



## GEOTECHNICAL DESIGN REPORT

20-1403

July 27, 2026

### Geotechnical Engineering Services

WIN 027160.00

East Side Road over Knowles River

Lot Norton Bridge #3754

Addison, Maine

**Prepared For:**

Maine Department of Transportation

Attention: Laura Krusinski, P.E.

State House Station 16

Augusta, ME 04333-0016

**Prepared By:**

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## TABLE OF CONTENTS

|                                        |    |
|----------------------------------------|----|
| 1.0 INTRODUCTION.....                  | 1  |
| 1.1 Site Conditions .....              | 1  |
| 1.2 Proposed Construction .....        | 2  |
| 2.0 EXPLORATIONS AND TESTING .....     | 2  |
| 2.1 Preliminary Explorations.....      | 2  |
| 2.2 Design Explorations .....          | 2  |
| 2.3 Testing .....                      | 2  |
| 3.0 SUBSURFACE CONDITIONS .....        | 3  |
| 3.1 Surficial Geology .....            | 3  |
| 3.2 Soil and Bedrock .....             | 3  |
| 3.3 Groundwater .....                  | 7  |
| 4.0 GEOTECHNICAL EVALUATIONS .....     | 7  |
| 4.1 Settlement Evaluation .....        | 7  |
| 4.2 Global Stability .....             | 8  |
| 4.3 Precast Concrete Box Culvert ..... | 9  |
| 4.4 Bearing Resistance .....           | 9  |
| 4.5 Modulus of Subgrade Reaction ..... | 10 |
| 4.6 Frost Protection.....              | 10 |
| 4.7 Seismic Design Considerations..... | 10 |
| 4.8 Scour Protection.....              | 10 |
| 4.9 Construction Considerations .....  | 11 |
| 5.0 CLOSURE.....                       | 12 |

|            |                                                                                              |
|------------|----------------------------------------------------------------------------------------------|
| Appendix A | Limitations                                                                                  |
| Appendix B | Figures                                                                                      |
|            | Site Location Map                                                                            |
|            | Boring Location Plan                                                                         |
|            | Interpretive Subsurface Profile                                                              |
|            | Boring Log Plan Sheet                                                                        |
| Appendix C | Boring Logs, Key to Soil and Rock Descriptions and Terms                                     |
| Appendix D | Rock Core Photos                                                                             |
| Appendix E | Laboratory Test Results                                                                      |
| Appendix F | Calculations                                                                                 |
| Appendix G | Special Provisions                                                                           |
|            | Special Provision 203 – Excavation and Embankment (Culvert Bedding Stone)                    |
|            | Special Provision 203 – Excavation and Embankment (Ultra-Lightweight Foamed Glass Aggregate) |

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State House Station 16  
Augusta, ME 04333-0016

Subject: Geotechnical Engineering Services  
WIN 027160.00  
East Side Road over Knowles River  
Lot Norton Bridge #3754 Replacement  
Addison, Maine

Dear Laura:

In accordance with our Proposals, dated October 11, 2023, and July 22, 2025, and project specific Assignment Letter #11, dated October 13, 2023, and #1, dated March 4, 2026, we have completed geotechnical services for the subject project. The purpose of our services was to provide geotechnical recommendations for foundations and earthwork associated with the proposed bridge construction. Our scope of services included subsurface explorations, soils laboratory testing, geotechnical analyses of the subsurface findings, and preparation of this report.

The services provided by S. W. Cole Engineering, Inc. (S.W.COLE) were conducted in accordance with our Multi-PIN Agreements with the Maine Department of Transportation (MaineDOT), No. 20200623000000000765, dated June 22, 2020, and No. 20250909000000000189, dated September 9, 2025. The contents of this report are subject to the limitations set forth in Appendix A.

## **1.0 INTRODUCTION**

### **1.1 Site Conditions**

The site is Lot Norton Bridge (MaineDOT Bridge #3754) carrying East Side Road over the Knowles River in Addison, Maine. The site location is shown on the "Site Location Map" attached in Appendix B. Based on the Historic Plans dated May 1993, we understand the existing structure was constructed in 1993 and consist of a  $\pm 14$ -foot-diameter, aluminum-plate arch culvert. We understand the existing structure overtops during storm surges.

## **1.2 Proposed Construction**

Based on the completed Preliminary Design Report (PDR), we understand the existing aluminum-plate arch culvert will be replaced with a 20-foot-span by 16-foot-rise by 98-foot-long (including tapered sections) precast concrete box culvert with a 0-degree skew. The box culvert invert will be embedded about 2.5 feet below the riverbed corresponding to about elevation -7 feet. The replacement structure will be constructed on the existing horizontal alignment; however, we understand fill of about 4.5 feet will be placed to raise grade at the box culvert and tapered fills of up to 5 feet will be placed along the roadway approaches. The site is underlain by silty clay that is compressible under the weight of new fills and foundation loads. In order to mitigate potential adverse settlement, lightweight fill material will be used to reduce magnitude of settlement at the crossing and approaches. We understand 1.75H:1V or flatter riprap slopes will match into existing approach side slopes on the inlet and outlet ends of the culvert.

## **2.0 EXPLORATIONS AND TESTING**

### **2.1 Preliminary Explorations**

Four test borings (BB-AKR-101 through BB-AKR-104) were made at the site between November 20 and November 30, 2023, by Seaboard Drilling, LLC (Seaboard) using a track-mounted Diedrich D-50 drill rig. The exploration locations were selected and established in the field by S.W.COLE using taped measurements from existing site features. The “as-drilled” exploration locations, surveyed by MaineDOT, are shown on the “Boring Location Plan” attached in Appendix B. Logs of these test borings and a Key to Soil and Rock Descriptions and Terms used on the logs are attached in Appendix C.

### **2.2 Design Explorations**

Five test borings (BB-AKR-201 through BB-AKR-205) were made at the site between September 15 and September 19, 2025, by Seaboard using a track-mounted Diedrich D-50 drill rig. The exploration locations were selected in consultation with MaineDOT and established in the field by S.W.COLE using taped measurements from existing site features. The “as-drilled” exploration locations are shown on the “Boring Location Plan” attached in Appendix B. Logs of these test borings and a Key to Soil and Rock Descriptions and Terms used on the logs are attached in Appendix C.

### **2.3 Testing**

The test borings were drilled using a combination of solid-stem auger, cased wash boring, and NQ2 rock core drilling techniques. The soils were sampled at approximate 5-foot intervals using a split-spoon sampler and Standard Penetration Test (SPT) methods using a calibrated automatic hammer. Undisturbed Shelby tube sampling and Vane Shear Testing (VST), using a Geonor vane kit, were performed where softer cohesive soils were encountered. Upon encountering refusal, borings BB-AKR-102 and BB-AKR-103 were advanced about 10 feet into bedrock using NQ2 rock coring. Rock core photographs are shown in Appendix D.

The Seaboard drill rig was equipped with an automatic hammer to drive the split-spoon sampler. The hammer was calibrated per ASTM D4633-10 “Standard Test Method for Energy Measurement for Dynamic Penetrometers.” Corrected N-values discussed in this report were computed by applying the corresponding average energy transfer factors of 1.066<sup>1</sup> (preliminary explorations) and 0.985<sup>2</sup> (design explorations) to the raw field N-values. The hammer efficiency factor (1.066 and 0.985), uncorrected SPT blow counts, uncorrected and corrected SPT N-values, VST results, rock core intervals, and Rock Quality Designation (RQD) are shown on the boring logs provided in Appendix C. Rock core photographs are shown in Appendix D

Laboratory testing was performed on disturbed SPT samples and undisturbed Shelby tube samples obtained during the explorations. Laboratory testing was performed following applicable American Association of State Highway and Transportation Officials (AASHTO) testing procedures. Laboratory testing included 32 natural water content tests, 11 grain size analyses (three with hydrometer and eight without hydrometer), 2 organic contents, 21 Atterberg limits, and 5 consolidation tests.

Moisture contents, organic contents, and Atterberg limits test results are shown on the boring logs in Appendix C. A summary, and results of the laboratory testing are provided in Appendix E.

### **3.0 SUBSURFACE CONDITIONS**

#### **3.1 Surficial Geology**

According to the Maine Geological Survey's (MGS's) mapping of the Columbia Falls Quadrangle, Maine (Open-File Map 75-1)<sup>3</sup>, surficial geologic units within the site vicinity generally consists of Presumpscot Formation (clay, silt, and sand). The surficial geologic units encountered were generally consistent with the mapped geology, however, fill from previous site development and glacial till were also encountered.

#### **3.2 Soil and Bedrock**

Subsurface conditions at the project site were explored by drilling 9 test borings. Borings BB-AKR-101, BB-AKR-102, BB-AKR-203, BB-AKR-204, and BB-AKR-205 were drilled along the north approach and borings BB-AKR-103, BB-AKR-104, BB-AKR-201 and BB-AKR-202 were drilled along the south approach. The test borings encountered a soils profile generally consisting of fill overlying marine deposits (silty clay and sand) overlying glacial till overlying bedrock. The principal strata encountered in the explorations are summarized below. An Interpretive Subsurface Profile is

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<sup>1</sup> Preliminary explorations completed track-mounted Diedrich D-50 drill rig equipped with an automatic hammer (SN 367), calibrated 11/03/2023.

<sup>2</sup> Design explorations completed with track-mounted Diedrich D-50 drill rig equipped with an automatic hammer (SN 362), calibrated 10/11/2024.

<sup>3</sup> Borns, Harold W., Jr., 1975, Reconnaissance surficial geology of the Columbia Falls quadrangle, Maine: Maine Geological Survey, Open-File Map 75-1, map, scale 1:62,500.

attached in Appendix B. Refer to the boring logs in Appendix C for more detailed descriptions of the subsurface findings at the exploration locations.

Surficial: The test borings were made within the roadway encountered 6 to 11 inches of pavement.

Fill: Below the pavement, fill was encountered in each boring extending to depths of about 5.0 to 15.5 feet below ground surface (bgs), corresponding to Elevation (El.) 7.5 to -5.6 feet. Where sampled, the fill generally consisted of:

- Brown, Silty SAND, some to little gravel, some to little silt
- Brown, Gravelly SAND, trace silt

The fill was generally medium dense to very dense with SPT  $N_{60}$  values ranging from 23 to 135 blows per foot (bpf).

Marine Clay: Below the fill, marine clay was observed to depths of about 47.7 to 49.0 feet bgs, corresponding to El. -37.6 to -39.2 feet. The marine clay deposit consisted of an upper, medium plasticity silty clay to depths of about 15 to 25 feet bgs (El. -2.6 to -15.1 feet) overlying a lower, low plasticity silty clay to depths of about 38.4 to 59.2 feet bgs, (El. -27.0 to -48.6 feet).

The upper marine clay deposit generally consisted of:

- Brown to grey, Silty CLAY, trace fine sand, with some organics (roots, rootlets, wood fiber)
- Gray, Clayey SILT, little to trace sand, trace gravel, with trace organics (rootlets)

The upper marine clay was generally very soft to stiff with SPT  $N_{60}$  values ranging from weight of hammer to 11 blows per foot (bpf). Organic content tests completed in the upper marine clay ranged from 6.9 to 15.1 percent.

The lower marine clay deposit generally consisted of:

- Grey, Silty CLAY, with occasional sand/silt seams becoming more frequent with depth

Fourteen sets of VSTs were completed in the lower marine clay unit. Where completed, these tests measured undisturbed undrained shear strengths ranging from about 853 to 1,875 psf, indicating a medium stiff to stiff consistency. The remolded shear strengths ranged from about 1525 to 625 psf. Based on the ratio of peak (undisturbed) to remolded shear strength, the lower marine clay unit has a sensitivity ranging from 2.7 to 8.3 and generally classified as low to medium sensitive.

Atterberg limits tests were conducted on 21 samples of the marine clay deposit (upper and lower) with results summarized in the following table.

| Boring No. | Sample No. | USCS Classification | Water Content (%) | Atterberg Limits |    |    | Liquidity Index (LI) |
|------------|------------|---------------------|-------------------|------------------|----|----|----------------------|
|            |            |                     |                   | LL               | PL | PI |                      |
| BB-AKR-101 | 3D         | CH                  | 63.8              | 56               | 30 | 26 | 1.3                  |
| BB-AKR-102 | 6D         | CL                  | 30.3              | 40               | 23 | 17 | 0.4                  |
| BB-AKR-102 | 9D         | CL                  | 25.1              | 40               | 22 | 18 | 0.2                  |
| BB-AKR-103 | 5D         | CL                  | 43.0              | 44               | 26 | 18 | 0.9                  |
| BB-AKR-103 | 7D         | CL                  | 30.9              | 39               | 23 | 16 | 0.5                  |
| BB-AKR-103 | 9D         | CL                  | 24.9              | 36               | 22 | 14 | 0.2                  |
| BB-AKR-104 | 3D         | CH                  | 59.5              | 54               | 26 | 28 | 1.2                  |
| BB-AKR-104 | 1U         | CL                  | 33.4              | 37               | 23 | 14 | 0.7                  |
| BB-AKR-104 | 2U         | CL                  | 30.0              | 35               | 21 | 14 | 0.6                  |
| BB-AKR-201 | 5D         | CL                  | 32.2              | 38               | 17 | 21 | 0.7                  |
| BB-AKR-201 | 9D         | CL                  | 27.2              | 26               | 18 | 8  | 1.2                  |
| BB-AKR-202 | 1U         | CL                  | 32.0              | 39               | 21 | 18 | 0.6                  |
| BB-AKR-202 | 7D         | CL                  | 26.0              | 40               | 16 | 24 | 0.4                  |
| BB-AKR-203 | 3D         | CL                  | 38.4              | 49               | 24 | 25 | 0.6                  |
| BB-AKR-203 | 7D         | CL                  | 33.3              | 37               | 18 | 19 | 0.8                  |
| BB-AKR-204 | 1U         | CL                  | 29.0              | 39               | 19 | 20 | 0.5                  |
| BB-AKR-204 | 2U         | CL                  | 34.3              | 43               | 21 | 22 | 0.6                  |
| BB-AKR-204 | 3U         | CL                  | 30.1              | 42               | 20 | 22 | 0.5                  |
| BB-AKR-205 | 4D         | CL                  | 25.0              | 25               | 17 | 8  | 1.0                  |
| BB-AKR-205 | 9D         | CL                  | 32.5              | 39               | 21 | 18 | 0.6                  |
| BB-AKR-205 | 11D        | CL                  | 30.6              | 37               | 18 | 19 | 0.7                  |

The plasticity indices (PI) of these samples ranged from 14 to 28 indicating the soils generally have a low to medium plasticity. The natural water contents for these samples ranged from about 24.9 to 63.8 percent and liquid limits (LL) ranged from 35 to 56. The liquidity indices (LI) ranged from 0.2 to 1.3. Interpretation of these results indicate the soils with a LI of 1 or less are normally or heavily consolidated while those with LI more than 1 are on the verge of being a viscous liquid as the natural water content exceeds the LL. Soils with LI more than 1 have a high potential to remold and lose strength and structure when disturbed. LI values greater than or equal to 1 are also indicative of soils that are unconsolidated and are commonly referred to as “quick.”

Five, one-dimensional consolidation tests were completed on undisturbed Shelby Tube samples of the marine clay. Based on the completed laboratory testing, we estimated the following compressibility and stress history characteristics of the marine clay.

| Boring No. | Sample No. | Sample Depth (ft) | Sample Elevation (ft) | Stress History                           |                               |      | Compressibility |                 |
|------------|------------|-------------------|-----------------------|------------------------------------------|-------------------------------|------|-----------------|-----------------|
|            |            |                   |                       | Existing Vertical Effective Stress (psf) | Maximum Previous Stress (psf) | OCR  | C <sub>ce</sub> | C <sub>re</sub> |
| BB-AKR-104 | 1U         | 25                | -14.9                 | 2,160                                    | 2,700                         | 1.25 | 0.35            | 0.07            |
| BB-AKR-104 | 2U         | 35                | -24.9                 | 2,640                                    | 4,100                         | 1.55 | 0.30            | 0.05            |
| BB-AKR-202 | 1U         | 20                | -9.4                  | 1,820                                    | 3,900                         | 2.14 | 0.09            | 0.01            |
| BB-AKR-204 | 1U         | 25                | -16.8                 | 1,840                                    | 3,750                         | 2.04 | 0.06            | 0.01            |
| BB-AKR-204 | 2U         | 30                | -21.8                 | 2,070                                    | 3,800                         | 1.84 | 0.09            | 0.01            |

OCR = Over-Consolidation Ratio

C<sub>ce</sub> = Compression Ratio (CR)

C<sub>re</sub> = Recompression Ratio (RR)

Based on the consolidation test results, the maximum previous stress (e.g., pre-consolidation stress) within the marine silty clay deposit is greater than the existing vertical effective stress ( $OCR > 1.0$ ) indicating the marine silty clay is over-consolidated.

**Marine Sand:** Underlying the marine clay deposits, marine sand was observed to depths of about 52.0 to 59.2 feet bgs (El. -42.5 to -48.6 feet), where penetrated. Borings BB-AKR-104 and borings BB-AKR-201 through BB-AKR-203 were terminated in the marine sands at depths of 42 to 57 feet (El. -31.4 to -46.8 feet). Where sampled, the marine sand generally consisted of:

- Grey, Silty SAND, trace gravel.
- Grey, SAND, little silt.

The marine sand was generally medium dense to dense with SPT  $N_{60}$  values of 12 to 34 bpf, where sampled.

**Glacial Till:** Underlying the marine sand, where penetrated, and below the marine clay in BB-AKR-205, glacial till was observed to depths of about 79.6 to 80.4 feet bgs (El. -69.8 to -70.5 feet). Borings BB-AKR-101, BB-AKR-204 and BB-AKR-205 were terminated in the glacial till at depths of 57 to 62 feet (El. -48.8 to -52.5 feet). Where sampled, the glacial till generally consisted of:

- Grey, Gravelly SAND, some to little silt.
- Grey, Sandy GRAVEL, little silt.
- Grey, Silty SAND, little gravel.

The glacial till was generally dense to very dense with an SPT  $N_{60}$  value of 44 bpf to greater than 50 blows per 6 inches (sampler refusal).

**Bedrock:** Bedrock was encountered and sampled in borings BB-AKR-102 and BB-AKR-103. The top of intact bedrock varied from about 79.6 to 80.4 feet bgs (El. -69.8 to -70.5 feet). The bedrock generally consisted of grey to dark grey, hard, very slightly weathered schist of the Quoddy Formation. Joints were generally very close, low to moderately dipping and tight to open.

The following table summarizes the approximate depths to bedrock, corresponding top of bedrock elevations and Rock Quality Designation (RQD) where encountered.

| Boring Number<br>(Substructure) | Approximate Depth to<br>Bedrock (feet) | Approximate Bedrock<br>Elevation (feet) | RQD (Rock Quality)                       |
|---------------------------------|----------------------------------------|-----------------------------------------|------------------------------------------|
| BB-AKR-102<br>(North Approach)  | 79.6                                   | -69.8                                   | R1: 0% (Very Poor)<br>R2: 0% (Very Poor) |
| BB-AKR-103<br>(South Approach)  | 80.4                                   | -70.5                                   | R1: 7% (Very Poor)<br>R2: 9% (Very Poor) |

RQD values for the bedrock cores generally ranged from 0 to 9 percent corresponding to a Rock Quality of very poor. Detailed descriptions of the rock core and RQD values for each core run are shown on the exploration logs in Appendix C. Rock core photographs are shown in Appendix D.

### **3.3 Groundwater**

The soils encountered at the test borings were damp to moist from the ground surface. It should be noted that Knowles River is tidally influenced, and water was introduced during drilling. Long-term groundwater information is not available but can be expected to be influenced by the water level of the Knowles River. It should be anticipated that groundwater levels will fluctuate seasonally, particularly in response to periods of snowmelt and precipitation, changes in site use and the water level of Knowles River.

## **4.0 GEOTECHNICAL EVALUATIONS**

S.W.COLE conducted geotechnical engineering evaluations in accordance with 2020 AASHTO LRFD Bridge Design Specifications, 9<sup>th</sup> Edition (LRFD) and the MaineDOT Bridge Design Guide, 2003 Edition with revisions through June 2018 (MaineDOT BDG). Geotechnical engineering calculations and reference documents used to support the recommendations within this report are provided in Appendix F.

### **4.1 Settlement Evaluation**

The proposed box culvert will be founded on medium stiff marine clay that is susceptible to immediate and consolidation settlement. As a result, we evaluated the effective stress at the bearing elevation of the proposed box culvert (EI -9 feet) for the existing and proposed conditions. Our evaluation indicates that the proposed construction, including the grade raise, will result in a net decrease in effective stress at the box culvert. Therefore, consolidation of the underlying marine clay is not anticipated as a result of the culvert placement. We anticipate settlement of the proposed culvert will occur as elastic settlement during foundation construction and backfill placement and as consolidation settlement resulting from placement of the approach grade raise fills.

We evaluated settlement of the approach roadway and box culvert considering a grade raise of up to 4.5 feet over the box culvert and tapered fills of up to 5 feet along the approaches, subsurface soil conditions encountered in the test borings, and the compressibility/stress history characteristics of the marine clay summarized herein. We conducted settlement evaluations using Settle3D software to estimate the magnitude of settlement following construction.

Settlement was evaluated at 1 month, 5 years and 75 years after loading. We conservatively modeled the upper marine clay deposit with an OCR of 1.3 and the lower marine clay with an OCR between 1.8 to 1.5. We evaluated settlement assuming partial replacement of the normal weight fill with lightweight Foamed Glass Aggregate (FGA) having a total unit weight of 20 pcf. We modeled the tapered fill assuming 2 feet of normal-weight fill and the remainder (up to 3 feet) of the fill as lightweight FGA. Estimates of the magnitude of total settlement for each model and stage are summarized below. Model run outputs are provided in Appendix F.

| Model                                            | Range of Estimated Total Settlement (inches) |                           |                            |                                                     |
|--------------------------------------------------|----------------------------------------------|---------------------------|----------------------------|-----------------------------------------------------|
|                                                  | Stage 1<br>(0 to 30 days)                    | Stage 2<br>(0 to 5 years) | Stage 3<br>(0 to 75 years) | Net Change from<br>Stage 2 and 3<br>(5 to 75 years) |
| Box Culvert + 2-feet<br>Normal Fill & 3 feet FGA | Negligible                                   | 0.1 to 0.5                | 0.8 to 2.3                 | 0.7 to 1.8                                          |

**Note:** Fill modeled as normal-weight fill with in-place total unit weight of 125 pcf.  
Lightweight fill modeled as foamed glass aggregate with in-place total unit weight of 20 pcf.

Based on our preliminary evaluation, we estimate settlement due to placement of the box culvert and tapered fills of up to 5 feet along the roadway alignment will result in total settlements ranging from about 1.5 to 9.6 inches with normal-weight fill after 75 years. The estimated settlement due to placement of the box culvert, 2 feet of normal-weight fill, and up to 3 feet of lightweight FGA, will result in total settlements ranging from about 0.8 to 2.3 inches after 75 years. The estimated settlement is anticipated to occur as elastic and long-term consolidation-related settlement.

#### **4.2 Global Stability**

We performed global stability evaluations for the approach embankments at approximately Sta. 9+00 and 10+25 considering the embankment widening and up to 5-foot raise in roadway grade. Our slope stability analyses were made using RocScience Slide2 software.

We evaluated global stability considering the resistance factors outlined in AASHTO LRFD, Section 11.6.3.7 and guidance in Section C11.6.3.7 as follows:

Global Stability for Static Conditions

$FS \geq 1.3$  ( $f = 0.75$ ) for slopes or walls not supporting a structural element

Results of our global stability model runs are summarized in the following table and included in Appendix F.

| Model       |                                                         | Safety Factor |
|-------------|---------------------------------------------------------|---------------|
| Station     | Description                                             | Static        |
| 9+00 Right  | Embankment widening & 5-foot raise in road grade; MLW   | 1.35          |
| 9+00 Left   | Embankment widening & 5-foot raise in road grade; MLW   | 1.36          |
| 9+00 Right  | Embankment widening & 5-foot raise in road grade; MHW   | 1.35          |
| 9+00 Left   | Embankment widening & 5-foot raise in road grade; MHW   | 1.36          |
| 10+25 Right | Embankment widening & 4.5-foot raise in road grade; MLW | 1.32          |
| 10+25 Left  | Embankment widening & 4.5-foot raise in road grade; MLW | 1.48          |
| 10+25 Right | Embankment widening & 4.5-foot raise in road grade; MHW | 1.32          |
| 10+25 Left  | Embankment widening & 4.5-foot raise in road grade; MHW | 1.48          |

Results of our global stability models indicate some minor surficial failures at the top of slope however the safety factors against global stability failure during static conditions are above the referenced safety factors per LRFD Section 11.6.2.3.

#### **4.3 Precast Concrete Box Culvert**

The proposed replacement structure will consist of a 20-foot-span by 16-foot-rise precast concrete box culvert (box culvert) with slope-tapered inlet and outlet walls. We understand the box culvert will be 98 feet long ( $\pm$ 42-foot-long box section plus 28-foot-long tapered inlet and outlet sections) with a 0-degree skew. We understand the slopes on the inlet and outlet ends of the culvert shall have 1.75:1(H:V) or flatter riprap slopes. We understand the bottom of box will be embedded approximately 2.5 feet into the riverbed.

Based on the MaineDOT BDG Section 8.3.1, the precast box culvert shall include toe walls at the inlet and outlet ends to prevent undermining. The toe walls should extend at least 1 foot below the maximum scour depth.

The anticipated subgrade soils for the proposed box culvert will generally consist of medium stiff marine clay. Based on the anticipated cohesive bearing soils, the box culvert will be constructed on a 2-foot-thick mat of compacted Culvert Bedding Stone (Pay Item 203.55) that is reinforced with geogrid and underlain (bottom and sidewalls of 2-foot excavation) by stabilization/reinforcement geotextile. The stabilization/reinforcement geotextile shall be hand-deployed on the prepared soil subgrade prior to installing the culvert bedding stone. The Culvert Bedding Stone shall meet the requirements of MaineDOT Standard Specification 703.22 – Underdrain Backfill Material Type C. The Culvert Bedding Stone shall be placed in maximum 6-inch-thick lifts and each lift compacted with at least 4 passes of a walk-behind vibrator-type compactor.

The geogrid reinforcement shall meet the requirements of Special Provision 620 – Geotextile (Reinforcement Geogrid). The stabilization/reinforcement geotextile shall meet the requirements of MaineDOT Standard Specification 722.01 Stabilization/Reinforcement Geotextile, Class 1. Abutting sections of the stabilization/reinforcement geotextile shall overlap at least 1 foot.

#### **4.4 Bearing Resistance**

Based on the anticipated subgrade conditions described herein, the box culvert will be founded on a 2-foot-thick layer of compacted Culvert Bedding Stone that is reinforced with geogrid and underlain (bottom and sidewalls of 2-foot excavation) by stabilization/reinforcement geogrid. The bearing elevation of the Culvert Bedding Stone mat will be approximately El. -9 feet. The subgrade at the elevation is expected to consist of medium stiff marine clay.

The factored bearing resistance for a precast box culvert strength and service limit states based on LRFD Section 10.6.3.2.2a shall not exceed the factored bearing resistances shown in the following table.

| Overall Foundation Width<br>(feet) | Factored Bearing Resistance (ksf) |                     |
|------------------------------------|-----------------------------------|---------------------|
|                                    | Strength Limit State              | Service Limit State |
| 22                                 | 2.8                               | 3.0                 |

Due to the size of the box culvert, the service limit state may govern the design. The bearing stress shall not exceed the nominal structural resistance of the structural concrete of  $0.3 \times f'_c$ .

#### **4.5 Modulus of Subgrade Reaction**

The modulus of subgrade reaction relates bearing pressure to settlement for mat foundations, such as box culverts, and is often used in the soil-structure interaction analyses. The modulus of subgrade reaction is dependent on many factors including the material properties, thickness of the bearing soils, geometry of the box culvert, and the stiffness of the box culvert.

We recommend a modulus of subgrade reaction ( $k_s$ ) equal to 32 pounds per cubic inch (pci) for preliminary analysis for the box culvert bearing on a 2-foot-thick layer of compacted Culvert Bedding Stone that is reinforced with geogrid and underlain by stabilization/reinforcement geogrid deployed on the existing medium stiff, marine clay.

#### **4.6 Frost Protection**

Based on the Maine Design Freezing Index Map<sup>4</sup>, the design freezing index for Addison, Maine is approximately 1,100 freezing degree-days. Based on Section 5.2.1 of the MaineDOT BDG for fine-grained fill soils with an average water content of 20%, the maximum seasonal frost penetration is estimated to be on the order of about 3.6 feet.

Considering this, we recommend foundations should have at least 3.6 feet of soil cover to provide frost protection; however, there are currently no requirements for embedment of precast concrete boxes at stream crossings in the MaineDOT BDG.

Riprap is not to be considered as contributing to the overall thickness of soils required for frost protection.

#### **4.7 Seismic Design Considerations**

In accordance with LRFD Article 3.10.1, seismic analysis is not required for buried structures, except where they cross active faults. There are no known active faults in Maine; therefore, further seismic evaluation is not required.

#### **4.8 Scour Protection**

The box culvert shall be constructed with inlet and outlet toe walls that extend a minimum of 1 foot below the maximum depth of scour. Inlet and outlet toe walls will be protected by streambed armoring consisting of 2 feet of plain riprap (MaineDOT Standard Specification 703.26 Plain Riprap). The riprap side slopes shall be constructed no steeper than a maximum 2H:1V extending from the edge of the roadway down to the existing ground surface. Riprap side slopes shall be underlain by a Class

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<sup>4</sup> Maine Department of Transportation, Bridge Design Guide (BDG), August 2003, with Revisions through 2014, Figure 5-1.

1 erosion control geotextile and a 1-foot layer of bedding material conforming to MaineDOT Standard Specification 703.19 Granular Borrow Material for Underwater Backfill.

#### **4.9 Construction Considerations**

The site is tidally influenced, and construction phase dewatering is recommended to maintain the water level below the subgrade elevation to allow for earthwork and grading activities to occur in the “dry” and help to stabilize subgrades. Construction activities may require sheet-pile cofferdams to divert the river flow, control groundwater seepage, and maintain a dry excavation.

The subgrades soils for the box culvert are anticipated to consist of sensitive marine clay that can undergo strength loss when disturbed by construction activities. Use a smooth-edge bucket and maintaining grade to avoid unnecessary over-excavation or disturbance of the bearing soils. If disturbance of the subgrade marine clays occurs, the Contractor shall remove the disturbed soils and backfill with additional culvert bedding stone may be necessary.

The box culvert shall be constructed on a minimum 2-foot-thick bearing mat of compacted Culvert Bedding Stone (MaineDOT Standard Specification 703.22 Underdrain Backfill Material Type C) that is reinforced with geogrid and underlain by stabilization/reinforcement geotextile (MaineDOT Standard Specification 722.01 Stabilization/Reinforcement Geotextile, Class 1). The geotextile shall be placed by hand on the prepared soil subgrade prior to installing the geogrid-reinforced stone mat. The Culvert bedding stone shall be placed in maximum 6-inch-thick lifts and each lift compacted with a walk-behind vibrator-type compactor. Adjoining sections of the stabilization/reinforcement geotextile shall be overlapped by a minimum of 1 foot.

The soil envelope and box culvert backfill shall consist of MaineDOT Standard Specification 703.19 Granular Borrow Material for Underwater Backfill with a maximum particle size of 4 inches to within 5 feet of the proposed finish grade. The granular borrow backfill should be placed in maximum 8-inch lifts (loose measure) and compacted to at least 92 percent of the AASHTO T-180 maximum dry density. The precast concrete box culvert shall be installed in conformance with MaineDOT BDG Section 8 and MaineDOT Standard Specification Section 534.

The subgrade soils along the roadway approaches are anticipated to consist of moisture sensitive granular fills. New approach roadways fills will consist of 2 feet of new roadway aggregates overlying up to 3 feet of lightweight FGA between Station 6+37 to 15+13. The FGA shall be wrapped in a non-woven separation geotextile (MaineDOT Standard Specification 722.04 Separation Geotextile). Adjoining sections of the separation geotextile shall be overlapped by a minimum of 1 foot.

Saturated soils and water seepage will be encountered during construction and in excavations. There may be localized sloughing and instability in some excavations and cut slopes. The Contractor should control groundwater and surface water infiltration using temporary ditches, sump pumps, granular drainage blankets, stone ditch protection, or hand-laid riprap with geotextile underlayment to divert groundwater and surface water. The design and planning of excavations, excavation support systems, and dewatering is the responsibility of the contractor.

**5.0 CLOSURE**

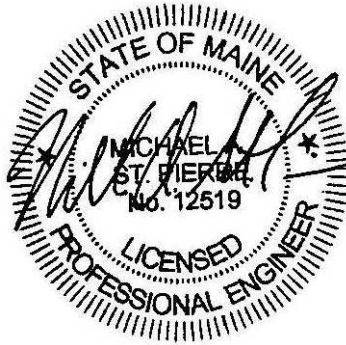
It has been a pleasure to be of assistance to you with this phase of your project. We look forward to working with you during the construction phase of the project.

Sincerely,

**S. W. Cole Engineering, Inc.**



Michael A. St Pierre, P.E.  
Principal Geotechnical Engineer



Robert E. Chaput, Jr., P.E.  
Principal Geotechnical Engineer

MAS:nds-rec



## **APPENDIX A**

### **Limitations**

This report has been prepared for the exclusive use of Maine Department of Transportation for specific application to the Lot Norton Bridge #3754 over Knowles River (WIN 027160.00) on East Side Road in Addison, Maine. S. W. Cole Engineering, Inc. (S.W.COLE) has endeavored to conduct our services in accordance with generally accepted soil and foundation 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 investigation 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.

S.W.COLE's scope of services has not included the investigation, detection, or prevention of any Biological Pollutants at the project site or in any existing or proposed structure at the site. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and the byproducts of any such biological organisms.

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.

## **APPENDIX B**

### **Figures**



2,000 0 2,000 4,000



Scale in Feet



**S.W.COLE**  
ENGINEERING, INC.

MAINEDOT

## SITE LOCATION MAP

LOT NORTON BRIDGE #3754 REPLACEMENT  
EAST SIDE ROAD OVER KNOWLES RIVER  
ADDISON, MAINE  
WIN 027160.00

### NOTE:

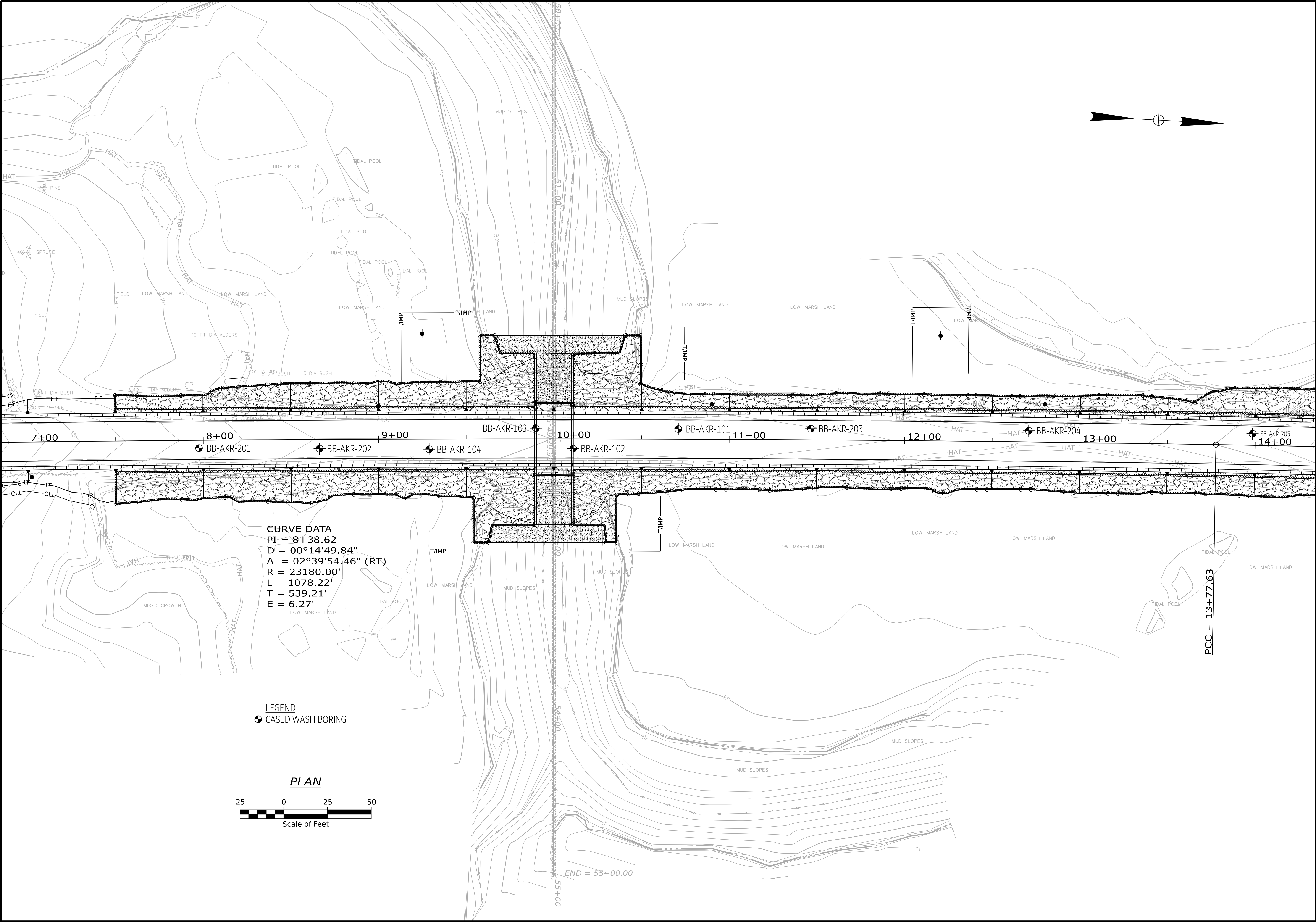
SITE LOCATION MAP PREPARED FROM  
ESRI ArcGIS ONLINE AND DATA PARTNERS  
INCLUDING USGS AND © 2007 NATIONAL  
GEOGRAPHIC SOCIETY.

Job No.  
Date:

20-1403-027160  
04/16/2024

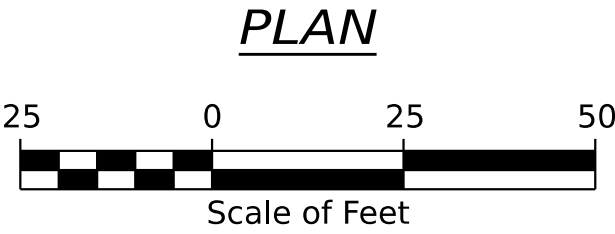
Scale  
Sheet

1" = 2000'  
1



CURVE DATA  
PI = 8+38.62  
D = 00°14'49.84"  
Δ = 02°39'54.46" (RT)  
R = 23180.00'  
L = 1078.22'  
T = 539.21'  
E = 6.27'

LEGEND  
◆ CASED WASH BORING



|                                                    |  |  |  |  |           |             |
|----------------------------------------------------|--|--|--|--|-----------|-------------|
| STATE OF MAINE<br>DEPARTMENT OF TRANSPORTATION     |  |  |  |  | SIGNATURE |             |
|                                                    |  |  |  |  |           | P.E. NUMBER |
|                                                    |  |  |  |  |           |             |
| BRIDGE NO. 3754<br>WIN<br>27160.00<br>BRIDGE PLANS |  |  |  |  | DATE      |             |
|                                                    |  |  |  |  |           |             |
|                                                    |  |  |  |  |           |             |

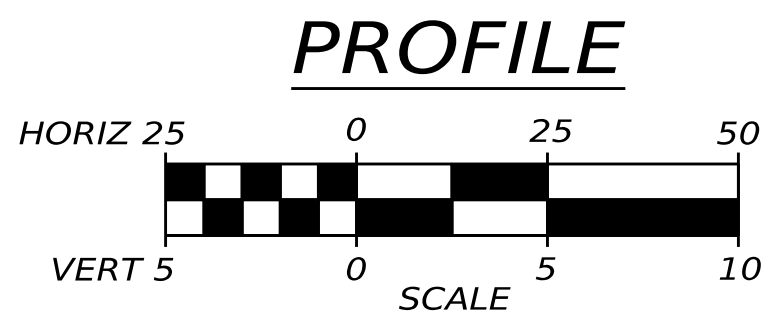
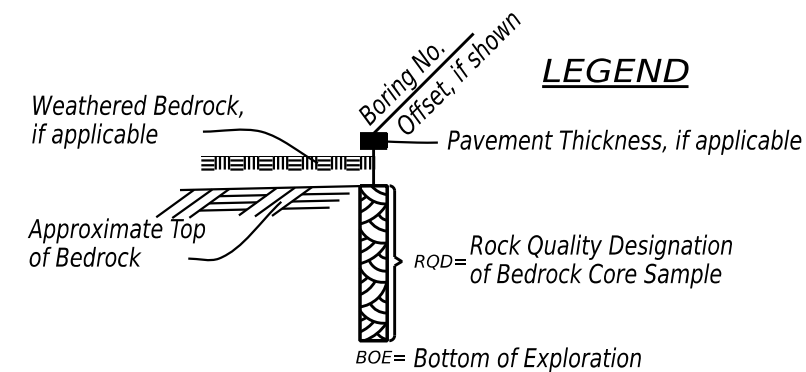
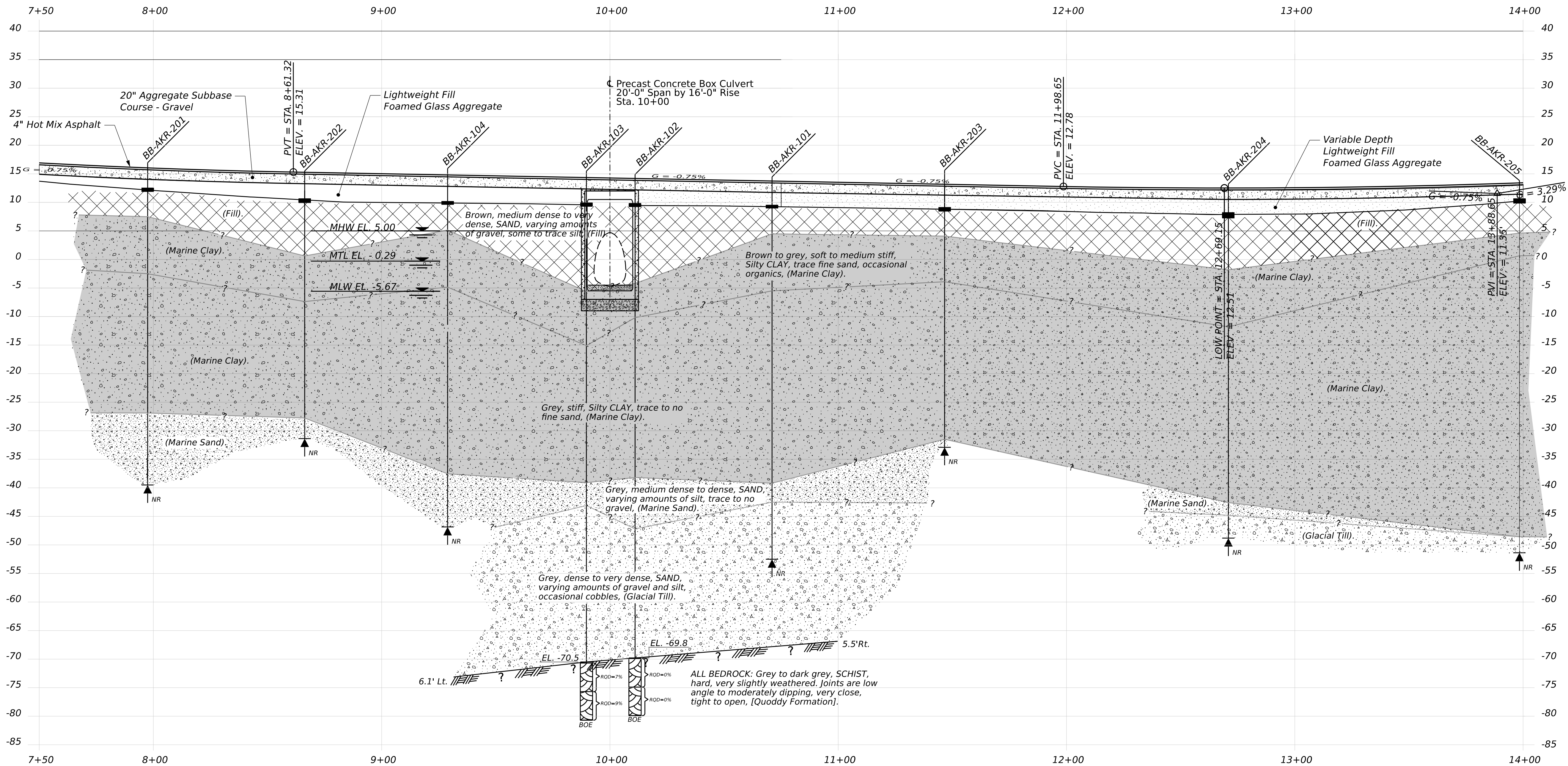
|                                                                 |                   |           |          |           |      |
|-----------------------------------------------------------------|-------------------|-----------|----------|-----------|------|
| LOT NORTON BRIDGE<br>KNOWLES RIVER<br>ADDISON<br>WASHINGTON CO. | PROJ. MANAGER     |           | C. CUYI  | BY        | DATE |
|                                                                 | DESIGN-DETAILED   |           |          |           |      |
|                                                                 | CHECKED-REVIEWED  |           |          |           |      |
|                                                                 | DESIGN-DETAILED02 | M.SPIERRE | T. WHITE | JUN. 2026 |      |
|                                                                 | DESIGN-DETAILED03 |           |          |           |      |

|                      |             |  |  |  |
|----------------------|-------------|--|--|--|
| BORING LOCATION PLAN | REVISIONS 1 |  |  |  |
|                      | REVISIONS 2 |  |  |  |
|                      | REVISIONS 3 |  |  |  |
|                      | REVISIONS 4 |  |  |  |

|               |  |  |  |  |
|---------------|--|--|--|--|
| FIELD CHANGES |  |  |  |  |
|---------------|--|--|--|--|

|              |   |
|--------------|---|
| SHEET NUMBER | 7 |
|--------------|---|

|       |  |
|-------|--|
| OF 32 |  |
|-------|--|



Note: This generalized interpretive soil profile is intended to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized, and have been developed by interpretations of widely spaced explorations and samples. Actual soil and bedrock transitions may vary and are probably more erratic. For more specific information refer to the exploration logs.

## **APPENDIX C**

### **Boring Logs & Key to Soil and Rock Descriptions and Terms**

| UNIFIED SOIL CLASSIFICATION SYSTEM                                                         |                                                                                    |                                                    |                                                                                                                      |                                                                  |
|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| MAJOR DIVISIONS                                                                            |                                                                                    |                                                    | GROUP SYMBOLS                                                                                                        | TYPICAL NAMES                                                    |
| COARSE-GRAINED SOILS<br><br>(more than half of material is larger than No. 200 sieve size) | GRAVELS<br><br>(more than half of coarse fraction is larger than No. 4 sieve size) | CLEAN GRAVELS                                      | GW                                                                                                                   | Well-graded gravels, gravel-sand mixtures, little or no fines.   |
|                                                                                            |                                                                                    | (little or no fines)                               | GP                                                                                                                   | Poorly-graded gravels, gravel sand mixtures, little or no fines. |
|                                                                                            |                                                                                    | GRAVEL WITH FINES<br>(Appreciable amount of fines) | GM                                                                                                                   | Silty gravels, gravel-sand-silt mixtures.                        |
|                                                                                            | SANDS<br><br>(more than half of coarse fraction is smaller than No. 4 sieve size)  | CLEAN SANDS                                        | SW                                                                                                                   | Well-graded sands, Gravelly sands, little or no fines            |
|                                                                                            |                                                                                    | (little or no fines)                               | SP                                                                                                                   | Poorly-graded sands, Gravelly sand, little or no fines.          |
|                                                                                            |                                                                                    | SANDS WITH FINES<br>(Appreciable amount of fines)  | SM                                                                                                                   | Silty sands, sand-silt mixtures                                  |
| FINE-GRAINED SOILS<br><br>(more than half of material is smaller than No. 200 sieve size)  | SILTS AND CLAYS<br><br>(liquid limit less than 50)                                 | ML                                                 | Inorganic silts and very fine sands, rock flour, Silty or Clayey fine sands, or Clayey silts with slight plasticity. |                                                                  |
|                                                                                            |                                                                                    | CL                                                 | Inorganic clays of low to medium plasticity, Gravelly clays, Sandy clays, Silty clays, lean clays.                   |                                                                  |
|                                                                                            |                                                                                    | OL                                                 | Organic silts and organic Silty clays of low plasticity.                                                             |                                                                  |
|                                                                                            | SILTS AND CLAYS<br><br>(liquid limit greater than 50)                              | MH                                                 | Inorganic silts, micaceous or diatomaceous fine Sandy or Silty soils, elastic silts.                                 |                                                                  |
|                                                                                            |                                                                                    | CH                                                 | Inorganic clays of high plasticity, fat clays.                                                                       |                                                                  |
|                                                                                            |                                                                                    | OH                                                 | Organic clays of medium to high plasticity, organic silts.                                                           |                                                                  |
| HIGHLY ORGANIC SOILS                                                                       | Pt                                                                                 | Peat and other highly organic soils.               |                                                                                                                      |                                                                  |

| MODIFIED BURMISTER SYSTEM                                                                                                                                                                                                                                                    |  |                                                                                   |                                                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------|---------------------------------------------------|
| <u>Descriptive Term</u>                                                                                                                                                                                                                                                      |  | <u>Portion of Total (%)</u>                                                       |                                                   |
| trace                                                                                                                                                                                                                                                                        |  | 0 - 10                                                                            |                                                   |
| little                                                                                                                                                                                                                                                                       |  | 11 - 20                                                                           |                                                   |
| some                                                                                                                                                                                                                                                                         |  | 21 - 35                                                                           |                                                   |
| adjective (e.g. Sandy, Clayey)                                                                                                                                                                                                                                               |  | 36 - 50                                                                           |                                                   |
| TERMS DESCRIBING DENSITY/CONSISTENCY                                                                                                                                                                                                                                         |  |                                                                                   |                                                   |
| <u>Coarse-grained soils</u> (more than half of material is larger than No. 200 sieve): Includes (1) clean gravels; (2) Silty or Clayey gravels; and (3) Silty, Clayey or Gravelly sands. Density is rated according to standard penetration resistance (N-value).            |  |                                                                                   |                                                   |
| <u>Density of Cohesionless Soils</u>                                                                                                                                                                                                                                         |  | <u>Standard Penetration Resistance</u><br>N <sub>60</sub> -Value (blows per foot) |                                                   |
| Very loose                                                                                                                                                                                                                                                                   |  | 0 - 4                                                                             |                                                   |
| Loose                                                                                                                                                                                                                                                                        |  | 5 - 10                                                                            |                                                   |
| Medium Dense                                                                                                                                                                                                                                                                 |  | 11 - 30                                                                           |                                                   |
| Dense                                                                                                                                                                                                                                                                        |  | 31 - 50                                                                           |                                                   |
| Very Dense                                                                                                                                                                                                                                                                   |  | > 50                                                                              |                                                   |
| <u>Fine-grained soils</u> (more than half of material is smaller than No. 200 sieve): Includes (1) inorganic and organic silts and clays; (2) Gravelly, Sandy or Silty clays; and (3) Clayey silts. Consistency is rated according to undrained shear strength as indicated. |  |                                                                                   |                                                   |
| <u>Consistency of Cohesive soils</u>                                                                                                                                                                                                                                         |  | <u>SPT N<sub>60</sub>-Value (blows per foot)</u>                                  | <u>Approximate Undrained Shear Strength (psf)</u> |
| Very Soft                                                                                                                                                                                                                                                                    |  | WOH, WOR, WOP, <2                                                                 | 0 - 250                                           |
| Soft                                                                                                                                                                                                                                                                         |  | 2 - 4                                                                             | 250 - 500                                         |
| Medium Stiff                                                                                                                                                                                                                                                                 |  | 5 - 8                                                                             | 500 - 1000                                        |
| Stiff                                                                                                                                                                                                                                                                        |  | 9 - 15                                                                            | 1000 - 2000                                       |
| Very Stiff                                                                                                                                                                                                                                                                   |  | 16 - 30                                                                           | 2000 - 4000                                       |
| Hard                                                                                                                                                                                                                                                                         |  | >30                                                                               | over 4000                                         |
| <u>Field Guidelines</u>                                                                                                                                                                                                                                                      |  |                                                                                   |                                                   |
| Fist easily penetrates                                                                                                                                                                                                                                                       |  |                                                                                   |                                                   |
| Thumb easily penetrates                                                                                                                                                                                                                                                      |  |                                                                                   |                                                   |
| Thumb penetrates with moderate effort                                                                                                                                                                                                                                        |  |                                                                                   |                                                   |
| Indented by thumb with great effort                                                                                                                                                                                                                                          |  |                                                                                   |                                                   |
| Indented by thumbnail                                                                                                                                                                                                                                                        |  |                                                                                   |                                                   |
| Indented by thumbnail with difficulty                                                                                                                                                                                                                                        |  |                                                                                   |                                                   |
| <u>Rock Quality Designation (RQD):</u>                                                                                                                                                                                                                                       |  |                                                                                   |                                                   |
| RQD (%) = $\frac{\text{sum of the lengths of intact pieces of core}^* > 4 \text{ inches}}{\text{length of core advance}}$                                                                                                                                                    |  |                                                                                   |                                                   |
| *Minimum NQ rock core (1.88 in. OD of core)                                                                                                                                                                                                                                  |  |                                                                                   |                                                   |
| <u>Rock Quality Based on RQD</u>                                                                                                                                                                                                                                             |  |                                                                                   |                                                   |
| <u>Rock Quality</u>                                                                                                                                                                                                                                                          |  | <u>RQD (%)</u>                                                                    |                                                   |
| Very Poor                                                                                                                                                                                                                                                                    |  | ≤25                                                                               |                                                   |
| Poor                                                                                                                                                                                                                                                                         |  | 26 - 50                                                                           |                                                   |
| Fair                                                                                                                                                                                                                                                                         |  | 51 - 75                                                                           |                                                   |
| Good                                                                                                                                                                                                                                                                         |  | 76 - 90                                                                           |                                                   |
| Excellent                                                                                                                                                                                                                                                                    |  | 91 - 100                                                                          |                                                   |
| <u>Desired Rock Observations (in this order, if applicable):</u>                                                                                                                                                                                                             |  |                                                                                   |                                                   |
| Color (Munsell color chart)                                                                                                                                                                                                                                                  |  |                                                                                   |                                                   |
| Texture (aphanitic, fine-grained, etc.)                                                                                                                                                                                                                                      |  |                                                                                   |                                                   |
| Rock Type (granite, schist, sandstone, etc.)                                                                                                                                                                                                                                 |  |                                                                                   |                                                   |
| Hardness (very hard, hard, mod. hard, etc.)                                                                                                                                                                                                                                  |  |                                                                                   |                                                   |
| Weathering (fresh, very slight, slight, moderate, mod. severe, severe, etc.)                                                                                                                                                                                                 |  |                                                                                   |                                                   |
| Geologic discontinuities/jointing:                                                                                                                                                                                                                                           |  |                                                                                   |                                                   |
| -dip (horiz - 0-5 deg., low angle - 5-35 deg., mod. dipping - 35-55 deg., steep - 55-85 deg., vertical - 85-90 deg.)                                                                                                                                                         |  |                                                                                   |                                                   |
| -spacing (very close - <2 inch, close - 2-12 inch, mod. close - 1-3 feet, wide - 3-10 feet, very wide >10 feet)                                                                                                                                                              |  |                                                                                   |                                                   |
| -tightness (tight, open, or healed)                                                                                                                                                                                                                                          |  |                                                                                   |                                                   |
| -infilling (grain size, color, etc.)                                                                                                                                                                                                                                         |  |                                                                                   |                                                   |
| Formation (Waterville, Ellsworth, Cape Elizabeth, etc.)                                                                                                                                                                                                                      |  |                                                                                   |                                                   |
| RQD and correlation to rock quality (very poor, poor, etc.)                                                                                                                                                                                                                  |  |                                                                                   |                                                   |
| ref: ASTM D6032 and FHWA NHI-16-072 GEC 5 - Geotechnical Site Characterization, Table 4-12                                                                                                                                                                                   |  |                                                                                   |                                                   |
| Recovery (inch/inch and percentage)                                                                                                                                                                                                                                          |  |                                                                                   |                                                   |
| Rock Core Rate (X.X ft - Y.Y ft (min:sec))                                                                                                                                                                                                                                   |  |                                                                                   |                                                   |

|                                                                                |
|--------------------------------------------------------------------------------|
| <u>Desired Soil Observations (in this order, if applicable):</u>               |
| Color (Munsell color chart)                                                    |
| Moisture (dry, damp, moist, wet)                                               |
| Density/Consistency (from above right hand side)                               |
| Texture (fine, medium, coarse, etc.)                                           |
| Name (Sand, Silty Sand, Clay, etc., including portions - trace, little, etc.)  |
| Gradation (well-graded, poorly-graded, uniform, etc.)                          |
| Plasticity (non-plastic, slightly plastic, moderately plastic, highly plastic) |
| Structure (layering, fractures, cracks, etc.)                                  |
| Bonding (well, moderately, loosely, etc., )                                    |
| Cementation (weak, moderate, or strong)                                        |
| Geologic Origin (till, marine clay, alluvium, etc.)                            |
| Groundwater level                                                              |

|                                                                                                                                                                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Maine Department of Transportation</b><br><b>Geotechnical Section</b><br><b>Key to Soil and Rock Descriptions and Terms</b><br>Field Identification Information |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                |                    |
|------------------------------------------------|--------------------|
| <u>Sample Container Labeling Requirements:</u> |                    |
| WIN                                            | Blow Counts        |
| Bridge Name / Town                             | Sample Recovery    |
| Boring Number                                  | Date               |
| Sample Number                                  | Personnel Initials |
| Sample Depth                                   |                    |

| <div>Maine Department of Transportation</div> <div>Soil/Rock Exploration Log</div> <div>US CUSTOMARY UNITS</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |                 |                    | <div>Project: Lot Norton Bridge #3754 carries East Side Road over Knowles River</div> <div>Location: Addison, ME</div>                                                                                                                                       |               |                 |              | <div>Boring No.: BB-AKR-101</div> <div>WIN: 27160.00</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                         |                                                                   |                                                |                                                                                                                                                                                                                                                                        |  |  |  |  |  |  |  |             |                                |                                                       |             |            |                 |                    |                                               |               |                 |              |                 |   |    |      |             |             |    |    |     |     |                 |                                                                   |                                                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |       |             |         |   |   |  |     |                                                                                                         |                                                               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |    |       |               |          |     |  |   |  |                                                                                                   |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   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----------|--------------------|-----------------------------------------------|---------------|-----------------|--------------|-----------------|---|----|------|-------------|-------------|----|----|-----|-----|-----------------|-------------------------------------------------------------------|------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|---|----|-------|-------------|---------|---|---|--|-----|---------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----|----|-------|---------------|----------|-----|--|---|--|---------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|---|--|--|--|--|--|--|--|--|--|---|--|--|--|--|--|--|--|--|--|----|--|--|----|----|-------|---------------|-----------|---|---|----|------|---------------------------------------------------------------------------|--|--|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|--|----|--|--|----|----|-------|---------------|------|--|--|----|--|----------------------------------------------|--|--|--|--|--|--|--|--|----|--|--|--|-------|-------|---------------|---------|---|---|----|--|--------------------------------------------------------------------------|--|--|--|--|--|--|--|----|--|--|----|--|--|--|--|--|--|----|--|--|--|--|
| Driller: Seaboard Drilling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                 |                    | Elevation (ft.) 9.50                                                                                                                                                                                                                                         |               |                 |              | Auger ID/OD: 5" Solid-Stem                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                         |                                                                   |                                                |                                                                                                                                                                                                                                                                        |  |  |  |  |  |  |  |             |                                |                                                       |             |            |            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| Operator: K. Hanscom                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |                 |                    | Datum: NAVD88                                                                                                                                                                                                                                                |               |                 |              | Sampler: Standard Split-Spoon                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                         |                                                                   |                                                |                                                                                                                                                                                                                                                                        |  |  |  |  |  |  |  |             |                                |                                                       |             |            |                 |         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| Logged By: J. Celamy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |                 |                    | Rig Type: Track-mounted Diedrich D-50                                                                                                                                                                                                                        |               |                 |              | Hammer Wt./Fall: 140 lb / 30"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                         |                                                                   |                                                |                                                                                                                                                                                                                                                                        |  |  |  |  |  |  |  |             |                                |                                                       |             |            |                 |          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| Date Start/Finish: 11-29-2023 / 11-30-2023                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                 |                    | Drilling Method: Cased Wash Boring                                                                                                                                                                                                                           |               |                 |              | Core Barrel: N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                         |                                                                   |                                                |                                                                                                                                                                                                                                                                        |  |  |  |  |  |  |  |             |                                |                                                       |             |            |            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| Boring Location: 10+71, 5.8 ft Lt.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |                 |                    | Casing ID/OD: HW 4" / 4.5"                                                                                                                                                                                                                                   |               |                 |              | Water Level*: Tidally influenced                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                         |                                                                   |                                                |                                                                                                                                                                                                                                                                        |  |  |  |  |  |  |  |             |                                |                                                       |             |            |            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| Hammer Efficiency Factor: 1.066                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |                 |                    | Hammer Type: Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/>                                                                                                                        |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                         |                                                                   |                                                |                                                                                                                                                                                                                                                                        |  |  |  |  |  |  |  |             |                                |                                                       |             |            |            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| <div>Definitions:</div> <div>D = Split Spoon Sample</div> <div>MD = Unsuccessful Split Spoon Sample Attempt</div> <div>U = Thin Wall Tube Sample</div> <div>MU = Unsuccessful Thin Wall Tube Sample Attempt</div> <div>V = Field Vane Shear Test, PP = Pocket Penetrometer</div> <div>MV = Unsuccessful Field Vane Shear Test Attempt</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |                 |                    | <div>R = Rock Core Sample</div> <div>SSA = Solid Stem Auger</div> <div>HSA = Hollow Stem Auger</div> <div>RC = Roller Cone</div> <div>WOH = Weight of 140lb. Hammer</div> <div>WOR/C = Weight of Rods or Casing</div> <div>WO1P = Weight of One Person</div> |               |                 |              | <div>S<sub>u</sub> = Peak/Remolded Field Vane Undrained Shear Strength (psf)</div> <div>S<sub>u</sub>(lab) = Lab Vane Undrained Shear Strength (psf)</div> <div>q<sub>0</sub> = Unconfined Compressive Strength (ksf)</div> <div>N-uncorrected = Raw Field SPT N-value</div> <div>Hammer Efficiency Factor = Rig Specific Annual Calibration Value</div> <div>N<sub>60</sub> = SPT N-uncorrected Corrected for Hammer Efficiency</div> <div>N<sub>60</sub> = (Hammer Efficiency Factor/60%)*N-uncorrected</div> |                                                                                                         |                                                                   |                                                | <div>T<sub>v</sub> = Pocket Torvane Shear Strength (psf)</div> <div>WC = Water Content, percent</div> <div>LL = Liquid Limit</div> <div>PL = Plastic Limit</div> <div>PI = Plasticity Index</div> <div>G = Grain Size Analysis</div> <div>C = Consolidation Test</div> |  |  |  |  |  |  |  |             |                                |                                                       |             |            |                 |                    |                                               |               |                 |              |                 |   |    |      |             |             |    |    |     |     |                 |                                                                   |                                                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |       |             |         |   |   |  |     |                                                                                                         |                                                               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |    |       |               |          |     |  |   |  |                                                                                                   |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |    |  |  |    |    |       |               |           |   |   |    |      |                                                                           |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |    |  |  |    |    |       |               |      |  |  |    |  |                                              |  |  |  |  |  |  |  |  |    |  |  |  |       |       |               |         |   |   |    |  |                                                                          |  |  |  |  |  |  |  |    |  |  |    |  |  |  |  |  |  |    |  |  |  |  |
| <table><tr><th colspan="8">Sample Information</th><th rowspan="2">Graphic Log</th><th rowspan="2">Visual Description and Remarks</th><th rowspan="2">Laboratory Testing Results/ AASHTO and Unified Class.</th></tr><tr><th>Depth (ft.)</th><th>Sample No.</th><th>Pen./Rec. (in.)</th><th>Sample Depth (ft.)</th><th>Blows (6 in.) Shear Strength (psf) or RQD (%)</th><th>N-uncorrected</th><th>N<sub>60</sub></th><th>Casing Blows</th><th>Elevation (ft.)</th></tr><tr><td>0</td><td>1D</td><td>24/9</td><td>0.60 - 2.60</td><td>12-15-14-11</td><td>29</td><td>52</td><td>SSA</td><td>9.0</td><td>6" of Pavement.</td><td rowspan="4">Brown, moist, very dense, SAND, some gravel, little silt, (Fill).</td><td rowspan="4">ID 15329A<br/>A-7-5, CH<br/>WC=97.9%<br/>OC=15.1%</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>5</td><td>2D</td><td>24/22</td><td>5.00 - 7.00</td><td>2-1-1-1</td><td>2</td><td>4</td><td></td><td>4.5</td><td>Brown to dark brown, moist, soft, Silty CLAY, trace fine sand, with organics (rootlets), (Marine Clay).</td><td rowspan="4">ID 15330A<br/>A-7-5, CH<br/>WC=63.8%<br/>LL=56<br/>PL=30<br/>PI=26</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>10</td><td>3D</td><td>24/23</td><td>10.00 - 12.00</td><td>WOH/18-1</td><td>- -</td><td></td><td>2</td><td></td><td>Grey, wet, very soft, Silty CLAY, trace fine sand, with organics (rootlets/roots), (Marine Clay).</td><td rowspan="4"></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>5</td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>6</td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>11</td><td></td><td></td></tr><tr><td>15</td><td>4D</td><td>24/22</td><td>15.00 - 17.00</td><td>WOH-1-1-1</td><td>2</td><td>4</td><td>18</td><td>-5.5</td><td>Grey, wet, soft to medium stiff, Silty CLAY, (Marine Clay).<br/>PP=1.0 ksf</td><td rowspan="4"></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>21</td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>25</td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>28</td><td></td><td></td></tr><tr><td>20</td><td>1U</td><td>24/24</td><td>20.00 - 22.00</td><td>PUSH</td><td></td><td></td><td>32</td><td></td><td>Grey, wet, stiff, Silty CLAY, (Marine Clay).</td><td rowspan="4"></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>31</td><td></td><td></td></tr><tr><td></td><td>MV/5D</td><td>24/24</td><td>22.00 - 24.00</td><td>4-1-2-3</td><td>5</td><td>9</td><td>41</td><td></td><td>55x110 mm vane<br/>MV: Failed vane attempt; could not push.<br/>PP=3.0 ksf</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>54</td><td></td><td></td></tr><tr><td>25</td><td></td><td></td><td></td><td></td><td></td><td></td><td>60</td><td></td><td></td><td></td><td></td></tr></table> |            |                 |                    |                                                                                                                                                                                                                                                              |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                         |                                                                   |                                                | Sample Information                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  | Graphic Log | Visual Description and Remarks | Laboratory Testing Results/ AASHTO and Unified Class. | Depth (ft.) | Sample No. | Pen./Rec. (in.) | Sample Depth (ft.) | Blows (6 in.) Shear Strength (psf) or RQD (%) | N-uncorrected | N <sub>60</sub> | Casing Blows | Elevation (ft.) | 0 | 1D | 24/9 | 0.60 - 2.60 | 12-15-14-11 | 29 | 52 | SSA | 9.0 | 6" of Pavement. | Brown, moist, very dense, SAND, some gravel, little silt, (Fill). | ID 15329A<br>A-7-5, CH<br>WC=97.9%<br>OC=15.1% |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 5 | 2D | 24/22 | 5.00 - 7.00 | 2-1-1-1 | 2 | 4 |  | 4.5 | Brown to dark brown, moist, soft, Silty CLAY, trace fine sand, with organics (rootlets), (Marine Clay). | ID 15330A<br>A-7-5, CH<br>WC=63.8%<br>LL=56<br>PL=30<br>PI=26 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 10 | 3D | 24/23 | 10.00 - 12.00 | WOH/18-1 | - - |  | 2 |  | Grey, wet, very soft, Silty CLAY, trace fine sand, with organics (rootlets/roots), (Marine Clay). |  |  |  |  |  |  |  |  | 5 |  |  |  |  |  |  |  |  |  | 6 |  |  |  |  |  |  |  |  |  | 11 |  |  | 15 | 4D | 24/22 | 15.00 - 17.00 | WOH-1-1-1 | 2 | 4 | 18 | -5.5 | Grey, wet, soft to medium stiff, Silty CLAY, (Marine Clay).<br>PP=1.0 ksf |  |  |  |  |  |  |  |  | 21 |  |  |  |  |  |  |  |  |  | 25 |  |  |  |  |  |  |  |  |  | 28 |  |  | 20 | 1U | 24/24 | 20.00 - 22.00 | PUSH |  |  | 32 |  | Grey, wet, stiff, Silty CLAY, (Marine Clay). |  |  |  |  |  |  |  |  | 31 |  |  |  | MV/5D | 24/24 | 22.00 - 24.00 | 4-1-2-3 | 5 | 9 | 41 |  | 55x110 mm vane<br>MV: Failed vane attempt; could not push.<br>PP=3.0 ksf |  |  |  |  |  |  |  | 54 |  |  | 25 |  |  |  |  |  |  | 60 |  |  |  |  |
| Sample Information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     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     |                    |                                               |               |                 |              |                 |   |    |      |             |             |    |    |     |     |                 |                                                                   |                                                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |       |             |         |   |   |  |     |                                                                                                         |                                                               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |    |       |               |          |     |  |   |  |                                                                                                   |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   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| Depth (ft.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Sample No. | Pen./Rec. 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| 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1D         | 24/9            | 0.60 - 2.60        | 12-15-14-11                                                                                                                                                                                                                                                  | 29            | 52              | SSA          | 9.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 6" of Pavement.                                                                                         | Brown, moist, very dense, SAND, some gravel, little silt, (Fill). | ID 15329A<br>A-7-5, CH<br>WC=97.9%<br>OC=15.1% |                                                                                                                                                                                                                                                                        |  |  |  |  |  |  |  |             |                                |                                                       |             |            |                 |                    |                                               |               |                 |              |                 |   |    |      |             |             |    |    |     |     |                 |                                                                   |                                                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |       |             |         |   |   |  |     |                                                                                                         |                                                               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |    |       |               |          |     |  |   |  |                                                                                                   |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |    |  |  |    |    |       |               |           |   |   |    |      |                                                                           |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |    |  |  |    |    |       |               |      |  |  |    |  |                                              |  |  |  |  |  |  |  |  |    |  |  |  |       |       |               |         |   |   |    |  |                                                                          |  |  |  |  |  |  |  |    |  |  |    |  |  |  |  |  |  |    |  |  |  |  |
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| 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 2D         | 24/22           | 5.00 - 7.00        | 2-1-1-1                                                                                                                                                                                                                                                      | 2             | 4               |              | 4.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Brown to dark brown, moist, soft, Silty CLAY, trace fine sand, with organics (rootlets), (Marine Clay). | ID 15330A<br>A-7-5, CH<br>WC=63.8%<br>LL=56<br>PL=30<br>PI=26     |                                                |                                                                                                                                                                                                                                                                        |  |  |  |  |  |  |  |             |                                |                                                       |             |            |                 |                    |                                               |               |                 |              |                 |   |    |      |             |             |    |    |     |     |                 |                                                                   |                                                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |       |             |         |   |   |  |     |                                                                                                         |                                                               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |    |       |               |          |     |  |   |  |                                                                                                   |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |    |  |  |    |    |       |               |           |   |   |    |      |                                                                           |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |    |  |  |    |    |       |               |      |  |  |    |  |                                              |  |  |  |  |  |  |  |  |    |  |  |  |       |       |               |         |   |   |    |  |                                                                          |  |  |  |  |  |  |  |    |  |  |    |  |  |  |  |  |  |    |  |  |  |  |
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12.00      | WOH/18-1                                                                                                                                                                                                                                                     | - -           |                 | 2            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Grey, wet, very soft, Silty CLAY, trace fine sand, with organics (rootlets/roots), (Marine Clay).       |                                                                   |                                                |                                                                                                                                                                                                                                                                        |  |  |  |  |  |  |  |             |                                |                                                       |             |            |                 |                    |                                               |               |                 |              |                 |   |    |      |             |             |    |    |     |     |                 |                                                                   |                                                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |       |             |         |   |   |  |     |                                                                                                         |                                                               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |    |       |               |          |     |  |   |  |                                                                                                   |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |    |  |  |    |    |       |               |           |   |   |    |      |                                                                           |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |    |  |  |    |    |       |               |      |  |  |    |  |                                              |  |  |  |  |  |  |  |  |    |  |  |  |       |       |               |         |   |   |    |  |                                                                          |  |  |  |  |  |  |  |    |  |  |    |  |  |  |  |  |  |    |  |  |  |  |
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| 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 4D         | 24/22           | 15.00 - 17.00      | WOH-1-1-1                                                                                                                                                                                                                                                    | 2             | 4               | 18           | -5.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Grey, wet, soft to medium stiff, Silty CLAY, (Marine Clay).<br>PP=1.0 ksf                               |                                                                   |                                                |                                                                                                                                                                                                                                                                        |  |  |  |  |  |  |  |             |                                |                                                       |             |            |                 |                    |                                               |               |                 |              |                 |   |    |      |             |             |    |    |     |     |                 |                                                                   |                                                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |       |             |         |   |   |  |     |                                                                                                         |                                                               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |    |       |               |          |     |  |   |  |                                                                                                   |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |    |  |  |    |    |       |               |           |   |   |    |      |                                                                           |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |    |  |  |    |    |       |               |      |  |  |    |  |                                              |  |  |  |  |  |  |  |  |    |  |  |  |       |       |               |         |   |   |    |  |                                                                          |  |  |  |  |  |  |  |    |  |  |    |  |  |  |  |  |  |    |  |  |  |  |
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22.00      | PUSH                                                                                                                                                                                                                                                         |               |                 | 32           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Grey, wet, stiff, Silty CLAY, (Marine Clay).                                                            |                                                                   |                                                |                                                                                                                                                                                                                                                                        |  |  |  |  |  |  |  |             |                                |                                                       |             |            |                 |                    |                                               |               |                 |              |                 |   |    |      |             |             |    |    |     |     |                 |                                                                   |                                                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |       |             |         |   |   |  |     |                                                                                                         |                                                               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |    |       |               |          |     |  |   |  |                                                                                                   |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |    |  |  |    |    |       |               |           |   |   |    |      |                                                                           |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |    |  |  |    |    |       |               |      |  |  |    |  |                                              |  |  |  |  |  |  |  |  |    |  |  |  |       |       |               |         |   |   |    |  |                                                                          |  |  |  |  |  |  |  |    |  |  |    |  |  |  |  |  |  |    |  |  |  |  |
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could not push.<br>PP=3.0 ksf                                |                                                                   |                                                |                                                                                                                                                                                                                                                                        |  |  |  |  |  |  |  |             |                                |                                                       |             |            |                 |                    |                                               |               |                 |              |                 |   |    |      |             |             |    |    |     |     |                 |                                                                   |                                                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |       |             |         |   |   |  |     |                                                                                                         |                                                               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |    |       |               |          |     |  |   |  |                                                                                                   |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |    |  |  |    |    |       |               |           |   |   |    |      |                                                                           |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |    |  |  |    |    |       |               |      |  |  |    |  |                                              |  |  |  |  |  |  |  |  |    |  |  |  |       |       |               |         |   |   |    |  |                                                                          |  |  |  |  |  |  |  |    |  |  |    |  |  |  |  |  |  |    |  |  |  |  |
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| 25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     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| <div>Remarks:</div> <div>Autohammer SN 367; Calibrated 11/03/2023.</div> <div>bgs = below ground surface</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         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| Stratification lines represent approximate boundaries between soil types; transitions may be gradual.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  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     |                    |                                               |               |                 |              |                 |   |    |      |             |             |    |    |     |     |                 |                                                                   |                                                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |       |             |         |   |   |  |     |                                                                                                         |                                                               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |    |       |               |          |     |  |   |  |                                                                                                   |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   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| * Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        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                                                                                                                                                                                                                                                                               |                                                                                                         | Boring No.: BB-AKR-101                                            |                                                |                                                                                                                                                                                                                                                                        |  |  |  |  |  |  |  |             |                                |                                                       |             |            |                 |                    |                                               |               |                 |              |                 |   |    |      |             |             |    |    |     |     |                 |                                                                   |                                                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |       |             |         |   |   |  |     |                                                                                                         |                                                               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |    |       |               |          |     |  |   |  |                                                                                                   |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |    |  |  |    |    |       |               |           |   |   |    |      |    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| <b>Maine Department of Transportation</b><br>Soil/Rock Exploration Log<br>US CUSTOMARY UNITS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                    |                 |                    | <b>Project:</b> Lot Norton Bridge #3754 carries East Side Road over Knowles River<br><b>Location:</b> Addison, ME                            |               |                 |              | <b>Boring No.:</b> BB-AKR-101<br><br><b>WIN:</b> 27160.00 |                 |                               |                                                                                      |                                                       |
| <b>Driller:</b> Seaboard Drilling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |                 |                    | <b>Elevation (ft.):</b> 9.50                                                                                                                 |               |                 |              | <b>Auger ID/OD:</b> 5" Solid-Stem                         |                 |                               |                                                                                      |                                                       |
| <b>Operator:</b> K. Hanscom                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                 |                    | <b>Datum:</b> NAVD88                                                                                                                         |               |                 |              | <b>Sampler:</b> Standard Split-Spoon                      |                 |                               |                                                                                      |                                                       |
| <b>Logged By:</b> J. Celamy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                 |                    | <b>Rig Type:</b> Track-mounted Diedrich D-50                                                                                                 |               |                 |              | <b>Hammer Wt./Fall:</b> 140 lb / 30"                      |                 |                               |                                                                                      |                                                       |
| <b>Date Start/Finish:</b> 11-29-2023 / 11-30-2023                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |                 |                    | <b>Drilling Method:</b> Cased Wash Boring                                                                                                    |               |                 |              | <b>Core Barrel:</b> N/A                                   |                 |                               |                                                                                      |                                                       |
| <b>Boring Location:</b> 10+71, 5.8 ft Lt.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |                 |                    | <b>Casing ID/OD:</b> HW 4" / 4.5"                                                                                                            |               |                 |              | <b>Water Level*:</b> Tidally influenced                   |                 |                               |                                                                                      |                                                       |
| <b>Hammer Efficiency Factor:</b> 1.066                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |                 |                    | <b>Hammer Type:</b> Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/> |               |                 |              |                                                           |                 |                               |                                                                                      |                                                       |
| <div style="display: flex; justify-content: space-between; font-size: 0.8em;"> <div> <b>Definitions:</b><br/>           D = Split Spoon Sample<br/>           MD = Unsuccessful Split Spoon Sample Attempt<br/>           U = Thin Wall Tube Sample<br/>           MU = Unsuccessful Thin Wall Tube Sample Attempt<br/>           V = Field Vane Shear Test, PP = Pocket Penetrometer<br/>           MV = Unsuccessful Field Vane Shear Test Attempt         </div> <div>           R = Rock Core Sample<br/>           SSA = Solid Stem Auger<br/>           HSA = Hollow Stem Auger<br/>           RC = Roller Cone<br/>           WOH = Weight of 140 lb. Hammer<br/>           WOR/C = Weight of Rods or Casing<br/>           WO1P = Weight of One Person         </div> <div>           S<sub>u</sub> = Peak/Remolded Field Vane Undrained Shear Strength (psf)<br/>           S<sub>u</sub>(lab) = Lab Vane Undrained Shear Strength (psf)<br/>           q<sub>p</sub> = Unconfined Compressive Strength (ksf)<br/>           N-uncorrected = Raw Field SPT N-value<br/>           Hammer Efficiency Factor = Rig Specific Annual Calibration Value<br/>           N<sub>60</sub> = SPT N-uncorrected Corrected for Hammer Efficiency<br/>           N<sub>60</sub> = (Hammer Efficiency Factor/60%)*N-uncorrected         </div> <div>           T<sub>v</sub> = Pocket Torvane Shear Strength (psf)<br/>           WC = Water Content, percent<br/>           LL = Liquid Limit<br/>           PL = Plastic Limit<br/>           PI = Plasticity Index<br/>           G = Grain Size Analysis<br/>           C = Consolidation Test         </div> </div> |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                           |                 |                               |                                                                                      |                                                       |
| Depth (ft.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Sample Information |                 |                    |                                                                                                                                              |               |                 |              |                                                           | Elevation (ft.) | Graphic Log                   | Visual Description and Remarks                                                       | Laboratory Testing Results/ AASHTO and Unified Class. |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Sample No.         | Pen./Rec. (in.) | Sample Depth (ft.) | Blows (6 in.) Shear Strength (psf) or RQD (%)                                                                                                | N-uncorrected | N <sub>60</sub> | Casing Blows |                                                           |                 |                               |                                                                                      |                                                       |
| 25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | MV/6D              | 24/24           | 25.00 - 27.00      | 1-2-2-4                                                                                                                                      | 4             | 7               | 38           |                                                           |                 |                               | 55x110 mm vane<br>MV: Failed vane attempt, could not push.                           | ID 15331A<br>A-6, CL<br>WC=13.6%                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |                    |                                                                                                                                              |               |                 | 65           |                                                           |                 |                               | Grey, wet, stiff, Silty CLAY, occasional sand seams, (Marine Clay).<br>PP=2.5 ksf    |                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |                    |                                                                                                                                              |               |                 | 73           |                                                           |                 |                               |                                                                                      |                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |                    |                                                                                                                                              |               |                 | 79           |                                                           |                 |                               |                                                                                      |                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |                    |                                                                                                                                              |               |                 | 80           |                                                           |                 |                               |                                                                                      |                                                       |
| 30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 2U                 | 24/24           | 30.00 - 32.00      | PUSH                                                                                                                                         |               |                 | 110          |                                                           |                 |                               | Grey, wet, medium stiff, Silty CLAY, (Marine Clay).                                  |                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |                    |                                                                                                                                              |               |                 | 109          |                                                           |                 |                               |                                                                                      |                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | MV/7D              | 24/24           | 32.00 - 34.00      | WOH-2-1-2                                                                                                                                    | 3             | 5               | 94           |                                                           |                 |                               | 55x110 mm vane<br>MV: Failed vane attempt, could not push.                           |                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |                    |                                                                                                                                              |               |                 | 81           |                                                           |                 |                               | Similar to above.                                                                    |                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |                    |                                                                                                                                              |               |                 | 72           |                                                           |                 |                               |                                                                                      |                                                       |
| 35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 8D                 | 24/24           | 35.00 - 37.00      | WOH/12"-1-1                                                                                                                                  | 1             | 2               | 44           |                                                           |                 |                               | Grey streaked black, wet, soft, Silty CLAY, fine to medium sand seam, (Marine Clay). |                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |                    |                                                                                                                                              |               |                 | 56           |                                                           |                 |                               |                                                                                      |                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |                    |                                                                                                                                              |               |                 | 43           |                                                           |                 |                               |                                                                                      |                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |                    |                                                                                                                                              |               |                 | 52           |                                                           |                 |                               |                                                                                      |                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |                    |                                                                                                                                              |               |                 | 56           |                                                           |                 |                               |                                                                                      |                                                       |
| 40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 9D                 | 24/24           | 40.00 - 42.00      | 1-1-4-2                                                                                                                                      | 5             | 9               | 47           |                                                           |                 |                               | Grey, wet, stiff, Silty CLAY, little gravel (drop stone), (Marine Clay).             |                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |                    |                                                                                                                                              |               |                 | 57           |                                                           |                 |                               |                                                                                      |                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |                    |                                                                                                                                              |               |                 | 64           |                                                           |                 |                               |                                                                                      |                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |                    |                                                                                                                                              |               |                 | 70           |                                                           |                 |                               |                                                                                      |                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |                    |                                                                                                                                              |               |                 | 73           |                                                           |                 |                               |                                                                                      |                                                       |
| 45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 10D                | 24/24           | 45.00 - 47.00      | WOH-2-2-2                                                                                                                                    | 4             | 7               | 64           |                                                           |                 |                               | Grey, wet, medium stiff, Silty CLAY, (Marine Clay).                                  |                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |                    |                                                                                                                                              |               |                 | 74           |                                                           |                 |                               |                                                                                      |                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |                    |                                                                                                                                              |               |                 | 76           |                                                           |                 |                               |                                                                                      |                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |                    |                                                                                                                                              |               |                 | 81           |                                                           |                 |                               |                                                                                      |                                                       |
| 50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                 |                    |                                                                                                                                              |               |                 | 80           |                                                           |                 |                               |                                                                                      |                                                       |
| <b>Remarks:</b><br><br>Autohammer SN 367; Calibrated 11/03/2023.<br>bgs = below ground surface                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                           |                 |                               |                                                                                      |                                                       |
| Stratification lines represent approximate boundaries between soil types; transitions may be gradual.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                           |                 | Page 2 of 3                   |                                                                                      |                                                       |
| * Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                           |                 | <b>Boring No.:</b> BB-AKR-101 |                                                                                      |                                                       |

| <b>Maine Department of Transportation</b><br>Soil/Rock Exploration Log<br>US CUSTOMARY UNITS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |                 |                    | <b>Project:</b> Lot Norton Bridge #3754 carries East Side Road over Knowles River<br><b>Location:</b> Addison, ME                                                                                  |               |     |              | <b>Boring No.:</b> BB-AKR-101<br><b>WIN:</b> 27160.00                                                                                                                                                                                                                                                                                                                                         |             |                                                                   |                                                          |                    |  |  |  |  |  |  |  |  |             |                                |                                                       |             |            |                 |                    |                                                |               |     |              |                 |    |     |       |               |         |    |    |    |       |  |                                                                   |                                 |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |         |  |  |    |     |       |               |             |    |    |  |       |  |                                                                   |                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |     |      |               |           |  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| <b>Driller:</b> Seaboard Drilling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |                 |                    | <b>Elevation (ft.)</b> 9.50                                                                                                                                                                        |               |     |              | <b>Auger ID/OD:</b> 5" Solid-Stem                                                                                                                                                                                                                                                                                                                                                             |             |                                                                   |                                                          |                    |  |  |  |  |  |  |  |  |             |                                |                                                       |             |            |                 |                    |                                                |               |     |              |                 |    |     |       |               |         |    |    |    |       |  |                                                                   |                                 |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |         |  |  |    |     |       |               |             |    |    |  |       |  |                                                                   |                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |     |      |               |           |  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| <b>Operator:</b> K. Hanscom                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |                 |                    | <b>Datum:</b> NAVD88                                                                                                                                                                               |               |     |              | <b>Sampler:</b> Standard Split-Spoon                                                                                                                                                                                                                                                                                                                                                          |             |                                                                   |                                                          |                    |  |  |  |  |  |  |  |  |             |                                |                                                       |             |            |                 |                    |                                                |               |     |              |                 |    |     |       |               |         |    |    |    |       |  |                                                                   |                                 |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |         |  |  |    |     |       |               |             |    |    |  |       |  |                                                                   |                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |     |      |               |           |    |    |  |       |  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| <b>Logged By:</b> J. Celamy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |                 |                    | <b>Rig Type:</b> Track-mounted Diedrich D-50                                                                                                                                                       |               |     |              | <b>Hammer Wt./Fall:</b> 140 lb / 30"                                                                                                                                                                                                                                                                                                                                                          |             |                                                                   |                                                          |                    |  |  |  |  |  |  |  |  |             |                                |                                                       |             |            |                 |                    |                                                |               |     |              |                 |    |     |       |               |         |    |    |    |       |  |                                                                   |                                 |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |         |  |  |    |     |       |               |             |    |    |  |       |  |                                                                   |                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |     |      |               |           |    |    |  |       |  | 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| <b>Date Start/Finish:</b> 11-29-2023 / 11-30-2023                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |                 |                    | <b>Drilling Method:</b> Cased Wash Boring                                                                                                                                                          |               |     |              | <b>Core Barrel:</b> N/A                                                                                                                                                                                                                                                                                                                                                                       |             |                                                                   |                                                          |                    |  |  |  |  |  |  |  |  |             |                                |                                                       |             |            |                 |                    |                                                |               |     |              |                 |    |     |       |               |         |    |    |    |       |  |                                                                   |                                 |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |         |  |  |    |     |       |               |             |    |    |  |       |  |                                                                   |                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |     |      |               |           |  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| <b>Boring Location:</b> 10+71, 5.8 ft Lt.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |                 |                    | <b>Casing ID/OD:</b> HW 4" / 4.5"                                                                                                                                                                  |               |     |              | <b>Water Level*:</b> Tidally influenced                                                                                                                                                                                                                                                                                                                                                       |             |                                                                   |                                                          |                    |  |  |  |  |  |  |  |  |             |                                |                                                       |             |            |                 |                    |                                                |               |     |              |                 |    |     |       |               |         |    |    |    |       |  |                                                                   |                                 |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |         |  |  |    |     |       |               |             |    |    |  |       |  |                                                                   |                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |     |      |               |           |  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| <b>Hammer Efficiency Factor:</b> 1.066                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |                 |                    | <b>Hammer Type:</b> Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/>                                                       |               |     |              |                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                   |                                                          |                    |  |  |  |  |  |  |  |  |             |                                |                                                       |             |            |                 |                    |                                                |               |     |              |                 |    |     |       |               |         |    |    |    |       |  |                                                                   |                                 |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |         |  |  |    |     |       |               |             |    |    |  |       |  |                                                                   |                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |     |      |               |           |  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| Definitions:<br>D = Split Spoon Sample<br>MD = Unsuccessful Split Spoon Sample Attempt<br>U = Thin Wall Tube Sample<br>MU = Unsuccessful Thin Wall Tube Sample Attempt<br>V = Field Vane Shear Test, PP = Pocket Penetrometer<br>MV = Unsuccessful Field Vane Shear Test Attempt                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |                 |                    | R = Rock Core Sample<br>SSA = Solid Stem Auger<br>HSA = Hollow Stem Auger<br>RC = Roller Cone<br>WOH = Weight of 140 lb. Hammer<br>WOR/C = Weight of Rods or Casing<br>WO1P = Weight of One Person |               |     |              | Su = Peak/Remolded Field Vane Undrained Shear Strength (psf)<br>Su(lab) = Lab Vane Undrained Shear Strength (psf)<br>qp = Unconfined Compressive Strength (ksf)<br>N-uncorrected = Raw Field SPT N-value<br>Hammer Efficiency Factor = Rig Specific Annual Calibration Value<br>N60 = SPT N-uncorrected Corrected for Hammer Efficiency<br>N60 = (Hammer Efficiency Factor/60%)*N-uncorrected |             |                                                                   |                                                          |                    |  |  |  |  |  |  |  |  |             |                                |                                                       |             |            |                 |                    |                                                |               |     |              |                 |    |     |       |               |         |    |    |    |       |  |                                                                   |                                 |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |         |  |  |    |     |       |               |             |    |    |  |       |  |                                                                   |                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |     |      |               |           |    |    |  |       |  |                                                             |                                                          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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                                                                                                                                                                                                                           |            |                 |                    |                                                                                                                                                                                                    |               |     |              | Tv = Pocket Torvane Shear Strength (psf)<br>WC = Water Content, percent<br>LL = Liquid Limit<br>PL = Plastic Limit<br>PI = Plasticity Index<br>G = Grain Size Analysis<br>C = Consolidation Test                                                                                                                                                                                              |             |                                                                   |                                                          |                    |  |  |  |  |  |  |  |  |             |                                |                                                       |             |            |                 |                    |                                                |               |     |              |                 |    |     |       |               |         |    |    |    |       |  |                                                                   |                                 |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |         |  |  |    |     |       |               |             |    |    |  |       |  |                                                                   |                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |     |      |               |           |  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| <table><tr><th colspan="9">Sample Information</th><th rowspan="2">Graphic Log</th><th rowspan="2">Visual Description and Remarks</th><th rowspan="2">Laboratory Testing Results/ AASHTO and Unified Class.</th></tr><tr><th>Depth (ft.)</th><th>Sample No.</th><th>Pen./Rec. (in.)</th><th>Sample Depth (ft.)</th><th>Blows (/6 in.) Shear Strength (psf) or RQD (%)</th><th>N-uncorrected</th><th>N60</th><th>Casing Blows</th><th>Elevation (ft.)</th></tr><tr><td>50</td><td>11D</td><td>24/20</td><td>50.00 - 52.00</td><td>5-3-7-7</td><td>10</td><td>18</td><td>80</td><td rowspan="5">-42.5</td><td rowspan="5"></td><td>Grey, wet, medium dense, Silty SAND, trace gravel, (Marine Sand).</td><td rowspan="5">ID 15332A<br/>A-4, SM<br/>WC=9.8%</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>90</td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>123</td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>150</td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>80 OPEN</td><td></td><td></td></tr><tr><td>55</td><td>12D</td><td>24/12</td><td>55.00 - 57.00</td><td>26-20-18-13</td><td>38</td><td>68</td><td></td><td rowspan="5">-52.5</td><td rowspan="5"></td><td>Grey, wet, very dense, Sandy GRAVEL, little silt, (Glacial Till).</td><td rowspan="5">ID 15333A<br/>A-2-4, GM<br/>WC=8.0%</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>60</td><td>13D</td><td>24/9</td><td>60.00 - 62.00</td><td>7-8-17-14</td><td>25</td><td>44</td><td></td><td rowspan="5">-52.5</td><td rowspan="5"></td><td>Grey, wet, dense, Gravelly SAND, some silt, (Glacial Till).</td><td rowspan="5">Bottom of Exploration at 62.0 feet below ground surface.</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>65</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td rowspan="5">-52.5</td><td rowspan="5"></td><td></td><td rowspan="5"></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>70</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td rowspan="5">-52.5</td><td rowspan="5"></td><td></td><td rowspan="5"></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>75</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td rowspan="5">-52.5</td><td rowspan="5"></td><td></td><td rowspan="5"></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> |            |                 |                    |                                                                                                                                                                                                    |               |     |              |                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                   |                                                          | Sample Information |  |  |  |  |  |  |  |  | Graphic Log | Visual Description and Remarks | Laboratory Testing Results/ AASHTO and Unified Class. | Depth (ft.) | Sample No. | Pen./Rec. (in.) | Sample Depth (ft.) | Blows (/6 in.) Shear Strength (psf) or RQD (%) | N-uncorrected | N60 | Casing Blows | Elevation (ft.) | 50 | 11D | 24/20 | 50.00 - 52.00 | 5-3-7-7 | 10 | 18 | 80 | -42.5 |  | Grey, wet, medium dense, Silty SAND, trace gravel, (Marine Sand). | ID 15332A<br>A-4, SM<br>WC=9.8% |  |  |  |  |  |  |  | 90 |  |  |  |  |  |  |  |  |  | 123 |  |  |  |  |  |  |  |  |  | 150 |  |  |  |  |  |  |  |  |  | 80 OPEN |  |  | 55 | 12D | 24/12 | 55.00 - 57.00 | 26-20-18-13 | 38 | 68 |  | -52.5 |  | Grey, wet, very dense, Sandy GRAVEL, little silt, (Glacial Till). | ID 15333A<br>A-2-4, GM<br>WC=8.0% |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 60 | 13D | 24/9 | 60.00 - 62.00 | 7-8-17-14 | 25 | 44 |  | -52.5 |  | Grey, wet, dense, Gravelly SAND, some silt, (Glacial Till). | Bottom of Exploration at 62.0 feet below ground surface. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 65 |  |  |  |  |  |  |  | -52.5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 70 |  |  |  |  |  |  |  | -52.5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 75 |  |  |  |  |  |  |  | -52.5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sample Information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |                 |                    |                                                                                                                                                                                                    |               |     |              |                                                                                                                                                                                                                                                                                                                                                                                               | Graphic Log | Visual Description and Remarks                                    | Laboratory Testing Results/ AASHTO and Unified Class.    |                    |  |  |  |  |  |  |  |  |             |                                |                                                       |             |            |                 |                    |                                                |               |     |              |                 |    |     |       |               |         |    |    |    |       |  |                                                                   |                                 |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |         |  |  |    |     |       |               |             |    |    |  |       |  |                                                                   |                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |     |      |               |           |  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| Depth (ft.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Sample No. | Pen./Rec. (in.) | Sample Depth (ft.) | Blows (/6 in.) 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| <b>Remarks:</b><br><br>Autohammer SN 367; Calibrated 11/03/2023.<br>bgs = below ground surface                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         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| Stratification lines represent approximate boundaries between soil types; transitions may be gradual.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  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| * Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        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| <b>Maine Department of Transportation</b><br>Soil/Rock Exploration Log<br>US CUSTOMARY UNITS                                                                                                                                                                                                                                                                                                                                                              |  |  |                                                                                                                                              | <b>Project:</b> Lot Norton Bridge #3754 carries East Side Road over Knowles River<br><b>Location:</b> Addison, ME |                                         | <b>Boring No.:</b> BB-AKR-102<br><br><b>WIN:</b> 27160.00 |  |
| <b>Driller:</b> Seaboard Drilling                                                                                                                                                                                                                                                                                                                                                                                                                         |  |  | <b>Elevation (ft.):</b> 9.80                                                                                                                 |                                                                                                                   | <b>Auger ID/OD:</b> 5" Solid-Stem       |                                                           |  |
| <b>Operator:</b> K. Hanscom                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  | <b>Datum:</b> NAVD88                                                                                                                         |                                                                                                                   | <b>Sampler:</b> Standard Split-Spoon    |                                                           |  |
| <b>Logged By:</b> J. Celamy                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  | <b>Rig Type:</b> Track-mounted Diedrich D-50                                                                                                 |                                                                                                                   | <b>Hammer Wt./Fall:</b> 140 lb / 30"    |                                                           |  |
| <b>Date Start/Finish:</b> 11-20-2023 / 11-21-2023                                                                                                                                                                                                                                                                                                                                                                                                         |  |  | <b>Drilling Method:</b> Cased Wash Boring                                                                                                    |                                                                                                                   | <b>Core Barrel:</b> NQ2 2"              |                                                           |  |
| <b>Boring Location:</b> 10+11, 5.5 ft Rt.                                                                                                                                                                                                                                                                                                                                                                                                                 |  |  | <b>Casing ID/OD:</b> HW 4"/4.5" NW 3"/3.5"                                                                                                   |                                                                                                                   | <b>Water Level*:</b> Tidally influenced |                                                           |  |
| <b>Hammer Efficiency Factor:</b> 1.066                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  | <b>Hammer Type:</b> Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/> |                                                                                                                   |                                         |                                                           |  |
| Definitions:<br>D = Split Spoon Sample<br>MD = Unsuccessful Split Spoon Sample Attempt<br>U = Thin Wall Tube Sample<br>MU = Unsuccessful Thin Wall Tube Sample Attempt<br>V = Field Vane Shear Test, PP = Pocket Penetrometer<br>MV = Unsuccessful Field Vane Shear Test Attempt                                                                                                                                                                          |  |  |                                                                                                                                              |                                                                                                                   |                                         |                                                           |  |
| R = Rock Core Sample<br>SSA = Solid Stem Auger<br>HSA = Hollow Stem Auger<br>RC = Roller Cone<br>WOH = Weight of 140lb. Hammer<br>WOR/C = Weight of Rods or Casing<br>WO1P = Weight of One Person                                                                                                                                                                                                                                                         |  |  |                                                                                                                                              |                                                                                                                   |                                         |                                                           |  |
| S <sub>u</sub> = Peak/Remolded Field Vane Undrained Shear Strength (psf)<br>S <sub>u(lab)</sub> = Lab Vane Undrained Shear Strength (psf)<br>q <sub>p</sub> = Unconfined Compressive Strength (ksf)<br>N-uncorrected = Raw Field SPT N-value<br>Hammer Efficiency Factor = Rig Specific Annual Calibration Value<br>N <sub>60</sub> = SPT N-uncorrected Corrected for Hammer Efficiency<br>N <sub>60</sub> = (Hammer Efficiency Factor/60%)*N-uncorrected |  |  |                                                                                                                                              |                                                                                                                   |                                         |                                                           |  |
| T <sub>v</sub> = Pocket Torvane Shear Strength (psf)<br>WC = Water Content, percent<br>LL = Liquid Limit<br>PL = Plastic Limit<br>PI = Plasticity Index<br>G = Grain Size Analysis<br>C = Consolidation Test                                                                                                                                                                                                                                              |  |  |                                                                                                                                              |                                                                                                                   |                                         |                                                           |  |

| Depth (ft.) | Sample Information |                 |                    |                                               |               |                 |              |     | Elevation (ft.) | Graphic Log                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Visual Description and Remarks     | Laboratory Testing Results/ AASHTO and Unified Class. |
|-------------|--------------------|-----------------|--------------------|-----------------------------------------------|---------------|-----------------|--------------|-----|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-------------------------------------------------------|
|             | Sample No.         | Pen./Rec. (in.) | Sample Depth (ft.) | Blows (6 in.) Shear Strength (psf) or RQD (%) | N-uncorrected | N <sub>60</sub> | Casing Blows |     |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                    |                                                       |
| 0           | 1D                 | 24/15           | 0.70 - 2.70        | 12-37-33-33                                   | 70            | 124             | SSA          | 9.3 |                 | 6.5" of Pavement.<br><br>Brown, damp, very dense, SAND, some gravel, little silt, occasional cobbles, (Fill).<br><br>Brown, moist, dense, Gravelly SAND, trace silt, (Fill).<br><br>Brown, wet, dense, SAND, little silt, little gravel, (Fill).<br><br>Grey, wet, soft to medium stiff, Silty CLAY, trace fine sand, with organics (rootlets), (Marine Clay).<br>PP=1.5 ksf<br><br>Grey, wet, stiff, Silty CLAY, with trace shells, (Marine Clay).<br>PP=2.5 ksf | ID 15334A<br>A-3, SW-SM<br>WC=2.0% |                                                       |
|             |                    |                 |                    |                                               |               |                 |              |     |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                    |                                                       |
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| 5           | 2D                 | 24/13           | 5.00 - 7.00        | 13-14-12-10                                   | 26            | 46              |              |     |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                    |                                                       |
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| 10          | 3D                 | 24/3            | 10.00 - 12.00      | 6-8-11-21                                     | 19            | 34              |              |     |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                    |                                                       |
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| 15          | 4D                 | 24/21           | 15.00 - 17.00      | 1-1-1-2                                       | 2             | 4               |              |     |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                    |                                                       |
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| 20          | 5D                 | 24/24           | 20.00 - 22.00      | 1-2-3-2                                       | 5             | 9               |              |     |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                    |                                                       |
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| 25          |                    |                 |                    |                                               |               |                 |              |     |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                    |                                                       |

**Remarks:**  
 Autohammer SN 367; Calibrated 11/03/2023.  
 bgs = below ground surface

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.  
  
 \* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

**Page 1 of 4**  
  
**Boring No.:** BB-AKR-102

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                                                                                                                                              |                                |                                                                                                                   |               |                                                           |              |                   |                                                                                                                                                          |                                                             |                                                                                                                                           |                                                       |                                                             |
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| <b>Maine Department of Transportation</b><br>Soil/Rock Exploration Log<br>US CUSTOMARY UNITS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                           |                                                                                                                                              |                                | <b>Project:</b> Lot Norton Bridge #3754 carries East Side Road over Knowles River<br><b>Location:</b> Addison, ME |               | <b>Boring No.:</b> BB-AKR-102<br><br><b>WIN:</b> 27160.00 |              |                   |                                                                                                                                                          |                                                             |                                                                                                                                           |                                                       |                                                             |
| <b>Driller:</b> Seaboard Drilling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                           | <b>Elevation (ft.):</b> 9.80                                                                                                                 |                                | <b>Auger ID/OD:</b> 5" Solid-Stem                                                                                 |               |                                                           |              |                   |                                                                                                                                                          |                                                             |                                                                                                                                           |                                                       |                                                             |
| <b>Operator:</b> K. Hanscom                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                           | <b>Datum:</b> NAVD88                                                                                                                         |                                | <b>Sampler:</b> Standard Split-Spoon                                                                              |               |                                                           |              |                   |                                                                                                                                                          |                                                             |                                                                                                                                           |                                                       |                                                             |
| <b>Logged By:</b> J. Celamy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                           | <b>Rig Type:</b> Track-mounted Diedrich D-50                                                                                                 |                                | <b>Hammer Wt./Fall:</b> 140 lb / 30"                                                                              |               |                                                           |              |                   |                                                                                                                                                          |                                                             |                                                                                                                                           |                                                       |                                                             |
| <b>Date Start/Finish:</b> 11-20-2023 / 11-21-2023                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                           | <b>Drilling Method:</b> Cased Wash Boring                                                                                                    |                                | <b>Core Barrel:</b> NQ2 2"                                                                                        |               |                                                           |              |                   |                                                                                                                                                          |                                                             |                                                                                                                                           |                                                       |                                                             |
| <b>Boring Location:</b> 10+11, 5.5 ft Rt.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                           | <b>Casing ID/OD:</b> HW 4"/4.5" NW 3"/3.5"                                                                                                   |                                | <b>Water Level*:</b> Tidally influenced                                                                           |               |                                                           |              |                   |                                                                                                                                                          |                                                             |                                                                                                                                           |                                                       |                                                             |
| <b>Hammer Efficiency Factor:</b> 1.066                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                           | <b>Hammer Type:</b> Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/> |                                |                                                                                                                   |               |                                                           |              |                   |                                                                                                                                                          |                                                             |                                                                                                                                           |                                                       |                                                             |
| <div style="display: flex; justify-content: space-between; font-size: 0.8em;"> <div> <b>Definitions:</b><br/>           D = Split Spoon Sample<br/>           MD = Unsuccessful Split Spoon Sample Attempt<br/>           U = Thin Wall Tube Sample<br/>           MU = Unsuccessful Thin Wall Tube Sample Attempt<br/>           V = Field Vane Shear Test, PP = Pocket Penetrometer<br/>           MV = Unsuccessful Field Vane Shear Test Attempt         </div> <div>           R = Rock Core Sample<br/>           SSA = Solid Stem Auger<br/>           HSA = Hollow Stem Auger<br/>           RC = Roller Cone<br/>           WOH = Weight of 140 lb. Hammer<br/>           WOR/C = Weight of Rods or Casing<br/>           WO1P = Weight of One Person         </div> <div>           S<sub>u</sub> = Peak/Remolded Field Vane Undrained Shear Strength (psf)<br/>           S<sub>u(lab)</sub> = Lab Vane Undrained Shear Strength (psf)<br/>           q<sub>p</sub> = Unconfined Compressive Strength (ksf)<br/>           N-uncorrected = Raw Field SPT N-value<br/>           Hammer Efficiency Factor = Rig Specific Annual Calibration Value<br/>           N<sub>60</sub> = SPT N-uncorrected Corrected for Hammer Efficiency<br/>           N<sub>60</sub> = (Hammer Efficiency Factor/60%)*N-uncorrected         </div> <div>           T<sub>v</sub> = Pocket Torvane Shear Strength (psf)<br/>           WC = Water Content, percent<br/>           LL = Liquid Limit<br/>           PL = Plastic Limit<br/>           PI = Plasticity Index<br/>           G = Grain Size Analysis<br/>           C = Consolidation Test         </div> </div> |                           |                                                                                                                                              |                                |                                                                                                                   |               |                                                           |              |                   |                                                                                                                                                          |                                                             |                                                                                                                                           |                                                       |                                                             |
| Depth (ft.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Sample Information</b> |                                                                                                                                              |                                |                                                                                                                   |               |                                                           |              |                   | Elevation (ft.)                                                                                                                                          | Graphic Log                                                 | Visual Description and Remarks                                                                                                            | Laboratory Testing Results/ AASHTO and Unified Class. |                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Sample No.                | Pen./Rec. (in.)                                                                                                                              | Sample Depth (ft.)             | Blows (6 in.) Shear Strength (psf) or RQD (%)                                                                     | N-uncorrected | N <sub>60</sub>                                           | Casing Blows |                   |                                                                                                                                                          |                                                             |                                                                                                                                           |                                                       |                                                             |
| 25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 6D<br>V1                  | 24/24                                                                                                                                        | 25.00 - 27.00<br>25.64 - 26.00 | WOH/12"-1-2<br>Su=1,786/268 psf                                                                                   | - -           |                                                           | 66           |                   | Grey with black staining, wet, stiff, Silty CLAY, trace sand (Marine Clay).<br>55x110 mm vane raw torque readings<br>V1: 40/6 ft-lbs<br>V2: 42/10 ft-lbs | ID 15336A<br>A-6, CL<br>WC=30.3%<br>LL=40<br>PL=23<br>PI=17 |                                                                                                                                           |                                                       |                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | V2                        |                                                                                                                                              | 26.64 - 27.00                  | Su=1,875/446 psf                                                                                                  |               |                                                           | 76           |                   |                                                                                                                                                          |                                                             |                                                                                                                                           |                                                       |                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                                                                                                                                              |                                |                                                                                                                   |               |                                                           | 82           |                   |                                                                                                                                                          |                                                             |                                                                                                                                           |                                                       |                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                                                                                                                                              |                                |                                                                                                                   |               |                                                           | 88           |                   |                                                                                                                                                          |                                                             |                                                                                                                                           |                                                       |                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                                                                                                                                              |                                |                                                                                                                   |               |                                                           | 102          |                   |                                                                                                                                                          |                                                             |                                                                                                                                           |                                                       |                                                             |
| 30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 7D                        | 24/16                                                                                                                                        | 30.00 - 32.00                  | WOH-1-3-2                                                                                                         | 4             | 7                                                         | 81           |                   |                                                                                                                                                          |                                                             | Similar to above, except medium stiff.                                                                                                    |                                                       |                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                                                                                                                                              |                                |                                                                                                                   |               |                                                           | 83           |                   |                                                                                                                                                          |                                                             |                                                                                                                                           |                                                       |                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                                                                                                                                              |                                |                                                                                                                   |               |                                                           | 93           |                   |                                                                                                                                                          |                                                             |                                                                                                                                           |                                                       |                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                                                                                                                                              |                                |                                                                                                                   |               |                                                           | 96           |                   |                                                                                                                                                          |                                                             |                                                                                                                                           |                                                       |                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                                                                                                                                              |                                |                                                                                                                   |               |                                                           | 79           |                   |                                                                                                                                                          |                                                             |                                                                                                                                           |                                                       |                                                             |
| 35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | MV/8D                     | 24/24                                                                                                                                        | 35.00 - 37.00                  | 1-3-3-3                                                                                                           | 6             | 11                                                        | 82           |                   |                                                                                                                                                          |                                                             | Grey, wet, stiff, Silty CLAY, with fine to medium sand seam, (Marine Clay).<br>55x110 mm vane<br>MV: Failed vane attempt; could not push. |                                                       |                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                                                                                                                                              |                                |                                                                                                                   |               |                                                           | 86           |                   |                                                                                                                                                          |                                                             |                                                                                                                                           |                                                       |                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                                                                                                                                              |                                |                                                                                                                   |               |                                                           | 93           |                   |                                                                                                                                                          |                                                             |                                                                                                                                           |                                                       |                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                                                                                                                                              |                                |                                                                                                                   |               |                                                           | 91           |                   |                                                                                                                                                          |                                                             |                                                                                                                                           |                                                       |                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                                                                                                                                              |                                |                                                                                                                   |               |                                                           | 96           |                   |                                                                                                                                                          |                                                             |                                                                                                                                           |                                                       |                                                             |
| 40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 9D<br>V3                  | 24/24                                                                                                                                        | 40.00 - 42.00<br>40.64 - 41.00 | WOH-1-3-3<br>Su=1,696/491 psf                                                                                     | - -           |                                                           | 81           |                   |                                                                                                                                                          |                                                             | Grey, wet, stiff, Silty CLAY, Marine Clay).<br>55x110 mm vane raw torque readings<br>V3: 38/11 ft-lbs<br>V4: 39/11 ft-lbs                 |                                                       | ID 15338A<br>A-6, CL<br>WC=25.1%<br>LL=40<br>PL=22<br>PI=18 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | V4                        |                                                                                                                                              | 41.64 - 42.00                  | Su=1,741/491 psf                                                                                                  |               |                                                           | 103          |                   |                                                                                                                                                          |                                                             |                                                                                                                                           |                                                       |                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                                                                                                                                              |                                |                                                                                                                   |               |                                                           | 100          |                   |                                                                                                                                                          |                                                             |                                                                                                                                           |                                                       |                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                                                                                                                                              |                                |                                                                                                                   |               |                                                           | 109          |                   |                                                                                                                                                          |                                                             |                                                                                                                                           |                                                       |                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                                                                                                                                              |                                |                                                                                                                   |               |                                                           | 103          |                   |                                                                                                                                                          |                                                             |                                                                                                                                           |                                                       |                                                             |
| 45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 10D                       | 24/24                                                                                                                                        | 45.00 - 47.00                  | WOH-3-3-3                                                                                                         | 6             | 11                                                        | 112          | Similar to above. |                                                                                                                                                          |                                                             |                                                                                                                                           |                                                       |                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                                                                                                                                              |                                |                                                                                                                   |               |                                                           | 103          |                   |                                                                                                                                                          |                                                             |                                                                                                                                           |                                                       |                                                             |
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| 50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                           |                                                                                                                                              |                                |                                                                                                                   |               |                                                           | 113          |                   |                                                                                                                                                          |                                                             |                                                                                                                                           |                                                       |                                                             |
| <b>Remarks:</b><br><br>Autohammer SN 367; Calibrated 11/03/2023.<br>bgs = below ground surface                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                           |                                                                                                                                              |                                |                                                                                                                   |               |                                                           |              |                   |                                                                                                                                                          |                                                             |                                                                                                                                           |                                                       |                                                             |
| Stratification lines represent approximate boundaries between soil types; transitions may be gradual.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                           |                                                                                                                                              |                                |                                                                                                                   |               |                                                           |              |                   |                                                                                                                                                          | Page 2 of 4<br><br><b>Boring No.:</b> BB-AKR-102            |                                                                                                                                           |                                                       |                                                             |
| * Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                           |                                                                                                                                              |                                |                                                                                                                   |               |                                                           |              |                   |                                                                                                                                                          |                                                             |                                                                                                                                           |                                                       |                                                             |

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| <b>Maine Department of Transportation</b><br>Soil/Rock Exploration Log<br>US CUSTOMARY UNITS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                    |                 |                    | <b>Project:</b> Lot Norton Bridge #3754 carries East Side Road over Knowles River<br><b>Location:</b> Addison, ME                            |               |                 |              | <b>Boring No.:</b> BB-AKR-102<br><br><b>WIN:</b> 27160.00 |                 |                                                                                                                                                          |                                 |                                                       |
| <b>Driller:</b> Seaboard Drilling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |                 |                    | <b>Elevation (ft.):</b> 9.80                                                                                                                 |               |                 |              | <b>Auger ID/OD:</b> 5" Solid-Stem                         |                 |                                                                                                                                                          |                                 |                                                       |
| <b>Operator:</b> K. Hanscom                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                 |                    | <b>Datum:</b> NAVD88                                                                                                                         |               |                 |              | <b>Sampler:</b> Standard Split-Spoon                      |                 |                                                                                                                                                          |                                 |                                                       |
| <b>Logged By:</b> J. Celamy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                 |                    | <b>Rig Type:</b> Track-mounted Diedrich D-50                                                                                                 |               |                 |              | <b>Hammer Wt./Fall:</b> 140 lb / 30"                      |                 |                                                                                                                                                          |                                 |                                                       |
| <b>Date Start/Finish:</b> 11-20-2023 / 11-21-2023                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |                 |                    | <b>Drilling Method:</b> Cased Wash Boring                                                                                                    |               |                 |              | <b>Core Barrel:</b> NQ2 2"                                |                 |                                                                                                                                                          |                                 |                                                       |
| <b>Boring Location:</b> 10+11, 5.5 ft Rt.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |                 |                    | <b>Casing ID/OD:</b> HW 4"/4.5" NW 3"/3.5"                                                                                                   |               |                 |              | <b>Water Level*:</b> Tidally influenced                   |                 |                                                                                                                                                          |                                 |                                                       |
| <b>Hammer Efficiency Factor:</b> 1.066                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |                 |                    | <b>Hammer Type:</b> Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/> |               |                 |              |                                                           |                 |                                                                                                                                                          |                                 |                                                       |
| Definitions:<br>D = Split Spoon Sample<br>MD = Unsuccessful Split Spoon Sample Attempt<br>U = Thin Wall Tube Sample<br>MU = Unsuccessful Thin Wall Tube Sample Attempt<br>V = Field Vane Shear Test, PP = Pocket Penetrometer<br>MV = Unsuccessful Field Vane Shear Test Attempt<br>R = Rock Core Sample<br>SSA = Solid Stem Auger<br>HSA = Hollow Stem Auger<br>RC = Roller Cone<br>WOH = Weight of 140 lb. Hammer<br>WOR/C = Weight of Rods or Casing<br>WO1P = Weight of One Person<br>S <sub>u</sub> = Peak/Remolded Field Vane Undrained Shear Strength (psf)<br>S <sub>u(lab)</sub> = Lab Vane Undrained Shear Strength (psf)<br>q <sub>p</sub> = Unconfined Compressive Strength (ksf)<br>N-uncorrected = Raw Field SPT N-value<br>Hammer Efficiency Factor = Rig Specific Annual Calibration Value<br>N <sub>60</sub> = SPT N-uncorrected Corrected for Hammer Efficiency<br>N <sub>60</sub> = (Hammer Efficiency Factor/60%)*N-uncorrected<br>T <sub>v</sub> = Pocket Torvane Shear Strength (psf)<br>WC = Water Content, percent<br>LL = Liquid Limit<br>PL = Plastic Limit<br>PI = Plasticity Index<br>G = Grain Size Analysis<br>C = Consolidation Test |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                           |                 |                                                                                                                                                          |                                 |                                                       |
| Depth (ft.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Sample Information |                 |                    |                                                                                                                                              |               |                 |              |                                                           | Elevation (ft.) | Graphic Log                                                                                                                                              | Visual Description and Remarks  | Laboratory Testing Results/ AASHTO and Unified Class. |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Sample No.         | Pen./Rec. (in.) | Sample Depth (ft.) | Blows (6 in.) Shear Strength (psf) or RQD (%)                                                                                                | N-uncorrected | N <sub>60</sub> | Casing Blows |                                                           |                 |                                                                                                                                                          |                                 |                                                       |
| 50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 11D                | 24/9            | 50.00 - 52.00      | 4-4-8-10                                                                                                                                     | 12            | 21              | 97           |                                                           |                 | Grey, wet, medium dense, Silty SAND, trace gravel, (Marine Sand).                                                                                        | ID 15339A<br>A-4, SM<br>WC=9.0% |                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |                    |                                                                                                                                              |               |                 | 105          |                                                           |                 |                                                                                                                                                          |                                 |                                                       |
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| 55                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 12D                | 24/24           | 55.00 - 57.00      | 8-8-11-16                                                                                                                                    | 19            | 34              | 128          |                                                           |                 | Grey, wet, dense, Silty SAND, trace gravel, (Marine Sand).                                                                                               |                                 |                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |                    |                                                                                                                                              |               |                 | 132          |                                                           |                 |                                                                                                                                                          |                                 |                                                       |
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| 60                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 13D                | 17/7            | 60.00 - 61.42      | 17-16-50/5"                                                                                                                                  | - -           |                 | 103          |                                                           |                 | Grey, wet, very dense, Gravelly SAND, little silt, (Glacial Till).<br>HW Casing refusal at ±60.3 ft bgs.<br>Place NW Casing. Advanced by wash and drive. |                                 |                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                           |                 |                                                                                                                                                          |                                 |                                                       |
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| 65                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 14D                | 24/4            | 65.00 - 67.00      | 12-18-20-21                                                                                                                                  | 38            | 68              |              |                                                           |                 | Grey, wet, very dense, Gravelly SAND, little silt, (Glacial Till).                                                                                       |                                 |                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                           |                 |                                                                                                                                                          |                                 |                                                       |
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| 70                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | MD                 | 2/0             | 70.00 - 70.17      |                                                                                                                                              |               |                 |              |                                                           |                 | No recovery.                                                                                                                                             |                                 |                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                           |                 |                                                                                                                                                          |                                 |                                                       |
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Remarks:  
 Autohammer SN 367; Calibrated 11/03/2023.  
 bgs = below ground surface

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.  
 \* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 3 of 4  
  
 Boring No.: BB-AKR-102

[illegible]

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |                 |                                                                                                                                              |                                                                                                                   |               |                                         |              |                                                           |                 |                 |                                                                                                                         |                                                                   |
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| <b>Maine Department of Transportation</b><br>Soil/Rock Exploration Log<br>US CUSTOMARY UNITS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    |                 |                                                                                                                                              | <b>Project:</b> Lot Norton Bridge #3754 carries East Side Road over Knowles River<br><b>Location:</b> Addison, ME |               |                                         |              | <b>Boring No.:</b> BB-AKR-103<br><br><b>WIN:</b> 27160.00 |                 |                 |                                                                                                                         |                                                                   |
| <b>Driller:</b> Seaboard Drilling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                 | <b>Elevation (ft.):</b> 9.90                                                                                                                 |                                                                                                                   |               | <b>Auger ID/OD:</b> 5" Solid-Stem       |              |                                                           |                 |                 |                                                                                                                         |                                                                   |
| <b>Operator:</b> K. Hanscom                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                    |                 | <b>Datum:</b> NAVD88                                                                                                                         |                                                                                                                   |               | <b>Sampler:</b> Standard Split-Spoon    |              |                                                           |                 |                 |                                                                                                                         |                                                                   |
| <b>Logged By:</b> J. Celamy / N. Strout                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                    |                 | <b>Rig Type:</b> Track-mounted Diedrich D-50                                                                                                 |                                                                                                                   |               | <b>Hammer Wt./Fall:</b> 140 lb / 30"    |              |                                                           |                 |                 |                                                                                                                         |                                                                   |
| <b>Date Start/Finish:</b> 11-27-2023 / 11-29-2023                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                 | <b>Drilling Method:</b> Cased Wash Boring                                                                                                    |                                                                                                                   |               | <b>Core Barrel:</b> NQ2 2"              |              |                                                           |                 |                 |                                                                                                                         |                                                                   |
| <b>Boring Location:</b> 9+89.7, 6.1 ft Lt.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                 | <b>Casing ID/OD:</b> HW 4"/4.5" NW 3"/3.5"                                                                                                   |                                                                                                                   |               | <b>Water Level*:</b> Tidally influenced |              |                                                           |                 |                 |                                                                                                                         |                                                                   |
| <b>Hammer Efficiency Factor:</b> 1.066                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |                 | <b>Hammer Type:</b> Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/> |                                                                                                                   |               |                                         |              |                                                           |                 |                 |                                                                                                                         |                                                                   |
| Definitions:<br>D = Split Spoon Sample<br>MD = Unsuccessful Split Spoon Sample Attempt<br>U = Thin Wall Tube Sample<br>MU = Unsuccessful Thin Wall Tube Sample Attempt<br>V = Field Vane Shear Test, PP = Pocket Penetrometer<br>MV = Unsuccessful Field Vane Shear Test Attempt<br>R = Rock Core Sample<br>SSA = Solid Stem Auger<br>HSA = Hollow Stem Auger<br>RC = Roller Cone<br>WOH = Weight of 140lb. Hammer<br>WOR/C = Weight of Rods or Casing<br>WO1P = Weight of One Person<br>S <sub>u</sub> = Peak/Remolded Field Vane Undrained Shear Strength (psf)<br>S <sub>u(lab)</sub> = Lab Vane Undrained Shear Strength (psf)<br>q <sub>p</sub> = Unconfined Compressive Strength (ksf)<br>N-uncorrected = Raw Field SPT N-value<br>Hammer Efficiency Factor = Rig Specific Annual Calibration Value<br>N <sub>60</sub> = SPT N-uncorrected Corrected for Hammer Efficiency<br>N <sub>60</sub> = (Hammer Efficiency Factor/60%)*N-uncorrected<br>T <sub>v</sub> = Pocket Torvane Shear Strength (psf)<br>WC = Water Content, percent<br>LL = Liquid Limit<br>PL = Plastic Limit<br>PI = Plasticity Index<br>G = Grain Size Analysis<br>C = Consolidation Test |                    |                 |                                                                                                                                              |                                                                                                                   |               |                                         |              |                                                           |                 |                 |                                                                                                                         |                                                                   |
| Depth (ft.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Sample Information |                 |                                                                                                                                              |                                                                                                                   |               |                                         |              |                                                           | Elevation (ft.) | Graphic Log     | Visual Description and Remarks                                                                                          | Laboratory Testing Results/ AASHTO and Unified Class.             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Sample No.         | Pen./Rec. (in.) | Sample Depth (ft.)                                                                                                                           | Blows (6 in.) Shear Strength (psf) or RQD (%)                                                                     | N-uncorrected | N <sub>60</sub>                         | Casing Blows |                                                           |                 |                 |                                                                                                                         |                                                                   |
| 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1D                 | 24/13           | 0.80 - 2.80                                                                                                                                  | 11-31-45-32                                                                                                       | 76            | 135                                     | SSA          | 9.3                                                       |                 | 7" of Pavement. | ID 15341A<br>A-3, SW-SM<br>WC=9.9%                                                                                      |                                                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |                 |                                                                                                                                              |                                                                                                                   |               |                                         |              |                                                           |                 |                 |                                                                                                                         | Brown, moist, very dense, SAND, some gravel, little silt, (Fill). |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |                 |                                                                                                                                              |                                                                                                                   |               |                                         |              |                                                           |                 |                 |                                                                                                                         |                                                                   |
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| 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 2D                 | 24/10           | 5.00 - 7.00                                                                                                                                  | 9-10-8-9                                                                                                          | 18            | 32                                      |              |                                                           |                 |                 | Brown, moist, dense, SAND, some gravel, some silt, (Fill).                                                              |                                                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |                 |                                                                                                                                              |                                                                                                                   |               |                                         |              |                                                           |                 |                 |                                                                                                                         |                                                                   |
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| 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 3D                 | 24/11           | 10.00 - 12.00                                                                                                                                | 3-8-9-13                                                                                                          | 17            | 30                                      |              |                                                           |                 |                 | Brown, wet, medium dense, SAND, some silt, some gravel, (Fill).                                                         |                                                                   |
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| 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 4D                 | 24/4            | 15.00 - 17.00                                                                                                                                | 14-4-2-2                                                                                                          | 8             | 14                                      |              |                                                           |                 |                 | 4D(A) Similar to above.<br>4D(B) Grey, wet, stiff, SILT some clay, with organics (rootlets, wood fiber), (Marine Clay). | ID 15341A<br>A-3, SW-SM<br>WC=9.9%                                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |                 |                                                                                                                                              |                                                                                                                   |               |                                         |              |                                                           |                 |                 |                                                                                                                         |                                                                   |
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| 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 5D                 | 24/6            | 20.00 - 22.00                                                                                                                                | 2-2-2-2                                                                                                           | 4             | 7                                       |              |                                                           |                 |                 | Grey, wet, medium stiff, SILT, some clay, some gravel, trace sand, with organics (rootlets), (Marine Clay).             | ID 15342A<br>A-7-6, CL<br>WC=43.0%<br>LL=44<br>PL=26<br>PI=18     |
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| <b>Remarks:</b><br>Autohammer SN 367; Calibrated 11/03/2023.<br>bgs = below ground surface                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                 |                                                                                                                                              |                                                                                                                   |               |                                         |              |                                                           |                 |                 |                                                                                                                         |                                                                   |
| Stratification lines represent approximate boundaries between soil types; transitions may be gradual.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |                 |                                                                                                                                              |                                                                                                                   |               |                                         |              |                                                           |                 |                 | Page 1 of 4<br><br><b>Boring No.:</b> BB-AKR-103                                                                        |                                                                   |

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| <b>Maine Department of Transportation</b><br>Soil/Rock Exploration Log<br>US CUSTOMARY UNITS                                                                                                                                                                                                                                                                                                                                                              |  |                                                                                                                                              |  | <b>Project:</b> Lot Norton Bridge #3754 carries East Side Road over Knowles River<br><b>Location:</b> Addison, ME |  | <b>Boring No.:</b> BB-AKR-103<br><br><b>WIN:</b> 27160.00                                                                                                                                                    |  |
| <b>Driller:</b> Seaboard Drilling                                                                                                                                                                                                                                                                                                                                                                                                                         |  | <b>Elevation (ft.):</b> 9.90                                                                                                                 |  | <b>Auger ID/OD:</b> 5" Solid-Stem                                                                                 |  |                                                                                                                                                                                                              |  |
| <b>Operator:</b> K. Hanscom                                                                                                                                                                                                                                                                                                                                                                                                                               |  | <b>Datum:</b> NAVD88                                                                                                                         |  | <b>Sampler:</b> Standard Split-Spoon                                                                              |  |                                                                                                                                                                                                              |  |
| <b>Logged By:</b> J. Celamy / N. Strout                                                                                                                                                                                                                                                                                                                                                                                                                   |  | <b>Rig Type:</b> Track-mounted Diedrich D-50                                                                                                 |  | <b>Hammer Wt./Fall:</b> 140 lb / 30"                                                                              |  |                                                                                                                                                                                                              |  |
| <b>Date Start/Finish:</b> 11-27-2023 / 11-29-2023                                                                                                                                                                                                                                                                                                                                                                                                         |  | <b>Drilling Method:</b> Cased Wash Boring                                                                                                    |  | <b>Core Barrel:</b> NQ2 2"                                                                                        |  |                                                                                                                                                                                                              |  |
| <b>Boring Location:</b> 9+89.7, 6.1 ft Lt.                                                                                                                                                                                                                                                                                                                                                                                                                |  | <b>Casing ID/OD:</b> HW 4"/4.5" NW 3"/3.5"                                                                                                   |  | <b>Water Level*:</b> Tidally influenced                                                                           |  |                                                                                                                                                                                                              |  |
| <b>Hammer Efficiency Factor:</b> 1.066                                                                                                                                                                                                                                                                                                                                                                                                                    |  | <b>Hammer Type:</b> Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/> |  |                                                                                                                   |  |                                                                                                                                                                                                              |  |
| Definitions:<br>D = Split Spoon Sample<br>MD = Unsuccessful Split Spoon Sample Attempt<br>U = Thin Wall Tube Sample<br>MU = Unsuccessful Thin Wall Tube Sample Attempt<br>V = Field Vane Shear Test, PP = Pocket Penetrometer<br>MV = Unsuccessful Field Vane Shear Test Attempt                                                                                                                                                                          |  |                                                                                                                                              |  |                                                                                                                   |  | R = Rock Core Sample<br>SSA = Solid Stem Auger<br>HSA = Hollow Stem Auger<br>RC = Roller Cone<br>WOH = Weight of 140 lb. Hammer<br>WOR/C = Weight of Rods or Casing<br>WO1P = Weight of One Person           |  |
| S <sub>u</sub> = Peak/Remolded Field Vane Undrained Shear Strength (psf)<br>S <sub>u(lab)</sub> = Lab Vane Undrained Shear Strength (psf)<br>q <sub>p</sub> = Unconfined Compressive Strength (ksf)<br>N-uncorrected = Raw Field SPT N-value<br>Hammer Efficiency Factor = Rig Specific Annual Calibration Value<br>N <sub>60</sub> = SPT N-uncorrected Corrected for Hammer Efficiency<br>N <sub>60</sub> = (Hammer Efficiency Factor/60%)*N-uncorrected |  |                                                                                                                                              |  |                                                                                                                   |  | T <sub>v</sub> = Pocket Torvane Shear Strength (psf)<br>WC = Water Content, percent<br>LL = Liquid Limit<br>PL = Plastic Limit<br>PI = Plasticity Index<br>G = Grain Size Analysis<br>C = Consolidation Test |  |

| Depth (ft.) | Sample Information |                 |                                |                                               |               |                 |              | Elevation (ft.) | Graphic Log                                                                                                                                           | Visual Description and Remarks                                                                                                       | Laboratory Testing Results/ AASHTO and Unified Class.       |                                                             |  |
|-------------|--------------------|-----------------|--------------------------------|-----------------------------------------------|---------------|-----------------|--------------|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|--|
|             | Sample No.         | Pen./Rec. (in.) | Sample Depth (ft.)             | Blows (6 in.) Shear Strength (psf) or RQD (%) | N-uncorrected | N <sub>60</sub> | Casing Blows |                 |                                                                                                                                                       |                                                                                                                                      |                                                             |                                                             |  |
| 25          | 6D                 | 24/24           | 25.00 - 27.00                  | WOH/12"-1-2                                   | 1             | 2               | 69           | -15.1           |                                                                                                                                                       | Grey streaked black, wet, medium stiff, Silty CLAY, (Marine Clay).<br>PP=1.5 ksf                                                     | ID 15343A<br>A-6, CL<br>WC=30.9%<br>LL=39<br>PL=23<br>PI=16 |                                                             |  |
|             |                    |                 |                                |                                               |               |                 | 64           |                 |                                                                                                                                                       |                                                                                                                                      |                                                             |                                                             |  |
|             |                    |                 |                                |                                               |               |                 | 68           |                 |                                                                                                                                                       |                                                                                                                                      |                                                             |                                                             |  |
|             |                    |                 |                                |                                               |               |                 | 78           |                 |                                                                                                                                                       |                                                                                                                                      |                                                             |                                                             |  |
|             |                    |                 |                                |                                               |               |                 | 80           |                 |                                                                                                                                                       |                                                                                                                                      |                                                             |                                                             |  |
| 30          | 7D<br>V1           | 24/16           | 30.00 - 32.00<br>30.64 - 31.00 | WOH/12"-1-2<br>Su=1,116/223 psf               | - -           |                 | 40           |                 |                                                                                                                                                       | Grey, wet, stiff, Silty CLAY, trace sand, (Marine Clay).<br>55x110 mm vane raw torque readings<br>V1: 25/5 ft-lbs<br>V2: 30/8 ft-lbs |                                                             | ID 15344A<br>A-6, CL<br>WC=24.9%<br>LL=36<br>PL=22<br>PI=14 |  |
|             | V2                 |                 | 31.64 - 32.00                  | Su=1,339/357 psf                              |               |                 | 80           |                 |                                                                                                                                                       |                                                                                                                                      |                                                             |                                                             |  |
|             |                    |                 |                                |                                               |               |                 | 80           |                 |                                                                                                                                                       |                                                                                                                                      |                                                             |                                                             |  |
|             |                    |                 |                                |                                               |               |                 | 84           |                 |                                                                                                                                                       |                                                                                                                                      |                                                             |                                                             |  |
|             |                    |                 |                                |                                               |               |                 | 89           |                 |                                                                                                                                                       |                                                                                                                                      |                                                             |                                                             |  |
| 35          | 8D                 | 24/24           | 35.00 - 37.00                  | WOH/12"-1-2                                   | 1             | 2               | 85           |                 |                                                                                                                                                       | Similar to above.                                                                                                                    |                                                             |                                                             |  |
|             |                    |                 |                                |                                               |               |                 | 89           |                 |                                                                                                                                                       |                                                                                                                                      |                                                             |                                                             |  |
|             |                    |                 |                                |                                               |               |                 | 96           |                 |                                                                                                                                                       |                                                                                                                                      |                                                             |                                                             |  |
|             |                    |                 |                                |                                               |               |                 | 112          |                 |                                                                                                                                                       |                                                                                                                                      |                                                             |                                                             |  |
|             |                    |                 |                                |                                               |               |                 | 122          |                 |                                                                                                                                                       |                                                                                                                                      |                                                             |                                                             |  |
| 40          | 9D<br>V3           | 24/24           | 40.00 - 42.00<br>40.64 - 41.00 | WOH-1-2-3<br>Su=1,786/536 psf                 | - -           |                 | 99           |                 | Grey, wet, stiff, Silty CLAY, trace gravel (drop stone), (Marine Clay).<br>55x110 mm vane raw torque readings<br>V3: 40/12 ft-lbs<br>V4: 42/14 ft-lbs |                                                                                                                                      |                                                             |                                                             |  |
|             | V4                 |                 | 41.64 - 42.00                  | Su=1,875/625 psf                              |               |                 | 100          |                 |                                                                                                                                                       |                                                                                                                                      |                                                             |                                                             |  |
|             |                    |                 |                                |                                               |               |                 | 125          |                 |                                                                                                                                                       |                                                                                                                                      |                                                             |                                                             |  |
|             |                    |                 |                                |                                               |               |                 | 142          |                 |                                                                                                                                                       |                                                                                                                                      |                                                             |                                                             |  |
|             |                    |                 |                                |                                               |               |                 | 132          |                 |                                                                                                                                                       |                                                                                                                                      |                                                             |                                                             |  |
| 45          | 10D                | 24/24           | 45.00 - 47.00                  | WOH-1-2-3                                     | 3             | 5               | 100          |                 | Similar to above, except medium stiff.                                                                                                                |                                                                                                                                      |                                                             |                                                             |  |
|             |                    |                 |                                |                                               |               |                 | 100          |                 |                                                                                                                                                       |                                                                                                                                      |                                                             |                                                             |  |
|             |                    |                 |                                |                                               |               |                 | 112          |                 |                                                                                                                                                       |                                                                                                                                      |                                                             |                                                             |  |
|             |                    |                 |                                |                                               |               |                 | 129          |                 |                                                                                                                                                       |                                                                                                                                      |                                                             |                                                             |  |
|             |                    |                 |                                |                                               |               |                 | 137          |                 |                                                                                                                                                       |                                                                                                                                      |                                                             |                                                             |  |
| 50          |                    |                 |                                |                                               |               |                 |              | -39.1           |                                                                                                                                                       |                                                                                                                                      |                                                             |                                                             |  |

**Remarks:**  
 Autohammer SN 367; Calibrated 11/03/2023.  
 bgs = below ground surface

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.  
  
 \* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

**Page 2 of 4**  
  
**Boring No.: BB-AKR-103**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                           |                                                                                                                                              |                    |                                                                                                                   |               |                                                           |              |       |                                                                    |                                                                                                                                                                                                                                              |                                                  |                                                       |
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| <b>Maine Department of Transportation</b><br>Soil/Rock Exploration Log<br>US CUSTOMARY UNITS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                           |                                                                                                                                              |                    | <b>Project:</b> Lot Norton Bridge #3754 carries East Side Road over Knowles River<br><b>Location:</b> Addison, ME |               | <b>Boring No.:</b> BB-AKR-103<br><br><b>WIN:</b> 27160.00 |              |       |                                                                    |                                                                                                                                                                                                                                              |                                                  |                                                       |
| <b>Driller:</b> Seaboard Drilling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                           | <b>Elevation (ft.):</b> 9.90                                                                                                                 |                    | <b>Auger ID/OD:</b> 5" Solid-Stem                                                                                 |               |                                                           |              |       |                                                                    |                                                                                                                                                                                                                                              |                                                  |                                                       |
| <b>Operator:</b> K. Hanscom                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                           | <b>Datum:</b> NAVD88                                                                                                                         |                    | <b>Sampler:</b> Standard Split-Spoon                                                                              |               |                                                           |              |       |                                                                    |                                                                                                                                                                                                                                              |                                                  |                                                       |
| <b>Logged By:</b> J. Celamy / N. Strout                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                           | <b>Rig Type:</b> Track-mounted Diedrich D-50                                                                                                 |                    | <b>Hammer Wt./Fall:</b> 140 lb / 30"                                                                              |               |                                                           |              |       |                                                                    |                                                                                                                                                                                                                                              |                                                  |                                                       |
| <b>Date Start/Finish:</b> 11-27-2023 / 11-29-2023                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                           | <b>Drilling Method:</b> Cased Wash Boring                                                                                                    |                    | <b>Core Barrel:</b> NQ2 2"                                                                                        |               |                                                           |              |       |                                                                    |                                                                                                                                                                                                                                              |                                                  |                                                       |
| <b>Boring Location:</b> 9+89.7, 6.1 ft Lt.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                           | <b>Casing ID/OD:</b> HW 4"/4.5" NW 3"/3.5"                                                                                                   |                    | <b>Water Level*:</b> Tidally influenced                                                                           |               |                                                           |              |       |                                                                    |                                                                                                                                                                                                                                              |                                                  |                                                       |
| <b>Hammer Efficiency Factor:</b> 1.066                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                           | <b>Hammer Type:</b> Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/> |                    |                                                                                                                   |               |                                                           |              |       |                                                                    |                                                                                                                                                                                                                                              |                                                  |                                                       |
| <div style="display: flex; justify-content: space-between; font-size: 0.8em;"> <div> <b>Definitions:</b><br/>           D = Split Spoon Sample<br/>           MD = Unsuccessful Split Spoon Sample Attempt<br/>           U = Thin Wall Tube Sample<br/>           MU = Unsuccessful Thin Wall Tube Sample Attempt<br/>           V = Field Vane Shear Test, PP = Pocket Penetrometer<br/>           MV = Unsuccessful Field Vane Shear Test Attempt         </div> <div>           R = Rock Core Sample<br/>           SSA = Solid Stem Auger<br/>           HSA = Hollow Stem Auger<br/>           RC = Roller Cone<br/>           WOH = Weight of 140 lb. Hammer<br/>           WOR/C = Weight of Rods or Casing<br/>           WO1P = Weight of One Person         </div> <div>           S<sub>u</sub> = Peak/Remolded Field Vane Undrained Shear Strength (psf)<br/>           S<sub>u(lab)</sub> = Lab Vane Undrained Shear Strength (psf)<br/>           q<sub>p</sub> = Unconfined Compressive Strength (ksf)<br/>           N-uncorrected = Raw Field SPT N-value<br/>           Hammer Efficiency Factor = Rig Specific Annual Calibration Value<br/>           N<sub>60</sub> = SPT N-uncorrected Corrected for Hammer Efficiency<br/>           N<sub>60</sub> = (Hammer Efficiency Factor/60%)*N-uncorrected         </div> <div>           T<sub>v</sub> = Pocket Torvane Shear Strength (psf)<br/>           WC = Water Content, percent<br/>           LL = Liquid Limit<br/>           PL = Plasticity Limit<br/>           PI = Plasticity Index<br/>           G = Grain Size Analysis<br/>           C = Consolidation Test         </div> </div> |                           |                                                                                                                                              |                    |                                                                                                                   |               |                                                           |              |       |                                                                    |                                                                                                                                                                                                                                              |                                                  |                                                       |
| Depth (ft.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Sample Information</b> |                                                                                                                                              |                    |                                                                                                                   |               |                                                           |              |       | Elevation (ft.)                                                    | Graphic Log                                                                                                                                                                                                                                  | Visual Description and Remarks                   | Laboratory Testing Results/ AASHTO and Unified Class. |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Sample No.                | Pen./Rec. (in.)                                                                                                                              | Sample Depth (ft.) | Blows (6 in.) Shear Strength (psf) or RQD (%)                                                                     | N-uncorrected | N <sub>60</sub>                                           | Casing Blows |       |                                                                    |                                                                                                                                                                                                                                              |                                                  |                                                       |
| 50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 11D                       | 24/17                                                                                                                                        | 50.00 - 52.00      | 3-4-3-5                                                                                                           | 7             | 12                                                        | 99           | -43.1 |                                                                    | Grey, wet, medium dense, Silty SAND, trace gravel, (Marine Sand).<br><br>HW Casing refusal at ±54.8 ft bgs.<br>Place NW Casing. Advanced by wash and drive below 55 ft.<br>Grey, wet, very dense, Silty SAND, little gravel, (Glacial Till). | ID 15345A<br>A-2-4, SM<br>WC=7.6%                |                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                           |                                                                                                                                              |                    |                                                                                                                   |               |                                                           | 83           |       |                                                                    |                                                                                                                                                                                                                                              |                                                  |                                                       |
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| 55                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 12D                       | 24/11                                                                                                                                        | 55.00 - 57.00      | 9-18-14-20                                                                                                        | 32            | 57                                                        | WASH         |       |                                                                    |                                                                                                                                                                                                                                              |                                                  |                                                       |
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| 60                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 13D                       | 24/8                                                                                                                                         | 60.00 - 62.00      | 32-24-36-42                                                                                                       | 60            | 107                                                       |              |       | Grey, wet, very dense, Gravelly SAND, little silt, (Glacial Till). |                                                                                                                                                                                                                                              |                                                  |                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                           |                                                                                                                                              |                    |                                                                                                                   |               |                                                           |              |       |                                                                    |                                                                                                                                                                                                                                              |                                                  |                                                       |
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| 65                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 14D                       | 24/4                                                                                                                                         | 65.00 - 67.00      | 26-20-25-26                                                                                                       | 45            | 80                                                        |              |       | Similar to above.                                                  |                                                                                                                                                                                                                                              |                                                  |                                                       |
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| 75                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                           |                                                                                                                                              |                    |                                                                                                                   |               |                                                           |              |       |                                                                    |                                                                                                                                                                                                                                              |                                                  |                                                       |
| <b>Remarks:</b><br><br>Autohammer SN 367; Calibrated 11/03/2023.<br>bgs = below ground surface                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                           |                                                                                                                                              |                    |                                                                                                                   |               |                                                           |              |       |                                                                    |                                                                                                                                                                                                                                              |                                                  |                                                       |
| Stratification lines represent approximate boundaries between soil types; transitions may be gradual.<br><br>* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                           |                                                                                                                                              |                    |                                                                                                                   |               |                                                           |              |       |                                                                    |                                                                                                                                                                                                                                              | Page 3 of 4<br><br><b>Boring No.:</b> BB-AKR-103 |                                                       |

| <div>Maine Department of Transportation</div> <div>Soil/Rock Exploration Log</div> <div>US CUSTOMARY UNITS</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                 |                                |                                                 |               | <div>Project: Lot Norton Bridge #3754 carries East Side Road over Knowles River</div> <div>Location: Addison, ME</div>                                                                |              |                 |             | <div>Boring No.: BB-AKR-103</div> <div>WIN: 27160.00</div>                                                                                                                                                                                                                                                                                                                                                                          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| Driller: Seaboard Drilling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                    |                 |                                |                                                 |               | Elevation (ft.): 9.90                                                                                                                                                                 |              |                 |             | Auger ID/OD: 5" Solid-Stem                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  |                                                                                                                                                                                                |                    |  |  |  |  |  |  |  |             |                                |                                                      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| Operator: K. Hanscom                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |                 |                                |                                                 |               | Datum: NAVD88                                                                                                                                                                         |              |                 |             | Sampler: Standard Split-Spoon                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  |                                                                                                                                                                                                |                    |  |  |  |  |  |  |  |             |                                |                                                      |            |  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| Logged By: J. Celamy / N. Strout                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                 |                                |                                                 |               | Rig Type: Track-mounted Diedrich D-50                                                                                                                                                 |              |                 |             | Hammer Wt./Fall: 140 lb / 30"                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  |                                                                                                                                                                                                |                    |  |  |  |  |  |  |  |             |                                |                                                      |            |               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| Date Start/Finish: 11-27-2023 / 11-29-2023                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                    |                 |                                |                                                 |               | Drilling Method: Cased Wash Boring                                                                                                                                                    |              |                 |             | Core Barrel: NQ2 2"                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  |                                                                                                                                                                                                |                    |  |  |  |  |  |  |  |             |                                |                                                      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| Boring Location: 9+89.7, 6.1 ft Lt.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |                                |                                                 |               | Casing ID/OD: HW 4"/4.5" NW 3"/3.5"                                                                                                                                                   |              |                 |             | Water Level*: Tidally influenced                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  |                                                                                                                                                                                                |                    |  |  |  |  |  |  |  |             |                                |                                                      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| Hammer Efficiency Factor: 1.066                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |                 |                                |                                                 |               | Hammer Type: Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/>                                                 |              |                 |             |                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  |                                                                                                                                                                                                |                    |  |  |  |  |  |  |  |             |                                |                                                      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| <div>Definitions:</div> D = Split Spoon SampleMD = Unsuccessful Split Spoon Sample AttemptU = Thin Wall Tube SampleMU = Unsuccessful Thin Wall Tube Sample AttemptV = Field Vane Shear Test, PP = Pocket PenetrometerMV = Unsuccessful Field Vane Shear Test Attempt                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |                 |                                |                                                 |               | <div>R = Rock Core SampleSSA = Solid Stem AugerHSA = Hollow Stem AugerRC = Roller ConeWOH = Weight of 140 lb. HammerWOR/C = Weight of Rods or CasingWQ1P = Weight of One Person</div> |              |                 |             | <div>S<sub>u</sub> = Peak/Remolded Field Vane Undrained Shear Strength (psf)S<sub>u(lab)</sub> = Lab Vane Undrained Shear Strength (psf)q<sub>p</sub> = Unconfined Compressive Strength (ksf)N-uncorrected = Raw Field SPT N-valueHammer Efficiency Factor = Rig Specific Annual Calibration ValueN<sub>60</sub> = SPT N-uncorrected Corrected for Hammer EfficiencyN<sub>60</sub> = (Hammer Efficiency Factor/60%)*N-uncorrected</div> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  | <div>T<sub>v</sub> = Pocket Torvane Shear Strength (psf)WC = Water Content, percentLL = Liquid LimitPL = Plastic LimitPI = Plasticity IndexG = Grain Size AnalysisC = Consolidation Test</div> |                    |  |  |  |  |  |  |  |             |                                |                                                      |            |                 |                    |                                                 |               |                 |              |                 |    |     |      |               |             |    |  |  |  |  |  |                                                                    |  |    |       |              |                                |                   |    |  |     |       |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |    |    |       |               |          |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |       |  |  |                                                          |  |    |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |
| <table><thead><tr><th rowspan="2">Depth (ft.)</th><th colspan="8">Sample Information</th><th rowspan="2">Graphic Log</th><th rowspan="2">Visual Description and Remarks</th><th rowspan="2">Laboratory Testing Results/AASHTO and Unified Class.</th></tr><tr><th>Sample No.</th><th>Pen./Rec. (in.)</th><th>Sample Depth (ft.)</th><th>Blows ((/6 in.) Shear Strength (psf) or RQD (%)</th><th>N-uncorrected</th><th>N<sub>60</sub></th><th>Casing Blows</th><th>Elevation (ft.)</th></tr></thead><tbody><tr><td>75</td><td>15D</td><td>17/9</td><td>75.00 - 76.42</td><td>45-48-50/5"</td><td>--</td><td></td><td></td><td></td><td></td><td></td><td>Grey, wet, very dense, Gravelly SAND, little silt, (Glacial Till).</td><td></td></tr><tr><td>80</td><td>MD R1</td><td>1/0<br/>60/33</td><td>80.00 - 80.08<br/>80.60 - 85.60</td><td>50/1"<br/>RQD = 7%</td><td>--</td><td></td><td>NQ2</td><td>-70.5</td><td></td><td></td><td>No recovery.<br/><br/>Top of Bedrock at Elev -70.5 ft.<br/>R1: Bedrock: Grey to dark grey, SCHIST with quartzite veins, hard, very slight weathering, joints are low angle to moderately dipping, very close to close, tight to open, [Quoddy Formation].<br/>Rock Quality = Very Poor.<br/>R1: Core Times (min:sec)<br/>80.6-81.6 ft (4:20)<br/>81.6-82.6 ft (6:01)<br/>82.6-83.6 ft (6:12)<br/>83.6-84.6 ft (6:21)<br/>84.6-85.6 ft (3:44) 55% Recovery<br/>R2: Bedrock: Similar to R1.<br/>Rock Quality = Very Poor.<br/>R2: Core Times (min:sec)<br/>85.6-86.6 ft (4:24)<br/>86.6-87.6 ft (5:48)<br/>87.6-88.6 ft (6:20)<br/>88.6-89.6 ft (4:02)<br/>89.6-90.6 ft (5:11)<br/>97% Recovery</td><td></td></tr><tr><td>85</td><td>R2</td><td>60/58</td><td>85.60 - 90.60</td><td>RQD = 9%</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>90</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-80.7</td><td></td><td></td><td>Bottom of Exploration at 90.6 feet below ground surface.</td><td></td></tr><tr><td>95</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>100</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table> |                    |                 |                                |                                                 |               |                                                                                                                                                                                       |              |                 |             |                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  | Depth (ft.)                                                                                                                                                                                    | Sample Information |  |  |  |  |  |  |  | Graphic Log | Visual Description and Remarks | Laboratory Testing Results/AASHTO and Unified Class. | Sample No. | Pen./Rec. (in.) | Sample Depth (ft.) | Blows ((/6 in.) Shear Strength (psf) or RQD (%) | N-uncorrected | N <sub>60</sub> | Casing Blows | Elevation (ft.) | 75 | 15D | 17/9 | 75.00 - 76.42 | 45-48-50/5" | -- |  |  |  |  |  | Grey, wet, very dense, Gravelly SAND, little silt, (Glacial Till). |  | 80 | MD R1 | 1/0<br>60/33 | 80.00 - 80.08<br>80.60 - 85.60 | 50/1"<br>RQD = 7% | -- |  | NQ2 | -70.5 |  |  | No recovery.<br><br>Top of Bedrock at Elev -70.5 ft.<br>R1: Bedrock: Grey to dark grey, SCHIST with quartzite veins, hard, very slight weathering, joints are low angle to moderately dipping, very close to close, tight to open, [Quoddy Formation].<br>Rock Quality = Very Poor.<br>R1: Core Times (min:sec)<br>80.6-81.6 ft (4:20)<br>81.6-82.6 ft (6:01)<br>82.6-83.6 ft (6:12)<br>83.6-84.6 ft (6:21)<br>84.6-85.6 ft (3:44) 55% Recovery<br>R2: Bedrock: Similar to R1.<br>Rock Quality = Very Poor.<br>R2: Core Times (min:sec)<br>85.6-86.6 ft (4:24)<br>86.6-87.6 ft (5:48)<br>87.6-88.6 ft (6:20)<br>88.6-89.6 ft (4:02)<br>89.6-90.6 ft (5:11)<br>97% Recovery |  | 85 | R2 | 60/58 | 85.60 - 90.60 | RQD = 9% |  |  |  |  |  |  |  |  | 90 |  |  |  |  |  |  |  | -80.7 |  |  | Bottom of Exploration at 90.6 feet below ground surface. |  | 95 |  |  |  |  |  |  |  |  |  |  |  |  | 100 |  |  |  |  |  |  |  |  |  |  |  |  |
| Depth (ft.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Sample Information |                 |                                |                                                 |               |                                                                                                                                                                                       |              |                 | Graphic Log | Visual Description and Remarks                                                                                                                                                                                                                                                                                                                                                                                                          | Laboratory Testing Results/AASHTO and Unified Class.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |  |                                                                                                                                                                                                |                    |  |  |  |  |  |  |  |             |                                |                                                      |            |                 |                    |                                                 |               |                 |              |                 |    |     |      |               |             |    |  |  |  |  |  |                                                                    |  |    |       |              |                                |                   |    |  |     |       |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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(in.) | Sample Depth (ft.)             | Blows ((/6 in.) Shear Strength (psf) or RQD (%) | N-uncorrected | N <sub>60</sub>                                                                                                                                                                       | Casing Blows | Elevation (ft.) |             |                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  |                                                                                                                                                                                                |                    |  |  |  |  |  |  |  |             |                                |                                                      |            |                 |                    |                                                 |               |                 |              |                 |    |     |      |               |             |    |  |  |  |  |  |                                                                    |  |    |       |              |                                |                   |    |  |     |       |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |    |    |       |               |          |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |       |  |  |                                                          |  |    |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |
| 75                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 15D                | 17/9            | 75.00 - 76.42                  | 45-48-50/5"                                     | --            |                                                                                                                                                                                       |              |                 |             |                                                                                                                                                                                                                                                                                                                                                                                                                                         | Grey, wet, very dense, Gravelly SAND, little silt, (Glacial Till).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |  |                                                                                                                                                                                                |                    |  |  |  |  |  |  |  |             |                                |                                                      |            |                 |                    |                                                 |               |                 |              |                 |    |     |      |               |             |    |  |  |  |  |  |                                                                    |  |    |       |              |                                |                   |    |  |     |       |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |    |    |       |               |          |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |       |  |  |                                                          |  |    |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |
| 80                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | MD R1              | 1/0<br>60/33    | 80.00 - 80.08<br>80.60 - 85.60 | 50/1"<br>RQD = 7%                               | --            |                                                                                                                                                                                       | NQ2          | -70.5           |             |                                                                                                                                                                                                                                                                                                                                                                                                                                         | No recovery.<br><br>Top of Bedrock at Elev -70.5 ft.<br>R1: Bedrock: Grey to dark grey, SCHIST with quartzite veins, hard, very slight weathering, joints are low angle to moderately dipping, very close to close, tight to open, [Quoddy Formation].<br>Rock Quality = Very Poor.<br>R1: Core Times (min:sec)<br>80.6-81.6 ft (4:20)<br>81.6-82.6 ft (6:01)<br>82.6-83.6 ft (6:12)<br>83.6-84.6 ft (6:21)<br>84.6-85.6 ft (3:44) 55% Recovery<br>R2: Bedrock: Similar to R1.<br>Rock Quality = Very Poor.<br>R2: Core Times (min:sec)<br>85.6-86.6 ft (4:24)<br>86.6-87.6 ft (5:48)<br>87.6-88.6 ft (6:20)<br>88.6-89.6 ft (4:02)<br>89.6-90.6 ft (5:11)<br>97% Recovery |  |  |                                                                                                                                                                                                |                    |  |  |  |  |  |  |  |             |                                |                                                      |            |                 |                    |                                                 |               |                 |              |                 |    |     |      |               |             |    |  |  |  |  |  |                                                                    |  |    |       |              |                                |                   |    |  |     |       |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |    |    |       |               |          |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |       |  |  |                                                          |  |    |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |
| 85                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | R2                 | 60/58           | 85.60 - 90.60                  | RQD = 9%                                        |               |                                                                                                                                                                                       |              |                 |             |                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  |                                                                                                                                                                                                |                    |  |  |  |  |  |  |  |             |                                |                                                      |            |                 |                    |                                                 |               |                 |              |                 |    |     |      |               |             |    |  |  |  |  |  |                                                                    |  |    |       |              |                                |                   |    |  |     |       |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |    |    |       |               |          |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |       |  |  |                                                          |  |    |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |
| 90                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                 |                                |                                                 |               |                                                                                                                                                                                       |              | -80.7           |             |                                                                                                                                                                                                                                                                                                                                                                                                                                         | Bottom of Exploration at 90.6 feet below ground surface.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |  |                                                                                                                                                                                                |                    |  |  |  |  |  |  |  |             |                                |                                                      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| 95                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     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| 100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    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| <div>Remarks:</div> <div>Autohammer SN 367; Calibrated 11/03/2023.</div> <div>bgs = below ground surface</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         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| Stratification lines represent approximate boundaries between soil types; transitions may be gradual.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  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    | Page 4 of 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |  |                                                                                                                                                                                                |                    |  |  |  |  |  |  |  |             |                                |                                                      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| <div>* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.</div> <div>Boring No.: BB-AKR-103</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                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| <div>Maine Department of Transportation</div> <div>Soil/Rock Exploration Log</div> <div>US CUSTOMARY UNITS</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |                 |                    | <div>Project: Lot Norton Bridge #3754 carries East Side Road over Knowles River</div> <div>Location: Addison, ME</div>                                                                                                                                       |               |                 |              | <div>Boring No.: BB-AKR-104</div> <div>WIN: 27160.00</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |                                                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| Driller: Seaboard Drilling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |                 |                    | Elevation (ft.) 10.15                                                                                                                                                                                                                                        |               |                 |              | Auger ID/OD: 5" Solid-Stem                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |                                                                                                           |                                                                          |                                                                                                                                                                                                                                                                        |                    |  |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |   |    |       |             |            |    |    |     |     |  |                 |                                                                          |  |  |  |  |  |  |  |  |  |  |                                                                   |  |  |  |  |  |  |  |  |  |  |  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| Operator: K. Hanscom                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                 |                    | Datum: NAVD88                                                                                                                                                                                                                                                |               |                 |              | Sampler: Standard Split-Spoon                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |             |                                                                                                           |                                                                          |                                                                                                                                                                                                                                                                        |                    |  |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |   |    |       |             |            |    |    |     |     |  |                 |                                                                          |  |  |  |  |  |  |  |  |  |  |                                                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  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| Logged By: J. Celamy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                 |                    | Rig Type: Track-mounted Diedrich D-50                                                                                                                                                                                                                        |               |                 |              | Hammer Wt./Fall: 140 lb / 30"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |             |                                                                                                           |                                                                          |                                                                                                                                                                                                                                                                        |                    |  |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |   |    |       |             |            |    |    |     |     |  |                 |                                                                          |  |  |  |  |  |  |  |  |  |  |                                                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  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| Date Start/Finish: 11-30-2023                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |                 |                    | Drilling Method: Cased Wash Boring                                                                                                                                                                                                                           |               |                 |              | Core Barrel: N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |             |                                                                                                           |                                                                          |                                                                                                                                                                                                                                                                        |                    |  |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |   |    |       |             |            |    |    |     |     |  |                 |                                                                          |  |  |  |  |  |  |  |  |  |  |                                                                   |  |  |  |  |  |  |  |  |  |  |  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| Boring Location: 9+28.9, 5.8 ft Rt.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |                 |                    | Casing ID/OD: HW 4" / 4.5"                                                                                                                                                                                                                                   |               |                 |              | Water Level*: Tidally influenced                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |             |                                                                                                           |                                                                          |                                                                                                                                                                                                                                                                        |                    |  |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |   |    |       |             |            |    |    |     |     |  |                 |                                                                          |  |  |  |  |  |  |  |  |  |  |                                                                   |  |  |  |  |  |  |  |  |  |  |  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| Hammer Efficiency Factor: 1.066                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |                    | Hammer Type: Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/>                                                                                                                        |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |             |                                                                                                           |                                                                          |                                                                                                                                                                                                                                                                        |                    |  |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |   |    |       |             |            |    |    |     |     |  |                 |                                                                          |  |  |  |  |  |  |  |  |  |  |                                                                   |  |  |  |  |  |  |  |  |  |  |  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| <div>Definitions:</div> <div>D = Split Spoon Sample</div> <div>MD = Unsuccessful Split Spoon Sample Attempt</div> <div>U = Thin Wall Tube Sample</div> <div>MU = Unsuccessful Thin Wall Tube Sample Attempt</div> <div>V = Field Vane Shear Test, PP = Pocket Penetrometer</div> <div>MV = Unsuccessful Field Vane Shear Test Attempt</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |                 |                    | <div>R = Rock Core Sample</div> <div>SSA = Solid Stem Auger</div> <div>HSA = Hollow Stem Auger</div> <div>RC = Roller Cone</div> <div>WOH = Weight of 140lb. Hammer</div> <div>WOR/C = Weight of Rods or Casing</div> <div>WO1P = Weight of One Person</div> |               |                 |              | <div>S<sub>u</sub> = Peak/Remolded Field Vane Undrained Shear Strength (psf)</div> <div>S<sub>u</sub>(lab) = Lab Vane Undrained Shear Strength (psf)</div> <div>q<sub>p</sub> = Unconfined Compressive Strength (ksf)</div> <div>N-uncorrected = Raw Field SPT N-value</div> <div>Hammer Efficiency Factor = Rig Specific Annual Calibration Value</div> <div>N<sub>60</sub> = SPT N-uncorrected Corrected for Hammer Efficiency</div> <div>N<sub>60</sub> = (Hammer Efficiency Factor/60%)*N-uncorrected</div> |             |                                                                                                           |                                                                          | <div>T<sub>v</sub> = Pocket Torvane Shear Strength (psf)</div> <div>WC = Water Content, percent</div> <div>LL = Liquid Limit</div> <div>PL = Plastic Limit</div> <div>PI = Plasticity Index</div> <div>G = Grain Size Analysis</div> <div>C = Consolidation Test</div> |                    |  |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |   |    |       |             |            |    |    |     |     |  |                 |                                                                          |  |  |  |  |  |  |  |  |  |  |                                                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |       |             |         |   |   |  |     |  |                                                                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |    |       |               |              |   |   |   |  |  |                                                                                        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |    |      |               |         |   |   |    |      |  |                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |       |       |               |         |   |   |    |  |  |                                                                                                           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| <table><tr><th rowspan="2">Depth (ft.)</th><th colspan="7">Sample Information</th><th rowspan="2">Elevation (ft.)</th><th rowspan="2">Graphic Log</th><th rowspan="2">Visual Description and Remarks</th><th rowspan="2">Laboratory Testing Results/ AASHTO and Unified Class.</th></tr><tr><th>Sample No.</th><th>Pen./Rec. (in.)</th><th>Sample Depth (ft.)</th><th>Blows (6 in.) Shear Strength (psf) or RQD (%)</th><th>N-uncorrected</th><th>N<sub>60</sub></th><th>Casing Blows</th></tr><tr><td>0</td><td>1D</td><td>24/13</td><td>0.50 - 2.50</td><td>18-16-13-9</td><td>29</td><td>52</td><td>SSA</td><td>9.7</td><td></td><td>6" of Pavement.</td><td rowspan="20">ID 15346A<br/>A-7-5, CH<br/>WC=59.5%<br/>LL=54<br/>PL=26<br/>PI=28<br/>OC=6.9%</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Brown, moist, very dense, SAND, some gravel, little silt, (Fill).</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>5</td><td>2D</td><td>24/13</td><td>5.00 - 7.00</td><td>2-1-1-1</td><td>2</td><td>4</td><td></td><td>5.2</td><td></td><td>Grey, wet, soft, Silty CLAY, with organics (rootlets), (Marine Clay).</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>10</td><td>3D</td><td>24/22</td><td>10.00 - 12.00</td><td>WOH/6"-1/18"</td><td>1</td><td>2</td><td>3</td><td></td><td></td><td>Grey streaked black, moist, soft, Silty CLAY, with organics (rootlets), (Marine Clay).</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>15</td><td>4D</td><td>24/4</td><td>15.00 - 17.00</td><td>1-2-2-3</td><td>4</td><td>7</td><td>22</td><td>-4.9</td><td></td><td>Grey, wet, medium stiff, Silty CLAY, (Marine Clay).</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>20</td><td>MV/5D</td><td>24/16</td><td>20.00 - 22.00</td><td>1-2-3-4</td><td>5</td><td>9</td><td>37</td><td></td><td></td><td>Grey, wet, stiff, Silty CLAY, (Marine CLAY).<br/>55x110 mm vane<br/>MV: Failed vane attempt; would not push</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>25</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> |                    |                 |                    |                                                                                                                                                                                                                                                              |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |             |                                                                                                           |                                                                          | Depth (ft.)                                                                                                                                                                                                                                                            | Sample Information |  |  |  |  |  |  | Elevation (ft.) | Graphic Log | Visual Description and Remarks | Laboratory Testing Results/ AASHTO and Unified Class. | Sample No. | Pen./Rec. (in.) | Sample Depth (ft.) | Blows (6 in.) Shear Strength (psf) or RQD (%) | N-uncorrected | N <sub>60</sub> | Casing Blows | 0 | 1D | 24/13 | 0.50 - 2.50 | 18-16-13-9 | 29 | 52 | SSA | 9.7 |  | 6" of Pavement. | ID 15346A<br>A-7-5, CH<br>WC=59.5%<br>LL=54<br>PL=26<br>PI=28<br>OC=6.9% |  |  |  |  |  |  |  |  |  |  | Brown, moist, very dense, SAND, some gravel, little silt, (Fill). |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 5 | 2D | 24/13 | 5.00 - 7.00 | 2-1-1-1 | 2 | 4 |  | 5.2 |  | Grey, wet, soft, Silty CLAY, with organics (rootlets), (Marine Clay). |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 10 | 3D | 24/22 | 10.00 - 12.00 | WOH/6"-1/18" | 1 | 2 | 3 |  |  | Grey streaked black, moist, soft, Silty CLAY, with organics (rootlets), (Marine Clay). |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 15 | 4D | 24/4 | 15.00 - 17.00 | 1-2-2-3 | 4 | 7 | 22 | -4.9 |  | Grey, wet, medium stiff, Silty CLAY, (Marine Clay). |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 20 | MV/5D | 24/16 | 20.00 - 22.00 | 1-2-3-4 | 5 | 9 | 37 |  |  | Grey, wet, stiff, Silty CLAY, (Marine CLAY).<br>55x110 mm vane<br>MV: Failed vane attempt; would not push |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 25 |  |  |  |  |  |  |  |  |  |  |
| Depth (ft.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Sample Information |                 |                    |                                                                                                                                                                                                                                                              |               |                 |              | Elevation (ft.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Graphic Log | Visual Description and Remarks                                                                            | Laboratory Testing Results/ AASHTO and Unified Class.                    |                                                                                                                                                                                                                                                                        |                    |  |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |   |    |       |             |            |    |    |     |     |  |                 |                                                                          |  |  |  |  |  |  |  |  |  |  |                                                                   |  |  |  |  |  |  |  |  |  |  |  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(in.) | Sample Depth (ft.) | Blows (6 in.) Shear Strength (psf) or RQD (%)                                                                                                                                                                                                                | N-uncorrected | N <sub>60</sub> | Casing Blows |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |             |                                                                                                           |                                                                          |                                                                                                                                                                                                                                                                        |                    |  |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |   |    |       |             |            |    |    |     |     |  |                 |                                                                          |  |  |  |  |  |  |  |  |  |  |                                                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |       |             |         |   |   |  |     |  |                                                                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |    |       |               |              |   |   |   |  |  |                                                                                        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |    |      |               |         |   |   |    |      |  |                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |       |       |               |         |   |   |    |  |  |                                                                                                           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
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2.50        | 18-16-13-9                                                                                                                                                                                                                                                   | 29            | 52              | SSA          | 9.7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             | 6" of Pavement.                                                                                           | ID 15346A<br>A-7-5, CH<br>WC=59.5%<br>LL=54<br>PL=26<br>PI=28<br>OC=6.9% |                                                                                                                                                                                                                                                                        |                    |  |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |   |    |       |             |            |    |    |     |     |  |                 |                                                                          |  |  |  |  |  |  |  |  |  |  |                                                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |       |             |         |   |   |  |     |  |                                                                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |    |       |               |              |   |   |   |  |  |                                                                                        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |    |      |               |         |   |   |    |      |  |                                                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |       |       |               |         |   |   |    |  |  |                                                                                                           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
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little silt, (Fill).                                         |                                                                          |                                                                                                                                                                                                                                                                        |                    |  |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |   |    |       |             |            |    |    |     |     |  |                 |                                                                          |  |  |  |  |  |  |  |  |  |  |                                                                   |  |  |  |  |  |  |  |  |  |  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| Remarks:<br>Autohammer SN 367; Calibrated 11/03/2023.<br>bgs = below ground surface                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    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| Stratification lines represent approximate boundaries between soil types; transitions may be gradual.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  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| * Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        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                                                        |                                                                                                                                                                                                                                                                        |                    |  |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |   |    |       |             |            |    |    |     |     |  |                 |                                                                          |  |  |  |  |  |  |  |  |  |  |                                                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |  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| <b>Maine Department of Transportation</b><br>Soil/Rock Exploration Log<br>US CUSTOMARY UNITS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |                 |                    | <b>Project:</b> Lot Norton Bridge #3754 carries East Side Road over Knowles River<br><b>Location:</b> Addison, ME                            |               |                 |              | <b>Boring No.:</b> BB-AKR-104<br><br><b>WIN:</b> 27160.00 |                 |                                                                                                                       |                                                          |                                                       |
| <b>Driller:</b> Seaboard Drilling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                 |                    | <b>Elevation (ft.):</b> 10.15                                                                                                                |               |                 |              | <b>Auger ID/OD:</b> 5" Solid-Stem                         |                 |                                                                                                                       |                                                          |                                                       |
| <b>Operator:</b> K. Hanscom                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                    |                 |                    | <b>Datum:</b> NAVD88                                                                                                                         |               |                 |              | <b>Sampler:</b> Standard Split-Spoon                      |                 |                                                                                                                       |                                                          |                                                       |
| <b>Logged By:</b> J. Celamy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                    |                 |                    | <b>Rig Type:</b> Track-mounted Diedrich D-50                                                                                                 |               |                 |              | <b>Hammer Wt./Fall:</b> 140 lb / 30"                      |                 |                                                                                                                       |                                                          |                                                       |
| <b>Date Start/Finish:</b> 11-30-2023                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |                 |                    | <b>Drilling Method:</b> Cased Wash Boring                                                                                                    |               |                 |              | <b>Core Barrel:</b> N/A                                   |                 |                                                                                                                       |                                                          |                                                       |
| <b>Boring Location:</b> 9+28.9, 5.8 ft Rt.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |                 |                    | <b>Casing ID/OD:</b> HW 4" / 4.5"                                                                                                            |               |                 |              | <b>Water Level*:</b> Tidally influenced                   |                 |                                                                                                                       |                                                          |                                                       |
| <b>Hammer Efficiency Factor:</b> 1.066                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |                 |                    | <b>Hammer Type:</b> Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/> |               |                 |              |                                                           |                 |                                                                                                                       |                                                          |                                                       |
| <div style="display: flex; justify-content: space-between; font-size: 0.8em;"> <div> <b>Definitions:</b><br/>           D = Split Spoon Sample<br/>           MD = Unsuccessful Split Spoon Sample Attempt<br/>           U = Thin Wall Tube Sample<br/>           MU = Unsuccessful Thin Wall Tube Sample Attempt<br/>           V = Field Vane Shear Test, PP = Pocket Penetrometer<br/>           MV = Unsuccessful Field Vane Shear Test Attempt         </div> <div>           R = Rock Core Sample<br/>           SSA = Solid Stem Auger<br/>           HSA = Hollow Stem Auger<br/>           RC = Roller Cone<br/>           WOH = Weight of 140 lb. Hammer<br/>           WOR/C = Weight of Rods or Casing<br/>           WO1P = Weight of One Person         </div> <div>           S<sub>u</sub> = Peak/Remolded Field Vane Undrained Shear Strength (psf)<br/>           S<sub>u</sub>(lab) = Lab Vane Undrained Shear Strength (psf)<br/>           q<sub>p</sub> = Unconfined Compressive Strength (ksf)<br/>           N-uncorrected = Raw Field SPT N-value<br/>           Hammer Efficiency Factor = Rig Specific Annual Calibration Value<br/>           N<sub>60</sub> = SPT N-uncorrected Corrected for Hammer Efficiency<br/>           N<sub>60</sub> = (Hammer Efficiency Factor/60%)*N-uncorrected         </div> <div>           T<sub>v</sub> = Pocket Torvane Shear Strength (psf)<br/>           WC = Water Content, percent<br/>           LL = Liquid Limit<br/>           PL = Plasticity Limit<br/>           PI = Plasticity Index<br/>           G = Grain Size Analysis<br/>           C = Consolidation Test         </div> </div> |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                           |                 |                                                                                                                       |                                                          |                                                       |
| Depth (ft.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Sample Information |                 |                    |                                                                                                                                              |               |                 |              |                                                           | Elevation (ft.) | Graphic Log                                                                                                           | Visual Description and Remarks                           | Laboratory Testing Results/ AASHTO and Unified Class. |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Sample No.         | Pen./Rec. (in.) | Sample Depth (ft.) | Blows (6 in.) Shear Strength (psf) or RQD (%)                                                                                                | N-uncorrected | N <sub>60</sub> | Casing Blows |                                                           |                 |                                                                                                                       |                                                          |                                                       |
| 25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1U                 | 24/24           | 25.00 - 27.00      | PUSH                                                                                                                                         |               |                 | 44           |                                                           |                 | Similar to above, except little gravel (drop stone).<br><br>55x110 mm vane<br>MV: Failed vane attempt, could not push | 270801<br>A-6, CL<br>WC=33.4%<br>LL=37<br>PL=23<br>PI=14 |                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                    |                 |                    |                                                                                                                                              |               |                 | 40           |                                                           |                 |                                                                                                                       |                                                          |                                                       |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                    |                 |                    |                                                                                                                                              |               |                 | 51           |                                                           |                 |                                                                                                                       |                                                          |                                                       |
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| 30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 6D                 | 24/24           | 30.00 - 32.00      | WOH-1-2-2                                                                                                                                    | 3             | 5               | 46           |                                                           |                 |                                                                                                                       |                                                          |                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                    |                 |                    |                                                                                                                                              |               |                 | 55           |                                                           |                 |                                                                                                                       |                                                          |                                                       |
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| 35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 2U                 | 24/24           | 35.00 - 37.00      | PUSH                                                                                                                                         |               |                 | 57           |                                                           |                 |                                                                                                                       |                                                          |                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                    |                 |                    |                                                                                                                                              |               |                 | 57           |                                                           |                 |                                                                                                                       |                                                          |                                                       |
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| 40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 7D                 | 24/24           | 40.00 - 42.00      | WOH-1-2-3                                                                                                                                    | 3             | 5               | OPEN         |                                                           |                 |                                                                                                                       |                                                          |                                                       |
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| 45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 8D                 | 24/24           | 45.00 - 47.00      | WOH-1-3-3                                                                                                                                    | 4             | 7               |              |                                                           |                 |                                                                                                                       |                                                          |                                                       |
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| 50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                           |                 |                                                                                                                       |                                                          |                                                       |
| <b>Remarks:</b><br><br>Autohammer SN 367; Calibrated 11/03/2023.<br>bgs = below ground surface                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                           |                 |                                                                                                                       |                                                          |                                                       |
| Stratification lines represent approximate boundaries between soil types; transitions may be gradual.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                           |                 | <b>Page 2 of 3</b><br><br><b>Boring No.:</b> BB-AKR-104                                                               |                                                          |                                                       |

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| <b>Maine Department of Transportation</b><br>Soil/Rock Exploration Log<br>US CUSTOMARY UNITS                                                                                                                                                                                     |                    |                 |                    | <b>Project:</b> Lot Norton Bridge #3754 carries East Side Road over Knowles River<br><b>Location:</b> Addison, ME                                                                                            |               |                 |              | <b>Boring No.:</b> BB-AKR-104<br><b>WIN:</b> 27160.00                                                                                                                                                                                                                                                                                                                                                                                                      |             |                                                            |                                                       |
| <b>Driller:</b> Seaboard Drilling                                                                                                                                                                                                                                                |                    |                 |                    | <b>Elevation (ft.):</b> 10.15                                                                                                                                                                                |               |                 |              | <b>Auger ID/OD:</b> 5" Solid-Stem                                                                                                                                                                                                                                                                                                                                                                                                                          |             |                                                            |                                                       |
| <b>Operator:</b> K. Hanscom                                                                                                                                                                                                                                                      |                    |                 |                    | <b>Datum:</b> NAVD88                                                                                                                                                                                         |               |                 |              | <b>Sampler:</b> Standard Split-Spoon                                                                                                                                                                                                                                                                                                                                                                                                                       |             |                                                            |                                                       |
| <b>Logged By:</b> J. Celamy                                                                                                                                                                                                                                                      |                    |                 |                    | <b>Rig Type:</b> Track-mounted Diedrich D-50                                                                                                                                                                 |               |                 |              | <b>Hammer Wt./Fall:</b> 140 lb / 30"                                                                                                                                                                                                                                                                                                                                                                                                                       |             |                                                            |                                                       |
| <b>Date Start/Finish:</b> 11-30-2023                                                                                                                                                                                                                                             |                    |                 |                    | <b>Drilling Method:</b> Cased Wash Boring                                                                                                                                                                    |               |                 |              | <b>Core Barrel:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                    |             |                                                            |                                                       |
| <b>Boring Location:</b> 9+28.9, 5.8 ft Rt.                                                                                                                                                                                                                                       |                    |                 |                    | <b>Casing ID/OD:</b> HW 4" / 4.5"                                                                                                                                                                            |               |                 |              | <b>Water Level*:</b> Tidally influenced                                                                                                                                                                                                                                                                                                                                                                                                                    |             |                                                            |                                                       |
| <b>Hammer Efficiency Factor:</b> 1.066                                                                                                                                                                                                                                           |                    |                 |                    | <b>Hammer Type:</b> Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/>                                                                 |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |             |                                                            |                                                       |
| Definitions:<br>D = Split Spoon Sample<br>MD = Unsuccessful Split Spoon Sample Attempt<br>U = Thin Wall Tube Sample<br>MU = Unsuccessful Thin Wall Tube Sample Attempt<br>V = Field Vane Shear Test, PP = Pocket Penetrometer<br>MV = Unsuccessful Field Vane Shear Test Attempt |                    |                 |                    | R = Rock Core Sample<br>SSA = Solid Stem Auger<br>HSA = Hollow Stem Auger<br>RC = Roller Cone<br>WOH = Weight of 140 lb. Hammer<br>WOR/C = Weight of Rods or Casing<br>WO1P = Weight of One Person           |               |                 |              | S <sub>u</sub> = Peak/Remolded Field Vane Undrained Shear Strength (psf)<br>S <sub>u</sub> (lab) = Lab Vane Undrained Shear Strength (psf)<br>q <sub>p</sub> = Unconfined Compressive Strength (ksf)<br>N-uncorrected = Raw Field SPT N-value<br>Hammer Efficiency Factor = Rig Specific Annual Calibration Value<br>N <sub>60</sub> = SPT N-uncorrected Corrected for Hammer Efficiency<br>N <sub>60</sub> = (Hammer Efficiency Factor/60%)*N-uncorrected |             |                                                            |                                                       |
|                                                                                                                                                                                                                                                                                  |                    |                 |                    | T <sub>v</sub> = Pocket Torvane Shear Strength (psf)<br>WC = Water Content, percent<br>LL = Liquid Limit<br>PL = Plastic Limit<br>PI = Plasticity Index<br>G = Grain Size Analysis<br>C = Consolidation Test |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |             |                                                            |                                                       |
| Depth (ft.)                                                                                                                                                                                                                                                                      | Sample Information |                 |                    |                                                                                                                                                                                                              |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Graphic Log | Visual Description and Remarks                             | Laboratory Testing Results/ AASHTO and Unified Class. |
|                                                                                                                                                                                                                                                                                  | Sample No.         | Pen./Rec. (in.) | Sample Depth (ft.) | Blows (6 in.) Shear Strength (psf) or RQD (%)                                                                                                                                                                | N-uncorrected | N <sub>60</sub> | Casing Blows | Elevation (ft.)                                                                                                                                                                                                                                                                                                                                                                                                                                            |             |                                                            |                                                       |
| 50                                                                                                                                                                                                                                                                               | 9D                 | 24/17           | 50.00 - 52.00      | 10-9-7-9                                                                                                                                                                                                     | 16            | 28              |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |             | Grey, wet, medium dense, SAND, little silt, (Marine Sand). | ID 15347A<br>A-4, SM<br>WC=27.2%                      |
| 55                                                                                                                                                                                                                                                                               | 10D                | 24/17           | 55.00 - 57.00      | 7-6-10-16                                                                                                                                                                                                    | 16            | 28              |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |             | Similar to above.                                          |                                                       |
|                                                                                                                                                                                                                                                                                  |                    |                 |                    |                                                                                                                                                                                                              |               |                 |              | -46.9                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             | Bottom of Exploration at 57.0 feet below ground surface.   |                                                       |
| 60                                                                                                                                                                                                                                                                               |                    |                 |                    |                                                                                                                                                                                                              |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |             |                                                            |                                                       |
| 65                                                                                                                                                                                                                                                                               |                    |                 |                    |                                                                                                                                                                                                              |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |             |                                                            |                                                       |
| 70                                                                                                                                                                                                                                                                               |                    |                 |                    |                                                                                                                                                                                                              |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |             |                                                            |                                                       |
| 75                                                                                                                                                                                                                                                                               |                    |                 |                    |                                                                                                                                                                                                              |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |             |                                                            |                                                       |
| <b>Remarks:</b><br><br>Autohammer SN 367; Calibrated 11/03/2023.<br>bgs = below ground surface                                                                                                                                                                                   |                    |                 |                    |                                                                                                                                                                                                              |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |             |                                                            |                                                       |
| Stratification lines represent approximate boundaries between soil types; transitions may be gradual.                                                                                                                                                                            |                    |                 |                    |                                                                                                                                                                                                              |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |             | Page 3 of 3                                                |                                                       |
| * Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.                                                                                    |                    |                 |                    |                                                                                                                                                                                                              |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |             | Boring No.: BB-AKR-104                                     |                                                       |

|                                                                                                                                                                                                                                                                                  |                |                 |                                                 |                                                                                                                                                                                                   |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                  |                                                             |  |                                                                                                                                                                                                              |  |                                |  |                                                       |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------------|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------|--|-------------------------------------------------------|--|
| <div>Maine Department of Transportation</div> <div>Soil/Rock Exploration Log</div> <div>US CUSTOMARY UNITS</div>                                                                                                                                                                 |                |                 |                                                 | <div>Project: Lot Norton Bridge #3754 carries East Side Road over Knowles River</div> <div>Location: Addison, ME</div>                                                                            |               |                 |              | <div>Boring No.: BB-AKR-201</div> <div>WIN: 27160.00</div>                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                  |                                                             |  |                                                                                                                                                                                                              |  |                                |  |                                                       |  |
| Driller: Seaboard Drilling                                                                                                                                                                                                                                                       |                |                 |                                                 | Elevation (ft.) 12.45                                                                                                                                                                             |               |                 |              | Auger ID/OD: 5" Solid-Stem                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                  |                                                             |  |                                                                                                                                                                                                              |  |                                |  |                                                       |  |
| Operator: R. Hackett                                                                                                                                                                                                                                                             |                |                 |                                                 | Datum: NAVD88                                                                                                                                                                                     |               |                 |              | Sampler: Standard Split-Spoon                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                  |                                                             |  |                                                                                                                                                                                                              |  |                                |  |                                                       |  |
| Logged By: E. Dennis                                                                                                                                                                                                                                                             |                |                 |                                                 | Rig Type: Track-mounted Diedrich D-50                                                                                                                                                             |               |                 |              | Hammer Wt./Fall: 140 lb / 30"                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                  |                                                             |  |                                                                                                                                                                                                              |  |                                |  |                                                       |  |
| Date Start/Finish: 09-15-2025                                                                                                                                                                                                                                                    |                |                 |                                                 | Drilling Method: Cased Wash Boring                                                                                                                                                                |               |                 |              | Core Barrel: N/A                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                  |                                                             |  |                                                                                                                                                                                                              |  |                                |  |                                                       |  |
| Boring Location: 7+97.5, 4.5 ft Rt.                                                                                                                                                                                                                                              |                |                 |                                                 | Casing ID/OD: HW 4" / 4.5"                                                                                                                                                                        |               |                 |              | Water Level*: Tidally influenced                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                  |                                                             |  |                                                                                                                                                                                                              |  |                                |  |                                                       |  |
| Hammer Efficiency Factor: 0.985                                                                                                                                                                                                                                                  |                |                 |                                                 | Hammer Type: Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/>                                                             |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                  |                                                             |  |                                                                                                                                                                                                              |  |                                |  |                                                       |  |
| Definitions:<br>D = Split Spoon Sample<br>MD = Unsuccessful Split Spoon Sample Attempt<br>U = Thin Wall Tube Sample<br>MU = Unsuccessful Thin Wall Tube Sample Attempt<br>V = Field Vane Shear Test, PP = Pocket Penetrometer<br>MV = Unsuccessful Field Vane Shear Test Attempt |                |                 |                                                 | R = Rock Core Sample<br>SSA = Solid Stem Auger<br>HSA = Hollow Stem Auger<br>RC = Roller Cone<br>WOH = Weight of 140lb. Hammer<br>WOR/C = Weight of Rods or Casing<br>WO1P = Weight of One Person |               |                 |              | S <sub>u</sub> = Peak/Remolded Field Vane Undrained Shear Strength (psf)<br>S <sub>u</sub> (lab) = Lab Vane Undrained Shear Strength (psf)<br>q <sub>0</sub> = Unconfined Compressive Strength (ksf)<br>N-uncorrected = Raw Field SPT N-value<br>Hammer Efficiency Factor = Rig Specific Annual Calibration Value<br>N <sub>60</sub> = SPT N-uncorrected Corrected for Hammer Efficiency<br>N <sub>60</sub> = (Hammer Efficiency Factor/60%)*N-uncorrected |                                                                                                                                  |                                                             |  | T <sub>v</sub> = Pocket Torvane Shear Strength (psf)<br>WC = Water Content, percent<br>LL = Liquid Limit<br>PL = Plastic Limit<br>PI = Plasticity Index<br>G = Grain Size Analysis<br>C = Consolidation Test |  |                                |  |                                                       |  |
| Sample Information                                                                                                                                                                                                                                                               |                |                 |                                                 |                                                                                                                                                                                                   |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                  |                                                             |  | Graphic Log                                                                                                                                                                                                  |  | Visual Description and Remarks |  | Laboratory Testing Results/ AASHTO and Unified Class. |  |
| Depth (ft.)                                                                                                                                                                                                                                                                      | Sample No.     | Pen./Rec. (in.) | Sample Depth (ft.)                              | Blows (6 in.) Shear Strength (psf) or RQD (%)                                                                                                                                                     | N-uncorrected | N <sub>60</sub> | Casing Blows | Elevation (ft.)                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                  |                                                             |  |                                                                                                                                                                                                              |  |                                |  |                                                       |  |
| 0                                                                                                                                                                                                                                                                                | 1D             | 24/10           | 0.80 - 2.80                                     | 12-9-5-5                                                                                                                                                                                          | 14            | 23              | SSA          | 11.9                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 7" of Pavement.                                                                                                                  | ID 16700A<br>A-6, CL<br>WC=32.2%<br>LL=38<br>PL=17<br>PI=21 |  |                                                                                                                                                                                                              |  |                                |  |                                                       |  |
|                                                                                                                                                                                                                                                                                  |                |                 |                                                 |                                                                                                                                                                                                   |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Brown, damp, medium dense, SAND, some gravel, little silt, (Fill).                                                               |                                                             |  |                                                                                                                                                                                                              |  |                                |  |                                                       |  |
|                                                                                                                                                                                                                                                                                  |                |                 |                                                 |                                                                                                                                                                                                   |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                  |                                                             |  |                                                                                                                                                                                                              |  |                                |  |                                                       |  |
|                                                                                                                                                                                                                                                                                  |                |                 |                                                 |                                                                                                                                                                                                   |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                  |                                                             |  |                                                                                                                                                                                                              |  |                                |  |                                                       |  |
|                                                                                                                                                                                                                                                                                  |                |                 |                                                 |                                                                                                                                                                                                   |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                  |                                                             |  |                                                                                                                                                                                                              |  |                                |  |                                                       |  |
| 5                                                                                                                                                                                                                                                                                | 2D             | 24/16           | 5.00 - 7.00                                     | 2-2-2-2                                                                                                                                                                                           | 4             | 7               | PUSH         | 7.5                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Grey, wet, medium stiff, Clayey SILT, little sand, trace fine gravel, trace organics, (Marine Clay).                             |                                                             |  |                                                                                                                                                                                                              |  |                                |  |                                                       |  |
|                                                                                                                                                                                                                                                                                  |                |                 |                                                 |                                                                                                                                                                                                   |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                  |                                                             |  |                                                                                                                                                                                                              |  |                                |  |                                                       |  |
|                                                                                                                                                                                                                                                                                  |                |                 |                                                 |                                                                                                                                                                                                   |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                  |                                                             |  |                                                                                                                                                                                                              |  |                                |  |                                                       |  |
|                                                                                                                                                                                                                                                                                  |                |                 |                                                 |                                                                                                                                                                                                   |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                  |                                                             |  |                                                                                                                                                                                                              |  |                                |  |                                                       |  |
|                                                                                                                                                                                                                                                                                  |                |                 |                                                 |                                                                                                                                                                                                   |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                  |                                                             |  |                                                                                                                                                                                                              |  |                                |  |                                                       |  |
| 10                                                                                                                                                                                                                                                                               | 3D             | 24/20           | 10.00 - 12.00                                   | 5-4-3-6                                                                                                                                                                                           | 7             | 11              |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Grey-brown, wet, stiff, Silty CLAY, (Marine Clay).                                                                               |                                                             |  |                                                                                                                                                                                                              |  |                                |  |                                                       |  |
|                                                                                                                                                                                                                                                                                  |                |                 |                                                 |                                                                                                                                                                                                   |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                  |                                                             |  |                                                                                                                                                                                                              |  |                                |  |                                                       |  |
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|                                                                                                                                                                                                                                                                                  |                |                 |                                                 |                                                                                                                                                                                                   |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                  |                                                             |  |                                                                                                                                                                                                              |  |                                |  |                                                       |  |
|                                                                                                                                                                                                                                                                                  |                |                 |                                                 |                                                                                                                                                                                                   |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                  |                                                             |  |                                                                                                                                                                                                              |  |                                |  |                                                       |  |
| 15                                                                                                                                                                                                                                                                               | MV/4D          | 24/24           | 15.00 - 17.00                                   | 1-2-3-2                                                                                                                                                                                           | 5             | 8               | OPEN         | -2.6                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Grey, wet, medium stiff, Silty CLAY, (Marine Clay).<br>55x110 mm vane<br>MV: Failed vane attempt; could not push.                |                                                             |  |                                                                                                                                                                                                              |  |                                |  |                                                       |  |
|                                                                                                                                                                                                                                                                                  |                |                 |                                                 |                                                                                                                                                                                                   |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                  |                                                             |  |                                                                                                                                                                                                              |  |                                |  |                                                       |  |
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|                                                                                                                                                                                                                                                                                  |                |                 |                                                 |                                                                                                                                                                                                   |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                  |                                                             |  |                                                                                                                                                                                                              |  |                                |  |                                                       |  |
|                                                                                                                                                                                                                                                                                  |                |                 |                                                 |                                                                                                                                                                                                   |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                  |                                                             |  |                                                                                                                                                                                                              |  |                                |  |                                                       |  |
| 20                                                                                                                                                                                                                                                                               | 5D<br>V1<br>V2 | 24/24           | 20.00 - 22.00<br>20.64 - 21.00<br>21.64 - 22.00 | WOH/24"<br>Su=1,214/161 psf<br>Su=1,268/152 psf                                                                                                                                                   | - -           |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Grey, wet, stiff, Silty CLAY, (Marine Clay).<br>55x110 mm vane raw torque readings<br>V1: 27.2/3.6 ft-lbs<br>V2: 28.4/3.4 ft-lbs |                                                             |  |                                                                                                                                                                                                              |  |                                |  |                                                       |  |
|                                                                                                                                                                                                                                                                                  |                |                 |                                                 |                                                                                                                                                                                                   |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                  |                                                             |  |                                                                                                                                                                                                              |  |                                |  |                                                       |  |
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| 25                                                                                                                                                                                                                                                                               |                |                 |                                                 |                                                                                                                                                                                                   |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                  |                                                             |  |                                                                                                                                                                                                              |  |                                |  |                                                       |  |
| Remarks:<br>Autohammer SN 362; Calibrated 10-11-2024.<br>bgs = below ground surface                                                                                                                                                                                              |                |                 |                                                 |                                                                                                                                                                                                   |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                  |                                                             |  |                                                                                                                                                                                                              |  |                                |  |                                                       |  |
| Stratification lines represent approximate boundaries between soil types; transitions may be gradual.                                                                                                                                                                            |                |                 |                                                 |                                                                                                                                                                                                   |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                  | Page 1 of 3                                                 |  |                                                                                                                                                                                                              |  |                                |  |                                                       |  |
| * Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.                                                                                    |                |                 |                                                 |                                                                                                                                                                                                   |               |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                  | Boring No.: BB-AKR-201                                      |  |                                                                                                                                                                                                              |  |                                |  |                                                       |  |

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| <b>Maine Department of Transportation</b><br>Soil/Rock Exploration Log<br>US CUSTOMARY UNITS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                 |                                                 | <b>Project:</b> Lot Norton Bridge #3754 carries East Side Road over Knowles River<br><b>Location:</b> Addison, ME                            |               |                 |              | <b>Boring No.:</b> BB-AKR-201<br><br><b>WIN:</b> 27160.00 |             |                                |                                                            |  |
| <b>Driller:</b> Seaboard Drilling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |                 |                                                 | <b>Elevation (ft.):</b> 12.45                                                                                                                |               |                 |              | <b>Auger ID/OD:</b> 5" Solid-Stem                         |             |                                |                                                            |  |
| <b>Operator:</b> R. Hackett                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    |                 |                                                 | <b>Datum:</b> NAVD88                                                                                                                         |               |                 |              | <b>Sampler:</b> Standard Split-Spoon                      |             |                                |                                                            |  |
| <b>Logged By:</b> E. Dennis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    |                 |                                                 | <b>Rig Type:</b> Track-mounted Diedrich D-50                                                                                                 |               |                 |              | <b>Hammer Wt./Fall:</b> 140 lb / 30"                      |             |                                |                                                            |  |
| <b>Date Start/Finish:</b> 09-15-2025                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |                 |                                                 | <b>Drilling Method:</b> Cased Wash Boring                                                                                                    |               |                 |              | <b>Core Barrel:</b> N/A                                   |             |                                |                                                            |  |
| <b>Boring Location:</b> 7+97.5, 4.5 ft Rt.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                    |                 |                                                 | <b>Casing ID/OD:</b> HW 4" / 4.5"                                                                                                            |               |                 |              | <b>Water Level*:</b> Tidally influenced                   |             |                                |                                                            |  |
| <b>Hammer Efficiency Factor:</b> 0.985                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                    |                 |                                                 | <b>Hammer Type:</b> Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/> |               |                 |              |                                                           |             |                                |                                                            |  |
| <div style="display: flex; justify-content: space-between; font-size: 0.8em;"> <div> <b>Definitions:</b><br/>           D = Split Spoon Sample<br/>           MD = Unsuccessful Split Spoon Sample Attempt<br/>           U = Thin Wall Tube Sample<br/>           MU = Unsuccessful Thin Wall Tube Sample Attempt<br/>           V = Field Vane Shear Test, PP = Pocket Penetrometer<br/>           MV = Unsuccessful Field Vane Shear Test Attempt         </div> <div>           R = Rock Core Sample<br/>           SSA = Solid Stem Auger<br/>           HSA = Hollow Stem Auger<br/>           RC = Roller Cone<br/>           WOH = Weight of 140 lb. Hammer<br/>           WOR/C = Weight of Rods or Casing<br/>           WO1P = Weight of One Person         </div> <div>           S<sub>u</sub> = Peak/Remolded Field Vane Undrained Shear Strength (psf)<br/>           S<sub>u(lab)</sub> = Lab Vane Undrained Shear Strength (psf)<br/>           q<sub>p</sub> = Unconfined Compressive Strength (ksf)<br/>           N-uncorrected = Raw Field SPT N-value<br/>           Hammer Efficiency Factor = Rig Specific Annual Calibration Value<br/>           N<sub>60</sub> = SPT N-uncorrected Corrected for Hammer Efficiency<br/>           N<sub>60</sub> = (Hammer Efficiency Factor/60%)*N-uncorrected         </div> <div>           T<sub>v</sub> = Pocket Torvane Shear Strength (psf)<br/>           WC = Water Content, percent<br/>           LL = Liquid Limit<br/>           PL = Plasticity Limit<br/>           G = Grain Size Analysis<br/>           C = Consolidation Test         </div> </div> |                    |                 |                                                 |                                                                                                                                              |               |                 |              |                                                           |             |                                |                                                            |  |
| Depth (ft.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Sample Information |                 |                                                 |                                                                                                                                              |               |                 |              |                                                           | Graphic Log | Visual Description and Remarks | Laboratory Testing Results/ AASHTO and Unified Class.      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Sample No.         | Pen./Rec. (in.) | Sample Depth (ft.)                              | Blows (6 in.) Shear Strength (psf) or RQD (%)                                                                                                | N-uncorrected | N <sub>60</sub> | Casing Blows | Elevation (ft.)                                           |             |                                |                                                            |  |
| 25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 6D<br>V3<br>V4     | 24/24           | 25.00 - 27.00<br>25.64 - 26.00<br>26.64 - 27.00 | WOH/24"<br>Su=1,692/228 psf<br>Su=1,179/241 psf                                                                                              | - -           |                 |              |                                                           |             |                                | ID 16701A<br>A-4, CL<br>WC=27.2%<br>LL=26<br>PL=18<br>PI=8 |  |
| 30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | MV/7D              | 24/24           | 30.00 - 32.00                                   | WOH/18"-3                                                                                                                                    | - -           |                 |              |                                                           |             |                                |                                                            |  |
| 35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 8D<br>V5<br>MV     | 24/24           | 35.00 - 37.00<br>35.64 - 36.00                  | WOR/12"-WOH-3<br>Su=1,049/393 psf                                                                                                            |               |                 |              |                                                           |             |                                |                                                            |  |
| 40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 9D                 | 24/24           | 40.00 - 42.00                                   | 4-6-3-3                                                                                                                                      | 9             | 15              |              |                                                           |             |                                |                                                            |  |
| 45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 10D                | 24/23           | 45.00 - 47.00                                   | 5-5-6-6                                                                                                                                      | 11            | 18              |              |                                                           |             |                                |                                                            |  |
| 50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                 |                                                 |                                                                                                                                              |               |                 |              |                                                           |             |                                |                                                            |  |
| <b>Remarks:</b><br><br>Autohammer SN 362; Calibrated 10-11-2024.<br>bgs = below ground surface                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |                 |                                                 |                                                                                                                                              |               |                 |              |                                                           |             |                                |                                                            |  |
| Stratification lines represent approximate boundaries between soil types; transitions may be gradual.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |                 |                                                 |                                                                                                                                              |               |                 |              |                                                           |             |                                |                                                            |  |
| * Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |                                                 |                                                                                                                                              |               |                 |              |                                                           |             |                                |                                                            |  |

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| <b>Maine Department of Transportation</b><br>Soil/Rock Exploration Log<br>US CUSTOMARY UNITS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |                                                                                                                                              | <b>Project:</b> Lot Norton Bridge #3754 carries East Side Road over Knowles River<br><b>Location:</b> Addison, ME |                                         | <b>Boring No.:</b> BB-AKR-202<br><br><b>WIN:</b> 27160.00 |  |
| <b>Driller:</b> Seaboard Drilling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |  | <b>Elevation (ft.):</b> 10.63                                                                                                                |                                                                                                                   | <b>Auger ID/OD:</b> 5" Solid-Stem       |                                                           |  |
| <b>Operator:</b> R. Hackett                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |  | <b>Datum:</b> NAVD88                                                                                                                         |                                                                                                                   | <b>Sampler:</b> Standard Split-Spoon    |                                                           |  |
| <b>Logged By:</b> E. Dennis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |  | <b>Rig Type:</b> Track-mounted Diedrich D-50                                                                                                 |                                                                                                                   | <b>Hammer Wt./Fall:</b> 140 lb / 30"    |                                                           |  |
| <b>Date Start/Finish:</b> 09-15-2025 / 09-16-2025                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |  | <b>Drilling Method:</b> Cased Wash Boring                                                                                                    |                                                                                                                   | <b>Core Barrel:</b> N/A                 |                                                           |  |
| <b>Boring Location:</b> 8+66.3, 5.2 ft Rt.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  | <b>Casing ID/OD:</b> HW 4" / 4.5"                                                                                                            |                                                                                                                   | <b>Water Level*:</b> Tidally influenced |                                                           |  |
| <b>Hammer Efficiency Factor:</b> 0.985                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  | <b>Hammer Type:</b> Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/> |                                                                                                                   |                                         |                                                           |  |
| Definitions:<br>D = Split Spoon Sample<br>MD = Unsuccessful Split Spoon Sample Attempt<br>U = Thin Wall Tube Sample<br>MU = Unsuccessful Thin Wall Tube Sample Attempt<br>V = Field Vane Shear Test, PP = Pocket Penetrometer<br>MV = Unsuccessful Field Vane Shear Test Attempt<br>R = Rock Core Sample<br>SSA = Solid Stem Auger<br>HSA = Hollow Stem Auger<br>RC = Roller Cone<br>WOH = Weight of 140lb. Hammer<br>WOR/C = Weight of Rods or Casing<br>WO1P = Weight of One Person<br>S <sub>u</sub> = Peak/Remolded Field Vane Undrained Shear Strength (psf)<br>S <sub>u</sub> (lab) = Lab Vane Undrained Shear Strength (psf)<br>q <sub>p</sub> = Unconfined Compressive Strength (ksf)<br>N-uncorrected = Raw Field SPT N-value<br>Hammer Efficiency Factor = Rig Specific Annual Calibration Value<br>N <sub>60</sub> = SPT N-uncorrected Corrected for Hammer Efficiency<br>N <sub>60</sub> = (Hammer Efficiency Factor/60%)*N-uncorrected<br>T <sub>v</sub> = Pocket Torvane Shear Strength (psf)<br>WC = Water Content, percent<br>LL = Liquid Limit<br>PL = Plastic Limit<br>PI = Plasticity Index<br>G = Grain Size Analysis<br>C = Consolidation Test |  |  |                                                                                                                                              |                                                                                                                   |                                         |                                                           |  |

| Depth (ft.) | Sample Information |                 |                    |                                               |               |                 |              |  | Elevation (ft.) | Graphic Log | Visual Description and Remarks | Laboratory Testing Results/ AASHTO and Unified Class. |
|-------------|--------------------|-----------------|--------------------|-----------------------------------------------|---------------|-----------------|--------------|--|-----------------|-------------|--------------------------------|-------------------------------------------------------|
|             | Sample No.         | Pen./Rec. (in.) | Sample Depth (ft.) | Blows (6 in.) Shear Strength (psf) or RQD (%) | N-uncorrected | N <sub>60</sub> | Casing Blows |  |                 |             |                                |                                                       |
| 0           | 1D                 | 24/15           | 0.70 - 2.70        | 17-19-15-13                                   | 34            | 56              | SSA          |  | 10.0            |             |                                |                                                       |
|             |                    |                 |                    |                                               |               |                 |              |  |                 |             |                                |                                                       |
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| 5           | 2D                 | 24/7            | 5.00 - 7.00        | 2-1-1-2                                       | 2             | 3               | 13           |  | 0.6             |             |                                |                                                       |
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| 10          | 3D                 | 24/21           | 10.00 - 12.00      | 1-1-2-1                                       | 3             | 5               | 15           |  | 0.6             |             |                                |                                                       |
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| 15          | 4D                 | 24/24           | 15.00 - 17.00      | 1-2-3-5                                       | 5             | 8               | 30           |  | 0.6             |             |                                |                                                       |
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| 20          | 1U                 | 24/18           | 20.00 - 22.00      | PUSH                                          |               |                 | OPEN         |  | 0.6             |             |                                |                                                       |
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| 25          | 5D V1              | 24/24           | 22.00 - 24.00      | 5-3-4-4                                       | -             | -               |              |  | 0.6             |             |                                |                                                       |
|             |                    |                 |                    |                                               |               |                 |              |  |                 |             |                                |                                                       |
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|             | V2                 |                 | 23.64 - 24.00      | Su=920/308 psf                                |               |                 |              |  | 0.6             |             |                                |                                                       |
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**Remarks:**  
 Autohammer SN 362; Calibrated 10-11-2024.  
 bgs = below ground surface

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.

\* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

**Page 1 of 2**  
  
**Boring No.:** BB-AKR-202

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                                                                                                                                       |                                |                                                                                                                        |               |                                                            |              |                 |             |                                                                                                                         |                                                             |
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| <div>Maine Department of Transportation</div> <div>Soil/Rock Exploration Log</div> <div>US CUSTOMARY UNITS</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |                                                                                                                                       |                                | <div>Project: Lot Norton Bridge #3754 carries East Side Road over Knowles River</div> <div>Location: Addison, ME</div> |               | <div>Boring No.: BB-AKR-202</div> <div>WIN: 27160.00</div> |              |                 |             |                                                                                                                         |                                                             |
| Driller: Seaboard Drilling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    | Elevation (ft.): 10.63                                                                                                                |                                | Auger ID/OD: 5" Solid-Stem                                                                                             |               |                                                            |              |                 |             |                                                                                                                         |                                                             |
| Operator: R. Hackett                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    | Datum: NAVD88                                                                                                                         |                                | Sampler: Standard Split-Spoon                                                                                          |               |                                                            |              |                 |             |                                                                                                                         |                                                             |
| Logged By: E. Dennis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    | Rig Type: Track-mounted Diedrich D-50                                                                                                 |                                | Hammer Wt./Fall: 140 lb / 30"                                                                                          |               |                                                            |              |                 |             |                                                                                                                         |                                                             |
| Date Start/Finish: 09-15-2025 / 09-16-2025                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    | Drilling Method: Cased Wash Boring                                                                                                    |                                | Core Barrel: N/A                                                                                                       |               |                                                            |              |                 |             |                                                                                                                         |                                                             |
| Boring Location: 8+66.3, 5.2 ft Rt.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    | Casing ID/OD: HW 4" / 4.5"                                                                                                            |                                | Water Level*: Tidally influenced                                                                                       |               |                                                            |              |                 |             |                                                                                                                         |                                                             |
| Hammer Efficiency Factor: 0.985                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    | Hammer Type: Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/> |                                |                                                                                                                        |               |                                                            |              |                 |             |                                                                                                                         |                                                             |
| <div>Definitions:</div> <div>D = Split Spoon Sample</div> <div>MD = Unsuccessful Split Spoon Sample Attempt</div> <div>U = Thin Wall Tube Sample</div> <div>MU = Unsuccessful Thin Wall Tube Sample Attempt</div> <div>V = Field Vane Shear Test, PP = Pocket Penetrometer</div> <div>MV = Unsuccessful Field Vane Shear Test Attempt</div> <div>R = Rock Core Sample</div> <div>SSA = Solid Stem Auger</div> <div>HSA = Hollow Stem Auger</div> <div>RC = Roller Cone</div> <div>WOH = Weight of 140 lb. Hammer</div> <div>WOR/C = Weight of Rods or Casing</div> <div>WO1P = Weight of One Person</div> <div>S<sub>u</sub> = Peak/Remolded Field Vane Undrained Shear Strength (psf)</div> <div>S<sub>u</sub>(lab) = Lab Vane Undrained Shear Strength (psf)</div> <div>q<sub>p</sub> = Unconfined Compressive Strength (ksf)</div> <div>N-uncorrected = Raw Field SPT N-value</div> <div>Hammer Efficiency Factor = Rig Specific Annual Calibration Value</div> <div>N<sub>60</sub> = SPT N-uncorrected Corrected for Hammer Efficiency</div> <div>N<sub>60</sub> = (Hammer Efficiency Factor/60%)*N-uncorrected</div> <div>T<sub>v</sub> = Pocket Torvane Shear Strength (psf)</div> <div>WC = Water Content, percent</div> <div>LL = Liquid Limit</div> <div>PL = Plastic Limit</div> <div>PI = Plasticity Index</div> <div>G = Grain Size Analysis</div> <div>C = Consolidation Test</div> |                    |                                                                                                                                       |                                |                                                                                                                        |               |                                                            |              |                 |             |                                                                                                                         |                                                             |
| Depth (ft.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Sample Information |                                                                                                                                       |                                |                                                                                                                        |               |                                                            |              |                 | Graphic Log | Visual Description and Remarks                                                                                          | Laboratory Testing Results/ AASHTO and Unified Class.       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Sample No.         | Pen./Rec. (in.)                                                                                                                       | Sample Depth (ft.)             | Blows (6 in.) Shear Strength (psf) or RQD (%)                                                                          | N-uncorrected | N <sub>60</sub>                                            | Casing Blows | Elevation (ft.) |             |                                                                                                                         |                                                             |
| 25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | MV/6D              | 24/24                                                                                                                                 | 25.00 - 27.00                  | WOH/12"-1-2                                                                                                            | - -           |                                                            |              |                 |             | Grey, wet, stiff to medium stiff, Silty CLAY, (Marine Clay). 55x110 mm vane<br>MV: Failed vane attempt; could not push. | ID 16702A<br>A-6, CL<br>WC=26.0%<br>LL=40<br>PL=16<br>PI=24 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                                                                                                                                       |                                |                                                                                                                        |               |                                                            |              |                 |             |                                                                                                                         |                                                             |
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| 30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 7D<br>MV           | 24/24                                                                                                                                 | 30.00 - 32.00<br>30.64 - 31.00 | WOR-WOH-1-2                                                                                                            | - -           |                                                            |              |                 |             | Grey, wet, stiff, Silty CLAY, (Marine Clay). 55x110 mm vane<br>MV: Failed vane attempt; could not rotate                |                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                                                                                                                                       |                                |                                                                                                                        |               |                                                            |              |                 |             |                                                                                                                         |                                                             |
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| 35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | MV/8D              | 24/24                                                                                                                                 | 35.00 - 37.00                  | WOH/12"-2-3                                                                                                            | 2             | 3                                                          |              |                 |             | Grey, wet, stiff, Silty CLAY, (Marine Clay). 55x110 mm vane<br>MV: Failed vane attempt; could not push                  |                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                                                                                                                                       |                                |                                                                                                                        |               |                                                            |              |                 |             |                                                                                                                         |                                                             |
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| 40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 9D                 | 24/21                                                                                                                                 | 40.00 - 42.00                  | 3-5-4-2                                                                                                                | 9             | 15                                                         |              |                 |             | Grey, wet, medium dense, Silty SAND, little gravel, (Marine Sand).                                                      |                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                                                                                                                                       |                                |                                                                                                                        |               |                                                            |              |                 |             |                                                                                                                         |                                                             |
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| 50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                                                                                                                                       |                                |                                                                                                                        |               |                                                            |              |                 |             |                                                                                                                         |                                                             |
| <div>Remarks:</div> <div>Autohammer SN 362; Calibrated 10-11-2024.</div> <div>bgs = below ground surface</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |                                                                                                                                       |                                |                                                                                                                        |               |                                                            |              |                 |             |                                                                                                                         |                                                             |
| Stratification lines represent approximate boundaries between soil types; transitions may be gradual.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                    |                                                                                                                                       |                                |                                                                                                                        |               |                                                            |              |                 |             | Page 2 of 2                                                                                                             |                                                             |
| * Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |                                                                                                                                       |                                |                                                                                                                        |               |                                                            |              |                 |             | Boring No.: BB-AKR-202                                                                                                  |                                                             |

| <b>Maine Department of Transportation</b><br>Soil/Rock Exploration Log<br>US CUSTOMARY UNITS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           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Knowles River<br><b>Location:</b> Addison, ME                                                                                 |               |                 |        | <b>Boring No.:</b> BB-AKR-203<br><br><b>WIN:</b> 27160.00                                                                                                                                                                                                                                                                                                                                                                                                 |                 |             |                                                                                                                                                                      |                                                                                                                                                                                                              |                                                       |  |  |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |        |       |   |    |       |             |             |    |    |     |  |     |  |                |  |  |  |  |  |  |  |  |  |  |  |  |                                                             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |      |             |         |   |   |  |    |     |  |                                                                                           |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |       |  |  |  | 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| <b>Driller:</b> Seaboard Drilling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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                                                                                                                              |               |                 |        | <b>Auger ID/OD:</b> 5" Solid-Stem                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |             |                                                                                                                                                                      |                                                                                                                                                                                                              |                                                       |  |  |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |        |       |   |    |       |             |             |    |    |     |  |     |  |                |  |  |  |  |  |  |  |  |  |  |  |  |                                                             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |      |             |         |   |   |  |    |     |  |                                                                                           |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |       |  |  |  | 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| <b>Operator:</b> R. Hackett                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  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                                                                                                        |               |                 |        | <b>Sampler:</b> Standard Split-Spoon                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |             |                                                                                                                                                                      |                                                                                                                                                                                                              |                                                       |  |  |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |        |       |   |    |       |             |             |    |    |     |  |     |  |                |  |  |  |  |  |  |  |  |  |  |  |  |                                                             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |      |             |         |   |   |  |    |     |  |                                                                                           |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |       |  |  |  |  |    |    |  |  |  | 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| <b>Logged By:</b> E. Dennis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |                 |                    | <b>Rig Type:</b> Track-mounted Diedrich D-50                                                                                                                                                      |               |                 |        | <b>Hammer Wt./Fall:</b> 140 lb / 30"                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |             |                                                                                                                                                                      |                                                                                                                                                                                                              |                                                       |  |  |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |        |       |   |    |       |             |             |    |    |     |  |     |  |                |  |  |  |  |  |  |  |  |  |  |  |  |                                                             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |      |             |         |   |   |  |    |     |  |                                                                                           |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |       |  |  |  |  |    |    |  |  |  |  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 |
| <b>Date Start/Finish:</b> 09-18-2025                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |                    | <b>Drilling Method:</b> Cased Wash Boring                                                                                                                                                         |               |                 |        | <b>Core Barrel:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |             |                                                                                                                                                                      |                                                                                                                                                                                                              |                                                       |  |  |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |        |       |   |    |       |             |             |    |    |     |  |     |  |                |  |  |  |  |  |  |  |  |  |  |  |  |                                                             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |      |             |         |   |   |  |    |     |  |                                                                                           |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |       |  |  |  | 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| <b>Boring Location:</b> 11+46.6, 6.4 ft Lt.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |                 |                    | <b>Casing ID/OD:</b> HW 4" / 4.5"                                                                                                                                                                 |               |                 |        | <b>Water Level*:</b> Tidally influenced                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |             |                                                                                                                                                                      |                                                                                                                                                                                                              |                                                       |  |  |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |        |       |   |    |       |             |             |    |    |     |  |     |  |                |  |  |  |  |  |  |  |  |  |  |  |  |                                                             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |      |             |         |   |   |  |    |     |  |                                                                                           |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |       |  |  |  | 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| <b>Hammer Efficiency Factor:</b> 0.985                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |                 |                    | <b>Hammer Type:</b> Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/>                                                      |               |                 |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |             |                                                                                                                                                                      |                                                                                                                                                                                          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| Definitions:<br>D = Split Spoon Sample<br>MD = Unsuccessful Split Spoon Sample Attempt<br>U = Thin Wall Tube Sample<br>MU = Unsuccessful Thin Wall Tube Sample Attempt<br>V = Field Vane Shear Test, PP = Pocket Penetrometer<br>MV = Unsuccessful Field Vane Shear Test Attempt                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       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Auger<br>RC = Roller Cone<br>WOH = Weight of 140lb. Hammer<br>WOR/C = Weight of Rods or Casing<br>WO1P = Weight of One Person |               |                 |        | S <sub>u</sub> = Peak/Remolded Field Vane Undrained Shear Strength (psf)<br>S <sub>u(lab)</sub> = Lab Vane Undrained Shear Strength (psf)<br>q <sub>p</sub> = Unconfined Compressive Strength (ksf)<br>N-uncorrected = Raw Field SPT N-value<br>Hammer Efficiency Factor = Rig Specific Annual Calibration Value<br>N <sub>60</sub> = SPT N-uncorrected Corrected for Hammer Efficiency<br>N <sub>60</sub> = (Hammer Efficiency Factor/60%)*N-uncorrected |                 |             |                                                                                                                                                                      | T <sub>v</sub> = Pocket Torvane Shear Strength (psf)<br>WC = Water Content, percent<br>LL = Liquid Limit<br>PL = Plastic Limit<br>PI = Plasticity Index<br>G = Grain Size Analysis<br>C = Consolidation Test |                                                       |  |  |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |        |       |   |    |       |             |             |    |    |     |  |     |  |                |  |  |  |  |  |  |  |  |  |  |  |  |                                                             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |      |             |         |   |   |  |    |     |  |                                                                                           |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |       |  |  |  |  |    |    |  |  |  |  |  |  |    |  |  |                                                           |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |    |    |       |               |         |   |   |  |    |      |  |                                                                          |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |    |       |       |               |         |    |    |  |    |  |  |                                                                                                                                                                      |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |
| <table border="1"> <thead> <tr> <th rowspan="2">Depth (ft.)</th> <th colspan="8">Sample Information</th> <th rowspan="2">Elevation (ft.)</th> <th rowspan="2">Graphic Log</th> <th rowspan="2">Visual Description and Remarks</th> <th rowspan="2">Laboratory Testing Results/ AASHTO and Unified Class.</th> </tr> <tr> <th>Sample No.</th> <th>Pen./Rec. (in.)</th> <th>Sample Depth (ft.)</th> <th>Blows (6 in.) Shear Strength (psf) or RQD (%)</th> <th>N-uncorrected</th> <th>N<sub>60</sub></th> <th>Casing</th> <th>Blows</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>1D</td> <td>24/16</td> <td>0.80 - 2.80</td> <td>16-15-13-12</td> <td>28</td> <td>46</td> <td>SSA</td> <td></td> <td>8.5</td> <td></td> <td>7" of Pavement</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Brown, damp, dense, SAND, some gravel, little silt, (Fill).</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>5</td> <td>2D</td> <td>24/4</td> <td>5.00 - 7.00</td> <td>5-3-2-2</td> <td>5</td> <td>8</td> <td></td> <td>25</td> <td>4.1</td> <td></td> <td>Brown, wet, medium stiff, Clayey SILT, with organics (rootlets and roots), (Marine Clay).</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>55</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>49</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>27</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>25/8"</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>10</td> <td>MD</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>18</td> <td></td> <td></td> <td>Wood obstructing casing. Advanced by rollercone to clear.</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>19</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>26</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>37</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>33</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>15</td> <td>3D</td> <td>24/22</td> <td>15.00 - 17.00</td> <td>1-1-1-1</td> <td>2</td> <td>3</td> <td></td> <td>25</td> <td>-3.9</td> <td></td> <td>Grey, wet, medium stiff, Silty CLAY, occasional rootlets, (Marine Clay).</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>30</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>32</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>45</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>41</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>20</td> <td>MV/4D</td> <td>24/23</td> <td>20.00 - 22.00</td> <td>3-7-7-6</td> <td>14</td> <td>23</td> <td></td> <td>53</td> <td></td> <td></td> <td>Grey streaked black, very stiff, Silty CLAY, with fine sand layers, and shell fragments, (Marine Clay).<br/>55x110 mm vane<br/>MV: Failed vane attempt; could not push</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>76</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>80</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>75</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>90</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>25</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> |                    |                 |                    |                                                                                                                                                                                                   |               |                 |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |             |                                                                                                                                                                      | Depth (ft.)                                                                                                                                                                                                  | Sample Information                                    |  |  |  |  |  |  |  | Elevation (ft.) | Graphic Log | Visual Description and Remarks | Laboratory Testing Results/ AASHTO and Unified Class. | Sample No. | Pen./Rec. (in.) | Sample Depth (ft.) | Blows (6 in.) Shear Strength (psf) or RQD (%) | N-uncorrected | N <sub>60</sub> | Casing | Blows | 0 | 1D | 24/16 | 0.80 - 2.80 | 16-15-13-12 | 28 | 46 | SSA |  | 8.5 |  | 7" of Pavement |  |  |  |  |  |  |  |  |  |  |  |  | Brown, damp, dense, SAND, some gravel, little silt, (Fill). |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 5 | 2D | 24/4 | 5.00 - 7.00 | 5-3-2-2 | 5 | 8 |  | 25 | 4.1 |  | Brown, wet, medium stiff, Clayey SILT, with organics (rootlets and roots), (Marine Clay). |  |  |  |  |  |  |  |  |  | 55 |  |  |  |  |  |  |  |  |  |  |  |  | 49 |  |  |  |  |  |  |  |  |  |  |  |  | 27 |  |  |  |  |  |  |  |  |  |  |  |  | 25/8" |  |  |  |  | 10 | MD |  |  |  |  |  |  | 18 |  |  | Wood obstructing casing. Advanced by rollercone to clear. |  |  |  |  |  |  |  |  |  | 19 |  |  |  |  |  |  |  |  |  |  |  |  | 26 |  |  |  |  |  |  |  |  |  |  |  |  | 37 |  |  |  |  |  |  |  |  |  |  |  |  | 33 |  |  |  |  | 15 | 3D | 24/22 | 15.00 - 17.00 | 1-1-1-1 | 2 | 3 |  | 25 | -3.9 |  | Grey, wet, medium stiff, Silty CLAY, occasional rootlets, (Marine Clay). |  |  |  |  |  |  |  |  |  | 30 |  |  |  |  |  |  |  |  |  |  |  |  | 32 |  |  |  |  |  |  |  |  |  |  |  |  | 45 |  |  |  |  |  |  |  |  |  |  |  |  | 41 |  |  |  |  | 20 | MV/4D | 24/23 | 20.00 - 22.00 | 3-7-7-6 | 14 | 23 |  | 53 |  |  | Grey streaked black, very stiff, Silty CLAY, with fine sand layers, and shell fragments, (Marine Clay).<br>55x110 mm vane<br>MV: Failed vane attempt; could not push |  |  |  |  |  |  |  |  |  | 76 |  |  |  |  |  |  |  |  |  |  |  |  | 80 |  |  |  |  |  |  |  |  |  |  |  |  | 75 |  |  |  |  |  |  |  |  |  |  |  |  | 90 |  |  |  |  | 25 |  |  |  |  |  |  |  |  |  |  |  |  |
| Depth (ft.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Sample Information |                 |                    |                                                                                                                                                                                                   |               |                 |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Elevation (ft.) | Graphic Log | Visual Description and Remarks                                                                                                                                       |                                                                                                                                                                                                              | Laboratory Testing Results/ AASHTO and Unified Class. |  |  |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |        |       |   |    |       |             |             |    |    |     |  |     |  |                |  |  |  |  |  |  |  |  |  |  |  |  |                                                             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |      |             |         |   |   |  |    |     |  |                                                                                           |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |       |  |  |  | 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(in.) | Sample Depth (ft.) | Blows (6 in.) Shear Strength (psf) or RQD (%)                                                                                                                                                     | N-uncorrected | N <sub>60</sub> | Casing | Blows                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |             |                                                                                                                                                                      |                                                                                                                                                                                                              |                                                       |  |  |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |        |       |   |    |       |             |             |    |    |     |  |     |  |                |  |  |  |  |  |  |  |  |  |  |  |  |                                                             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |      |             |         |   |   |  |    |     |  |                                                                                           |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |       |  |  |  |  |    |    |  |  |  |  |  |  |    |  |  |                                                           |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |    |    |       |               |         |   |   |  |    |      |  |                                                                          |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |    |       |       |               |         |    |    |  |    |  |  |                                                                                                                                                                      |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |
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2.80        | 16-15-13-12                                                                                                                                                                                       | 28            | 46              | SSA    |                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 8.5             |             | 7" of Pavement                                                                                                                                                       |                                                                                                                                                                                                              |                                                       |  |  |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |        |       |   |    |       |             |             |    |    |     |  |     |  |                |  |  |  |  |  |  |  |  |  |  |  |  |                                                             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |      |             |         |   |   |  |    |     |  |                                                                                           |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |       |  |  |  |  |    |    |  |  |  |  |  |  |    |  |  |                                                           |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |    |    |       |               |         |   |   |  |    |      |  |                                                                          |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |    |       |       |               |         |    |    |  |    |  |  |                                                                                                                                                                      |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |
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                  |                                                       |  |  |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |        |       |   |    |       |             |             |    |    |     |  |     |  |                |  |  |  |  |  |  |  |  |  |  |  |  |                                                             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |      |             |         |   |   |  |    |     |  |                                                                                           |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |       |  |  |  | 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| <b>Remarks:</b><br>Autohammer SN 362; Calibrated 10-11-2024.<br>bgs = below ground surface                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             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| Stratification lines represent approximate boundaries between soil types; transitions may be gradual.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  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| * Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        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|  |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |        |       |   |    |       |             |             |    |    |     |  |     |  |                |  |  |  |  |  |  |  |  |  |  |  |  |                                                             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |      |             |         |   |   |  |    |     |  |                                                                                           |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |       |  |  |  |  |    |    |  |  |  |  |  |  |    |  |  |                                    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|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|-------------------------------------------------|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------|--|-----------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|--|--|
| <b>Maine Department of Transportation</b><br>Soil/Rock Exploration Log<br>US CUSTOMARY UNITS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                    |                 |                                                 |                                                       | <b>Project:</b> Lot Norton Bridge #3754 carries East Side Road over Knowles River<br><b>Location:</b> Addison, ME                            |                 |              |  |                 | <b>Boring No.:</b> BB-AKR-203<br><b>WIN:</b> 27160.00                               |                                                                                                                                                                     |                                                             |  |  |
| <b>Driller:</b> Seaboard Drilling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |                 |                                                 |                                                       | <b>Elevation (ft.)</b> 9.09                                                                                                                  |                 |              |  |                 | <b>Auger ID/OD:</b> 5" Solid-Stem                                                   |                                                                                                                                                                     |                                                             |  |  |
| <b>Operator:</b> R. Hackett                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                 |                                                 |                                                       | <b>Datum:</b> NAVD88                                                                                                                         |                 |              |  |                 | <b>Sampler:</b> Standard Split-Spoon                                                |                                                                                                                                                                     |                                                             |  |  |
| <b>Logged By:</b> E. Dennis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                 |                                                 |                                                       | <b>Rig Type:</b> Track-mounted Diedrich D-50                                                                                                 |                 |              |  |                 | <b>Hammer Wt./Fall:</b> 140 lb / 30"                                                |                                                                                                                                                                     |                                                             |  |  |
| <b>Date Start/Finish:</b> 09-18-2025                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                 |                                                 |                                                       | <b>Drilling Method:</b> Cased Wash Boring                                                                                                    |                 |              |  |                 | <b>Core Barrel:</b> N/A                                                             |                                                                                                                                                                     |                                                             |  |  |
| <b>Boring Location:</b> 11+46.6, 6.4 ft Lt.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                 |                                                 |                                                       | <b>Casing ID/OD:</b> HW 4" / 4.5"                                                                                                            |                 |              |  |                 | <b>Water Level*:</b> Tidally influenced                                             |                                                                                                                                                                     |                                                             |  |  |
| <b>Hammer Efficiency Factor:</b> 0.985                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |                 |                                                 |                                                       | <b>Hammer Type:</b> Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/> |                 |              |  |                 |                                                                                     |                                                                                                                                                                     |                                                             |  |  |
| Definitions:<br>D = Split Spoon Sample<br>MD = Unsuccessful Split Spoon Sample Attempt<br>U = Thin Wall Tube Sample<br>MU = Unsuccessful Thin Wall Tube Sample Attempt<br>V = Field Vane Shear Test, PP = Pocket Penetrometer<br>MV = Unsuccessful Field Vane Shear Test Attempt<br>R = Rock Core Sample<br>SSA = Solid Stem Auger<br>HSA = Hollow Stem Auger<br>RC = Roller Cone<br>WOH = Weight of 140 lb. Hammer<br>WOR/C = Weight of Rods or Casing<br>WO1P = Weight of One Person<br>S <sub>u</sub> = Peak/Remolded Field Vane Undrained Shear Strength (psf)<br>S <sub>u(lab)</sub> = Lab Vane Undrained Shear Strength (psf)<br>q <sub>p</sub> = Unconfined Compressive Strength (ksf)<br>N-uncorrected = Raw Field SPT N-value<br>Hammer Efficiency Factor = Rig Specific Annual Calibration Value<br>N <sub>60</sub> = SPT N-uncorrected Corrected for Hammer Efficiency<br>N <sub>60</sub> = (Hammer Efficiency Factor/60%)*N-uncorrected<br>T <sub>v</sub> = Pocket Torvane Shear Strength (psf)<br>WC = Water Content, percent<br>LL = Liquid Limit<br>PL = Plastic Limit<br>PI = Plasticity Index<br>G = Grain Size Analysis<br>C = Consolidation Test |                    |                 |                                                 |                                                       |                                                                                                                                              |                 |              |  |                 |                                                                                     |                                                                                                                                                                     |                                                             |  |  |
| Depth (ft.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Sample Information |                 |                                                 |                                                       |                                                                                                                                              |                 |              |  | Elevation (ft.) | Graphic Log                                                                         | Visual Description and Remarks                                                                                                                                      | Laboratory Testing Results/ AASHTO and Unified Class.       |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Sample No.         | Pen./Rec. (in.) | Sample Depth (ft.)                              | Blows (6 in.) Shear Strength (psf) or RQD (%)         | N-uncorrected                                                                                                                                | N <sub>60</sub> | Casing Blows |  |                 |                                                                                     |                                                                                                                                                                     |                                                             |  |  |
| 25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | MV/5D              | 24/20           | 25.00 - 27.00                                   | WOH-2-3-3                                             | 5                                                                                                                                            | 8               |              |  |                 |    | Grey, wet, stiff, Silty CLAY, with sand layers, (Marine Clay).<br>55x110 mm vane<br>MV: Failed vane attempt; could not push                                         |                                                             |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |                                                 |                                                       |                                                                                                                                              |                 |              |  |                 |                                                                                     |                                                                                                                                                                     |                                                             |  |  |
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| 30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                 |                                                 |                                                       |                                                                                                                                              |                 |              |  |                 |   | Grey streaked black, wet, stiff, Silty CLAY, (Marine Clay).<br>55x110 mm vane raw torque readings<br>V1: 30.7/8.8 ft-lbs<br>MV: Failed vane attempt; could not push |                                                             |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1U                 | 24/15           | 30.00 - 32.00                                   | PUSH                                                  |                                                                                                                                              |                 |              |  |                 |                                                                                     |                                                                                                                                                                     |                                                             |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 6D<br>V1<br>MV     | 24/24           | 32.00 - 34.00<br>32.64 - 33.00                  | WOR-3-2-4<br>Su=1,371/393 psf                         | - -                                                                                                                                          |                 |              |  |                 |                                                                                     |                                                                                                                                                                     |                                                             |  |  |
| 35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                 |                                                 |                                                       |                                                                                                                                              |                 |              |  |                 |  | Grey, wet, medium stiff to stiff, Silty CLAY, (Marine Clay).<br>55x110 mm vane raw torque readings<br>V2: 19.1/4.9 ft-lbs<br>V3: 24.2/6.8 ft-lbs                    | ID 16704A<br>A-6, CL<br>WC=33.3%<br>LL=37<br>PL=18<br>PI=19 |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 7D<br>V2<br>V3     | 24/24           | 35.00 - 37.00<br>35.64 - 36.00<br>36.64 - 37.00 | WOR/12"-WOH/12"<br>Su=853/219 psf<br>Su=1,080/304 psf | - -                                                                                                                                          |                 |              |  |                 |                                                                                     |                                                                                                                                                                     |                                                             |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |                                                 |                                                       |                                                                                                                                              |                 |              |  |                 |                                                                                     |                                                                                                                                                                     |                                                             |  |  |
| 40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                 |                                                 |                                                       |                                                                                                                                              |                 |              |  |                 |  | 8D(A): Grey, wet, stiff, Silty CLAY, with sand seams, (Marine Clay).<br>8D(B): Grey, wet, medium dense, Silty SAND, some clay, little gravel (Marine SAND).         |                                                             |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | MV/8D              | 24/24           | 40.00 - 42.00                                   | 1-3-11-25                                             | 14                                                                                                                                           | 23              |              |  |                 |                                                                                     |                                                                                                                                                                     |                                                             |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |                                                 |                                                       |                                                                                                                                              |                 |              |  |                 |                                                                                     |                                                                                                                                                                     |                                                             |  |  |
| 45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                 |                                                 |                                                       |                                                                                                                                              |                 |              |  |                 |  | Bottom of Exploration at 42.0 feet below ground surface.                                                                                                            |                                                             |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |                                                 |                                                       |                                                                                                                                              |                 |              |  |                 |                                                                                     |                                                                                                                                                                     |                                                             |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |                                                 |                                                       |                                                                                                                                              |                 |              |  |                 |                                                                                     |                                                                                                                                                                     |                                                             |  |  |
| 50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                 |                                                 |                                                       |                                                                                                                                              |                 |              |  |                 |                                                                                     |                                                                                                                                                                     |                                                             |  |  |
| <b>Remarks:</b><br><br>Autohammer SN 362; Calibrated 10-11-2024.<br>bgs = below ground surface                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                 |                                                 |                                                       |                                                                                                                                              |                 |              |  |                 |                                                                                     |                                                                                                                                                                     |                                                             |  |  |
| Stratification lines represent approximate boundaries between soil types; transitions may be gradual.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |                                                 |                                                       |                                                                                                                                              |                 |              |  |                 |                                                                                     | Page 2 of 2                                                                                                                                                         |                                                             |  |  |
| * Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    |                 |                                                 |                                                       |                                                                                                                                              |                 |              |  |                 |                                                                                     | Boring No.: BB-AKR-203                                                                                                                                              |                                                             |  |  |

| <div>Maine Department of Transportation</div> <div>Soil/Rock Exploration Log</div> <div>US CUSTOMARY UNITS</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |                                                                                                                                                                                                              |                    | <div>Project: Lot Norton Bridge #3754 carries East Side Road over Knowles River</div> <div>Location: Addison, ME</div>                                                                                                                                                                                                                                                                                                                                    |               | <div>Boring No.: BB-AKR-204</div> <div>WIN: 27160.00</div> |              |                 |             |                                                                                                                                               |                                |                                                       |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |   |  |  |  |  |  |  |     |     |  |                  |  |  |    |       |             |             |    |    |  |  |  |                                                               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |       |             |           |    |    |    |  |  |                                                            |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  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| Driller: Seaboard Drilling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    | Elevation (ft.): 8.22                                                                                                                                                                                        |                    | Auger ID/OD: 5" Solid-Stem                                                                                                                                                                                                                                                                                                                                                                                                                                |               |                                                            |              |                 |             |                                                                                                                                               |                                |                                                       |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |   |  |  |  |  |  |  |     |     |  |                  |  |  |    |       |             |             |    |    |  |  |  |                                                               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |       |             |           |    |    |    |  |  |                                                            |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  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| Operator: R. Hackett                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    | Datum: NAVD88                                                                                                                                                                                                |                    | Sampler: Standard Split-Spoon                                                                                                                                                                                                                                                                                                                                                                                                                             |               |                                                            |              |                 |             |                                                                                                                                               |                                |                                                       |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |   |  |  |  |  |  |  |     |     |  |                  |  |  |    |       |             |             |    |    |  |  |  |                                                               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |       |             |           |    |    |    |  |  |                                                            |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  | 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| Logged By: E. Dennis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    | Rig Type: Track-mounted Diedrich D-50                                                                                                                                                                        |                    | Hammer Wt./Fall: 140 lb / 30"                                                                                                                                                                                                                                                                                                                                                                                                                             |               |                                                            |              |                 |             |                                                                                                                                               |                                |                                                       |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |   |  |  |  |  |  |  |     |     |  |                  |  |  |    |       |             |             |    |    |  |  |  |                                                               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |       |             |           |    |    |    |  |  |                                                            |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  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| Date Start/Finish: 09-17-2025                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    | Drilling Method: Cased Wash Boring                                                                                                                                                                           |                    | Core Barrel: N/A                                                                                                                                                                                                                                                                                                                                                                                                                                          |               |                                                            |              |                 |             |                                                                                                                                               |                                |                                                       |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |   |  |  |  |  |  |  |     |     |  |                  |  |  |    |       |             |             |    |    |  |  |  |                                                               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |       |             |           |    |    |    |  |  |                                                            |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  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| Boring Location: 12+70.9, 6.4 ft Lt.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    | Casing ID/OD: HW 4" / 4.5"                                                                                                                                                                                   |                    | Water Level*: Tidally influenced                                                                                                                                                                                                                                                                                                                                                                                                                          |               |                                                            |              |                 |             |                                                                                                                                               |                                |                                                       |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |   |  |  |  |  |  |  |     |     |  |                  |  |  |    |       |             |             |    |    |  |  |  |                                                               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |       |             |           |    |    |    |  |  |                                                            |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  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| Hammer Efficiency Factor: 0.985                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                    | Hammer Type: Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/>                                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |               |                                                            |              |                 |             |                                                                                                                                               |                                |                                                       |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |   |  |  |  |  |  |  |     |     |  |                  |  |  |    |       |             |             |    |    |  |  |  |                                                               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |       |             |           |    |    |    |  |  |                                                            |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  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| Definitions:<br>D = Split Spoon Sample<br>MD = Unsuccessful Split Spoon Sample Attempt<br>U = Thin Wall Tube Sample<br>MU = Unsuccessful Thin Wall Tube Sample Attempt<br>V = Field Vane Shear Test, PP = Pocket Penetrometer<br>MV = Unsuccessful Field Vane Shear Test Attempt                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    | R = Rock Core Sample<br>SSA = Solid Stem Auger<br>HSA = Hollow Stem Auger<br>RC = Roller Cone<br>WOH = Weight of 140lb. Hammer<br>WOR/C = Weight of Rods or Casing<br>WO1P = Weight of One Person            |                    | S <sub>u</sub> = Peak/Remolded Field Vane Undrained Shear Strength (psf)<br>S <sub>u(lab)</sub> = Lab Vane Undrained Shear Strength (psf)<br>q <sub>p</sub> = Unconfined Compressive Strength (ksf)<br>N-uncorrected = Raw Field SPT N-value<br>Hammer Efficiency Factor = Rig Specific Annual Calibration Value<br>N <sub>60</sub> = SPT N-uncorrected Corrected for Hammer Efficiency<br>N <sub>60</sub> = (Hammer Efficiency Factor/60%)*N-uncorrected |               |                                                            |              |                 |             |                                                                                                                                               |                                |                                                       |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |   |  |  |  |  |  |  |     |     |  |                  |  |  |    |       |             |             |    |    |  |  |  |                                                               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |       |             |           |    |    |    |  |  |                                                            |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |    |    |       |               |         |   |   |    |      |  |                                                                                                            |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |    |    |       |               |         |   |    |    |  |  |                                                                                                                                               |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |    |    |       |               |         |   |   |    |       |  |                                                            |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |
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                                                                                                                                                                                         |                    | T <sub>v</sub> = Pocket Torvane Shear Strength (psf)<br>WC = Water Content, percent<br>LL = Liquid Limit<br>PL = Plastic Limit<br>PI = Plasticity Index<br>G = Grain Size Analysis<br>C = Consolidation Test |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |               |                                                            |              |                 |             |                                                                                                                                               |                                |                                                       |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |   |  |  |  |  |  |  |     |     |  |                  |  |  |    |       |             |             |    |    |  |  |  |                                                               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |       |             |           |    |    |    |  |  |                                                            |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  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| <table><tr><th rowspan="2">Depth (ft.)</th><th colspan="7">Sample Information</th><th rowspan="2">Elevation (ft.)</th><th rowspan="2">Graphic Log</th><th rowspan="2">Visual Description and Remarks</th><th rowspan="2">Laboratory Testing Results/ AASHTO and Unified Class.</th></tr><tr><th>Sample No.</th><th>Pen./Rec. (in.)</th><th>Sample Depth (ft.)</th><th>Blows (6 in.) Shear Strength (psf) or RQD (%)</th><th>N-uncorrected</th><th>N<sub>60</sub></th><th>Casing Blows</th></tr><tr><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td><td>SSA</td><td>7.3</td><td></td><td>11" of Pavement.</td><td></td></tr><tr><td></td><td>1D</td><td>24/14</td><td>1.00 - 3.00</td><td>13-16-15-13</td><td>31</td><td>51</td><td></td><td></td><td></td><td>Brown, moist, very dense, Gravelly SAND, little silt, (Fill).</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>5</td><td>2D</td><td>24/12</td><td>5.00 - 7.00</td><td>2-4-19-15</td><td>23</td><td>38</td><td>12</td><td></td><td></td><td>Brown, wet, dense, SAND, some gravel, little silt, (Fill).</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>35</td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>62</td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>34</td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>24</td><td></td><td></td><td></td><td></td></tr><tr><td>10</td><td>3D</td><td>24/15</td><td>10.00 - 12.00</td><td>2-2-1-2</td><td>3</td><td>5</td><td>35</td><td>-1.8</td><td></td><td>Brown-grey, wet, medium stiff, Silty CLAY, with organics (roots, rootlets, wood fragments), (Marine Clay).</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>31</td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>30</td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>37</td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>45</td><td></td><td></td><td></td><td></td></tr><tr><td>15</td><td>4D</td><td>24/19</td><td>15.00 - 17.00</td><td>1-1-7-9</td><td>8</td><td>13</td><td>51</td><td></td><td></td><td>Grey-brown, wet, medium stiff, Silty CLAY, (4D(A)) with grey, wet, medium dense, SAND, some silt, trace gravel layers (4D(B)), (Marine Clay).</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>70</td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>62</td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>51</td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>46</td><td></td><td></td><td></td><td></td></tr><tr><td>20</td><td>5D</td><td>24/24</td><td>20.00 - 22.00</td><td>3-2-2-1</td><td>4</td><td>7</td><td>73</td><td>-11.8</td><td></td><td>Grey, wet, loose, Silty SAND, trace gravel, (Marine Sand).</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>52</td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>57</td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>70</td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>40</td><td></td><td></td><td></td><td></td></tr><tr><td>25</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> |                    |                                                                                                                                                                                                              |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |               |                                                            |              |                 |             | Depth (ft.)                                                                                                                                   | Sample Information             |                                                       |  |  |  |  |  | Elevation (ft.) | Graphic Log | Visual Description and Remarks | Laboratory Testing Results/ AASHTO and Unified Class. | Sample No. | Pen./Rec. (in.) | Sample Depth (ft.) | Blows (6 in.) Shear Strength (psf) or RQD (%) | N-uncorrected | N <sub>60</sub> | Casing Blows | 0 |  |  |  |  |  |  | SSA | 7.3 |  | 11" of Pavement. |  |  | 1D | 24/14 | 1.00 - 3.00 | 13-16-15-13 | 31 | 51 |  |  |  | Brown, moist, very dense, Gravelly SAND, little silt, (Fill). |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 5 | 2D | 24/12 | 5.00 - 7.00 | 2-4-19-15 | 23 | 38 | 12 |  |  | Brown, wet, dense, SAND, some gravel, little silt, (Fill). |  |  |  |  |  |  |  |  | 35 |  |  |  |  |  |  |  |  |  |  |  | 62 |  |  |  |  |  |  |  |  |  |  |  | 34 |  |  |  |  |  |  |  |  |  |  |  | 24 |  |  |  |  | 10 | 3D | 24/15 | 10.00 - 12.00 | 2-2-1-2 | 3 | 5 | 35 | -1.8 |  | Brown-grey, wet, medium stiff, Silty CLAY, with organics (roots, rootlets, wood fragments), (Marine Clay). |  |  |  |  |  |  |  |  | 31 |  |  |  |  |  |  |  |  |  |  |  | 30 |  |  |  |  |  |  |  |  |  |  |  | 37 |  |  |  |  |  |  |  |  |  |  |  | 45 |  |  |  |  | 15 | 4D | 24/19 | 15.00 - 17.00 | 1-1-7-9 | 8 | 13 | 51 |  |  | Grey-brown, wet, medium stiff, Silty CLAY, (4D(A)) with grey, wet, medium dense, SAND, some silt, trace gravel layers (4D(B)), (Marine Clay). |  |  |  |  |  |  |  |  | 70 |  |  |  |  |  |  |  |  |  |  |  | 62 |  |  |  |  |  |  |  |  |  |  |  | 51 |  |  |  |  |  |  |  |  |  |  |  | 46 |  |  |  |  | 20 | 5D | 24/24 | 20.00 - 22.00 | 3-2-2-1 | 4 | 7 | 73 | -11.8 |  | Grey, wet, loose, Silty SAND, trace gravel, (Marine Sand). |  |  |  |  |  |  |  |  | 52 |  |  |  |  |  |  |  |  |  |  |  | 57 |  |  |  |  |  |  |  |  |  |  |  | 70 |  |  |  |  |  |  |  |  |  |  |  | 40 |  |  |  |  | 25 |  |  |  |  |  |  |  |  |  |  |  |
| Depth (ft.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Sample Information |                                                                                                                                                                                                              |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |               |                                                            |              | Elevation (ft.) | Graphic Log |                                                                                                                                               | Visual Description and Remarks | Laboratory Testing Results/ AASHTO and Unified Class. |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |   |  |  |  |  |  |  |     |     |  |                  |  |  |    |       |             |             |    |    |  |  |  |                                                               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |       |             |           |    |    |    |  |  |                                                            |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  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(in.)                                                                                                                                                                                              | Sample Depth (ft.) | Blows (6 in.) Shear Strength (psf) or RQD (%)                                                                                                                                                                                                                                                                                                                                                                                                             | N-uncorrected | N <sub>60</sub>                                            | Casing Blows |                 |             |                                                                                                                                               |                                |                                                       |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |   |  |  |  |  |  |  |     |     |  |                  |  |  |    |       |             |             |    |    |  |  |  |                                                               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |       |             |           |    |    |    |  |  |                                                            |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |    |    |       |               |         |   |   |    |      |  |                                                                                                            |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |    |    |       |               |         |   |    |    |  |  |                                                                                                                                               |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |    |    |       |               |         |   |   |    |       |  |                                                            |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |
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                                                                                                                                                                                         |                    |                                                                                                                                                                                                              |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |               |                                                            | SSA          | 7.3             |             | 11" of Pavement.                                                                                                                              |                                |                                                       |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |   |  |  |  |  |  |  |     |     |  |                  |  |  |    |       |             |             |    |    |  |  |  |                                                               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |       |             |           |    |    |    |  |  |                                                            |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  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17.00      | 1-1-7-9                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 8             | 13                                                         | 51           |                 |             | Grey-brown, wet, medium stiff, Silty CLAY, (4D(A)) with grey, wet, medium dense, SAND, some silt, trace gravel layers (4D(B)), (Marine Clay). |                                |                                                       |  |  |  |  |  |                 |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |   |  |  |  |  |  |  |     |     |  |                  |  |  |    |       |             |             |    |    |  |  |  |                                                               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |       |             |           |    |    |    |  |  |                                                            |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |    |    |       |               |         |   |   |    |      |  |                                                                                                            |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |    |    |       |               |         |   |    |    |  |  |                                                                                                                                               |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |    |    |       |               |         |   |   |    |       |  |                                                            |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |
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| <div>Remarks:</div> <div>Autohammer SN 362; Calibrated 10-11-2024.</div> <div>bgs = below ground surface</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         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| Stratification lines represent approximate boundaries between soil types; transitions may be gradual.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  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| * Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        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| <b>Maine Department of Transportation</b><br>Soil/Rock Exploration Log<br>US CUSTOMARY UNITS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                 |                    | <b>Project:</b> Lot Norton Bridge #3754 carries East Side Road over Knowles River<br><b>Location:</b> Addison, ME                            |               |                 |              | <b>Boring No.:</b> BB-AKR-204<br><b>WIN:</b> 27160.00 |                                                                                              |                                                                                                                                        |                                                                                                                                         |                                                                                                                   |                                                                                                                                |                                                           |
| <b>Driller:</b> Seaboard Drilling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |                 |                    | <b>Elevation (ft.):</b> 8.22                                                                                                                 |               |                 |              | <b>Auger ID/OD:</b> 5" Solid-Stem                     |                                                                                              |                                                                                                                                        |                                                                                                                                         |                                                                                                                   |                                                                                                                                |                                                           |
| <b>Operator:</b> R. Hackett                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    |                 |                    | <b>Datum:</b> NAVD88                                                                                                                         |               |                 |              | <b>Sampler:</b> Standard Split-Spoon                  |                                                                                              |                                                                                                                                        |                                                                                                                                         |                                                                                                                   |                                                                                                                                |                                                           |
| <b>Logged By:</b> E. Dennis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    |                 |                    | <b>Rig Type:</b> Track-mounted Diedrich D-50                                                                                                 |               |                 |              | <b>Hammer Wt./Fall:</b> 140 lb / 30"                  |                                                                                              |                                                                                                                                        |                                                                                                                                         |                                                                                                                   |                                                                                                                                |                                                           |
| <b>Date Start/Finish:</b> 09-17-2025                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |                 |                    | <b>Drilling Method:</b> Cased Wash Boring                                                                                                    |               |                 |              | <b>Core Barrel:</b> N/A                               |                                                                                              |                                                                                                                                        |                                                                                                                                         |                                                                                                                   |                                                                                                                                |                                                           |
| <b>Boring Location:</b> 12+70.9, 6.4 ft Lt.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    |                 |                    | <b>Casing ID/OD:</b> HW 4" / 4.5"                                                                                                            |               |                 |              | <b>Water Level*:</b> Tidally influenced               |                                                                                              |                                                                                                                                        |                                                                                                                                         |                                                                                                                   |                                                                                                                                |                                                           |
| <b>Hammer Efficiency Factor:</b> 0.985                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                    |                 |                    | <b>Hammer Type:</b> Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/> |               |                 |              |                                                       |                                                                                              |                                                                                                                                        |                                                                                                                                         |                                                                                                                   |                                                                                                                                |                                                           |
| <div>Definitions:<br/>D = Split Spoon Sample<br/>MD = Unsuccessful Split Spoon Sample Attempt<br/>U = Thin Wall Tube Sample<br/>MU = Unsuccessful Thin Wall Tube Sample Attempt<br/>V = Field Vane Shear Test, PP = Pocket Penetrometer<br/>MV = Unsuccessful Field Vane Shear Test Attempt</div> <div>R = Rock Core Sample<br/>SSA = Solid Stem Auger<br/>HSA = Hollow Stem Auger<br/>RC = Roller Cone<br/>WOH = Weight of 140 lb. Hammer<br/>WOR/C = Weight of Rods or Casing<br/>WO1P = Weight of One Person</div> <div>S<sub>u</sub> = Peak/Remolded Field Vane Undrained Shear Strength (psf)<br/>S<sub>u</sub>(lab) = Lab Vane Undrained Shear Strength (psf)<br/>q<sub>p</sub> = Unconfined Compressive Strength (ksf)<br/>N-uncorrected = Raw Field SPT N-value<br/>Hammer Efficiency Factor = Rig Specific Annual Calibration Value<br/>N<sub>60</sub> = SPT N-uncorrected Corrected for Hammer Efficiency<br/>N<sub>60</sub> = (Hammer Efficiency Factor/60%)*N-uncorrected</div> <div>T<sub>v</sub> = Pocket Torvane Shear Strength (psf)<br/>WC = Water Content, percent<br/>LL = Liquid Limit<br/>PL = Plasticity Index<br/>G = Grain Size Analysis<br/>C = Consolidation Test</div> |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                       |                                                                                              |                                                                                                                                        |                                                                                                                                         |                                                                                                                   |                                                                                                                                |                                                           |
| Depth (ft.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Sample Information |                 |                    |                                                                                                                                              |               |                 |              |                                                       | Graphic Log                                                                                  | Visual Description and Remarks                                                                                                         | Laboratory Testing Results/ AASHTO and Unified Class.                                                                                   |                                                                                                                   |                                                                                                                                |                                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Sample No.         | Pen./Rec. (in.) | Sample Depth (ft.) | Blows (6 in.) Shear Strength (psf) or RQD (%)                                                                                                | N-uncorrected | N <sub>60</sub> | Casing Blows | Elevation (ft.)                                       |                                                                                              |                                                                                                                                        |                                                                                                                                         |                                                                                                                   |                                                                                                                                |                                                           |
| 25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1U                 | 24/12           | 25.00 - 27.00      | PUSH                                                                                                                                         |               |                 |              |                                                       |                                                                                              | Grey streaked black, wet, stiff, Silty CLAY, (Marine Clay).<br>PP=3.5 ksf<br>55x110 mm vane<br>MV: Failed vane attempt; could not push | ID 33478B<br>A-6, CL<br>WC=29.0%<br>LL=39<br>PL=19<br>PI=20                                                                             |                                                                                                                   |                                                                                                                                |                                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | MV/6D              | 24/24           | 27.00 - 29.00      | 3-3-5-4                                                                                                                                      | 8             | 13              |              |                                                       |                                                                                              |                                                                                                                                        |                                                                                                                                         |                                                                                                                   |                                                                                                                                |                                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                       |                                                                                              |                                                                                                                                        |                                                                                                                                         |                                                                                                                   |                                                                                                                                |                                                           |
| 30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 2U                 | 24/19           | 30.00 - 32.00      | PUSH                                                                                                                                         |               |                 |              |                                                       |                                                                                              |                                                                                                                                        | Grey, wet, stiff to medium stiff, Silty CLAY, (Marine Clay).<br>PP=2.0 ksf<br>55x110 mm vane<br>MV: Failed vane attempt; could not push | ID 33479B<br>A-7-6, CL<br>WC=34.3%<br>LL=43<br>PL=21<br>PI=22                                                     |                                                                                                                                |                                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | MV/7D              | 24/24           | 32.00 - 34.00      | 1-3-3-3                                                                                                                                      | 6             | 10              |              |                                                       |                                                                                              |                                                                                                                                        |                                                                                                                                         |                                                                                                                   |                                                                                                                                |                                                           |
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| 35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | MV/8D              | 24/24           | 35.00 - 37.00      | WOH-2-3-4                                                                                                                                    | 5             | 8               |              |                                                       |                                                                                              |                                                                                                                                        |                                                                                                                                         | Similar to above except, medium stiff.<br>PP=1.5 ksf<br>55x110 mm vane<br>MV: Failed vane attempt; could not push |                                                                                                                                |                                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                       |                                                                                              |                                                                                                                                        |                                                                                                                                         |                                                                                                                   |                                                                                                                                |                                                           |
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| 40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 3U                 | 24/10           | 40.00 - 42.00      | PUSH                                                                                                                                         |               |                 |              |                                                       |                                                                                              |                                                                                                                                        |                                                                                                                                         |                                                                                                                   | Grey, wet, medium stiff, Silty CLAY, (Marine Clay).<br>PP=1.0 ksf<br>55x110 mm vane<br>MV: Failed vane attempt; could not push | ID 33480B<br>A-7-6, CL<br>WC=%<br>LL=42<br>PL=20<br>PI=22 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | MV/9D              | 24/24           | 42.00 - 44.00      | 2-2-4-5                                                                                                                                      | 6             | 10              |              |                                                       |                                                                                              |                                                                                                                                        |                                                                                                                                         |                                                                                                                   |                                                                                                                                |                                                           |
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| 45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | V/10D              | 24/24           | 45.00 - 47.00      | 1-1-3-3                                                                                                                                      | 4             | 7               |              |                                                       | Similar to above.<br>PP=1.0 ksf<br>55x110 mm vane<br>MV: Failed vane attempt; could not push |                                                                                                                                        |                                                                                                                                         |                                                                                                                   |                                                                                                                                |                                                           |
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| 50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                       |                                                                                              |                                                                                                                                        |                                                                                                                                         |                                                                                                                   |                                                                                                                                |                                                           |
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| <b>Remarks:</b><br><br>Autohammer SN 362; Calibrated 10-11-2024.<br>bgs = below ground surface                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                       |                                                                                              |                                                                                                                                        |                                                                                                                                         |                                                                                                                   |                                                                                                                                |                                                           |
| Stratification lines represent approximate boundaries between soil types; transitions may be gradual.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                       |                                                                                              |                                                                                                                                        | Page 2 of 3                                                                                                                             |                                                                                                                   |                                                                                                                                |                                                           |
| * Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                       |                                                                                              |                                                                                                                                        | Boring No.: BB-AKR-204                                                                                                                  |                                                                                                                   |                                                                                                                                |                                                           |

| <div>Maine Department of Transportation</div> <div>Soil/Rock Exploration Log</div> <div>US CUSTOMARY UNITS</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |                    | <div>Project: Lot Norton Bridge #3754 carries East Side Road over Knowles River</div> <div>Location: Addison, ME</div>                |               |                 |              | <div>Boring No.: BB-AKR-204</div> <div>WIN: 27160.00</div> |             |                                                                          |                                                       |             |                    |  |  |  |  |  |  |  |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |                 |    |     |       |               |               |    |  |  |       |  |                                                     |  |  |  |  |  |  |  |  |       |                                                     |  |  |  |  |  |  |  |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |     |       |               |             |    |    |  |       |  |                                                                          |  |  |  |  |  |  |  |  |  |  |                                                          |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  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-|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Driller: Seaboard Drilling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |                    | Elevation (ft.): 8.22                                                                                                                 |               |                 |              | Auger ID/OD: 5" Solid-Stem                                 |             |                                                                          |                                                       |             |                    |  |  |  |  |  |  |  |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |                 |    |     |       |               |               |    |  |  |       |  |                                                     |  |  |  |  |  |  |  |  |       |                                                     |  |  |  |  |  |  |  |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |     |       |               |             |    |    |  |       |  |                                                                          |  |  |  |  |  |  |  |  |  |  |                                                          |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  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| Operator: R. Hackett                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |                 |                    | Datum: NAVD88                                                                                                                         |               |                 |              | Sampler: Standard Split-Spoon                              |             |                                                                          |                                                       |             |                    |  |  |  |  |  |  |  |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |                 |    |     |       |               |               |    |  |  |       |  |                                                     |  |  |  |  |  |  |  |  |       |                                                     |  |  |  |  |  |  |  |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |     |       |               |             |    |    |  |       |  |                                                                          |  |  |  |  |  |  |  |  |  |  |                                                          |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  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| Logged By: E. Dennis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |                 |                    | Rig Type: Track-mounted Diedrich D-50                                                                                                 |               |                 |              | Hammer Wt./Fall: 140 lb / 30"                              |             |                                                                          |                                                       |             |                    |  |  |  |  |  |  |  |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |                 |    |     |       |               |               |    |  |  |       |  |                                                     |  |  |  |  |  |  |  |  |       |                                                     |  |  |  |  |  |  |  |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |     |       |               |             |    |    |  |       |  |                                                                          |  |  |  |  |  |  |  |  |  |  |                                                          |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 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| Date Start/Finish: 09-17-2025                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                 |                    | Drilling Method: Cased Wash Boring                                                                                                    |               |                 |              | Core Barrel: N/A                                           |             |                                                                          |                                                       |             |                    |  |  |  |  |  |  |  |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |                 |    |     |       |               |               |    |  |  |       |  |                                                     |  |  |  |  |  |  |  |  |       |                                                     |  |  |  |  |  |  |  |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |     |       |               |             |    |    |  |       |  |                                                                          |  |  |  |  |  |  |  |  |  |  |                                                          |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  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| Boring Location: 12+70.9, 6.4 ft Lt.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |                 |                    | Casing ID/OD: HW 4" / 4.5"                                                                                                            |               |                 |              | Water Level*: Tidally influenced                           |             |                                                                          |                                                       |             |                    |  |  |  |  |  |  |  |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |                 |    |     |       |               |               |    |  |  |       |  |                                                     |  |  |  |  |  |  |  |  |       |                                                     |  |  |  |  |  |  |  |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |     |       |               |             |    |    |  |       |  |                                                                          |  |  |  |  |  |  |  |  |  |  |                                                          |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  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| Hammer Efficiency Factor: 0.985                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                 |                    | Hammer Type: Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/> |               |                 |              |                                                            |             |                                                                          |                                                       |             |                    |  |  |  |  |  |  |  |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |                 |    |     |       |               |               |    |  |  |       |  |                                                     |  |  |  |  |  |  |  |  |       |                                                     |  |  |  |  |  |  |  |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |     |       |               |             |    |    |  |       |  |                                                                          |  |  |  |  |  |  |  |  |  |  |                                                          |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  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| <div>Definitions:</div> <div>D = Split Spoon Sample</div> <div>MD = Unsuccessful Split Spoon Sample Attempt</div> <div>U = Thin Wall Tube Sample</div> <div>MU = Unsuccessful Thin Wall Tube Sample Attempt</div> <div>V = Field Vane Shear Test, PP = Pocket Penetrometer</div> <div>MV = Unsuccessful Field Vane Shear Test Attempt</div> <div>R = Rock Core Sample</div> <div>SSA = Solid Stem Auger</div> <div>HSA = Hollow Stem Auger</div> <div>RC = Roller Cone</div> <div>WOH = Weight of 140 lb. Hammer</div> <div>WOR/C = Weight of Rods or Casing</div> <div>WO1P = Weight of One Person</div> <div>S<sub>u</sub> = Peak/Remolded Field Vane Undrained Shear Strength (psf)</div> <div>S<sub>u</sub>(lab) = Lab Vane Undrained Shear Strength (psf)</div> <div>q<sub>p</sub> = Unconfined Compressive Strength (ksf)</div> <div>N-uncorrected = Raw Field SPT N-value</div> <div>Hammer Efficiency Factor = Rig Specific Annual Calibration Value</div> <div>N<sub>60</sub> = SPT N-uncorrected Corrected for Hammer Efficiency</div> <div>N<sub>60</sub> = (Hammer Efficiency Factor/60%)*N-uncorrected</div> <div>T<sub>v</sub> = Pocket Torvane Shear Strength (psf)</div> <div>WC = Water Content, percent</div> <div>LL = Liquid Limit</div> <div>PL = Plastic Limit</div> <div>PI = Plasticity Index</div> <div>G = Grain Size Analysis</div> <div>C = Consolidation Test</div>                                                                                                                                                   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| <table><tr><th rowspan="2">Depth (ft.)</th><th colspan="8">Sample Information</th><th rowspan="2">Graphic Log</th><th rowspan="2">Visual Description and Remarks</th><th rowspan="2">Laboratory Testing Results/ AASHTO and Unified Class.</th></tr><tr><th>Sample No.</th><th>Pen./Rec. (in.)</th><th>Sample Depth (ft.)</th><th>Blows (6 in.) Shear Strength (psf) or RQD (%)</th><th>N-uncorrected</th><th>N<sub>60</sub></th><th>Casing Blows</th><th>Elevation (ft.)</th></tr><tr><td rowspan="2">50</td><td>11D</td><td>24/24</td><td>50.00 - 52.00</td><td>WOR-WOH/12"-4</td><td>--</td><td></td><td></td><td>-42.6</td><td rowspan="5"></td><td>Grey, wet, medium stiff, Silty CLAY, (Marine Clay).</td><td rowspan="5"></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-50.8</td><td>Gray, wet, medium dense, Silty SAND, (Marine Sand).</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-44.3</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td rowspan="2">55</td><td>12D</td><td>24/18</td><td>55.00 - 57.00</td><td>15-23-24-21</td><td>47</td><td>77</td><td></td><td>-48.8</td><td></td><td>Grey-brown, wet, very dense, Gravelly SAND, little silt, (Glacial Till).</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Bottom of Exploration at 57.0 feet below ground surface.</td><td></td></tr><tr><td rowspan="5">60</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td rowspan="5">65</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td rowspan="5">70</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td rowspan="3">75</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> |                    |                 |                    |                                                                                                                                       |               |                 |              |                                                            |             |                                                                          |                                                       | Depth (ft.) | Sample Information |  |  |  |  |  |  |  | Graphic Log | Visual Description and Remarks | Laboratory Testing Results/ AASHTO and Unified Class. | Sample No. | Pen./Rec. (in.) | Sample Depth (ft.) | Blows (6 in.) Shear Strength (psf) or RQD (%) | N-uncorrected | N <sub>60</sub> | Casing Blows | Elevation (ft.) | 50 | 11D | 24/24 | 50.00 - 52.00 | WOR-WOH/12"-4 | -- |  |  | -42.6 |  | Grey, wet, medium stiff, Silty CLAY, (Marine Clay). |  |  |  |  |  |  |  |  | -50.8 | Gray, wet, medium dense, Silty SAND, (Marine Sand). |  |  |  |  |  |  |  |  | -44.3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 55 | 12D | 24/18 | 55.00 - 57.00 | 15-23-24-21 | 47 | 77 |  | -48.8 |  | Grey-brown, wet, very dense, Gravelly SAND, little silt, (Glacial Till). |  |  |  |  |  |  |  |  |  |  | Bottom of Exploration at 57.0 feet below ground surface. |  | 60 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 65 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 70 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 75 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Depth (ft.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            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        | Laboratory Testing Results/ AASHTO and Unified Class. |             |                    |  |  |  |  |  |  |  |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |                 |    |     |       |               |               |    |  |  |       |  |                                                     |  |  |  |  |  |  |  |  |       |                                                     |  |  |  |  |  |  |  |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |     |       |               |             |    |    |  |       |  |                                                                          |  |  |  |  |  |  |  |  |  |  |                                                          |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  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Shear Strength (psf) or RQD (%)                                                                                         | N-uncorrected | N <sub>60</sub> | Casing Blows | Elevation (ft.)                                            |             |                                                                          |                                                       |             |                    |  |  |  |  |  |  |  |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |                 |    |     |       |               |               |    |  |  |       |  |                                                     |  |  |  |  |  |  |  |  |       |                                                     |  |  |  |  |  |  |  |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |     |       |               |             |    |    |  |       |  |                                                                          |  |  |  |  |  |  |  |  |  |  |                                                          |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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52.00      | WOR-WOH/12"-4                                                                                                                         | --            |                 |              | -42.6                                                      |             | Grey, wet, medium stiff, Silty CLAY, (Marine Clay).                      |                                                       |             |                    |  |  |  |  |  |  |  |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |                 |    |     |       |               |               |    |  |  |       |  |                                                     |  |  |  |  |  |  |  |  |       |                                                     |  |  |  |  |  |  |  |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |     |       |               |             |    |    |  |       |  |                                                                          |  |  |  |  |  |  |  |  |  |  |                                                          |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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        |                                                       |             |                    |  |  |  |  |  |  |  |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |                 |    |     |       |               |               |    |  |  |       |  |                                                     |  |  |  |  |  |  |  |  |       |                                                     |  |  |  |  |  |  |  |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |     |       |               |             |    |    |  |       |  |                                                                          |  |  |  |  |  |  |  |  |  |  |                                                          |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  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| <div>Remarks:</div> <div>Autohammer SN 362; Calibrated 10-11-2024.</div> <div>bgs = below ground surface</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         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| Stratification lines represent approximate boundaries between soil types; transitions may be gradual.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  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| * Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        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|                    |  |  |  |  |  |  |  |             |                                |                                                       |            |                 |                    |                                               |               |                 |              |                 |    |     |       |               |               |    |  |  |       |  |                                                     |  |  |  |  |  |  |  |  |       |                                                     |  |  |  |  |  |  |  |  |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |     |       |               |             |    |    |  |       |  |                                                                          |  |  |  |  |  |  |  |  |  |  |                                                          |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  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| <div>Maine Department of Transportation</div> <div>Soil/Rock Exploration Log</div> <div>US CUSTOMARY UNITS</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |                 |                    | <div>Project: Lot Norton Bridge #3754 carries East Side Road over Knowles River</div> <div>Location: Addison, ME</div>                |               |                 |              | <div>Boring No.: BB-AKR-205</div> <div>WIN: 27160.00</div> |                                                                                                   |                                                                                |                                                            |                    |  |  |  |  |  |  |  |                 |             |                                |                                                       |             |            |                 |                    |                                               |               |                 |              |   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| Driller: Seaboard Drilling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |                 |                    | Elevation (ft.) 10.62                                                                                                                 |               |                 |              | Auger ID/OD: 5" Solid-Stem                                 |                                                                                                   |                                                                                |                                                            |                    |  |  |  |  |  |  |  |                 |             |                                |                                                       |             |            |                 |                    |                                               |               |                 |              |   |    |       |             |             |    |    |     |     |                                                                                    |                 |                                                            |  |  |  |  |  |  |  |  |  |                                                             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |       |             |          |    |    |    |     |                                                                                |  |  |  |  |  |  |  |  |  |                                                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |    |      |               |          |   |   |    |     |                                                                                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  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| Operator: R. Hackett                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |                 |                    | Datum: NAVD88                                                                                                                         |               |                 |              | Sampler: Standard Split-Spoon                              |                                                                                                   |                                                                                |                                                            |                    |  |  |  |  |  |  |  |                 |             |                                |                                                       |             |            |                 |                    |                                               |               |                 |              |   |    |       |  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| Logged By: E. Dennis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |                 |                    | Rig Type: Track-mounted Diedrich D-50                                                                                                 |               |                 |              | Hammer Wt./Fall: 140 lb / 30"                              |                                                                                                   |                                                                                |                                                            |                    |  |  |  |  |  |  |  |                 |             |                                |                                                       |             |            |                 |                    |                                               |               |                 |              |   |    |       |   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| Date Start/Finish: 09-16-2025                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |                 |                    | Drilling Method: Cased Wash Boring                                                                                                    |               |                 |              | Core Barrel: N/A                                           |                                                                                                   |                                                                                |                                                            |                    |  |  |  |  |  |  |  |                 |             |                                |                                                       |             |            |                 |                    |                                               |               |                 |              |   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| Boring Location: 13+98.4, 6.7 ft Lt.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |                 |                    | Casing ID/OD: HW 4" / 4.5"                                                                                                            |               |                 |              | Water Level*: Tidally influenced                           |                                                                                                   |                                                                                |                                                            |                    |  |  |  |  |  |  |  |                 |             |                                |                                                       |             |            |                 |                    |                                               |               |                 |              |   |    |       |             |             |    |    |     |     |                                                                                    |                 |                                                            |  |  |  |  |  |  |  |  |  |                                                             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |       |             |          |    |    |    |     |                                                                                |  |  |  |  |  |  |  |  |  |                                                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |    |      |               |          |   |   |    |     |                                                                                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  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| Hammer Efficiency Factor: 0.985                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |                 |                    | Hammer Type: Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/> |               |                 |              |                                                            |                                                                                                   |                                                                                |                                                            |                    |  |  |  |  |  |  |  |                 |             |                                |                                                       |             |            |                 |                    |                                               |               |                 |              |   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| <div>Definitions:</div> <div>D = Split Spoon Sample</div> <div>MD = Unsuccessful Split Spoon Sample Attempt</div> <div>U = Thin Wall Tube Sample</div> <div>MU = Unsuccessful Thin Wall Tube Sample Attempt</div> <div>V = Field Vane Shear Test, PP = Pocket Penetrometer</div> <div>MV = Unsuccessful Field Vane Shear Test Attempt</div> <div>R = Rock Core Sample</div> <div>SSA = Solid Stem Auger</div> <div>HSA = Hollow Stem Auger</div> <div>RC = Roller Cone</div> <div>WOH = Weight of 140lb. Hammer</div> <div>WOR/C = Weight of Rods or Casing</div> <div>WO1P = Weight of One Person</div> <div>S<sub>u</sub> = Peak/Remolded Field Vane Undrained Shear Strength (psf)</div> <div>S<sub>u</sub>(lab) = Lab Vane Undrained Shear Strength (psf)</div> <div>q<sub>0</sub> = Unconfined Compressive Strength (ksf)</div> <div>N-uncorrected = Raw Field SPT N-value</div> <div>Hammer Efficiency Factor = Rig Specific Annual Calibration Value</div> <div>N<sub>60</sub> = SPT N-uncorrected Corrected for Hammer Efficiency</div> <div>N<sub>60</sub> = (Hammer Efficiency Factor/60%)*N-uncorrected</div> <div>T<sub>v</sub> = Pocket Torvane Shear Strength (psf)</div> <div>WC = Water Content, percent</div> <div>LL = Liquid Limit</div> <div>PL = Plastic Limit</div> <div>PI = Plasticity Index</div> <div>G = Grain Size Analysis</div> <div>C = Consolidation Test</div>                                                                                                                                                   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| <table><tr><th colspan="8">Sample Information</th><th rowspan="2">Elevation (ft.)</th><th rowspan="2">Graphic Log</th><th rowspan="2">Visual Description and Remarks</th><th rowspan="2">Laboratory Testing Results/ AASHTO and Unified Class.</th></tr><tr><th>Depth (ft.)</th><th>Sample No.</th><th>Pen./Rec. (in.)</th><th>Sample Depth (ft.)</th><th>Blows (6 in.) Shear Strength (psf) or RQD (%)</th><th>N-uncorrected</th><th>N<sub>60</sub></th><th>Casing Blows</th></tr><tr><td>0</td><td>1D</td><td>24/14</td><td>0.80 - 2.80</td><td>11-11-11-12</td><td>22</td><td>36</td><td>SSA</td><td>9.9</td><td rowspan="10"></td><td>9" of Pavement.</td><td rowspan="10">ID 16705A<br/>A-4, CL<br/>WC=25.0%<br/>LL=25<br/>PL=17<br/>PI=8</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Brown, damp, dense, SAND, some gravel, little silt, (Fill).</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>5</td><td>2D</td><td>24/11</td><td>5.00 - 7.00</td><td>8-12-6-2</td><td>18</td><td>30</td><td>51</td><td>4.6</td><td>Brown, damp, medium dense, SAND, some gravel, little silt, with cobble (Fill).</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Brown, moist, stiff, Silty CLAY, (Marine Clay).</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>10</td><td>3D</td><td>24/1</td><td>10.00 - 12.00</td><td>28-2-3-6</td><td>5</td><td>8</td><td>77</td><td>0.6</td><td>Brown, wet, medium stiff, Silty CLAY, some gravel, with organics (wood fragments), (Marine Clay).</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>15</td><td>4D</td><td>24/10</td><td>15.00 - 17.00</td><td>3-3-5-5</td><td>8</td><td>13</td><td>52</td><td></td><td>Brown, wet, stiff, Silty CLAY, little sand, with organics (wood fragments), (Marine Clay).</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>20</td><td>5D</td><td>24/7</td><td>20.00 - 22.00</td><td>4-4-4-4</td><td>8</td><td>13</td><td>102</td><td></td><td>Similar to above.</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>25</td><td></td><td></td><td></td><td></td><td></td><td></td><td>67</td><td></td><td></td><td></td></tr></table> |            |                 |                    |                                                                                                                                       |               |                 |              |                                                            |                                                                                                   |                                                                                |                                                            | Sample Information |  |  |  |  |  |  |  | Elevation (ft.) | Graphic Log | Visual Description and Remarks | Laboratory Testing Results/ AASHTO and Unified Class. | Depth (ft.) | Sample No. | Pen./Rec. (in.) | Sample Depth (ft.) | Blows (6 in.) Shear Strength (psf) or RQD (%) | N-uncorrected | N <sub>60</sub> | Casing Blows | 0 | 1D | 24/14 | 0.80 - 2.80 | 11-11-11-12 | 22 | 36 | SSA | 9.9 |  | 9" of Pavement. | ID 16705A<br>A-4, CL<br>WC=25.0%<br>LL=25<br>PL=17<br>PI=8 |  |  |  |  |  |  |  |  |  | Brown, damp, dense, SAND, some gravel, little silt, (Fill). |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 5 | 2D | 24/11 | 5.00 - 7.00 | 8-12-6-2 | 18 | 30 | 51 | 4.6 | Brown, damp, medium dense, SAND, some gravel, little silt, with cobble (Fill). |  |  |  |  |  |  |  |  |  | Brown, moist, stiff, Silty CLAY, (Marine Clay). |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 10 | 3D | 24/1 | 10.00 - 12.00 | 28-2-3-6 | 5 | 8 | 77 | 0.6 | Brown, wet, medium stiff, Silty CLAY, some gravel, with organics (wood fragments), (Marine Clay). |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 15 | 4D | 24/10 | 15.00 - 17.00 | 3-3-5-5 | 8 | 13 | 52 |  | Brown, wet, stiff, Silty CLAY, little sand, with organics (wood fragments), (Marine Clay). |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 20 | 5D | 24/7 | 20.00 - 22.00 | 4-4-4-4 | 8 | 13 | 102 |  | Similar to above. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 25 |  |  |  |  |  |  | 67 |  |  |  |
| Sample Information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |                 |                    |                                                                                                                                       |               |                 |              | Elevation (ft.)                                            | Graphic Log                                                                                       | Visual Description and Remarks                                                 | Laboratory Testing Results/ AASHTO and Unified Class.      |                    |  |  |  |  |  |  |  |                 |             |                                |                                                       |             |            |                 |                    |                                               |               |                 |              |   |    |       |             |             |    |    |     |     |                                                                                    |                 |                                                            |  |  |  |  |  |  |  |  |  |                                                             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |       |             |          |    |    |    |     |                                                                                |  |  |  |  |  |  |  |  |  |                                                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |    |      |               |          |   |   |    |     |                                                                                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  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| Depth (ft.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Sample No. | Pen./Rec. (in.) | Sample Depth (ft.) | Blows (6 in.) 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| 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1D         | 24/14           | 0.80 - 2.80        | 11-11-11-12                                                                                                                           | 22            | 36              | SSA          | 9.9                                                        |                 | 9" of Pavement.                                                                | ID 16705A<br>A-4, CL<br>WC=25.0%<br>LL=25<br>PL=17<br>PI=8 |                    |  |  |  |  |  |  |  |                 |             |                                |                                                       |             |            |                 |                    |                                               |               |                 |              |   |    |       |             |             |    |    |     |     |                                                                                    |                 |                                                            |  |  |  |  |  |  |  |  |  |                                                             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |       |             |          |    |    |    |     |                                                                                |  |  |  |  |  |  |  |  |  |                                                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |    |      |               |          |   |   |    |     |                                                                                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |    |       |               |         |   |    |    |  |                                                                                            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |    |      |               |         |   |    |     |  |                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |    |  |  |  |
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|    |       |             |             |    |    |     |     |                                                                                    |                 |                                                            |  |  |  |  |  |  |  |  |  |                                                             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |       |             |          |    |    |    |     |                                                                                |  |  |  |  |  |  |  |  |  |                                                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |    |      |               |          |   |   |    |     |                                                                                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  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7.00        | 8-12-6-2                                                                                                                              | 18            | 30              | 51           | 4.6                                                        |                                                                                                   | Brown, damp, medium dense, SAND, some gravel, little silt, with cobble (Fill). |                                                            |                    |  |  |  |  |  |  |  |                 |             |                                |                                                       |             |            |                 |                    |                                               |               |                 |              |   |    |       |             |             |    |    |     |     |                                                                                    |                 |                                                            |  |  |  |  |  |  |  |  |  |                                                             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |       |             |          |    |    |    |     |                                                                                |  |  |  |  |  |  |  |  |  |                                                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |    |      |               |          |   |   |    |     |                                                                                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |    |       |               |         |   |    |    |  |                                                                                            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |    |      |               |         |   |    |     |  |                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |    |  |  |  |
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|    |       |             |             |    |    |     |     |                                                                                    |                 |                                                            |  |  |  |  |  |  |  |  |  |                                                             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |    |       |             |          |    |    |    |     |                                                                                |  |  |  |  |  |  |  |  |  |                                                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |    |      |               |          |   |   |    |     |                                                                                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  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| <div>Remarks:</div> <div>Autohammer SN 362; Calibrated 10-11-2024.</div> <div>bgs = below ground surface</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         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| Stratification lines represent approximate boundaries between soil types; transitions may be gradual.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  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| * Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        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|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------|--------------|-----------------------------------------------------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|--------------------------------------------------|--|--|
| <b>Maine Department of Transportation</b><br>Soil/Rock Exploration Log<br>US CUSTOMARY UNITS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                    |                 |                                | <b>Project:</b> Lot Norton Bridge #3754 carries East Side Road over Knowles River<br><b>Location:</b> Addison, ME                            |               |                 |              | <b>Boring No.:</b> BB-AKR-205<br><br><b>WIN:</b> 27160.00 |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                             |                                                  |  |  |
| <b>Driller:</b> Seaboard Drilling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |                 |                                | <b>Elevation (ft.):</b> 10.62                                                                                                                |               |                 |              | <b>Auger ID/OD:</b> 5" Solid-Stem                         |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                             |                                                  |  |  |
| <b>Operator:</b> R. Hackett                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                 |                                | <b>Datum:</b> NAVD88                                                                                                                         |               |                 |              | <b>Sampler:</b> Standard Split-Spoon                      |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                             |                                                  |  |  |
| <b>Logged By:</b> E. Dennis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                 |                                | <b>Rig Type:</b> Track-mounted Diedrich D-50                                                                                                 |               |                 |              | <b>Hammer Wt./Fall:</b> 140 lb / 30"                      |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                             |                                                  |  |  |
| <b>Date Start/Finish:</b> 09-16-2025                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                 |                                | <b>Drilling Method:</b> Cased Wash Boring                                                                                                    |               |                 |              | <b>Core Barrel:</b> N/A                                   |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                             |                                                  |  |  |
| <b>Boring Location:</b> 13+98.4, 6.7 ft Lt.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                 |                                | <b>Casing ID/OD:</b> HW 4" / 4.5"                                                                                                            |               |                 |              | <b>Water Level*:</b> Tidally influenced                   |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                             |                                                  |  |  |
| <b>Hammer Efficiency Factor:</b> 0.985                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |                 |                                | <b>Hammer Type:</b> Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/> |               |                 |              |                                                           |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                             |                                                  |  |  |
| Definitions:<br>D = Split Spoon Sample<br>MD = Unsuccessful Split Spoon Sample Attempt<br>U = Thin Wall Tube Sample<br>MU = Unsuccessful Thin Wall Tube Sample Attempt<br>V = Field Vane Shear Test, PP = Pocket Penetrometer<br>MV = Unsuccessful Field Vane Shear Test Attempt<br>R = Rock Core Sample<br>SSA = Solid Stem Auger<br>HSA = Hollow Stem Auger<br>RC = Roller Cone<br>WOH = Weight of 140 lb. Hammer<br>WOR/C = Weight of Rods or Casing<br>WO1P = Weight of One Person<br>S <sub>u</sub> = Peak/Remolded Field Vane Undrained Shear Strength (psf)<br>S <sub>u(lab)</sub> = Lab Vane Undrained Shear Strength (psf)<br>q <sub>p</sub> = Unconfined Compressive Strength (ksf)<br>N-uncorrected = Raw Field SPT N-value<br>Hammer Efficiency Factor = Rig Specific Annual Calibration Value<br>N <sub>60</sub> = SPT N-uncorrected Corrected for Hammer Efficiency<br>N <sub>60</sub> = (Hammer Efficiency Factor/60%)*N-uncorrected<br>T <sub>v</sub> = Pocket Torvane Shear Strength (psf)<br>WC = Water Content, percent<br>LL = Liquid Limit<br>PL = Plastic Limit<br>PI = Plasticity Index<br>G = Grain Size Analysis<br>C = Consolidation Test |                    |                 |                                |                                                                                                                                              |               |                 |              |                                                           |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                             |                                                  |  |  |
| Depth (ft.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Sample Information |                 |                                |                                                                                                                                              |               |                 |              |                                                           | Graphic Log | Visual Description and Remarks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Laboratory Testing Results/ AASHTO and Unified Class.       |                                                  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Sample No.         | Pen./Rec. (in.) | Sample Depth (ft.)             | Blows (6 in.) Shear Strength (psf) or RQD (%)                                                                                                | N-uncorrected | N <sub>60</sub> | Casing Blows | Elevation (ft.)                                           |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                             |                                                  |  |  |
| 25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | MV/6D              | 24/5            | 25.00 - 27.00                  | 1-1-2-1                                                                                                                                      | 3             | 5               |              |                                                           |             | Grey, wet, medium stiff, Silty CLAY with, organics (wood fragments, rootlets), (Marine Clay).<br>55x110 mm vane<br>MV: Failed vane attempt; could not push<br><br>Grey, wet, medium stiff, Silty CLAY, (Marine Clay).<br>55x110 mm vane<br>MV: Failed vane attempt; could not push<br><br>Grey streaked black, wet, medium stiff to stiff, Silty CLAY, (Marine Clay).<br>55x110 mm vane raw torque readings<br>V1: 24.6/4.6 ft=lbs<br>V2: 22.3/4.6 ft=lbs<br><br>Grey streaked black, wet, stiff, Silty CLAY, (Marine Clay).<br>55x110 mm vane raw torque readings<br>V3: 23.6/5.6 ft=lbs<br>V4: 24.4/6.0 ft=lbs<br><br>Similar to above.<br>55x110 mm vane raw torque readings<br>V5: 23.8/6.0 ft=lbs<br>V6: 24.4/6.0 ft=lbs | ID 16707A<br>A-6, CL<br>WC=32.5%<br>LL=39<br>PL=21<br>PI=18 |                                                  |  |  |
| 30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | MV/7D              | 24/3            | 30.00 - 32.00                  | 1-2-2-1                                                                                                                                      | 4             | 7               |              |                                                           |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                             |                                                  |  |  |
| 35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 8D<br>V1           | 24/24           | 35.00 - 37.00<br>35.64 - 36.00 | WOR/24"<br>Su=1,098/205 psf                                                                                                                  | --            |                 |              |                                                           |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                             |                                                  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | V2                 |                 | 36.64 - 37.00                  | Su=996/205 psf                                                                                                                               |               |                 |              |                                                           |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                             |                                                  |  |  |
| 40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 9D<br>V3           | 24/24           | 40.00 - 42.00<br>40.64 - 41.00 | WOR/18"-2<br>Su=1,054/250 psf                                                                                                                | --            |                 |              |                                                           |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                             |                                                  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | V4                 |                 | 41.64 - 42.00                  | Su=1,089/268 psf                                                                                                                             |               |                 |              |                                                           |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                             |                                                  |  |  |
| 45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 10D<br>V5          | 24/24           | 45.00 - 47.00<br>45.64 - 46.00 | WOR/18"-1<br>Su=1,062/268 psf                                                                                                                | --            |                 |              |                                                           |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                             |                                                  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | V6                 |                 | 46.64 - 47.00                  | Su=1,089/268 psf                                                                                                                             |               |                 |              |                                                           |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                             |                                                  |  |  |
| 50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                 |                                |                                                                                                                                              |               |                 |              |                                                           |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                             |                                                  |  |  |
| <b>Remarks:</b><br><br>Autohammer SN 362; Calibrated 10-11-2024.<br>bgs = below ground surface                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                 |                                |                                                                                                                                              |               |                 |              |                                                           |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                             |                                                  |  |  |
| Stratification lines represent approximate boundaries between soil types; transitions may be gradual.<br><br>* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                 |                                |                                                                                                                                              |               |                 |              |                                                           |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                             | Page 2 of 3<br><br><b>Boring No.:</b> BB-AKR-205 |  |  |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                       |             |                                                                                                                                  |                                                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------|--------------|-------------------------------------------------------|-------------|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|
| <b>Maine Department of Transportation</b><br>Soil/Rock Exploration Log<br>US CUSTOMARY UNITS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |                 |                    | <b>Project:</b> Lot Norton Bridge #3754 carries East Side Road over Knowles River<br><b>Location:</b> Addison, ME                            |               |                 |              | <b>Boring No.:</b> BB-AKR-205<br><b>WIN:</b> 27160.00 |             |                                                                                                                                  |                                                              |
| <b>Driller:</b> Seaboard Drilling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                    |                 |                    | <b>Elevation (ft.):</b> 10.62                                                                                                                |               |                 |              | <b>Auger ID/OD:</b> 5" Solid-Stem                     |             |                                                                                                                                  |                                                              |
| <b>Operator:</b> R. Hackett                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |                 |                    | <b>Datum:</b> NAVD88                                                                                                                         |               |                 |              | <b>Sampler:</b> Standard Split-Spoon                  |             |                                                                                                                                  |                                                              |
| <b>Logged By:</b> E. Dennis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |                 |                    | <b>Rig Type:</b> Track-mounted Diedrich D-50                                                                                                 |               |                 |              | <b>Hammer Wt./Fall:</b> 140 lb / 30"                  |             |                                                                                                                                  |                                                              |
| <b>Date Start/Finish:</b> 09-16-2025                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |                    | <b>Drilling Method:</b> Cased Wash Boring                                                                                                    |               |                 |              | <b>Core Barrel:</b> N/A                               |             |                                                                                                                                  |                                                              |
| <b>Boring Location:</b> 13+98.4, 6.7 ft Lt.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |                 |                    | <b>Casing ID/OD:</b> HW 4" / 4.5"                                                                                                            |               |                 |              | <b>Water Level*:</b> Tidally influenced               |             |                                                                                                                                  |                                                              |
| <b>Hammer Efficiency Factor:</b> 0.985                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |                 |                    | <b>Hammer Type:</b> Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/> |               |                 |              |                                                       |             |                                                                                                                                  |                                                              |
| <div>Definitions:<br/>D = Split Spoon Sample<br/>MD = Unsuccessful Split Spoon Sample Attempt<br/>U = Thin Wall Tube Sample<br/>MU = Unsuccessful Thin Wall Tube Sample Attempt<br/>V = Field Vane Shear Test, PP = Pocket Penetrometer<br/>MV = Unsuccessful Field Vane Shear Test Attempt</div> <div>R = Rock Core Sample<br/>SSA = Solid Stem Auger<br/>HSA = Hollow Stem Auger<br/>RC = Roller Cone<br/>WOH = Weight of 140 lb. Hammer<br/>WOR/C = Weight of Rods or Casing<br/>WO1P = Weight of One Person</div> <div>S<sub>u</sub> = Peak/Remolded Field Vane Undrained Shear Strength (psf)<br/>S<sub>u(lab)</sub> = Lab Vane Undrained Shear Strength (psf)<br/>q<sub>p</sub> = Unconfined Compressive Strength (ksf)<br/>N-uncorrected = Raw Field SPT N-value<br/>Hammer Efficiency Factor = Rig Specific Annual Calibration Value<br/>N<sub>60</sub> = SPT N-uncorrected Corrected for Hammer Efficiency<br/>N<sub>60</sub> = (Hammer Efficiency Factor/60%)*N-uncorrected</div> <div>T<sub>v</sub> = Pocket Torvane Shear Strength (psf)<br/>WC = Water Content, percent<br/>LL = Liquid Limit<br/>PL = Plastic Limit<br/>PI = Plasticity Index<br/>G = Grain Size Analysis<br/>C = Consolidation Test</div> |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                       |             |                                                                                                                                  |                                                              |
| Depth (ft.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Sample Information |                 |                    |                                                                                                                                              |               |                 |              |                                                       | Graphic Log | Visual Description and Remarks                                                                                                   | Laboratory Testing Results/ AASHTO and Unified Class.        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Sample No.         | Pen./Rec. (in.) | Sample Depth (ft.) | Blows (6 in.) Shear Strength (psf) or RQD (%)                                                                                                | N-uncorrected | N <sub>60</sub> | Casing Blows | Elevation (ft.)                                       |             |                                                                                                                                  |                                                              |
| 50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 11D                | 24/24           | 50.00 - 52.00      | WOR/24"                                                                                                                                      | --            |                 |              |                                                       |             | Grey, wet, stiff, Silty CLAY, (Marine Clay).<br>55x110 mm vane raw torque readings<br>V7: 22.5/6.3 ft=lbs<br>V8: 24.3/6.3 ft=lbs | ID 16708A<br>A-6, CLH<br>WC=30.6%<br>LL=37<br>PL=18<br>PI=19 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | V7                 |                 | 50.64 - 51.00      | Su=1,004/287 psf                                                                                                                             |               |                 |              |                                                       |             |                                                                                                                                  |                                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | V8                 |                 | 51.64 - 52.00      | Su=1,085/287 psf                                                                                                                             |               |                 |              |                                                       |             |                                                                                                                                  |                                                              |
| 55                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 12D                | 24/24           | 55.00 - 57.00      | WOR/24"                                                                                                                                      | --            |                 |              |                                                       |             | Similar to above.<br>55x110 mm vane raw torque readings<br>V9: 24.3/6.0 ft=lbs<br>V10: 31.3/6.4 ft=lbs                           |                                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | V9                 |                 | 55.64 - 56.00      | Su=1,085/268 psf                                                                                                                             |               |                 |              |                                                       |             |                                                                                                                                  |                                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | V10                |                 | 56.64 - 57.00      | Su=1,397/286 psf                                                                                                                             |               |                 |              |                                                       |             |                                                                                                                                  |                                                              |
| 60                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 13D                | 23/13           | 60.00 - 61.92      | 24-22-20-50                                                                                                                                  | 42            | 69              |              |                                                       |             | Grey, wet, very dense, Gravelly SAND, little silt, (Glacial Till).                                                               |                                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                       |             |                                                                                                                                  |                                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                       |             |                                                                                                                                  |                                                              |
| 65                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                       |             |                                                                                                                                  |                                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                       |             |                                                                                                                                  |                                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                       |             |                                                                                                                                  |                                                              |
| 70                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                       |             |                                                                                                                                  |                                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                       |             |                                                                                                                                  |                                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                       |             |                                                                                                                                  |                                                              |
| 75                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                       |             |                                                                                                                                  |                                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                       |             |                                                                                                                                  |                                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                       |             |                                                                                                                                  |                                                              |
| <b>Remarks:</b><br><br>Autohammer SN 362; Calibrated 10-11-2024.<br>bgs = below ground surface                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                       |             |                                                                                                                                  |                                                              |
| Stratification lines represent approximate boundaries between soil types; transitions may be gradual.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                       |             | Page 3 of 3                                                                                                                      |                                                              |
| * Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                    |                 |                    |                                                                                                                                              |               |                 |              |                                                       |             | Boring No.: BB-AKR-205                                                                                                           |                                                              |

## **APPENDIX D**

### **Rock Core Photos**

**MaineDOT**  
**Lot Norton Bridge #3754 carries East Side Road over Knowles River**  
**Addison, Maine**  
*Rock Core Photograph*

| Boring No. | Run | Depth (ft)  | Recovery (in) | Recovery (%) | RQD (in) | RQD (%) | Rock Type | Box Row |
|------------|-----|-------------|---------------|--------------|----------|---------|-----------|---------|
| BB-AKR-102 | R1  | 79.7 – 84.7 | 28            | 47%          | 0        | 0%      | SCHIST    | 1       |
| BB-ARK-102 | R2  | 84.7 – 89.7 | 30            | 50%          | 0        | 0%      | SCHIST    | 1       |
| BB-ARK-103 | R1  | 80.6 – 85.6 | 33            | 55%          | 4        | 7%      | SCHIST    | 2       |
| BB-ARK-103 | R2  | 85.6 – 90.6 | 58            | 97%          | 5.5      | 9%      | SCHIST    | 2/3     |



**Notes:** 1. "Box row" indicates the section of the box where the core run is contained: 1 = top, 4 = bottom.  
2. Transition between core runs within box row is marked by wood separators.

## **APPENDIX E**

### **Laboratory Test Results**

### Laboratory Testing Summary Sheet

| Boring No. | Sample No. | Station (feet) | Offset (feet) | Sample ID | Depth (feet) | Elev. (feet) | WC % | LL | PL | PI | OC % | Classification |       |
|------------|------------|----------------|---------------|-----------|--------------|--------------|------|----|----|----|------|----------------|-------|
|            |            |                |               |           |              |              |      |    |    |    |      | AASHTO         | USCS  |
| BB-AKR-101 | 2D         | 10+71          | 5.8 Lt.       | 15329A    | 5            | 4.5          | 97.9 |    |    |    | 15.1 | A-7-6          | CH    |
| BB-AKR-101 | 3D         | 10+71          | 5.8 Lt.       | 15330A    | 10           | -0.5         | 63.8 | 56 | 30 | 26 |      | A-7-5          | CH    |
| BB-AKR-101 | 9D         | 10+71          | 5.8 Lt.       | 15331A    | 40           | -30.5        | 13.6 |    |    |    |      | A-6            | CL    |
| BB-AKR-101 | 11D        | 10+71          | 5.8 Lt.       | 15332A    | 50           | -40.5        | 9.8  |    |    |    |      | A-4            | SM    |
| BB-AKR-101 | 12D        | 10+71          | 5.8 Lt.       | 15333A    | 55           | -45.5        | 8.0  |    |    |    |      | A-2-4          | GM    |
| BB-AKR-102 | 2D         | 10+11          | 5.5 Rt.       | 15334A    | 5            | 4.8          | 2.0  |    |    |    |      | A-3            | SW-SM |
| BB-AKR-102 | 4D         | 10+11          | 5.5 Rt.       | 15335A    | 15           | -5.2         | 42.1 |    |    |    |      | A-7-5          | CH    |
| BB-AKR-102 | 6D         | 10+11          | 5.5 Rt.       | 15336A    | 25           | -15.2        | 30.3 | 40 | 23 | 17 |      | A-6            | CL    |
| BB-AKR-102 | 9D         | 10+11          | 5.5 Rt.       | 15338A    | 40           | -30.2        | 25.1 | 40 | 22 | 18 |      | A-7-6          | CL    |
| BB-AKR-102 | 12D        | 10+11          | 5.5 Rt.       | 15339A    | 55           | -45.2        | 9.0  |    |    |    |      | A-4            | SM    |
| BB-AKR-102 | 15D        | 10+11          | 5.5 Rt.       | 15340A    | 75           | -65.2        | 6.8  |    |    |    |      | A-3            | SM    |
| BB-AKR-103 | 4D(A)      | 9+89.7         | 6.1 Lt.       | 15341A    | 15           | -5.1         | 9.9  |    |    |    |      | A-3            | SW-SM |
| BB-AKR-103 | 5D         | 9+89.7         | 6.1 Lt.       | 15342A    | 20           | -10.1        | 43.0 | 44 | 26 | 18 |      | A-7-6          | CL    |
| BB-AKR-103 | 7D         | 9+89.7         | 6.1 Lt.       | 15343A    | 30           | -20.1        | 30.9 | 39 | 23 | 16 |      | A-6            | CL    |
| BB-AKR-103 | 9D         | 9+89.7         | 6.1 Lt.       | 15344A    | 40           | -30.1        | 24.9 | 36 | 22 | 14 |      | A-6            | CL    |
| BB-AKR-103 | 12D        | 9+89.7         | 6.1 Lt.       | 15345A    | 55           | -45.1        | 7.6  |    |    |    |      | A-2-4          | SM    |
| BB-AKR-104 | 3D         | 9+28.9         | 5.8 Rt.       | 15346A    | 10           | 0.15         | 59.5 | 54 | 26 | 28 | 6.9  | A-7-5          | CH    |
| BB-AKR-104 | 1U         | 9+28.9         | 5.8 Rt.       | 270801    | 25           | -14.85       | 33.4 | 37 | 23 | 14 |      | A-6            | CL    |
| BB-AKR-104 | 2U         | 9+28.9         | 5.8 Rt.       | 270802    | 35           | -24.85       | 30.0 | 35 | 21 | 14 |      | A-6            | CL    |
| BB-AKR-104 | 9D         | 9+28.9         | 5.8 Rt.       | 15347A    | 50           | -39.85       | 27.2 |    |    |    |      | A-4            | SM    |
| BB-AKR-201 | 5D         | 7+97.5         | 4.5 Rt.       | 16700A    | 20           | -7.55        | 32.2 | 38 | 17 | 21 |      | A-6            | CL    |
| BB-AKR-201 | 9D         | 7+97.5         | 4.5 Rt.       | 16701A    | 35           | -22.55       | 27.2 | 26 | 18 | 8  |      | A-4            | CL    |
| BB-AKR-202 | 1U         | 8+66.3         | 5.2 Rt.       | 33477B    | 20           | -9.37        | 32.0 | 39 | 21 | 18 |      | A-6            | CL    |
| BB-AKR-202 | 7D         | 8+66.3         | 5.2 Rt.       | 16702A    | 30           | -19.37       | 26.0 | 40 | 16 | 24 |      | A-6            | CL    |
| BB-AKR-203 | 3D         | 11+46.6        | 6.4 Lt.       | 16703A    | 15           | -5.91        | 38.4 | 49 | 24 | 25 |      | A-7-6          | CL    |
| BB-AKR-203 | 7D         | 11+46.6        | 6.4 Lt.       | 16704A    | 35           | -25.91       | 33.3 | 37 | 18 | 19 |      | A-6            | CL    |
| BB-AKR-204 | 1U         | 12+70.9        | 6.4 Lt.       | 33478B    | 25           | -16.78       | 29.0 | 39 | 19 | 20 |      | A-6            | CL    |
| BB-AKR-204 | 2U         | 12+70.9        | 6.4 Lt.       | 33479B    | 30           | -21.78       | 34.3 | 43 | 21 | 22 |      | A-7-6          | CL    |
| BB-AKR-204 | 3U         | 12+70.9        | 6.4 Lt.       | 33480B    | 40           | -31.78       | 30.1 | 42 | 20 | 22 |      | A-7-6          | CL    |
| BB-AKR-205 | 4D         | 13+98.4        | 6.7 Lt.       | 16705A    | 15           | -4.38        | 25.0 | 25 | 17 | 8  |      | A-4            | CL    |
| BB-AKR-205 | 9D         | 13+98.4        | 6.7 Lt.       | 16707A    | 40           | -29.38       | 32.5 | 39 | 21 | 18 |      | A-6            | CL    |
| BB-AKR-205 | 11D        | 13+98.4        | 6.7 Lt.       | 16708A    | 50           | -39.38       | 30.6 | 37 | 18 | 19 |      | A-6            | CL    |

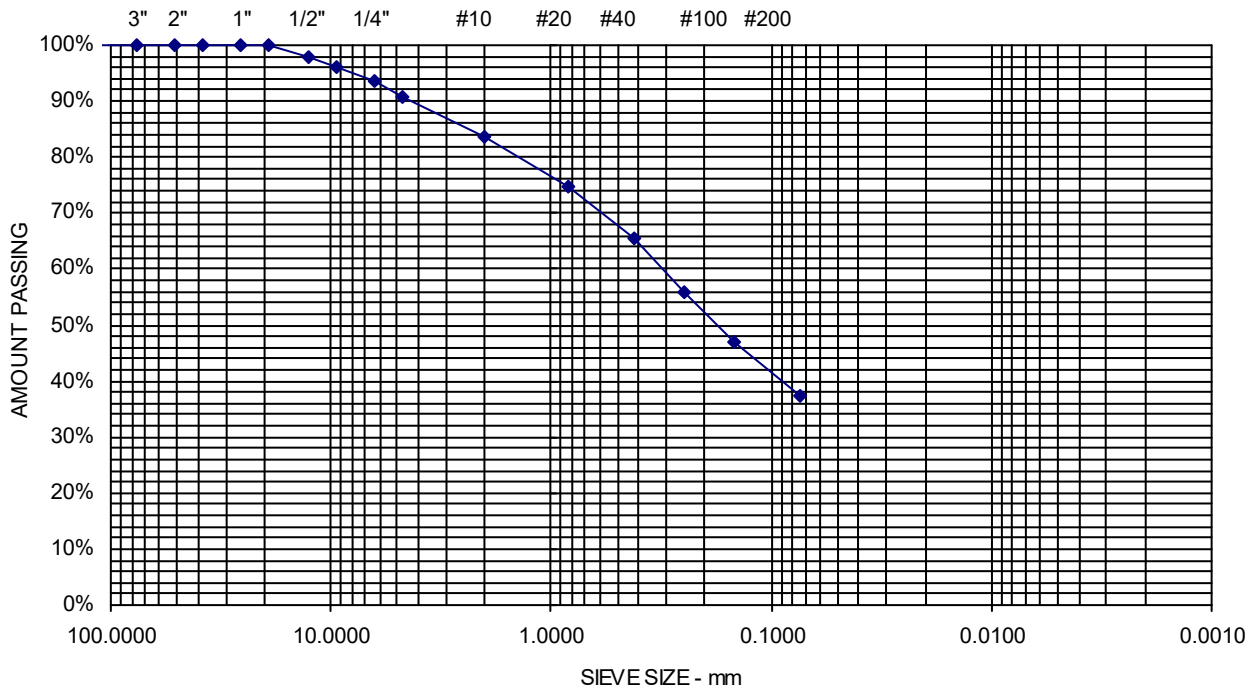
# Report of Gradation

ASTM C-117 & C-136

Project Name VARIOUS ME - STATEWIDE BRIDGE PROJECTS  
(20200623000000000765) - GEOTECHNICAL INVESTIGATIONS AND  
Client STATE OF MAINE DEPARTMENT OF TRANSPORTATION  
Exploration **BB-AKR-101**  
Material Source **11D, 50-52 FT**

Project Number 20-1403  
Lab ID 15332A  
Date Received 1/15/2024  
Date Completed 1/19/2024  
Tested By ALEXANDER PARENT

| <u>STANDARD<br/>DESIGNATION (mm/μm)</u> | <u>SIEVE SIZE</u> | <u>AMOUNT PASSING (%)</u> |             |
|-----------------------------------------|-------------------|---------------------------|-------------|
| 150 mm                                  | 6"                | 100                       |             |
| 100 mm                                  | 4"                | 100                       |             |
| 75 mm                                   | 3"                | 100                       |             |
| 50 mm                                   | 2"                | 100                       |             |
| 38.1 mm                                 | 1-1/2"            | 100                       |             |
| 25.0 mm                                 | 1"                | 100                       |             |
| 19.0 mm                                 | 3/4"              | 100                       |             |
| 12.5 mm                                 | 1/2"              | 98                        |             |
| 9.5 mm                                  | 3/8"              | 96                        |             |
| 6.3 mm                                  | 1/4"              | 94                        |             |
| 4.75 mm                                 | No. 4             | 91                        | 9.2% Gravel |
| 2.00 mm                                 | No. 10            | 84                        |             |
| 850 μm                                  | No. 20            | 75                        |             |
| 425 μm                                  | No. 40            | 65                        | 53.6% Sand  |
| 250 μm                                  | No. 60            | 56                        |             |
| 150 μm                                  | No. 100           | 47                        |             |
| 75 μm                                   | No. 200           | 37.3                      | 37.3% Fines |



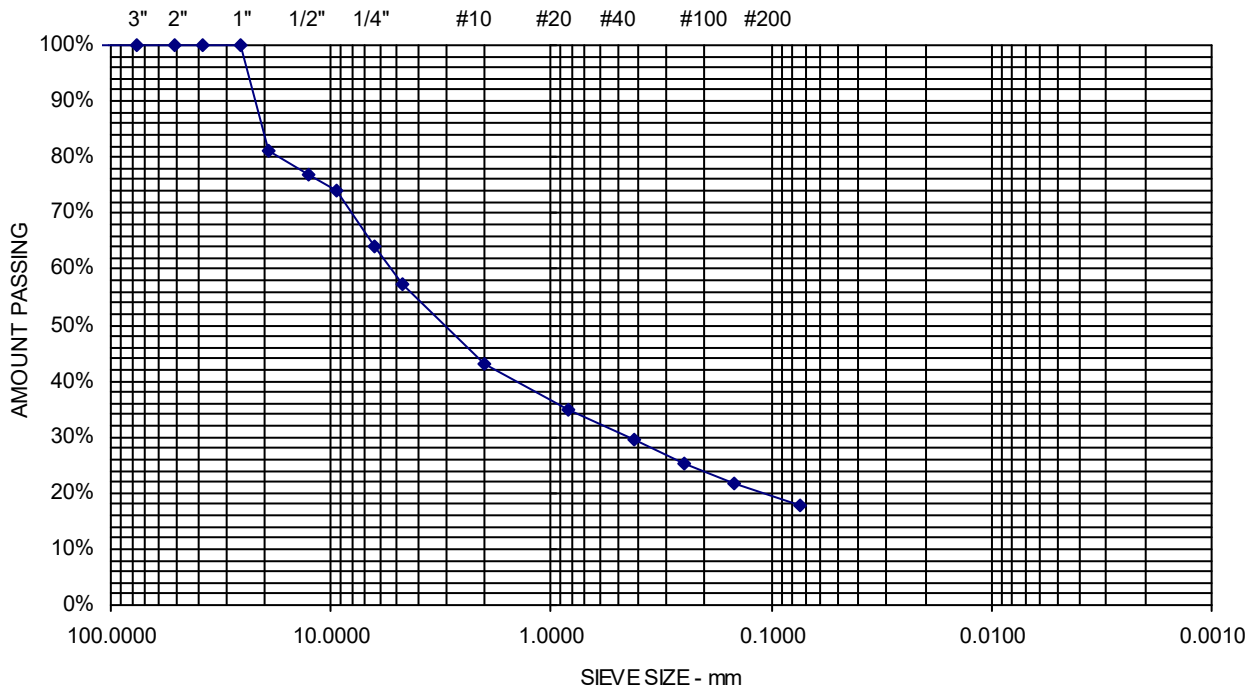
Comments: Moisture Content: 9.8%

**Sheet**

Project Name VARIOUS ME - STATEWIDE BRIDGE PROJECTS  
(20200623000000000765) - GEOTECHNICAL INVESTIGATIONS AND  
Client STATE OF MAINE DEPARTMENT OF TRANSPORTATION  
Exploration **BB-AKR-101**  
Material Source **12D, 55-57 FT**

Project Number 20-1403  
Lab ID 15333A  
Date Received 1/15/2024  
Date Completed 1/19/2024  
Tested By ALEXANDER PARENT

| <u>STANDARD<br/>DESIGNATION (mm/μm)</u> | <u>SIEVE SIZE</u> | <u>AMOUNT PASSING (%)</u> |              |
|-----------------------------------------|-------------------|---------------------------|--------------|
| 150 mm                                  | 6"                | 100                       |              |
| 100 mm                                  | 4"                | 100                       |              |
| 75 mm                                   | 3"                | 100                       |              |
| 50 mm                                   | 2"                | 100                       |              |
| 38.1 mm                                 | 1-1/2"            | 100                       |              |
| 25.0 mm                                 | 1"                | 100                       |              |
| 19.0 mm                                 | 3/4"              | 81                        |              |
| 12.5 mm                                 | 1/2"              | 77                        |              |
| 9.5 mm                                  | 3/8"              | 74                        |              |
| 6.3 mm                                  | 1/4"              | 64                        |              |
| 4.75 mm                                 | No. 4             | 57                        | 42.9% Gravel |
| 2.00 mm                                 | No. 10            | 43                        |              |
| 850 μm                                  | No. 20            | 35                        |              |
| 425 μm                                  | No. 40            | 29                        | 39.3% Sand   |
| 250 μm                                  | No. 60            | 25                        |              |
| 150 μm                                  | No. 100           | 22                        |              |
| 75 μm                                   | No. 200           | 17.8                      | 17.8% Fines  |



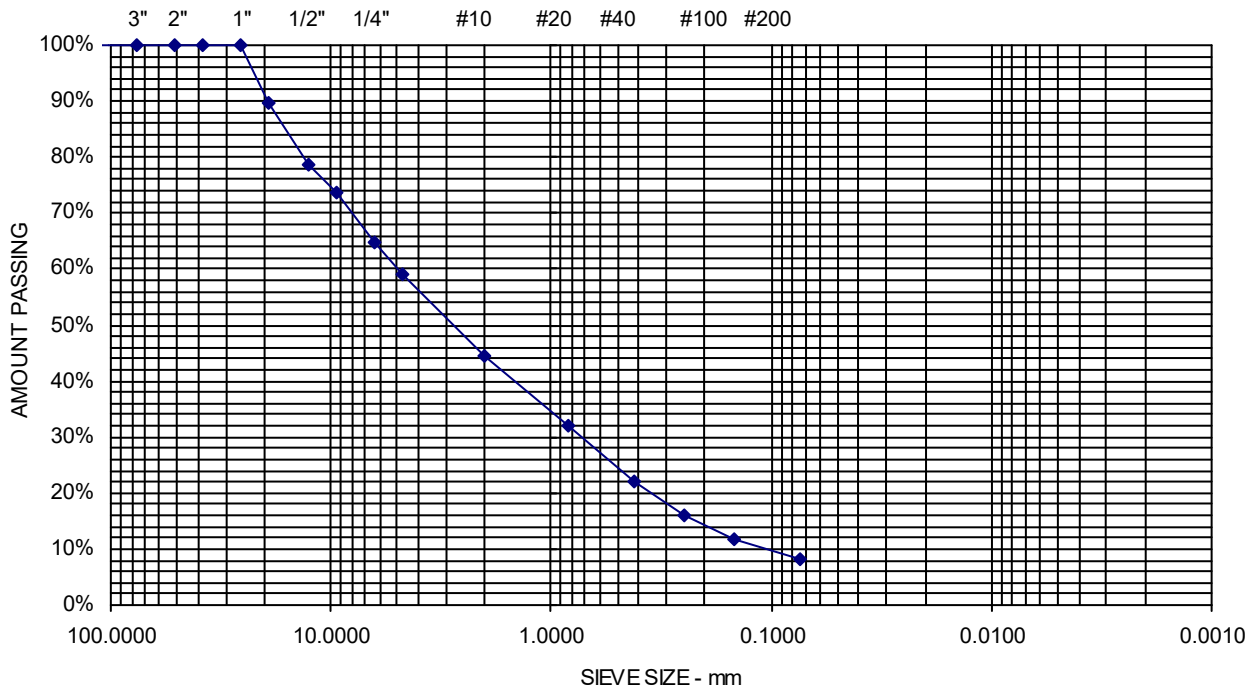
# Report of Gradation

ASTM C-117 & C-136

Project Name VARIOUS ME - STATEWIDE BRIDGE PROJECTS  
(20200623000000000765) - GEOTECHNICAL INVESTIGATIONS AND  
Client STATE OF MAINE DEPARTMENT OF TRANSPORTATION  
Exploration **BB-AKR-102**  
Material Source **2D, 5-7 FT**

Project Number 20-1403  
Lab ID 15334A  
Date Received 1/15/2024  
Date Completed 1/19/2024  
Tested By ALEXANDER PARENT

| <u>STANDARD<br/>DESIGNATION (mm/μm)</u> | <u>SIEVE SIZE</u> | <u>AMOUNT PASSING (%)</u> |            |
|-----------------------------------------|-------------------|---------------------------|------------|
| 150 mm                                  | 6"                | 100                       |            |
| 100 mm                                  | 4"                | 100                       |            |
| 75 mm                                   | 3"                | 100                       |            |
| 50 mm                                   | 2"                | 100                       |            |
| 38.1 mm                                 | 1-1/2"            | 100                       |            |
| 25.0 mm                                 | 1"                | 100                       |            |
| 19.0 mm                                 | 3/4"              | 90                        |            |
| 12.5 mm                                 | 1/2"              | 79                        |            |
| 9.5 mm                                  | 3/8"              | 74                        |            |
| 6.3 mm                                  | 1/4"              | 65                        |            |
| 4.75 mm                                 | No. 4             | 59                        | 41% Gravel |
| 2.00 mm                                 | No. 10            | 45                        |            |
| 850 μm                                  | No. 20            | 32                        |            |
| 425 μm                                  | No. 40            | 22                        | 50.7% Sand |
| 250 μm                                  | No. 60            | 16                        |            |
| 150 μm                                  | No. 100           | 12                        |            |
| 75 μm                                   | No. 200           | 8.3                       | 8.3% Fines |



Comments: Moisture Content: 2.0%

**Sheet**

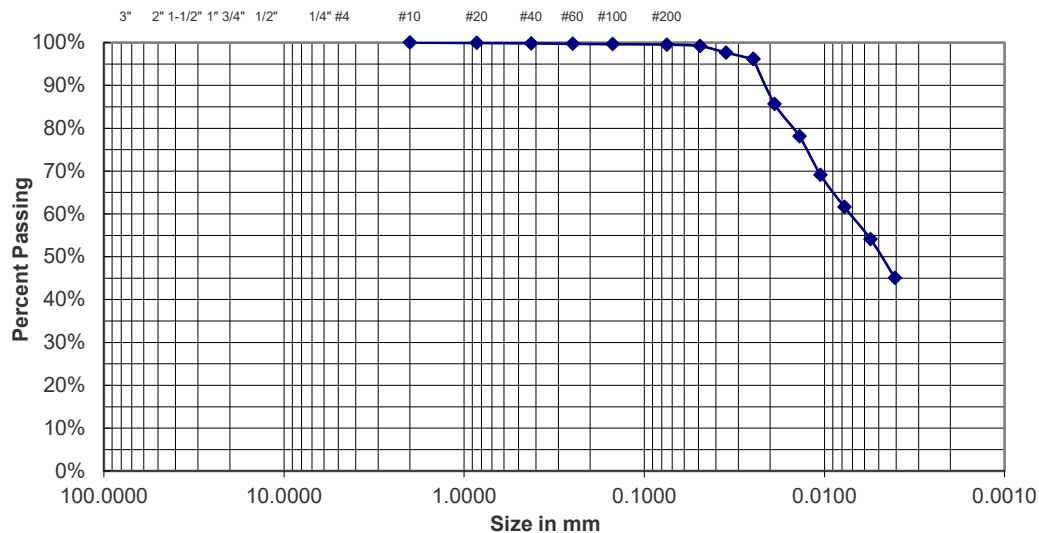
# Report of Hydrometer

ASTM D422-63 (07)

**Project Name:** Statewide Bridge Projects  
**Project Location:** Various, ME  
**Client:** State of Maine Department of Transportation  
**Material Description:** Exploration  
**Material Source:** BB-AKR-102, 4D, 15' to 17'

**Project Number:** 20-1403  
**Lab ID:** 15335A  
**Date Received:** 1/15/2024  
**Date Completed:** 2/8/2024  
**Tested By:** N. Davis

| Sieve Analysis |                           |                    | Hydrometer Analysis |                    |                    |
|----------------|---------------------------|--------------------|---------------------|--------------------|--------------------|
| Sieve Size     | Standard Designation (mm) | Amount Passing (%) | Specification       | Particle Size (mm) | Amount Passing (%) |
| 3"             | 76                        | 100                |                     | 0.04897            | 99.2               |
| 2"             | 50                        | 100                |                     | 0.03514            | 97.7               |
| 1½"            | 38.1                      | 100                |                     | 0.02484            | 96.2               |
| 1"             | 25                        | 100                |                     | 0.02484            | 96.2               |
| ¾"             | 19                        | 100                |                     | 0.01890            | 85.6               |
| ½"             | 12.5                      | 100                |                     | 0.01377            | 78.1               |
| ¼"             | 6.3                       | 100                |                     | 0.01051            | 69.1               |
| No. 4          | 4.75                      | 100                |                     | 0.00774            | 61.6               |
| No. 10         | 2                         | 100                |                     | 0.00554            | 54.1               |
| No. 20         | 0.85                      | 100                |                     | 0.00406            | 45.1               |
| No. 40         | 0.425                     | 100                |                     | 0.00291            | 40.6               |
| No. 60         | 0.25                      | 100                |                     | 0.00208            | 36.1               |
| No. 100        | 0.15                      | 100                |                     | 0.00124            | 30.1               |
| No. 200        | 0.075                     | 99.5               |                     |                    |                    |



**Particle Distribution:** Gravel (3" - No. 4) **0.0%** Fines (0.074 - 0.005) **49.9%**  
 Sand (No. 4 - No. 200) **0.5%** Clay (<0.005) **49.6%**

Comments:

Reviewed By

 26 Coles Crossing Drive, Sidney, ME 04330 • P: (207) 626.0600 • F: (207) 626.0700 • E: [infosidney@swcole.com](mailto:infosidney@swcole.com)

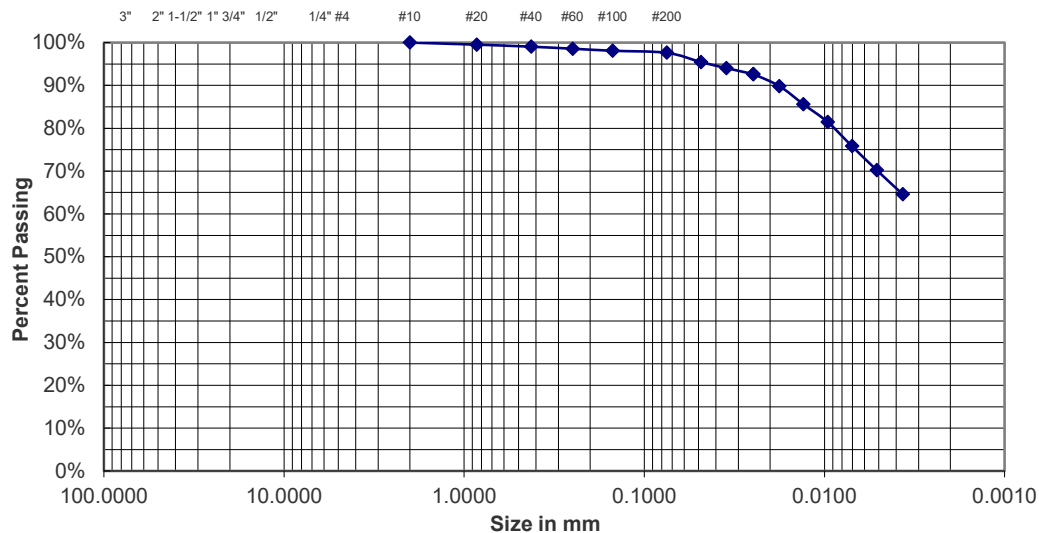
## Report of Hydrometer

ASTM D422-63 (07)

**Project Name:** Statewide Bridge Projects  
**Project Location:** Various, ME  
**Client:** State of Maine Department of Transportation  
**Material Description:** Exploration  
**Material Source:** BB-AKR-102, 6D, 25' to 27'

**Project Number:** 20-1403  
**Lab ID:** 15336A  
**Date Received:** 1/15/2024  
**Date Completed:** 2/8/2024  
**Tested By:** N. Davis

| Sieve Analysis |                           |                    | Hydrometer Analysis |                    |                    |
|----------------|---------------------------|--------------------|---------------------|--------------------|--------------------|
| Sieve Size     | Standard Designation (mm) | Amount Passing (%) | Specification       | Particle Size (mm) | Amount Passing (%) |
| 3"             | 76                        | 100                |                     | 0.04846            | 95.5               |
| 2"             | 50                        | 100                |                     | 0.03505            | 94.1               |
| 1½"            | 38.1                      | 100                |                     | 0.02478            | 92.6               |
| 1"             | 25                        | 100                |                     | 0.02478            | 92.6               |
| ¾"             | 19                        | 100                |                     | 0.01778            | 89.8               |
| ½"             | 12.5                      | 100                |                     | 0.01310            | 85.6               |
| ¼"             | 6.3                       | 100                |                     | 0.00958            | 81.4               |
| No. 4          | 4.75                      | 100                |                     | 0.00703            | 75.8               |
| No. 10         | 2                         | 100                |                     | 0.00511            | 70.2               |
| No. 20         | 0.85                      | 100                |                     | 0.00367            | 64.6               |
| No. 40         | 0.425                     | 99                 |                     | 0.00267            | 57.6               |
| No. 60         | 0.25                      | 99                 |                     | 0.00194            | 51.9               |
| No. 100        | 0.15                      | 98                 |                     | 0.00116            | 46.3               |
| No. 200        | 0.075                     | 97.6               |                     |                    |                    |



**Particle Distribution:** Gravel (3" - No. 4) **0.0%** Fines (0.074 - 0.005) **32.0%**  
 Sand (No. 4 - No. 200) **2.4%** Clay (<0.005) **65.6%**

Comments:

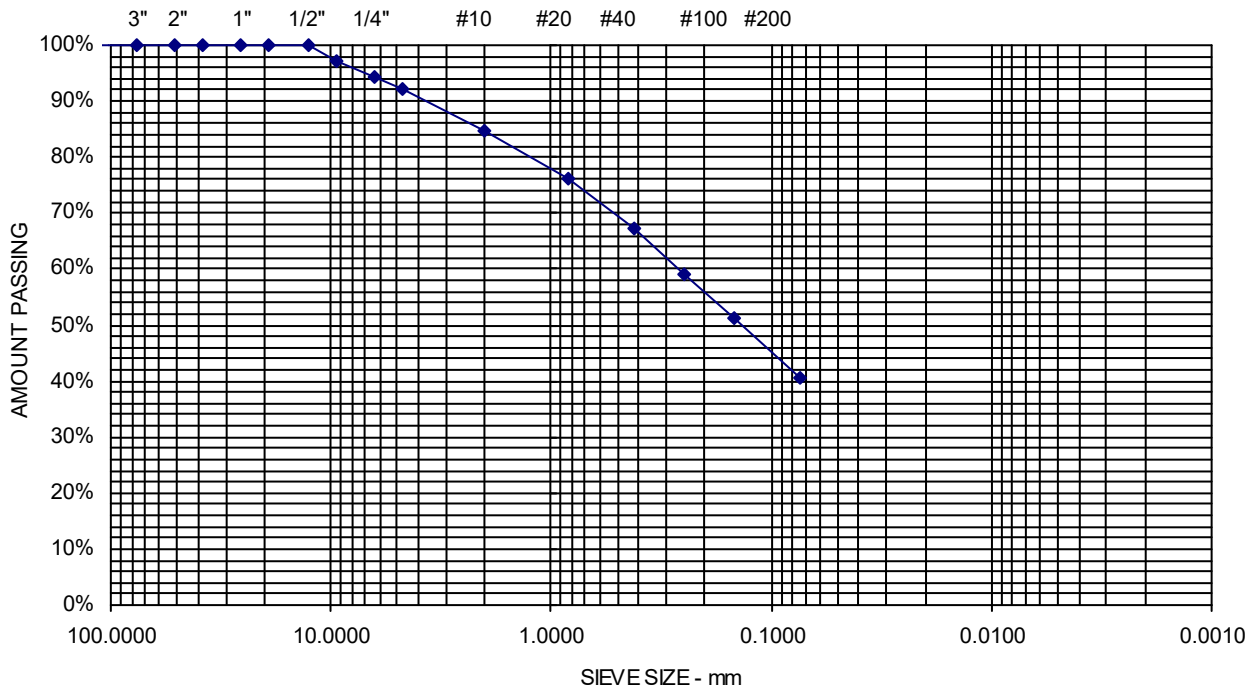
Reviewed By

 26 Coles Crossing Drive, Sidney, ME 04330 • P: (207) 626.0600 • F: (207) 626.0700 • E: [infosidney@swcole.com](mailto:infosidney@swcole.com)

Project Name VARIOUS ME - STATEWIDE BRIDGE PROJECTS  
(20200623000000000765) - GEOTECHNICAL INVESTIGATIONS AND  
Client STATE OF MAINE DEPARTMENT OF TRANSPORTATION  
Exploration **BB-AKR-102**  
Material Source **12D, 55-57 FT**

Project Number 20-1403  
Lab ID 15339A  
Date Received 1/15/2024  
Date Completed 1/23/2024  
Tested By NEIL DAVIS

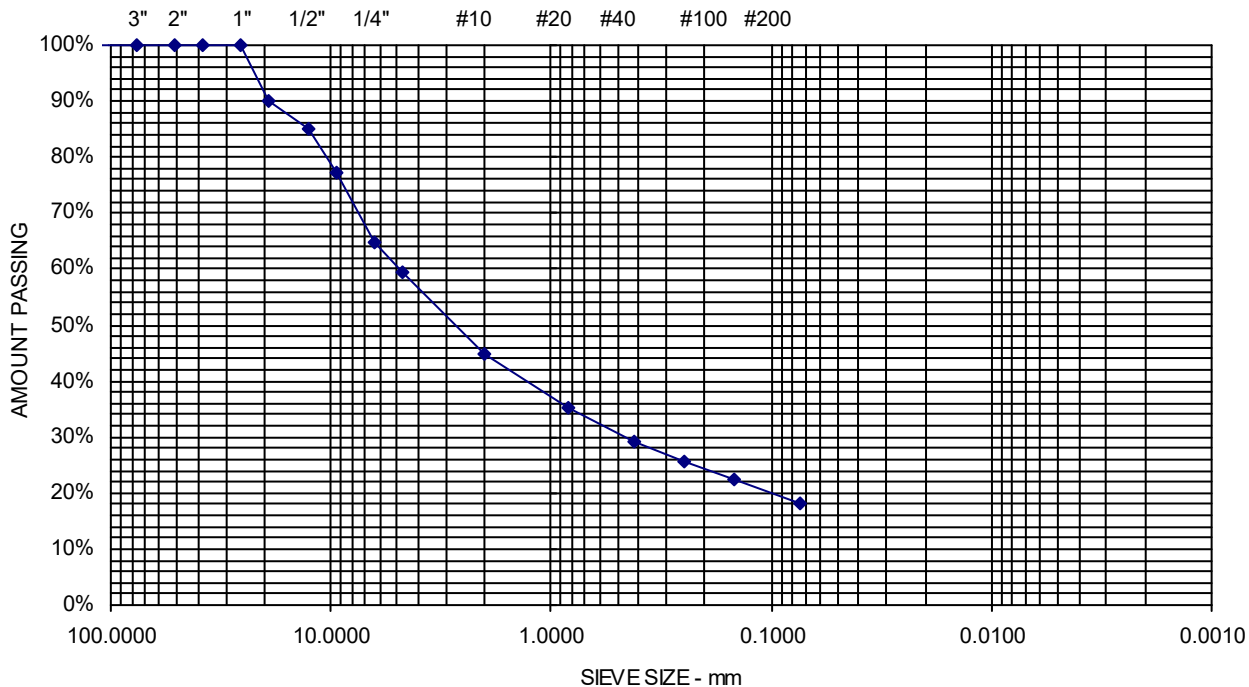
| <u>STANDARD<br/>DESIGNATION (mm/μm)</u> | <u>SIEVE SIZE</u> | <u>AMOUNT PASSING (%)</u> |             |
|-----------------------------------------|-------------------|---------------------------|-------------|
| 150 mm                                  | 6"                | 100                       |             |
| 100 mm                                  | 4"                | 100                       |             |
| 75 mm                                   | 3"                | 100                       |             |
| 50 mm                                   | 2"                | 100                       |             |
| 38.1 mm                                 | 1-1/2"            | 100                       |             |
| 25.0 mm                                 | 1"                | 100                       |             |
| 19.0 mm                                 | 3/4"              | 100                       |             |
| 12.5 mm                                 | 1/2"              | 100                       |             |
| 9.5 mm                                  | 3/8"              | 97                        |             |
| 6.3 mm                                  | 1/4"              | 94                        |             |
| 4.75 mm                                 | No. 4             | 92                        | 7.8% Gravel |
| 2.00 mm                                 | No. 10            | 85                        |             |
| 850 μm                                  | No. 20            | 76                        |             |
| 425 μm                                  | No. 40            | 67                        | 51.6% Sand  |
| 250 μm                                  | No. 60            | 59                        |             |
| 150 μm                                  | No. 100           | 51                        |             |
| 75 μm                                   | No. 200           | 40.6                      | 40.6% Fines |



Project Name VARIOUS ME - STATEWIDE BRIDGE PROJECTS  
(20200623000000000765) - GEOTECHNICAL INVESTIGATIONS AND  
Client STATE OF MAINE DEPARTMENT OF TRANSPORTATION  
Exploration **BB-AKR-102**  
Material Source **15D, 75-77 FT**

Project Number 20-1403  
Lab ID 15340A  
Date Received 1/15/2024  
Date Completed 1/19/2024  
Tested By ALEXANDER PARENT

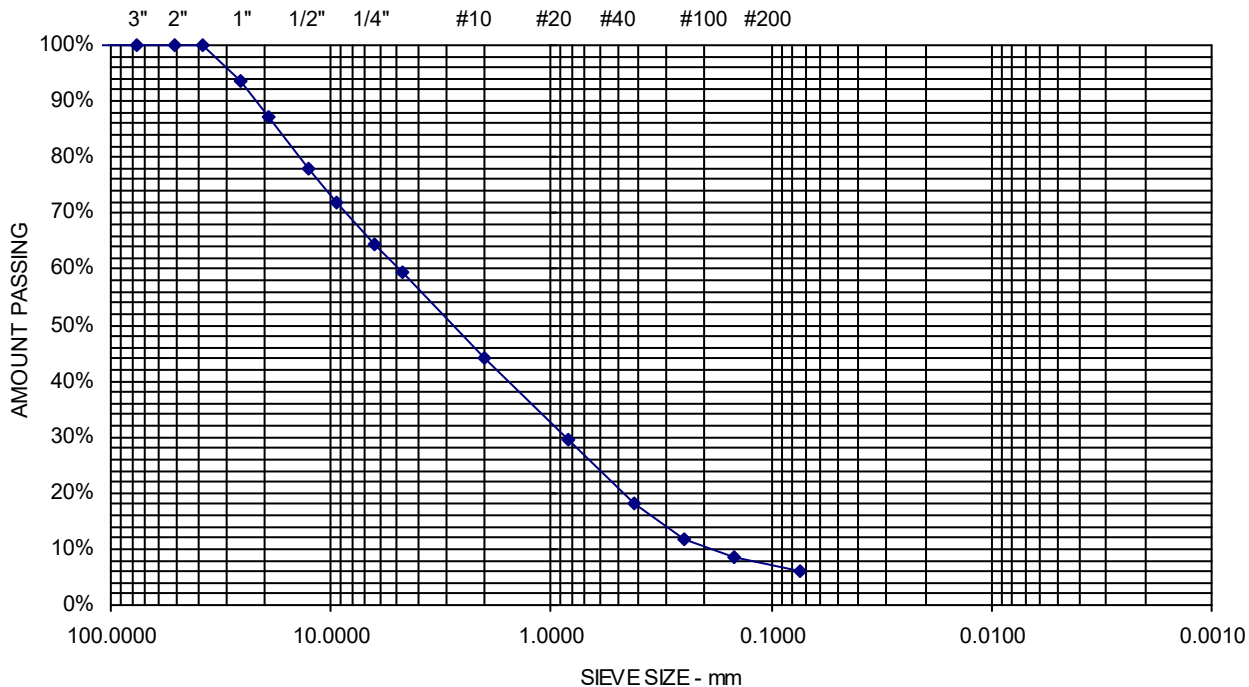
| <u>STANDARD<br/>DESIGNATION (mm/μm)</u> | <u>SIEVE SIZE</u> | <u>AMOUNT PASSING (%)</u> |              |
|-----------------------------------------|-------------------|---------------------------|--------------|
| 150 mm                                  | 6"                | 100                       |              |
| 100 mm                                  | 4"                | 100                       |              |
| 75 mm                                   | 3"                | 100                       |              |
| 50 mm                                   | 2"                | 100                       |              |
| 38.1 mm                                 | 1-1/2"            | 100                       |              |
| 25.0 mm                                 | 1"                | 100                       |              |
| 19.0 mm                                 | 3/4"              | 90                        |              |
| 12.5 mm                                 | 1/2"              | 85                        |              |
| 9.5 mm                                  | 3/8"              | 77                        |              |
| 6.3 mm                                  | 1/4"              | 65                        |              |
| 4.75 mm                                 | No. 4             | 59                        | 40.6% Gravel |
| 2.00 mm                                 | No. 10            | 45                        |              |
| 850 μm                                  | No. 20            | 35                        |              |
| 425 μm                                  | No. 40            | 29                        | 41.1% Sand   |
| 250 μm                                  | No. 60            | 26                        |              |
| 150 μm                                  | No. 100           | 23                        |              |
| 75 μm                                   | No. 200           | 18.2                      | 18.2% Fines  |



Project Name VARIOUS ME - STATEWIDE BRIDGE PROJECTS  
(20200623000000000765) - GEOTECHNICAL INVESTIGATIONS AND  
Client STATE OF MAINE DEPARTMENT OF TRANSPORTATION  
Exploration **BB-AKR-103**  
Material Source **2D, 5-7 FT**

Project Number 20-1403  
Lab ID 15341A  
Date Received 1/15/2024  
Date Completed 1/23/2024  
Tested By NEIL DAVIS

| <u>STANDARD<br/>DESIGNATION (mm/μm)</u> | <u>SIEVE SIZE</u> | <u>AMOUNT PASSING (%)</u> |              |
|-----------------------------------------|-------------------|---------------------------|--------------|
| 150 mm                                  | 6"                | 100                       |              |
| 100 mm                                  | 4"                | 100                       |              |
| 75 mm                                   | 3"                | 100                       |              |
| 50 mm                                   | 2"                | 100                       |              |
| 38.1 mm                                 | 1-1/2"            | 100                       |              |
| 25.0 mm                                 | 1"                | 93                        |              |
| 19.0 mm                                 | 3/4"              | 87                        |              |
| 12.5 mm                                 | 1/2"              | 78                        |              |
| 9.5 mm                                  | 3/8"              | 72                        |              |
| 6.3 mm                                  | 1/4"              | 64                        |              |
| 4.75 mm                                 | No. 4             | 59                        | 40.5% Gravel |
| 2.00 mm                                 | No. 10            | 44                        |              |
| 850 μm                                  | No. 20            | 30                        |              |
| 425 μm                                  | No. 40            | 18                        | 53.4% Sand   |
| 250 μm                                  | No. 60            | 12                        |              |
| 150 μm                                  | No. 100           | 8                         |              |
| 75 μm                                   | No. 200           | 6.1                       | 6.1% Fines   |



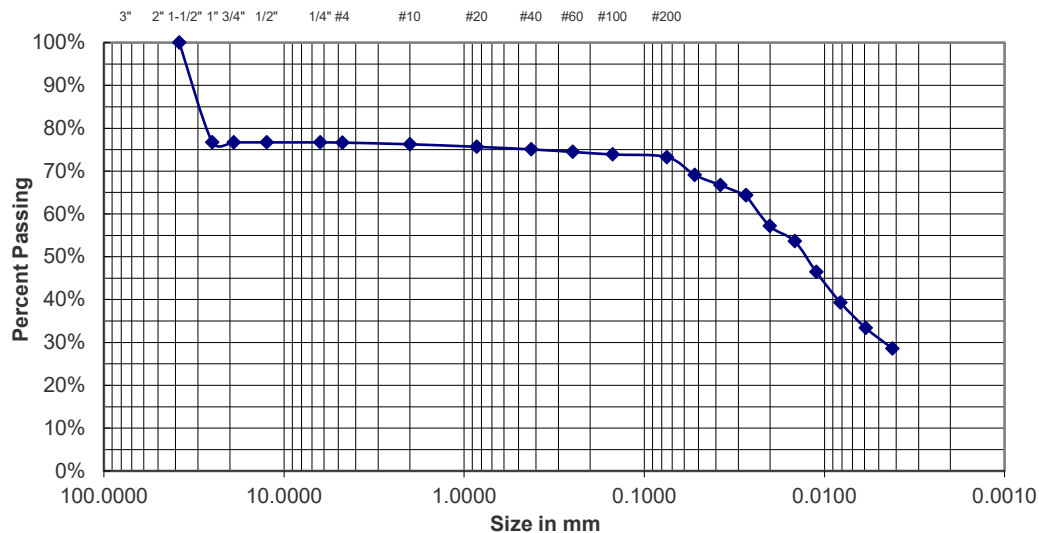
# Report of Hydrometer

ASTM D422-63 (07)

**Project Name:** Statewide Bridge Projects  
**Project Location:** Various, ME  
**Client:** State of Maine Department of Transportation  
**Material Description:** Exploration  
**Material Source:** BB-AKR-103, 5D, 20' to 22'

**Project Number:** 20-1403  
**Lab ID:** 15342A  
**Date Received:** 1/15/2024  
**Date Completed:** 2/8/2024  
**Tested By:** N. Davis

| Sieve Analysis |                           |                    | Hydrometer Analysis |                    |                    |
|----------------|---------------------------|--------------------|---------------------|--------------------|--------------------|
| Sieve Size     | Standard Designation (mm) | Amount Passing (%) | Specification       | Particle Size (mm) | Amount Passing (%) |
| 3"             | 76                        | 100                |                     | 0.05245            | 69.1               |
| 2"             | 50                        | 100                |                     | 0.03780            | 66.7               |
| 1½"            | 38.1                      | 100                |                     | 0.02722            | 64.3               |
| 1"             | 25                        | 77                 |                     | 0.02722            | 64.3               |
| ¾"             | 19                        | 77                 |                     | 0.02014            | 57.2               |
| ½"             | 12.5                      | 77                 |                     | 0.01462            | 53.6               |
| ¼"             | 6.3                       | 77                 |                     | 0.01111            | 46.5               |
| No. 4          | 4.75                      | 77                 |                     | 0.00815            | 39.3               |
| No. 10         | 2                         | 76                 |                     | 0.00589            | 33.4               |
| No. 20         | 0.85                      | 76                 |                     | 0.00420            | 28.6               |
| No. 40         | 0.425                     | 75                 |                     | 0.00301            | 25.0               |
| No. 60         | 0.25                      | 74                 |                     | 0.00214            | 21.4               |
| No. 100        | 0.15                      | 74                 |                     | 0.00128            | 17.9               |
| No. 200        | 0.075                     | 73.3               |                     |                    |                    |



**Particle Distribution:** Gravel (3" - No. 4) **23.4%** Fines (0.074 - 0.005) **42.2%**  
 Sand (No. 4 - No. 200) **3.4%** Clay (<0.005) **31.1%**

Comments:

Reviewed By

 26 Coles Crossing Drive, Sidney, ME 04330 • P: (207) 626.0600 • F: (207) 626.0700 • E: [infosidney@swcole.com](mailto:infosidney@swcole.com)

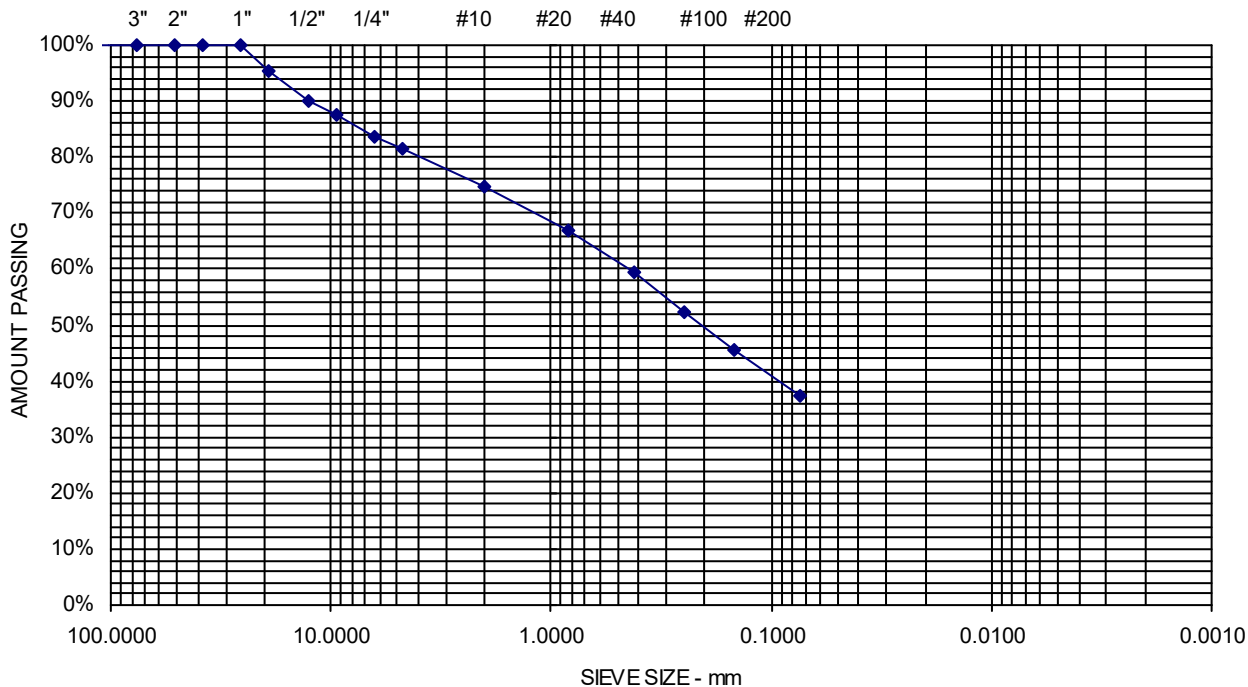
# Report of Gradation

ASTM C-117 & C-136

Project Name VARIOUS ME - STATEWIDE BRIDGE PROJECTS  
(20200623000000000765) - GEOTECHNICAL INVESTIGATIONS AND  
Client STATE OF MAINE DEPARTMENT OF TRANSPORTATION  
Exploration **BB-AKR-103**  
Material Source **12D, 55-57 FT**

Project Number 20-1403  
Lab ID 15345A  
Date Received 1/15/2024  
Date Completed 1/23/2024  
Tested By NEIL DAVIS

| <u>STANDARD<br/>DESIGNATION (mm/μm)</u> | <u>SIEVE SIZE</u> | <u>AMOUNT PASSING (%)</u> |              |
|-----------------------------------------|-------------------|---------------------------|--------------|
| 150 mm                                  | 6"                | 100                       |              |
| 100 mm                                  | 4"                | 100                       |              |
| 75 mm                                   | 3"                | 100                       |              |
| 50 mm                                   | 2"                | 100                       |              |
| 38.1 mm                                 | 1-1/2"            | 100                       |              |
| 25.0 mm                                 | 1"                | 100                       |              |
| 19.0 mm                                 | 3/4"              | 96                        |              |
| 12.5 mm                                 | 1/2"              | 90                        |              |
| 9.5 mm                                  | 3/8"              | 88                        |              |
| 6.3 mm                                  | 1/4"              | 84                        |              |
| 4.75 mm                                 | No. 4             | 81                        | 18.5% Gravel |
| 2.00 mm                                 | No. 10            | 75                        |              |
| 850 μm                                  | No. 20            | 67                        |              |
| 425 μm                                  | No. 40            | 59                        | 44% Sand     |
| 250 μm                                  | No. 60            | 52                        |              |
| 150 μm                                  | No. 100           | 45                        |              |
| 75 μm                                   | No. 200           | 37.5                      | 37.5% Fines  |



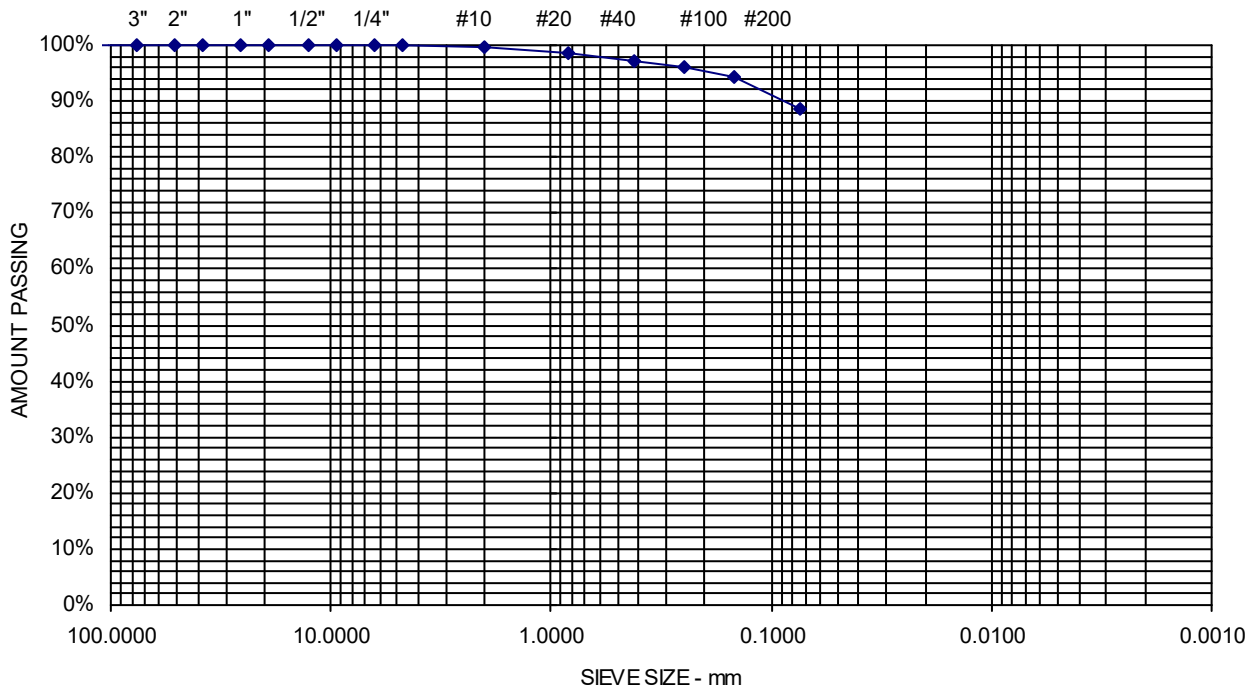
Comments: Moisture Content: 7.6%

**Sheet**

Project Name VARIOUS ME - STATEWIDE BRIDGE PROJECTS  
(20200623000000000765) - GEOTECHNICAL INVESTIGATIONS AND  
Client STATE OF MAINE DEPARTMENT OF TRANSPORTATION  
Exploration **BB-AKR-104**  
Material Source **9D, 50-52 FT**

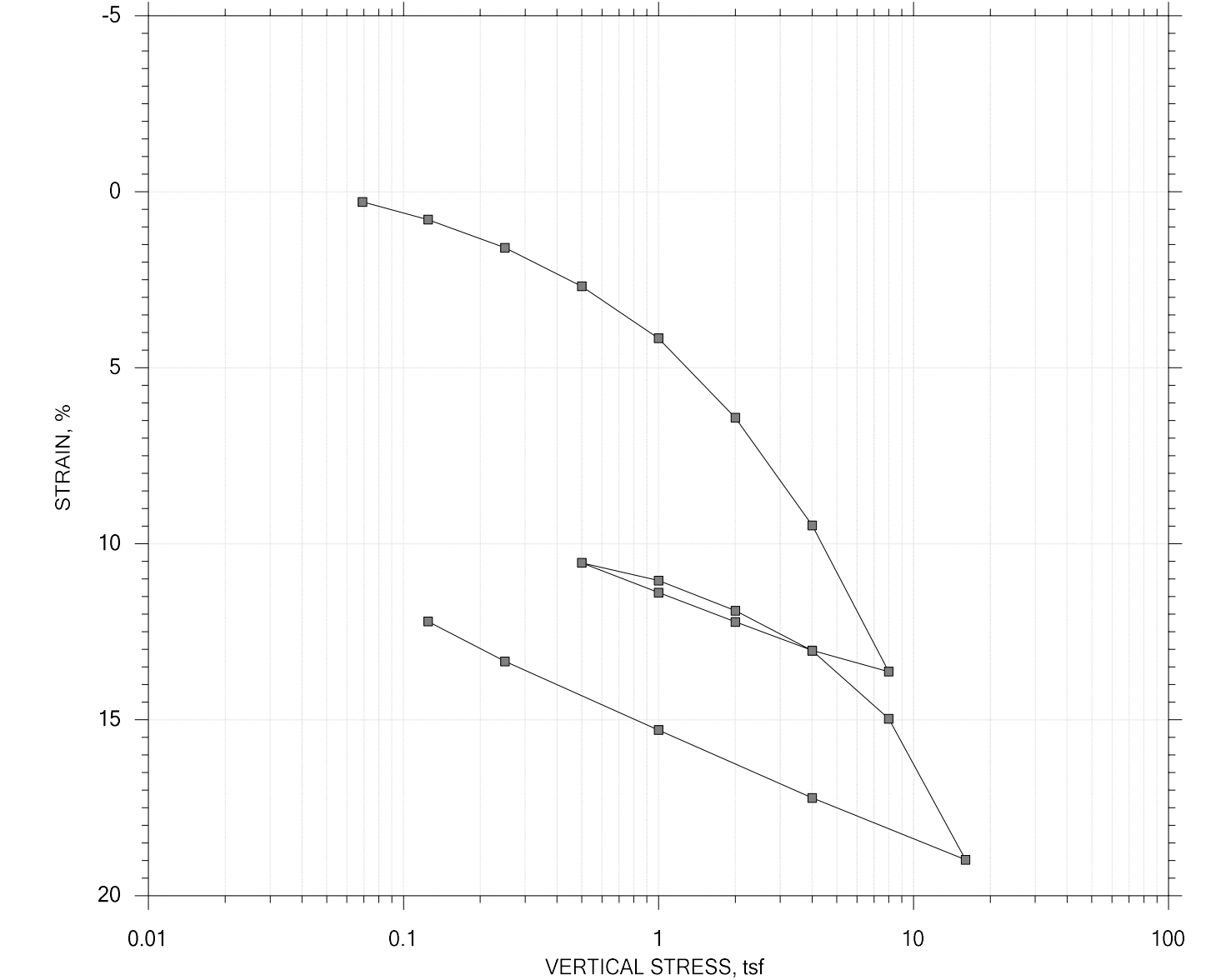
Project Number 20-1403  
Lab ID 15347A  
Date Received 1/15/2024  
Date Completed 1/23/2024  
Tested By NEIL DAVIS

| <u>STANDARD<br/>DESIGNATION (mm/μm)</u> | <u>SIEVE SIZE</u> | <u>AMOUNT PASSING (%)</u> |             |
|-----------------------------------------|-------------------|---------------------------|-------------|
| 150 mm                                  | 6"                | 100                       |             |
| 100 mm                                  | 4"                | 100                       |             |
| 75 mm                                   | 3"                | 100                       |             |
| 50 mm                                   | 2"                | 100                       |             |
| 38.1 mm                                 | 1-1/2"            | 100                       |             |
| 25.0 mm                                 | 1"                | 100                       |             |
| 19.0 mm                                 | 3/4"              | 100                       |             |
| 12.5 mm                                 | 1/2"              | 100                       |             |
| 9.5 mm                                  | 3/8"              | 100                       |             |
| 6.3 mm                                  | 1/4"              | 100                       |             |
| 4.75 mm                                 | No. 4             | 100                       | 0% Gravel   |
| 2.00 mm                                 | No. 10            | 100                       |             |
| 850 μm                                  | No. 20            | 98                        |             |
| 425 μm                                  | No. 40            | 97                        | 11.2% Sand  |
| 250 μm                                  | No. 60            | 96                        |             |
| 150 μm                                  | No. 100           | 94                        |             |
| 75 μm                                   | No. 200           | 88.8                      | 88.8% Fines |



One-Dimensional Consolidation by ASTM D2435 - Method B

SUMMARY REPORT

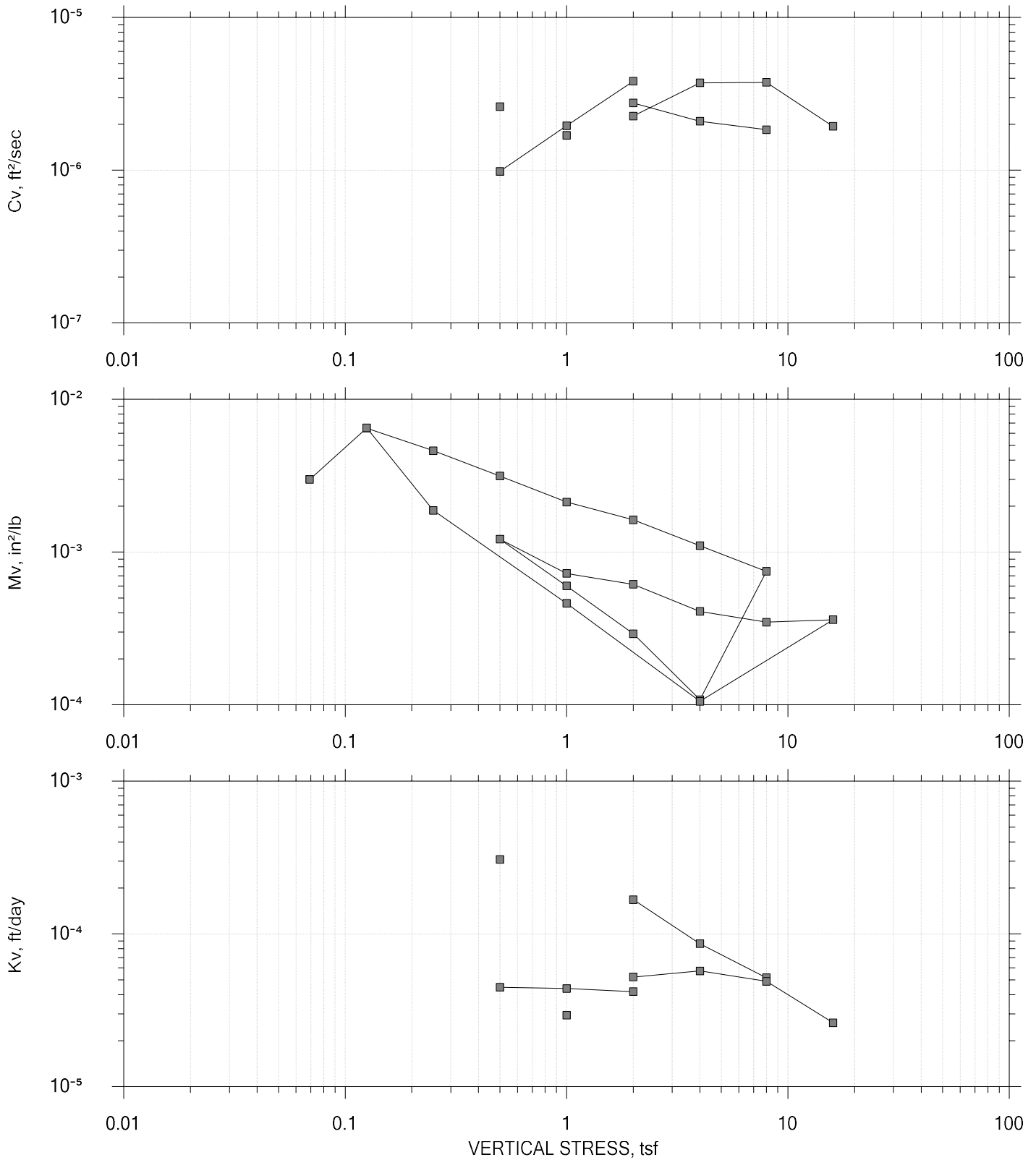


|                                        |        |                  |          | Before Test          | After Test |        |
|----------------------------------------|--------|------------------|----------|----------------------|------------|--------|
| Current Vertical Effective Stress: --- |        | 2,140 psf        |          | Water Content, %     | 35.00      | 28.88  |
| Preconsolidation Stress: ---           |        | 2,700 psf        |          | Dry Unit Weight, pcf | 85.117     | 94.312 |
| Compression Ratio: ---                 |        | .,13             |          | Saturation, %        | 97.13      | 100.00 |
| Diameter: 2.495 in                     |        | Height: 0.995 in |          | Void Ratio           | 0.97       | 0.77   |
| LL: 37                                 | PL: 23 | PI: 14           | GS: 2.68 |                      |            |        |

|  |                                        |                                   |                       |
|--|----------------------------------------|-----------------------------------|-----------------------|
|  | Project: ADDISON                       | Location: -- Qr, 7)06,7* 3,6) Pr, | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL                    | Checked By: -- K ?Q   |
|  | Sample No.: 1U                         | Test Date: 1/23/2024              | Test No.: 270801      |
|  | Depth: 25.0-27.0 FT                    | Sample Type: Intact               | Elevation: -- +/2,7   |
|  | Description: Grey Silty Clay           |                                   |                       |
|  | Remarks: Maine Sensitive Load Sequence |                                   |                       |
|  | Displacement at End of Increment       |                                   |                       |

# One-Dimensional Consolidation by ASTM D2435 - Method B

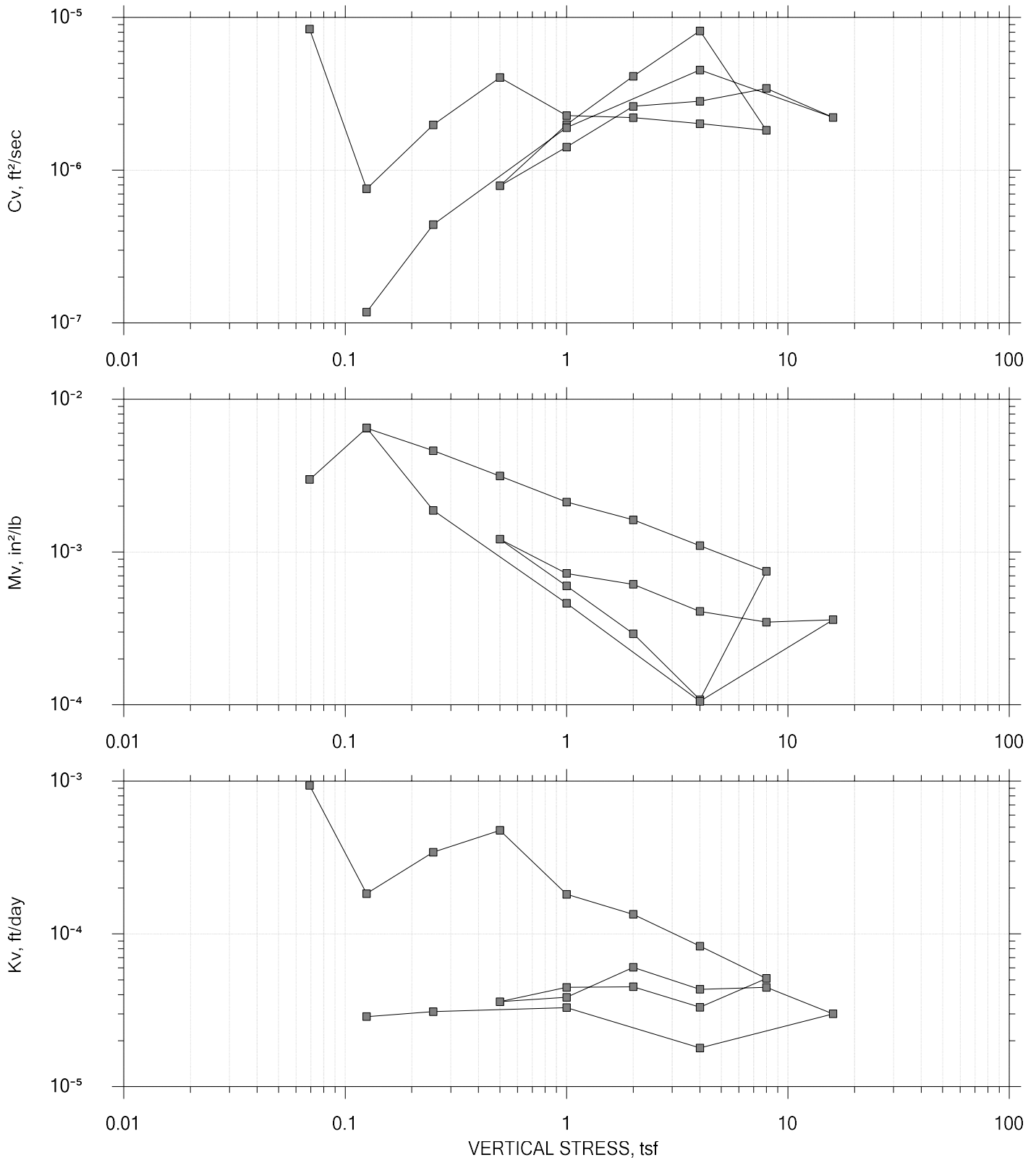
LOG of TIME COEFFICIENTS



|  |                                        |                      |                       |
|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 1U                         | Test Date: 1/23/2024 | Test No.: 270801      |
|  | Depth: 25.0-27.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  | Displacement at End of Increment       |                      |                       |

# One-Dimensional Consolidation by ASTM D2435 - Method B

SQUARE ROOT of TIME COEFFICIENTS



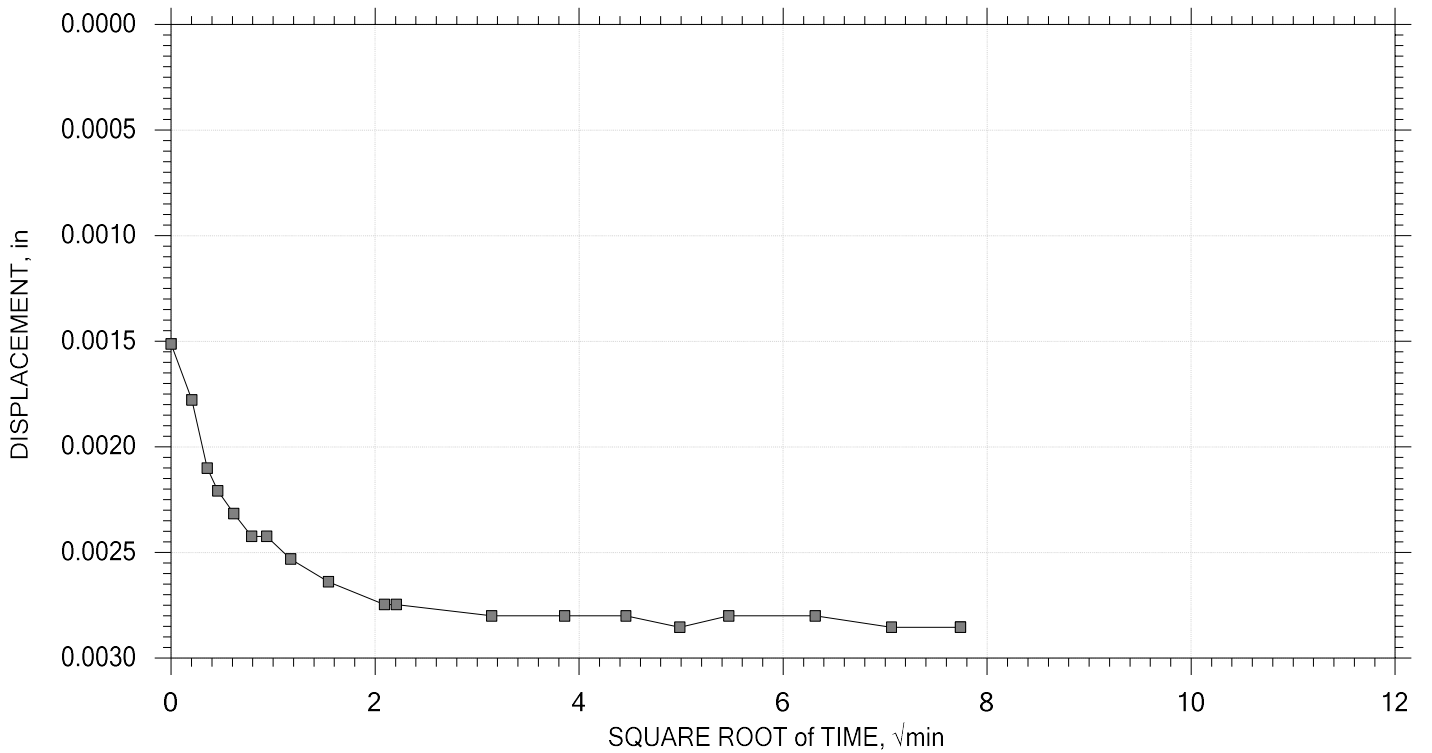
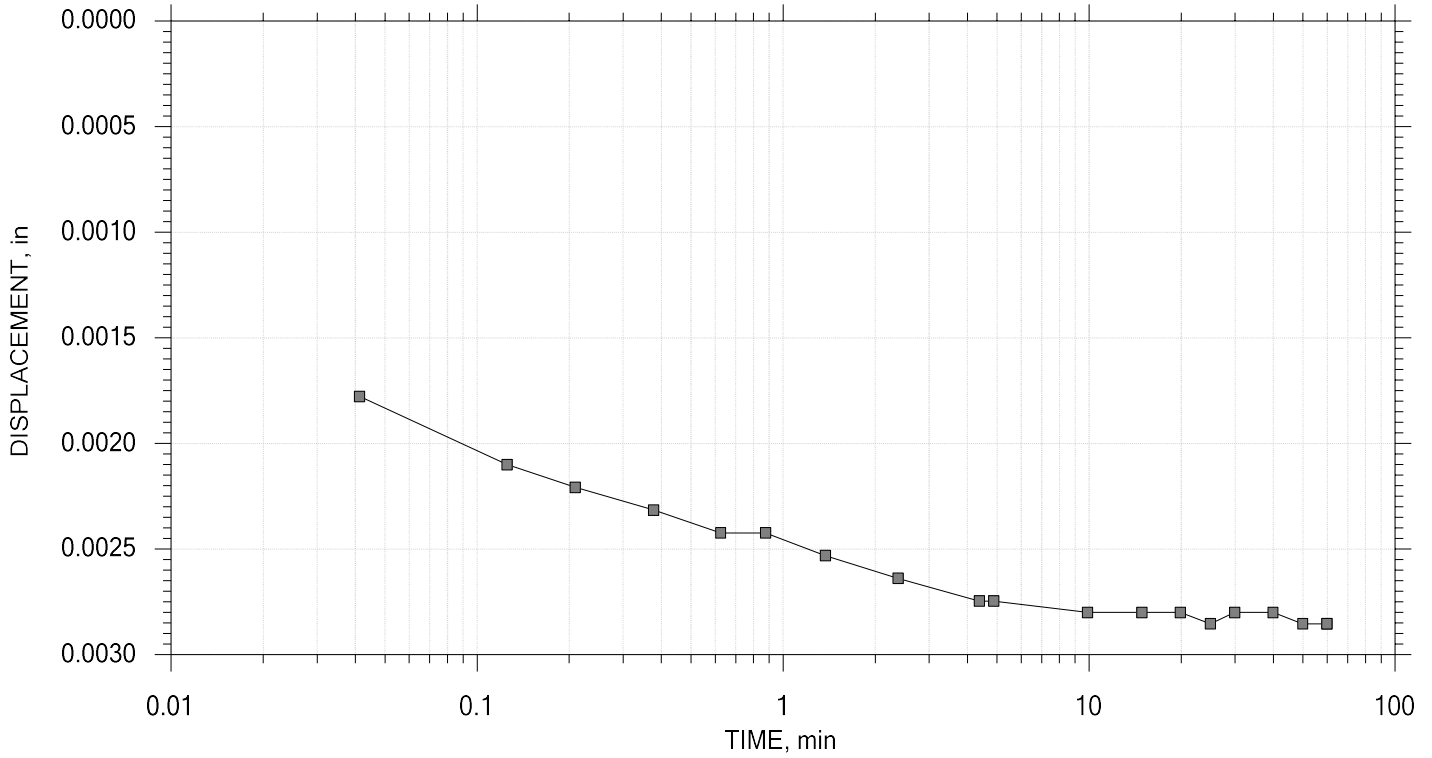
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|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 1U                         | Test Date: 1/23/2024 | Test No.: 270801      |
|  | Depth: 25.0-27.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  | Displacement at End of Increment       |                      |                       |

# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Volume Step 1 of 21

Stress: 0.069117 tsf



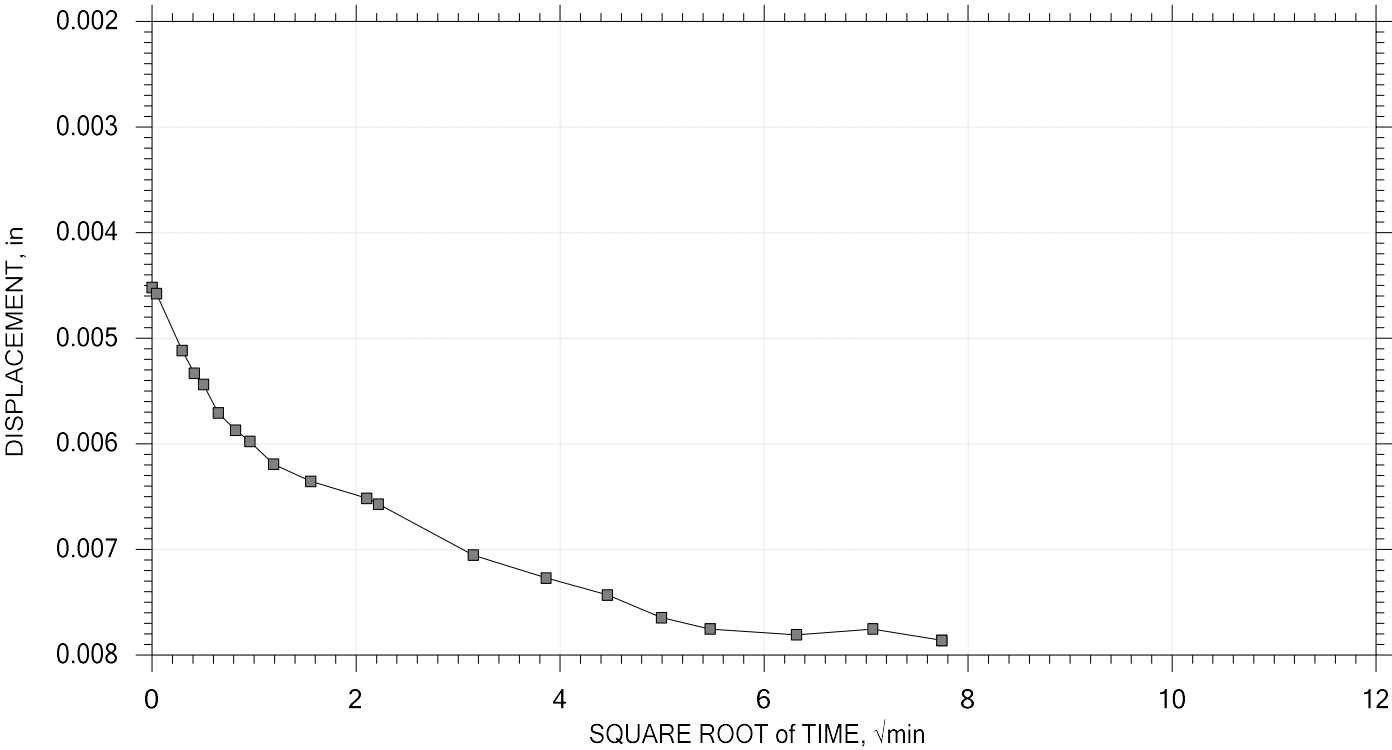
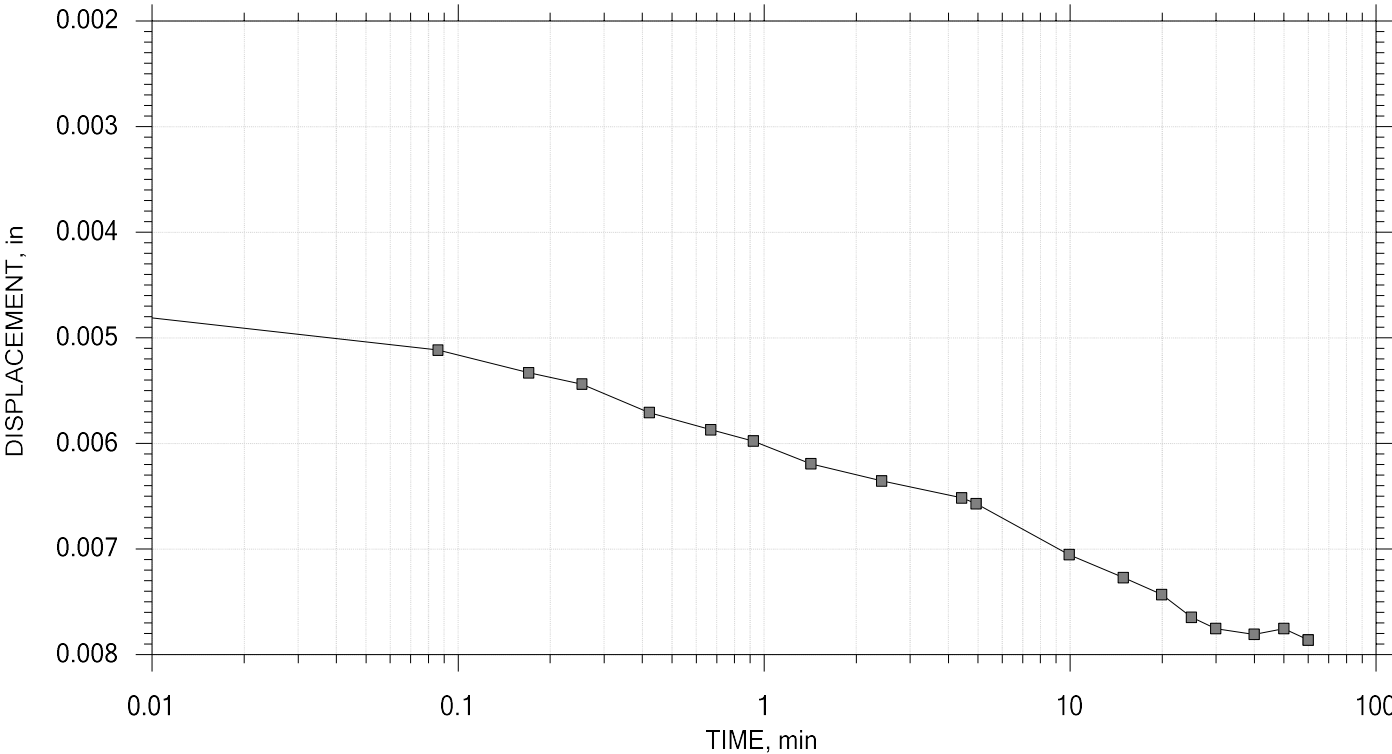
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|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 1U                         | Test Date: 1/23/2024 | Test No.: 270801      |
|  | Depth: 25.0-27.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 2 of 21

Stress: 0.125 tsf



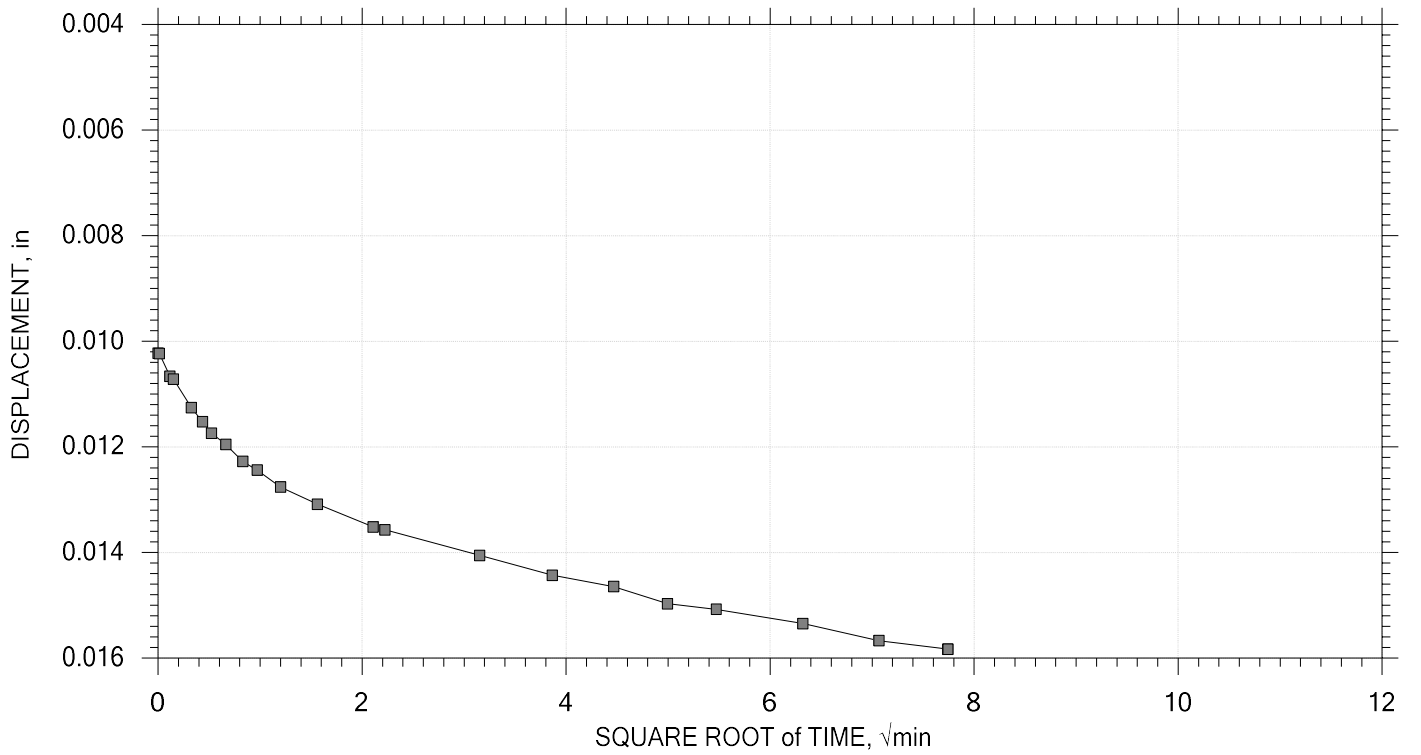
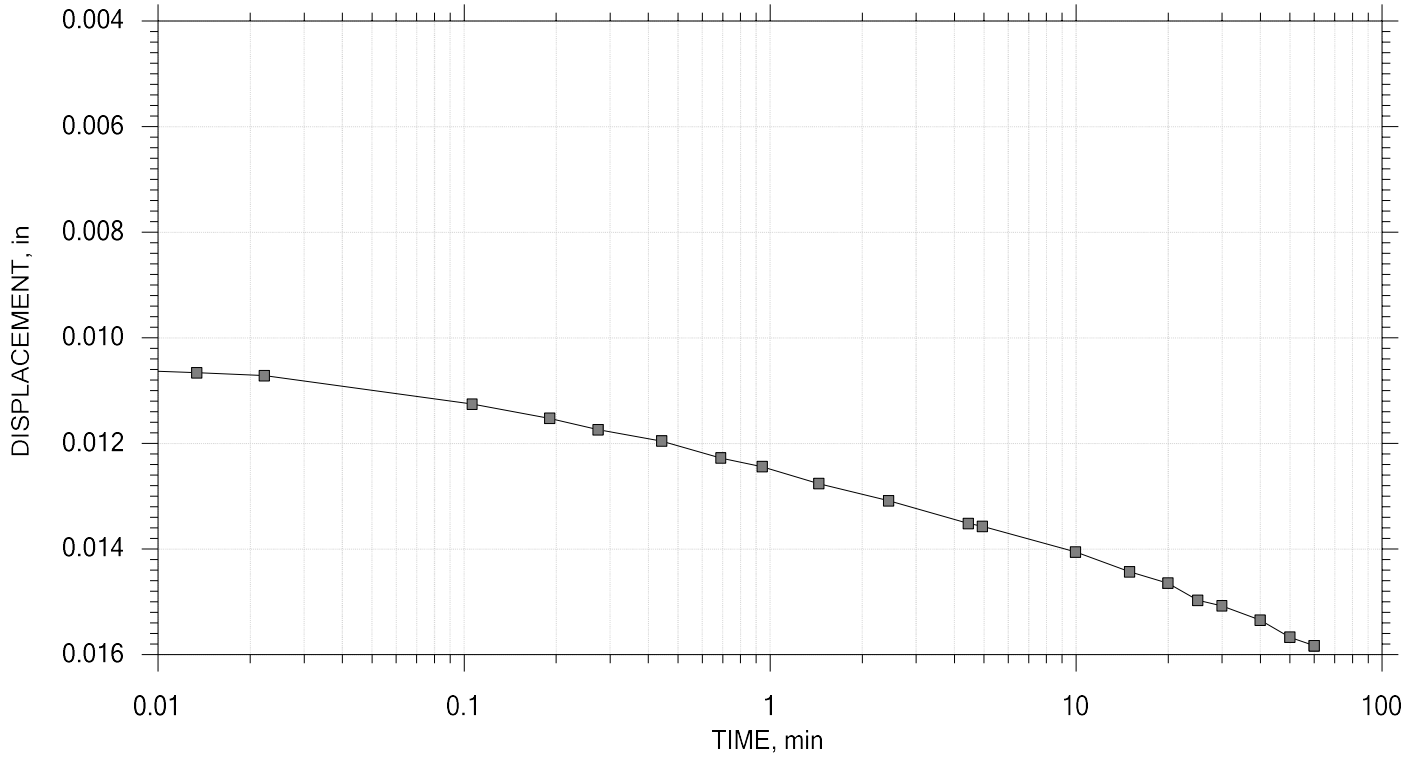
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|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 1U                         | Test Date: 1/23/2024 | Test No.: 270801      |
|  | Depth: 25.0-27.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 3 of 21

Stress: 0.25 tsf



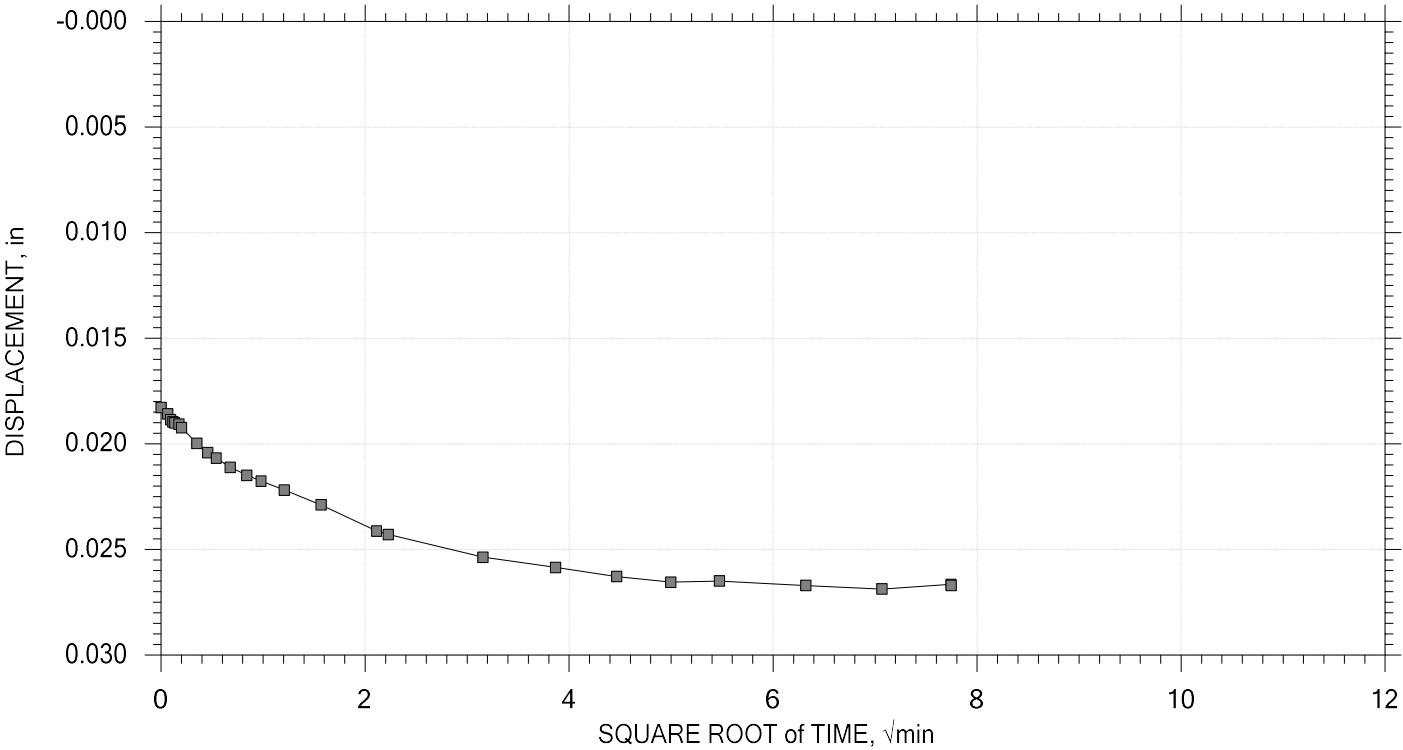
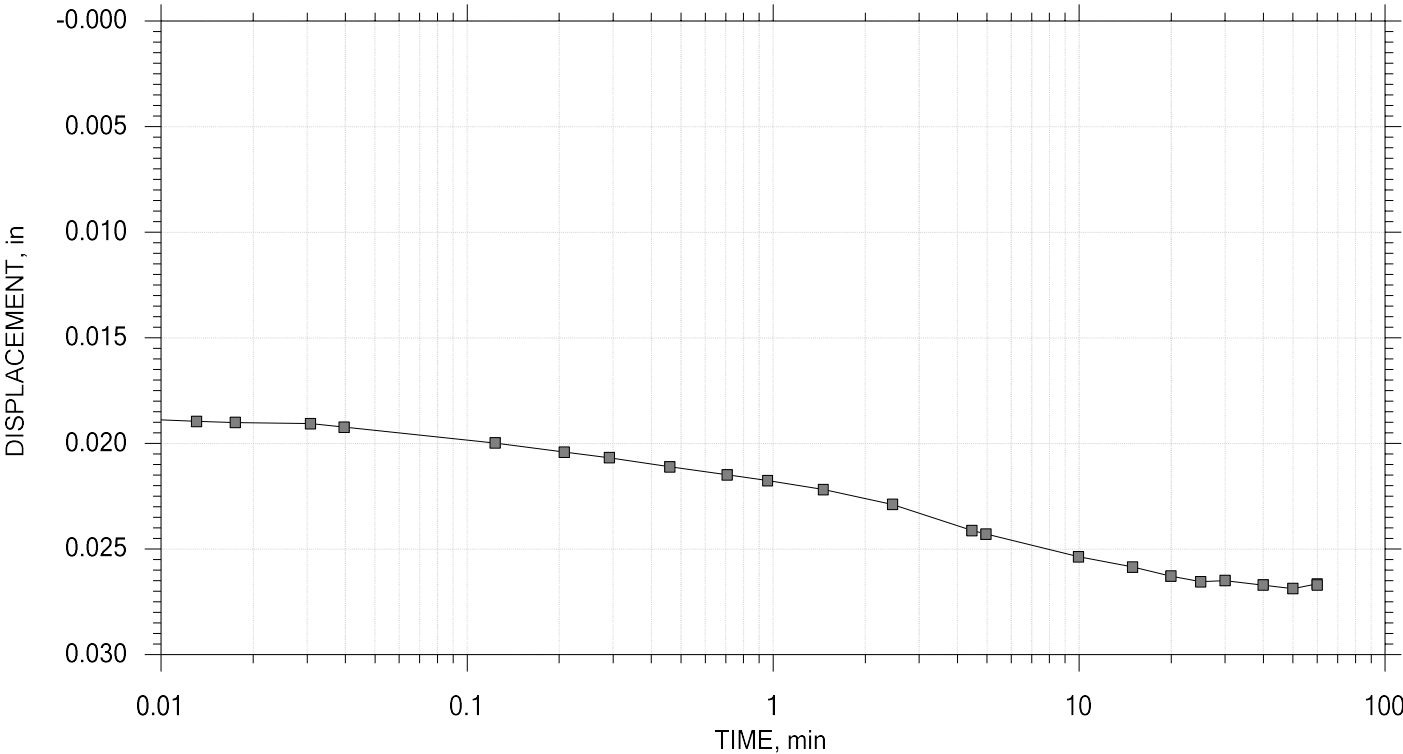
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|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 1U                         | Test Date: 1/23/2024 | Test No.: 270801      |
|  | Depth: 25.0-27.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 4 of 21

Stress: 0.5 tsf



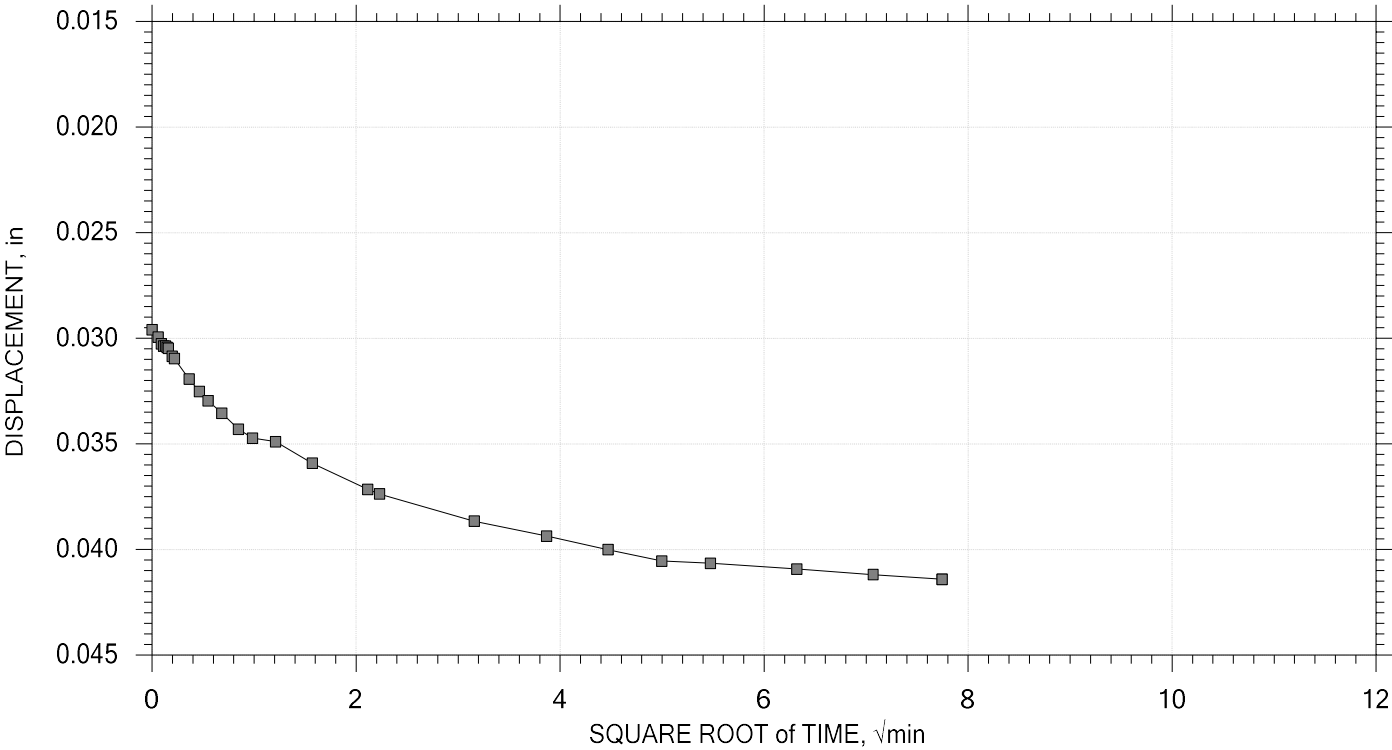
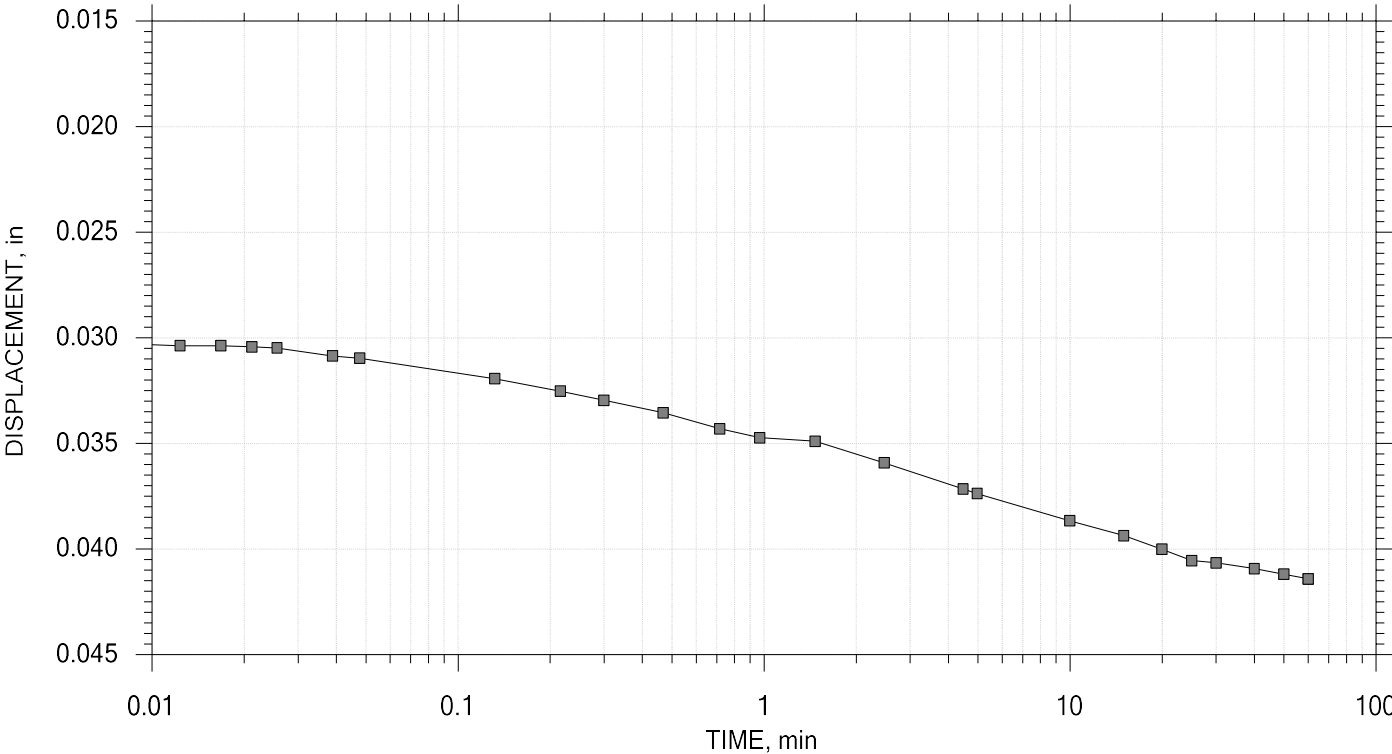
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|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 1U                         | Test Date: 1/23/2024 | Test No.: 270801      |
|  | Depth: 25.0-27.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 5 of 21

Stress: 1 tsf



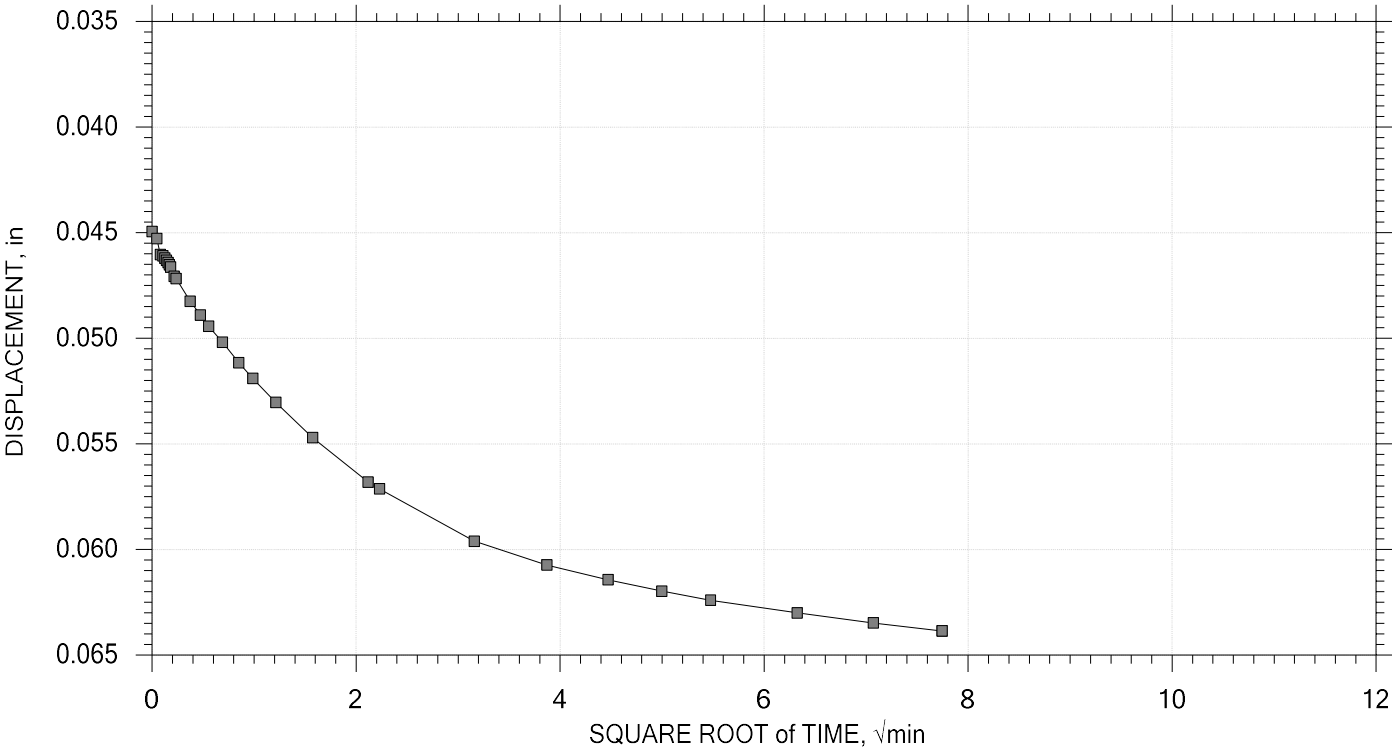
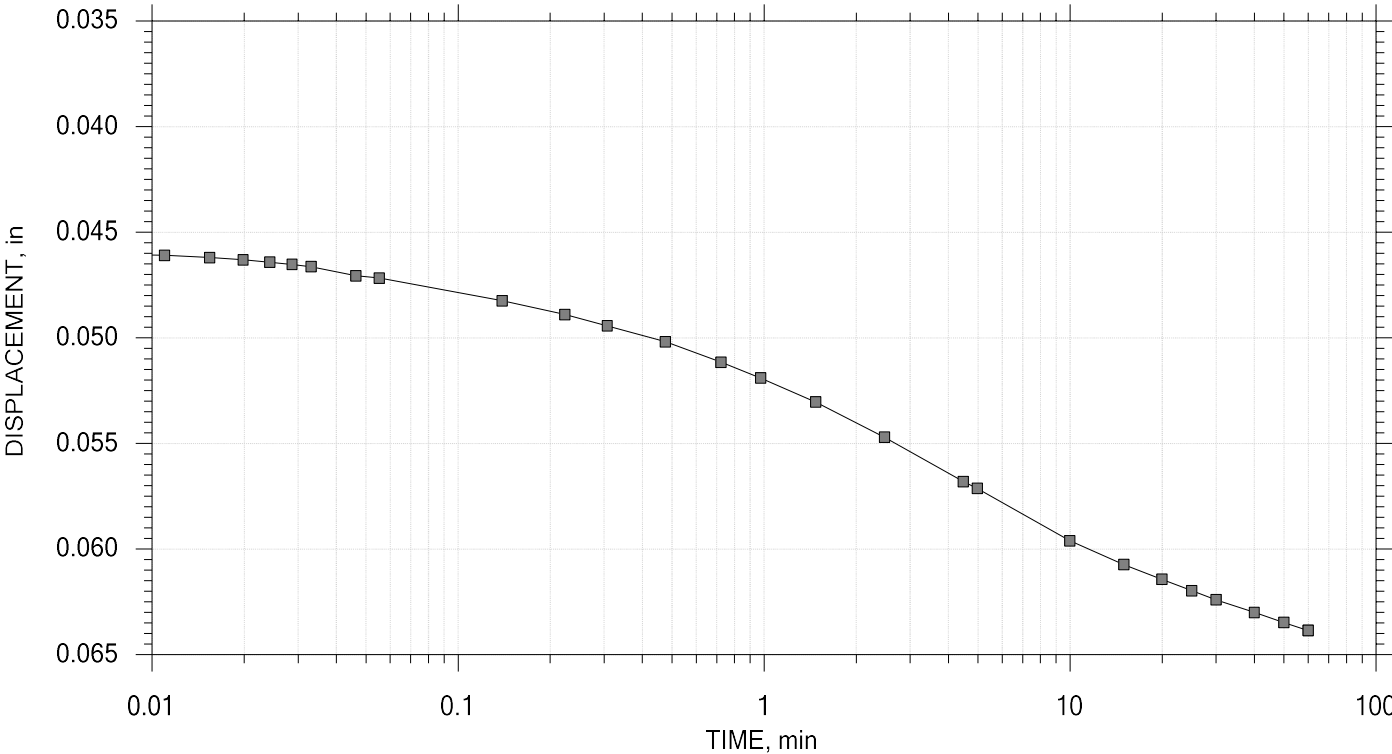
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|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 1U                         | Test Date: 1/23/2024 | Test No.: 270801      |
|  | Depth: 25.0-27.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 6 of 21

Stress: 2 tsf



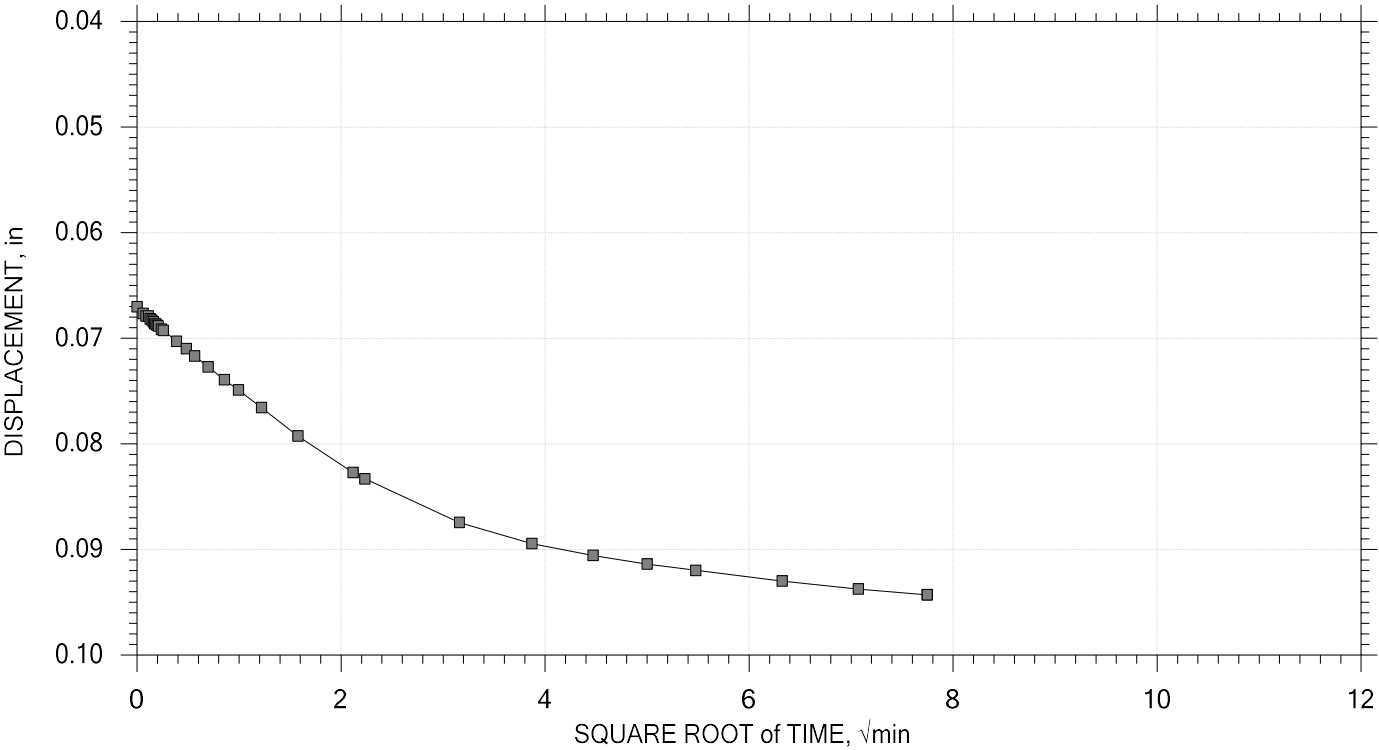
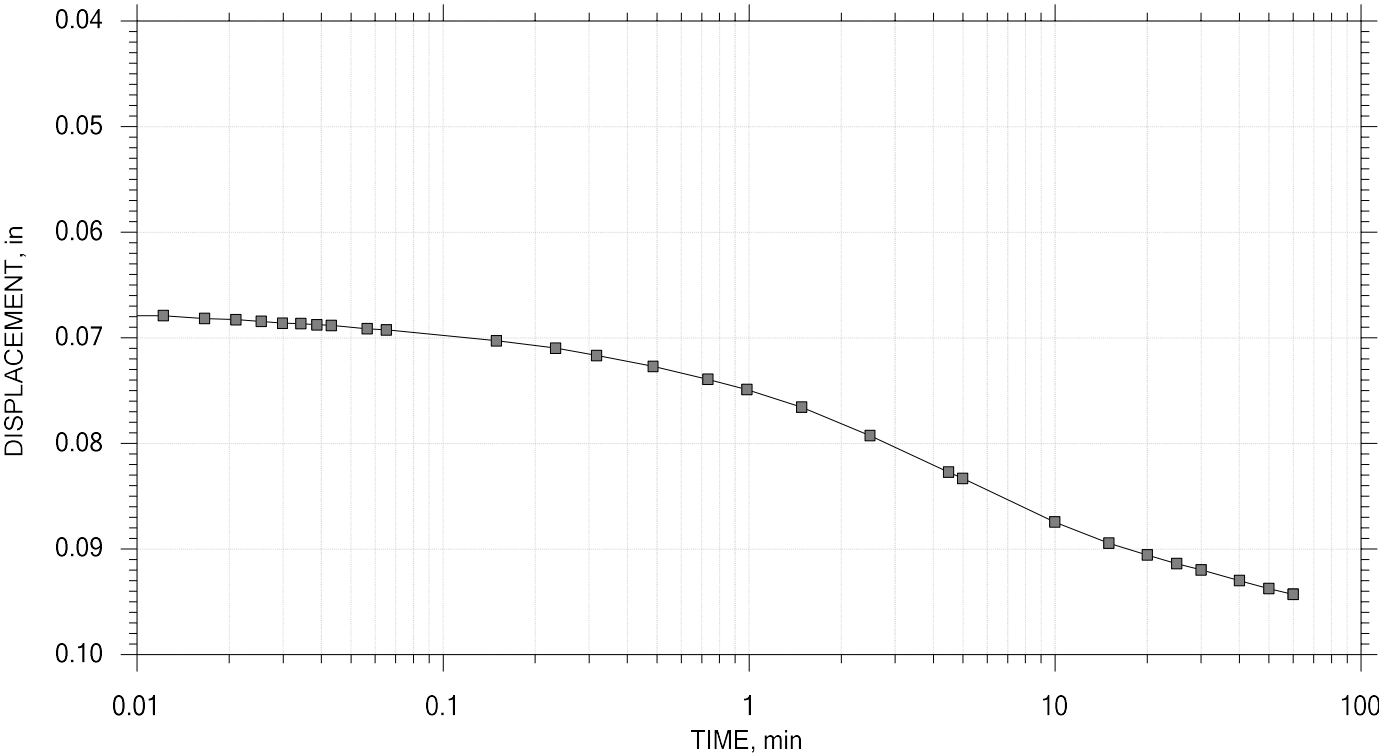
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|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 1U                         | Test Date: 1/23/2024 | Test No.: 270801      |
|  | Depth: 25.0-27.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 7 of 21

Stress: 4 tsf



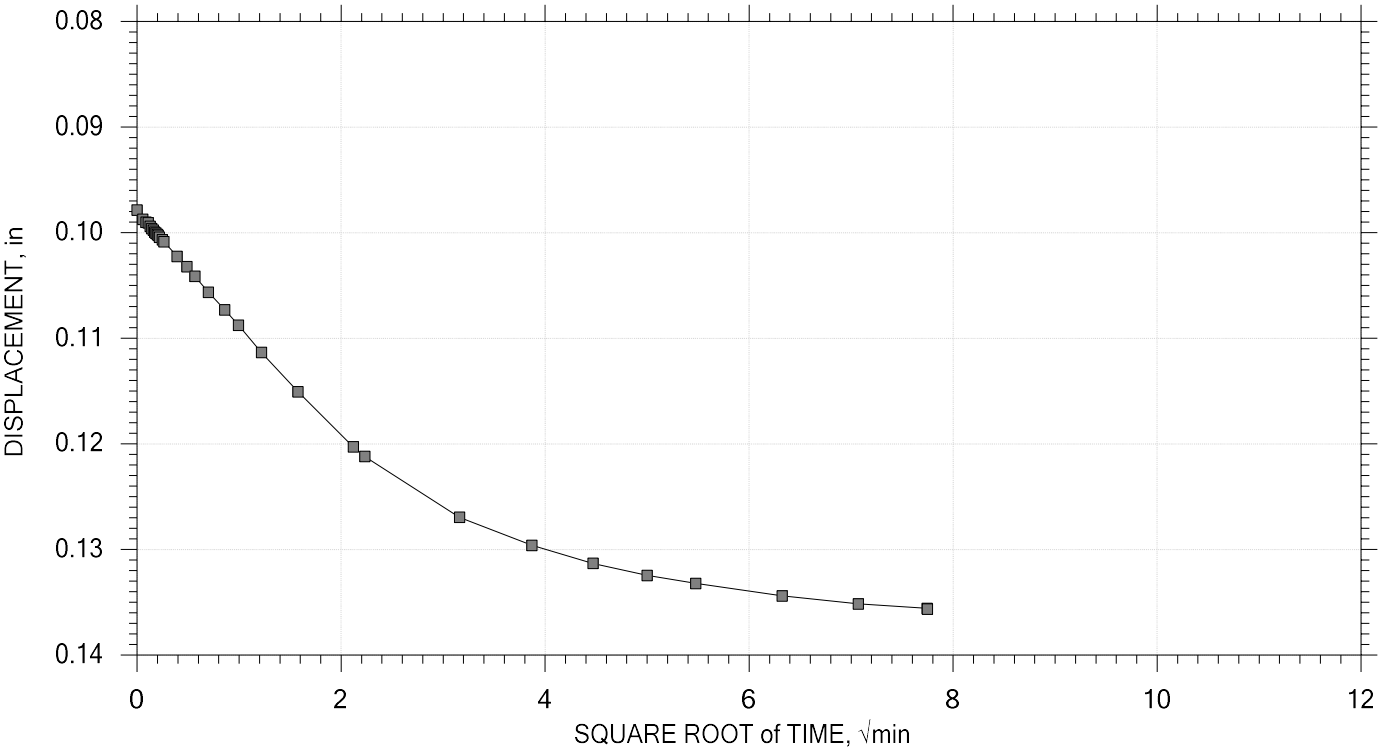
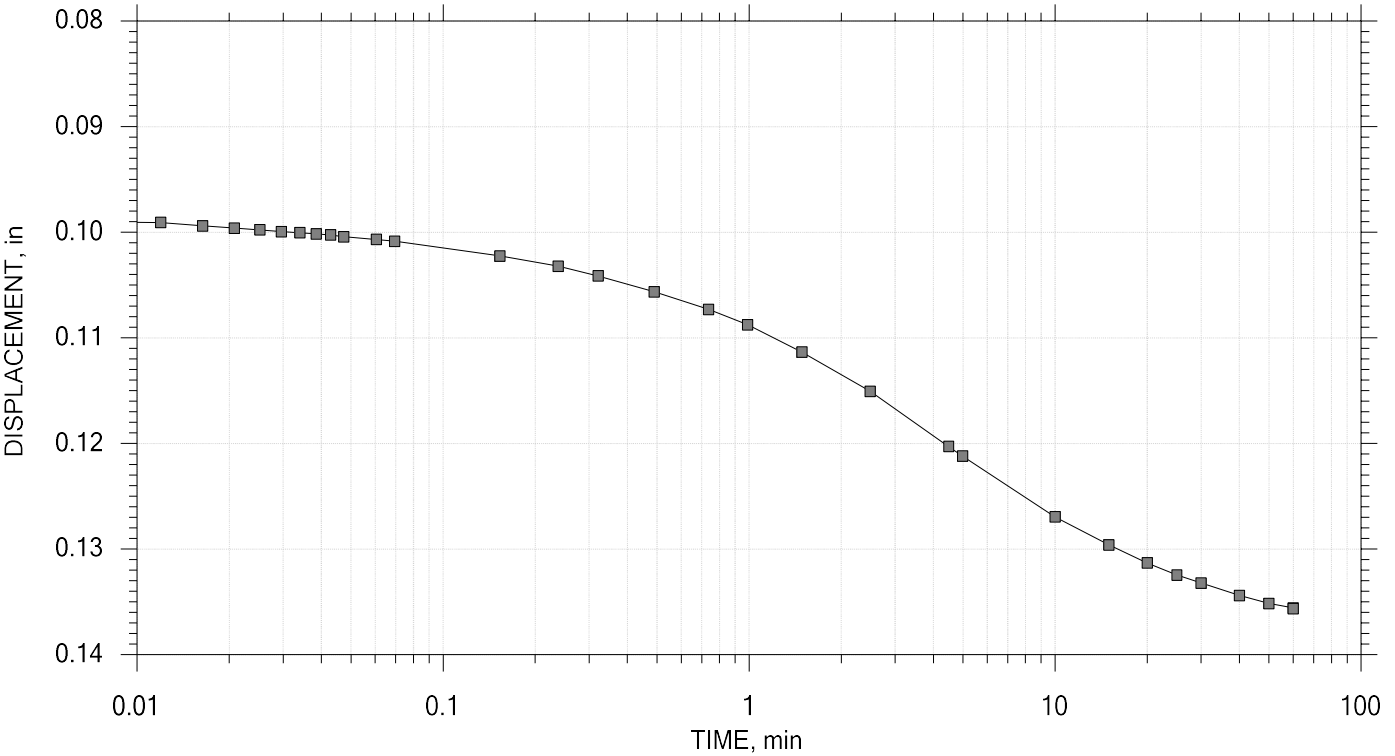
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|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 1U                         | Test Date: 1/23/2024 | Test No.: 270801      |
|  | Depth: 25.0-27.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 8 of 21

Stress: 8 tsf



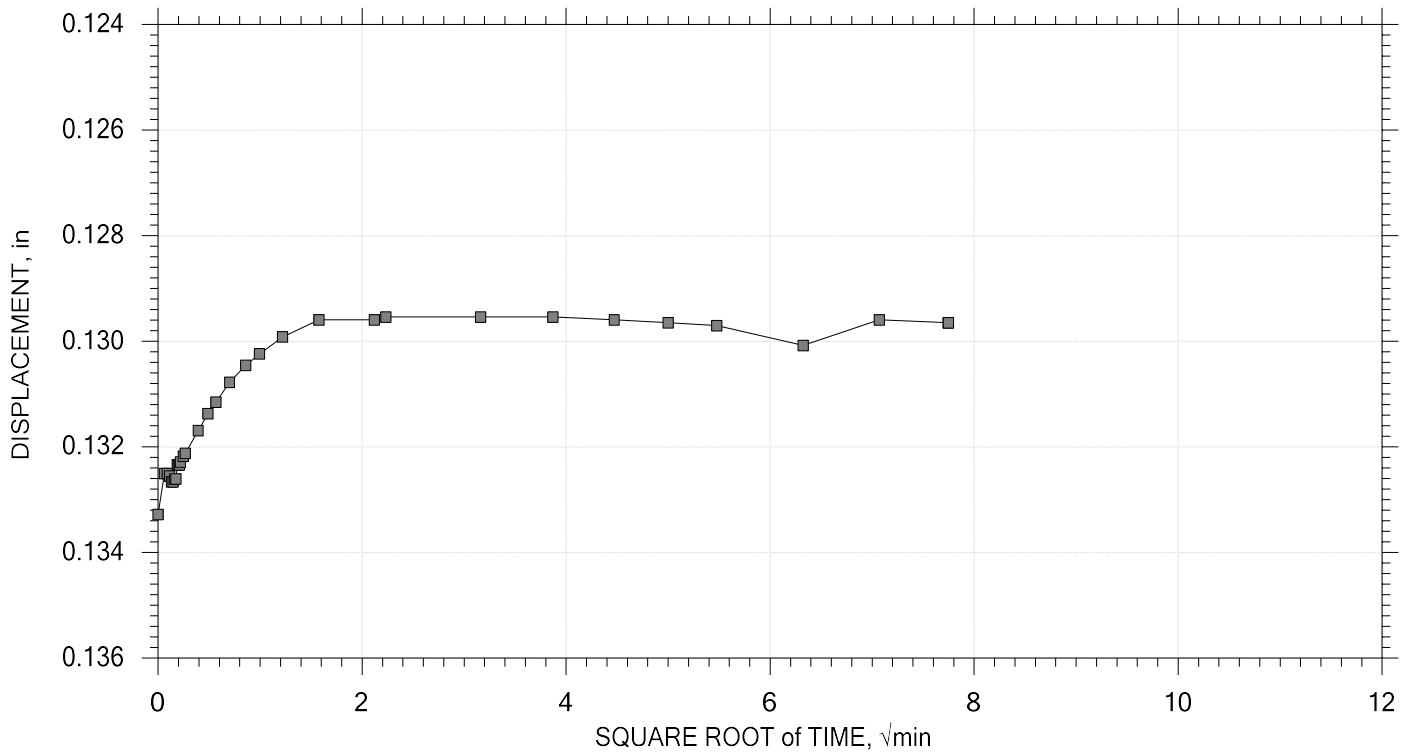
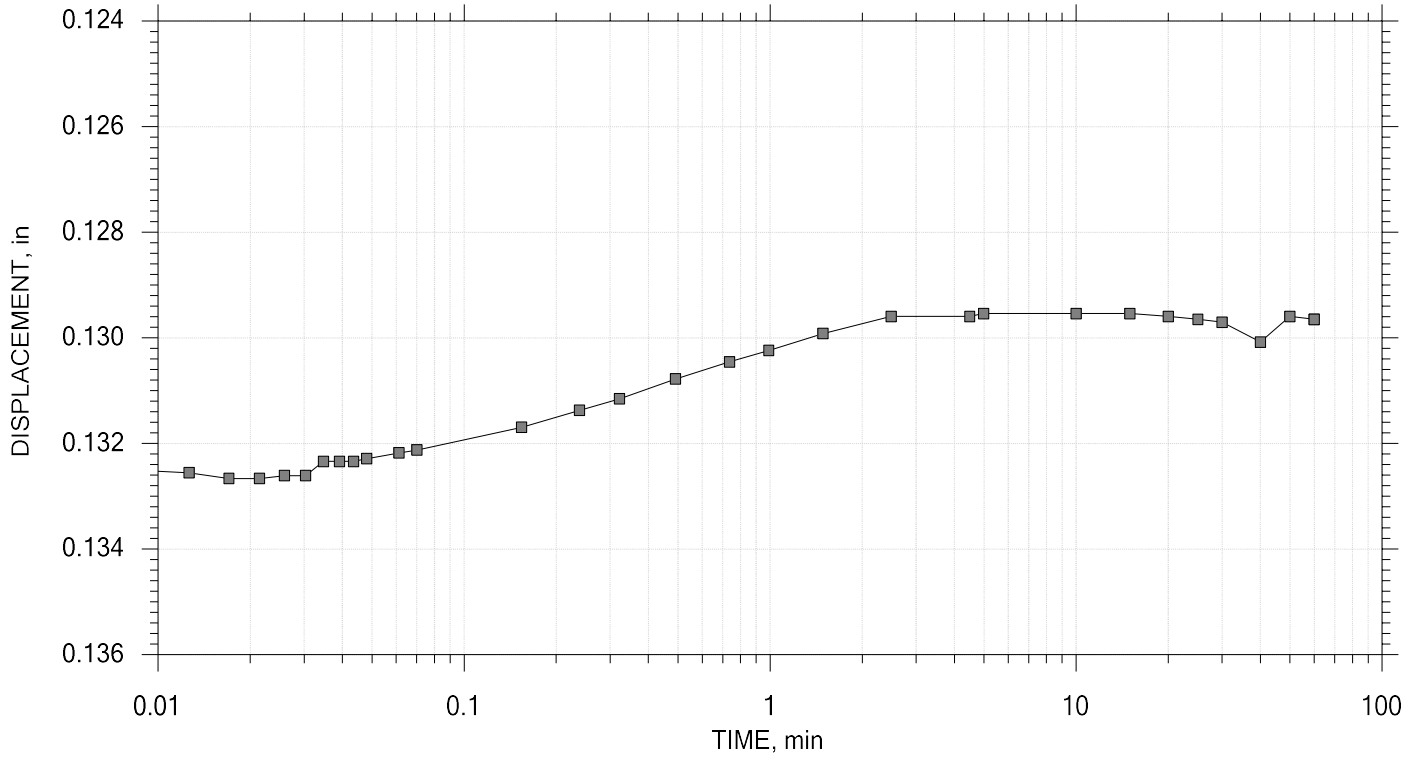
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|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 1U                         | Test Date: 1/23/2024 | Test No.: 270801      |
|  | Depth: 25.0-27.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 9 of 21

Stress: 4 tsf



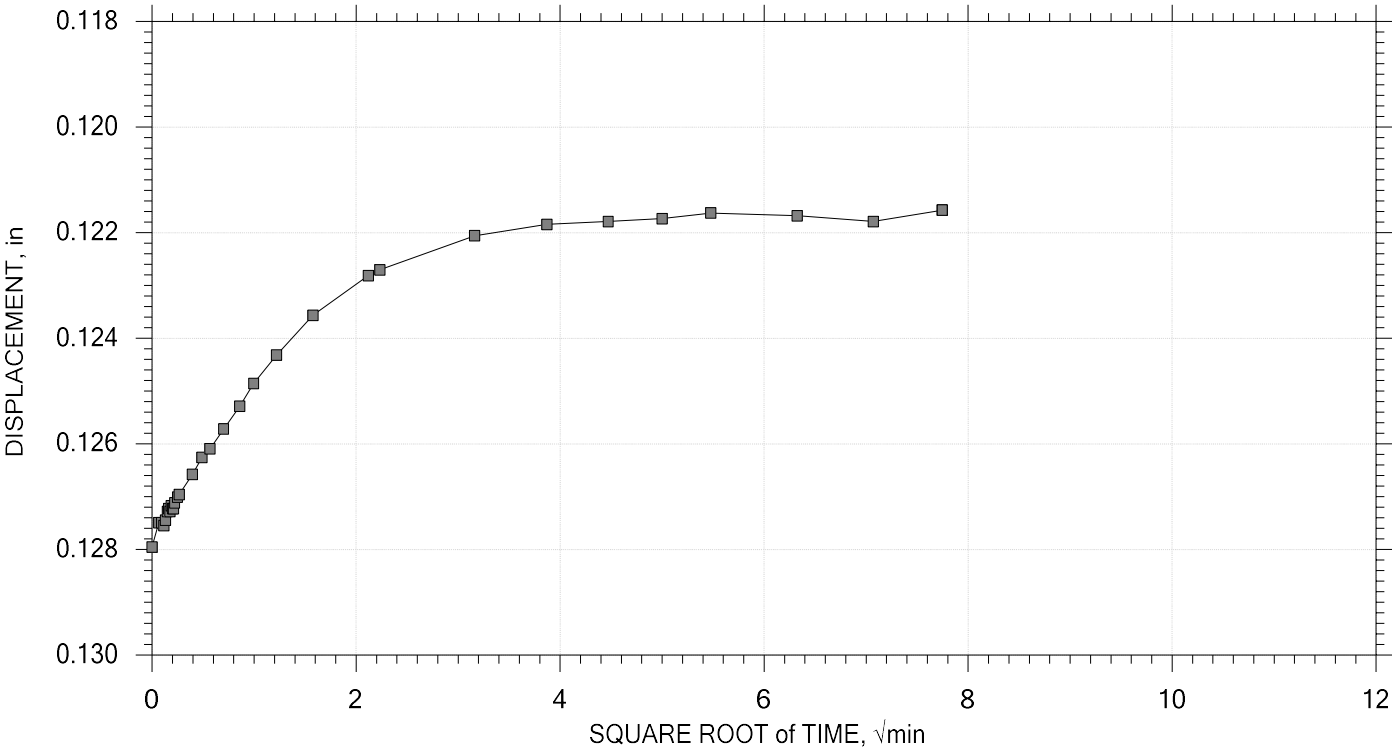
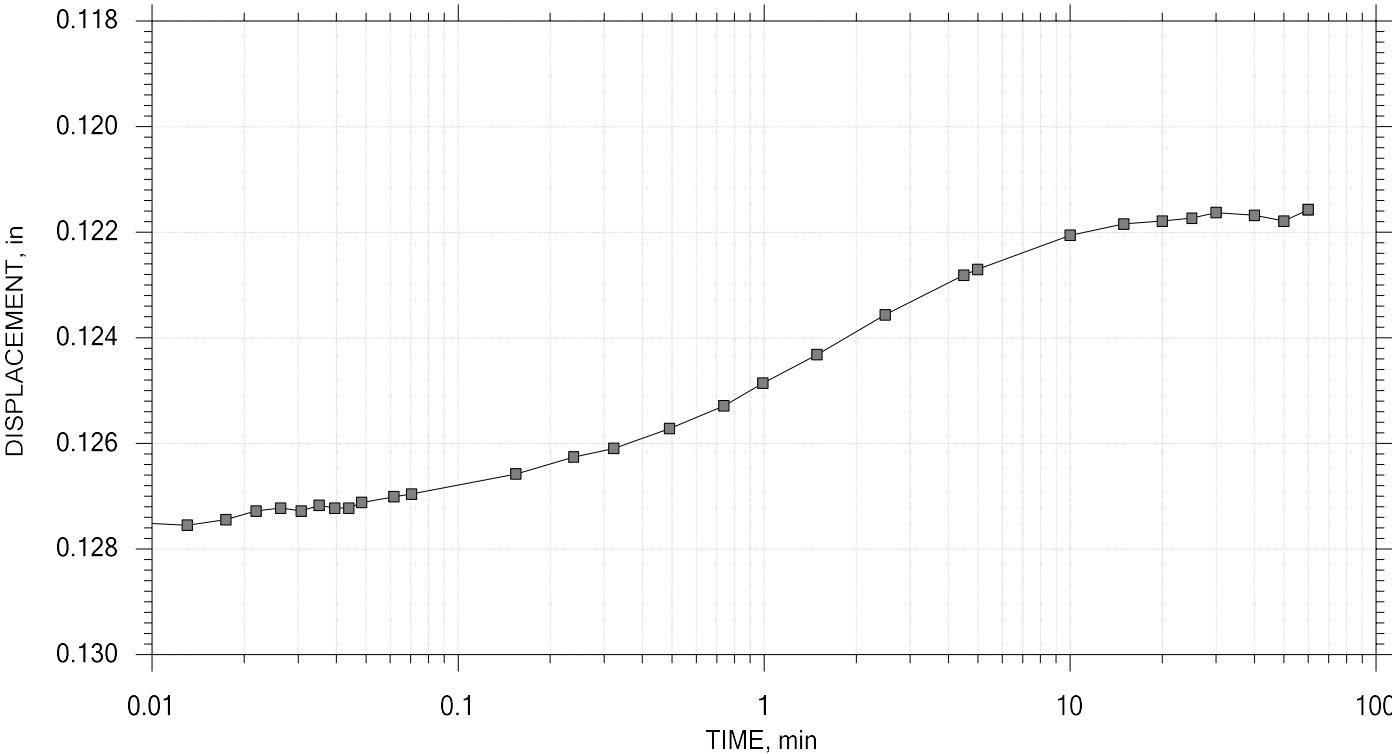
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|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 1U                         | Test Date: 1/23/2024 | Test No.: 270801      |
|  | Depth: 25.0-27.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 10 of 21

Stress: 2 tsf



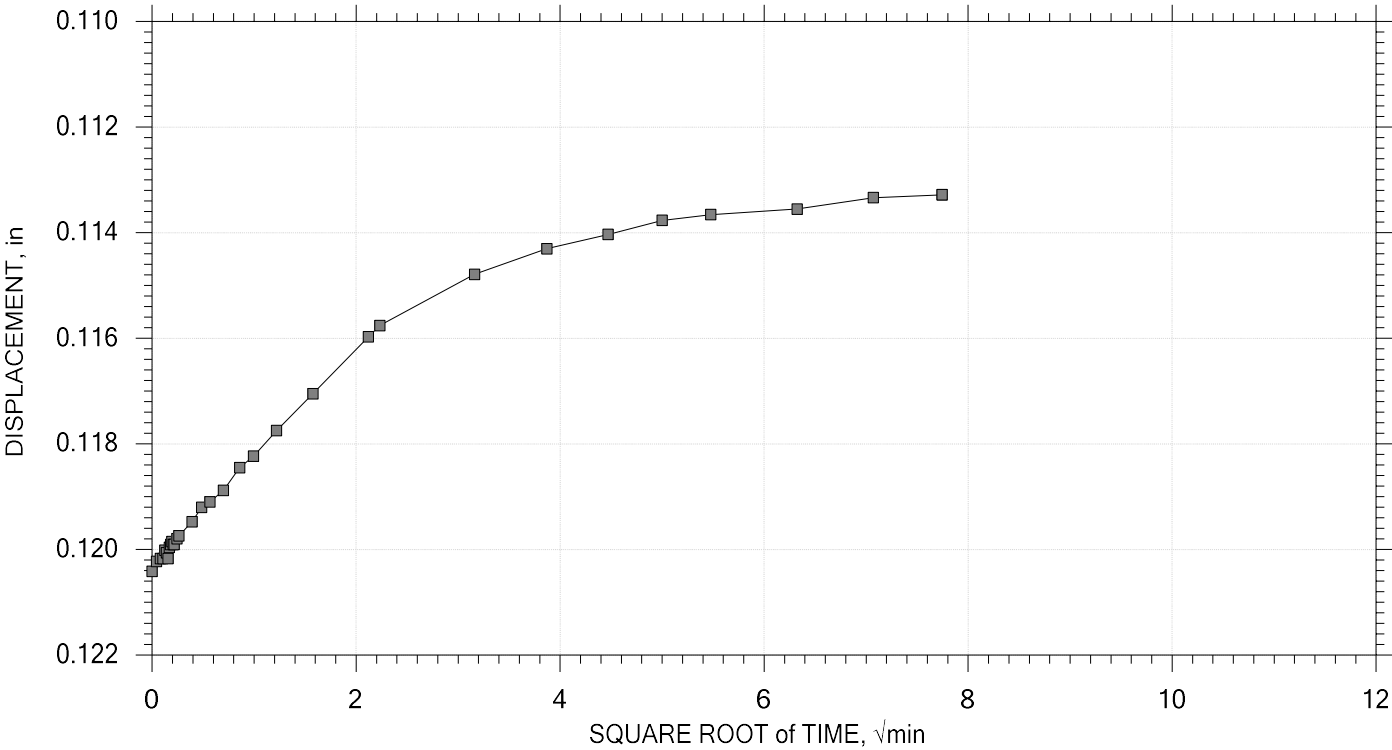
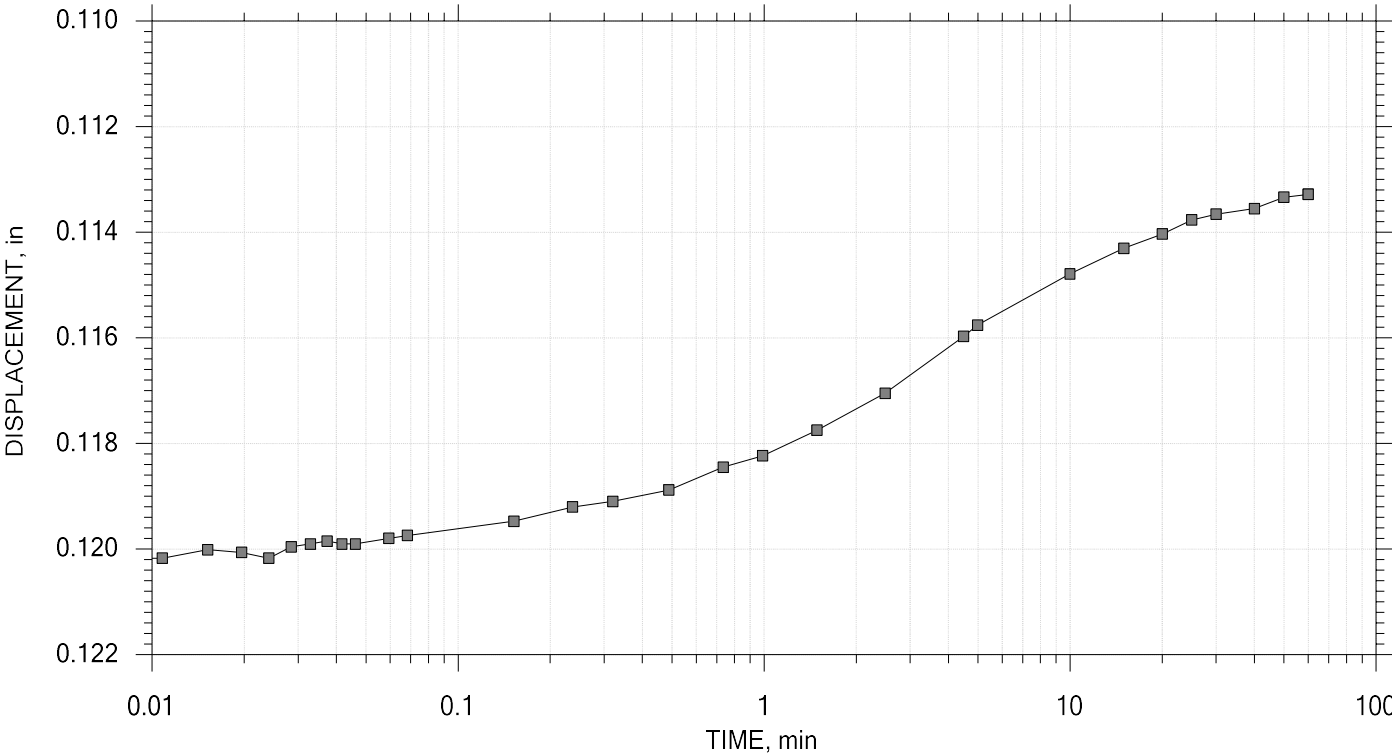
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|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 1U                         | Test Date: 1/23/2024 | Test No.: 270801      |
|  | Depth: 25.0-27.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 11 of 21

Stress: 1 tsf



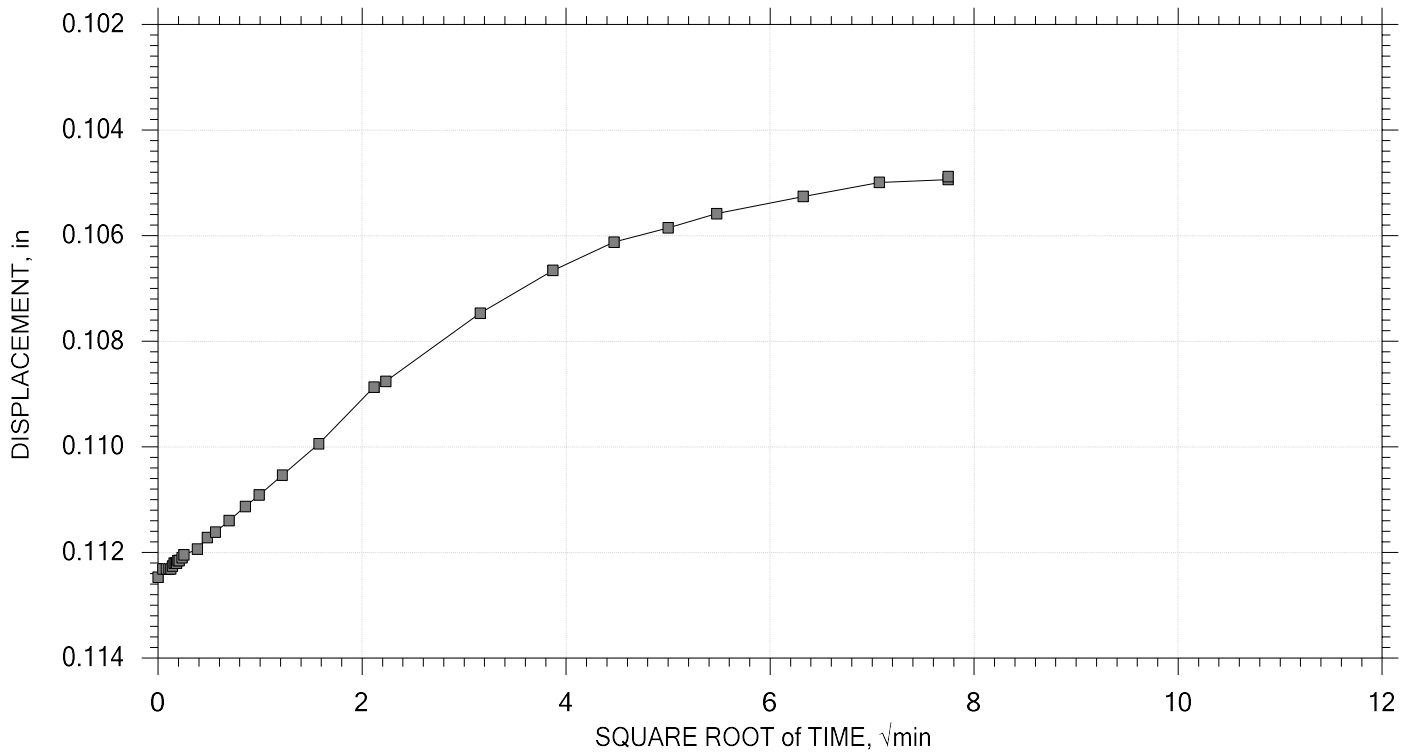
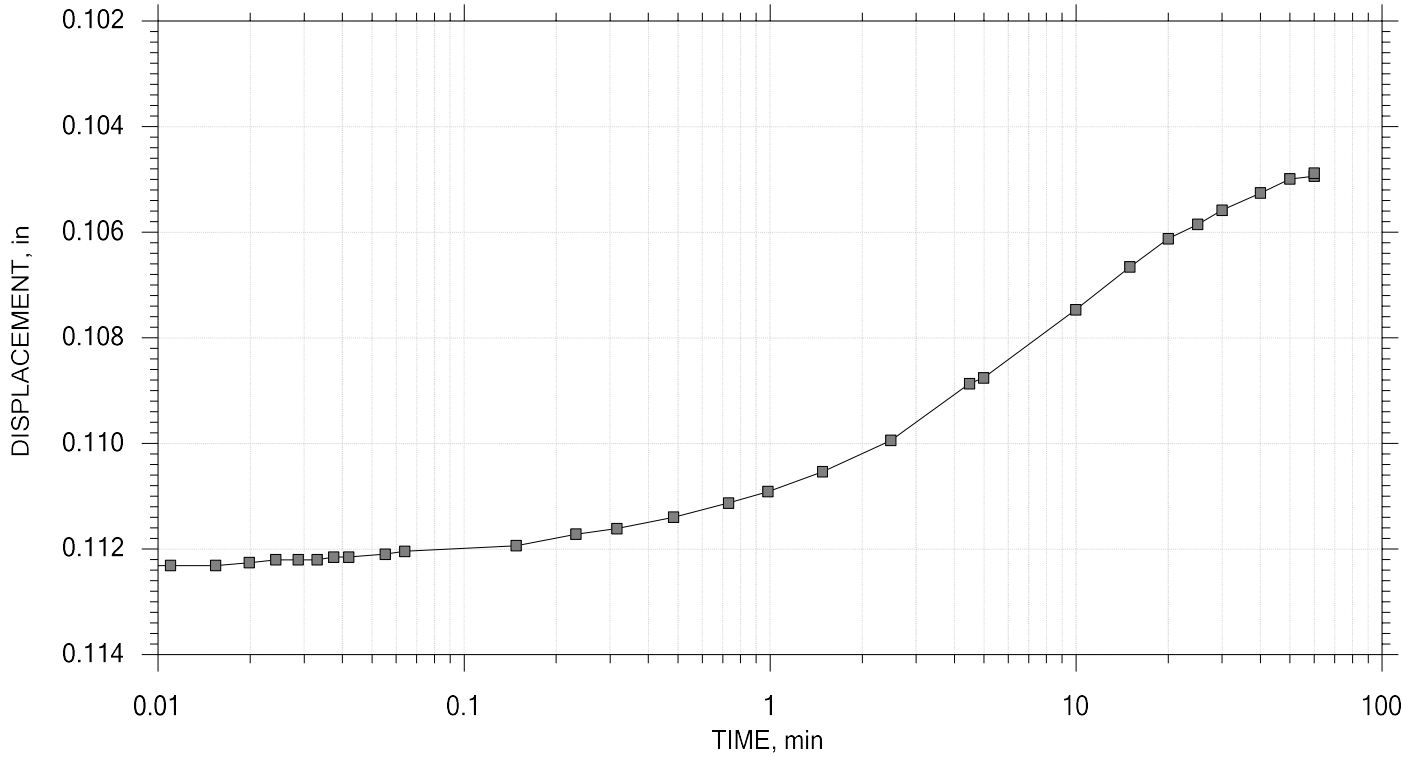
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|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 1U                         | Test Date: 1/23/2024 | Test No.: 270801      |
|  | Depth: 25.0-27.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 12 of 21

Stress: 0.5 tsf



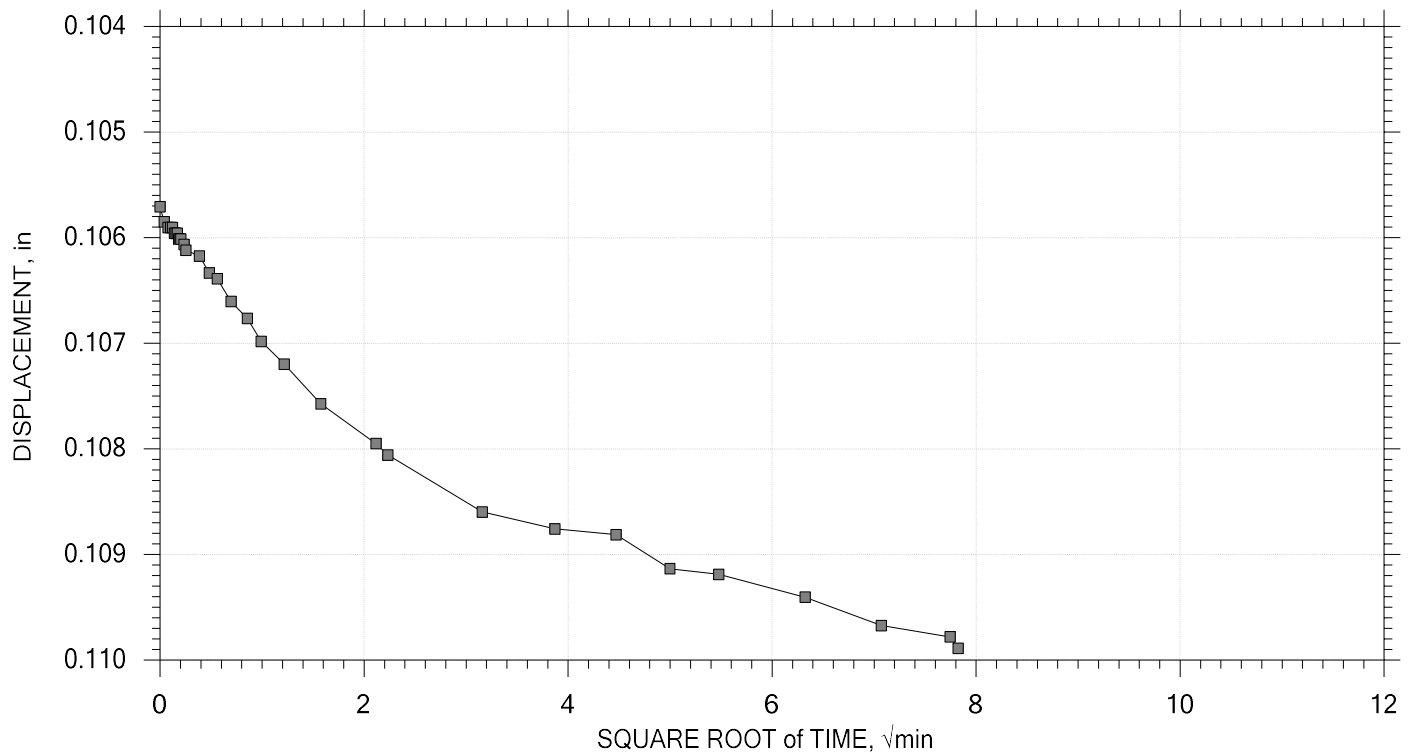
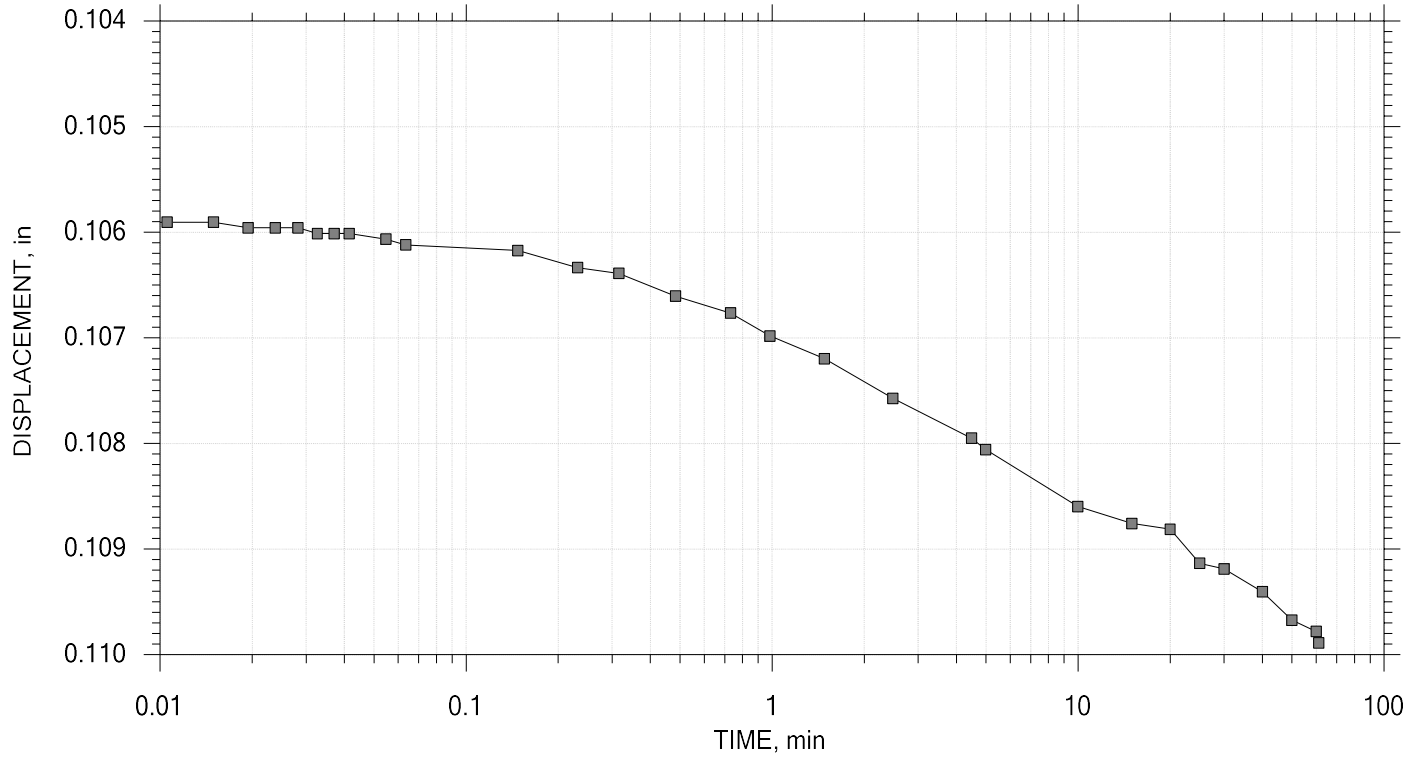
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|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 1U                         | Test Date: 1/23/2024 | Test No.: 270801      |
|  | Depth: 25.0-27.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 13 of 21

Stress: 1 tsf



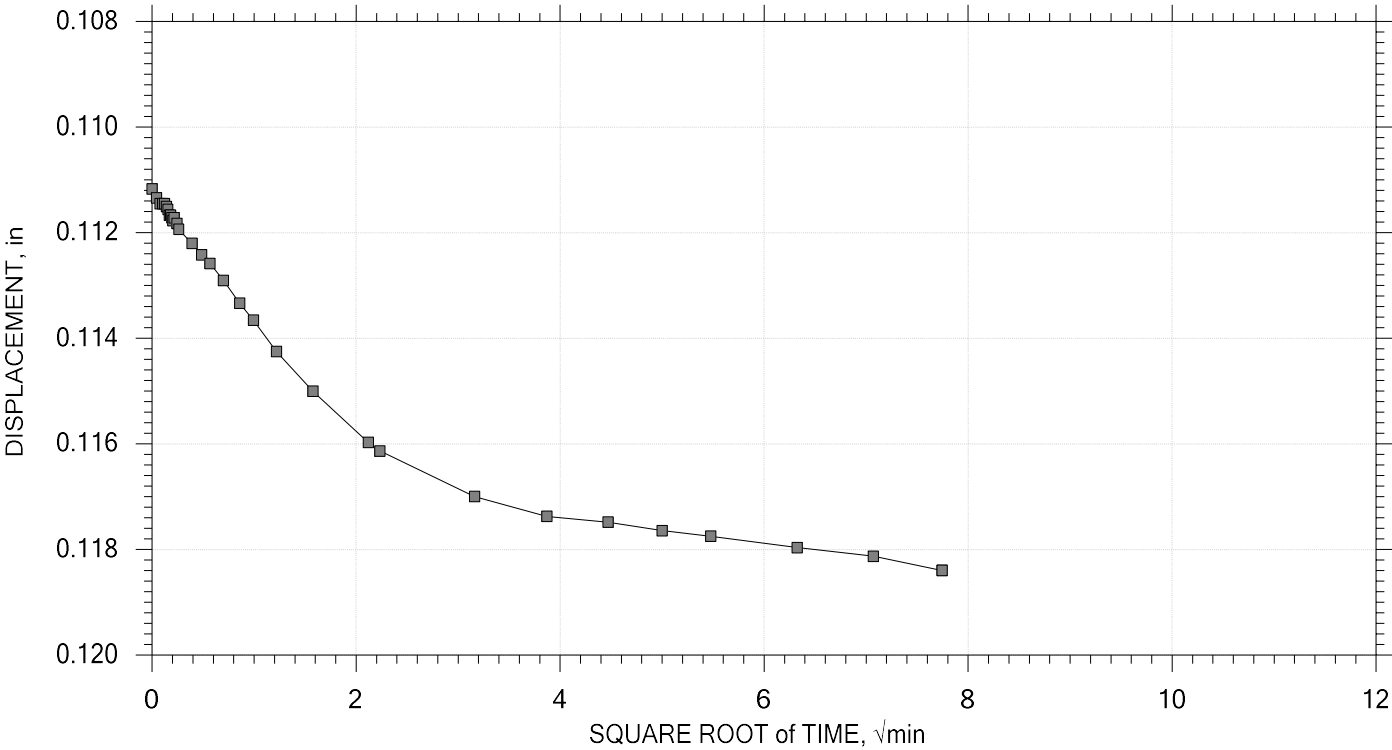
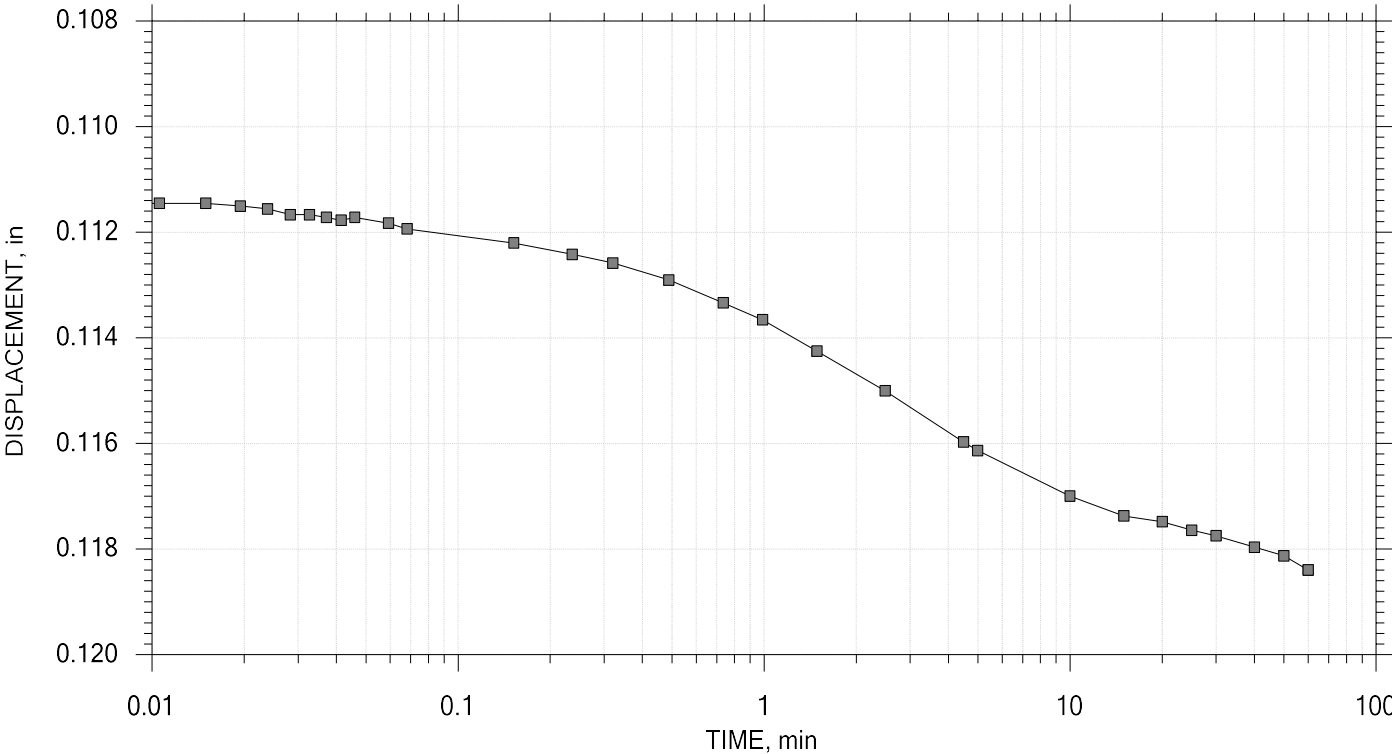
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|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 1U                         | Test Date: 1/23/2024 | Test No.: 270801      |
|  | Depth: 25.0-27.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 14 of 21

Stress: 2 tsf



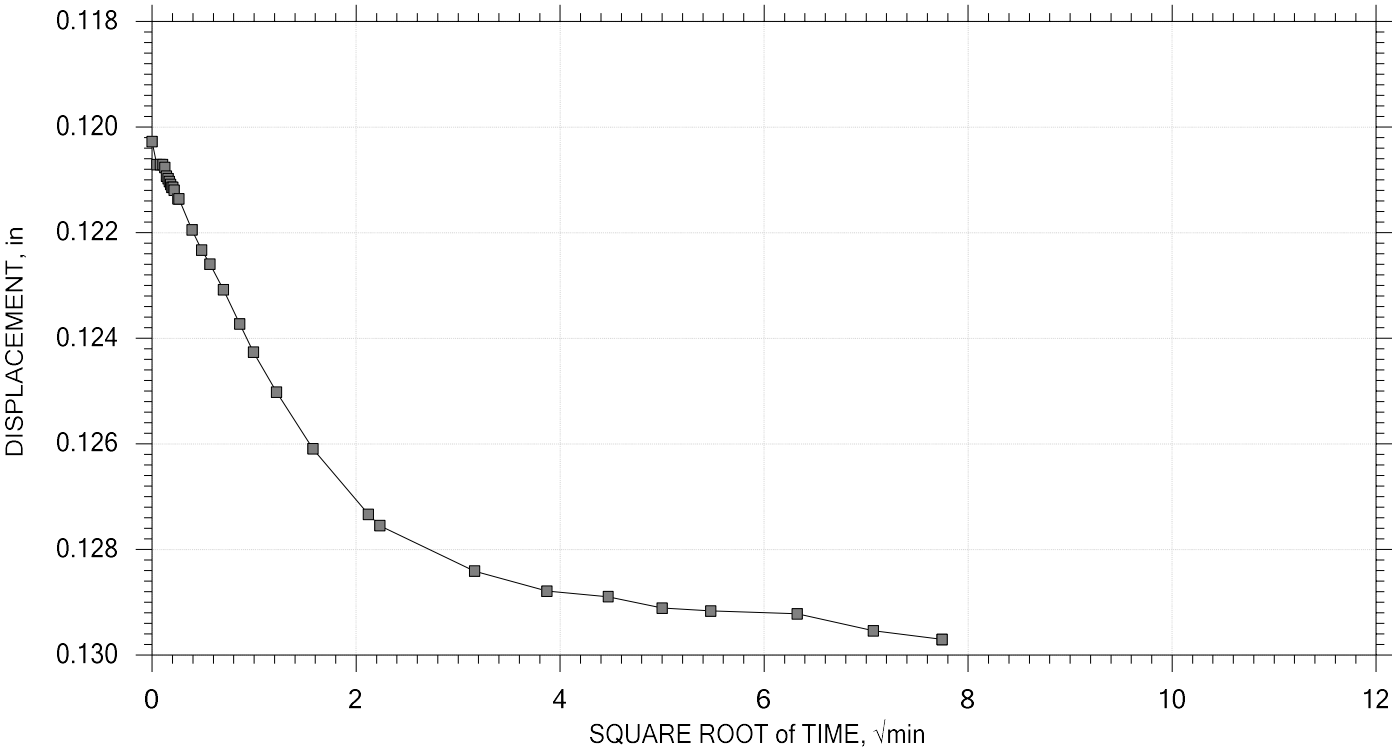
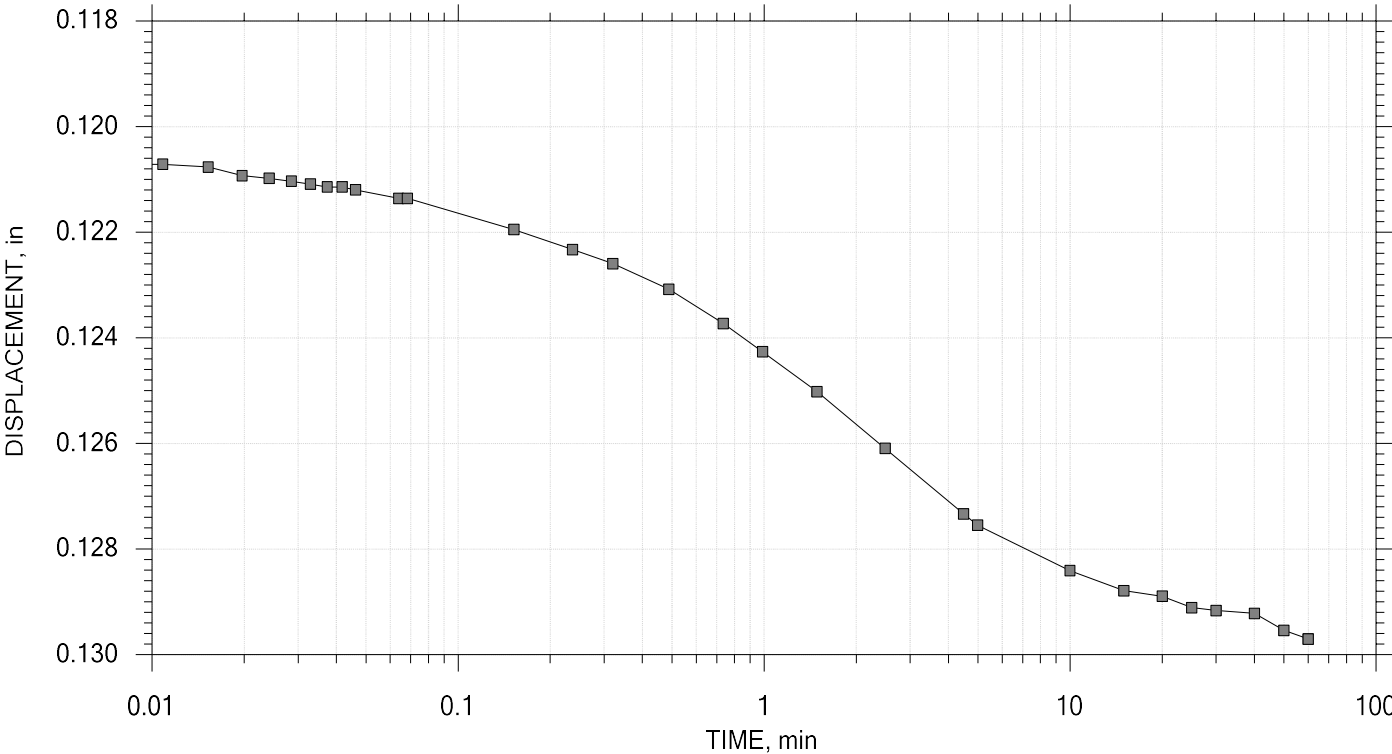
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|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 1U                         | Test Date: 1/23/2024 | Test No.: 270801      |
|  | Depth: 25.0-27.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 15 of 21

Stress: 4 tsf



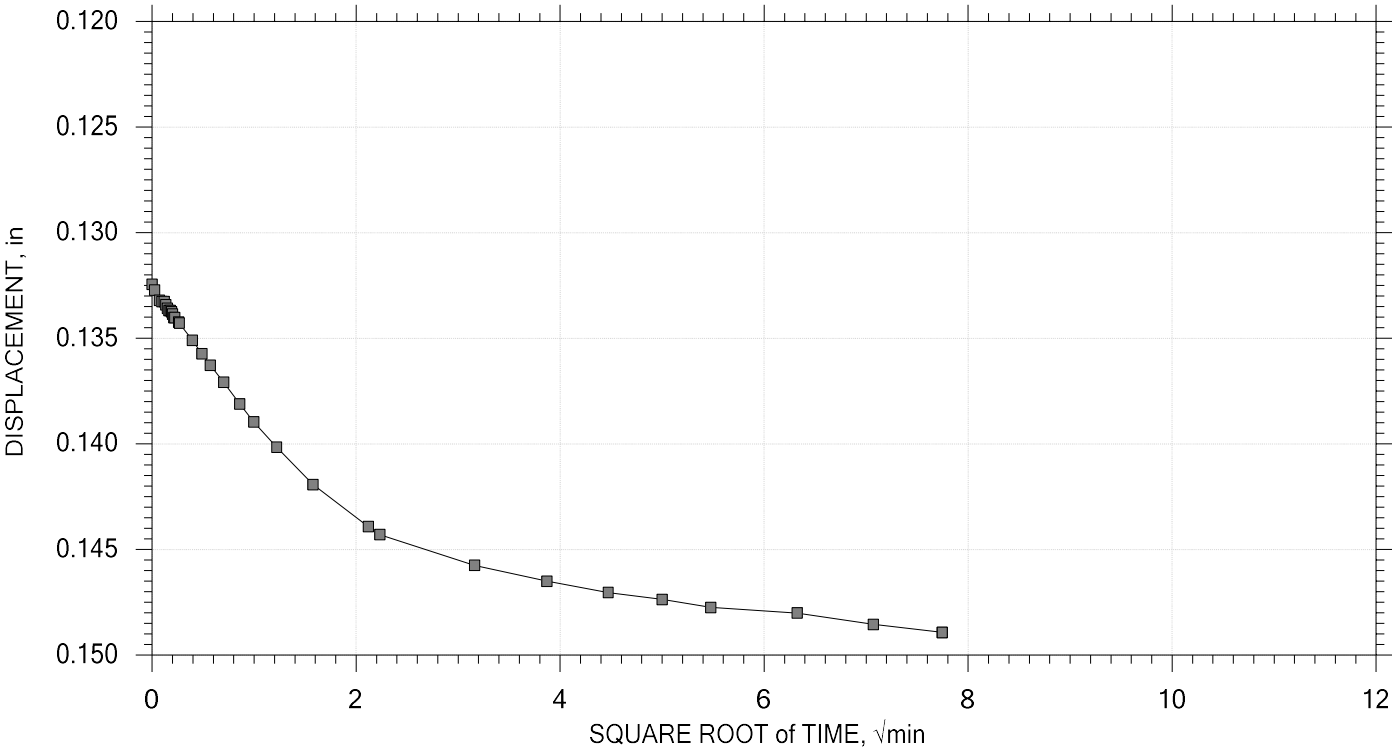
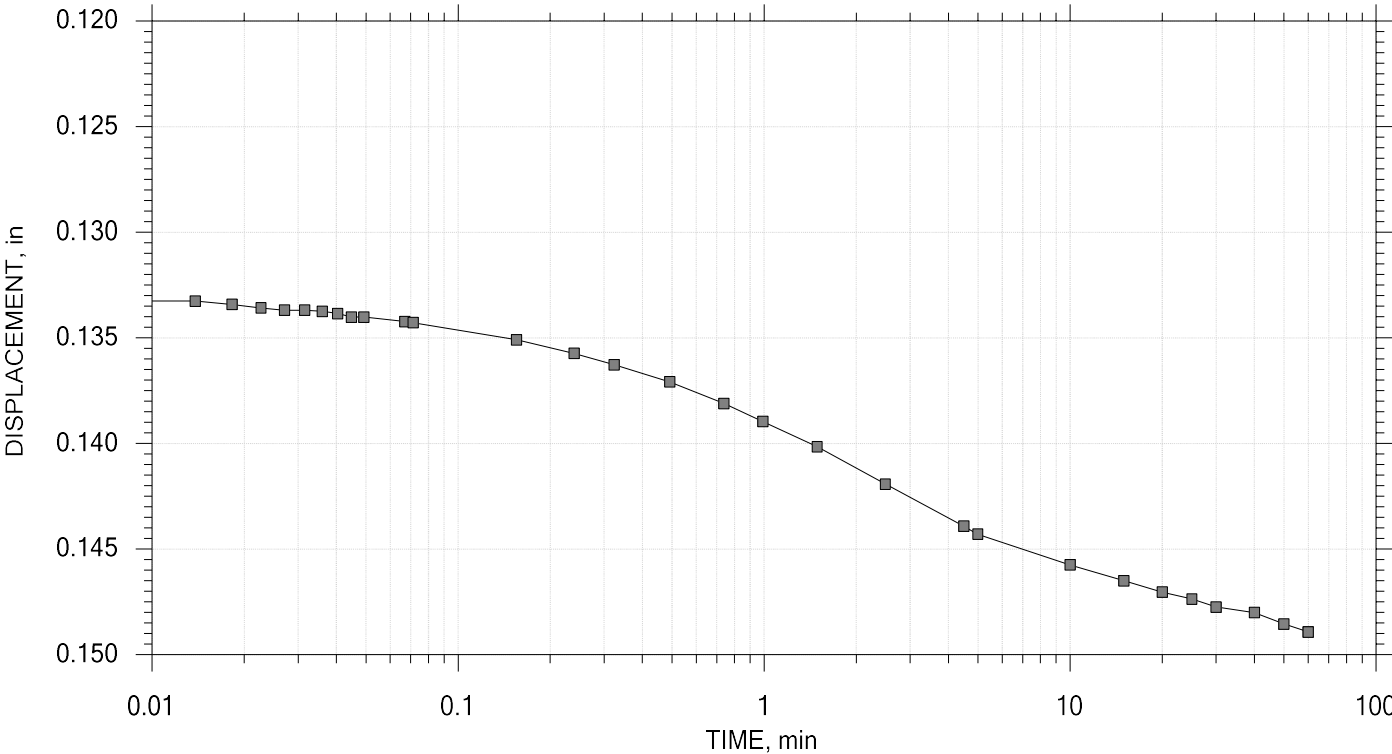
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|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 1U                         | Test Date: 1/23/2024 | Test No.: 270801      |
|  | Depth: 25.0-27.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 16 of 21

Stress: 8 tsf



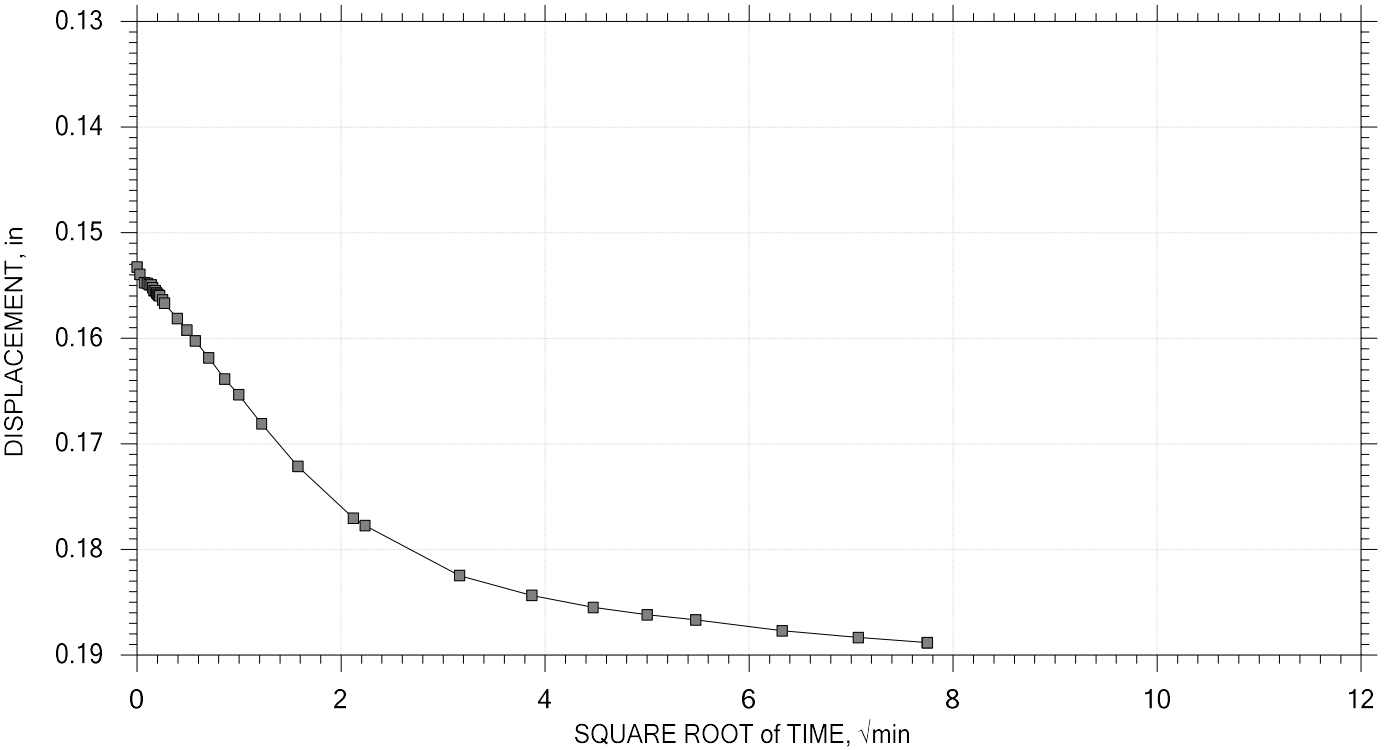
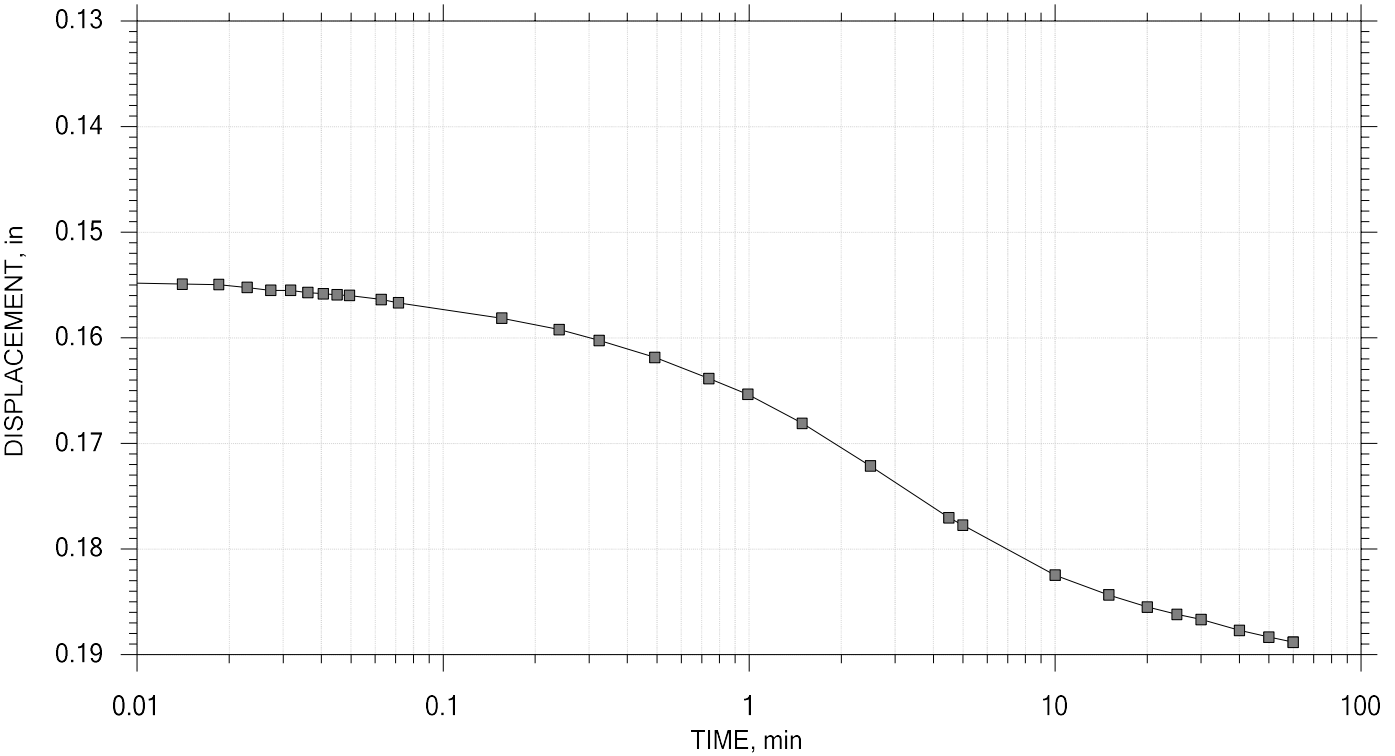
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|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 1U                         | Test Date: 1/23/2024 | Test No.: 270801      |
|  | Depth: 25.0-27.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 17 of 21

Stress: 16 tsf



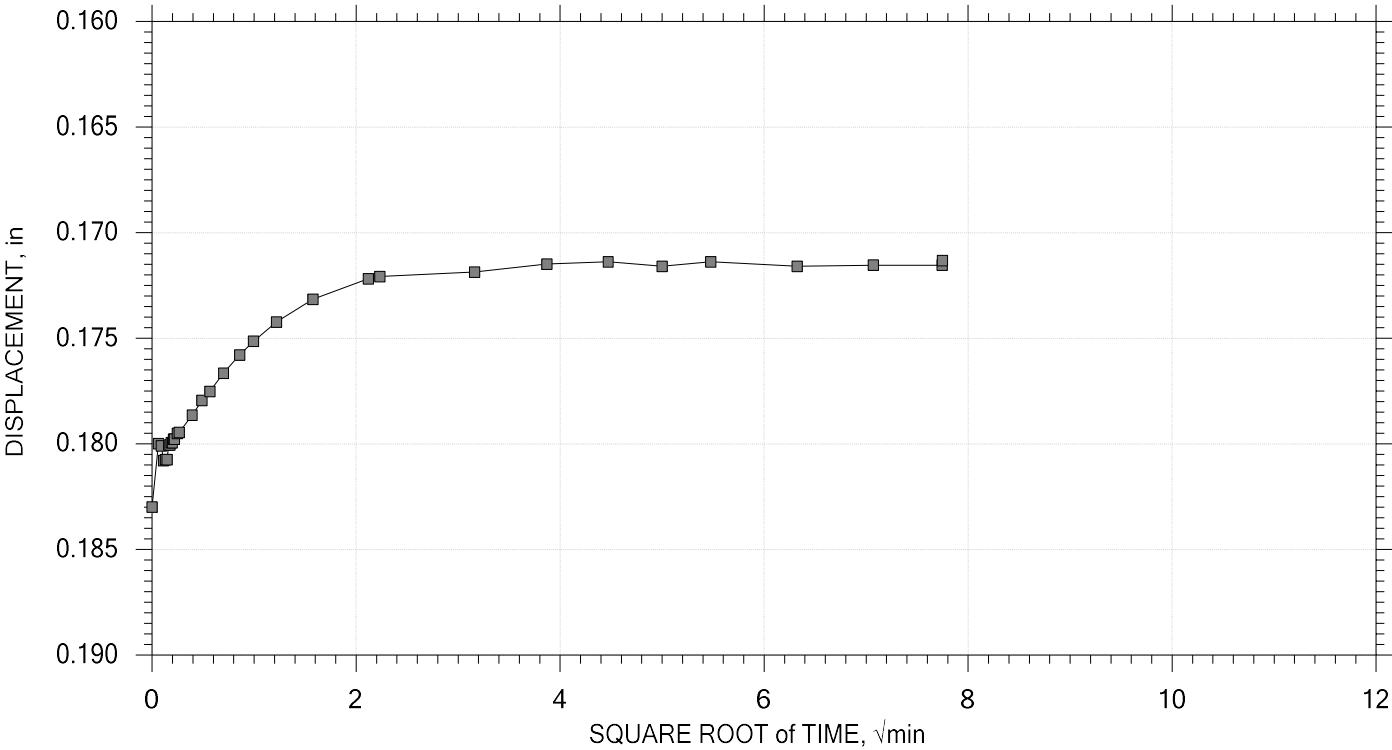
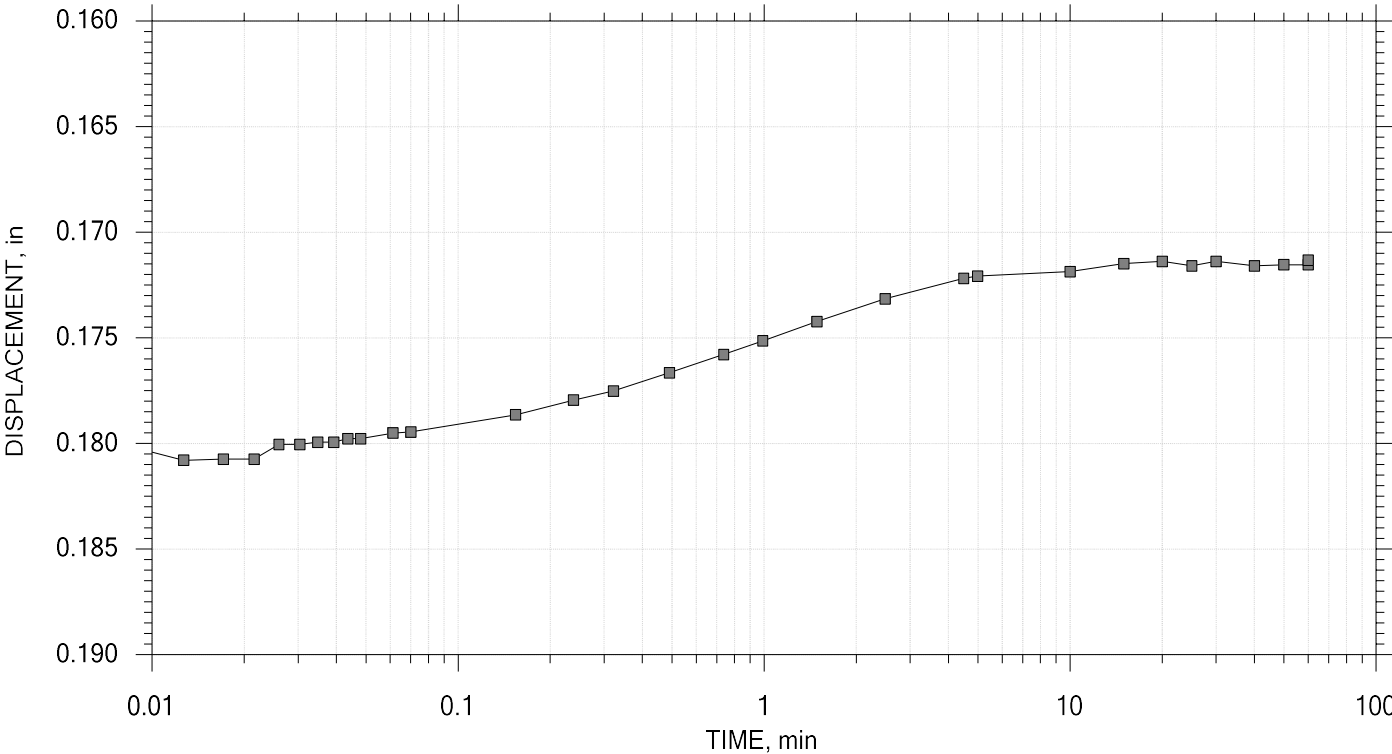
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|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 1U                         | Test Date: 1/23/2024 | Test No.: 270801      |
|  | Depth: 25.0-27.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 18 of 21

Stress: 4 tsf



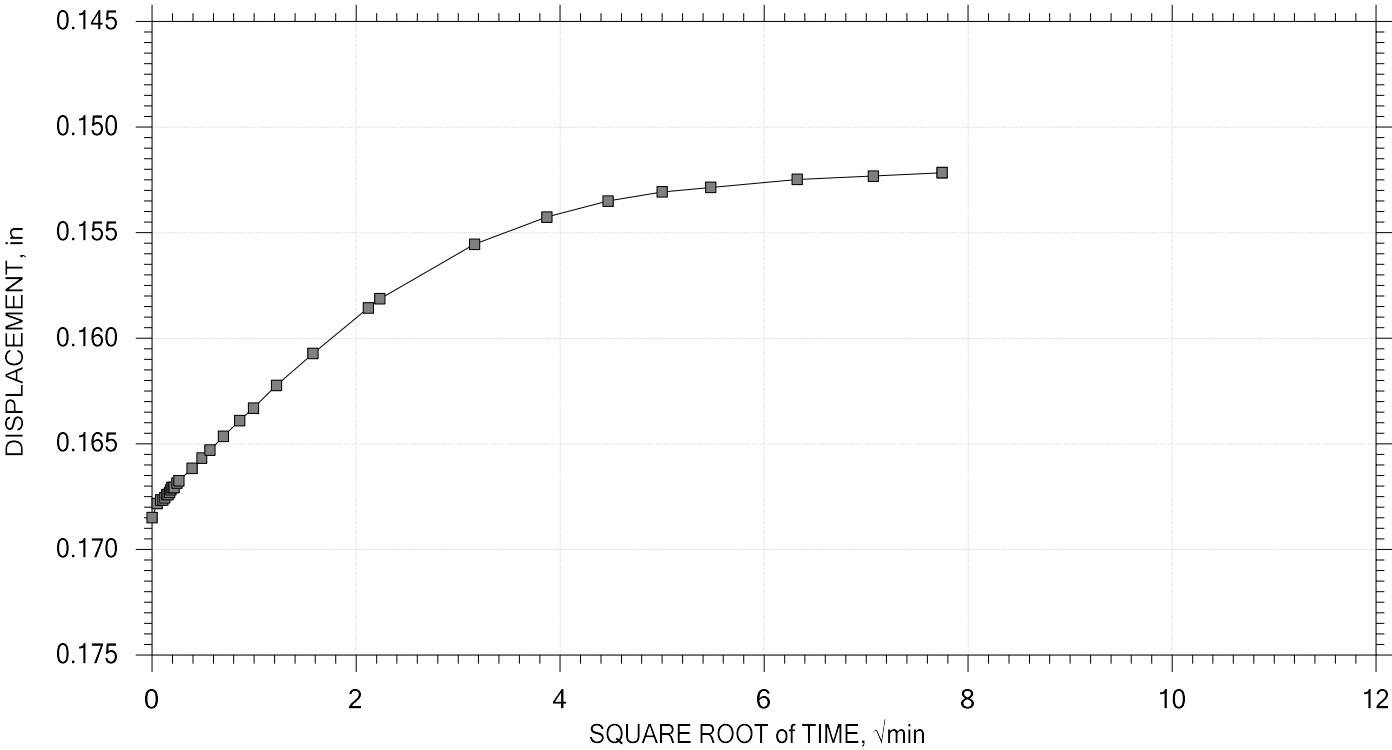
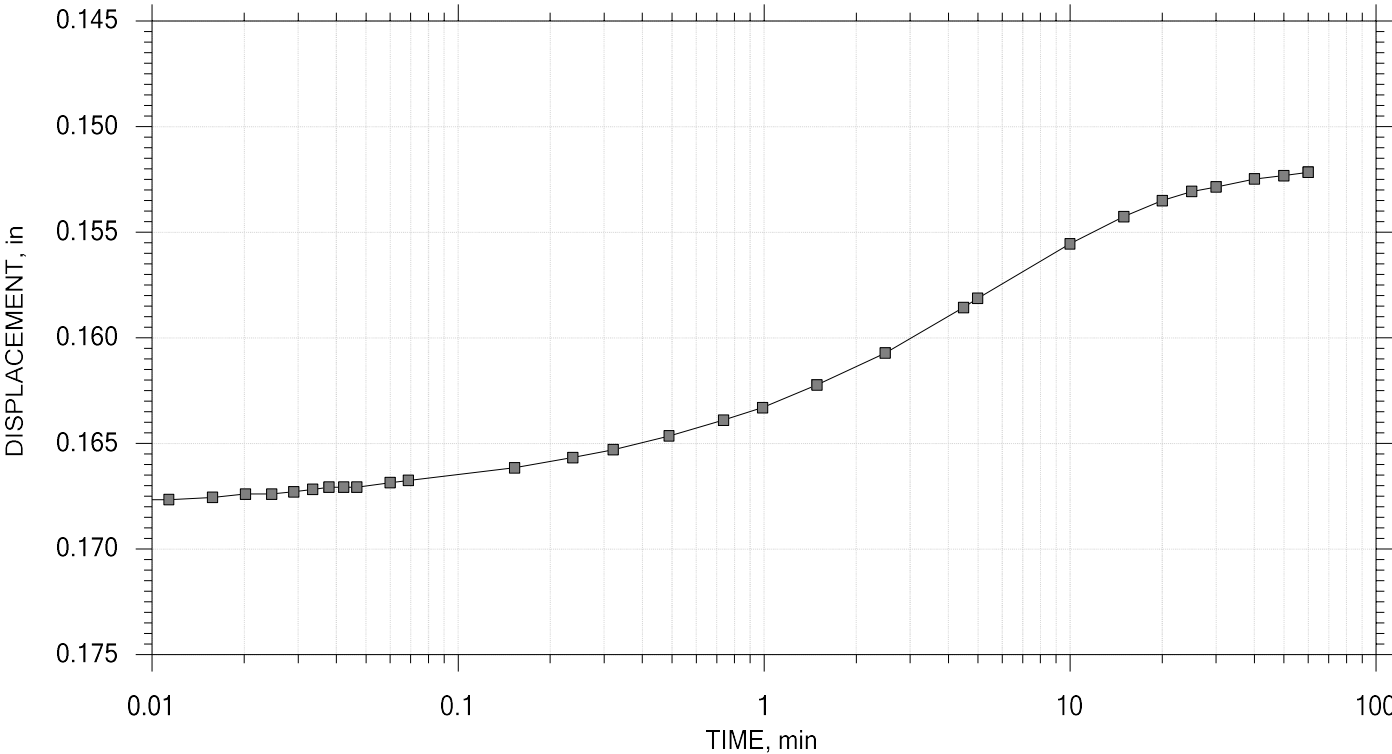
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|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 1U                         | Test Date: 1/23/2024 | Test No.: 270801      |
|  | Depth: 25.0-27.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 19 of 21

Stress: 1 tsf



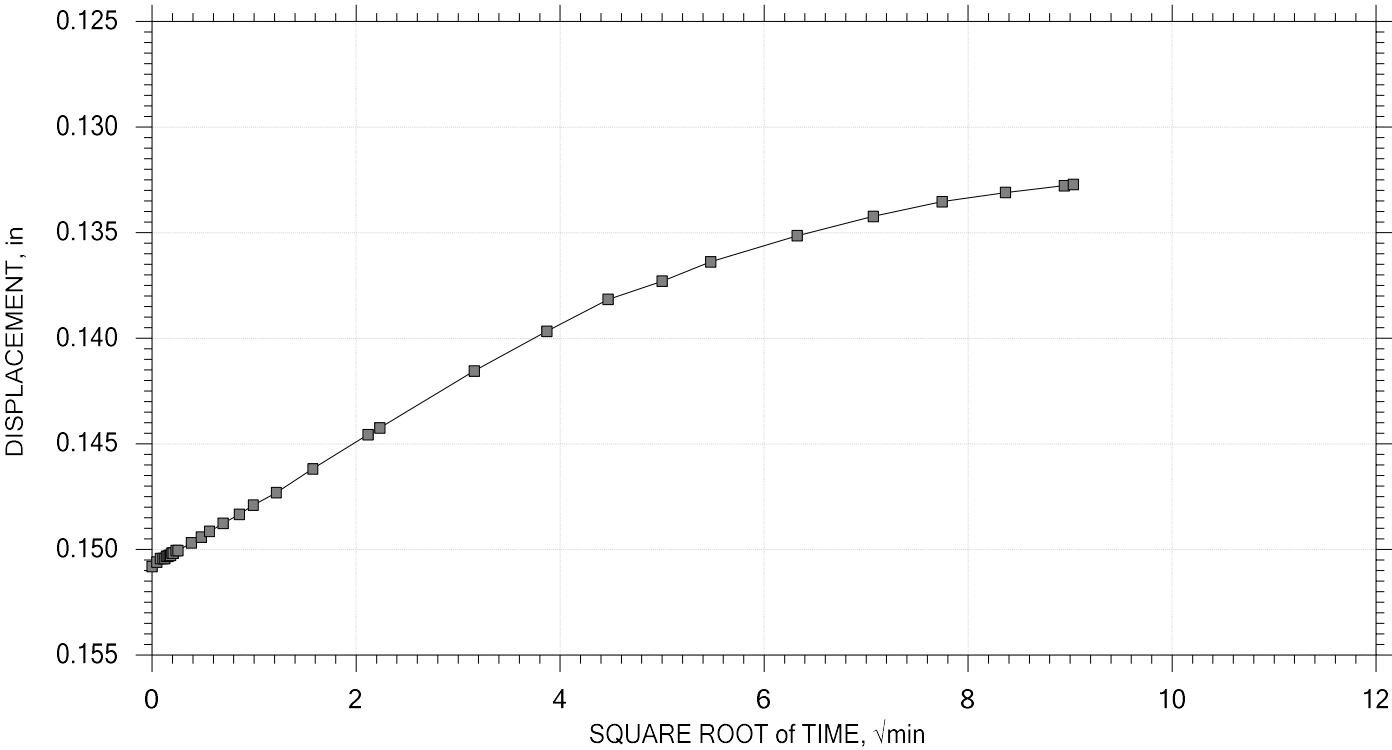
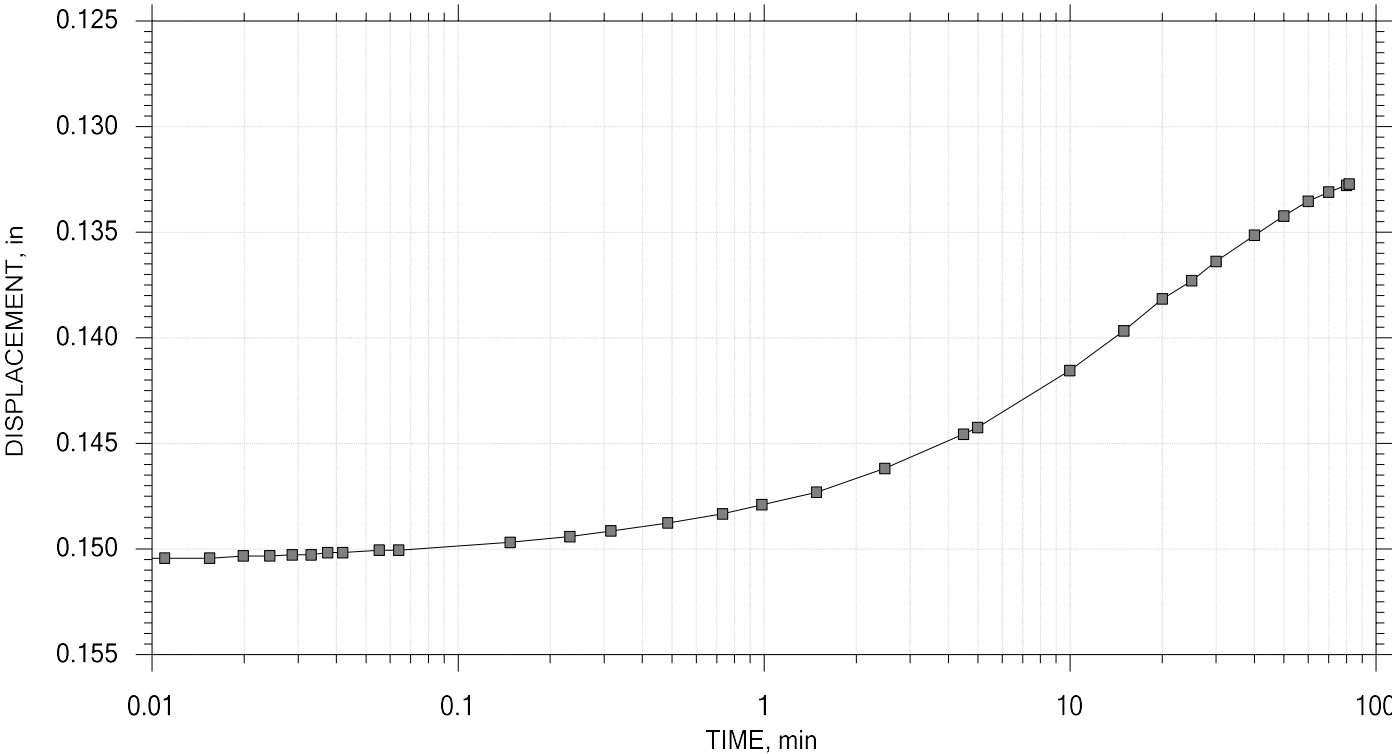
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|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 1U                         | Test Date: 1/23/2024 | Test No.: 270801      |
|  | Depth: 25.0-27.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 20 of 21

Stress: 0.25 tsf



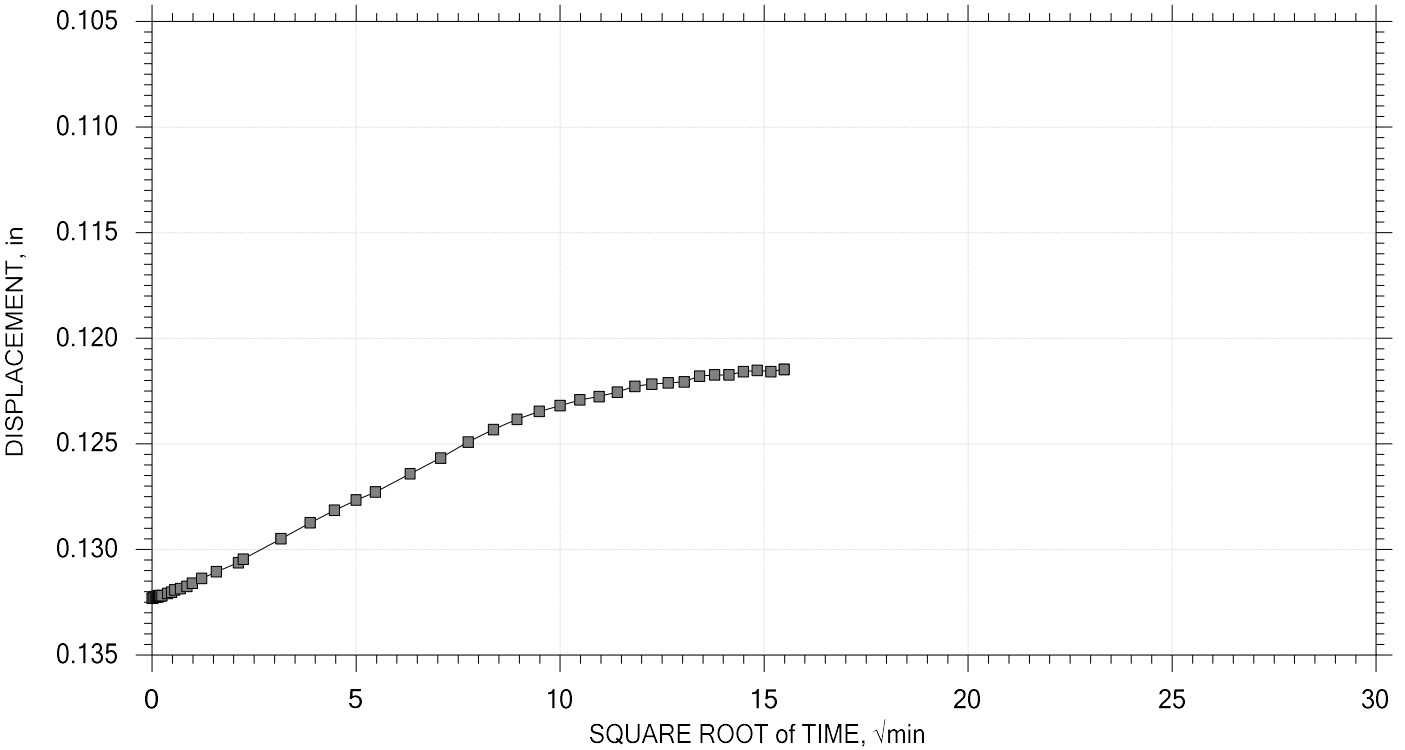
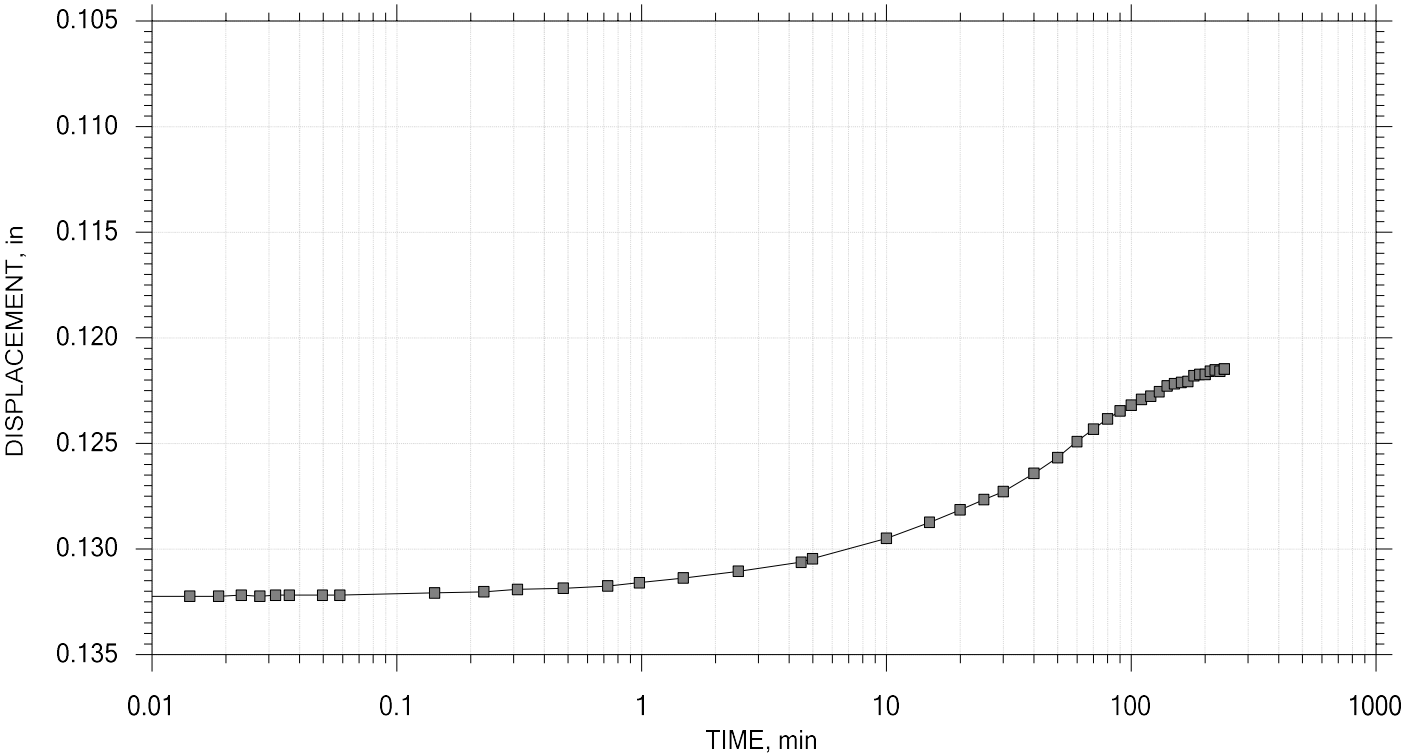
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|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 1U                         | Test Date: 1/23/2024 | Test No.: 270801      |
|  | Depth: 25.0-27.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 21 of 21

Stress: 0.125 tsf



|  |                                        |                      |                       |
|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 1U                         | Test Date: 1/23/2024 | Test No.: 270801      |
|  | Depth: 25.0-27.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

One-Dimensional Consolidation by ASTM D2435 - Method B

|                        |                      |                       |
|------------------------|----------------------|-----------------------|
| Project: ADDISON       | Location: --         | Project No.: 27160.00 |
| Boring No.: BB-AKR-104 | Tested By: GSL       | Checked By: --        |
| Sample No.: 1U         | Test Date: 1/23/2024 | Depth: 25.0-27.0 FT   |
| Test No.: 270801       | Sample Type: Intact  | Elevation: --         |

Soil Description: Grey Silty Clay  
Remarks: Maine Sensitive Load Sequence

|                                 |                      |                            |
|---------------------------------|----------------------|----------------------------|
| Measured Specific Gravity: 2.68 | Liquid Limit: 37     | Specimen Diameter: 2.50 in |
| Initial Void Ratio: 0.966       | Plastic Limit: 23    | Initial Height: 1.00 in    |
| Final Void Ratio: 0.774         | Plasticity Index: 14 | Final Height: 0.90 in      |

|                              | Before Consolidation |               | After Consolidation |           |
|------------------------------|----------------------|---------------|---------------------|-----------|
|                              | Trimmings            | Specimen+Ring | Specimen+Ring       | Trimmings |
| Container ID                 | 101                  | RING          | RING                | 70        |
| Wt. Container + Wet Soil, gm | 96.440               | 408.74        | 402.09              | 202.74    |
| Wt. Container + Dry Soil, gm | 84.140               | 370.70        | 370.70              | 171.34    |
| Wt. Container, gm            | 50.040               | 262.01        | 262.01              | 62.610    |
| Wt. Dry Soil, gm             | 34.100               | 108.69        | 108.69              | 108.73    |
| Water Content, %             | 36.07                | 35.00         | 28.88               | 28.88     |
| Void Ratio                   | ---                  | 0.966         | 0.774               | ---       |
| Degree of Saturation, %      | ---                  | 97.13         | 100.00              | ---       |
| Dry Unit Weight, pcf         | ---                  | 85.117        | 94.312              | ---       |

## One-Dimensional Consolidation by ASTM D2435 - Method B

Project: ADDISON  
 Boring No.: BB-AKR-104  
 Sample No.: 1U  
 Test No.: 270801

Location: --  
 Tested By: GSL  
 Test Date: 1/23/2024  
 Sample Type: Intact

Project No.: 27160.00  
 Checked By: --  
 Depth: 25.0-27.0 FT  
 Elevation: --

Soil Description: Grey Silty Clay  
 Remarks: Maine Sensitive Load Sequence

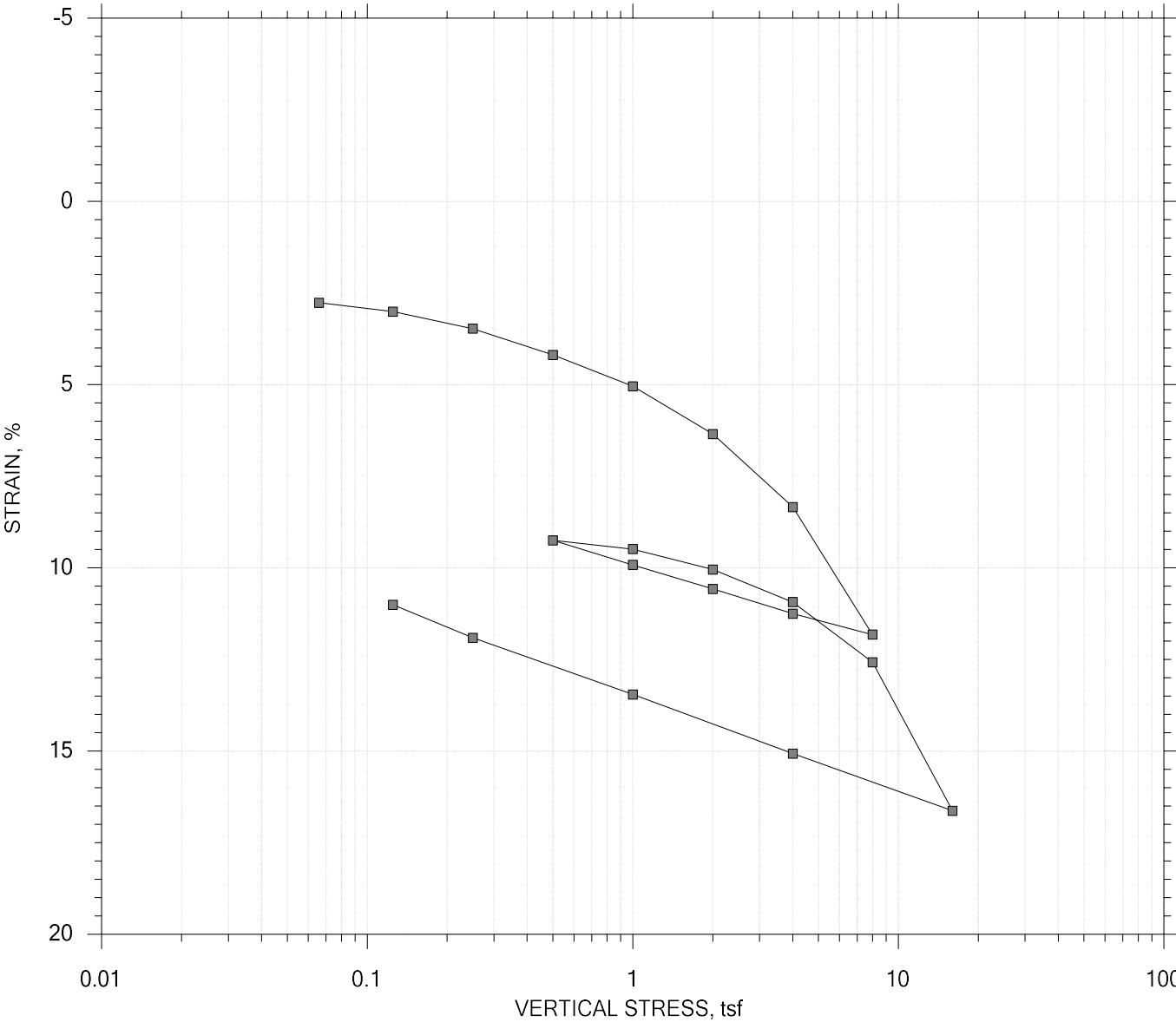
## Displacement at End of Increment

|    | Applied<br>Stress<br>tsf | Final<br>Displacement<br>in | Void<br>Ratio | Strain<br>at End<br>% | Sq.Rt<br>T90<br>min | Cv<br>ft <sup>2</sup> /sec | Mv<br>1/tsf | k<br>ft/day |
|----|--------------------------|-----------------------------|---------------|-----------------------|---------------------|----------------------------|-------------|-------------|
| 1  | 0.0691                   | 0.002854                    | 0.960         | 0.287                 | 2.889               | 8.39e-006                  | 4.15e-002   | 9.38e-004   |
| 2  | 0.125                    | 0.007861                    | 0.950         | 0.790                 | 31.799              | 7.56e-007                  | 9.00e-002   | 1.84e-004   |
| 3  | 0.250                    | 0.01583                     | 0.934         | 1.59                  | 11.957              | 1.98e-006                  | 6.41e-002   | 3.43e-004   |
| 4  | 0.500                    | 0.02670                     | 0.913         | 2.68                  | 5.751               | 4.05e-006                  | 4.37e-002   | 4.77e-004   |
| 5  | 1.00                     | 0.04140                     | 0.884         | 4.16                  | 9.931               | 2.28e-006                  | 2.95e-002   | 1.82e-004   |
| 6  | 2.00                     | 0.06385                     | 0.839         | 6.42                  | 9.861               | 2.21e-006                  | 2.26e-002   | 1.34e-004   |
| 7  | 4.00                     | 0.09427                     | 0.779         | 9.47                  | 10.206              | 2.02e-006                  | 1.53e-002   | 8.31e-005   |
| 8  | 8.00                     | 0.1356                      | 0.698         | 13.6                  | 10.405              | 1.83e-006                  | 1.04e-002   | 5.12e-005   |
| 9  | 4.00                     | 0.1296                      | 0.709         | 13.0                  | 2.232               | 8.17e-006                  | 1.50e-003   | 3.31e-005   |
| 10 | 2.00                     | 0.1216                      | 0.725         | 12.2                  | 4.498               | 4.12e-006                  | 4.06e-003   | 4.51e-005   |
| 11 | 1.00                     | 0.1133                      | 0.742         | 11.4                  | 9.492               | 1.99e-006                  | 8.33e-003   | 4.47e-005   |
| 12 | 0.500                    | 0.1049                      | 0.758         | 10.5                  | 24.358              | 7.91e-007                  | 1.69e-002   | 3.60e-005   |
| 13 | 1.00                     | 0.1099                      | 0.749         | 11.0                  | 13.630              | 1.42e-006                  | 1.01e-002   | 3.85e-005   |
| 14 | 2.00                     | 0.1184                      | 0.732         | 11.9                  | 7.268               | 2.62e-006                  | 8.55e-003   | 6.04e-005   |
| 15 | 4.00                     | 0.1297                      | 0.709         | 13.0                  | 6.575               | 2.83e-006                  | 5.68e-003   | 4.34e-005   |
| 16 | 8.00                     | 0.1489                      | 0.671         | 15.0                  | 5.234               | 3.43e-006                  | 4.83e-003   | 4.47e-005   |
| 17 | 16.0                     | 0.1888                      | 0.593         | 19.0                  | 7.548               | 2.22e-006                  | 5.01e-003   | 3.00e-005   |
| 18 | 4.00                     | 0.1713                      | 0.627         | 17.2                  | 3.594               | 4.53e-006                  | 1.47e-003   | 1.79e-005   |
| 19 | 1.00                     | 0.1522                      | 0.665         | 15.3                  | 8.963               | 1.90e-006                  | 6.42e-003   | 3.29e-005   |
| 20 | 0.250                    | 0.1327                      | 0.703         | 13.3                  | 40.454              | 4.41e-007                  | 2.60e-002   | 3.10e-005   |
| 21 | 0.125                    | 0.1215                      | 0.726         | 12.2                  | 156.974             | 1.18e-007                  | 9.05e-002   | 2.87e-005   |

|    | Applied<br>Stress<br>tsf | Final<br>Displacement<br>in | Void<br>Ratio | Strain<br>at End<br>% | Log<br>T50<br>min | Cv<br>ft <sup>2</sup> /sec | Mv<br>1/tsf | k<br>ft/day | Ca<br>%   |
|----|--------------------------|-----------------------------|---------------|-----------------------|-------------------|----------------------------|-------------|-------------|-----------|
| 1  | 0.0691                   | 0.002854                    | 0.960         | 0.287                 | 0.000             | 0.00e+000                  | 4.15e-002   | 0.00e+000   | 0.00e+000 |
| 2  | 0.125                    | 0.007861                    | 0.950         | 0.790                 | 0.000             | 0.00e+000                  | 9.00e-002   | 0.00e+000   | 0.00e+000 |
| 3  | 0.250                    | 0.01583                     | 0.934         | 1.59                  | 0.000             | 0.00e+000                  | 6.41e-002   | 0.00e+000   | 0.00e+000 |
| 4  | 0.500                    | 0.02670                     | 0.913         | 2.68                  | 2.069             | 2.61e-006                  | 4.37e-002   | 3.08e-004   | 0.00e+000 |
| 5  | 1.00                     | 0.04140                     | 0.884         | 4.16                  | 0.000             | 0.00e+000                  | 2.95e-002   | 0.00e+000   | 0.00e+000 |
| 6  | 2.00                     | 0.06385                     | 0.839         | 6.42                  | 1.836             | 2.76e-006                  | 2.26e-002   | 1.68e-004   | 0.00e+000 |
| 7  | 4.00                     | 0.09427                     | 0.779         | 9.47                  | 2.283             | 2.09e-006                  | 1.53e-002   | 8.63e-005   | 0.00e+000 |
| 8  | 8.00                     | 0.1356                      | 0.698         | 13.6                  | 2.394             | 1.84e-006                  | 1.04e-002   | 5.17e-005   | 0.00e+000 |
| 9  | 4.00                     | 0.1296                      | 0.709         | 13.0                  | 0.000             | 0.00e+000                  | 1.50e-003   | 0.00e+000   | 0.00e+000 |
| 10 | 2.00                     | 0.1216                      | 0.725         | 12.2                  | 1.125             | 3.83e-006                  | 4.06e-003   | 4.19e-005   | 0.00e+000 |
| 11 | 1.00                     | 0.1133                      | 0.742         | 11.4                  | 2.246             | 1.95e-006                  | 8.33e-003   | 4.39e-005   | 0.00e+000 |
| 12 | 0.500                    | 0.1049                      | 0.758         | 10.5                  | 4.552             | 9.83e-007                  | 1.69e-002   | 4.47e-005   | 0.00e+000 |
| 13 | 1.00                     | 0.1099                      | 0.749         | 11.0                  | 0.000             | 0.00e+000                  | 1.01e-002   | 0.00e+000   | 0.00e+000 |
| 14 | 2.00                     | 0.1184                      | 0.732         | 11.9                  | 1.953             | 2.26e-006                  | 8.55e-003   | 5.22e-005   | 0.00e+000 |
| 15 | 4.00                     | 0.1297                      | 0.709         | 13.0                  | 1.158             | 3.74e-006                  | 5.68e-003   | 5.72e-005   | 0.00e+000 |
| 16 | 8.00                     | 0.1489                      | 0.671         | 15.0                  | 1.110             | 3.76e-006                  | 4.83e-003   | 4.90e-005   | 0.00e+000 |
| 17 | 16.0                     | 0.1888                      | 0.593         | 19.0                  | 2.006             | 1.94e-006                  | 5.01e-003   | 2.62e-005   | 0.00e+000 |
| 18 | 4.00                     | 0.1713                      | 0.627         | 17.2                  | 0.000             | 0.00e+000                  | 1.47e-003   | 0.00e+000   | 0.00e+000 |
| 19 | 1.00                     | 0.1522                      | 0.665         | 15.3                  | 2.335             | 1.70e-006                  | 6.42e-003   | 2.94e-005   | 0.00e+000 |
| 20 | 0.250                    | 0.1327                      | 0.703         | 13.3                  | 0.000             | 0.00e+000                  | 2.60e-002   | 0.00e+000   | 0.00e+000 |
| 21 | 0.125                    | 0.1215                      | 0.726         | 12.2                  | 0.000             | 0.00e+000                  | 9.05e-002   | 0.00e+000   | 0.00e+000 |

One-Dimensional Consolidation by ASTM D2435 - Method B

SUMMARY REPORT

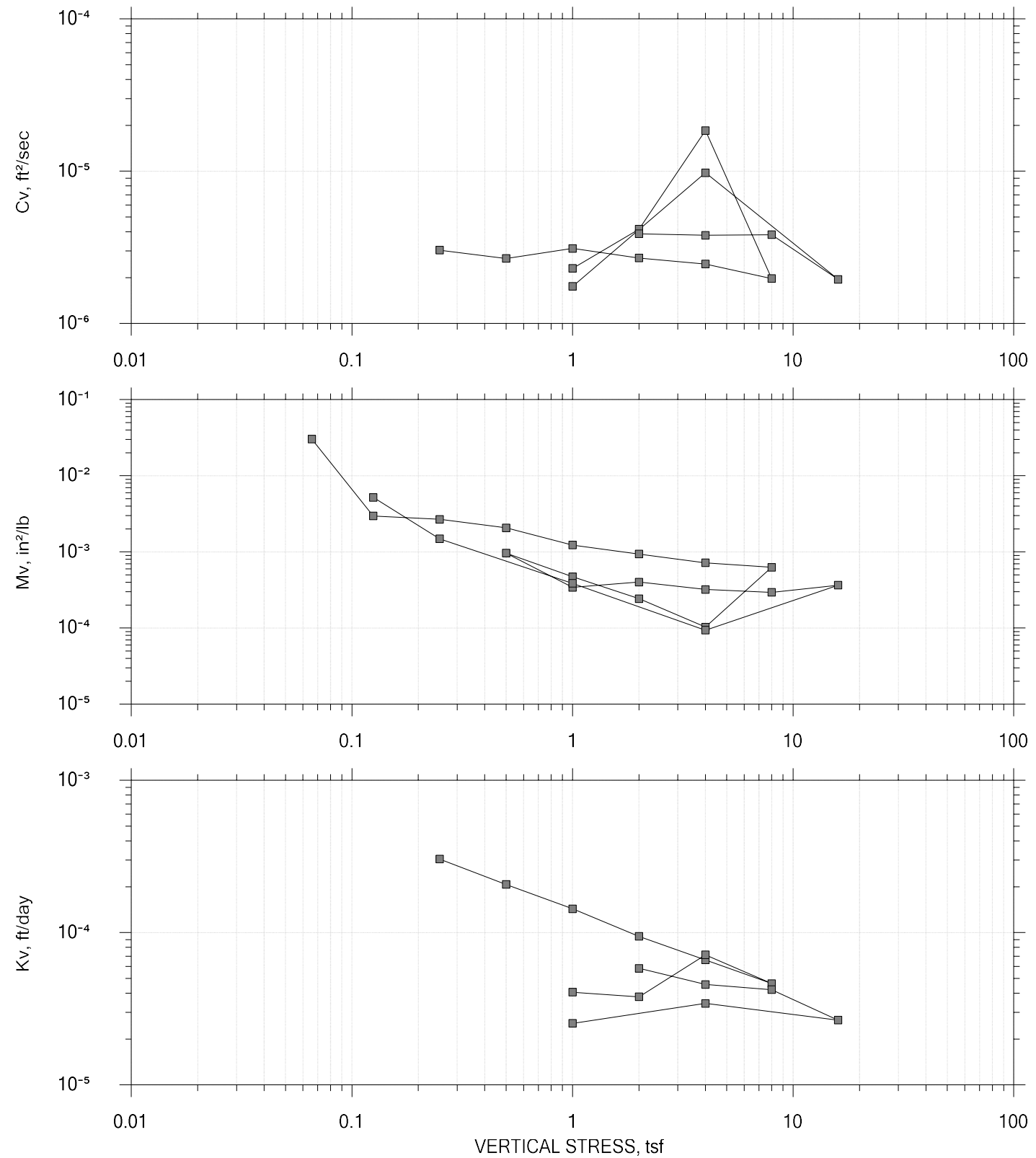


|                                        |        |                  |          | Before Test          | After Test |        |
|----------------------------------------|--------|------------------|----------|----------------------|------------|--------|
| Current Vertical Effective Stress: --- |        | 2,640 psf        |          | Water Content, %     | 32.45      | 28.76  |
| Preconsolidation Stress: ---           |        | 4,100 psf        |          | Dry Unit Weight, pcf | 87.566     | 93.679 |
| Compression Ratio: ---                 |        | 0.3              |          | Saturation, %        | 97.13      | 100.00 |
| Diameter: 2.5 in                       |        | Height: 0.996 in |          | Void Ratio           | 0.88       | 0.76   |
| LL: 35                                 | PL: 21 | PI: 14           | GS: 2.64 |                      |            |        |

|  |                                        |                                    |                       |
|--|----------------------------------------|------------------------------------|-----------------------|
|  | Project: ADDISON                       | Location: -- Sta. 9+28.9, 5.8' Rt. | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL                     | Checked By: -- MAS    |
|  | Sample No.: 2U                         | Test Date: 1/30/2024               | Test No.: 270802      |
|  | Depth: 35.0-37.0 FT                    | Sample Type: Intact                | Elevation: -- -24.9'  |
|  | Description: Grey Silty Clay           |                                    |                       |
|  | Remarks: Maine Sensitive Load Sequence |                                    |                       |
|  | Displacement at End of Increment       |                                    |                       |

One-Dimensional Consolidation by ASTM D2435 - Method B

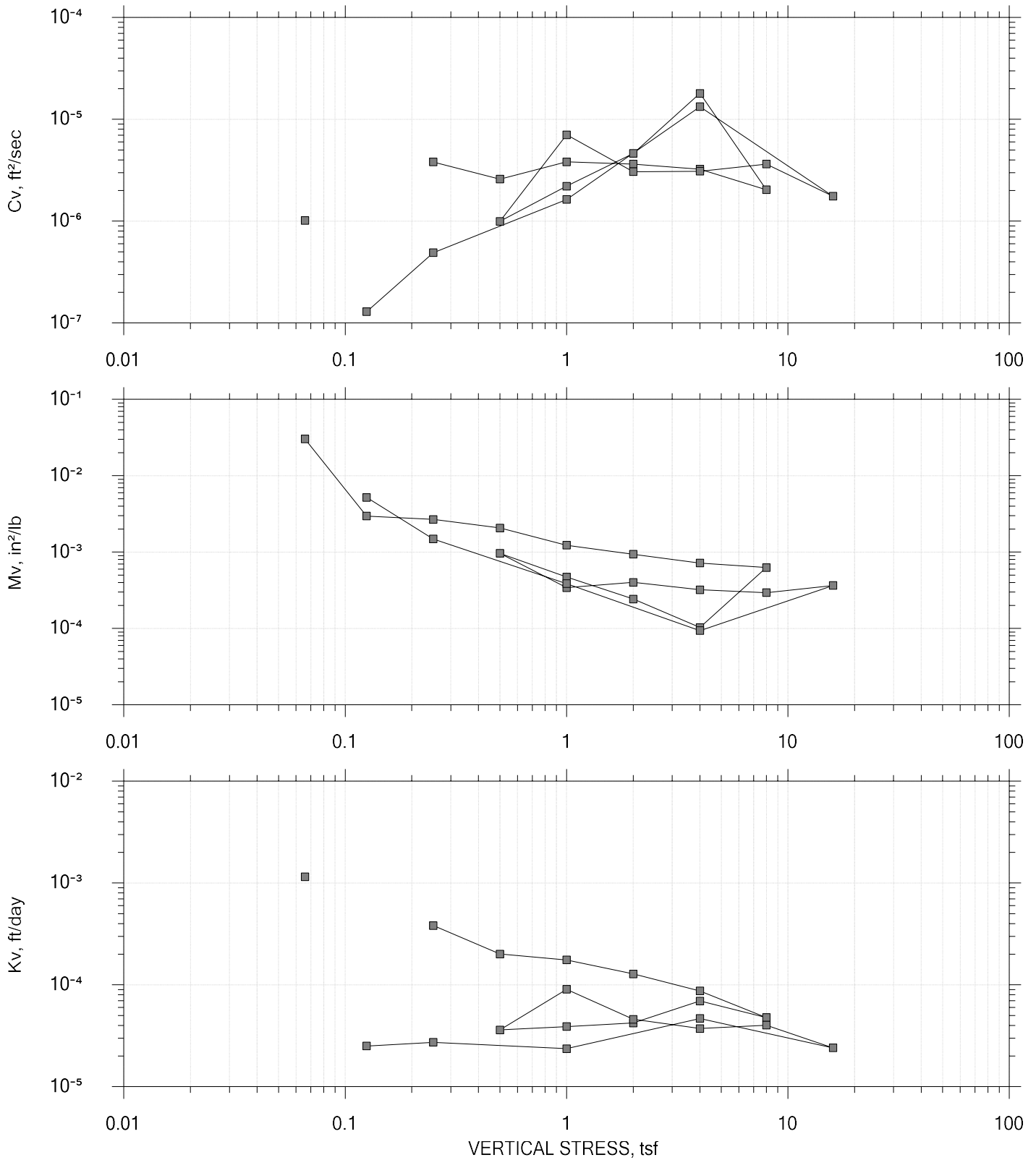
LOG of TIME COEFFICIENTS



|  |                                        |                      |                       |
|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 2U                         | Test Date: 1/30/2024 | Test No.: 270802      |
|  | Depth: 35.0-37.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  | Displacement at End of Increment       |                      |                       |

# One-Dimensional Consolidation by ASTM D2435 - Method B

SQUARE ROOT of TIME COEFFICIENTS



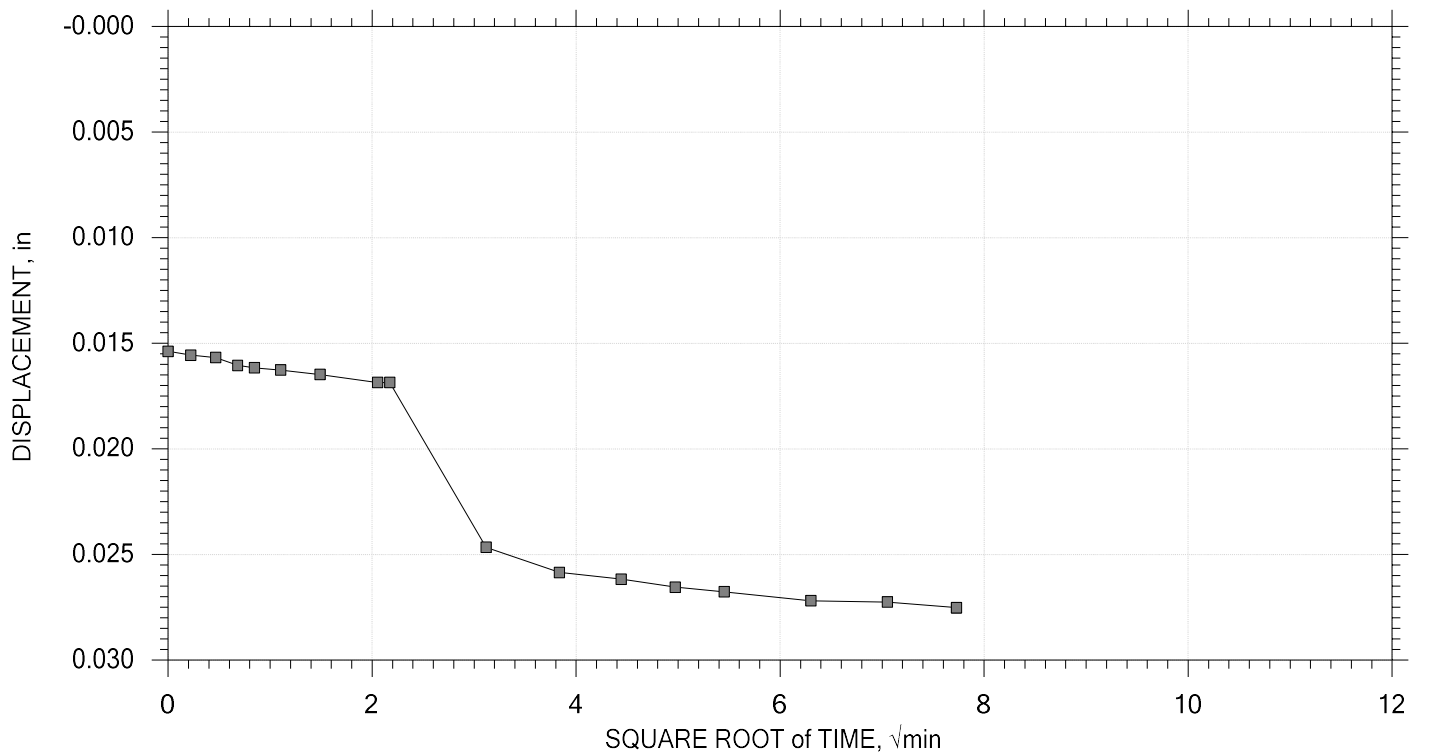
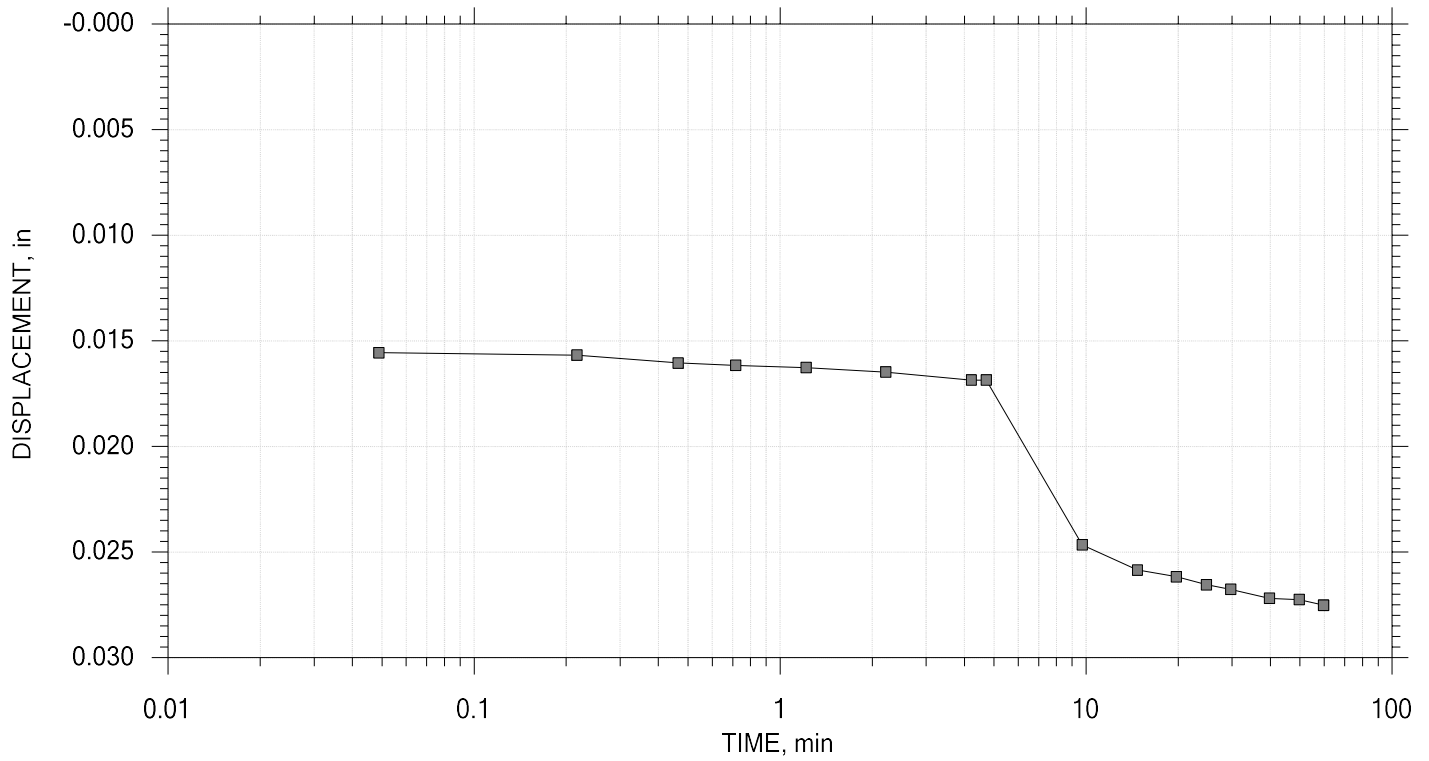
|  |                                        |                      |                       |
|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 2U                         | Test Date: 1/30/2024 | Test No.: 270802      |
|  | Depth: 35.0-37.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  | Displacement at End of Increment       |                      |                       |

# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Volume Step 1 of 21

Stress: 0.065816 tsf



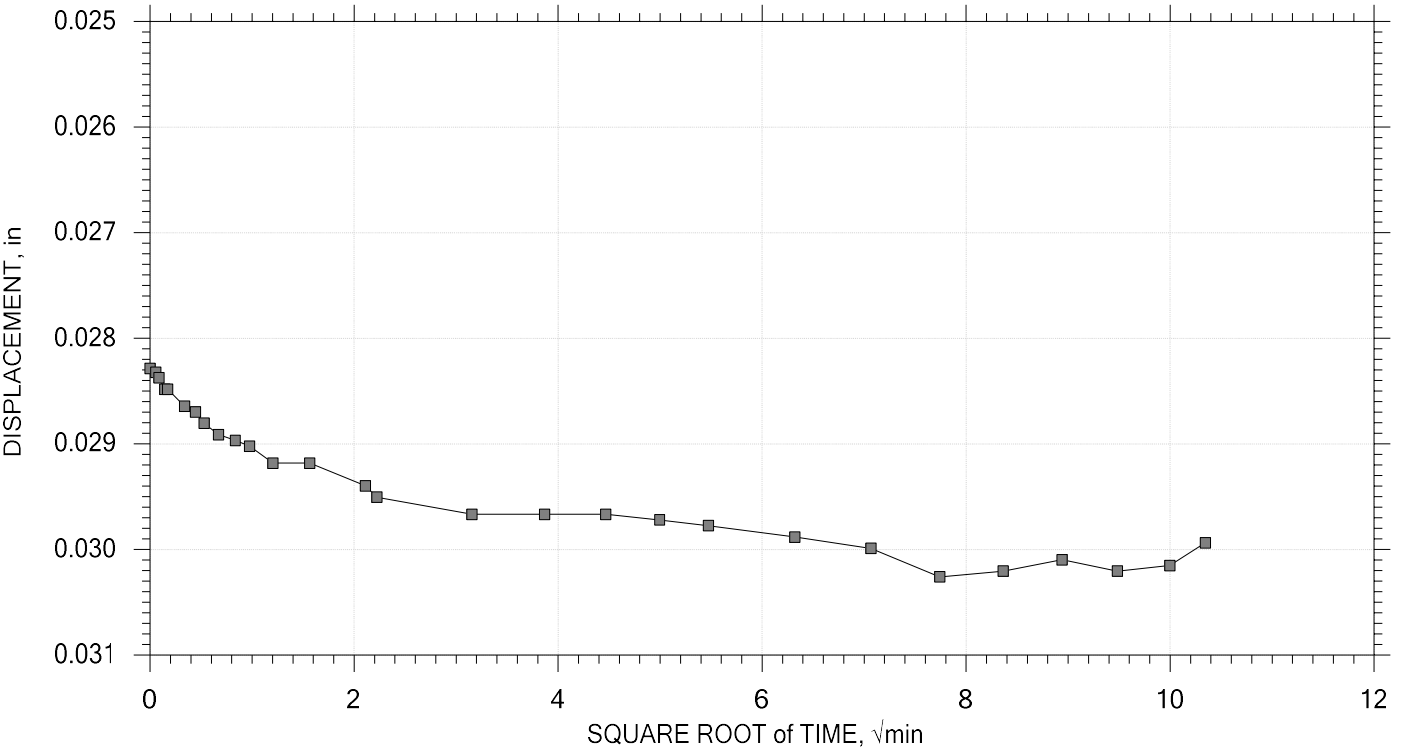
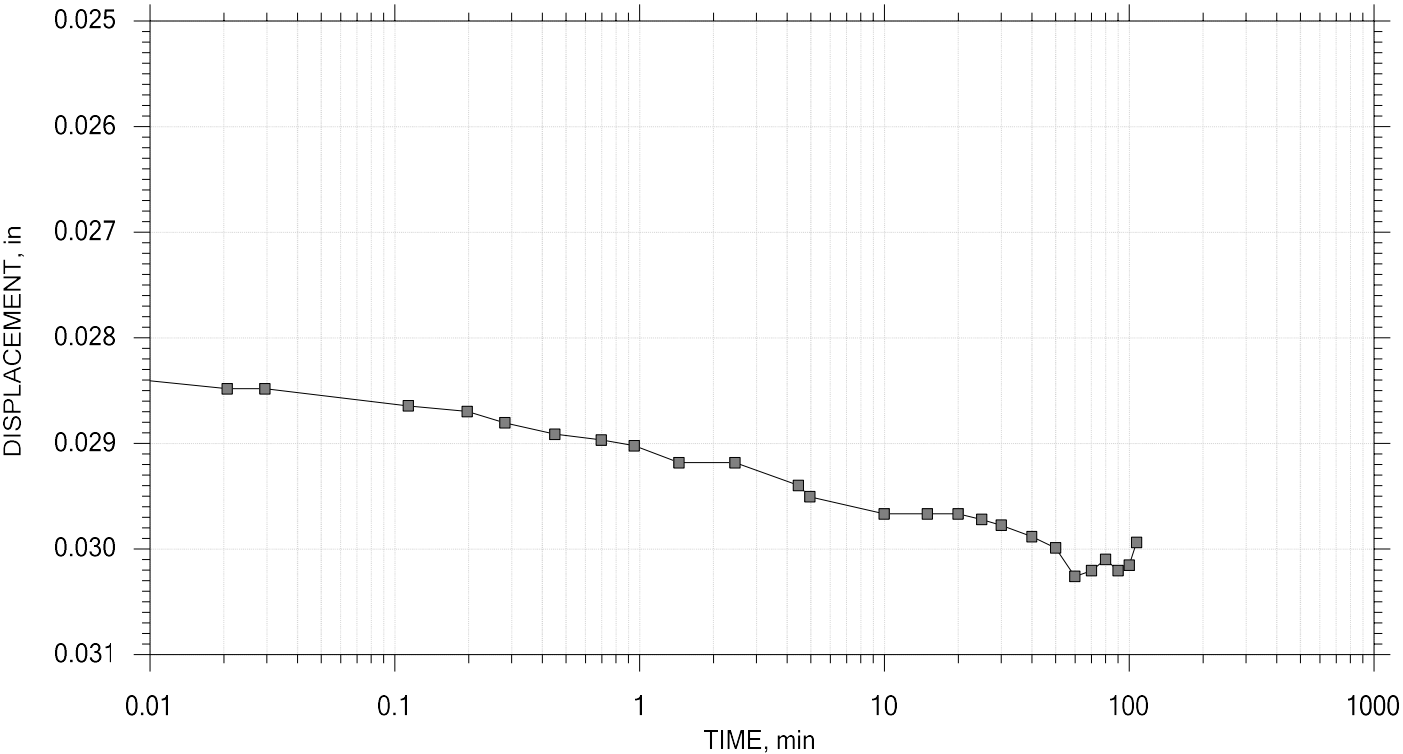
|  |                                        |                      |                       |
|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 2U                         | Test Date: 1/30/2024 | Test No.: 270802      |
|  | Depth: 35.0-37.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 2 of 21

Stress: 0.125 tsf



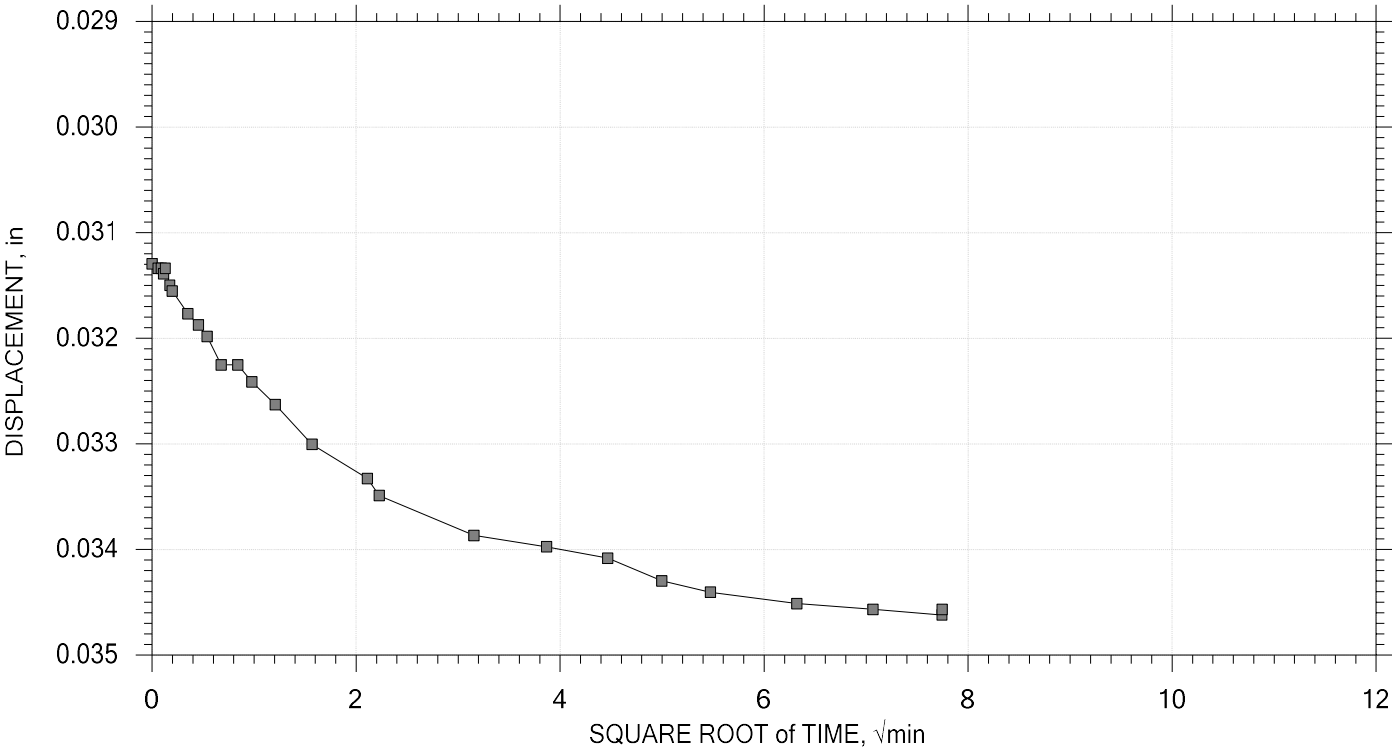
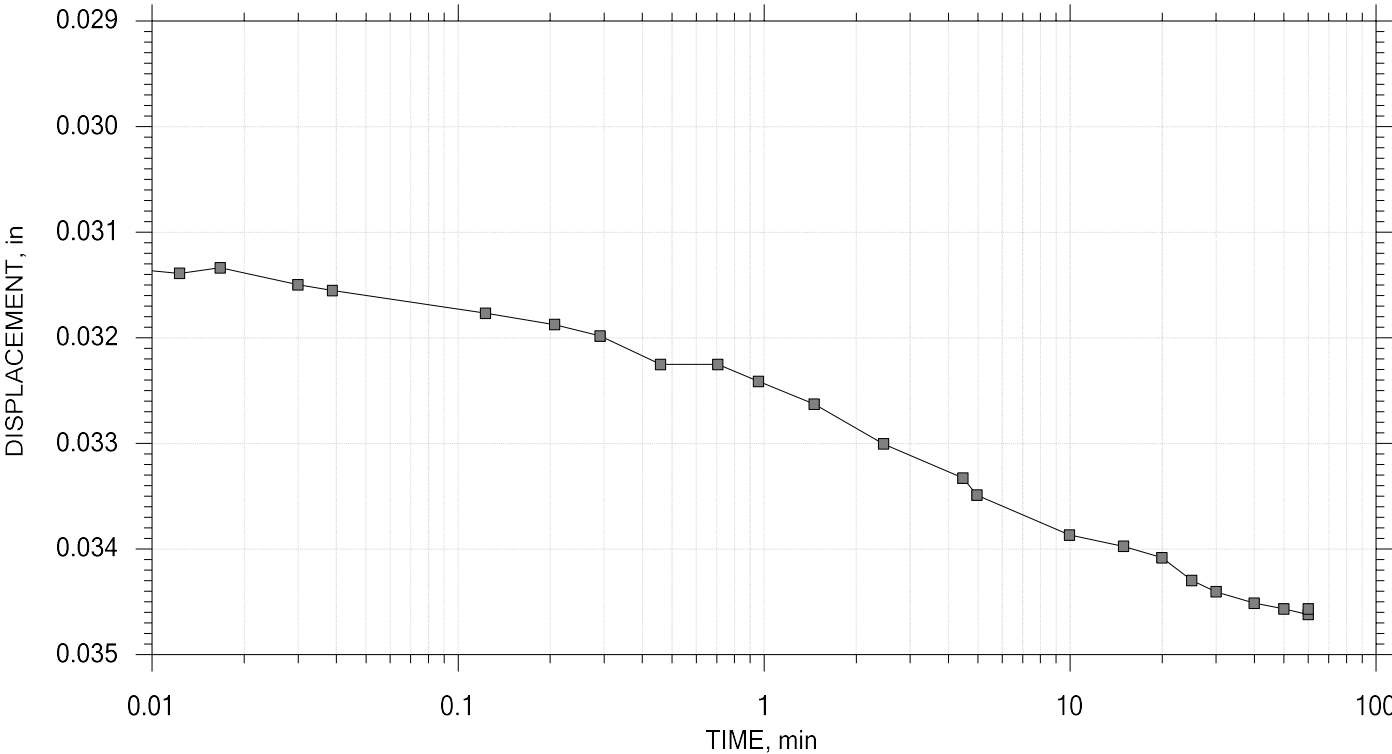
|  |                                        |                      |                       |
|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 2U                         | Test Date: 1/30/2024 | Test No.: 270802      |
|  | Depth: 35.0-37.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 3 of 21

Stress: 0.25 tsf



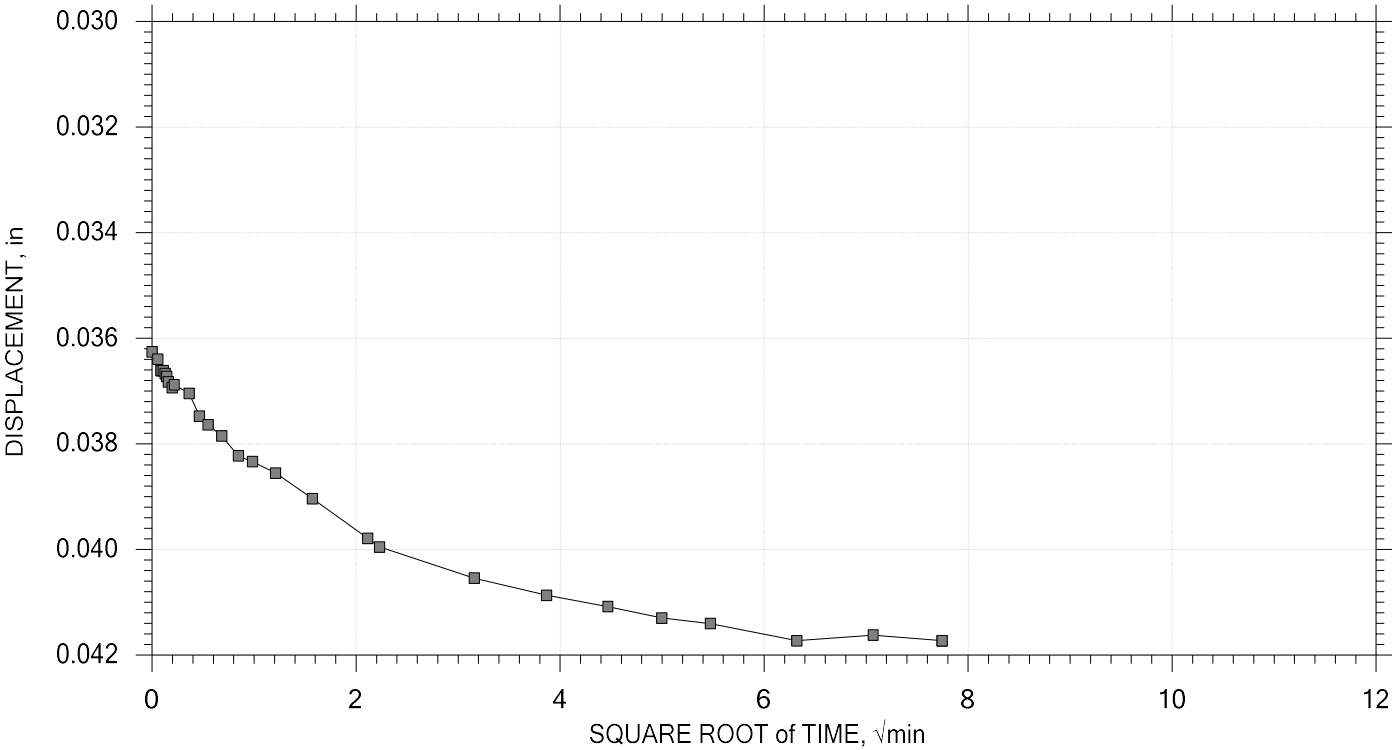
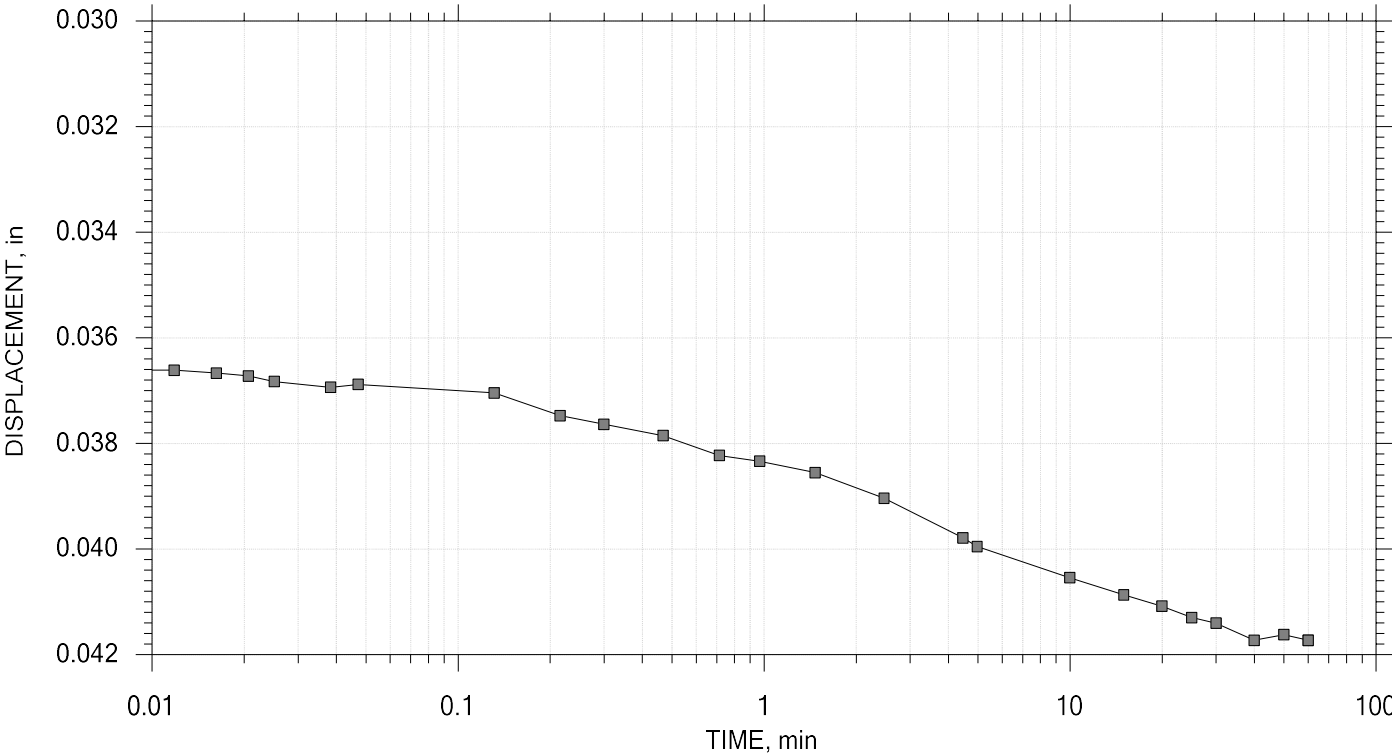
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|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 2U                         | Test Date: 1/30/2024 | Test No.: 270802      |
|  | Depth: 35.0-37.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 4 of 21

Stress: 0.5 tsf



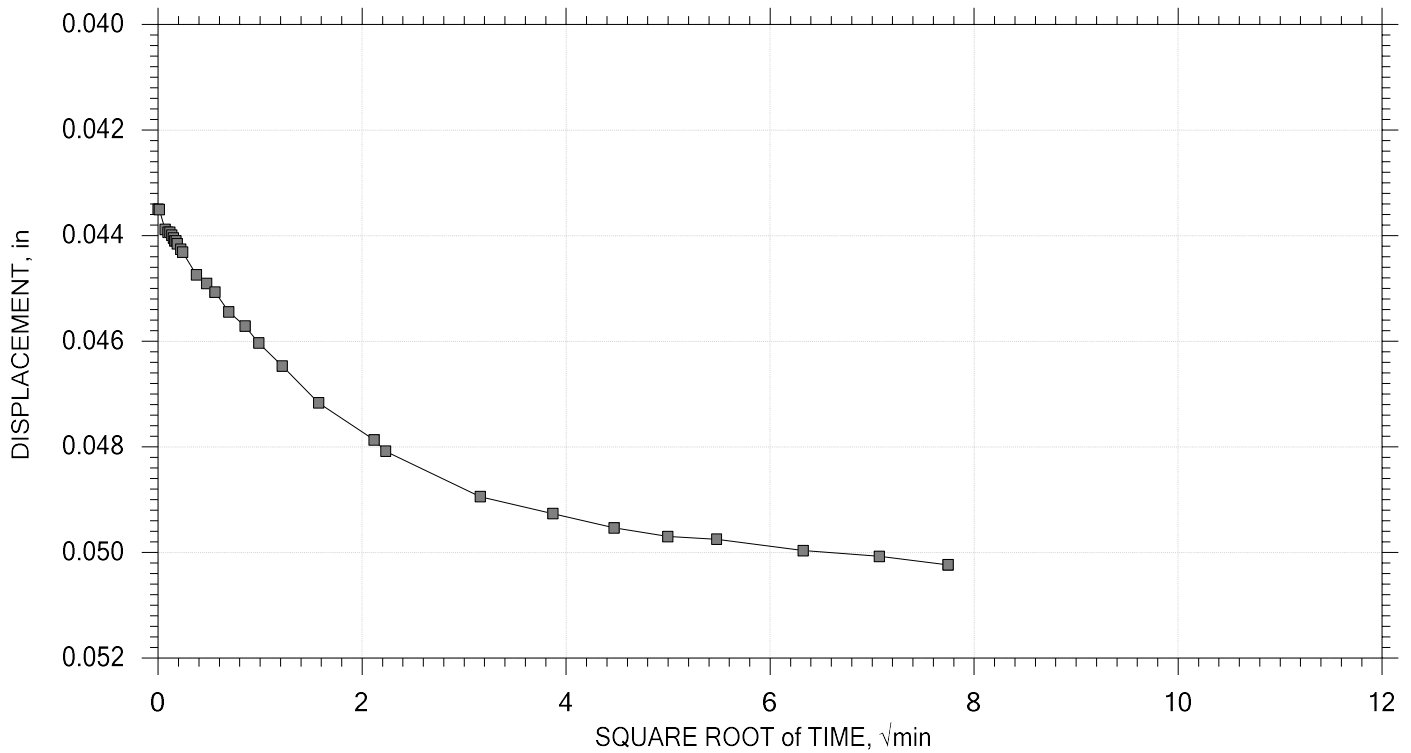
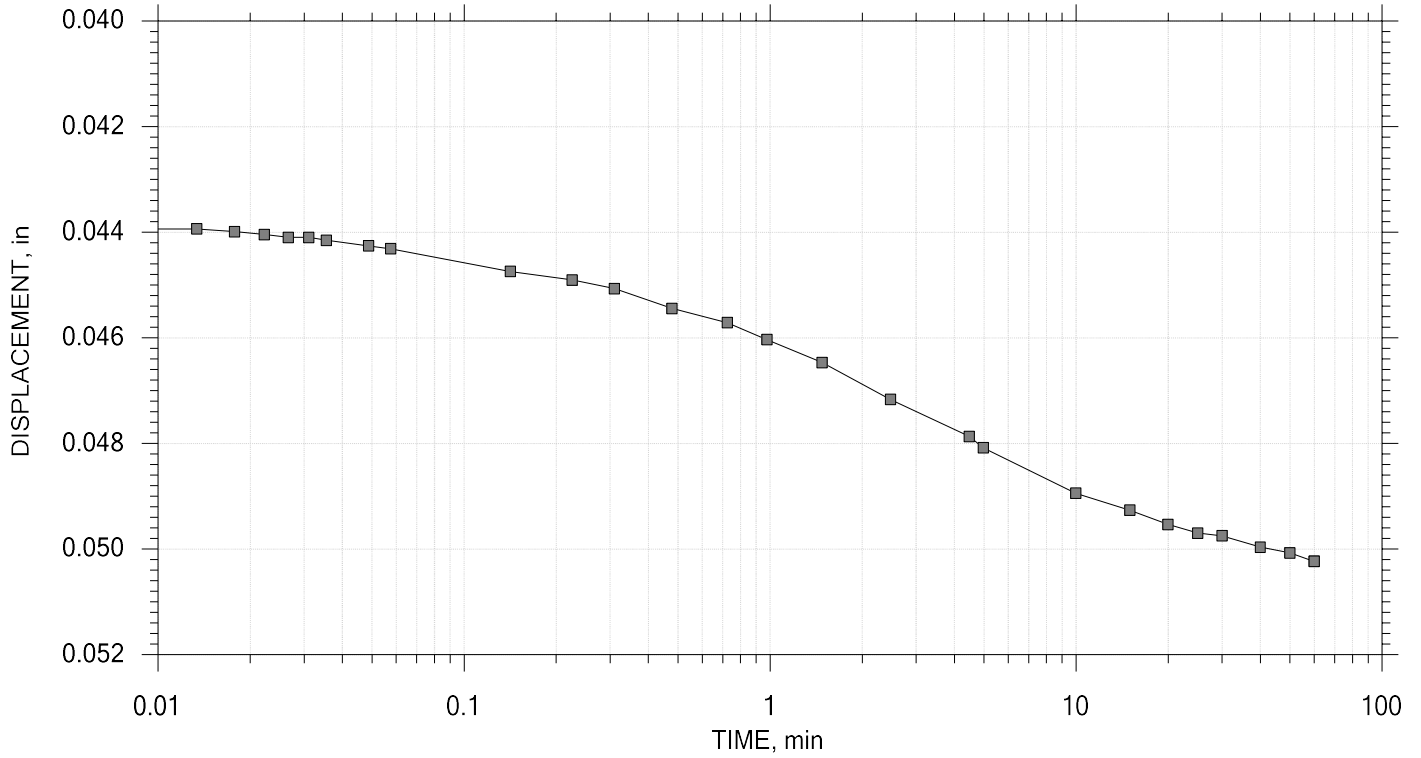
|  |                                        |                      |                       |
|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 2U                         | Test Date: 1/30/2024 | Test No.: 270802      |
|  | Depth: 35.0-37.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 5 of 21

Stress: 1 tsf



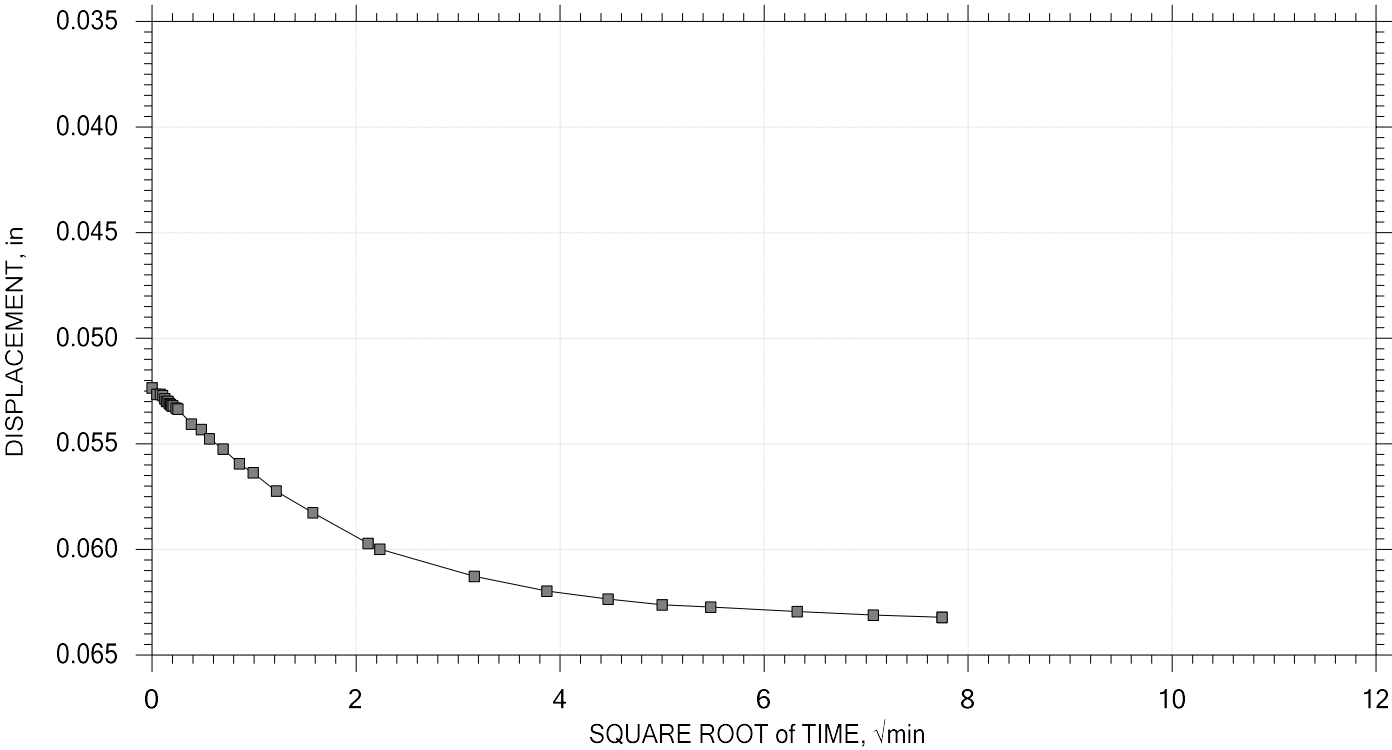
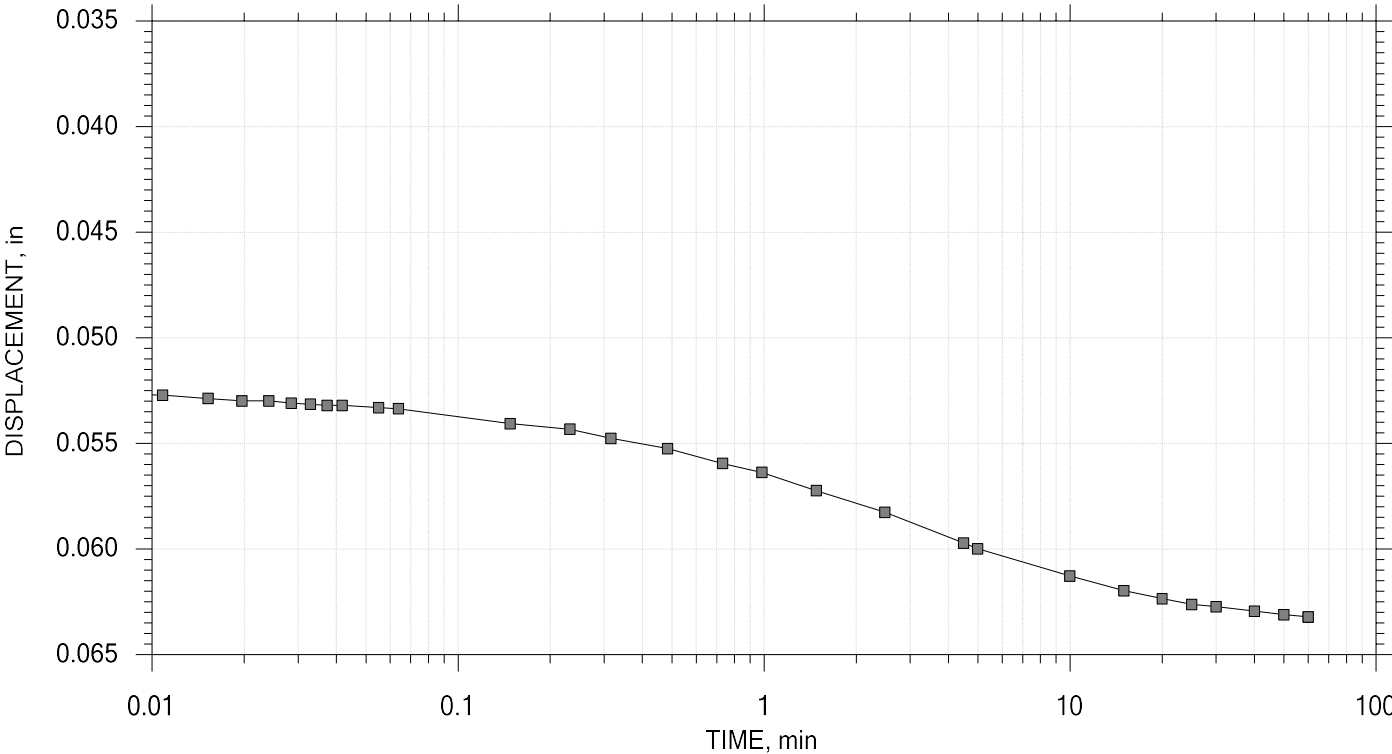
|  |                                        |                      |                       |
|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 2U                         | Test Date: 1/30/2024 | Test No.: 270802      |
|  | Depth: 35.0-37.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 6 of 21

Stress: 2 tsf



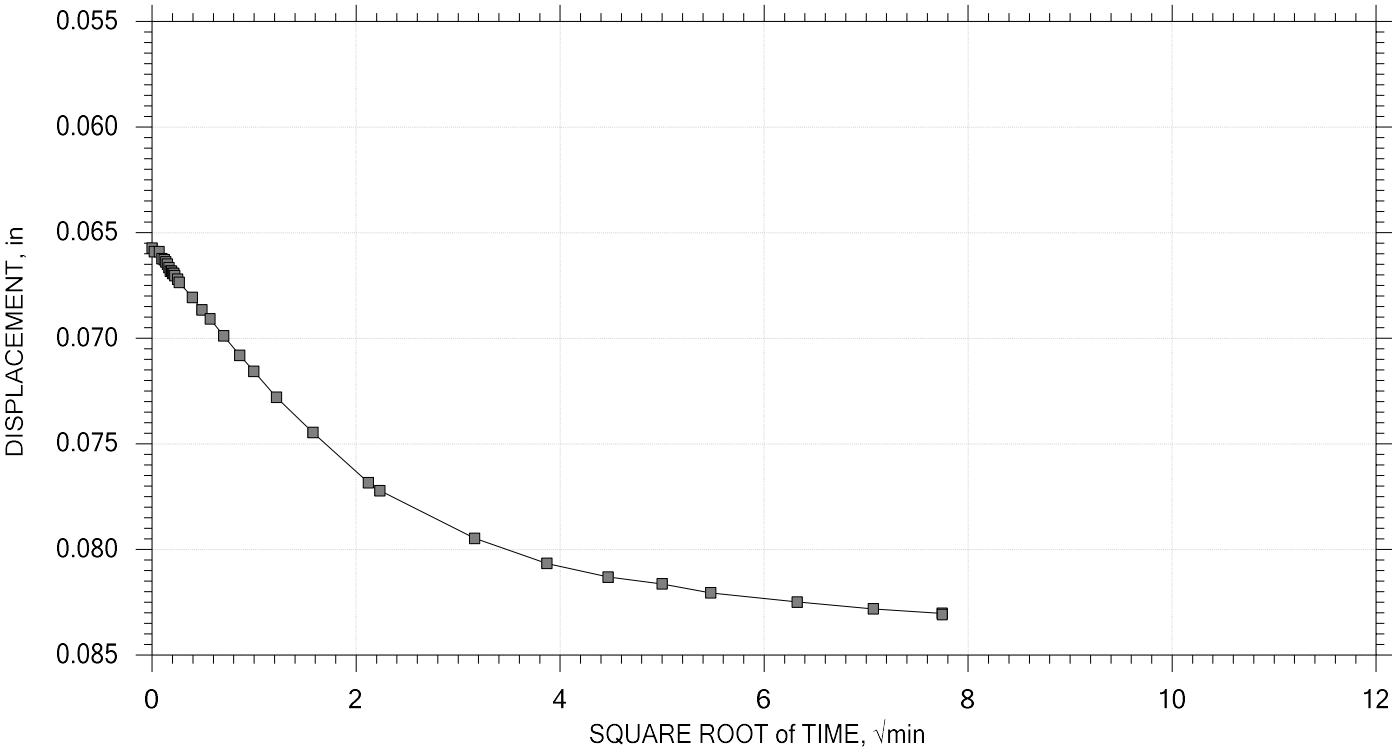
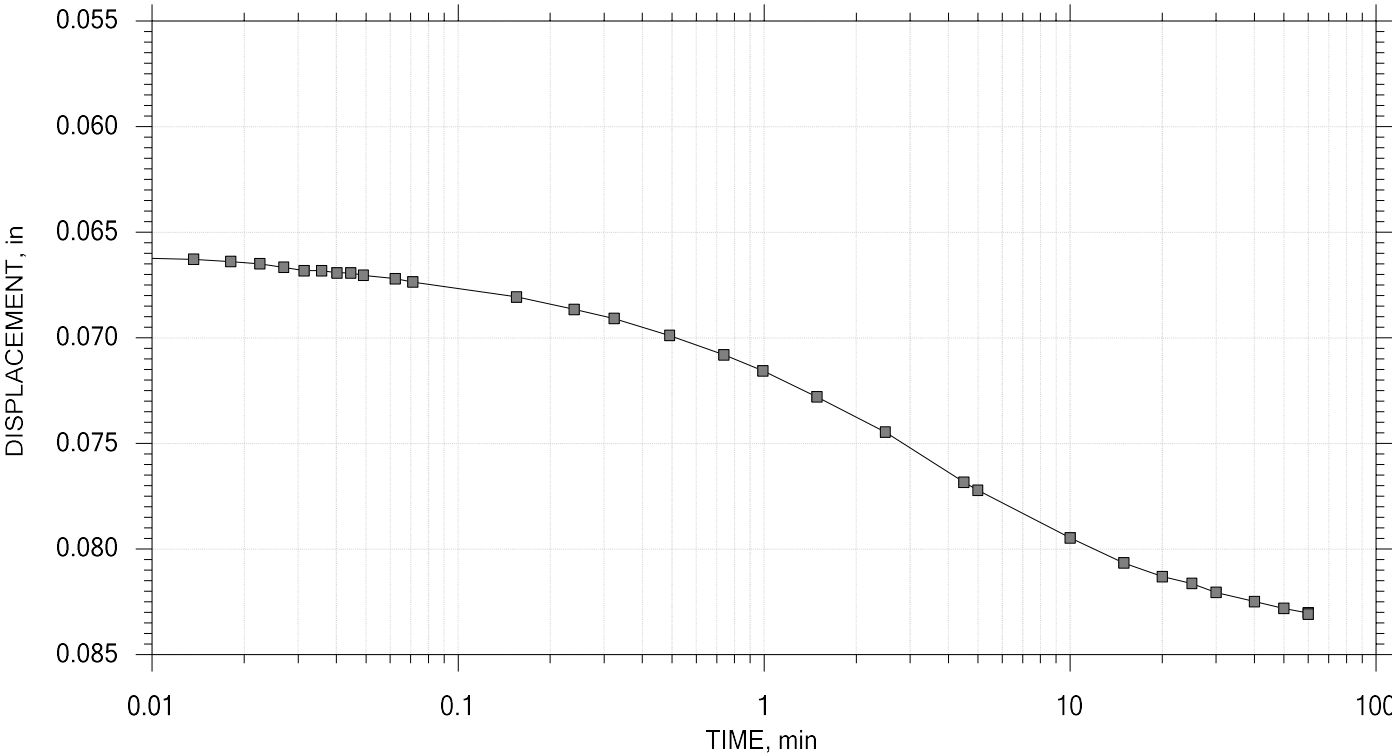
|  |                                        |                      |                       |
|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 2U                         | Test Date: 1/30/2024 | Test No.: 270802      |
|  | Depth: 35.0-37.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 7 of 21

Stress: 4 tsf



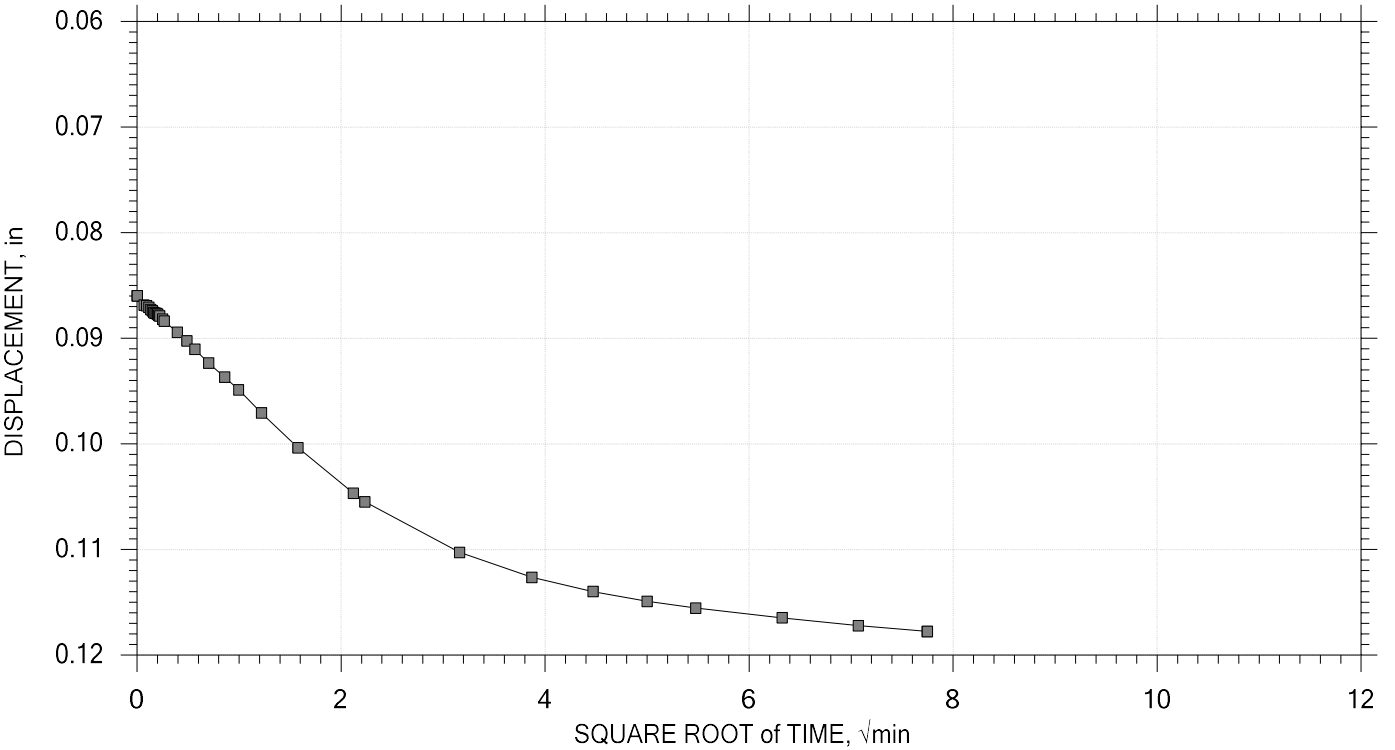
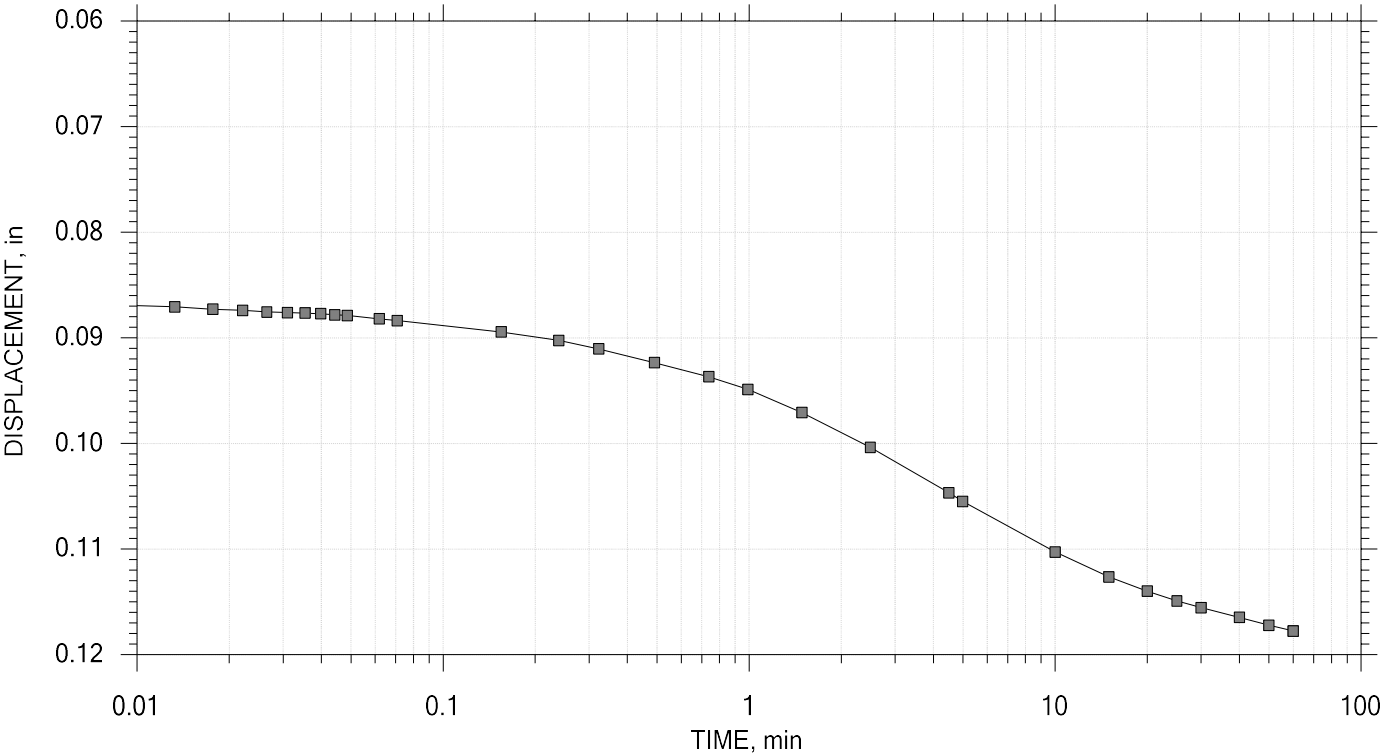
|  |                                        |                      |                       |
|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 2U                         | Test Date: 1/30/2024 | Test No.: 270802      |
|  | Depth: 35.0-37.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 8 of 21

Stress: 8 tsf



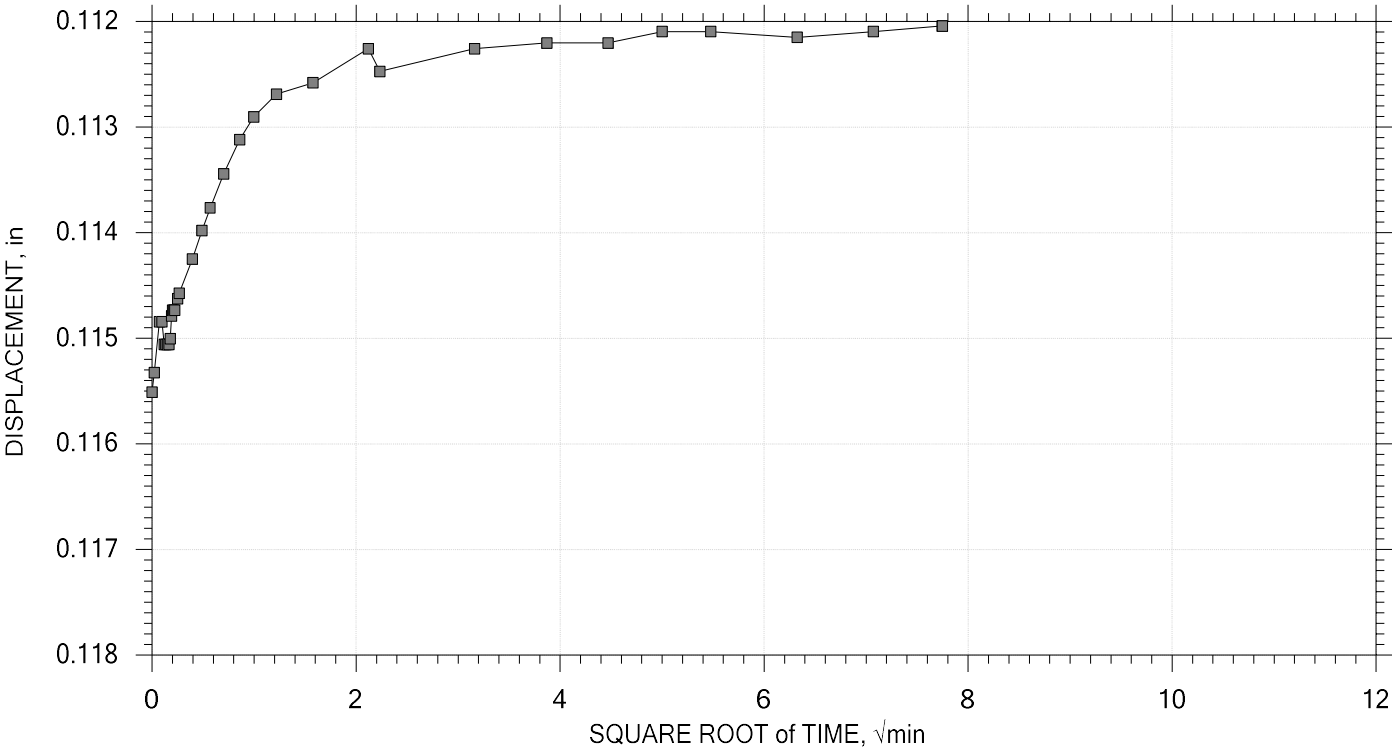
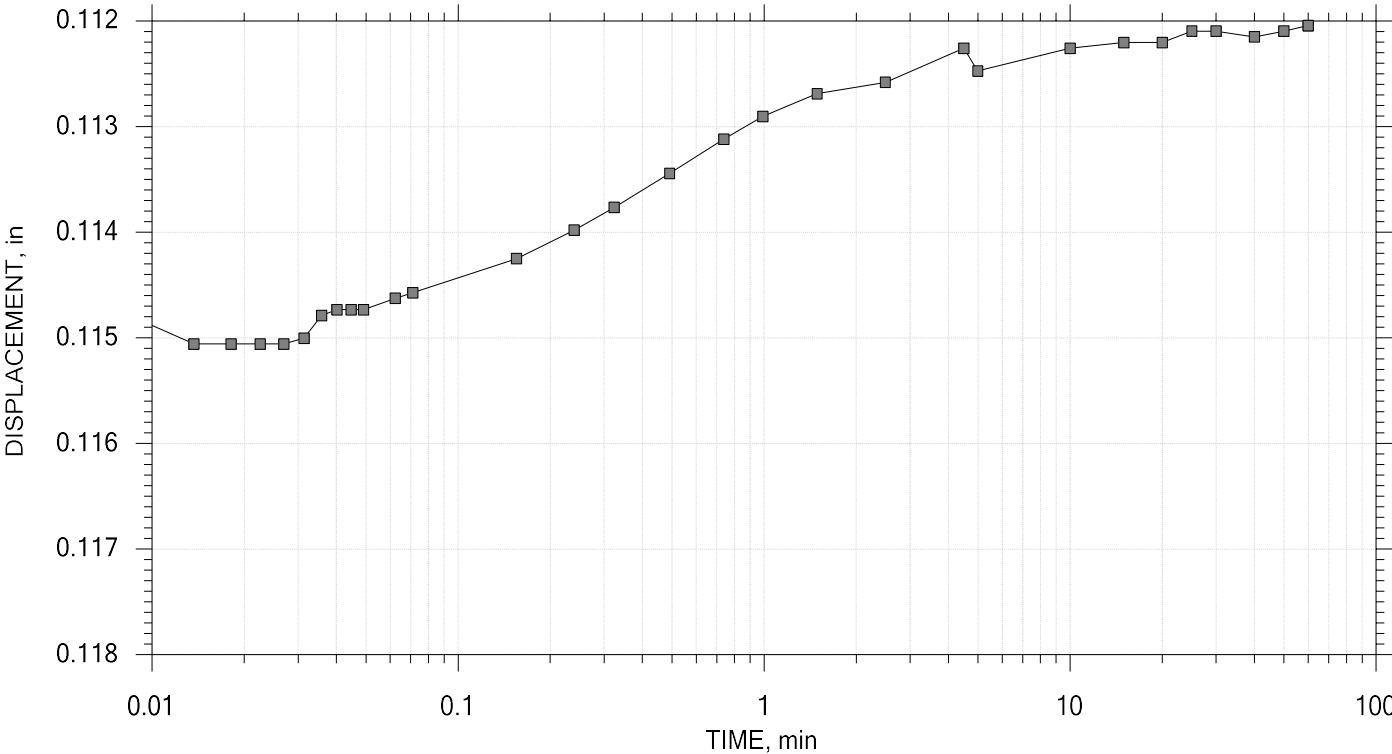
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|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 2U                         | Test Date: 1/30/2024 | Test No.: 270802      |
|  | Depth: 35.0-37.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 9 of 21

Stress: 4 tsf



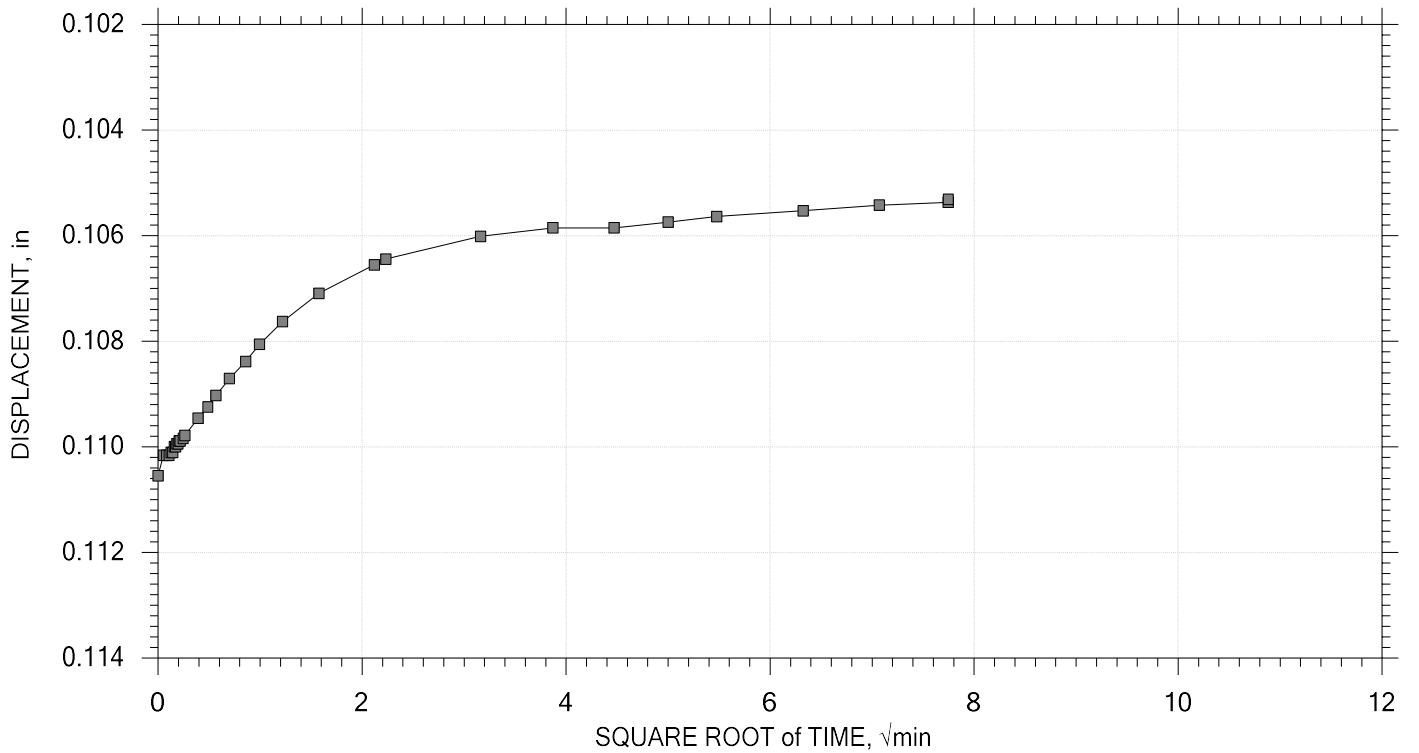
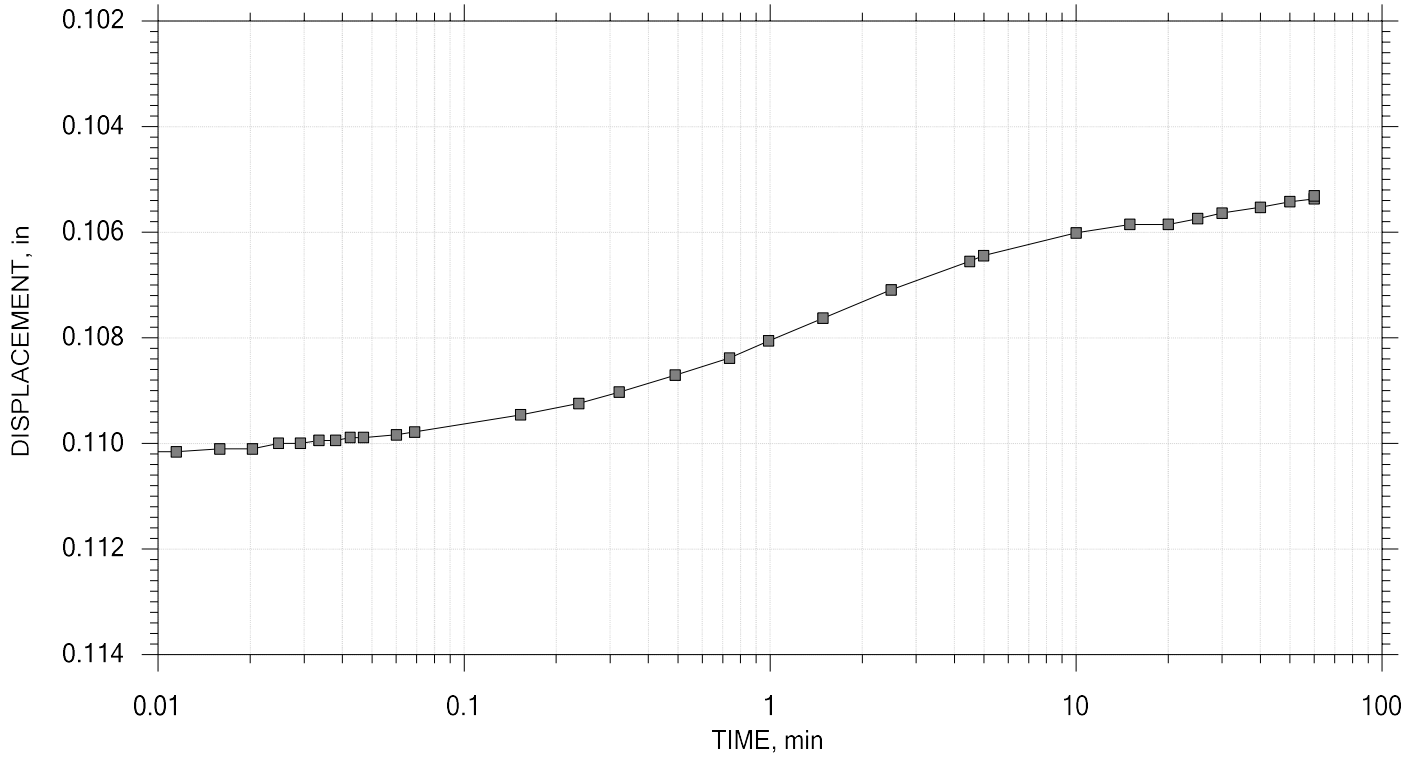
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|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 2U                         | Test Date: 1/30/2024 | Test No.: 270802      |
|  | Depth: 35.0-37.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 10 of 21

Stress: 2 tsf



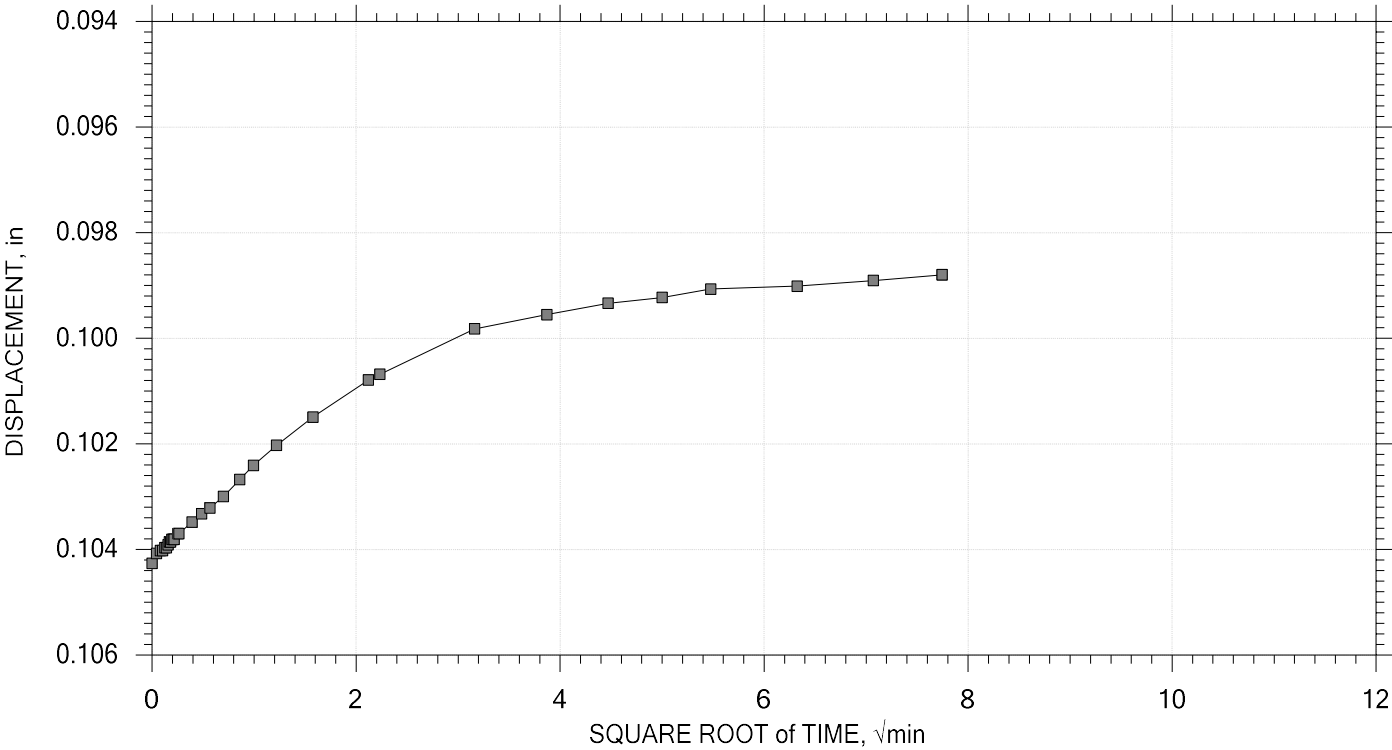
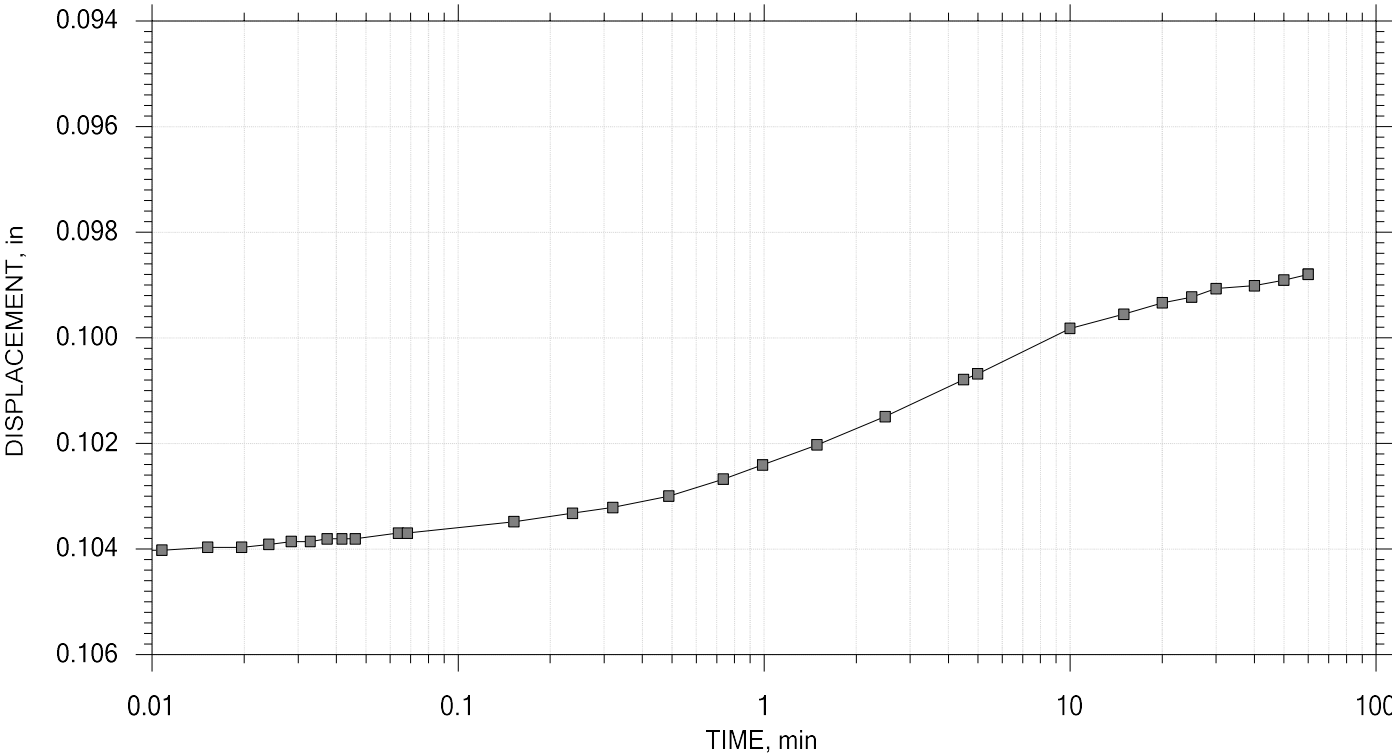
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|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 2U                         | Test Date: 1/30/2024 | Test No.: 270802      |
|  | Depth: 35.0-37.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 11 of 21

Stress: 1 tsf



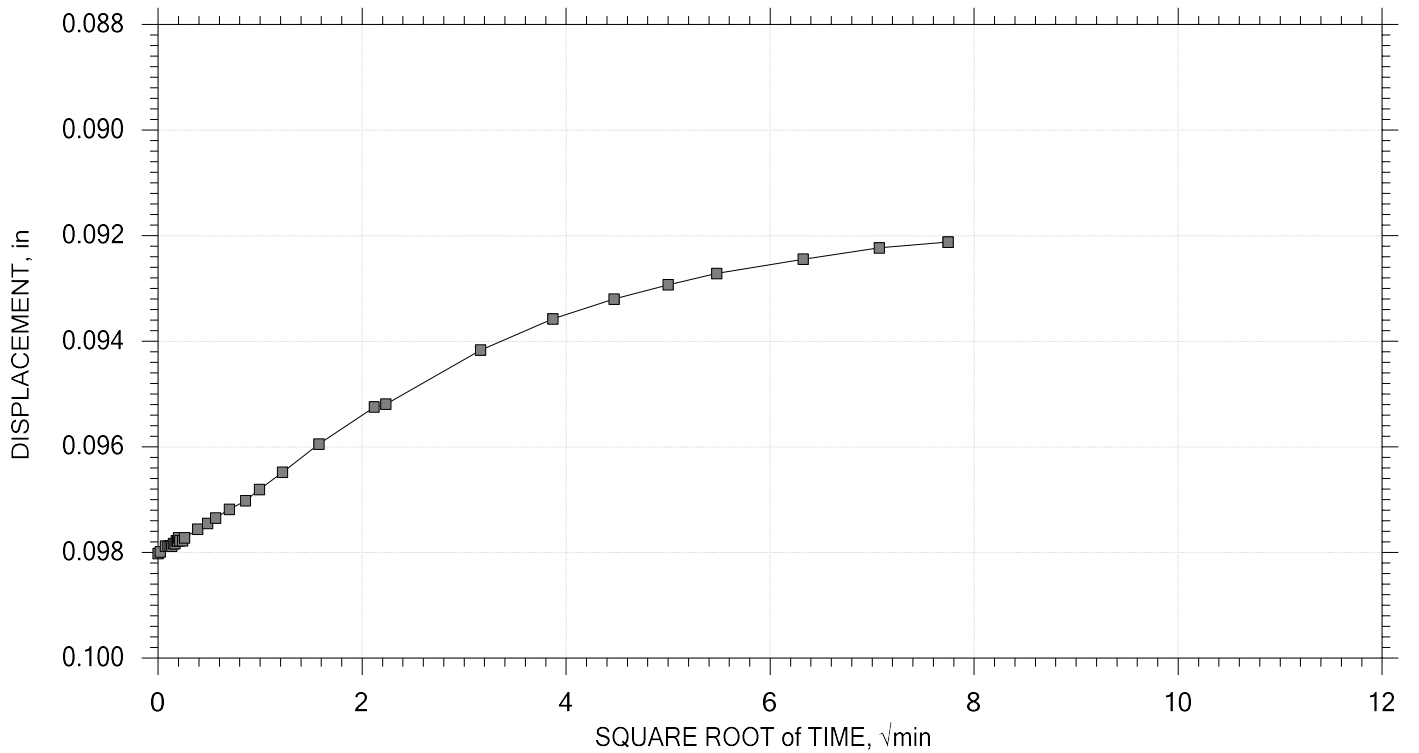
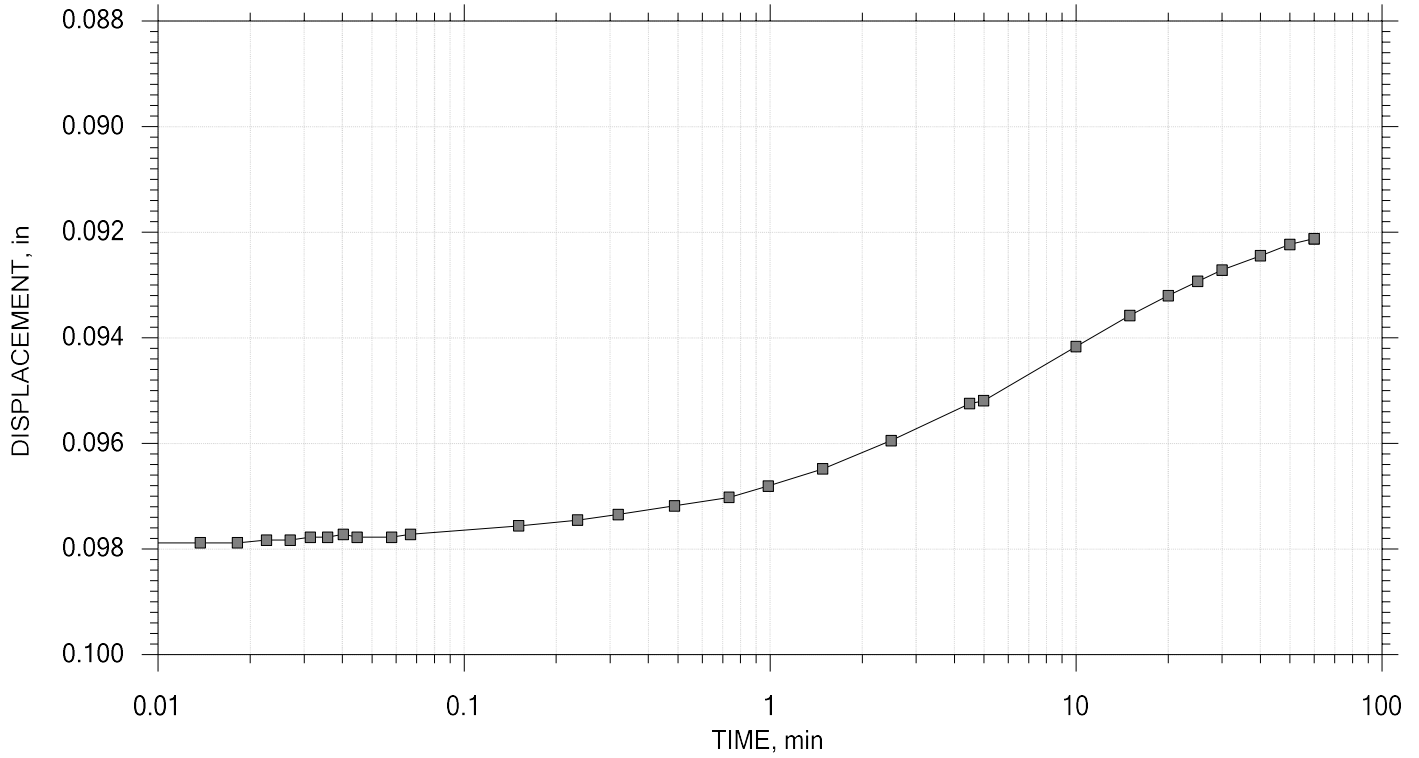
|  |                                        |                      |                       |
|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 2U                         | Test Date: 1/30/2024 | Test No.: 270802      |
|  | Depth: 35.0-37.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 12 of 21

Stress: 0.5 tsf



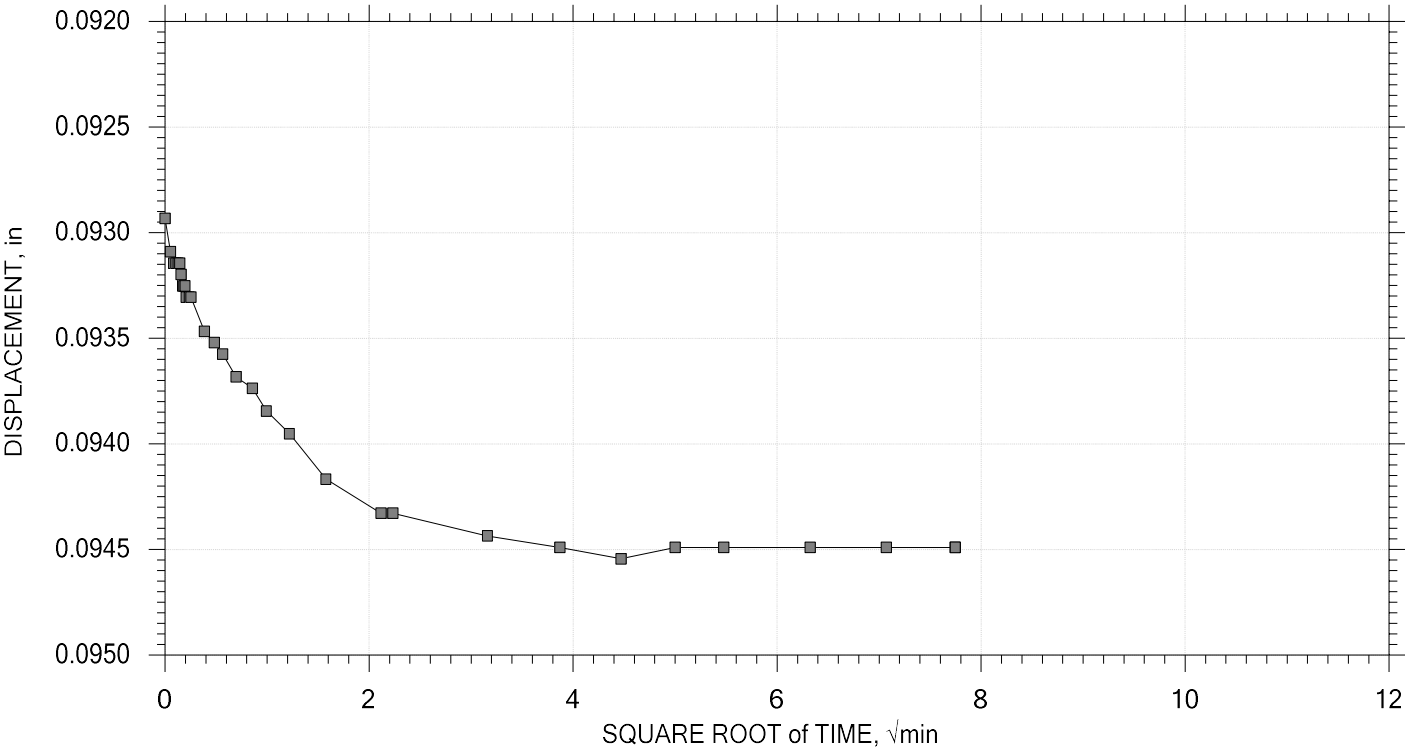
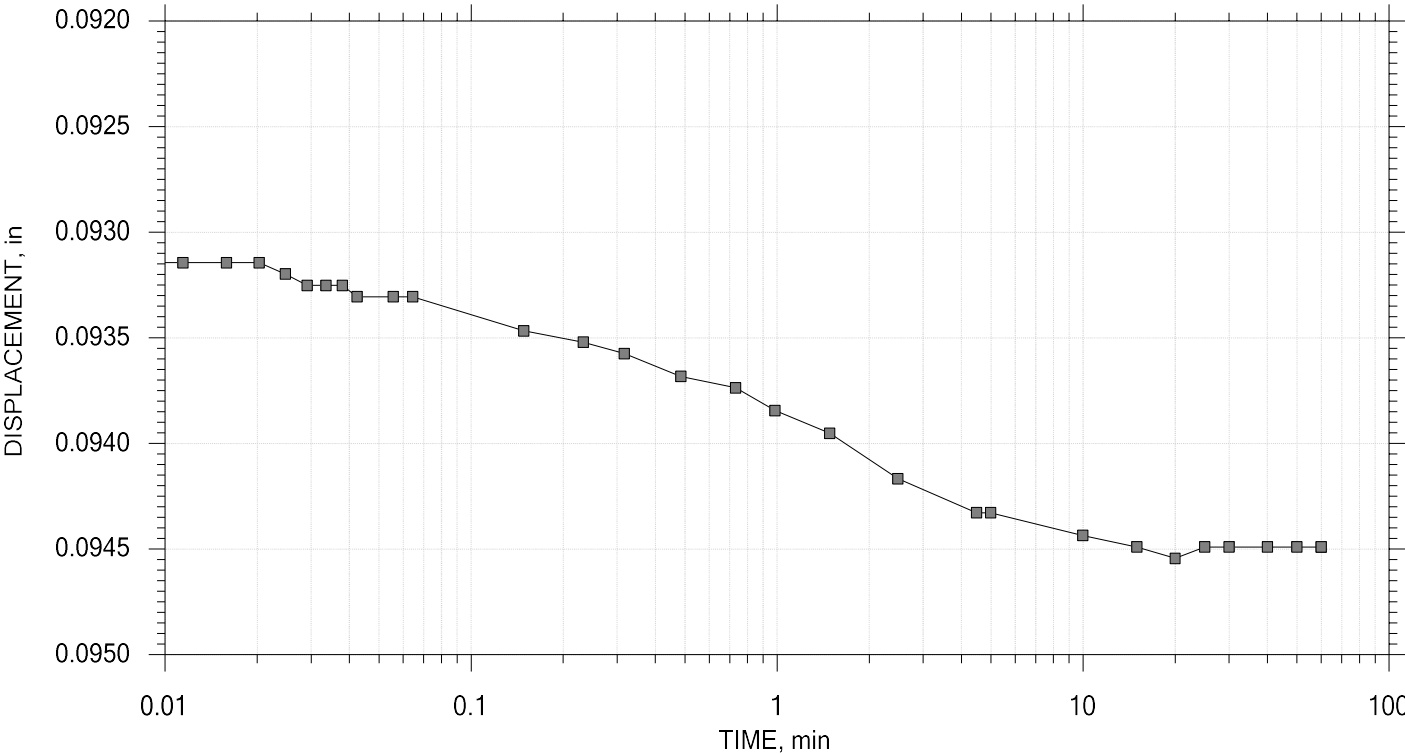
|  |                                        |                      |                       |
|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 2U                         | Test Date: 1/30/2024 | Test No.: 270802      |
|  | Depth: 35.0-37.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 13 of 21

Stress: 1 tsf



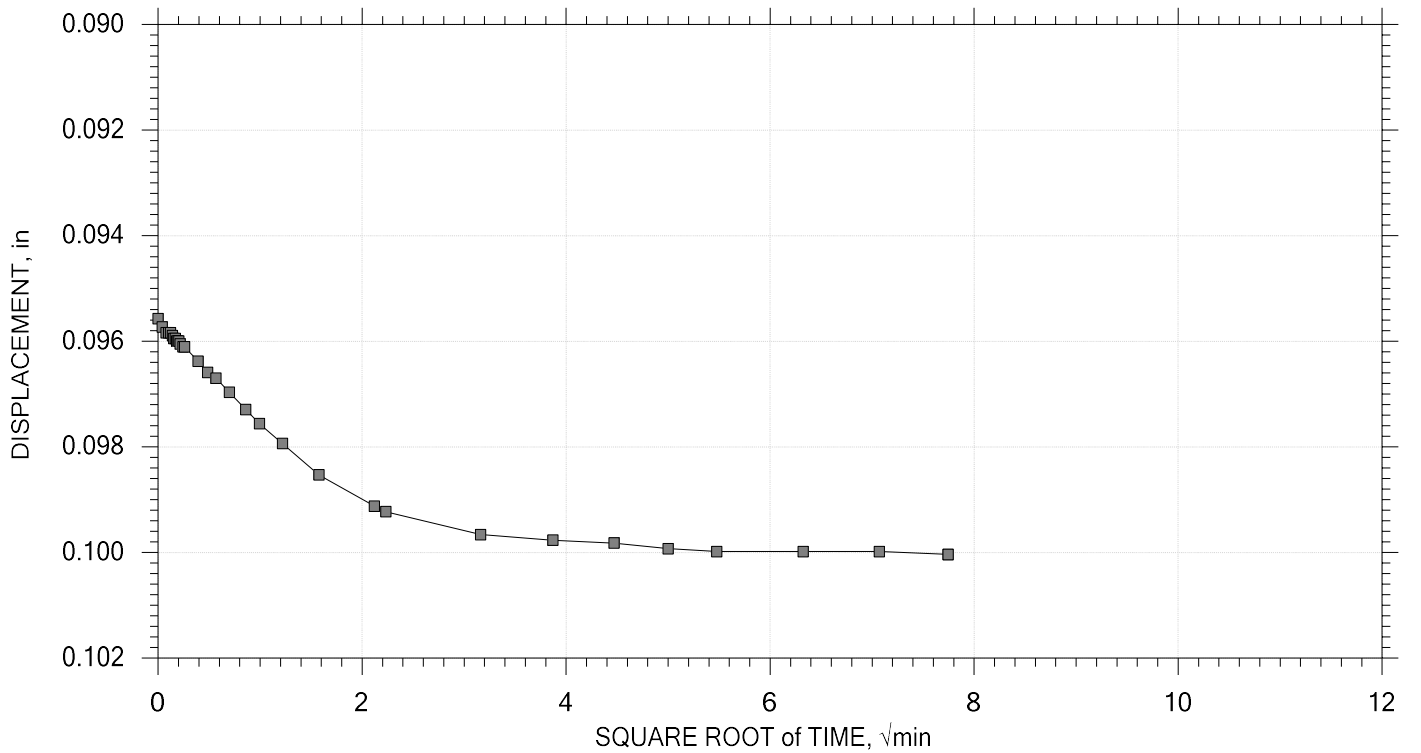
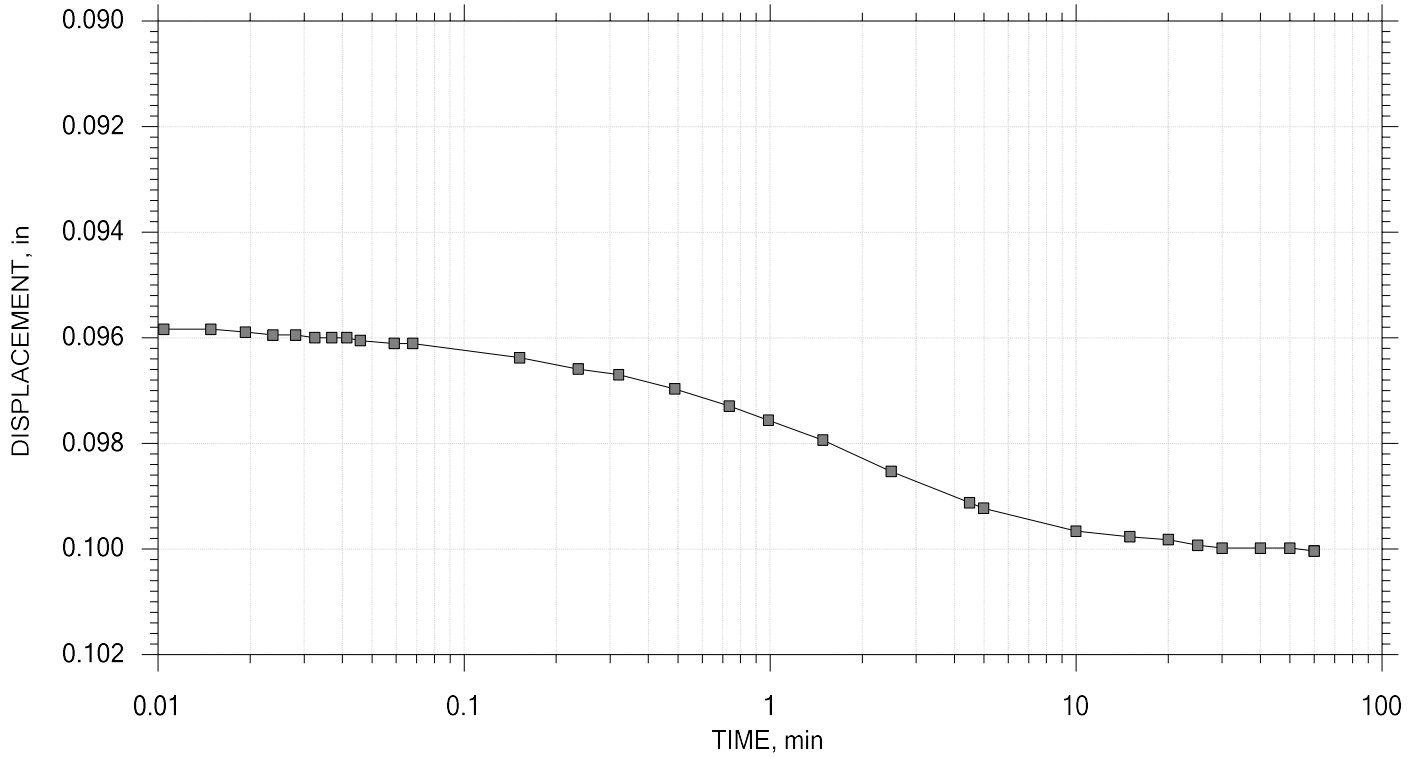
|  |                                        |                      |                       |
|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 2U                         | Test Date: 1/30/2024 | Test No.: 270802      |
|  | Depth: 35.0-37.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 14 of 21

Stress: 2 tsf



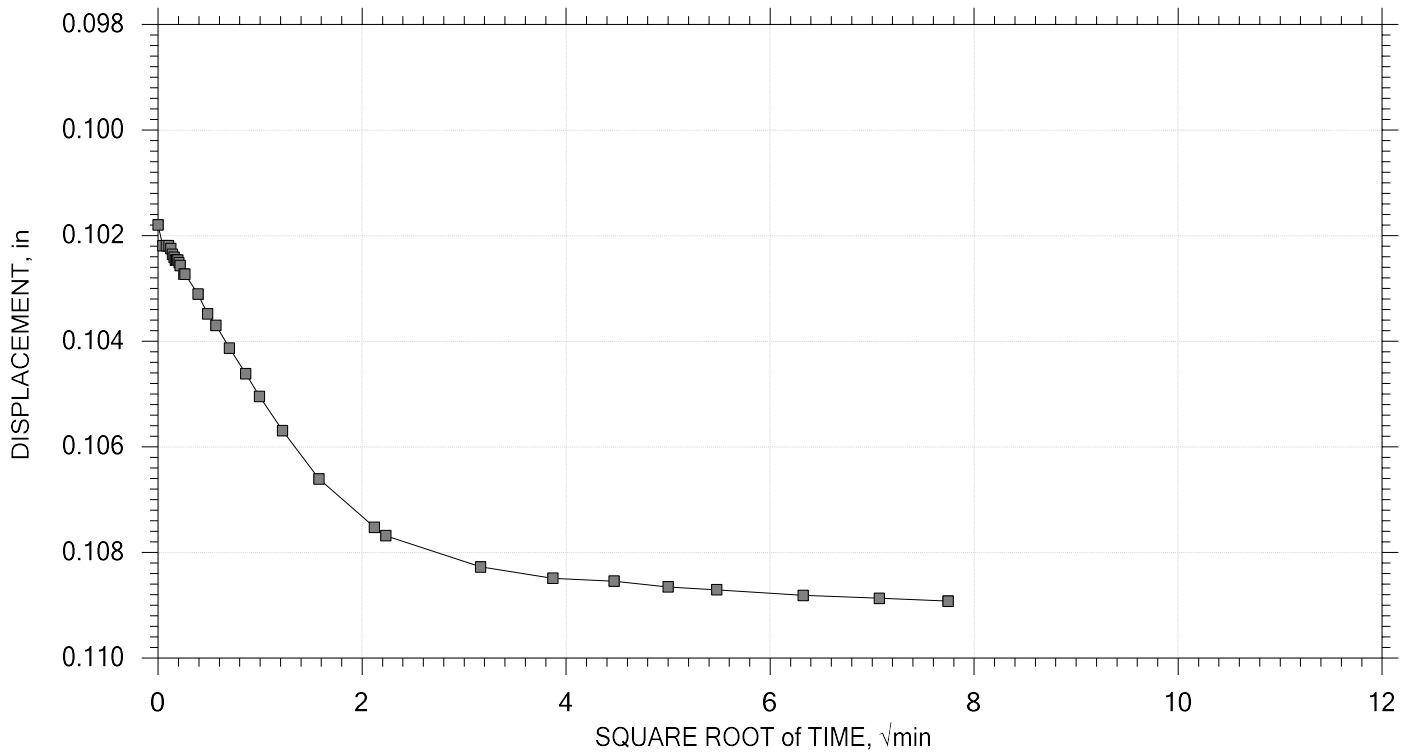
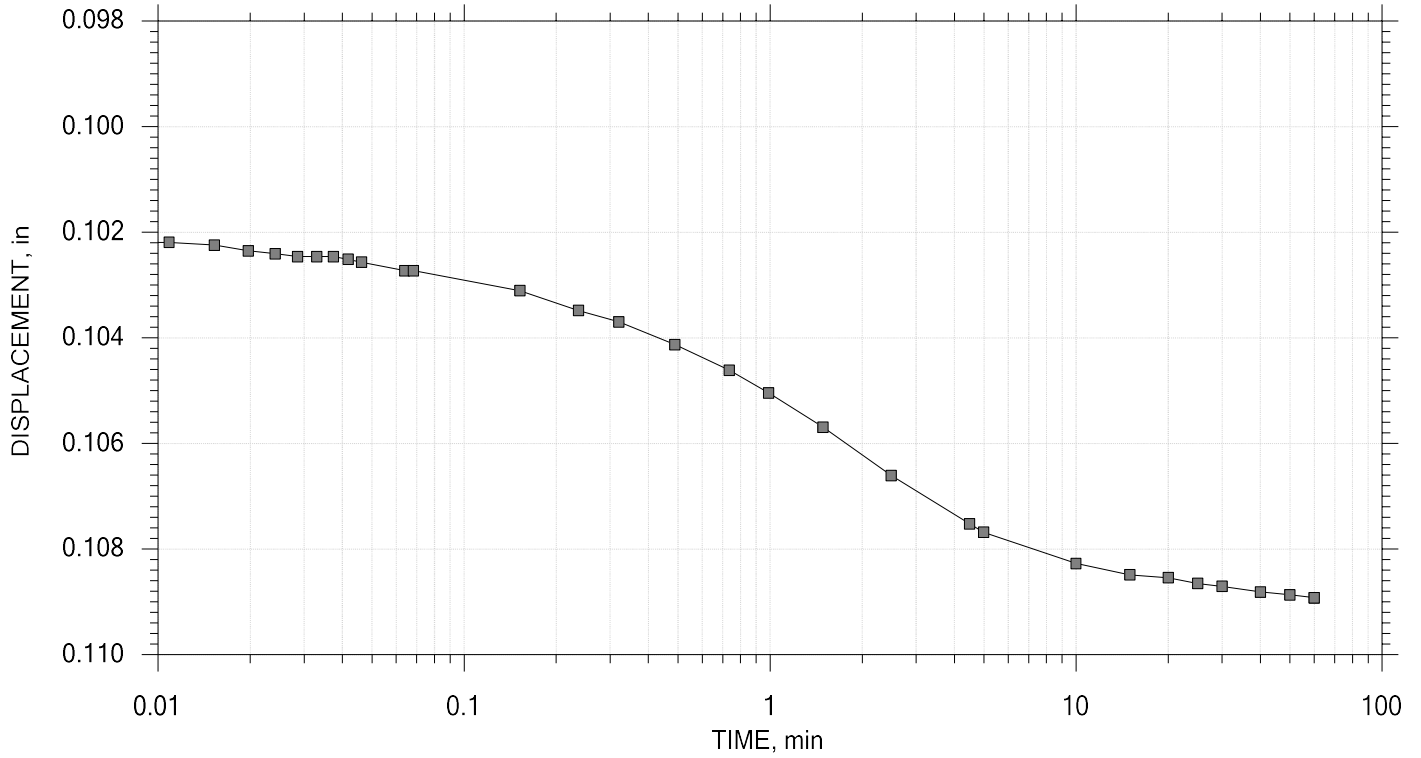
|  |                                        |                      |                       |
|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 2U                         | Test Date: 1/30/2024 | Test No.: 270802      |
|  | Depth: 35.0-37.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 15 of 21

Stress: 4 tsf



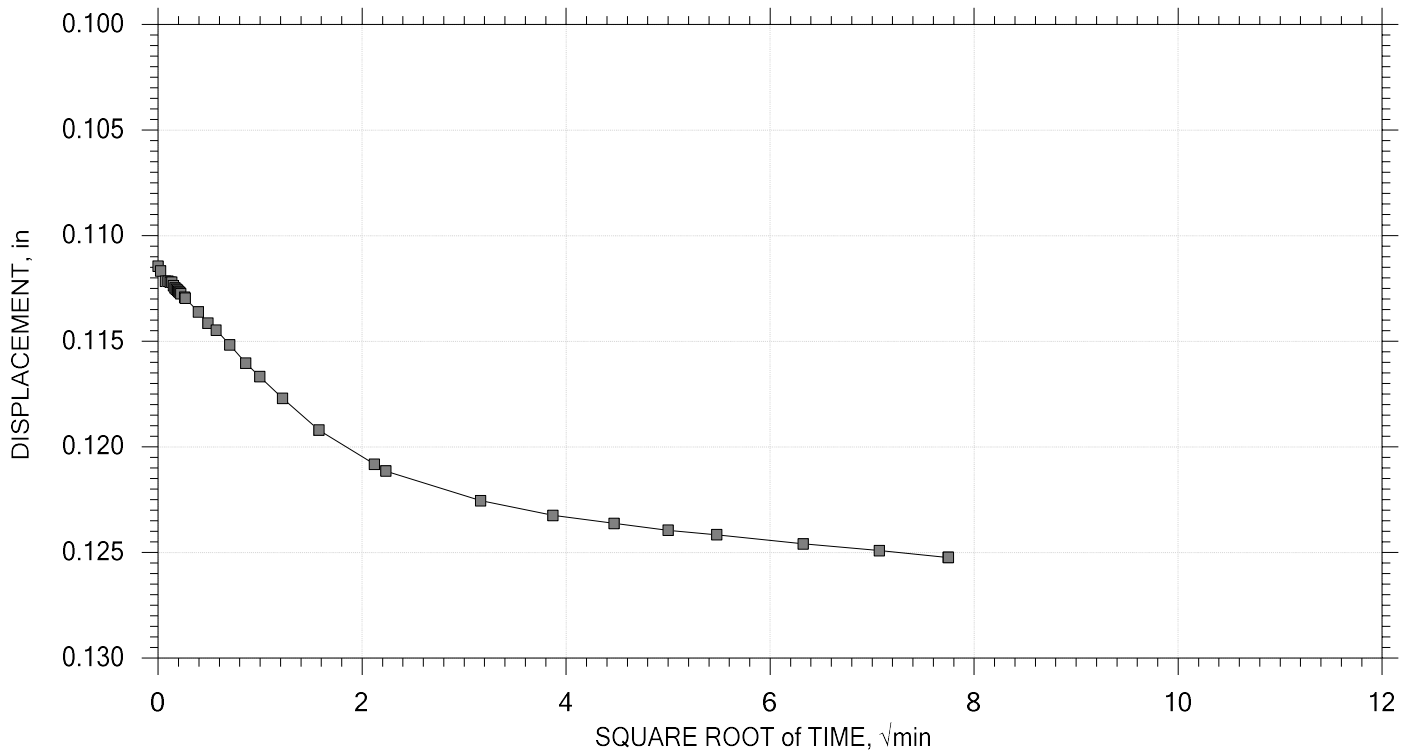
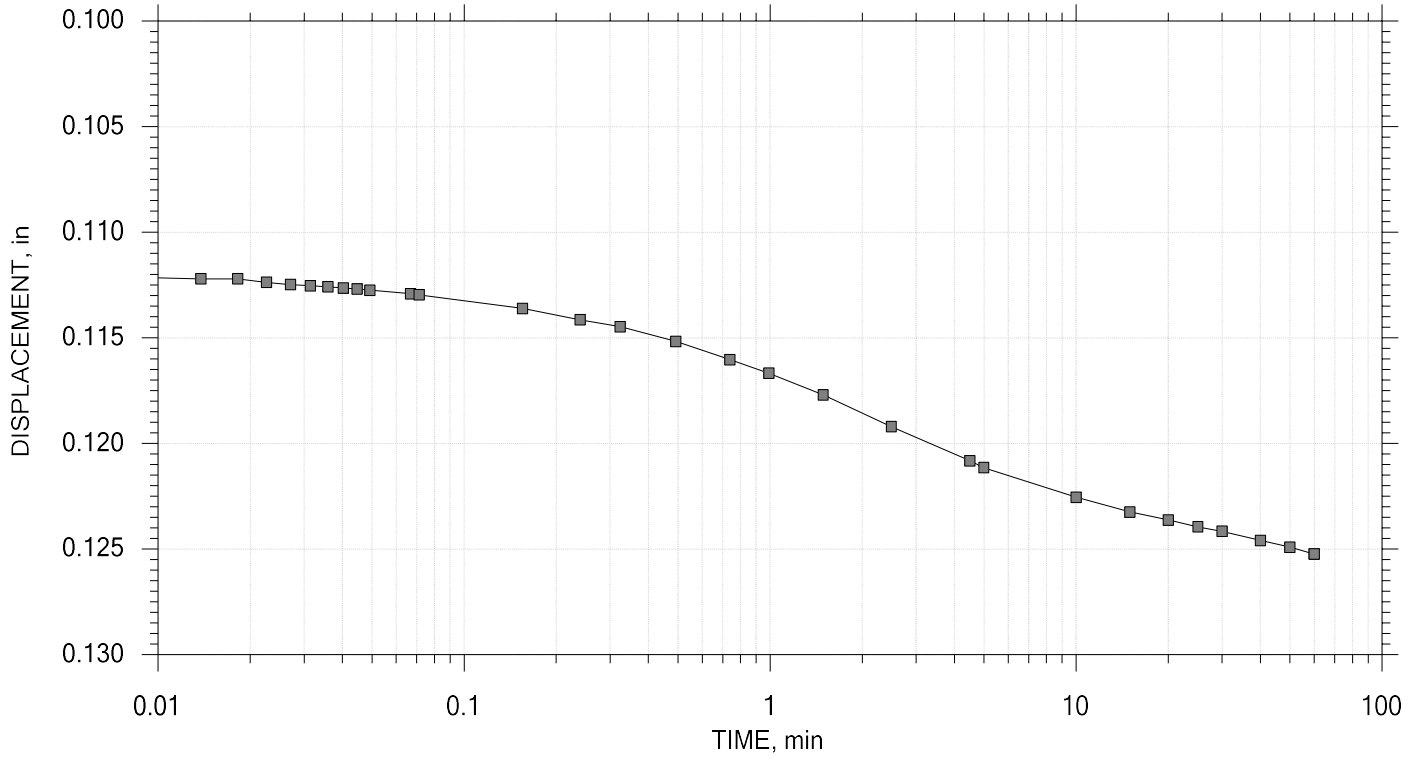
|  |                                        |                      |                       |
|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 2U                         | Test Date: 1/30/2024 | Test No.: 270802      |
|  | Depth: 35.0-37.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 16 of 21

Stress: 8 tsf



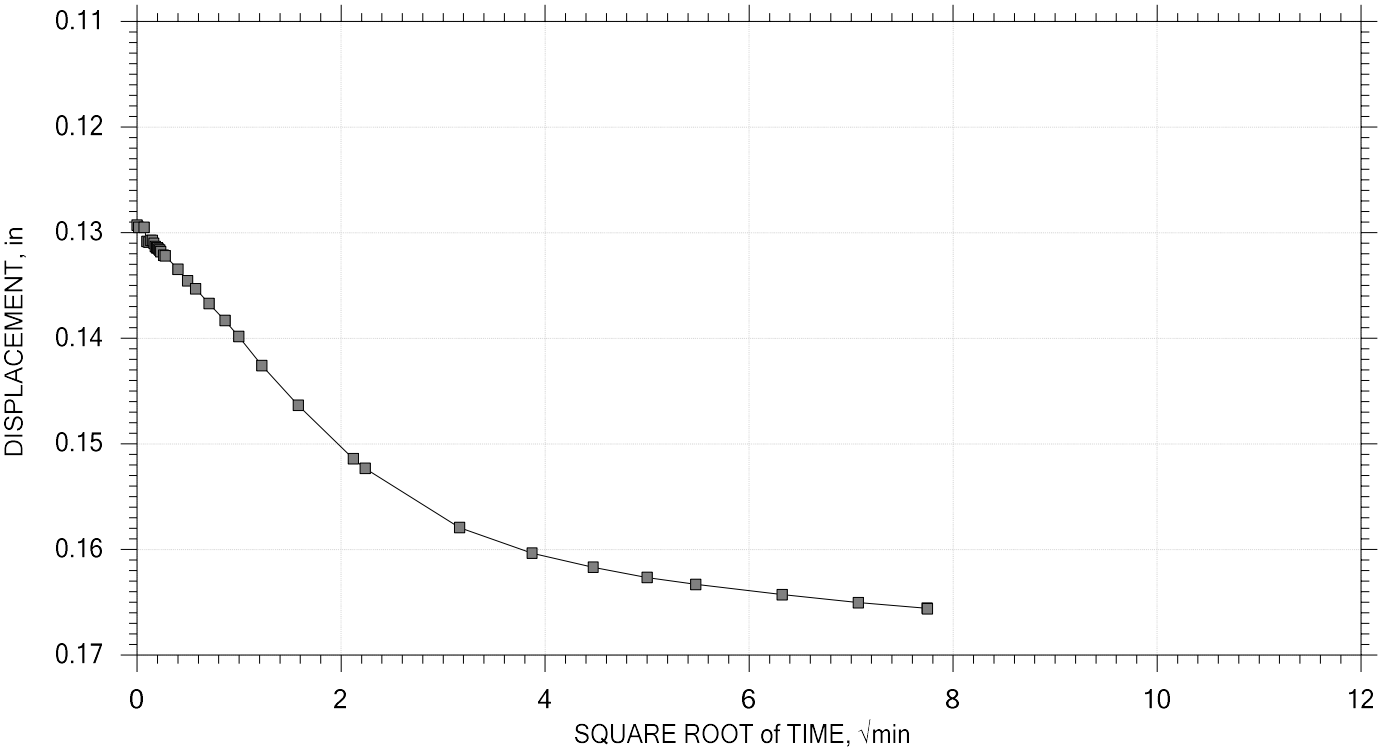
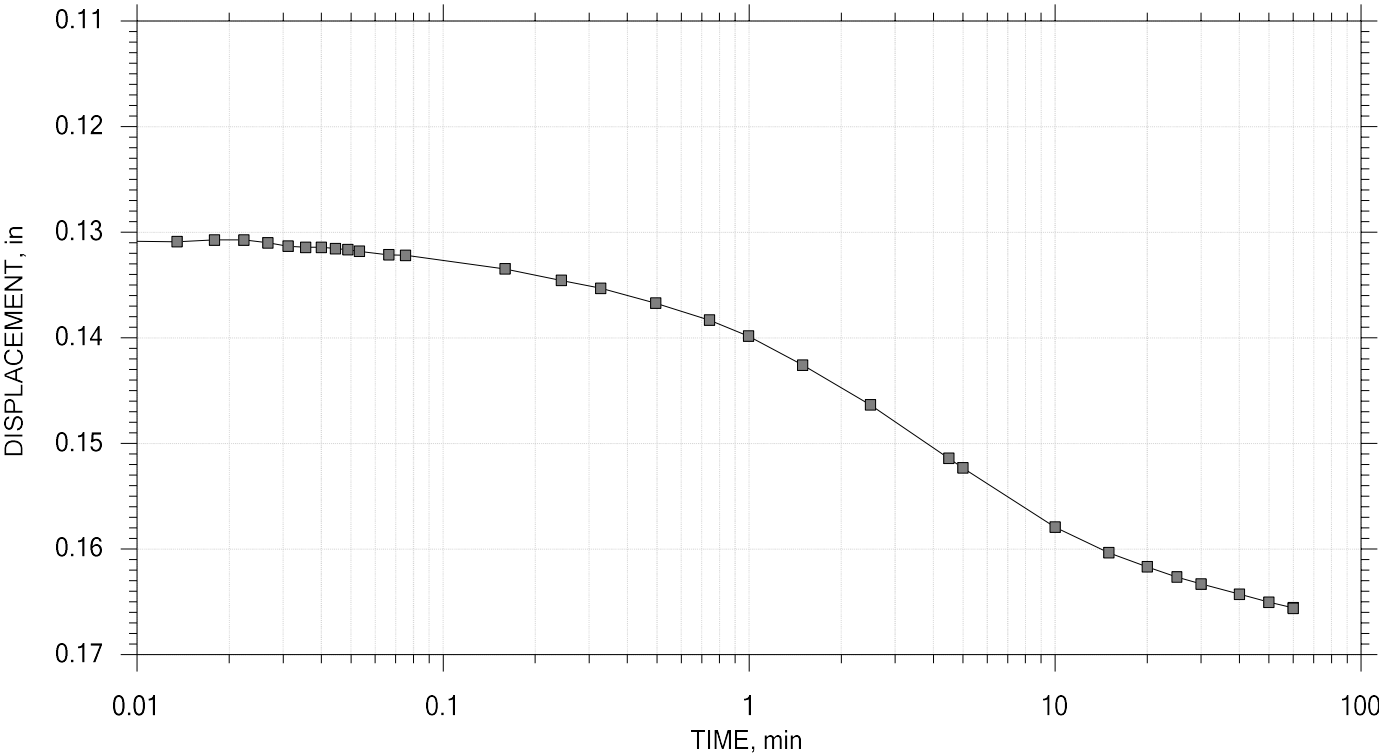
|  |                                        |                      |                       |
|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 2U                         | Test Date: 1/30/2024 | Test No.: 270802      |
|  | Depth: 35.0-37.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 17 of 21

Stress: 16 tsf



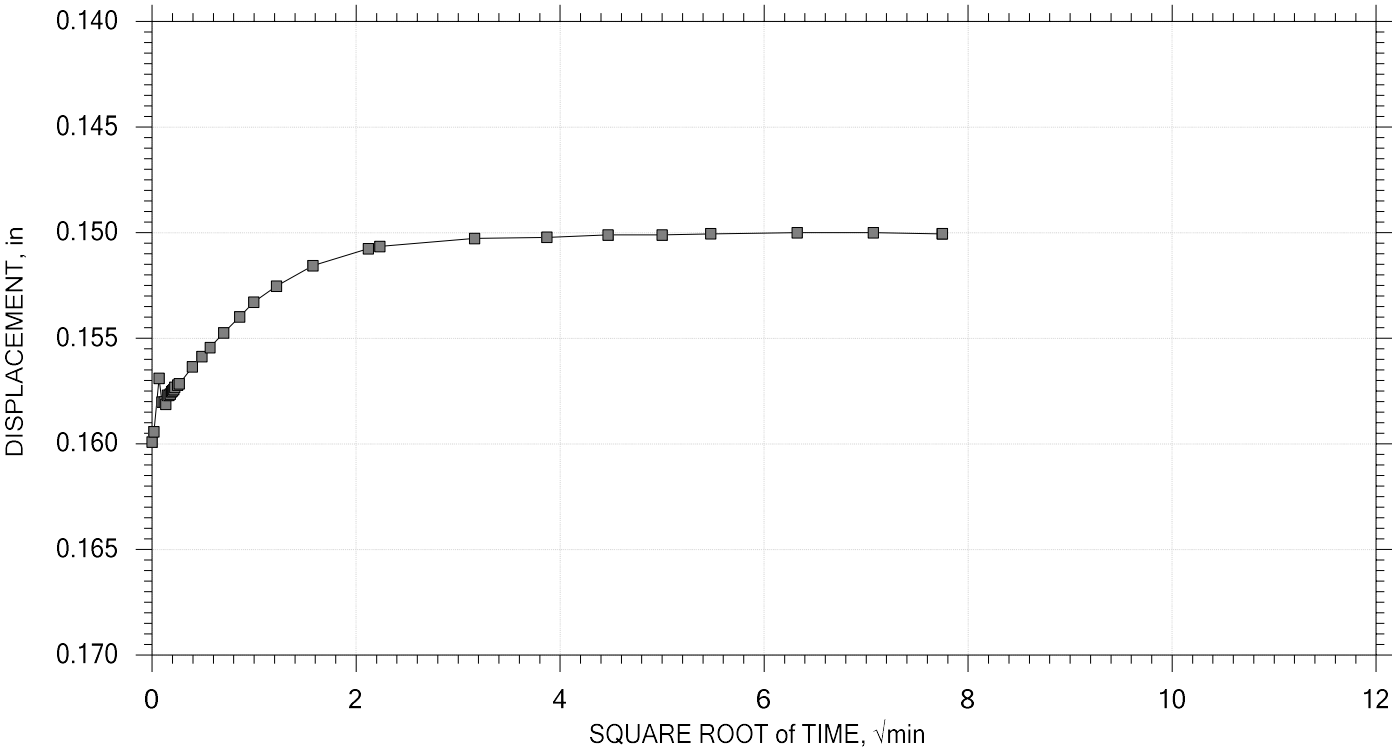
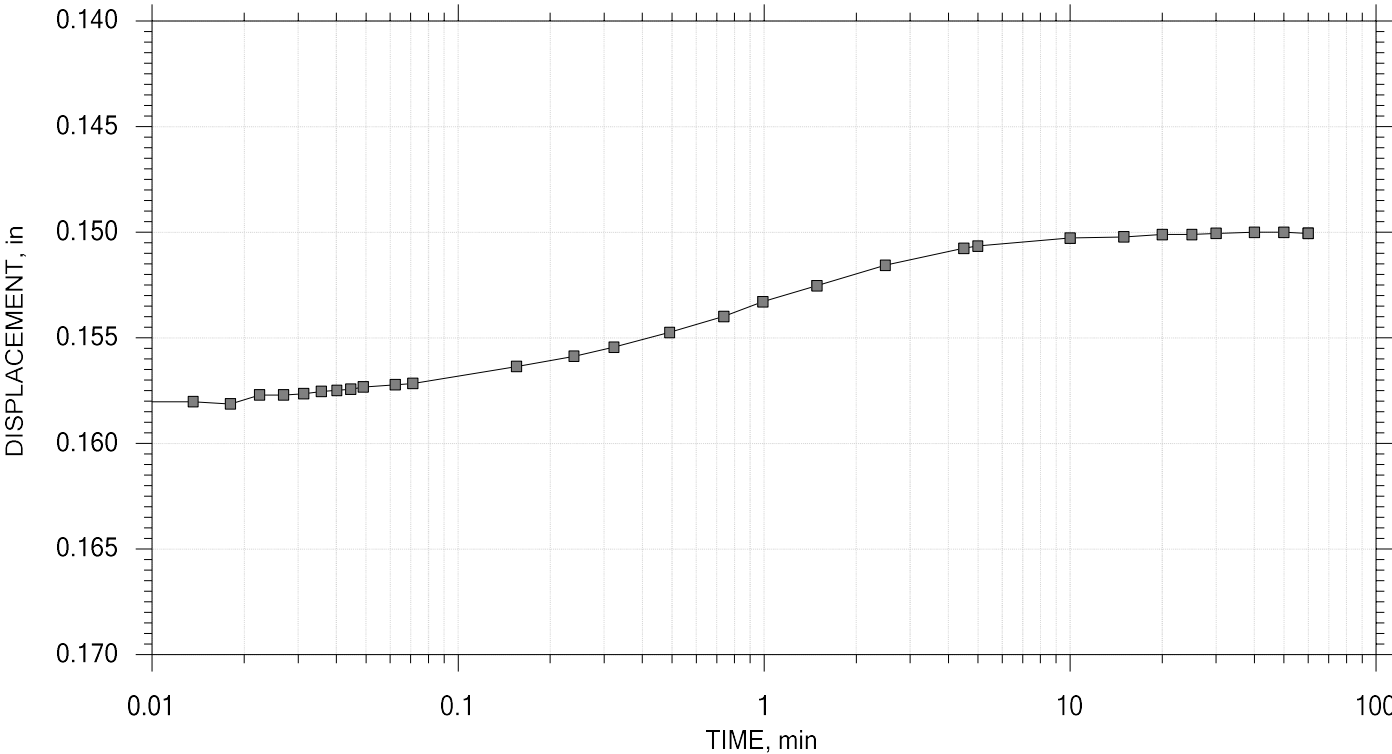
|  |                                        |                      |                       |
|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 2U                         | Test Date: 1/30/2024 | Test No.: 270802      |
|  | Depth: 35.0-37.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 18 of 21

Stress: 4 tsf



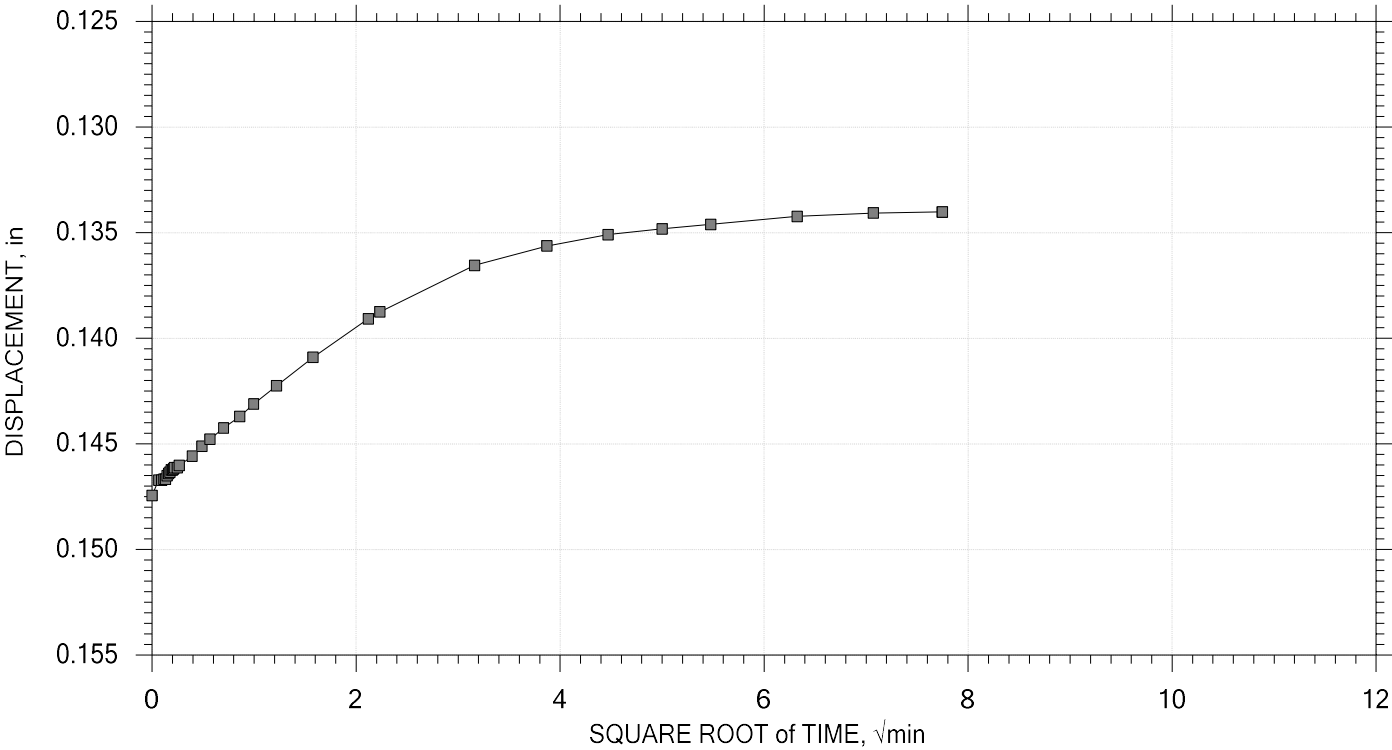
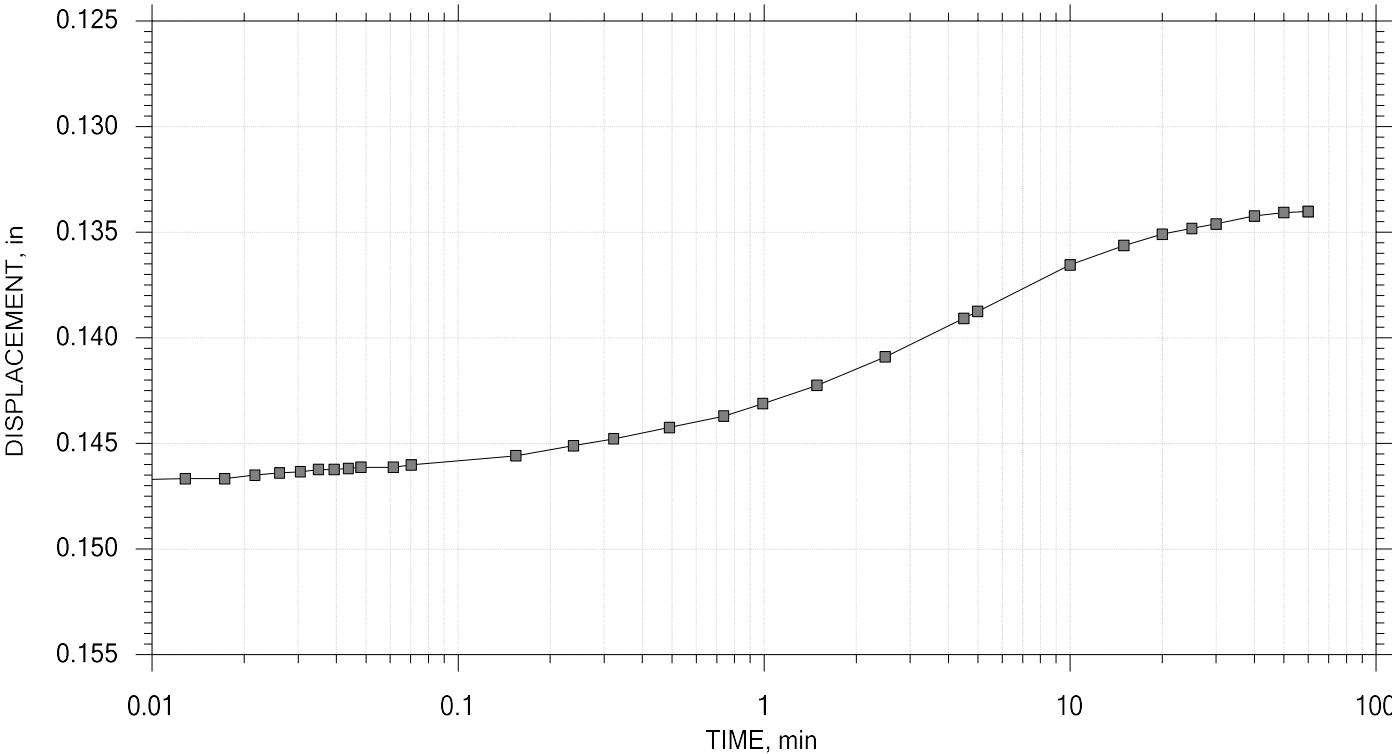
|  |                                        |                      |                       |
|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 2U                         | Test Date: 1/30/2024 | Test No.: 270802      |
|  | Depth: 35.0-37.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 19 of 21

Stress: 1 tsf



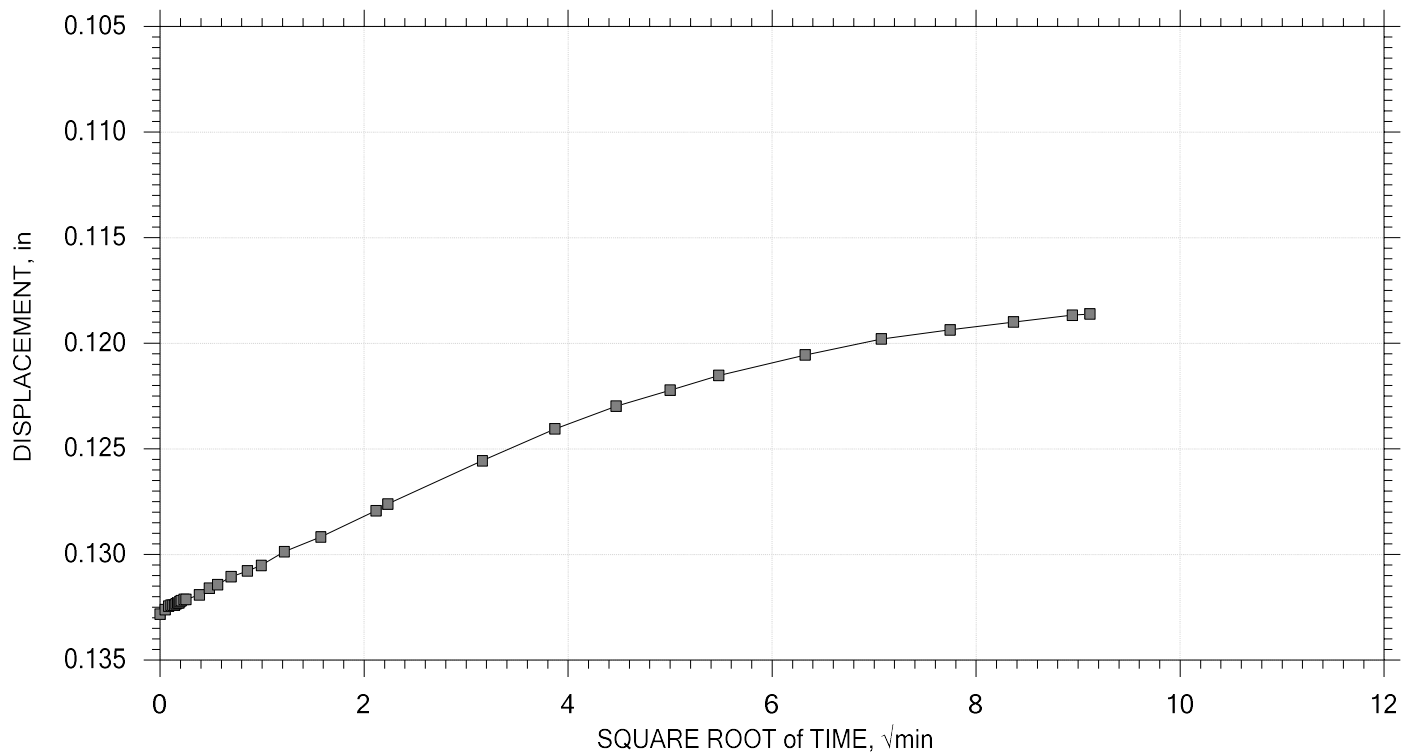
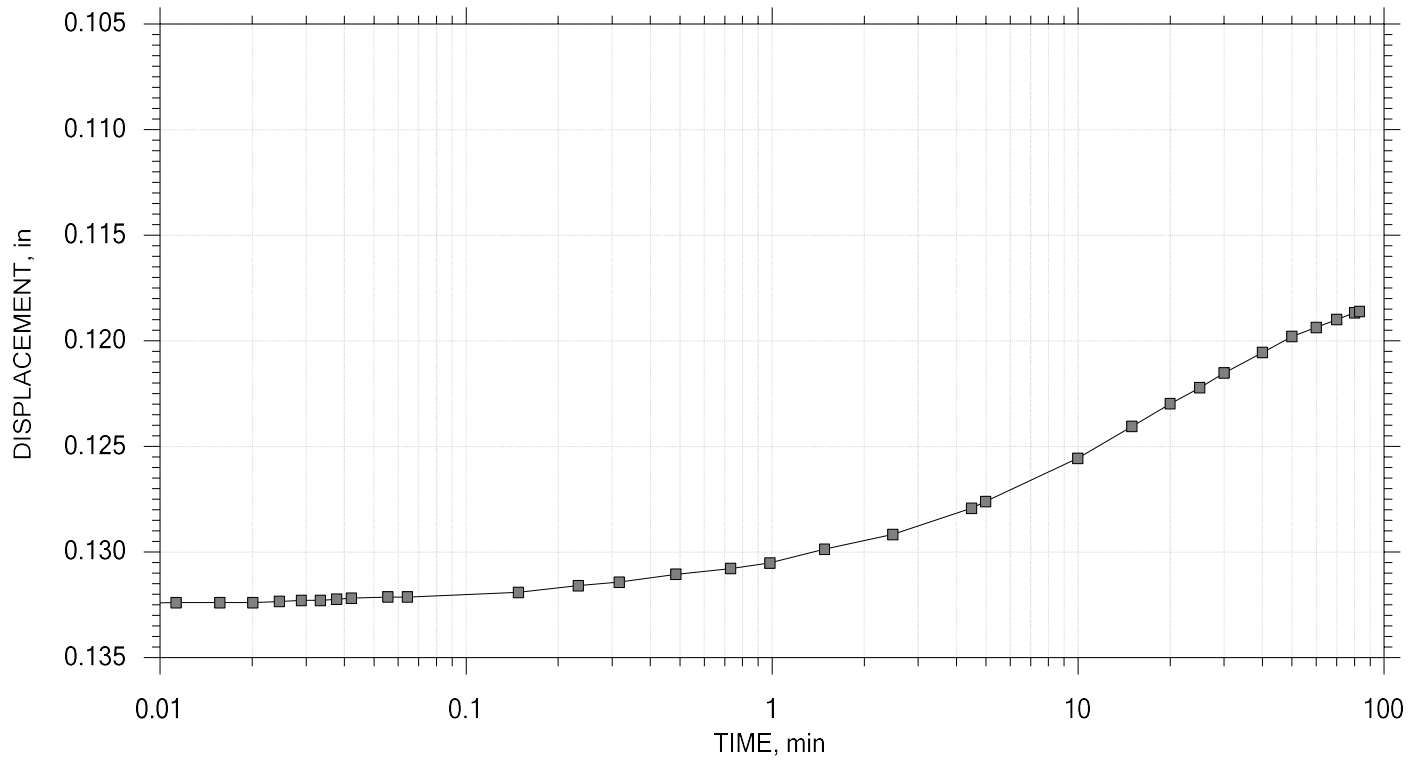
|  |                                        |                      |                       |
|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 2U                         | Test Date: 1/30/2024 | Test No.: 270802      |
|  | Depth: 35.0-37.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 20 of 21

Stress: 0.25 tsf



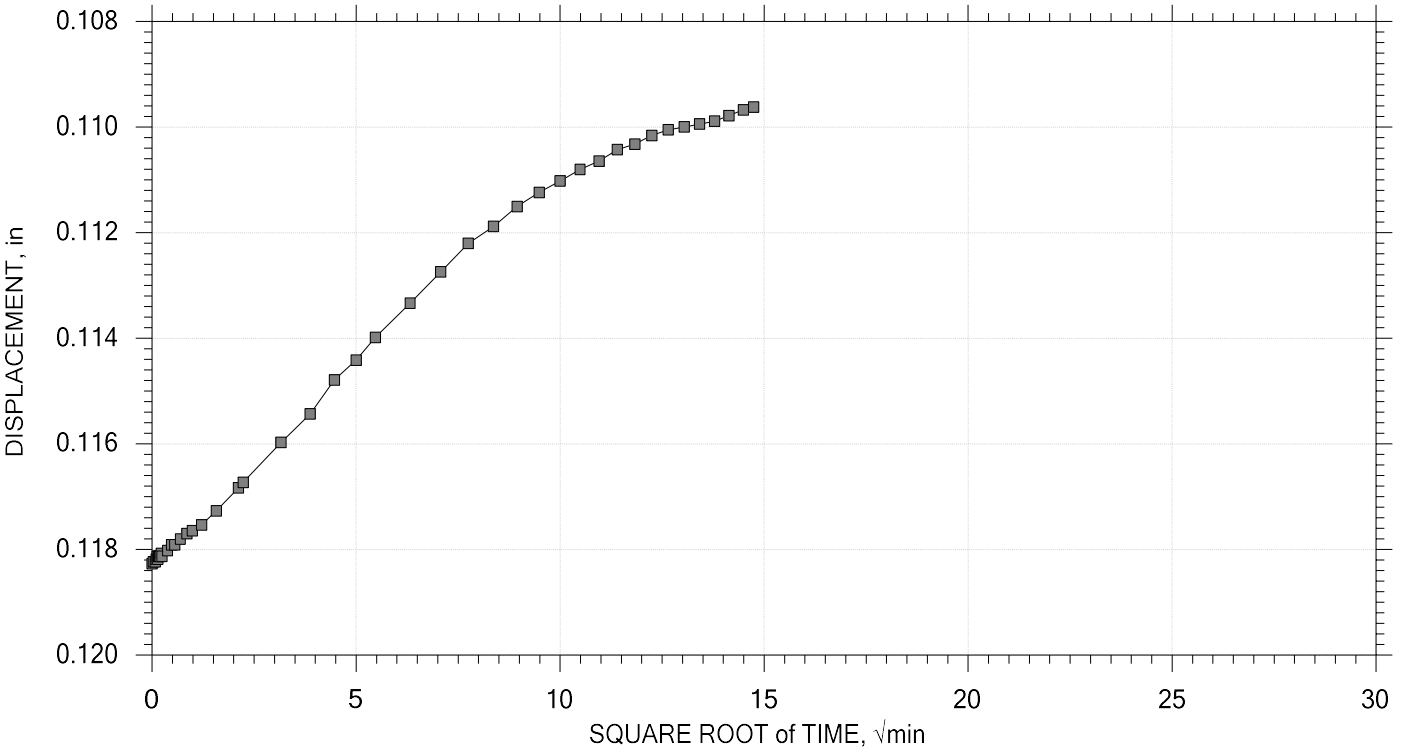
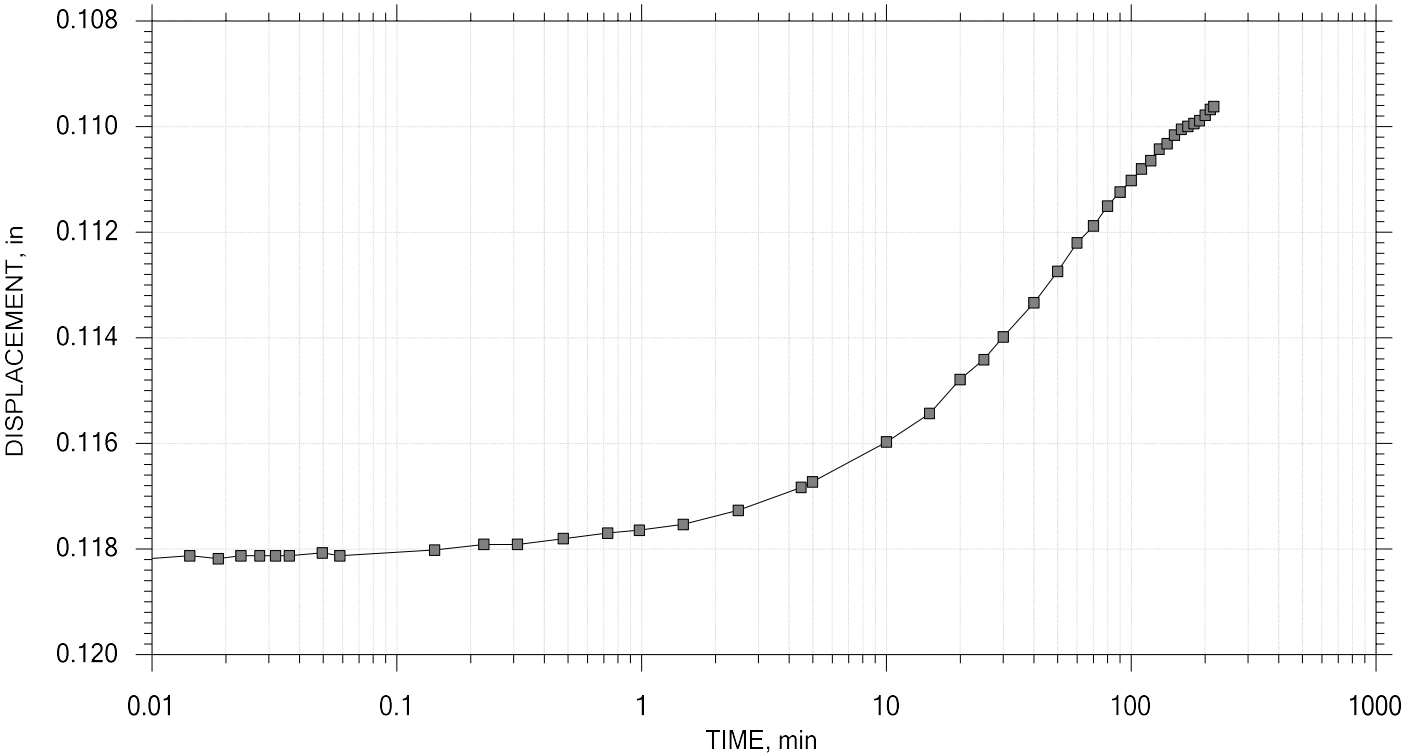
|  |                                        |                      |                       |
|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 2U                         | Test Date: 1/30/2024 | Test No.: 270802      |
|  | Depth: 35.0-37.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 21 of 21

Stress: 0.125 tsf



|  |                                        |                      |                       |
|--|----------------------------------------|----------------------|-----------------------|
|  | Project: ADDISON                       | Location: --         | Project No.: 27160.00 |
|  | Boring No.: BB-AKR-104                 | Tested By: GSL       | Checked By: --        |
|  | Sample No.: 2U                         | Test Date: 1/30/2024 | Test No.: 270802      |
|  | Depth: 35.0-37.0 FT                    | Sample Type: Intact  | Elevation: --         |
|  | Description: Grey Silty Clay           |                      |                       |
|  | Remarks: Maine Sensitive Load Sequence |                      |                       |
|  |                                        |                      |                       |

One-Dimensional Consolidation by ASTM D2435 - Method B

|                        |                      |                       |
|------------------------|----------------------|-----------------------|
| Project: ADDISON       | Location: --         | Project No.: 27160.00 |
| Boring No.: BB-AKR-104 | Tested By: GSL       | Checked By: --        |
| Sample No.: 2U         | Test Date: 1/30/2024 | Depth: 35.0-37.0 FT   |
| Test No.: 270802       | Sample Type: Intact  | Elevation: --         |

Soil Description: Grey Silty Clay  
Remarks: Maine Sensitive Load Sequence

|                                 |                      |                            |
|---------------------------------|----------------------|----------------------------|
| Measured Specific Gravity: 2.64 | Liquid Limit: 35     | Specimen Diameter: 2.50 in |
| Initial Void Ratio: 0.882       | Plastic Limit: 21    | Initial Height: 1.00 in    |
| Final Void Ratio: 0.759         | Plasticity Index: 14 | Final Height: 0.93 in      |

|                              | Before Consolidation |               | After Consolidation |           |
|------------------------------|----------------------|---------------|---------------------|-----------|
|                              | Trimmings            | Specimen+Ring | Specimen+Ring       | Trimmings |
| Container ID                 | 221                  | RING          | RING                | 32        |
| Wt. Container + Wet Soil, gm | 116.42               | 410.94        | 406.79              | 194.12    |
| Wt. Container + Dry Soil, gm | 104.16               | 374.47        | 374.47              | 161.96    |
| Wt. Container, gm            | 65.710               | 262.09        | 262.09              | 50.140    |
| Wt. Dry Soil, gm             | 38.450               | 112.38        | 112.38              | 111.82    |
| Water Content, %             | 31.89                | 32.45         | 28.76               | 28.76     |
| Void Ratio                   | ---                  | 0.882         | 0.759               | ---       |
| Degree of Saturation, %      | ---                  | 97.13         | 100.00              | ---       |
| Dry Unit Weight, pcf         | ---                  | 87.566        | 93.679              | ---       |

## One-Dimensional Consolidation by ASTM D2435 - Method B

Project: ADDISON  
 Boring No.: BB-AKR-104  
 Sample No.: 2U  
 Test No.: 270802

Location: --  
 Tested By: GSL  
 Test Date: 1/30/2024  
 Sample Type: Intact

Project No.: 27160.00  
 Checked By: --  
 Depth: 35.0-37.0 FT  
 Elevation: --

Soil Description: Grey Silty Clay  
 Remarks: Maine Sensitive Load Sequence

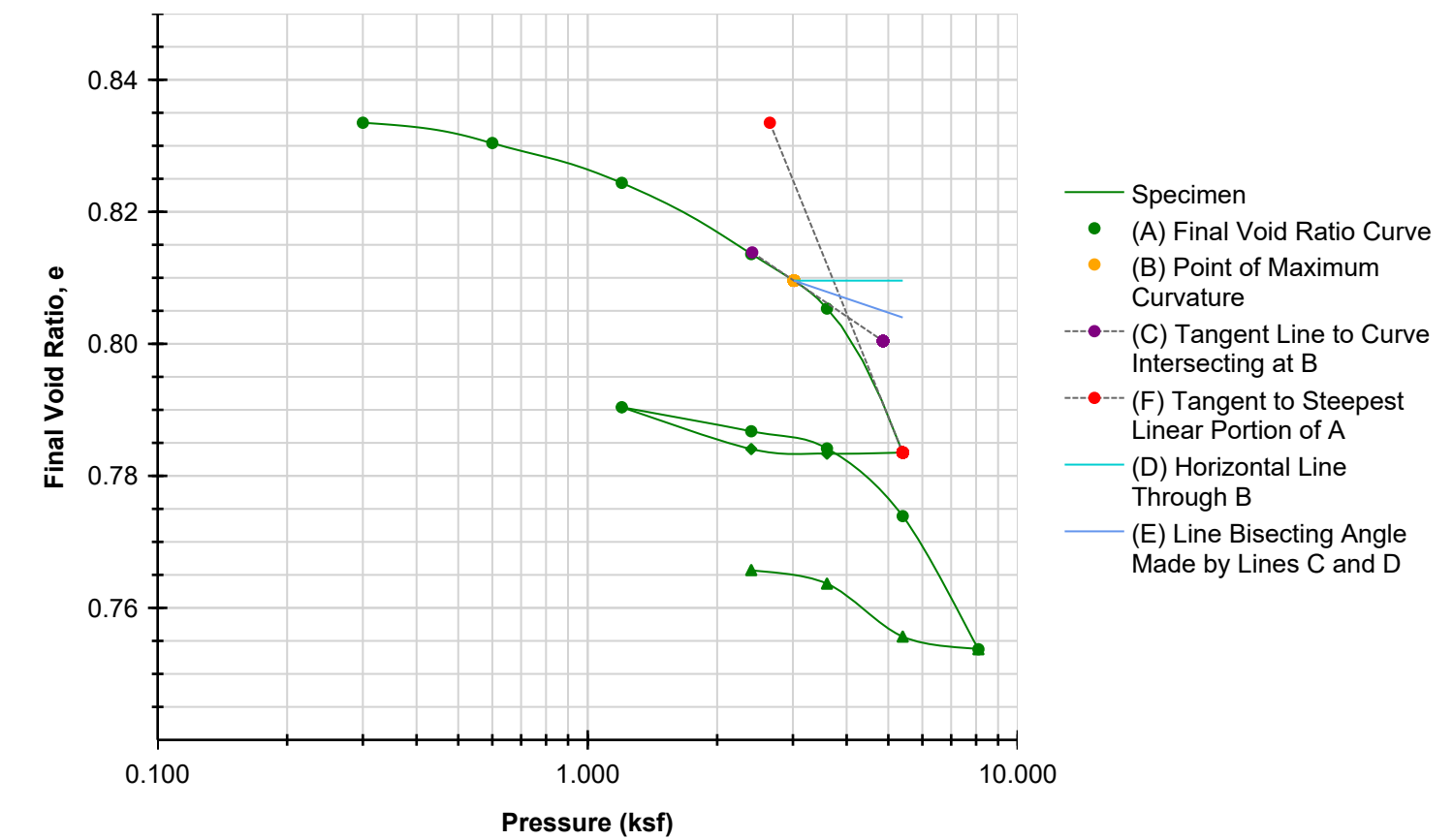
## Displacement at End of Increment

|    | Applied<br>Stress<br>tsf | Final<br>Displacement<br>in | Void<br>Ratio | Strain<br>at End<br>% | Sq.Rt<br>T90<br>min | Cv<br>ft <sup>2</sup> /sec | Mv<br>1/tsf | k<br>ft/day |
|----|--------------------------|-----------------------------|---------------|-----------------------|---------------------|----------------------------|-------------|-------------|
| 1  | 0.0658                   | 0.02751                     | 0.830         | 2.76                  | 23.325              | 1.01e-006                  | 4.20e-001   | 1.15e-003   |
| 2  | 0.125                    | 0.02994                     | 0.826         | 3.01                  | 0.000               | 0.00e+000                  | 4.11e-002   | 0.00e+000   |
| 3  | 0.250                    | 0.03457                     | 0.817         | 3.47                  | 5.985               | 3.81e-006                  | 3.72e-002   | 3.82e-004   |
| 4  | 0.500                    | 0.04173                     | 0.803         | 4.19                  | 8.697               | 2.59e-006                  | 2.88e-002   | 2.01e-004   |
| 5  | 1.00                     | 0.05023                     | 0.787         | 5.04                  | 5.800               | 3.82e-006                  | 1.71e-002   | 1.76e-004   |
| 6  | 2.00                     | 0.06321                     | 0.763         | 6.35                  | 5.948               | 3.64e-006                  | 1.30e-002   | 1.28e-004   |
| 7  | 4.00                     | 0.08308                     | 0.725         | 8.34                  | 6.446               | 3.24e-006                  | 9.97e-003   | 8.72e-005   |
| 8  | 8.00                     | 0.1177                      | 0.660         | 11.8                  | 9.680               | 2.03e-006                  | 8.70e-003   | 4.77e-005   |
| 9  | 4.00                     | 0.1120                      | 0.670         | 11.2                  | 1.060               | 1.80e-005                  | 1.43e-003   | 6.94e-005   |
| 10 | 2.00                     | 0.1053                      | 0.683         | 10.6                  | 4.171               | 4.63e-006                  | 3.38e-003   | 4.22e-005   |
| 11 | 1.00                     | 0.09880                     | 0.695         | 9.92                  | 8.883               | 2.21e-006                  | 6.54e-003   | 3.89e-005   |
| 12 | 0.500                    | 0.09212                     | 0.708         | 9.25                  | 19.956              | 9.97e-007                  | 1.34e-002   | 3.61e-005   |
| 13 | 1.00                     | 0.09449                     | 0.704         | 9.49                  | 2.837               | 7.05e-006                  | 4.76e-003   | 9.04e-005   |
| 14 | 2.00                     | 0.1000                      | 0.693         | 10.0                  | 6.479               | 3.06e-006                  | 5.57e-003   | 4.59e-005   |
| 15 | 4.00                     | 0.1089                      | 0.676         | 10.9                  | 6.299               | 3.10e-006                  | 4.46e-003   | 3.72e-005   |
| 16 | 8.00                     | 0.1252                      | 0.645         | 12.6                  | 5.213               | 3.64e-006                  | 4.09e-003   | 4.02e-005   |
| 17 | 16.0                     | 0.1656                      | 0.569         | 16.6                  | 10.100              | 1.76e-006                  | 5.07e-003   | 2.40e-005   |
| 18 | 4.00                     | 0.1501                      | 0.599         | 15.1                  | 1.295               | 1.33e-005                  | 1.30e-003   | 4.67e-005   |
| 19 | 1.00                     | 0.1340                      | 0.629         | 13.5                  | 10.969              | 1.63e-006                  | 5.37e-003   | 2.36e-005   |
| 20 | 0.250                    | 0.1186                      | 0.658         | 11.9                  | 37.849              | 4.90e-007                  | 2.06e-002   | 2.73e-005   |
| 21 | 0.125                    | 0.1096                      | 0.675         | 11.0                  | 148.067             | 1.29e-007                  | 7.22e-002   | 2.51e-005   |

|    | Applied<br>Stress<br>tsf | Final<br>Displacement<br>in | Void<br>Ratio | Strain<br>at End<br>% | Log<br>T50<br>min | Cv<br>ft <sup>2</sup> /sec | Mv<br>1/tsf | k<br>ft/day | Ca<br>%   |
|----|--------------------------|-----------------------------|---------------|-----------------------|-------------------|----------------------------|-------------|-------------|-----------|
| 1  | 0.0658                   | 0.02751                     | 0.830         | 2.76                  | 0.000             | 0.00e+000                  | 4.20e-001   | 0.00e+000   | 0.00e+000 |
| 2  | 0.125                    | 0.02994                     | 0.826         | 3.01                  | 0.000             | 0.00e+000                  | 4.11e-002   | 0.00e+000   | 0.00e+000 |
| 3  | 0.250                    | 0.03457                     | 0.817         | 3.47                  | 1.747             | 3.03e-006                  | 3.72e-002   | 3.04e-004   | 0.00e+000 |
| 4  | 0.500                    | 0.04173                     | 0.803         | 4.19                  | 1.957             | 2.67e-006                  | 2.88e-002   | 2.07e-004   | 0.00e+000 |
| 5  | 1.00                     | 0.05023                     | 0.787         | 5.04                  | 1.654             | 3.11e-006                  | 1.71e-002   | 1.43e-004   | 0.00e+000 |
| 6  | 2.00                     | 0.06321                     | 0.763         | 6.35                  | 1.870             | 2.69e-006                  | 1.30e-002   | 9.45e-005   | 0.00e+000 |
| 7  | 4.00                     | 0.08308                     | 0.725         | 8.34                  | 1.974             | 2.46e-006                  | 9.97e-003   | 6.61e-005   | 0.00e+000 |
| 8  | 8.00                     | 0.1177                      | 0.660         | 11.8                  | 2.318             | 1.97e-006                  | 8.70e-003   | 4.63e-005   | 0.00e+000 |
| 9  | 4.00                     | 0.1120                      | 0.670         | 11.2                  | 0.239             | 1.85e-005                  | 1.43e-003   | 7.15e-005   | 0.00e+000 |
| 10 | 2.00                     | 0.1053                      | 0.683         | 10.6                  | 1.079             | 4.16e-006                  | 3.38e-003   | 3.79e-005   | 0.00e+000 |
| 11 | 1.00                     | 0.09880                     | 0.695         | 9.92                  | 1.980             | 2.30e-006                  | 6.54e-003   | 4.06e-005   | 0.00e+000 |
| 12 | 0.500                    | 0.09212                     | 0.708         | 9.25                  | 0.000             | 0.00e+000                  | 1.34e-002   | 0.00e+000   | 0.00e+000 |
| 13 | 1.00                     | 0.09449                     | 0.704         | 9.49                  | 0.000             | 0.00e+000                  | 4.76e-003   | 0.00e+000   | 0.00e+000 |
| 14 | 2.00                     | 0.1000                      | 0.693         | 10.0                  | 1.186             | 3.88e-006                  | 5.57e-003   | 5.83e-005   | 0.00e+000 |
| 15 | 4.00                     | 0.1089                      | 0.676         | 10.9                  | 1.194             | 3.79e-006                  | 4.46e-003   | 4.56e-005   | 0.00e+000 |
| 16 | 8.00                     | 0.1252                      | 0.645         | 12.6                  | 1.151             | 3.82e-006                  | 4.09e-003   | 4.22e-005   | 0.00e+000 |
| 17 | 16.0                     | 0.1656                      | 0.569         | 16.6                  | 2.118             | 1.95e-006                  | 5.07e-003   | 2.66e-005   | 0.00e+000 |
| 18 | 4.00                     | 0.1501                      | 0.599         | 15.1                  | 0.410             | 9.76e-006                  | 1.30e-003   | 3.43e-005   | 0.00e+000 |
| 19 | 1.00                     | 0.1340                      | 0.629         | 13.5                  | 2.374             | 1.75e-006                  | 5.37e-003   | 2.54e-005   | 0.00e+000 |
| 20 | 0.250                    | 0.1186                      | 0.658         | 11.9                  | 0.000             | 0.00e+000                  | 2.06e-002   | 0.00e+000   | 0.00e+000 |
| 21 | 0.125                    | 0.1096                      | 0.675         | 11.0                  | 0.000             | 0.00e+000                  | 7.22e-002   | 0.00e+000   | 0.00e+000 |

Final Voids [Log]

ASTM D2435



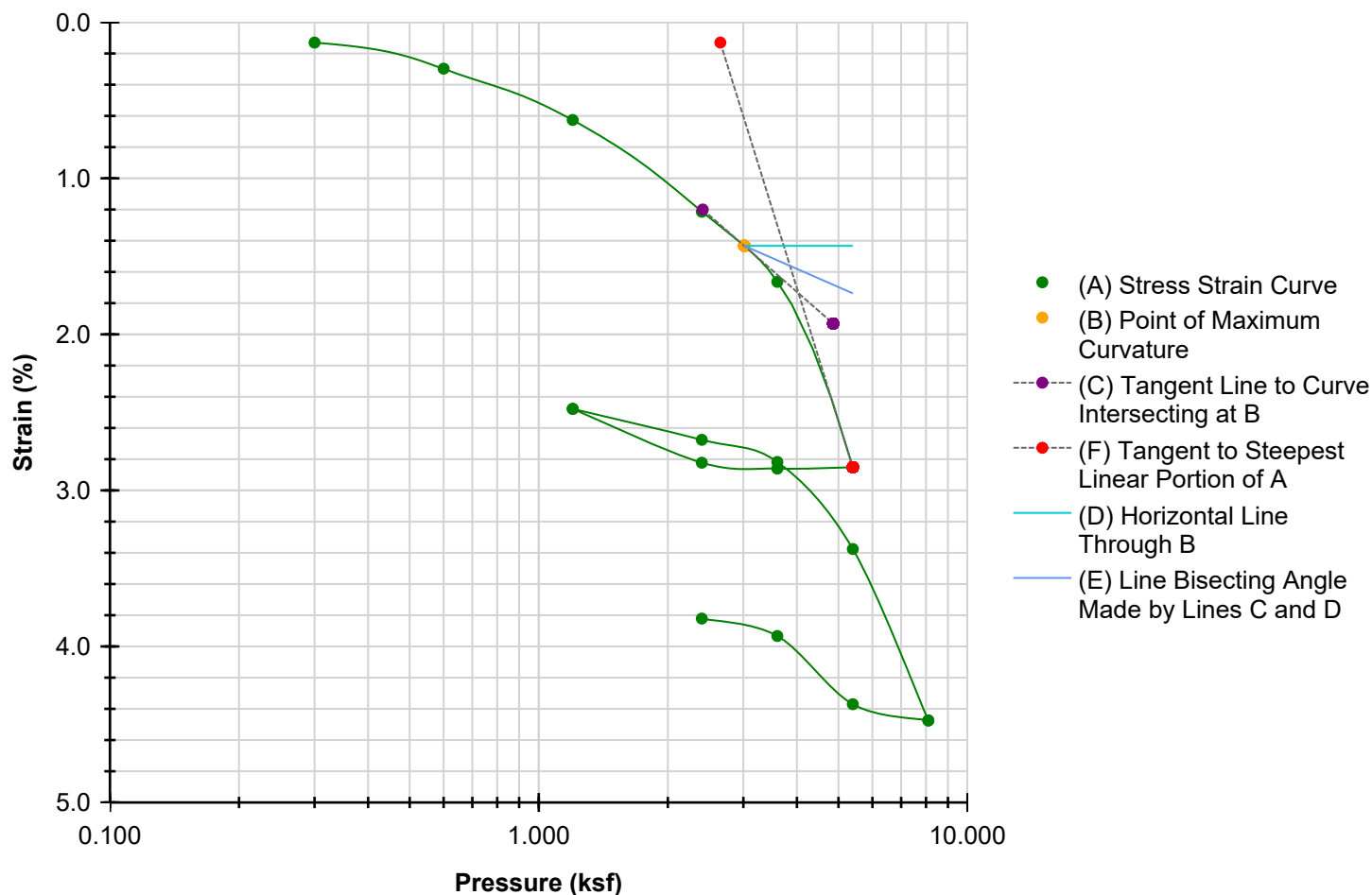
|                               |      |     |       |     |       |
|-------------------------------|------|-----|-------|-----|-------|
| Preconsolidation Stress (ksf) | 3.85 | Cce | 0.091 | Cre | 0.006 |
|-------------------------------|------|-----|-------|-----|-------|

|                   |        |       |                  |      |                     |
|-------------------|--------|-------|------------------|------|---------------------|
|                   | BEFORE | AFTER | Liquid Limits    | 39   | Test Date 10/8/2025 |
| Moisture (%)      | 32.0   | 28.5  | Plastic Limits   | 21   |                     |
| Dry Density (pcf) | 92.3   | 94.3  |                  |      |                     |
| Saturation (%)    | 103.6  | 97.0  |                  |      |                     |
| Void Ratio        | 0.84   | 0.80  | Specific Gravity | 2.72 | ASSUMED             |

|                    |                                        |               |            |  |         |
|--------------------|----------------------------------------|---------------|------------|--|---------|
| Sample Description |                                        |               |            |  | Remarks |
| Project Number     | 20-1403                                | Depth (ft)    | 20         |  |         |
| Sample Number      | 33477B                                 | Boring Number | BB-AKR-202 |  |         |
| Project            | Various ME - Statewide Bridge Projects |               |            |  |         |
| Client             | MaineDOT                               |               |            |  |         |
| Location           | Addison, ME                            |               |            |  |         |

## Percent Strain [Log]

ASTM D2435



|                               |       |    |    |    |    |
|-------------------------------|-------|----|----|----|----|
| Preconsolidation Stress (ksf) | 3.854 | Cc | NA | Cr | NA |
|-------------------------------|-------|----|----|----|----|

|                   |        |       |                  |      |                     |
|-------------------|--------|-------|------------------|------|---------------------|
|                   | BEFORE | AFTER | Liquid Limits    | 39   | Test Date 10/8/2025 |
| Moisture (%)      | 32.0   | 28.5  | Plastic Limits   | 21   |                     |
| Dry Density (pcf) | 92.3   | 94.3  |                  |      |                     |
| Saturation (%)    | 103.6  | 97.0  |                  |      |                     |
| Void Ratio        | 0.84   | 0.80  | Specific Gravity | 2.72 | ASSUMED             |

| Sample Description |                                        |               |            |  | Remarks |
|--------------------|----------------------------------------|---------------|------------|--|---------|
| Project Number     | 20-1403                                | Depth (ft)    | 20         |  |         |
| Sample Number      | 33477B                                 | Boring Number | BB-AKR-202 |  |         |
| Project            | Various ME - Statewide Bridge Projects |               |            |  |         |
| Client             | MaineDOT                               |               |            |  |         |
| Location           |                                        |               |            |  |         |

Project Name: Various ME - Statewide Bridge Projects Project Number: 24-1043

Technician: cr

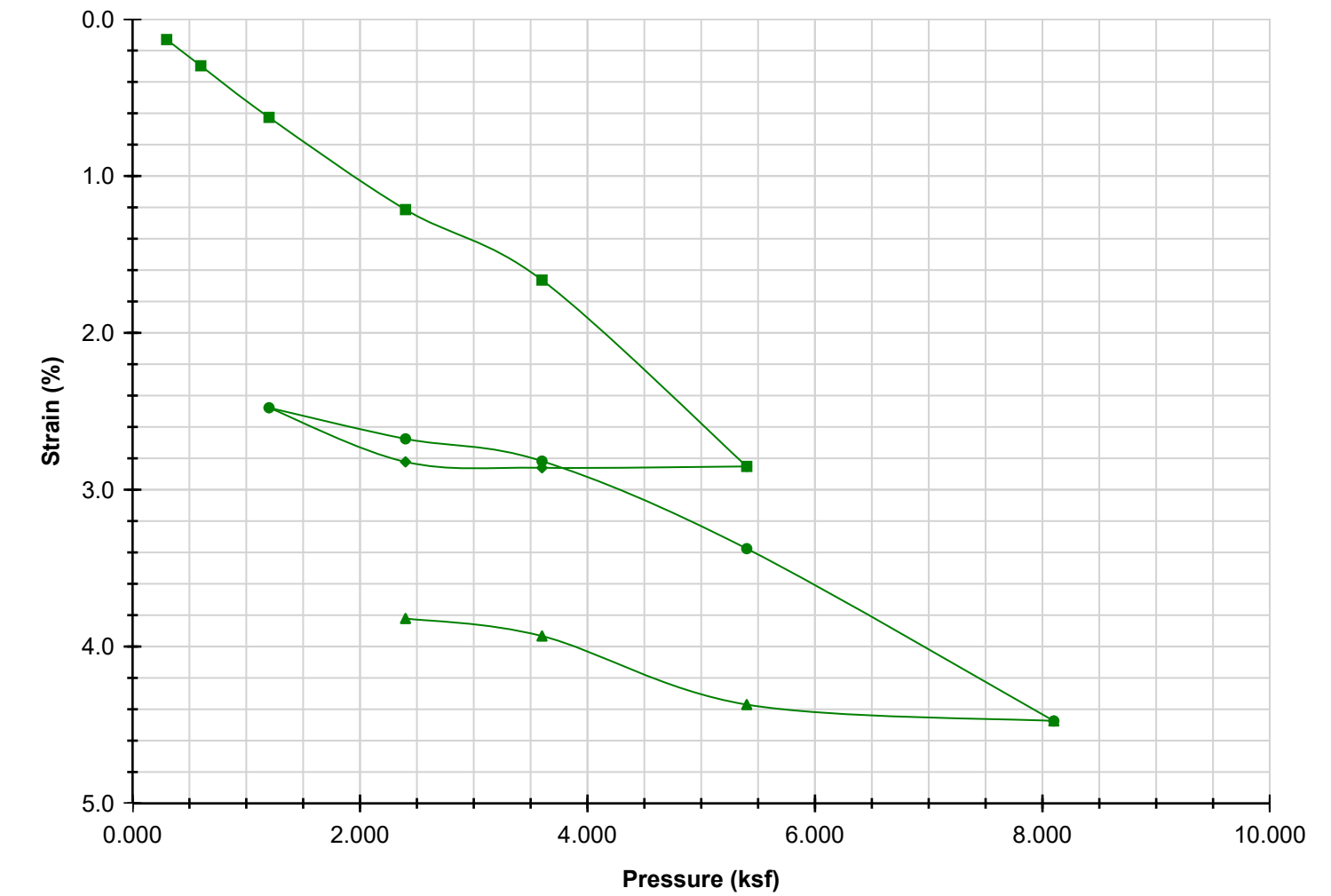
Test Date: 10/8/2025

Checked By: \_\_\_\_\_

Date: \_\_\_\_\_

Percent Strain

ASTM D2435

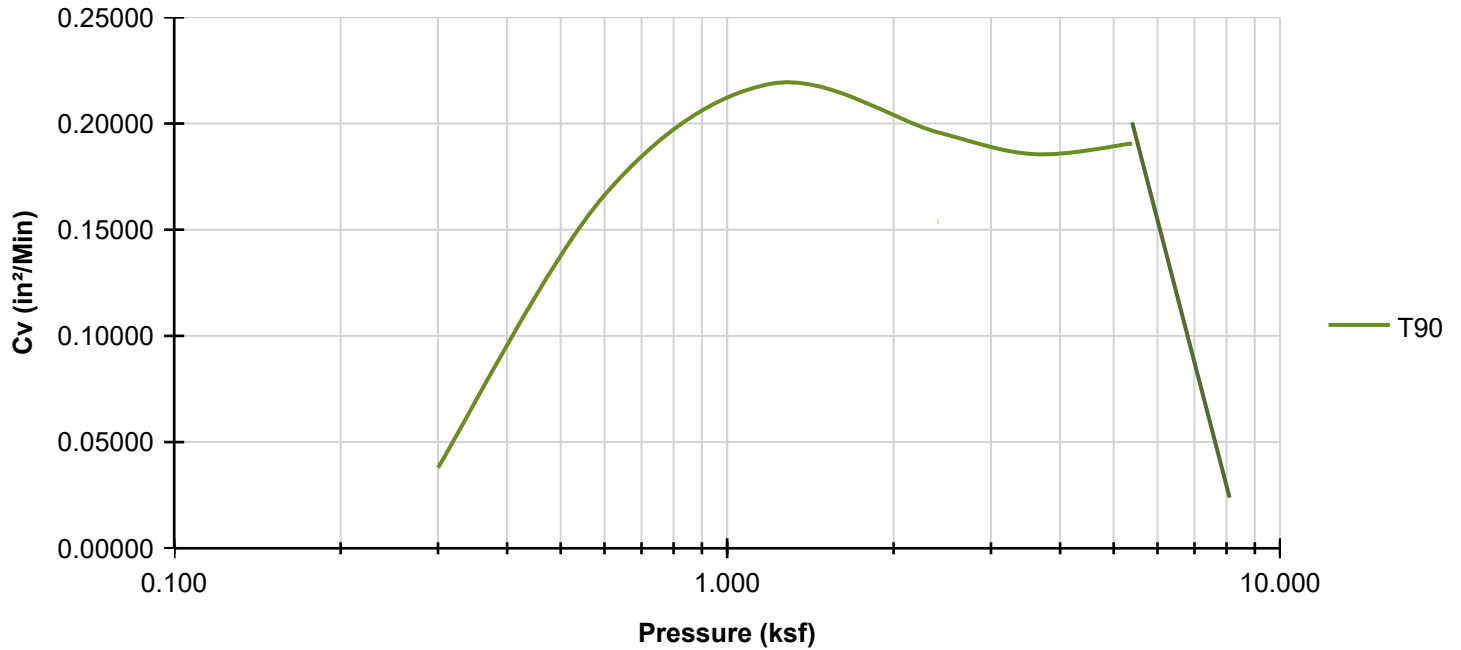
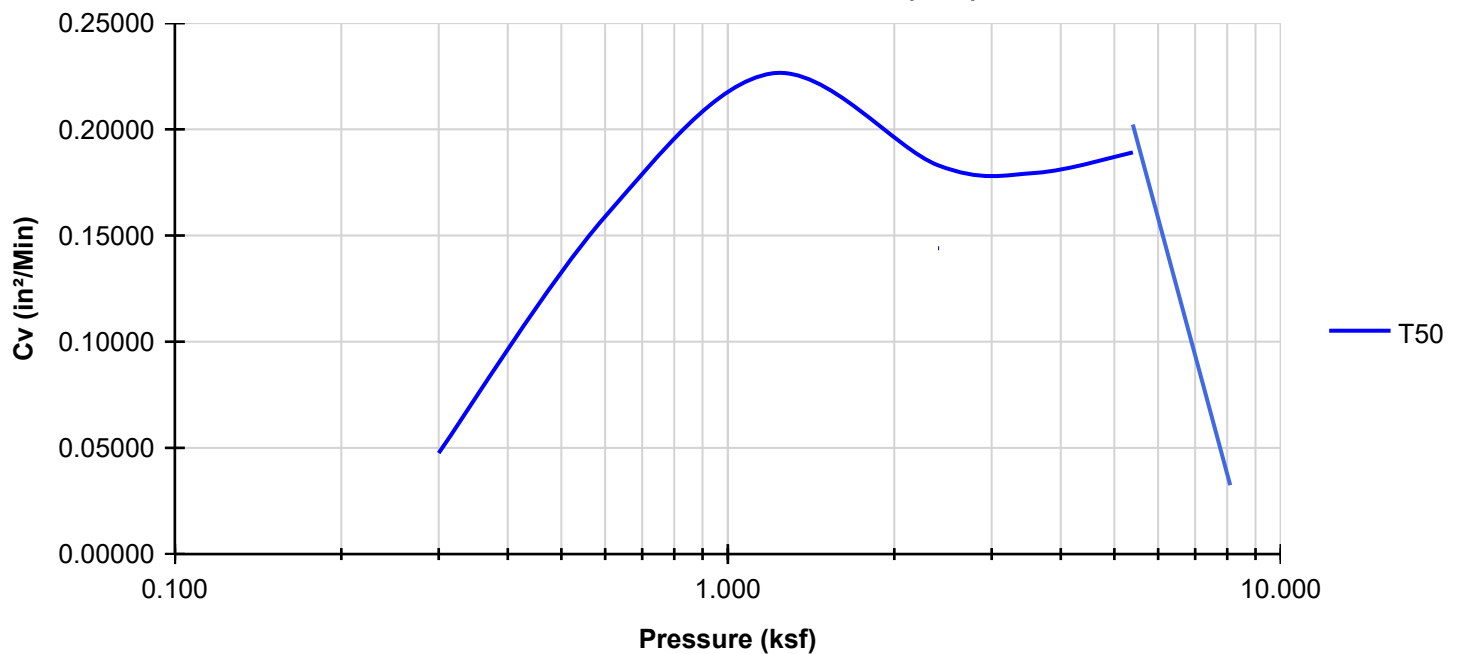


|                   |        |       |                  |      |                     |
|-------------------|--------|-------|------------------|------|---------------------|
|                   | BEFORE | AFTER | Liquid Limits    | 39   | Test Date 10/8/2025 |
| Moisture (%)      | 32.0   | 28.5  | Plastic Limits   | 21   |                     |
| Dry Density (pcf) | 92.3   | 94.3  |                  |      |                     |
| Saturation (%)    | 103.6  | 97.0  |                  |      |                     |
| Void Ratio        | 0.84   | 0.80  | Specific Gravity | 2.72 | ASSUMED             |

|                    |                                             |               |            |  |         |
|--------------------|---------------------------------------------|---------------|------------|--|---------|
| Sample Description |                                             |               |            |  | Remarks |
| Project Number     | 20-1403                                     | Depth (ft)    | 20         |  |         |
| Sample Number      | 33477B                                      | Boring Number | BB-AKR-202 |  |         |
| Project            | Various ME - Statewide Bridge Projects      |               |            |  |         |
| Client             | State of Maine Department of Transportation |               |            |  |         |
| Location           |                                             |               |            |  |         |

# Coefficients of Consolidation

ASTM D2435

**Coefficients of Consolidation (T90)****Coefficients of Consolidation (T50)**

Project Name: Various ME - Statewide Bridge Projects Project Number: 24-1043

Technician: cr

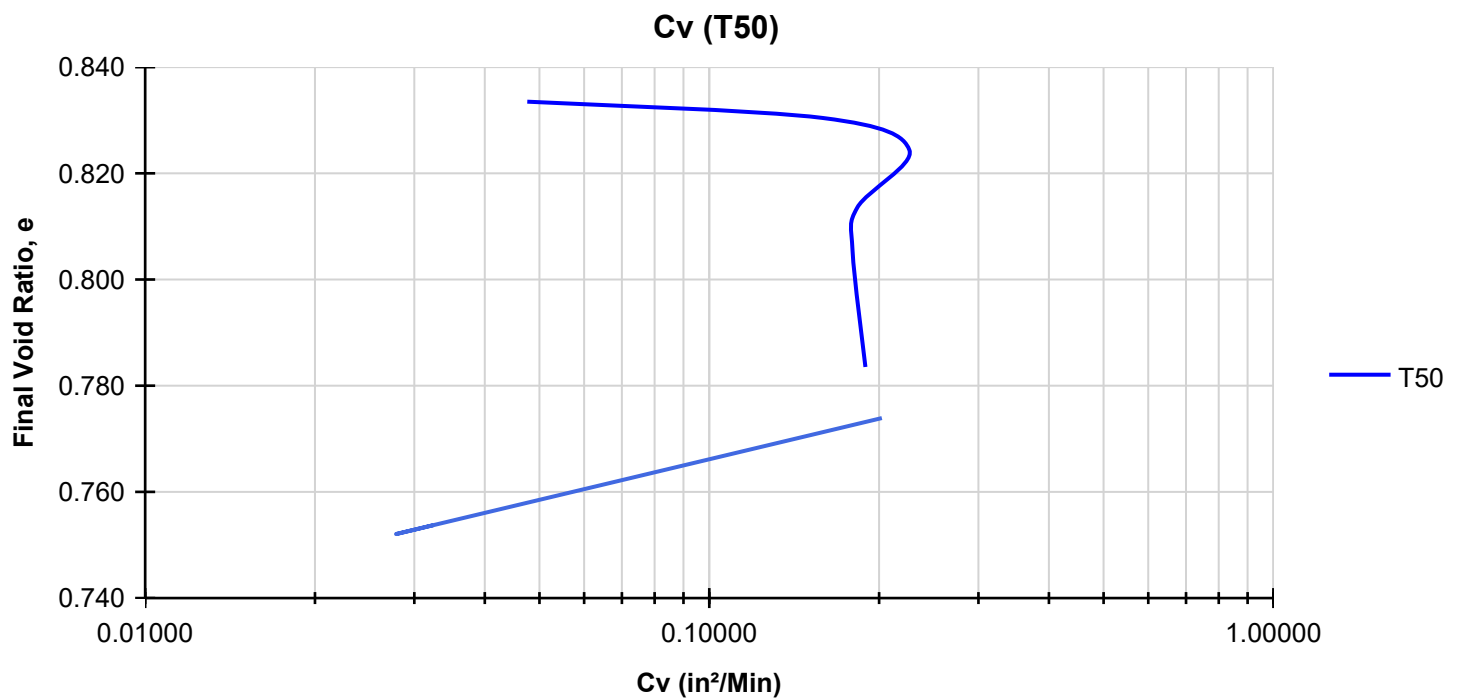
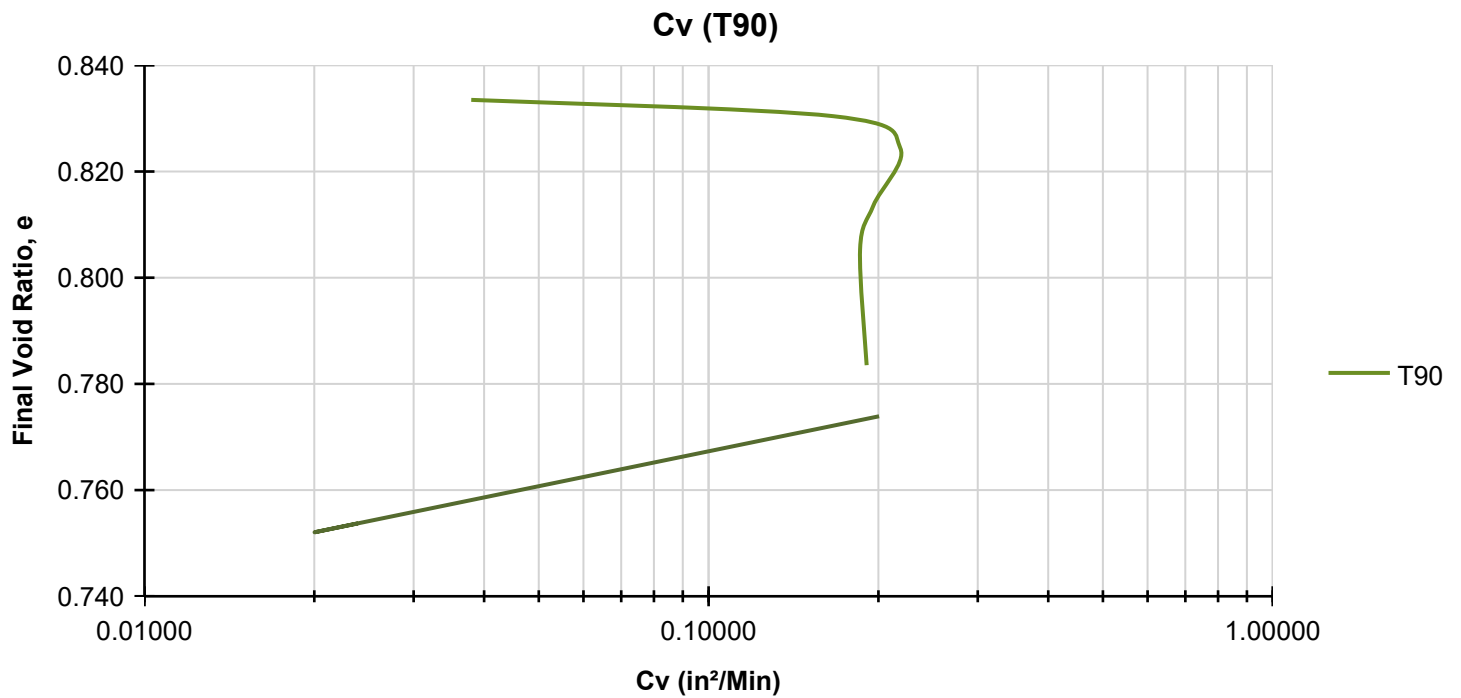
Test Date: 10/8/2025

Checked By: \_\_\_\_\_

Date: \_\_\_\_\_

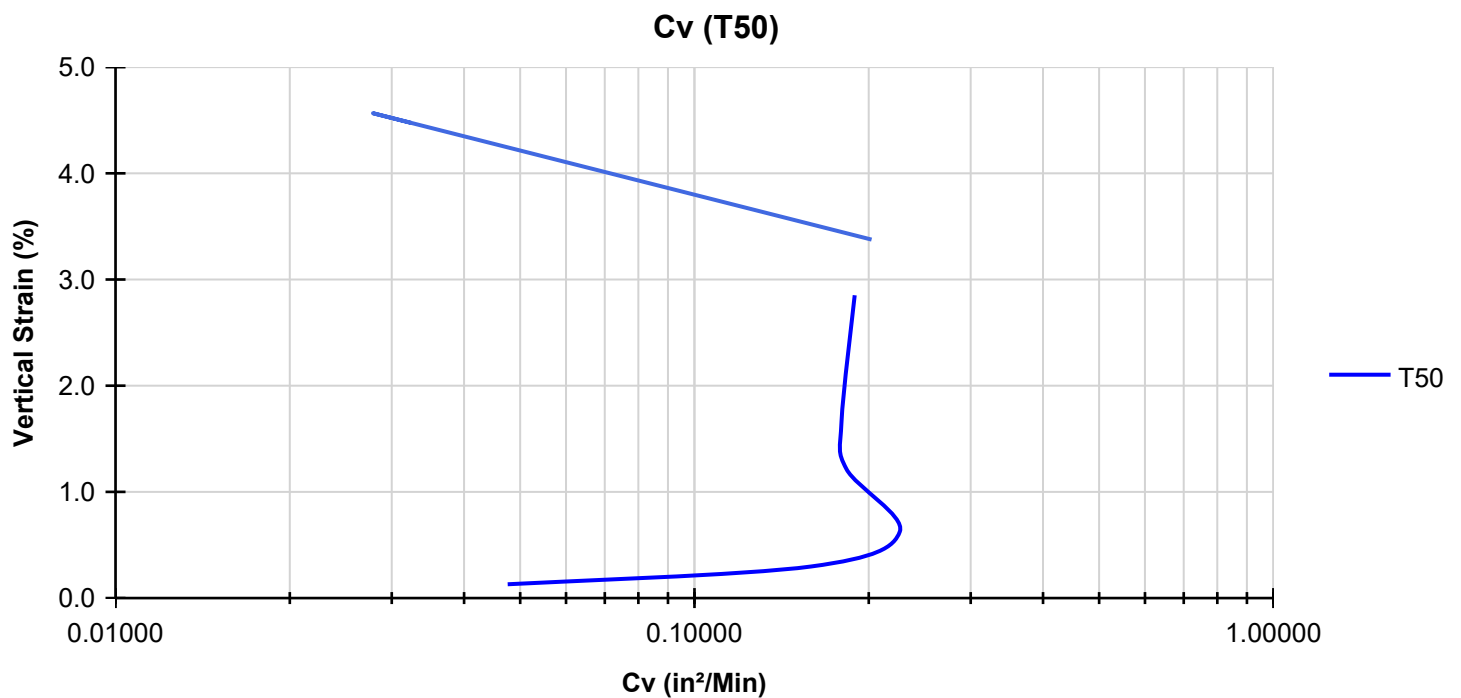
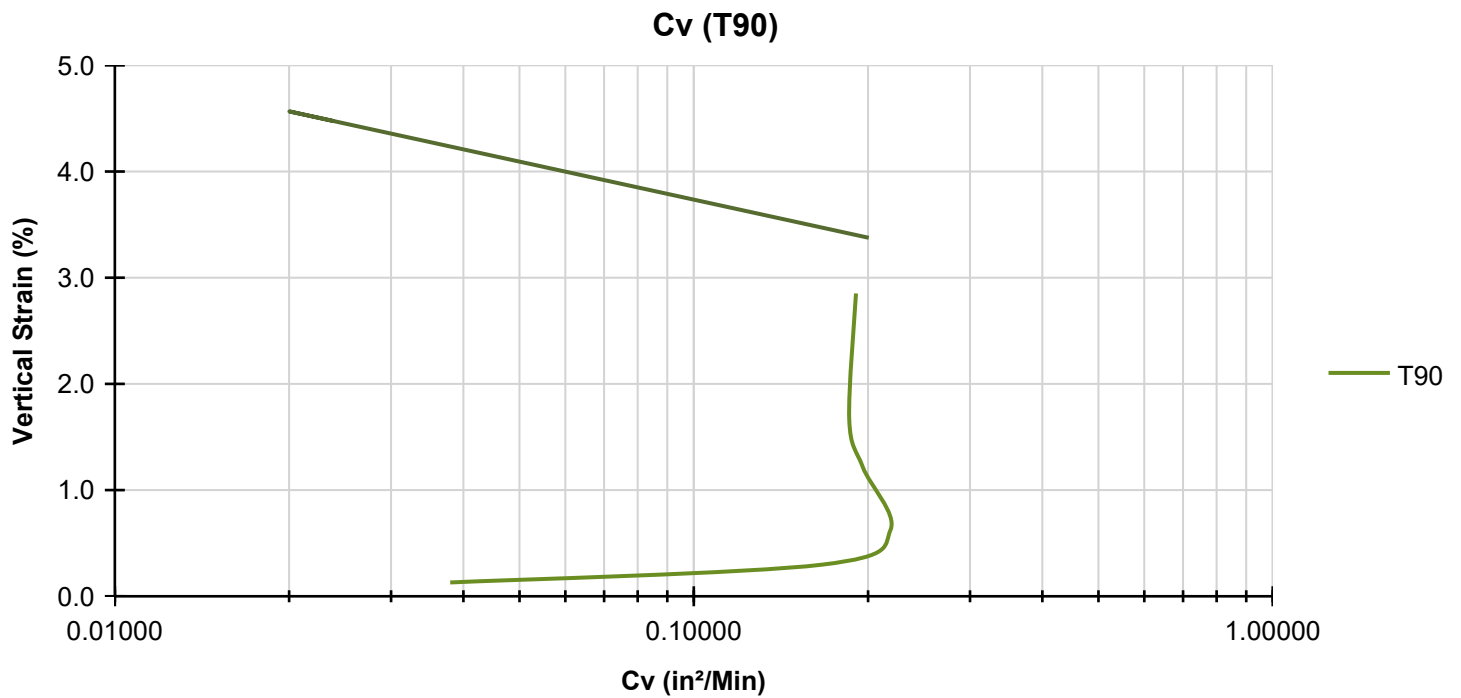
# Cv - Void Ratio

ASTM D2435



# Cv - Vertical Strain

ASTM D2435



Project Name: Various ME - Statewide Bridge Projects Project Number: 24-1043

Technician: cr

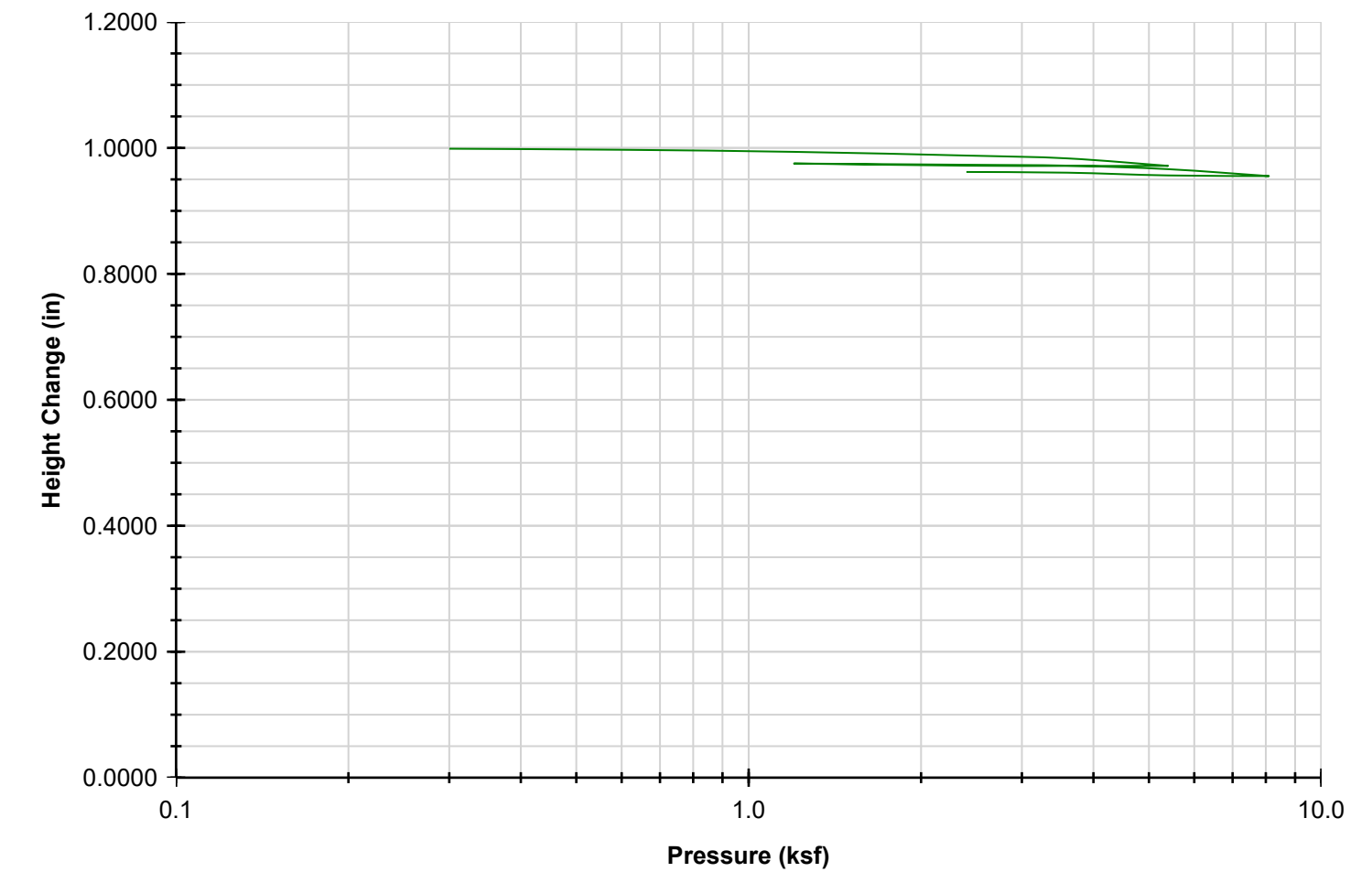
Test Date: 10/8/2025

Checked By: \_\_\_\_\_

Date: \_\_\_\_\_

# Height Change [Log]

ASTM D2435



|                   |        |       |                  |      |                     |
|-------------------|--------|-------|------------------|------|---------------------|
|                   | BEFORE | AFTER | Liquid Limits    | 39   | Test Date 10/8/2025 |
| Moisture (%)      | 32.0   | 28.5  | Plastic Limits   | 21   |                     |
| Dry Density (pcf) | 92.3   | 94.3  |                  |      |                     |
| Saturation (%)    | 103.6  | 97.0  |                  |      |                     |
| Void Ratio        | 0.84   | 0.80  | Specific Gravity | 2.72 | ASSUMED             |

| Sample Description |                                             |               |            |  | Remarks |
|--------------------|---------------------------------------------|---------------|------------|--|---------|
| Project Number     | 20-1403                                     | Depth (ft)    | 20         |  |         |
| Sample Number      | 33477B                                      | Boring Number | BB-AKR-202 |  |         |
| Project            | Various ME - Statewide Bridge Projects      |               |            |  |         |
| Client             | State of Maine Department of Transportation |               |            |  |         |
| Location           |                                             |               |            |  |         |

# Summary

ASTM D2435

| Sample Description |                                             |               |                |         |
|--------------------|---------------------------------------------|---------------|----------------|---------|
| Project Number     | 20-1403                                     | Depth (ft)    | 20             | Remarks |
| Sample Number      | 33477B                                      | Boring Number | BB-AKR-202, 1U |         |
| Project            | Various ME - Statewide Bridge Projects      |               |                |         |
| Client             | State of Maine Department of Transportation |               |                |         |
| Location           |                                             |               |                |         |

| Index | Loading Sequence (ksf) | Cummulative Change in Height (in) | Specimen Height (in) | Height of Voids (in) | Vertical Strain (%) | Void Ratio | T90 Fitting Time (Hr) | T50 Fitting Time (Hr) | T90 Cv (in²/Min) | T50 Cv (in²/Min) | Sequence Status |
|-------|------------------------|-----------------------------------|----------------------|----------------------|---------------------|------------|-----------------------|-----------------------|------------------|------------------|-----------------|
| 0     | 0.000                  | 0.0000                            | 1.0000               | 0.0000               | 0.0                 | 0.839      | 0.000                 | 0.000                 | 0.00000          | 0.00000          | ENABLED         |
| 1     | 0.300                  | 0.0013                            | 0.9987               | 0.4540               | 0.1                 | 0.833      | 0.093                 | 0.017                 | 0.03795          | 0.04757          | ENABLED         |
| 2     | 0.600                  | 0.0030                            | 0.9970               | 0.4523               | 0.3                 | 0.830      | 0.021                 | 0.005                 | 0.16627          | 0.15893          | ENABLED         |
| 3     | 1.200                  | 0.0063                            | 0.9937               | 0.4490               | 0.6                 | 0.824      | 0.016                 | 0.004                 | 0.21871          | 0.22631          | ENABLED         |
| 4     | 2.400                  | 0.0121                            | 0.9879               | 0.4432               | 1.2                 | 0.814      | 0.018                 | 0.004                 | 0.19593          | 0.18306          | ENABLED         |
| 5     | 3.600                  | 0.0166                            | 0.9834               | 0.4387               | 1.7                 | 0.805      | 0.018                 | 0.004                 | 0.18557          | 0.17948          | ENABLED         |
| 6     | 5.400                  | 0.0285                            | 0.9715               | 0.4268               | 2.9                 | 0.784      | 0.017                 | 0.004                 | 0.19062          | 0.18914          | ENABLED         |
| 7     | 3.600                  | 0.0286                            | 0.9714               | 0.4267               | 2.9                 | 0.783      | 0.000                 | 0.000                 | 0.00000          | 0.00000          | ENABLED         |
| 8     | 2.400                  | 0.0282                            | 0.9718               | 0.4271               | 2.8                 | 0.784      | 0.000                 | 0.000                 | 0.00000          | 0.00000          | ENABLED         |
| 9     | 1.200                  | 0.0248                            | 0.9752               | 0.4305               | 2.5                 | 0.790      | 0.000                 | 0.000                 | 0.00000          | 0.00000          | ENABLED         |
| 10    | 2.400                  | 0.0268                            | 0.9732               | 0.4285               | 2.7                 | 0.787      | 0.022                 | 0.005                 | 0.15392          | 0.14401          | ENABLED         |
| 11    | 3.600                  | 0.0282                            | 0.9718               | 0.4271               | 2.8                 | 0.784      | 0.000                 | 0.000                 | 0.00000          | 0.00000          | ENABLED         |
| 12    | 5.400                  | 0.0338                            | 0.9662               | 0.4215               | 3.4                 | 0.774      | 0.016                 | 0.004                 | 0.20054          | 0.20225          | ENABLED         |
| 13    | 8.100                  | 0.0447                            | 0.9553               | 0.4106               | 4.5                 | 0.754      | 0.135                 | 0.021                 | 0.02390          | 0.03243          | ENABLED         |
| 14    | 5.400                  | 0.0437                            | 0.9563               | 0.4116               | 4.4                 | 0.756      | 0.000                 | 0.000                 | 0.00000          | 0.00000          | ENABLED         |
| 15    | 3.600                  | 0.0393                            | 0.9607               | 0.4160               | 3.9                 | 0.764      | 0.000                 | 0.000                 | 0.00000          | 0.00000          | ENABLED         |
| 16    | 2.400                  | 0.0382                            | 0.9618               | 0.4171               | 3.8                 | 0.766      | 0.000                 | 0.000                 | 0.00000          | 0.00000          | ENABLED         |

# Summary

ASTM D2435

| Index | Loading<br>Sequence<br>(ksf) | Cummulative<br>Change in<br>Height<br>(in) | Specimen<br>Height<br>(in) | Height of<br>Voids<br>(in) | Vertical<br>Strain<br>(%) | Void<br>Ratio | T90<br>Fitting<br>Time<br>(Hr) | T50<br>Fitting<br>Time<br>(Hr) | T90<br>Cv<br>(in <sup>2</sup> /Min) | T50<br>Cv<br>(in <sup>2</sup> /Min) | Sequence<br>Status |
|-------|------------------------------|--------------------------------------------|----------------------------|----------------------------|---------------------------|---------------|--------------------------------|--------------------------------|-------------------------------------|-------------------------------------|--------------------|
| 17    | 1.200                        | 0.0006                                     | 0.9994                     | 0.4547                     | 0.1                       | 0.835         | 0.000                          | 0.000                          | 0.00000                             | 0.00000                             | DISABLED           |
| 18    | 0.600                        | 0.0000                                     | 0.0000                     | 0.0000                     | 0.0                       | 0.000         | 0.000                          | 0.000                          | 0.00000                             | 0.00000                             | DISABLED           |
| 19    | 0.300                        | 0.0000                                     | 0.0000                     | 0.0000                     | 0.0                       | 0.000         | 0.000                          | 0.000                          | 0.00000                             | 0.00000                             | DISABLED           |

# Consolidated Test Results

ASTM D2435

|                 |                                        |
|-----------------|----------------------------------------|
| Project:        | Various ME - Statewide Bridge Projects |
| Project Number: | 20-1403                                |
| Job Number:     | 027160                                 |
| Test Date:      | 10/8/2025                              |

|                |                |
|----------------|----------------|
| Sampling Date: | 10/8/2025      |
| Sample Number: | 33477B         |
| Depth (ft)     | 20             |
| Boring Number: | BB-AKR-202, 1U |
| Location:      |                |
| Client Name:   | MaineDOT       |
| Remarks:       |                |

|                          |             |                      |    |                    |       |
|--------------------------|-------------|----------------------|----|--------------------|-------|
| Specific Gravity:        | 2.72        | Plastic Limit:       | 21 | Liquid Limit:      | 39    |
| Specific Gravity Method: | ASSUMED     |                      |    | Weight of Ring (g) | 102.0 |
| Sampling Method:         | Undisturbed | Soil Classification: |    |                    |       |
| Specimen Description:    |             |                      |    |                    |       |

| Parameters                         | Initial | Final        |
|------------------------------------|---------|--------------|
| Height (in)                        | 1.0000  | 0.9994       |
| Height Source                      | NA      | TEST RESULTS |
| Diameter (in)                      | 2.5000  | NA           |
| Area (in <sup>2</sup> )            | 4.909   | NA           |
| Volume (in <sup>3</sup> )          | 4.9087  | 4.9058       |
| Weight of Container (g)            | 344.8   | 344.8        |
| Weight of Wet Soil + Container (g) | 609.8   | 500.6        |
| Weight of Dry Soil + Container (g) | 545.6   | 466.0        |
| Moisture Content (%)               | 32.0    | 28.5         |
| Moist Weight + Ring Weight (g)     | 259.0   | 258.1        |
| Dry Density (pcf)                  | 92.3    | 94.3         |
| Wet Density (pcf)                  | 121.8   | 121.2        |
| Saturation (%)                     | 103.6   | 97.0         |
| Void Ratio                         | 0.8     | 0.8          |

Project Name: Various ME - Statewide Bridge Projects Project Number: 24-1043

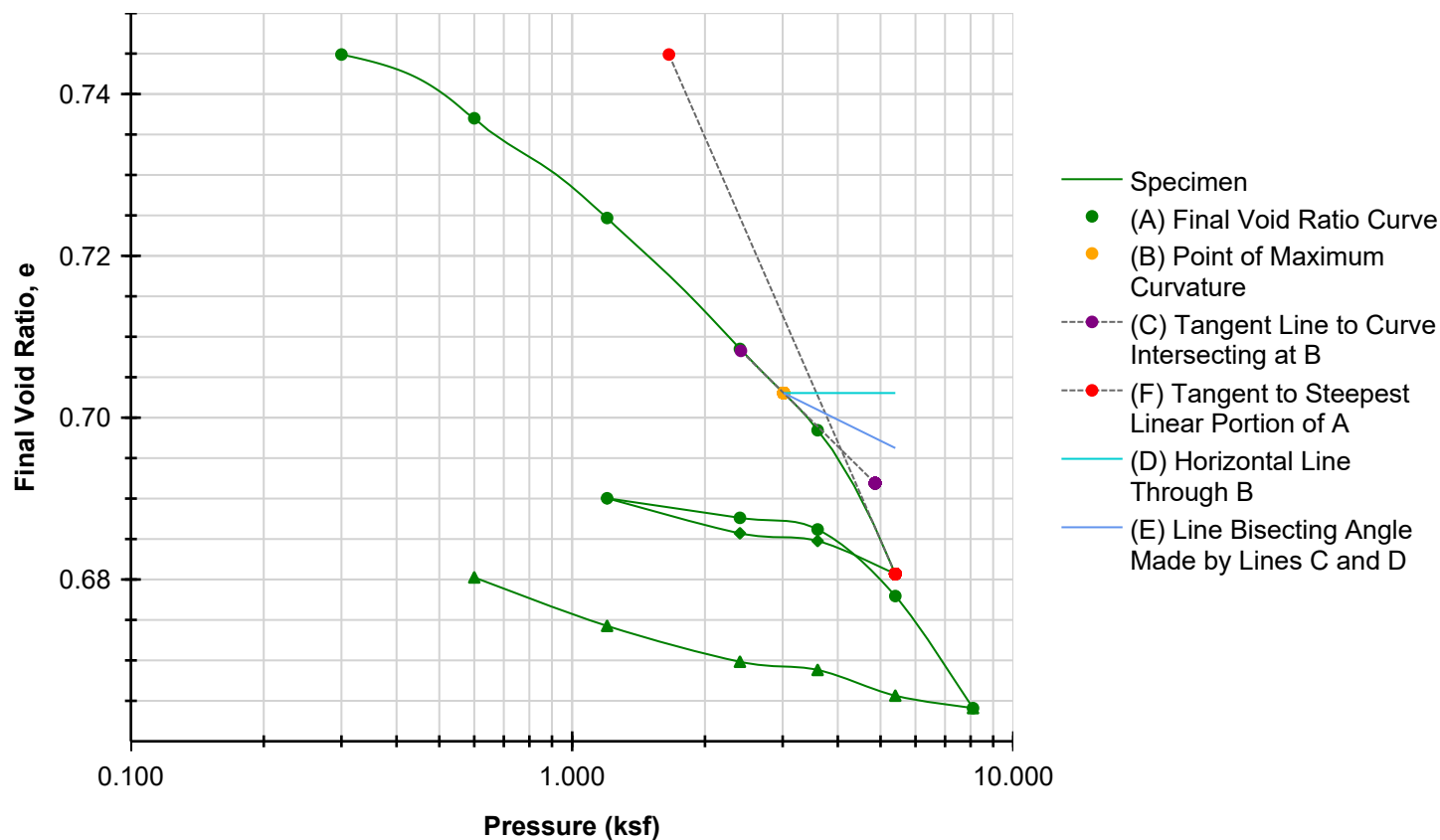
Technician: cr

Test Date: 10/8/2025

Checked By: \_\_\_\_\_ Date: \_\_\_\_\_

## Final Voids [Log]

ASTM D2435



|                               |      |     |       |     |       |
|-------------------------------|------|-----|-------|-----|-------|
| Preconsolidation Stress (ksf) | 3.75 | Cce | 0.057 | Cre | 0.007 |
|-------------------------------|------|-----|-------|-----|-------|

|                   | BEFORE | AFTER | Liquid Limits    | 39   | Test Date | 11/3/2025 |
|-------------------|--------|-------|------------------|------|-----------|-----------|
| Moisture (%)      | 29.0   | 26.8  | Plastic Limits   | 19   |           |           |
| Dry Density (pcf) | 96.8   | 101.1 |                  |      |           |           |
| Saturation (%)    | 104.4  | 107.1 |                  |      |           |           |
| Void Ratio        | 0.75   | 0.68  | Specific Gravity | 2.72 | ASSUMED   |           |

| Sample Description |                           |               |            |         |
|--------------------|---------------------------|---------------|------------|---------|
| Project Number     | 20-1403                   | Depth (ft)    | 25         | Remarks |
| Sample Number      | 33478B                    | Boring Number | BB-AKR-204 |         |
| Project            | Statewide Bridge Projects |               |            |         |
| Client             | MaineDOT                  |               |            |         |
| Location           | Addison, ME               |               |            |         |

Project Name: Statewide Bridge Projects Project Number: 20-1403

Technician: CR

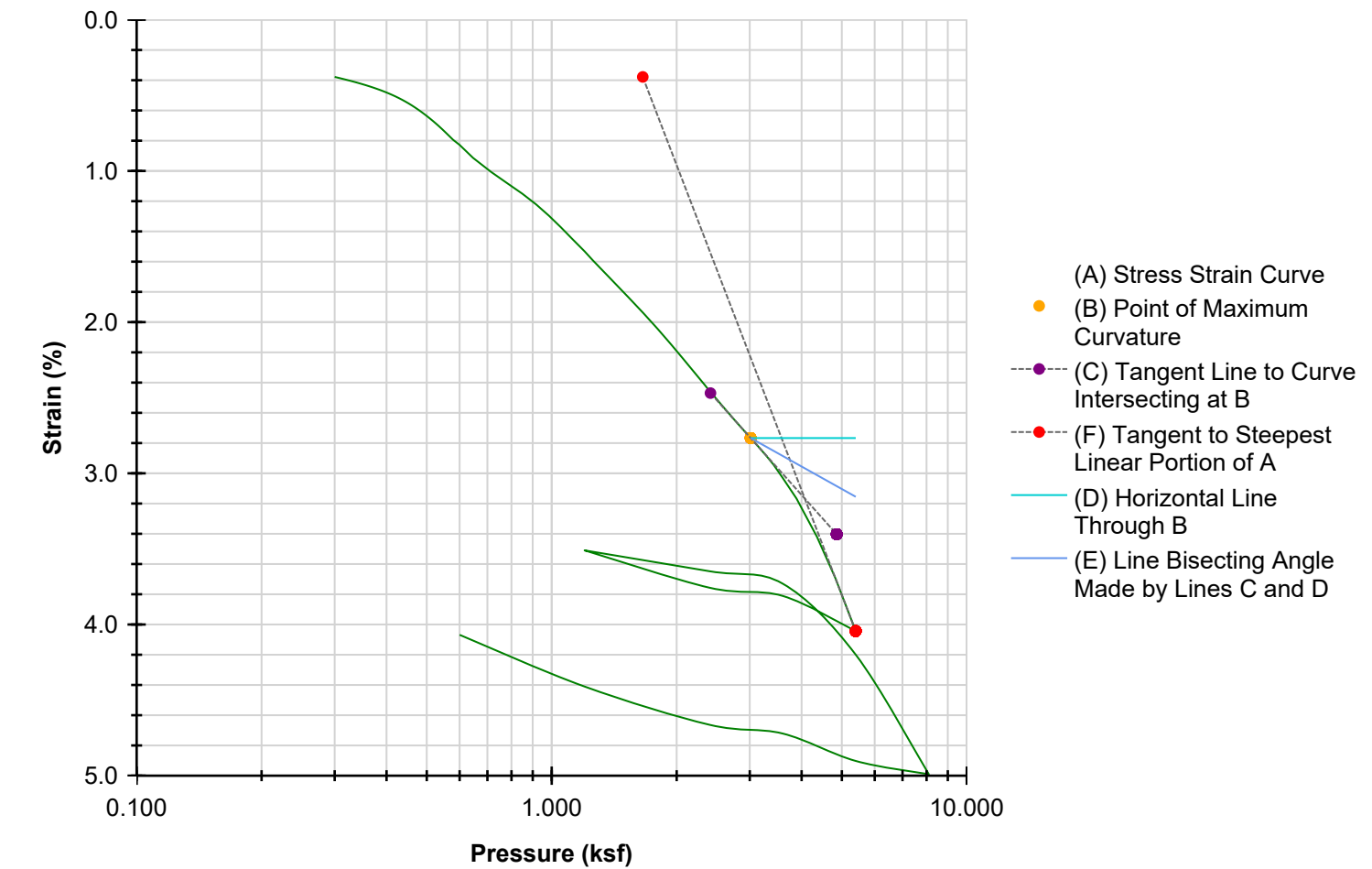
Test Date: 11/3/2025

Checked By: \_\_\_\_\_

Date: \_\_\_\_\_

Percent Strain [Log]

ASTM D2435



|                               |      |     |       |     |       |
|-------------------------------|------|-----|-------|-----|-------|
| Preconsolidation Stress (ksf) | 3.75 | Cce | 0.057 | Cre | 0.007 |
|-------------------------------|------|-----|-------|-----|-------|

|                   |        |       |                  |      |                     |
|-------------------|--------|-------|------------------|------|---------------------|
|                   | BEFORE | AFTER | Liquid Limits    | 39   | Test Date 11/3/2025 |
| Moisture (%)      | 29.0   | 26.8  | Plastic Limits   | 19   |                     |
| Dry Density (pcf) | 96.8   | 101.1 |                  |      |                     |
| Saturation (%)    | 104.4  | 107.1 |                  |      |                     |
| Void Ratio        | 0.75   | 0.68  | Specific Gravity | 2.72 | ASSUMED             |

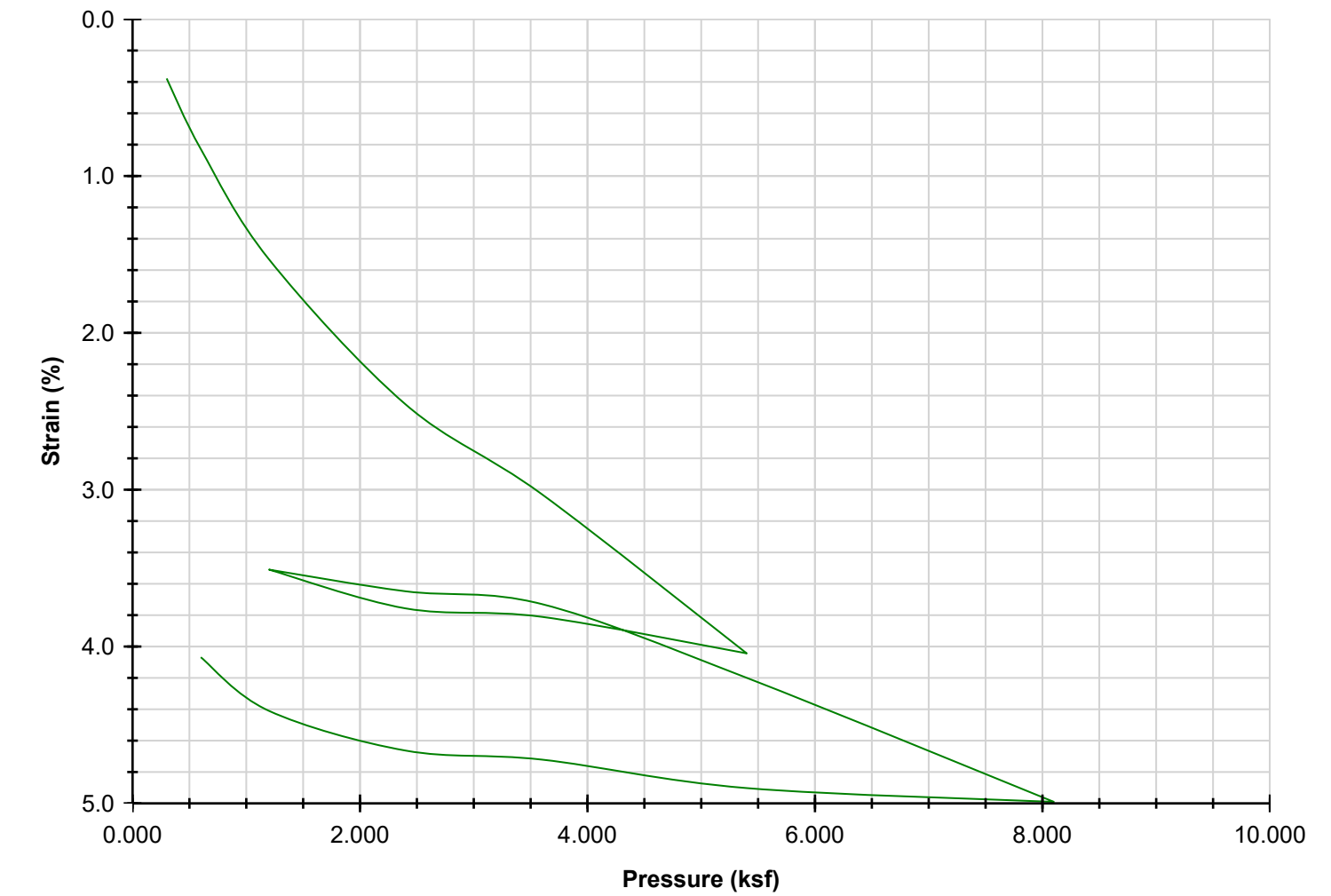
|                    |                           |               |            |  |         |
|--------------------|---------------------------|---------------|------------|--|---------|
| Sample Description |                           |               |            |  | Remarks |
| Project Number     | 20-1403                   | Depth (ft)    | 25         |  |         |
| Sample Number      | 33478B                    | Boring Number | BB-AKR-204 |  |         |
| Project            | Statewide Bridge Projects |               |            |  |         |
| Client             | MaineDOT                  |               |            |  |         |
| Location           |                           |               |            |  |         |

Project Name: Statewide Bridge Projects Project Number: 20-1403

Technician: CR      Test Date: 11/3/2025      Checked By: \_\_\_\_\_      Date: \_\_\_\_\_

Percent Strain

ASTM D2435



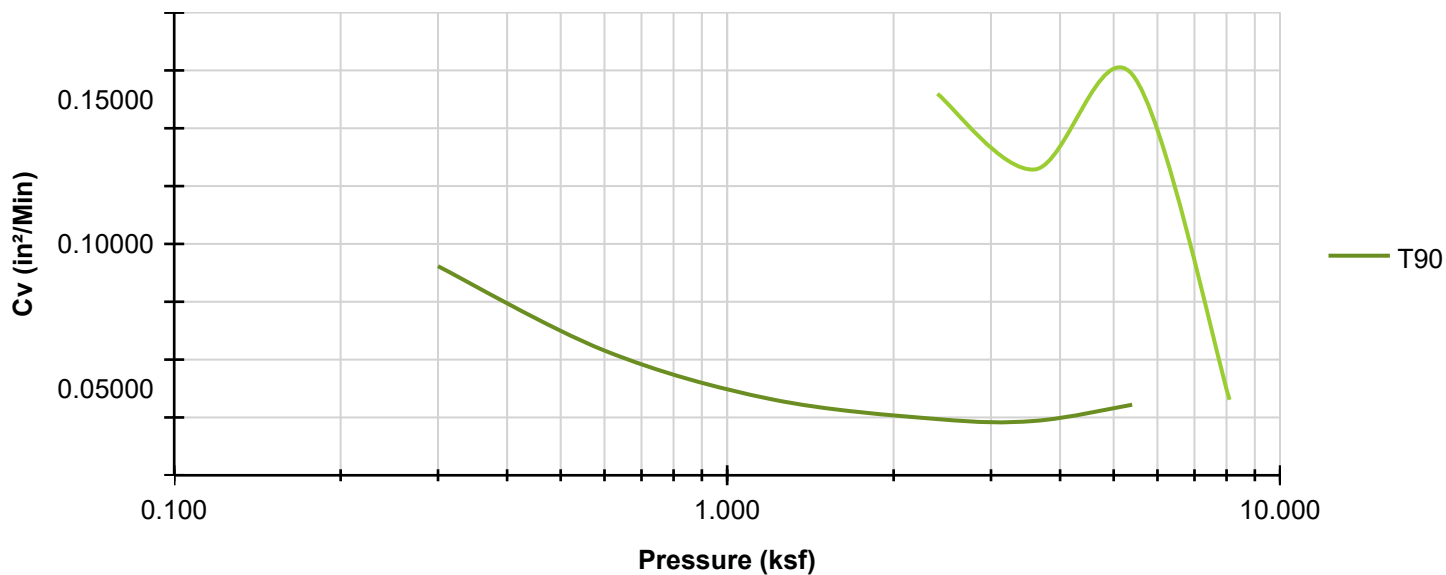
|                   |        |       |                  |      |                     |
|-------------------|--------|-------|------------------|------|---------------------|
|                   | BEFORE | AFTER | Liquid Limits    | 39   | Test Date 11/3/2025 |
| Moisture (%)      | 29.0   | 26.8  | Plastic Limits   | 19   |                     |
| Dry Density (pcf) | 96.8   | 101.1 |                  |      |                     |
| Saturation (%)    | 104.4  | 107.1 |                  |      |                     |
| Void Ratio        | 0.75   | 0.68  | Specific Gravity | 2.72 | ASSUMED             |

|                    |                           |               |            |  |         |
|--------------------|---------------------------|---------------|------------|--|---------|
| Sample Description |                           |               |            |  | Remarks |
| Project Number     | 20-1403                   | Depth (ft)    | 25         |  |         |
| Sample Number      | 33478B                    | Boring Number | BB-AKR-204 |  |         |
| Project            | Statewide Bridge Projects |               |            |  |         |
| Client             | Maine DOT                 |               |            |  |         |
| Location           |                           |               |            |  |         |

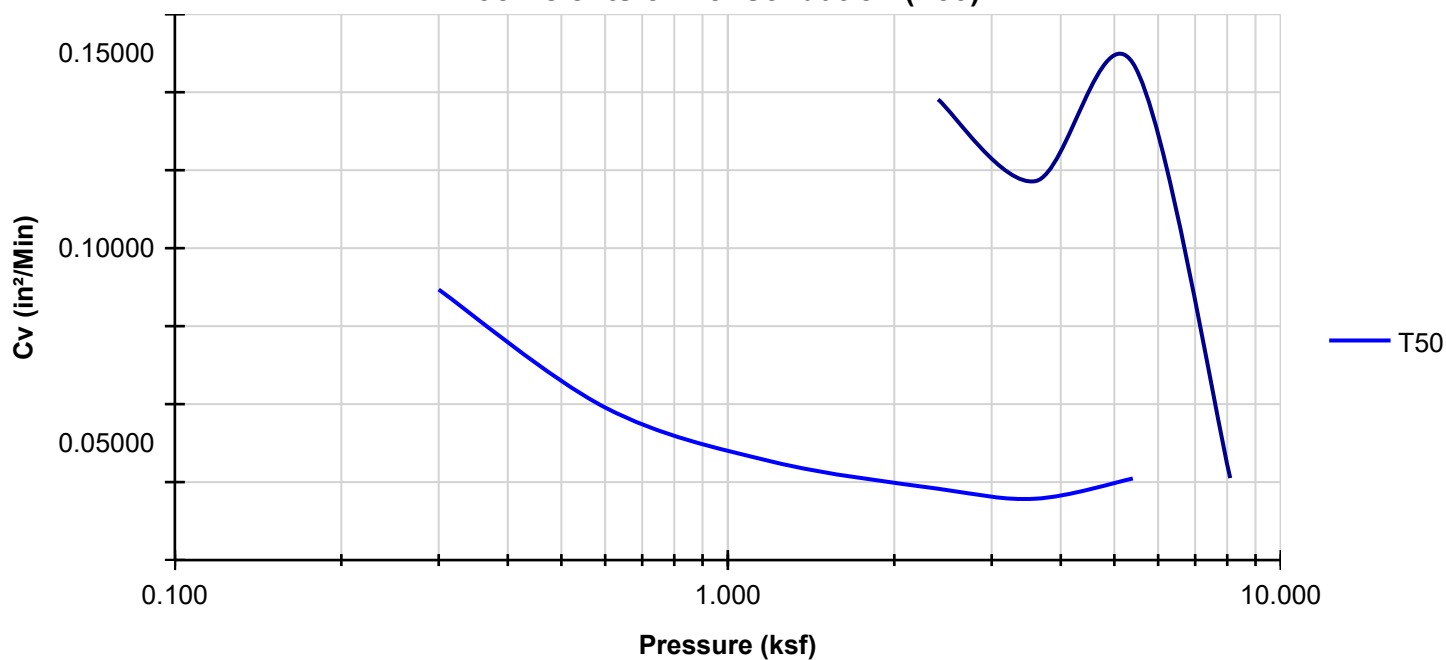
# Coefficients of Consolidation

ASTM D2435

**Coefficients of Consolidation (T90)**



**Coefficients of Consolidation (T50)**



Project Name: Statewide Bridge Projects Project Number: 20-1403

Technician: CR

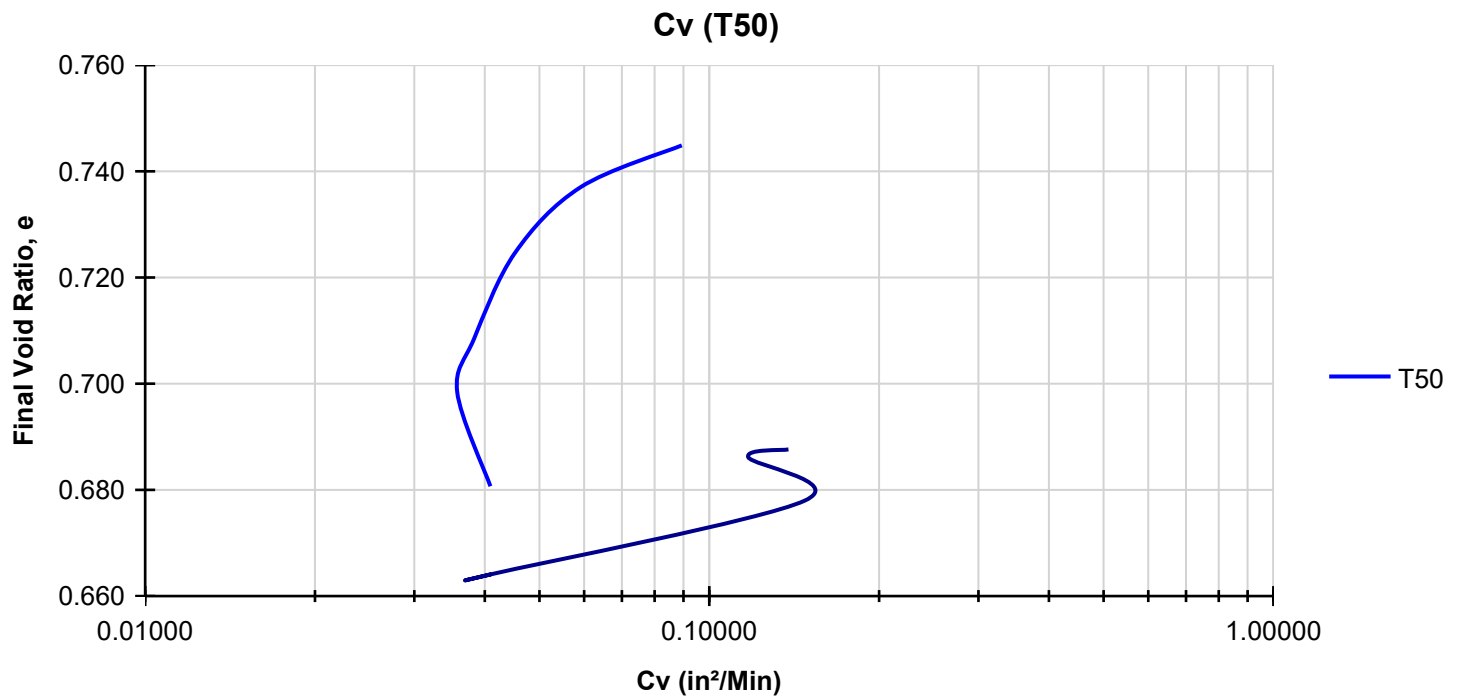
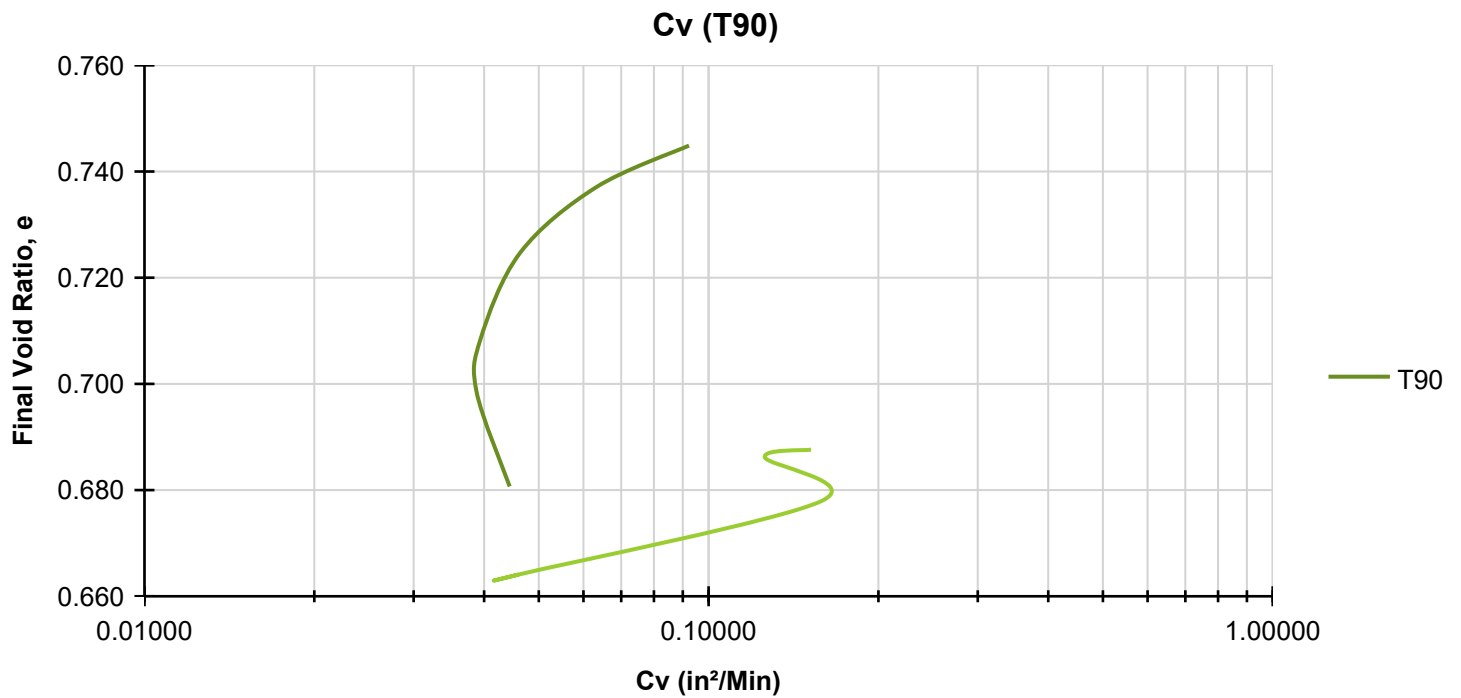
Test Date: 11/3/2025

Checked By: \_\_\_\_\_

Date: \_\_\_\_\_

# Cv - Void Ratio

ASTM D2435



Project Name: Statewide Bridge Projects Project Number: 20-1403

Technician: CR

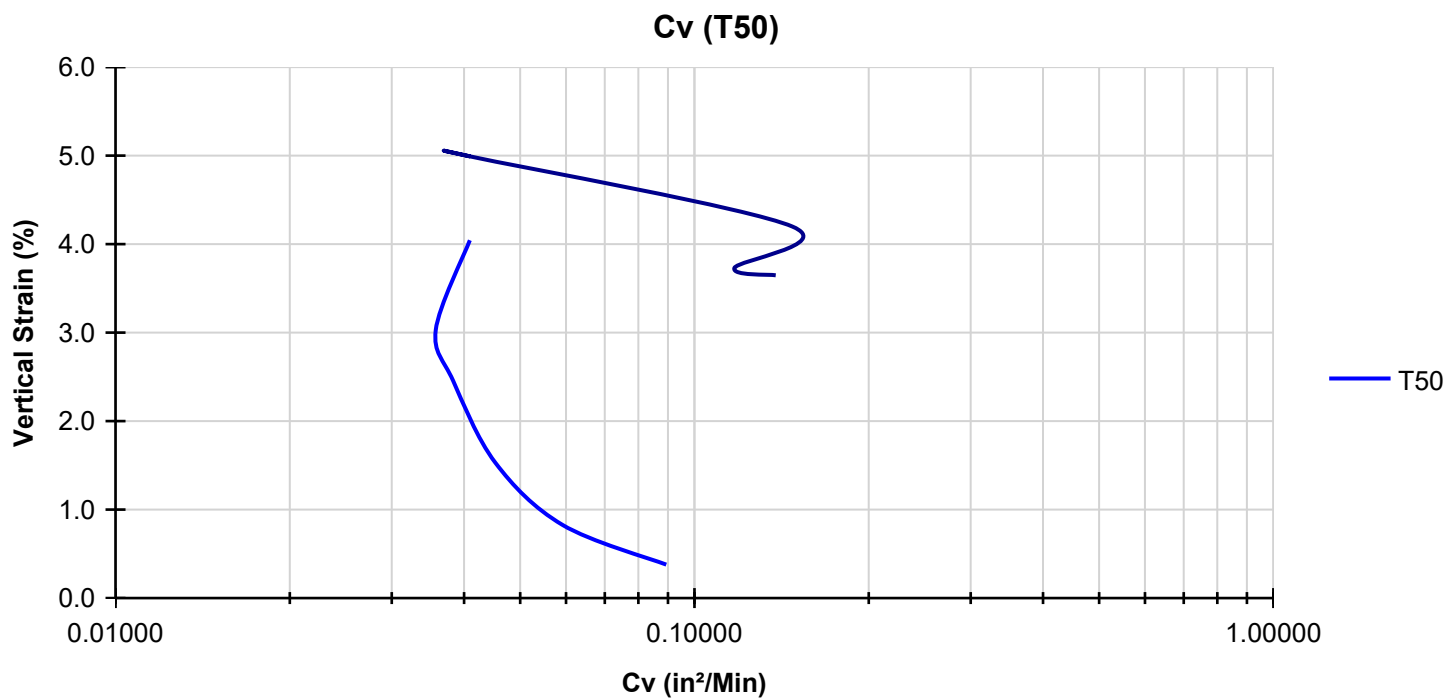
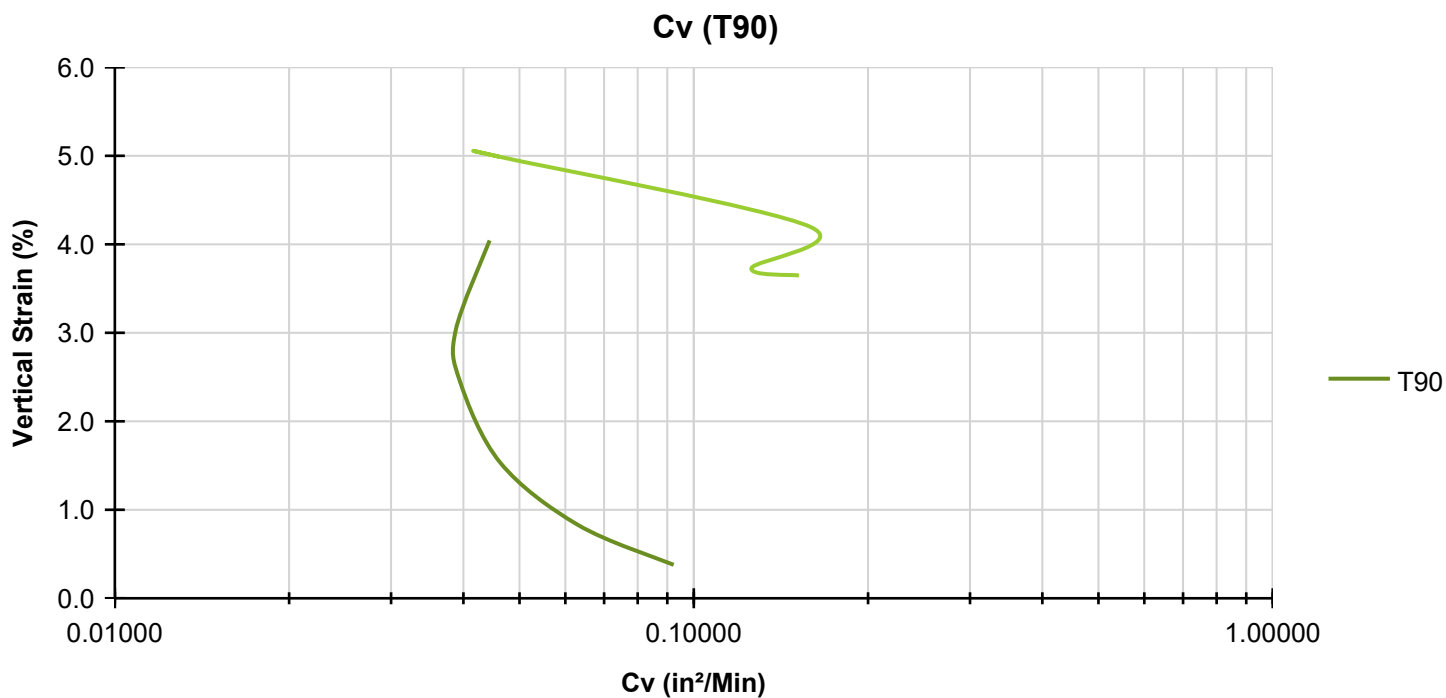
Test Date: 11/3/2025

Checked By: \_\_\_\_\_

Date: \_\_\_\_\_

# Cv - Vertical Strain

ASTM D2435



Project Name: Statewide Bridge Projects Project Number: 20-1403

Technician: CR

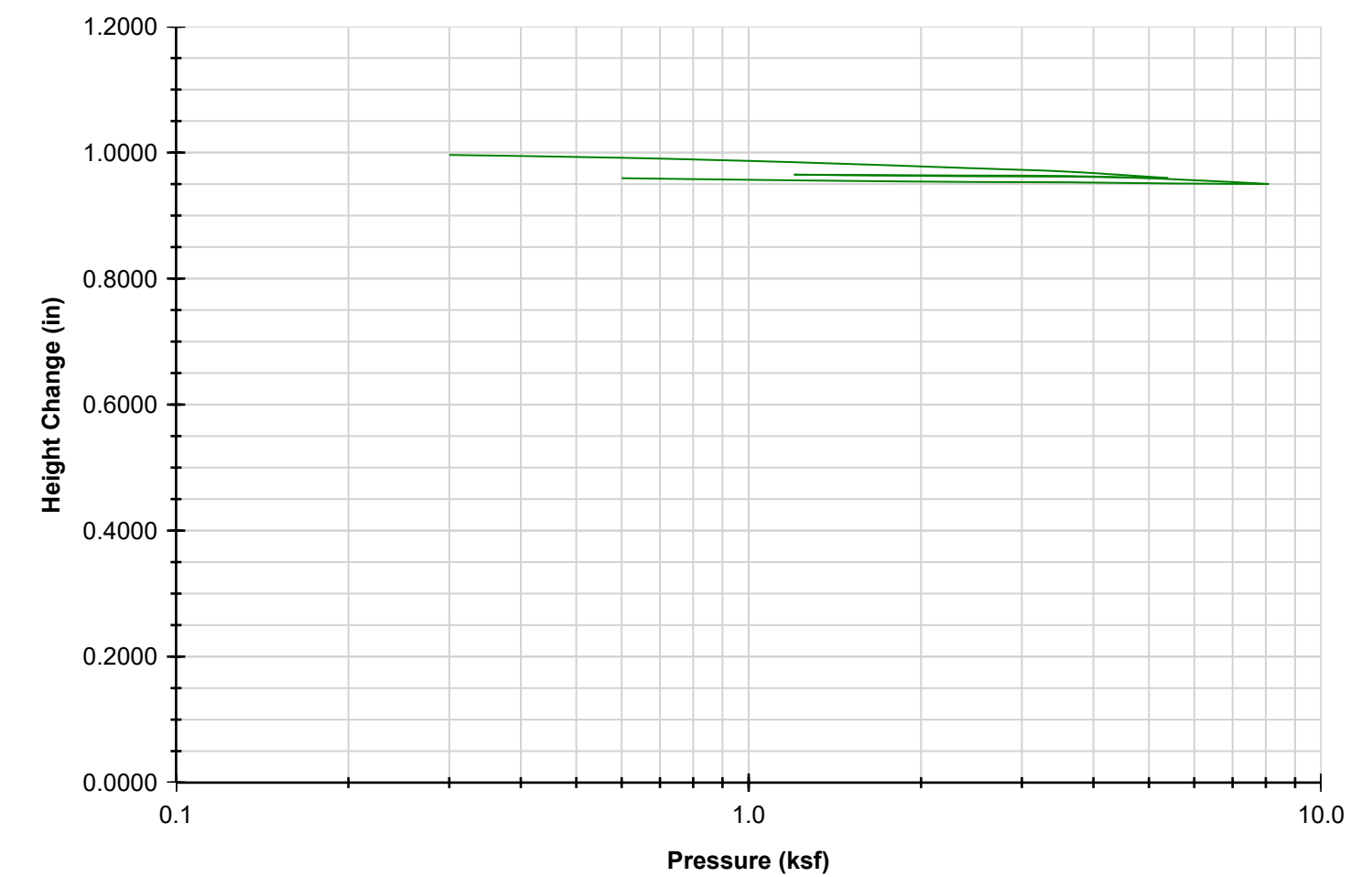
Test Date: 11/3/2025

Checked By: \_\_\_\_\_

Date: \_\_\_\_\_

# Height Change [Log]

ASTM D2435



|                   |        |       |                  |      |                     |
|-------------------|--------|-------|------------------|------|---------------------|
|                   | BEFORE | AFTER | Liquid Limits    | 39   | Test Date 11/3/2025 |
| Moisture (%)      | 29.0   | 26.8  | Plastic Limits   | 19   |                     |
| Dry Density (pcf) | 96.8   | 101.1 |                  |      |                     |
| Saturation (%)    | 104.4  | 107.1 |                  |      |                     |
| Void Ratio        | 0.75   | 0.68  | Specific Gravity | 2.72 | ASSUMED             |

| Sample Description |                           |  |               |            | Remarks |
|--------------------|---------------------------|--|---------------|------------|---------|
| Project Number     | 20-1403                   |  | Depth (ft)    | 25         |         |
| Sample Number      | 33478B                    |  | Boring Number | BB-AKR-204 |         |
| Project            | Statewide Bridge Projects |  |               |            |         |
| Client             | Maine DOT                 |  |               |            |         |
| Location           |                           |  |               |            |         |

# Summary

ASTM D2435

| Sample Description |                           |               |            |         |
|--------------------|---------------------------|---------------|------------|---------|
| Project Number     | 20-1403                   | Depth (ft)    | 25         | Remarks |
| Sample Number      | 33478B                    | Boring Number | BB-AKR-204 |         |
| Project            | Statewide Bridge Projects |               |            |         |
| Client             | Maine DOT                 |               |            |         |
| Location           |                           |               |            |         |

| Index | Loading Sequence (ksf) | Cummulative Change in Height (in) | Specimen Height (in) | Height of Voids (in) | Vertical Strain (%) | Void Ratio | T90 Fitting Time (Hr) | T50 Fitting Time (Hr) | T90 Cv (in²/Min) | T50 Cv (in²/Min) | Sequence Status |
|-------|------------------------|-----------------------------------|----------------------|----------------------|---------------------|------------|-----------------------|-----------------------|------------------|------------------|-----------------|
| 0     | 0.000                  | 0.0000                            | 1.0000               | 0.0000               | 0.0                 | 0.755      | 0.000                 | 0.000                 | 0.00000          | 0.00000          | ENABLED         |
| 1     | 0.300                  | 0.0038                            | 0.9962               | 0.4253               | 0.4                 | 0.745      | 0.038                 | 0.009                 | 0.09231          | 0.08939          | ENABLED         |
| 2     | 0.600                  | 0.0083                            | 0.9917               | 0.4208               | 0.8                 | 0.737      | 0.055                 | 0.014                 | 0.06312          | 0.05913          | ENABLED         |
| 3     | 1.200                  | 0.0153                            | 0.9847               | 0.4137               | 1.5                 | 0.725      | 0.074                 | 0.017                 | 0.04633          | 0.04527          | ENABLED         |
| 4     | 2.400                  | 0.0246                            | 0.9754               | 0.4045               | 2.5                 | 0.708      | 0.085                 | 0.020                 | 0.03943          | 0.03830          | ENABLED         |
| 5     | 3.600                  | 0.0303                            | 0.9697               | 0.3988               | 3.0                 | 0.698      | 0.086                 | 0.020                 | 0.03880          | 0.03574          | ENABLED         |
| 6     | 5.400                  | 0.0404                            | 0.9596               | 0.3886               | 4.0                 | 0.681      | 0.073                 | 0.017                 | 0.04440          | 0.04093          | ENABLED         |
| 7     | 3.600                  | 0.0381                            | 0.9619               | 0.3910               | 3.8                 | 0.685      | 0.000                 | 0.000                 | 0.00000          | 0.00000          | ENABLED         |
| 8     | 2.400                  | 0.0376                            | 0.9624               | 0.3915               | 3.8                 | 0.686      | 0.000                 | 0.000                 | 0.00000          | 0.00000          | ENABLED         |
| 9     | 1.200                  | 0.0351                            | 0.9649               | 0.3940               | 3.5                 | 0.690      | 0.000                 | 0.000                 | 0.00000          | 0.00000          | ENABLED         |
| 10    | 2.400                  | 0.0365                            | 0.9635               | 0.3926               | 3.6                 | 0.688      | 0.022                 | 0.005                 | 0.15192          | 0.13815          | ENABLED         |
| 11    | 3.600                  | 0.0373                            | 0.9627               | 0.3918               | 3.7                 | 0.686      | 0.026                 | 0.006                 | 0.12576          | 0.11720          | ENABLED         |
| 12    | 5.400                  | 0.0420                            | 0.9580               | 0.3871               | 4.2                 | 0.678      | 0.020                 | 0.005                 | 0.15863          | 0.14748          | ENABLED         |
| 13    | 8.100                  | 0.0499                            | 0.9501               | 0.3792               | 5.0                 | 0.664      | 0.069                 | 0.016                 | 0.04610          | 0.04103          | ENABLED         |
| 14    | 5.400                  | 0.0490                            | 0.9510               | 0.3800               | 4.9                 | 0.666      | 0.000                 | 0.000                 | 0.00000          | 0.00000          | ENABLED         |
| 15    | 3.600                  | 0.0472                            | 0.9528               | 0.3819               | 4.7                 | 0.669      | 0.000                 | 0.000                 | 0.00000          | 0.00000          | ENABLED         |
| 16    | 2.400                  | 0.0466                            | 0.9534               | 0.3824               | 4.7                 | 0.670      | 0.000                 | 0.000                 | 0.00000          | 0.00000          | ENABLED         |

Project Name: Statewide Bridge Projects Project Number: 20-1403

Technician: CR

Test Date: 11/3/2025

Checked By: \_\_\_\_\_ Date: \_\_\_\_\_

Report Created: 12/19/2025

# Summary

ASTM D2435

| Index | Loading<br>Sequence<br>(ksf) | Cummulative<br>Change in<br>Height<br>(in) | Specimen<br>Height<br>(in) | Height of<br>Voids<br>(in) | Vertical<br>Strain<br>(%) | Void<br>Ratio | T90<br>Fitting<br>Time<br>(Hr) | T50<br>Fitting<br>Time<br>(Hr) | T90<br>Cv<br>(in <sup>2</sup> /Min) | T50<br>Cv<br>(in <sup>2</sup> /Min) | Sequence<br>Status |
|-------|------------------------------|--------------------------------------------|----------------------------|----------------------------|---------------------------|---------------|--------------------------------|--------------------------------|-------------------------------------|-------------------------------------|--------------------|
| 17    | 1.200                        | 0.0441                                     | 0.9559                     | 0.3850                     | 4.4                       | 0.674         | 0.000                          | 0.000                          | 0.00000                             | 0.00000                             | ENABLED            |
| 18    | 0.600                        | 0.0407                                     | 0.9593                     | 0.3884                     | 4.1                       | 0.680         | 0.000                          | 0.000                          | 0.00000                             | 0.00000                             | ENABLED            |
| 19    | 0.300                        | 0.0000                                     | 0.0000                     | 0.0000                     | 0.0                       | 0.000         | 0.000                          | 0.000                          | 0.00000                             | 0.00000                             | DISABLED           |

# Consolidated Test Results

ASTM D2435

|                 |                           |
|-----------------|---------------------------|
| Project:        | Statewide Bridge Projects |
| Project Number: | 20-1403                   |
| Job Number:     |                           |
| Test Date:      | 11/3/2025                 |

|                |                |
|----------------|----------------|
| Sampling Date: | 11/3/2025      |
| Sample Number: | 33478B         |
| Depth (ft)     | 25             |
| Boring Number: | BB-AKR-204, 1U |
| Location:      |                |
| Client Name:   | MaineDOT       |
| Remarks:       |                |

|                          |             |                      |    |                    |       |
|--------------------------|-------------|----------------------|----|--------------------|-------|
| Specific Gravity:        | 2.72        | Plastic Limit:       | 19 | Liquid Limit:      | 39    |
| Specific Gravity Method: | ASSUMED     |                      |    | Weight of Ring (g) | 102.2 |
| Sampling Method:         | Undisturbed | Soil Classification: |    |                    |       |
| Specimen Description:    |             |                      |    |                    |       |

| Parameters                         | Initial | Final        |
|------------------------------------|---------|--------------|
| Height (in)                        | 1.0000  | 0.9593       |
| Height Source                      | NA      | TEST RESULTS |
| Diameter (in)                      | 2.5000  | NA           |
| Area (in <sup>2</sup> )            | 4.909   | NA           |
| Volume (in <sup>3</sup> )          | 4.9087  | 4.7090       |
| Weight of Container (g)            | 342.3   | 342.5        |
| Weight of Wet Soil + Container (g) | 534.7   | 500.2        |
| Weight of Dry Soil + Container (g) | 491.5   | 466.9        |
| Moisture Content (%)               | 29.0    | 26.8         |
| Moist Weight + Ring Weight (g)     | 263.0   | 260.6        |
| Dry Density (pcf)                  | 96.8    | 101.1        |
| Wet Density (pcf)                  | 124.8   | 128.1        |
| Saturation (%)                     | 104.4   | 107.1        |
| Void Ratio                         | 0.8     | 0.7          |

Project Name: Statewide Bridge Projects Project Number: 20-1403

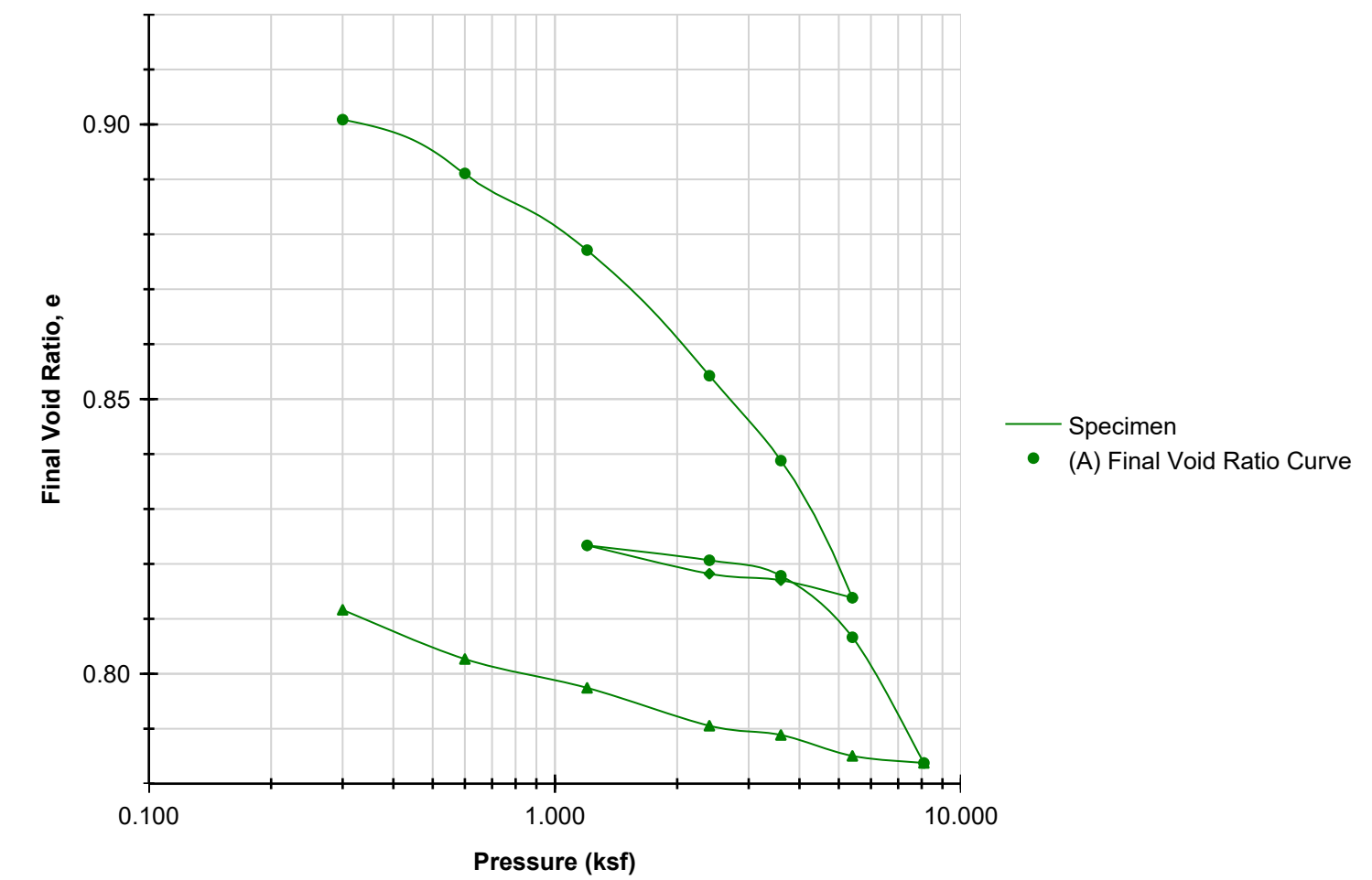
Technician: CR

Test Date: 11/3/2025

Checked By: \_\_\_\_\_ Date: \_\_\_\_\_

# Final Voids [Log]

ASTM D2435



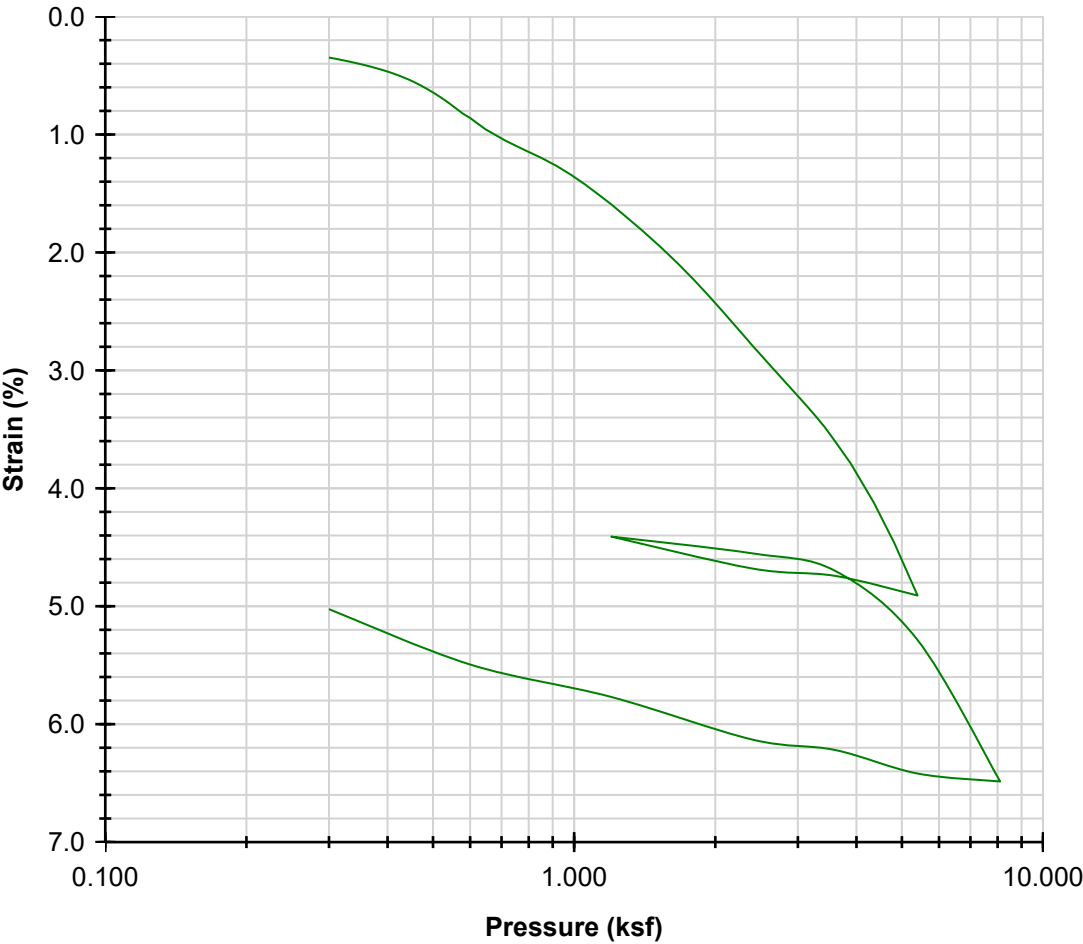
|                               |      |     |       |     |       |
|-------------------------------|------|-----|-------|-----|-------|
| Preconsolidation Stress (ksf) | 3.80 | Cce | 0.091 | Cre | 0.005 |
|-------------------------------|------|-----|-------|-----|-------|

|                   |        |       |                  |      |                      |
|-------------------|--------|-------|------------------|------|----------------------|
|                   | BEFORE | AFTER | Liquid Limits    | 43   | Test Date 11/14/2025 |
| Moisture (%)      | 34.3   | 30.9  | Plastic Limits   | 21   |                      |
| Dry Density (pcf) | 88.9   | 94.0  |                  |      |                      |
| Saturation (%)    | 102.5  | 104.2 |                  |      |                      |
| Void Ratio        | 0.91   | 0.81  | Specific Gravity | 2.72 | ASSUMED              |

|                    |                           |               |            |  |         |
|--------------------|---------------------------|---------------|------------|--|---------|
| Sample Description |                           |               |            |  | Remarks |
| Project Number     | 20-1403                   | Depth (ft)    | 30         |  |         |
| Sample Number      | 33479B                    | Boring Number | BB-AKR-204 |  |         |
| Project            | Statewide Bridge Projects |               |            |  |         |
| Client             | MaineDOT                  |               |            |  |         |
| Location           | Addison, ME               |               |            |  |         |

Percent Strain [Log]

ASTM D2435



(A) Stress Strain Curve

|                               |      |     |       |     |       |
|-------------------------------|------|-----|-------|-----|-------|
| Preconsolidation Stress (ksf) | 3.80 | Cce | 0.091 | Cre | 0.005 |
|-------------------------------|------|-----|-------|-----|-------|

|                   |        |       |                  |      |                      |
|-------------------|--------|-------|------------------|------|----------------------|
|                   | BEFORE | AFTER | Liquid Limits    | 43   | Test Date 11/14/2025 |
| Moisture (%)      | 34.3   | 30.9  | Plastic Limits   | 21   |                      |
| Dry Density (pcf) | 88.9   | 94.0  |                  |      |                      |
| Saturation (%)    | 102.5  | 104.2 |                  |      |                      |
| Void Ratio        | 0.91   | 0.81  | Specific Gravity | 2.72 | ASSUMED              |

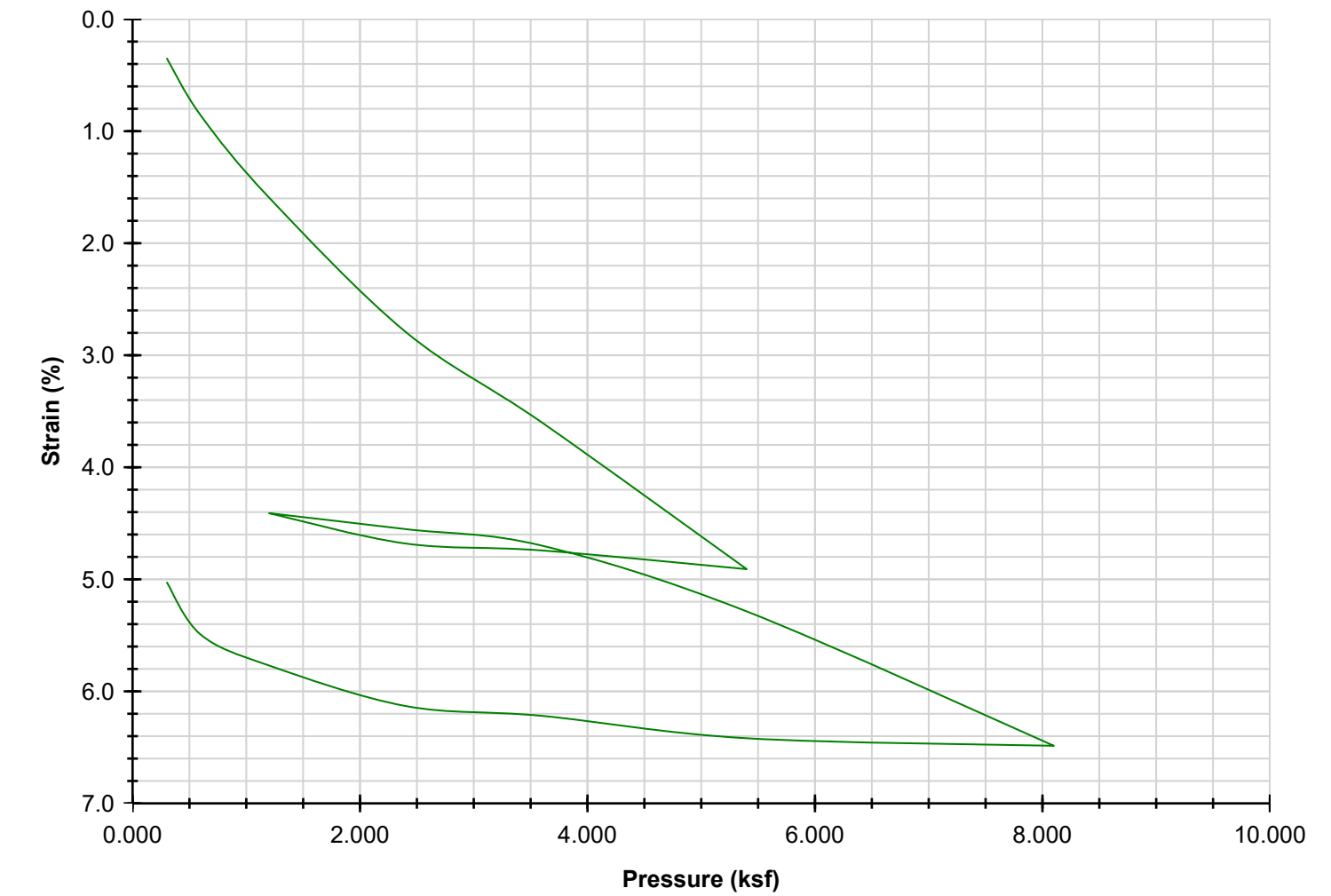
| Sample Description |                           |                           |    |         |
|--------------------|---------------------------|---------------------------|----|---------|
| Project Number     | 20-1403                   | Depth (ft)                | 30 | Remarks |
| Sample Number      | 33479B                    | Boring Number BB-AKR-204, |    |         |
| Project            | Statewide Bridge Projects |                           |    |         |
| Client             | MaineDOT                  |                           |    |         |
| Location           |                           |                           |    |         |

Project Name: Statewide Bridge Projects Project Number: 20-1403

Technician: CR      Test Date: 11/14/2025      Checked By: \_\_\_\_\_      Date: \_\_\_\_\_

Percent Strain

ASTM D2435



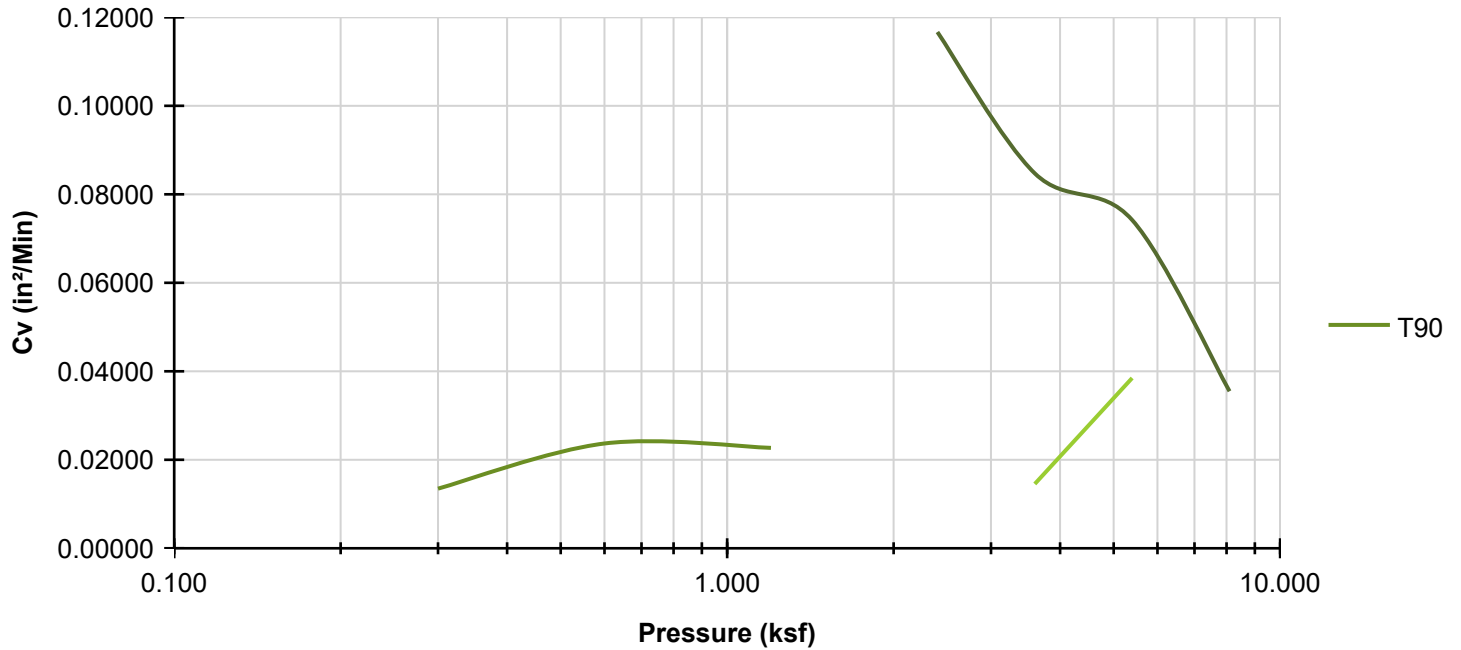
|                   |        |       |                  |      |                      |
|-------------------|--------|-------|------------------|------|----------------------|
|                   | BEFORE | AFTER | Liquid Limits    | 43   | Test Date 11/14/2025 |
| Moisture (%)      | 34.3   | 30.9  | Plastic Limits   | 21   |                      |
| Dry Density (pcf) | 88.9   | 94.0  |                  |      |                      |
| Saturation (%)    | 102.5  | 104.2 |                  |      |                      |
| Void Ratio        | 0.91   | 0.81  | Specific Gravity | 2.72 | ASSUMED              |

| Sample Description |                           |               |             |  | Remarks |
|--------------------|---------------------------|---------------|-------------|--|---------|
| Project Number     | 20-1403                   | Depth (ft)    | 30          |  |         |
| Sample Number      | 33479B                    | Boring Number | BB-AKR-204, |  |         |
| Project            | Statewide Bridge Projects |               |             |  |         |
| Client             | MDOT                      |               |             |  |         |
| Location           |                           |               |             |  |         |

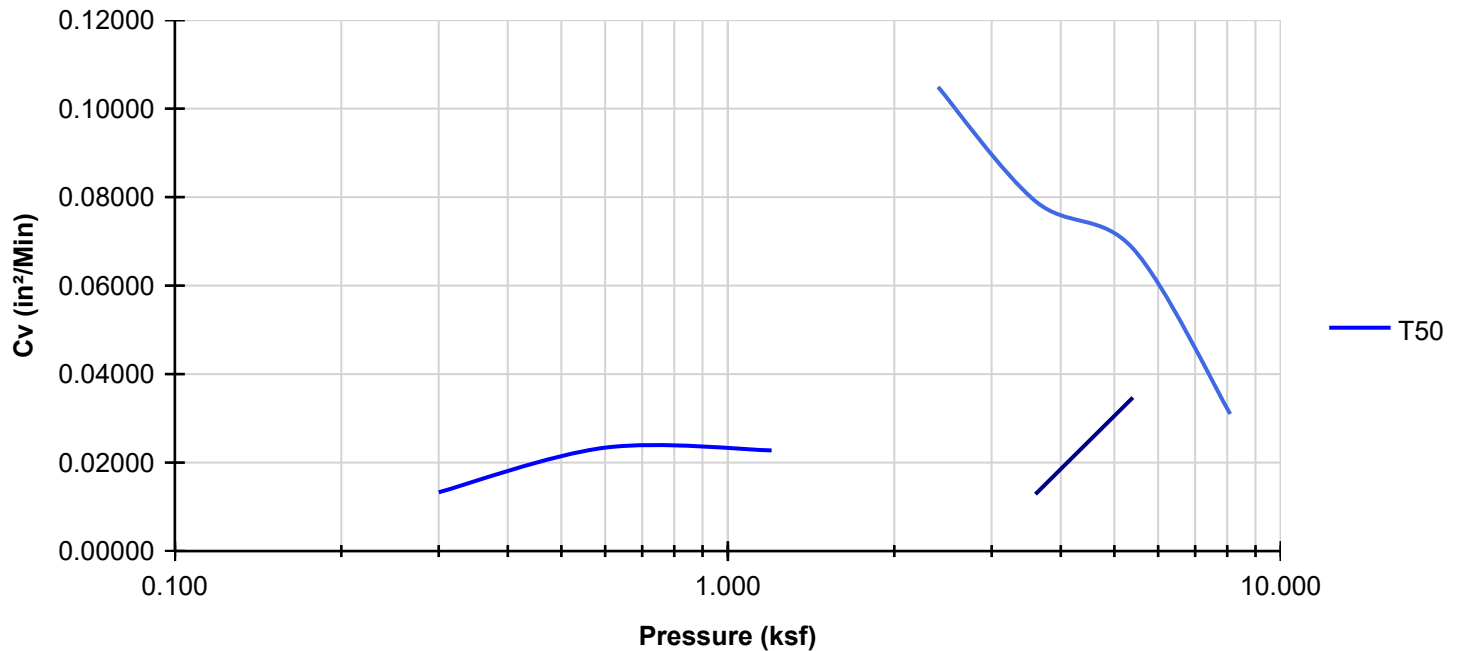
# Coefficients of Consolidation

ASTM D2435

**Coefficients of Consolidation (T90)**



**Coefficients of Consolidation (T50)**



Project Name: Statewide Bridge Projects Project Number: 20-1403

Technician: CR

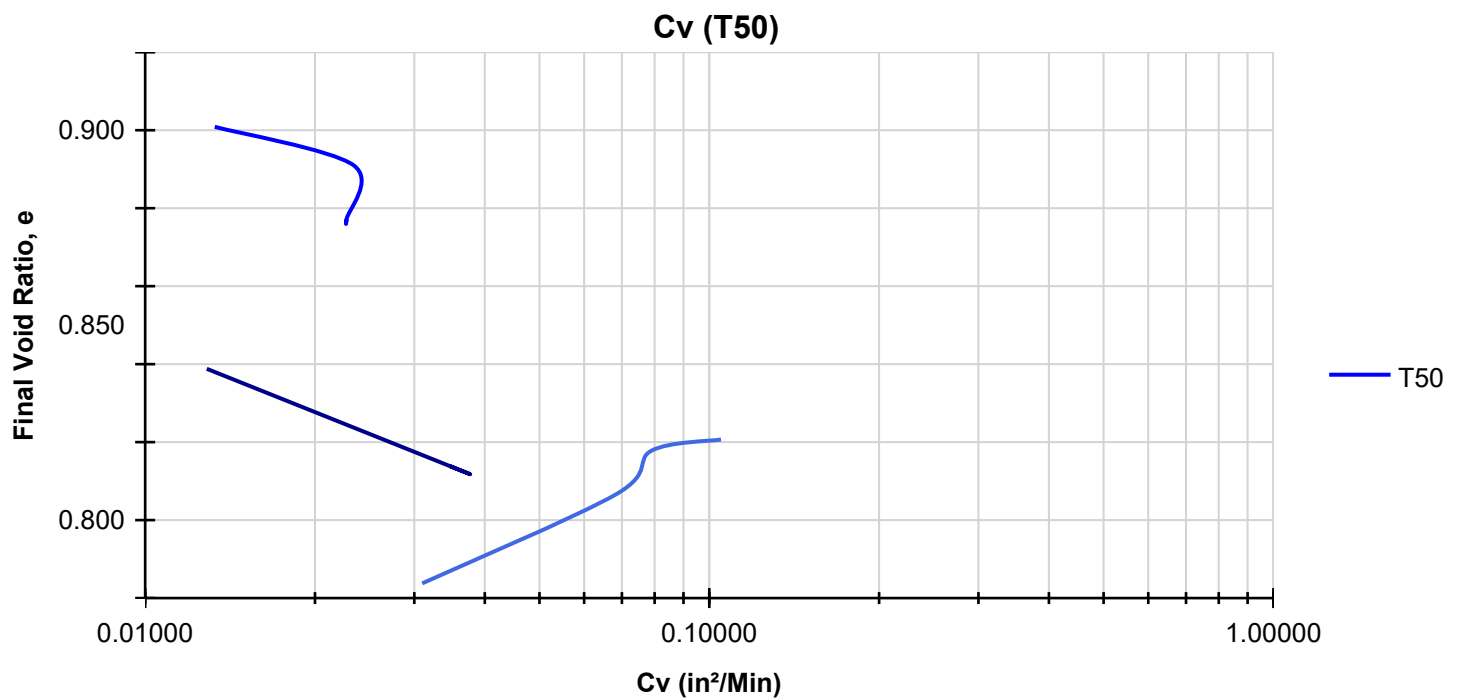
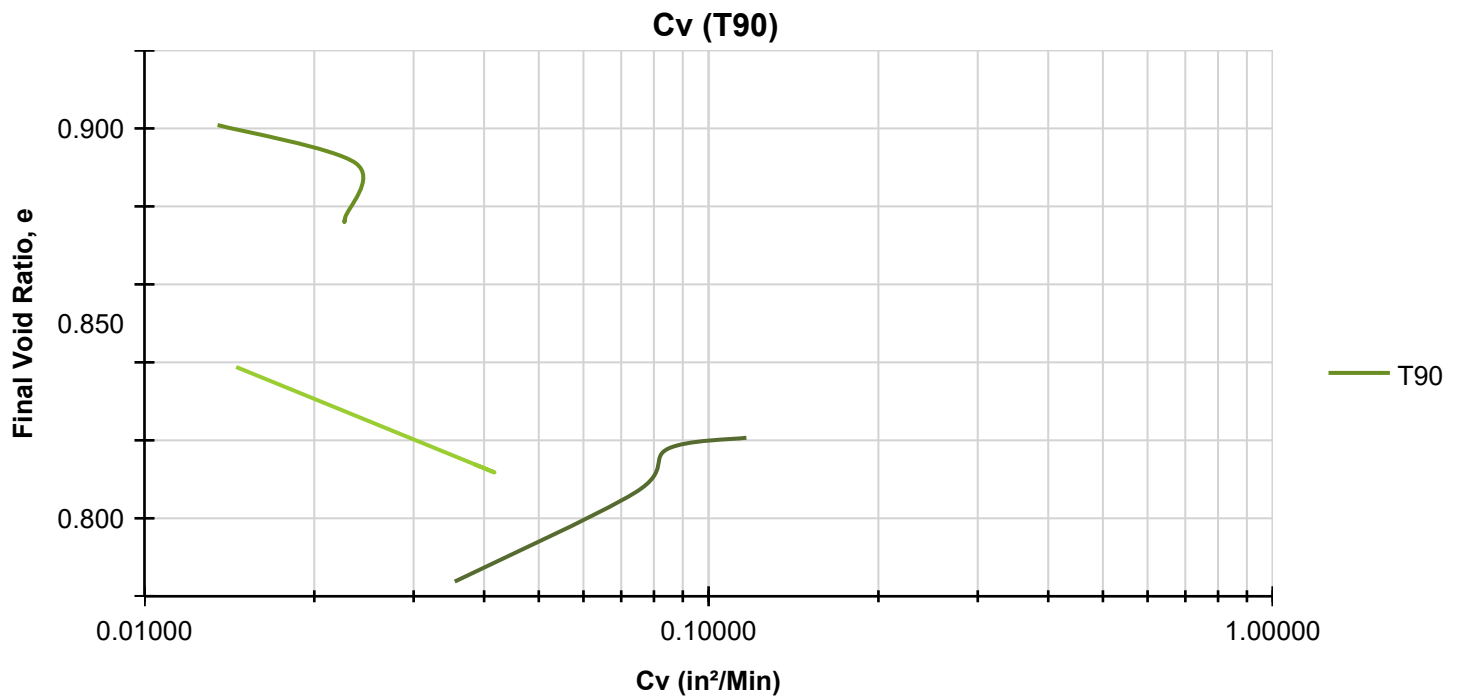
Test Date: 11/14/2025

Checked By: \_\_\_\_\_

Date: \_\_\_\_\_

# Cv - Void Ratio

ASTM D2435



Project Name: Statewide Bridge Projects Project Number: 20-1403

Technician: CR

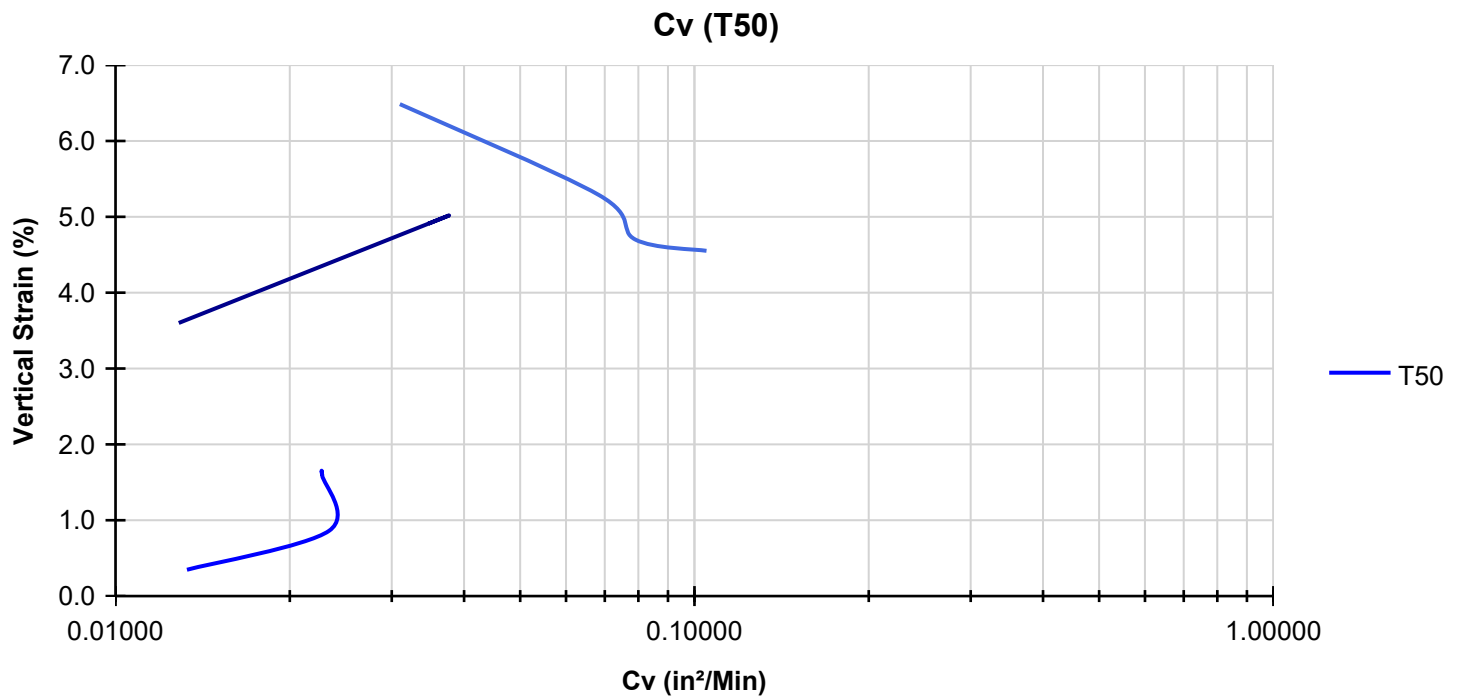
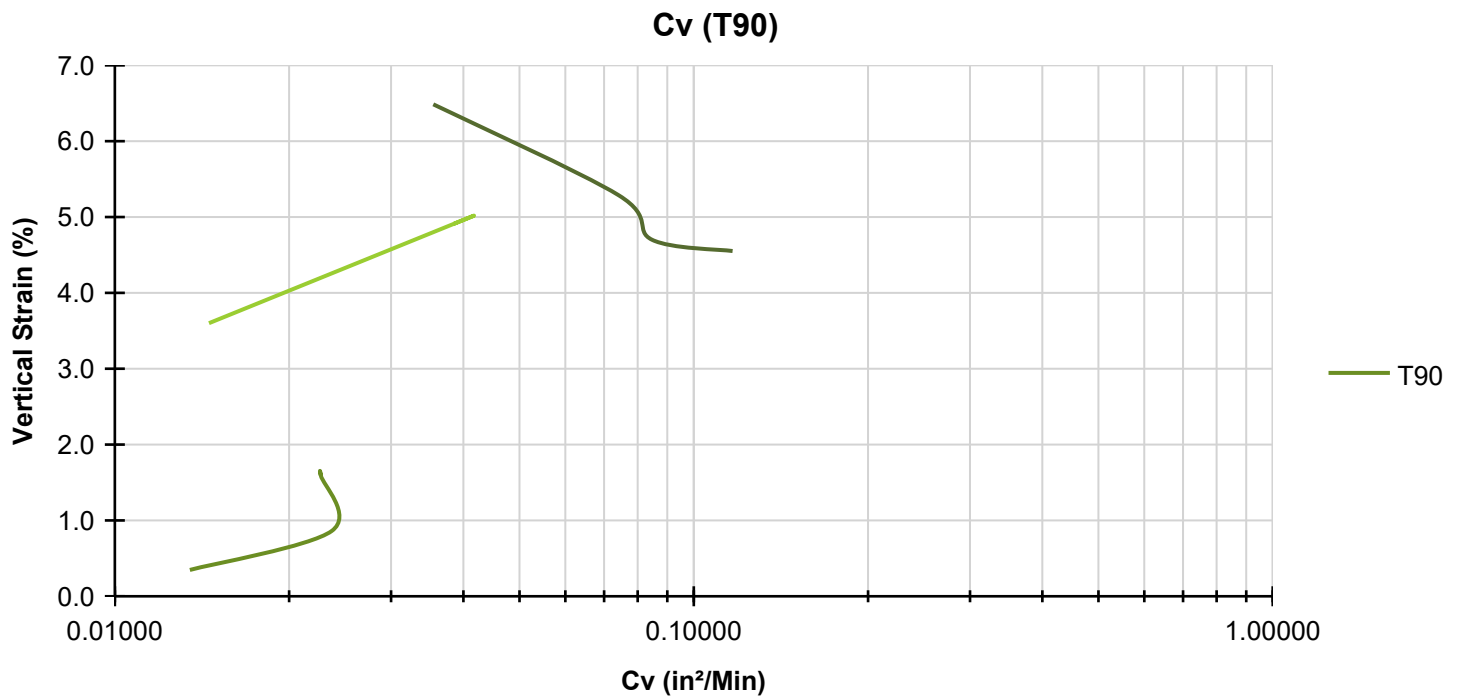
Test Date: 11/14/2025

Checked By: \_\_\_\_\_

Date: \_\_\_\_\_

# Cv - Vertical Strain

ASTM D2435



Project Name: Statewide Bridge Projects Project Number: 20-1403

Technician: CR

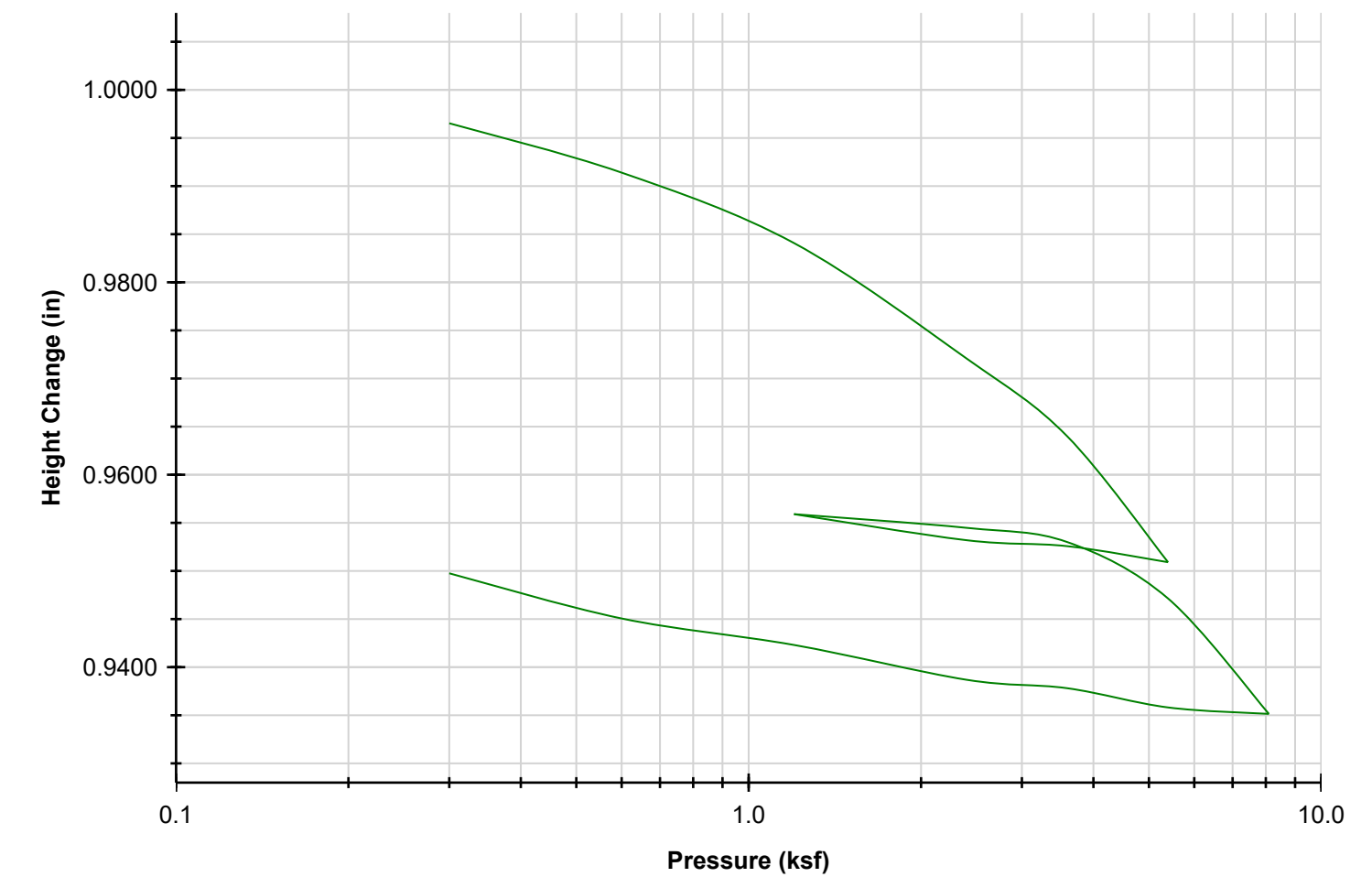
Test Date: 11/14/2025

Checked By: \_\_\_\_\_

Date: \_\_\_\_\_

# Height Change [Log]

ASTM D2435



|                   |        |       |                  |      |                      |
|-------------------|--------|-------|------------------|------|----------------------|
|                   | BEFORE | AFTER | Liquid Limits    | 43   | Test Date 11/14/2025 |
| Moisture (%)      | 34.3   | 30.9  | Plastic Limits   | 21   |                      |
| Dry Density (pcf) | 88.9   | 94.0  |                  |      |                      |
| Saturation (%)    | 102.5  | 104.2 |                  |      |                      |
| Void Ratio        | 0.91   | 0.81  | Specific Gravity | 2.72 | ASSUMED              |

| Sample Description |                           |               |             |  | Remarks |
|--------------------|---------------------------|---------------|-------------|--|---------|
| Project Number     | 20-1403                   | Depth (ft)    | 30          |  |         |
| Sample Number      | 33479B                    | Boring Number | BB-AKR-204, |  |         |
| Project            | Statewide Bridge Projects |               |             |  |         |
| Client             | MDOT                      |               |             |  |         |
| Location           |                           |               |             |  |         |

# Summary

ASTM D2435

| Sample Description |                           |               |                |         |
|--------------------|---------------------------|---------------|----------------|---------|
| Project Number     | 20-1403                   | Depth (ft)    | 30             | Remarks |
| Sample Number      | 33479B                    | Boring Number | BB-AKR-204, 2U |         |
| Project            | Statewide Bridge Projects |               |                |         |
| Client             | MDOT                      |               |                |         |
| Location           |                           |               |                |         |

| Index | Loading Sequence (ksf) | Cummulative Change in Height (in) | Specimen Height (in) | Height of Voids (in) | Vertical Strain (%) | Void Ratio | T90 Fitting Time (Hr) | T50 Fitting Time (Hr) | T90 Cv (in²/Min) | T50 Cv (in²/Min) | Sequence Status |
|-------|------------------------|-----------------------------------|----------------------|----------------------|---------------------|------------|-----------------------|-----------------------|------------------|------------------|-----------------|
| 0     | 0.000                  | 0.0000                            | 1.0000               | 0.0000               | 0.0                 | 0.911      | 0.000                 | 0.000                 | 0.00000          | 0.00000          | ENABLED         |
| 1     | 0.300                  | 0.0035                            | 0.9965               | 0.4723               | 0.3                 | 0.901      | 0.260                 | 0.061                 | 0.01348          | 0.01329          | ENABLED         |
| 2     | 0.600                  | 0.0086                            | 0.9914               | 0.4671               | 0.9                 | 0.891      | 0.147                 | 0.034                 | 0.02368          | 0.02338          | ENABLED         |
| 3     | 1.200                  | 0.0159                            | 0.9841               | 0.4598               | 1.6                 | 0.877      | 0.151                 | 0.034                 | 0.02269          | 0.02275          | ENABLED         |
| 4     | 2.400                  | 0.0279                            | 0.9721               | 0.4478               | 2.8                 | 0.854      | 0.000                 | 0.000                 | 0.00000          | 0.00000          | ENABLED         |
| 5     | 3.600                  | 0.0360                            | 0.9640               | 0.4397               | 3.6                 | 0.839      | 0.226                 | 0.055                 | 0.01454          | 0.01286          | ENABLED         |
| 6     | 5.400                  | 0.0491                            | 0.9509               | 0.4267               | 4.9                 | 0.814      | 0.083                 | 0.020                 | 0.03848          | 0.03470          | ENABLED         |
| 7     | 3.600                  | 0.0474                            | 0.9526               | 0.4283               | 4.7                 | 0.817      | 0.000                 | 0.000                 | 0.00000          | 0.00000          | ENABLED         |
| 8     | 2.400                  | 0.0468                            | 0.9532               | 0.4289               | 4.7                 | 0.818      | 0.000                 | 0.000                 | 0.00000          | 0.00000          | ENABLED         |
| 9     | 1.200                  | 0.0441                            | 0.9559               | 0.4317               | 4.4                 | 0.823      | 0.000                 | 0.000                 | 0.00000          | 0.00000          | ENABLED         |
| 10    | 2.400                  | 0.0455                            | 0.9545               | 0.4302               | 4.6                 | 0.821      | 0.028                 | 0.006                 | 0.11668          | 0.10490          | ENABLED         |
| 11    | 3.600                  | 0.0470                            | 0.9530               | 0.4288               | 4.7                 | 0.818      | 0.038                 | 0.009                 | 0.08473          | 0.07907          | ENABLED         |
| 12    | 5.400                  | 0.0529                            | 0.9471               | 0.4229               | 5.3                 | 0.807      | 0.043                 | 0.010                 | 0.07419          | 0.06841          | ENABLED         |
| 13    | 8.100                  | 0.0649                            | 0.9351               | 0.4109               | 6.5                 | 0.784      | 0.087                 | 0.020                 | 0.03548          | 0.03098          | ENABLED         |
| 14    | 5.400                  | 0.0642                            | 0.9358               | 0.4116               | 6.4                 | 0.785      | 0.000                 | 0.000                 | 0.00000          | 0.00000          | ENABLED         |
| 15    | 3.600                  | 0.0622                            | 0.9378               | 0.4136               | 6.2                 | 0.789      | 0.000                 | 0.000                 | 0.00000          | 0.00000          | ENABLED         |
| 16    | 2.400                  | 0.0613                            | 0.9387               | 0.4144               | 6.1                 | 0.791      | 0.000                 | 0.000                 | 0.00000          | 0.00000          | ENABLED         |

Project Name: Statewide Bridge Projects Project Number: 20-1403

Technician: CR

Test Date:  
11/14/2025

Checked By: \_\_\_\_\_ Date: \_\_\_\_\_

# Summary

ASTM D2435

| Index | Loading<br>Sequence<br>(ksf) | Cummulative<br>Change in<br>Height<br>(in) | Specimen<br>Height<br>(in) | Height of<br>Voids<br>(in) | Vertical<br>Strain<br>(%) | Void<br>Ratio | T90<br>Fitting<br>Time<br>(Hr) | T50<br>Fitting<br>Time<br>(Hr) | T90<br>Cv<br>(in <sup>2</sup> /Min) | T50<br>Cv<br>(in <sup>2</sup> /Min) | Sequence<br>Status |
|-------|------------------------------|--------------------------------------------|----------------------------|----------------------------|---------------------------|---------------|--------------------------------|--------------------------------|-------------------------------------|-------------------------------------|--------------------|
| 17    | 1.200                        | 0.0577                                     | 0.9423                     | 0.4181                     | 5.8                       | 0.797         | 0.000                          | 0.000                          | 0.00000                             | 0.00000                             | ENABLED            |
| 18    | 0.600                        | 0.0549                                     | 0.9451                     | 0.4208                     | 5.5                       | 0.803         | 0.000                          | 0.000                          | 0.00000                             | 0.00000                             | ENABLED            |
| 19    | 0.300                        | 0.0502                                     | 0.9498                     | 0.4255                     | 5.0                       | 0.812         | 0.000                          | 0.000                          | 0.00000                             | 0.00000                             | ENABLED            |

# Consolidated Test Results

ASTM D2435

|                 |                           |
|-----------------|---------------------------|
| Project:        | Statewide Bridge Projects |
| Project Number: | 20-1403                   |
| Job Number:     |                           |
| Test Date:      | 11/14/2025                |

|                |                |
|----------------|----------------|
| Sampling Date: | 11/14/2025     |
| Sample Number: | 33479B         |
| Depth (ft)     | 30             |
| Boring Number: | BB-AKR-204, 2U |
| Location:      |                |
| Client Name:   | MaineDOT       |
| Remarks:       |                |

|                          |             |                      |    |                    |       |
|--------------------------|-------------|----------------------|----|--------------------|-------|
| Specific Gravity:        | 2.72        | Plastic Limit:       | 21 | Liquid Limit:      | 43    |
| Specific Gravity Method: | ASSUMED     |                      |    | Weight of Ring (g) | 102.0 |
| Sampling Method:         | Undisturbed | Soil Classification: |    |                    |       |
| Specimen Description:    |             |                      |    |                    |       |

| Parameters                         | Initial | Final        |
|------------------------------------|---------|--------------|
| Height (in)                        | 1.0000  | 0.9498       |
| Height Source                      | NA      | TEST RESULTS |
| Diameter (in)                      | 2.5000  | NA           |
| Area (in²)                         | 4.909   | NA           |
| Volume (in³)                       | 4.9087  | 4.6621       |
| Weight of Container (g)            | 342.5   | 342.4        |
| Weight of Wet Soil + Container (g) | 518.6   | 489.1        |
| Weight of Dry Soil + Container (g) | 473.6   | 454.5        |
| Moisture Content (%)               | 34.3    | 30.9         |
| Moist Weight + Ring Weight (g)     | 255.8   | 252.6        |
| Dry Density (pcf)                  | 88.9    | 94.0         |
| Wet Density (pcf)                  | 119.4   | 123.1        |
| Saturation (%)                     | 102.5   | 104.2        |
| Void Ratio                         | 0.9     | 0.8          |

## **APPENDIX F**

### **Calculations**



**Evaluation of Vane Shear Sensitivity**  
**Ratio of Undisturbed to Remolded Shear Strength**

**Project Name:** Lot Norton Bridge #3754 Replacement  
East Side Road over Knowles River  
**Location:** Addison, Maine

**S.W.COLE No.:** 20-1403-027160  
**Evaluated By/Date:** April 2024 / September 2025

| Boring No. | Sample No. | Depth (feet) | Elev. (feet) | Material   | Undrained Shear Strength |          | Sensitivity | Remarks          |                                                       |
|------------|------------|--------------|--------------|------------|--------------------------|----------|-------------|------------------|-------------------------------------------------------|
|            |            |              |              |            | Undisturbed              | Remolded |             |                  |                                                       |
| BB-AKR-102 | V1         | 25.5         | -15.7        | Silty Clay | 1786                     | 268      | 6.7         | Medium Sensitive | Marine Clay<br>Undisturbed<br>max = 1875<br>min = 853 |
| BB-AKR-102 | V2         | 26.5         | -16.7        | Silty Clay | 1875                     | 446      | 4.2         | Medium Sensitive |                                                       |
| BB-AKR-102 | V3         | 40.5         | -30.7        | Silty Clay | 1696                     | 491      | 3.5         | Low Sensitive    |                                                       |
| BB-AKR-102 | V4         | 41.5         | -31.7        | Silty Clay | 1741                     | 491      | 3.5         | Low Sensitive    |                                                       |
| BB-AKR-103 | V1         | 30.5         | -20.6        | Silty Clay | 1116                     | 223      | 5.0         | Medium Sensitive | Remolded<br>max = 625<br>min = 152                    |
| BB-AKR-103 | V2         | 31.5         | -21.6        | Silty Clay | 1339                     | 357      | 3.8         | Low Sensitive    |                                                       |
| BB-AKR-103 | V3         | 40.5         | -30.6        | Silty Clay | 1786                     | 536      | 3.3         | Low Sensitive    |                                                       |
| BB-AKR-103 | V4         | 41.5         | -31.6        | Silty Clay | 1875                     | 625      | 3.0         | Low Sensitive    |                                                       |
| BB-AKR-201 | V1         | 20.6         | -8.2         | Silty Clay | 1214                     | 161      | 7.5         | Medium Sensitive | Sensitivity<br>max = 8.3<br>min = 2.7                 |
| BB-AKR-201 | V2         | 21.6         | -9.2         | Silty Clay | 1268                     | 152      | 8.3         | Medium Sensitive |                                                       |
| BB-AKR-201 | V3         | 25.6         | -13.2        | Silty Clay | 1692                     | 228      | 7.4         | Medium Sensitive |                                                       |
| BB-AKR-201 | V4         | 26.6         | -14.2        | Silty Clay | 1179                     | 241      | 4.9         | Medium Sensitive |                                                       |
| BB-AKR-201 | V5         | 35.6         | -23.2        | Silty Clay | 1049                     | 393      | 2.7         | Low Sensitive    |                                                       |
| BB-AKR-202 | V1         | 22.6         | -12.0        | Silty Clay | 969                      | 263      | 3.7         | Low Sensitive    |                                                       |
| BB-AKR-202 | V2         | 23.6         | -13.0        | Silty Clay | 920                      | 308      | 3.0         | Low Sensitive    |                                                       |
| BB-AKR-203 | V1         | 32.6         | -23.6        | Silty Clay | 1371                     | 393      | 3.5         | Low Sensitive    |                                                       |
| BB-AKR-203 | V2         | 35.6         | -26.6        | Silty Clay | 853                      | 219      | 3.9         | Low Sensitive    |                                                       |
| BB-AKR-203 | V3         | 36.6         | -27.6        | Silty Clay | 1080                     | 304      | 3.6         | Low Sensitive    |                                                       |
| BB-AKR-205 | V1         | 35.6         | -25.0        | Silty Clay | 1098                     | 205      | 5.4         | Medium Sensitive |                                                       |
| BB-AKR-205 | V2         | 36.6         | -26.0        | Silty Clay | 996                      | 205      | 4.9         | Medium Sensitive |                                                       |
| BB-AKR-205 | V3         | 40.6         | -30.0        | Silty Clay | 1054                     | 250      | 4.2         | Medium Sensitive |                                                       |
| BB-AKR-205 | V4         | 41.6         | -31.0        | Silty Clay | 1089                     | 268      | 4.1         | Medium Sensitive |                                                       |
| BB-AKR-205 | V5         | 45.6         | -35.0        | Silty Clay | 1062                     | 268      | 4.0         | Low Sensitive    |                                                       |
| BB-AKR-205 | V6         | 46.6         | -36.0        | Silty Clay | 1089                     | 268      | 4.1         | Medium Sensitive |                                                       |
| BB-AKR-205 | V7         | 50.6         | -40.0        | Silty Clay | 1004                     | 287      | 3.5         | Low Sensitive    |                                                       |
| BB-AKR-205 | V8         | 51.6         | -41.0        | Silty Clay | 1085                     | 287      | 3.8         | Low Sensitive    |                                                       |
| BB-AKR-205 | V9         | 55.6         | -45.0        | Silty Clay | 1085                     | 268      | 4.0         | Medium Sensitive |                                                       |
| BB-AKR-205 | V10        | 56.6         | -46.0        | Silty Clay | 1397                     | 286      | 4.9         | Medium Sensitive |                                                       |



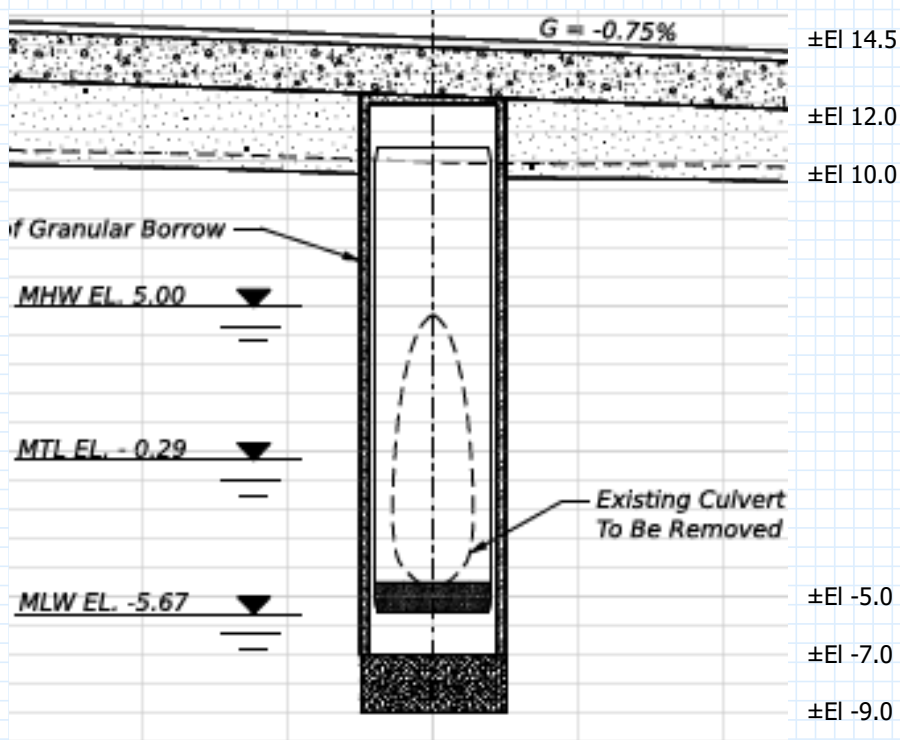
## Evaluation of Liquidity Index

**Project:** Lot Norton Bridge #3754 Replacement  
East Side Road over Knowles River  
**Location:** Addison, Maine

**S.W.COLE No.:** 20-1403-027160  
**Evaluated By/Date:** MAS / April 2024-December 2025

| A                      B                      C                      D=(B-C)                      E=(A-C)/D |            |                         |              |              |      |               |                   |                    |                       |                      |             |                              |
|-------------------------------------------------------------------------------------------------------------|------------|-------------------------|--------------|--------------|------|---------------|-------------------|--------------------|-----------------------|----------------------|-------------|------------------------------|
| Boring No.                                                                                                  | Sample No. | Visual Soil Description | Depth (feet) | Elev. (feet) | USCS | Water Content | Liquid Limit (LL) | Plastic Limit (PL) | Plasticity Index (PI) | Liquidity Index (LI) | Sensitivity | Remarks                      |
| BB-AKR-101                                                                                                  | 3D         | Silty Clay              | 10           | -0.5         | CH   | 63.8          | 56                | 30                 | 26                    | 1.3                  | quick       | viscous liquid when remolded |
| BB-AKR-102                                                                                                  | 6D         | Silty Clay              | 25           | -15.2        | CL   | 30.3          | 40                | 23                 | 17                    | 0.4                  | plastic     | over-consolidated            |
| BB-AKR-102                                                                                                  | 9D         | Silty Clay              | 40           | -30.2        | CL   | 25.1          | 40                | 22                 | 18                    | 0.2                  | plastic     | over-consolidated            |
| BB-AKR-103                                                                                                  | 5D         | Silty Clay              | 20           | -20.1        | CL   | 43.0          | 44                | 26                 | 18                    | 0.9                  | plastic     | normally consolidated        |
| BB-AKR-103                                                                                                  | 7D         | Silty Clay              | 30           | -30.1        | CL   | 30.9          | 39                | 23                 | 16                    | 0.5                  | plastic     | over-consolidated            |
| BB-AKR-103                                                                                                  | 9D         | Silty Clay              | 40           | -40.1        | CL   | 24.9          | 36                | 22                 | 14                    | 0.2                  | plastic     | over-consolidated            |
| BB-AKR-104                                                                                                  | 3D         | Silty Clay              | 10           | 0.2          | CH   | 59.5          | 54                | 26                 | 28                    | 1.2                  | quick       | viscous liquid when remolded |
| BB-AKR-104                                                                                                  | 1U         | Silty Clay              | 25           | -14.9        | CL   | 33.4          | 37                | 23                 | 14                    | 0.7                  | plastic     | over-consolidated            |
| BB-AKR-104                                                                                                  | 2U         | Silty Clay              | 35           | -24.9        | CL   | 30.0          | 35                | 21                 | 14                    | 0.6                  | plastic     | over-consolidated            |
| BB-AKR-201                                                                                                  | 5D         | Silty Clay              | 20           | -7.6         | CL   | 32.2          | 38                | 17                 | 21                    | 0.7                  | plastic     | over-consolidated            |
| BB-AKR-201                                                                                                  | 9D         | Silty Clay              | 35           | -22.6        | CL   | 27.2          | 26                | 18                 | 8                     | 1.2                  | quick       | viscous liquid when remolded |
| BB-AKR-202                                                                                                  | 1U         | Silty Clay              | 20           | -9.4         | CL   | 32.0          | 39                | 21                 | 18                    | 0.6                  | plastic     | over-consolidated            |
| BB-AKR-202                                                                                                  | 7D         | Silty Clay              | 30           | -19.4        | CL   | 26.0          | 40                | 16                 | 24                    | 0.4                  | plastic     | over-consolidated            |
| BB-AKR-203                                                                                                  | 3D         | Silty Clay              | 15           | -5.9         | CL   | 38.4          | 49                | 24                 | 25                    | 0.6                  | plastic     | over-consolidated            |
| BB-AKR-203                                                                                                  | 7D         | Silty Clay              | 35           | -25.9        | CL   | 33.3          | 37                | 18                 | 19                    | 0.8                  | plastic     | normally consolidated        |
| BB-AKR-204                                                                                                  | 1U         | Silty Clay              | 25           | -16.8        | CL   | 29.0          | 39                | 19                 | 20                    | 0.5                  | plastic     | over-consolidated            |
| BB-AKR-204                                                                                                  | 2U         | Silty Clay              | 30           | -21.8        | CL   | 34.3          | 43                | 21                 | 22                    | 0.6                  | plastic     | over-consolidated            |
| BB-AKR-204                                                                                                  | 3U         | Silty Clay              | 40           | -31.8        | CL   | 30.1          | 42                | 20                 | 22                    | 0.5                  | plastic     | over-consolidated            |
| BB-AKR-205                                                                                                  | 4D         | Silty Clay              | 15           | -4.4         | CL   | 25.0          | 25                | 17                 | 8                     | 1.0                  | plastic     | normally consolidated        |
| BB-AKR-205                                                                                                  | 9D         | Silty Clay              | 40           | -29.4        | CL   | 32.5          | 39                | 21                 | 18                    | 0.6                  | plastic     | over-consolidated            |
| BB-AKR-205                                                                                                  | 11D        | Silty Clay              | 50           | -39.4        | CL   | 30.6          | 37                | 18                 | 19                    | 0.7                  | plastic     | over-consolidated            |

Find the net pressure for the existing CMP culvert and proposed box culvert and road grade raise at the elevation of the proposed bearing pad.



### Existing Culvert and Pressure

Area of Existing Culvert (9ft T x 14ft W)

$$R_{ex1} := 4.5 \text{ ft}$$

$$R_{ex2} := 7 \text{ ft}$$

$$A_{ex\_culvert} := \pi \cdot R_{ex1} \cdot R_{ex2} = 99 \text{ ft}^2$$

Area of Existing Soil Box (existing road to base of bedding) Assume. 24ft W, 19ft H

$$W_{s\_box} := 24 \text{ ft}$$

$$H_{s\_box} := 19 \text{ ft}$$

$$A_{s\_box} := W_{s\_box} \cdot H_{s\_box} - A_{ex\_culvert} = 357 \text{ ft}^2$$

Average Unit Weight of Existing Soil Assume water at El 0ft

Fill 125pcf  
Marine Clay 105pcf

$$\gamma_{s\_avg} := \frac{((10 \text{ ft} \cdot 125 \text{ pcf}) + (5 \text{ ft} \cdot (125 \text{ pcf} - 62.4 \text{ pcf})) + (4 \text{ ft} \cdot (105 \text{ pcf} - 62.4 \text{ pcf})))}{H_{s\_box}} = 91.2 \text{ pcf}$$

Effective Stress at El -9.0

$$\sigma_{existing} := \frac{A_{s\_box} \cdot \gamma_{s\_avg}}{W_{s\_box}} = 1357.2 \text{ psf}$$

## Proposed Box Culvert and Pressure

Area of Open Box, 20ft span, 16ft rise

$$AO_{prop\_box} := 20 \text{ ft} \cdot 16 \text{ ft} = 320 \text{ ft}^2$$

Area of Box Culvert

$$A_{prop\_box} := (22 \text{ ft} \cdot 19 \text{ ft}) - AO_{prop\_box} = 98 \text{ ft}^2$$

Weight of Concrete Box

$$\gamma_c := 150 \text{ pcf}$$

$$W_{box} := A_{prop\_box} \cdot \gamma_c \cdot 1 \text{ ft} = 14700 \text{ lbf}$$

Weight of Fill Above Proposed Culvert

$$W_{soilabv} := 125 \text{ pcf} \cdot 2.5 \text{ ft} \cdot 1 \text{ ft} \cdot 24 \text{ ft} = 7500 \text{ lbf}$$

Weight of Soil In-Fill

$$W_{infill} := (125 \text{ pcf} - 62.4 \text{ pcf}) \cdot 1 \text{ ft} \cdot 1 \text{ ft} \cdot 20 \text{ ft} = 1252 \text{ lbf}$$

Weight of Culvert Bedding Stone

$$W_{cbs} := (110 \text{ pcf} - 62.4 \text{ pcf}) \cdot 2 \text{ ft} \cdot 1 \text{ ft} \cdot 24 \text{ ft} = 2284.8 \text{ lbf}$$

Weight of Soil Backfill

$$W_{backfill} := (125 \text{ pcf} \cdot 1 \text{ ft} \cdot 1 \text{ ft} \cdot 14.5 \text{ ft}) + ((125 \text{ pcf} - 62.4 \text{ pcf}) \cdot 1 \text{ ft} \cdot 1 \text{ ft} \cdot 9 \text{ ft}) = 2375.9 \text{ lbf}$$

Total Weight of Concrete and Soil

$$W_T := W_{box} + W_{soilabv} + W_{infill} + W_{cbs} + W_{backfill} = 28112.7 \text{ lbf}$$

Stress at bottom of EI -9 from Proposed Box Culvert

$$\sigma_{proposed} := \frac{W_T}{24 \text{ ft} \cdot 1 \text{ ft}} = 1171.4 \text{ psf}$$

|                                                                                                                                                                     |                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| $\Delta Stress := \begin{cases} \text{if } \sigma_{existing} > \sigma_{proposed} \\ \text{"Net Unload"} \\ \text{else} \\ \text{"Net Stress Increase"} \end{cases}$ | = "Net Unload" |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|

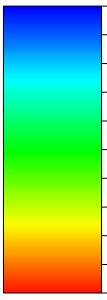
Find Net Stress Change

$$\Delta \sigma := |\sigma_{proposed} - \sigma_{existing}| = 185.9 \text{ psf}$$

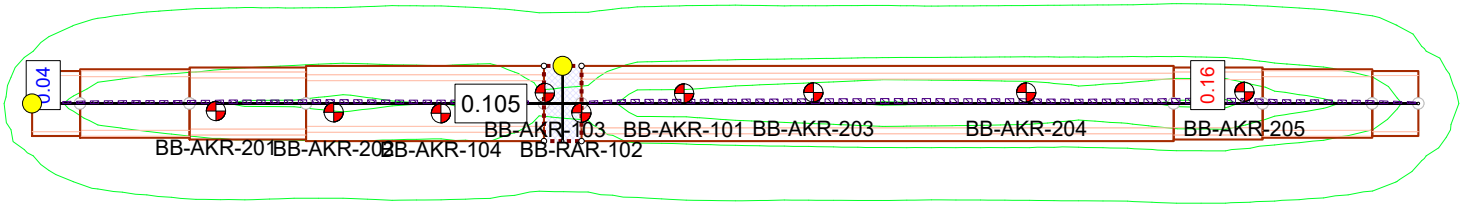
**The net pressure at the base of the proposed culvert is less than the existing, therefore consolidation of the underlying clay is anticipated to be negligible under the proposed box culvert.**

| Material Name  | Sat. Unit Weight (kips/ft3) | Es (ksf) | Poisson Ratio | Material Type | Cc/Cce | Cr/Cre | OCR | e0 | Cv (ft2/d) |
|----------------|-----------------------------|----------|---------------|---------------|--------|--------|-----|----|------------|
| Fill           | 0.122                       | 750      | 0.35          | -             | -      | -      | -   | -  | -          |
| Silty Clay CH  | 0.105                       | -        | 0.45          | Non-Linear    | 0.4    | 0.07   | 1.3 | -  | 0.17       |
| Silty Clay CL1 | 0.105                       | -        | 0.45          | Non-Linear    | 0.35   | 0.07   | 1.8 | -  | 0.17       |
| Silty Clay CL2 | 0.105                       | -        | 0.45          | Non-Linear    | 0.3    | 0.05   | 1.5 | -  | 0.17       |
| Silty Sand     | 0.122                       | -        | 0.35          | -             | -      | -      | -   | -  | -          |

Total Settlement (in)



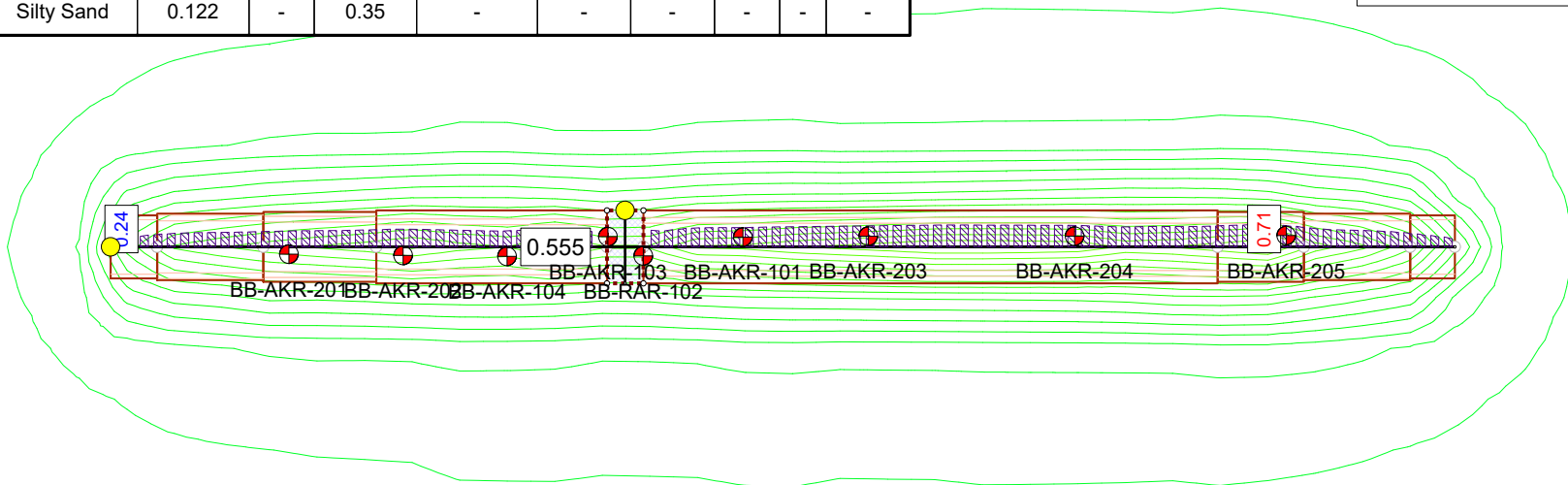
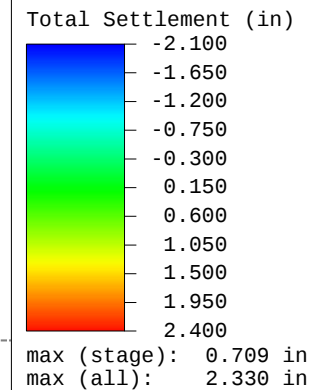
max (stage): 0.165 in  
max (all): 2.330 in



SETTLE3 5.025

|                      |                              |                                                             |                                 |
|----------------------|------------------------------|-------------------------------------------------------------|---------------------------------|
| Project              |                              | Lot Norton Bridge #3754 - East Side Road over Knowles River |                                 |
| Analysis Description |                              | Settlement Evaluation - 0.1 yr = 0.1 y                      |                                 |
| Drawn By             | MAS                          | Reviewed By                                                 | TJB                             |
|                      |                              | Date                                                        | April 2024 / Rev3 July 2026     |
| Company              | S. W. Cole Engineering, Inc. | File Name                                                   | Combine_ULFGA_culvert final.s3z |

| Material Name  | Sat. Unit Weight (kips/ft3) | Es (ksf) | Poisson Ratio | Material Type | Cc/Cce | Cr/Cre | OCR | e0 | Cv (ft2/d) |
|----------------|-----------------------------|----------|---------------|---------------|--------|--------|-----|----|------------|
| Fill           | 0.122                       | 750      | 0.35          | -             | -      | -      | -   | -  | -          |
| Silty Clay CH  | 0.105                       | -        | 0.45          | Non-Linear    | 0.4    | 0.07   | 1.3 | -  | 0.17       |
| Silty Clay CL1 | 0.105                       | -        | 0.45          | Non-Linear    | 0.35   | 0.07   | 1.8 | -  | 0.17       |
| Silty Clay CL2 | 0.105                       | -        | 0.45          | Non-Linear    | 0.3    | 0.05   | 1.5 | -  | 0.17       |
| Silty Sand     | 0.122                       | -        | 0.35          | -             | -      | -      | -   | -  | -          |



Project

Lot Norton Bridge #3754 - East Side Road over Knowles River

Analysis Description

Settlement Evaluation - 5 yrs = 5 y

Drawn By

MAS

Reviewed By

TJB

Date

April 2024 / Rev3 July 2026

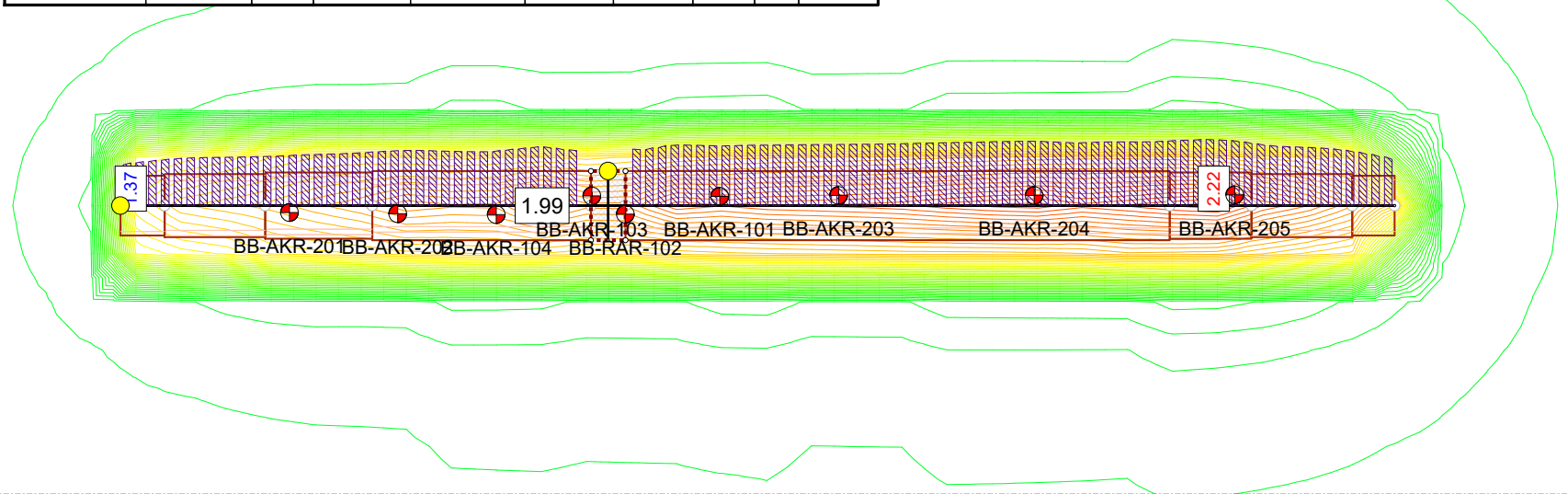
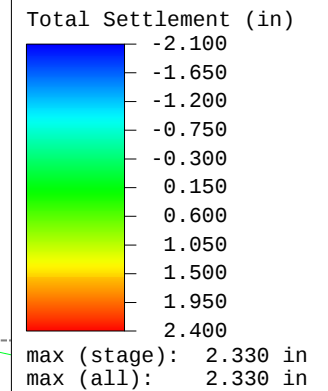
Company

S. W. Cole Engineering, Inc.

File Name

Combine\_ULFGA\_culvert final.s3z

| Material Name  | Sat. Unit Weight (kips/ft3) | Es (ksf) | Poisson Ratio | Material Type | Cc/Cce | Cr/Cre | OCR | e0 | Cv (ft2/d) |
|----------------|-----------------------------|----------|---------------|---------------|--------|--------|-----|----|------------|
| Fill           | 0.122                       | 750      | 0.35          | -             | -      | -      | -   | -  | -          |
| Silty Clay CH  | 0.105                       | -        | 0.45          | Non-Linear    | 0.4    | 0.07   | 1.3 | -  | 0.17       |
| Silty Clay CL1 | 0.105                       | -        | 0.45          | Non-Linear    | 0.35   | 0.07   | 1.8 | -  | 0.17       |
| Silty Clay CL2 | 0.105                       | -        | 0.45          | Non-Linear    | 0.3    | 0.05   | 1.5 | -  | 0.17       |
| Silty Sand     | 0.122                       | -        | 0.35          | -             | -      | -      | -   | -  | -          |



Project

Lot Norton Bridge #3754 - East Side Road over Knowles River

Analysis Description

Settlement Evaluation - 75 yrs = 75 y

Drawn By

MAS

Reviewed By

TJB

Date

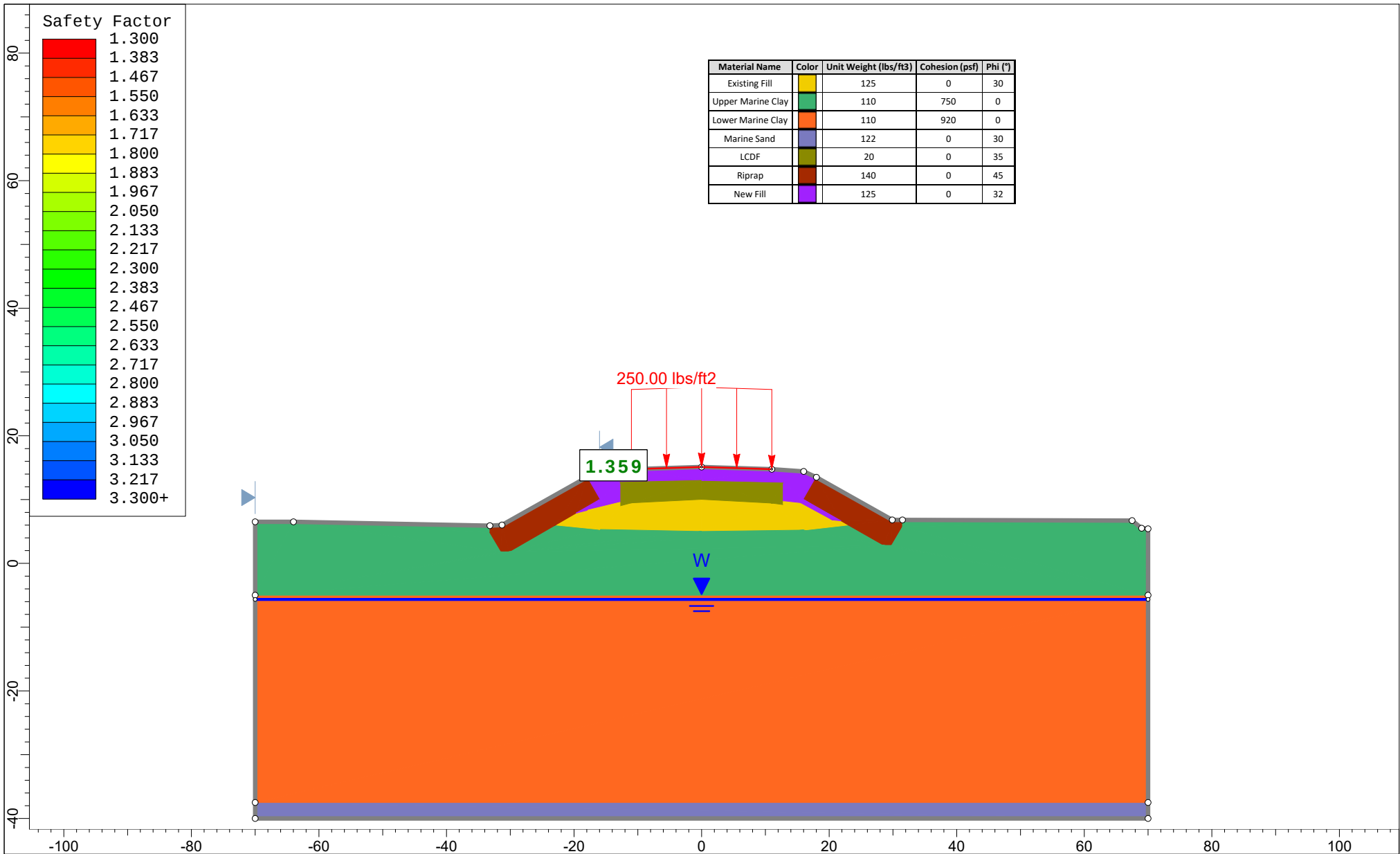
April 2024 / Rev3 July 2026

Company

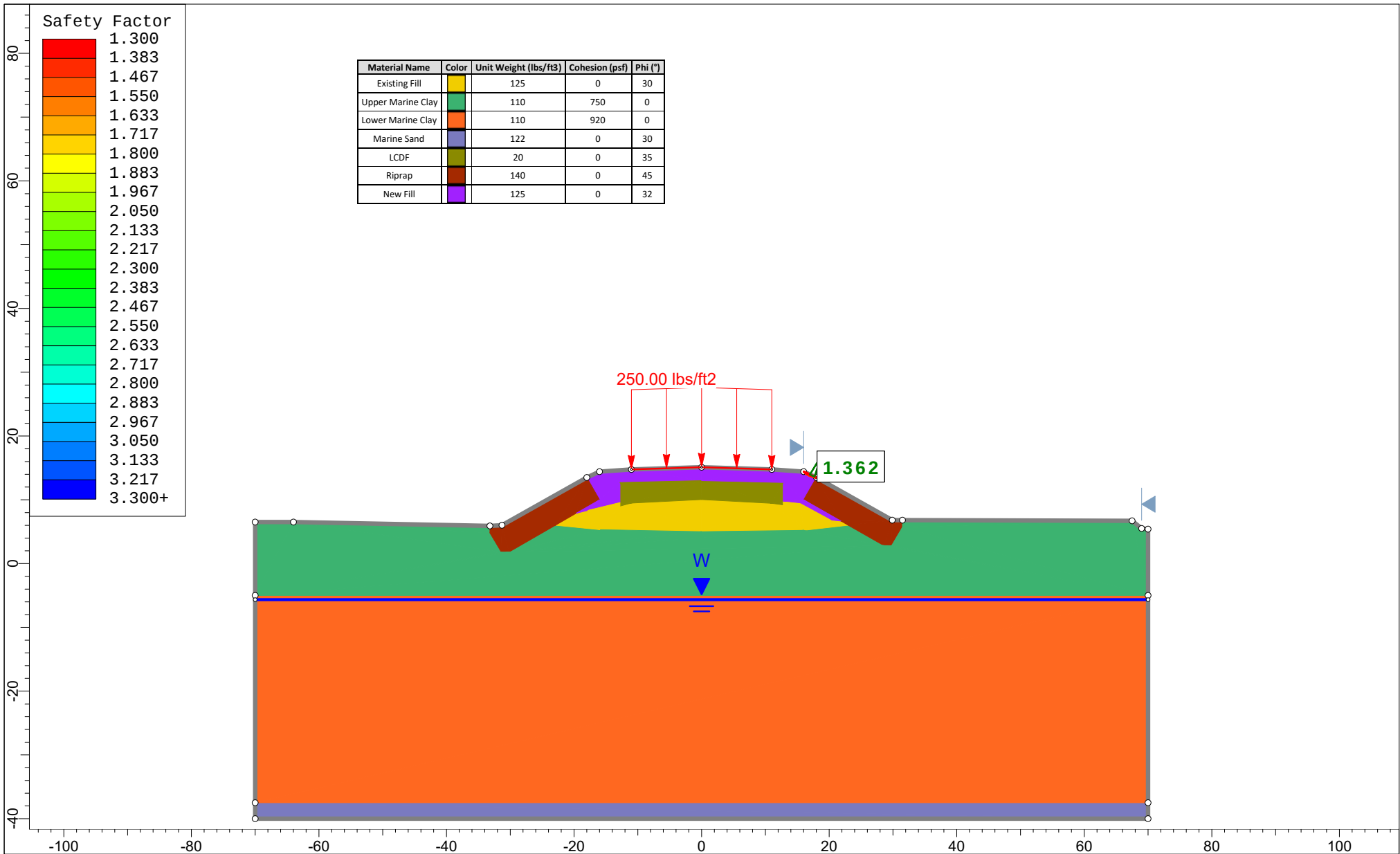
S. W. Cole Engineering, Inc.

File Name

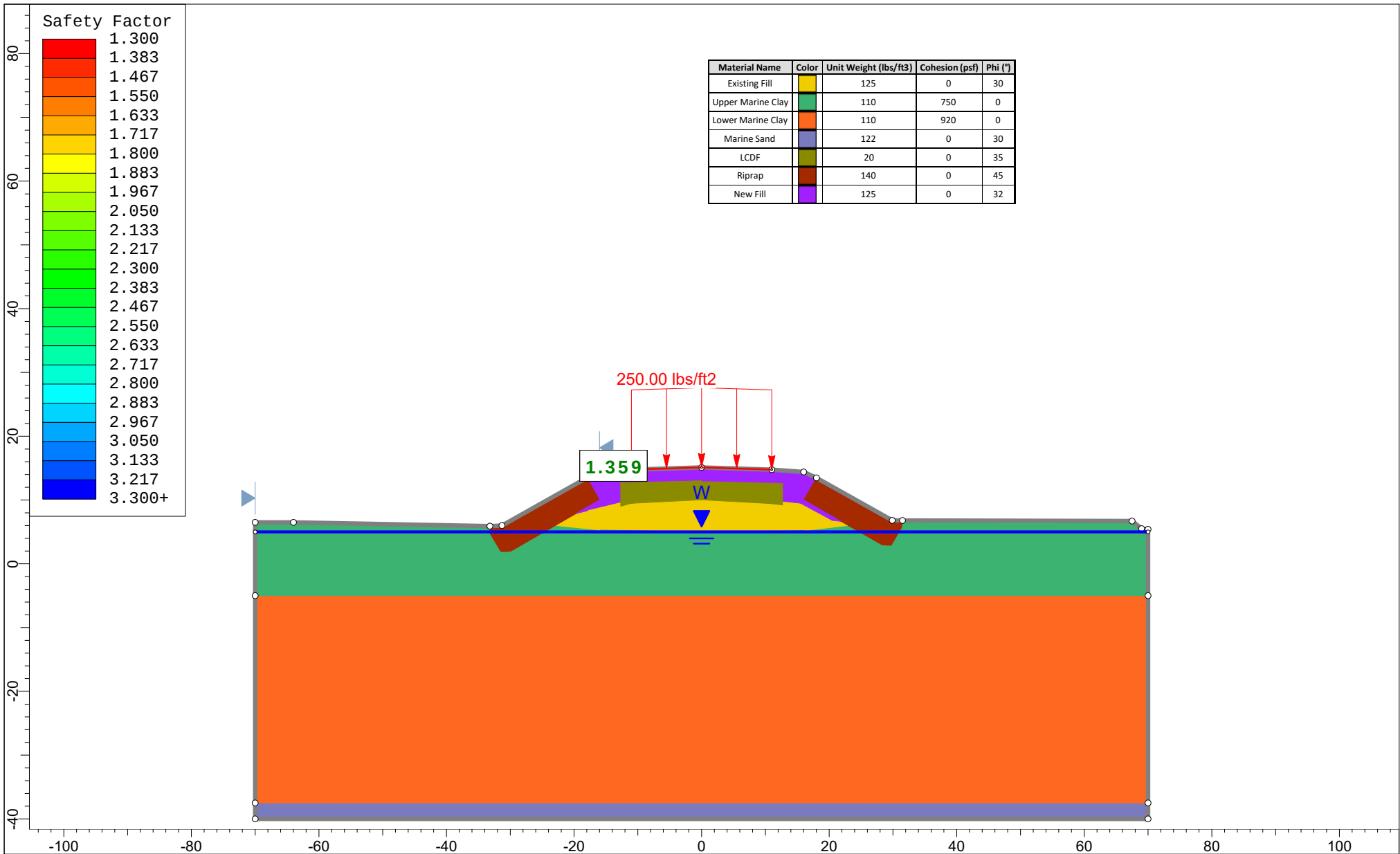
Combine\_ULFGA\_culvert final.s3z



|                      |                        |                                                                                           |     |             |              |
|----------------------|------------------------|-------------------------------------------------------------------------------------------|-----|-------------|--------------|
| Project              |                        | WIN 27160 - Lot Norton Bridge #3754<br>East Side Road over Knowles River - Addison, Maine |     |             |              |
| Analysis Description |                        | Sta. 9+00 - R to L - MLW EI -5.67'                                                        |     |             |              |
| Scale                | 1:250                  | Drawn By                                                                                  | MAS | Reviewed By | TSD          |
| Company              | S. W. Cole Engineering |                                                                                           |     | File Name   | Sta9+00.slmd |
|                      |                        |                                                                                           |     | Date        | July 2026    |

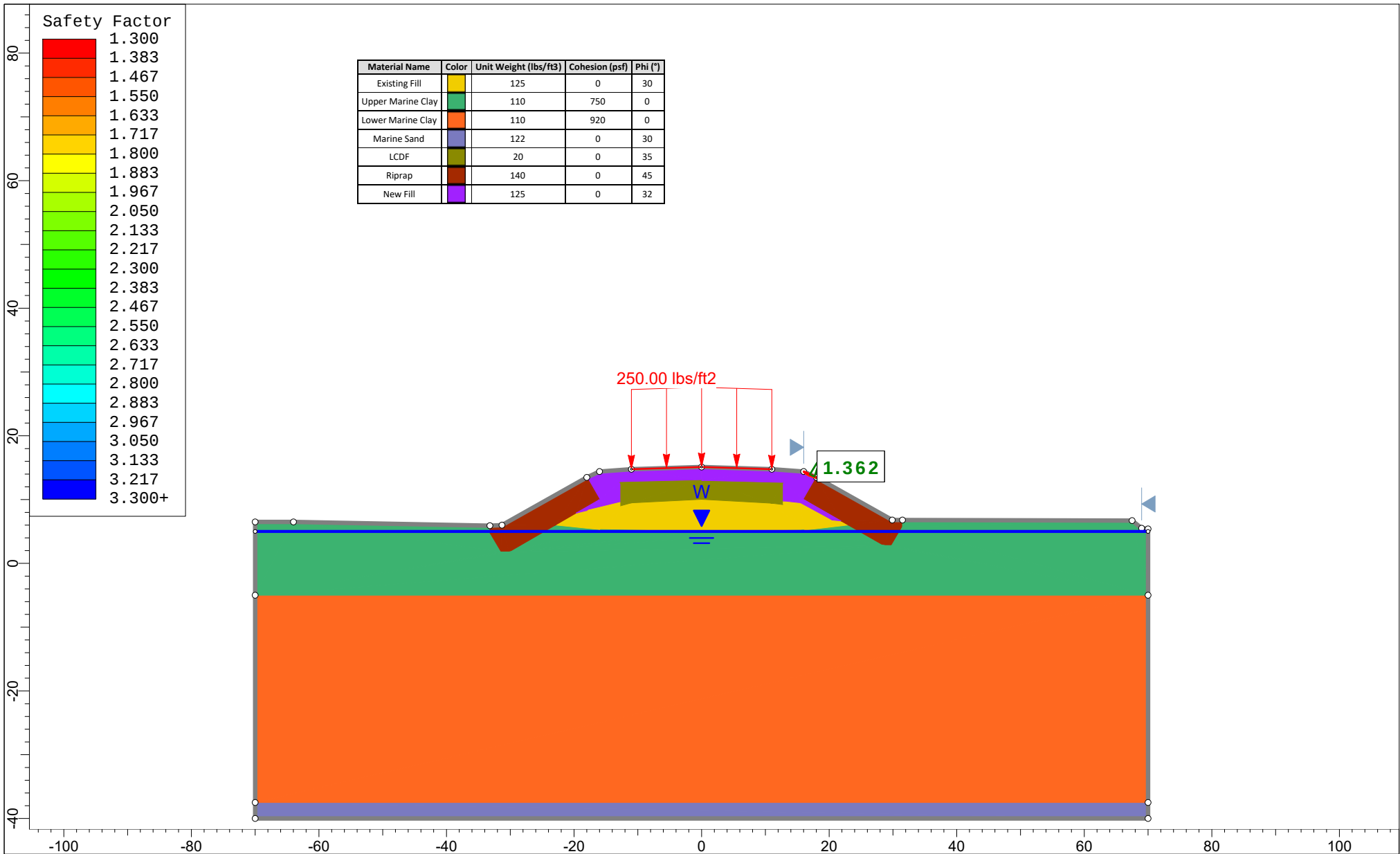


|                      |                        |                                                                                           |     |             |              |
|----------------------|------------------------|-------------------------------------------------------------------------------------------|-----|-------------|--------------|
| Project              |                        | WIN 27160 - Lot Norton Bridge #3754<br>East Side Road over Knowles River - Addison, Maine |     |             |              |
| Analysis Description |                        | Sta. 9+00 - L to R - MLW El -5.67'                                                        |     |             |              |
| Scale                | 1:250                  | Drawn By                                                                                  | MAS | Reviewed By | TSD          |
| Company              | S. W. Cole Engineering |                                                                                           |     | File Name   | Sta9+00.slmd |
|                      |                        |                                                                                           |     | Date        | July 2026    |

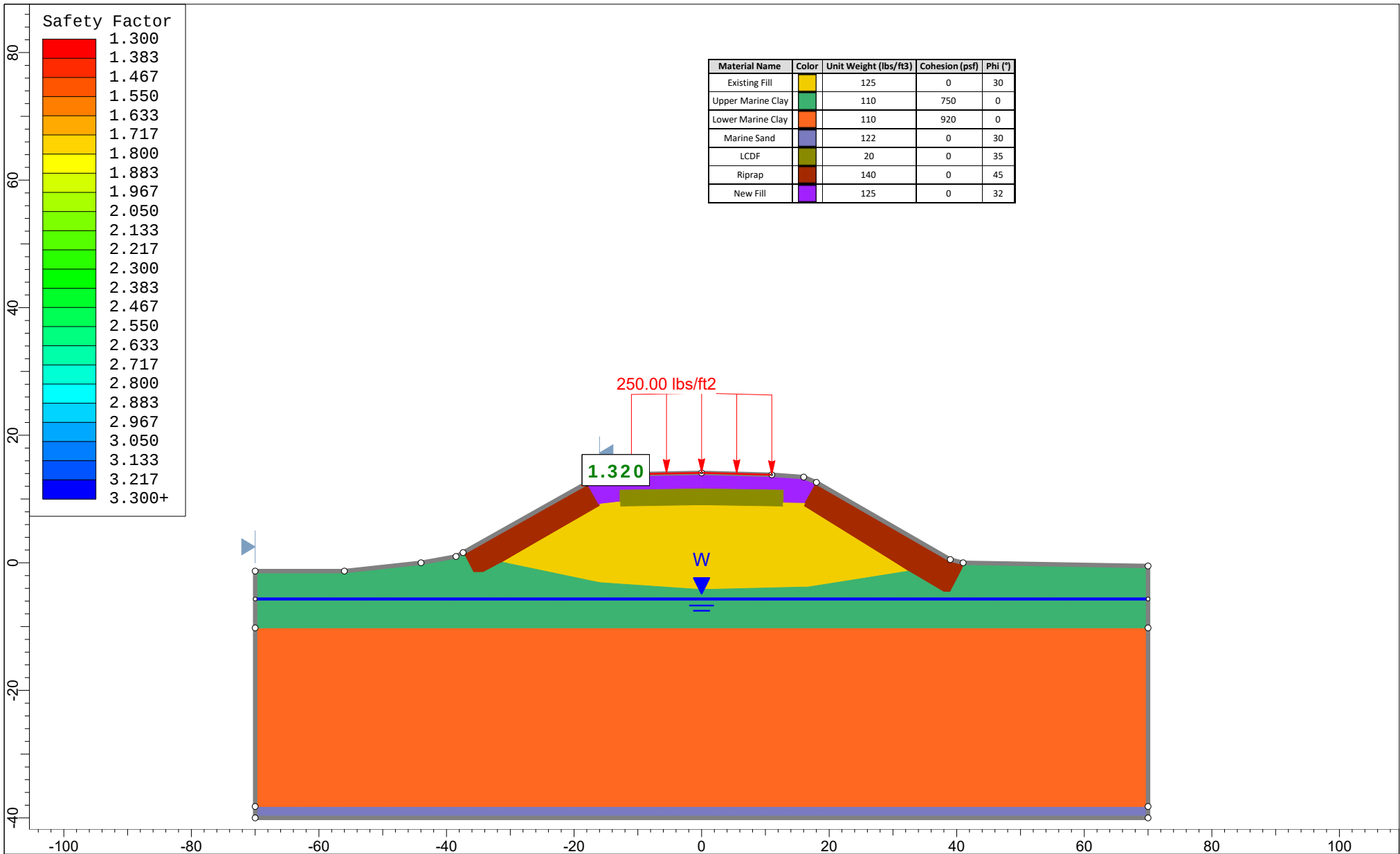


|                                                                                    |                                                                                           |       |          |           |              |     |      |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-------|----------|-----------|--------------|-----|------|
|  | Project                                                                                   |       |          |           |              |     |      |
|                                                                                    | WIN 27160 - Lot Norton Bridge #3754<br>East Side Road over Knowles River - Addison, Maine |       |          |           |              |     |      |
|                                                                                    | Analysis Description                                                                      |       |          |           |              |     |      |
|                                                                                    | Sta. 9+00 - R to L - MHW El 5.00'                                                         |       |          |           |              |     |      |
|                                                                                    | Scale                                                                                     | 1:250 | Drawn By | MAS       | Reviewed By  | TSD | Date |
| Company                                                                            | S. W. Cole Engineering                                                                    |       |          | File Name | Sta9+00.slmd |     |      |

SLIDEINTERPRET 9.031

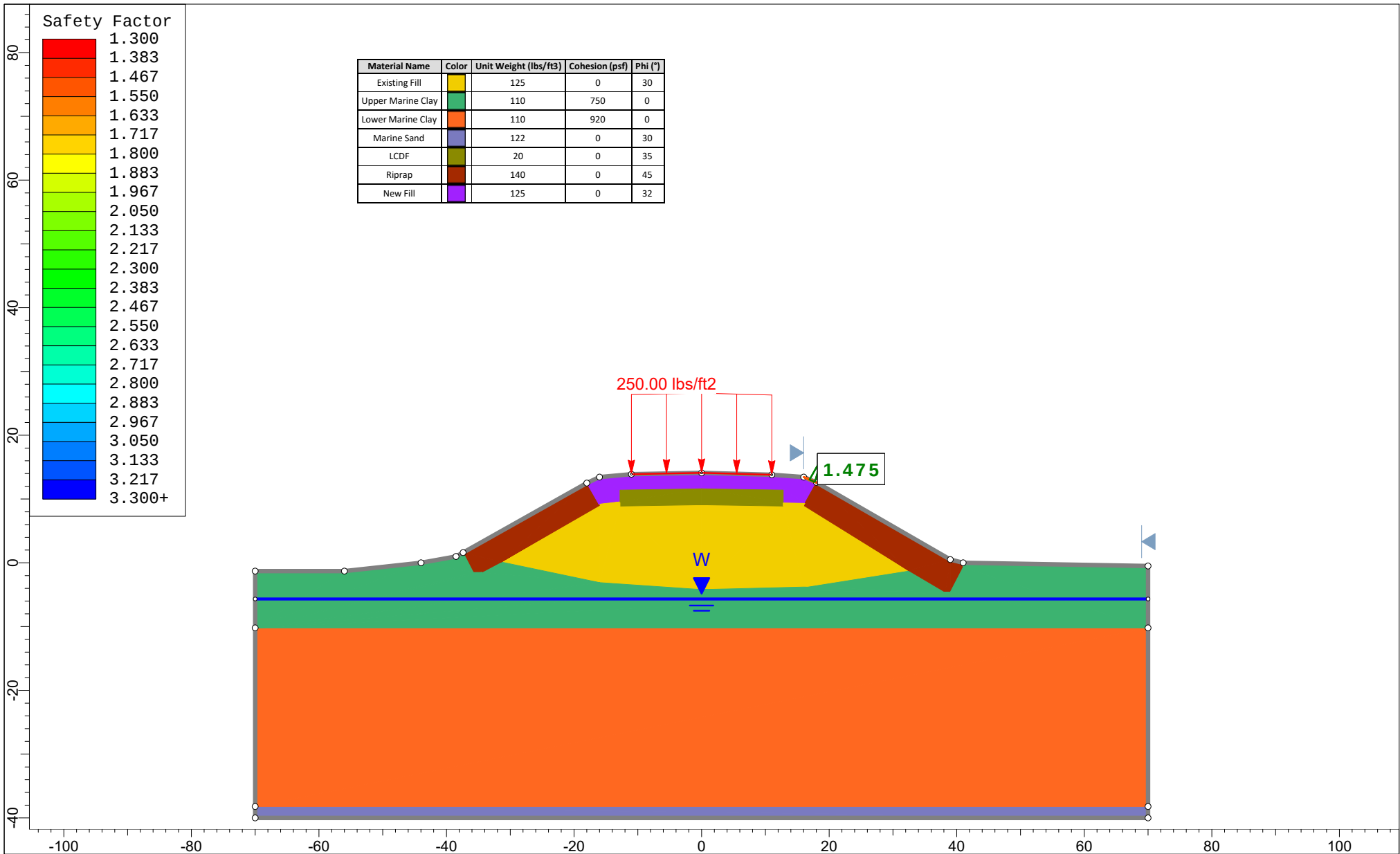


|                      |                        |                                                                                           |     |             |              |
|----------------------|------------------------|-------------------------------------------------------------------------------------------|-----|-------------|--------------|
| Project              |                        | WIN 27160 - Lot Norton Bridge #3754<br>East Side Road over Knowles River - Addison, Maine |     |             |              |
| Analysis Description |                        | Sta. 9+00 - L to R - MHW El 5.00'                                                         |     |             |              |
| Scale                | 1:250                  | Drawn By                                                                                  | MAS | Reviewed By | TSD          |
| Company              | S. W. Cole Engineering |                                                                                           |     | File Name   | Sta9+00.slmd |
|                      |                        |                                                                                           |     | Date        | July 2026    |

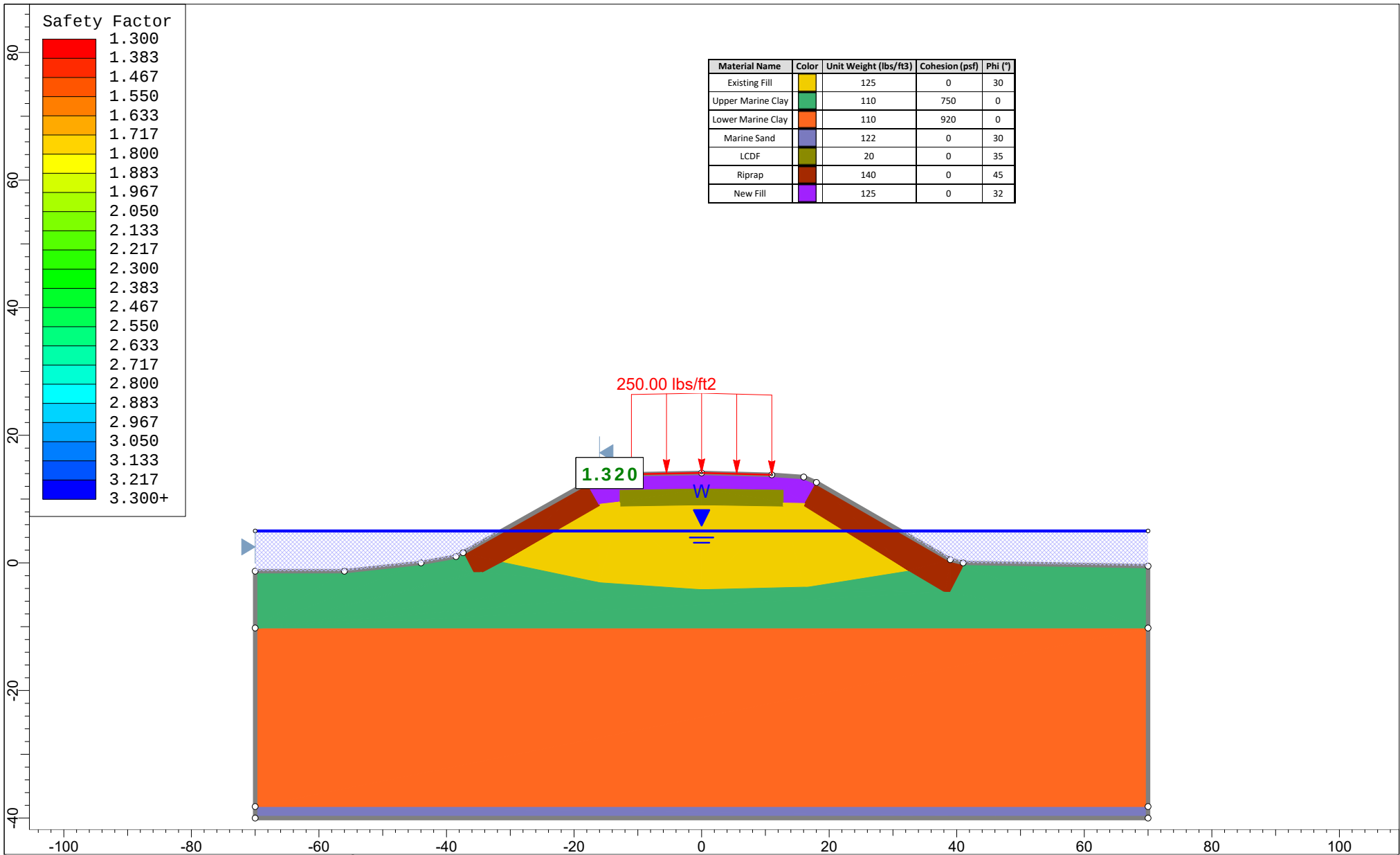


SLIDEINTERPRET 9.031

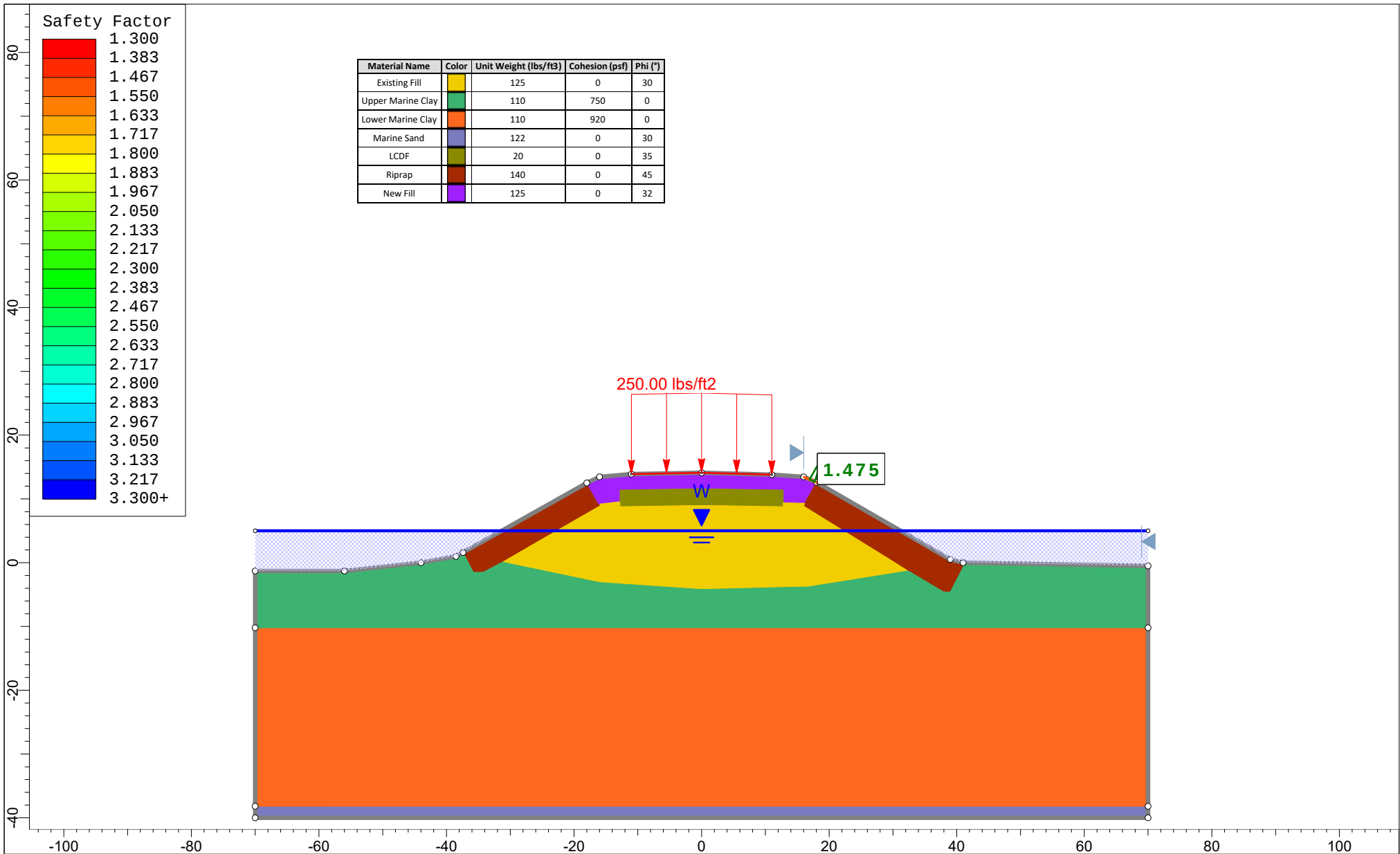
|                      |                        |                                                                                           |     |             |               |
|----------------------|------------------------|-------------------------------------------------------------------------------------------|-----|-------------|---------------|
| Project              |                        | WIN 27160 - Lot Norton Bridge #3754<br>East Side Road over Knowles River - Addison, Maine |     |             |               |
| Analysis Description |                        | Sta. 10+25 - R to L - MLW EI -5.67'                                                       |     |             |               |
| Scale                | 1:250                  | Drawn By                                                                                  | MAS | Reviewed By | TSD           |
| Company              | S. W. Cole Engineering |                                                                                           |     | File Name   | Sta10+25.slmd |
|                      |                        |                                                                                           |     | Date        | July 2026     |



|                      |       |                                                                                           |     |             |               |
|----------------------|-------|-------------------------------------------------------------------------------------------|-----|-------------|---------------|
| Project              |       | WIN 27160 - Lot Norton Bridge #3754<br>East Side Road over Knowles River - Addison, Maine |     |             |               |
| Analysis Description |       | Sta. 10+25 - L to R - MLW EI -5.67'                                                       |     |             |               |
| Scale                | 1:250 | Drawn By                                                                                  | MAS | Reviewed By | TSD           |
| Company              |       | S. W. Cole Engineering                                                                    |     | File Name   | Sta10+25.slmd |
|                      |       |                                                                                           |     | Date        | July 2026     |



|                                                                                                            |                                                                                           |  |       |  |          |                        |     |  |             |  |     |           |      |  |           |  |  |               |  |  |  |  |  |
|------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|--|-------|--|----------|------------------------|-----|--|-------------|--|-----|-----------|------|--|-----------|--|--|---------------|--|--|--|--|--|
| <br>SLIDEINTERPRET 9.031 | Project                                                                                   |  |       |  |          |                        |     |  |             |  |     |           |      |  |           |  |  |               |  |  |  |  |  |
|                                                                                                            | WIN 27160 - Lot Norton Bridge #3754<br>East Side Road over Knowles River - Addison, Maine |  |       |  |          |                        |     |  |             |  |     |           |      |  |           |  |  |               |  |  |  |  |  |
|                                                                                                            | Analysis Description                                                                      |  |       |  |          |                        |     |  |             |  |     |           |      |  |           |  |  |               |  |  |  |  |  |
|                                                                                                            | Sta. 10+25 - R to L - MHW El 5.00'                                                        |  |       |  |          |                        |     |  |             |  |     |           |      |  |           |  |  |               |  |  |  |  |  |
|                                                                                                            | Scale                                                                                     |  | 1:250 |  | Drawn By |                        | MAS |  | Reviewed By |  | TSD |           | Date |  | July 2026 |  |  |               |  |  |  |  |  |
| Company                                                                                                    |                                                                                           |  |       |  |          | S. W. Cole Engineering |     |  |             |  |     | File Name |      |  |           |  |  | Sta10+25.slmd |  |  |  |  |  |



|                      |                        |                                                                                           |     |             |               |      |           |
|----------------------|------------------------|-------------------------------------------------------------------------------------------|-----|-------------|---------------|------|-----------|
| Project              |                        | WIN 27160 - Lot Norton Bridge #3754<br>East Side Road over Knowles River - Addison, Maine |     |             |               |      |           |
| Analysis Description |                        | Sta. 10+25 - L to R - MHW El 5.00'                                                        |     |             |               |      |           |
| Scale                | 1:250                  | Drawn By                                                                                  | MAS | Reviewed By | TSD           | Date | July 2026 |
| Company              | S. W. Cole Engineering |                                                                                           |     | File Name   | Sta10+25.slmd |      |           |

### **Bearing Resistance of Precast Box Culvert**

**Bearing Soils:** 24" Crushed Stone over medium stiff marine clay (SILT, some clay to silty CLAY)

#### **Soil Parameters:**

|                              |                                   |                                                               |
|------------------------------|-----------------------------------|---------------------------------------------------------------|
| $\gamma_f := 110$ <b>pcf</b> | Total Unit Weight of Bearing Soil |                                                               |
| $\phi := 0$ <b>deg</b>       | Undrained Friction Angle          |                                                               |
| $c_s := 1000$ <b>psf</b>     | Undrained Shear Strength          | $S_u = 750-1250$ psf at bearing Elev.<br>use $S_u = 1000$ psf |
| $\gamma_q := 125$ <b>pcf</b> | Total Unit Weight of Backfill     |                                                               |

#### **Foundation Parameters:**

|                      |                                 |
|----------------------|---------------------------------|
| $B := 20$ <b>ft</b>  | Overall Foundation Width        |
| $D_f := 5$ <b>ft</b> | Embedment Depth + Bearing Pad   |
| $D_w := 0$ <b>ft</b> | Depth of Water Below Foundation |

### **Nominal Bearing Resistance - Service Limit State** (AASHTO LRFD Table C10.6.2.5.1-1)

**Table C10.6.2.5.1-1—Presumptive Bearing Resistance for Spread Footing Foundations at the Service Limit State Modified after U.S. Department of the Navy (1982)**

| Type of Bearing Material                                                                                                                                   | Consistency in Place  | Bearing Resistance (ksf) |                          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------|--------------------------|
|                                                                                                                                                            |                       | Ordinary Range           | Recommended Value of Use |
| Massive crystalline igneous and metamorphic rock: granite, diorite, basalt, gneiss, thoroughly cemented conglomerate (sound condition allows minor cracks) | Very hard, sound rock | 120–200                  | 160                      |
| Foliated metamorphic rock: slate, schist (sound condition allows minor cracks)                                                                             | Hard sound rock       | 60–80                    | 70                       |
| Sedimentary rock: hard cemented shales, siltstone, sandstone, limestone without cavities                                                                   | Hard sound rock       | 30–50                    | 40                       |
| Weathered or broken bedrock of any kind, except highly argillaceous rock (shale)                                                                           | Medium hard rock      | 16–24                    | 20                       |
| Compaction shale or other highly argillaceous rock in sound condition                                                                                      | Medium hard rock      | 16–24                    | 20                       |
| Well-graded mixture of fine- and coarse-grained soil: glacial till, hardpan, boulder clay (GW-GC, GC, SC)                                                  | Very dense            | 16–24                    | 20                       |
| Gravel, gravel-sand mixture, boulder-gravel mixtures (GW, GP, SW, SP)                                                                                      | Very dense            | 12–20                    | 14                       |
|                                                                                                                                                            | Medium dense to dense | 8–14                     | 10                       |
|                                                                                                                                                            | Loose                 | 4–12                     | 6                        |
| Coarse to medium sand, and with little gravel (SW, SP)                                                                                                     | Very dense            | 8–12                     | 8                        |
|                                                                                                                                                            | Medium dense to dense | 4–8                      | 6                        |
|                                                                                                                                                            | Loose                 | 2–6                      | 3                        |
| Fine to medium sand, silty or clayey medium to coarse sand (SW, SM, SC)                                                                                    | Very dense            | 6–10                     | 6                        |
|                                                                                                                                                            | Medium dense to dense | 4–8                      | 5                        |
|                                                                                                                                                            | Loose                 | 2–4                      | 3                        |
| Fine sand, silty or clayey medium to fine sand (SP, SM, SC)                                                                                                | Very dense            | 6–10                     | 6                        |
|                                                                                                                                                            | Medium dense to dense | 4–8                      | 5                        |
|                                                                                                                                                            | Loose                 | 2–4                      | 3                        |
| Homogeneous inorganic clay, sandy or silty clay (CL, CH)                                                                                                   | Very dense            | 6–12                     | 8                        |
|                                                                                                                                                            | Medium dense to dense | 2–6                      | 4                        |
|                                                                                                                                                            | Loose                 | 1–2                      | 1                        |
| Inorganic silt, sandy or clayey silt, varved silt-clay-fine sand (ML, MH)                                                                                  | Very stiff to hard    | 4–8                      | 6                        |
|                                                                                                                                                            | Medium stiff to stiff | 2–6                      | 3                        |
|                                                                                                                                                            | Soft                  | 1–2                      | 1                        |

**Recommend Service Limit Nominal Bearing Resistance = 2.5 ksf at bottom of bearing pad**

**Table 10.6.3.1.2a-1—Bearing Capacity Factors  $N_c$  (Prandtl, 1921),  $N_q$  (Reissner, 1924), and  $N_\gamma$  (Vesic, 1975)**

| $\phi_f$ | $N_c$ | $N_q$ | $N_\gamma$ | $\phi_f$ | $N_c$ | $N_q$ | $N_\gamma$ |
|----------|-------|-------|------------|----------|-------|-------|------------|
| 0        | 5.14  | 1.0   | 0.0        | 23       | 18.1  | 8.7   | 8.2        |
| 1        | 5.4   | 1.1   | 0.1        | 24       | 19.3  | 9.6   | 9.4        |
| 2        | 5.6   | 1.2   | 0.2        | 25       | 20.7  | 10.7  | 10.9       |
| 3        | 5.9   | 1.3   | 0.2        | 26       | 22.3  | 11.9  | 12.5       |
| 4        | 6.2   | 1.4   | 0.3        | 27       | 23.9  | 13.2  | 14.5       |
| 5        | 6.5   | 1.6   | 0.5        | 28       | 25.8  | 14.7  | 16.7       |
| 6        | 6.8   | 1.7   | 0.6        | 29       | 27.9  | 16.4  | 19.3       |
| 7        | 7.2   | 1.9   | 0.7        | 30       | 30.1  | 18.4  | 22.4       |
| 8        | 7.5   | 2.1   | 0.9        | 31       | 32.7  | 20.6  | 26.0       |
| 9        | 7.9   | 2.3   | 1.0        | 32       | 35.5  | 23.2  | 30.2       |
| 10       | 8.4   | 2.5   | 1.2        | 33       | 38.6  | 26.1  | 35.2       |
| 11       | 8.8   | 2.7   | 1.4        | 34       | 42.2  | 29.4  | 41.1       |
| 12       | 9.3   | 3.0   | 1.7        | 35       | 46.1  | 33.3  | 48.0       |
| 13       | 9.8   | 3.3   | 2.0        | 36       | 50.6  | 37.8  | 56.3       |
| 14       | 10.4  | 3.6   | 2.3        | 37       | 55.6  | 42.9  | 66.2       |
| 15       | 11.0  | 3.9   | 2.7        | 38       | 61.4  | 48.9  | 78.0       |
| 16       | 11.6  | 4.3   | 3.1        | 39       | 67.9  | 56.0  | 92.3       |
| 17       | 12.3  | 4.8   | 3.5        | 40       | 75.3  | 64.2  | 109.4      |
| 18       | 13.1  | 5.3   | 4.1        | 41       | 83.9  | 73.9  | 130.2      |
| 19       | 13.9  | 5.8   | 4.7        | 42       | 93.7  | 85.4  | 155.6      |
| 20       | 14.8  | 6.4   | 5.4        | 43       | 105.1 | 99.0  | 186.5      |
| 21       | 15.8  | 7.1   | 6.2        | 44       | 118.4 | 115.3 | 224.6      |
| 22       | 16.9  | 7.8   | 7.1        | 45       | 133.9 | 134.9 | 271.8      |

### **Nominal Bearing Resistance - Strength Limit State**

From AASHTO LRFD Section 10.6.3.1.2a

$$q_n = c_s \cdot N_{cm} + \gamma_q \cdot D_f \cdot N_{qm} \cdot C_{wq} + 0.5 \cdot \gamma_f \cdot B \cdot N_{\gamma m} \cdot C_{w\gamma}$$

From Table 10.6.3.1.8a-1 for  $\phi = 0$  *deg*  $c_s = 1000$  *psf*

$N_c := 5.14$   $N_q := 1$   $N_\gamma := 0$

From Table 10.6.3.1.2a-2, for  $D_w = D_f$

$C_{wq} := 0.5$   $C_{w\gamma} := 0.5$

LRFD Eqn 10.6.3.1.2a-1

$$q_n := c_s \cdot N_c + \gamma_q \cdot D_f \cdot N_q \cdot C_{wq} + 0.5 \cdot \gamma_f \cdot B \cdot N_\gamma \cdot C_{w\gamma} = 5.5 \text{ ksf} \quad \text{for } B = 20 \text{ ft}$$

### **Factored Bearing Resistance - Strength Limit State**

From AASHTO LRFD Table 10.5.5.2.2-1, Resistance Factor for Geotechnical Resistance of Shallow Foundations at the Strength Limit State

$\varphi_b := 0.45$

$$q_r := \varphi_b \cdot q_n = 2.5 \text{ ksf} \quad \text{for } B = 20 \text{ ft}$$

### **Modulus of Subgrade Reaction**

Reference(s): Bowles (1996) Foundation Analysis and Design, 5th Ed.  
Das (2016) Principles of Foundation Engineering, 8th Ed.  
FHWA (2002) Geotechnical Engineering Circular No. 6 Shallow Foundations

### **Determine Foundation and Soil Properties**

#### Assumptions:

1. Box culvert is 20 feet wide and 48 feet long (excluding tapered ends)
2. Box culvert is embedded 3 feet into riverbed
3. Box culvert is founded on 2 feet of Crushed Stone at El. -9 feet
4. Proposed finished grade is about 4.5 feet above existing road grade
5. Bottom of box culvert is submerged for structure's design life

Foundation Soil: medium stiff, SILT, some clay to Silty CLAY  
Su=750 to 1,260 psf                      use 1,000 psf

$\mu_s := 0.45$                       Poisson's Ratio (Bowles Table 2-7)  
                                        typical value 0.4-0.5 - clay soils

$s_u := 1000 \text{ psf}$                       Su values near El -9 ft (bearing elevation)  
                                        750, 969, 920, 1214, to 1268 psf  
                                        use Su = 1,000 psf

                                        N60 values near El -9 ft  
                                        3, 4, 7, 7, 9, 9, 9  
                                        use N60 = 7

#### **Published Values**

- From Bowles, Table 9-1: Range of Modulus of Subgrade Reaction  
For Clayey Soil,  $q < 4000 \text{ psf}$                       use  $k_s = 44 \text{ pci}$
- From Das, Table 8.2: Typical Subgrade Reaction Values  
For Stiff Clay,  $k = 40-90 \text{ pci}$
- From FHWA GEC, Figure 8-3  
For Medium Stiff Fine-Grained Soil,  $k_v = 40 \text{ pci}$

Published values range from 40 to 90 pci;  
Assume value of 40 pci

$$k_s := 40 \text{ pci}$$

Box culvert dimensions (excluding tapered ends)

$$B_f := 20 \text{ ft} \qquad L_f := 48 \text{ ft}$$

From Das, Eqn 8.48 for foundations on clayey soil

$$k := \frac{k_s \cdot \left( 1 + 0.5 \cdot \frac{B_f}{L_f} \right)}{1.5} = 32 \text{ pci} \qquad k = 32 \text{ pci}$$

The definitions of  $k$  and  $k_1$  are the same as in Eq. (8.46).

For rectangular foundations having dimensions of  $B \times L$  (for similar soil and  $q$ ),

$$k = \frac{k_{(B \times B)} \left( 1 + 0.5 \frac{B}{L} \right)}{1.5} \quad (8.48)$$

where

$k$  = coefficient of subgrade reaction of the rectangular foundation ( $L \times B$ )

$k_{(B \times B)}$  = coefficient of subgrade reaction of a square foundation having dimension of  $B \times B$

Equation (8.48) indicates that the value of  $k$  for a very long foundation with a width  $B$  is approximately  $0.67k_{(B \times B)}$ .

The modulus of elasticity of granular soils increases with depth. Because the settlement of a foundation depends on the modulus of elasticity, the value of  $k$  increases with the depth of the foundation.

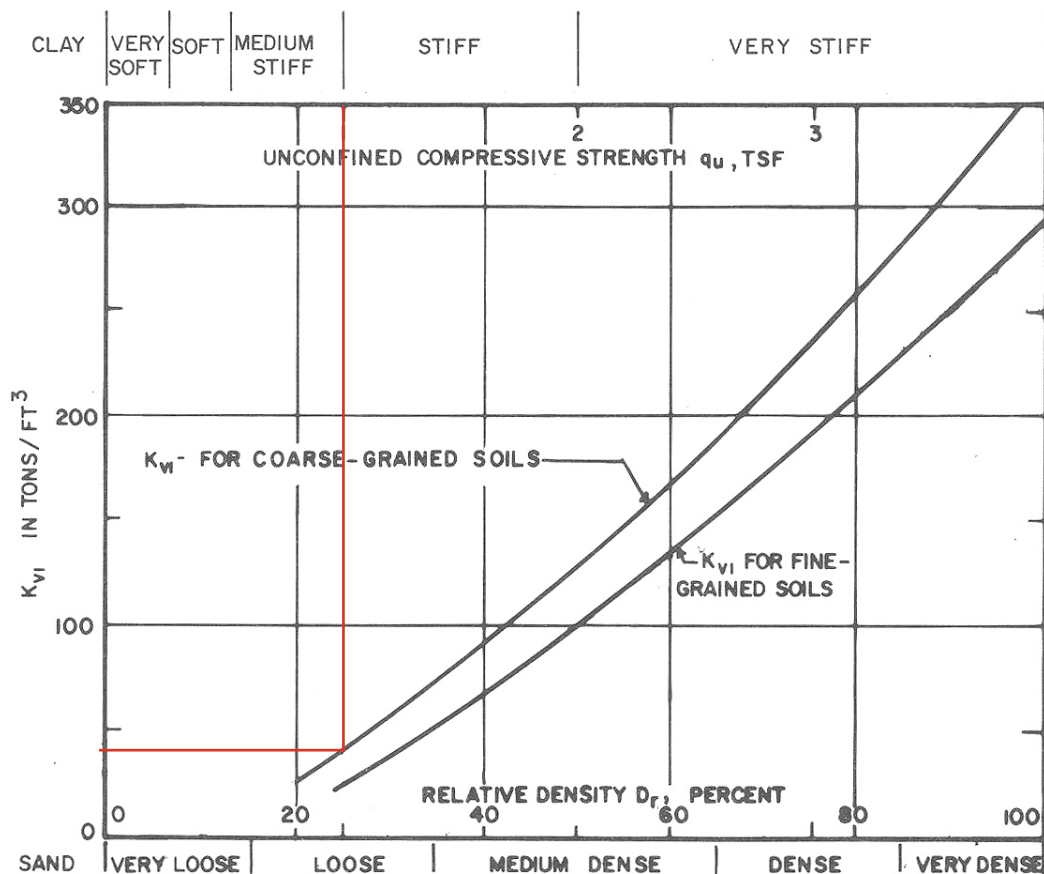
Table 8.2 provides typical ranges of values for the coefficient of subgrade reaction,  $k_{0.3}(k_1)$ , for sandy and clayey soils.

For long beams, Vesic (1961) proposed an equation for estimating subgrade reaction, namely,

$$k' = Bk = 0.65 \sqrt[12]{\frac{E_s B^4}{E_F I_F}} \frac{E_s}{1 - \mu_s^2}$$

**Table 8.2** Typical Subgrade Reaction Values,  $k_{0.3}(k_1)$

| Soil type          | $k_{0.3}(k_1)$    |                     |
|--------------------|-------------------|---------------------|
|                    | MN/m <sup>3</sup> | lb/in. <sup>3</sup> |
| Dry or moist sand: |                   |                     |
| Loose              | 8–25              | 30–90               |
| Medium             | 25–125            | 90–450              |
| Dense              | 125–375           | 450–1350            |
| Saturated sand:    |                   |                     |
| Loose              | 10–15             | 35–55               |
| Medium             | 35–40             | 125–145             |
| Dense              | 130–150           | 475–550             |
| Clay:              |                   |                     |
| Stiff              | 10–25             | 40–90               |
| Very stiff         | 25–50             | 90–185              |
| Hard               | >50               | >185                |



### DEFINITIONS

$\Delta H_i$  = IMMEDIATE SETTLEMENT OF FOOTING  
 $q$  = FOOTING UNIT LOAD IN tsf  
 $B$  = FOOTING WIDTH

$D$  = DEPTH OF FOOTING BELOW GROUND SURFACE

$K_{vi}$  = MODULUS OF VERTICAL SUBGRADE REACTION

### COARSE-GRAINED SOILS

(MODULUS OF ELASTICITY INCREASING LINEARLY WITH DEPTH)  
 SHALLOW FOOTINGS  $D \leq B$

FOR  $B \leq 20$  FT:

$$\Delta H_i = \frac{4 q B^2}{K_{vi} (B+1)^2}$$

FOR  $B \geq 40$  FT:

$$\Delta H_i = \frac{2 q B^2}{K_{vi} (B+1)^2}$$

INTERPOLATE FOR INTERMEDIATE VALUES OF  $B$

DEEP FOUNDATION  $D \geq 5B$

FOR  $B \leq 20$  FT:

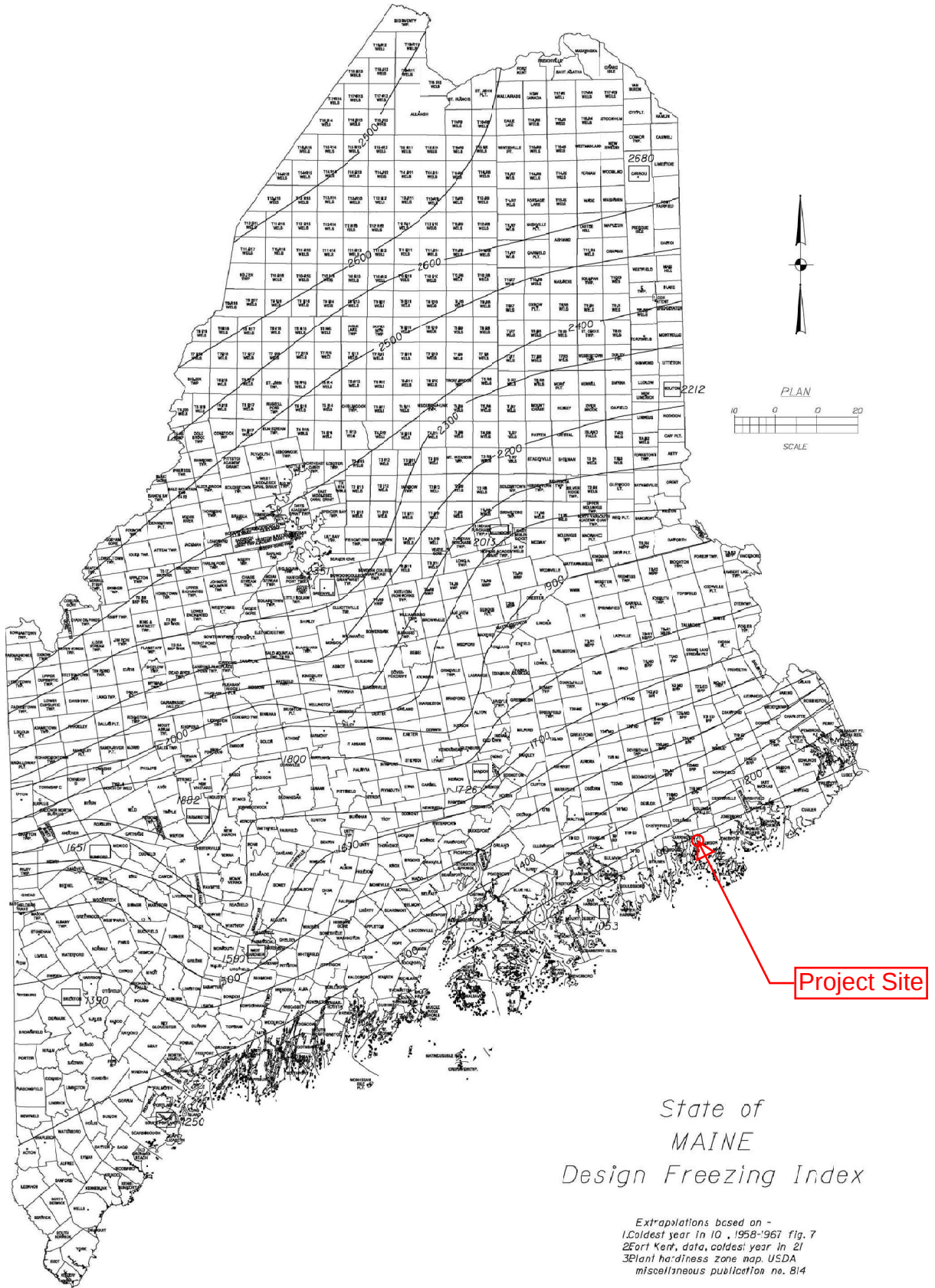
$$\Delta H_i = \frac{2 q B^2}{K_{vi} (B+1)^2}$$

NOTES: 1. NONPLASTIC SILT IS ANALYZED AS COARSE-GRAINED SOIL WITH MODULUS OF ELASTICITY INCREASING LINEARLY WITH DEPTH.

2. VALUES OF  $K_{vi}$  SHOWN FOR COARSE-GRAINED SOILS APPLY TO DRY OR MOIST MATERIAL WITH THE GROUNDWATER LEVEL AT A DEPTH OF AT LEAST  $1.5B$  BELOW BASE OF FOOTING. IF GROUNDWATER IS AT BASE OF FOOTING, USE  $K_{vi}/2$  IN COMPUTING SETTLEMENT

Figure 8-3: Modulus of Subgrade Reaction (NAVFAC, 1986a)

Figure 5-1 Maine Design Freezing Index Map



## 5.2 General

### 5.2.1 Frost

Any foundation placed on seasonally frozen soils must be embedded below the depth of frost penetration to provide adequate frost protection and to minimize the potential for freeze/thaw movements. Fine-grained soils with low cohesion tend to be most frost susceptible. Soils containing a high percentage of particles smaller than the No. 200 sieve also tend to promote frost penetration.

In order to estimate the depth of frost penetration at a site, Table 5-1 has been developed using the Modified Berggren equation and Figure 5-1 Maine Design Freezing Index Map. The use of Table 5-1 assumes site specific, uniform soil conditions where the Geotechnical Designer has evaluated subsurface conditions. Coarse-grained soils are defined as soils with sand as the major constituent. Fine-grained soils are those having silt and/or clay as the major constituent. If the make-up of the soil is not easily discerned, consult the Geotechnical Designer for assistance. In the event that specific site soil conditions vary, the depth of frost penetration should be calculated by the Geotechnical Designer.

**Table 5-1 Depth of Frost Penetration**

| Design Freezing Index | Frost Penetration (in) |       |       |              |       |       |
|-----------------------|------------------------|-------|-------|--------------|-------|-------|
|                       | Coarse Grained         |       |       | Fine Grained |       |       |
|                       | w=10%                  | w=20% | w=30% | w=10%        | w=20% | w=30% |
| 1000                  | 66.3                   | 55.0  | 47.5  | 47.1         | 40.7  | 36.9  |
| 1100                  | 69.8                   | 57.8  | 49.8  | 49.6         | 42.7  | 38.7  |
| 1200                  | 73.1                   | 60.4  | 52.0  | 51.9         | 44.7  | 40.5  |
| 1300                  | 76.3                   | 63.0  | 54.3  | 54.2         | 46.6  | 42.2  |
| 1400                  | 79.2                   | 65.5  | 56.4  | 56.3         | 48.5  | 43.9  |
| 1500                  | 82.1                   | 67.9  | 58.4  | 58.3         | 50.2  | 45.4  |
| 1600                  | 84.8                   | 70.2  | 60.3  | 60.2         | 51.9  | 46.9  |
| 1700                  | 87.5                   | 72.4  | 62.2  | 62.2         | 53.5  | 48.4  |
| 1800                  | 90.1                   | 74.5  | 64.0  | 64.0         | 55.1  | 49.8  |
| 1900                  | 92.6                   | 76.6  | 65.7  | 65.8         | 56.7  | 51.1  |
| 2000                  | 95.1                   | 78.7  | 67.5  | 67.6         | 58.2  | 52.5  |
| 2100                  | 97.6                   | 80.7  | 69.2  | 69.3         | 59.7  | 53.8  |
| 2200                  | 100.0                  | 82.6  | 70.8  | 71.0         | 61.1  | 55.1  |
| 2300                  | 102.3                  | 84.5  | 72.4  | 72.7         | 62.5  | 56.4  |
| 2400                  | 104.6                  | 86.4  | 74.0  | 74.3         | 63.9  | 57.6  |
| 2500                  | 106.9                  | 88.2  | 75.6  | 75.9         | 65.2  | 58.8  |
| 2600                  | 109.1                  | 89.9  | 77.1  | 77.5         | 66.5  | 60.0  |

- Notes:
1.  $w$  = water content
  2. Where the Freezing Index and/or water content is between the presented values, linear interpretation may be used to determine the frost penetration.

**Estimated Frost Penetration Depth**

Based on MaineDOT Bridge Design Guide Section 5.2.1

Site Location: Addison, Maine

Soil Conditions: Silty Clay (CL) (Marine Clay)  
(Fine Grained)

**Step 1.** From Figure 5-1: Design Freezing Index =  $\pm 1100$  freezing degree-days

**Step 2.** From laboratory test results:  
range of soil water contents: 9.9 to 63.8%  
**USE** WC = 15%

**Step 3.** From Table 5-1: Interpolate frost penetration for  $w = 15\%$

$$w := 15$$

$$w_{10} := 10 \quad d_1 := 49.6 \text{ in}$$

$$w_{20} := 20 \quad d_2 := 42.7 \text{ in}$$

$$d_{frost} := d_1 + (d_2 - d_1) \cdot \left( \frac{w - w_{10}}{w_{20} - w_{10}} \right)$$

$$d_{frost} = 46.2 \text{ in}$$

$$d_{frost} = 3.8 \text{ ft}$$

## **APPENDIX G**

### **Special Provisions**

SPECIAL PROVISION  
SECTION 203  
EXCAVATION AND EMBANKMENT  
(Culvert Bedding Stone)

Description This work shall consist of constructing a foundation pad of Culvert Bedding Stone in accordance with these specifications and in reasonably close conformity with the width, length, grade and thickness shown on the Plans or established by the Resident.

Materials Culvert Bedding Stone shall meet the requirements of Standard Specification Section 703.22, Underdrain Backfill Material, Type C.

Construction Requirements The Culvert Bedding Stone shall be placed and graded as shown on the Plans or as directed by the Resident, and shall be compacted as required to ensure that all voids in the stone are filled, as approved by the Resident.

Method of Measurement Culvert Bedding Stone will be measured by the cubic yard, complete, in place.

Basis of Payment The accepted quantity of Culvert Bedding Stone will be paid for at the Contract unit price per cubic yard, complete, in place.

Payment will be made under:

| <u>Pay Item</u>              | <u>Pay Unit</u> |
|------------------------------|-----------------|
| 203.55 Culvert Bedding Stone | Cubic Yards     |

SPECIAL PROVISION  
SECTION 203  
EXCAVATION AND EMBANKMENT  
(Ultra-Lightweight Foamed Glass Aggregate)

203.01 Description

The following is added to Subsection 203.01 of the Standard Specifications:

The work shall consist of furnishing all labor, equipment and materials, including supplying the Ultra-Lightweight Foamed Glass Aggregate (ULFGA), and performing all operations required to install ULFGA fill to the limits shown on the Plans or as approved by the Resident (for the work of this section the term Resident will include the Geotechnical Engineer). All work performed under this Special Provision shall be coordinated with the Resident. The work shall include complete encapsulation of the ULFGA from surrounding materials using a separation geotextile and as outlined herein, including:

1. Separating pavement subbase materials (above) from the ULFGA.
2. Separating the soils present at embankment subgrade (below) from the ULFGA.
3. Separating the fill materials or underdrain material alongside the ULFGA section from the ULFGA

The Contractor shall furnish all labor, materials, equipment, tools, and appurtenances required to complete the Work specified in this Section, including:

1. Preparation of subgrade.
2. Storage and handling of ULFGA.
3. Protection of all existing utilities and structures.
4. Placement and compaction of ULFGA fill to the limits shown on the Plans.
5. Placement of separation geotextile as specified herein and to the limits shown on the Plans.
6. Protection of placed ULFGA from damage or disturbance.

203.02 Materials

The following is added to Subsection 203.02 of the Standard Specifications:

The Contractor shall supply and install ULFGA fills that conforms to the following requirements:

1. ULFGA shall be made from a minimum of 95% recycled glass.
2. ULFGA shall meet the gradation specifications presented below upon delivery per when tested in accordance with ASTM C136/136M-19 (AASHTO T27-23).

| Sieve Designation | Percentage by Weight Passing<br>Square Mesh Sieve |
|-------------------|---------------------------------------------------|
| 4-in.             | 100                                               |
| 2 ½-in.           | 85-100                                            |
| 3/8-in.           | 0-15                                              |

3. The as-manufactured ULFGA shall have a maximum dry bulk density of 15 pounds per cubic foot (pcf) per ASTM C29/29M-17a. The as-delivered ULFGA shall have a maximum compacted moist bulk density of 20 pcf per ASTM C29/29M-17a.
4. The manufacturing process shall produce a closed cell ULFGA material, which is non-leaching. The ULFGA material shall be manufactured using either a dry-process or wet-process provided it meets the requirements specified herein.
5. The ULFGA shall have a minimum peak friction angle of 35 degrees at 10% to 15% strain for normal stresses between 500 and 1,000 psf per ASTM D3080-23. ASTM D3080-23 testing shall be completed using a large-scale direct shear device (LSDS) where ULFGA samples shall be prepared using the parallel gradation approach. Refer to FHWA Publication No.: FHWA-HRT-13-068 (<https://highways.dot.gov/media/1651>) pertaining to Friction Angles of Open-Graded Aggregates From Large-Scale Direct Shear Testing for information on LSDS testing. Refer to Ooi, P. and Selvarajah, P. (2010). Use of the Parallel Gradation Technique to Assess the Shear Strength of Reclaimed Asphalt Pavement in Direct Shear. Proceedings of the International Conference on the Built Environment (ICSBE-2010), pp. 219-226. for information on the parallel gradation approach.
6. The ULFGA shall have a compressive minimum strength at 20 percent strain of 15,000 psf per modified EN-1097 (no precompression of material).
7. The ULFGA (subjected to precompression at a 1.3:1 ratio) shall have minimum compressive strengths per ISO 29469:2022 according to table below.

| Deformation | Minimum Compressive Strength (psf) |
|-------------|------------------------------------|
| 1%          | 18,000                             |
| 5%          | 20,000                             |
| 10%         | 24,000                             |

8. The ULFGA manufacturer must demonstrate experience of manufacturing a minimum of 100,000 cubic yards of ULFGA meeting the requirements of this Section.

Geotextile fabric shall be completely encapsulate the placed ULFGA and separate if from adjacent prepared subgrades below, topsoil/fill on embankment slopes, and granular fills on top.

The geotextile fabric shall be a non-woven, stable fiber, needle-punched, polypropylene geotextile with a minimum grab tensile strength of 160 lbs per ASTM D4632 and shall meet the requirements of Subsection 722.04 for Separation Geotextile.

### 203.021 Submittals

The following subsection is added to Standard Specification 203:

The Contractor shall submit an Installation Plan to the Resident for approval a minimum of 30 calendar days prior to the first scheduled delivery of ULFGA material to the site. The Installation Plan shall include but may not be limited to the following:

1. The name and address of the ULFGA supplier(s).
2. Manufacturer's specifications, catalog cut sheets, laboratory testing results, and other product data needed to demonstrate compliance with the requirements specified herein.
3. Written certification from manufacturer's quality control testing laboratory indicating that the product meets or exceeds the gradation, strength, compacted unit weight, and internal friction angle requirements specified herein. The laboratory test results shall be completed within 60 calendar days of submitting the Installation Plan to the Resident.

The Contractor shall submit additional laboratory testing results to the Resident for each 1000 cy delivered to the site, prior to delivery of the ULFGA material to the site.

4. Two (2) bulk samples of ULFGA.
5. Proposed means of delivery to the site and stockpiling (if proposed).
6. Proposed equipment specifications and procedures for placing separation geotextile and placing and compacting ULFGA.
7. Proposed plan for protecting exposed ULFGA.
8. Proposed methods of controlling buoyancy of the ULFGA during construction, including but not limited to, the use of dewatering or keeping the ULFGA weighted with ballast, so that compaction is not negatively impacted during tidal inundation.
9. Proposed test strip dimensions and equipment for open area compaction as specified.
10. Description of methodology to provide a continuous ULFGA fill layer in accordance with the Plans considering phased bridge and embankment construction.
11. Description of the type, size, and ground pressure limitations of all equipment intended for compaction operations.

The Installation Plan shall meet, at a minimum, the ULFGA Installation requirements described in Section 203.04 of this Special Provision. If portions of the ULFGA manufacturer's recommendation for installation are more strict than the requirements described herein, the relevant manufacturer's recommendations shall be included in the Installation Plan for review and acceptance by the Resident.

### 203.04 General

The following is added to Subsection 203.04 of the Standard Specifications: ULFGA

### Product Delivery, Storage and Handling

1. Deliver, store, and handle materials in accordance with manufacturer's recommendations.
2. During all stages of manufacture, shipment, storage, and construction, the Contractor shall minimize the amount that the ULFGA material moves on site to prevent physical damage. Construction equipment other than for placement and compaction of ULFGA shall not operate on the exposed ULFGA surface until a geotextile and a minimum 12-in. thickness of aggregate subbase material (i.e., cover material) is placed over the ULFGA. The cover material shall be placed and compacted within 48 hours of placing and compacting the final lift(s) of ULFGA in an area. Until that time, operation of construction equipment directly on the ULFGA shall be limited to light-duty equipment with rubber tires.
3. During delivery, storage and handling, the Contractor shall not contaminate the ULFGA with earth material or any other debris or aggregate materials.
4. The Contractor shall protect the ULFGA before, during, and after construction as recommended by the material manufacturer.

### ULFGA Installation

1. The Contractor shall provide a minimum of five (5) working days' notice to the Resident prior to the placement of any ULFGA fill.
2. The Contractor shall place the ULFGA fill in dry conditions.
3. The Contractor shall place the ULFGA fill to the plan and vertical limits shown on the Plans. Preparation of the subgrade shall include excavation with a smooth-edged bucket to minimize disturbance of the subgrade materials.
4. If deemed necessary by the Resident, the Contractor shall proof compact soil subgrades prior to placement of ULFGA fill to the satisfaction of the Resident at no additional cost to the Department.
5. Compaction shall be performed in the presence of the Resident who will observe performance of the selected equipment and compactive effort and will modify requirements for the number of passes and lift thickness stated herein if needed for specific compaction equipment.
6. The areas to be filled using ULFGA shall not have standing water, ice, organic or otherwise unsuitable materials present prior to placement. If unsuitable materials are encountered, as determined by the Contractor or the Resident, the Contractor shall excavate these materials and replace them with compacted fill meeting the requirements of Subsection 703.18 Common Borrow.
7. Adjacent panels of geotextile used for separation of ULFGA from surrounding materials shall be either sewn together or overlapped a minimum of 12 inches. The Contractor shall not place geotextile fabric until the subgrades have been inspected and approved by the Resident.

8. To limit possible degradation, the geotextile shall not be exposed to the elements for more than 14 days after placement.
9. Care shall be taken during placement of topsoil/loam on embankment side slopes and aggregate fills above the ULFGA to prevent damage to ULFGA. A minimum of 6-inches of compacted materials shall be placed above ULFGA in areas where concrete structures, roadway materials, or riprap are to be installed, unless additional thickness is required per the Contract Plans,
10. The Contractor shall prevent submergence of compacted ULFGA until the material is ballasted in its final position by overlying layers, as shown on the contract documents. Previously placed material which shifts due to buoyancy forces shall be removed and recompacted in lifts.
11. ULFGA may be dumped and spread in place. Construction equipment other than for placement and compaction shall not operate on the exposed ULFGA. If equipment is anticipated to travel or be positioned over exposed material, the Contractor shall bridge the exposed material using either 12 inches of capping materials (e.g., fill), crane mats, or similar materials.
12. In open areas, ULFGA fill shall be placed using tracked equipment (excavator and dozer) in uncompacted lifts not less than 12 inches and not exceeding 24 inches in loose thickness.
13. Compaction in open areas shall be performed with a pneumatic rubber tired static roller with maximum ground pressures not exceeding 1,100 psf. Sufficient compaction has been achieved when, in the judgment of the Resident, the material ceases to densify further with additional passes of the roller. Excessive compaction shall be avoided to minimize crushing of the ULFGA particles.
14. In areas not accessible by larger equipment (e.g., adjacent to bridge abutments and wingwalls, near utilities, etc.), ULFGA fill shall be placed using smaller tracked equipment in uncompacted lifts not less than 6 inches and exceeding 12 inches in loose thickness.
15. Compaction in these areas shall be performed using a small vibratory plate compactor with a maximum operating weight of 250 lbs. Sufficient compaction has been achieved when, in the judgement of the Resident, the material ceases to densify further with additional passes of the plate compactor. Excessive compaction shall be avoided to minimize crushing of the ULFGA particles.
16. A test strip is required for the compaction methods specified herein and for Contractor-proposed alternative compaction methods for open areas prior to full production placement of the ULFGA. This test strip area will be used to determine lift thickness based on the Contractor's chosen equipment for placement and the number of passes required to achieve the desired compaction without degrading the ULFGA material. The desired compaction is defined as a compression ratio of 1.3:1 for ULFGA manufactured using either the dry-process or wet-process. The test strip shall have a minimum area of 10 times the contact area of the proposed equipment tracks or plate compactor plate area. The test strip shall be completed within the onsite footprint of the finished ULFGA placement. The test strip placement and compaction will be observed and approved by the Resident and the Engineer of Record. Notification shall be made at least 5 business days before the compaction test strip is

- planned to be completed. If the Contractor chooses to change equipment type or installation method, a new test strip will need to be completed prior to full production placement.
17. Permanent foundations for guard rail or drilled shafts that are installed within an area where ULFGA is specified shall have a minimum of 1-foot thickness below the base and a minimum of 2-feet around the perimeter of compacted Granular Borrow (703.19).
  18. Where temporary support poles for lighting, traffic signals, or sign supports are to be installed within ULFGA, the portion of the pole embedded in ULFGA shall be cased. The casing shall be a minimum 30 inch inside diameter, corrugated plastic pipe installed vertically and extend to the top of temporary grade. ULFGA shall be compacted around the perimeter of the corrugated plastic pipe in lifts per this special provision. The temporary support poles shall be installed within the corrugated plastic pipe such that the annular space can be backfilled with Backfill Type C (703.22) and compacted by rodding. Upon removal of the temporary pole, the CPP casing shall remain in place and the perimeter ULFGA. The void within the casing following removal of the pole shall be filled with compacted ULFGA.
  19. Where back-guys and anchors are required for temporary support poles, back-guy anchors shall not be installed through, or founded in, ULFGA.

#### ULFGA Testing

1. The Contractor shall measure the compacted bulk density at the site per the requirements of ASTM C29/29M-17a and shall submit documentation of the results to the Resident. A minimum of one (1) test shall be performed for every 1000 cubic yards of ULFGA delivered to the site. All bulk density testing shall be performed in the presence of the Resident.
2. The Resident shall visually observe compaction of each lift of ULFGA for sufficient compaction. The Contractor shall not place additional lifts of ULFGA until the previous lift has been inspected and approved by the Resident.
3. Compaction shall be performed in the presence of the Resident who will observe performance of the selected equipment and the compactive effort, and establish requirements for the number of passes, and lift thickness for each piece of specific compaction equipment that the Contractor intends to use.

#### 203.18 Method of Measurement

The following is added to Subsection 203.18 of the Standard Specifications:

Lightweight Fill (ULFGA) will be measured by the Cubic Yard in place to the limits shown on the Plans.

203.19 Basis of Payment

The following subsection is added to Section 203 of the Standard Specifications:

Lightweight Fill (ULFGA) will be paid for at the contract unit price per in place Cubic Yard, which shall be full compensation for all labor, materials, equipment, and incidentals required to supply, deliver, protect, place, and compact the ULFGA, including separation geotextile and temporary pole casing and backfill as described herein and shown on the Plans, and the creation of an Installation Plan. Removal and replacement of ULFGA material that has been damaged by the Contractor, in the opinion of the Resident, shall be incidental to the work, as directed by the Resident. No additional compensation shall be provided for separation geotextile, or corrugated plastic pipe and Backfill Type C (703.22) for temporary poles.

Payment will be made under:

| <u>Pay Item</u>                                                      | <u>Pay Unit</u> |
|----------------------------------------------------------------------|-----------------|
| 203.4338 Lightweight Fill – Ultra-Lightweight Foamed Glass Aggregate | Cubic Yard      |