# ALABAMA DEPARTMENT OF TRANSPORTATION

1409 Coliseum Boulevard, Montgomery, Alabama 36110

## Bureau of Materials and Tests

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*Kay Ivey*
*Governor*

*John R. Cooper*
*Transportation Director*


January 16, 2018

**MEMORANDUM**

TO: Mr. Matt Ericksen, P.E.
Mobile River Bridge Director

FROM: Ms. Kaye Chancellor Davis, P.E. AKCD
Geotechnical Engineer

RE: Project No. DPI-0030 (005)
I-10 Mobile River Bridge
Mobile County

Attached please find the Subsurface Data Report for the High Level Approach for the above referenced project as produced by Thompson Engineering. Geotechnical Section has reviewed the attached report and agrees with the recommendations contained therein. Should you have any questions, please feel free to contact this office.

AKCD:amb
Attachment

C: Project File
File

# REPORT OF GEOTECHNICAL CONSULTING SERVICES

GEOTECHNICAL SUBSURFACE DATA REPORT

I-10 Mobile River Bridge – High Level Approaches

Mobile County, Alabama

ALDOT PE Project No.: DPI-0030(005)

Thompson Engineering Project No.: 17-1101-0145

January 16, 2018

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January 16, 2018

Mr. Scott W. George, P.E.
Materials and Test Engineer
**Alabama Department of Transportation**
**Bureau of Materials and Test**
3700 Fairgrounds Road
Montgomery, Alabama 36130

Attention: **Kaye Chancellor Davis, P.E.**
**ALDOT Geotechnical Engineer**

Subject: **Report of Geotechnical Consulting Services**
Subsurface Data Report
I-10 Mobile River Bridge – High Level Approaches
ALDOT PE Project No.: DPI-0030(005)
Mobile, Mobile County, Alabama
Thompson Project No. 17-1101-0145

Dear Ms. Davis:

Thompson Engineering is pleased to transmit this geotechnical subsurface data report for the project referenced above. This submittal summarizes the field exploration and laboratory testing results for the referenced design build operate and maintain project. Our services were performed in accordance with the Thompson Fee Proposals dated September 9, 2015, April 5, 2016 and February 16, 2017.

We appreciate the opportunity to assist the Alabama Department of Transportation with project-related geotechnical matters. Please do not hesitate to contact our office with any questions concerning this submittal.

Respectfully submitted,

**THOMPSON ENGINEERING, INC.**

Michael Davis, Jr. E.I.
Geotechnical Engineering Associate II

Sam Sternberg III, P.E.
Senior Geotechnical Engineer

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## 1.0 SCOPE OF SERVICES

Thompson Engineering (Thompson) has completed the field exploration and laboratory testing for the High Level Approaches in support of the overall Mobile River Bridge (MRB) located in Mobile and Baldwin Counties, Alabama. This scope of work was performed in general accordance with the contracted scope of services between the Alabama Department of Transportation (ALDOT) and Thompson, dated August 4, 2017.

## 2.0 PROJECT DESCRIPTION

The project is located along interstate I-10 in Mobile County, Alabama. The scope of services included borings for the east and western high level approaches which connect to the Main Bridge Span Unit in support of the design build or design build operate and maintain (DBFOM) delivery method. The overall intent was to provide subsurface information to the prospective teams in an effort to reduce the risk and unknowns associated with the subsurface conditions.

## 3.0 SUBSURFACE EXPLORATION PROGRAM

Thompson geotechnical drilling crews performed soil test borings and sampling operations at the approximate locations shown on the appended Boring Location Plan in **Appendix A**. Boring locations which were offset/deleted are presented below in **Table 1**.

**Table 1: Offset/Deleted Borings**

| Boring | Status | Reason |
|---|---|---|
| HLA-3 | Offset | Encountered, most likely, an old utility trench and lost drilling mud circulation at 15 feet. |
| HLA-10 | Offset | Boring continued to cave in at 20 feet and drilling mud circulation was lost. |
| HLA-11 | Deleted | Property owner denied access. |
| HLA-18 | Offset | Encountered hard concrete or asphalt layer. See notes on boring logs. |
| WHLA-2 | Deleted | Property owner denied access. |

A Diedrich D50 track mounted drill rig, CME 45C trailer mounted drill rig and CME 550X All-Terrain Vehicle (ATV) drilling rigs, equipped with automatic penetration test hammers, were utilized to advance the borings using hollow stem auger and mud rotary drilling techniques. The hammer energy reports for the automatic SPT hammers on the drill rigs are attached in **Appendix D** of this report. Drilling and field operations took place between April 27, 2016 and October 30, 2017.

Borings were drilled to depths up to 250 feet below the existing ground surface as shown on the attached Record of Test Borings in **Appendix B**. Borings were surveyed by Thompson Survey crews upon completion.

Brief descriptions of the testing protocols are presented below.

### 3.1 Standard Penetration Test (SPT) Borings

The SPT borings were performed in general accordance with AASHTO T-206 guidelines. Recovered samples were examined and visually classified in the field or the geotechnical laboratory by a geologist or engineer. Samples were returned to Thompson's geotechnical laboratory for additional testing. The results of the classification and stratification are shown on the appended Record of Test Borings. Weight of Rod (WOR) and Weight of Hammer (WOH) "N" blow counts were noted as a zero (0) on the attached boring logs.

Samples obtained for corrosion tests were immediately placed in sealed containers and placed on ice for transport to the testing facility.

### 3.2 Undisturbed Soil Sampling

Undisturbed soil specimens were recovered utilizing thin-wall "Shelby" tube sampling equipment at select depths within soft to firm cohesive soil zones. Undisturbed samples were collected per AASHTO T-207. The recovered soil samples were sealed and transported to Thompson's geotechnical laboratory.

### 3.3 Cone Penetration Tests

The cone penetration test was carried out using an integrated electronic piezocone (CPTU). The cone reaction system consisted of a 20-ton tracked-rig. The cone was advanced to termination depths at a rate of 2 cm/s. Tip resistance (qc), sleeve friction (fs), and dynamic pore pressure measurements (u2) were recorded every 5 centimeters (2 inches). Testing was performed in general accordance with the methods and procedures described in ASTM Specification D5778-07. Samples are not recovered with the cone penetration test.

The results of the soundings are shown on the CPT log, presented in **Appendix B**. The corrected tip resistance (Qt) is the recorded tip resistance (Qc) which has been corrected to account for the pore water pressures acting on unequal tip areas of the cone.

## 4.0 LABORATORY TESTING

Samples selected for laboratory testing were assigned by Thompson. **Table 2** provides a quantitative summary of the lab tests performed.

| Table 2: Laboratory Testing Summary | |
|---|---|
| **Test Type** | **Quantity** |
| Atterberg Limits | 403 |
| Full Sieve Analysis | 375 |
| #200 Sieve Analysis | 9 |
| Hydrometer Analysis | 20 |
| Consolidation | 6 |
| Unconsolidated Undrained (U.U.) Triaxial Shear Tests | 51 |
| Consolidated Undrained (C.U.) Triaxial Shear Tests | 4 |
| Direct Shear Test | 4 |
| pH | 8 |
| Resistivity | 6 |
| Total Sulfates | 8 |
| Total Chlorides | 8 |

A laboratory test summary table, BMT-5 sheets, and individual test results are included in **Appendix C**.

### 4.1 Electrochemical Testing Summary

Electrochemical series soil tests (total chlorides, total sulfates, resistivity and pH) were performed on select samples obtained from borings MB-1 and MB-02A. The following soil limit conditions for corrosive environments for steel piles have been provided by ALDOT and FHWA.

ALDOT:

- Resistivity less than 3,000 ohm-cm
- pH less than 5 or greater than 10
- Chlorides greater than 50 ppm
- Sulfates greater than 100 ppm

FHWA *(Publication NHI-16-009):*

- Resistivity less than 2,000 ohm-cm
- pH less than 4.5
- Resistivity is between 2,000 and 5,000 ohms-cm and chlorides are greater than 100 ppm or sulfate greater than 200 ppm

The electrochemical test results are summarized in **Table 3** below.

**Table 3: Summary of Electrochemical Test Results**

| Boring No. | Sample No./ Depth(ft.) | pH[1] | Chlorides (ppm)[2] | Sulfates (ppm)[3] | Resistivity (ohms-cm)[4] | ALDOT Classification | FHWA Classification |
|---|---|---|---|---|---|---|---|
| WHLA-3 *(identified as MHLA-3 in Test America Report, Appendix C* | S-1A / 3.0-5.0 | 7.2 | <25 | <25 | 5,000 | Non-Aggressive | Non-Aggressive |
| | S-1B / 5.0-7.0 | 8.1 | <23 | <23 | 5,900 | Non-Aggressive | Non-Aggressive |
| | S-2A / 8.0-10.0 | 7.7 | <24 | <24 | 4,900 | Non-Aggressive | Non-Aggressive |
| | S-2B / 10.0-12.0 | 6.8 | <25 | <25 | 4,900 | Non-Aggressive | Non-Aggressive |
| | S-3A / 18.0-20.0 | 7.2 | <24 | <24 | 8,850[5] | Non-Aggressive | Non-Aggressive |
| | S-3B / 20.0-22.0 | 7.2 | <24 | 31 | | Non-Aggressive | Non-Aggressive |
| | S-4A / 28.0-30.0 | 8.2 | <24 | 42 | 7,200[5] | Non-Aggressive | Non-Aggressive |
| | S-4B / 30.0-32.0 | 8.3 | <23 | 33 | | Non-Aggressive | Non-Aggressive |

***Note:*** *(1) EPA Method 150.1(pH) performed.*
*(2) EPA Method 325.2 (chloride) performed.*
*(3) Standard Methods for the Examination of Water and Waste Water Method 4500-SO4E (sulfate) performed equivalent to EPA Method 375.4.*
*(4) AASHTO T288 Method (Resistivity) performed.*
*(5) Samples were combined for resistivity testing.*

## 5.0 SUBSURFACE FINDINGS

While establishment of generalized subsurface conditions is useful for the geotechnical engineering evaluation process, such generalizations should be reviewed with caution as they promote extrapoloation of recovered data between soil test boring locations. The stratifications shown on the Soil Test Borings represent the conditions only at the actual boring locations. The actual transition between soil types may be more gradual than those depicted on the test boring log and between borings.

### 5.1 Groundwater Conditions

Groundwater measurements were taken immediately after borehole completion. Delayed measurements were obtained whenever possible. Fluctuations in groundwater depth measurements can be attributed to elevations and/or drilling techniques used in the field. Groundwater depth measurements are provided in **Table 4**.

| Table 4: Groundwater Depth Measurements | | | | | |
|---|---|---|---|---|---|
| **Boring** | **Completion of Boring (ft.)** | **Day 1 (ft.)** | **Day 2 (ft.)** | **Day 3 (ft.)** | **Comments/Additional GW Depth Measurements** |
| HLA-1 | 2.0 | 10.0 | 10.0 | 10.4 | |
| HLA-2 | 17.3 | Not Obtained | Not Obtained | Not Obtained | Interstate Boring |
| HLA-3A | 21.1 | Not Obtained | Not Obtained | Not Obtained | Interstate Boring |
| HLA-4 | Not Obtained | 18.3 | 18.4 | 18.5 | 15.2 ft. (41 days), 15.0 ft. (42 days), 14.9 ft.(43 days) |
| HLA-5 | Not Obtained | Not Obtained | Not Obtained | Not Obtained | Interstate Boring |
| HLA-6 | Not Obtained | 5.4 | 10.5 | 13.1 | |
| HLA-7 | Not Obtained | Not Obtained | Not Obtained | Not Obtained | Interstate Boring |
| HLA-8 | Not Obtained | Not Obtained | Not Obtained | Not Obtained | 14.7 ft.(35 days), 14.5 ft.(36 days), 14.4 ft.(37 days) |
| HLA-9 | 14.5 | Not Obtained | Not Obtained | Not Obtained | Interstate Boring |
| HLA-10A | 21.5 | 18.5 | 11.1 | 6.5 | |
| HLA-12 | 1.2 | 15.1 | 15.2 | 15.2 | |
| HLA-13 | 8.2 | 7.8 | Not Obtained | Not Obtained | Austal Parking Lot |
| HLA-14 | 8.9 | 8.5 | Not Obtained | Not Obtained | Austal Parking Lot |
| HLA-15 | 7.2 | 7.3 | Not Obtained | Not Obtained | Austal Parking Lot |
| HLA-16 | 5.8 | 3.4 | 3.3 | 3.2 | |
| HLA-17 | 2.3 | 2.0 | Not Obtained | Not Obtained | |
| HLA-18 | 3 | 1.7 | Not Obtained | Not Obtained | |
| HLA-19 | 4 | Not Obtained | Not Obtained | Not Obtained | |
| HLA-20 | 4.2 | 2.4 | Not Obtained | Not Obtained | |
| HLA-21 | 3.1 | 3.3 | Not Obtained | Not Obtained | |
| WHLA-1 | Not Obtained | Not Obtained | Not Obtained | Not Obtained | Active Mechanic Yard |
| WHLA-3 | 6.0 | Not Obtained | Not Obtained | Not Obtained | |

Fluctuations of the groundwater level on this project may be expected to occur seasonally as a result of rainfall, surface runoff, tidal issues, and immediate area construction activities.

## 6.0 REPORT LIMITATIONS

This Geotechnical Subsurface Data Report has been prepared for the exlusive use of ALDOT for the specific project discussed herein. This Geotechnical Subsurface Data Report has been prepared in accordance with generally accepted local geotechnical engineering practices; no other warranty is expressed or implied. The recovered samples were not examined, either visually or analytically, for chemical composition or environmental hazards.

The observations from field sample recovery, laboratory examination of samples and testing, and computed data analysis, which are presented in this data report, should be considered preliminary investigation and are subject to change upon the acquisition of additional data during the final investigation for the final design. Additional subsurface exploration including borings and laboratory testing for the purposes of evaluating cut slopes, embankment slopes, embankment settlements, retaining walls and bridge foundation types and capacities will be required for final design and applicable to the specific final design layout. The Geotechnical Engineer of Record for the project must review the data submitted in this report and develop their own interpretation of the testing results as they apply to design.

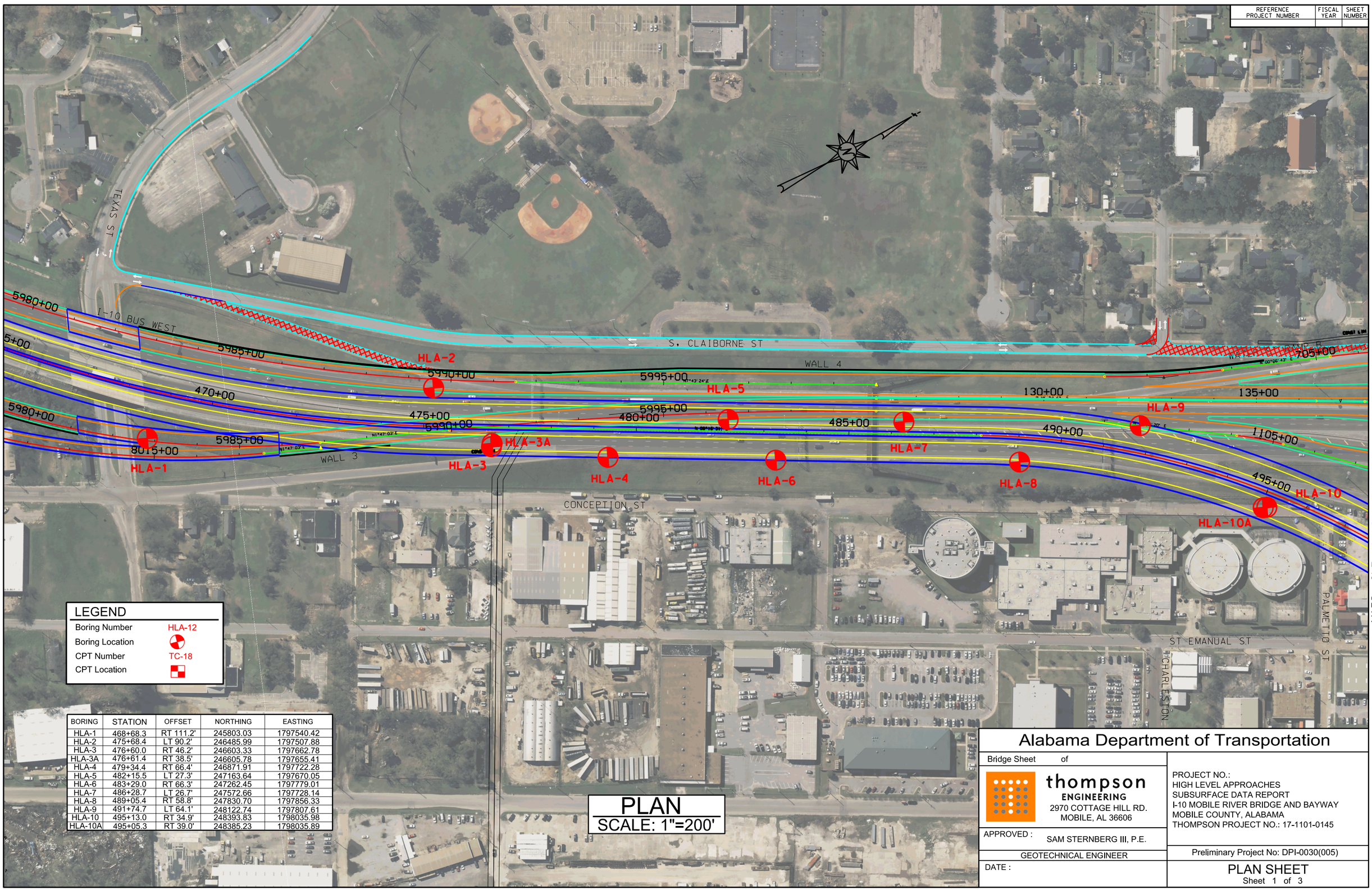
## 7.0 REFERENCES

Hannigan, P.J., Rausche, F., Likins, G., Robinson, B.R., and Becker, M. (2016). Geotechnical Engineering Circular No. 12 – Vol. 1: Design and Construction of Driven Pile Foundations. FHWA-NHI-16-009. National Highway Institute, Federal Highway Administration, Washington, D.C.

# APPENDIX A

- **Boring and CPT Sounding Location Plan**

| REFERENCE PROJECT NUMBER | FISCAL YEAR | SHEET NUMBER |
|---|---|---|
| | | |




## LEGEND

| | |
|---|---|
| Boring Number | HLA-12 |
| Boring Location | |
| CPT Number | TC-18 |
| CPT Location | |

| BORING | STATION | OFFSET | NORTHING | EASTING |
|---|---|---|---|---|
| HLA-1 | 468+68.3 | RT 111.2' | 245803.03 | 1797540.42 |
| HLA-2 | 475+68.4 | LT 90.2' | 246485.99 | 1797507.88 |
| HLA-3 | 476+60.0 | RT 46.2' | 246603.33 | 1797662.78 |
| HLA-3A | 476+61.4 | RT 38.5' | 246605.78 | 1797655.41 |
| HLA-4 | 479+34.4 | RT 66.4' | 246871.91 | 1797722.28 |
| HLA-5 | 482+15.5 | LT 27.3' | 247163.64 | 1797670.05 |
| HLA-6 | 483+29.0 | RT 66.3' | 247262.45 | 1797779.01 |
| HLA-7 | 486+28.7 | LT 26.7' | 247572.66 | 1797728.14 |
| HLA-8 | 489+05.4 | RT 58.8' | 247830.70 | 1797856.33 |
| HLA-9 | 491+74.7 | LT 64.1' | 248122.74 | 1797807.61 |
| HLA-10 | 495+13.0 | RT 34.9' | 248393.83 | 1798035.98 |
| HLA-10A | 495+05.3 | RT 39.0' | 248385.23 | 1798035.89 |

# PLAN
SCALE: 1"=200'

## Alabama Department of Transportation

Bridge Sheet of

thompson ENGINEERING
2970 COTTAGE HILL RD.
MOBILE, AL 36606

APPROVED : SAM STERNBERG III, P.E.
GEOTECHNICAL ENGINEER

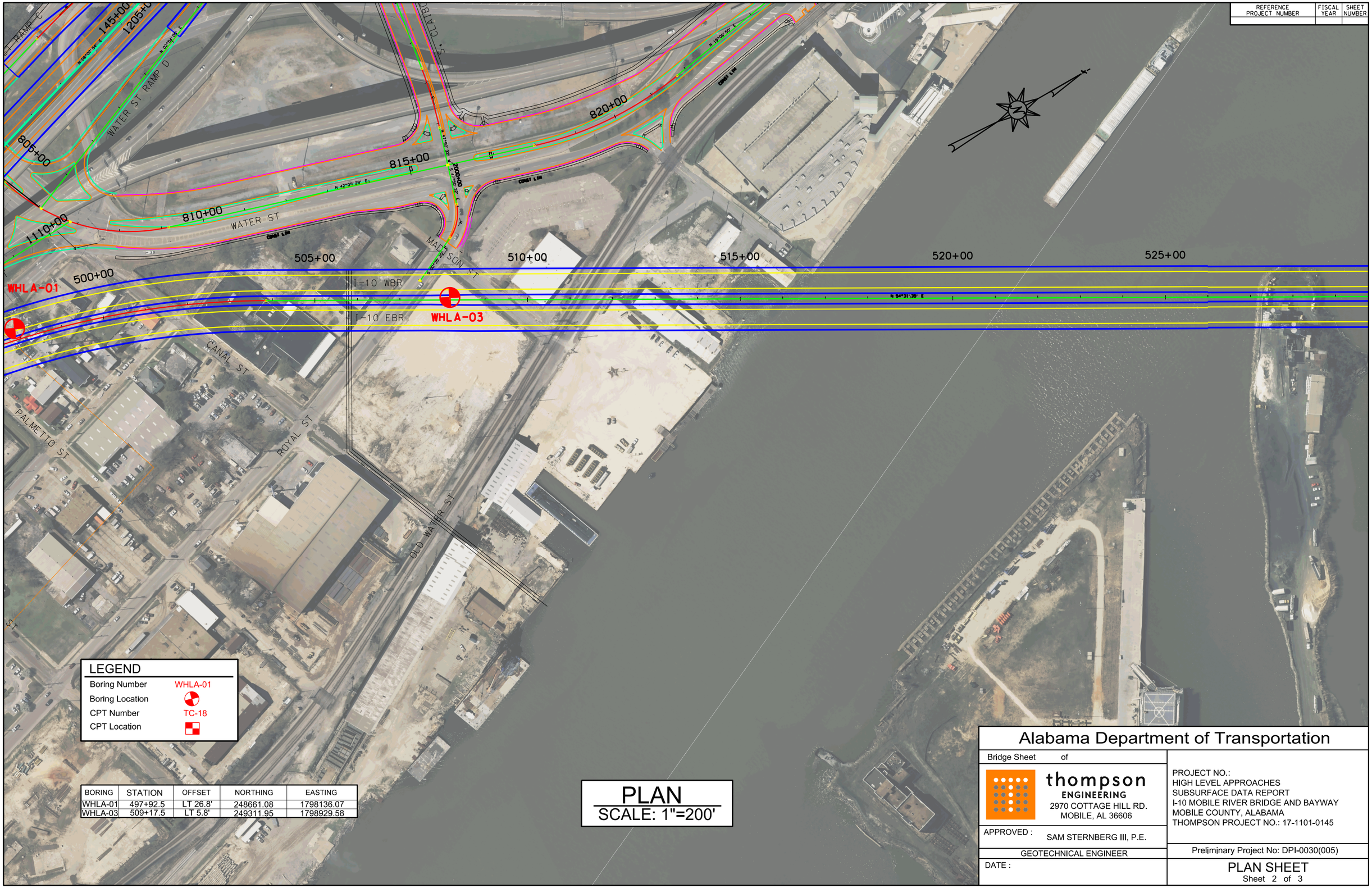
DATE :

PROJECT NO.:
HIGH LEVEL APPROACHES
SUBSURFACE DATA REPORT
I-10 MOBILE RIVER BRIDGE AND BAYWAY
MOBILE COUNTY, ALABAMA
THOMPSON PROJECT NO.: 17-1101-0145

Preliminary Project No: DPI-0030(005)

PLAN SHEET
Sheet 1 of 3

| REFERENCE PROJECT NUMBER | FISCAL YEAR | SHEET NUMBER |
|---|---|---|
| | | |




## LEGEND

| | |
|---|---|
| Boring Number | WHLA-01 |
| Boring Location | |
| CPT Number | TC-18 |
| CPT Location | |

| BORING | STATION | OFFSET | NORTHING | EASTING |
|---|---|---|---|---|
| WHLA-01 | 497+92.5 | LT 26.8' | 248661.08 | 1798136.07 |
| WHLA-03 | 509+17.5 | LT 5.8' | 249311.95 | 1798929.58 |

# PLAN
SCALE: 1"=200'

## Alabama Department of Transportation

Bridge Sheet of

thompson ENGINEERING
2970 COTTAGE HILL RD.
MOBILE, AL 36606

APPROVED : SAM STERNBERG III, P.E.

GEOTECHNICAL ENGINEER

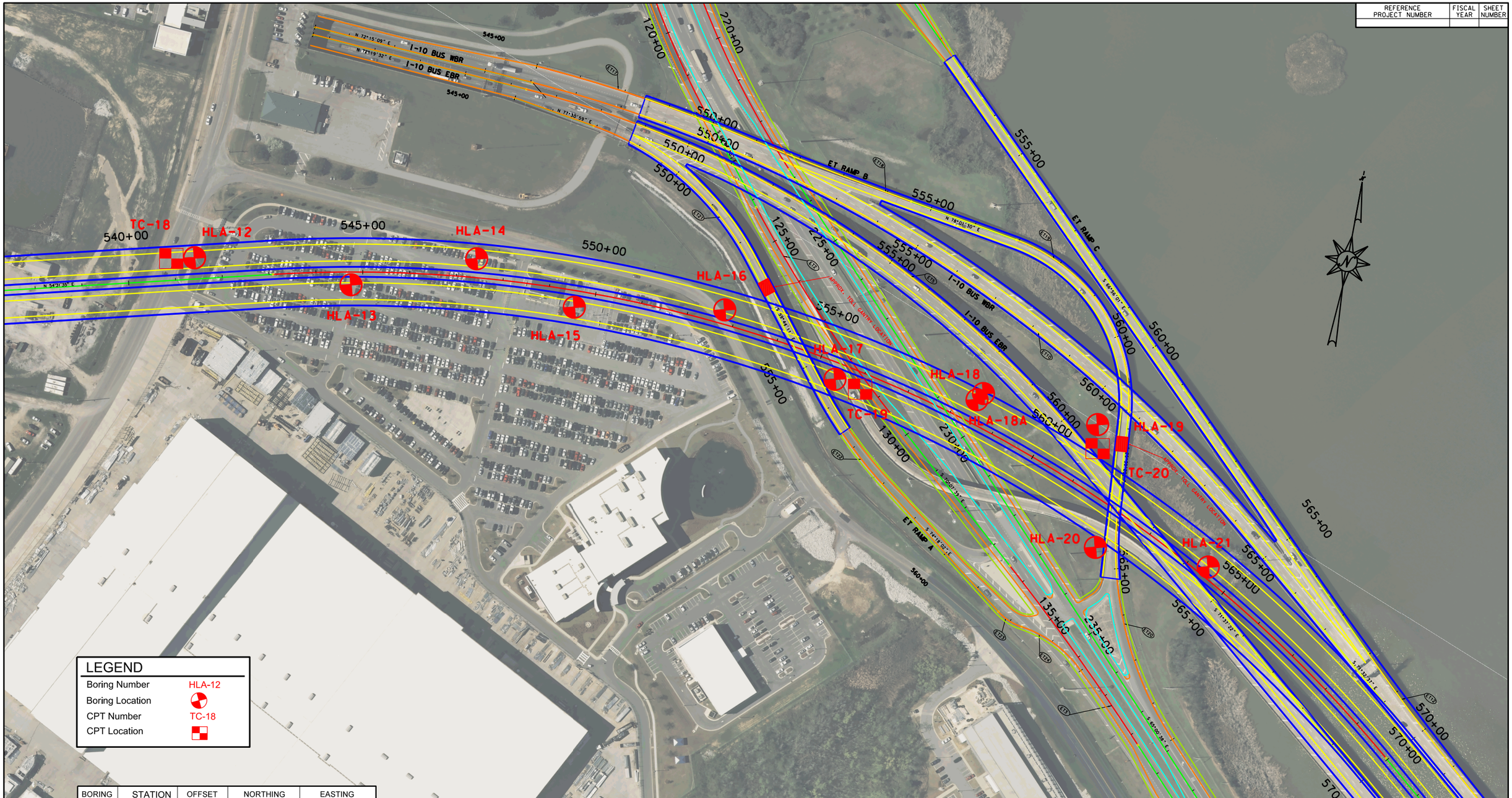
DATE :

PROJECT NO.:
HIGH LEVEL APPROACHES
SUBSURFACE DATA REPORT
I-10 MOBILE RIVER BRIDGE AND BAYWAY
MOBILE COUNTY, ALABAMA
THOMPSON PROJECT NO.: 17-1101-0145

Preliminary Project No: DPI-0030(005)

PLAN SHEET
Sheet 2 of 3

| REFERENCE PROJECT NUMBER | FISCAL YEAR | SHEET NUMBER |
|---|---|---|
| | | |




## LEGEND

| | |
|---|---|
| Boring Number | HLA-12 |
| Boring Location | |
| CPT Number | TC-18 |
| CPT Location | |

| BORING | STATION | OFFSET | NORTHING | EASTING |
|---|---|---|---|---|
| HLA-12 | 541+43.3 | LT 45.4' | 251274.32 | 1801615.13 |
| HLA-13 | 544+74.9 | RT 27.7' | 251402.66 | 1801928.72 |
| HLA-14 | 547+39.7 | LT 40.3' | 251591.94 | 1802126.53 |
| HLA-15 | 550+95.1 | RT 49.7' | 251614.75 | 1802395.84 |
| HLA-16 | 552+74.5 | LT 30.2' | 251780.48 | 1802633.22 |
| HLA-17 | 555+44.8 | RT 35.2' | 251779.57 | 1802911.00 |
| HLA-18 | 558+38.5 | LT 30.2' | 251903.56 | 1803191.20 |
| HLA-18A | 558+44.6 | LT 67.9' | 251921.98 | 1803195.88 |
| HLA-19 | 560+80.9 | LT 131.2' | 251995.07 | 1803437.58 |
| HLA-20 | 562+20.6 | RT 90.3' | 251770.26 | 1803572.60 |
| HLA-21 | 564+40.6 | LT 21.7' | 251862.58 | 1803798.97 |
| TC-18 | 541+43.3 | LT 45.1' | 251273.96 | 1801615.27 |
| TC-19 | 555+53.7 | RT 40.1' | 251776.40 | 1802920.52 |
| TC-20 | 560+88.8 | LT 127.6' | 251991.51 | 1803445.86 |

# PLAN
SCALE: 1"=200'

## Alabama Department of Transportation

Bridge Sheet of

thompson ENGINEERING
2970 COTTAGE HILL RD.
MOBILE, AL 36606

APPROVED : SAM STERNBERG III, P.E.

GEOTECHNICAL ENGINEER

DATE :

PROJECT NO.:
HIGH LEVEL APPROACHES
SUBSURFACE DATA REPORT
I-10 MOBILE RIVER BRIDGE AND BAYWAY
MOBILE COUNTY, ALABAMA
THOMPSON PROJECT NO.: 17-1101-0145

Preliminary Project No: DPI-0030(005)

PLAN SHEET
Sheet 3 of 3

# APPENDIX B

- **Records of Test Borings**
- **CPT Soundings**
- **Legend**

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-01 | **Boring Location:** | 468+68.3 | **Offset:** | RT 111.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C. Tisher |
| **Elev.:** | 13.1 ft. | **Northing:** | 245803.03 | **Easting:** | 1797540.42 | **Date Started:** | 9/10/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/14/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 45C | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 86% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 2.0 ft. | **Delayed:** | 10.0 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | | | | | | | | | |
| | 10.0 | Approximately 10 inches of topsoil. Medium dense, moist, dark brown, fine grained, with trace organics, SILTY SAND (SM) | | 0.0 | SS-1 | 2 | 5 | 10 | 15 |
| | | Medium dense, moist, reddish brown, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=8.6 %#200=25.8 | | 1.5 | SS-2 | 12 | 12 | 13 | 25 |
| 5.0 | | Medium dense, moist | | 3.0 | SS-3 | 3 | 7 | 6 | 13 |
| | | Medium dense | | 4.5 | SS-4 | 5 | 6 | 8 | 14 |
| | 5.0 | Loose, moist, tan, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=22.2 %#200=9.7 | | 6.0 | SS-5 | 3 | 3 | 3 | 6 |
| 10.0 | | Very loose, wet, reddish brown | | 8.5 | SS-6 | 2 | 1 | 2 | 3 |
| | 0.0 | | | 13.5 | SS-7 | 0 | 0 | 0 | 0 |
| 15.0 | | Very loose, moist, dark brown, fine grained, CLAYEY SAND (SC) | | | | | | | |
| | -5.0 | | | 18.5 | T-1 | | | | |
| 20.0 | | Undisturbed sample obtained from 18.5 to 20.5 feet. Approximately 24 inches of recovery. Medium dense, moist, pale brown, light gray and yellow, fine grained, CLAYEY SAND (SC, A-6(2)), LL=29 PL=17 PI=12 NMC=28.3 %#200=42.4 | | | | | | | |
| | -10.0 | | | 23.5 | SS-8 | 5 | 9 | 12 | 21 |
| 25.0 | | Medium dense, moist, tan and white, fine grained, POORLY GRADED SAND with SILT (SP-SM) | | | | | | | |
| | -15.0 | | | 28.5 | SS-9 | 4 | 3 | 7 | 10 |
| 30.0 | | Medium dense, moist, tan, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP | | | | | | | |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-01 | **Boring Location:** | 468+68.3 | **Offset:** | RT 111.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C. Tisher |
| **Elev.:** | 13.1 ft. | **Northing:** | 245803.03 | **Easting:** | 1797540.42 | **Date Started:** | 9/10/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/14/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 45C | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 86% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 2.0 ft. | **Delayed:** | 10.0 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | ● SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 30.0 | | PL=NP PI=NP NMC=31.3 %#200=9.8 | | | | | | | | |
| | -20.0 | | | | | | | | | |
| | | Dense, wet | | 33.5 | SS-10 | 12 | 20 | 27 | 47 | |
| 35.0 | | | | | | | | | | |
| | -25.0 | | | | | | | | | |
| | | Dense, moist, pale brown | | 38.5 | SS-11 | 11 | 18 | 21 | 39 | |
| 40.0 | | | | | | | | | | |
| | -30.0 | | | | | | | | | |
| | | Medium dense, moist, reddish brown, fine to medium grained, with trace gravel, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=23.4 %#200=5.7 | | 43.5 | SS-12 | 8 | 9 | 10 | 19 | |
| 45.0 | | | | | | | | | | |
| | -35.0 | | | | | | | | | |
| | | Medium dense, tan, fine grained | | 48.5 | SS-13 | 8 | 11 | 17 | 28 | |
| 50.0 | | | | | | | | | | |
| | -40.0 | | | | | | | | | |
| | | Medium dense, reddish brown, medium to fine grained | | 53.5 | SS-14 | 4 | 7 | 7 | 14 | |
| 55.0 | | | | | | | | | | |
| | -45.0 | | | | | | | | | |
| | | Medium dense, pale brown | | 58.5 | SS-15 | 6 | 7 | 8 | 15 | |
| 60.0 | | | | | | | | | | |

## LEGEND

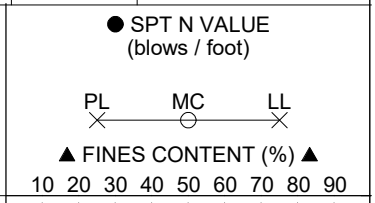
| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-01 | **Boring Location:** | 468+68.3 | **Offset:** | RT 111.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C. Tisher |
| **Elev.:** | 13.1 ft. | **Northing:** | 245803.03 | **Easting:** | 1797540.42 | **Date Started:** | 9/10/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/14/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 45C | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 86% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 2.0 ft. | **Delayed:** | 10.0 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 60.0 | | | | | | | | | |
| | -50.0 | Medium dense | | 63.5 | SS-16 | 4 | 5 | 6 | 11 |
| 65.0 | | | | | | | | | |
| | -55.0 | Medium dense, tan | | 68.5 | SS-17 | 5 | 7 | 10 | 17 |
| 70.0 | | | | | | | | | |
| | -60.0 | Medium dense, fine to medium grained | | 73.5 | SS-18 | 5 | 7 | 10 | 17 |
| 75.0 | | | | | | | | | |
| | -65.0 | Medium dense, moist, tan, fine to medium grained, with trace gravel, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=17.4 %#200=5.5 | | 78.5 | SS-19 | 5 | 11 | 14 | 25 |
| 80.0 | | | | | | | | | |
| | -70.0 | Dense | | 83.5 | SS-20 | 10 | 18 | 23 | 41 |
| 85.0 | | | | | | | | | |
| | -75.0 | Dense | | 88.5 | SS-21 | 11 | 17 | 27 | 44 |
| 90.0 | | | | | | | | | |




## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-01 | **Boring Location:** | 468+68.3 | **Offset:** | RT 111.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C. Tisher |
| **Elev.:** | 13.1 ft. | **Northing:** | 245803.03 | **Easting:** | 1797540.42 | **Date Started:** | 9/10/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/14/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 45C | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 86% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 2.0 ft. | **Delayed:** | 10.0 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 90.0 | | | | | | | | | |
| | -80.0 | | | | | | | | |
| | | Dense | | 93.5 | SS-22 | 14 | 30 | 47 | 77 |
| 95.0 | | | | | | | | | |
| | -85.0 | | | | | | | | |
| | | Dense, moist, reddish brown, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=16.1 %#200=5.9 | | 98.5 | SS-23 | 8 | 14 | 21 | 35 |
| 100.0 | | | | | | | | | |
| | -90.0 | | | | | | | | |
| | | Medium dense | | 103.5 | SS-24 | 13 | 19 | 11 | 30 |
| 105.0 | | | | | | | | | |
| | -95.0 | | | | | | | | |
| | | Stiff, moist, dark brown, LEAN CLAY with SAND (CL) | | 108.5 | SS-25 | 3 | 5 | 6 | 11 |
| 110.0 | | | | | | | | | |
| | -100.0 | | | | | | | | |
| | | Undisturbed sample obtained from 113.5 to 115.5 feet. Approximately 21 inches of recovery. Very soft, moist, gray, LEAN CLAY with SAND (CL, A-7-6(16)), LL=46 PL=24 PI=22 NMC=70.4 %#200=72.9 | | 113.5 | T-2 | | | | |
| 115.0 | | | | | | | | | |
| | -105.0 | | | | | | | | |
| | | Stiff, moist, dark brown, with trace sand, FAT CLAY (CH, A-7-6(57)), LL=78 PL=28 PI=50 NMC=41.1 | | 118.5 | SS-26 | 3 | 5 | 5 | 10 |
| 120.0 | | | | | | | | | |

● SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-01 | **Boring Location:** | 468+68.3 | **Offset:** | RT 111.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C. Tisher |
| **Elev.:** | 13.1 ft. | **Northing:** | 245803.03 | **Easting:** | 1797540.42 | **Date Started:** | 9/10/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/14/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 45C | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 86% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 2.0 ft. | **Delayed:** | 10.0 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | ● SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 120.0 | | %#200=96.8 | | | | | | | | |
| | -110.0 | | | | | | | | | |
| 125.0 | | Dense, dark gray, fine grained, with trace clay, POORLY GRADED SAND with SILT (SP-SM) | | 123.5 | SS-27 | 8 | 18 | 25 | 43 | |
| | -115.0 | | | | | | | | | |
| 130.0 | | Very dense, moist, pale brown, medium to coarse grained, with trace gravel | | 128.5 | SS-28 | 24 | 25 | 26 | 51 | |
| | -120.0 | | | | | | | | | |
| 135.0 | | Medium dense, moist, light gray, fine to coarse grained, POORLY GRADED SAND with SILT and GRAVEL (SP-SM, A-1-b(0)), LL=NP PL=NP PI=NP NMC=13.1 %#200=6.1 | | 133.5 | SS-29 | 17 | 12 | 11 | 23 | |
| | -125.0 | | | | | | | | | |
| 140.0 | | Very dense, moist, light gray and white, medium to fine grained, WELL-GRADED SAND with SILT and GRAVEL (SW-SM, A-1-b(0)), LL=NP PL=NP PI=NP NMC=11.9 %#200=7.7 | | 138.5 | SS-30 | 22 | 27 | 37 | 64 | |
| | -130.0 | | | | | | | | | |
| 145.0 | | Dense, moist, dark gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=19.3 %#200=12.8 | | 143.5 | SS-31 | 15 | 24 | 24 | 48 | |
| | -135.0 | | | | | | | | | |
| 150.0 | | Dense, wet | | 148.5 | SS-32 | 13 | 19 | 21 | 40 | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-01 | **Boring Location:** | 468+68.3 | **Offset:** | RT 111.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C. Tisher |
| **Elev.:** | 13.1 ft. | **Northing:** | 245803.03 | **Easting:** | 1797540.42 | **Date Started:** | 9/10/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/14/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 45C | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 86% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 2.0 ft. | **Delayed:** | 10.0 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 150.0 | | | | | | | | | | |
| | -140.0 | | | | | | | | | |
| 155.0 | | | | | | | | | | |
| | -145.0 | Stiff, moist, dark gray, with few sand, LEAN CLAY (CL, A-7-6(25)), LL=47 PL=20 PI=27 NMC=30.0 %#200=88.3 | | 158.5 | SS-33 | 4 | 6 | 7 | 13 | |
| 160.0 | | | | | | | | | | |
| | -150.0 | | | | | | | | | |
| 165.0 | | | | | | | | | | |
| | -155.0 | Very dense, wet, brown, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=20.0 %#200=10.9 | | 168.5 | SS-34 | 30 | 50 | X | 50+ | >> |
| 170.0 | | | | | | | | | | |
| | -160.0 | | | | | | | | | |
| 175.0 | | | | | | | | | | |
| | -165.0 | | | | | | | | | |
| | | Very dense, moist, dark gray | | 178.5 | SS-35 | 24 | 50 | X | 50+ | >> |
| 180.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-01 | **Boring Location:** | 468+68.3 | **Offset:** | RT 111.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C. Tisher |
| **Elev.:** | 13.1 ft. | **Northing:** | 245803.03 | **Easting:** | 1797540.42 | **Date Started:** | 9/10/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/14/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 45C | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 86% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 2.0 ft. | **Delayed:** | 10.0 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 180.0 | | | | | | | | | | |
| | -170.0 | | | | | | | | | |
| 185.0 | | | | | | | | | | |
| | -175.0 | Very dense, moist, gray, fine grained, CLAYEY SAND (SC) | | 188.5 | SS-36 | 9 | 25 | 33 | 58 | ● |
| 190.0 | | | | | | | | | | |
| | -180.0 | | | | | | | | | |
| 195.0 | | | | | | | | | | |
| | -185.0 | | | 198.5 | | | | | | |
| 200.0 | | Very dense, moist, dark gray, fine grained, CLAYEY SAND (SC, A-2-4(0)), LL=22 PL=14 PI=8 NMC=21.2 %#200=18.6 | | | SS-37 | 10 | 21 | 37 | 58 | ×▲× ● |
| | -190.0 | | | | | | | | | |
| 205.0 | | | | | | | | | | |
| | -195.0 | | | 208.5 | | | | | | |
| 210.0 | | Very dense, moist, dark gray, fine grained, POORLY GRADED SAND (SP) | | | SS-38 | 26 | 30 | 27 | 57 | ● |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-01 | **Boring Location:** | 468+68.3 | **Offset:** | RT 111.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C. Tisher |
| **Elev.:** | 13.1 ft. | **Northing:** | 245803.03 | **Easting:** | 1797540.42 | **Date Started:** | 9/10/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/14/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 45C | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 86% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 2.0 ft. | **Delayed:** | 10.0 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 210.0 | | | | | | | | | | |
| 215.0 | -200.0 | | | | | | | | | |
| 220.0 | -205.0 | Very stiff, moist, greenish gray, LEAN CLAY with SAND (CL, A-6(11)), LL=33 PL=13 PI=20 NMC=19.9 %#200=70.4 | | 218.5 | SS-39 | 8 | 8 | 10 | 18 | |
| 225.0 | -210.0 | | | | | | | | | |
| 230.0 | -215.0 | Undisturbed sample attempted from 228.0 to 230.0 feet. Shelby Tube encountered immediate refusal with no recovery. Very stiff, gray | | 228.0 | T-3 | | | | | |
| | | | | 228.5 | SS-40 | 5 | 6 | 12 | 18 | |
| 235.0 | -220.0 | | | | | | | | | |
| 240.0 | -225.0 | Very dense, wet, brown, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=22.8 | | 238.5 | SS-41 | 20 | 35 | 40 | 75 | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-01 | **Boring Location:** | 468+68.3 | **Offset:** | RT 111.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C. Tisher |
| **Elev.:** | 13.1 ft. | **Northing:** | 245803.03 | **Easting:** | 1797540.42 | **Date Started:** | 9/10/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/14/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 45C | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 86% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 2.0 ft. | **Delayed:** | 10.0 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 240.0 | | %#200=15.7 | | | | | | | | |
| | -230.0 | | | | | | | | | |
| 245.0 | | | | | | | | | | |
| | -235.0 | | | | | | | | | |
| 250.0 | | Very dense | | 248.5 | SS-42 | 34 | 50/5 | X | 50+ | >> |
| | | Boring Terminated at 250.0 feet. | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-02 | **Boring Location:** | 475+68.4 | **Offset:** | LT 90.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.Tisher/C.LaFroscia |
| **Elev.:** | 29.0 ft. | **Northing:** | 246485.99 | **Easting:** | 1797507.88 | **Date Started:** | 10/12/2017 |
| **Total Depth:** | 240.0 ft. | **Soil Depth:** | 240.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/13/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 17.3 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|
| 0.0 | | Approximately 12 inches of asphalt and 5.5 inches of base material. | | | | | | |
| | | Dense, dry, red, fine to medium grained, with few gravel, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=9.7 %#200=16.9 | 1.5 | SS-1 | 15 | 22 | 18 | 40 |
| | 25.0 | Dense | 3.0 | SS-2 | 12 | 19 | 19 | 38 |
| 5.0 | | Dense | 4.5 | SS-3 | 12 | 17 | 21 | 38 |
| | | Medium dense, dry, red, fine to medium grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=14.2 %#200=15.0 | 6.0 | SS-4 | 9 | 10 | 14 | 24 |
| | 20.0 | Medium dense | 7.5 | SS-5 | 10 | 13 | 16 | 29 |
| 10.0 | | Very dense | 9.0 | SS-6 | 12 | 22 | 28 | 50 |
| | 15.0 | Dense, dry, pale brown and red, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=12.6 %#200=10.0 | 13.5 | SS-7 | 15 | 18 | 16 | 34 |
| 15.0 | | | | | | | | |
| | 10.0 | Dense, moist, gray, fine grained, with trace gravel, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=16.4 %#200=12.4 | 18.5 | SS-8 | 17 | 18 | 16 | 34 |
| 20.0 | | | | | | | | |
| | 5.0 | Loose | 23.5 | SS-9 | 4 | 2 | 2 | 4 |
| 25.0 | | | | | | | | |
| | 0.0 | Loose, moist, gray, fine grained, CLAYEY SAND (SC, A-6(1)), LL=27 PL=16 PI=11 NMC=60.7 %#200=41.5 | 28.5 | SS-10 | 0 | 0 | 1 | 1 |
| 30.0 | | | | | | | | |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

**SAMPLER TYPE**

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

**DRILLING METHOD**

HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
MR - Mud Rotary Wash
RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-02 | **Boring Location:** | 475+68.4 | **Offset:** | LT 90.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.Tisher/C.LaFroscia |
| **Elev.:** | 29.0 ft. | **Northing:** | 246485.99 | **Easting:** | 1797507.88 | **Date Started:** | 10/12/2017 |
| **Total Depth:** | 240.0 ft. | **Soil Depth:** | 240.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/13/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 17.3 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | ● SPT N VALUE (blows / foot); PL MC LL; ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 30.0 | | | | | | | | | | |
| 35.0 | -5.0 | Undisturbed sample obtained from 33.0 to 35.0 feet. Approximately 24 inches of recovery. Moist, light gray, SANDY LEAN CLAY (CL), LL=38 PL=15 PI=23 NMC=34.2 %#200=44.9 | | 33.0 | T-1 | | | | | |
| 40.0 | -10.0 | Medium dense, moist, pale brown, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=26.5 %#200=8.8 | | 38.5 | SS-11 | 8 | 10 | 8 | 18 | |
| 45.0 | -15.0 | Medium dense | | 43.5 | SS-12 | 7 | 10 | 12 | 22 | |
| 50.0 | -20.0 | Medium dense, moist, pale brown, medium to fine grained, POORLY GRADED SAND with SILT (SP-SM, A-1-b(0)), LL=NP PL=NP PI=NP NMC=22.5 %#200=6.7 | | 48.5 | SS-13 | 10 | 8 | 13 | 21 | |
| 55.0 | -25.0 | Dense, tan, fine grained | | 53.5 | SS-14 | 16 | 21 | 28 | 49 | |
| 60.0 | -30.0 | Dense, white | | 58.5 | SS-15 | 17 | 21 | 20 | 41 | |

## LEGEND

**SAMPLER TYPE**

- SS - Split Spoon
- T - Shelby Tube
- DCP - Dynamic Cone Penetrometer
- AC - Auger Cuttings
- GB - Grab Bag
- NQ - Rock Core

**DRILLING METHOD**

- HSA - Hollow Stem Augers
- SSA - Solid Stem Augers
- HA - Hand Auger
- MR - Mud Rotary Wash
- RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-02 | **Boring Location:** | 475+68.4 | **Offset:** | LT 90.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.Tisher/C.LaFroscia |
| **Elev.:** | 29.0 ft. | **Northing:** | 246485.99 | **Easting:** | 1797507.88 | **Date Started:** | 10/12/2017 |
| **Total Depth:** | 240.0 ft. | **Soil Depth:** | 240.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/13/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 17.3 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 60.0 | | | | | | | | | | |
| 65.0 | -35.0 | Dense, moist, white, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=25.2 %#200=6.9 | | 63.5 | SS-16 | 18 | 18 | 21 | 39 | |
| 70.0 | -40.0 | Dense, fine to medium grained | | 68.5 | SS-17 | 17 | 19 | 25 | 44 | |
| 75.0 | -45.0 | Dense, moist, brown, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=23.6 %#200=7.0 | | 73.5 | SS-18 | 21 | 21 | 25 | 46 | |
| 80.0 | -50.0 | Medium dense, light brown | | 78.5 | SS-19 | 6 | 6 | 7 | 13 | |
| 85.0 | -55.0 | Dense, moist, brown, medium to fine grained, WELL GRADED SAND with SILT (SW-SM, A-1-b(0)), LL=NP PL=NP PI=NP NMC=18.4 %#200=9.4 | | 83.5 | SS-20 | 13 | 18 | 19 | 37 | |
| 90.0 | -60.0 | Medium dense | | 88.5 | SS-21 | 11 | 12 | 16 | 28 | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-02 | **Boring Location:** | 475+68.4 | **Offset:** | LT 90.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.Tisher/C.LaFroscia |
| **Elev.:** | 29.0 ft. | **Northing:** | 246485.99 | **Easting:** | 1797507.88 | **Date Started:** | 10/12/2017 |
| **Total Depth:** | 240.0 ft. | **Soil Depth:** | 240.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/13/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 17.3 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / FINES CONTENT (%) 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 90.0 | | | | | | | | | | |
| 95.0 | -65.0 | Very dense | | 93.5 | SS-22 | 18 | 24 | 37 | 61 | |
| 100.0 | -70.0 | Very stiff, moist, brown, SANDY LEAN CLAY (CL, A-7-6(13)), LL=48 PL=15 PI=33 NMC=43.9 %#200=52.9 | | 98.5 | SS-23 | 5 | 11 | 14 | 25 | |
| 105.0 | -75.0 | Very dense, moist, brown, fine grained, POORLY GRADED SAND with SILT (SP-SM) | | 103.5 | SS-24 | 25 | 35 | 40 | 75 | |
| 110.0 | -80.0 | Very dense, fine to medium grained | | 108.5 | SS-25 | 24 | 25 | 34 | 59 | |
| 115.0 | -85.0 | Medium dense, gray | | 113.5 | SS-26 | 10 | 12 | 15 | 27 | |
| 120.0 | -90.0 | Medium dense, moist, gray, fine grained, SILTY CLAYEY SAND (SC-SM, A-2-4(0)), LL=23 PL=17 | | 118.5 | SS-27 | 10 | 9 | 8 | 17 | |

## LEGEND

**SAMPLER TYPE**

- SS - Split Spoon
- T - Shelby Tube
- DCP - Dynamic Cone Penetrometer
- AC - Auger Cuttings
- GB - Grab Bag
- NQ - Rock Core

**DRILLING METHOD**

- HSA - Hollow Stem Augers
- SSA - Solid Stem Augers
- HA - Hand Auger
- MR - Mud Rotary Wash
- RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-02 | **Boring Location:** | 475+68.4 | **Offset:** | LT 90.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.Tisher/C.LaFroscia |
| **Elev.:** | 29.0 ft. | **Northing:** | 246485.99 | **Easting:** | 1797507.88 | **Date Started:** | 10/12/2017 |
| **Total Depth:** | 240.0 ft. | **Soil Depth:** | 240.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/13/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 17.3 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 120.0 | | PI=6 NMC=34.7 %#200=26.2 | | | | | | | | |
| | -95.0 | Undisturbed sample obtained from 123.0 to 125.0 feet. Approximately 24 inches of recovery. Moist, gray, FAT CLAY (CH), LL=76 PL=33 PI=43 NMC=48.8 %#200=99.7 | | 123.0 | T-2 | | | | | |
| 125.0 | | | | | | | | | | |
| | -100.0 | Firm | | 128.5 | SS-28 | 3 | 2 | 4 | 6 | |
| 130.0 | | | | | | | | | | |
| | -105.0 | Undisturbed sample obtained from 133.0 to 135.0 feet. Approximately 24 inches of recovery., LL=88 PL=26 PI=62 NMC=42.4 %#200=98.5 | | 133.0 | T-3 | | | | | |
| 135.0 | | | | | | | | | | |
| | -110.0 | Very dense, moist, gray, fine to coarse grained, POORLY GRADED SAND with SILT and GRAVEL (SP-SM) | | 138.5 | SS-29 | 20 | 33 | 31 | 64 | |
| 140.0 | | | | | | | | | | |
| | -115.0 | Very dense, light brown, fine to medium grained | | 143.5 | SS-30 | 30 | 36 | 33 | 69 | |
| 145.0 | | | | | | | | | | |
| | -120.0 | Medium dense, moist, light brown, fine to coarse grained, POORLY GRADED SAND with SILT and | | 148.5 | SS-31 | 12 | 11 | 9 | 20 | |
| 150.0 | | | | | | | | | | |

## LEGEND

**SAMPLER TYPE**

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

**DRILLING METHOD**

HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
MR - Mud Rotary Wash
RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-02 | **Boring Location:** | 475+68.4 | **Offset:** | LT 90.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.Tisher/C.LaFroscia |
| **Elev.:** | 29.0 ft. | **Northing:** | 246485.99 | **Easting:** | 1797507.88 | **Date Started:** | 10/12/2017 |
| **Total Depth:** | 240.0 ft. | **Soil Depth:** | 240.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/13/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | | AASHTO T206 & T207 | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 17.3 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 150.0 | | GRAVEL (SP-SM, A-1-b(0)), LL=NP PL=NP PI=NP NMC=15.3 %#200=5.5 | | | | | | | |
| | -125.0 | | | | | | | | |
| 155.0 | | | | | | | | | |
| | -130.0 | Dense, brown | | 158.5 | SS-32 | 24 | 20 | 22 | 42 |
| 160.0 | | | | | | | | | |
| | -135.0 | | | | | | | | |
| 165.0 | | | | | | | | | |
| | -140.0 | Very stiff, moist, gray, SANDY LEAN CLAY (CL, A-6(6)), LL=29 PL=14 PI=15 NMC=20.1 %#200=59.4 | | 168.5 | SS-33 | 23 | 12 | 11 | 23 |
| 170.0 | | | | | | | | | |
| | -145.0 | | | | | | | | |
| 175.0 | | | | | | | | | |
| | -150.0 | Undisturbed sample attempted from 178.0 to 180.0 feet. No Recovery. | | 178.0 | T-4 | | | | |
| 180.0 | | | | | | | | | |

● SPT N VALUE (blows / foot)

PL ⊗ MC ⊖ LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-02 | **Boring Location:** | 475+68.4 | **Offset:** | LT 90.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.Tisher/C.LaFroscia |
| **Elev.:** | 29.0 ft. | **Northing:** | 246485.99 | **Easting:** | 1797507.88 | **Date Started:** | 10/12/2017 |
| **Total Depth:** | 240.0 ft. | **Soil Depth:** | 240.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/13/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 17.3 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | ● SPT N VALUE (blows / foot); PL MC LL; ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 180.0 | | Hard | | 180.0 | SS-34 | 9 | 14 | 24 | 38 | ● |
| 185.0 | -155.0 | | | | | | | | | |
| 190.0 | -160.0 | Very dense, moist, brown, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM) | | 188.5 | SS-35 | 30 | 40 | 42 | 82 | ● |
| 195.0 | -165.0 | | | | | | | | | |
| 200.0 | -170.0 | Very dense, moist, brown, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=23.9 %#200=10.4 | | 198.5 | SS-36 | 50/5 | X | X | 50+ | ▲ ○ >>● |
| 205.0 | -175.0 | | | | | | | | | |
| 210.0 | -180.0 | Very dense, gray | | 208.5 | SS-37 | 47 | 45 | 50/5 | 100+ | >>● |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-02 | **Boring Location:** | 475+68.4 | **Offset:** | LT 90.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.Tisher/C.LaFroscia |
| **Elev.:** | 29.0 ft. | **Northing:** | 246485.99 | **Easting:** | 1797507.88 | **Date Started:** | 10/12/2017 |
| **Total Depth:** | 240.0 ft. | **Soil Depth:** | 240.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/13/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 17.3 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / FINES CONTENT (%) 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 210.0 | | | | | | | | | | |
| 215.0 | -185.0 | | | | | | | | | |
| 220.0 | -190.0 | Very dense, moist, gray, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=25.6 %#200=10.6 | | 218.5 | SS-38 | 33 | 45 | 50 | 95 | |
| 225.0 | -195.0 | | | | | | | | | |
| 230.0 | -200.0 | Very dense, moist, gray, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=29.7 %#200=8.1 | | 228.5 | SS-39 | 50/5 | X | X | 50+ | >> |
| 235.0 | -205.0 | | | | | | | | | |
| 240.0 | -210.0 | Very stiff, moist, green, LEAN CLAY with SAND (CL, A-7-6(20)), LL=45 PL=14 PI=31 NMC=20.6 | | 238.5 | SS-40 | 9 | 8 | 11 | 19 | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-02 | **Boring Location:** | 475+68.4 | **Offset:** | LT 90.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.Tisher/C.LaFroscia |
| **Elev.:** | 29.0 ft. | **Northing:** | 246485.99 | **Easting:** | 1797507.88 | **Date Started:** | 10/12/2017 |
| **Total Depth:** | 240.0 ft. | **Soil Depth:** | 240.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/13/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | | AASHTO T206 & T207 | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 17.3 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | ● SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | %#200=71.9<br>Boring Terminated at 240.0 feet. | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-03 | **Boring Location:** | 476+60.0 | **Offset:** | RT 46.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | D.Sikdar |
| **Elev.:** | 28.0 ft. | **Northing:** | 246603.33 | **Easting:** | 1797662.78 | **Date Started:** | 10/17/2017 |
| **Total Depth:** | 16.5 ft. | **Soil Depth:** | 16.5 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/17/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 | | | | |
| **Drill Machine:** | D50 | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 94% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | | Approximately 6 inches of asphalt. | | 0.5 | | | | | |
| | 25.0 | Medium dense, wet, reddish brown, fine to medium grained, CLAYEY SAND (SC), FILL | | 2.0 | SS-1 | 9 | 9 | 10 | 19 |
| | | Medium dense, wet, reddish brown, fine to medium grained, CLAYEY SAND (SC, A-2-6(0)), FILL, LL=26 PL=13 PI=13 NMC=14.4 %#200=19.6 | | 3.5 | SS-2 | 8 | 7 | 14 | 21 |
| 5.0 | | Medium dense, FILL | | | SS-3 | 6 | 10 | 12 | 22 |
| | | Medium dense, fine to medium grained, FILL | | 5.0 | SS-4 | 14 | 14 | 14 | 28 |
| | 20.0 | Medium dense, wet, reddish brown, fine to medium grained, SILTY SAND (SM, A-2-4(0)), FILL, LL=NP PL=NP PI=NP NMC=14.3 %#200=18.4 | | 6.5 | SS-5 | 11 | 14 | 15 | 29 |
| 10.0 | | Dense, FILL | | 9.0 | SS-6 | 11 | 16 | 19 | 35 |
| | 15.0 | | | | | | | | |
| 15.0 | | Dense, wet, reddish brown, fine to medium grained, SILTY SAND (SM, A-2-4(0)), FILL, LL=NP PL=NP PI=NP NMC=16.3 %#200=17.4 | | 14.0 | SS-7 | 9 | 15 | 23 | 38 |
| | | Encountered mud rotary refusal on potential concrete at approximately 16.5 feet. | | | | | | | |
| | | Offset boring approximately 15 feet toward the west. Mud rotary drilled boring identified as HLA-03A. | | | | | | | |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-03A | **Boring Location:** | 476+61.4 | **Offset:** | RT 38.5 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | D.Sikdar |
| **Elev.:** | 28.5 ft. | **Northing:** | 246605.78 | **Easting:** | 1797655.41 | **Date Started:** | 10/17/2017 |
| **Total Depth:** | 251.0 ft. | **Soil Depth:** | 251 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/18/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | D50 | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 94% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | 21.1 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | | | | | | | | | | |
| | 25.0 | Mud rotary drilled to 19.5 feet and began sampling. | | | | | | | | |
| 5.0 | | | | | | | | | | |
| | 20.0 | | | | | | | | | |
| 10.0 | | | | | | | | | | |
| | 15.0 | | | | | | | | | |
| 15.0 | | | | | | | | | | |
| | 10.0 | | | | | | | | | |
| 20.0 ▽ | | Medium dense, wet, reddish brown, fine to medium grained, SILTY SAND (SM) | | 19.5 | SS-8 | 9 | 11 | 11 | 22 | ● |
| | 5.0 | | | | | | | | | |
| 25.0 | | Loose, wet, brown, fine to medium grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=23.8 %#200=21.4 | | 24.5 | SS-9 | 3 | 3 | 4 | 7 | ● ▲ |
| | 0.0 | | | | | | | | | |
| 30.0 | | | | 29.5 | | | | | | |

## LEGEND

**SAMPLER TYPE**

- SS - Split Spoon
- T - Shelby Tube
- DCP - Dynamic Cone Penetrometer
- AC - Auger Cuttings
- GB - Grab Bag
- NQ - Rock Core

**DRILLING METHOD**

- HSA - Hollow Stem Augers
- SSA - Solid Stem Augers
- HA - Hand Auger
- MR - Mud Rotary Wash
- RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-03A | **Boring Location:** | 476+61.4 | **Offset:** | RT 38.5 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | D.Sikdar |
| **Elev.:** | 28.5 ft. | **Northing:** | 246605.78 | **Easting:** | 1797655.41 | **Date Started:** | 10/17/2017 |
| **Total Depth:** | 251.0 ft. | **Soil Depth:** | 251 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/18/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | D50 | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 94% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | 21.1 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 30.0 | | | | | | | | | |
| | -5.0 | Very soft, wet, gray, LEAN CLAY (CL) | | | SS-10 | 0 | 0 | 2 | 2 |
| 35.0 | | Undisturbed sample obtained from 34.5 to 36.5 feet. Approximately 24 inches of recovery. Loose, moist, reddish brown, fine grained, POORLY GRADED SAND with SILT (SP-SM), LL=NP PL=NP PI=NP NMC=30.4 %#200=35.7 | | 34.5 | T-1 | | | | |
| | -10.0 | | | | | | | | |
| 40.0 | | Loose, brown | | 39.5 | SS-12 | 2 | 3 | 6 | 9 |
| | -15.0 | | | | | | | | |
| 45.0 | | Dense, moist, light brown, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=23.0 %#200=8.8 | | 44.5 | SS-13 | 10 | 15 | 18 | 33 |
| | -20.0 | | | | | | | | |
| 50.0 | | Dense | | 49.5 | SS-14 | 13 | 16 | 18 | 34 |
| | -25.0 | | | | | | | | |
| 55.0 | | Dense | | 54.5 | SS-15 | 11 | 14 | 19 | 33 |
| | -30.0 | | | | | | | | |
| 60.0 | | | | 59.5 | | | | | |

● SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

**SAMPLER TYPE**

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

**DRILLING METHOD**

HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
MR - Mud Rotary Wash
RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-03A | **Boring Location:** | 476+61.4 | **Offset:** | RT 38.5 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | D.Sikdar |
| **Elev.:** | 28.5 ft. | **Northing:** | 246605.78 | **Easting:** | 1797655.41 | **Date Started:** | 10/17/2017 |
| **Total Depth:** | 251.0 ft. | **Soil Depth:** | 251 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/18/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | D50 | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 94% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | 21.1 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 60.0 | | Dense | | | SS-16 | 17 | 20 | 27 | 47 |
| | -35.0 | | | | | | | | |
| 65.0 | | Dense, moist, light brown, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=24.5 %#200=8.0 | | 64.5 | SS-17 | 14 | 20 | 27 | 47 |
| | -40.0 | | | | | | | | |
| 70.0 | | Dense | | 69.5 | SS-18 | 11 | 17 | 20 | 37 |
| | -45.0 | | | | | | | | |
| 75.0 | | Dense, brown | | 74.5 | SS-19 | 10 | 16 | 22 | 38 |
| | -50.0 | | | | | | | | |
| 80.0 | | Medium dense, moist, light brown, fine to medium grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=22.1 %#200=14.3 | | 79.5 | SS-20 | 8 | 9 | 16 | 25 |
| | -55.0 | | | | | | | | |
| 85.0 | | Dense, brown | | 84.5 | SS-21 | 19 | 24 | 26 | 50 |
| | -60.0 | | | | | | | | |
| 90.0 | | | | 89.5 | | | | | |

● SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-03A | **Boring Location:** | 476+61.4 | **Offset:** | RT 38.5 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | D.Sikdar |
| **Elev.:** | 28.5 ft. | **Northing:** | 246605.78 | **Easting:** | 1797655.41 | **Date Started:** | 10/17/2017 |
| **Total Depth:** | 251.0 ft. | **Soil Depth:** | 251 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/18/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | D50 | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 94% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | 21.1 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 90.0 | | | | | | | | | |
| | -65.0 | Medium dense, light brown | | | SS-22 | 10 | 10 | 15 | 25 |
| 95.0 | | Dense | | 94.5 | SS-23 | 24 | 21 | 29 | 50 |
| | -70.0 | | | | | | | | |
| 100.0 | | Dense, moist, gray, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=22.1 %#200=6.1 | | 99.5 | SS-24 | 13 | 19 | 22 | 41 |
| | -75.0 | | | | | | | | |
| 105.0 | | Very dense | | 104.5 | SS-25 | 16 | 33 | 42 | 75 |
| | -80.0 | | | | | | | | |
| 110.0 | | Very dense | | 109.5 | SS-26 | 22 | 29 | 43 | 72 |
| | -85.0 | | | | | | | | |
| 115.0 | | Medium dense, wet, brown, medium to fine and coarse grained, WELL-GRADED SAND with SILT and GRAVEL (SW-SM, A-1-b(0)), LL=NP PL=NP PI=NP NMC=17.7 %#200=10.4 | | 114.5 | SS-27 | 7 | 3 | 16 | 19 |
| | -90.0 | | | | | | | | |
| 120.0 | | | | 119.5 | | | | | |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-03A | **Boring Location:** | 476+61.4 | **Offset:** | RT 38.5 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | D.Sikdar |
| **Elev.:** | 28.5 ft. | **Northing:** | 246605.78 | **Easting:** | 1797655.41 | **Date Started:** | 10/17/2017 |
| **Total Depth:** | 251.0 ft. | **Soil Depth:** | 251 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/18/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | D50 | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 94% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | 21.1 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 120.0 | | | | | | | | | |
| | -95.0 | Undisturbed sample obtained from 119.5 to 121.5 feet. Approximately 24 inches of recovery. Stiff, moist, gray and dark gray, with trace wood and trace gravel, SANDY ELASTIC SILT (MH, A-7-5(22)), LL=84 PL=43 PI=41 NMC=152.3 %#200=56.6 | | | T-2 | | | | |
| 125.0 | | Loose, wet, gray, fine grained, SILTY SAND (SM, A-4(0)), LL=NP PL=NP PI=NP NMC=25.7 %#200=40.4 | | 124.5 | SS-29 | 6 | 4 | 4 | 8 |
| | -100.0 | | | | | | | | |
| 130.0 | | Dense, wet, gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=24.4 %#200=26.2 | | 129.5 | SS-30 | 9 | 17 | 25 | 42 |
| | -105.0 | | | | | | | | |
| 135.0 | | Very dense, wet, gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=21.6 %#200=21.3 | | 134.5 | SS-31 | 10 | 22 | 36 | 58 |
| | -110.0 | | | | | | | | |
| 140.0 | | Very dense, wet, gray, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM) | | 139.5 | SS-32 | 24 | 47 | 47 | 94 |
| | -115.0 | | | | | | | | |
| 145.0 | | Very dense, with trace gravel | | 144.5 | SS-33 | 28 | 30 | 39 | 69 |
| | -120.0 | | | | | | | | |
| 150.0 | | | | 149.5 | | | | | |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-03A | **Boring Location:** | 476+61.4 | **Offset:** | RT 38.5 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | D.Sikdar |
| **Elev.:** | 28.5 ft. | **Northing:** | 246605.78 | **Easting:** | 1797655.41 | **Date Started:** | 10/17/2017 |
| **Total Depth:** | 251.0 ft. | **Soil Depth:** | 251 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/18/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | D50 | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 94% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | 21.1 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 150.0 | | Very dense | | | SS-34 | 24 | 25 | 36 | 61 | |
| | -125.0 | | | | | | | | | |
| 155.0 | | | | | | | | | | |
| | -130.0 | | | | | | | | | |
| 160.0 | | Very dense | | 159.5 | SS-35 | 20 | 26 | 26 | 52 | |
| | -135.0 | | | | | | | | | |
| 165.0 | | | | | | | | | | |
| | -140.0 | | | | | | | | | |
| 170.0 | | Dense, wet, gray, medium to fine grained, POORLY GRADED SAND with SILT (SP-SM, A-1-b(0)), LL=NP PL=NP PI=NP NMC=17.2 %#200=5.7 | | 169.5 | SS-36 | 13 | 14 | 20 | 34 | |
| | -145.0 | | | | | | | | | |
| 175.0 | | | | | | | | | | |
| | -150.0 | | | | | | | | | |
| 180.0 | | | | 179.5 | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-03A | **Boring Location:** | 476+61.4 | **Offset:** | RT 38.5 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | D.Sikdar |
| **Elev.:** | 28.5 ft. | **Northing:** | 246605.78 | **Easting:** | 1797655.41 | **Date Started:** | 10/17/2017 |
| **Total Depth:** | 251.0 ft. | **Soil Depth:** | 251 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/18/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | D50 | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 94% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | 21.1 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | ● SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 180.0 | | Very dense, fine grained | | | SS-37 | 50/5 | X | X | 50+ | >> |
| 185.0 | -155.0 | | | | | | | | | |
| 190.0 | -160.0 | Very dense, wet, gray, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=22.2 %#200=10.4 | | 189.5 | SS-38 | 44 | 50/4 | X | 50+ | ▲ ○ >> |
| 195.0 | -165.0 | | | | | | | | | |
| 200.0 | -170.0 | Very dense | | 199.5 | SS-39 | 50/4 | X | X | 50+ | >> |
| 205.0 | -175.0 | | | | | | | | | |
| 210.0 | -180.0 | | | 209.5 | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-03A | **Boring Location:** | 476+61.4 | **Offset:** | RT 38.5 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | D.Sikdar |
| **Elev.:** | 28.5 ft. | **Northing:** | 246605.78 | **Easting:** | 1797655.41 | **Date Started:** | 10/17/2017 |
| **Total Depth:** | 251.0 ft. | **Soil Depth:** | 251 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/18/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | D50 | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 94% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | 21.1 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 210.0 | | Very dense, fine grained | | | SS-40 | 47 | 50/4 | X | 50+ |
| | -185.0 | | | | | | | | |
| 215.0 | | | | | | | | | |
| | -190.0 | | | | | | | | |
| 220.0 | | Very dense, wet, gray, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=25.3 %#200=10.8 | | 219.5 | SS-41 | 35 | 50 | X | 50+ |
| | -195.0 | | | | | | | | |
| 225.0 | | | | | | | | | |
| | -200.0 | | | | | | | | |
| 230.0 | | Very dense | | 229.5 | SS-42 | 42 | 50/5 | X | 50+ |
| | -205.0 | | | | | | | | |
| 235.0 | | | | | | | | | |
| | -210.0 | | | | | | | | |
| 240.0 | | | | 239.5 | | | | | |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-03A | **Boring Location:** | 476+61.4 | **Offset:** | RT 38.5 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | D.Sikdar |
| **Elev.:** | 28.5 ft. | **Northing:** | 246605.78 | **Easting:** | 1797655.41 | **Date Started:** | 10/17/2017 |
| **Total Depth:** | 251.0 ft. | **Soil Depth:** | 251 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/18/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | D50 | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 94% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | 21.1 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 240.0 | | | | | | | | | |
| | -215.0 | Hard, moist, gray, LEAN CLAY with SAND (CL, A-6(9)), LL=32 PL=15 PI=17 NMC=19.8 %#200=70.4 | | | SS-43 | 49 | 29 | 27 | 56 |
| 245.0 | | | | | | | | | |
| | -220.0 | | | | | | | | |
| 250.0 | | Medium dense, moist, gray, SANDY SILT (ML, A-4(0)), LL=NP PL=NP PI=NP NMC=18.6 %#200=51.6 | | 249.5 | SS-44 | 7 | 8 | 7 | 15 |
| | | Boring Terminated at 251.0 feet. | | | | | | | |

● SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-04 | **Boring Location:** | 479+34.4 | **Offset:** | RT 66.4 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.LaFroscia/D.Sikdar |
| **Elev.:** | 21.8 ft. | **Northing:** | 246871.91 | **Easting:** | 1797722.28 | **Date Started:** | 9/12/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/14/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | 18.3 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | | | | | | | | | |
| | 20.0 | Approximately 4 inches of topsoil.<br>Loose, moist, brown, fine to medium grained, with few gravel, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=7.6 %#200=15.7 | | 0.0 | SS-1 | 3 | 3 | 2 | 5 |
| | | Loose | | 1.5 | SS-2 | 1 | 2 | 3 | 5 |
| | | Loose | | 3.0 | SS-3 | 3 | 2 | 3 | 5 |
| 5.0 | | Loose, moist, brown, fine to medium grained, with trace gravel, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=22.5 %#200=15.1 | | 4.5 | SS-4 | 1 | 2 | 4 | 6 |
| | 15.0 | Medium dense | | 6.0 | SS-5 | 4 | 7 | 12 | 19 |
| | | Dense | | 8.5 | SS-6 | 7 | 15 | 16 | 31 |
| 10.0 | | | | | | | | | |
| | 10.0 | | | | | | | | |
| | | Medium dense, moist, brown, fine to medium grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=18.0 %#200=13.5 | | 13.5 | SS-7 | 7 | 7 | 8 | 15 |
| 15.0 | 5.0 | | | | | | | | |
| ▽ | | Very loose, light brown | | 18.5 | SS-8 | 1 | 1 | 2 | 3 |
| 20.0 | 0.0 | | | | | | | | |
| | | Stiff, moist, brown, with few sand, FAT CLAY (CH, A-7-6(29)), LL=52 PL=21 PI=31 NMC=27.5 %#200=87.6 | | 23.5 | SS-9 | 4 | 9 | 6 | 15 |
| 25.0 | -5.0 | | | | | | | | |
| | | Undisturbed sample obtained from 28.0 to 30.0 feet. Approximately 24 inches of recovery. | | 28.0 | T-1 | | | | |
| 30.0 | | Loose, moist, yellowish brown, fine grained, SILTY | | | | | | | |

● SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

**SAMPLER TYPE**

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

**DRILLING METHOD**

HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
MR - Mud Rotary Wash
RC - Rock Coring

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-04 | **Boring Location:** | 479+34.4 | **Offset:** | RT 66.4 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.LaFroscia/D.Sikdar |
| **Elev.:** | 21.8 ft. | **Northing:** | 246871.91 | **Easting:** | 1797722.28 | **Date Started:** | 9/12/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/14/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | 18.3 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | ● SPT N VALUE (blows / foot); PL MC LL; ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 30.0 | | | | | | | | | | |
| | -10.0 | SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=29.1 %#200=34.8 | | | | | | | | |
| | | Medium dense, moist, brown, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM) | | 33.5 | SS-10 | 5 | 6 | 11 | 17 | ● |
| 35.0 | -15.0 | | | | | | | | | |
| | | Medium dense | | 38.5 | SS-11 | 9 | 12 | 12 | 24 | ● |
| 40.0 | -20.0 | | | | | | | | | |
| | | Dense | | 43.5 | SS-12 | 13 | 16 | 21 | 37 | ● |
| 45.0 | -25.0 | | | | | | | | | |
| | | Medium dense, moist, light brown, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=20.8 %#200=5.8 | | 48.5 | SS-13 | 12 | 9 | 8 | 17 | ×▲ ●○ |
| 50.0 | -30.0 | | | | | | | | | |
| | | Medium dense | | 53.5 | SS-14 | 9 | 10 | 11 | 21 | ● |
| 55.0 | -35.0 | | | | | | | | | |
| | | Dense, brown | | 58.5 | SS-15 | 9 | 14 | 19 | 33 | ● |
| 60.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-04 | **Boring Location:** | 479+34.4 | **Offset:** | RT 66.4 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.LaFroscia/D.Sikdar |
| **Elev.:** | 21.8 ft. | **Northing:** | 246871.91 | **Easting:** | 1797722.28 | **Date Started:** | 9/12/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/14/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | | AASHTO T206 & T207 | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | 18.3 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / ▲ FINES CONTENT (%) ▲ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60.0 | | | | | | | | | | 10 20 30 40 50 60 70 80 90 |
| | -40.0 | | | | | | | | | |
| | | Medium dense, light brown | | 63.5 | SS-16 | 8 | 11 | 17 | 28 | |
| 65.0 | | | | | | | | | | |
| | -45.0 | | | | | | | | | |
| | | Dense, moist, light brown, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=32.7 %#200=5.6 | | 68.5 | SS-17 | 11 | 16 | 20 | 36 | |
| 70.0 | | | | | | | | | | |
| | -50.0 | | | | | | | | | |
| | | Medium dense, wet, reddish brown | | 73.5 | SS-18 | 4 | 5 | 9 | 14 | |
| 75.0 | | | | | | | | | | |
| | -55.0 | | | | | | | | | |
| | | Loose | | 78.5 | SS-19 | 4 | 5 | 5 | 10 | |
| 80.0 | | | | | | | | | | |
| | -60.0 | | | | | | | | | |
| | | Medium dense | | 83.5 | SS-20 | 8 | 7 | 9 | 16 | |
| 85.0 | | | | | | | | | | |
| | -65.0 | | | | | | | | | |
| | | Medium dense, wet, brown, medium to fine grained, with trace gravel, POORLY GRADED SAND with SILT | | 88.5 | SS-21 | 9 | 13 | 15 | 28 | |
| 90.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-04 | **Boring Location:** | 479+34.4 | **Offset:** | RT 66.4 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.LaFroscia/D.Sikdar |
| **Elev.:** | 21.8 ft. | **Northing:** | 246871.91 | **Easting:** | 1797722.28 | **Date Started:** | 9/12/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/14/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | 18.3 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 90.0 | | | | | | | | | |
| | -70.0 | (SP-SM, A-1-b(0)), LL=NP PL=NP PI=NP NMC=16.6 %#200=6.1 | | | | | | | |
| | | Dense | | 93.5 | SS-22 | 14 | 22 | 26 | 48 |
| 95.0 | | | | | | | | | |
| | -75.0 | | | | | | | | |
| | | Dense, fine to medium grained | | 98.5 | SS-23 | 16 | 18 | 22 | 40 |
| 100.0 | | | | | | | | | |
| | -80.0 | | | | | | | | |
| | | Very dense, fine grained | | 103.5 | SS-24 | 17 | 27 | 35 | 62 |
| 105.0 | | | | | | | | | |
| | -85.0 | | | | | | | | |
| | | Medium dense, moist, gray, fine grained, SILTY SAND (SM, A-2-7(0)), LL=67 PL=34 PI=33 NMC=30.5 %#200=13.6 | | 108.5 | SS-25 | 6 | 11 | 14 | 25 |
| 110.0 | | | | | | | | | |
| | -90.0 | | | | | | | | |
| | | Stiff, moist, gray, with trace organics, SANDY FAT CLAY (CH, A-7-6(32)), LL=71 PL=23 PI=48 NMC=47.8 %#200=68.2 | | 113.5 | SS-26 | 2 | 3 | 6 | 9 |
| 115.0 | | | | | | | | | |
| | -95.0 | | | | | | | | |
| | | Undisturbed sample obtained from 118.0 to 120.0 feet. Approximately 24 inches of recovery. Medium dense, wet, olive gray, fine grained, SILTY | | 118.0 | T-2 | | | | |
| 120.0 | | | | | | | | | |

● SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-04 | **Boring Location:** | 479+34.4 | **Offset:** | RT 66.4 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.LaFroscia/D.Sikdar |
| **Elev.:** | 21.8 ft. | **Northing:** | 246871.91 | **Easting:** | 1797722.28 | **Date Started:** | 9/12/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/14/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | 18.3 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / FINES CONTENT (%) 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 120.0 | | | | | | | | | | |
| | -100.0 | SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=25.1 %#200=31.1 | | | | | | | | |
| | | Medium dense, gray | | 123.5 | SS-28 | 12 | 12 | 13 | 25 | |
| 125.0 | -105.0 | | | | | | | | | |
| | | Dense, wet, gray, fine to medium grained, with trace gravel, POORLY GRADED SAND with SILT (SP-SM) | | 128.5 | SS-29 | 12 | 17 | 21 | 38 | |
| 130.0 | -110.0 | | | | | | | | | |
| | | Very dense | | 133.5 | SS-30 | 28 | 35 | 36 | 71 | |
| 135.0 | -115.0 | | | | | | | | | |
| | | Very dense, wet, gray, medium to fine grained, with few gravel, POORLY GRADED SAND with SILT (SP-SM, A-1-b(0)), LL=NP PL=NP PI=NP NMC=19.2 %#200=8.2 | | 138.5 | SS-31 | 14 | 33 | 32 | 65 | |
| 140.0 | -120.0 | | | | | | | | | |
| | | Dense, brown | | 143.5 | SS-32 | 8 | 16 | 24 | 40 | |
| 145.0 | -125.0 | | | | | | | | | |
| | | Dense | | 148.5 | SS-33 | 10 | 16 | 24 | 40 | |
| 150.0 | | | | | | | | | | |

## LEGEND

**SAMPLER TYPE**

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

**DRILLING METHOD**

HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
MR - Mud Rotary Wash
RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-04 | **Boring Location:** | 479+34.4 | **Offset:** | RT 66.4 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.LaFroscia/D.Sikdar |
| **Elev.:** | 21.8 ft. | **Northing:** | 246871.91 | **Easting:** | 1797722.28 | **Date Started:** | 9/12/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/14/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | | AASHTO T206 & T207 | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | 18.3 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 150.0 | -130.0 | | | | | | | | |
| 155.0 | -135.0 | | | | | | | | |
| | | Very dense, with trace gravel | | 158.5 | SS-34 | 19 | 29 | 33 | 62 |
| 160.0 | -140.0 | | | | | | | | |
| 165.0 | -145.0 | | | | | | | | |
| | | Very dense | | 168.5 | SS-35 | 29 | 46 | 64 | 110 |
| 170.0 | -150.0 | | | | | | | | |
| 175.0 | -155.0 | | | | | | | | |
| | | Very dense, wet, gray, fine to medium grained, with trace gravel, POORLY GRADED SAND with SILT | | 178.5 | SS-36 | 23 | 36 | 61 | 97 |
| 180.0 | | | | | | | | | |

● SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-04 | **Boring Location:** | 479+34.4 | **Offset:** | RT 66.4 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.LaFroscia/D.Sikdar |
| **Elev.:** | 21.8 ft. | **Northing:** | 246871.91 | **Easting:** | 1797722.28 | **Date Started:** | 9/12/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/14/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | | AASHTO T206 & T207 | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | 18.3 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 180.0 | | | | | | | | | |
| | -160.0 | (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=18.6 %#200=8.3 | | | | | | | |
| 185.0 | -165.0 | | | | | | | | |
| | | | | 188.5 | | | | | |
| 190.0 | | Very dense, wet, gray, fine grained, with trace gravel, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=22.8 %#200=8.4 | | | SS-37 | 14 | 28 | 29 | 57 |
| | -170.0 | | | | | | | | |
| 195.0 | | | | | | | | | |
| | -175.0 | | | | | | | | |
| | | Dense | | 198.5 | | | | | |
| 200.0 | | | | | SS-38 | 10 | 16 | 21 | 37 |
| | -180.0 | | | | | | | | |
| 205.0 | | | | | | | | | |
| | -185.0 | | | | | | | | |
| | | Very dense, brown | | 208.5 | | | | | |
| 210.0 | | | | | SS-39 | 22 | 50 | 50/5 | 100+ |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-04 | **Boring Location:** | 479+34.4 | **Offset:** | RT 66.4 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.LaFroscia/D.Sikdar |
| **Elev.:** | 21.8 ft. | **Northing:** | 246871.91 | **Easting:** | 1797722.28 | **Date Started:** | 9/12/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/14/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | | AASHTO T206 & T207 | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | 18.3 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / FINES CONTENT (%) 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 210.0 | | | | | | | | | | |
| | -190.0 | | | | | | | | | |
| 215.0 | | | | | | | | | | |
| | -195.0 | | | | | | | | | |
| | | Very dense | | 218.5 | SS-40 | 39 | 50/4 | X | 50+ | >> |
| 220.0 | | | | | | | | | | |
| | -200.0 | | | | | | | | | |
| 225.0 | | | | | | | | | | |
| | -205.0 | | | | | | | | | |
| | | Very dense, brown and gray | | 228.5 | SS-41 | 30 | 50/3 | X | 50+ | >> |
| 230.0 | | | | | | | | | | |
| | -210.0 | | | | | | | | | |
| 235.0 | | | | | | | | | | |
| | -215.0 | | | | | | | | | |
| | | Stiff, wet, gray, SANDY LEAN CLAY (CL, A-4(4)), LL=27 PL=19 PI=8 NMC=22.3 %#200=69.0 | | 238.5 | SS-42 | 2 | 2 | 7 | 9 | |
| 240.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-04 | **Boring Location:** | 479+34.4 | **Offset:** | RT 66.4 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.LaFroscia/D.Sikdar |
| **Elev.:** | 21.8 ft. | **Northing:** | 246871.91 | **Easting:** | 1797722.28 | **Date Started:** | 9/12/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/14/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | | AASHTO T206 & T207 | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | 18.3 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 240.0 | | | | | | | | | | |
| | -220.0 | | | | | | | | | |
| 245.0 | | | | | | | | | | |
| | -225.0 | | | | | | | | | |
| | | Medium dense, wet, bluish gray, fine grained, CLAYEY SAND (SC) | | 248.5 | SS-43 | 3 | 4 | 15 | 19 | ● |
| 250.0 | | Boring Terminated at 250.0 feet. | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-05 | **Boring Location:** | 482+15.5 | **Offset:** | LT 27.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | D.Sikdar |
| **Elev.:** | 18.6 ft. | **Northing:** | 247163.64 | **Easting:** | 1797670.05 | **Date Started:** | 10/14/2017 |
| **Total Depth:** | 251.8 ft. | **Soil Depth:** | 251.8 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/15/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | D50 | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 94% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|
| 0.0 | | Approximately 9 inches of asphalt and 12 inches of base material. | | | | | | |
| | 15.0 | Dense, wet, reddish brown, fine to medium grained, with trace gravel, SILTY SAND (SM), FILL | 1.8 | SS-1 | 4 | 20 | 20 | 40 |
| 5.0 | | Dense, wet, reddish brown, fine to medium grained, SILTY SAND (SM, A-2-4(0)), FILL, LL=NP PL=NP PI=NP NMC=11.4 %#200=21.0 | 3.3 | SS-2 | 11 | 14 | 20 | 34 |
| | | Dense, FILL | 4.8 | SS-3 | 12 | 17 | 26 | 43 |
| | | Very dense, FILL | 6.3 | SS-4 | 12 | 26 | 27 | 53 |
| | 10.0 | Dense, wet, reddish brown, fine grained, SILTY SAND (SM, A-2-4(0)), FILL, LL=NP PL=NP PI=NP NMC=17.1 %#200=15.1 | 7.8 | SS-5 | 14 | 17 | 26 | 43 |
| 10.0 | | Medium dense, wet, gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=16.5 %#200=22.1 | 10.3 | SS-6 | 9 | 10 | 9 | 19 |
| | 5.0 | | | | | | | |
| 15.0 | | Very loose, wet, gray, fine grained, SILTY, CLAYEY SAND (SC-SM, A-4(0)), LL=23 PL=18 PI=5 NMC=32.9 %#200=37.1 | 15.3 | SS-7 | 1 | 2 | 1 | 3 |
| | 0.0 | | | | | | | |
| 20.0 | | Very loose, wet, gray, fine grained, SILTY, CLAYEY SAND (SC-SM, A-4(0)), LL=23 PL=18 PI=5 NMC=29.4 %#200=40.1 | 20.3 | SS-8 | 0 | 0 | 0 | 0 |
| | -5.0 | | | | | | | |
| 25.0 | | Undisturbed sample obtained from 25.3 to 27.3 feet. Approximately 24 inches of recovery. Wet, gray, with trace sand, ELASTIC SILT (MH, A-7-5(44)), LL=76 PL=39 PI=37 NMC=95.8 %#200=95.1 | 25.3 | T-1 | | | | |
| | -10.0 | | | | | | | |
| 30.0 | | | | | | | | |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

**SAMPLER TYPE**

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

**DRILLING METHOD**

HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
MR - Mud Rotary Wash
RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-05 | **Boring Location:** | 482+15.5 | **Offset:** | LT 27.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | D.Sikdar |
| **Elev.:** | 18.6 ft. | **Northing:** | 247163.64 | **Easting:** | 1797670.05 | **Date Started:** | 10/14/2017 |
| **Total Depth:** | 251.8 ft. | **Soil Depth:** | 251.8 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/15/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | D50 | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 94% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|
| 30.0 | | Soft | 30.3 | SS-10 | 2 | 2 | 2 | 4 |
| | -15.0 | | | | | | | |
| 35.0 | | Undisturbed sample attempted from 35.3 to 37.3 feet. No recovery. | 35.3 | T-2 | | | | |
| | -20.0 | Medium dense, wet, gray, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=24.9 %#200=8.1 | 37.3 | SS-11 | 3 | 4 | 8 | 12 |
| 40.0 | | Medium dense, wet, gray, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=26.1 %#200=7.6 | 40.3 | SS-12 | 11 | 10 | 10 | 20 |
| | -25.0 | | | | | | | |
| 45.0 | | Medium dense, gray and reddish brown | 45.3 | SS-13 | 7 | 7 | 8 | 15 |
| | -30.0 | | | | | | | |
| 50.0 | | Medium dense, gray | 50.3 | SS-14 | 12 | 12 | 15 | 27 |
| | -35.0 | | | | | | | |
| 55.0 | | Dense | 55.3 | SS-15 | 15 | 17 | 18 | 35 |
| | -40.0 | | | | | | | |
| 60.0 | | | | | | | | |

● SPT N VALUE (blows / foot)

PL ○ MC ○ LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

**SAMPLER TYPE**

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

**DRILLING METHOD**

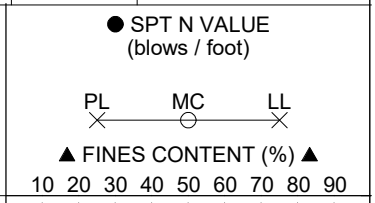
HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
MR - Mud Rotary Wash
RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-05 | **Boring Location:** | 482+15.5 | **Offset:** | LT 27.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | D.Sikdar |
| **Elev.:** | 18.6 ft. | **Northing:** | 247163.64 | **Easting:** | 1797670.05 | **Date Started:** | 10/14/2017 |
| **Total Depth:** | 251.8 ft. | **Soil Depth:** | 251.8 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/15/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | D50 | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 94% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 60.0 | | | | | | | | | |
| | | Medium dense, wet, gray, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=23.8 %#200=5.9 | | 60.3 | SS-16 | 12 | 12 | 14 | 26 |
| | -45.0 | | | | | | | | |
| 65.0 | | Medium dense | | 65.3 | SS-17 | 14 | 12 | 13 | 25 |
| | -50.0 | | | | | | | | |
| 70.0 | | Medium dense, wet, gray, medium to fine grained, POORLY GRADED SAND (SP, A-1-b(0)), LL=NP PL=NP PI=NP NMC=21.8 %#200=4.0 | | 70.3 | SS-18 | 9 | 9 | 11 | 20 |
| | -55.0 | | | | | | | | |
| 75.0 | | Medium dense, wet, gray and reddish brown, fine to medium grained, with trace gravel, SILTY SAND (SM, A-4(0)), LL=NP PL=NP PI=NP NMC=26.1 %#200=46.9 | | 75.3 | SS-19 | 2 | 3 | 12 | 15 |
| | -60.0 | | | | | | | | |
| 80.0 | | Dense, with trace gravel | | 80.3 | SS-20 | 19 | 17 | 16 | 33 |
| | -65.0 | | | | | | | | |
| 85.0 | | Very dense, brown | | 85.3 | SS-21 | 17 | 26 | 30 | 56 |
| | -70.0 | | | | | | | | |
| 90.0 | | | | | | | | | |




## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-05 | **Boring Location:** | 482+15.5 | **Offset:** | LT 27.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | D.Sikdar |
| **Elev.:** | 18.6 ft. | **Northing:** | 247163.64 | **Easting:** | 1797670.05 | **Date Started:** | 10/14/2017 |
| **Total Depth:** | 251.8 ft. | **Soil Depth:** | 251.8 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/15/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | D50 | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 94% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 90.0 | | | | 90.3 | | | | | |
| | -75.0 | Very dense, wet, brown, medium to fine grained, POORLY GRADED SAND with SILT (SP-SM, A-1-b(0)), LL=NP PL=NP PI=NP NMC=17.9 %#200=8.3 | | | SS-22 | 17 | 27 | 29 | 56 |
| 95.0 | | | | 95.3 | | | | | |
| | | Medium dense | | | SS-23 | 21 | 17 | 12 | 29 |
| | -80.0 | | | | | | | | |
| 100.0 | | | | 100.3 | | | | | |
| | | Medium dense, reddish brown | | | SS-24 | 16 | 7 | 8 | 15 |
| | -85.0 | | | | | | | | |
| 105.0 | | | | 105.3 | | | | | |
| | | Medium dense, wet, gray, fine grained, CLAYEY SAND (SC, A-2-7(0)), LL=69 PL=23 PI=46 NMC=47.7 %#200=16.2 | | | SS-25 | 7 | 8 | 9 | 17 |
| | -90.0 | | | | | | | | |
| 110.0 | | | | 110.3 | | | | | |
| | | Undisturbed sample attempted from 110.3 to 112.3 feet. No recovery. | | | T-3 | | | | |
| | | Stiff, wet, gray, with few sand, FAT CLAY (CH, A-7-6(32)), LL=54 PL=20 PI=34 NMC=26.9 %#200=89.4 | | 112.3 | SS-26 | 3 | 5 | 6 | 11 |
| | -95.0 | | | | | | | | |
| 115.0 | | | | 115.3 | | | | | |
| | | Dense, wet, gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=24.2 %#200=12.6 | | | SS-27 | 9 | 15 | 25 | 40 |
| | -100.0 | | | | | | | | |
| 120.0 | | | | | | | | | |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

SAMPLER TYPE

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

DRILLING METHOD

HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
MR - Mud Rotary Wash
RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-05 | **Boring Location:** | 482+15.5 | **Offset:** | LT 27.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | D.Sikdar |
| **Elev.:** | 18.6 ft. | **Northing:** | 247163.64 | **Easting:** | 1797670.05 | **Date Started:** | 10/14/2017 |
| **Total Depth:** | 251.8 ft. | **Soil Depth:** | 251.8 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/15/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | D50 | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 94% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / FINES CONTENT (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| 120.0 | | | | | | | | | | 10 20 30 40 50 60 70 80 90 |
| | | Very dense, wet, gray, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=23.4 %#200=8.5 | | 120.3 | SS-28 | 26 | 27 | 41 | 68 | |
| | -105.0 | | | | | | | | | |
| 125.0 | | Very dense | | 125.3 | SS-29 | 25 | 26 | 37 | 63 | |
| | -110.0 | | | | | | | | | |
| 130.0 | | Very dense | | 130.3 | SS-30 | 26 | 44 | 50 | 94 | |
| | -115.0 | | | | | | | | | |
| 135.0 | | Very dense | | 135.3 | SS-31 | 16 | 19 | 40 | 59 | |
| | -120.0 | | | | | | | | | |
| 140.0 | | Very dense, wet, gray, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=22.1 %#200=10.5 | | 140.3 | SS-32 | 23 | 32 | 39 | 71 | |
| | -125.0 | | | | | | | | | |
| 145.0 | | Dense | | 145.3 | SS-33 | 18 | 23 | 27 | 50 | |
| | -130.0 | | | | | | | | | |
| 150.0 | | | | | | | | | | |

## LEGEND

**SAMPLER TYPE**

- SS - Split Spoon
- T - Shelby Tube
- DCP - Dynamic Cone Penetrometer
- AC - Auger Cuttings
- GB - Grab Bag
- NQ - Rock Core

**DRILLING METHOD**

- HSA - Hollow Stem Augers
- SSA - Solid Stem Augers
- HA - Hand Auger
- MR - Mud Rotary Wash
- RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-05 | **Boring Location:** | 482+15.5 | **Offset:** | LT 27.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | D.Sikdar |
| **Elev.:** | 18.6 ft. | **Northing:** | 247163.64 | **Easting:** | 1797670.05 | **Date Started:** | 10/14/2017 |
| **Total Depth:** | 251.8 ft. | **Soil Depth:** | 251.8 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/15/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | D50 | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 94% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 150.0 | | | | | | | | | | |
| | | Very dense | | 150.3 | SS-34 | 25 | 39 | 50 | 89 | ● |
| | -135.0 | | | | | | | | | |
| 155.0 | | | | | | | | | | |
| | -140.0 | | | | | | | | | |
| 160.0 | | Dense | | 160.3 | SS-35 | 20 | 23 | 26 | 49 | ● |
| | -145.0 | | | | | | | | | |
| 165.0 | | | | | | | | | | |
| | -150.0 | | | | | | | | | |
| 170.0 | | Very dense, wet, gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=23.6 %#200=13.8 | | 170.3 | SS-36 | 9 | 26 | 38 | 64 | ▲ ○ ● |
| | -155.0 | | | | | | | | | |
| 175.0 | | | | | | | | | | |
| | -160.0 | | | | | | | | | |
| 180.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-05 | **Boring Location:** | 482+15.5 | **Offset:** | LT 27.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | D.Sikdar |
| **Elev.:** | 18.6 ft. | **Northing:** | 247163.64 | **Easting:** | 1797670.05 | **Date Started:** | 10/14/2017 |
| **Total Depth:** | 251.8 ft. | **Soil Depth:** | 251.8 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/15/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | D50 | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 94% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 180.0 | | | | | | | | | | |
| | | Very dense | | 180.3 | SS-37 | 20 | 30 | 36 | 66 | ● |
| | -165.0 | | | | | | | | | |
| 185.0 | | | | | | | | | | |
| | -170.0 | | | | | | | | | |
| 190.0 | | Very dense, wet, gray, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=21.3 %#200=8.8 | | 190.3 | SS-38 | 42 | 50/3 | X | 50+ | ▲ ○ >>● |
| | -175.0 | | | | | | | | | |
| 195.0 | | | | | | | | | | |
| | -180.0 | | | | | | | | | |
| 200.0 | | Very dense | | 200.3 | SS-39 | 44 | 47 | 50/2 | 100+ | >>● |
| | -185.0 | | | | | | | | | |
| 205.0 | | | | | | | | | | |
| | -190.0 | | | | | | | | | |
| 210.0 | | | | | | | | | | |

## LEGEND

**SAMPLER TYPE**

- SS - Split Spoon
- T - Shelby Tube
- DCP - Dynamic Cone Penetrometer
- AC - Auger Cuttings
- GB - Grab Bag
- NQ - Rock Core

**DRILLING METHOD**

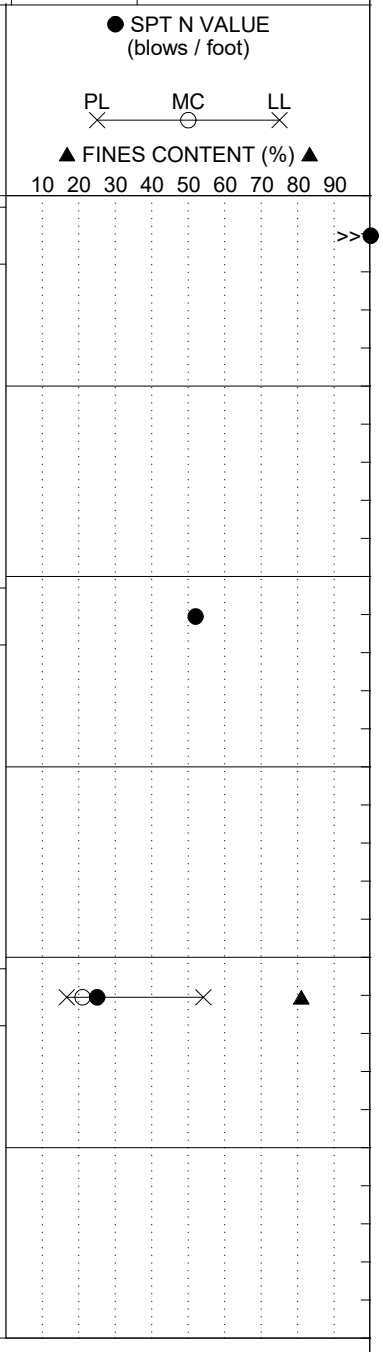
- HSA - Hollow Stem Augers
- SSA - Solid Stem Augers
- HA - Hand Auger
- MR - Mud Rotary Wash
- RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-05 | **Boring Location:** | 482+15.5 | **Offset:** | LT 27.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | D.Sikdar |
| **Elev.:** | 18.6 ft. | **Northing:** | 247163.64 | **Easting:** | 1797670.05 | **Date Started:** | 10/14/2017 |
| **Total Depth:** | 251.8 ft. | **Soil Depth:** | 251.8 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/15/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | D50 | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 94% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 210.0 | | | | | | | | | |
| | | Very dense | | 210.3 | SS-40 | 32 | 50/5 | X | 50+ |
| | -195.0 | | | | | | | | |
| 215.0 | | | | | | | | | |
| | -200.0 | | | | | | | | |
| 220.0 | | Very dense | | 220.3 | SS-41 | 18 | 24 | 28 | 52 |
| | -205.0 | | | | | | | | |
| 225.0 | | | | | | | | | |
| | -210.0 | | | | | | | | |
| 230.0 | | Very stiff, wet, gray, FAT CLAY with SAND (CH, A-7-6(30)), LL=54 PL=17 PI=37 NMC=21.0 %#200=81.0 | | 230.3 | SS-42 | 10 | 12 | 13 | 25 |
| | -215.0 | | | | | | | | |
| 235.0 | | | | | | | | | |
| | -220.0 | | | | | | | | |
| 240.0 | | | | | | | | | |




## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-05 | **Boring Location:** | 482+15.5 | **Offset:** | LT 27.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | D.Sikdar |
| **Elev.:** | 18.6 ft. | **Northing:** | 247163.64 | **Easting:** | 1797670.05 | **Date Started:** | 10/14/2017 |
| **Total Depth:** | 251.8 ft. | **Soil Depth:** | 251.8 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/15/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | D50 | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 94% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 240.0 | | | | | | | | | | |
| | | Hard | | 240.3 | SS-43 | 10 | 23 | 29 | 52 | |
| | -225.0 | | | | | | | | | |
| 245.0 | | | | | | | | | | |
| | -230.0 | | | | | | | | | |
| 250.0 | | Very stiff, wet, gray, with few sand, FAT CLAY (CH, A-7-6(40)), LL=57 PL=17 PI=40 NMC=30.8 %#200=93.3 | | 250.3 | SS-44 | 6 | 9 | 13 | 22 | |
| | | Boring Terminated at 251.8 feet. | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-06 | **Boring Location:** | 483+29.0 | **Offset:** | RT 66.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | D.Sikdar |
| **Elev.:** | 17.0 ft. | **Northing:** | 247262.45 | **Easting:** | 1797779.01 | **Date Started:** | 9/20/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/30/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 5.5 ft. | **Delayed:** | 13.1 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|
| 0.0 | 15.0 | Approximately 12 inches of topsoil.<br>Very loose, moist, reddish brown, fine to medium grained, with trace gravel, SILTY SAND (SM, A-2-4(0)), FILL, LL=NP PL=NP PI=NP NMC=14.0 %#200=22.7 | 0.0 | SS-1 | 1 | 2 | 3 | 5 |
| | | Very loose, gray, FILL | 1.5 | SS-2 | 3 | 1 | 2 | 3 |
| | | Very loose, reddish brown, black, and gray, FILL | 3.0 | SS-3 | 1 | 2 | 1 | 3 |
| 5.0 ▼ | | Loose, wet, brown | 4.5 | SS-4 | 4 | 5 | 5 | 10 |
| | 10.0 | Very loose, wet, brown, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=24.3 %#200=13.5 | 6.0 | SS-5 | 1 | 1 | 1 | 2 |
| 10.0 | | Loose, gray, fine grained | 8.5 | SS-6 | 2 | 3 | 2 | 5 |
| | 5.0 | | | | | | | |
| ▽ | | | 13.5 | SS-7 | 0 | 0 | 0 | 0 |
| 15.0 | | Very loose, wet, gray, fine grained, SILTY SAND (SM, A-4(0)), LL=NP PL=NP PI=NP NMC=32.3 %#200=47.7 | | | | | | |
| | 0.0 | | | | | | | |
| 20.0 | | Very soft, wet, gray, FAT CLAY (CH) | 18.5 | SS-8 | 0 | 0 | 0 | 0 |
| | -5.0 | | | | | | | |
| 25.0 | | Very soft, wet, brown and gray, with trace sand, FAT CLAY (CH, A-7-6(35)), LL=56 PL=24 PI=32 NMC=46.3 %#200=96.6 | 23.5 | SS-9 | 0 | 0 | 0 | 0 |
| | -10.0 | | | | | | | |
| 30.0 | | Undisturbed sample obtained from 28.5 to 30.5 feet. Approximately 20 inches of recovery. | 28.5 | T-1 | | | | |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-06 | **Boring Location:** | 483+29.0 | **Offset:** | RT 66.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | D.Sikdar |
| **Elev.:** | 17.0 ft. | **Northing:** | 247262.45 | **Easting:** | 1797779.01 | **Date Started:** | 9/20/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/30/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 5.5 ft. | **Delayed:** | 13.1 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 30.0 | | Moist, tan, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=28.7 %#200=12.2 | | | | | | | |
| | -15.0 | | | 33.5 | SS-11 | 4 | 5 | 8 | 13 |
| 35.0 | | Medium dense, wet, brown, fine to medium grained, POORLY GRADED SAND (SP) | | | | | | | |
| | -20.0 | | | 38.5 | SS-12 | 8 | 10 | 9 | 19 |
| 40.0 | | Medium dense | | | | | | | |
| | -25.0 | | | 43.5 | SS-13 | 11 | 14 | 21 | 35 |
| 45.0 | | Dense, wet, brown, fine grained, POORLY GRADED SAND (SP, A-3(0)), LL=NP PL=NP PI=NP NMC=22.2 %#200=4.7 | | | | | | | |
| | -30.0 | | | 48.5 | SS-14 | 9 | 10 | 17 | 27 |
| 50.0 | | Medium dense, gray | | | | | | | |
| | -35.0 | | | 53.5 | SS-15 | 17 | 11 | 19 | 30 |
| 55.0 | | Medium dense | | | | | | | |
| | -40.0 | | | 58.5 | SS-16 | 13 | 17 | 20 | 37 |
| 60.0 | | Dense | | | | | | | |

● SPT N VALUE (blows / foot)

PL ⨯ MC ○ LL ⨯

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-06 | **Boring Location:** | 483+29.0 | **Offset:** | RT 66.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | D.Sikdar |
| **Elev.:** | 17.0 ft. | **Northing:** | 247262.45 | **Easting:** | 1797779.01 | **Date Started:** | 9/20/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/30/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 5.5 ft. | **Delayed:** | 13.1 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 60.0 | | | | | | | | | |
| | -45.0 | | | | | | | | |
| 65.0 | | Medium dense, wet, gray, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=23.4 %#200=6.7 | | 63.5 | SS-17 | 10 | 13 | 16 | 29 |
| | -50.0 | | | | | | | | |
| 70.0 | | Dense | | 68.5 | SS-18 | 10 | 16 | 15 | 31 |
| | -55.0 | | | | | | | | |
| 75.0 | | Medium dense | | 73.5 | SS-19 | 7 | 11 | 11 | 22 |
| | -60.0 | | | | | | | | |
| 80.0 | | Medium dense, fine to medium grained, with trace gravel | | 78.5 | SS-20 | 7 | 8 | 7 | 15 |
| | -65.0 | | | | | | | | |
| 85.0 | | Medium dense, brown | | 83.5 | SS-21 | 6 | 7 | 8 | 15 |
| | -70.0 | | | | | | | | |
| 90.0 | | Medium dense, with trace gravel | | 88.5 | SS-22 | 5 | 8 | 17 | 25 |

● SPT N VALUE (blows / foot)

PL ⨯ MC ○ LL ⨯

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

SAMPLER TYPE

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

DRILLING METHOD

HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
MR - Mud Rotary Wash
RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-06 | **Boring Location:** | 483+29.0 | **Offset:** | RT 66.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | D.Sikdar |
| **Elev.:** | 17.0 ft. | **Northing:** | 247262.45 | **Easting:** | 1797779.01 | **Date Started:** | 9/20/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/30/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 5.5 ft. | **Delayed:** | 13.1 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 90.0 | | | | | | | | | |
| | -75.0 | | | | | | | | |
| 95.0 | | Very dense, with trace gravel | | 93.5 | SS-23 | 20 | 37 | 26 | 63 |
| | -80.0 | | | | | | | | |
| 100.0 | | Loose, wet, gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=30.9 %#200=18.8 | | 98.5 | SS-24 | 0 | 3 | 7 | 10 |
| | -85.0 | | | | | | | | |
| 105.0 | | Firm, wet, gray, FAT CLAY (CH) | | 103.5 | SS-25 | 0 | 0 | 6 | 6 |
| | -90.0 | | | | | | | | |
| 110.0 | | Undisturbed sample obtained from 108.0 to 110.0 feet. Approximately 24 inches of recovery. Wet, pale brown, with trace gravel and few sand, FAT CLAY (CH, A-7-5(51)), LL=80 PL=31 PI=49 NMC=52.1 %#200=90.3 | | 108.0 | T-2 | | | | |
| | -95.0 | | | | | | | | |
| 115.0 | | Very soft, gray | | 113.5 | SS-27 | 0 | 0 | 0 | 0 |
| | -100.0 | | | | | | | | |
| 120.0 | | Very dense, wet, gray, POORLY GRADED SAND (SP) | | 118.5 | SS-28 | 17 | 37 | 36 | 73 |

● SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-06 | **Boring Location:** | 483+29.0 | **Offset:** | RT 66.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | D.Sikdar |
| **Elev.:** | 17.0 ft. | **Northing:** | 247262.45 | **Easting:** | 1797779.01 | **Date Started:** | 9/20/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/30/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 5.5 ft. | **Delayed:** | 13.1 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|
| 120.0 | | | | | | | | |
| | -105.0 | | | | | | | |
| | | Very dense | 123.5 | SS-29 | 11 | 21 | 33 | 54 |
| 125.0 | | | | | | | | |
| | -110.0 | | | | | | | |
| | | Very dense, with trace gravel | 128.5 | SS-30 | 13 | 26 | 31 | 57 |
| 130.0 | | | | | | | | |
| | -115.0 | | | | | | | |
| | | Dense | 133.5 | SS-31 | 10 | 17 | 22 | 39 |
| 135.0 | | | | | | | | |
| | -120.0 | | | | | | | |
| | | Dense, wet, gray, fine to medium grained, with few gravel, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=19.3 %#200=7.2 | 138.5 | SS-32 | 8 | 23 | 27 | 50 |
| 140.0 | | | | | | | | |
| | -125.0 | | | | | | | |
| | | Medium dense | 143.5 | SS-33 | 1 | 10 | 16 | 26 |
| 145.0 | | | | | | | | |
| | -130.0 | | | | | | | |
| | | Very dense, fine grained | 148.5 | SS-34 | 13 | 23 | 32 | 55 |
| 150.0 | | | | | | | | |

● SPT N VALUE (blows / foot)

PL ⨯ MC ○ LL ⨯

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

**SAMPLER TYPE**

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

**DRILLING METHOD**

HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
MR - Mud Rotary Wash
RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-06 | **Boring Location:** | 483+29.0 | **Offset:** | RT 66.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | D.Sikdar |
| **Elev.:** | 17.0 ft. | **Northing:** | 247262.45 | **Easting:** | 1797779.01 | **Date Started:** | 9/20/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/30/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 5.5 ft. | **Delayed:** | 13.1 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|
| 150.0 | | | | | | | | |
| | -135.0 | | | | | | | |
| 155.0 | | | | | | | | |
| | -140.0 | | | | | | | |
| | | Medium dense, moist, pale brown, medium to coarse and fine grained, with few gravel, WELL-GRADED SAND (SW, A-1-b(0)), LL=NP PL=NP PI=NP NMC=13.8 %#200=3.7 | 158.5 | SS-35 | 15 | 18 | 12 | 30 |
| 160.0 | | | | | | | | |
| | -145.0 | | | | | | | |
| 165.0 | | | | | | | | |
| | -150.0 | | | | | | | |
| | | Very dense, gray | 168.5 | SS-36 | 32 | 43 | 41 | 84 |
| 170.0 | | | | | | | | |
| | -155.0 | | | | | | | |
| 175.0 | | | | | | | | |
| | -160.0 | | | | | | | |
| | | Very dense | 178.5 | SS-37 | 23 | 33 | 34 | 67 |
| 180.0 | | | | | | | | |

● SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-06 | **Boring Location:** | 483+29.0 | **Offset:** | RT 66.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | D.Sikdar |
| **Elev.:** | 17.0 ft. | **Northing:** | 247262.45 | **Easting:** | 1797779.01 | **Date Started:** | 9/20/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/30/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 5.5 ft. | **Delayed:** | 13.1 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / FINES CONTENT (%) 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 180.0 | | | | | | | | | | |
| | -165.0 | | | | | | | | | |
| 185.0 | | | | | | | | | | |
| | -170.0 | | | | | | | | | |
| | | Very dense, wet, pale brown, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=20.6 %#200=10.2 | | 188.5 | SS-38 | 33 | 44 | 40 | 84 | |
| 190.0 | | | | | | | | | | |
| | -175.0 | | | | | | | | | |
| 195.0 | | | | | | | | | | |
| | -180.0 | | | | | | | | | |
| | | Very dense, moist | | 198.5 | SS-39 | 39 | 50/4 | X | 50/4 | >> |
| 200.0 | | | | | | | | | | |
| | -185.0 | | | | | | | | | |
| 205.0 | | | | | | | | | | |
| | -190.0 | | | | | | | | | |
| | | Very dense | | 208.5 | SS-40 | 29 | 34 | 50/5 | 44 | |
| 210.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-06 | **Boring Location:** | 483+29.0 | **Offset:** | RT 66.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | D.Sikdar |
| **Elev.:** | 17.0 ft. | **Northing:** | 247262.45 | **Easting:** | 1797779.01 | **Date Started:** | 9/20/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/30/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | | AASHTO T206 & T207 | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 5.5 ft. | **Delayed:** | 13.1 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 210.0 | | | | | | | | | | |
| | -195.0 | | | | | | | | | |
| 215.0 | | | | | | | | | | |
| | -200.0 | | | | | | | | | |
| | | Hard, moist, greenish gray, LEAN CLAY with SAND (CL), LL=54 PL=17 PI=37 NMC=20.2 %#200=75.3 | | 218.5 | SS-41 | 7 | 14 | 18 | 32 | |
| 220.0 | | | | | | | | | | |
| | -205.0 | | | | | | | | | |
| 225.0 | | | | | | | | | | |
| | -210.0 | | | | | | | | | |
| | | Firm, moist, light gray, LEAN CLAY with SAND (CL, A-6(7)), LL=30 PL=18 PI=12 NMC=23.2 %#200=76.0 | | 228.5 | SS-42 | 2 | 3 | 4 | 7 | |
| 230.0 | | | | | | | | | | |
| | -215.0 | | | | | | | | | |
| 235.0 | | | | | | | | | | |
| | -220.0 | | | | | | | | | |
| | | Stiff, gray | | 238.5 | SS-43 | 7 | 11 | 13 | 24 | |
| 240.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-06 | **Boring Location:** | 483+29.0 | **Offset:** | RT 66.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | D.Sikdar |
| **Elev.:** | 17.0 ft. | **Northing:** | 247262.45 | **Easting:** | 1797779.01 | **Date Started:** | 9/20/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/30/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 5.5 ft. | **Delayed:** | 13.1 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / FINES CONTENT (%) 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 240.0 | | | | | | | | | | |
| | -225.0 | | | | | | | | | |
| 245.0 | | | | | | | | | | |
| | -230.0 | | | | | | | | | |
| | | | | 248.5 | | | | | | |
| 250.0 | | Very stiff, moist, gray, LEAN CLAY with SAND (CL, A-6(9)), LL=29 PL=16 PI=13 NMC=19.3 %#200=80.8 | | | SS-44 | 9 | 7 | 12 | 19 | |
| | | Boring Terminated at 250.0 feet. | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-07 | **Boring Location:** | 486+28.7 | **Offset:** | LT 26.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.Tisher/C.LaFroscia |
| **Elev.:** | 17.5 ft. | **Northing:** | 247572.66 | **Easting:** | 1797728.14 | **Date Started:** | 10/13/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/14/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | | Approximately 12 inches of asphalt and 6 inches of base material... | | 1.5 | | | | | |
| | 15.0 | Dense, dry, brown, fine to medium grained, with few gravel, SILTY SAND (SM, A-2-4(0)), FILL, LL=NP PL=NP PI=NP NMC=10.9 %#200=20.8 Dense, FILL | | 3.0 | SS-1 | 12 | 18 | 18 | 36 |
| | | | | 4.5 | SS-2 | 11 | 17 | 16 | 33 |
| 5.0 | | Dense, moist, brown, fine to medium grained, SILTY SAND (SM, A-2-4(0)), FILL, LL=NP PL=NP PI=NP NMC=10.7 %#200=17.4 Dense | | 6.0 | SS-3 | 7 | 16 | 17 | 33 |
| | 10.0 | | | | SS-4 | 5 | 16 | 26 | 42 |
| | | | | 8.5 | SS-5 | 7 | 6 | 8 | 14 |
| 10.0 | | Medium dense, moist, light brown, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=19.4 %#200=19.9 | | | | | | | |
| | 5.0 | | | | | | | | |
| | | Very soft, wet, brown | | 13.5 | SS-6 | 0 | 0 | 0 | 0 |
| 15.0 | | | | | | | | | |
| | 0.0 | | | | | | | | |
| | | Very loose, moist | | 18.5 | SS-7 | 0 | 0 | 0 | 0 |
| 20.0 | | | | | | | | | |
| | -5.0 | | | | | | | | |
| | | Undisturbed sample obtained from 23.0 to 25.0 feet. Approximately 24 inches of recovery. Moist, gray, medium to coarse and fine grained, SILTY SAND (SM, A-7-5(8)), LL=86 PL=53 PI=33 NMC=17.7 %#200=40.3 | | 23.0 | T-1 | | | | |
| 25.0 | | | | | | | | | |
| | -10.0 | | | | | | | | |
| | | Loose, moist, brown, fine grained, POORLY GRADED SAND with SILT (SP-SM) | | 28.5 | SS-8 | 7 | 5 | 4 | 9 |
| 30.0 | | | | | | | | | |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

**SAMPLER TYPE**

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

**DRILLING METHOD**

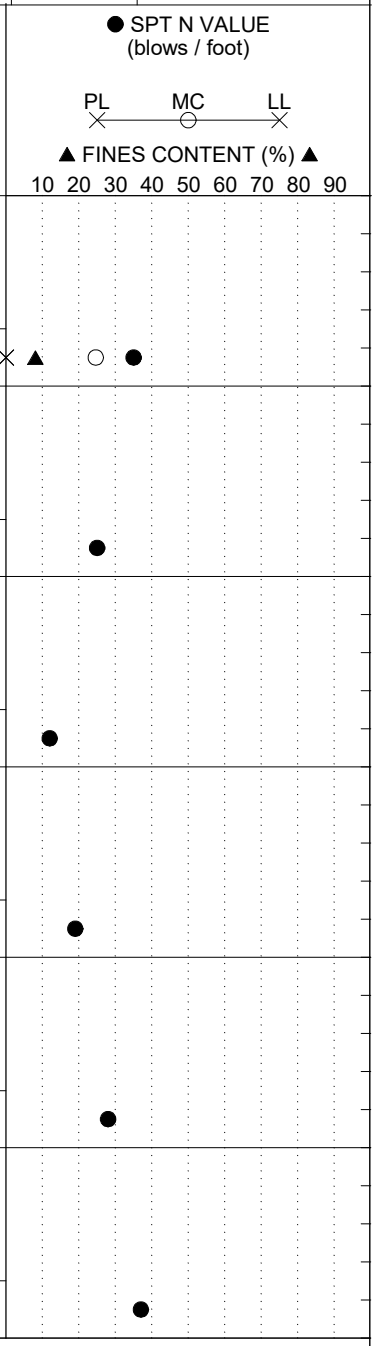
HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
MR - Mud Rotary Wash
RC - Rock Coring

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-07 | **Boring Location:** | 486+28.7 | **Offset:** | LT 26.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.Tisher/C.LaFroscia |
| **Elev.:** | 17.5 ft. | **Northing:** | 247572.66 | **Easting:** | 1797728.14 | **Date Started:** | 10/13/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/14/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 30.0 | | | | | | | | | |
| | -15.0 | | | | | | | | |
| 35.0 | | Dense, moist, light brown, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=24.6 %#200=8.1 | | 33.5 | SS-9 | 17 | 16 | 19 | 35 |
| | -20.0 | | | | | | | | |
| 40.0 | | Medium dense | | 38.5 | SS-10 | 7 | 11 | 14 | 25 |
| | -25.0 | | | | | | | | |
| 45.0 | | Medium dense | | 43.5 | SS-11 | 7 | 5 | 7 | 12 |
| | -30.0 | | | | | | | | |
| 50.0 | | Medium dense | | 48.5 | SS-12 | 7 | 8 | 11 | 19 |
| | -35.0 | | | | | | | | |
| 55.0 | | Medium dense | | 53.5 | SS-13 | 7 | 12 | 16 | 28 |
| | -40.0 | | | | | | | | |
| 60.0 | | Dense, fine to medium grained | | 58.5 | SS-14 | 11 | 16 | 21 | 37 |




## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-07 | **Boring Location:** | 486+28.7 | **Offset:** | LT 26.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.Tisher/C.LaFroscia |
| **Elev.:** | 17.5 ft. | **Northing:** | 247572.66 | **Easting:** | 1797728.14 | **Date Started:** | 10/13/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/14/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | ● SPT N VALUE (blows / foot); PL MC LL; ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 60.0 | | | | | | | | | | |
| | -45.0 | | | | | | | | | |
| 65.0 | | Dense, moist, light brown, fine to medium grained, with trace gravel, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=20.9 %#200=6.7 | | 63.5 | SS-15 | 13 | 18 | 21 | 39 | |
| | -50.0 | | | | | | | | | |
| 70.0 | | Medium dense | | 68.5 | SS-16 | 9 | 11 | 12 | 23 | |
| | -55.0 | | | | | | | | | |
| 75.0 | | Medium dense, moist, white, medium to fine grained, with trace gravel, POORLY GRADED SAND with SILT (SP-SM, A-1-b(0)), LL=NP PL=NP PI=NP NMC=16.7 %#200=7.3 | | 73.5 | SS-17 | 9 | 13 | 17 | 30 | |
| | -60.0 | | | | | | | | | |
| 80.0 | | Medium dense | | 78.5 | SS-18 | 8 | 10 | 10 | 20 | |
| | -65.0 | | | | | | | | | |
| 85.0 | | Loose, reddish brown, medium to coarse grained | | 83.5 | SS-19 | 4 | 4 | 5 | 9 | |
| | -70.0 | | | | | | | | | |
| 90.0 | | Medium dense, light brown, fine to medium grained | | 88.5 | SS-20 | 8 | 8 | 13 | 21 | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-07 | **Boring Location:** | 486+28.7 | **Offset:** | LT 26.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.Tisher/C.LaFroscia |
| **Elev.:** | 17.5 ft. | **Northing:** | 247572.66 | **Easting:** | 1797728.14 | **Date Started:** | 10/13/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/14/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 90.0 | | | | | | | | | | |
| 95.0 | -75.0 | Very dense, moist, reddish brown, fine to medium grained, with little gravel, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=16.4 %#200=7.1 | | 93.5 | SS-21 | 16 | 29 | 31 | 60 | |
| 100.0 | -80.0 | Loose, moist, dark gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=35.0 %#200=20.8 | | 98.5 | SS-22 | 1 | 3 | 2 | 5 | |
| 105.0 | -85.0 | Undisturbed sample obtained from 103.0 to 105.0 feet. Approximately 24 inches of recovery. Moist, gray, fine to medium grained, with few gravel, CLAYEY SAND (SC, A-2-7(1)), LL=49 PL=17 PI=32 NMC=30.7 %#200=20.3 | | 103.0 | T-2 | | | | | |
| 110.0 | -90.0 | Medium dense | | 108.5 | SS-23 | 1 | 5 | 6 | 11 | |
| 115.0 | -95.0 | Undisturbed sample obtained from 113.0 to 115.0 feet. Approximately 24 inches of recovery. Moist, greenish gray, SANDY FAT CLAY (CH, A-7-6(24)), LL=63 PL=28 PI=35 NMC=50.9 %#200=68.3 | | 113.0 | T-3 | | | | | |
| 120.0 | -100.0 | Very dense, moist, white, fine to medium grained, POORLY GRADED SAND (SP) | | 118.5 | SS-24 | 17 | 31 | 32 | 63 | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-07 | **Boring Location:** | 486+28.7 | **Offset:** | LT 26.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.Tisher/C.LaFroscia |
| **Elev.:** | 17.5 ft. | **Northing:** | 247572.66 | **Easting:** | 1797728.14 | **Date Started:** | 10/13/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/14/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 120.0 | | | | | | | | | |
| | -105.0 | | | | | | | | |
| 125.0 | | Very dense | | 123.5 | SS-25 | 14 | 29 | 31 | 60 |
| | -110.0 | | | | | | | | |
| 130.0 | | Very dense, moist, light gray, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=20.9 %#200=9.2 | | 128.5 | SS-26 | 21 | 34 | 37 | 71 |
| | -115.0 | | | | | | | | |
| 135.0 | | Very dense, moist, light gray, fine to medium grained, with trace gravel, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=17.5 %#200=9.1 | | 133.5 | SS-27 | 26 | 47 | 47 | 94 |
| | -120.0 | | | | | | | | |
| 140.0 | | Very dense, pale brown | | 138.5 | SS-28 | 23 | 35 | 37 | 72 |
| | -125.0 | | | | | | | | |
| 145.0 | | Medium dense, brown, medium to coarse grained | | 143.5 | SS-29 | 10 | 12 | 18 | 30 |
| | -130.0 | | | | | | | | |
| 150.0 | | Very dense, fine to medium grained | | 148.5 | SS-30 | 17 | 22 | 37 | 59 |

● SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-07 | **Boring Location:** | 486+28.7 | **Offset:** | LT 26.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.Tisher/C.LaFroscia |
| **Elev.:** | 17.5 ft. | **Northing:** | 247572.66 | **Easting:** | 1797728.14 | **Date Started:** | 10/13/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/14/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 150.0 | | | | | | | | | |
| | -135.0 | | | | | | | | |
| 155.0 | | | | | | | | | |
| | -140.0 | | | | | | | | |
| | | Very dense, moist, greenish gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=18.2 %#200=16.7 | | 158.5 | SS-31 | 26 | 42 | 42 | 84 |
| 160.0 | | | | | | | | | |
| | -145.0 | | | | | | | | |
| 165.0 | | | | | | | | | |
| | -150.0 | | | | | | | | |
| | | Very dense | | 168.5 | SS-32 | 36 | 44 | 34 | 78 |
| 170.0 | | | | | | | | | |
| | -155.0 | | | | | | | | |
| 175.0 | | | | | | | | | |
| | -160.0 | | | | | | | | |
| | | Very dense | | 178.5 | SS-33 | 17 | 32 | 43 | 75 |
| 180.0 | | | | | | | | | |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

**SAMPLER TYPE**

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

**DRILLING METHOD**

HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
MR - Mud Rotary Wash
RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-07 | **Boring Location:** | 486+28.7 | **Offset:** | LT 26.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.Tisher/C.LaFroscia |
| **Elev.:** | 17.5 ft. | **Northing:** | 247572.66 | **Easting:** | 1797728.14 | **Date Started:** | 10/13/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/14/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / FINES CONTENT (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| 180.0 | | | | | | | | | | 10 20 30 40 50 60 70 80 90 |
| 185.0 | -165.0 | | | | | | | | | |
| 190.0 | -170.0 | Very dense, moist, greenish gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=21.8 %#200=12.2 | | 188.5 | SS-34 | 50 | X | X | 50+ | >> |
| 195.0 | -175.0 | | | | | | | | | |
| 200.0 | -180.0 | Very dense, gray and brown | | 198.5 | SS-35 | 38 | 50 | X | 50+ | >> |
| 205.0 | -185.0 | | | | | | | | | |
| 210.0 | -190.0 | Stiff, moist, gray, with few sand, FAT CLAY (CH, A-7-6(54))), LL=70 PL=19 PI=51 NMC=30.0 | | 208.5 | SS-36 | 3 | 3 | 10 | 13 | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-07 | **Boring Location:** | 486+28.7 | **Offset:** | LT 26.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.Tisher/C.LaFroscia |
| **Elev.:** | 17.5 ft. | **Northing:** | 247572.66 | **Easting:** | 1797728.14 | **Date Started:** | 10/13/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/14/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 210.0 | | %#200=95.0 | | | | | | | |
| | -195.0 | | | | | | | | |
| 215.0 | | | | | | | | | |
| | -200.0 | | | 218.5 | | | | | |
| 220.0 | | Very stiff, moist, gray and light brown, LEAN CLAY (CL) | | | SS-37 | 7 | 10 | 12 | 22 |
| | -205.0 | | | | | | | | |
| 225.0 | | | | | | | | | |
| | -210.0 | | | 228.5 | | | | | |
| 230.0 | | Very stiff, moist, gray and light brown, LEAN CLAY with SAND (CL, A-7-6(23)), LL=42 PL=14 PI=28 NMC=22.7 %#200=84.6 | | | SS-38 | 5 | 7 | 9 | 16 |
| | -215.0 | | | | | | | | |
| 235.0 | | | | | | | | | |
| | -220.0 | | | 238.5 | | | | | |
| 240.0 | | Hard | | | SS-39 | 9 | 15 | 19 | 34 |

● SPT N VALUE (blows / foot)

PL ⨯ MC ○ LL ⨯

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-07 | **Boring Location:** | 486+28.7 | **Offset:** | LT 26.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.Tisher/C.LaFroscia |
| **Elev.:** | 17.5 ft. | **Northing:** | 247572.66 | **Easting:** | 1797728.14 | **Date Started:** | 10/13/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/14/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | | AASHTO T206 & T207 | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 240.0 | | | | | | | | | | |
| | -225.0 | | | | | | | | | |
| 245.0 | | | | | | | | | | |
| | -230.0 | | | | | | | | | |
| | | Hard, moist, gray and light brown, SILT with SAND (ML, A-4(0)), LL=NP PL=NP PI=NP NMC=21.4 %#200=75.5 | | 248.5 | SS-40 | 23 | 40 | 50/3 | 100+ | ✕ ○ ▲ >>● |
| 250.0 | | Boring Terminated at 250.0 feet. | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-08 | **Boring Location:** | 489+05.4 | **Offset:** | RT 58.8 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.LaFroscia |
| **Elev.:** | 18.8 ft. | **Northing:** | 247830.7 | **Easting:** | 1797856.33 | **Date Started:** | 9/16/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/20/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | 14.4 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / FINES CONTENT (%) 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | | | | | | | | | | |
| | 15.0 | Approximately 4 inches of topsoil. Loose, dry, reddish brown, fine to medium grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=7.7 %#200=21.3 | | 0.0 | SS-1 | 6 | 4 | 4 | 8 | |
| | | | | 1.5 | SS-2 | 1 | 3 | 4 | 7 | |
| | | Loose, moist | | 3.0 | SS-3 | 1 | 3 | 1 | 4 | |
| 5.0 | | Very loose, moist, reddish brown, fine to medium grained, with trace gravel, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=15.9 %#200=12.4 | | 4.5 | SS-4 | 0 | 1 | 1 | 2 | |
| | | Very loose | | 6.0 | SS-5 | 2 | 2 | 1 | 3 | |
| | 10.0 | Very loose | | | | | | | | |
| 10.0 | | Medium dense | | 8.5 | SS-6 | 4 | 10 | 12 | 22 | |
| | 5.0 | | | 13.5 | SS-7 | 4 | 3 | 2 | 5 | |
| 15.0 ▽ | | Loose, moist, brown and gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=25.9 %#200=19.3 | | | | | | | | |
| | 0.0 | | | 18.5 | SS-8 | 0 | 0 | 0 | 0 | |
| 20.0 | | Very loose, moist, brown, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=30.4 %#200=34.2 | | | | | | | | |
| | -5.0 | | | 23.5 | SS-9 | 0 | 3 | 7 | 10 | |
| 25.0 | | Stiff, moist, brown, FAT CLAY with SAND (CH, A-7-6(25)), LL=51 PL=22 PI=29 NMC=29.7 %#200=82.0 | | | | | | | | |
| | -10.0 | | | 28.5 | SS-10 | 2 | 3 | 5 | 8 | |
| 30.0 | | Loose, moist, brown, fine grained, POORLY GRADED SAND with SILT (SP-SM) | | | | | | | | |

## LEGEND

**SAMPLER TYPE**

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

**DRILLING METHOD**

HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
MR - Mud Rotary Wash
RC - Rock Coring

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-08 | **Boring Location:** | 489+05.4 | **Offset:** | RT 58.8 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.LaFroscia |
| **Elev.:** | 18.8 ft. | **Northing:** | 247830.7 | **Easting:** | 1797856.33 | **Date Started:** | 9/16/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/20/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | 14.4 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | ● SPT N VALUE (blows / foot); PL MC LL; ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 30.0 | | | | | | | | | | |
| 35.0 | -15.0 | Medium dense, moist, brown, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=23.9 %#200=6.6 | | 33.5 | SS-11 | 10 | 11 | 15 | 26 | |
| 40.0 | -20.0 | Medium dense | | 38.5 | SS-12 | 10 | 10 | 14 | 24 | |
| 45.0 | -25.0 | Medium dense | | 43.5 | SS-13 | 7 | 10 | 11 | 21 | |
| 50.0 | -30.0 | Medium dense | | 48.5 | SS-14 | 7 | 11 | 14 | 25 | |
| 55.0 | -35.0 | Dense, moist, brown, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=22.6 %#200=6.4 | | 53.5 | SS-15 | 7 | 14 | 24 | 38 | |
| 60.0 | -40.0 | Dense | | 58.5 | SS-16 | 12 | 17 | 17 | 34 | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-08 | **Boring Location:** | 489+05.4 | **Offset:** | RT 58.8 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.LaFroscia |
| **Elev.:** | 18.8 ft. | **Northing:** | 247830.7 | **Easting:** | 1797856.33 | **Date Started:** | 9/16/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/20/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | 14.4 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | ● SPT N VALUE (blows / foot); PL MC LL; ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 60.0 | | | | | | | | | | |
| | -45.0 | Dense | | 63.5 | SS-17 | 9 | 18 | 18 | 36 | ● |
| 65.0 | | | | | | | | | | |
| | -50.0 | Medium dense | | 68.5 | SS-18 | 8 | 13 | 13 | 26 | ● |
| 70.0 | | | | | | | | | | |
| | -55.0 | Medium dense, moist, brown, medium to fine grained, POORLY GRADED SAND (SP, A-1-b(0)), LL=NP PL=NP PI=NP NMC=21.4 %#200=3.6 | | 73.5 | SS-19 | 7 | 7 | 7 | 14 | ▲ ● ○ |
| 75.0 | | | | | | | | | | |
| | -60.0 | No recovery<br>Note: Weight of rods dropped 3 to 5 feet beyond sample depth. | | 78.5 | SS-20 | 0 | 0 | 0 | 0 | ● |
| 80.0 | | | | | | | | | | |
| | -65.0 | Medium dense, with trace gravel | | 83.5 | SS-21 | 8 | 7 | 6 | 13 | ● |
| 85.0 | | | | | | | | | | |
| | -70.0 | Medium dense, with trace gravel | | 88.5 | SS-22 | 8 | 10 | 10 | 20 | ● |
| 90.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-08 | **Boring Location:** | 489+05.4 | **Offset:** | RT 58.8 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.LaFroscia |
| **Elev.:** | 18.8 ft. | **Northing:** | 247830.7 | **Easting:** | 1797856.33 | **Date Started:** | 9/16/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/20/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | 14.4 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 90.0 | | | | | | | | | |
| 95.0 | -75.0 | Medium dense, with trace gravel | | 93.5 | SS-23 | 9 | 11 | 7 | 18 |
| 100.0 | -80.0 | Medium dense, fine to medium grained | | 98.5 | SS-24 | 11 | 13 | 15 | 28 |
| 105.0 | -85.0 | Medium dense, moist, brown, medium to fine grained, with trace gravel, POORLY GRADED SAND (SP, A-1-b(0)), LL=NP PL=NP PI=NP NMC=19.1 %#200=4.4 | | 103.5 | SS-25 | 12 | 10 | 11 | 21 |
| 110.0 | -90.0 | Firm, moist, gray, with trace sand, FAT CLAY (CH, A-7-5(70)), LL=95 PL=36 PI=59 NMC=43.3 %#200=97.3 | | 108.5 | SS-26 | 0 | 2 | 6 | 8 |
| 115.0 | -95.0 | Undisturbed sample obtained from 113.0 to 115.0 feet. Approximately 15 inches of recovery. Moist, gray and brown, fine to medium grained, with trace gravel, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=26.9 %#200=16.1 | | 113.0 | T-1 | | | | |
| 120.0 | -100.0 | Stiff, moist, gray, with trace sand, FAT CLAY (CH) | | 118.5 | SS-27 | 0 | 4 | 7 | 11 |

● SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

**SAMPLER TYPE**

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

**DRILLING METHOD**

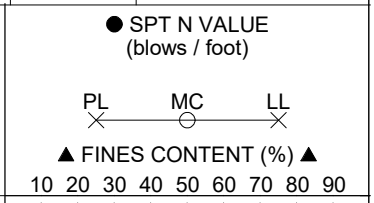
HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
MR - Mud Rotary Wash
RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-08 | **Boring Location:** | 489+05.4 | **Offset:** | RT 58.8 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.LaFroscia |
| **Elev.:** | 18.8 ft. | **Northing:** | 247830.7 | **Easting:** | 1797856.33 | **Date Started:** | 9/16/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/20/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | 14.4 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|
| 120.0 | | | | | | | | |
| | -105.0 | Very stiff, moist, gray, SANDY LEAN CLAY (CL, A-6(3)), LL=29 PL=16 PI=13 NMC=27.8 %#200=51.5 | 123.5 | SS-28 | 0 | 3 | 16 | 19 |
| 125.0 | | | | | | | | |
| | -110.0 | Dense, moist, brown, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM) | 128.5 | SS-29 | 14 | 25 | 16 | 41 |
| 130.0 | | | | | | | | |
| | -115.0 | Dense | 133.5 | SS-30 | 16 | 18 | 20 | 38 |
| 135.0 | | | | | | | | |
| | -120.0 | Very dense | 138.5 | SS-31 | 19 | 26 | 32 | 58 |
| 140.0 | | | | | | | | |
| | -125.0 | Dense | 143.5 | SS-32 | 17 | 23 | 21 | 44 |
| 145.0 | | | | | | | | |
| | -130.0 | Dense | 148.5 | SS-33 | 17 | 22 | 18 | 40 |
| 150.0 | | | | | | | | |




## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-08 | **Boring Location:** | 489+05.4 | **Offset:** | RT 58.8 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.LaFroscia |
| **Elev.:** | 18.8 ft. | **Northing:** | 247830.7 | **Easting:** | 1797856.33 | **Date Started:** | 9/16/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/20/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | 14.4 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / FINES CONTENT (%) 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 150.0 | | | | | | | | | | |
| | -135.0 | | | | | | | | | |
| 155.0 | | | | | | | | | | |
| | -140.0 | Very dense, fine grained | | 158.5 | SS-34 | 20 | 50/5 | X | 50+ | >> |
| 160.0 | | | | | | | | | | |
| | -145.0 | | | | | | | | | |
| 165.0 | | | | | | | | | | |
| | -150.0 | Very dense, moist, brown, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=19.9 %#200=11.3 | | 168.5 | SS-35 | 27 | 56 | 50/3 | 100+ | >> |
| 170.0 | | | | | | | | | | |
| | -155.0 | | | | | | | | | |
| 175.0 | | | | | | | | | | |
| | -160.0 | Very dense | | 178.5 | SS-36 | 15 | 30 | 31 | 61 | |
| 180.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-08 | **Boring Location:** | 489+05.4 | **Offset:** | RT 58.8 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.LaFroscia |
| **Elev.:** | 18.8 ft. | **Northing:** | 247830.7 | **Easting:** | 1797856.33 | **Date Started:** | 9/16/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/20/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | 14.4 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 180.0 | | | | | | | | | | |
| 185.0 | -165.0 | | | | | | | | | |
| 190.0 | -170.0 | Very dense, moist, brown, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=24.5 %#200=14.9 | | 188.5 | SS-37 | 28 | 45 | 48 | 93 | |
| 195.0 | -175.0 | | | | | | | | | |
| 200.0 | -180.0 | Very stiff, moist, gray, SANDY SILT (ML, A-4(0)), LL=NP PL=NP PI=NP NMC=21.6 %#200=57.2 | | 198.5 | SS-38 | 8 | 11 | 9 | 20 | |
| 205.0 | -185.0 | | | | | | | | | |
| 210.0 | -190.0 | Undisturbed sample obtained from 208.5 to 210.5 feet. Approximately 24 inches of recovery. | | 208.5 | T-2 | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-08 | **Boring Location:** | 489+05.4 | **Offset:** | RT 58.8 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.LaFroscia |
| **Elev.:** | 18.8 ft. | **Northing:** | 247830.7 | **Easting:** | 1797856.33 | **Date Started:** | 9/16/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/20/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | 14.4 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 210.0 | | | | | | | | | | |
| | | Very stiff, moist, gray, with few sand, LEAN CLAY (CL, A-6(9)), LL=29 PL=17 PI=12 NMC=25.0 %#200=87.9 | | | | | | | | |
| | -195.0 | | | | | | | | | |
| 215.0 | | | | | | | | | | |
| | | | | 218.5 | | | | | | |
| | -200.0 | Very stiff, moist, gray, FAT CLAY (CH) | | | SS-39 | 9 | 12 | 15 | 27 | ● |
| 220.0 | | | | | | | | | | |
| | -205.0 | | | | | | | | | |
| 225.0 | | | | | | | | | | |
| | -210.0 | | | 228.5 | | | | | | |
| 230.0 | | Very stiff, moist, gray, with few sand and trace gravel, FAT CLAY (CH, A-7-6(37)), LL=54 PL=14 PI=40 NMC=18.6 %#200=89.7 | | | SS-40 | 0 | 10 | 15 | 25 | ⊗●— ▲ |
| | -215.0 | | | | | | | | | |
| 235.0 | | | | | | | | | | |
| | -220.0 | Undisturbed sample obtained from 238.0 to 240.0 feet. Approximately 24 inches of recovery. Moist, gray, LEAN CLAY with SAND (CL, A-7-6(25)), | | 238.0 | T-3 | | | | | ⊗—○— ▲ |
| 240.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-08 | **Boring Location:** | 489+05.4 | **Offset:** | RT 58.8 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.LaFroscia |
| **Elev.:** | 18.8 ft. | **Northing:** | 247830.7 | **Easting:** | 1797856.33 | **Date Started:** | 9/16/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/20/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | 14.4 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 240.0 | | | | | | | | | | |
| | | LL=42 PL=11 PI=31 NMC=16.7 %#200=84.7 | | | | | | | | |
| | -225.0 | | | | | | | | | |
| 245.0 | | | | | | | | | | |
| | -230.0 | Hard | | 248.5 | SS-41 | 11 | 19 | 18 | 37 | ● |
| 250.0 | | | | | | | | | | |
| | | Boring Terminated at 250.0 feet. | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-09 | **Boring Location:** | 491+74.7 | **Offset:** | LT 64.1 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | Chris L\Charles T |
| **Elev.:** | 23.0 ft. | **Northing:** | 248122.74 | **Easting:** | 1797807.61 | **Date Started:** | 10/16/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/17/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 14.5 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|
| 0.0 | | Approximately 12 inches of asphalt. | | | | | | |
| | 20.0 | Dense, moist, red, fine to medium grained, with little gravel, SILTY SAND (SM, A-2-4(0)), FILL, LL=NP PL=NP PI=NP NMC=7.5 %#200=18.4 | 1.0 | SS-1 | 11 | 20 | 19 | 39 |
| | | Dense, with trace gravel, FILL | 2.5 | SS-2 | 8 | 17 | 16 | 33 |
| 5.0 | | Medium dense, moist, red, fine to medium grained, SILTY SAND (SM, A-2-4(0)), FILL, LL=NP PL=NP PI=NP NMC=11.4 %#200=19.3 | 4.0 | SS-3 | 12 | 16 | 12 | 28 |
| | | Medium dense, with trace gravel, FILL | 5.5 | SS-4 | 5 | 8 | 8 | 16 |
| | 15.0 | Dense, FILL | 7.0 | SS-5 | 9 | 16 | 14 | 30 |
| 10.0 | | Medium dense, red and black | 9.5 | SS-6 | 5 | 10 | 15 | 25 |
| | 10.0 | | 13.5 | SS-7 | 13 | 16 | 13 | 29 |
| 15.0 | | Medium dense, moist, light gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=18.4 %#200=16.1 | | | | | | |
| | 5.0 | | 18.5 | SS-8 | 0 | 0 | 0 | 0 |
| 20.0 | | Very loose, moist, light gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=28.6 %#200=26.6 | | | | | | |
| | 0.0 | | 23.5 | SS-9 | 0 | 0 | 0 | 0 |
| 25.0 | | Very loose, moist, light gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=27.5 %#200=29.4 | | | | | | |
| | -5.0 | | 28.0 | T-1 | | | | |
| 30.0 | | Undisturbed sample obtained from 28.0 to 30.0 feet. Approximately 24 inches of recovery. Moist, gray, medium to coarse and fine grained, with | | | | | | |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-09 | **Boring Location:** | 491+74.7 | **Offset:** | LT 64.1 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | Chris L\Charles T |
| **Elev.:** | 23.0 ft. | **Northing:** | 248122.74 | **Easting:** | 1797807.61 | **Date Started:** | 10/16/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/17/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 14.5 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / FINES CONTENT (%) 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 30.0 | | few gravel, SILTY SAND (SM, A-1-b(0)), LL=NP PL=NP PI=NP NMC=116.9 %#200=20.4 | | | | | | | | |
| | -10.0 | | | 33.5 | | | | | | |
| 35.0 | | Medium dense, moist, reddish yellow, fine grained, POORLY GRADED SAND with SILT (SP-SM) | | | SS-10 | 9 | 13 | 17 | 30 | |
| | -15.0 | | | 38.5 | | | | | | |
| 40.0 | | Medium dense, moist, tan, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=24.7 %#200=5.6 | | | SS-11 | 9 | 13 | 16 | 29 | |
| | -20.0 | | | 43.5 | | | | | | |
| 45.0 | | Loose, white | | | SS-12 | 4 | 6 | 2 | 8 | |
| | -25.0 | | | 48.5 | | | | | | |
| 50.0 | | Medium dense | | | SS-13 | 7 | 6 | 9 | 15 | |
| | -30.0 | | | 53.5 | | | | | | |
| 55.0 | | Medium dense | | | SS-14 | 9 | 13 | 5 | 18 | |
| | -35.0 | | | 58.5 | | | | | | |
| 60.0 | | Medium dense, moist, tan, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP | | | SS-15 | 4 | 8 | 15 | 23 | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-09 | **Boring Location:** | 491+74.7 | **Offset:** | LT 64.1 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | Chris L\Charles T |
| **Elev.:** | 23.0 ft. | **Northing:** | 248122.74 | **Easting:** | 1797807.61 | **Date Started:** | 10/16/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/17/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 14.5 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|
| 60.0 | | PL=NP PI=NP NMC=23.9 %#200=7.7 | | | | | | |
| | -40.0 | | 63.5 | | | | | |
| 65.0 | | Medium dense, brown, fine to medium grained | | SS-16 | 9 | 14 | 15 | 29 |
| | -45.0 | | 68.5 | | | | | |
| 70.0 | | Dense, light brown, fine grained | | SS-17 | 9 | 18 | 19 | 37 |
| | -50.0 | | 73.5 | | | | | |
| 75.0 | | Dense, moist, brown, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=22.5 %#200=6.3 | | SS-18 | 15 | 18 | 23 | 41 |
| | -55.0 | | 78.5 | | | | | |
| 80.0 | | Dense, fine to medium grained | | SS-19 | 13 | 20 | 25 | 45 |
| | -60.0 | | 83.5 | | | | | |
| 85.0 | | Medium dense, fine to coarse grained | | SS-20 | 6 | 8 | 8 | 16 |
| | -65.0 | | 88.5 | | | | | |
| 90.0 | | Very dense, moist, brown, medium to fine grained, with few gravel, POORLY GRADED SAND with SILT | | SS-21 | 9 | 20 | 34 | 54 |

● SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

SAMPLER TYPE

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

DRILLING METHOD

HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
MR - Mud Rotary Wash
RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-09 | **Boring Location:** | 491+74.7 | **Offset:** | LT 64.1 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | Chris L\Charles T |
| **Elev.:** | 23.0 ft. | **Northing:** | 248122.74 | **Easting:** | 1797807.61 | **Date Started:** | 10/16/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/17/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 14.5 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / FINES CONTENT (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| 90.0 | | | | | | | | | | 10 20 30 40 50 60 70 80 90 |
| | | (SP-SM, A-1-b(0)), LL=NP PL=NP PI=NP NMC=19.0 %#200=8.8 | | | | | | | | |
| | -70.0 | | | | | | | | | |
| | | Dense | | 93.5 | | | | | | |
| 95.0 | | | | | SS-22 | 10 | 19 | 20 | 39 | |
| | -75.0 | | | | | | | | | |
| | | Medium dense | | 98.5 | | | | | | |
| 100.0 | | | | | SS-23 | 7 | 11 | 10 | 21 | |
| | -80.0 | | | | | | | | | |
| | | Medium dense, moist, brown, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=32.0 %#200=18.9 | | 103.5 | | | | | | |
| 105.0 | | | | | SS-24 | 2 | 4 | 9 | 13 | |
| | -85.0 | | | | | | | | | |
| | | Undisturbed sample obtained from 108.0 to 110.0 feet. Approximately 24 inches of recovery. Stiff, moist, gray, with trace sand, FAT CLAY (CH, A-7-6(84)), LL=102 PL=28 PI=74 NMC=48.6 %#200=97.2 | | 108.0 | | | | | | |
| 110.0 | | | | | T-2 | | | | | |
| | -90.0 | | | | | | | | | |
| | | Firm | | 113.5 | | | | | | |
| 115.0 | | | | | SS-25 | 1 | 3 | 5 | 8 | |
| | -95.0 | | | | | | | | | |
| | | Undisturbed sample obtained from 118.0 to 120.0 feet. Approximately 3 inches of recovery. Moist, gray, fine grained, POORLY GRADED SAND | | 118.0 | | | | | | |
| 120.0 | | | | | T-3 | | | | | |

## LEGEND

**SAMPLER TYPE**

- SS - Split Spoon
- T - Shelby Tube
- DCP - Dynamic Cone Penetrometer
- AC - Auger Cuttings
- GB - Grab Bag
- NQ - Rock Core

**DRILLING METHOD**

- HSA - Hollow Stem Augers
- SSA - Solid Stem Augers
- HA - Hand Auger
- MR - Mud Rotary Wash
- RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-09 | **Boring Location:** | 491+74.7 | **Offset:** | LT 64.1 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | Chris L\Charles T |
| **Elev.:** | 23.0 ft. | **Northing:** | 248122.74 | **Easting:** | 1797807.61 | **Date Started:** | 10/16/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/17/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 14.5 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 120.0 | | with SILT (SP-SM) | | | | | | | | |
| | -100.0 | | | | | | | | | |
| 125.0 | | Dense, moist, light gray, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=21.5 %#200=6.3 | | 123.5 | SS-26 | 13 | 21 | 28 | 49 | |
| | -105.0 | | | | | | | | | |
| 130.0 | | Very dense | | 128.5 | SS-27 | 17 | 28 | 26 | 54 | |
| | -110.0 | | | | | | | | | |
| 135.0 | | Dense, moist, greenish gray, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=24.0 %#200=11.1 | | 133.5 | SS-28 | 21 | 24 | 21 | 45 | |
| | -115.0 | | | | | | | | | |
| 140.0 | | Very dense, moist, light gray, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=21.7 %#200=10.6 | | 138.5 | SS-29 | 15 | 20 | 33 | 53 | |
| | -120.0 | | | | | | | | | |
| 145.0 | | Dense, moist, white, fine to medium grained, POORLY GRADED SAND (SP) | | 143.5 | SS-30 | 15 | 21 | 25 | 46 | |
| | -125.0 | | | | | | | | | |
| 150.0 | | Very dense, gray | | 148.5 | SS-31 | 17 | 23 | 28 | 51 | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-09 | **Boring Location:** | 491+74.7 | **Offset:** | LT 64.1 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | Chris L\Charles T |
| **Elev.:** | 23.0 ft. | **Northing:** | 248122.74 | **Easting:** | 1797807.61 | **Date Started:** | 10/16/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/17/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 14.5 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 150.0 | | | | | | | | | | |
| | -130.0 | | | | | | | | | |
| 155.0 | | | | | | | | | | |
| | -135.0 | Very stiff, moist, gray, LEAN CLAY with SAND (CL, A-6(8)), LL=28 PL=12 PI=16 NMC=24.3 %#200=70.1 | | 158.5 | SS-32 | 10 | 12 | 10 | 22 | |
| 160.0 | | | | | | | | | | |
| | -140.0 | | | | | | | | | |
| 165.0 | | | | | | | | | | |
| | -145.0 | Undisturbed sample obtained from 168.0 to 170.0 feet. Approximately 18 inches of recovery. Moist, gray, fine to medium grained, CLAYEY SAND (SC), LL=33 PL=18 PI=15 NMC=24.9 %#200=34.1 | | 168.0 | T-4 | | | | | |
| 170.0 | | | | | | | | | | |
| | -150.0 | | | | | | | | | |
| 175.0 | | | | | | | | | | |
| | -155.0 | Dense, moist, gray, fine to medium grained, WELL-GRADED SAND with CLAY (SW-SC) | | 178.5 | SS-33 | 19 | 21 | 25 | 46 | |
| 180.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-09 | **Boring Location:** | 491+74.7 | **Offset:** | LT 64.1 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | Chris L\Charles T |
| **Elev.:** | 23.0 ft. | **Northing:** | 248122.74 | **Easting:** | 1797807.61 | **Date Started:** | 10/16/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/17/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 14.5 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 180.0 | | | | | | | | | | |
| 185.0 | -160.0 | | | | | | | | | |
| 190.0 | -165.0 | Very dense, moist, gray, fine to medium grained, with trace gravel, WELL-GRADED SAND with CLAY (SW-SC, A-2-6(0)), LL=33 PL=12 PI=21 NMC=13.9 %#200=10.6 | | 188.5 | SS-34 | 18 | 40 | 49 | 89 | |
| 195.0 | -170.0 | | | | | | | | | |
| 200.0 | -175.0 | Hard, moist, light gray, SILT (ML) | | 198.5 | SS-35 | 39 | 24 | 25 | 49 | |
| 205.0 | -180.0 | | | | | | | | | |
| 210.0 | -185.0 | Undisturbed sample obtained from 208.5 to 210.5 feet. Approximately 24 inches of recovery. | | 208.5 | T-5 | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-09 | **Boring Location:** | 491+74.7 | **Offset:** | LT 64.1 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | Chris L\Charles T |
| **Elev.:** | 23.0 ft. | **Northing:** | 248122.74 | **Easting:** | 1797807.61 | **Date Started:** | 10/16/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/17/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | | AASHTO T206 & T207 | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 14.5 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 210.0 | | | | | | | | | | |
| | | Very stiff, wet, gray, with few sand, LEAN CLAY (CL, A-6(18)), LL=34 PL=13 PI=21 NMC=23.0 %#200=91.6 | | | | | | | | |
| | -190.0 | | | | | | | | | |
| 215.0 | | | | | | | | | | |
| | -195.0 | | | | | | | | | |
| | | Hard, moist | | 218.5 | SS-36 | 9 | 14 | 18 | 32 | |
| 220.0 | | | | | | | | | | |
| | -200.0 | | | | | | | | | |
| 225.0 | | | | | | | | | | |
| | -205.0 | | | | | | | | | |
| | | Stiff | | 228.5 | SS-37 | 5 | 7 | 8 | 15 | |
| 230.0 | | | | | | | | | | |
| | -210.0 | | | | | | | | | |
| 235.0 | | | | | | | | | | |
| | -215.0 | | | | | | | | | |
| | | Very stiff, moist, gray, with few sand, LEAN CLAY (CL, A-6(9)), LL=29 PL=17 PI=12 NMC=23.5 | | 238.5 | SS-38 | 5 | 8 | 9 | 17 | |
| 240.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-09 | **Boring Location:** | 491+74.7 | **Offset:** | LT 64.1 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | Chris L\Charles T |
| **Elev.:** | 23.0 ft. | **Northing:** | 248122.74 | **Easting:** | 1797807.61 | **Date Started:** | 10/16/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/17/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | | AASHTO T206 & T207 | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 14.5 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 240.0 | | %#200=89.2 | | | | | | | | |
| | -220.0 | | | | | | | | | |
| 245.0 | | | | | | | | | | |
| | -225.0 | | | | | | | | | |
| | | Hard, moist, gray, with trace gravel and few sand, LEAN CLAY (CL, A-6(14)), LL=32 PL=14 PI=18 NMC=19.1 %#200=87.6 | | 248.5 | SS-39 | 12 | 19 | 21 | 40 | |
| 250.0 | | Boring Terminated at 250.0 feet. | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-10 | **Boring Location:** | 495+13.0 | **Offset:** | RT 34.9 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | D.Sikdar |
| **Elev.:** | 11.5 ft. | **Northing:** | 248393.83 | **Easting:** | 1798035.98 | **Date Started:** | 9/15/2017 |
| **Total Depth:** | 20.0 ft. | **Soil Depth:** | 20.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/15/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | HSA/MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|
| 0.0 | | | 0.0 | SS-2 | X | X | 3 | 0 |
| | 10.0 | Approximately 12 inches of asphalt. | 1.5 | SS-3 | 3 | 4 | 3 | 7 |
| | | Loose, wet, brown, fine to medium grained, with trace gravel, SILTY SAND (SM), FILL | 3.0 | SS-4 | 2 | 1 | 2 | 3 |
| 5.0 | | Loose, wet, brown, fine grained, SILTY SAND with GRAVEL (SM, A-2-4(0)), FILL, LL=NP PL=NP PI=NP NMC=23.9 %#200=26.2 | 4.5 | SS-5 | 0 | 0 | 0 | 0 |
| | 5.0 | Very loose, brown and black, fine grained, with trace organics, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=21.1 %#200=28.0 | 6.0 | SS-6 | 0 | 0 | 2 | 2 |
| | | Very soft, No Recovery | | | | | | |
| | | Very loose, gray and black, with wood | 8.5 | SS-7 | 0 | 1 | 1 | 2 |
| 10.0 | | Very loose, wet, gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=30.3 %#200=31.9 | | | | | | |
| | 0.0 | | 13.5 | SS-8 | 0 | 1 | 2 | 3 |
| 15.0 | | Very loose, wet, gray, fine grained, with organics and few gravel, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=44.5 %#200=21.3 | | | | | | |
| | -5.0 | | | | | | | |
| | | Mud rotary drilling techniques began at 17.0 feet. | | | | | | |
| | | Very loose, with few gravel | 18.5 | SS-9 | 1 | 2 | 1 | 3 |
| 20.0 | | | | | | | | |
| | | Drilling fluid could not be contained and boring caved in. | | | | | | |
| | | Boring Terminated at 20.0 feet. | | | | | | |
| | | Offset boring approximately 9 feet toward the south. Mud rotary drilled boring identified as HLA-10A. | | | | | | |

● SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-10A | **Boring Location:** | 495+05.3 | **Offset:** | RT 39.0 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | B.Ellis/D.Sikdar |
| **Elev.:** | 11.5 ft. | **Northing:** | 248385.23 | **Easting:** | 1798035.89 | **Date Started:** | 10/2/2017 |
| **Total Depth:** | 250.8 ft. | **Soil Depth:** | 250.8 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/5/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 21.5 ft. | **Delayed:** | 6.5 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / FINES CONTENT (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 10.0 | Mud rotary drilled to 24.3 feet and began sampling. | | | | | | | | |
| 5.0 | 5.0 | | | | | | | | | |
| 10.0 | 0.0 | | | | | | | | | |
| 15.0 | -5.0 | | | | | | | | | |
| 20.0 | -10.0 | | | | | | | | | |
| 25.0 | -15.0 | Medium dense, wet, pale brown and light gray, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=26.2 %#200=9.0 | | 24.3 | SS-1 | 6 | 8 | 9 | 17 | |
| 30.0 | | Medium dense, light brown | | 29.3 | | | | | | |

FINES CONTENT (%): 10 20 30 40 50 60 70 80 90

## LEGEND

**SAMPLER TYPE**

- SS - Split Spoon
- T - Shelby Tube
- DCP - Dynamic Cone Penetrometer
- AC - Auger Cuttings
- GB - Grab Bag
- NQ - Rock Core

**DRILLING METHOD**

- HSA - Hollow Stem Augers
- SSA - Solid Stem Augers
- HA - Hand Auger
- MR - Mud Rotary Wash
- RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-10A | **Boring Location:** | 495+05.3 | **Offset:** | RT 39.0 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | B.Ellis/D.Sikdar |
| **Elev.:** | 11.5 ft. | **Northing:** | 248385.23 | **Easting:** | 1798035.89 | **Date Started:** | 10/2/2017 |
| **Total Depth:** | 250.8 ft. | **Soil Depth:** | 250.8 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/5/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 21.5 ft. | **Delayed:** | 6.5 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|
| 30.0 | | | | SS-2 | 6 | 7 | 9 | 16 |
| | -20.0 | | 34.3 | | | | | |
| 35.0 | | Medium dense, wet, light brown, fine grained, with trace gravel, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=25.3 %#200=7.1 | | SS-3 | 5 | 5 | 6 | 11 |
| | -25.0 | | 39.3 | | | | | |
| 40.0 | | Loose, moist, pale brown and light brown, fine to medium grained, with trace gravel | | SS-4 | 3 | 3 | 3 | 6 |
| | -30.0 | | 44.3 | | | | | |
| 45.0 | | Loose, pale brown and reddish brown, fine grained | | SS-5 | 2 | 2 | 3 | 5 |
| | -35.0 | | 49.3 | | | | | |
| 50.0 | | Loose, pale brown | | SS-6 | 4 | 4 | 5 | 9 |
| | -40.0 | | 54.3 | | | | | |
| 55.0 | | Medium dense | | SS-7 | 10 | 13 | 12 | 25 |
| | -45.0 | | 59.3 | | | | | |
| 60.0 | | Dense, wet, gray, fine to medium grained, POORLY | | | | | | |

● SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

SAMPLER TYPE

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

DRILLING METHOD

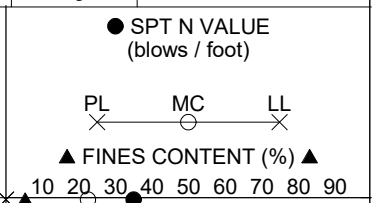
HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
MR - Mud Rotary Wash
RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-10A | **Boring Location:** | 495+05.3 | **Offset:** | RT 39.0 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | B.Ellis/D.Sikdar |
| **Elev.:** | 11.5 ft. | **Northing:** | 248385.23 | **Easting:** | 1798035.89 | **Date Started:** | 10/2/2017 |
| **Total Depth:** | 250.8 ft. | **Soil Depth:** | 250.8 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/5/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 21.5 ft. | **Delayed:** | 6.5 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|
| 60.0 | | | | | | | | |
| | -50.0 | GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=22.5 %#200=5.3 | | SS-8 | 6 | 14 | 21 | 35 |
| 65.0 | | Dense | 64.3 | SS-9 | 9 | 16 | 19 | 35 |
| | -55.0 | | | | | | | |
| 70.0 | | Medium dense, wet, gray, medium to fine grained, POORLY GRADED SAND with SILT (SP-SM, A-1-b(0)), LL=NP PL=NP PI=NP NMC=20.5 %#200=7.2 | 69.3 | SS-10 | 9 | 6 | 6 | 12 |
| | -60.0 | | | | | | | |
| 75.0 | | Medium dense | 74.3 | SS-11 | 6 | 7 | 9 | 16 |
| | -65.0 | | | | | | | |
| 80.0 | | Loose, fine grained | 79.3 | SS-12 | 3 | 4 | 5 | 9 |
| | -70.0 | | | | | | | |
| 85.0 | | Medium dense, wet, gray, coarse to medium grained, with few gravel, POORLY GRADED SAND (SP, A-1-a(0)), LL=NP PL=NP PI=NP NMC=14.6 %#200=2.7 | 84.3 | SS-13 | 4 | 8 | 8 | 16 |
| | -75.0 | | | | | | | |
| 90.0 | | Loose | 89.3 | | | | | |




## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-10A | **Boring Location:** | 495+05.3 | **Offset:** | RT 39.0 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | B.Ellis/D.Sikdar |
| **Elev.:** | 11.5 ft. | **Northing:** | 248385.23 | **Easting:** | 1798035.89 | **Date Started:** | 10/2/2017 |
| **Total Depth:** | 250.8 ft. | **Soil Depth:** | 250.8 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/5/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 21.5 ft. | **Delayed:** | 6.5 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 90.0 | -80.0 | | | | SS-14 | 3 | 5 | 7 | 12 |
| 95.0 | -85.0 | Very loose, wet, gray, medium to fine and coarse grained, with little gravel, CLAYEY SAND (SC, A-2-7(0)), LL=54 PL=16 PI=38 NMC=34.1 %#200=14.3 | | 94.3 | SS-15 | 1 | 1 | 2 | 3 |
| 100.0 | -90.0 | Stiff, wet, gray, FAT CLAY (CH) | | 99.3 | SS-16 | 2 | 5 | 6 | 11 |
| 105.0 | -95.0 | Undisturbed sample obtained from 103.8 to 105.5 feet. Approximately 12 inches of recovery. Wet, gray and brown, FAT CLAY with SAND (CH, A-7-5(45)), LL=82 PL=34 PI=48 NMC=56.4 %#200=81.9 | | 103.8 | T-1 | | | | |
| 110.0 | -100.0 | Medium dense, wet, gray, fine grained, SILTY SAND (SM, A-4(0)), LL=NP PL=NP PI=NP NMC=22.7 %#200=38.4 | | 109.3 | SS-18 | 2 | 11 | 17 | 28 |
| 115.0 | -105.0 | Dense, wet, gray, fine grained, POORLY GRADED SAND (SP, A-3(0)), LL=NP PL=NP PI=NP NMC=22.3 %#200=4.4 | | 114.3 | SS-19 | 10 | 17 | 20 | 37 |
| 120.0 | | Medium dense, wet, gray, fine grained, SILTY SAND | | 119.3 | | | | | |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

SAMPLER TYPE

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

DRILLING METHOD

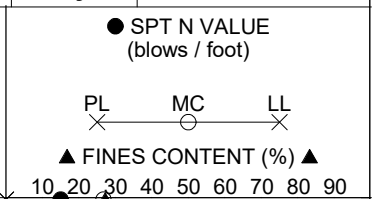
HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
MR - Mud Rotary Wash
RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-10A | **Boring Location:** | 495+05.3 | **Offset:** | RT 39.0 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | B.Ellis/D.Sikdar |
| **Elev.:** | 11.5 ft. | **Northing:** | 248385.23 | **Easting:** | 1798035.89 | **Date Started:** | 10/2/2017 |
| **Total Depth:** | 250.8 ft. | **Soil Depth:** | 250.8 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/5/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | | AASHTO T206 & T207 | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 21.5 ft. | **Delayed:** | 6.5 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|
| 120.0 | -110.0 | (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=26.7 %#200=27.2 | | SS-20 | 4 | 7 | 8 | 15 |
| 125.0 | -115.0 | Very dense, wet, gray, medium to fine grained, POORLY GRADED SAND with SILT (SP-SM) | 124.3 | SS-21 | 11 | 26 | 37 | 63 |
| 130.0 | -120.0 | Dense | 129.3 | SS-22 | 17 | 17 | 31 | 48 |
| 135.0 | -125.0 | Medium dense, with trace gravel | 134.3 | SS-23 | 10 | 9 | 9 | 18 |
| 140.0 | -130.0 | Loose, fine to medium grained | 139.3 | SS-24 | 0 | 0 | 5 | 5 |
| 145.0 | -135.0 | Very dense | 144.3 | SS-25 | 28 | 29 | 34 | 63 |
| 150.0 | | Very dense, wet, gray, medium to fine grained, with | 149.3 | | | | | |




## LEGEND

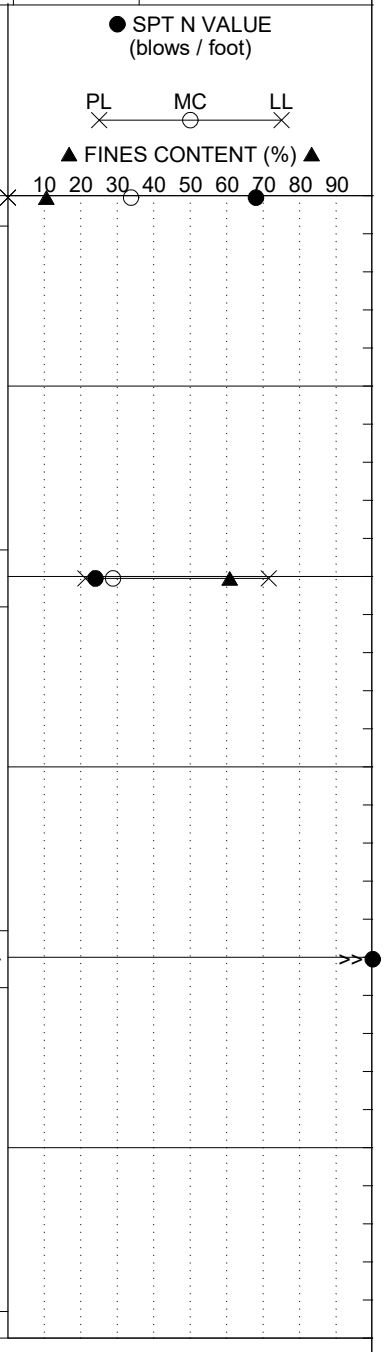
| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-10A | **Boring Location:** | 495+05.3 | **Offset:** | RT 39.0 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | B.Ellis/D.Sikdar |
| **Elev.:** | 11.5 ft. | **Northing:** | 248385.23 | **Easting:** | 1798035.89 | **Date Started:** | 10/2/2017 |
| **Total Depth:** | 250.8 ft. | **Soil Depth:** | 250.8 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/5/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 21.5 ft. | **Delayed:** | 6.5 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 150.0 | | | | | | | | | |
| | -140.0 | trace gravel, WELL-GRADED SAND with SILT (SW-SM, A-1-b(0)), LL=NP PL=NP PI=NP NMC=33.7 %#200=10.5 | | | SS-26 | 22 | 34 | 34 | 68 |
| 155.0 | | | | | | | | | |
| | -145.0 | | | | | | | | |
| 160.0 | | Very stiff, wet, gray, with few gravel, SANDY FAT CLAY (CH, A-7-6(28)), LL=72 PL=21 PI=51 NMC=28.8 %#200=60.8 | | 159.3 | SS-27 | 10 | 10 | 14 | 24 |
| | -150.0 | | | | | | | | |
| 165.0 | | | | | | | | | |
| | -155.0 | | | | | | | | |
| 170.0 | | Very dense, wet, gray, fine to medium grained, SILTY SAND (SM) | | 169.3 | SS-28 | 9 | 32 | 50/4 | 50+ |
| | -160.0 | | | | | | | | |
| 175.0 | | | | | | | | | |
| | -165.0 | | | | | | | | |
| 180.0 | | Medium dense, fine grained | | 179.3 | | | | | |




## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-10A | **Boring Location:** | 495+05.3 | **Offset:** | RT 39.0 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | B.Ellis/D.Sikdar |
| **Elev.:** | 11.5 ft. | **Northing:** | 248385.23 | **Easting:** | 1798035.89 | **Date Started:** | 10/2/2017 |
| **Total Depth:** | 250.8 ft. | **Soil Depth:** | 250.8 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/5/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 21.5 ft. | **Delayed:** | 6.5 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 180.0 | | | | | SS-29 | 0 | 0 | 15 | 15 |
| | -170.0 | | | | | | | | |
| 185.0 | | | | | | | | | |
| | -175.0 | | | | | | | | |
| 190.0 | | Very dense, wet, gray, fine grained, with few gravel, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=20.6 %#200=24.2 | | 189.3 | SS-30 | 25 | 39 | 37 | 76 |
| | -180.0 | | | | | | | | |
| 195.0 | | | | | | | | | |
| | -185.0 | | | | | | | | |
| 200.0 | | Undisturbed sample obtained from 198.8 to 208.8 feet. Approximately 24 inches of recovery. Moist, pale brown, FAT CLAY with SAND (CH, A-7-6(24)), LL=50 PL=16 PI=34 NMC=24.4 %#200=74.8 | | 198.8 | T-2 | | | | |
| | -190.0 | | | | | | | | |
| 205.0 | | | | | | | | | |
| | -195.0 | | | | | | | | |
| 210.0 | | Hard, wet, gray | | 209.3 | | | | | |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-10A | **Boring Location:** | 495+05.3 | **Offset:** | RT 39.0 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | B.Ellis/D.Sikdar |
| **Elev.:** | 11.5 ft. | **Northing:** | 248385.23 | **Easting:** | 1798035.89 | **Date Started:** | 10/2/2017 |
| **Total Depth:** | 250.8 ft. | **Soil Depth:** | 250.8 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/5/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | | AASHTO T206 & T207 | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 21.5 ft. | **Delayed:** | 6.5 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 210.0 | | | | | SS-32 | 10 | 14 | 17 | 31 |
| | -200.0 | | | | | | | | |
| 215.0 | | | | | | | | | |
| | -205.0 | | | | | | | | |
| 220.0 | | Undisturbed sample obtained from 218.8 to 220.8 feet. Approximately 24 inches of recovery. Moist, light brown, LEAN CLAY with SAND (CL, A-6(8)), LL=30 PL=17 PI=13 NMC=16.8 %#200=77.9 | | 218.8 | T-3 | | | | |
| | -210.0 | | | | | | | | |
| 225.0 | | | | | | | | | |
| | -215.0 | | | | | | | | |
| 230.0 | | LL=30 PL=18 PI=12 NMC=23.8 %#200=59.1 Very stiff, moist, greenish gray, SILT (ML) | | 229.3 | SS-34 | 2 | 7 | 11 | 18 |
| | -220.0 | | | | | | | | |
| 235.0 | | | | | | | | | |
| | -225.0 | | | | | | | | |
| 240.0 | | Undisturbed sample attempted from 238.8 to 240.8. Encountered refusal at 238.3 feet. No recovery. | | 238.8 | T-4 | | | | |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-10A | **Boring Location:** | 495+05.3 | **Offset:** | RT 39.0 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | B.Ellis/D.Sikdar |
| **Elev.:** | 11.5 ft. | **Northing:** | 248385.23 | **Easting:** | 1798035.89 | **Date Started:** | 10/2/2017 |
| **Total Depth:** | 250.8 ft. | **Soil Depth:** | 250.8 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/5/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | | AASHTO T206 & T207 | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 90% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 21.5 ft. | **Delayed:** | 6.5 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 240.0 | | | | | | | | | | |
| | -230.0 | Very stiff, wet, gray, trace sand, FAT CLAY (CH) | | 239.8 | SS-35 | 7 | 10 | 16 | 26 | ● |
| 245.0 | | | | | | | | | | |
| | -235.0 | | | | | | | | | |
| 250.0 | | Hard, wet, gray, SANDY SILT (ML, A-4(0)), LL=NP PL=NP PI=NP NMC=25.4 %#200=63.9 | | 249.3 | SS-36 | 6 | 12 | 20 | 32 | ○ ● ▲ |
| | | Boring Terminated at 250.8 feet. | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-12 | **Boring Location:** | 541+43.3 | **Offset:** | LT 45.4 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 16.3 ft. | **Northing:** | 251274.32 | **Easting:** | 1801615.13 | **Date Started:** | 9/13/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/18/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 1.2 ft. | **Delayed:** | 15.1 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 15.0 | Approximately 17 inches of topsoil.<br>Loose, dry, tan, medium grained, POORLY GRADED SAND (SP) | | 0.0 | SS-1 | 3 | 4 | 5 | 9 |
| | | | | 1.5 | SS-2 | 8 | 6 | 8 | 14 |
| | | Medium dense, dry, white and tan, fine to medium grained, with trace gravel, POORLY GRADED SAND (SP, A-3(0)), LL=NP PL=NP PI=NP NMC=3.1 %#200=3.9 | | 3.0 | SS-3 | 3 | 6 | 4 | 10 |
| 5.0 | | Loose, moist, tan<br>Medium dense, wet | | 4.5 | SS-4 | 8 | 10 | 12 | 22 |
| | 10.0 | Very loose, fine to medium grained | | 6.0 | SS-5 | 1 | 1 | 3 | 4 |
| | | | | 8.5 | SS-6 | 4 | 7 | 7 | 14 |
| 10.0 | | Medium dense, wet, tan, medium to fine and coarse grained, POORLY GRADED SAND with GRAVEL (SP, A-1-b(0)), LL=NP PL=NP PI=NP NMC=11.3 %#200=2.5 | | | | | | | |
| | 5.0 | | | 13.5 | SS-7 | 5 | 6 | 9 | 15 |
| 15.0 | | Medium dense, tan and pale brown | | | | | | | |
| | 0.0 | | | | | | | | |
| | | Firm, wet, gray, with trace wood, GRAVELLY FAT CLAY (CH) | | 18.5 | SS-8 | 9 | 3 | 3 | 6 |
| 20.0 | -5.0 | | | | | | | | |
| | | Loose, wet, gray, fine to medium grained, POORLY GRADED SAND (SP) | | 23.5 | SS-9 | 4 | 5 | 5 | 10 |
| 25.0 | -10.0 | | | | | | | | |
| | | Loose, medium to fine grained | | 28.5 | SS-10 | 3 | 4 | 4 | 8 |
| 30.0 | | | | | | | | | |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-12 | **Boring Location:** | 541+43.3 | **Offset:** | LT 45.4 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 16.3 ft. | **Northing:** | 251274.32 | **Easting:** | 1801615.13 | **Date Started:** | 9/13/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/18/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 1.2 ft. | **Delayed:** | 15.1 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | ● SPT N VALUE (blows / foot); PL MC LL; ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 30.0 | -15.0 | | | | | | | | | |
| 35.0 | -20.0 | Loose, wet, brown, fine to medium grained, POORLY GRADED SAND (SP, A-3(0)), LL=NP PL=NP PI=NP NMC=22.3 %#200=3.8 | | 33.5 | SS-11 | 3 | 3 | 4 | 7 | |
| 40.0 | -25.0 | Loose, pale brown, medium to fine grained | | 38.5 | SS-12 | 4 | 4 | 4 | 8 | |
| 45.0 | -30.0 | Loose, dark brown | | 43.5 | SS-13 | 3 | 4 | 6 | 10 | |
| 50.0 | -35.0 | Loose, brown | | 48.5 | SS-14 | 3 | 4 | 5 | 9 | |
| 55.0 | -40.0 | Medium dense, wet, pale brown, fine to medium grained, POORLY GRADED SAND (SP, A-3(0)), LL=NP PL=NP PI=NP NMC=23.6 %#200=4.5 | | 53.5 | SS-15 | 4 | 5 | 6 | 11 | |
| 60.0 | | Medium dense, white and pale brown | | 58.5 | SS-16 | 5 | 5 | 8 | 13 | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-12 | **Boring Location:** | 541+43.3 | **Offset:** | LT 45.4 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 16.3 ft. | **Northing:** | 251274.32 | **Easting:** | 1801615.13 | **Date Started:** | 9/13/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/18/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 1.2 ft. | **Delayed:** | 15.1 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 60.0 | -45.0 | | | | | | | | |
| | | Medium dense, pale brown | | 63.5 | SS-17 | 10 | 14 | 15 | 29 |
| 65.0 | -50.0 | | | | | | | | |
| | | Dense | | 68.5 | SS-18 | 16 | 18 | 20 | 38 |
| 70.0 | -55.0 | | | | | | | | |
| | | Medium dense, brown and pale brown | | 73.5 | SS-19 | 11 | 11 | 13 | 24 |
| 75.0 | -60.0 | | | | | | | | |
| | | Dense, wet, white and pale brown, medium to fine grained, POORLY GRADED SAND (SP, A-1-b(0)), LL=NP PL=NP PI=NP NMC=15.8 %#200=4.9 | | 78.5 | SS-20 | 14 | 17 | 14 | 31 |
| 80.0 | -65.0 | | | | | | | | |
| | | Medium dense | | 83.5 | SS-21 | 9 | 13 | 12 | 25 |
| 85.0 | -70.0 | | | | | | | | |
| | | Very dense, wet, white and pale brown, fine to medium grained, with trace gravel, POORLY | | 88.5 | SS-22 | 19 | 28 | 37 | 65 |
| 90.0 | | | | | | | | | |

● SPT N VALUE (blows / foot)

PL ✕ MC ○ LL ✕

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

**SAMPLER TYPE**

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

**DRILLING METHOD**

HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
MR - Mud Rotary Wash
RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-12 | **Boring Location:** | 541+43.3 | **Offset:** | LT 45.4 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 16.3 ft. | **Northing:** | 251274.32 | **Easting:** | 1801615.13 | **Date Started:** | 9/13/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/18/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 1.2 ft. | **Delayed:** | 15.1 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 90.0 | | | | | | | | | |
| | -75.0 | GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=18.4 %#200=5.4 | | | | | | | |
| | | Very dense, pale brown, fine to medium grained | | 93.5 | SS-23 | 15 | 40 | 50 | 90 |
| 95.0 | | | | | | | | | |
| | -80.0 | | | | | | | | |
| | | Very dense | | 98.5 | SS-24 | 21 | 32 | 37 | 69 |
| 100.0 | | | | | | | | | |
| | -85.0 | | | | | | | | |
| | | Top of spoon: Medium dense, brown, with trace wood | | 103.5 | SS-25 | 17 | 8 | 9 | 17 |
| 105.0 | | Bottom of spoon: Very stiff, wet, very dark gray, FAT CLAY (CH) | | | | | | | |
| | -90.0 | | | | | | | | |
| | | Undisturbed sample obtained from 108.0 to 110.0 feet. Approximately 24 inches of recovery. Stiff, wet, gray, with trace sand, FAT CLAY (CH, A-7-6(79)), LL=97 PL=26 PI=71 NMC=36.6 %#200=96.2 | | 108.0 | T-1 | | | | |
| 110.0 | | | | | | | | | |
| | -95.0 | | | | | | | | |
| | | Stiff, wet, gray, SANDY SILT (ML, A-4(0)), LL=NP PL=NP PI=NP NMC=25.6 %#200=50.1 | | 113.5 | SS-26 | 5 | 4 | 5 | 9 |
| 115.0 | | | | | | | | | |
| | -100.0 | | | | | | | | |
| | | Dense, wet, brown and gray, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM) | | 118.5 | SS-27 | 15 | 17 | 22 | 39 |
| 120.0 | | | | | | | | | |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

SAMPLER TYPE

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

DRILLING METHOD

HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
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thompson ENGINEERING

# RECORD OF TEST BORING

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|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-12 | **Boring Location:** | 541+43.3 | **Offset:** | LT 45.4 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 16.3 ft. | **Northing:** | 251274.32 | **Easting:** | 1801615.13 | **Date Started:** | 9/13/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/18/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 1.2 ft. | **Delayed:** | 15.1 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 120.0 | -105.0 | | | | | | | | |
| 125.0 | | Very dense, pale brown, medium to fine grained | | 123.5 | SS-28 | 17 | 27 | 38 | 65 |
| | -110.0 | | | | | | | | |
| 130.0 | | Very dense | | 128.5 | SS-29 | 21 | 36 | 40 | 76 |
| | -115.0 | | | | | | | | |
| 135.0 | | Very dense | | 133.5 | SS-30 | 25 | 40 | 50 | 90 |
| | -120.0 | | | | | | | | |
| 140.0 | | Very dense, wet, pale brown, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=21.9 %#200=6.3 | | 138.5 | SS-31 | 20 | 32 | 31 | 63 |
| | -125.0 | | | | | | | | |
| 145.0 | | Very dense | | 143.5 | SS-32 | 29 | 38 | 37 | 75 |
| | -130.0 | | | | | | | | |
| 150.0 | | Very stiff, wet, bluish gray, with few sand, LEAN CLAY (CL, A-6(22)), LL=39 PL=15 PI=24 NMC=21.4 | | 148.5 | SS-33 | 9 | 11 | 17 | 28 |

● SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

SAMPLER TYPE

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

DRILLING METHOD

HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
MR - Mud Rotary Wash
RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-12 | **Boring Location:** | 541+43.3 | **Offset:** | LT 45.4 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 16.3 ft. | **Northing:** | 251274.32 | **Easting:** | 1801615.13 | **Date Started:** | 9/13/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/18/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 1.2 ft. | **Delayed:** | 15.1 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 150.0 | | | | | | | | | |
| | -135.0 | %#200=92.6 | | | | | | | |
| 155.0 | | | | | | | | | |
| | -140.0 | | | | | | | | |
| | | | | 158.5 | | | | | |
| 160.0 | | Very stiff, wet, bluish gray, SANDY LEAN CLAY (CL, A-7-6(18)), LL=46 PL=15 PI=31 NMC=22.4 %#200=66.1 | | | SS-34 | 9 | 13 | 16 | 29 |
| | -145.0 | | | | | | | | |
| 165.0 | | | | | | | | | |
| | -150.0 | | | | | | | | |
| | | | | 168.5 | | | | | |
| 170.0 | | Hard | | | SS-35 | 13 | 22 | 32 | 54 |
| | -155.0 | | | | | | | | |
| 175.0 | | | | | | | | | |
| | -160.0 | | | | | | | | |
| | | | | 178.5 | | | | | |
| 180.0 | | Very dense, wet, light gray, fine to medium grained, POORLY GRADED SAND (SP) | | | SS-36 | 44 | 50/5 | X | 50+ |

● SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-12 | **Boring Location:** | 541+43.3 | **Offset:** | LT 45.4 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 16.3 ft. | **Northing:** | 251274.32 | **Easting:** | 1801615.13 | **Date Started:** | 9/13/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/18/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 1.2 ft. | **Delayed:** | 15.1 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 180.0 | | | | | | | | | |
| | -165.0 | | | | | | | | |
| 185.0 | | | | | | | | | |
| | -170.0 | Undisturbed sample obtained from 188.0 to 190.0 feet. Approximately 24 inches of recovery. Hard, wet, gray, with few sand, LEAN CLAY (CL, A-6(11)), LL=29 PL=15 PI=14 NMC=20.4 %#200=89.0 | | 188.0 | T-2 | | | | |
| 190.0 | | | | | | | | | |
| | -175.0 | | | | | | | | |
| 195.0 | | | | | | | | | |
| | -180.0 | Hard, bluish gray, with few sand | | 198.5 | SS-37 | 15 | 19 | 22 | 41 |
| 200.0 | | | | | | | | | |
| | -185.0 | | | | | | | | |
| 205.0 | | | | | | | | | |
| | -190.0 | Hard, wet, bluish gray, SANDY LEAN CLAY (CL, A-6(5)), LL=32 PL=16 PI=16 NMC=19.8 %#200=51.3 | | 208.5 | SS-38 | 15 | 14 | 18 | 32 |
| 210.0 | | | | | | | | | |

● SPT N VALUE (blows / foot)

PL ⨯ MC ○ LL ⨯

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-12 | **Boring Location:** | 541+43.3 | **Offset:** | LT 45.4 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 16.3 ft. | **Northing:** | 251274.32 | **Easting:** | 1801615.13 | **Date Started:** | 9/13/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/18/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 1.2 ft. | **Delayed:** | 15.1 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 210.0 | -195.0 | | | | | | | | |
| 215.0 | -200.0 | Very dense, wet, bluish gray, fine grained, SILTY SAND (SM) | | 218.5 | SS-39 | 42 | 39 | 26 | 65 |
| 220.0 | -205.0 | | | | | | | | |
| 225.0 | -210.0 | Firm, wet, bluish gray, LEAN CLAY with SAND (CL, A-6(10)), LL=34 PL=19 PI=15 NMC=25.7 %#200=74.0 | | 228.5 | SS-40 | 11 | 9 | 7 | 16 |
| 230.0 | -215.0 | | | | | | | | |
| 235.0 | -220.0 | Medium dense, wet, bluish gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP | | 238.5 | SS-41 | 12 | 11 | 11 | 22 |
| 240.0 | | | | | | | | | |

● SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-12 | **Boring Location:** | 541+43.3 | **Offset:** | LT 45.4 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 16.3 ft. | **Northing:** | 251274.32 | **Easting:** | 1801615.13 | **Date Started:** | 9/13/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/18/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 1.2 ft. | **Delayed:** | 15.1 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / FINES CONTENT (%) 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 240.0 | | | | | | | | | | |
| | -225.0 | NMC=22.2 %#200=31.0 | | | | | | | | |
| 245.0 | | | | | | | | | | |
| | -230.0 | | | | | | | | | |
| | | | | 248.5 | | | | | | |
| 250.0 | | Medium dense, wet, gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=24.3 %#200=23.3 | | | SS-42 | 10 | 6 | 8 | 14 | |
| | | Boring Terminated at 250.0 feet. | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-13 | **Boring Location:** | 544+74.9 | **Offset:** | RT 27.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 14.3 ft. | **Northing:** | 251402.66 | **Easting:** | 1801928.72 | **Date Started:** | 9/19/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/21/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 8.5 ft. | **Delayed:** | 7.8 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | | Approximately 2.5 inches of asphalt and 10 inches of crushed aggregate. | | 1.0 | | | | | |
| | 10.0 | Medium dense, dry, white and light tan, fine to medium grained, POORLY GRADED SAND (SP, A-3(0)), LL=NP PL=NP PI=NP NMC=12.5 %#200=2.8 | | | SS-1 | 6 | 9 | 15 | 24 |
| | | Medium dense, moist, white and tan | | 2.5 | | | | | |
| 5.0 | | Medium dense, moist, white and tan, fine to medium grained, with trace gravel, POORLY GRADED SAND (SP, A-3(0)), LL=NP PL=NP PI=NP NMC=15.9 %#200=3.0 | | 4.0 | SS-2 | 8 | 11 | 10 | 21 |
| | | | | | SS-3 | 5 | 9 | 10 | 19 |
| | | Medium dense, tan and pale brown | | 5.5 | | | | | |
| | | Medium dense | | | SS-4 | 6 | 7 | 9 | 16 |
| | | | | 7.0 | | | | | |
| | | | | | SS-5 | 5 | 6 | 8 | 14 |
| | 5.0 | Medium dense, wet, pale brown | | 8.5 | | | | | |
| 10.0 | | | | | SS-6 | 5 | 7 | 7 | 14 |
| | | | | | | | | | |
| | 0.0 | Very loose, wet, pale brown and gray, fine grained, SILTY SAND (SM, A-4(0)), LL=NP PL=NP PI=NP NMC=42.5 %#200=43.9 | | 13.5 | SS-7 | 2 | 1 | 1 | 2 |
| 15.0 | | | | | | | | | |
| | | | | 18.0 | | | | | |
| | -5.0 | Undisturbed sample obtained from 18.0 to 20.0 feet. Approximately 24 inches of recovery. Medium dense, wet, dark brown, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=33.9 %#200=25.3 | | | T-1 | | | | |
| 20.0 | | | | | | | | | |
| | | | | | | | | | |
| | -10.0 | Loose, wet, brown, fine grained, POORLY GRADED SAND (SP) | | 23.5 | SS-8 | 3 | 4 | 5 | 9 |
| 25.0 | | | | | | | | | |
| | | | | 28.5 | | | | | |
| | -15.0 | Loose, fine to medium grained | | | SS-9 | 3 | 3 | 5 | 8 |
| 30.0 | | | | | | | | | |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

**SAMPLER TYPE**

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

**DRILLING METHOD**

HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
MR - Mud Rotary Wash
RC - Rock Coring

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-13 | **Boring Location:** | 544+74.9 | **Offset:** | RT 27.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 14.3 ft. | **Northing:** | 251402.66 | **Easting:** | 1801928.72 | **Date Started:** | 9/19/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/21/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 8.5 ft. | **Delayed:** | 7.8 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 30.0 | | | | | | | | | | |
| 35.0 | -20.0 | Loose, wet, dark brown, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=23.7 %#200=5.2 | | 33.5 | SS-10 | 2 | 2 | 3 | 5 | |
| 40.0 | -25.0 | Very loose, wet, dark brown, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=23.1 %#200=5.5 | | 38.5 | SS-11 | 1 | 0 | 1 | 1 | |
| 45.0 | -30.0 | Very loose, brown | | 43.5 | SS-12 | 1 | 1 | 2 | 3 | |
| 50.0 | -35.0 | Very loose, wet, dark brown, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=17.8 %#200=34.3 | | 48.5 | SS-13 | 2 | 1 | 2 | 3 | |
| 55.0 | -40.0 | Stiff, wet, reddish brown and gray, SANDY SILTY CLAY (CL-ML, A-4(1)), LL=24 PL=17 PI=7 NMC=22.2 %#200=53.2 | | 53.5 | SS-14 | 4 | 6 | 7 | 13 | |
| 60.0 | -45.0 | Dense, wet, bluish gray, fine grained, POORLY GRADED SAND with SILT (SP-SM) | | 58.5 | SS-15 | 1 | 16 | 22 | 38 | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-13 | **Boring Location:** | 544+74.9 | **Offset:** | RT 27.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 14.3 ft. | **Northing:** | 251402.66 | **Easting:** | 1801928.72 | **Date Started:** | 9/19/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/21/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 8.5 ft. | **Delayed:** | 7.8 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / FINES CONTENT (%) 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 60.0 | | | | | | | | | | |
| | -50.0 | Dense, wet, pale brown and brown, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=26.0 %#200=5.8 | | 63.5 | SS-16 | 11 | 15 | 18 | 33 | |
| 65.0 | | | | | | | | | | |
| | -55.0 | Dense, pale brown, with trace gravel | | 68.5 | SS-17 | 12 | 14 | 17 | 31 | |
| 70.0 | | | | | | | | | | |
| | -60.0 | Medium dense, wet, white and pale gray, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=19.7 %#200=9.1 | | 73.5 | SS-18 | 8 | 9 | 13 | 22 | |
| 75.0 | | | | | | | | | | |
| | -65.0 | Dense, pale brown | | 78.5 | SS-19 | 8 | 18 | 23 | 41 | |
| 80.0 | | | | | | | | | | |
| | -70.0 | Very dense | | 83.5 | SS-20 | 18 | 24 | 28 | 52 | |
| 85.0 | | | | | | | | | | |
| | -75.0 | Very dense | | 88.5 | SS-21 | 17 | 25 | 33 | 58 | |
| 90.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-13 | **Boring Location:** | 544+74.9 | **Offset:** | RT 27.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 14.3 ft. | **Northing:** | 251402.66 | **Easting:** | 1801928.72 | **Date Started:** | 9/19/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/21/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 8.5 ft. | **Delayed:** | 7.8 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 90.0 | | | | | | | | | | |
| 95.0 | -80.0 | Dense, wet, pale brown and light tan, fine to medium grained, POORLY GRADED SAND (SP, A-3(0)), LL=NP PL=NP PI=NP NMC=20.8 %#200=3.9 | | 93.5 | SS-22 | 17 | 23 | 26 | 49 | |
| 100.0 | -85.0 | Very soft, wet, dark gray, with trace wood and few sand, FAT CLAY (CH, A-7-5(39)), LL=68 PL=30 PI=38 NMC=47.2 %#200=89.4 | | 98.5 | SS-23 | 0 | 0 | 0 | 0 | |
| 105.0 | -90.0 | Very stiff, wet, gray, fine to medium grained, SILTY SAND (SM) | | 103.5 | SS-24 | 7 | 9 | 9 | 18 | |
| 110.0 | -95.0 | Medium dense, wet, light gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=24.7 %#200=18.8 | | 108.5 | SS-25 | 6 | 6 | 15 | 21 | |
| 115.0 | -100.0 | Dense, gray, with trace clay | | 113.5 | SS-26 | 12 | 19 | 14 | 33 | |
| 120.0 | -105.0 | Very dense, pale brown, medium to fine grained | | 118.5 | SS-27 | 21 | 36 | 46 | 82 | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-13 | **Boring Location:** | 544+74.9 | **Offset:** | RT 27.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 14.3 ft. | **Northing:** | 251402.66 | **Easting:** | 1801928.72 | **Date Started:** | 9/19/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/21/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 8.5 ft. | **Delayed:** | 7.8 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / FINES CONTENT (%) 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 120.0 | | | | | | | | | | |
| 125.0 | -110.0 | Very dense, wet, pale brown, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM) | | 123.5 | SS-28 | 24 | 31 | 31 | 62 | |
| 130.0 | -115.0 | Very dense, wet, pale brown, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=22.9 %#200=7.0 | | 128.5 | SS-29 | 27 | 40 | 44 | 84 | |
| 135.0 | -120.0 | Dense | | 133.5 | SS-30 | 12 | 17 | 24 | 41 | |
| 140.0 | -125.0 | Dense | | 138.5 | SS-31 | 19 | 18 | 16 | 34 | |
| 145.0 | -130.0 | Dense, wet, bluish gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=22.8 %#200=27.2 | | 143.5 | SS-32 | 11 | 16 | 19 | 35 | |
| 150.0 | -135.0 | Dense, bluish gray and brown | | 148.5 | SS-33 | 15 | 20 | 23 | 43 | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-13 | **Boring Location:** | 544+74.9 | **Offset:** | RT 27.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 14.3 ft. | **Northing:** | 251402.66 | **Easting:** | 1801928.72 | **Date Started:** | 9/19/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/21/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 8.5 ft. | **Delayed:** | 7.8 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 150.0 | | | | | | | | | | |
| | -140.0 | | | | | | | | | |
| 155.0 | | | | | | | | | | |
| | | Undisturbed sample obtained from 158.0 to 160.0 feet. Approximately 24 inches of recovery. Wet, bluish gray and brown, LEAN CLAY with SAND (CL, A-7-6(20)), LL=41 PL=16 PI=25 NMC=20.3 %#200=83.1 | | 158.0 | T-2 | | | | | |
| | -145.0 | | | | | | | | | |
| 160.0 | | | | | | | | | | |
| | -150.0 | | | | | | | | | |
| 165.0 | | | | | | | | | | |
| | | Dense, wet, bluish gray, fine grained, CLAYEY SAND (SC, A-6(3)), LL=25 PL=12 PI=13 NMC=16.6 %#200=48.6 | | 168.5 | SS-34 | 15 | 18 | 20 | 38 | |
| | -155.0 | | | | | | | | | |
| 170.0 | | | | | | | | | | |
| | -160.0 | | | | | | | | | |
| 175.0 | | | | | | | | | | |
| | | Very stiff, wet, bluish gray, SANDY LEAN CLAY (CL, A-6(6)), LL=29 PL=11 PI=18 NMC=23.2 %#200=56.0 | | 178.5 | SS-35 | 8 | 11 | 14 | 25 | |
| | -165.0 | | | | | | | | | |
| 180.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-13 | **Boring Location:** | 544+74.9 | **Offset:** | RT 27.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 14.3 ft. | **Northing:** | 251402.66 | **Easting:** | 1801928.72 | **Date Started:** | 9/19/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/21/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 8.5 ft. | **Delayed:** | 7.8 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 180.0 | | | | | | | | | | |
| 185.0 | -170.0 | | | | | | | | | |
| 190.0 | -175.0 | Hard, wet, bluish gray, with few sand, LEAN CLAY (CL, A-6(18)), LL=34 PL=14 PI=20 NMC=20.4 %#200=93.9 | | 188.5 | SS-36 | 0 | 14 | 17 | 31 | |
| 195.0 | -180.0 | | | | | | | | | |
| 200.0 | -185.0 | Hard, wet, bluish gray and brown, SANDY LEAN CLAY (CL, A-6(7)), LL=28 PL=14 PI=14 NMC=17.5 %#200=68.2 | | 198.5 | SS-37 | 13 | 15 | 18 | 33 | |
| 205.0 | -190.0 | | | | | | | | | |
| 210.0 | -195.0 | Very dense, wet, bluish gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP | | 208.5 | SS-38 | 17 | 26 | 31 | 57 | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-13 | **Boring Location:** | 544+74.9 | **Offset:** | RT 27.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 14.3 ft. | **Northing:** | 251402.66 | **Easting:** | 1801928.72 | **Date Started:** | 9/19/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/21/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 8.5 ft. | **Delayed:** | 7.8 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 210.0 | | | | | | | | | | |
| | -200.0 | NMC=21.4 %#200=20.5 | | | | | | | | |
| 215.0 | | | | | | | | | | |
| | -205.0 | Very dense | | 218.5 | SS-39 | 30 | 31 | 26 | 57 | ● |
| 220.0 | | | | | | | | | | |
| | -210.0 | | | | | | | | | |
| 225.0 | | | | | | | | | | |
| | -215.0 | Very stiff, wet, bluish gray, with trace sand, LEAN CLAY (CL, A-6(17)), LL=37 PL=20 PI=17 NMC=28.7 %#200=97.1 | | 228.5 | SS-40 | 8 | 8 | 12 | 20 | ● ⊖ × ▲ |
| 230.0 | | | | | | | | | | |
| | -220.0 | | | | | | | | | |
| 235.0 | | | | | | | | | | |
| | -225.0 | Medium dense, wet, bluish gray, fine grained, SILTY SAND (SM) | | 238.5 | SS-41 | 10 | 9 | 7 | 16 | ● |
| 240.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-13 | **Boring Location:** | 544+74.9 | **Offset:** | RT 27.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 14.3 ft. | **Northing:** | 251402.66 | **Easting:** | 1801928.72 | **Date Started:** | 9/19/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/21/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 8.5 ft. | **Delayed:** | 7.8 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 240.0 | | | | | | | | | | |
| 245.0 | -230.0 | | | | | | | | | |
| 250.0 | -235.0 | Dense, wet, bluish gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=23.2 %#200=24.4 | | 248.5 | SS-42 | 11 | 15 | 17 | 32 | |
| | | Boring Terminated at 250.0 feet. | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-14 | **Boring Location:** | 547+39.7 | **Offset:** | LT 40.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 14.4 ft. | **Northing:** | 251591.94 | **Easting:** | 1802126.53 | **Date Started:** | 9/25/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/27/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 4.0 ft. | **Delayed:** | 8.5 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|
| 0.0 | | Approximately 2 inches of asphalt and 8 inches of crushed aggregate. | 1.0 | | | | | |
| | | Dense, dry, reddish brown and white, fine to medium grained, with trace gravel, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=6.8 %#200=8.0 | 2.5 | SS-1 | 12 | 19 | 22 | 41 |
| | | | 4.0 | SS-2 | 4 | 16 | 19 | 35 |
| 5.0 ▼ | 10.0 | Dense, moist, light tan, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=14.2 %#200=6.5 | | SS-3 | 10 | 20 | 20 | 40 |
| | | Dense, wet, pale brown | 5.5 | SS-4 | 7 | 13 | 15 | 28 |
| | | Medium dense, wet, pale brown, medium to fine grained, with trace gravel, POORLY GRADED SAND (SP, A-1-b(0)), LL=NP PL=NP PI=NP NMC=19.3 %#200=2.9 | 7.0 | SS-5 | 6 | 10 | 10 | 20 |
| 10.0 ▽ | 5.0 | Medium dense, with trace gravel | 8.5 | SS-6 | 5 | 7 | 9 | 16 |
| | | Medium dense, wet, tan, fine to medium grained, with few gravel, POORLY GRADED SAND (SP, A-3(0)), LL=NP PL=NP PI=NP NMC=16.8 %#200=2.1 | | | | | | |
| 15.0 | 0.0 | Medium dense, pale brown | 13.5 | SS-7 | 5 | 8 | 10 | 18 |
| | | | 18.5 | SS-8 | 0 | 0 | 2 | 2 |
| 20.0 | -5.0 | Very loose, wet, dark brown, fine grained, SILTY, CLAYEY SAND (SC-SM, A-4(0)), LL=26 PL=21 PI=5 NMC=36.5 %#200=47.2 | | | | | | |
| 25.0 | -10.0 | Loose, wet, dark gray, fine grained, POORLY GRADED SAND (SP) | 23.5 | SS-9 | 3 | 3 | 4 | 7 |
| | | | 28.5 | SS-10 | 0 | 0 | 0 | 0 |
| 30.0 | -15.0 | Very loose, wet, dark gray, fine grained, POORLY GRADED SAND (SP, A-3(0)), LL=NP PL=NP PI=NP | | | | | | |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

**SAMPLER TYPE**

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

**DRILLING METHOD**

HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
MR - Mud Rotary Wash
RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-14 | **Boring Location:** | 547+39.7 | **Offset:** | LT 40.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 14.4 ft. | **Northing:** | 251591.94 | **Easting:** | 1802126.53 | **Date Started:** | 9/25/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/27/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 4.0 ft. | **Delayed:** | 8.5 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | ● SPT N VALUE (blows / foot); PL MC LL; ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 30.0 | | NMC=20.5 %#200=4.6 | | | | | | | | |
| 35.0 | -20.0 | Very loose, medium to fine grained | | 33.5 | SS-11 | 1 | 1 | 2 | 3 | ● |
| 40.0 | -25.0 | Very loose | | 38.5 | SS-12 | 1 | 1 | 2 | 3 | ● |
| 45.0 | -30.0 | Very loose, wet, dark gray, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=22.2 %#200=8.6 | | 43.5 | SS-13 | 2 | 1 | 2 | 3 | ● ▲ ○ |
| 50.0 | -35.0 | Very loose | | 48.5 | SS-14 | 2 | 1 | 2 | 3 | ● |
| 55.0 | -40.0 | Medium dense, wet, dark gray, fine grained, with trace wood, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=19.9 %#200=27.8 | | 53.5 | SS-15 | 5 | 7 | 6 | 13 | ● ○ ▲ |
| 60.0 | -45.0 | Firm, wet, dark gray, with trace wood, SANDY SILTY CLAY (CL-ML, A-4(1)), LL=25 PL=19 PI=6 NMC=41.8 | | 58.5 | SS-16 | 3 | 2 | 3 | 5 | ● ○ ▲ |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-14 | **Boring Location:** | 547+39.7 | **Offset:** | LT 40.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 14.4 ft. | **Northing:** | 251591.94 | **Easting:** | 1802126.53 | **Date Started:** | 9/25/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/27/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 4.0 ft. | **Delayed:** | 8.5 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | ● SPT N VALUE (blows / foot); PL MC LL; ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 60.0 | | %#200=62.4 | | | | | | | | |
| 65.0 | -50.0 | Soft, wet, dark gray, with trace wood, SILTY CLAY with SAND (CL-ML, A-4(3)), LL=26 PL=20 PI=6 NMC=28.5 %#200=76.6 | | 63.5 | SS-17 | 0 | 1 | 3 | 4 | |
| 70.0 | -55.0 | Undisturbed sample obtained from 68.0 to 70.0 feet. Approximately 24 inches of recovery. Stiff, moist, gray and brown, SANDY LEAN CLAY (CL, A-4(2)), LL=24 PL=15 PI=9 NMC=22.3 %#200=56.1 | | 68.0 | T-1 | | | | | |
| 75.0 | -60.0 | Dense, wet, reddish brown and pale brown, fine to medium grained, POORLY GRADED SAND (SP) | | 73.5 | SS-18 | 15 | 19 | 27 | 46 | |
| 80.0 | -65.0 | Dense, wet, pale brown, fine to medium grained, POORLY GRADED SAND (SP, A-3(0)), LL=NP PL=NP PI=NP NMC=21.0 %#200=4.3 | | 78.5 | SS-19 | 11 | 20 | 29 | 49 | |
| 85.0 | -70.0 | Very dense | | 83.5 | SS-20 | 24 | 26 | 27 | 53 | |
| 90.0 | -75.0 | Medium dense, wet, pale brown, fine to medium grained, with few gravel, POORLY GRADED SAND | | 88.5 | SS-21 | 13 | 13 | 15 | 28 | |

## LEGEND

**SAMPLER TYPE**

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

**DRILLING METHOD**

HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
MR - Mud Rotary Wash
RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-14 | **Boring Location:** | 547+39.7 | **Offset:** | LT 40.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 14.4 ft. | **Northing:** | 251591.94 | **Easting:** | 1802126.53 | **Date Started:** | 9/25/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/27/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 4.0 ft. | **Delayed:** | 8.5 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 90.0 | | (SP, A-3(0)), LL=NP PL=NP PI=NP NMC=20.9 %#200=4.4 | | | | | | | |
| 95.0 | -80.0 | Very dense | | 93.5 | SS-22 | 13 | 22 | 30 | 52 |
| 100.0 | -85.0 | Very dense, wet, pale brown, fine to medium grained, with trace gravel, POORLY GRADED SAND (SP, A-3(0)), LL=NP PL=NP PI=NP NMC=21.0 %#200=4.9 | | 98.5 | SS-23 | 18 | 28 | 36 | 64 |
| 105.0 | -90.0 | Dense | | 103.5 | SS-24 | 23 | 21 | 23 | 44 |
| 110.0 | -95.0 | Dense | | 108.5 | SS-25 | 14 | 21 | 25 | 46 |
| 115.0 | -100.0 | Dense, fine grained | | 113.5 | SS-26 | 9 | 15 | 18 | 33 |
| 120.0 | -105.0 | Very dense, light gray | | 118.5 | SS-27 | 23 | 36 | 38 | 74 |

● SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-14 | **Boring Location:** | 547+39.7 | **Offset:** | LT 40.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 14.4 ft. | **Northing:** | 251591.94 | **Easting:** | 1802126.53 | **Date Started:** | 9/25/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/27/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 4.0 ft. | **Delayed:** | 8.5 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | ● SPT N VALUE (blows / foot); PL MC LL; ▲ FINES CONTENT (%) 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 120.0 | | | | | | | | | | |
| 125.0 | -110.0 | Dense, gray, fine grained | | 123.5 | SS-28 | 15 | 17 | 29 | 46 | |
| 130.0 | -115.0 | Dense, wet, gray, fine to medium grained, POORLY GRADED SAND (SP, A-3(0)), LL=NP PL=NP PI=NP NMC=23.3 %#200=4.8 | | 128.5 | SS-29 | 5 | 24 | 30 | 54 | |
| 135.0 | -120.0 | Very dense | | 133.5 | SS-30 | 20 | 32 | 35 | 67 | |
| 140.0 | -125.0 | Medium dense, wet, bluish gray, fine grained, POORLY GRADED SAND with SILT (SP-SM) | | 138.5 | SS-31 | 18 | 14 | 14 | 28 | |
| 145.0 | -130.0 | Very dense, wet, bluish gray, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=22.0 %#200=10.0 | | 143.5 | SS-32 | 25 | 37 | 36 | 73 | |
| 150.0 | -135.0 | Very dense, wet, bluish gray and brownish gray, fine grained, POORLY GRADED SAND with SILT | | 148.5 | SS-33 | 22 | 30 | 45 | 75 | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-14 | **Boring Location:** | 547+39.7 | **Offset:** | LT 40.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 14.4 ft. | **Northing:** | 251591.94 | **Easting:** | 1802126.53 | **Date Started:** | 9/25/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/27/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 4.0 ft. | **Delayed:** | 8.5 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 150.0 | | | | | | | | | |
| | -140.0 | (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=21.8 %#200=10.4 | | | | | | | |
| 155.0 | | | | | | | | | |
| | -145.0 | Hard, wet, bluish gray, with little sand, LEAN CLAY (CL, A-7-6(22)), LL=42 PL=15 PI=27 NMC=25.2 %#200=85.2 | | 158.5 | SS-34 | 12 | 15 | 23 | 38 |
| 160.0 | | | | | | | | | |
| | -150.0 | | | | | | | | |
| 165.0 | | | | | | | | | |
| | -155.0 | Hard, wet, bluish gray, SANDY LEAN CLAY (CL, A-6(5)), LL=27 PL=11 PI=16 NMC=16.4 %#200=51.5 | | 168.5 | SS-35 | 12 | 17 | 22 | 39 |
| 170.0 | | | | | | | | | |
| | -160.0 | | | | | | | | |
| 175.0 | | | | | | | | | |
| | -165.0 | Hard, gray | | 178.5 | SS-36 | 33 | 16 | 15 | 31 |
| 180.0 | | | | | | | | | |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

SAMPLER TYPE

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

DRILLING METHOD

HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
MR - Mud Rotary Wash
RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-14 | **Boring Location:** | 547+39.7 | **Offset:** | LT 40.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 14.4 ft. | **Northing:** | 251591.94 | **Easting:** | 1802126.53 | **Date Started:** | 9/25/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/27/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 4.0 ft. | **Delayed:** | 8.5 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 180.0 | | | | | | | | | |
| | -170.0 | | | | | | | | |
| 185.0 | | | | | | | | | |
| | -175.0 | Medium dense, wet, gray, fine grained, CLAYEY SAND (SC, A-4(1)), LL=22 PL=14 PI=8 NMC=19.2 %#200=46.8 | | 188.5 | SS-37 | 7 | 4 | 8 | 12 |
| 190.0 | | | | | | | | | |
| | -180.0 | | | | | | | | |
| 195.0 | | | | | | | | | |
| | -185.0 | Very dense, wet, gray, medium grained, with trace clay, POORLY GRADED SAND (SP) | | 198.5 | SS-38 | 27 | 32 | 47 | 79 |
| 200.0 | | | | | | | | | |
| | -190.0 | | | | | | | | |
| 205.0 | | | | | | | | | |
| | -195.0 | Undisturbed sample obtained from 208.0 to 210.0 feet. Approximately 24 inches of recovery. Medium dense, moist, bluish gray, fine grained, | | 208.0 | T-2 | | | | |
| 210.0 | | | | | | | | | |

● SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-14 | **Boring Location:** | 547+39.7 | **Offset:** | LT 40.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 14.4 ft. | **Northing:** | 251591.94 | **Easting:** | 1802126.53 | **Date Started:** | 9/25/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/27/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 4.0 ft. | **Delayed:** | 8.5 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 210.0 | | | | | | | | | |
| | -200.0 | CLAYEY SAND (SC, A-6(1))), LL=29 PL=17 PI=12 NMC=21.8 %#200=41.1 | | | | | | | |
| 215.0 | | | | | | | | | |
| | -205.0 | Very dense, wet, gray, medium to fine grained, POORLY GRADED SAND (SP) | | 218.5 | SS-39 | 50/4 | X | X | 50+ |
| 220.0 | | | | | | | | | |
| | -210.0 | | | | | | | | |
| 225.0 | | | | | | | | | |
| | -215.0 | Very stiff, wet, bluish gray, with trace sand, LEAN CLAY (CL, A-7-6(27)), LL=45 PL=18 PI=27 NMC=28.1 %#200=95.0 | | 228.5 | SS-40 | 11 | 13 | 15 | 28 |
| 230.0 | | | | | | | | | |
| | -220.0 | | | | | | | | |
| 235.0 | | | | | | | | | |
| | -225.0 | Very stiff, moist, bluish gray, SANDY LEAN CLAY (CL, A-6(6)), LL=29 PL=12 PI=17 NMC=17.3 | | 238.5 | SS-41 | 6 | 9 | 12 | 21 |
| 240.0 | | | | | | | | | |

● SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

>>●

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-14 | **Boring Location:** | 547+39.7 | **Offset:** | LT 40.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 14.4 ft. | **Northing:** | 251591.94 | **Easting:** | 1802126.53 | **Date Started:** | 9/25/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/27/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 4.0 ft. | **Delayed:** | 8.5 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / FINES CONTENT (%) 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 240.0 | | %#200=54.6 | | | | | | | | |
| 245.0 | -230.0 | | | | | | | | | |
| 250.0 | -235.0 | Very dense, wet, gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=20.5 %#200=28.7 | | 248.5 | SS-42 | 15 | 25 | 28 | 53 | |
| | | Boring Terminated at 250.0 feet. | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-15 | **Boring Location:** | 550+95.1 | **Offset:** | RT 49.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 13.2 ft. | **Northing:** | 251614.75 | **Easting:** | 1802395.84 | **Date Started:** | 9/28/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/2/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 8.0 ft. | **Delayed:** | 7.3 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | | Approximately 3.5 inches of asphalt and 9.5 inches of base material. | | | | | | | |
| | 10.0 | Medium dense, moist, tan and grayish brown, medium to fine grained, with trace gravel, WELL-GRADED SAND with SILT (SW-SM, A-1-b(0)), FILL, LL=NP PL=NP PI=NP NMC=14.7 %#200=10.8 | | 1.1 | SS-1 | 10 | 9 | 9 | 18 |
| | | | | 2.6 | SS-2 | 2 | 7 | 6 | 13 |
| 5.0 | | Medium dense, brown, with glass and plastic in sample, FILL | | 4.1 | SS-3 | 5 | 9 | 13 | 22 |
| | | Medium dense, moist, reddish brown and brown, fine to medium grained, with trace gravel, WELL-GRADED SAND with SILT (SW-SM, A-2-4(0)), FILL, LL=NP PL=NP PI=NP NMC=12.0 %#200=11.6 | | 5.6 | SS-4 | 10 | 11 | 10 | 21 |
| | 5.0 | Medium dense, pale brown, FILL | | 7.1 | SS-5 | 3 | 3 | 5 | 8 |
| 10.0 | | Loose, moist, gray, fine to medium grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=24.3 %#200=12.0 | | 9.6 | SS-6 | 4 | 4 | 8 | 12 |
| | | Medium dense, wet, pale brown, with trace organics | | | | | | | |
| | 0.0 | | | 13.5 | SS-7 | 6 | 6 | 2 | 8 |
| 15.0 | | Loose, pale brown and gray, fine grained | | | | | | | |
| | -5.0 | | | 18.5 | SS-8 | 2 | 4 | 4 | 8 |
| 20.0 | | Loose, wet, gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=25.9 %#200=21.8 | | | | | | | |
| | -10.0 | | | 23.5 | SS-9 | 1 | 2 | 3 | 5 |
| 25.0 | | Loose, gray and pale brown | | | | | | | |
| | -15.0 | | | 28.5 | SS-10 | 1 | 2 | 1 | 3 |
| 30.0 | | Very loose, pale brown | | | | | | | |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

**SAMPLER TYPE**

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

**DRILLING METHOD**

HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
MR - Mud Rotary Wash
RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-15 | **Boring Location:** | 550+95.1 | **Offset:** | RT 49.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 13.2 ft. | **Northing:** | 251614.75 | **Easting:** | 1802395.84 | **Date Started:** | 9/28/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/2/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 8.0 ft. | **Delayed:** | 7.3 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 30.0 | | | | | | | | | | |
| 35.0 | -20.0 | Very loose, wet, pale brown, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=26.9 %#200=6.2 | | 33.5 | SS-11 | 2 | 2 | 2 | 4 | |
| 40.0 | -25.0 | Very loose, fine to medium grained | | 38.5 | SS-12 | 2 | 1 | 1 | 2 | |
| 45.0 | -30.0 | Very loose, medium to fine grained | | 43.5 | SS-13 | 1 | 0 | 1 | 1 | |
| 50.0 | -35.0 | Firm, wet, gray, SANDY LEAN CLAY (CL, A-6(7)), LL=26 PL=11 PI=15 NMC=22.4 %#200=67.1 | | 48.5 | SS-14 | 0 | 1 | 5 | 6 | |
| 55.0 | -40.0 | Medium dense, wet, light gray and reddish brown, fine to medium grained, CLAYEY SAND (SC, A-2-6(0)), LL=31 PL=13 PI=18 NMC=25.8 %#200=16.8 | | 53.5 | SS-15 | 8 | 4 | 8 | 12 | |
| 60.0 | -45.0 | Medium dense, wet, tan, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM, | | 58.5 | SS-16 | 10 | 11 | 14 | 25 | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-15 | **Boring Location:** | 550+95.1 | **Offset:** | RT 49.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 13.2 ft. | **Northing:** | 251614.75 | **Easting:** | 1802395.84 | **Date Started:** | 9/28/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/2/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 8.0 ft. | **Delayed:** | 7.3 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / ▲ FINES CONTENT (%) ▲ |
|---|---|---|---|---|---|---|---|---|---|---|
| 60.0 | | A-1-b(0)) | | | | | | | | 10 20 30 40 50 60 70 80 90 |
| | -50.0 | | | | | | | | | |
| 65.0 | | Medium dense, pale brown, medium to fine grained | | 63.5 | SS-17 | 8 | 12 | 17 | 29 | |
| | -55.0 | | | | | | | | | |
| 70.0 | | Very dense, pale brown, tan and white | | 68.5 | SS-18 | 13 | 23 | 29 | 52 | |
| | -60.0 | | | | | | | | | |
| 75.0 | | Dense, wet, pale brown and white, medium to fine grained, POORLY GRADED SAND with SILT (SP-SM, A-1-b(0)), LL=NP PL=NP PI=NP NMC=21.9 %#200=5.2 | | 73.5 | SS-19 | 10 | 20 | 21 | 41 | |
| | -65.0 | | | | | | | | | |
| 80.0 | | Dense, pale brown | | 78.5 | SS-20 | 17 | 22 | 24 | 46 | |
| | -70.0 | | | | | | | | | |
| 85.0 | | Dense, wet, pale brown, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=20.9 %#200=5.8 | | 83.5 | SS-21 | 20 | 23 | 24 | 47 | |
| | -75.0 | | | | | | | | | |
| 90.0 | | Dense | | 88.5 | SS-22 | 14 | 20 | 27 | 47 | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-15 | **Boring Location:** | 550+95.1 | **Offset:** | RT 49.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 13.2 ft. | **Northing:** | 251614.75 | **Easting:** | 1802395.84 | **Date Started:** | 9/28/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/2/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 8.0 ft. | **Delayed:** | 7.3 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 90.0 | | | | | | | | | | |
| 95.0 | -80.0 | Dense | | 93.5 | SS-23 | 13 | 22 | 23 | 45 | |
| 100.0 | -85.0 | Hard, reddish brown, SILT (ML, A-4(0)), LL=NP PL=NP PI=NP NMC=21.1 %#200=99.3 | | 98.5 | SS-24 | 19 | 25 | 16 | 41 | |
| 105.0 | -90.0 | Undisturbed sample obtained from 103.0 to 105.0 feet. Approximately 24 inches of recovery. Very stiff, wet, gray, medium to fine grained, with trace clay, POORLY GRADED SAND (SP, A-2-7(0)), LL=84 PL=23 PI=61 NMC=36.5 %#200=5.0 | | 103.0 | T-1 | | | | | |
| 110.0 | -95.0 | Loose, fine grained, bluish gray, with trace clay | | 108.5 | SS-25 | 3 | 4 | 5 | 9 | |
| 115.0 | -100.0 | Dense, wet, gray, medium to coarse grained, POORLY GRADED SAND with SILT and GRAVEL (SP-SM) | | 113.5 | SS-26 | 19 | 17 | 16 | 33 | |
| 120.0 | -105.0 | Dense, wet, light tan, fine to medium grained, POORLY GRADED SAND with SILT and GRAVEL | | 118.5 | SS-27 | 16 | 21 | 22 | 43 | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-15 | **Boring Location:** | 550+95.1 | **Offset:** | RT 49.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 13.2 ft. | **Northing:** | 251614.75 | **Easting:** | 1802395.84 | **Date Started:** | 9/28/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/2/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 8.0 ft. | **Delayed:** | 7.3 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 120.0 | | (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=18.0 %#200=5.1 | | | | | | | |
| | -110.0 | Dense, medium to fine grained, with trace gravel | | 123.5 | SS-28 | 18 | 25 | 24 | 49 |
| 125.0 | | | | | | | | | |
| | -115.0 | Very dense, fine to medium grained, with trace gravel | | 128.5 | SS-29 | 29 | 43 | 50/4 | 100+ |
| 130.0 | | | | | | | | | |
| | -120.0 | Very dense, pale brown, medium to fine grained | | 133.5 | SS-30 | 21 | 28 | 34 | 62 |
| 135.0 | | | | | | | | | |
| | -125.0 | Very stiff, wet, bluish gray, LEAN CLAY with SAND (CL, A-7-6(24)), LL=43 PL=13 PI=30 NMC=21.9 %#200=84.1 | | 138.5 | SS-31 | 11 | 12 | 15 | 27 |
| 140.0 | | | | | | | | | |
| | -130.0 | Undisturbed sample obtained from 143.0 to 145.0 feet. Approximately 24 inches of recovery. Hard, wet, brown, with trace sand, LEAN CLAY (CL, A-7-6(31)), LL=46 PL=15 PI=31 NMC=17.8 %#200=97.0 | | 143.0 | T-2 | | | | |
| 145.0 | | | | | | | | | |
| | -135.0 | Top of spoon: Hard, bluish gray, with trace sand | | 148.5 | SS-32 | 13 | 21 | 45 | 66 |
| 150.0 | | Bottom of spoon: Very dense, wet, bluish gray, fine | | | | | | | |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-15 | **Boring Location:** | 550+95.1 | **Offset:** | RT 49.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 13.2 ft. | **Northing:** | 251614.75 | **Easting:** | 1802395.84 | **Date Started:** | 9/28/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/2/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 8.0 ft. | **Delayed:** | 7.3 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 150.0 | | grained, with trace clay, POORLY GRADED SAND (SP) | | | | | | | |
| | -140.0 | | | | | | | | |
| 155.0 | | | | | | | | | |
| | -145.0 | Hard, wet, bluish gray, LEAN CLAY (CL) | | 158.5 | SS-33 | 11 | 15 | 16 | 31 |
| 160.0 | | | | | | | | | |
| | -150.0 | | | | | | | | |
| 165.0 | | | | | | | | | |
| | -155.0 | Hard, wet, bluish gray, SANDY LEAN CLAY (CL, A-6(7)), LL=28 PL=13 PI=15 NMC=18.9 %#200=63.5 | | 168.5 | SS-34 | 16 | 18 | 20 | 38 |
| 170.0 | | | | | | | | | |
| | -160.0 | | | | | | | | |
| 175.0 | | | | | | | | | |
| | -165.0 | Very stiff | | 178.5 | SS-35 | 6 | 9 | 11 | 20 |
| 180.0 | | | | | | | | | |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

SAMPLER TYPE

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

DRILLING METHOD

HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
MR - Mud Rotary Wash
RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-15 | **Boring Location:** | 550+95.1 | **Offset:** | RT 49.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 13.2 ft. | **Northing:** | 251614.75 | **Easting:** | 1802395.84 | **Date Started:** | 9/28/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/2/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 8.0 ft. | **Delayed:** | 7.3 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 180.0 | | | | | | | | | | |
| 185.0 | -170.0 | | | | | | | | | |
| 190.0 | -175.0 | Hard | | 188.5 | SS-36 | 13 | 25 | 24 | 49 | ● |
| 195.0 | -180.0 | | | | | | | | | |
| 200.0 | -185.0 | Hard, wet, bluish gray, LEAN CLAY with SAND (CL, A-7-6(22)), LL=41 PL=14 PI=27 NMC=18.7 %#200=83.5 | | 198.5 | SS-37 | 12 | 15 | 17 | 32 | ⨯○—●—⨯ ▲ |
| 205.0 | -190.0 | | | | | | | | | |
| 210.0 | -195.0 | Very dense, wet, gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=22.8 | | 208.5 | SS-38 | 50/4 | X | X | 50+ | ⨯ ◭ >>● |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-15 | **Boring Location:** | 550+95.1 | **Offset:** | RT 49.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 13.2 ft. | **Northing:** | 251614.75 | **Easting:** | 1802395.84 | **Date Started:** | 9/28/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/2/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 8.0 ft. | **Delayed:** | 7.3 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 210.0 | | %#200=22.2 | | | | | | | |
| | -200.0 | | | | | | | | |
| 215.0 | | | | | | | | | |
| | -205.0 | Hard, wet, bluish gray, with trace sand, LEAN CLAY (CL) | | 218.5 | SS-39 | 13 | 15 | 29 | 44 |
| 220.0 | | | | | | | | | |
| | -210.0 | | | | | | | | |
| 225.0 | | | | | | | | | |
| | -215.0 | | | 228.0 | | | | | |
| 230.0 | | Undisturbed sample obtained from 228.0 to 230.0 feet. Approximately 10 inches of recovery. Hard, wet, gray, LEAN CLAY with SAND (CL, A-6(6)), LL=27 PL=16 PI=11 NMC=20.4 %#200=72.6 | | | T-3 | | | | |
| | -220.0 | | | | | | | | |
| 235.0 | | | | | | | | | |
| | -225.0 | | | 238.5 | | | | | |
| 240.0 | | Very dense, wet, gray, fine grained, SILTY SAND (SM) | | | SS-40 | 15 | 25 | 27 | 52 |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-15 | **Boring Location:** | 550+95.1 | **Offset:** | RT 49.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 13.2 ft. | **Northing:** | 251614.75 | **Easting:** | 1802395.84 | **Date Started:** | 9/28/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 10/2/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | | AASHTO T206 & T207 | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 8.0 ft. | **Delayed:** | 7.3 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / FINES CONTENT (%) 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 240.0 | | | | | | | | | | |
| | -230.0 | | | | | | | | | |
| 245.0 | | | | | | | | | | |
| | -235.0 | | | | | | | | | |
| | | | | 248.5 | | | | | | |
| 250.0 | | Very dense, wet, gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=21.7 %#200=28.5 | | | SS-41 | 16 | 20 | 24 | 44 | |
| | | Boring Terminated at 250.0 feet | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-16 | **Boring Location:** | 552+74.5 | **Offset:** | LT 30.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 7.6 ft. | **Northing:** | 251780.48 | **Easting:** | 1802633.22 | **Date Started:** | 9/11/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/13/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 5.8 ft. | **Delayed:** | 3.2 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|
| 0.0 | | Approximately 16 inches of topsoil. | 0.0 | | | | | |
| | 5.0 | Loose, dry, brown, fine to medium grained, with trace organics and trace gravel, SILTY SAND (SM) | 1.5 | SS-1 | 3 | 4 | 3 | 7 |
| | | Loose, moist, reddish brown, fine to medium grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=14.6 %#200=18.7 | 3.0 | SS-2 | 3 | 5 | 5 | 10 |
| 5.0 | | Very loose, wet, brown and very dark brown | 4.5 | SS-3 | 2 | 2 | 1 | 3 |
| | | Very loose, wet, dark brown, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=24.6 %#200=28.4 | 6.0 | SS-4 | 1 | 1 | 1 | 2 |
| | 0.0 | Very soft, wet, very dark brown, ELASTIC SILT with SAND (MH, A-7-5(33)), LL=68 PL=33 PI=35 NMC=83.7 %#200=82.4 | | SS-5 | 0 | 0 | 0 | 0 |
| 10.0 | | Very loose, wet, dark brown, fine grained, SILTY SAND (SM, A-4(0)), LL=NP PL=NP PI=NP NMC=33.8 %#200=47.2 | 8.5 | SS-6 | 3 | 2 | 1 | 3 |
| | -5.0 | | | | | | | |
| 15.0 | | Very loose, dark gray, fine to medium grained | 13.5 | SS-7 | 2 | 1 | 2 | 3 |
| | -10.0 | | | | | | | |
| 20.0 | | Very loose, wet, brown and dark brown, fine grained, POORLY GRADED SAND with SILT (SP-SM) | 18.5 | SS-8 | 2 | 1 | 1 | 2 |
| | -15.0 | | | | | | | |
| 25.0 | | Very loose, dark gray | 23.5 | SS-9 | 1 | 1 | 1 | 2 |
| | -20.0 | | | | | | | |
| 30.0 | | Very loose, wet, dark gray, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-2-4(0)), LL=NP | 28.5 | SS-10 | 0 | 0 | 2 | 2 |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-16 | **Boring Location:** | 552+74.5 | **Offset:** | LT 30.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 7.6 ft. | **Northing:** | 251780.48 | **Easting:** | 1802633.22 | **Date Started:** | 9/11/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/13/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 5.8 ft. | **Delayed:** | 3.2 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|
| 30.0 | | PL=NP PI=NP NMC=24.9 %#200=11.4 | | | | | | |
| | -25.0 | | | | | | | |
| | | Very loose | 33.5 | SS-11 | 1 | 1 | 1 | 2 |
| 35.0 | | | | | | | | |
| | -30.0 | | | | | | | |
| | | Very loose, with trace wood | 38.5 | SS-12 | 1 | 2 | 1 | 3 |
| 40.0 | | | | | | | | |
| | -35.0 | | | | | | | |
| | | Undisturbed sample obtained from 43.0 to 45.0 feet. Approximately 24 inches of recovery. Wet, reddish brown, fine to medium grained | 43.0 | T-1 | | | | |
| 45.0 | | | | | | | | |
| | -40.0 | | | | | | | |
| | | Medium dense, tan | 48.5 | SS-13 | 7 | 8 | 11 | 19 |
| 50.0 | | | | | | | | |
| | -45.0 | | | | | | | |
| | | Medium dense, pale brown, medium to fine grained, with trace gravel | 53.5 | SS-14 | 9 | 11 | 18 | 29 |
| 55.0 | | | | | | | | |
| | -50.0 | | | | | | | |
| | | Medium dense | 58.5 | SS-15 | 8 | 10 | 11 | 21 |
| 60.0 | | | | | | | | |

● SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

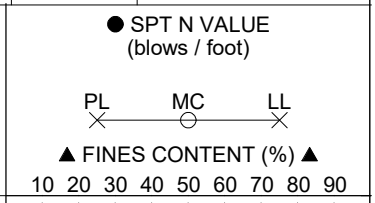
| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-16 | **Boring Location:** | 552+74.5 | **Offset:** | LT 30.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 7.6 ft. | **Northing:** | 251780.48 | **Easting:** | 1802633.22 | **Date Started:** | 9/11/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/13/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 5.8 ft. | **Delayed:** | 3.2 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|
| 60.0 | | | | | | | | |
| | -55.0 | | | | | | | |
| 65.0 | | Dense, wet, pale brown, fine to medium grained, POORLY GRADED SAND (SP, A-3(0)), LL=NP PL=NP PI=NP NMC=20.9 %#200=2.9 | 63.5 | SS-16 | 9 | 15 | 18 | 33 |
| | -60.0 | | | | | | | |
| 70.0 | | Loose, tan and pale brown | 68.5 | SS-17 | 5 | 5 | 3 | 8 |
| | -65.0 | | | | | | | |
| 75.0 | | Medium dense, tan and pale brown, fine to medium grained | 73.5 | SS-18 | 11 | 11 | 15 | 26 |
| | -70.0 | | | | | | | |
| 80.0 | | Very dense, wet, white, tan and pale brown, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=21.1 %#200=5.8 | 78.5 | SS-19 | 18 | 29 | 40 | 69 |
| | -75.0 | | | | | | | |
| 85.0 | | Dense, pale brown | 83.5 | SS-20 | 13 | 22 | 17 | 39 |
| | -80.0 | | | | | | | |
| 90.0 | | Dense | 88.5 | SS-21 | 14 | 16 | 17 | 33 |




## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-16 | **Boring Location:** | 552+74.5 | **Offset:** | LT 30.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 7.6 ft. | **Northing:** | 251780.48 | **Easting:** | 1802633.22 | **Date Started:** | 9/11/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/13/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 5.8 ft. | **Delayed:** | 3.2 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 90.0 | | | | | | | | | | |
| 95.0 | -85.0 | Dense | | 93.5 | SS-22 | 9 | 16 | 20 | 36 | |
| 100.0 | -90.0 | Firm, wet, gray, with few sand and trace gravel, FAT CLAY (CH, A-7-6(51)), LL=75 PL=24 PI=51 NMC=34.1 %#200=89.5 | | 98.5 | SS-23 | 0 | 3 | 4 | 7 | |
| 105.0 | -95.0 | Undisturbed sample obtained from 103.0 to 105.0 feet. Approximately 24 inches of recovery. Medium dense, wet, dark brown, fine grained, CLAYEY SAND (SC, A-2-6(1)), LL=30 PL=14 PI=16 NMC=23.3 %#200=32.3 | | 103.0 | T-2 | | | | | |
| 110.0 | -100.0 | Top of spoon: Very dense<br>Bottom of spoon: Very dense, wet, brown, fine to medium grained, POORLY GRADED SAND (SP) | | 108.5 | SS-24 | 7 | 19 | 37 | 56 | |
| 115.0 | -105.0 | Very dense, pale brown | | 113.5 | SS-25 | 15 | 30 | 27 | 57 | |
| 120.0 | -110.0 | Medium dense, wet, pale brown, medium to fine grained, POORLY GRADED SAND with GRAVEL | | 118.5 | SS-26 | 11 | 13 | 13 | 26 | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-16 | **Boring Location:** | 552+74.5 | **Offset:** | LT 30.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 7.6 ft. | **Northing:** | 251780.48 | **Easting:** | 1802633.22 | **Date Started:** | 9/11/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/13/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 5.8 ft. | **Delayed:** | 3.2 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 120.0 | | | | | | | | | |
| | -115.0 | (SP, A-1-b(0)), LL=NP PL=NP PI=NP NMC=18.3 %#200=3.5 | | | | | | | |
| 125.0 | | Very dense, coarse to fine grained | | 123.5 | SS-27 | 21 | 29 | 38 | 67 |
| | -120.0 | | | | | | | | |
| 130.0 | | Very dense, wet, pale brown, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=26.6 %#200=5.1 | | 128.5 | SS-28 | 16 | 21 | 31 | 52 |
| | -125.0 | | | | | | | | |
| 135.0 | | Very stiff, wet, bluish gray, LEAN CLAY (CL) | | 133.5 | SS-29 | 8 | 11 | 14 | 25 |
| | -130.0 | | | | | | | | |
| 140.0 | | Undisturbed sample obtained from 138.0 to 140.0 feet. Approximately 18 inches of recovery. Hard, wet, tan, with few sand, LEAN CLAY (CL, A-7-6(28)), LL=47 PL=18 PI=29 NMC=21.8 %#200=92.1 | | 138.0 | T-3 | | | | |
| | -135.0 | | | | | | | | |
| 145.0 | | Hard, wet, bluish gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=31.2 %#200=33.6 | | 143.5 | SS-30 | 24 | 24 | 19 | 43 |
| | -140.0 | | | | | | | | |
| 150.0 | | Very stiff, wet, bluish gray, LEAN CLAY (CL) | | 148.5 | SS-31 | 9 | 12 | 16 | 28 |

● SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-16 | **Boring Location:** | 552+74.5 | **Offset:** | LT 30.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 7.6 ft. | **Northing:** | 251780.48 | **Easting:** | 1802633.22 | **Date Started:** | 9/11/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/13/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 5.8 ft. | **Delayed:** | 3.2 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 150.0 | | | | | | | | | | |
| | -145.0 | | | | | | | | | |
| 155.0 | | | | | | | | | | |
| | -150.0 | | | | | | | | | |
| | | Hard, wet, bluish gray, SANDY LEAN CLAY (CL, A-6(10)), LL=33 PL=11 PI=22 NMC=66.7 %#200=60.1 | | 158.5 | SS-32 | 21 | 28 | 26 | 54 | |
| 160.0 | | | | | | | | | | |
| | -155.0 | | | | | | | | | |
| 165.0 | | | | | | | | | | |
| | -160.0 | | | | | | | | | |
| | | Very stiff, wet, bluish gray, SANDY LEAN CLAY (CL, A-6(6)), LL=30 PL=11 PI=19 NMC=20.3 %#200=53.0 | | 168.5 | SS-33 | 12 | 11 | 12 | 23 | |
| 170.0 | | | | | | | | | | |
| | -165.0 | | | | | | | | | |
| 175.0 | | | | | | | | | | |
| | -170.0 | | | | | | | | | |
| | | Very stiff | | 178.5 | SS-34 | 8 | 11 | 12 | 23 | |
| 180.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-16 | **Boring Location:** | 552+74.5 | **Offset:** | LT 30.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 7.6 ft. | **Northing:** | 251780.48 | **Easting:** | 1802633.22 | **Date Started:** | 9/11/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/13/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 5.8 ft. | **Delayed:** | 3.2 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | ● SPT N VALUE (blows / foot); PL MC LL; ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 180.0 | | | | | | | | | | |
| | -175.0 | | | | | | | | | |
| 185.0 | | | | | | | | | | |
| | -180.0 | | | | | | | | | |
| | | Very stiff | | 188.5 | | | | | | |
| 190.0 | | | | | SS-35 | 8 | 10 | 19 | 29 | ● |
| | -185.0 | | | | | | | | | |
| 195.0 | | | | | | | | | | |
| | -190.0 | | | 198.0 | | | | | | |
| | | Undisturbed sample obtained from 198.0 to 200.0 feet. Approximately 24 inches of recovery. Hard, wet, tan and dark brown, SANDY LEAN CLAY (CL, A-6(14)), LL=37 PL=11 PI=26 NMC=14.8 %#200=66.1 | | | T-4 | | | | | ⊗—⊗—× ▲ |
| 200.0 | | | | | | | | | | |
| | -195.0 | | | | | | | | | |
| 205.0 | | | | | | | | | | |
| | -200.0 | | | | | | | | | |
| | | Very stiff | | 208.5 | | | | | | |
| 210.0 | | | | | SS-36 | 9 | 11 | 15 | 26 | ● |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-16 | **Boring Location:** | 552+74.5 | **Offset:** | LT 30.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 7.6 ft. | **Northing:** | 251780.48 | **Easting:** | 1802633.22 | **Date Started:** | 9/11/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/13/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 5.8 ft. | **Delayed:** | 3.2 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 210.0 | | | | | | | | | | |
| | -205.0 | | | | | | | | | |
| 215.0 | | | | | | | | | | |
| | -210.0 | | | | | | | | | |
| 220.0 | | Very stiff, wet, bluish gray, with few sand, LEAN CLAY (CL, A-6(11)), LL=30 PL=16 PI=14 NMC=14.4 %#200=91.4 | | 218.5 | SS-37 | 20 | 14 | 13 | 27 | |
| | -215.0 | | | | | | | | | |
| 225.0 | | | | | | | | | | |
| | -220.0 | | | | | | | | | |
| 230.0 | | Medium dense, wet, gray, fine grained, SILTY SAND (SM) | | 228.5 | SS-38 | 14 | 15 | 10 | 25 | |
| | -225.0 | | | | | | | | | |
| 235.0 | | | | | | | | | | |
| | -230.0 | | | | | | | | | |
| 240.0 | | Medium dense, wet, gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=24.2 | | 238.5 | SS-39 | 10 | 7 | 10 | 17 | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-16 | **Boring Location:** | 552+74.5 | **Offset:** | LT 30.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 7.6 ft. | **Northing:** | 251780.48 | **Easting:** | 1802633.22 | **Date Started:** | 9/11/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/13/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 5.8 ft. | **Delayed:** | 3.2 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / FINES CONTENT (%) 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 240.0 | | %#200=23.6 | | | | | | | | |
| | -235.0 | | | | | | | | | |
| 245.0 | | | | | | | | | | |
| | -240.0 | | | | | | | | | |
| | | | | 248.5 | | | | | | |
| 250.0 | | Very dense, wet, gray, fine grained, with trace gravel, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=19.0 %#200=22.7 | | | SS-40 | 20 | 32 | 42 | 74 | |
| | | Boring Terminated at 250.0 feet. | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-17 | **Boring Location:** | 555+44.8 | **Offset:** | RT 35.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 3.8 ft. | **Northing:** | 251779.57 | **Easting:** | 1802911 | **Date Started:** | 9/6/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/10/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 2.3 ft. | **Delayed:** | 2.0 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | | Approximately 5 inches of topsoil. | | 0.0 | SS-1 | 1 | 1 | 3 | 4 |
| | | Very loose, dry, dark and light brown, fine to medium grained, with trace organics, POORLY GRADED SAND (SP) | | 1.5 | SS-2 | 4 | 7 | 10 | 17 |
| | 0.0 | Medium dense, wet, pale brown and tan, fine to medium grained, POORLY GRADED SAND (SP, A-3(0)), LL=NP PL=NP PI=NP NMC=20.8 %#200=4.7 | | 3.0 | SS-3 | 3 | 1 | 2 | 3 |
| 5.0 | | Very loose, light gray, with few clay, trace wood and trace concrete | | 4.5 | SS-4 | 2 | 3 | 7 | 10 |
| | | Loose, dark grayish brown, with trace wood | | 6.0 | SS-5 | 5 | 5 | 2 | 7 |
| | | Loose, gray, fine grained | | | | | | | |
| | -5.0 | | | 8.5 | SS-6 | 0 | 1 | 2 | 3 |
| 10.0 | | Very loose, wet, dark brown, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=33.4 %#200=30.6 | | | | | | | |
| | -10.0 | | | 13.5 | SS-7 | 1 | 2 | 2 | 4 |
| 15.0 | | Very loose, wet, pale brown, fine grained, POORLY GRADED SAND (SP) | | | | | | | |
| | -15.0 | | | 18.5 | SS-8 | 1 | 1 | 1 | 2 |
| 20.0 | | Very loose, dark gray, with trace wood | | | | | | | |
| | -20.0 | | | 23.5 | SS-9 | 1 | 0 | 0 | 0 |
| 25.0 | | Very loose, fine to medium grained | | | | | | | |
| | -25.0 | | | 28.5 | SS-10 | 0 | 0 | 2 | 2 |
| 30.0 | | Top of spoon: Very loose, with trace shells<br>Bottom of spoon: Very soft, wet, bluish gray and | | | | | | | |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-17 | **Boring Location:** | 555+44.8 | **Offset:** | RT 35.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 3.8 ft. | **Northing:** | 251779.57 | **Easting:** | 1802911 | **Date Started:** | 9/6/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/10/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 2.3 ft. | **Delayed:** | 2.0 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / FINES CONTENT (%) 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 30.0 | | | | | | | | | | |
| 35.0 | -30.0 | brown, FAT CLAY with SAND (CH)<br><br>Undisturbed sample obtained from 33.0 to 35.0 feet. Approximately 24 inches of recovery.<br>Wet, brown and bluish gray, FAT CLAY with SAND (CH, A-7-6(24)), LL=51 PL=17 PI=34 NMC=29.8<br>%#200=73.0 | | 33.0 | T-1 | | | | | |
| 40.0 | -35.0 | Medium dense, wet, dark brown and tan, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM) | | 38.5 | SS-11 | 4 | 10 | 11 | 21 | |
| 45.0 | -40.0 | Medium dense, wet, tan and pale brown, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=21.2<br>%#200=8.8 | | 43.5 | SS-12 | 6 | 9 | 13 | 22 | |
| 50.0 | -45.0 | Dense, pale brown | | 48.5 | SS-13 | 10 | 14 | 18 | 32 | |
| 55.0 | -50.0 | Dense | | 53.5 | SS-14 | 9 | 16 | 21 | 37 | |
| 60.0 | -55.0 | Dense, brown | | 58.5 | SS-15 | 11 | 14 | 18 | 32 | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-17 | **Boring Location:** | 555+44.8 | **Offset:** | RT 35.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 3.8 ft. | **Northing:** | 251779.57 | **Easting:** | 1802911 | **Date Started:** | 9/6/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/10/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 2.3 ft. | **Delayed:** | 2.0 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | ● SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 60.0 | | | | | | | | | | |
| | -60.0 | Medium dense | | 63.5 | SS-16 | 8 | 8 | 10 | 18 | |
| 65.0 | | | | | | | | | | |
| | -65.0 | Medium dense, wet, white and pale brown, medium to fine and coarse grained, with few gravel, POORLY GRADED SAND with SILT (SP-SM, A-1-b(0)), LL=NP PL=NP PI=NP NMC=21.4 %#200=11.3 | | 68.5 | SS-17 | 6 | 11 | 12 | 23 | |
| 70.0 | | | | | | | | | | |
| | -70.0 | Medium dense, white and tan, medium to coarse grained | | 73.5 | SS-18 | 11 | 11 | 16 | 27 | |
| 75.0 | | | | | | | | | | |
| | -75.0 | Medium dense, wet, tan and pale brown, medium to fine and coarse grained, with trace gravel, SILTY SAND (SM, A-1-b(0)), LL=NP PL=NP PI=NP NMC=18.6 %#200=12.4 | | 78.5 | SS-19 | 6 | 7 | 12 | 19 | |
| 80.0 | | | | | | | | | | |
| | -80.0 | Medium dense, tan | | 83.5 | SS-20 | 11 | 10 | 14 | 24 | |
| 85.0 | | | | | | | | | | |
| | -85.0 | Very dense | | 88.5 | SS-21 | 16 | 29 | 27 | 56 | |
| 90.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-17 | **Boring Location:** | 555+44.8 | **Offset:** | RT 35.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 3.8 ft. | **Northing:** | 251779.57 | **Easting:** | 1802911 | **Date Started:** | 9/6/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/10/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 2.3 ft. | **Delayed:** | 2.0 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 90.0 | | | | | | | | | | |
| | -90.0 | Stiff, wet, dark brown, with trace wood, LEAN CLAY with SAND (CL) | | 93.5 | SS-22 | 4 | 6 | 9 | 15 | |
| 95.0 | | Undisturbed sample obtained from 96.0 to 98.0 feet. Approximately 6 inches of recovery. Wet, gray and tan, LEAN CLAY with SAND (CL, A-7-6(17)), LL=42 PL=15 PI=27 NMC=36.5 %#200=72.1 | | 96.0 | T-2 | | | | | |
| | -95.0 | Stiff, bluish gray | | 98.5 | SS-23 | 0 | 4 | 5 | 9 | |
| 100.0 | | | | | | | | | | |
| | -100.0 | Soft | | 103.5 | SS-24 | 0 | 0 | 3 | 3 | |
| 105.0 | | | | | | | | | | |
| | -105.0 | Medium dense, wet, pale brown, medium to fine grained, with trace clay, POORLY GRADED SAND (SP) | | 108.5 | SS-25 | 4 | 10 | 11 | 21 | |
| 110.0 | | | | | | | | | | |
| | -110.0 | Medium dense, wet, tan, fine grained, WELL-GRADED GRAVEL with SAND (GW, A-1-a(0)), LL=NP PL=NP PI=NP NMC=8.5 %#200=0.9 | | 113.5 | SS-26 | 4 | 5 | 13 | 18 | |
| 115.0 | | | | | | | | | | |
| | -115.0 | Very dense, wet, white and pale brown, fine to medium grained, with trace gravel, POORLY | | 118.5 | SS-27 | 17 | 29 | 29 | 58 | |
| 120.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-17 | **Boring Location:** | 555+44.8 | **Offset:** | RT 35.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 3.8 ft. | **Northing:** | 251779.57 | **Easting:** | 1802911 | **Date Started:** | 9/6/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/10/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 2.3 ft. | **Delayed:** | 2.0 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / FINES CONTENT (%) 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 120.0 | | | | | | | | | | |
| | -120.0 | GRADED SAND (SP) | | | | | | | | |
| | | Very dense, pale brown | | 123.5 | SS-28 | 14 | 31 | 21 | 52 | |
| 125.0 | | | | | | | | | | |
| | -125.0 | Very dense, medium to fine grained | | 128.5 | SS-29 | 20 | 28 | 28 | 56 | |
| 130.0 | | | | | | | | | | |
| | -130.0 | Very stiff, wet, bluish gray, LEAN CLAY (CL) | | 133.5 | SS-30 | 10 | 11 | 13 | 24 | |
| 135.0 | | | | | | | | | | |
| | -135.0 | Undisturbed sample obtained from 138.0 to 140.0 feet. Approximately 16 inches of recovery. Moist, dark brown, with few sand, LEAN CLAY (CL, A-4(8)), LL=31 PL=22 PI=9 NMC=27.3 %#200=94.0 | | 138.0 | T-3 | | | | | |
| 140.0 | | | | | | | | | | |
| | -140.0 | Medium dense, wet, bluish gray, fine grained, with few gravel, SILTY, CLAYEY SAND (SC-SM, A-2-4(0)), LL=26 PL=19 PI=7 NMC=25.3 %#200=30.3 | | 143.5 | SS-31 | 12 | 11 | 12 | 23 | |
| 145.0 | | | | | | | | | | |
| | -145.0 | Very stiff, wet, bluish gray, SANDY LEAN CLAY (CL) | | 148.5 | SS-32 | 8 | 9 | 16 | 25 | |
| 150.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-17 | **Boring Location:** | 555+44.8 | **Offset:** | RT 35.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 3.8 ft. | **Northing:** | 251779.57 | **Easting:** | 1802911 | **Date Started:** | 9/6/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/10/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 2.3 ft. | **Delayed:** | 2.0 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 150.0 | | | | | | | | | | |
| | -150.0 | | | | | | | | | |
| 155.0 | | | | | | | | | | |
| | -155.0 | Undisturbed sample obtained from 158.0 to 160.0 feet. Approximately 24 inches of recovery. Moist, bluish gray and olive, SANDY LEAN CLAY (CL, A-6(5)), LL=29 PL=15 PI=14 NMC=17.2 %#200=56.8 | | 158.0 | T-4 | | | | | |
| 160.0 | | | | | | | | | | |
| | -160.0 | | | | | | | | | |
| 165.0 | | | | | | | | | | |
| | -165.0 | Very stiff | | 168.5 | SS-33 | 8 | 10 | 14 | 24 | |
| 170.0 | | | | | | | | | | |
| | -170.0 | | | | | | | | | |
| 175.0 | | | | | | | | | | |
| | -175.0 | Stiff, wet, gray, SANDY LEAN CLAY (CL, A-4(3)), LL=24 PL=15 PI=9 NMC=20.1 %#200=67.2 | | 178.5 | SS-34 | 6 | 3 | 8 | 11 | |
| 180.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-17 | **Boring Location:** | 555+44.8 | **Offset:** | RT 35.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 3.8 ft. | **Northing:** | 251779.57 | **Easting:** | 1802911 | **Date Started:** | 9/6/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/10/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 2.3 ft. | **Delayed:** | 2.0 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 180.0 | | | | | | | | | |
| | -180.0 | | | | | | | | |
| 185.0 | | | | | | | | | |
| | -185.0 | Hard, bluish gray | | 188.5 | SS-35 | 12 | 16 | 17 | 33 |
| 190.0 | | | | | | | | | |
| | -190.0 | | | | | | | | |
| 195.0 | | | | | | | | | |
| | -195.0 | Hard, wet, bluish gray, LEAN CLAY with SAND (CL, A-7-6(26)), LL=47 PL=13 PI=34 NMC=17.5 %#200=79.0 | | 198.5 | SS-36 | 12 | 20 | 23 | 43 |
| 200.0 | | | | | | | | | |
| | -200.0 | | | | | | | | |
| 205.0 | | | | | | | | | |
| | -205.0 | Very stiff | | 208.5 | SS-37 | 13 | 10 | 19 | 29 |
| 210.0 | | | | | | | | | |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-17 | **Boring Location:** | 555+44.8 | **Offset:** | RT 35.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 3.8 ft. | **Northing:** | 251779.57 | **Easting:** | 1802911 | **Date Started:** | 9/6/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/10/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 2.3 ft. | **Delayed:** | 2.0 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 210.0 | | | | | | | | | | |
| 215.0 | -210.0 | | | | | | | | | |
| 220.0 | -215.0 | Very stiff, wet, bluish gray, with few sand, LEAN CLAY (CL, A-6(13)), LL=32 PL=17 PI=15 NMC=28.8 %#200=93.2 | | 218.5 | SS-38 | 7 | 10 | 15 | 25 | |
| 225.0 | -220.0 | | | | | | | | | |
| 230.0 | -225.0 | Very dense, wet, gray, fine to coarse grained, SILTY SAND (SM) | | 228.5 | SS-39 | 15 | 29 | 38 | 67 | |
| 235.0 | -230.0 | | | | | | | | | |
| 240.0 | -235.0 | Medium dense, wet, gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=23.2 | | 238.5 | SS-40 | 6 | 8 | 11 | 19 | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-17 | **Boring Location:** | 555+44.8 | **Offset:** | RT 35.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 3.8 ft. | **Northing:** | 251779.57 | **Easting:** | 1802911 | **Date Started:** | 9/6/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/10/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | | AASHTO T206 & T207 | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 2.3 ft. | **Delayed:** | 2.0 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 240.0 | | %#200=25.1 | | | | | | | | |
| | -240.0 | | | | | | | | | |
| 245.0 | | | | | | | | | | |
| | -245.0 | | | 248.5 | | | | | | |
| 250.0 | | Very dense, wet, gray, fine grained, with trace gravel, POORLY GRADED SAND (SP) | | | SS-41 | 24 | 41 | 59 | 100 | ● |
| | | Boring Terminated at 250.0 feet. | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-18 | **Boring Location:** | 558+38.5 | **Offset:** | LT 30.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 3.9 ft. | **Northing:** | 251903.56 | **Easting:** | 1803191.2 | **Date Started:** | 8/17/2017 |
| **Total Depth:** | 3.4 ft. | **Soil Depth:** | 3.4 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 8/17/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / FINES CONTENT (%) 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | | Approximately 3 inches of topsoil. | | 0.0 | SS-1 | 2 | 7 | 10 | 17 | |
| | | Medium dense, dry, brown, fine to medium grained, with trace organics, SILTY SAND (SM) | | 1.5 | SS-2 | 8 | 10 | 8 | 18 | |
| | | Medium dense, moist, dark brown, fine to medium grained, SILTY SAND with GRAVEL (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=19.6 %#200=19.0 | | 3.0 | SS-3 | 28 | 1 | 0 | 1 | |
| | | Very loose, wet, brown, medium to fine grained, with some shells and trace organics | | | | | | | | |
| | | Encountered mud rotary refusal on potential asphalt at approximately 3.4 feet. | | | | | | | | |
| | | Offset boring approximately 3 feet toward the northwest. Encountered mud rotary refusal on potential asphalt at 3.0 feet. | | | | | | | | |
| | | Offset boring approximately 5 feet toward the north. Encountered mud rotary refusal on potential asphalt at 3.8 feet. | | | | | | | | |
| | | Offset boring approximately 10 feet toward the north. Mud rotary drilled boring identified as HLA-18A. | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-18A | **Boring Location:** | 558+44.6 | **Offset:** | LT 67.9 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 3.7 ft. | **Northing:** | 251921.98 | **Easting:** | 1803195.88 | **Date Started:** | 8/17/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 8/20/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 3.0 ft. | **Delayed:** | 1.7 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | | Mud rotary drilled to 4.5 feet and began sampling. | | | | | | | |
| | 0.0 | | | 4.5 | | | | | |
| 5.0 | | Very loose, wet, brown, fine to medium grained, with some shells, SILTY SAND (SM) | | | SS-4 | 0 | 1 | 2 | 3 |
| | | Medium dense, wet, dark brown, fine grained, with few gravel, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=26.5 %#200=16.7 | | 6.0 | SS-5 | 7 | 8 | 9 | 17 |
| | -5.0 | | | 8.5 | | | | | |
| 10.0 | | Loose, with trace gravel | | | SS-6 | 2 | 3 | 2 | 5 |
| | -10.0 | | | 13.5 | | | | | |
| 15.0 | | Loose, No Recovery | | | SS-7 | 2 | 3 | 2 | 5 |
| | -15.0 | | | 18.5 | | | | | |
| 20.0 | | Very soft, wet, dark brown, with trace sand, SILT (ML) | | | SS-8 | 1 | 1 | 1 | 2 |
| | -20.0 | | | 23.5 | | | | | |
| 25.0 | | Very soft, wet, dark gray, SANDY LEAN CLAY (CL, A-7-6(15)), LL=44 PL=14 PI=30 NMC=38.2 %#200=60.5 | | | SS-9 | 0 | 0 | 0 | 0 |
| | -25.0 | | | 28.0 | | | | | |
| 30.0 | | Undisturbed sample obtained from 28.0 to 30.0 feet. Approximately 24 inches of recovery. Soft, wet, light brown and bluish gray, with trace | | | T-1 | | | | |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-18A | **Boring Location:** | 558+44.6 | **Offset:** | LT 67.9 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 3.7 ft. | **Northing:** | 251921.98 | **Easting:** | 1803195.88 | **Date Started:** | 8/17/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 8/20/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 3.0 ft. | **Delayed:** | 1.7 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | ● SPT N VALUE (blows / foot); PL MC LL; ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 30.0 | | | | | | | | | | |
| | -30.0 | gravel, SANDY LEAN CLAY (CL, A-6(12)), LL=40 PL=14 PI=26 NMC=27.5 %#200=59.5 | | | | | | | | |
| | | Top of spoon: Very stiff, gray | | 33.5 | SS-10 | 1 | 6 | 11 | 17 | ● |
| 35.0 | | Bottom of spoon: Medium dense, wet, tan, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM) | | | | | | | | |
| | -35.0 | Medium dense, moist, tan and gray | | 38.5 | SS-11 | 8 | 8 | 10 | 18 | ● |
| 40.0 | | | | | | | | | | |
| | -40.0 | Medium dense, tan and brown, with trace gravel | | 43.5 | SS-12 | 6 | 7 | 12 | 19 | ● |
| 45.0 | | | | | | | | | | |
| | -45.0 | Medium dense, wet, brown, fine to medium grained, with few gravel, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=21.8 %#200=7.1 | | 48.5 | SS-13 | 8 | 11 | 12 | 23 | ▲ ● |
| 50.0 | | | | | | | | | | |
| | -50.0 | Medium dense, moist, white, tan, and brown, fine to medium grained | | 53.5 | SS-14 | 0 | 9 | 15 | 24 | ● |
| 55.0 | | | | | | | | | | |
| | -55.0 | Medium dense, white and light tan | | 58.5 | SS-15 | 6 | 12 | 14 | 26 | ● |
| 60.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-18A | **Boring Location:** | 558+44.6 | **Offset:** | LT 67.9 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 3.7 ft. | **Northing:** | 251921.98 | **Easting:** | 1803195.88 | **Date Started:** | 8/17/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 8/20/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 3.0 ft. | **Delayed:** | 1.7 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|
| 60.0 | | | | | | | | |
| | -60.0 | Medium dense, moist, brown and pale brown, medium to fine grained, with trace shells and few gravel, POORLY GRADED SAND with SILT (SP-SM, A-1-b(0)), LL=NP PL=NP PI=NP NMC=18.7 %#200=5.5 | 63.5 | SS-16 | 4 | 8 | 10 | 18 |
| 65.0 | | | | | | | | |
| | -65.0 | Dense, moist, pale brown, medium to coarse and fine grained, with few gravel, POORLY GRADED SAND with SILT (SP-SM, A-1-b(0)), LL=NP PL=NP PI=NP NMC=19.7 %#200=6.2 | 68.5 | SS-17 | 11 | 14 | 18 | 32 |
| 70.0 | | | | | | | | |
| | -70.0 | Medium dense, wet, with trace gravel | 73.5 | SS-18 | 8 | 11 | 19 | 30 |
| 75.0 | | | | | | | | |
| | -75.0 | Dense, moist, white and pale brown | 78.5 | SS-19 | 10 | 14 | 19 | 33 |
| 80.0 | | | | | | | | |
| | -80.0 | Dense, wet, with trace gravel | 83.5 | SS-20 | 12 | 19 | 22 | 41 |
| 85.0 | | | | | | | | |
| | -85.0 | Dense, moist, with trace gravel | 88.5 | SS-21 | 19 | 25 | 24 | 49 |
| 90.0 | | | | | | | | |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

SAMPLER TYPE

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

DRILLING METHOD

HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
MR - Mud Rotary Wash
RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-18A | **Boring Location:** | 558+44.6 | **Offset:** | LT 67.9 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 3.7 ft. | **Northing:** | 251921.98 | **Easting:** | 1803195.88 | **Date Started:** | 8/17/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 8/20/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 3.0 ft. | **Delayed:** | 1.7 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 90.0 | | | | | | | | | | |
| 95.0 | -90.0 | Dense, with trace organics | | 93.5 | SS-22 | 17 | 17 | 20 | 37 | ● |
| 100.0 | -95.0 | Medium dense, pale brown, with trace gravel | | 98.5 | SS-23 | 11 | 13 | 13 | 26 | ● |
| 105.0 | -100.0 | Dense, wet, brown, with trace gravel | | 103.5 | SS-24 | 13 | 22 | 34 | 56 | ● |
| 110.0 | -105.0 | Dense | | 108.5 | SS-25 | 17 | 22 | 25 | 47 | ● |
| 115.0 | -110.0 | Dense, moist, brown, pale brown and white, coarse to medium grained, POORLY GRADED SAND with GRAVEL (SP, A-1-a(0)), LL=NP PL=NP PI=NP NMC=11.3 %#200=4.0 | | 113.5 | SS-26 | 19 | 16 | 21 | 37 | ▲ ○ ● |
| 120.0 | -115.0 | Very dense, moist, brown, pale brown and white, medium to fine and coarse grained, POORLY | | 118.5 | SS-27 | 18 | 22 | 29 | 51 | ▲ ○ ● |

## LEGEND

**SAMPLER TYPE**

- SS - Split Spoon
- T - Shelby Tube
- DCP - Dynamic Cone Penetrometer
- AC - Auger Cuttings
- GB - Grab Bag
- NQ - Rock Core

**DRILLING METHOD**

- HSA - Hollow Stem Augers
- SSA - Solid Stem Augers
- HA - Hand Auger
- MR - Mud Rotary Wash
- RC - Rock Coring

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-18A | **Boring Location:** | 558+44.6 | **Offset:** | LT 67.9 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 3.7 ft. | **Northing:** | 251921.98 | **Easting:** | 1803195.88 | **Date Started:** | 8/17/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 8/20/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 3.0 ft. | **Delayed:** | 1.7 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / FINES CONTENT (%) 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 120.0 | | | | | | | | | | |
| | | GRADED GRAVEL with SAND (GP, A-1-a(0)), LL=NP PL=NP PI=NP NMC=15.2 %#200=2.3 | | | | | | | | |
| | -120.0 | Dense, wet, white and pale brown, medium to fine grained, with trace gravel, POORLY GRADED SAND (SP) | | 123.5 | SS-28 | 16 | 20 | 21 | 41 | |
| 125.0 | | | | | | | | | | |
| | -125.0 | Dense, pale brown, fine to medium grained | | 128.5 | SS-29 | 11 | 23 | 22 | 45 | |
| 130.0 | | | | | | | | | | |
| | -130.0 | Hard, wet, bluish gray, with trace sand, SILT (ML) | | 133.5 | SS-30 | 12 | 12 | 21 | 33 | |
| 135.0 | | | | | | | | | | |
| | -135.0 | Very dense, wet, pale brown, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=28.5 %#200=24.1 | | 138.5 | SS-31 | 16 | 27 | 28 | 55 | |
| 140.0 | | | | | | | | | | |
| | -140.0 | Very stiff, wet, bluish gray, LEAN CLAY (CL) | | 143.5 | SS-32 | 0 | 9 | 10 | 19 | |
| 145.0 | | | | | | | | | | |
| | -145.0 | Undisturbed sample obtained from 148.0 to 150.0 feet. Approximately 24 inches of recovery. Hard, wet, bluish gray and tan, with few sand, LEAN | | 148.0 | T-2 | | | | | |
| 150.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-18A | **Boring Location:** | 558+44.6 | **Offset:** | LT 67.9 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 3.7 ft. | **Northing:** | 251921.98 | **Easting:** | 1803195.88 | **Date Started:** | 8/17/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 8/20/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 3.0 ft. | **Delayed:** | 1.7 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / FINES CONTENT (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| 150.0 | | | | | | | | | | 10 20 30 40 50 60 70 80 90 |
| | -150.0 | CLAY (CL, A-7-6(22)), LL=41 PL=17 PI=24 NMC=18.4 %#200=90.9 | | | | | | | | |
| 155.0 | | | | | | | | | | |
| | -155.0 | | | 158.5 | | | | | | |
| 160.0 | | Hard, wet, bluish gray, SANDY LEAN CLAY (CL, A-6(5)), LL=32 PL=14 PI=18 NMC=18.4 %#200=50.2 | | | SS-33 | 17 | 23 | 31 | 54 | |
| | -160.0 | | | | | | | | | |
| 165.0 | | | | | | | | | | |
| | -165.0 | Undisturbed sample obtained from 168.0 to 170.0 feet. Approximately 24 inches of recovery. Hard, moist, bluish gray, FAT CLAY with SAND (CH, A-7-6(27)), LL=56 PL=25 PI=31 NMC=24.0 %#200=81.0 | | 168.0 | T-3 | | | | | |
| 170.0 | | | | | | | | | | |
| | -170.0 | | | | | | | | | |
| 175.0 | | | | | | | | | | |
| | -175.0 | Very stiff, moist, gray, LEAN CLAY (CL) | | 178.5 | | | | | | |
| 180.0 | | | | | SS-34 | 5 | 11 | 19 | 30 | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-18A | **Boring Location:** | 558+44.6 | **Offset:** | LT 67.9 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 3.7 ft. | **Northing:** | 251921.98 | **Easting:** | 1803195.88 | **Date Started:** | 8/17/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 8/20/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 3.0 ft. | **Delayed:** | 1.7 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / FINES CONTENT (%) 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 180.0 | | | | | | | | | | |
| | -180.0 | | | | | | | | | |
| 185.0 | | | | | | | | | | |
| | -185.0 | Undisturbed sample obtained from 188.0 to 190.0 feet. Approximately 24 inches of recovery. Hard, moist, bluish gray and brown, with trace sand, LEAN CLAY (CL, A-7-6(31)), LL=47 PL=16 PI=31 NMC=19.5 %#200=96.0 | | 188.0 | T-4 | | | | | |
| 190.0 | | | | | | | | | | |
| | -190.0 | | | | | | | | | |
| 195.0 | | | | | | | | | | |
| | -195.0 | Hard, wet, bluish gray | | 198.5 | SS-35 | 14 | 17 | 25 | 42 | |
| 200.0 | | | | | | | | | | |
| | -200.0 | | | | | | | | | |
| 205.0 | | | | | | | | | | |
| | -205.0 | Undisturbed sample obtained from 208.0 to 210.0 feet. Approximately 24 inches of recovery. Brown | | 208.0 | T-5 | | | | | |
| 210.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-18A | **Boring Location:** | 558+44.6 | **Offset:** | LT 67.9 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 3.7 ft. | **Northing:** | 251921.98 | **Easting:** | 1803195.88 | **Date Started:** | 8/17/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 8/20/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 3.0 ft. | **Delayed:** | 1.7 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 210.0 | | | | | | | | | | |
| 215.0 | -210.0 | | | | | | | | | |
| 220.0 | -215.0 | Very stiff, wet, gray, with few sand, LEAN CLAY (CL, A-6(15)), LL=35 PL=18 PI=17 NMC=29.0 %#200=89.3 | | 218.5 | SS-36 | 11 | 11 | 15 | 26 | |
| 225.0 | -220.0 | | | | | | | | | |
| 230.0 | -225.0 | Medium dense, wet, gray, fine grained, SILTY SAND (SM) | | 228.5 | SS-37 | 10 | 13 | 12 | 25 | |
| 235.0 | -230.0 | | | | | | | | | |
| 240.0 | -235.0 | Medium dense, wet, fine grained, gray, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=26.8 | | 238.5 | SS-38 | 8 | 8 | 9 | 17 | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-18A | **Boring Location:** | 558+44.6 | **Offset:** | LT 67.9 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 3.7 ft. | **Northing:** | 251921.98 | **Easting:** | 1803195.88 | **Date Started:** | 8/17/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 8/20/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 3.0 ft. | **Delayed:** | 1.7 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 240.0 | | %#200=28.0 | | | | | | | | |
| | -240.0 | | | | | | | | | |
| 245.0 | | | | | | | | | | |
| | -245.0 | Very dense | | 248.5 | SS-39 | 16 | 30 | 35 | 65 | ● |
| 250.0 | | Boring Terminated at 250.0 feet. | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-19 | **Boring Location:** | 560+80.9 | **Offset:** | LT 131.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | Shelby H. |
| **Elev.:** | 4.6 ft. | **Northing:** | 251995.07 | **Easting:** | 1803437.58 | **Date Started:** | 8/26/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 8/28/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 4.0 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|
| 0.0 | | | 0.0 | SS-1 | 5 | 22 | 11 | 33 |
| | | Approximately 7 inches of topsoil. Dense, dry, reddish brown, fine grained, with trace shells and organics, POORLY GRADED SAND (SP) | 1.5 | SS-2 | 12 | 12 | 10 | 22 |
| | | Medium dense, wet, medium to fine grained, with trace shell | 3.0 | SS-3 | 5 | 8 | 11 | 19 |
| 5.0 ▼ | 0.0 | Medium dense, reddish brown and pale brown, fine to medium grained | 4.5 | SS-4 | 4 | 7 | 9 | 16 |
| | | Medium dense, wet, reddish brown and pale brown, fine to medium grained, with trace gravel, POORLY GRADED SAND (SP, A-3(0)), LL=NP PL=NP PI=NP NMC=22.7 %#200=5.0 | 6.0 | SS-5 | 4 | 5 | 6 | 11 |
| | | Medium dense, pale brown, with trace gravel | 8.5 | SS-6 | 0 | 1 | 5 | 6 |
| 10.0 | -5.0 | Loose, wet, dark gray, fine grained, with trace gravel, CLAYEY SAND (SC, A-6(4)), LL=38 PL=18 PI=20 NMC=40.8 %#200=42.6 | | | | | | |
| 15.0 | -10.0 | Very loose, wet, dark gray, fine grained, SILTY SAND (SM) | 13.5 | SS-7 | 3 | 1 | 2 | 3 |
| 20.0 | -15.0 | Very loose, wet, dark gray, fine grained, SILTY SAND (SM, A-4(0)), LL=NP PL=NP PI=NP NMC=31.6 %#200=36.6 | 18.5 | SS-8 | 0 | 0 | 1 | 1 |
| 25.0 | -20.0 | Very soft, wet, dark gray, SANDY LEAN CLAY (CL) | 23.5 | SS-9 | 0 | 0 | 0 | 0 |
| 30.0 | -25.0 | Undisturbed sample obtained from 28.0 to 30.0 feet. Approximately 24 inches of recovery. Soft, wet, dark gray, SANDY LEAN CLAY (CL, | 28.0 | T-1 | | | | |

● SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

**SAMPLER TYPE**

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

**DRILLING METHOD**

HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
MR - Mud Rotary Wash
RC - Rock Coring

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-19 | **Boring Location:** | 560+80.9 | **Offset:** | LT 131.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | Shelby H. |
| **Elev.:** | 4.6 ft. | **Northing:** | 251995.07 | **Easting:** | 1803437.58 | **Date Started:** | 8/26/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 8/28/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 4.0 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / FINES CONTENT (%) 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 30.0 | | | | | | | | | | |
| | | A-7-6(15)), LL=45 PL=16 PI=29 NMC=37.0 %#200=62.7 | | | | | | | | |
| 35.0 | -30.0 | Soft | | 33.5 | SS-10 | 0 | 2 | 2 | 4 | ● |
| | | Undisturbed sample attempted from 38.0 to 40.0 feet. No Recovery. | | 38.0 | T-2 | | | | | |
| 40.0 | -35.0 | Medium dense, wet, reddish brown, fine to medium grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=21.4 %#200=12.2 | | 40.5 | SS-11 | 4 | 6 | 12 | 18 | ▲ ● ○ |
| 45.0 | -40.0 | Medium dense, wet, brown and tan, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM) | | 43.5 | SS-12 | 11 | 15 | 14 | 29 | ● |
| 50.0 | -45.0 | Dense, pale brown | | 48.5 | SS-13 | 7 | 14 | 18 | 32 | ● |
| 55.0 | -50.0 | Dense, brown | | 53.5 | SS-14 | 12 | 15 | 22 | 37 | ● |
| 60.0 | -55.0 | Dense, pale brown | | 58.5 | SS-15 | 14 | 21 | 21 | 42 | ● |

## LEGEND

**SAMPLER TYPE**

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

**DRILLING METHOD**

HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
MR - Mud Rotary Wash
RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-19 | **Boring Location:** | 560+80.9 | **Offset:** | LT 131.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | Shelby H. |
| **Elev.:** | 4.6 ft. | **Northing:** | 251995.07 | **Easting:** | 1803437.58 | **Date Started:** | 8/26/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 8/28/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 4.0 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | ● SPT N VALUE (blows / foot); PL MC LL; ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 60.0 | | | | | | | | | | |
| 65.0 | -60.0 | Medium dense | | 63.5 | SS-16 | 11 | 11 | 10 | 21 | |
| 70.0 | -65.0 | Medium dense, dark brown | | 68.5 | SS-17 | 7 | 8 | 10 | 18 | |
| 75.0 | -70.0 | Medium dense, wet, reddish yellow and brown, medium to fine grained, with trace gravel, POORLY GRADED SAND with SILT (SP-SM, A-1-b(0)), LL=NP PL=NP PI=NP NMC=22.9 %#200=8.2 | | 73.5 | SS-18 | 12 | 5 | 9 | 14 | |
| 80.0 | -75.0 | Medium dense, pale brown and white | | 78.5 | SS-19 | 11 | 12 | 13 | 25 | |
| 85.0 | -80.0 | Dense, pale brown | | 83.5 | SS-20 | 9 | 16 | 22 | 38 | |
| 90.0 | -85.0 | Dense, fine to medium grained | | 88.5 | SS-21 | 20 | 20 | 22 | 42 | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-19 | **Boring Location:** | 560+80.9 | **Offset:** | LT 131.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | Shelby H. |
| **Elev.:** | 4.6 ft. | **Northing:** | 251995.07 | **Easting:** | 1803437.58 | **Date Started:** | 8/26/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 8/28/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 4.0 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / FINES CONTENT (%) 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 90.0 | | | | | | | | | | |
| 95.0 | -90.0 | Medium dense, pale brown | | 93.5 | SS-22 | 10 | 12 | 18 | 30 | |
| 100.0 | -95.0 | Very dense | | 98.5 | SS-23 | 12 | 24 | 29 | 53 | |
| 105.0 | -100.0 | Dense, wet, pale brown, medium to fine grained, POORLY GRADED SAND (SP, A-1-b(0)), LL=NP PL=NP PI=NP NMC=19.7 %#200=4.4 | | 103.5 | SS-24 | 14 | 17 | 21 | 38 | |
| 110.0 | -105.0 | Medium dense, reddish brown | | 108.5 | SS-25 | 7 | 8 | 10 | 18 | |
| 115.0 | -110.0 | Medium dense, pale brown and reddish brown | | 113.5 | SS-26 | 16 | 14 | 15 | 29 | |
| 120.0 | -115.0 | Dense, white and pale brown, with trace gravel | | 118.5 | SS-27 | 14 | 21 | 22 | 43 | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-19 | **Boring Location:** | 560+80.9 | **Offset:** | LT 131.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | Shelby H. |
| **Elev.:** | 4.6 ft. | **Northing:** | 251995.07 | **Easting:** | 1803437.58 | **Date Started:** | 8/26/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 8/28/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 4.0 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / FINES CONTENT (%) 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 120.0 | | | | | | | | | | |
| 125.0 | -120.0 | Dense, pale brown, fine to medium grained, with trace gravel | | 123.5 | SS-28 | 15 | 17 | 21 | 38 | ● |
| 130.0 | -125.0 | Hard, wet, bluish gray, with few gravel, SANDY SILT (ML, A-4(0)), LL=NP PL=NP PI=NP NMC=15.2 %#200=54.5 | | 128.5 | SS-29 | 7 | 19 | 28 | 47 | ×○●▲ |
| 135.0 | -130.0 | Medium dense, wet, bluish gray, fine grained, SILTY SAND (SM) | | 133.5 | SS-30 | 18 | 14 | 14 | 28 | ● |
| 140.0 | -135.0 | Undisturbed sample obtained from 138.0 to 140.0 feet. Approximately 20 inches of recovery. Wet, pale brown and olive, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=25.9 %#200=30.0 | | 138.0 | T-3 | | | | × | ○▲ |
| 145.0 | -140.0 | Very dense, wet, bluish gray, fine grained, POORLY GRADED SAND with SILT (SP-SM) | | 143.5 | SS-31 | 21 | 26 | 32 | 58 | ● |
| 150.0 | -145.0 | Undisturbed sample obtained from 148.0 to 150.0 feet. Approximately 24 inches of recovery. Hard, wet, bluish gray and brown, SANDY LEAN | | 148.0 | T-4 | | | | | ×○×▲ |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-19 | **Boring Location:** | 560+80.9 | **Offset:** | LT 131.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | Shelby H. |
| **Elev.:** | 4.6 ft. | **Northing:** | 251995.07 | **Easting:** | 1803437.58 | **Date Started:** | 8/26/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 8/28/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 4.0 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 150.0 | | CLAY (CL, A-6(12)), LL=40 PL=12 PI=28 NMC=19.2 %#200=56.3 | | | | | | | |
| 155.0 | -150.0 | | | | | | | | |
| | -155.0 | Hard, wet | | 158.5 | SS-32 | 15 | 21 | 26 | 47 |
| 160.0 | | | | | | | | | |
| 165.0 | -160.0 | | | | | | | | |
| | -165.0 | Very stiff, wet, bluish gray, SANDY LEAN CLAY (CL, A-6(12)), LL=36 PL=12 PI=24 NMC=19.5 %#200=62.9 | | 168.5 | SS-33 | 8 | 8 | 11 | 19 |
| 170.0 | | | | | | | | | |
| 175.0 | -170.0 | | | | | | | | |
| | -175.0 | Hard | | 178.5 | SS-34 | 8 | 12 | 19 | 31 |
| 180.0 | | | | | | | | | |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

SAMPLER TYPE

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

DRILLING METHOD

HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
MR - Mud Rotary Wash
RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-19 | **Boring Location:** | 560+80.9 | **Offset:** | LT 131.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | Shelby H. |
| **Elev.:** | 4.6 ft. | **Northing:** | 251995.07 | **Easting:** | 1803437.58 | **Date Started:** | 8/26/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 8/28/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 4.0 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | ● SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 180.0 | | | | | | | | | | |
| 185.0 | -180.0 | | | | | | | | | |
| 190.0 | -185.0 | Hard | | 188.5 | SS-35 | 14 | 25 | 30 | 55 | ● |
| 195.0 | -190.0 | | | | | | | | | |
| 200.0 | -195.0 | LL=32 PL=10 PI=22 NMC=14.3 %#200=62.3 Undisturbed sample obtained from 198.0 to 200.0 feet. Approximately 24 inches of recovery. Hard, wet, bluish gray, SANDY LEAN CLAY (CL, A-6(10)) | | 198.0 | T-5 | | | | | ⊗—× ▲ |
| 205.0 | -200.0 | | | | | | | | | |
| 210.0 | -205.0 | Hard, wet, bluish gray, LEAN CLAY with SAND (CL, A-6(7)), LL=29 PL=15 PI=14 NMC=22.8 %#200=71.0 | | 208.5 | SS-36 | 24 | 28 | 27 | 55 | ×—⊗—× ● ▲ |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-19 | **Boring Location:** | 560+80.9 | **Offset:** | LT 131.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | Shelby H. |
| **Elev.:** | 4.6 ft. | **Northing:** | 251995.07 | **Easting:** | 1803437.58 | **Date Started:** | 8/26/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 8/28/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 4.0 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 210.0 | | | | | | | | | | |
| 215.0 | -210.0 | | | | | | | | | |
| 220.0 | -215.0 | Hard, wet, bluish gray, with trace sand, FAT CLAY (CH, A-7-6(33)), LL=50 PL=19 PI=31 NMC=24.9 %#200=97.6 | | 218.5 | SS-37 | 11 | 13 | 18 | 31 | |
| 225.0 | -220.0 | | | | | | | | | |
| 230.0 | -225.0 | Dense, wet, gray, fine to medium grained, SILTY SAND (SM) | | 228.5 | SS-38 | 9 | 15 | 16 | 31 | |
| 235.0 | -230.0 | | | | | | | | | |
| 240.0 | -235.0 | Medium dense, fine grained | | 238.5 | SS-39 | 9 | 8 | 13 | 21 | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-19 | **Boring Location:** | 560+80.9 | **Offset:** | LT 131.2 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | Shelby H. |
| **Elev.:** | 4.6 ft. | **Northing:** | 251995.07 | **Easting:** | 1803437.58 | **Date Started:** | 8/26/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 8/28/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 4.0 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | ● SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 240.0 | | | | | | | | | | |
| 245.0 | -240.0 | | | | | | | | | |
| 250.0 | -245.0 | Very dense, wet, gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=22.1 %#200=12.5 | | 248.5 | SS-40 | 19 | 33 | 45 | 78 | ▲ ○ ● |
| | | Boring Terminated at 250.0 feet. | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-20 | **Boring Location:** | 562+20.6 | **Offset:** | RT 90.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | Shelby H. |
| **Elev.:** | 2.3 ft. | **Northing:** | 251770.26 | **Easting:** | 1803572.6 | **Date Started:** | 8/22/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 8/23/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 4.2 ft. | **Delayed:** | 2.4 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | Approximately 4 inches of topsoil. Medium dense, dry, brown, fine to medium grained, trace organics, SILTY SAND (SM) | 0.0 | SS-1 | 0 | 5 | 9 | 14 |
| | | Medium dense, moist, brown, fine to medium grained, with trace organics, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=14.2 %#200=20.6 | 1.5 | SS-2 | 6 | 7 | 8 | 15 |
| 5.0 | | Loose, wet, gray | 3.0 | SS-3 | 3 | 5 | 5 | 10 |
| | | Medium dense, brown, with trace organics | 4.5 | SS-4 | 9 | 12 | 14 | 26 |
| | -5.0 | Loose, wet, gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=31.8 %#200=26.1 | 6.0 | SS-5 | 6 | 5 | 3 | 8 |
| 10.0 | | Loose, fine to medium grained | 8.5 | SS-6 | 5 | 3 | 2 | 5 |
| | -10.0 | | | | | | | |
| 15.0 | | Very loose, wet, gray, fine grained, with trace shells, SILTY SAND with GRAVEL (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=31.4 %#200=20.2 | 13.5 | SS-7 | 0 | 1 | 1 | 2 |
| | -15.0 | | | | | | | |
| 20.0 | | Very soft, wet, gray, SANDY LEAN CLAY (CL) | 18.5 | SS-8 | 0 | 0 | 0 | 0 |
| | -20.0 | | | | | | | |
| 25.0 | | Undisturbed sample obtained from 23.0 to 25.0 feet. Approximately 24 inches of recovery. Soft, wet, gray, SANDY LEAN CLAY (CL, A-7-6(20)), LL=46 PL=15 PI=31 NMC=42.0 %#200=69.5 | 23.0 | T-1 | | | | |
| | -25.0 | | | | | | | |
| 30.0 | | Very soft, wet, gray, FAT CLAY (CH) | 28.5 | SS-9 | 0 | 0 | 0 | 0 |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

**SAMPLER TYPE**

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

**DRILLING METHOD**

HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
MR - Mud Rotary Wash
RC - Rock Coring

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-20 | **Boring Location:** | 562+20.6 | **Offset:** | RT 90.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | Shelby H. |
| **Elev.:** | 2.3 ft. | **Northing:** | 251770.26 | **Easting:** | 1803572.6 | **Date Started:** | 8/22/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 8/23/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 4.2 ft. | **Delayed:** | 2.4 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 30.0 | | | | | | | | | | |
| 35.0 | -30.0 | Undisturbed sample obtained from 33.0 to 35.0 feet. Approximately 24 inches of recovery. Soft, wet, gray, with trace sand, FAT CLAY (CH, A-7-6(51)), LL=68 PL=22 PI=46 NMC=42.8 %#200=97.2 | | 33.0 | T-2 | | | | | |
| | -35.0 | Top of spoon: Very stiff | | 38.5 | SS-10 | 6 | 12 | 11 | 23 | |
| 40.0 | | Bottom of spoon: Medium dense, wet, gray, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM) | | | | | | | | |
| | -40.0 | | | 43.5 | SS-11 | 8 | 12 | 14 | 26 | |
| 45.0 | | Medium dense, wet, light gray and brown, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=20.6 %#200=8.6 | | | | | | | | |
| | -45.0 | | | 48.5 | SS-12 | 7 | 11 | 15 | 26 | |
| 50.0 | | Medium dense, pale brown | | | | | | | | |
| | -50.0 | | | 53.5 | SS-13 | 10 | 16 | 17 | 33 | |
| 55.0 | | Dense, pale brown and gray | | | | | | | | |
| | -55.0 | | | 58.5 | SS-14 | 10 | 17 | 17 | 34 | |
| 60.0 | | Dense, dark gray, medium to fine grained, with trace gravel | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-20 | **Boring Location:** | 562+20.6 | **Offset:** | RT 90.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | Shelby H. |
| **Elev.:** | 2.3 ft. | **Northing:** | 251770.26 | **Easting:** | 1803572.6 | **Date Started:** | 8/22/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 8/23/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 4.2 ft. | **Delayed:** | 2.4 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / FINES CONTENT (%) 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 60.0 | | | | | | | | | | |
| | -60.0 | Loose, gray | | 63.5 | SS-15 | 6 | 5 | 4 | 9 | ● |
| 65.0 | | | | | | | | | | |
| | -65.0 | Medium dense, pale brown, fine to medium grained | | 68.5 | SS-16 | 8 | 8 | 16 | 24 | ● |
| 70.0 | | | | | | | | | | |
| | -70.0 | Medium dense | | 73.5 | SS-17 | 7 | 8 | 14 | 22 | ● |
| 75.0 | | | | | | | | | | |
| | -75.0 | Dense, pale brown, fine grained | | 78.5 | SS-18 | 14 | 20 | 28 | 48 | ● |
| 80.0 | | | | | | | | | | |
| | -80.0 | Dense, pale brown and white, fine to medium grained | | 83.5 | SS-19 | 20 | 17 | 20 | 37 | ● |
| 85.0 | | | | | | | | | | |
| | -85.0 | Dense, wet, pale brown, fine to medium grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP | | 88.5 | SS-20 | 14 | 22 | 27 | 49 | ▲ ○ ● |
| 90.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-20 | **Boring Location:** | 562+20.6 | **Offset:** | RT 90.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | Shelby H. |
| **Elev.:** | 2.3 ft. | **Northing:** | 251770.26 | **Easting:** | 1803572.6 | **Date Started:** | 8/22/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 8/23/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 4.2 ft. | **Delayed:** | 2.4 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 90.0 | | NMC=22.9 %#200=13.5 | | | | | | | |
| | -90.0 | | | | | | | | |
| | | Dense | | 93.5 | | | | | |
| 95.0 | | | | | SS-21 | 10 | 14 | 20 | 34 |
| | -95.0 | | | | | | | | |
| | | Dense, medium to fine grained | | 98.5 | | | | | |
| 100.0 | | | | | SS-22 | 13 | 16 | 18 | 34 |
| | -100.0 | | | | | | | | |
| | | Medium dense | | 103.5 | | | | | |
| 105.0 | | | | | SS-23 | 10 | 13 | 12 | 25 |
| | -105.0 | | | | | | | | |
| | | Dense | | 108.5 | | | | | |
| 110.0 | | | | | SS-24 | 16 | 24 | 24 | 48 |
| | -110.0 | | | | | | | | |
| | | Very dense | | 113.5 | | | | | |
| 115.0 | | | | | SS-25 | 21 | 32 | 36 | 68 |
| | -115.0 | | | | | | | | |
| | | Dense, with trace gravel | | 118.5 | | | | | |
| 120.0 | | | | | SS-26 | 25 | 23 | 19 | 42 |

● SPT N VALUE (blows / foot)

PL ⨯ MC ○ LL ⨯

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-20 | **Boring Location:** | 562+20.6 | **Offset:** | RT 90.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | Shelby H. |
| **Elev.:** | 2.3 ft. | **Northing:** | 251770.26 | **Easting:** | 1803572.6 | **Date Started:** | 8/22/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 8/23/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 4.2 ft. | **Delayed:** | 2.4 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 120.0 | | | | | | | | | |
| | -120.0 | Top of spoon: Dense, fine to medium grained | | 123.5 | SS-27 | 21 | 16 | 17 | 33 |
| 125.0 | | Bottom of spoon: Hard, wet, bluish gray and brown, with trace sand, LEAN CLAY (CL) | | | | | | | |
| | -125.0 | | | 128.5 | SS-28 | 8 | 13 | 16 | 29 |
| 130.0 | | Very stiff, blue | | | | | | | |
| | -130.0 | | | 133.0 | T-3 | | | | |
| 135.0 | | Undisturbed sample obtained from 133.0 to 135.0 feet. Approximately 24 inches of recovery. Hard, wet, bluish gray, LEAN CLAY with SAND (CL, A-7-6(24)), LL=42 PL=12 PI=30 NMC=18.4 %#200=84.0 | | | | | | | |
| | -135.0 | | | 138.5 | SS-29 | 24 | 33 | 35 | 68 |
| 140.0 | | Very dense, wet, bluish gray, fine grained, SILTY SAND (SM) | | | | | | | |
| | -140.0 | | | 143.5 | SS-30 | 9 | 14 | 14 | 28 |
| 145.0 | | Very stiff, wet, bluish gray, fine grained, CLAYEY SAND (SC, A-2-4(0)), LL=28 PL=19 PI=9 NMC=23.1 %#200=32.4 | | | | | | | |
| | -145.0 | | | 148.5 | SS-31 | 9 | 13 | 21 | 34 |
| 150.0 | | Hard, wet, bluish gray, FAT CLAY (CH) | | | | | | | |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

SAMPLER TYPE

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

DRILLING METHOD

HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
MR - Mud Rotary Wash
RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-20 | **Boring Location:** | 562+20.6 | **Offset:** | RT 90.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | Shelby H. |
| **Elev.:** | 2.3 ft. | **Northing:** | 251770.26 | **Easting:** | 1803572.6 | **Date Started:** | 8/22/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 8/23/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 4.2 ft. | **Delayed:** | 2.4 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 150.0 | -150.0 | | | | | | | | | |
| 155.0 | -155.0 | | | | | | | | | |
| | | Hard | | 158.5 | SS-32 | 13 | 20 | 28 | 48 | ● |
| 160.0 | -160.0 | | | | | | | | | |
| 165.0 | -165.0 | | | | | | | | | |
| | | Undisturbed sample obtained from 168.0 to 170.0 feet. Approximately 24 inches of recovery. Wet, bluish gray and brown, with few sand, FAT CLAY (CH, A-7-6(40)), LL=60 PL=20 PI=40 NMC=29.8 %#200=92.4 | | 168.0 | T-4 | | | | | ▲ |
| 170.0 | -170.0 | | | | | | | | | |
| 175.0 | -175.0 | | | | | | | | | |
| | | Very stiff, bluish gray and white | | 178.5 | SS-33 | 9 | 12 | 17 | 29 | ● |
| 180.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-20 | **Boring Location:** | 562+20.6 | **Offset:** | RT 90.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | Shelby H. |
| **Elev.:** | 2.3 ft. | **Northing:** | 251770.26 | **Easting:** | 1803572.6 | **Date Started:** | 8/22/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 8/23/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 4.2 ft. | **Delayed:** | 2.4 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 180.0 | | | | | | | | | | |
| 185.0 | -180.0 | | | | | | | | | |
| 190.0 | -185.0 | Hard, wet, bluish gray, with few sand, LEAN CLAY (CL, A-7-6(27)), LL=44 PL=13 PI=31 NMC=20.8 %#200=88.9 | | 188.5 | SS-34 | 10 | 13 | 18 | 31 | |
| 195.0 | -190.0 | | | | | | | | | |
| 200.0 | -195.0 | Very stiff, bluish gray and pale brown | | 198.5 | SS-35 | 10 | 13 | 17 | 30 | |
| 205.0 | -200.0 | | | | | | | | | |
| 210.0 | -205.0 | Very stiff, wet, bluish gray, LEAN CLAY with SAND (CL, A-6(9)), LL=30 PL=17 PI=13 NMC=23.4 | | 208.5 | SS-36 | 9 | 11 | 15 | 26 | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-20 | **Boring Location:** | 562+20.6 | **Offset:** | RT 90.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | Shelby H. |
| **Elev.:** | 2.3 ft. | **Northing:** | 251770.26 | **Easting:** | 1803572.6 | **Date Started:** | 8/22/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 8/23/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 4.2 ft. | **Delayed:** | 2.4 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 210.0 | | %#200=83.7 | | | | | | | |
| | -210.0 | | | | | | | | |
| 215.0 | | | | | | | | | |
| | -215.0 | | | | | | | | |
| | | Undisturbed sample obtained from 218.0 to 220.0 feet. Approximately 24 inches of recovery. Very stiff, wet, bluish gray, with few sand, LEAN CLAY (CL, A-6(17)), LL=37 PL=17 PI=20 NMC=27.3 %#200=88.5 | | 218.0 | T-5 | | | | |
| 220.0 | | | | | | | | | |
| | -220.0 | | | | | | | | |
| 225.0 | | | | | | | | | |
| | -225.0 | | | | | | | | |
| | | Medium dense, wet, gray, fine grained, CLAYEY SAND (SC, A-2-6(1)), LL=25 PL=12 PI=13 NMC=16.3 %#200=33.0 | | 228.5 | SS-37 | 10 | 10 | 9 | 19 |
| 230.0 | | | | | | | | | |
| | -230.0 | | | | | | | | |
| 235.0 | | | | | | | | | |
| | -235.0 | | | | | | | | |
| | | Dense, wet, gray and brown, fine grained, SILTY SAND (SM) | | 238.5 | SS-38 | 14 | 22 | 27 | 49 |
| 240.0 | | | | | | | | | |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-20 | **Boring Location:** | 562+20.6 | **Offset:** | RT 90.3 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | Shelby H. |
| **Elev.:** | 2.3 ft. | **Northing:** | 251770.26 | **Easting:** | 1803572.6 | **Date Started:** | 8/22/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 8/23/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 4.2 ft. | **Delayed:** | 2.4 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 240.0 | | | | | | | | | | |
| | -240.0 | | | | | | | | | |
| 245.0 | | | | | | | | | | |
| | -245.0 | | | | | | | | | |
| | | | | 248.5 | | | | | | |
| 250.0 | | Very dense, wet, gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=22.3 %#200=25.1 | | | SS-39 | 17 | 26 | 33 | 59 | |
| | | Boring Terminated at 250.0 feet. | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-21 | **Boring Location:** | 564+40.6 | **Offset:** | LT 21.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 4.1 ft. | **Northing:** | 251862.58 | **Easting:** | 1803798.97 | **Date Started:** | 8/29/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/5/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 3.1 ft. | **Delayed:** | 3.3 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|
| 0.0 | | Approximately 3.5 inches of topsoil. | 0.0 | | | | | |
| | | Medium dense, dry, brown, fine to medium grained, with trace gravel, SILTY SAND (SM) | 1.5 | SS-1 | 3 | 7 | 5 | 12 |
| | | Loose, moist, reddish brown, fine to medium grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=15.9 %#200=24.7 | 3.0 | SS-2 | 5 | 4 | 4 | 8 |
| | 0.0 | Loose, wet, with trace gravel | 4.5 | SS-3 | 4 | 4 | 3 | 7 |
| 5.0 | | Very loose, with trace gravel | 6.0 | SS-4 | 2 | 2 | 2 | 4 |
| | | Very loose, wet, brown, fine and coarse grained, POORLY GRADED SAND with SILT and GRAVEL (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=19.4 %#200=8.7 | | SS-5 | 2 | 1 | 2 | 3 |
| | -5.0 | Very loose | 8.5 | SS-6 | 1 | 1 | 1 | 2 |
| 10.0 | | | | | | | | |
| | -10.0 | Loose, wet, dark gray, fine grained, SILTY SAND with GRAVEL (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=26.7 %#200=19.6 | 13.5 | SS-7 | 3 | 3 | 4 | 7 |
| 15.0 | | | | | | | | |
| | -15.0 | Very loose | 18.5 | SS-8 | 1 | 1 | 1 | 2 |
| 20.0 | | | | | | | | |
| | -20.0 | Very soft, wet, dark gray, LEAN CLAY with SAND (CL, A-7-6(13)), LL=42 PL=25 PI=17 NMC=40.3 %#200=75.1 | 23.5 | SS-9 | 0 | 0 | 0 | 0 |
| 25.0 | | | | | | | | |
| | -25.0 | Very soft | 28.5 | SS-10 | 0 | 0 | 0 | 0 |
| 30.0 | | | | | | | | |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

**SAMPLER TYPE**

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

**DRILLING METHOD**

HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
MR - Mud Rotary Wash
RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-21 | **Boring Location:** | 564+40.6 | **Offset:** | LT 21.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 4.1 ft. | **Northing:** | 251862.58 | **Easting:** | 1803798.97 | **Date Started:** | 8/29/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/5/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 3.1 ft. | **Delayed:** | 3.3 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | ● SPT N VALUE (blows / foot); PL MC LL; ▲ FINES CONTENT (%) 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 30.0 | | | | | | | | | | |
| 35.0 | -30.0 | Undisturbed sample obtained from 33.0 to 35.0 feet. Approximately 24 inches of recovery. Firm, moist, dark gray, FAT CLAY with SAND (CH, A-7-6(32)), LL=60 PL=18 PI=42 NMC=34.6 %#200=77.4 | | 33.0 | T-1 | | | | | |
| 40.0 | -35.0 | Loose, wet, light gray, fine grained, POORLY GRADED SAND with SILT (SP-SM) | | 38.5 | SS-11 | 5 | 4 | 5 | 9 | |
| 45.0 | -40.0 | Medium dense, wet, pale brown, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=21.7 %#200=5.3 | | 43.5 | SS-12 | 10 | 7 | 10 | 17 | |
| 50.0 | -45.0 | Medium dense, with trace gravel | | 48.5 | SS-13 | 5 | 9 | 9 | 18 | |
| 55.0 | -50.0 | Medium dense | | 53.5 | SS-14 | 6 | 7 | 9 | 16 | |
| 60.0 | -55.0 | Medium dense, pale brown and dark brown, medium to fine grained, with trace gravel | | 58.5 | SS-15 | 7 | 9 | 9 | 18 | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-21 | **Boring Location:** | 564+40.6 | **Offset:** | LT 21.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 4.1 ft. | **Northing:** | 251862.58 | **Easting:** | 1803798.97 | **Date Started:** | 8/29/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/5/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 3.1 ft. | **Delayed:** | 3.3 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / FINES CONTENT (%) 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 60.0 | | | | | | | | | | |
| | -60.0 | Medium dense, wet, pale brown, medium to fine grained, with trace gravel, POORLY GRADED SAND (SP, A-1-b(0)), LL=NP PL=NP PI=NP NMC=19.6 %#200=4.6 | | 63.5 | SS-16 | 7 | 9 | 11 | 20 | |
| 65.0 | | | | | | | | | | |
| | -65.0 | Medium dense | | 68.5 | SS-17 | 10 | 11 | 12 | 23 | |
| 70.0 | | | | | | | | | | |
| | -70.0 | Medium dense, brown and reddish brown | | 73.5 | SS-18 | 15 | 15 | 15 | 30 | |
| 75.0 | | | | | | | | | | |
| | -75.0 | Medium dense, white and tan | | 78.5 | SS-19 | 7 | 11 | 13 | 24 | |
| 80.0 | | | | | | | | | | |
| | -80.0 | Dense, brown | | 83.5 | SS-20 | 12 | 15 | 22 | 37 | |
| 85.0 | | | | | | | | | | |
| | -85.0 | Dense, wet, pale reddish brown, medium to fine grained, with trace gravel, POORLY GRADED SAND | | 88.5 | SS-21 | 8 | 14 | 17 | 31 | |
| 90.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-21 | **Boring Location:** | 564+40.6 | **Offset:** | LT 21.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 4.1 ft. | **Northing:** | 251862.58 | **Easting:** | 1803798.97 | **Date Started:** | 8/29/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/5/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 3.1 ft. | **Delayed:** | 3.3 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 90.0 | | (SP, A-1-b(0)), LL=NP PL=NP PI=NP NMC=21.3 %#200=2.5 | | | | | | | |
| | -90.0 | Medium dense | | 93.5 | SS-22 | 9 | 13 | 13 | 26 |
| 95.0 | | | | | | | | | |
| | -95.0 | Dense, brown, fine to medium grained | | 98.5 | SS-23 | 12 | 19 | 20 | 39 |
| 100.0 | | | | | | | | | |
| | -100.0 | Very dense | | 103.5 | SS-24 | 14 | 22 | 31 | 53 |
| 105.0 | | | | | | | | | |
| | -105.0 | Medium dense, medium to fine grained, with trace gravel | | 108.5 | SS-25 | 6 | 8 | 12 | 20 |
| 110.0 | | | | | | | | | |
| | -110.0 | Dense, wet, brown, medium to fine grained, with few gravel, POORLY GRADED SAND (SP, A-1-b(0)), LL=NP PL=NP PI=NP NMC=19.4 %#200=2.6 | | 113.5 | SS-26 | 15 | 20 | 23 | 43 |
| 115.0 | | | | | | | | | |
| | -115.0 | Very dense, pale brown, with trace gravel | | 118.5 | SS-26A | 15 | 18 | 36 | 54 |
| 120.0 | | | | | | | | | |

● SPT N VALUE (blows / foot)

PL ⨯ MC ○ LL ⨯

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

SAMPLER TYPE

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

DRILLING METHOD

HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
MR - Mud Rotary Wash
RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-21 | **Boring Location:** | 564+40.6 | **Offset:** | LT 21.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 4.1 ft. | **Northing:** | 251862.58 | **Easting:** | 1803798.97 | **Date Started:** | 8/29/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/5/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 3.1 ft. | **Delayed:** | 3.3 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 120.0 | | | | | | | | | |
| | -120.0 | Very dense, wet, pale brown, medium to fine grained, with trace gravel, POORLY GRADED SAND (SP, A-1-b(0)), LL=NP PL=NP PI=NP NMC=17.0 %#200=4.3 | | 123.5 | SS-27 | 18 | 20 | 32 | 52 |
| 125.0 | | | | | | | | | |
| | -125.0 | Very stiff, wet, bluish gray and brown, LEAN CLAY with SAND (CL) | | 128.5 | SS-28 | 7 | 8 | 10 | 18 |
| 130.0 | | | | | | | | | |
| | -130.0 | Undisturbed sample obtained from 133.0 to 135.0 feet. Approximately 24 inches of recovery. Hard, moist, tan and brown, LEAN CLAY with SAND (CL, A-6(12)), LL=31 PL=14 PI=17 NMC=17.0 %#200=81.5 | | 133.0 | T-2 | | | | |
| 135.0 | | | | | | | | | |
| | -135.0 | Very dense, wet, brown and bluish gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=24.5 %#200=14.6 | | 138.5 | SS-29 | 21 | 27 | 27 | 54 |
| 140.0 | | | | | | | | | |
| | -140.0 | Dense, wet, bluish gray, fine to medium grained, with trace clay, POORLY GRADED SAND (SP) | | 143.5 | SS-30 | 10 | 13 | 24 | 37 |
| 145.0 | | | | | | | | | |
| | -145.0 | Hard, wet, pale brown and bluish gray, with little sand, LEAN CLAY (CL, A-7-6(28)), LL=49 PL=17 PI=32 | | 148.5 | SS-31 | 14 | 22 | 24 | 46 |
| 150.0 | | | | | | | | | |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-21 | **Boring Location:** | 564+40.6 | **Offset:** | LT 21.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 4.1 ft. | **Northing:** | 251862.58 | **Easting:** | 1803798.97 | **Date Started:** | 8/29/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/5/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 3.1 ft. | **Delayed:** | 3.3 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 150.0 | | NMC=19.3 %#200=86.2 | | | | | | | |
| | -150.0 | | | | | | | | |
| 155.0 | | | | | | | | | |
| | -155.0 | Very stiff, with trace sand | | 158.5 | SS-32 | 12 | 12 | 12 | 24 |
| 160.0 | | | | | | | | | |
| | -160.0 | | | | | | | | |
| 165.0 | | | | | | | | | |
| | -165.0 | Very stiff, pale brown | | 168.5 | SS-33 | 3 | 7 | 11 | 18 |
| 170.0 | | | | | | | | | |
| | -170.0 | | | | | | | | |
| 175.0 | | | | | | | | | |
| | -175.0 | Very stiff, wet, bluish gray, with few sand, LEAN CLAY (CL, A-7-6(30)), LL=47 PL=16 PI=31 NMC=20.2 | | 178.5 | SS-34 | 8 | 12 | 16 | 28 |
| 180.0 | | | | | | | | | |

● SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-21 | **Boring Location:** | 564+40.6 | **Offset:** | LT 21.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 4.1 ft. | **Northing:** | 251862.58 | **Easting:** | 1803798.97 | **Date Started:** | 8/29/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/5/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 3.1 ft. | **Delayed:** | 3.3 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 180.0 | | %#200=92.8 | | | | | | | |
| | -180.0 | | | | | | | | |
| 185.0 | | | | | | | | | |
| | -185.0 | Very stiff, wet, bluish gray, with trace sand, LEAN CLAY (CL, A-6(17)), LL=35 PL=17 PI=18 NMC=21.9 %#200=97.5 | | 188.5 | SS-35 | 8 | 12 | 16 | 28 |
| 190.0 | | | | | | | | | |
| | -190.0 | | | | | | | | |
| 195.0 | | | | | | | | | |
| | -195.0 | Hard, wet, bluish gray, LEAN CLAY with SAND (CL, A-6(20)), LL=39 PL=13 PI=26 NMC=18.8 %#200=81.9 | | 198.5 | SS-36 | 12 | 17 | 21 | 38 |
| 200.0 | | | | | | | | | |
| | -200.0 | | | | | | | | |
| 205.0 | | | | | | | | | |
| | -205.0 | Hard, wet, bluish gray and brown, SANDY SILT (ML) | | 208.5 | SS-37 | 11 | 11 | 20 | 31 |
| 210.0 | | | | | | | | | |

● SPT N VALUE (blows / foot)

PL ⊗ MC ○ LL ⊗

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-21 | **Boring Location:** | 564+40.6 | **Offset:** | LT 21.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 4.1 ft. | **Northing:** | 251862.58 | **Easting:** | 1803798.97 | **Date Started:** | 8/29/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/5/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 3.1 ft. | **Delayed:** | 3.3 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | ● SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 210.0 | | | | | | | | | | |
| | -210.0 | | | | | | | | | |
| 215.0 | | | | | | | | | | |
| | -215.0 | Wet, bluish gray<br>Note: Rod slipped to sample depth. Blow counts not obtained. | | 218.5 | SS-38 | | | | | |
| 220.0 | | | | | | | | | | |
| | -220.0 | | | | | | | | | |
| 225.0 | | | | | | | | | | |
| | -225.0 | Dense, wet, dark brown, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=19.2 %#200=28.5 | | 228.5 | SS-39 | 9 | 12 | 22 | 34 | ○ ▲● |
| 230.0 | | | | | | | | | | |
| | -230.0 | | | | | | | | | |
| 235.0 | | | | | | | | | | |
| | -235.0 | Medium dense, dark gray | | 238.5 | SS-40 | 9 | 6 | 6 | 12 | ● |
| 240.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | HLA-21 | **Boring Location:** | 564+40.6 | **Offset:** | LT 21.7 | **Alignment:** | High Level Approach |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | S.Howard |
| **Elev.:** | 4.1 ft. | **Northing:** | 251862.58 | **Easting:** | 1803798.97 | **Date Started:** | 8/29/2017 |
| **Total Depth:** | 250.0 ft. | **Soil Depth:** | 250.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 9/5/2017 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 3.1 ft. | **Delayed:** | 3.3 ft. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / FINES CONTENT (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| 240.0 | | | | | | | | | | PL MC LL; 10 20 30 40 50 60 70 80 90 |
| 245.0 | -240.0 | | | | | | | | | |
| 250.0 | -245.0 | Very dense, dark gray, fine to medium grained | | 248.5 | SS-41 | 35 | 50/4 | X | 50+ | >> |
| | | Boring Terminated at 250.0 feet. | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | WHLA-01 | **Boring Location:** | 497+92.5 | **Offset:** | LT 26.8 | **Alignment:** | I-10 Main Span |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.Tisher |
| **Elev.:** | 12.3 ft. | **Northing:** | 248661.085 | **Easting:** | 1798136.072 | **Date Started:** | 5/5/2016 |
| **Total Depth:** | 280.0 ft. | **Soil Depth:** | 280.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 5/9/2016 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|
| 0.0 | 12.3 | Loose, dry, dark brown and light brown, fine grained, SILTY SAND (SM) | 0.0 | SS-1 | 5 | 3 | 5 | 8 |
| | 10.0 | Medium dense, wet, tan, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=16.1 %#200=12.2 | 1.5 | SS-2 | 8 | 6 | 9 | 15 |
| | | Medium dense, wet, tan, fine grained, POORLY GRADED SAND with SILT (SP-SM) | 3.0 | SS-3 | 7 | 7 | 8 | 15 |
| 5.0 | | Medium dense, wet, tan, gray and reddish brown, fine grained, POORLY GRADED SAND with SILT | 4.5 | SS-4 | 7 | 8 | 8 | 16 |
| | 5.0 | (SP-SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=24.2 %#200=11.6 | 6.0 | SS-5 | 2 | 1 | 2 | 3 |
| | | Very loose, wet, gray, fine grained, with organics, SILTY SAND (SM) | | | | | | |
| | | Very loose | 8.5 | SS-6 | 0 | 0 | 0 | 0 |
| 10.0 | 0.0 | | | | | | | |
| | | Very loose, wet, gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=31.8 %#200=33.2 | 13.5 | SS-7 | 0 | 0 | 0 | 0 |
| 15.0 | -5.0 | | | | | | | |
| | | Very loose, wet, brown, with organics, SILTY SAND (SM, A-7-5(8)), LL=69 PL=45 PI=24 NMC=66.5 %#200=46.2 | 18.5 | SS-8 | 0 | 2 | 2 | 4 |
| 20.0 | | Undisturbed sample obtained from 20.0 to 22.0 feet. Approximately 20 inches of recovery. | 20.0 | ST-1 | | | | |
| | -10.0 | Wet, bluish gray, with wood | | | | | | |
| | | Undisturbed sample obtained from 23.5 to 25.5 feet. Approximately 20 inches of recovery. | 23.5 | ST-2 | | | | |
| 25.0 | | Wet, bluish gray, fine grained | | | | | | |
| | -15.0 | | | | | | | |
| 30.0 | | Medium dense, wet, reddish brown, fine to medium grained, POORLY GRADED SAND with SILT | 28.5 | SS-9 | 8 | 13 | 16 | 29 |

● SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | WHLA-01 | **Boring Location:** | 497+92.5 | **Offset:** | LT 26.8 | **Alignment:** | I-10 Main Span |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.Tisher |
| **Elev.:** | 12.3 ft. | **Northing:** | 248661.085 | **Easting:** | 1798136.072 | **Date Started:** | 5/5/2016 |
| **Total Depth:** | 280.0 ft. | **Soil Depth:** | 280.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 5/9/2016 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 30.0 | | | | | | | | | | |
| | -20.0 | (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=23.3 %#200=5.5 | | | | | | | | |
| | | Medium dense, light brown | | 33.5 | SS-10 | 10 | 13 | 17 | 30 | ● |
| 35.0 | | | | | | | | | | |
| | -25.0 | | | | | | | | | |
| | | Medium dense, wet, light tan, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=18.9 %#200=7.1 | | 38.5 | SS-11 | 6 | 11 | 14 | 25 | ▲ ○ ● |
| 40.0 | | | | | | | | | | |
| | -30.0 | | | | | | | | | |
| | | Dense, tan and white | | 43.5 | SS-12 | 9 | 14 | 17 | 31 | ● |
| 45.0 | | | | | | | | | | |
| | -35.0 | | | | | | | | | |
| | | Medium dense, tan | | 48.5 | SS-13 | 10 | 12 | 14 | 26 | ● |
| 50.0 | | | | | | | | | | |
| | -40.0 | | | | | | | | | |
| | | Dense | | 53.5 | SS-14 | 14 | 18 | 23 | 41 | ● |
| 55.0 | | | | | | | | | | |
| | -45.0 | | | | | | | | | |
| | | Medium dense, wet, white, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=24.4 | | 58.5 | SS-15 | 3 | 7 | 16 | 23 | ▲ ● |
| 60.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | WHLA-01 | **Boring Location:** | 497+92.5 | **Offset:** | LT 26.8 | **Alignment:** | I-10 Main Span |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.Tisher |
| **Elev.:** | 12.3 ft. | **Northing:** | 248661.085 | **Easting:** | 1798136.072 | **Date Started:** | 5/5/2016 |
| **Total Depth:** | 280.0 ft. | **Soil Depth:** | 280.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 5/9/2016 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 60.0 | | %#200=16.5 | | | | | | | | |
| | -50.0 | | | | | | | | | |
| | | Medium dense, wet, tan, light tan, and white, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM) | | 63.5 | SS-16 | 10 | 8 | 12 | 20 | ● |
| 65.0 | | | | | | | | | | |
| | -55.0 | | | | | | | | | |
| | | Dense, tan and white | | 68.5 | SS-17 | 10 | 17 | 20 | 37 | ● |
| 70.0 | | | | | | | | | | |
| | -60.0 | | | | | | | | | |
| | | Medium dense | | 73.5 | SS-18 | 8 | 14 | 12 | 26 | ● |
| 75.0 | | | | | | | | | | |
| | -65.0 | | | | | | | | | |
| | | Medium dense | | 78.5 | SS-19 | 10 | 14 | 15 | 29 | ● |
| 80.0 | | | | | | | | | | |
| | -70.0 | | | | | | | | | |
| | | Dense, wet, white and tan, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=26.7 %#200=8.2 | | 83.5 | SS-20 | 10 | 14 | 22 | 36 | ▲ ○ ● |
| 85.0 | | | | | | | | | | |
| | -75.0 | | | | | | | | | |
| | | Dense, wet, tan, fine to medium grained, POORLY GRADED SAND (SP) | | 88.5 | SS-21 | 12 | 16 | 21 | 37 | ● |
| 90.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | WHLA-01 | **Boring Location:** | 497+92.5 | **Offset:** | LT 26.8 | **Alignment:** | I-10 Main Span |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.Tisher |
| **Elev.:** | 12.3 ft. | **Northing:** | 248661.085 | **Easting:** | 1798136.072 | **Date Started:** | 5/5/2016 |
| **Total Depth:** | 280.0 ft. | **Soil Depth:** | 280.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 5/9/2016 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 90.0 | | | | | | | | | | |
| | -80.0 | | | | | | | | | |
| 95.0 | | Medium dense, reddish brown, medium to coarse grained | | 93.5 | SS-22 | 5 | 7 | 13 | 20 | ● |
| | -85.0 | | | | | | | | | |
| 100.0 | | Dense, light brown and tan, fine to medium grained | | 98.5 | SS-23 | 15 | 22 | 24 | 46 | ● |
| | -90.0 | | | | | | | | | |
| 105.0 | | Undisturbed sample obtained from 103.5 to 105.5. Approximately 24 inches of recovery. Wet, gray, FAT CLAY (CH) | | 103.5 | ST-3 | | | | | |
| | -95.0 | | | | | | | | | |
| 110.0 | | Firm | | 108.5 | SS-24 | 2 | 3 | 5 | 8 | ● |
| | -100.0 | | | | | | | | | |
| 115.0 | | Undisturbed sample obtained from 113.5 to 115.5 feet. Approximately 20 inches of recovery. Stiff, wet, bluish gray, FAT CLAY (CH, A-7-6(69)), LL=87 PL=29 PI=58 NMC=44.3 %#200=98.9 | | 113.5 | ST-4 | | | | | ▲ |
| | -105.0 | | | | | | | | | |
| 120.0 | | Dense, wet, dark gray, fine grained, POORLY GRADED SAND with SILT (SP-SM) | | 118.5 | SS-25 | 11 | 18 | 21 | 39 | ● |

## LEGEND

**SAMPLER TYPE**

SS - Split Spoon
T - Shelby Tube
DCP - Dynamic Cone Penetrometer
AC - Auger Cuttings
GB - Grab Bag
NQ - Rock Core

**DRILLING METHOD**

HSA - Hollow Stem Augers
SSA - Solid Stem Augers
HA - Hand Auger
MR - Mud Rotary Wash
RC - Rock Coring

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | WHLA-01 | **Boring Location:** | 497+92.5 | **Offset:** | LT 26.8 | **Alignment:** | I-10 Main Span |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.Tisher |
| **Elev.:** | 12.3 ft. | **Northing:** | 248661.085 | **Easting:** | 1798136.072 | **Date Started:** | 5/5/2016 |
| **Total Depth:** | 280.0 ft. | **Soil Depth:** | 280.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 5/9/2016 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 120.0 | | | | | | | | | | |
| 125.0 | -110.0 | Dense, gray | | 123.5 | SS-26 | 12 | 22 | 20 | 42 | |
| 130.0 | -115.0 | Very dense, gray and white | | 128.5 | SS-27 | 18 | 27 | 45 | 72 | |
| 135.0 | -120.0 | Very dense, wet, gray, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=11.1 %#200=5.9 | | 133.5 | SS-28 | 24 | 26 | 34 | 60 | |
| 140.0 | -125.0 | Dense, medium grained | | 138.5 | SS-29 | 20 | 23 | 24 | 47 | |
| 145.0 | -130.0 | Loose, fine to medium grained | | 143.5 | SS-30 | 8 | 5 | 1 | 6 | |
| 150.0 | -135.0 | Stiff, wet, bluish gray, LEAN CLAY (CL) | | 148.5 | SS-31 | 7 | 5 | 10 | 15 | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | WHLA-01 | **Boring Location:** | 497+92.5 | **Offset:** | LT 26.8 | **Alignment:** | I-10 Main Span |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.Tisher |
| **Elev.:** | 12.3 ft. | **Northing:** | 248661.085 | **Easting:** | 1798136.072 | **Date Started:** | 5/5/2016 |
| **Total Depth:** | 280.0 ft. | **Soil Depth:** | 280.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 5/9/2016 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 150.0 | | | | | | | | | | |
| | -140.0 | | | | | | | | | |
| 155.0 | | Very dense, wet, gray, fine grained, POORLY GRADED SAND with SILT (SP-SM) | | 153.5 | SS-32 | 50 | X | X | 100+ | >> |
| | -145.0 | | | | | | | | | |
| 160.0 | | Very dense | | 158.5 | SS-33 | 50 | X | X | 100+ | >> |
| | -150.0 | | | | | | | | | |
| 165.0 | | Very dense, light brown, with trace clay | | 163.5 | SS-34 | 24 | 50 | X | 50+ | >> |
| | -155.0 | | | | | | | | | |
| 170.0 | | Very dense, gray, fine to medium grained | | 168.5 | SS-35 | 29 | 45 | 49 | 94 | ● |
| | -160.0 | | | | | | | | | |
| 175.0 | | Undisturbed sample obtained from 173.5 to 174.7 feet. Approximately 10 inches of recovery. Gray and brown | | 173.5 | ST-5 | | | | | |
| | -165.0 | | | | | | | | | |
| 180.0 | | Very dense, wet, gray, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP | | 178.5 | SS-36 | 50/4 | X | X | 100+ | ▲ ○ >> |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | WHLA-01 | **Boring Location:** | 497+92.5 | **Offset:** | LT 26.8 | **Alignment:** | I-10 Main Span |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.Tisher |
| **Elev.:** | 12.3 ft. | **Northing:** | 248661.085 | **Easting:** | 1798136.072 | **Date Started:** | 5/5/2016 |
| **Total Depth:** | 280.0 ft. | **Soil Depth:** | 280.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 5/9/2016 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 180.0 | | | | | | | | | | |
| | -170.0 | PL=NP PI=NP NMC=19.5 %#200=8.7 | | | | | | | | |
| | | Very dense | | 183.5 | SS-37 | 45 | 50/5 | X | 50+ | >> |
| 185.0 | | | | | | | | | | |
| | -175.0 | | | | | | | | | |
| | | Very dense | | 188.5 | SS-38 | 50 | X | X | 100+ | >> |
| 190.0 | | | | | | | | | | |
| | -180.0 | | | | | | | | | |
| | | Medium dense, wet, bluish gray, fine grained, CLAYEY SAND (SC, A-6(4)), LL=38 PL=21 PI=17 NMC=29.1 %#200=45.9 | | 193.5 | SS-39 | 22 | 12 | 16 | 28 | |
| 195.0 | | | | | | | | | | |
| | -185.0 | | | | | | | | | |
| | | Undisturbed sample obtained from 198.5 to 200.5 feet. Approximately 24 inches of recovery. Very stiff, wet, bluish gray, with trace sand, LEAN CLAY (CL, A-6(14)), LL=30 PL=14 PI=16 NMC=56.2 %#200=83.3 | | 198.5 | ST-6 | | | | | |
| 200.0 | | | | | | | | | | |
| | -190.0 | | | | | | | | | |
| 205.0 | | | | | | | | | | |
| | -195.0 | | | | | | | | | |
| | | Hard | | 208.5 | SS-40 | 11 | 14 | 18 | 32 | |
| 210.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | WHLA-01 | **Boring Location:** | 497+92.5 | **Offset:** | LT 26.8 | **Alignment:** | I-10 Main Span |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.Tisher |
| **Elev.:** | 12.3 ft. | **Northing:** | 248661.085 | **Easting:** | 1798136.072 | **Date Started:** | 5/5/2016 |
| **Total Depth:** | 280.0 ft. | **Soil Depth:** | 280.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 5/9/2016 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | | AASHTO T206 & T207 | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 210.0 | | | | | | | | | | |
| | -200.0 | | | | | | | | | |
| 215.0 | | | | | | | | | | |
| | -205.0 | | | | | | | | | |
| | | Undisturbed sample obtained from 218.5 to 220.5 feet. Approximately 24 inches of recovery. Hard, wet, bluish gray, with trace sand, LEAN CLAY (CL, A-6(19)), LL=36 PL=16 PI=20 NMC=18.8 %#200=82.9 | | 218.5 | ST-7 | | | | | ▲ |
| 220.0 | | | | | | | | | | |
| | -210.0 | | | | | | | | | |
| 225.0 | | | | | | | | | | |
| | -215.0 | | | | | | | | | |
| | | Hard, green | | 228.5 | SS-41 | 11 | 14 | 21 | 35 | ● |
| 230.0 | | | | | | | | | | |
| | -220.0 | | | | | | | | | |
| 235.0 | | | | | | | | | | |
| | -225.0 | | | | | | | | | |
| | | Undisturbed sample obtained from 238.5 to 240.5 feet. Approximately 18 inches of recovery. | | 238.5 | ST-8 | | | | | × ◪ |
| 240.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | WHLA-01 | **Boring Location:** | 497+92.5 | **Offset:** | LT 26.8 | **Alignment:** | I-10 Main Span |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.Tisher |
| **Elev.:** | 12.3 ft. | **Northing:** | 248661.085 | **Easting:** | 1798136.072 | **Date Started:** | 5/5/2016 |
| **Total Depth:** | 280.0 ft. | **Soil Depth:** | 280.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 5/9/2016 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 240.0 | | | | | | | | | | |
| | -230.0 | Very stiff, wet, bluish gray and gray, SANDY SILT (ML, A-4(0)), LL=NP PL=NP PI=NP NMC=24.9 %#200=26.0 | | | | | | | | |
| 245.0 | | | | | | | | | | |
| | -235.0 | | | | | | | | | |
| | | Medium dense, wet, bluish gray, fine grained, SILTY SAND (SM) | | 248.5 | SS-42 | 8 | 6 | 5 | 11 | ● |
| 250.0 | | | | | | | | | | |
| | -240.0 | | | | | | | | | |
| 255.0 | | | | | | | | | | |
| | -245.0 | | | | | | | | | |
| | | Loose, wet, bluish gray, fine grained, SILTY SAND (SM, A-4(0)), LL=NP PL=NP PI=NP NMC=21.6 %#200=42.2 | | 258.5 | SS-43 | 5 | 3 | 4 | 7 | × ● ○ ▲ |
| 260.0 | | | | | | | | | | |
| | -250.0 | | | | | | | | | |
| 265.0 | | | | | | | | | | |
| | -255.0 | | | | | | | | | |
| | | Medium dense, gray | | 268.5 | SS-44 | 10 | 8 | 8 | 16 | ● |
| 270.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | WHLA-01 | **Boring Location:** | 497+92.5 | **Offset:** | LT 26.8 | **Alignment:** | I-10 Main Span |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | C.Tisher |
| **Elev.:** | 12.3 ft. | **Northing:** | 248661.085 | **Easting:** | 1798136.072 | **Date Started:** | 5/5/2016 |
| **Total Depth:** | 280.0 ft. | **Soil Depth:** | 280.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 5/9/2016 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | AASHTO T206 & T207 | | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** N.O. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 270.0 | | | | | | | | | | |
| | -260.0 | | | | | | | | | |
| 275.0 | | | | | | | | | | |
| | -265.0 | | | | | | | | | |
| | | Very dense | | 278.5 | SS-45 | 20 | 30 | 42 | 72 | ● |
| 280.0 | | Boring Terminated at 280.0 feet. | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | WHLA-03 | **Boring Location:** | 509+17.5 | **Offset:** | LT 5.8 | **Alignment:** | I-10 Main Span |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | B.Ellis/C.Tisher |
| **Elev.:** | 7.1 ft. | **Northing:** | 249311.95 | **Easting:** | 1798929.585 | **Date Started:** | 4/29/2016 |
| **Total Depth:** | 300.0 ft. | **Soil Depth:** | 300.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 5/4/2016 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | | AASHTO T206 & T207 | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 6.0 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|
| 0.0 | | | 0.0 | SS-1 | 6 | 13 | 6 | 19 |
| | 5.0 | Medium dense, dry, black, fine grained, with glass, metal and debris, SILTY SAND (SM) | 1.5 | SS-2 | 6 | 7 | 10 | 17 |
| | | Medium dense, dry, black and reddish yellow, fine grained, with some debris, SILTY SAND with GRAVEL (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=34.6 %#200=17.8 | 3.0 | SS-3 | 3 | 3 | 4 | 7 |
| 5.0 | | Loose, wet, gray and brown, fine grained, with trace gravel | 4.5 | SS-4 | 4 | 4 | 5 | 9 |
| | 0.0 | Loose, wet, gray, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=24.5 %#200=8.3 | 6.0 | SS-5 | 1 | 1 | 1 | 2 |
| | | Very loose | 8.5 | SS-6 | 0 | 0 | 0 | 0 |
| 10.0 | | Very loose | | | | | | |
| | -5.0 | | | | | | | |
| | | Undisturbed sample obtained 13.5 to 15.5 feet. Approximately 19 inches of recovery. Moist, gray and dark gray, with trace organics, FAT CLAY (CH) | 13.5 | T-1 | | | | |
| 15.0 | -10.0 | | | | | | | |
| | | Medium dense, wet, tan, fine grained, POORLY GRADED SAND (SP) | 18.5 | SS-7 | 7 | 10 | 14 | 24 |
| 20.0 | -15.0 | | | | | | | |
| | | Medium dense | 23.5 | SS-8 | 8 | 11 | 16 | 27 |
| 25.0 | -20.0 | | | | | | | |
| | | Medium dense, wet, white, fine grained, POORLY GRADED SAND (SP, A-3(0)), LL=NP PL=NP PI=NP | 28.5 | SS-9 | 8 | 10 | 14 | 24 |
| 30.0 | | | | | | | | |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | WHLA-03 | **Boring Location:** | 509+17.5 | **Offset:** | LT 5.8 | **Alignment:** | I-10 Main Span |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | B.Ellis/C.Tisher |
| **Elev.:** | 7.1 ft. | **Northing:** | 249311.95 | **Easting:** | 1798929.585 | **Date Started:** | 4/29/2016 |
| **Total Depth:** | 300.0 ft. | **Soil Depth:** | 300.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 5/4/2016 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | | AASHTO T206 & T207 | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 6.0 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / FINES CONTENT (%) 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 30.0 | | NMC=25.6 %#200=3.4 | | | | | | | | |
| | -25.0 | | | | | | | | | |
| | | Medium dense, light tan | | 33.5 | SS-10 | 4 | 6 | 10 | 16 | ● |
| 35.0 | | | | | | | | | | |
| | -30.0 | | | | | | | | | |
| | | Medium dense, light tan and white | | 38.5 | SS-11 | 10 | 12 | 17 | 29 | ● |
| 40.0 | | | | | | | | | | |
| | -35.0 | | | | | | | | | |
| | | Dense | | 43.5 | SS-12 | 13 | 21 | 28 | 49 | ● |
| 45.0 | | | | | | | | | | |
| | -40.0 | | | | | | | | | |
| | | Medium dense, white and brown, fine to medium grained | | 48.5 | SS-13 | 10 | 11 | 12 | 23 | ● |
| 50.0 | | | | | | | | | | |
| | -45.0 | | | | | | | | | |
| | | Medium dense, wet, tan, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM) | | 53.5 | SS-14 | 5 | 5 | 6 | 11 | ● |
| 55.0 | | | | | | | | | | |
| | -50.0 | | | | | | | | | |
| | | Medium dense, wet, tan, fine grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP | | 58.5 | SS-15 | 7 | 10 | 15 | 25 | ▲ ● |
| 60.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | WHLA-03 | **Boring Location:** | 509+17.5 | **Offset:** | LT 5.8 | **Alignment:** | I-10 Main Span |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | B.Ellis/C.Tisher |
| **Elev.:** | 7.1 ft. | **Northing:** | 249311.95 | **Easting:** | 1798929.585 | **Date Started:** | 4/29/2016 |
| **Total Depth:** | 300.0 ft. | **Soil Depth:** | 300.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 5/4/2016 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | | AASHTO T206 & T207 | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 6.0 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) / PL MC LL / FINES CONTENT (%) 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 60.0 | | | | | | | | | | |
| | | PL=NP PI=NP NMC=23.7 %#200=9.9 | | | | | | | | |
| | -55.0 | | | | | | | | | |
| | | Medium dense | | 63.5 | SS-16 | 9 | 7 | 9 | 16 | |
| 65.0 | | | | | | | | | | |
| | -60.0 | | | | | | | | | |
| | | Loose, wet, reddish brown, medium to fine grained, with trace gravel, POORLY GRADED SAND with SILT (SP-SM, A-1-b(0)), LL=NP PL=NP PI=NP NMC=18.3 %#200=10.9 | | 68.5 | SS-17 | 3 | 3 | 6 | 9 | |
| 70.0 | | | | | | | | | | |
| | -65.0 | | | | | | | | | |
| | | Medium dense, fine grained | | 73.5 | SS-18 | 6 | 9 | 8 | 17 | |
| 75.0 | | | | | | | | | | |
| | -70.0 | | | | | | | | | |
| | | Medium dense, light brown | | 78.5 | SS-19 | 11 | 13 | 16 | 29 | |
| 80.0 | | | | | | | | | | |
| | -75.0 | | | | | | | | | |
| | | Loose, light brown and brown, fine to medium grained | | 83.5 | SS-20 | 5 | 4 | 5 | 9 | |
| 85.0 | | | | | | | | | | |
| | -80.0 | | | | | | | | | |
| | | Dense, wet, reddish brown, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), | | 88.5 | SS-21 | 10 | 19 | 16 | 35 | |
| 90.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | WHLA-03 | **Boring Location:** | 509+17.5 | **Offset:** | LT 5.8 | **Alignment:** | I-10 Main Span |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | B.Ellis/C.Tisher |
| **Elev.:** | 7.1 ft. | **Northing:** | 249311.95 | **Easting:** | 1798929.585 | **Date Started:** | 4/29/2016 |
| **Total Depth:** | 300.0 ft. | **Soil Depth:** | 300.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 5/4/2016 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | | AASHTO T206 & T207 | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 6.0 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 90.0 | | | | | | | | | | |
| | | LL=NP PL=NP PI=NP NMC=22.5 %#200=7.1 | | | | | | | | |
| | -85.0 | | | | | | | | | |
| 95.0 | | Undisturbed sample obtained from 93.5 to 95.5 feet. Approximately 24 inches of recovery. Stiff, moist, dark grayish brown, with trace sand, FAT CLAY (CH, A-7-6(65)), LL=81 PL=25 PI=56 NMC=46.9 %#200=98.5 | | 93.5 | T-2 | | | | | |
| | -90.0 | | | | | | | | | |
| 100.0 | | Undisturbed sample obtained from 98.5 to 100.5 feet. Approximately 7 inches of recovery. Wet, brown, fine to medium grained, CLAYEY SAND (SC) | | 98.5 | T-3 | | | | | |
| | -95.0 | | | | | | | | | |
| 105.0 | | Medium dense, moist, dark gray, with organics, CLAYEY SAND (SC, A-7-5(11)), LL=82 PL=32 PI=50 NMC=77.0 %#200=38.6 | | 103.5 | SS-22 | 1 | 6 | 7 | 13 | |
| | -100.0 | | | | | | | | | |
| 110.0 | | Undisturbed sample obtained from 108.5 to 110.5 feet. Approximately 24 inches of recovery. Top of tube: Brown | | 108.5 | T-4 | | | | | |
| | -105.0 | Bottom of tube: Moist, gray, FAT CLAY with SAND (CH) | | | | | | | | |
| 115.0 | | Dense, wet, gray and grayish brown, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=29.7 %#200=23.1 | | 113.5 | SS-23 | 19 | 20 | 21 | 41 | |
| | -110.0 | | | | | | | | | |
| 120.0 | | Dense, wet, dark gray, fine grained, with trace organics, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP | | 118.5 | SS-24 | 11 | 15 | 27 | 42 | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | WHLA-03 | **Boring Location:** | 509+17.5 | **Offset:** | LT 5.8 | **Alignment:** | I-10 Main Span |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | B.Ellis/C.Tisher |
| **Elev.:** | 7.1 ft. | **Northing:** | 249311.95 | **Easting:** | 1798929.585 | **Date Started:** | 4/29/2016 |
| **Total Depth:** | 300.0 ft. | **Soil Depth:** | 300.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 5/4/2016 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | | AASHTO T206 & T207 | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 6.0 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) |
|---|---|---|---|---|---|---|---|---|---|
| 120.0 | | PI=NP NMC=23.6 %#200=14.4 | | | | | | | |
| | -115.0 | | | | | | | | |
| 125.0 | | Dense, wet, gray, fine to medium grained, with few gravel, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=13.8 %#200=8.9 | | 123.5 | SS-25 | 23 | 23 | 25 | 48 |
| | -120.0 | | | | | | | | |
| 130.0 | | Dense, fine to coarse grained, with trace gravel | | 128.5 | SS-26 | 16 | 18 | 23 | 41 |
| | -125.0 | | | | | | | | |
| 135.0 | | Very dense, with trace gravel | | 133.5 | SS-27 | 42 | 45 | 44 | 89 |
| | -130.0 | | | | | | | | |
| 140.0 | | Stiff, moist, bluish gray, with trace sand, FAT CLAY (CH, A-7-6(40)), LL=60 PL=18 PI=42 NMC=20.9 %#200=89.0 | | 138.5 | SS-28 | 2 | 8 | 7 | 15 |
| | -135.0 | Undisturbed sample obtained from 140.5 to 141.9 feet. Approximately 17 inches of recovery. Gray, with trace sand and trace silt lenses | | 140.5 | T-5 | | | | |
| 145.0 | | Undisturbed sample obtained from 143.5 to 145.3 feet. Approximately 21 inches of recovery. Very stiff, moist, bluish gray and gray, with few sand lenses, LEAN CLAY (CL, A-6(14)), LL=32 PL=16 PI=16 NMC=27.0 %#200=91.5 | | 143.5 | T-6 | | | | |
| | -140.0 | | | | | | | | |
| 150.0 | | Stiff | | 148.5 | SS-29 | 5 | 6 | 9 | 15 |

SPT N VALUE (blows / foot)

PL MC LL

▲ FINES CONTENT (%) ▲

10 20 30 40 50 60 70 80 90

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | WHLA-03 | **Boring Location:** | 509+17.5 | **Offset:** | LT 5.8 | **Alignment:** | I-10 Main Span |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | B.Ellis/C.Tisher |
| **Elev.:** | 7.1 ft. | **Northing:** | 249311.95 | **Easting:** | 1798929.585 | **Date Started:** | 4/29/2016 |
| **Total Depth:** | 300.0 ft. | **Soil Depth:** | 300.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 5/4/2016 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | | AASHTO T206 & T207 | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 6.0 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 150.0 | | | | | | | | | | |
| | -145.0 | | | | | | | | | |
| 155.0 | | Undisturbed sample obtained from 153.5 to 155.5 feet. Approximately 24 inches of recovery. Top of tube: Gray | | 153.5 | T-7 | | | | | |
| | -150.0 | Bottom of tube: Wet, gray, fine to medium grained, SILTY SAND (SM) | | | | | | | | |
| 160.0 | | Very dense, wet, gray, fine to medium grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=19.5 %#200=12.4 | | 158.5 | SS-30 | 30 | 54 | 50/4 | 100+ | |
| | -155.0 | | | | | | | | | |
| 165.0 | | Hard, wet, gray, LEAN CLAY (CL) | | 163.5 | SS-31 | 29 | 23 | 16 | 39 | |
| | -160.0 | Undisturbed sample obtained from 166.0 to 168.0 feet. Approximately 24 inches of recovery. Very stiff, wet, bluish gray, LEAN CLAY with SAND (CL, A-7-6(25)), LL=48 PL=16 PI=32 NMC=29.5 %#200=79.5 | | 166.0 | T-8 | | | | | |
| 170.0 | | Hard, wet, bluish gray, with trace sand, LEAN CLAY (CL, A-7-6(26)), LL=45 PL=19 PI=26 NMC=31.0 %#200=92.5 | | 168.0 | SS-32 | 6 | 7 | 29 | 36 | |
| | -165.0 | | | | | | | | | |
| 175.0 | | Hard | | 173.5 | SS-33 | 22 | 26 | 24 | 50 | |
| | -170.0 | | | | | | | | | |
| 180.0 | | Very dense, wet, green, fine grained, SILTY SAND (SM, A-4(0)), LL=NP PL=NP PI=NP NMC=27.4 | | 178.5 | SS-34 | 19 | 40 | 44 | 84 | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | WHLA-03 | **Boring Location:** | 509+17.5 | **Offset:** | LT 5.8 | **Alignment:** | I-10 Main Span |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | B.Ellis/C.Tisher |
| **Elev.:** | 7.1 ft. | **Northing:** | 249311.95 | **Easting:** | 1798929.585 | **Date Started:** | 4/29/2016 |
| **Total Depth:** | 300.0 ft. | **Soil Depth:** | 300.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 5/4/2016 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | | AASHTO T206 & T207 | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 6.0 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | ● SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 180.0 | | %#200=47.0 | | | | | | | | |
| | -175.0 | | | | | | | | | |
| 185.0 | | Very dense, wet, dark gray, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM) | | 183.5 | SS-35 | 44 | 50/5 | X | 50/5 | >> |
| | -180.0 | | | | | | | | | |
| 190.0 | | Very dense, wet, gray, fine to medium grained, with trace gravel, POORLY GRADED SAND with SILT (SP-SM, A-3(0)), LL=NP PL=NP PI=NP NMC=17.5 %#200=8.4 | | 188.5 | SS-36 | 50 | 50/4 | X | 50/4 | ▲ ○ >> |
| | -185.0 | | | | | | | | | |
| 195.0 | | Undisturbed sample obtained from 193.0 to 195.0 feet. Approximately 24 inches of recovery. Hard, wet to moist, bluish gray, SANDY LEAN CLAY (CL, A-4(3)), LL=28 PL=20 PI=8 NMC=19.9 %#200=63.4 | | 193.0 | T-9 | | | | | ⊗ ▲ |
| | -190.0 | | | | | | | | | |
| 200.0 | | Very stiff | | 198.5 | SS-37 | 8 | 12 | 14 | 26 | ● |
| | | Undisturbed sample could not be obtained from 200.0 to 202.0 feet. No recovery. | | 200.0 | T-10 | | | | | |
| | -195.0 | | | | | | | | | |
| 205.0 | | | | | | | | | | |
| | -200.0 | | | | | | | | | |
| 210.0 | | Undisturbed sample obtained from 208.5 to 210.5 feet. Approximately 10 inches of recovery. | | 208.5 | T-11 | | | | | ○ ▲ |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | WHLA-03 | **Boring Location:** | 509+17.5 | **Offset:** | LT 5.8 | **Alignment:** | I-10 Main Span |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | B.Ellis/C.Tisher |
| **Elev.:** | 7.1 ft. | **Northing:** | 249311.95 | **Easting:** | 1798929.585 | **Date Started:** | 4/29/2016 |
| **Total Depth:** | 300.0 ft. | **Soil Depth:** | 300.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 5/4/2016 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | | AASHTO T206 & T207 | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 6.0 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 210.0 | | | | | | | | | | |
| | -205.0 | Very stiff, wet to moist, bluish gray, SANDY LEAN CLAY (CL, A-6(8)), LL=32 PL=11 PI=21 NMC=13.1 %#200=54.9 | | | | | | | | |
| 215.0 | | | | | | | | | | |
| | -210.0 | | | | | | | | | |
| | | Undisturbed sample obtained from 218.5 to 220.5 feet. Approximately 9 inches of recovery. Moist to wet, SANDY LEAN CLAY (CL) | | 218.5 | T-12 | | | | | |
| 220.0 | | | | | | | | | | |
| | -215.0 | | | | | | | | | |
| 225.0 | | | | | | | | | | |
| | -220.0 | | | | | | | | | |
| | | Firm, wet, gray, SANDY SILT (ML, A-4(0)), LL=NP PL=NP PI=NP NMC=27.5 %#200=60.5 | | 228.5 | SS-38 | 6 | 3 | 4 | 7 | |
| 230.0 | | | | | | | | | | |
| | -225.0 | | | | | | | | | |
| 235.0 | | | | | | | | | | |
| | -230.0 | | | | | | | | | |
| | | Loose, wet, gray, fine grained, SILTY SAND (SM) | | 238.5 | SS-39 | 2 | 5 | 5 | 10 | |
| 240.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | WHLA-03 | **Boring Location:** | 509+17.5 | **Offset:** | LT 5.8 | **Alignment:** | I-10 Main Span |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | B.Ellis/C.Tisher |
| **Elev.:** | 7.1 ft. | **Northing:** | 249311.95 | **Easting:** | 1798929.585 | **Date Started:** | 4/29/2016 |
| **Total Depth:** | 300.0 ft. | **Soil Depth:** | 300.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 5/4/2016 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | | AASHTO T206 & T207 | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 6.0 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 240.0 | | | | | | | | | | |
| | -235.0 | | | | | | | | | |
| 245.0 | | | | | | | | | | |
| | -240.0 | | | | | | | | | |
| | | Loose, wet, gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=27.5 %#200=29.2 | | 248.5 | SS-40 | 7 | 3 | 5 | 8 | |
| 250.0 | | | | | | | | | | |
| | -245.0 | | | | | | | | | |
| 255.0 | | | | | | | | | | |
| | -250.0 | | | | | | | | | |
| | | Very dense | | 258.5 | SS-41 | 20 | 30 | 30 | 60 | |
| 260.0 | | | | | | | | | | |
| | -255.0 | | | | | | | | | |
| 265.0 | | | | | | | | | | |
| | -260.0 | | | | | | | | | |
| | | Very dense, wet, gray, fine grained, SILTY SAND (SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=19.7 | | 268.5 | SS-42 | 38 | 36 | 50/6 | 100+ | >> |
| 270.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

thompson ENGINEERING

# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | WHLA-03 | **Boring Location:** | 509+17.5 | **Offset:** | LT 5.8 | **Alignment:** | I-10 Main Span |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | B.Ellis/C.Tisher |
| **Elev.:** | 7.1 ft. | **Northing:** | 249311.95 | **Easting:** | 1798929.585 | **Date Started:** | 4/29/2016 |
| **Total Depth:** | 300.0 ft. | **Soil Depth:** | 300.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 5/4/2016 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | | AASHTO T206 & T207 | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 6.0 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 270.0 | | %#200=17.3 | | | | | | | | |
| | -265.0 | | | | | | | | | |
| 275.0 | | | | | | | | | | |
| | -270.0 | | | | | | | | | |
| | | Very dense, wet, gray, fine grained, POORLY GRADED SAND with SILT (SP-SM) | | 278.5 | SS-43 | 29 | 46 | 50/5 | 100+ | >> |
| 280.0 | | | | | | | | | | |
| | -275.0 | | | | | | | | | |
| 285.0 | | | | | | | | | | |
| | -280.0 | | | | | | | | | |
| | | Very dense, wet, gray, fine to medium grained, POORLY GRADED SAND with SILT (SP-SM, A-2-4(0)), LL=NP PL=NP PI=NP NMC=20.8 %#200=11.1 | | 288.5 | SS-44 | 30 | 50 | X | 50/6 | ▲ ○ >> |
| 290.0 | | | | | | | | | | |
| | -285.0 | | | | | | | | | |
| 295.0 | | | | | | | | | | |
| | -290.0 | | | | | | | | | |
| | | Very dense, light gray and white | | 298.5 | SS-45 | 50 | X | X | 100+ | >> |
| 300.0 | | | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
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| DCP - Dynamic Cone Penetrometer | NQ - Rock Core | HA - Hand Auger | |

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# RECORD OF TEST BORING

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Site Description:** | I-10 Mobile River Bridge and Bayway | | | | | **County:** | Mobile |
| **Boring No.:** | WHLA-03 | **Boring Location:** | 509+17.5 | **Offset:** | LT 5.8 | **Alignment:** | I-10 Main Span |
| **ALDOT PE No.:** | DPI-0030(005) | **TE Project No.:** | 15-1101-0228 | | | **Eng./Geo.:** | B.Ellis/C.Tisher |
| **Elev.:** | 7.1 ft. | **Northing:** | 249311.95 | **Easting:** | 1798929.585 | **Date Started:** | 4/29/2016 |
| **Total Depth:** | 300.0 ft. | **Soil Depth:** | 300.0 ft. | **Core Depth:** | 0.0 ft. | **Date Completed:** | 5/4/2016 |
| **Bore Hole Diameter (in):** | 4-inch | **AASHTO / ASTM Sampling Methods:** | | AASHTO T206 & T207 | | | |
| **Drill Machine:** | CME 550X | **Drill Method:** | MR | **Hammer Type:** | Automatic | **Energy Ratio:** | 88% |
| **Core Size:** | N/A | **Driller:** | Thompson Eng | **Groundwater:** | **TOB** 6.0 ft. | **Delayed:** | N.O. |

| Depth (ft) | Elevation (ft) | MATERIAL DESCRIPTION | Graphic Log | Sample Depth (ft.) | Sample No./Type | 1st 6" | 2nd 6" | 3rd 6" | N Value (Field) | ● SPT N VALUE (blows / foot) PL MC LL ▲ FINES CONTENT (%) ▲ 10 20 30 40 50 60 70 80 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Boring Terminated at 300.0 feet. | | | | | | | | |

## LEGEND

| SAMPLER TYPE | | DRILLING METHOD | |
|---|---|---|---|
| SS - Split Spoon | AC - Auger Cuttings | HSA - Hollow Stem Augers | MR - Mud Rotary Wash |
| T - Shelby Tube | GB - Grab Bag | SSA - Solid Stem Augers | RC - Rock Coring |
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CPT REPORT - DYNAMIC BOTTOM LEGEND - DF STD US LAB.GDT - 11/29/17 15:45 - L:\GINT PROJECTS\2015\15-1101-0228 ALDOT MRB INITIAL GEOTECHNICAL\15-1101-0228 CPT INVESTIGATIONS.GP

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**Mobile River Bridge CPT Investigation**
**Mobile, Alabama**

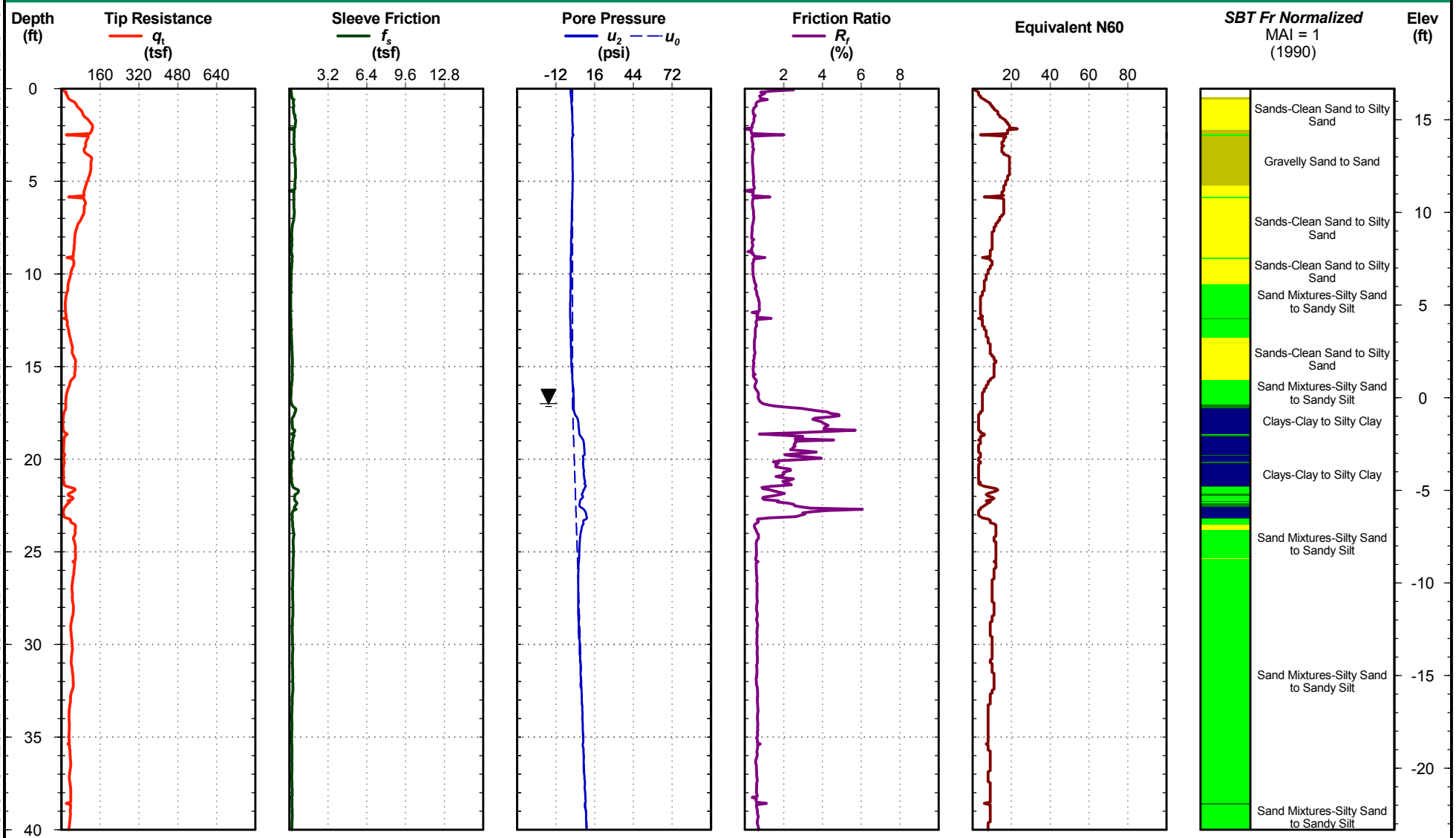
# Cone Penetration Test

**TC-18**

**Project #:** 17-1101-0145
**Date:** Nov. 15, 2017

**Northing:** 251291.2
**Easting:** 1801648.1

**Elevation:** 16.68
**Filename:** TC-18.cpt




1 - Sensitive, Fine Grained Soils
2 - Organic Soils, Peats
3 - Clays-Clay to Silty Clay
4 - Silt Mixtures-Clay Silt to Silty Clay
5 - Sand Mixtures-Silty Sand to Sandy Silt
6 - Sands-Clean Sand to Silty Sand
7 - Gravelly Sand to Sand
8 - Very Stiff Clay to Clayey Sand
9 - Very Stiff Fine Grained Soils

TC-18

CPT REPORT - DYNAMIC BOTTOM LEGEND - DF STD US LAB.GDT - 11/29/17 15:45 - L:\GINT PROJECTS\2015\15-1101-0228 ALDOT MRB INITIAL GEOTECHNICAL\15-1101-0228 CPT INVESTIGATIONS.GP

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**Mobile River Bridge CPT Investigation**
**Mobile, Alabama**

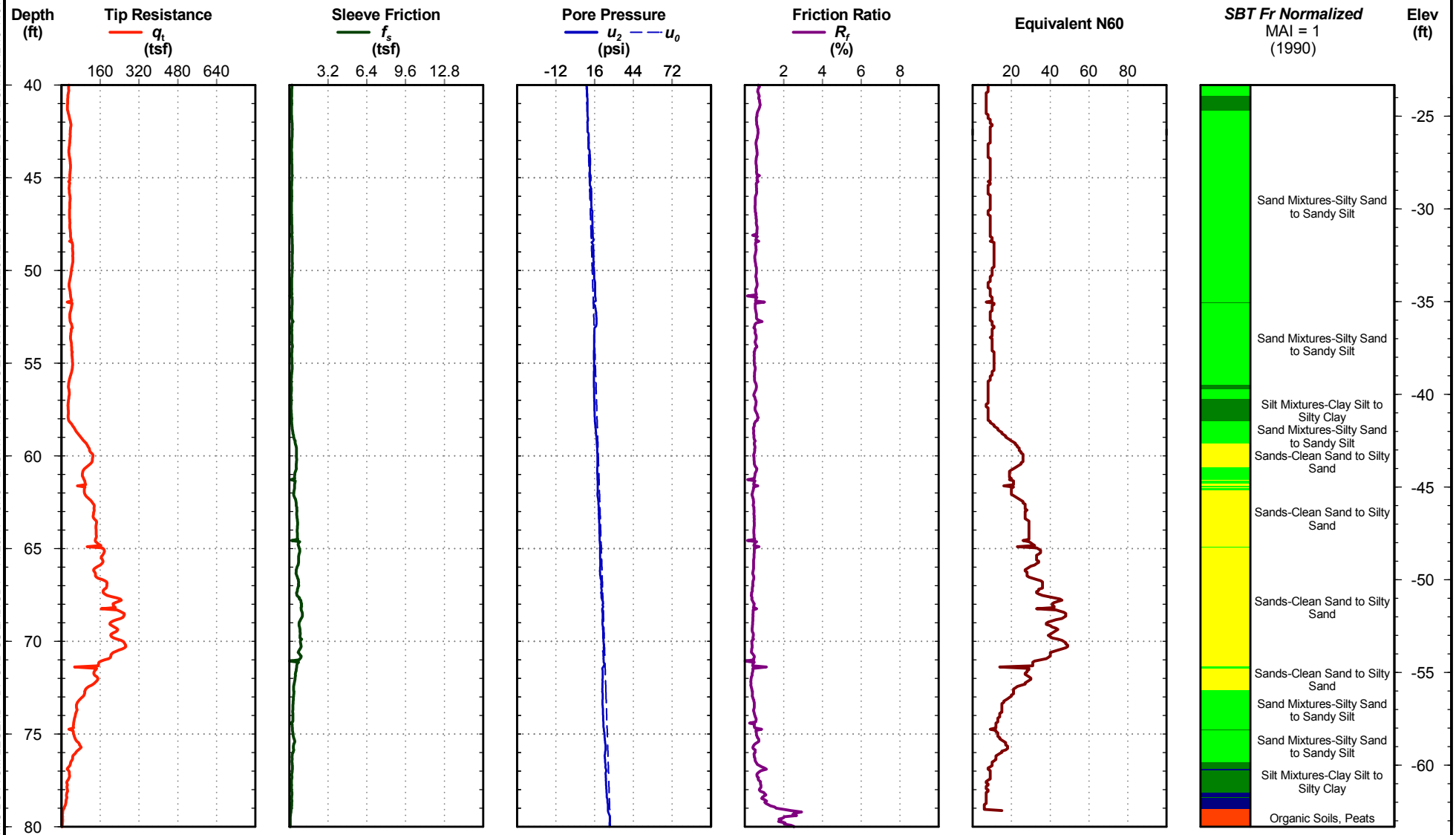
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**Easting:** 1801648.1

**Elevation:** 16.68
**Filename:** TC-18.cpt




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9 - Very Stiff Fine Grained Soils

TC-18

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**Mobile River Bridge CPT Investigation**
**Mobile, Alabama**

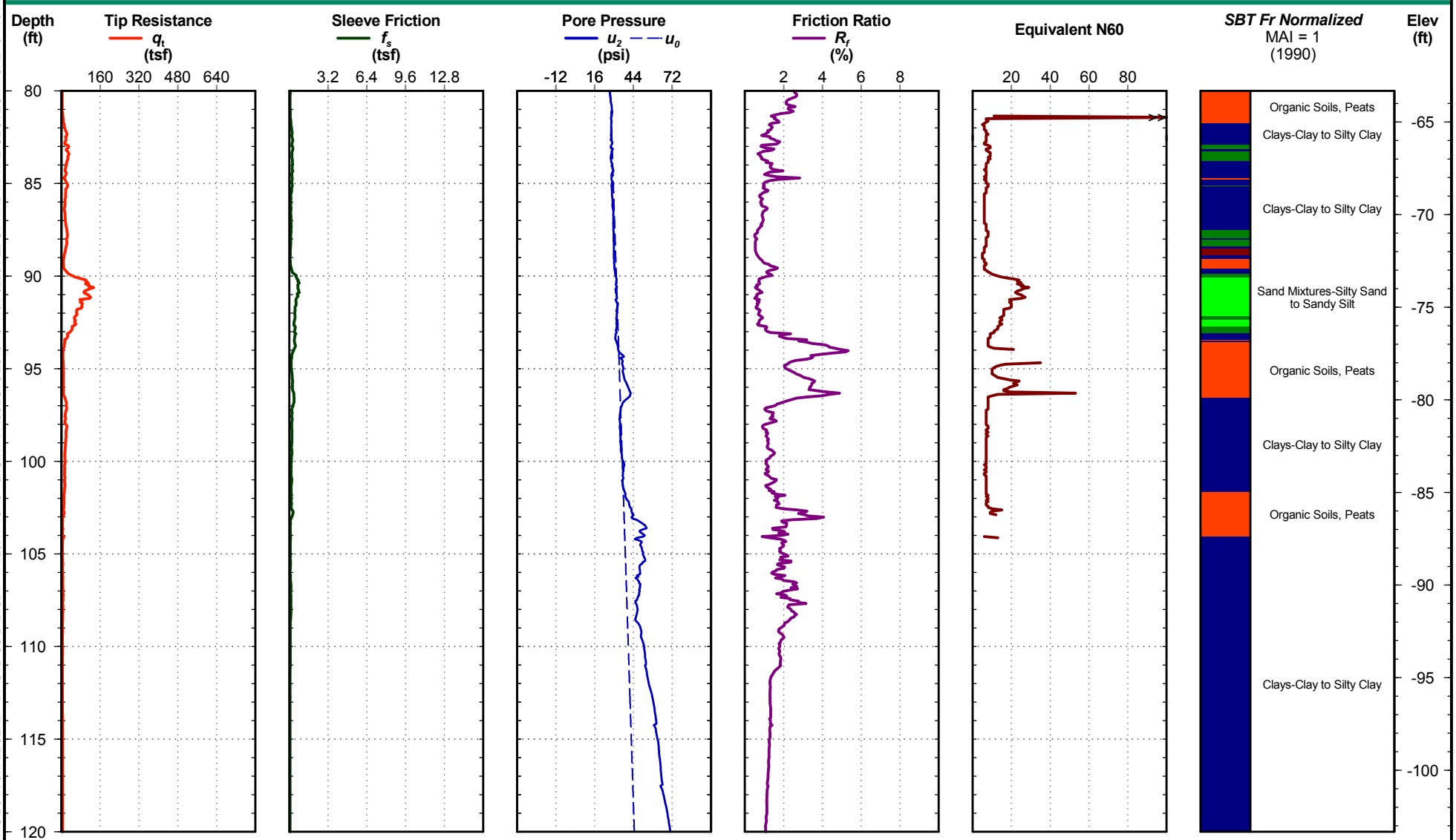
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**Date:** Nov. 15, 2017

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TC-18

CPT REPORT - DYNAMIC BOTTOM LEGEND - DF STD US LAB.GDT - 11/29/17 15:45 - L:\GINT PROJECTS\2015\15-1101-0228 ALDOT MRB INITIAL GEOTECHNICAL\15-1101-0228 CPT INVESTIGATIONS.GP

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**Mobile River Bridge CPT Investigation**
**Mobile, Alabama**

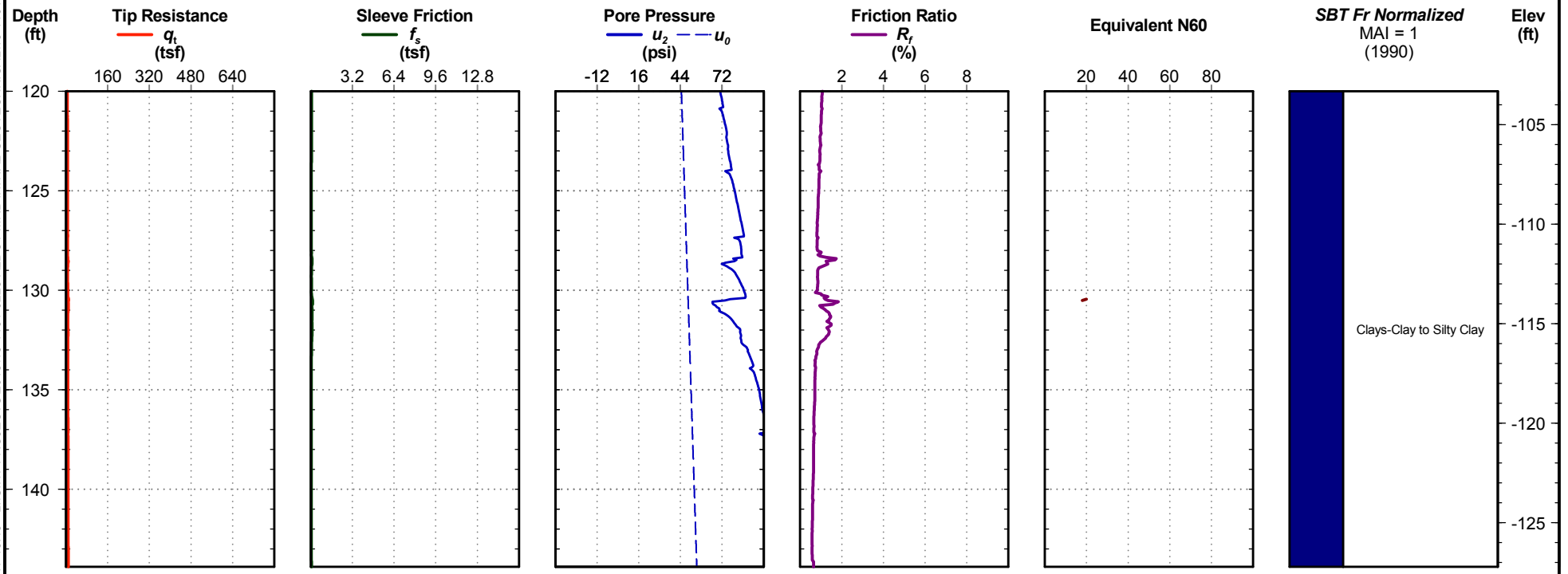
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9 - Very Stiff Fine Grained Soils



**TC-18**

CPT REPORT - DYNAMIC BOTTOM LEGEND - DF STD US LAB.GDT - 11/29/17 15:46 - L:\GINT PROJECTS\2015\15-1101-0228 ALDOT MRB INITIAL GEOTECHNICAL\15-1101-0228 CPT INVESTIGATIONS.GP

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**Mobile River Bridge CPT Investigation**
**Mobile, Alabama**

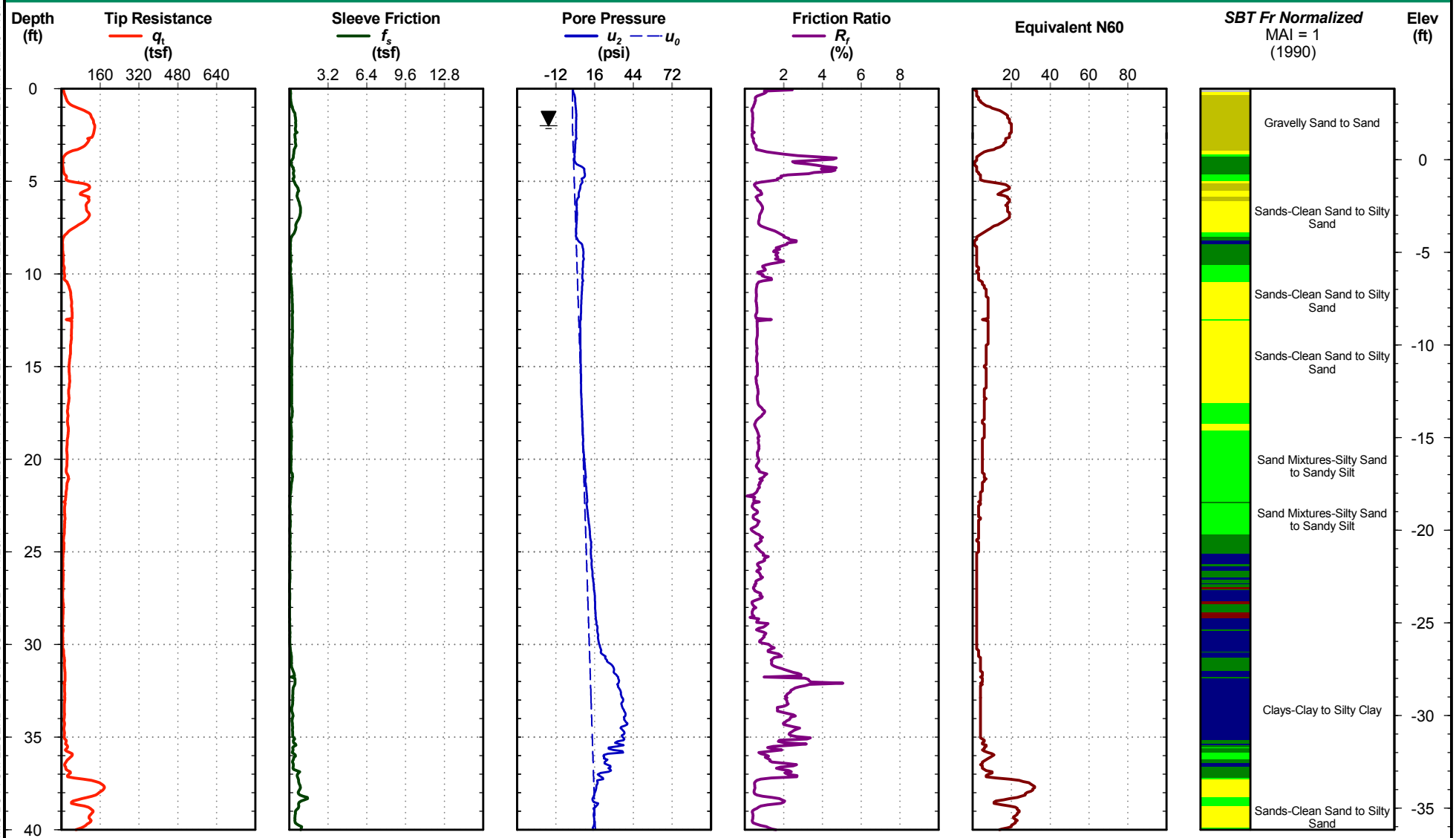
# Cone Penetration Test

**TC-19**

**Project #:** 17-1101-0145
**Date:** Nov. 15, 2017

**Northing:** 251774.1
**Easting:** 1802907.8

**Elevation:** 3.83
**Filename:** TC-19.cpt




1 - Sensitive, Fine Grained Soils
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6 - Sands-Clean Sand to Silty Sand
7 - Gravelly Sand to Sand
8 - Very Stiff Clay to Clayey Sand
9 - Very Stiff Fine Grained Soils

TC-19

CPT REPORT - DYNAMIC BOTTOM LEGEND - DF STD US LAB.GDT - 11/29/17 15:46 - L:\GINT PROJECTS\2015\15-1101-0228 ALDOT MRB INITIAL GEOTECHNICAL\15-1101-0228 CPT INVESTIGATIONS.GP

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**Mobile River Bridge CPT Investigation**
**Mobile, Alabama**

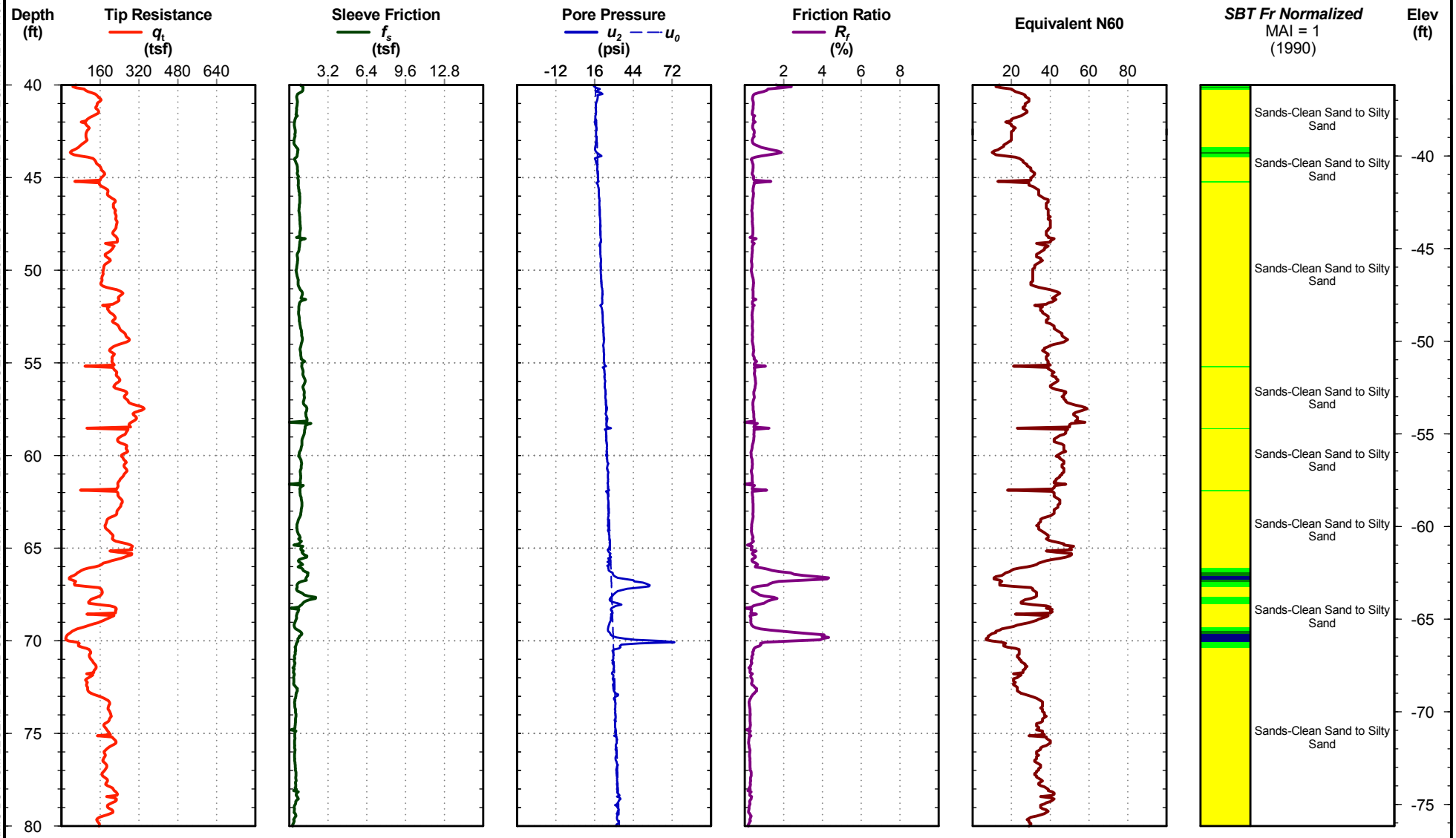
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**TC-19**

**Project #:** 17-1101-0145
**Date:** Nov. 15, 2017

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**Easting:** 1802907.8

**Elevation:** 3.83
**Filename:** TC-19.cpt




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6 - Sands-Clean Sand to Silty Sand
7 - Gravelly Sand to Sand
8 - Very Stiff Clay to Clayey Sand
9 - Very Stiff Fine Grained Soils

TC-19

CPT REPORT - DYNAMIC BOTTOM LEGEND - DF STD US LAB.GDT - 11/29/17 15:46 - L:\GINT PROJECTS\2015\15-1101-0228 ALDOT MRB INITIAL GEOTECHNICAL\15-1101-0228 CPT INVESTIGATIONS.GP

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**Mobile River Bridge CPT Investigation**
**Mobile, Alabama**

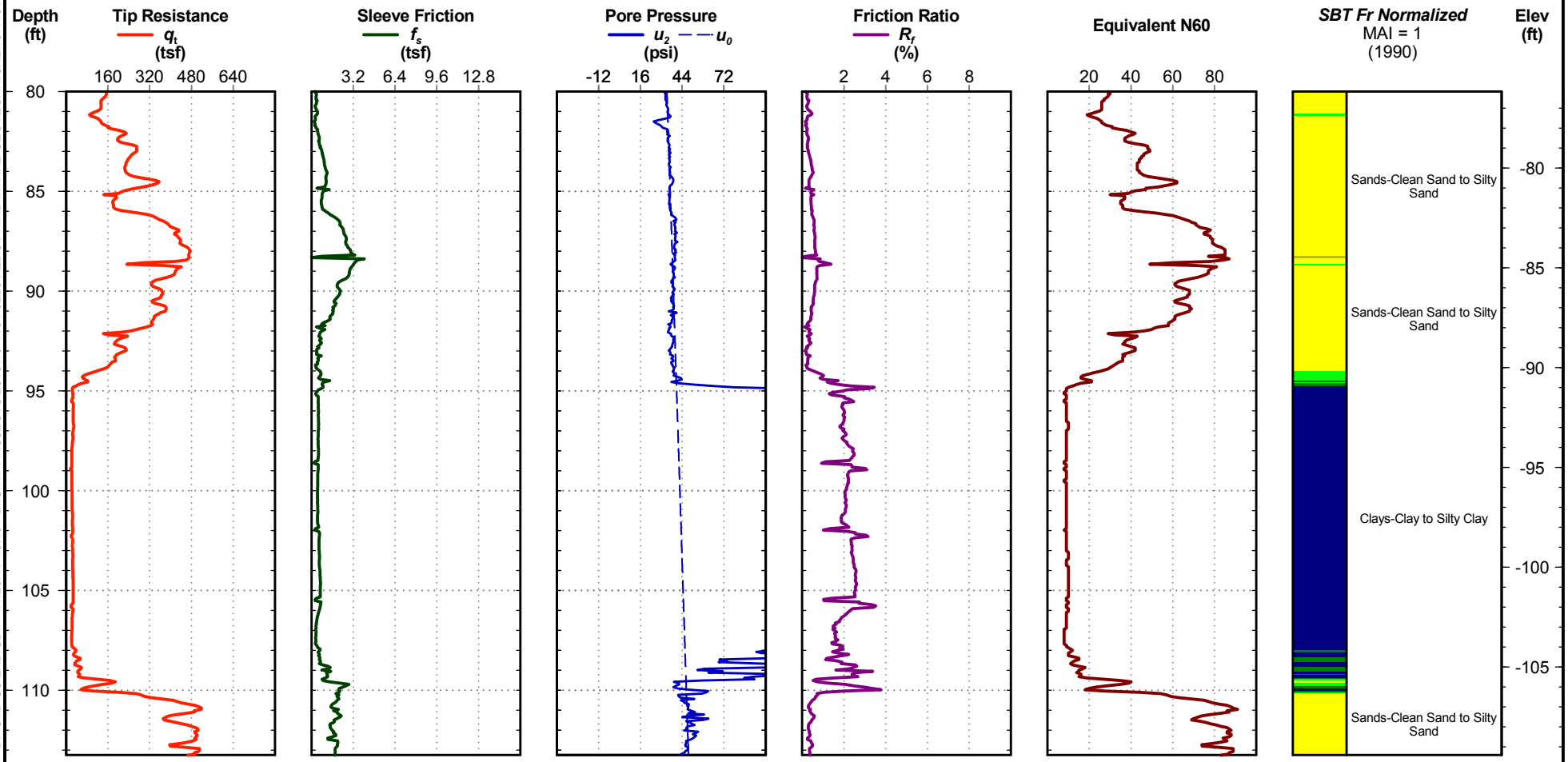
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TC-19

CPT REPORT - DYNAMIC BOTTOM LEGEND - DF STD US LAB.GDT - 11/29/17 15:47 - L:\GINT PROJECTS\2015\15-1101-0228 ALDOT MRB INITIAL GEOTECHNICAL\15-1101-0228 CPT INVESTIGATIONS.GP

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**Mobile River Bridge CPT Investigation**
**Mobile, Alabama**

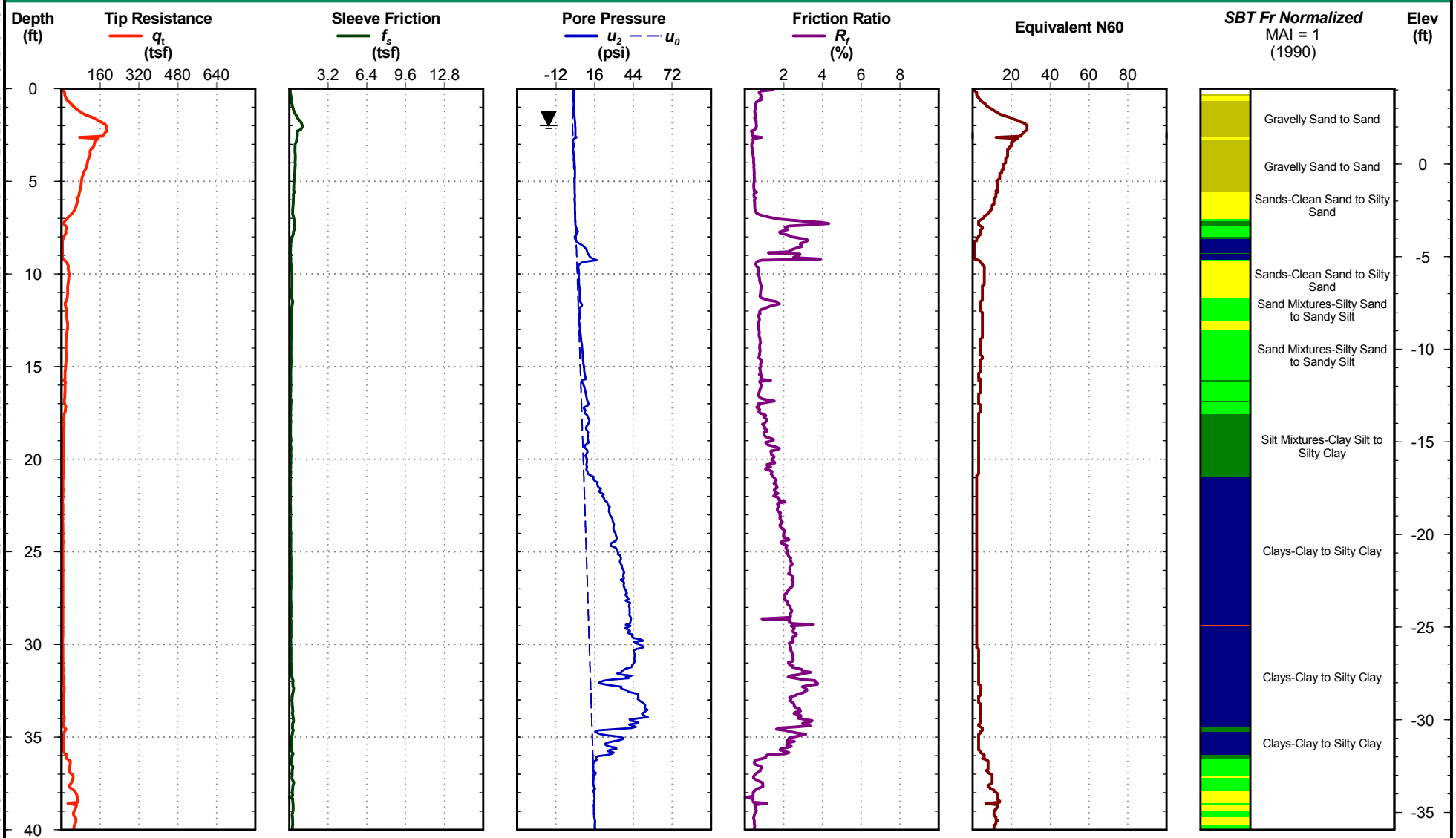
# Cone Penetration Test

**TC-20**

**Project #:** 17-1101-0145
**Date:** Nov. 15, 2017

**Northing:** 251983.9
**Easting:** 1803437.4

**Elevation:** 4.07
**Filename:** TC-20.cpt




1 - Sensitive, Fine Grained Soils
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8 - Very Stiff Clay to Clayey Sand
9 - Very Stiff Fine Grained Soils

TC-20

CPT REPORT - DYNAMIC BOTTOM LEGEND - DF STD US LAB.GDT - 11/29/17 15:47 - L:\GINT PROJECTS\2015\15-1101-0228 ALDOT MRB INITIAL GEOTECHNICAL\15-1101-0228 CPT INVESTIGATIONS.GP

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**Mobile River Bridge CPT Investigation**
**Mobile, Alabama**

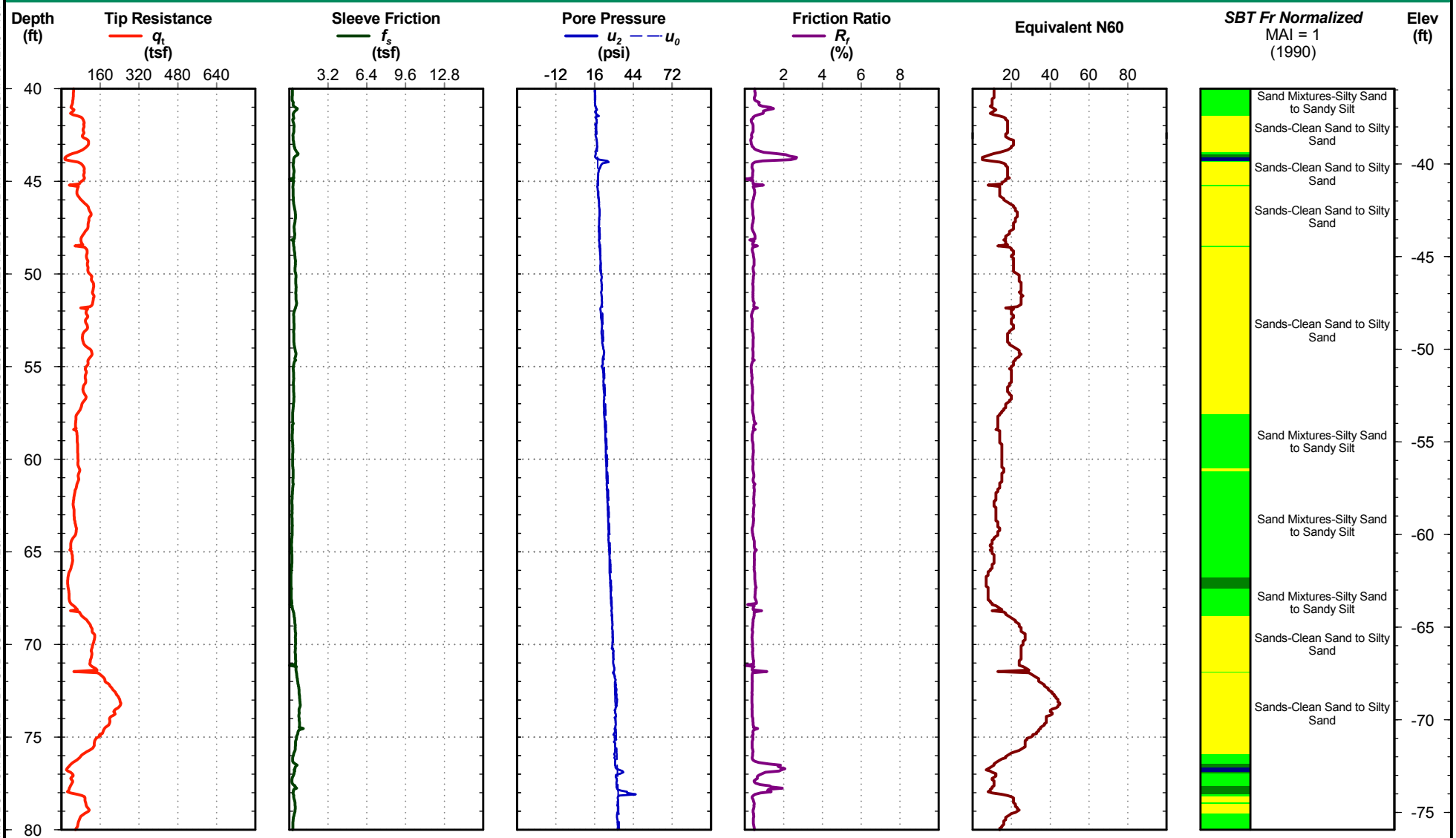
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TC-20

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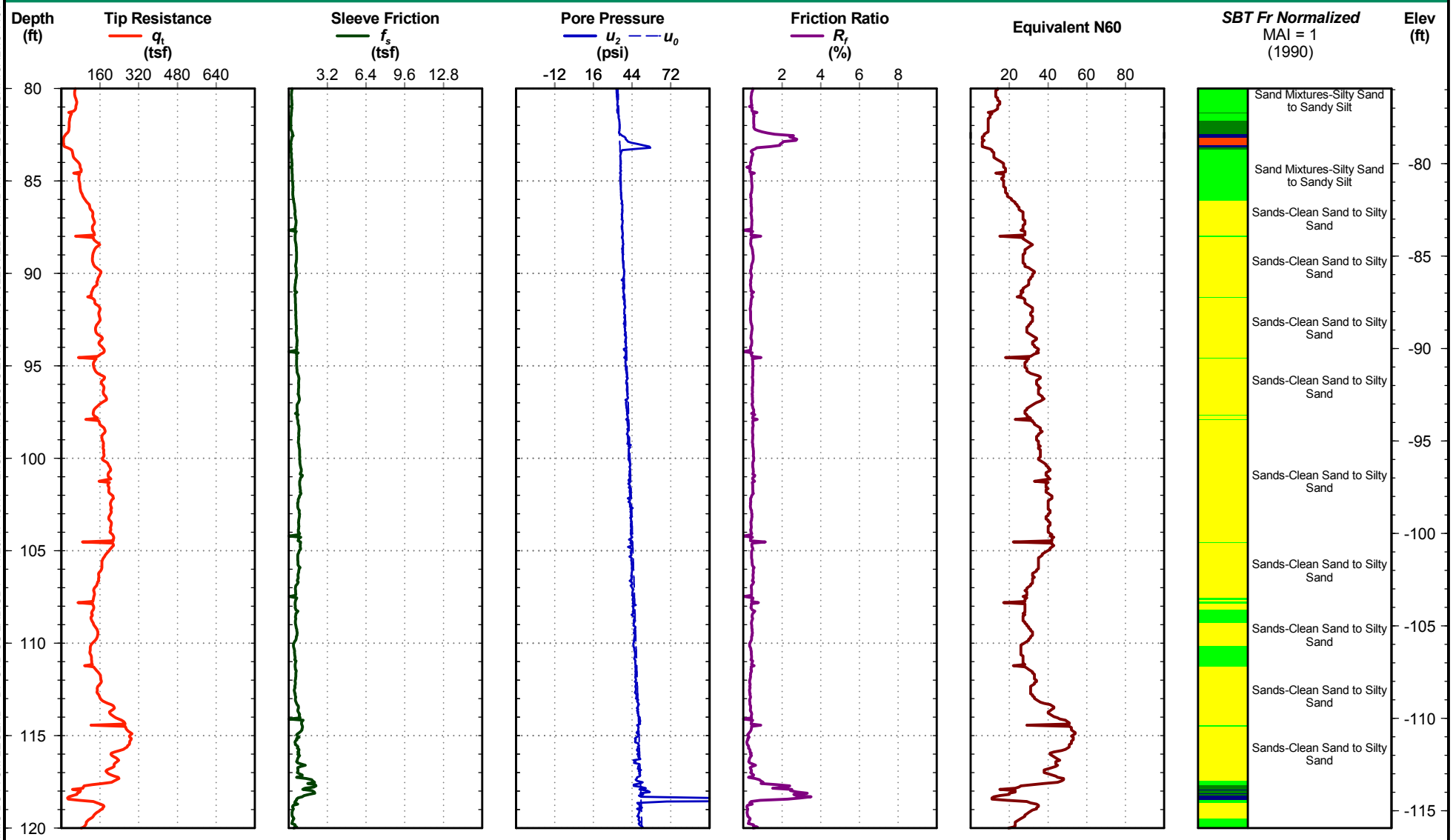
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**Elevation:** 4.07
**Filename:** TC-20.cpt




**TC-20**

CPT REPORT - DYNAMIC BOTTOM LEGEND - DF STD US LAB.GDT - 11/29/17 15:47 - L:\GINT PROJECTS\2015\15-1101-0228 ALDOT MRB INITIAL GEOTECHNICAL\15-1101-0228 CPT INVESTIGATIONS.GP

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**Mobile River Bridge CPT Investigation**
**Mobile, Alabama**

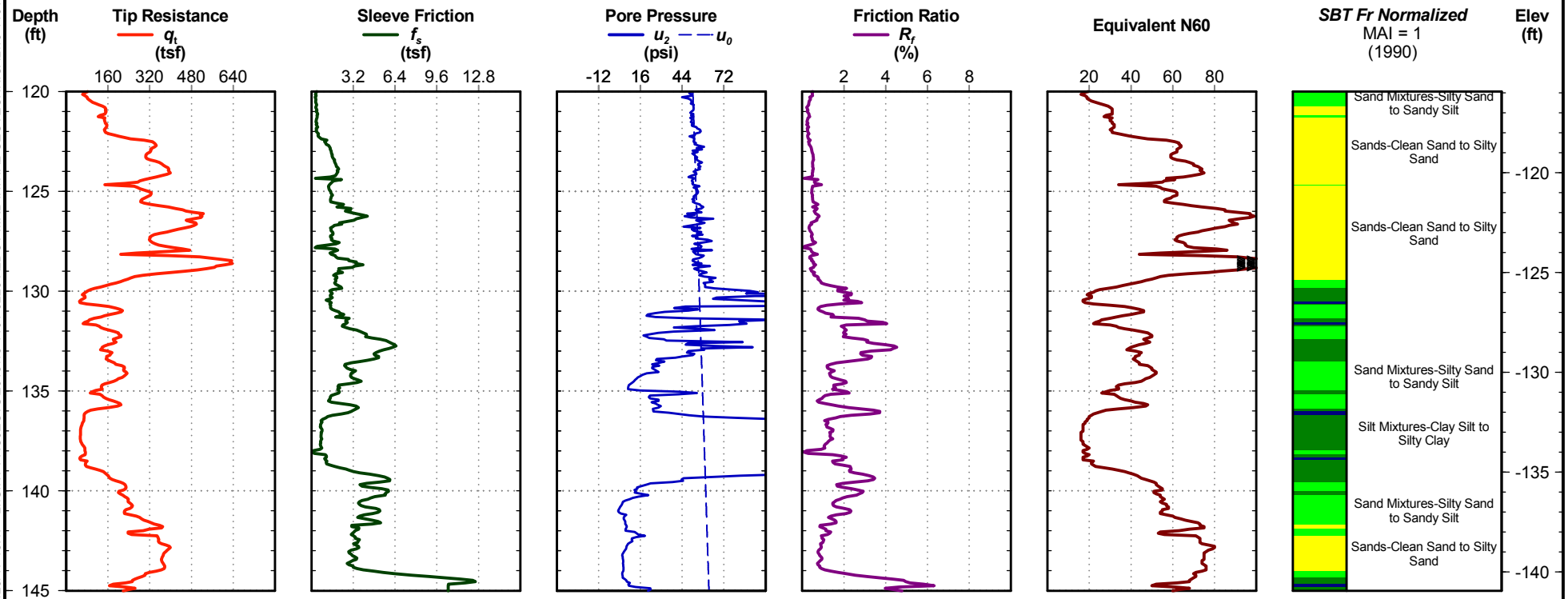
# Cone Penetration Test

**TC-20**

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**Northing:** 251983.9
**Easting:** 1803437.4

**Elevation:** 4.07
**Filename:** TC-20.cpt




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8 - Very Stiff Clay to Clayey Sand
9 - Very Stiff Fine Grained Soils

TC-20

# KEY TO SYMBOLS

Thompson Engineering, Inc

**PROJECT NAME** I-10 Mobile River Bridge and Bayway **CLIENT** ALDOT

**ALDOT PROJECT NO:** DPI-0030(005) **TE PROJECT NO:** 15-1101-0228 **PROJECT LOCATION** Baldwin, Baldwin

## LITHOLOGIC SYMBOLS


ASPHALT: Asphalt


AUGER


CH: USCS High Plasticity Clay


CL: USCS Low Plasticity Clay


CL-ML: USCS Low Plasticity Silty Clay


CONCRETE: Concrete


GM: USCS Silty Gravel


GP: USCS Poorly-graded Gravel


GP-GM: USCS Poorly-graded Gravel with Silt


GW: USCS Well-graded Gravel


MH: USCS Elastic Silt


ML: USCS Silt


SC: USCS Clayey Sand


SC-SM: USCS Clayey Sand


SM: USCS Silty Sand


SP: USCS Poorly-graded Sand

## SAMPLER TYPE

SS - Split Spoon

T - Shelby Tube

DCP - Dynamic Cone Penetrometer

AC - Auger Cuttings

GB - Grab Bag

NQ - Rock Core

## GROUNDWATER LEGEND

▽ Delayed Groundwater Level

▼ Groundwater Level at TOB (Time of Boring). Water levels at the time of boring may have not been obtained due to mud rotary drilling techniques.

N.E. - Not Encountered

N.O. - Not Obtained

## ABBREVIATIONS

| | |
|---|---|
| LL | - LIQUID LIMIT (%) |
| PL | - PLASTIC LIMIT (%) |
| PI | - PLASTIC INDEX (%) |
| NMC | - MOISTURE CONTENT (%) |
| DD | - DRY DENSITY (PCF) |
| NP | - NON PLASTIC |
| %#200 | - PERCENT PASSING NO. 200 SIEVE |
| PP | - POCKET PENETROMETER (TSF) |
| TV | - TORVANE |
| UC | - UNCONFINED COMPRESSION |

ALDOT MRB LEGEND - GINT STD US LAB.GDT - 11/16/17 10:42 - L:\GINT PROJECTS\2015\15-1101-0228 ALDOT MRB INITIAL GEOTECHNICAL\15-1101-0228 ALDOT MRB INITIAL GEOTECHNICAL.GPJ

# APPENDIX C

- **Laboratory Summary**
- **BMT-5's**
- **Consolidated Undrained (C.U.) Triaxial Shear Tests**
- **Unconsolidated Undrained (U.U.) Triaxial Shear Test Results**
- **Direct Shear Tests**
- **One Dimensional Consolidation Tests**
- **Electrochemical Test Results**

| Station & Offset | Boring No. | Sample ID | Depth (ft) | Water Content (%) | Liquid Limit | Plastic Limit | Plasticity Index | % Gravel | % Sand | % Pass 200 | | D50 (mm) | USCS | AASHTO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | % Silt | % Clay | | | |
| 468+68.3 RT 111.2 | HLA-01 | SS-2 | 1.5 | 8.6 | NP | NP | NP | 0.0 | 74.2 | 25.8 | | 0.1689 | SM | A-2-4(0) |
| 468+68.3 RT 111.2 | HLA-01 | SS-5 | 6.0 | 22.2 | NP | NP | NP | 0.0 | 90.3 | 9.7 | | 0.2106 | SP-SM | A-3(0) |
| 468+68.3 RT 111.2 | HLA-01 | T-1 | 18.5 | 28.3 | 29 | 17 | 12 | 0.0 | 57.6 | 42.4 | | 0.0852 | SC | A-6(2) |
| 468+68.3 RT 111.2 | HLA-01 | SS-9 | 28.5 | 31.3 | NP | NP | NP | 0.2 | 90.0 | 9.8 | | 0.1713 | SP-SM | A-3(0) |
| 468+68.3 RT 111.2 | HLA-01 | SS-12 | 43.5 | 23.4 | NP | NP | NP | 1.4 | 92.9 | 5.7 | | 0.2988 | SP-SM | A-3(0) |
| 468+68.3 RT 111.2 | HLA-01 | SS-19 | 78.5 | 17.4 | NP | NP | NP | 1.0 | 93.5 | 5.5 | | 0.3325 | SP-SM | A-3(0) |
| 468+68.3 RT 111.2 | HLA-01 | SS-23 | 98.5 | 16.1 | NP | NP | NP | 0.1 | 94.0 | 5.9 | | 0.4047 | SP-SM | A-3(0) |
| 468+68.3 RT 111.2 | HLA-01 | T-2 | 113.5 | 70.4 | 46 | 24 | 22 | 0.3 | 26.8 | 72.9 | | | CL | A-7-6(16) |
| 468+68.3 RT 111.2 | HLA-01 | SS-26 | 118.5 | 41.1 | 78 | 28 | 50 | 0.0 | 3.2 | 96.8 | | | CH | A-7-6(57) |
| 468+68.3 RT 111.2 | HLA-01 | SS-29 | 133.5 | 13.1 | NP | NP | NP | 29.9 | 64.1 | 6.1 | | 1.6836 | SP-SM | A-1-b(0) |
| 468+68.3 RT 111.2 | HLA-01 | SS-30 | 138.5 | 11.9 | NP | NP | NP | 18.8 | 73.6 | 7.7 | | 0.7037 | SW-SM | A-1-b(0) |
| 468+68.3 RT 111.2 | HLA-01 | SS-31 | 143.5 | 19.3 | NP | NP | NP | 0.0 | 87.2 | 12.8 | | 0.1757 | SM | A-2-4(0) |
| 468+68.3 RT 111.2 | HLA-01 | SS-33 | 158.5 | 30.0 | 47 | 20 | 27 | 0.3 | 11.4 | 88.3 | | | CL | A-7-6(25) |
| 468+68.3 RT 111.2 | HLA-01 | SS-34 | 168.5 | 20.0 | NP | NP | NP | 0.4 | 88.7 | 10.9 | | 0.2451 | SP-SM | A-2-4(0) |
| 468+68.3 RT 111.2 | HLA-01 | SS-37 | 198.5 | 21.2 | 22 | 14 | 8 | 0.1 | 81.2 | 18.6 | | 0.2346 | SC | A-2-4(0) |
| 468+68.3 RT 111.2 | HLA-01 | SS-39 | 218.5 | 19.9 | 33 | 13 | 20 | 0.0 | 29.6 | 70.4 | | | CL | A-6(11) |
| 468+68.3 RT 111.2 | HLA-01 | SS-41 | 238.5 | 22.8 | NP | NP | NP | 0.0 | 84.3 | 15.7 | | 0.1653 | SM | A-2-4(0) |
| 475+68.4 LT 90.2 | HLA-02 | SS-1 | 1.5 | 9.7 | NP | NP | NP | 12.1 | 71.0 | 16.9 | | 0.3143 | SM | A-2-4(0) |
| 475+68.4 LT 90.2 | HLA-02 | SS-4 | 6.0 | 14.2 | NP | NP | NP | 0.0 | 85.0 | 15.0 | | 0.2730 | SM | A-2-4(0) |
| 475+68.4 LT 90.2 | HLA-02 | SS-7 | 13.5 | 12.6 | NP | NP | NP | 0.0 | 90.0 | 10.0 | | 0.2737 | SP-SM | A-3(0) |
| 475+68.4 LT 90.2 | HLA-02 | SS-8 | 18.5 | 16.4 | NP | NP | NP | 1.8 | 85.8 | 12.4 | | 0.2306 | SM | A-2-4(0) |
| 475+68.4 LT 90.2 | HLA-02 | SS-10 | 28.5 | 60.7 | 27 | 16 | 11 | 0.2 | 58.2 | 41.5 | | 0.1034 | SC | A-6(1) |
| 475+68.4 LT 90.2 | HLA-02 | T-1 | 33.0 | 34.2 | 38 | 15 | 23 | 0.2 | 54.8 | 26.0 | 19.0 | 0.0811 | SC | A-6(6) |
| 475+68.4 LT 90.2 | HLA-02 | SS-11 | 38.5 | 26.5 | NP | NP | NP | 0.0 | 91.2 | 8.8 | | 0.1710 | SP-SM | A-3(0) |
| 475+68.4 LT 90.2 | HLA-02 | SS-13 | 48.5 | 22.5 | NP | NP | NP | 0.0 | 93.3 | 6.7 | | 0.4703 | SP-SM | A-1-b(0) |
| 475+68.4 LT 90.2 | HLA-02 | SS-16 | 63.5 | 25.2 | NP | NP | NP | 0.0 | 93.1 | 6.9 | | 0.2107 | SP-SM | A-3(0) |
| 475+68.4 LT 90.2 | HLA-02 | SS-18 | 73.5 | 23.6 | NP | NP | NP | 0.0 | 93.0 | 7.0 | | 0.2994 | SP-SM | A-3(0) |
| 475+68.4 LT 90.2 | HLA-02 | SS-20 | 83.5 | 18.4 | NP | NP | NP | 0.0 | 90.6 | 9.4 | | 0.4817 | SW-SM | A-1-b(0) |
| 475+68.4 LT 90.2 | HLA-02 | SS-23 | 98.5 | 43.9 | 48 | 15 | 33 | 0.0 | 47.1 | 52.9 | | | CL | A-7-6(13) |
| 475+68.4 LT 90.2 | HLA-02 | SS-27 | 118.5 | 34.7 | 23 | 17 | 6 | 0.0 | 73.8 | 26.2 | | 0.1567 | SC-SM | A-2-4(0) |

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**Soil Classification Summary**

ALDOT
ALDOT Project No.: 15-1101-0228
Project Name: I-10 Mobile River Bridge and Bayway
Mobile, Alabama

| Station & Offset | Boring No. | Sample ID | Depth (ft) | Water Content (%) | Liquid Limit | Plastic Limit | Plasticity Index | % Gravel | % Sand | % Pass 200 | | D50 (mm) | USCS | AASHTO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | % Silt | % Clay | | | |
| 475+68.4 LT 90.2 | HLA-02 | T-2 | 123.0 | 48.8 | 76 | 33 | 43 | 0.0 | 0.3 | 47.6 | 52.1 | 0.0041 | CH | A-7-5(53) |
| 475+68.4 LT 90.2 | HLA-02 | T-3 | 133.0 | 42.4 | 88 | 26 | 62 | 0.0 | 1.5 | 21.4 | 77.1 | | CH | A-7-6(72) |
| 475+68.4 LT 90.2 | HLA-02 | SS-31 | 148.5 | 15.3 | NP | NP | NP | 22.0 | 72.6 | 5.5 | | 0.4881 | SP-SM | A-1-b(0) |
| 475+68.4 LT 90.2 | HLA-02 | SS-33 | 168.5 | 20.1 | 29 | 14 | 15 | 0.0 | 40.6 | 59.4 | | | CL | A-6(6) |
| 475+68.4 LT 90.2 | HLA-02 | SS-36 | 198.5 | 23.9 | NP | NP | NP | 0.5 | 89.1 | 10.4 | | 0.2676 | SP-SM | A-3(0) |
| 475+68.4 LT 90.2 | HLA-02 | SS-38 | 218.5 | 25.6 | NP | NP | NP | 0.5 | 88.9 | 10.6 | | 0.2838 | SP-SM | A-2-4(0) |
| 475+68.4 LT 90.2 | HLA-02 | SS-39 | 228.5 | 29.7 | NP | NP | NP | 0.0 | 91.9 | 8.1 | | 0.3299 | SP-SM | A-3(0) |
| 475+68.4 LT 90.2 | HLA-02 | SS-40 | 238.5 | 20.6 | 45 | 14 | 31 | 0.0 | 28.1 | 71.9 | | | CL | A-7-6(20) |
| 476+60.0 RT 46.2 | HLA-03 | SS-2 | 2.0 | 14.4 | 26 | 13 | 13 | 0.1 | 80.4 | 19.6 | | 0.2839 | SC | A-2-6(0) |
| 476+60.0 RT 46.2 | HLA-03 | SS-5 | 6.5 | 14.3 | NP | NP | NP | 0.0 | 81.6 | 18.4 | | 0.2383 | SM | A-2-4(0) |
| 476+60.0 RT 46.2 | HLA-03 | SS-7 | 14.0 | 16.3 | NP | NP | NP | 0.0 | 82.6 | 17.4 | | 0.2778 | SM | A-2-4(0) |
| 476+61.4 RT 38.5 | HLA-03A | SS-9 | 24.5 | 23.8 | NP | NP | NP | 0.0 | 78.6 | 21.4 | | 0.1799 | SM | A-2-4(0) |
| 476+61.4 RT 38.5 | HLA-03A | T-1 | 34.5 | 30.4 | NP | NP | NP | 0.0 | 64.3 | 35.7 | | 0.0863 | SM | A-4(0) |
| 476+61.4 RT 38.5 | HLA-03A | SS-13 | 44.5 | 23.0 | NP | NP | NP | 0.0 | 91.2 | 8.8 | | 0.2813 | SP-SM | A-3(0) |
| 476+61.4 RT 38.5 | HLA-03A | SS-17 | 64.5 | 24.5 | NP | NP | NP | 0.5 | 91.4 | 8.0 | | 0.2783 | SP-SM | A-3(0) |
| 476+61.4 RT 38.5 | HLA-03A | SS-20 | 79.5 | 22.1 | NP | NP | NP | 0.4 | 85.3 | 14.3 | | 0.2402 | SM | A-2-4(0) |
| 476+61.4 RT 38.5 | HLA-03A | SS-24 | 99.5 | 22.1 | NP | NP | NP | 0.6 | 93.3 | 6.1 | | 0.2278 | SP-SM | A-3(0) |
| 476+61.4 RT 38.5 | HLA-03A | SS-27 | 114.5 | 17.7 | NP | NP | NP | 34.1 | 55.5 | 10.4 | | 1.4783 | SW-SM | A-1-b(0) |
| 476+61.4 RT 38.5 | HLA-03A | T-2 | 119.5 | 152.3 | 84 | 43 | 41 | 3.4 | 40.1 | 56.6 | | | MH | A-7-5(22) |
| 476+61.4 RT 38.5 | HLA-03A | SS-29 | 124.5 | 25.7 | NP | NP | NP | 0.0 | 59.6 | 40.4 | | 0.0888 | SM | A-4(0) |
| 476+61.4 RT 38.5 | HLA-03A | SS-30 | 129.5 | 24.4 | NP | NP | NP | 0.0 | 73.8 | 26.2 | | 0.1177 | SM | A-2-4(0) |
| 476+61.4 RT 38.5 | HLA-03A | SS-31 | 134.5 | 21.6 | NP | NP | NP | 0.0 | 78.7 | 21.3 | | 0.1405 | SM | A-2-4(0) |
| 476+61.4 RT 38.5 | HLA-03A | SS-36 | 169.5 | 17.2 | NP | NP | NP | 0.8 | 93.5 | 5.7 | | 0.4760 | SP-SM | A-1-b(0) |
| 476+61.4 RT 38.5 | HLA-03A | SS-38 | 189.5 | 22.2 | NP | NP | NP | 0.0 | 89.6 | 10.4 | | 0.2332 | SP-SM | A-3(0) |
| 476+61.4 RT 38.5 | HLA-03A | SS-41 | 219.5 | 25.3 | NP | NP | NP | 0.0 | 89.2 | 10.8 | | 0.2493 | SP-SM | A-2-4(0) |
| 476+61.4 RT 38.5 | HLA-03A | SS-43 | 239.5 | 19.8 | 32 | 15 | 17 | 0.0 | 29.6 | 70.4 | | | CL | A-6(9) |
| 476+61.4 RT 38.5 | HLA-03A | SS-44 | 249.5 | 18.6 | NP | NP | NP | 0.0 | 48.4 | 51.6 | | | ML | A-4(0) |
| 479+34.4 RT 66.4 | HLA-04 | SS-1 | 0.0 | 7.6 | NP | NP | NP | 8.6 | 75.7 | 15.7 | | 0.2861 | SM | A-2-4(0) |
| 479+34.4 RT 66.4 | HLA-04 | SS-4 | 4.5 | 22.5 | NP | NP | NP | 2.4 | 82.5 | 15.1 | | 0.3228 | SM | A-2-4(0) |
| 479+34.4 RT 66.4 | HLA-04 | SS-7 | 13.5 | 18.0 | NP | NP | NP | 0.7 | 85.8 | 13.5 | | 0.2062 | SM | A-2-4(0) |

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**Soil Classification Summary**

ALDOT
ALDOT Project No.: 15-1101-0228
Project Name: I-10 Mobile River Bridge and Bayway
Mobile, Alabama

| Station & Offset | Boring No. | Sample ID | Depth (ft) | Water Content (%) | Liquid Limit | Plastic Limit | Plasticity Index | % Gravel | % Sand | % Pass 200 | | D50 (mm) | USCS | AASHTO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | % Silt | % Clay | | | |
| 479+34.4 RT 66.4 | HLA-04 | SS-9 | 23.5 | 27.5 | 52 | 21 | 31 | 0.0 | 12.4 | 87.6 | | | CH | A-7-6(29) |
| 479+34.4 RT 66.4 | HLA-04 | T-1 | 28.0 | 29.1 | NP | NP | NP | 0.0 | 65.2 | 34.8 | | 0.1069 | SM | A-2-4(0) |
| 479+34.4 RT 66.4 | HLA-04 | SS-13 | 48.5 | 20.8 | NP | NP | NP | 0.0 | 94.2 | 5.8 | | 0.2160 | SP-SM | A-3(0) |
| 479+34.4 RT 66.4 | HLA-04 | SS-17 | 68.5 | 32.7 | NP | NP | NP | 0.0 | 94.4 | 5.6 | | 0.2955 | SP-SM | A-3(0) |
| 479+34.4 RT 66.4 | HLA-04 | SS-21 | 88.5 | 16.6 | NP | NP | NP | 11.0 | 83.0 | 6.1 | | 0.5461 | SP-SM | A-1-b(0) |
| 479+34.4 RT 66.4 | HLA-04 | SS-25 | 108.5 | 30.5 | 67 | 34 | 33 | 1.2 | 85.2 | 13.6 | | 0.1750 | SM | A-2-7(0) |
| 479+34.4 RT 66.4 | HLA-04 | SS-26 | 113.5 | 47.8 | 71 | 23 | 48 | 1.2 | 30.6 | 68.2 | | | CH | A-7-6(32) |
| 479+34.4 RT 66.4 | HLA-04 | T-2 | 118.0 | 25.1 | NP | NP | NP | 0.0 | 68.9 | 31.1 | | 0.1112 | SM | A-2-4(0) |
| 479+34.4 RT 66.4 | HLA-04 | SS-31 | 138.5 | 19.2 | NP | NP | NP | 6.1 | 85.7 | 8.2 | | 0.4635 | SP-SM | A-1-b(0) |
| 479+34.4 RT 66.4 | HLA-04 | SS-36 | 178.5 | 18.6 | NP | NP | NP | 5.6 | 86.1 | 8.3 | | 0.2542 | SP-SM | A-3(0) |
| 479+34.4 RT 66.4 | HLA-04 | SS-37 | 188.5 | 22.8 | NP | NP | NP | 1.3 | 90.3 | 8.4 | | 0.2184 | SP-SM | A-3(0) |
| 479+34.4 RT 66.4 | HLA-04 | SS-42 | 238.5 | 22.3 | 27 | 19 | 8 | 0.0 | 31.0 | 69.0 | | | CL | A-4(4) |
| 482+15.5 LT 27.3 | HLA-05 | SS-2 | 3.3 | 11.4 | NP | NP | NP | 0.6 | 78.4 | 21.0 | | 0.2586 | SM | A-2-4(0) |
| 482+15.5 LT 27.3 | HLA-05 | SS-5 | 7.8 | 17.1 | NP | NP | NP | 0.3 | 84.6 | 15.1 | | 0.2013 | SM | A-2-4(0) |
| 482+15.5 LT 27.3 | HLA-05 | SS-6 | 10.3 | 16.5 | NP | NP | NP | 0.0 | 77.9 | 22.1 | | 0.1719 | SM | A-2-4(0) |
| 482+15.5 LT 27.3 | HLA-05 | SS-7 | 15.3 | 32.9 | 23 | 18 | 5 | 0.0 | 62.9 | 37.1 | | 0.1079 | SC-SM | A-4(0) |
| 482+15.5 LT 27.3 | HLA-05 | SS-8 | 20.3 | 29.4 | 23 | 18 | 5 | 0.2 | 59.7 | 40.1 | | 0.1083 | SC-SM | A-4(0) |
| 482+15.5 LT 27.3 | HLA-05 | T-1 | 25.3 | 95.8 | 76 | 39 | 37 | 0.0 | 4.9 | 33.1 | 61.9 | 0.0022 | MH | A-7-5(44) |
| 482+15.5 LT 27.3 | HLA-05 | SS-11 | 37.3 | 24.9 | NP | NP | NP | 0.0 | 91.9 | 8.1 | | 0.1826 | SP-SM | A-3(0) |
| 482+15.5 LT 27.3 | HLA-05 | SS-12 | 40.3 | 26.1 | NP | NP | NP | 0.0 | 92.4 | 7.6 | | 0.2295 | SP-SM | A-3(0) |
| 482+15.5 LT 27.3 | HLA-05 | SS-16 | 60.3 | 23.8 | NP | NP | NP | 0.0 | 94.1 | 5.9 | | 0.2871 | SP-SM | A-3(0) |
| 482+15.5 LT 27.3 | HLA-05 | SS-18 | 70.3 | 21.8 | NP | NP | NP | 0.0 | 96.0 | 4.0 | | 0.6015 | SP | A-1-b(0) |
| 482+15.5 LT 27.3 | HLA-05 | SS-19 | 75.3 | 26.1 | NP | NP | NP | 2.1 | 51.0 | 46.9 | | 0.1859 | SM | A-4(0) |
| 482+15.5 LT 27.3 | HLA-05 | SS-22 | 90.3 | 17.9 | NP | NP | NP | 0.6 | 91.1 | 8.3 | | 0.4293 | SP-SM | A-1-b(0) |
| 482+15.5 LT 27.3 | HLA-05 | SS-25 | 105.3 | 47.7 | 69 | 23 | 46 | 0.0 | 83.8 | 16.2 | | 0.1792 | SC | A-2-7(0) |
| 482+15.5 LT 27.3 | HLA-05 | SS-26 | 112.3 | 26.9 | 54 | 20 | 34 | 0.0 | 10.6 | 89.4 | | | CH | A-7-6(32) |
| 482+15.5 LT 27.3 | HLA-05 | SS-27 | 115.3 | 24.2 | NP | NP | NP | 0.0 | 87.4 | 12.6 | | 0.1749 | SM | A-2-4(0) |
| 482+15.5 LT 27.3 | HLA-05 | SS-28 | 120.3 | 23.4 | NP | NP | NP | 0.0 | 91.5 | 8.5 | | 0.2096 | SP-SM | A-3(0) |
| 482+15.5 LT 27.3 | HLA-05 | SS-32 | 140.3 | 22.1 | NP | NP | NP | 0.0 | 89.5 | 10.5 | | 0.2310 | SP-SM | A-3(0) |
| 482+15.5 LT 27.3 | HLA-05 | SS-36 | 170.3 | 23.6 | NP | NP | NP | 0.0 | 86.2 | 13.8 | | 0.1678 | SM | A-2-4(0) |

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**Soil Classification Summary**

ALDOT
ALDOT Project No.: 15-1101-0228
Project Name: I-10 Mobile River Bridge and Bayway
Mobile, Alabama

| Station & Offset | Boring No. | Sample ID | Depth (ft) | Water Content (%) | Liquid Limit | Plastic Limit | Plasticity Index | % Gravel | % Sand | % Pass 200 | | D50 (mm) | USCS | AASHTO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | % Silt | % Clay | | | |
| 482+15.5 LT 27.3 | HLA-05 | SS-38 | 190.3 | 21.3 | NP | NP | NP | 0.0 | 91.2 | 8.8 | | 0.2758 | SP-SM | A-3(0) |
| 482+15.5 LT 27.3 | HLA-05 | SS-42 | 230.3 | 21.0 | 54 | 17 | 37 | 0.0 | 19.0 | 81.0 | | | CH | A-7-6(30) |
| 482+15.5 LT 27.3 | HLA-05 | SS-44 | 250.3 | 30.8 | 57 | 17 | 40 | 0.0 | 6.7 | 93.3 | | | CH | A-7-6(40) |
| 483+29.0 RT 66.3 | HLA-06 | SS-1 | 0.0 | 14.0 | NP | NP | NP | 3.7 | 73.6 | 22.7 | | 0.2040 | SM | A-2-4(0) |
| 483+29.0 RT 66.3 | HLA-06 | SS-5 | 6.0 | 24.3 | NP | NP | NP | 0.0 | 86.5 | 13.5 | | 0.1901 | SM | A-2-4(0) |
| 483+29.0 RT 66.3 | HLA-06 | SS-7 | 13.5 | 32.3 | NP | NP | NP | 0.1 | 52.1 | 47.7 | | 0.0797 | SM | A-4(0) |
| 483+29.0 RT 66.3 | HLA-06 | SS-9 | 23.5 | 46.3 | 56 | 24 | 32 | 0.0 | 3.4 | 96.6 | | | CH | A-7-6(35) |
| 483+29.0 RT 66.3 | HLA-06 | T-1 | 28.5 | 28.7 | NP | NP | NP | 0.0 | 87.8 | 5.9 | 6.3 | 0.1713 | SM | A-2-4(0) |
| 483+29.0 RT 66.3 | HLA-06 | SS-13 | 43.5 | 22.2 | NP | NP | NP | 0.0 | 95.3 | 4.7 | | 0.2391 | SP | A-3(0) |
| 483+29.0 RT 66.3 | HLA-06 | SS-17 | 63.5 | 23.4 | NP | NP | NP | 0.0 | 93.3 | 6.7 | | 0.3679 | SP-SM | A-3(0) |
| 483+29.0 RT 66.3 | HLA-06 | SS-24 | 98.5 | 30.9 | NP | NP | NP | 0.0 | 81.2 | 18.8 | | 0.1750 | SM | A-2-4(0) |
| 483+29.0 RT 66.3 | HLA-06 | T-2 | 108.0 | 52.1 | 80 | 31 | 49 | 2.0 | 7.7 | 90.3 | | | CH | A-7-5(51) |
| 483+29.0 RT 66.3 | HLA-06 | SS-32 | 138.5 | 19.3 | NP | NP | NP | 9.6 | 83.3 | 7.2 | | 0.3238 | SP-SM | A-3(0) |
| 483+29.0 RT 66.3 | HLA-06 | SS-35 | 158.5 | 13.8 | NP | NP | NP | 11.0 | 85.3 | 3.7 | | 1.4351 | SW | A-1-b(0) |
| 483+29.0 RT 66.3 | HLA-06 | SS-38 | 188.5 | 20.6 | NP | NP | NP | 0.1 | 89.6 | 10.2 | | 0.2155 | SP-SM | A-3(0) |
| 483+29.0 RT 66.3 | HLA-06 | SS-41 | 218.5 | 20.2 | 54 | 17 | 37 | 0.0 | 24.7 | 75.3 | | | CH | A-7-6(27) |
| 483+29.0 RT 66.3 | HLA-06 | SS-42 | 228.5 | 23.2 | 30 | 18 | 12 | 0.0 | 24.0 | 76.0 | | | CL | A-6(7) |
| 483+29.0 RT 66.3 | HLA-06 | SS-44 | 248.5 | 19.3 | 29 | 16 | 13 | 0.0 | 19.2 | 80.8 | | | CL | A-6(9) |
| 486+28.7 LT 26.7 | HLA-07 | SS-1 | 1.5 | 10.9 | NP | NP | NP | 5.9 | 73.3 | 20.8 | | 0.2199 | SM | A-2-4(0) |
| 486+28.7 LT 26.7 | HLA-07 | SS-3 | 4.5 | 10.7 | NP | NP | NP | 0.0 | 82.6 | 17.4 | | 0.2563 | SM | A-2-4(0) |
| 486+28.7 LT 26.7 | HLA-07 | SS-5 | 8.5 | 19.4 | NP | NP | NP | 0.0 | 80.1 | 19.9 | | 0.1786 | SM | A-2-4(0) |
| 486+28.7 LT 26.7 | HLA-07 | T-1 | 23.0 | 17.7 | 86 | 53 | 33 | 2.3 | 57.4 | 40.3 | | 0.2786 | SM | A-7-5(8) |
| 486+28.7 LT 26.7 | HLA-07 | SS-9 | 33.5 | 24.6 | NP | NP | NP | 0.0 | 91.9 | 8.1 | | 0.2606 | SP-SM | A-3(0) |
| 486+28.7 LT 26.7 | HLA-07 | SS-15 | 63.5 | 20.9 | NP | NP | NP | 1.0 | 92.2 | 6.7 | | 0.3244 | SP-SM | A-3(0) |
| 486+28.7 LT 26.7 | HLA-07 | SS-17 | 73.5 | 16.7 | NP | NP | NP | 4.8 | 87.9 | 7.3 | | 0.4530 | SP-SM | A-1-b(0) |
| 486+28.7 LT 26.7 | HLA-07 | SS-21 | 93.5 | 16.4 | NP | NP | NP | 14.7 | 78.2 | 7.1 | | 0.4006 | SP-SM | A-3(0) |
| 486+28.7 LT 26.7 | HLA-07 | SS-22 | 98.5 | 35.0 | NP | NP | NP | 0.0 | 79.2 | 20.8 | | 0.1677 | SM | A-2-4(0) |
| 486+28.7 LT 26.7 | HLA-07 | T-2 | 103.0 | 30.7 | 49 | 17 | 32 | 7.2 | 72.5 | 20.3 | | 0.2867 | SC | A-2-7(1) |
| 486+28.7 LT 26.7 | HLA-07 | T-3 | 113.0 | 50.9 | 63 | 28 | 35 | 0.1 | 31.6 | 23.2 | 45.1 | 0.0077 | CH | A-7-6(24) |
| 486+28.7 LT 26.7 | HLA-07 | SS-26 | 128.5 | 20.9 | NP | NP | NP | 0.2 | 90.6 | 9.2 | | 0.2626 | SP-SM | A-3(0) |

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**Soil Classification Summary**

ALDOT
ALDOT Project No.: 15-1101-0228
Project Name: I-10 Mobile River Bridge and Bayway
Mobile, Alabama

| Station & Offset | Boring No. | Sample ID | Depth (ft) | Water Content (%) | Liquid Limit | Plastic Limit | Plasticity Index | % Gravel | % Sand | % Pass 200 | | D50 (mm) | USCS | AASHTO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | % Silt | % Clay | | | |
| 486+28.7 LT 26.7 | HLA-07 | SS-27 | 133.5 | 17.5 | NP | NP | NP | 4.6 | 86.3 | 9.1 | | 0.3432 | SP-SM | A-3(0) |
| 486+28.7 LT 26.7 | HLA-07 | SS-31 | 158.5 | 18.2 | NP | NP | NP | 0.0 | 83.3 | 16.7 | | 0.1660 | SM | A-2-4(0) |
| 486+28.7 LT 26.7 | HLA-07 | SS-34 | 188.5 | 21.8 | NP | NP | NP | 0.0 | 87.8 | 12.2 | | 0.1894 | SM | A-2-4(0) |
| 486+28.7 LT 26.7 | HLA-07 | SS-36 | 208.5 | 30.0 | 70 | 19 | 51 | 0.0 | 5.0 | 95.0 | | | CH | A-7-6(54) |
| 486+28.7 LT 26.7 | HLA-07 | SS-38 | 228.5 | 22.7 | 42 | 14 | 28 | 0.0 | 15.4 | 84.6 | | | CL | A-7-6(23) |
| 486+28.7 LT 26.7 | HLA-07 | SS-40 | 248.5 | 21.4 | NP | NP | NP | 0.4 | 24.1 | 75.5 | | | ML | A-4(0) |
| 489+05.4 RT 58.8 | HLA-08 | SS-1 | 0.0 | 7.7 | NP | NP | NP | 0.7 | 78.0 | 21.3 | | 0.2113 | SM | A-2-4(0) |
| 489+05.4 RT 58.8 | HLA-08 | SS-3 | 3.0 | 15.9 | NP | NP | NP | 3.2 | 84.4 | 12.4 | | 0.3811 | SM | A-2-4(0) |
| 489+05.4 RT 58.8 | HLA-08 | SS-7 | 13.5 | 25.9 | NP | NP | NP | 0.0 | 80.7 | 19.3 | | 0.1794 | SM | A-2-4(0) |
| 489+05.4 RT 58.8 | HLA-08 | SS-8 | 18.5 | 30.4 | NP | NP | NP | 0.0 | 65.8 | 34.2 | | 0.1253 | SM | A-2-4(0) |
| 489+05.4 RT 58.8 | HLA-08 | SS-9 | 23.5 | 29.7 | 51 | 22 | 29 | 0.3 | 17.7 | 82.0 | | | CH | A-7-6(25) |
| 489+05.4 RT 58.8 | HLA-08 | SS-11 | 33.5 | 23.9 | NP | NP | NP | 0.0 | 93.4 | 6.6 | | 0.2096 | SP-SM | A-3(0) |
| 489+05.4 RT 58.8 | HLA-08 | SS-15 | 53.5 | 22.6 | NP | NP | NP | 0.0 | 93.6 | 6.4 | | 0.2400 | SP-SM | A-3(0) |
| 489+05.4 RT 58.8 | HLA-08 | SS-19 | 73.5 | 21.4 | NP | NP | NP | 0.9 | 95.6 | 3.6 | | 0.6008 | SP | A-1-b(0) |
| 489+05.4 RT 58.8 | HLA-08 | SS-25 | 103.5 | 19.1 | NP | NP | NP | 2.5 | 93.1 | 4.4 | | 0.4762 | SP | A-1-b(0) |
| 489+05.4 RT 58.8 | HLA-08 | SS-26 | 108.5 | 43.3 | 95 | 36 | 59 | 0.0 | 2.7 | 97.3 | | | CH | A-7-5(70) |
| 489+05.4 RT 58.8 | HLA-08 | T-1 | 113.0 | 26.9 | NP | NP | NP | 1.1 | 82.7 | 16.1 | | 0.3662 | SM | A-2-4(0) |
| 489+05.4 RT 58.8 | HLA-08 | SS-28 | 123.5 | 27.8 | 29 | 16 | 13 | 0.0 | 48.5 | 51.5 | | | CL | A-6(3) |
| 489+05.4 RT 58.8 | HLA-08 | SS-35 | 168.5 | 19.9 | NP | NP | NP | 0.1 | 88.6 | 11.3 | | 0.3244 | SP-SM | A-2-4(0) |
| 489+05.4 RT 58.8 | HLA-08 | SS-37 | 188.5 | 24.5 | NP | NP | NP | 0.0 | 85.1 | 14.9 | | 0.1791 | SM | A-2-4(0) |
| 489+05.4 RT 58.8 | HLA-08 | SS-38 | 198.5 | 21.6 | NP | NP | NP | 0.0 | 42.8 | 57.2 | | | ML | A-4(0) |
| 489+05.4 RT 58.8 | HLA-08 | T-2 | 208.5 | 25.0 | 29 | 17 | 12 | 0.0 | 12.1 | 87.9 | | | CL | A-6(9) |
| 489+05.4 RT 58.8 | HLA-08 | SS-40 | 228.5 | 18.6 | 54 | 14 | 40 | 1.7 | 8.6 | 89.7 | | | CH | A-7-6(37) |
| 489+05.4 RT 58.8 | HLA-08 | T-3 | 238.0 | 16.7 | 42 | 11 | 31 | 0.0 | 15.3 | 84.7 | | | CL | A-7-6(25) |
| 491+74.7 LT 64.1 | HLA-09 | SS-1 | 1.0 | 7.5 | NP | NP | NP | 13.9 | 67.7 | 18.4 | | 0.3060 | SM | A-2-4(0) |
| 491+74.7 LT 64.1 | HLA-09 | SS-3 | 4.0 | 11.4 | NP | NP | NP | 0.0 | 80.7 | 19.3 | | 0.2717 | SM | A-2-4(0) |
| 491+74.7 LT 64.1 | HLA-09 | SS-7 | 13.5 | 18.4 | NP | NP | NP | 0.0 | 83.9 | 16.1 | | 0.1832 | SM | A-2-4(0) |
| 491+74.7 LT 64.1 | HLA-09 | SS-8 | 18.5 | 28.6 | NP | NP | NP | 0.0 | 73.4 | 26.6 | | 0.1443 | SM | A-2-4(0) |
| 491+74.7 LT 64.1 | HLA-09 | SS-9 | 23.5 | 27.5 | NP | NP | NP | 0.0 | 70.6 | 29.4 | | 0.1452 | SM | A-2-4(0) |
| 491+74.7 LT 64.1 | HLA-09 | T-1 | 28.0 | 116.9 | NP | NP | NP | 7.4 | 72.2 | 20.4 | | 1.1113 | SM | A-1-b(0) |

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**Soil Classification Summary**

ALDOT
ALDOT Project No.: 15-1101-0228
Project Name: I-10 Mobile River Bridge and Bayway
Mobile, Alabama

| Station & Offset | Boring No. | Sample ID | Depth (ft) | Water Content (%) | Liquid Limit | Plastic Limit | Plasticity Index | % Gravel | % Sand | % Pass 200 | | D50 (mm) | USCS | AASHTO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | % Silt | % Clay | | | |
| 491+74.7 LT 64.1 | HLA-09 | SS-11 | 38.5 | 24.7 | NP | NP | NP | 0.0 | 94.4 | 5.6 | | 0.2267 | SP-SM | A-3(0) |
| 491+74.7 LT 64.1 | HLA-09 | SS-15 | 58.5 | 23.9 | NP | NP | NP | 0.0 | 92.3 | 7.7 | | 0.2228 | SP-SM | A-3(0) |
| 491+74.7 LT 64.1 | HLA-09 | SS-18 | 73.5 | 22.5 | NP | NP | NP | 0.3 | 93.4 | 6.3 | | 0.2782 | SP-SM | A-3(0) |
| 491+74.7 LT 64.1 | HLA-09 | SS-21 | 88.5 | 19.0 | NP | NP | NP | 8.0 | 83.2 | 8.8 | | 0.4847 | SP-SM | A-1-b(0) |
| 491+74.7 LT 64.1 | HLA-09 | SS-24 | 103.5 | 32.0 | NP | NP | NP | 0.0 | 81.1 | 18.9 | | 0.1720 | SM | A-2-4(0) |
| 491+74.7 LT 64.1 | HLA-09 | T-2 | 108.0 | 48.6 | 102 | 28 | 74 | 0.0 | 2.8 | 97.2 | | | CH | A-7-6(84) |
| 491+74.7 LT 64.1 | HLA-09 | SS-26 | 123.5 | 21.5 | NP | NP | NP | 0.0 | 93.7 | 6.3 | | 0.1925 | SP-SM | A-3(0) |
| 491+74.7 LT 64.1 | HLA-09 | SS-28 | 133.5 | 24.0 | NP | NP | NP | 0.0 | 88.9 | 11.1 | | 0.1814 | SP-SM | A-2-4(0) |
| 491+74.7 LT 64.1 | HLA-09 | SS-29 | 138.5 | 21.7 | NP | NP | NP | 0.0 | 89.4 | 10.6 | | 0.1943 | SP-SM | A-2-4(0) |
| 491+74.7 LT 64.1 | HLA-09 | SS-32 | 158.5 | 24.3 | 28 | 12 | 16 | 0.0 | 29.9 | 70.1 | | | CL | A-6(8) |
| 491+74.7 LT 64.1 | HLA-09 | T-4 | 168.0 | 24.9 | 33 | 18 | 15 | 0.8 | 65.1 | 34.1 | | 0.2255 | SC | A-2-6(1) |
| 491+74.7 LT 64.1 | HLA-09 | SS-34 | 188.5 | 13.9 | 33 | 12 | 21 | 1.3 | 88.2 | 10.6 | | 0.4021 | SW-SC | A-2-6(0) |
| 491+74.7 LT 64.1 | HLA-09 | T-5 | 208.5 | 23.0 | 34 | 13 | 21 | 0.1 | 8.4 | 91.6 | | | CL | A-6(18) |
| 491+74.7 LT 64.1 | HLA-09 | SS-38 | 238.5 | 23.5 | 29 | 17 | 12 | 0.0 | 10.8 | 89.2 | | | CL | A-6(9) |
| 491+74.7 LT 64.1 | HLA-09 | SS-39 | 248.5 | 19.1 | 32 | 14 | 18 | 2.5 | 9.9 | 87.6 | | | CL | A-6(14) |
| 495+13.0 RT 34.9 | HLA-10 | SS-3 | 1.5 | 23.9 | NP | NP | NP | 18.9 | 54.9 | 26.2 | | 0.1886 | SM | A-2-4(0) |
| 495+13.0 RT 34.9 | HLA-10 | SS-4 | 3.0 | 21.1 | NP | NP | NP | 0.0 | 72.0 | 28.0 | | 0.1652 | SM | A-2-4(0) |
| 495+13.0 RT 34.9 | HLA-10 | SS-7 | 8.5 | 30.3 | NP | NP | NP | 0.4 | 67.7 | 31.9 | | 0.1427 | SM | A-2-4(0) |
| 495+13.0 RT 34.9 | HLA-10 | SS-8 | 13.5 | 44.5 | NP | NP | NP | 11.7 | 67.0 | 21.3 | | 0.2257 | SM | A-2-4(0) |
| 495+05.3 RT 39.0 | HLA-10A | SS-1 | 24.3 | 26.2 | NP | NP | NP | 0.0 | 91.0 | 9.0 | | 0.1955 | SP-SM | A-3(0) |
| 495+05.3 RT 39.0 | HLA-10A | SS-3 | 34.3 | 25.3 | NP | NP | NP | 4.2 | 88.7 | 7.1 | | 0.3009 | SP-SM | A-3(0) |
| 495+05.3 RT 39.0 | HLA-10A | SS-8 | 59.3 | 22.5 | NP | NP | NP | 0.1 | 94.6 | 5.3 | | 0.2978 | SP-SM | A-3(0) |
| 495+05.3 RT 39.0 | HLA-10A | SS-10 | 69.3 | 20.5 | NP | NP | NP | 0.7 | 92.1 | 7.2 | | 0.6850 | SP-SM | A-1-b(0) |
| 495+05.3 RT 39.0 | HLA-10A | SS-13 | 84.3 | 14.6 | NP | NP | NP | 8.6 | 88.7 | 2.7 | | 2.4649 | SP | A-1-a(0) |
| 495+05.3 RT 39.0 | HLA-10A | SS-15 | 94.3 | 34.1 | 54 | 16 | 38 | 14.0 | 71.7 | 14.3 | | 0.9108 | SC | A-2-7(0) |
| 495+05.3 RT 39.0 | HLA-10A | T-1 | 103.8 | 56.4 | 82 | 34 | 48 | 0.0 | 18.1 | 81.9 | | | CH | A-7-5(45) |
| 495+05.3 RT 39.0 | HLA-10A | SS-18 | 109.3 | 22.7 | NP | NP | NP | 0.0 | 61.6 | 38.4 | | 0.1137 | SM | A-4(0) |
| 495+05.3 RT 39.0 | HLA-10A | SS-19 | 114.3 | 22.3 | NP | NP | NP | 0.0 | 95.6 | 4.4 | | 0.3027 | SP | A-3(0) |
| 495+05.3 RT 39.0 | HLA-10A | SS-20 | 119.3 | 26.7 | NP | NP | NP | 0.0 | 72.8 | 27.2 | | 0.1155 | SM | A-2-4(0) |
| 495+05.3 RT 39.0 | HLA-10A | SS-26 | 149.3 | 33.7 | NP | NP | NP | 4.4 | 85.1 | 10.5 | | 0.4433 | SW-SM | A-1-b(0) |

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**Soil Classification Summary**

ALDOT
ALDOT Project No.: 15-1101-0228
Project Name: I-10 Mobile River Bridge and Bayway
Mobile, Alabama

| Station & Offset | Boring No. | Sample ID | Depth (ft) | Water Content (%) | Liquid Limit | Plastic Limit | Plasticity Index | % Gravel | % Sand | % Pass 200 | | D50 (mm) | USCS | AASHTO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | % Silt | % Clay | | | |
| 495+05.3 RT 39.0 | HLA-10A | SS-27 | 159.3 | 28.8 | 72 | 21 | 51 | 5.7 | 33.5 | 60.8 | | | CH | A-7-6(28) |
| 495+05.3 RT 39.0 | HLA-10A | SS-30 | 189.3 | 20.6 | NP | NP | NP | 5.5 | 70.4 | 24.2 | | 0.1899 | SM | A-2-4(0) |
| 495+05.3 RT 39.0 | HLA-10A | T-2 | 198.8 | 24.4 | 50 | 16 | 34 | 0.0 | 25.2 | 74.8 | | | CH | A-7-6(24) |
| 495+05.3 RT 39.0 | HLA-10A | T-3 | 218.8 | 16.8 | 30 | 17 | 13 | 0.0 | 22.1 | 59.8 | 18.0 | 0.0442 | CL | A-6(8) |
| 495+05.3 RT 39.0 | HLA-10A | - | 228.5 | 23.8 | 30 | 18 | 12 | 0.0 | 40.9 | 59.1 | | | CL | A-6(4) |
| 495+05.3 RT 39.0 | HLA-10A | SS-36 | 249.3 | 25.4 | NP | NP | NP | 0.0 | 36.1 | 63.9 | | | ML | A-4(0) |
| 541+43.3 LT 45.4 | HLA-12 | SS-2 | 1.5 | 3.1 | NP | NP | NP | 3.5 | 92.6 | 3.9 | | 0.4151 | SP | A-3(0) |
| 541+43.3 LT 45.4 | HLA-12 | SS-6 | 8.5 | 11.3 | NP | NP | NP | 22.7 | 74.8 | 2.5 | | 1.1886 | SP | A-1-b(0) |
| 541+43.3 LT 45.4 | HLA-12 | SS-11 | 33.5 | 22.3 | NP | NP | NP | 0.1 | 96.1 | 3.8 | | 0.2510 | SP | A-3(0) |
| 541+43.3 LT 45.4 | HLA-12 | SS-15 | 53.5 | 23.6 | NP | NP | NP | 0.2 | 95.3 | 4.5 | | 0.3211 | SP | A-3(0) |
| 541+43.3 LT 45.4 | HLA-12 | SS-20 | 78.5 | 15.8 | NP | NP | NP | 0.7 | 94.5 | 4.9 | | 0.4861 | SP | A-1-b(0) |
| 541+43.3 LT 45.4 | HLA-12 | SS-22 | 88.5 | 18.4 | NP | NP | NP | 1.9 | 92.6 | 5.4 | | 0.3569 | SP-SM | A-3(0) |
| 541+43.3 LT 45.4 | HLA-12 | T-1 | 108.0 | 36.6 | 97 | 26 | 71 | 0.0 | 3.8 | 96.2 | | | CH | A-7-6(79) |
| 541+43.3 LT 45.4 | HLA-12 | SS-26 | 113.5 | 25.6 | NP | NP | NP | 0.3 | 49.6 | 50.1 | | | ML | A-4(0) |
| 541+43.3 LT 45.4 | HLA-12 | SS-31 | 138.5 | 21.9 | NP | NP | NP | 0.5 | 93.2 | 6.3 | | 0.3223 | SP-SM | A-3(0) |
| 541+43.3 LT 45.4 | HLA-12 | SS-33 | 148.5 | 21.4 | 39 | 15 | 24 | 0.0 | 7.4 | 92.6 | | | CL | A-6(22) |
| 541+43.3 LT 45.4 | HLA-12 | SS-34 | 158.5 | 22.4 | 46 | 15 | 31 | 0.0 | 33.9 | 66.1 | | | CL | A-7-6(18) |
| 541+43.3 LT 45.4 | HLA-12 | T-2 | 188.0 | 20.4 | 29 | 15 | 14 | 0.0 | 11.0 | 89.0 | | | CL | A-6(11) |
| 541+43.3 LT 45.4 | HLA-12 | SS-38 | 208.5 | 19.8 | 32 | 16 | 16 | 0.0 | 48.7 | 51.3 | | | CL | A-6(5) |
| 541+43.3 LT 45.4 | HLA-12 | SS-40 | 228.5 | 25.7 | 34 | 19 | 15 | 0.0 | 26.0 | 74.0 | | | CL | A-6(10) |
| 541+43.3 LT 45.4 | HLA-12 | SS-41 | 238.5 | 22.2 | NP | NP | NP | 0.0 | 69.0 | 31.0 | | 0.1142 | SM | A-2-4(0) |
| 541+43.3 LT 45.4 | HLA-12 | SS-42 | 248.5 | 24.3 | NP | NP | NP | 0.0 | 76.7 | 23.3 | | 0.1308 | SM | A-2-4(0) |
| 544+74.9 RT 27.7 | HLA-13 | SS-1 | 1.0 | 12.5 | NP | NP | NP | 0.7 | 96.5 | 2.8 | | 0.3846 | SP | A-3(0) |
| 544+74.9 RT 27.7 | HLA-13 | SS-3 | 4.0 | 15.9 | NP | NP | NP | 3.1 | 93.9 | 3.0 | | 0.3937 | SP | A-3(0) |
| 544+74.9 RT 27.7 | HLA-13 | SS-7 | 13.5 | 42.5 | NP | NP | NP | | | 43.9 | | | SM | A-4(0) |
| 544+74.9 RT 27.7 | HLA-13 | T-1 | 18.0 | 33.9 | NP | NP | NP | 0.0 | 74.7 | 17.9 | 7.4 | 0.0996 | SM | A-2-4(0) |
| 544+74.9 RT 27.7 | HLA-13 | SS-10 | 33.5 | 23.7 | NP | NP | NP | 0.2 | 94.6 | 5.2 | | 0.2435 | SP-SM | A-3(0) |
| 544+74.9 RT 27.7 | HLA-13 | SS-11 | 38.5 | 23.1 | NP | NP | NP | 0.0 | 94.5 | 5.5 | | 0.2440 | SP-SM | A-3(0) |
| 544+74.9 RT 27.7 | HLA-13 | SS-13 | 48.5 | 17.8 | NP | NP | NP | 0.0 | 65.7 | 34.3 | | 0.1402 | SM | A-2-4(0) |
| 544+74.9 RT 27.7 | HLA-13 | SS-14 | 53.5 | 22.2 | 24 | 17 | 7 | 0.0 | 46.8 | 53.2 | | | CL-ML | A-4(1) |

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**Soil Classification Summary**

ALDOT
ALDOT Project No.: 15-1101-0228
Project Name: I-10 Mobile River Bridge and Bayway
Mobile, Alabama

| Station & Offset | Boring No. | Sample ID | Depth (ft) | Water Content (%) | Liquid Limit | Plastic Limit | Plasticity Index | % Gravel | % Sand | % Pass 200 | | D50 (mm) | USCS | AASHTO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | % Silt | % Clay | | | |
| 544+74.9 RT 27.7 | HLA-13 | SS-16 | 63.5 | 26.0 | NP | NP | NP | 0.3 | 93.9 | 5.8 | | 0.2899 | SP-SM | A-3(0) |
| 544+74.9 RT 27.7 | HLA-13 | SS-18 | 73.5 | 19.7 | NP | NP | NP | 0.8 | 90.1 | 9.1 | | 0.3136 | SP-SM | A-3(0) |
| 544+74.9 RT 27.7 | HLA-13 | SS-22 | 93.5 | 20.8 | NP | NP | NP | 0.4 | 95.7 | 3.9 | | 0.3683 | SP | A-3(0) |
| 544+74.9 RT 27.7 | HLA-13 | SS-23 | 98.5 | 47.2 | 68 | 30 | 38 | | | 89.4 | | | CH | A-7-5(39) |
| 544+74.9 RT 27.7 | HLA-13 | SS-25 | 108.5 | 24.7 | NP | NP | NP | 0.0 | 81.2 | 18.8 | | 0.1426 | SM | A-2-4(0) |
| 544+74.9 RT 27.7 | HLA-13 | SS-29 | 128.5 | 22.9 | NP | NP | NP | 0.0 | 93.0 | 7.0 | | 0.2674 | SP-SM | A-3(0) |
| 544+74.9 RT 27.7 | HLA-13 | SS-32 | 143.5 | 22.8 | NP | NP | NP | 0.0 | 72.8 | 27.2 | | 0.1564 | SM | A-2-4(0) |
| 544+74.9 RT 27.7 | HLA-13 | T-2 | 158.0 | 20.3 | 41 | 16 | 25 | 0.0 | 16.9 | 40.8 | 42.3 | 0.0143 | CL | A-7-6(20) |
| 544+74.9 RT 27.7 | HLA-13 | SS-34 | 168.5 | 16.6 | 25 | 12 | 13 | 0.0 | 51.4 | 48.6 | | 0.0785 | SC | A-6(3) |
| 544+74.9 RT 27.7 | HLA-13 | SS-35 | 178.5 | 23.2 | 29 | 11 | 18 | 0.0 | 44.0 | 56.0 | | | CL | A-6(6) |
| 544+74.9 RT 27.7 | HLA-13 | SS-36 | 188.5 | 20.4 | 34 | 14 | 20 | | | 93.9 | | | CL | A-6(18) |
| 544+74.9 RT 27.7 | HLA-13 | SS-37 | 198.5 | 17.5 | 28 | 14 | 14 | 0.0 | 31.8 | 68.2 | | | CL | A-6(7) |
| 544+74.9 RT 27.7 | HLA-13 | SS-38 | 208.5 | 21.4 | NP | NP | NP | 0.0 | 79.5 | 20.5 | | 0.1462 | SM | A-2-4(0) |
| 544+74.9 RT 27.7 | HLA-13 | SS-40 | 228.5 | 28.7 | 37 | 20 | 17 | | | 97.1 | | | CL | A-6(17) |
| 544+74.9 RT 27.7 | HLA-13 | SS-42 | 248.5 | 23.2 | NP | NP | NP | 0.0 | 75.6 | 24.4 | | 0.1313 | SM | A-2-4(0) |
| 547+39.7 LT 40.3 | HLA-14 | SS-1 | 1.0 | 6.8 | NP | NP | NP | 8.3 | 83.7 | 8.0 | | 0.3631 | SP-SM | A-3(0) |
| 547+39.7 LT 40.3 | HLA-14 | SS-2 | 2.5 | 14.2 | NP | NP | NP | 0.6 | 92.9 | 6.5 | | 0.3820 | SP-SM | A-3(0) |
| 547+39.7 LT 40.3 | HLA-14 | SS-4 | 5.5 | 19.3 | NP | NP | NP | 4.0 | 93.1 | 2.9 | | 0.5122 | SP | A-1-b(0) |
| 547+39.7 LT 40.3 | HLA-14 | SS-6 | 8.5 | 16.8 | NP | NP | NP | 8.8 | 89.2 | 2.1 | | 0.3678 | SP | A-3(0) |
| 547+39.7 LT 40.3 | HLA-14 | SS-8 | 18.5 | 36.5 | 26 | 21 | 5 | 0.0 | 52.8 | 47.2 | | 0.0797 | SC-SM | A-4(0) |
| 547+39.7 LT 40.3 | HLA-14 | SS-10 | 28.5 | 20.5 | NP | NP | NP | 0.0 | 95.4 | 4.6 | | 0.2326 | SP | A-3(0) |
| 547+39.7 LT 40.3 | HLA-14 | SS-13 | 43.5 | 22.2 | NP | NP | NP | 0.2 | 91.2 | 8.6 | | 0.2586 | SP-SM | A-3(0) |
| 547+39.7 LT 40.3 | HLA-14 | SS-15 | 53.5 | 19.9 | NP | NP | NP | 0.0 | 72.2 | 27.8 | | 0.1664 | SM | A-2-4(0) |
| 547+39.7 LT 40.3 | HLA-14 | SS-16 | 58.5 | 41.8 | 25 | 19 | 6 | 0.0 | 37.6 | 39.1 | 23.3 | 0.0492 | CL-ML | A-4(1) |
| 547+39.7 LT 40.3 | HLA-14 | SS-17 | 63.5 | 28.5 | 26 | 20 | 6 | 0.0 | 23.4 | 76.6 | | | CL-ML | A-4(3) |
| 547+39.7 LT 40.3 | HLA-14 | T-1 | 68.0 | 22.3 | 24 | 15 | 9 | 0.0 | 43.9 | 56.1 | | | CL | A-4(2) |
| 547+39.7 LT 40.3 | HLA-14 | SS-19 | 78.5 | 21.0 | NP | NP | NP | 0.8 | 94.8 | 4.3 | | 0.3192 | SP | A-3(0) |
| 547+39.7 LT 40.3 | HLA-14 | SS-21 | 88.5 | 20.9 | NP | NP | NP | 5.6 | 90.0 | 4.4 | | 0.3889 | SP | A-3(0) |
| 547+39.7 LT 40.3 | HLA-14 | SS-23 | 98.5 | 21.0 | NP | NP | NP | 1.1 | 94.0 | 4.9 | | 0.3677 | SP | A-3(0) |
| 547+39.7 LT 40.3 | HLA-14 | SS-29 | 128.5 | 23.3 | NP | NP | NP | 0.0 | 95.2 | 4.8 | | 0.3357 | SP | A-3(0) |

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**Soil Classification Summary**

ALDOT
ALDOT Project No.: 15-1101-0228
Project Name: I-10 Mobile River Bridge and Bayway
Mobile, Alabama

| Station & Offset | Boring No. | Sample ID | Depth (ft) | Water Content (%) | Liquid Limit | Plastic Limit | Plasticity Index | % Gravel | % Sand | % Pass 200 | | D50 (mm) | USCS | AASHTO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | % Silt | % Clay | | | |
| 547+39.7 LT 40.3 | HLA-14 | SS-32 | 143.5 | 22.0 | NP | NP | NP | 0.0 | 90.0 | 10.0 | | 0.2295 | SP-SM | A-3(0) |
| 547+39.7 LT 40.3 | HLA-14 | SS-33 | 148.5 | 21.8 | NP | NP | NP | 0.0 | 89.6 | 10.4 | | 0.1878 | SP-SM | A-3(0) |
| 547+39.7 LT 40.3 | HLA-14 | SS-34 | 158.5 | 25.2 | 42 | 15 | 27 | | | 85.2 | | | CL | A-7-6(22) |
| 547+39.7 LT 40.3 | HLA-14 | SS-35 | 168.5 | 16.4 | 27 | 11 | 16 | | | 51.5 | | | CL | A-6(5) |
| 547+39.7 LT 40.3 | HLA-14 | SS-37 | 188.5 | 19.2 | 22 | 14 | 8 | 0.0 | 53.2 | 46.8 | | 0.0830 | SC | A-4(1) |
| 547+39.7 LT 40.3 | HLA-14 | T-2 | 208.0 | 21.8 | 29 | 17 | 12 | 0.0 | 58.9 | 41.1 | | 0.0870 | SC | A-6(1) |
| 547+39.7 LT 40.3 | HLA-14 | SS-40 | 228.5 | 28.1 | 45 | 18 | 27 | | | 95.0 | | | CL | A-7-6(27) |
| 547+39.7 LT 40.3 | HLA-14 | SS-41 | 238.5 | 17.3 | 29 | 12 | 17 | 0.0 | 45.4 | 54.6 | | | CL | A-6(6) |
| 547+39.7 LT 40.3 | HLA-14 | SS-42 | 248.5 | 20.5 | NP | NP | NP | 0.0 | 71.3 | 28.7 | | 0.1212 | SM | A-2-4(0) |
| 550+95.1 RT 49.7 | HLA-15 | SS-1 | 1.1 | 14.7 | NP | NP | NP | 3.3 | 85.9 | 10.8 | | 0.4345 | SW-SM | A-1-b(0) |
| 550+95.1 RT 49.7 | HLA-15 | SS-3 | 4.1 | 12.0 | NP | NP | NP | 2.3 | 86.1 | 11.6 | | 0.3084 | SW-SM | A-2-4(0) |
| 550+95.1 RT 49.7 | HLA-15 | SS-5 | 7.1 | 24.3 | NP | NP | NP | 0.0 | 88.0 | 12.0 | | 0.3033 | SM | A-2-4(0) |
| 550+95.1 RT 49.7 | HLA-15 | SS-8 | 18.5 | 25.9 | NP | NP | NP | 0.0 | 78.2 | 21.8 | | 0.1707 | SM | A-2-4(0) |
| 550+95.1 RT 49.7 | HLA-15 | SS-11 | 33.5 | 26.9 | NP | NP | NP | 0.0 | 93.8 | 6.2 | | 0.2157 | SP-SM | A-3(0) |
| 550+95.1 RT 49.7 | HLA-15 | SS-14 | 48.5 | 22.4 | 26 | 11 | 15 | 0.0 | 32.9 | 67.1 | | | CL | A-6(7) |
| 550+95.1 RT 49.7 | HLA-15 | SS-15 | 53.5 | 25.8 | 31 | 13 | 18 | 0.0 | 83.2 | 16.8 | | 0.2506 | SC | A-2-6(0) |
| 550+95.1 RT 49.7 | HLA-15 | SS-19 | 73.5 | 21.9 | NP | NP | NP | 0.0 | 94.8 | 5.2 | | 0.4713 | SP-SM | A-1-b(0) |
| 550+95.1 RT 49.7 | HLA-15 | SS-21 | 83.5 | 20.9 | NP | NP | NP | 0.9 | 93.4 | 5.8 | | 0.3437 | SP-SM | A-3(0) |
| 550+95.1 RT 49.7 | HLA-15 | SS-24 | 98.5 | 21.1 | NP | NP | NP | 0.0 | 0.7 | 99.3 | | | ML | A-4(0) |
| 550+95.1 RT 49.7 | HLA-15 | T-1 | 103.0 | 36.5 | 84 | 23 | 61 | 0.0 | 95.0 | 5.0 | | 0.4799 | SP | A-2-7(0) |
| 550+95.1 RT 49.7 | HLA-15 | SS-27 | 118.5 | 18.0 | NP | NP | NP | 17.3 | 77.7 | 5.1 | | 0.4113 | SP-SM | A-3(0) |
| 550+95.1 RT 49.7 | HLA-15 | SS-31 | 138.5 | 21.9 | 43 | 13 | 30 | 0.0 | 15.9 | 84.1 | | | CL | A-7-6(24) |
| 550+95.1 RT 49.7 | HLA-15 | T-2 | 143.0 | 17.8 | 46 | 15 | 31 | 0.0 | 3.0 | 97.0 | | | CL | A-7-6(31) |
| 550+95.1 RT 49.7 | HLA-15 | SS-34 | 168.5 | 18.9 | 28 | 13 | 15 | 0.0 | 36.5 | 63.5 | | | CL | A-6(7) |
| 550+95.1 RT 49.7 | HLA-15 | SS-37 | 198.5 | 18.7 | 41 | 14 | 27 | 0.0 | 16.5 | 83.5 | | | CL | A-7-6(22) |
| 550+95.1 RT 49.7 | HLA-15 | SS-38 | 208.5 | 22.8 | NP | NP | NP | 0.0 | 77.8 | 22.2 | | 0.1297 | SM | A-2-4(0) |
| 550+95.1 RT 49.7 | HLA-15 | T-3 | 228.0 | 20.4 | 27 | 16 | 11 | 0.0 | 27.4 | 72.6 | | | CL | A-6(6) |
| 550+95.1 RT 49.7 | HLA-15 | SS-41 | 248.5 | 21.7 | NP | NP | NP | 0.0 | 71.4 | 28.5 | | 0.1304 | SM | A-2-4(0) |
| 552+74.5 LT 30.2 | HLA-16 | SS-2 | 1.5 | 14.6 | NP | NP | NP | 0.0 | 81.3 | 18.7 | | 0.2654 | SM | A-2-4(0) |
| 552+74.5 LT 30.2 | HLA-16 | SS-4 | 4.5 | 24.6 | NP | NP | NP | 0.2 | 71.3 | 28.4 | | 0.1768 | SM | A-2-4(0) |

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**Soil Classification Summary**

ALDOT
ALDOT Project No.: 15-1101-0228
Project Name: I-10 Mobile River Bridge and Bayway
Mobile, Alabama

| Station & Offset | Boring No. | Sample ID | Depth (ft) | Water Content (%) | Liquid Limit | Plastic Limit | Plasticity Index | % Gravel | % Sand | % Pass 200 | | D50 (mm) | USCS | AASHTO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | % Silt | % Clay | | | |
| 552+74.5 LT 30.2 | HLA-16 | SS-5 | 6.0 | 83.7 | 68 | 33 | 35 | 0.0 | 17.6 | 82.4 | | | MH | A-7-5(33) |
| 552+74.5 LT 30.2 | HLA-16 | SS-6 | 8.5 | 33.8 | NP | NP | NP | 0.1 | 52.7 | 47.2 | | 0.0782 | SM | A-4(0) |
| 552+74.5 LT 30.2 | HLA-16 | SS-10 | 28.5 | 24.9 | NP | NP | NP | 0.0 | 88.6 | 11.4 | | 0.2030 | SP-SM | A-2-4(0) |
| 552+74.5 LT 30.2 | HLA-16 | SS-16 | 63.5 | 20.9 | NP | NP | NP | 0.0 | 97.1 | 2.9 | | 0.3283 | SP | A-3(0) |
| 552+74.5 LT 30.2 | HLA-16 | SS-19 | 78.5 | 21.1 | NP | NP | NP | 0.4 | 93.8 | 5.8 | | 0.3000 | SP-SM | A-3(0) |
| 552+74.5 LT 30.2 | HLA-16 | SS-23 | 98.5 | 34.1 | 75 | 24 | 51 | 1.5 | 9.0 | 89.5 | | | CH | A-7-6(51) |
| 552+74.5 LT 30.2 | HLA-16 | T-2 | 103.0 | 23.3 | 30 | 14 | 16 | 0.0 | 67.7 | 32.3 | | 0.1276 | SC | A-2-6(1) |
| 552+74.5 LT 30.2 | HLA-16 | SS-26 | 118.5 | 18.3 | NP | NP | NP | 38.6 | 57.9 | 3.5 | | 1.0275 | SP | A-1-b(0) |
| 552+74.5 LT 30.2 | HLA-16 | SS-28 | 128.5 | 26.6 | NP | NP | NP | 0.6 | 94.3 | 5.1 | | 0.2950 | SP-SM | A-3(0) |
| 552+74.5 LT 30.2 | HLA-16 | T-3 | 138.0 | 21.8 | 47 | 18 | 29 | 0.0 | 7.9 | 92.1 | | | CL | A-7-6(28) |
| 552+74.5 LT 30.2 | HLA-16 | SS-30 | 143.5 | 31.2 | NP | NP | NP | 0.0 | 66.4 | 33.6 | | 0.0956 | SM | A-2-4(0) |
| 552+74.5 LT 30.2 | HLA-16 | SS-32 | 158.5 | 66.7 | 33 | 11 | 22 | 0.0 | 39.9 | 60.1 | | | CL | A-6(10) |
| 552+74.5 LT 30.2 | HLA-16 | SS-33 | 168.5 | 20.3 | 30 | 11 | 19 | 0.0 | 47.0 | 53.0 | | | CL | A-6(6) |
| 552+74.5 LT 30.2 | HLA-16 | T-4 | 198.0 | 14.8 | 37 | 11 | 26 | 0.0 | 33.9 | 66.1 | | | CL | A-6(14) |
| 552+74.5 LT 30.2 | HLA-16 | SS-37 | 218.5 | 14.4 | 30 | 16 | 14 | 0.0 | 8.6 | 91.4 | | | CL | A-6(11) |
| 552+74.5 LT 30.2 | HLA-16 | SS-39 | 238.5 | 24.2 | NP | NP | NP | 0.0 | 76.4 | 23.6 | | 0.1313 | SM | A-2-4(0) |
| 552+74.5 LT 30.2 | HLA-16 | SS-40 | 248.5 | 19.0 | NP | NP | NP | 1.8 | 75.5 | 22.7 | | 0.1909 | SM | A-2-4(0) |
| 555+44.8 RT 35.2 | HLA-17 | SS-2 | 1.5 | 20.8 | NP | NP | NP | 0.3 | 95.0 | 4.7 | | 0.3163 | SP | A-3(0) |
| 555+44.8 RT 35.2 | HLA-17 | SS-6 | 8.5 | 33.4 | NP | NP | NP | 0.0 | 69.4 | 30.6 | | 0.1170 | SM | A-2-4(0) |
| 555+44.8 RT 35.2 | HLA-17 | T-1 | 33.0 | 29.8 | 51 | 17 | 34 | 0.0 | 27.0 | 73.0 | | | CH | A-7-6(24) |
| 555+44.8 RT 35.2 | HLA-17 | SS-12 | 43.5 | 21.2 | NP | NP | NP | 0.9 | 90.3 | 8.8 | | 0.3582 | SP-SM | A-3(0) |
| 555+44.8 RT 35.2 | HLA-17 | SS-17 | 68.5 | 21.4 | NP | NP | NP | 6.0 | 82.7 | 11.3 | | 0.5138 | SP-SM | A-1-b(0) |
| 555+44.8 RT 35.2 | HLA-17 | SS-19 | 78.5 | 18.6 | NP | NP | NP | 2.7 | 84.8 | 12.4 | | 0.7800 | SM | A-1-b(0) |
| 555+44.8 RT 35.2 | HLA-17 | T-2 | 96.0 | 36.5 | 42 | 15 | 27 | 0.0 | 27.9 | 72.1 | | | CL | A-7-6(17) |
| 555+44.8 RT 35.2 | HLA-17 | SS-26 | 113.5 | 8.5 | NP | NP | NP | 62.4 | 36.7 | 0.9 | | 6.0411 | GW | A-1-a(0) |
| 555+44.8 RT 35.2 | HLA-17 | T-3 | 138.0 | 27.3 | 31 | 22 | 9 | 0.0 | 6.0 | 94.0 | | | CL | A-4(8) |
| 555+44.8 RT 35.2 | HLA-17 | SS-31 | 143.5 | 25.3 | 26 | 19 | 7 | 8.8 | 60.9 | 30.3 | | 0.1081 | SC-SM | A-2-4(0) |
| 555+44.8 RT 35.2 | HLA-17 | T-4 | 158.0 | 17.2 | 29 | 15 | 14 | 0.0 | 43.2 | 56.8 | | | CL | A-6(5) |
| 555+44.8 RT 35.2 | HLA-17 | SS-34 | 178.5 | 20.1 | 24 | 15 | 9 | 0.0 | 32.8 | 67.2 | | | CL | A-4(3) |
| 555+44.8 RT 35.2 | HLA-17 | SS-36 | 198.5 | 17.5 | 47 | 13 | 34 | 0.3 | 20.7 | 79.0 | | | CL | A-7-6(26) |

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**Soil Classification Summary**

ALDOT
ALDOT Project No.: 15-1101-0228
Project Name: I-10 Mobile River Bridge and Bayway
Mobile, Alabama

| Station & Offset | Boring No. | Sample ID | Depth (ft) | Water Content (%) | Liquid Limit | Plastic Limit | Plasticity Index | % Gravel | % Sand | % Pass 200 | | D50 (mm) | USCS | AASHTO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | % Silt | % Clay | | | |
| 555+44.8 RT 35.2 | HLA-17 | SS-38 | 218.5 | 28.8 | 32 | 17 | 15 | 0.0 | 6.8 | 93.2 | | | CL | A-6(13) |
| 555+44.8 RT 35.2 | HLA-17 | SS-40 | 238.5 | 23.2 | NP | NP | NP | 0.0 | 74.9 | 25.1 | | 0.1349 | SM | A-2-4(0) |
| 558+38.5 LT 30.2 | HLA-18 | SS-2 | 1.5 | 19.6 | NP | NP | NP | 19.1 | 61.9 | 19.0 | | 0.3023 | SM | A-2-4(0) |
| 558+44.6 LT 67.9 | HLA-18A | SS-5 | 6.0 | 26.5 | NP | NP | NP | 9.9 | 73.4 | 16.7 | | 0.1300 | SM | A-2-4(0) |
| 558+44.6 LT 67.9 | HLA-18A | SS-9 | 23.5 | 38.2 | 44 | 14 | 30 | 0.0 | 39.5 | 60.5 | | | CL | A-7-6(15) |
| 558+44.6 LT 67.9 | HLA-18A | T-1 | 28.0 | 27.5 | 40 | 14 | 26 | 3.2 | 37.3 | 59.5 | | | CL | A-6(12) |
| 558+44.6 LT 67.9 | HLA-18A | SS-13 | 48.5 | 21.8 | NP | NP | NP | 8.6 | 84.3 | 7.1 | | 0.3699 | SP-SM | A-3(0) |
| 558+44.6 LT 67.9 | HLA-18A | SS-16 | 63.5 | 18.7 | NP | NP | NP | 6.4 | 88.1 | 5.5 | | 0.6316 | SP-SM | A-1-b(0) |
| 558+44.6 LT 67.9 | HLA-18A | SS-17 | 68.5 | 19.7 | NP | NP | NP | 6.0 | 87.8 | 6.2 | | 0.7138 | SP-SM | A-1-b(0) |
| 558+44.6 LT 67.9 | HLA-18A | SS-26 | 113.5 | 11.3 | NP | NP | NP | 44.9 | 51.1 | 4.0 | | 4.1169 | SP | A-1-a(0) |
| 558+44.6 LT 67.9 | HLA-18A | SS-27 | 118.5 | 15.2 | NP | NP | NP | 53.9 | 43.8 | 2.3 | | 5.0435 | GP | A-1-a(0) |
| 558+44.6 LT 67.9 | HLA-18A | SS-31 | 138.5 | 28.5 | NP | NP | NP | 0.0 | 75.9 | 24.1 | | 0.0975 | SM | A-2-4(0) |
| 558+44.6 LT 67.9 | HLA-18A | T-2 | 148.0 | 18.4 | 41 | 17 | 24 | 0.0 | 9.1 | 90.9 | | | CL | A-7-6(22) |
| 558+44.6 LT 67.9 | HLA-18A | SS-33 | 158.5 | 18.4 | 32 | 14 | 18 | 0.0 | 49.8 | 50.2 | | | CL | A-6(5) |
| 558+44.6 LT 67.9 | HLA-18A | T-3 | 168.0 | 24.0 | 56 | 25 | 31 | 0.0 | 19.0 | 81.0 | | | CH | A-7-6(27) |
| 558+44.6 LT 67.9 | HLA-18A | T-4 | 188.0 | 19.5 | 47 | 16 | 31 | 0.0 | 4.0 | 96.0 | | | CL | A-7-6(31) |
| 558+44.6 LT 67.9 | HLA-18A | SS-36 | 218.5 | 29.0 | 35 | 18 | 17 | 0.0 | 10.7 | 89.3 | | | CL | A-6(15) |
| 558+44.6 LT 67.9 | HLA-18A | SS-38 | 238.5 | 26.8 | NP | NP | NP | 0.0 | 72.0 | 28.0 | | 0.1261 | SM | A-2-4(0) |
| 560+80.9 LT 131.2 | HLA-19 | SS-4 | 4.5 | 22.7 | NP | NP | NP | 4.2 | 90.9 | 5.0 | | 0.3353 | SP | A-3(0) |
| 560+80.9 LT 131.2 | HLA-19 | SS-6 | 8.5 | 40.8 | 38 | 18 | 20 | 4.9 | 52.5 | 42.6 | | 0.0976 | SC | A-6(4) |
| 560+80.9 LT 131.2 | HLA-19 | SS-8 | 18.5 | 31.6 | NP | NP | NP | 0.0 | 63.3 | 36.6 | | 0.0926 | SM | A-4(0) |
| 560+80.9 LT 131.2 | HLA-19 | T-1 | 28.0 | 37.0 | 45 | 16 | 29 | 0.0 | 37.3 | 48.7 | 14.0 | 0.0580 | CL | A-7-6(15) |
| 560+80.9 LT 131.2 | HLA-19 | SS-11 | 40.5 | 21.4 | NP | NP | NP | 0.5 | 87.3 | 12.2 | | 0.3588 | SM | A-2-4(0) |
| 560+80.9 LT 131.2 | HLA-19 | SS-18 | 73.5 | 22.9 | NP | NP | NP | 3.6 | 88.3 | 8.2 | | 0.4488 | SP-SM | A-1-b(0) |
| 560+80.9 LT 131.2 | HLA-19 | SS-24 | 103.5 | 19.7 | NP | NP | NP | 0.3 | 95.3 | 4.4 | | 0.4814 | SP | A-1-b(0) |
| 560+80.9 LT 131.2 | HLA-19 | SS-29 | 128.5 | 15.2 | NP | NP | NP | 8.9 | 36.6 | 54.5 | | | ML | A-4(0) |
| 560+80.9 LT 131.2 | HLA-19 | T-3 | 138.0 | 25.9 | NP | NP | NP | 0.0 | 70.0 | 30.0 | | 0.0930 | SM | A-2-4(0) |
| 560+80.9 LT 131.2 | HLA-19 | T-4 | 148.0 | 19.2 | 40 | 12 | 28 | 0.2 | 43.5 | 56.3 | | | CL | A-6(12) |
| 560+80.9 LT 131.2 | HLA-19 | SS-33 | 168.5 | 19.5 | 36 | 12 | 24 | 0.0 | 37.1 | 62.9 | | | CL | A-6(12) |
| 560+80.9 LT 131.2 | HLA-19 | T-5 | 198.0 | 14.3 | 32 | 10 | 22 | 0.0 | 37.7 | 62.3 | | | CL | A-6(10) |

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**Soil Classification Summary**

ALDOT
ALDOT Project No.: 15-1101-0228
Project Name: I-10 Mobile River Bridge and Bayway
Mobile, Alabama

| Station & Offset | Boring No. | Sample ID | Depth (ft) | Water Content (%) | Liquid Limit | Plastic Limit | Plasticity Index | % Gravel | % Sand | % Pass 200 | | D50 (mm) | USCS | AASHTO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | % Silt | % Clay | | | |
| 560+80.9 LT 131.2 | HLA-19 | SS-36 | 208.5 | 22.8 | 29 | 15 | 14 | 0.0 | 29.0 | 71.0 | | | CL | A-6(7) |
| 560+80.9 LT 131.2 | HLA-19 | SS-37 | 218.5 | 24.9 | 50 | 19 | 31 | 0.0 | 2.4 | 97.6 | | | CH | A-7-6(33) |
| 560+80.9 LT 131.2 | HLA-19 | SS-40 | 248.5 | 22.1 | NP | NP | NP | 0.7 | 86.8 | 12.5 | | 0.1809 | SM | A-2-4(0) |
| 562+20.6 RT 90.3 | HLA-20 | SS-2 | 1.5 | 14.2 | NP | NP | NP | 0.2 | 79.2 | 20.6 | | 0.2209 | SM | A-2-4(0) |
| 562+20.6 RT 90.3 | HLA-20 | SS-5 | 6.0 | 31.8 | NP | NP | NP | 0.0 | 73.9 | 26.1 | | 0.1009 | SM | A-2-4(0) |
| 562+20.6 RT 90.3 | HLA-20 | SS-7 | 13.5 | 31.4 | NP | NP | NP | 15.1 | 64.7 | 20.2 | | 0.1287 | SM | A-2-4(0) |
| 562+20.6 RT 90.3 | HLA-20 | T-1 | 23.0 | 42.0 | 46 | 15 | 31 | 0.0 | 30.5 | 69.5 | | | CL | A-7-6(20) |
| 562+20.6 RT 90.3 | HLA-20 | T-2 | 33.0 | 42.8 | 68 | 22 | 46 | 0.0 | 2.8 | 97.2 | | | CH | A-7-6(51) |
| 562+20.6 RT 90.3 | HLA-20 | SS-11 | 43.5 | 20.6 | NP | NP | NP | 0.0 | 91.4 | 8.6 | | 0.3792 | SP-SM | A-3(0) |
| 562+20.6 RT 90.3 | HLA-20 | SS-20 | 88.5 | 22.9 | NP | NP | NP | 0.0 | 86.5 | 13.5 | | 0.2666 | SM | A-2-4(0) |
| 562+20.6 RT 90.3 | HLA-20 | T-3 | 133.0 | 18.4 | 42 | 12 | 30 | 0.0 | 16.0 | 84.0 | | | CL | A-7-6(24) |
| 562+20.6 RT 90.3 | HLA-20 | SS-30 | 143.5 | 23.1 | 28 | 19 | 9 | 0.0 | 67.6 | 32.4 | | 0.0923 | SC | A-2-4(0) |
| 562+20.6 RT 90.3 | HLA-20 | T-4 | 168.0 | 29.8 | 60 | 20 | 40 | 0.0 | 7.6 | 92.4 | | | CH | A-7-6(40) |
| 562+20.6 RT 90.3 | HLA-20 | SS-34 | 188.5 | 20.8 | 44 | 13 | 31 | 0.0 | 11.1 | 88.9 | | | CL | A-7-6(27) |
| 562+20.6 RT 90.3 | HLA-20 | SS-36 | 208.5 | 23.4 | 30 | 17 | 13 | 0.0 | 16.3 | 83.7 | | | CL | A-6(9) |
| 562+20.6 RT 90.3 | HLA-20 | T-5 | 218.0 | 27.3 | 37 | 17 | 20 | 0.0 | 11.5 | 88.5 | | | CL | A-6(17) |
| 562+20.6 RT 90.3 | HLA-20 | SS-37 | 228.5 | 16.3 | 25 | 12 | 13 | 0.0 | 67.0 | 33.0 | | 0.1593 | SC | A-2-6(1) |
| 562+20.6 RT 90.3 | HLA-20 | SS-39 | 248.5 | 22.3 | NP | NP | NP | 0.0 | 74.9 | 25.1 | | 0.1607 | SM | A-2-4(0) |
| 564+40.6 LT 21.7 | HLA-21 | SS-2 | 1.5 | 15.9 | NP | NP | NP | 0.0 | 75.3 | 24.7 | | 0.1975 | SM | A-2-4(0) |
| 564+40.6 LT 21.7 | HLA-21 | SS-5 | 6.0 | 19.4 | NP | NP | NP | 18.5 | 72.7 | 8.7 | | 0.3303 | SP-SM | A-3(0) |
| 564+40.6 LT 21.7 | HLA-21 | SS-7 | 13.5 | 26.7 | NP | NP | NP | 15.4 | 65.0 | 19.6 | | 0.1274 | SM | A-2-4(0) |
| 564+40.6 LT 21.7 | HLA-21 | SS-9 | 23.5 | 40.3 | 42 | 25 | 17 | 0.2 | 24.7 | 75.1 | | | CL | A-7-6(13) |
| 564+40.6 LT 21.7 | HLA-21 | T-1 | 33.0 | 34.6 | 60 | 18 | 42 | | 22.5 | 77.4 | | | CH | A-7-6(32) |
| 564+40.6 LT 21.7 | HLA-21 | SS-12 | 43.5 | 21.7 | NP | NP | NP | 0.0 | 94.7 | 5.3 | | 0.3161 | SP-SM | A-3(0) |
| 564+40.6 LT 21.7 | HLA-21 | SS-16 | 63.5 | 19.6 | NP | NP | NP | 4.0 | 91.4 | 4.6 | | 0.6018 | SP | A-1-b(0) |
| 564+40.6 LT 21.7 | HLA-21 | SS-21 | 88.5 | 21.3 | NP | NP | NP | 11.9 | 85.6 | 2.5 | | 0.4944 | SP | A-1-b(0) |
| 564+40.6 LT 21.7 | HLA-21 | SS-26 | 113.5 | 19.4 | NP | NP | NP | 11.8 | 85.6 | 2.6 | | 0.5915 | SP | A-1-b(0) |
| 564+40.6 LT 21.7 | HLA-21 | SS-27 | 123.5 | 17.0 | NP | NP | NP | 4.7 | 91.0 | 4.3 | | 0.4751 | SP | A-1-b(0) |
| 564+40.6 LT 21.7 | HLA-21 | T-2 | 133.0 | 17.0 | 31 | 14 | 17 | 0.0 | 18.5 | 81.5 | | | CL | A-6(12) |
| 564+40.6 LT 21.7 | HLA-21 | SS-29 | 138.5 | 24.5 | NP | NP | NP | 0.0 | 85.4 | 14.6 | | 0.1564 | SM | A-2-4(0) |

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**Soil Classification Summary**

ALDOT
ALDOT Project No.: 15-1101-0228
Project Name: I-10 Mobile River Bridge and Bayway
Mobile, Alabama

| Station & Offset | Boring No. | Sample ID | Depth (ft) | Water Content (%) | Liquid Limit | Plastic Limit | Plasticity Index | % Gravel | % Sand | % Pass 200 | | D50 (mm) | USCS | AASHTO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | % Silt | % Clay | | | |
| 564+40.6 LT 21.7 | HLA-21 | SS-31 | 148.5 | 19.3 | 49 | 17 | 32 | 0.0 | 13.8 | 86.2 | | | CL | A-7-6(28) |
| 564+40.6 LT 21.7 | HLA-21 | SS-34 | 178.5 | 20.2 | 47 | 16 | 31 | 0.0 | 7.2 | 92.8 | | | CL | A-7-6(30) |
| 564+40.6 LT 21.7 | HLA-21 | SS-35 | 188.5 | 21.9 | 35 | 17 | 18 | 0.0 | 2.5 | 97.5 | | | CL | A-6(17) |
| 564+40.6 LT 21.7 | HLA-21 | SS-36 | 198.5 | 18.8 | 39 | 13 | 26 | 0.0 | 18.1 | 81.9 | | | CL | A-6(20) |
| 564+40.6 LT 21.7 | HLA-21 | SS-39 | 228.5 | 19.2 | NP | NP | NP | 0.0 | 71.5 | 28.5 | | 0.1413 | SM | A-2-4(0) |
| 497+92.5 LT 26.8 | WHLA-01 | SS-2 | 1.5 | 16.1 | NP | NP | NP | 0.0 | 87.8 | 12.2 | | 0.1820 | SM | A-2-4(0) |
| 497+92.5 LT 26.8 | WHLA-01 | SS-4 | 4.5 | 24.2 | NP | NP | NP | 0.0 | 88.4 | 11.6 | | 0.1845 | SP-SM | A-2-4(0) |
| 497+92.5 LT 26.8 | WHLA-01 | SS-7 | 13.5 | 31.8 | NP | NP | NP | 0.0 | 66.8 | 33.2 | | 0.1258 | SM | A-2-4(0) |
| 497+92.5 LT 26.8 | WHLA-01 | SS-8 | 18.5 | 66.5 | 69 | 45 | 24 | | | 46.2 | | | SM | A-7-5(8) |
| 497+92.5 LT 26.8 | WHLA-01 | SS-9 | 28.5 | 23.3 | NP | NP | NP | 0.0 | 94.5 | 5.5 | | 0.3132 | SP-SM | A-3(0) |
| 497+92.5 LT 26.8 | WHLA-01 | SS-11 | 38.5 | 18.9 | NP | NP | NP | 0.3 | 92.6 | 7.1 | | 0.3081 | SP-SM | A-3(0) |
| 497+92.5 LT 26.8 | WHLA-01 | SS-15 | 58.5 | 24.4 | NP | NP | NP | 0.2 | 83.3 | 16.5 | | 0.2729 | SM | A-2-4(0) |
| 497+92.5 LT 26.8 | WHLA-01 | SS-20 | 83.5 | 26.7 | NP | NP | NP | 0.6 | 91.2 | 8.2 | | 0.1674 | SP-SM | A-3(0) |
| 497+92.5 LT 26.8 | WHLA-01 | ST-4 | 113.5 | 44.3 | 87 | 29 | 58 | 0.0 | 1.1 | 18.3 | 80.6 | | CH | A-7-6(68) |
| 497+92.5 LT 26.8 | WHLA-01 | SS-28 | 133.5 | 11.1 | NP | NP | NP | 0.7 | 93.4 | 5.9 | | 0.3467 | SP-SM | A-3(0) |
| 497+92.5 LT 26.8 | WHLA-01 | SS-36 | 178.5 | 19.5 | NP | NP | NP | 0.0 | 91.3 | 8.7 | | 0.2151 | SP-SM | A-3(0) |
| 497+92.5 LT 26.8 | WHLA-01 | SS-39 | 193.5 | 29.1 | 38 | 21 | 17 | 0.0 | 54.1 | 45.9 | | 0.0848 | SC | A-6(4) |
| 497+92.5 LT 26.8 | WHLA-01 | ST-6 | 198.5 | 56.2 | 30 | 14 | 16 | 0.0 | 16.7 | 54.4 | 28.9 | 0.0404 | CL | A-6(11) |
| 497+92.5 LT 26.8 | WHLA-01 | ST-7 | 218.5 | 18.8 | 36 | 16 | 20 | 0.0 | 17.1 | 53.7 | 29.2 | 0.0355 | CL | A-6(15) |
| 497+92.5 LT 26.8 | WHLA-01 | ST-8 | 238.5 | 24.9 | NP | NP | NP | 0.0 | 74.0 | 13.4 | 12.6 | 0.1789 | SM | A-2-4(0) |
| 497+92.5 LT 26.8 | WHLA-01 | SS-43 | 258.5 | 21.6 | NP | NP | NP | 0.0 | 57.8 | 42.2 | | 0.0918 | SM | A-4(0) |
| 509+17.5 LT 5.8 | WHLA-03 | SS-2 | 1.5 | 34.6 | NP | NP | NP | 15.4 | 66.8 | 17.8 | | 0.2102 | SM | A-2-4(0) |
| 509+17.5 LT 5.8 | WHLA-03 | SS-4 | 4.5 | 24.5 | NP | NP | NP | 0.0 | 91.7 | 8.3 | | 0.1820 | SP-SM | A-3(0) |
| 509+17.5 LT 5.8 | WHLA-03 | SS-9 | 28.5 | 25.6 | NP | NP | NP | 0.0 | 96.6 | 3.4 | | 0.2889 | SP | A-3(0) |
| 509+17.5 LT 5.8 | WHLA-03 | SS-15 | 58.5 | 23.7 | NP | NP | NP | 0.0 | 90.1 | 9.9 | | 0.2508 | SP-SM | A-3(0) |
| 509+17.5 LT 5.8 | WHLA-03 | SS-17 | 68.5 | 18.3 | NP | NP | NP | 1.2 | 87.9 | 10.9 | | 0.5673 | SP-SM | A-1-b(0) |
| 509+17.5 LT 5.8 | WHLA-03 | SS-21 | 88.5 | 22.5 | NP | NP | NP | 0.5 | 92.4 | 7.1 | | 0.3353 | SP-SM | A-3(0) |
| 509+17.5 LT 5.8 | WHLA-03 | ST-2 | 93.5 | 46.9 | 81 | 25 | 56 | 0.0 | 1.5 | 36.0 | 62.5 | 0.0014 | CH | A-7-6(65) |
| 509+17.5 LT 5.8 | WHLA-03 | SS-22 | 103.5 | 77.0 | 82 | 32 | 50 | | | 38.6 | | | SC | A-7-5(11) |
| 509+17.5 LT 5.8 | WHLA-03 | SS-23 | 113.5 | 29.7 | NP | NP | NP | 0.0 | 76.9 | 23.1 | | 0.1957 | SM | A-2-4(0) |

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**Soil Classification Summary**

ALDOT
ALDOT Project No.: 15-1101-0228
Project Name: I-10 Mobile River Bridge and Bayway
Mobile, Alabama

| Station & Offset | Boring No. | Sample ID | Depth (ft) | Water Content (%) | Liquid Limit | Plastic Limit | Plasticity Index | % Gravel | % Sand | % Pass 200 | | D50 (mm) | USCS | AASHTO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | % Silt | % Clay | | | |
| 509+17.5 LT 5.8 | WHLA-03 | SS-24 | 118.5 | 23.6 | NP | NP | NP | 0.0 | 85.6 | 14.4 | | 0.1814 | SM | A-2-4(0) |
| 509+17.5 LT 5.8 | WHLA-03 | SS-25 | 123.5 | 13.8 | NP | NP | NP | 5.3 | 85.7 | 8.9 | | 0.3423 | SP-SM | A-3(0) |
| 509+17.5 LT 5.8 | WHLA-03 | SS-28 | 138.5 | 20.9 | 60 | 18 | 42 | 0.0 | 11.0 | 89.0 | | | CH | A-7-6(40) |
| 509+17.5 LT 5.8 | WHLA-03 | ST-6 | 143.5 | 27.0 | 32 | 16 | 16 | 0.0 | 8.5 | 66.1 | 25.4 | 0.0194 | CL | A-6(14) |
| 509+17.5 LT 5.8 | WHLA-03 | SS-30 | 158.5 | 19.5 | NP | NP | NP | 0.3 | 87.4 | 12.4 | | 0.2915 | SM | A-2-4(0) |
| 509+17.5 LT 5.8 | WHLA-03 | ST-8 | 166.0 | 29.5 | 48 | 16 | 32 | 0.0 | 20.5 | 58.1 | 21.4 | 0.0424 | CL | A-7-6(25) |
| 509+17.5 LT 5.8 | WHLA-03 | SS-32 | 168.0 | 31.0 | 45 | 19 | 26 | 0.0 | 7.5 | 92.5 | | | CL | A-7-6(26) |
| 509+17.5 LT 5.8 | WHLA-03 | SS-34 | 178.5 | 27.4 | NP | NP | NP | 0.0 | 53.0 | 47.0 | | 0.0795 | SM | A-4(0) |
| 509+17.5 LT 5.8 | WHLA-03 | SS-36 | 188.5 | 17.5 | NP | NP | NP | 1.0 | 90.6 | 8.4 | | 0.3448 | SP-SM | A-3(0) |
| 509+17.5 LT 5.8 | WHLA-03 | ST-9 | 193.0 | 19.9 | 28 | 20 | 8 | 0.0 | 36.6 | 46.3 | 17.1 | 0.0517 | CL | A-4(3) |
| 509+17.5 LT 5.8 | WHLA-03 | ST-11 | 208.5 | 13.1 | 32 | 11 | 21 | 0.0 | 45.1 | 27.9 | 27.0 | 0.0551 | CL | A-6(8) |
| 509+17.5 LT 5.8 | WHLA-03 | SS-38 | 228.5 | 27.5 | NP | NP | NP | 0.0 | 39.5 | 60.5 | | | ML | A-4(0) |
| 509+17.5 LT 5.8 | WHLA-03 | SS-40 | 248.5 | 27.5 | NP | NP | NP | 0.0 | 70.8 | 29.2 | | 0.1169 | SM | A-2-4(0) |
| 509+17.5 LT 5.8 | WHLA-03 | SS-42 | 268.5 | 19.7 | NP | NP | NP | 0.0 | 82.7 | 17.3 | | 0.1731 | SM | A-2-4(0) |
| 509+17.5 LT 5.8 | WHLA-03 | SS-44 | 288.5 | 20.8 | NP | NP | NP | 0.0 | 88.9 | 11.1 | | 0.2914 | SP-SM | A-2-4(0) |

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**Soil Classification Summary**

ALDOT
ALDOT Project No.: 15-1101-0228
Project Name: I-10 Mobile River Bridge and Bayway
Mobile, Alabama

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-01 | HLA-01 | HLA-01 | HLA-01 | HLA-01 | HLA-01 |
|---|---|---|---|---|---|---|
| Station | 468+68.3 | 468+68.3 | 468+68.3 | 468+68.3 | 468+68.3 | 468+68.3 |
| Offset | RT 111.2 | RT 111.2 | RT 111.2 | RT 111.2 | RT 111.2 | RT 111.2 |
| Sample ID | SS-2 | SS-5 | T-1 | SS-9 | SS-12 | SS-19 |
| Depth (ft) | 1.5 | 6.0 | 18.5 | 28.5 | 43.5 | 78.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 99.1 |
| #4 SIEVE (4.75mm) | 100.0 | 100.0 | 100.0 | 99.8 | 98.6 | 99.0 |
| #10 SIEVE (2.00mm) | 100.0 | 100.0 | 100.0 | 99.8 | 98.6 | 98.4 |
| #20 SIEVE (0.85mm) | 99.8 | 99.7 | 100.0 | 99.8 | 98.1 | 92.9 |
| #40" SIEVE (425um) | 97.5 | 96.0 | 99.9 | 99.6 | 82.6 | 65.4 |
| #60 SIEVE (250um) | 76.8 | 64.3 | 99.6 | 96.5 | 33.5 | 32.2 |
| #100 SIEVE (150um) | 41.9 | 21.7 | 88.2 | 33.7 | 11.6 | 12.4 |
| #140 SIEVE (106um) | 31.0 | 12.9 | 62.9 | 14.8 | 7.8 | 7.8 |
| #200 SIEVE (75um) | 25.8 | 9.7 | 42.4 | 9.8 | 5.7 | 5.5 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 74.2 | 90.3 | 57.6 | 90.0 | 92.9 | 93.5 |
| Total Gravel | 0.0 | 0.0 | 0.0 | 0.2 | 1.4 | 1.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | NP | 29 | NP | NP | NP |
| Plastic Limit | NP | NP | 17 | NP | NP | NP |
| Plasticity Index | NP | NP | 12 | NP | NP | NP |
| | | | | | | |
| USCS | SM | SP-SM | SC | SP-SM | SP-SM | SP-SM |
| AASHTO | A-2-4(0) | A-3(0) | A-6(2) | A-3(0) | A-3(0) | A-3(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-01 | HLA-01 | HLA-01 | HLA-01 | HLA-01 | HLA-01 |
|---|---|---|---|---|---|---|
| Station | 468+68.3 | 468+68.3 | 468+68.3 | 468+68.3 | 468+68.3 | 468+68.3 |
| Offset | RT 111.2 | RT 111.2 | RT 111.2 | RT 111.2 | RT 111.2 | RT 111.2 |
| Sample ID | SS-23 | T-2 | SS-26 | SS-29 | SS-30 | SS-31 |
| Depth (ft) | 98.5 | 113.5 | 118.5 | 133.5 | 138.5 | 143.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 98.4 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 97.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 99.9 | 99.7 | 100.0 | 70.1 | 81.2 | 100.0 |
| #10 SIEVE (2.00mm) | 95.0 | 94.7 | 100.0 | 51.9 | 70.1 | 99.6 |
| #20 SIEVE (0.85mm) | 79.9 | 87.7 | 100.0 | 42.6 | 55.9 | 98.6 |
| #40" SIEVE (425um) | 52.8 | 82.0 | 99.9 | 29.5 | 34.3 | 96.6 |
| #60 SIEVE (250um) | 22.7 | 77.1 | 98.9 | 17.3 | 19.9 | 94.1 |
| #100 SIEVE (150um) | 10.9 | 74.1 | 97.8 | 9.5 | 12.0 | 30.3 |
| #140 SIEVE (106um) | 7.9 | 73.3 | 97.2 | 7.3 | 9.5 | 16.8 |
| #200 SIEVE (75um) | 5.9 | 72.9 | 96.8 | 6.1 | 7.7 | 12.8 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 94.0 | 26.8 | 3.2 | 64.1 | 73.6 | 87.2 |
| Total Gravel | 0.1 | 0.3 | 0.0 | 29.9 | 18.8 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | 46 | 78 | NP | NP | NP |
| Plastic Limit | NP | 24 | 28 | NP | NP | NP |
| Plasticity Index | NP | 22 | 50 | NP | NP | NP |
| | | | | | | |
| USCS | SP-SM | CL | CH | SP-SM | SW-SM | SM |
| AASHTO | A-3(0) | A-7-6(16) | A-7-6(57) | A-1-b(0) | A-1-b(0) | A-2-4(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-01 | HLA-01 | HLA-01 | HLA-01 | HLA-01 | HLA-02 |
|---|---|---|---|---|---|---|
| Station | 468+68.3 | 468+68.3 | 468+68.3 | 468+68.3 | 468+68.3 | 475+68.4 |
| Offset | RT 111.2 | RT 111.2 | RT 111.2 | RT 111.2 | RT 111.2 | LT 90.2 |
| Sample ID | SS-33 | SS-34 | SS-37 | SS-39 | SS-41 | SS-1 |
| Depth (ft) | 158.5 | 168.5 | 198.5 | 218.5 | 238.5 | 1.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 95.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 94.7 |
| #4 SIEVE (4.75mm) | 99.7 | 99.6 | 99.9 | 100.0 | 100.0 | 87.9 |
| #10 SIEVE (2.00mm) | 99.1 | 99.4 | 98.9 | 100.0 | 100.0 | 80.4 |
| #20 SIEVE (0.85mm) | 98.4 | 98.4 | 96.4 | 100.0 | 100.0 | 76.1 |
| #40" SIEVE (425um) | 97.3 | 84.4 | 87.7 | 99.7 | 98.9 | 62.7 |
| #60 SIEVE (250um) | 96.0 | 51.1 | 53.5 | 96.2 | 85.4 | 40.3 |
| #100 SIEVE (150um) | 94.2 | 23.7 | 25.3 | 85.0 | 41.7 | 24.5 |
| #140 SIEVE (106um) | 93.0 | 15.2 | 20.9 | 78.3 | 24.6 | 20.0 |
| #200 SIEVE (75um) | 88.3 | 10.9 | 18.6 | 70.4 | 15.7 | 16.9 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 11.4 | 88.7 | 81.2 | 29.6 | 84.3 | 71.0 |
| Total Gravel | 0.3 | 0.4 | 0.1 | 0.0 | 0.0 | 12.1 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | 47 | NP | 22 | 33 | NP | NP |
| Plastic Limit | 20 | NP | 14 | 13 | NP | NP |
| Plasticity Index | 27 | NP | 8 | 20 | NP | NP |
| | | | | | | |
| USCS | CL | SP-SM | SC | CL | SM | SM |
| AASHTO | A-7-6(25) | A-2-4(0) | A-2-4(0) | A-6(11) | A-2-4(0) | A-2-4(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-02 | HLA-02 | HLA-02 | HLA-02 | HLA-02 | HLA-02 |
|---|---|---|---|---|---|---|
| Station | 475+68.4 | 475+68.4 | 475+68.4 | 475+68.4 | 475+68.4 | 475+68.4 |
| Offset | LT 90.2 | LT 90.2 | LT 90.2 | LT 90.2 | LT 90.2 | LT 90.2 |
| Sample ID | SS-4 | SS-7 | SS-8 | SS-10 | T-1 | SS-11 |
| Depth (ft) | 6.0 | 13.5 | 18.5 | 28.5 | 33.0 | 38.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 100.0 | 98.2 | 99.8 | 99.8 | 100.0 |
| #10 SIEVE (2.00mm) | 100.0 | 99.5 | 87.3 | 99.0 | 99.7 | 100.0 |
| #20 SIEVE (0.85mm) | 99.0 | 97.1 | 82.8 | 98.2 | 99.7 | 100.0 |
| #40" SIEVE (425um) | 82.2 | 77.9 | 76.5 | 97.1 | 99.6 | 100.0 |
| #60 SIEVE (250um) | 43.6 | 44.3 | 54.8 | 91.9 | 99.1 | 99.5 |
| #100 SIEVE (150um) | 21.9 | 18.4 | 24.3 | 70.5 | 93.4 | 32.9 |
| #140 SIEVE (106um) | 17.2 | 12.8 | 15.8 | 50.7 | 67.4 | 12.4 |
| #200 SIEVE (75um) | 15.0 | 10.0 | 12.4 | 41.5 | 44.9 | 8.8 |
| | | | | | | |
| Clay | | | | | 19.0 | |
| Silt | | | | | 26.0 | |
| Total Sand | 85.0 | 90.0 | 85.8 | 58.2 | 54.8 | 91.2 |
| Total Gravel | 0.0 | 0.0 | 1.8 | 0.2 | 0.2 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | NP | NP | 27 | 38 | NP |
| Plastic Limit | NP | NP | NP | 16 | 15 | NP |
| Plasticity Index | NP | NP | NP | 11 | 23 | NP |
| | | | | | | |
| USCS | SM | SP-SM | SM | SC | SC | SP-SM |
| AASHTO | A-2-4(0) | A-3(0) | A-2-4(0) | A-6(1) | A-6(6) | A-3(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-02 | HLA-02 | HLA-02 | HLA-02 | HLA-02 | HLA-02 |
|---|---|---|---|---|---|---|
| Station | 475+68.4 | 475+68.4 | 475+68.4 | 475+68.4 | 475+68.4 | 475+68.4 |
| Offset | LT 90.2 | LT 90.2 | LT 90.2 | LT 90.2 | LT 90.2 | LT 90.2 |
| Sample ID | SS-13 | SS-16 | SS-18 | SS-20 | SS-23 | SS-27 |
| Depth (ft) | 48.5 | 63.5 | 73.5 | 83.5 | 98.5 | 118.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #10 SIEVE (2.00mm) | 92.2 | 100.0 | 99.8 | 99.9 | 100.0 | 100.0 |
| #20 SIEVE (0.85mm) | 67.9 | 99.7 | 98.9 | 85.1 | 99.8 | 99.8 |
| #40" SIEVE (425um) | 46.9 | 97.8 | 90.1 | 42.3 | 98.6 | 98.6 |
| #60 SIEVE (250um) | 38.8 | 68.5 | 29.4 | 18.8 | 88.1 | 92.0 |
| #100 SIEVE (150um) | 15.5 | 13.3 | 11.2 | 12.1 | 63.5 | 46.1 |
| #140 SIEVE (106um) | 8.7 | 9.1 | 8.7 | 10.5 | 56.8 | 31.2 |
| #200 SIEVE (75um) | 6.7 | 6.9 | 7.0 | 9.4 | 52.9 | 26.2 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 93.3 | 93.1 | 93.0 | 90.6 | 47.1 | 73.8 |
| Total Gravel | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | NP | NP | NP | 48 | 23 |
| Plastic Limit | NP | NP | NP | NP | 15 | 17 |
| Plasticity Index | NP | NP | NP | NP | 33 | 6 |
| | | | | | | |
| USCS | SP-SM | SP-SM | SP-SM | SW-SM | CL | SC-SM |
| AASHTO | A-1-b(0) | A-3(0) | A-3(0) | A-1-b(0) | A-7-6(13) | A-2-4(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-02 | HLA-02 | HLA-02 | HLA-02 | HLA-02 | HLA-02 |
|---|---|---|---|---|---|---|
| Station | 475+68.4 | 475+68.4 | 475+68.4 | 475+68.4 | 475+68.4 | 475+68.4 |
| Offset | LT 90.2 | LT 90.2 | LT 90.2 | LT 90.2 | LT 90.2 | LT 90.2 |
| Sample ID | T-2 | T-3 | SS-31 | SS-33 | SS-36 | SS-38 |
| Depth (ft) | 123.0 | 133.0 | 148.5 | 168.5 | 198.5 | 218.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 98.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 96.5 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 100.0 | 78.0 | 100.0 | 99.5 | 99.5 |
| #10 SIEVE (2.00mm) | 100.0 | 100.0 | 61.2 | 99.6 | 98.7 | 99.0 |
| #20 SIEVE (0.85mm) | 100.0 | 100.0 | 61.2 | 99.4 | 97.0 | 96.7 |
| #40" SIEVE (425um) | 100.0 | 100.0 | 47.2 | 98.4 | 89.1 | 81.8 |
| #60 SIEVE (250um) | 100.0 | 99.7 | 14.9 | 94.2 | 44.2 | 40.0 |
| #100 SIEVE (150um) | 99.9 | 99.4 | 8.3 | 83.5 | 15.9 | 16.6 |
| #140 SIEVE (106um) | 99.8 | 99.1 | 6.6 | 71.7 | 12.3 | 12.8 |
| #200 SIEVE (75um) | 99.7 | 98.5 | 5.5 | 59.4 | 10.4 | 10.6 |
| | | | | | | |
| Clay | 52.1 | 77.1 | | | | |
| Silt | 47.6 | 21.4 | | | | |
| Total Sand | 0.3 | 1.5 | 72.6 | 40.6 | 89.1 | 88.9 |
| Total Gravel | 0.0 | 0.0 | 22.0 | 0.0 | 0.5 | 0.5 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | 76 | 88 | NP | 29 | NP | NP |
| Plastic Limit | 33 | 26 | NP | 14 | NP | NP |
| Plasticity Index | 43 | 62 | NP | 15 | NP | NP |
| | | | | | | |
| USCS | CH | CH | SP-SM | CL | SP-SM | SP-SM |
| AASHTO | A-7-5(53) | A-7-6(72) | A-1-b(0) | A-6(6) | A-3(0) | A-2-4(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-02 | HLA-02 | HLA-03 | HLA-03 | HLA-03 | HLA-03A |
|---|---|---|---|---|---|---|
| Station | 475+68.4 | 475+68.4 | 476+60.0 | 476+60.0 | 476+60.0 | 476+61.4 |
| Offset | LT 90.2 | LT 90.2 | RT 46.2 | RT 46.2 | RT 46.2 | RT 38.5 |
| Sample ID | SS-39 | SS-40 | SS-2 | SS-5 | SS-7 | SS-9 |
| Depth (ft) | 228.5 | 238.5 | 2.0 | 6.5 | 14.0 | 24.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 100.0 | 99.9 | 100.0 | 100.0 | 100.0 |
| #10 SIEVE (2.00mm) | 99.2 | 100.0 | 99.0 | 99.8 | 99.9 | 100.0 |
| #20 SIEVE (0.85mm) | 95.8 | 99.8 | 95.4 | 98.5 | 98.0 | 100.0 |
| #40" SIEVE (425um) | 75.1 | 99.3 | 72.4 | 83.9 | 78.5 | 97.2 |
| #60 SIEVE (250um) | 22.6 | 94.2 | 42.9 | 52.2 | 42.9 | 75.3 |
| #100 SIEVE (150um) | 11.6 | 84.8 | 26.7 | 28.6 | 24.4 | 36.0 |
| #140 SIEVE (106um) | 9.6 | 79.4 | 22.3 | 22.1 | 20.0 | 25.9 |
| #200 SIEVE (75um) | 8.1 | 71.9 | 19.6 | 18.4 | 17.4 | 21.4 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 91.9 | 28.1 | 80.4 | 81.6 | 82.6 | 78.6 |
| Total Gravel | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | 45 | 26 | NP | NP | NP |
| Plastic Limit | NP | 14 | 13 | NP | NP | NP |
| Plasticity Index | NP | 31 | 13 | NP | NP | NP |
| | | | | | | |
| USCS | SP-SM | CL | SC | SM | SM | SM |
| AASHTO | A-3(0) | A-7-6(20) | A-2-6(0) | A-2-4(0) | A-2-4(0) | A-2-4(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-03A | HLA-03A | HLA-03A | HLA-03A | HLA-03A | HLA-03A |
|---|---|---|---|---|---|---|
| Station | 476+61.4 | 476+61.4 | 476+61.4 | 476+61.4 | 476+61.4 | 476+61.4 |
| Offset | RT 38.5 | RT 38.5 | RT 38.5 | RT 38.5 | RT 38.5 | RT 38.5 |
| Sample ID | T-1 | SS-13 | SS-17 | SS-20 | SS-24 | SS-27 |
| Depth (ft) | 34.5 | 44.5 | 64.5 | 79.5 | 99.5 | 114.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 99.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 98.2 |
| #4 SIEVE (4.75mm) | 100.0 | 100.0 | 99.5 | 99.6 | 99.4 | 65.9 |
| #10 SIEVE (2.00mm) | 100.0 | 100.0 | 98.4 | 99.1 | 99.1 | 54.2 |
| #20 SIEVE (0.85mm) | 100.0 | 99.9 | 97.4 | 95.2 | 96.1 | 42.4 |
| #40" SIEVE (425um) | 100.0 | 92.3 | 66.8 | 78.5 | 87.3 | 26.4 |
| #60 SIEVE (250um) | 99.8 | 37.9 | 45.7 | 52.5 | 58.4 | 18.2 |
| #100 SIEVE (150um) | 95.8 | 14.6 | 14.4 | 20.3 | 12.3 | 12.8 |
| #140 SIEVE (106um) | 71.1 | 10.8 | 10.5 | 16.4 | 8.2 | 11.4 |
| #200 SIEVE (75um) | 35.7 | 8.8 | 8.0 | 14.3 | 6.1 | 10.4 |
| | | | | | | |
| Clay | 7.2 | | | | | |
| Silt | 28.5 | | | | | |
| Total Sand | 64.3 | 91.2 | 91.4 | 85.3 | 93.3 | 55.5 |
| Total Gravel | 0.0 | 0.0 | 0.5 | 0.4 | 0.6 | 34.1 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | NP | NP | NP | NP | NP |
| Plastic Limit | NP | NP | NP | NP | NP | NP |
| Plasticity Index | NP | NP | NP | NP | NP | NP |
| | | | | | | |
| USCS | SM | SP-SM | SP-SM | SM | SP-SM | SW-SM |
| AASHTO | A-4(0) | A-3(0) | A-3(0) | A-2-4(0) | A-3(0) | A-1-b(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-03A | HLA-03A | HLA-03A | HLA-03A | HLA-03A | HLA-03A |
|---|---|---|---|---|---|---|
| Station | 476+61.4 | 476+61.4 | 476+61.4 | 476+61.4 | 476+61.4 | 476+61.4 |
| Offset | RT 38.5 | RT 38.5 | RT 38.5 | RT 38.5 | RT 38.5 | RT 38.5 |
| Sample ID | T-2 | SS-29 | SS-30 | SS-31 | SS-36 | SS-38 |
| Depth (ft) | 119.5 | 124.5 | 129.5 | 134.5 | 169.5 | 189.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 96.6 | 100.0 | 100.0 | 100.0 | 99.2 | 100.0 |
| #10 SIEVE (2.00mm) | 78.8 | 100.0 | 100.0 | 100.0 | 92.1 | 99.8 |
| #20 SIEVE (0.85mm) | 72.4 | 99.9 | 99.8 | 99.8 | 69.0 | 95.4 |
| #40" SIEVE (425um) | 66.5 | 99.2 | 98.7 | 91.3 | 46.3 | 82.4 |
| #60 SIEVE (250um) | 62.0 | 96.6 | 91.6 | 76.0 | 25.9 | 54.7 |
| #100 SIEVE (150um) | 58.9 | 84.1 | 67.1 | 54.0 | 12.2 | 20.5 |
| #140 SIEVE (106um) | 57.5 | 60.1 | 42.6 | 32.9 | 8.2 | 13.9 |
| #200 SIEVE (75um) | 56.6 | 40.4 | 26.2 | 21.3 | 5.7 | 10.4 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 40.1 | 59.6 | 73.8 | 78.7 | 93.5 | 89.6 |
| Total Gravel | 3.4 | 0.0 | 0.0 | 0.0 | 0.8 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | 84 | NP | NP | NP | NP | NP |
| Plastic Limit | 43 | NP | NP | NP | NP | NP |
| Plasticity Index | 41 | NP | NP | NP | NP | NP |
| | | | | | | |
| USCS | MH | SM | SM | SM | SP-SM | SP-SM |
| AASHTO | A-7-5(22) | A-4(0) | A-2-4(0) | A-2-4(0) | A-1-b(0) | A-3(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-03A | HLA-03A | HLA-03A | HLA-04 | HLA-04 | HLA-04 |
|---|---|---|---|---|---|---|
| Station | 476+61.4 | 476+61.4 | 476+61.4 | 479+34.4 | 479+34.4 | 479+34.4 |
| Offset | RT 38.5 | RT 38.5 | RT 38.5 | RT 66.4 | RT 66.4 | RT 66.4 |
| Sample ID | SS-41 | SS-43 | SS-44 | SS-1 | SS-4 | SS-7 |
| Depth (ft) | 219.5 | 239.5 | 249.5 | 0.0 | 4.5 | 13.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 98.3 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 94.9 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 100.0 | 100.0 | 91.4 | 97.6 | 99.3 |
| #10 SIEVE (2.00mm) | 99.9 | 100.0 | 100.0 | 87.8 | 95.8 | 98.4 |
| #20 SIEVE (0.85mm) | 96.4 | 99.6 | 99.8 | 84.0 | 90.9 | 95.1 |
| #40" SIEVE (425um) | 87.1 | 97.9 | 97.4 | 69.1 | 65.7 | 84.0 |
| #60 SIEVE (250um) | 50.2 | 91.9 | 83.9 | 43.5 | 35.4 | 62.6 |
| #100 SIEVE (150um) | 20.6 | 85.0 | 70.3 | 24.7 | 20.5 | 29.1 |
| #140 SIEVE (106um) | 14.4 | 78.7 | 61.0 | 19.0 | 17.1 | 18.1 |
| #200 SIEVE (75um) | 10.8 | 70.4 | 51.6 | 15.7 | 15.1 | 13.5 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 89.2 | 29.6 | 48.4 | 75.7 | 82.5 | 85.8 |
| Total Gravel | 0.0 | 0.0 | 0.0 | 8.6 | 2.4 | 0.7 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | 32 | NP | NP | NP | NP |
| Plastic Limit | NP | 15 | NP | NP | NP | NP |
| Plasticity Index | NP | 17 | NP | NP | NP | NP |
| | | | | | | |
| USCS | SP-SM | CL | ML | SM | SM | SM |
| AASHTO | A-2-4(0) | A-6(9) | A-4(0) | A-2-4(0) | A-2-4(0) | A-2-4(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-04 | HLA-04 | HLA-04 | HLA-04 | HLA-04 | HLA-04 |
|---|---|---|---|---|---|---|
| Station | 479+34.4 | 479+34.4 | 479+34.4 | 479+34.4 | 479+34.4 | 479+34.4 |
| Offset | RT 66.4 | RT 66.4 | RT 66.4 | RT 66.4 | RT 66.4 | RT 66.4 |
| Sample ID | SS-9 | T-1 | SS-13 | SS-17 | SS-21 | SS-25 |
| Depth (ft) | 23.5 | 28.0 | 48.5 | 68.5 | 88.5 | 108.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 96.9 | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 89.0 | 98.8 |
| #10 SIEVE (2.00mm) | 99.9 | 100.0 | 99.8 | 100.0 | 83.4 | 98.6 |
| #20 SIEVE (0.85mm) | 99.4 | 99.7 | 97.7 | 98.9 | 70.4 | 98.4 |
| #40" SIEVE (425um) | 98.5 | 99.4 | 88.0 | 89.1 | 38.4 | 97.7 |
| #60 SIEVE (250um) | 97.7 | 98.8 | 64.1 | 32.0 | 21.6 | 94.0 |
| #100 SIEVE (150um) | 96.2 | 73.0 | 14.7 | 11.3 | 10.4 | 31.0 |
| #140 SIEVE (106um) | 93.9 | 49.4 | 7.8 | 7.7 | 7.7 | 16.9 |
| #200 SIEVE (75um) | 87.6 | 34.8 | 5.8 | 5.6 | 6.1 | 13.6 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 12.4 | 65.2 | 94.2 | 94.4 | 83.0 | 85.2 |
| Total Gravel | 0.0 | 0.0 | 0.0 | 0.0 | 11.0 | 1.2 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | 52 | NP | NP | NP | NP | 67 |
| Plastic Limit | 21 | NP | NP | NP | NP | 34 |
| Plasticity Index | 31 | NP | NP | NP | NP | 33 |
| | | | | | | |
| USCS | CH | SM | SP-SM | SP-SM | SP-SM | SM |
| AASHTO | A-7-6(29) | A-2-4(0) | A-3(0) | A-3(0) | A-1-b(0) | A-2-7(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-04 | HLA-04 | HLA-04 | HLA-04 | HLA-04 | HLA-04 |
|---|---|---|---|---|---|---|
| Station | 479+34.4 | 479+34.4 | 479+34.4 | 479+34.4 | 479+34.4 | 479+34.4 |
| Offset | RT 66.4 | RT 66.4 | RT 66.4 | RT 66.4 | RT 66.4 | RT 66.4 |
| Sample ID | SS-26 | T-2 | SS-31 | SS-36 | SS-37 | SS-42 |
| Depth (ft) | 113.5 | 118.0 | 138.5 | 178.5 | 188.5 | 238.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 98.8 | 100.0 | 93.9 | 94.4 | 98.7 | 100.0 |
| #10 SIEVE (2.00mm) | 92.0 | 100.0 | 89.4 | 92.7 | 98.2 | 100.0 |
| #20 SIEVE (0.85mm) | 87.2 | 99.8 | 77.1 | 89.9 | 96.1 | 99.8 |
| #40" SIEVE (425um) | 83.2 | 99.6 | 46.1 | 77.5 | 88.7 | 98.7 |
| #60 SIEVE (250um) | 79.1 | 98.7 | 25.3 | 49.1 | 61.5 | 93.6 |
| #100 SIEVE (150um) | 73.8 | 72.5 | 13.4 | 16.6 | 18.1 | 87.4 |
| #140 SIEVE (106um) | 70.8 | 46.4 | 10.2 | 10.9 | 10.7 | 80.0 |
| #200 SIEVE (75um) | 68.2 | 31.1 | 8.2 | 8.3 | 8.4 | 69.0 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 30.6 | 68.9 | 85.7 | 86.1 | 90.3 | 31.0 |
| Total Gravel | 1.2 | 0.0 | 6.1 | 5.6 | 1.3 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | 71 | NP | NP | NP | NP | 27 |
| Plastic Limit | 23 | NP | NP | NP | NP | 19 |
| Plasticity Index | 48 | NP | NP | NP | NP | 8 |
| | | | | | | |
| USCS | CH | SM | SP-SM | SP-SM | SP-SM | CL |
| AASHTO | A-7-6(32) | A-2-4(0) | A-1-b(0) | A-3(0) | A-3(0) | A-4(4) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-05 | HLA-05 | HLA-05 | HLA-05 | HLA-05 | HLA-05 |
|---|---|---|---|---|---|---|
| Station | 482+15.5 | 482+15.5 | 482+15.5 | 482+15.5 | 482+15.5 | 482+15.5 |
| Offset | LT 27.3 | LT 27.3 | LT 27.3 | LT 27.3 | LT 27.3 | LT 27.3 |
| Sample ID | SS-2 | SS-5 | SS-6 | SS-7 | SS-8 | T-1 |
| Depth (ft) | 3.3 | 7.8 | 10.3 | 15.3 | 20.3 | 25.3 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 99.4 | 99.7 | 100.0 | 100.0 | 99.8 | 100.0 |
| #10 SIEVE (2.00mm) | 99.3 | 99.2 | 99.8 | 100.0 | 99.5 | 100.0 |
| #20 SIEVE (0.85mm) | 96.0 | 97.7 | 99.7 | 99.9 | 99.4 | 99.9 |
| #40" SIEVE (425um) | 76.7 | 90.3 | 98.4 | 98.9 | 99.0 | 99.4 |
| #60 SIEVE (250um) | 48.2 | 66.2 | 78.6 | 87.2 | 96.4 | 98.7 |
| #100 SIEVE (150um) | 28.4 | 27.9 | 39.6 | 62.3 | 70.6 | 97.5 |
| #140 SIEVE (106um) | 23.7 | 18.8 | 27.4 | 49.3 | 48.6 | 96.4 |
| #200 SIEVE (75um) | 21.0 | 15.1 | 22.1 | 37.1 | 40.1 | 95.1 |
| | | | | | | |
| Clay | | | | | | 61.9 |
| Silt | | | | | | 33.1 |
| Total Sand | 78.4 | 84.6 | 77.9 | 62.9 | 59.7 | 4.9 |
| Total Gravel | 0.6 | 0.3 | 0.0 | 0.0 | 0.2 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | NP | NP | 23 | 23 | 76 |
| Plastic Limit | NP | NP | NP | 18 | 18 | 39 |
| Plasticity Index | NP | NP | NP | 5 | 5 | 37 |
| | | | | | | |
| USCS | SM | SM | SM | SC-SM | SC-SM | MH |
| AASHTO | A-2-4(0) | A-2-4(0) | A-2-4(0) | A-4(0) | A-4(0) | A-7-5(44) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-05 | HLA-05 | HLA-05 | HLA-05 | HLA-05 | HLA-05 |
|---|---|---|---|---|---|---|
| Station | 482+15.5 | 482+15.5 | 482+15.5 | 482+15.5 | 482+15.5 | 482+15.5 |
| Offset | LT 27.3 | LT 27.3 | LT 27.3 | LT 27.3 | LT 27.3 | LT 27.3 |
| Sample ID | SS-11 | SS-12 | SS-16 | SS-18 | SS-19 | SS-22 |
| Depth (ft) | 37.3 | 40.3 | 60.3 | 70.3 | 75.3 | 90.3 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 97.9 | 99.4 |
| #10 SIEVE (2.00mm) | 100.0 | 100.0 | 100.0 | 99.7 | 93.6 | 96.1 |
| #20 SIEVE (0.85mm) | 100.0 | 100.0 | 99.8 | 81.6 | 83.6 | 83.8 |
| #40" SIEVE (425um) | 99.9 | 99.3 | 97.6 | 18.3 | 71.0 | 49.5 |
| #60 SIEVE (250um) | 88.8 | 57.1 | 33.2 | 8.7 | 52.9 | 24.5 |
| #100 SIEVE (150um) | 25.7 | 14.8 | 10.2 | 5.5 | 47.9 | 13.2 |
| #140 SIEVE (106um) | 12.6 | 9.6 | 7.5 | 4.6 | 47.3 | 10.2 |
| #200 SIEVE (75um) | 8.1 | 7.6 | 5.9 | 4.0 | 46.9 | 8.3 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 91.9 | 92.4 | 94.1 | 96.0 | 51.0 | 91.1 |
| Total Gravel | 0.0 | 0.0 | 0.0 | 0.0 | 2.1 | 0.6 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | NP | NP | NP | NP | NP |
| Plastic Limit | NP | NP | NP | NP | NP | NP |
| Plasticity Index | NP | NP | NP | NP | NP | NP |
| | | | | | | |
| USCS | SP-SM | SP-SM | SP-SM | SP | SM | SP-SM |
| AASHTO | A-3(0) | A-3(0) | A-3(0) | A-1-b(0) | A-4(0) | A-1-b(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-05 | HLA-05 | HLA-05 | HLA-05 | HLA-05 | HLA-05 |
|---|---|---|---|---|---|---|
| Station | 482+15.5 | 482+15.5 | 482+15.5 | 482+15.5 | 482+15.5 | 482+15.5 |
| Offset | LT 27.3 | LT 27.3 | LT 27.3 | LT 27.3 | LT 27.3 | LT 27.3 |
| Sample ID | SS-25 | SS-26 | SS-27 | SS-28 | SS-32 | SS-36 |
| Depth (ft) | 105.3 | 112.3 | 115.3 | 120.3 | 140.3 | 170.3 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #10 SIEVE (2.00mm) | 99.9 | 99.5 | 100.0 | 99.9 | 100.0 | 99.9 |
| #20 SIEVE (0.85mm) | 99.6 | 99.1 | 99.9 | 99.6 | 99.6 | 99.4 |
| #40" SIEVE (425um) | 98.6 | 98.1 | 98.0 | 95.8 | 91.7 | 96.6 |
| #60 SIEVE (250um) | 91.8 | 96.5 | 86.6 | 66.4 | 55.4 | 83.7 |
| #100 SIEVE (150um) | 27.7 | 93.2 | 34.3 | 18.9 | 20.3 | 40.5 |
| #140 SIEVE (106um) | 18.8 | 91.1 | 20.0 | 11.6 | 13.9 | 20.3 |
| #200 SIEVE (75um) | 16.2 | 89.4 | 12.6 | 8.5 | 10.5 | 13.8 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 83.8 | 10.6 | 87.4 | 91.5 | 89.5 | 86.2 |
| Total Gravel | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | 69 | 54 | NP | NP | NP | NP |
| Plastic Limit | 23 | 20 | NP | NP | NP | NP |
| Plasticity Index | 46 | 34 | NP | NP | NP | NP |
| | | | | | | |
| USCS | SC | CH | SM | SP-SM | SP-SM | SM |
| AASHTO | A-2-7(0) | A-7-6(32) | A-2-4(0) | A-3(0) | A-3(0) | A-2-4(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-05 | HLA-05 | HLA-05 | HLA-06 | HLA-06 | HLA-06 |
|---|---|---|---|---|---|---|
| Station | 482+15.5 | 482+15.5 | 482+15.5 | 483+29.0 | 483+29.0 | 483+29.0 |
| Offset | LT 27.3 | LT 27.3 | LT 27.3 | RT 66.3 | RT 66.3 | RT 66.3 |
| Sample ID | SS-38 | SS-42 | SS-44 | SS-1 | SS-5 | SS-7 |
| Depth (ft) | 190.3 | 230.3 | 250.3 | 0.0 | 6.0 | 13.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 99.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 98.7 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 100.0 | 100.0 | 96.3 | 100.0 | 99.9 |
| #10 SIEVE (2.00mm) | 99.8 | 100.0 | 100.0 | 93.3 | 100.0 | 99.6 |
| #20 SIEVE (0.85mm) | 98.1 | 99.8 | 100.0 | 89.9 | 99.9 | 99.5 |
| #40" SIEVE (425um) | 81.0 | 99.4 | 99.5 | 78.6 | 98.2 | 99.0 |
| #60 SIEVE (250um) | 43.0 | 98.2 | 98.4 | 58.8 | 73.2 | 94.2 |
| #100 SIEVE (150um) | 17.7 | 94.7 | 97.3 | 36.7 | 29.9 | 76.1 |
| #140 SIEVE (106um) | 11.6 | 89.7 | 95.8 | 27.9 | 18.2 | 60.6 |
| #200 SIEVE (75um) | 8.8 | 81.0 | 93.3 | 22.7 | 13.5 | 47.7 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 91.2 | 19.0 | 6.7 | 73.6 | 86.5 | 52.1 |
| Total Gravel | 0.0 | 0.0 | 0.0 | 3.7 | 0.0 | 0.1 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | 54 | 57 | NP | NP | NP |
| Plastic Limit | NP | 17 | 17 | NP | NP | NP |
| Plasticity Index | NP | 37 | 40 | NP | NP | NP |
| | | | | | | |
| USCS | SP-SM | CH | CH | SM | SM | SM |
| AASHTO | A-3(0) | A-7-6(30) | A-7-6(40) | A-2-4(0) | A-2-4(0) | A-4(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-06 | HLA-06 | HLA-06 | HLA-06 | HLA-06 | HLA-06 |
|---|---|---|---|---|---|---|
| Station | 483+29.0 | 483+29.0 | 483+29.0 | 483+29.0 | 483+29.0 | 483+29.0 |
| Offset | RT 66.3 | RT 66.3 | RT 66.3 | RT 66.3 | RT 66.3 | RT 66.3 |
| Sample ID | SS-9 | T-1 | SS-13 | SS-17 | SS-24 | T-2 |
| Depth (ft) | 23.5 | 28.5 | 43.5 | 63.5 | 98.5 | 108.0 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 98.0 |
| #10 SIEVE (2.00mm) | 100.0 | 100.0 | 100.0 | 99.7 | 100.0 | 94.7 |
| #20 SIEVE (0.85mm) | 99.8 | 100.0 | 98.5 | 98.4 | 99.8 | 92.9 |
| #40" SIEVE (425um) | 99.5 | 99.8 | 89.3 | 62.4 | 99.3 | 92.1 |
| #60 SIEVE (250um) | 99.1 | 95.3 | 53.9 | 16.9 | 92.4 | 91.6 |
| #100 SIEVE (150um) | 98.4 | 34.1 | 9.2 | 10.3 | 31.6 | 91.1 |
| #140 SIEVE (106um) | 97.7 | 17.6 | 6.2 | 8.1 | 22.3 | 90.7 |
| #200 SIEVE (75um) | 96.6 | 12.2 | 4.7 | 6.7 | 18.8 | 90.3 |
| | | | | | | |
| Clay | | 6.3 | | | | |
| Silt | | 5.9 | | | | |
| Total Sand | 3.4 | 87.8 | 95.3 | 93.3 | 81.2 | 7.7 |
| Total Gravel | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | 56 | NP | NP | NP | NP | 80 |
| Plastic Limit | 24 | NP | NP | NP | NP | 31 |
| Plasticity Index | 32 | NP | NP | NP | NP | 49 |
| | | | | | | |
| USCS | CH | SM | SP | SP-SM | SM | CH |
| AASHTO | A-7-6(35) | A-2-4(0) | A-3(0) | A-3(0) | A-2-4(0) | A-7-5(51) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-06 | HLA-06 | HLA-06 | HLA-06 | HLA-06 | HLA-06 |
|---|---|---|---|---|---|---|
| Station | 483+29.0 | 483+29.0 | 483+29.0 | 483+29.0 | 483+29.0 | 483+29.0 |
| Offset | RT 66.3 | RT 66.3 | RT 66.3 | RT 66.3 | RT 66.3 | RT 66.3 |
| Sample ID | SS-32 | SS-35 | SS-38 | SS-41 | SS-42 | SS-44 |
| Depth (ft) | 138.5 | 158.5 | 188.5 | 218.5 | 228.5 | 248.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 98.8 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 90.4 | 89.0 | 99.9 | 100.0 | 100.0 | 100.0 |
| #10 SIEVE (2.00mm) | 86.9 | 60.5 | 99.7 | 100.0 | 99.9 | 99.6 |
| #20 SIEVE (0.85mm) | 80.1 | 33.4 | 99.6 | 99.7 | 99.6 | 99.5 |
| #40" SIEVE (425um) | 64.2 | 23.3 | 97.8 | 99.2 | 98.9 | 99.1 |
| #60 SIEVE (250um) | 36.5 | 13.2 | 62.4 | 97.9 | 97.2 | 98.3 |
| #100 SIEVE (150um) | 16.0 | 6.3 | 19.8 | 94.1 | 92.0 | 96.0 |
| #140 SIEVE (106um) | 10.3 | 4.5 | 13.3 | 87.3 | 85.3 | 90.3 |
| #200 SIEVE (75um) | 7.2 | 3.7 | 10.2 | 75.3 | 76.0 | 80.8 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 83.3 | 85.3 | 89.6 | 24.7 | 24.0 | 19.2 |
| Total Gravel | 9.6 | 11.0 | 0.1 | 0.0 | 0.0 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | NP | NP | 54 | 30 | 29 |
| Plastic Limit | NP | NP | NP | 17 | 18 | 16 |
| Plasticity Index | NP | NP | NP | 37 | 12 | 13 |
| | | | | | | |
| USCS | SP-SM | SW | SP-SM | CH | CL | CL |
| AASHTO | A-3(0) | A-1-b(0) | A-3(0) | A-7-6(27) | A-6(7) | A-6(9) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-07 | HLA-07 | HLA-07 | HLA-07 | HLA-07 | HLA-07 |
|---|---|---|---|---|---|---|
| Station | 486+28.7 | 486+28.7 | 486+28.7 | 486+28.7 | 486+28.7 | 486+28.7 |
| Offset | LT 26.7 | LT 26.7 | LT 26.7 | LT 26.7 | LT 26.7 | LT 26.7 |
| Sample ID | SS-1 | SS-3 | SS-5 | T-1 | SS-9 | SS-15 |
| Depth (ft) | 1.5 | 4.5 | 8.5 | 23.0 | 33.5 | 63.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 98.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 96.9 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 94.1 | 100.0 | 100.0 | 97.7 | 100.0 | 99.0 |
| #10 SIEVE (2.00mm) | 91.9 | 99.4 | 100.0 | 80.2 | 100.0 | 98.5 |
| #20 SIEVE (0.85mm) | 89.5 | 97.1 | 99.9 | 64.6 | 100.0 | 98.5 |
| #40" SIEVE (425um) | 79.4 | 78.9 | 98.8 | 54.8 | 99.1 | 76.9 |
| #60 SIEVE (250um) | 55.8 | 48.6 | 76.4 | 48.8 | 45.8 | 24.1 |
| #100 SIEVE (150um) | 32.7 | 25.5 | 36.3 | 44.2 | 14.2 | 11.8 |
| #140 SIEVE (106um) | 25.2 | 20.4 | 24.9 | 42.0 | 10.5 | 8.6 |
| #200 SIEVE (75um) | 20.8 | 17.4 | 19.9 | 40.3 | 8.1 | 6.7 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 73.3 | 82.6 | 80.1 | 57.4 | 91.9 | 92.2 |
| Total Gravel | 5.9 | 0.0 | 0.0 | 2.3 | 0.0 | 1.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | NP | NP | 86 | NP | NP |
| Plastic Limit | NP | NP | NP | 53 | NP | NP |
| Plasticity Index | NP | NP | NP | 33 | NP | NP |
| | | | | | | |
| USCS | SM | SM | SM | SM | SP-SM | SP-SM |
| AASHTO | A-2-4(0) | A-2-4(0) | A-2-4(0) | A-7-5(8) | A-3(0) | A-3(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-07 | HLA-07 | HLA-07 | HLA-07 | HLA-07 | HLA-07 |
|---|---|---|---|---|---|---|
| Station | 486+28.7 | 486+28.7 | 486+28.7 | 486+28.7 | 486+28.7 | 486+28.7 |
| Offset | LT 26.7 | LT 26.7 | LT 26.7 | LT 26.7 | LT 26.7 | LT 26.7 |
| Sample ID | SS-17 | SS-21 | SS-22 | T-2 | T-3 | SS-26 |
| Depth (ft) | 73.5 | 93.5 | 98.5 | 103.0 | 113.0 | 128.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 95.6 | 97.2 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 95.6 | 92.9 | 100.0 | 98.3 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 95.2 | 85.3 | 100.0 | 92.8 | 99.9 | 99.8 |
| #10 SIEVE (2.00mm) | 93.3 | 81.3 | 99.8 | 88.5 | 99.2 | 99.6 |
| #20 SIEVE (0.85mm) | 86.0 | 75.5 | 99.5 | 81.0 | 94.3 | 99.3 |
| #40" SIEVE (425um) | 46.4 | 52.7 | 98.4 | 63.0 | 85.2 | 93.7 |
| #60 SIEVE (250um) | 19.3 | 28.7 | 93.3 | 45.5 | 78.1 | 45.5 |
| #100 SIEVE (150um) | 11.0 | 12.3 | 37.9 | 29.1 | 71.2 | 18.1 |
| #140 SIEVE (106um) | 8.7 | 9.0 | 26.0 | 23.6 | 69.3 | 12.1 |
| #200 SIEVE (75um) | 7.3 | 7.1 | 20.8 | 20.3 | 68.3 | 9.2 |
| | | | | | | |
| Clay | | | | | 45.1 | |
| Silt | | | | | 23.2 | |
| Total Sand | 87.9 | 78.2 | 79.2 | 72.5 | 31.6 | 90.6 |
| Total Gravel | 4.8 | 14.7 | 0.0 | 7.2 | 0.1 | 0.2 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | NP | NP | 49 | 63 | NP |
| Plastic Limit | NP | NP | NP | 17 | 28 | NP |
| Plasticity Index | NP | NP | NP | 32 | 35 | NP |
| | | | | | | |
| USCS | SP-SM | SP-SM | SM | SC | CH | SP-SM |
| AASHTO | A-1-b(0) | A-3(0) | A-2-4(0) | A-2-7(1) | A-7-6(24) | A-3(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-07 | HLA-07 | HLA-07 | HLA-07 | HLA-07 | HLA-07 |
|---|---|---|---|---|---|---|
| Station | 486+28.7 | 486+28.7 | 486+28.7 | 486+28.7 | 486+28.7 | 486+28.7 |
| Offset | LT 26.7 | LT 26.7 | LT 26.7 | LT 26.7 | LT 26.7 | LT 26.7 |
| Sample ID | SS-27 | SS-31 | SS-34 | SS-36 | SS-38 | SS-40 |
| Depth (ft) | 133.5 | 158.5 | 188.5 | 208.5 | 228.5 | 248.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 98.1 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 95.4 | 100.0 | 100.0 | 100.0 | 100.0 | 99.6 |
| #10 SIEVE (2.00mm) | 95.4 | 100.0 | 100.0 | 99.9 | 100.0 | 98.1 |
| #20 SIEVE (0.85mm) | 86.1 | 99.7 | 99.7 | 99.7 | 99.8 | 96.0 |
| #40" SIEVE (425um) | 60.8 | 98.4 | 97.0 | 99.4 | 99.3 | 94.3 |
| #60 SIEVE (250um) | 33.9 | 90.7 | 77.1 | 98.8 | 98.9 | 91.9 |
| #100 SIEVE (150um) | 16.6 | 39.9 | 27.2 | 97.9 | 96.8 | 86.7 |
| #140 SIEVE (106um) | 11.5 | 23.3 | 16.2 | 96.6 | 92.8 | 82.6 |
| #200 SIEVE (75um) | 9.1 | 16.7 | 12.2 | 95.0 | 84.6 | 75.5 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 86.3 | 83.3 | 87.8 | 5.0 | 15.4 | 24.1 |
| Total Gravel | 4.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | NP | NP | 70 | 42 | NP |
| Plastic Limit | NP | NP | NP | 19 | 14 | NP |
| Plasticity Index | NP | NP | NP | 51 | 28 | NP |
| | | | | | | |
| USCS | SP-SM | SM | SM | CH | CL | ML |
| AASHTO | A-3(0) | A-2-4(0) | A-2-4(0) | A-7-6(54) | A-7-6(23) | A-4(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-08 | HLA-08 | HLA-08 | HLA-08 | HLA-08 | HLA-08 |
|---|---|---|---|---|---|---|
| Station | 489+05.4 | 489+05.4 | 489+05.4 | 489+05.4 | 489+05.4 | 489+05.4 |
| Offset | RT 58.8 | RT 58.8 | RT 58.8 | RT 58.8 | RT 58.8 | RT 58.8 |
| Sample ID | SS-1 | SS-3 | SS-7 | SS-8 | SS-9 | SS-11 |
| Depth (ft) | 0.0 | 3.0 | 13.5 | 18.5 | 23.5 | 33.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 98.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 99.3 | 96.8 | 100.0 | 100.0 | 99.7 | 100.0 |
| #10 SIEVE (2.00mm) | 98.5 | 95.7 | 100.0 | 100.0 | 99.1 | 100.0 |
| #20 SIEVE (0.85mm) | 96.0 | 87.7 | 99.9 | 99.9 | 98.6 | 100.0 |
| #40" SIEVE (425um) | 81.4 | 55.0 | 98.9 | 99.5 | 98.3 | 99.8 |
| #60 SIEVE (250um) | 57.5 | 30.9 | 75.6 | 92.4 | 97.9 | 69.3 |
| #100 SIEVE (150um) | 34.8 | 18.1 | 36.2 | 59.2 | 93.6 | 13.4 |
| #140 SIEVE (106um) | 26.1 | 14.4 | 24.9 | 41.5 | 88.7 | 8.7 |
| #200 SIEVE (75um) | 21.3 | 12.4 | 19.3 | 34.2 | 82.0 | 6.6 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 78.0 | 84.4 | 80.7 | 65.8 | 17.7 | 93.4 |
| Total Gravel | 0.7 | 3.2 | 0.0 | 0.0 | 0.3 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | NP | NP | NP | 51 | NP |
| Plastic Limit | NP | NP | NP | NP | 22 | NP |
| Plasticity Index | NP | NP | NP | NP | 29 | NP |
| | | | | | | |
| USCS | SM | SM | SM | SM | CH | SP-SM |
| AASHTO | A-2-4(0) | A-2-4(0) | A-2-4(0) | A-2-4(0) | A-7-6(25) | A-3(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-08 | HLA-08 | HLA-08 | HLA-08 | HLA-08 | HLA-08 |
|---|---|---|---|---|---|---|
| Station | 489+05.4 | 489+05.4 | 489+05.4 | 489+05.4 | 489+05.4 | 489+05.4 |
| Offset | RT 58.8 | RT 58.8 | RT 58.8 | RT 58.8 | RT 58.8 | RT 58.8 |
| Sample ID | SS-15 | SS-19 | SS-25 | SS-26 | T-1 | SS-28 |
| Depth (ft) | 53.5 | 73.5 | 103.5 | 108.5 | 113.0 | 123.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 99.2 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 99.1 | 97.5 | 100.0 | 98.9 | 100.0 |
| #10 SIEVE (2.00mm) | 100.0 | 93.0 | 93.3 | 99.9 | 97.0 | 100.0 |
| #20 SIEVE (0.85mm) | 99.1 | 77.4 | 78.4 | 99.3 | 87.9 | 99.9 |
| #40" SIEVE (425um) | 92.5 | 22.6 | 44.4 | 98.6 | 58.5 | 99.5 |
| #60 SIEVE (250um) | 53.2 | 10.4 | 16.4 | 98.2 | 28.2 | 96.1 |
| #100 SIEVE (150um) | 12.8 | 6.0 | 6.7 | 97.7 | 19.8 | 84.3 |
| #140 SIEVE (106um) | 8.6 | 4.5 | 5.3 | 97.5 | 17.5 | 68.9 |
| #200 SIEVE (75um) | 6.4 | 3.6 | 4.4 | 97.3 | 16.1 | 51.5 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 93.6 | 95.6 | 93.1 | 2.7 | 82.7 | 48.5 |
| Total Gravel | 0.0 | 0.9 | 2.5 | 0.0 | 1.1 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | NP | NP | 95 | NP | 29 |
| Plastic Limit | NP | NP | NP | 36 | NP | 16 |
| Plasticity Index | NP | NP | NP | 59 | NP | 13 |
| | | | | | | |
| USCS | SP-SM | SP | SP | CH | SM | CL |
| AASHTO | A-3(0) | A-1-b(0) | A-1-b(0) | A-7-5(70) | A-2-4(0) | A-6(3) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-08 | HLA-08 | HLA-08 | HLA-08 | HLA-08 | HLA-08 |
|---|---|---|---|---|---|---|
| Station | 489+05.4 | 489+05.4 | 489+05.4 | 489+05.4 | 489+05.4 | 489+05.4 |
| Offset | RT 58.8 | RT 58.8 | RT 58.8 | RT 58.8 | RT 58.8 | RT 58.8 |
| Sample ID | SS-35 | SS-37 | SS-38 | T-2 | SS-40 | T-3 |
| Depth (ft) | 168.5 | 188.5 | 198.5 | 208.5 | 228.5 | 238.0 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 99.1 | 100.0 |
| #4 SIEVE (4.75mm) | 99.9 | 100.0 | 100.0 | 100.0 | 98.3 | 100.0 |
| #10 SIEVE (2.00mm) | 98.6 | 99.6 | 100.0 | 100.0 | 97.3 | 100.0 |
| #20 SIEVE (0.85mm) | 97.4 | 99.5 | 99.8 | 99.9 | 97.0 | 99.9 |
| #40" SIEVE (425um) | 67.2 | 98.7 | 99.3 | 99.8 | 96.8 | 99.8 |
| #60 SIEVE (250um) | 33.4 | 86.6 | 98.5 | 99.6 | 96.6 | 99.7 |
| #100 SIEVE (150um) | 22.4 | 30.5 | 93.7 | 98.5 | 95.6 | 97.8 |
| #140 SIEVE (106um) | 14.9 | 20.2 | 82.2 | 96.3 | 93.3 | 93.0 |
| #200 SIEVE (75um) | 11.3 | 14.9 | 57.2 | 87.9 | 89.7 | 84.7 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 88.6 | 85.1 | 42.8 | 12.1 | 8.6 | 15.3 |
| Total Gravel | 0.1 | 0.0 | 0.0 | 0.0 | 1.7 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | NP | NP | 29 | 54 | 42 |
| Plastic Limit | NP | NP | NP | 17 | 14 | 11 |
| Plasticity Index | NP | NP | NP | 12 | 40 | 31 |
| | | | | | | |
| USCS | SP-SM | SM | ML | CL | CH | CL |
| AASHTO | A-2-4(0) | A-2-4(0) | A-4(0) | A-6(9) | A-7-6(37) | A-7-6(25) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-09 | HLA-09 | HLA-09 | HLA-09 | HLA-09 | HLA-09 |
|---|---|---|---|---|---|---|
| Station | 491+74.7 | 491+74.7 | 491+74.7 | 491+74.7 | 491+74.7 | 491+74.7 |
| Offset | LT 64.1 | LT 64.1 | LT 64.1 | LT 64.1 | LT 64.1 | LT 64.1 |
| Sample ID | SS-1 | SS-3 | SS-7 | SS-8 | SS-9 | T-1 |
| Depth (ft) | 1.0 | 4.0 | 13.5 | 18.5 | 23.5 | 28.0 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 96.2 | 100.0 | 100.0 | 100.0 | 100.0 | 98.9 |
| #4 SIEVE (4.75mm) | 86.1 | 100.0 | 100.0 | 100.0 | 100.0 | 92.6 |
| #10 SIEVE (2.00mm) | 78.4 | 100.0 | 99.5 | 99.6 | 99.9 | 63.2 |
| #20 SIEVE (0.85mm) | 73.3 | 98.2 | 99.3 | 99.5 | 99.9 | 44.0 |
| #40" SIEVE (425um) | 61.7 | 77.6 | 97.7 | 98.4 | 99.2 | 32.5 |
| #60 SIEVE (250um) | 42.8 | 44.9 | 75.0 | 83.2 | 93.2 | 26.7 |
| #100 SIEVE (150um) | 27.1 | 25.9 | 33.9 | 51.7 | 51.5 | 22.9 |
| #140 SIEVE (106um) | 21.8 | 21.8 | 21.6 | 36.7 | 35.2 | 21.5 |
| #200 SIEVE (75um) | 18.4 | 19.3 | 16.1 | 26.6 | 29.4 | 20.4 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 67.7 | 80.7 | 83.9 | 73.4 | 70.6 | 72.2 |
| Total Gravel | 13.9 | 0.0 | 0.0 | 0.0 | 0.0 | 7.4 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | NP | NP | NP | NP | NP |
| Plastic Limit | NP | NP | NP | NP | NP | NP |
| Plasticity Index | NP | NP | NP | NP | NP | NP |
| | | | | | | |
| USCS | SM | SM | SM | SM | SM | SM |
| AASHTO | A-2-4(0) | A-2-4(0) | A-2-4(0) | A-2-4(0) | A-2-4(0) | A-1-b(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-09 | HLA-09 | HLA-09 | HLA-09 | HLA-09 | HLA-09 |
|---|---|---|---|---|---|---|
| Station | 491+74.7 | 491+74.7 | 491+74.7 | 491+74.7 | 491+74.7 | 491+74.7 |
| Offset | LT 64.1 | LT 64.1 | LT 64.1 | LT 64.1 | LT 64.1 | LT 64.1 |
| Sample ID | SS-11 | SS-15 | SS-18 | SS-21 | SS-24 | T-2 |
| Depth (ft) | 38.5 | 58.5 | 73.5 | 88.5 | 103.5 | 108.0 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 99.3 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 100.0 | 99.7 | 92.0 | 100.0 | 100.0 |
| #10 SIEVE (2.00mm) | 100.0 | 99.9 | 99.3 | 83.1 | 99.9 | 99.3 |
| #20 SIEVE (0.85mm) | 100.0 | 99.2 | 97.7 | 79.7 | 99.6 | 98.8 |
| #40" SIEVE (425um) | 98.8 | 91.7 | 91.2 | 43.0 | 98.9 | 98.4 |
| #60 SIEVE (250um) | 59.3 | 61.0 | 39.6 | 20.9 | 93.2 | 98.0 |
| #100 SIEVE (150um) | 10.8 | 12.1 | 11.3 | 12.2 | 34.2 | 97.7 |
| #140 SIEVE (106um) | 7.1 | 8.7 | 8.2 | 10.1 | 23.3 | 97.5 |
| #200 SIEVE (75um) | 5.6 | 7.7 | 6.3 | 8.8 | 18.9 | 97.2 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 94.4 | 92.3 | 93.4 | 83.2 | 81.1 | 2.8 |
| Total Gravel | 0.0 | 0.0 | 0.3 | 8.0 | 0.0 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | NP | NP | NP | NP | 102 |
| Plastic Limit | NP | NP | NP | NP | NP | 28 |
| Plasticity Index | NP | NP | NP | NP | NP | 74 |
| | | | | | | |
| USCS | SP-SM | SP-SM | SP-SM | SP-SM | SM | CH |
| AASHTO | A-3(0) | A-3(0) | A-3(0) | A-1-b(0) | A-2-4(0) | A-7-6(84) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-09 | HLA-09 | HLA-09 | HLA-09 | HLA-09 | HLA-09 |
|---|---|---|---|---|---|---|
| Station | 491+74.7 | 491+74.7 | 491+74.7 | 491+74.7 | 491+74.7 | 491+74.7 |
| Offset | LT 64.1 | LT 64.1 | LT 64.1 | LT 64.1 | LT 64.1 | LT 64.1 |
| Sample ID | SS-26 | SS-28 | SS-29 | SS-32 | T-4 | SS-34 |
| Depth (ft) | 123.5 | 133.5 | 138.5 | 158.5 | 168.0 | 188.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 99.2 | 98.7 |
| #10 SIEVE (2.00mm) | 100.0 | 99.3 | 100.0 | 99.9 | 98.8 | 94.0 |
| #20 SIEVE (0.85mm) | 99.9 | 98.8 | 100.0 | 99.8 | 97.1 | 84.9 |
| #40" SIEVE (425um) | 99.8 | 97.5 | 98.9 | 96.2 | 83.9 | 52.6 |
| #60 SIEVE (250um) | 76.6 | 85.8 | 76.5 | 80.0 | 52.8 | 27.7 |
| #100 SIEVE (150um) | 24.6 | 28.7 | 22.8 | 73.7 | 39.0 | 16.4 |
| #140 SIEVE (106um) | 9.3 | 15.8 | 13.9 | 72.2 | 36.2 | 12.5 |
| #200 SIEVE (75um) | 6.3 | 11.1 | 10.6 | 70.1 | 34.1 | 10.6 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 93.7 | 88.9 | 89.4 | 29.9 | 65.1 | 88.2 |
| Total Gravel | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 | 1.3 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | NP | NP | 28 | 33 | 33 |
| Plastic Limit | NP | NP | NP | 12 | 18 | 12 |
| Plasticity Index | NP | NP | NP | 16 | 15 | 21 |
| | | | | | | |
| USCS | SP-SM | SP-SM | SP-SM | CL | SC | SW-SC |
| AASHTO | A-3(0) | A-2-4(0) | A-2-4(0) | A-6(8) | A-2-6(1) | A-2-6(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-09 | HLA-09 | HLA-09 | HLA-10 | HLA-10 | HLA-10 |
|---|---|---|---|---|---|---|
| Station | 491+74.7 | 491+74.7 | 491+74.7 | 495+13.0 | 495+13.0 | 495+13.0 |
| Offset | LT 64.1 | LT 64.1 | LT 64.1 | RT 34.9 | RT 34.9 | RT 34.9 |
| Sample ID | T-5 | SS-38 | SS-39 | SS-3 | SS-4 | SS-7 |
| Depth (ft) | 208.5 | 238.5 | 248.5 | 1.5 | 3.0 | 8.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 91.3 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 89.1 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 99.9 | 100.0 | 97.5 | 81.1 | 100.0 | 99.6 |
| #10 SIEVE (2.00mm) | 99.9 | 100.0 | 96.9 | 76.8 | 89.4 | 98.4 |
| #20 SIEVE (0.85mm) | 99.8 | 99.8 | 96.4 | 74.5 | 85.4 | 97.5 |
| #40" SIEVE (425um) | 99.5 | 99.6 | 95.7 | 71.8 | 82.5 | 96.1 |
| #60 SIEVE (250um) | 99.1 | 99.0 | 94.7 | 61.4 | 72.6 | 84.0 |
| #100 SIEVE (150um) | 97.9 | 97.7 | 92.5 | 40.8 | 44.8 | 51.9 |
| #140 SIEVE (106um) | 95.3 | 95.7 | 91.1 | 32.0 | 33.5 | 38.9 |
| #200 SIEVE (75um) | 91.6 | 89.2 | 87.6 | 26.2 | 28.0 | 31.9 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 8.4 | 10.8 | 9.9 | 54.9 | 72.0 | 67.7 |
| Total Gravel | 0.1 | 0.0 | 2.5 | 18.9 | 0.0 | 0.4 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | 34 | 29 | 32 | NP | NP | NP |
| Plastic Limit | 13 | 17 | 14 | NP | NP | NP |
| Plasticity Index | 21 | 12 | 18 | NP | NP | NP |
| | | | | | | |
| USCS | CL | CL | CL | SM | SM | SM |
| AASHTO | A-6(18) | A-6(9) | A-6(14) | A-2-4(0) | A-2-4(0) | A-2-4(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-10 | HLA-10A | HLA-10A | HLA-10A | HLA-10A | HLA-10A |
|---|---|---|---|---|---|---|
| Station | 495+13.0 | 495+05.3 | 495+05.3 | 495+05.3 | 495+05.3 | 495+05.3 |
| Offset | RT 34.9 | RT 39.0 | RT 39.0 | RT 39.0 | RT 39.0 | RT 39.0 |
| Sample ID | SS-8 | SS-1 | SS-3 | SS-8 | SS-10 | SS-13 |
| Depth (ft) | 13.5 | 24.3 | 34.3 | 59.3 | 69.3 | 84.3 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 99.1 | 100.0 | 99.1 | 100.0 | 100.0 | 99.0 |
| #4 SIEVE (4.75mm) | 88.3 | 100.0 | 95.8 | 99.9 | 99.3 | 91.4 |
| #10 SIEVE (2.00mm) | 77.7 | 100.0 | 93.0 | 98.9 | 93.6 | 36.8 |
| #20 SIEVE (0.85mm) | 72.7 | 100.0 | 92.2 | 94.6 | 62.4 | 13.7 |
| #40" SIEVE (425um) | 66.7 | 99.8 | 88.8 | 85.8 | 22.6 | 9.1 |
| #60 SIEVE (250um) | 54.9 | 77.5 | 29.2 | 32.4 | 11.1 | 6.5 |
| #100 SIEVE (150um) | 30.5 | 20.4 | 10.1 | 8.6 | 8.2 | 4.0 |
| #140 SIEVE (106um) | 24.0 | 12.6 | 8.2 | 6.5 | 7.6 | 3.1 |
| #200 SIEVE (75um) | 21.3 | 9.0 | 7.1 | 5.3 | 7.2 | 2.7 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 67.0 | 91.0 | 88.7 | 94.6 | 92.1 | 88.7 |
| Total Gravel | 11.7 | 0.0 | 4.2 | 0.1 | 0.7 | 8.6 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | NP | NP | NP | NP | NP |
| Plastic Limit | NP | NP | NP | NP | NP | NP |
| Plasticity Index | NP | NP | NP | NP | NP | NP |
| | | | | | | |
| USCS | SM | SP-SM | SP-SM | SP-SM | SP-SM | SP |
| AASHTO | A-2-4(0) | A-3(0) | A-3(0) | A-3(0) | A-1-b(0) | A-1-a(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-10A | HLA-10A | HLA-10A | HLA-10A | HLA-10A | HLA-10A |
|---|---|---|---|---|---|---|
| Station | 495+05.3 | 495+05.3 | 495+05.3 | 495+05.3 | 495+05.3 | 495+05.3 |
| Offset | RT 39.0 | RT 39.0 | RT 39.0 | RT 39.0 | RT 39.0 | RT 39.0 |
| Sample ID | SS-15 | T-1 | SS-18 | SS-19 | SS-20 | SS-26 |
| Depth (ft) | 94.3 | 103.8 | 109.3 | 114.3 | 119.3 | 149.3 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 95.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 86.0 | 100.0 | 100.0 | 100.0 | 100.0 | 95.6 |
| #10 SIEVE (2.00mm) | 72.6 | 94.0 | 100.0 | 100.0 | 100.0 | 89.2 |
| #20 SIEVE (0.85mm) | 48.0 | 86.5 | 100.0 | 99.9 | 100.0 | 80.6 |
| #40" SIEVE (425um) | 35.1 | 83.9 | 99.5 | 89.7 | 99.8 | 48.0 |
| #60 SIEVE (250um) | 26.6 | 83.1 | 91.0 | 27.7 | 96.6 | 22.7 |
| #100 SIEVE (150um) | 19.3 | 82.6 | 62.4 | 9.7 | 68.1 | 14.6 |
| #140 SIEVE (106um) | 16.5 | 82.2 | 46.9 | 6.1 | 44.0 | 12.0 |
| #200 SIEVE (75um) | 14.3 | 81.9 | 38.4 | 4.4 | 27.2 | 10.5 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 71.7 | 18.1 | 61.6 | 95.6 | 72.8 | 85.1 |
| Total Gravel | 14.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.4 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | 54 | 82 | NP | NP | NP | NP |
| Plastic Limit | 16 | 34 | NP | NP | NP | NP |
| Plasticity Index | 38 | 48 | NP | NP | NP | NP |
| | | | | | | |
| USCS | SC | CH | SM | SP | SM | SW-SM |
| AASHTO | A-2-7(0) | A-7-5(45) | A-4(0) | A-3(0) | A-2-4(0) | A-1-b(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-10A | HLA-10A | HLA-10A | HLA-10A | | HLA-10A |
|---|---|---|---|---|---|---|
| Station | 495+05.3 | 495+05.3 | 495+05.3 | 495+05.3 | 495+05.3 | 495+05.3 |
| Offset | RT 39.0 | RT 39.0 | RT 39.0 | RT 39.0 | RT 39.0 | RT 39.0 |
| Sample ID | SS-27 | SS-30 | T-2 | T-3 | - | SS-36 |
| Depth (ft) | 159.3 | 189.3 | 198.8 | 218.8 | 228.5 | 249.3 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 96.8 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 94.3 | 94.5 | 100.0 | 100.0 | 100.0 | 100.0 |
| #10 SIEVE (2.00mm) | 90.5 | 93.3 | 100.0 | 100.0 | 99.8 | 100.0 |
| #20 SIEVE (0.85mm) | 86.7 | 93.1 | 99.5 | 100.0 | 99.7 | 99.9 |
| #40" SIEVE (425um) | 76.0 | 89.2 | 99.1 | 99.9 | 99.5 | 99.2 |
| #60 SIEVE (250um) | 69.0 | 66.2 | 98.0 | 99.1 | 98.9 | 93.9 |
| #100 SIEVE (150um) | 66.3 | 36.1 | 93.3 | 94.0 | 91.0 | 79.1 |
| #140 SIEVE (106um) | 64.0 | 27.8 | 86.0 | 87.6 | 73.2 | 72.1 |
| #200 SIEVE (75um) | 60.8 | 24.2 | 74.8 | 77.9 | 59.1 | 63.9 |
| | | | | | | |
| Clay | | | | 18.0 | | |
| Silt | | | | 59.8 | | |
| Total Sand | 33.5 | 70.4 | 25.2 | 22.1 | 40.9 | 36.1 |
| Total Gravel | 5.7 | 5.5 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | 72 | NP | 50 | 30 | 30 | NP |
| Plastic Limit | 21 | NP | 16 | 17 | 18 | NP |
| Plasticity Index | 51 | NP | 34 | 13 | 12 | NP |
| | | | | | | |
| USCS | CH | SM | CH | CL | CL | ML |
| AASHTO | A-7-6(28) | A-2-4(0) | A-7-6(24) | A-6(8) | A-6(4) | A-4(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-12 | HLA-12 | HLA-12 | HLA-12 | HLA-12 | HLA-12 |
|---|---|---|---|---|---|---|
| Station | 541+43.3 | 541+43.3 | 541+43.3 | 541+43.3 | 541+43.3 | 541+43.3 |
| Offset | LT 45.4 | LT 45.4 | LT 45.4 | LT 45.4 | LT 45.4 | LT 45.4 |
| Sample ID | SS-2 | SS-6 | SS-11 | SS-15 | SS-20 | SS-22 |
| Depth (ft) | 1.5 | 8.5 | 33.5 | 53.5 | 78.5 | 88.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 89.4 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 89.4 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 98.7 | 86.6 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 96.5 | 77.3 | 99.9 | 99.8 | 99.3 | 98.1 |
| #10 SIEVE (2.00mm) | 94.1 | 60.0 | 98.9 | 99.2 | 97.5 | 96.1 |
| #20 SIEVE (0.85mm) | 84.4 | 43.5 | 97.1 | 97.5 | 79.7 | 87.1 |
| #40" SIEVE (425um) | 51.5 | 24.5 | 84.6 | 81.1 | 42.9 | 61.5 |
| #60 SIEVE (250um) | 18.7 | 8.9 | 49.7 | 22.3 | 22.7 | 26.6 |
| #100 SIEVE (150um) | 6.4 | 3.6 | 10.7 | 8.0 | 9.9 | 10.1 |
| #140 SIEVE (106um) | 4.7 | 2.9 | 5.4 | 5.8 | 6.6 | 7.1 |
| #200 SIEVE (75um) | 3.9 | 2.5 | 3.8 | 4.5 | 4.9 | 5.4 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 92.6 | 74.8 | 96.1 | 95.3 | 94.5 | 92.6 |
| Total Gravel | 3.5 | 22.7 | 0.1 | 0.2 | 0.7 | 1.9 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | NP | NP | NP | NP | NP |
| Plastic Limit | NP | NP | NP | NP | NP | NP |
| Plasticity Index | NP | NP | NP | NP | NP | NP |
| | | | | | | |
| USCS | SP | SP | SP | SP | SP | SP-SM |
| AASHTO | A-3(0) | A-1-b(0) | A-3(0) | A-3(0) | A-1-b(0) | A-3(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-12 | HLA-12 | HLA-12 | HLA-12 | HLA-12 | HLA-12 |
|---|---|---|---|---|---|---|
| Station | 541+43.3 | 541+43.3 | 541+43.3 | 541+43.3 | 541+43.3 | 541+43.3 |
| Offset | LT 45.4 | LT 45.4 | LT 45.4 | LT 45.4 | LT 45.4 | LT 45.4 |
| Sample ID | T-1 | SS-26 | SS-31 | SS-33 | SS-34 | T-2 |
| Depth (ft) | 108.0 | 113.5 | 138.5 | 148.5 | 158.5 | 188.0 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 99.7 | 99.5 | 100.0 | 100.0 | 100.0 |
| #10 SIEVE (2.00mm) | 100.0 | 98.8 | 98.8 | 99.9 | 98.6 | 100.0 |
| #20 SIEVE (0.85mm) | 99.9 | 98.4 | 95.2 | 99.8 | 97.0 | 99.9 |
| #40" SIEVE (425um) | 99.5 | 97.7 | 69.9 | 99.0 | 91.9 | 99.8 |
| #60 SIEVE (250um) | 99.0 | 96.3 | 31.8 | 97.8 | 86.5 | 99.7 |
| #100 SIEVE (150um) | 98.0 | 89.0 | 11.1 | 96.9 | 81.1 | 98.6 |
| #140 SIEVE (106um) | 97.0 | 71.8 | 8.1 | 95.6 | 74.9 | 95.6 |
| #200 SIEVE (75um) | 96.2 | 50.1 | 6.3 | 92.6 | 66.1 | 89.0 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 3.8 | 49.6 | 93.2 | 7.4 | 33.9 | 11.0 |
| Total Gravel | 0.0 | 0.3 | 0.5 | 0.0 | 0.0 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | 97 | NP | NP | 39 | 46 | 29 |
| Plastic Limit | 26 | NP | NP | 15 | 15 | 15 |
| Plasticity Index | 71 | NP | NP | 24 | 31 | 14 |
| | | | | | | |
| USCS | CH | ML | SP-SM | CL | CL | CL |
| AASHTO | A-7-6(79) | A-4(0) | A-3(0) | A-6(22) | A-7-6(18) | A-6(11) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-12 | HLA-12 | HLA-12 | HLA-12 | HLA-13 | HLA-13 |
|---|---|---|---|---|---|---|
| Station | 541+43.3 | 541+43.3 | 541+43.3 | 541+43.3 | 544+74.9 | 544+74.9 |
| Offset | LT 45.4 | LT 45.4 | LT 45.4 | LT 45.4 | RT 27.7 | RT 27.7 |
| Sample ID | SS-38 | SS-40 | SS-41 | SS-42 | SS-1 | SS-3 |
| Depth (ft) | 208.5 | 228.5 | 238.5 | 248.5 | 1.0 | 4.0 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 99.3 | 96.9 |
| #10 SIEVE (2.00mm) | 100.0 | 100.0 | 100.0 | 100.0 | 97.6 | 94.5 |
| #20 SIEVE (0.85mm) | 99.4 | 99.2 | 99.9 | 99.9 | 90.6 | 87.1 |
| #40" SIEVE (425um) | 98.2 | 98.1 | 99.0 | 98.8 | 57.5 | 55.4 |
| #60 SIEVE (250um) | 94.9 | 94.7 | 91.0 | 87.9 | 17.5 | 18.0 |
| #100 SIEVE (150um) | 79.5 | 87.5 | 65.1 | 57.2 | 5.1 | 5.3 |
| #140 SIEVE (106um) | 64.2 | 82.3 | 45.9 | 38.9 | 3.7 | 3.7 |
| #200 SIEVE (75um) | 51.3 | 74.0 | 31.0 | 23.3 | 2.8 | 3.0 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 48.7 | 26.0 | 69.0 | 76.7 | 96.5 | 93.9 |
| Total Gravel | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 3.1 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | 32 | 34 | NP | NP | NP | NP |
| Plastic Limit | 16 | 19 | NP | NP | NP | NP |
| Plasticity Index | 16 | 15 | NP | NP | NP | NP |
| | | | | | | |
| USCS | CL | CL | SM | SM | SP | SP |
| AASHTO | A-6(5) | A-6(10) | A-2-4(0) | A-2-4(0) | A-3(0) | A-3(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-13 | HLA-13 | HLA-13 | HLA-13 | HLA-13 | HLA-13 |
|---|---|---|---|---|---|---|
| Station | 544+74.9 | 544+74.9 | 544+74.9 | 544+74.9 | 544+74.9 | 544+74.9 |
| Offset | RT 27.7 | RT 27.7 | RT 27.7 | RT 27.7 | RT 27.7 | RT 27.7 |
| Sample ID | SS-7 | T-1 | SS-10 | SS-11 | SS-13 | SS-14 |
| Depth (ft) | 13.5 | 18.0 | 33.5 | 38.5 | 48.5 | 53.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | | 100.0 | 99.8 | 100.0 | 100.0 | 100.0 |
| #10 SIEVE (2.00mm) | | 100.0 | 99.8 | 99.9 | 100.0 | 100.0 |
| #20 SIEVE (0.85mm) | | 99.9 | 98.9 | 99.1 | 99.5 | 99.9 |
| #40" SIEVE (425um) | | 98.4 | 88.4 | 89.1 | 92.4 | 98.9 |
| #60 SIEVE (250um) | | 92.5 | 52.1 | 51.8 | 71.2 | 95.1 |
| #100 SIEVE (150um) | | 77.1 | 12.4 | 13.2 | 51.6 | 88.1 |
| #140 SIEVE (106um) | | 55.4 | 6.6 | 6.9 | 43.6 | 75.5 |
| #200 SIEVE (75um) | 43.9 | 25.3 | 5.2 | 5.5 | 34.3 | 53.2 |
| | | | | | | |
| Clay | | 7.4 | | | | |
| Silt | | 17.9 | | | | |
| Total Sand | | 74.7 | 94.6 | 94.5 | 65.7 | 46.8 |
| Total Gravel | | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | NP | NP | NP | NP | 24 |
| Plastic Limit | NP | NP | NP | NP | NP | 17 |
| Plasticity Index | NP | NP | NP | NP | NP | 7 |
| | | | | | | |
| USCS | SM | SM | SP-SM | SP-SM | SM | CL-ML |
| AASHTO | A-4(0) | A-2-4(0) | A-3(0) | A-3(0) | A-2-4(0) | A-4(1) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-13 | HLA-13 | HLA-13 | HLA-13 | HLA-13 | HLA-13 |
|---|---|---|---|---|---|---|
| Station | 544+74.9 | 544+74.9 | 544+74.9 | 544+74.9 | 544+74.9 | 544+74.9 |
| Offset | RT 27.7 | RT 27.7 | RT 27.7 | RT 27.7 | RT 27.7 | RT 27.7 |
| Sample ID | SS-16 | SS-18 | SS-22 | SS-23 | SS-25 | SS-29 |
| Depth (ft) | 63.5 | 73.5 | 93.5 | 98.5 | 108.5 | 128.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 99.2 | 100.0 | | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 99.7 | 99.2 | 99.6 | | 100.0 | 100.0 |
| #10 SIEVE (2.00mm) | 99.5 | 99.2 | 99.1 | | 100.0 | 100.0 |
| #20 SIEVE (0.85mm) | 98.7 | 98.4 | 95.3 | | 100.0 | 99.8 |
| #40" SIEVE (425um) | 87.0 | 75.3 | 60.0 | | 99.8 | 93.1 |
| #60 SIEVE (250um) | 35.6 | 31.1 | 23.0 | | 92.5 | 43.7 |
| #100 SIEVE (150um) | 10.1 | 16.5 | 7.7 | | 53.5 | 14.2 |
| #140 SIEVE (106um) | 7.4 | 12.3 | 5.3 | | 29.7 | 9.5 |
| #200 SIEVE (75um) | 5.8 | 9.1 | 3.9 | 89.4 | 18.8 | 7.0 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 93.9 | 90.1 | 95.7 | | 81.2 | 93.0 |
| Total Gravel | 0.3 | 0.8 | 0.4 | | 0.0 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | NP | NP | 68 | NP | NP |
| Plastic Limit | NP | NP | NP | 30 | NP | NP |
| Plasticity Index | NP | NP | NP | 38 | NP | NP |
| | | | | | | |
| USCS | SP-SM | SP-SM | SP | CH | SM | SP-SM |
| AASHTO | A-3(0) | A-3(0) | A-3(0) | A-7-5(39) | A-2-4(0) | A-3(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-13 | HLA-13 | HLA-13 | HLA-13 | HLA-13 | HLA-13 |
|---|---|---|---|---|---|---|
| Station | 544+74.9 | 544+74.9 | 544+74.9 | 544+74.9 | 544+74.9 | 544+74.9 |
| Offset | RT 27.7 | RT 27.7 | RT 27.7 | RT 27.7 | RT 27.7 | RT 27.7 |
| Sample ID | SS-32 | T-2 | SS-34 | SS-35 | SS-36 | SS-37 |
| Depth (ft) | 143.5 | 158.0 | 168.5 | 178.5 | 188.5 | 198.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 100.0 | 100.0 | 100.0 | | 100.0 |
| #10 SIEVE (2.00mm) | 100.0 | 100.0 | 100.0 | 99.7 | | 100.0 |
| #20 SIEVE (0.85mm) | 99.8 | 100.0 | 99.9 | 99.2 | | 99.2 |
| #40" SIEVE (425um) | 99.1 | 99.7 | 99.6 | 97.9 | | 96.0 |
| #60 SIEVE (250um) | 82.1 | 99.1 | 97.5 | 92.8 | | 92.8 |
| #100 SIEVE (150um) | 47.1 | 96.2 | 77.3 | 78.3 | | 83.6 |
| #140 SIEVE (106um) | 34.8 | 91.4 | 59.1 | 64.0 | | 76.0 |
| #200 SIEVE (75um) | 27.2 | 83.1 | 48.6 | 56.0 | 93.9 | 68.2 |
| | | | | | | |
| Clay | | 42.3 | | | | |
| Silt | | 40.8 | | | | |
| Total Sand | 72.8 | 16.9 | 51.4 | 44.0 | | 31.8 |
| Total Gravel | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | 41 | 25 | 29 | 34 | 28 |
| Plastic Limit | NP | 16 | 12 | 11 | 14 | 14 |
| Plasticity Index | NP | 25 | 13 | 18 | 20 | 14 |
| | | | | | | |
| USCS | SM | CL | SC | CL | CL | CL |
| AASHTO | A-2-4(0) | A-7-6(20) | A-6(3) | A-6(6) | A-6(18) | A-6(7) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-13 | HLA-13 | HLA-13 | HLA-14 | HLA-14 | HLA-14 |
|---|---|---|---|---|---|---|
| Station | 544+74.9 | 544+74.9 | 544+74.9 | 547+39.7 | 547+39.7 | 547+39.7 |
| Offset | RT 27.7 | RT 27.7 | RT 27.7 | LT 40.3 | LT 40.3 | LT 40.3 |
| Sample ID | SS-38 | SS-40 | SS-42 | SS-1 | SS-2 | SS-4 |
| Depth (ft) | 208.5 | 228.5 | 248.5 | 1.0 | 2.5 | 5.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | | 100.0 | 97.7 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | | 100.0 | 94.2 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | | 100.0 | 91.7 | 99.4 | 96.0 |
| #10 SIEVE (2.00mm) | 100.0 | | 100.0 | 89.5 | 96.3 | 91.0 |
| #20 SIEVE (0.85mm) | 99.9 | | 99.9 | 82.7 | 87.3 | 77.0 |
| #40" SIEVE (425um) | 99.5 | | 99.8 | 59.2 | 57.9 | 40.0 |
| #60 SIEVE (250um) | 97.4 | | 87.6 | 28.1 | 18.8 | 12.4 |
| #100 SIEVE (150um) | 51.8 | | 56.5 | 12.4 | 11.7 | 4.5 |
| #140 SIEVE (106um) | 27.3 | | 39.6 | 9.6 | 8.6 | 3.5 |
| #200 SIEVE (75um) | 20.5 | 97.1 | 24.4 | 8.0 | 6.5 | 2.9 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 79.5 | | 75.6 | 83.7 | 92.9 | 93.1 |
| Total Gravel | 0.0 | | 0.0 | 8.3 | 0.6 | 4.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | 37 | NP | NP | NP | NP |
| Plastic Limit | NP | 20 | NP | NP | NP | NP |
| Plasticity Index | NP | 17 | NP | NP | NP | NP |
| | | | | | | |
| USCS | SM | CL | SM | SP-SM | SP-SM | SP |
| AASHTO | A-2-4(0) | A-6(17) | A-2-4(0) | A-3(0) | A-3(0) | A-1-b(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-14 | HLA-14 | HLA-14 | HLA-14 | HLA-14 | HLA-14 |
|---|---|---|---|---|---|---|
| Station | 547+39.7 | 547+39.7 | 547+39.7 | 547+39.7 | 547+39.7 | 547+39.7 |
| Offset | LT 40.3 | LT 40.3 | LT 40.3 | LT 40.3 | LT 40.3 | LT 40.3 |
| Sample ID | SS-6 | SS-8 | SS-10 | SS-13 | SS-15 | SS-16 |
| Depth (ft) | 8.5 | 18.5 | 28.5 | 43.5 | 53.5 | 58.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 98.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 91.2 | 100.0 | 100.0 | 99.8 | 100.0 | 100.0 |
| #10 SIEVE (2.00mm) | 87.2 | 99.0 | 99.2 | 99.5 | 100.0 | 100.0 |
| #20 SIEVE (0.85mm) | 78.8 | 98.8 | 98.8 | 99.1 | 99.0 | 99.9 |
| #40" SIEVE (425um) | 58.5 | 97.4 | 91.1 | 89.6 | 89.4 | 99.7 |
| #60 SIEVE (250um) | 27.4 | 91.6 | 56.1 | 47.3 | 65.2 | 99.3 |
| #100 SIEVE (150um) | 5.3 | 80.0 | 12.6 | 13.0 | 46.1 | 95.5 |
| #140 SIEVE (106um) | 3.5 | 63.1 | 6.6 | 8.8 | 36.4 | 83.9 |
| #200 SIEVE (75um) | 2.1 | 47.2 | 4.6 | 8.6 | 27.8 | 62.4 |
| | | | | | | |
| Clay | | | | | | 23.3 |
| Silt | | | | | | 39.1 |
| Total Sand | 89.2 | 52.8 | 95.4 | 91.2 | 72.2 | 37.6 |
| Total Gravel | 8.8 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | 26 | NP | NP | NP | 25 |
| Plastic Limit | NP | 21 | NP | NP | NP | 19 |
| Plasticity Index | NP | 5 | NP | NP | NP | 6 |
| | | | | | | |
| USCS | SP | SC-SM | SP | SP-SM | SM | CL-ML |
| AASHTO | A-3(0) | A-4(0) | A-3(0) | A-3(0) | A-2-4(0) | A-4(1) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-14 | HLA-14 | HLA-14 | HLA-14 | HLA-14 | HLA-14 |
|---|---|---|---|---|---|---|
| Station | 547+39.7 | 547+39.7 | 547+39.7 | 547+39.7 | 547+39.7 | 547+39.7 |
| Offset | LT 40.3 | LT 40.3 | LT 40.3 | LT 40.3 | LT 40.3 | LT 40.3 |
| Sample ID | SS-17 | T-1 | SS-19 | SS-21 | SS-23 | SS-29 |
| Depth (ft) | 63.5 | 68.0 | 78.5 | 88.5 | 98.5 | 128.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 99.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 100.0 | 99.2 | 94.4 | 98.9 | 100.0 |
| #10 SIEVE (2.00mm) | 100.0 | 100.0 | 98.3 | 90.3 | 97.9 | 99.5 |
| #20 SIEVE (0.85mm) | 99.9 | 99.9 | 97.4 | 82.7 | 89.2 | 97.4 |
| #40" SIEVE (425um) | 99.7 | 98.6 | 77.8 | 55.6 | 60.9 | 75.2 |
| #60 SIEVE (250um) | 99.4 | 92.5 | 26.3 | 22.0 | 20.9 | 18.6 |
| #100 SIEVE (150um) | 98.0 | 78.3 | 9.3 | 8.5 | 9.4 | 8.4 |
| #140 SIEVE (106um) | 91.8 | 68.8 | 6.0 | 6.1 | 6.8 | 6.3 |
| #200 SIEVE (75um) | 76.6 | 56.1 | 4.3 | 4.4 | 4.9 | 4.8 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 23.4 | 43.9 | 94.8 | 90.0 | 94.0 | 95.2 |
| Total Gravel | 0.0 | 0.0 | 0.8 | 5.6 | 1.1 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | 26 | 24 | NP | NP | NP | NP |
| Plastic Limit | 20 | 15 | NP | NP | NP | NP |
| Plasticity Index | 6 | 9 | NP | NP | NP | NP |
| | | | | | | |
| USCS | CL-ML | CL | SP | SP | SP | SP |
| AASHTO | A-4(3) | A-4(2) | A-3(0) | A-3(0) | A-3(0) | A-3(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-14 | HLA-14 | HLA-14 | HLA-14 | HLA-14 | HLA-14 |
|---|---|---|---|---|---|---|
| Station | 547+39.7 | 547+39.7 | 547+39.7 | 547+39.7 | 547+39.7 | 547+39.7 |
| Offset | LT 40.3 | LT 40.3 | LT 40.3 | LT 40.3 | LT 40.3 | LT 40.3 |
| Sample ID | SS-32 | SS-33 | SS-34 | SS-35 | SS-37 | T-2 |
| Depth (ft) | 143.5 | 148.5 | 158.5 | 168.5 | 188.5 | 208.0 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | | | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | | | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | | | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | | | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | | | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | | | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | | | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | | | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 100.0 | | | 100.0 | 100.0 |
| #10 SIEVE (2.00mm) | 99.9 | 100.0 | | | 100.0 | 99.7 |
| #20 SIEVE (0.85mm) | 99.3 | 98.7 | | | 99.8 | 99.4 |
| #40" SIEVE (425um) | 96.0 | 93.1 | | | 99.1 | 99.1 |
| #60 SIEVE (250um) | 56.3 | 91.3 | | | 94.7 | 98.9 |
| #100 SIEVE (150um) | 19.0 | 17.6 | | | 71.9 | 90.7 |
| #140 SIEVE (106um) | 13.2 | 13.0 | | | 57.6 | 61.9 |
| #200 SIEVE (75um) | 10.0 | 10.4 | 85.2 | 51.5 | 46.8 | 41.1 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 90.0 | 89.6 | | | 53.2 | 58.9 |
| Total Gravel | 0.0 | 0.0 | | | 0.0 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | NP | 42 | 27 | 22 | 29 |
| Plastic Limit | NP | NP | 15 | 11 | 14 | 17 |
| Plasticity Index | NP | NP | 27 | 16 | 8 | 12 |
| | | | | | | |
| USCS | SP-SM | SP-SM | CL | CL | SC | SC |
| AASHTO | A-3(0) | A-3(0) | A-7-6(22) | A-6(5) | A-4(1) | A-6(1) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-14 | HLA-14 | HLA-14 | HLA-15 | HLA-15 | HLA-15 |
|---|---|---|---|---|---|---|
| Station | 547+39.7 | 547+39.7 | 547+39.7 | 550+95.1 | 550+95.1 | 550+95.1 |
| Offset | LT 40.3 | LT 40.3 | LT 40.3 | RT 49.7 | RT 49.7 | RT 49.7 |
| Sample ID | SS-40 | SS-41 | SS-42 | SS-1 | SS-3 | SS-5 |
| Depth (ft) | 228.5 | 238.5 | 248.5 | 1.1 | 4.1 | 7.1 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | | 100.0 | 100.0 | 96.7 | 97.7 | 100.0 |
| #10 SIEVE (2.00mm) | | 100.0 | 100.0 | 91.5 | 95.3 | 100.0 |
| #20 SIEVE (0.85mm) | | 99.7 | 99.8 | 78.8 | 90.9 | 97.7 |
| #40" SIEVE (425um) | | 98.9 | 98.2 | 49.1 | 70.3 | 73.8 |
| #60 SIEVE (250um) | | 93.1 | 87.8 | 23.0 | 36.7 | 36.3 |
| #100 SIEVE (150um) | | 78.2 | 60.1 | 14.3 | 17.1 | 17.1 |
| #140 SIEVE (106um) | | 65.6 | 43.7 | 12.2 | 13.6 | 14.0 |
| #200 SIEVE (75um) | 95.0 | 54.6 | 28.7 | 10.8 | 11.6 | 12.0 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | | 45.4 | 71.3 | 85.9 | 86.1 | 88.0 |
| Total Gravel | | 0.0 | 0.0 | 3.3 | 2.3 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | 45 | 29 | NP | NP | NP | NP |
| Plastic Limit | 18 | 12 | NP | NP | NP | NP |
| Plasticity Index | 27 | 17 | NP | NP | NP | NP |
| | | | | | | |
| USCS | CL | CL | SM | SW-SM | SW-SM | SM |
| AASHTO | A-7-6(27) | A-6(6) | A-2-4(0) | A-1-b(0) | A-2-4(0) | A-2-4(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-15 | HLA-15 | HLA-15 | HLA-15 | HLA-15 | HLA-15 |
|---|---|---|---|---|---|---|
| Station | 550+95.1 | 550+95.1 | 550+95.1 | 550+95.1 | 550+95.1 | 550+95.1 |
| Offset | RT 49.7 | RT 49.7 | RT 49.7 | RT 49.7 | RT 49.7 | RT 49.7 |
| Sample ID | SS-8 | SS-11 | SS-14 | SS-15 | SS-19 | SS-21 |
| Depth (ft) | 18.5 | 33.5 | 48.5 | 53.5 | 73.5 | 83.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 99.1 |
| #10 SIEVE (2.00mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 99.1 |
| #20 SIEVE (0.85mm) | 99.8 | 99.8 | 99.6 | 99.6 | 95.6 | 93.3 |
| #40" SIEVE (425um) | 96.8 | 95.0 | 95.0 | 84.6 | 42.0 | 69.3 |
| #60 SIEVE (250um) | 75.3 | 63.4 | 85.1 | 49.9 | 17.1 | 21.0 |
| #100 SIEVE (150um) | 41.4 | 17.0 | 77.7 | 34.5 | 8.2 | 8.8 |
| #140 SIEVE (106um) | 30.4 | 8.1 | 73.1 | 26.5 | 6.3 | 6.7 |
| #200 SIEVE (75um) | 21.8 | 6.2 | 67.1 | 16.8 | 5.2 | 5.8 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 78.2 | 93.8 | 32.9 | 83.2 | 94.8 | 93.4 |
| Total Gravel | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | NP | 26 | 31 | NP | NP |
| Plastic Limit | NP | NP | 11 | 13 | NP | NP |
| Plasticity Index | NP | NP | 15 | 18 | NP | NP |
| | | | | | | |
| USCS | SM | SP-SM | CL | SC | SP-SM | SP-SM |
| AASHTO | A-2-4(0) | A-3(0) | A-6(7) | A-2-6(0) | A-1-b(0) | A-3(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-15 | HLA-15 | HLA-15 | HLA-15 | HLA-15 | HLA-15 |
|---|---|---|---|---|---|---|
| Station | 550+95.1 | 550+95.1 | 550+95.1 | 550+95.1 | 550+95.1 | 550+95.1 |
| Offset | RT 49.7 | RT 49.7 | RT 49.7 | RT 49.7 | RT 49.7 | RT 49.7 |
| Sample ID | SS-24 | T-1 | SS-27 | SS-31 | T-2 | SS-34 |
| Depth (ft) | 98.5 | 103.0 | 118.5 | 138.5 | 143.0 | 168.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 99.1 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 100.0 | 82.7 | 100.0 | 100.0 | 100.0 |
| #10 SIEVE (2.00mm) | 100.0 | 96.8 | 75.5 | 99.8 | 99.8 | 99.9 |
| #20 SIEVE (0.85mm) | 99.9 | 83.4 | 72.6 | 99.7 | 99.7 | 99.7 |
| #40" SIEVE (425um) | 99.7 | 42.9 | 52.1 | 99.3 | 99.3 | 99.0 |
| #60 SIEVE (250um) | 99.5 | 16.8 | 17.6 | 98.6 | 99.0 | 96.1 |
| #100 SIEVE (150um) | 99.3 | 7.9 | 7.9 | 94.6 | 98.1 | 84.2 |
| #140 SIEVE (106um) | 99.3 | 6.0 | 6.0 | 89.7 | 97.6 | 72.9 |
| #200 SIEVE (75um) | 99.3 | 5.0 | 5.1 | 84.1 | 97.0 | 63.5 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 0.7 | 95.0 | 77.7 | 15.9 | 3.0 | 36.5 |
| Total Gravel | 0.0 | 0.0 | 17.3 | 0.0 | 0.0 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | 84 | NP | 43 | 46 | 28 |
| Plastic Limit | NP | 23 | NP | 13 | 15 | 13 |
| Plasticity Index | NP | 61 | NP | 30 | 31 | 15 |
| | | | | | | |
| USCS | ML | SP | SP-SM | CL | CL | CL |
| AASHTO | A-4(0) | A-2-7(0) | A-3(0) | A-7-6(24) | A-7-6(31) | A-6(7) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-15 | HLA-15 | HLA-15 | HLA-15 | HLA-16 | HLA-16 |
|---|---|---|---|---|---|---|
| Station | 550+95.1 | 550+95.1 | 550+95.1 | 550+95.1 | 552+74.5 | 552+74.5 |
| Offset | RT 49.7 | RT 49.7 | RT 49.7 | RT 49.7 | LT 30.2 | LT 30.2 |
| Sample ID | SS-37 | SS-38 | T-3 | SS-41 | SS-2 | SS-4 |
| Depth (ft) | 198.5 | 208.5 | 228.0 | 248.5 | 1.5 | 4.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 99.8 |
| #10 SIEVE (2.00mm) | 99.8 | 99.0 | 99.7 | 99.7 | 99.2 | 99.4 |
| #20 SIEVE (0.85mm) | 99.8 | 96.1 | 99.5 | 99.2 | 94.8 | 98.0 |
| #40" SIEVE (425um) | 99.3 | 91.7 | 99.1 | 96.8 | 75.9 | 89.7 |
| #60 SIEVE (250um) | 98.0 | 86.2 | 96.5 | 85.8 | 46.7 | 67.6 |
| #100 SIEVE (150um) | 93.9 | 61.4 | 88.1 | 56.2 | 26.3 | 41.7 |
| #140 SIEVE (106um) | 89.1 | 34.2 | 81.3 | 40.8 | 21.9 | 34.7 |
| #200 SIEVE (75um) | 83.5 | 22.2 | 72.6 | 28.5 | 18.7 | 28.4 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 16.5 | 77.8 | 27.4 | 71.4 | 81.3 | 71.3 |
| Total Gravel | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | 41 | NP | 27 | NP | NP | NP |
| Plastic Limit | 14 | NP | 16 | NP | NP | NP |
| Plasticity Index | 27 | NP | 11 | NP | NP | NP |
| | | | | | | |
| USCS | CL | SM | CL | SM | SM | SM |
| AASHTO | A-7-6(22) | A-2-4(0) | A-6(6) | A-2-4(0) | A-2-4(0) | A-2-4(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-16 | HLA-16 | HLA-16 | HLA-16 | HLA-16 | HLA-16 |
|---|---|---|---|---|---|---|
| Station | 552+74.5 | 552+74.5 | 552+74.5 | 552+74.5 | 552+74.5 | 552+74.5 |
| Offset | LT 30.2 | LT 30.2 | LT 30.2 | LT 30.2 | LT 30.2 | LT 30.2 |
| Sample ID | SS-5 | SS-6 | SS-10 | SS-16 | SS-19 | SS-23 |
| Depth (ft) | 6.0 | 8.5 | 28.5 | 63.5 | 78.5 | 98.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 99.9 | 100.0 | 100.0 | 99.6 | 98.5 |
| #10 SIEVE (2.00mm) | 99.9 | 99.6 | 99.8 | 99.3 | 99.3 | 98.1 |
| #20 SIEVE (0.85mm) | 96.9 | 99.3 | 99.7 | 97.4 | 98.5 | 96.4 |
| #40" SIEVE (425um) | 93.5 | 98.8 | 97.5 | 74.4 | 90.6 | 93.4 |
| #60 SIEVE (250um) | 89.7 | 96.6 | 67.3 | 24.2 | 28.7 | 91.1 |
| #100 SIEVE (150um) | 86.0 | 88.7 | 24.9 | 6.3 | 10.1 | 90.1 |
| #140 SIEVE (106um) | 84.1 | 71.0 | 14.8 | 3.9 | 7.4 | 89.7 |
| #200 SIEVE (75um) | 82.4 | 47.2 | 11.4 | 2.9 | 5.8 | 89.5 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 17.6 | 52.7 | 88.6 | 97.1 | 93.8 | 9.0 |
| Total Gravel | 0.0 | 0.1 | 0.0 | 0.0 | 0.4 | 1.5 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | 68 | NP | NP | NP | NP | 75 |
| Plastic Limit | 33 | NP | NP | NP | NP | 24 |
| Plasticity Index | 35 | NP | NP | NP | NP | 51 |
| | | | | | | |
| USCS | MH | SM | SP-SM | SP | SP-SM | CH |
| AASHTO | A-7-5(33) | A-4(0) | A-2-4(0) | A-3(0) | A-3(0) | A-7-6(51) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-16 | HLA-16 | HLA-16 | HLA-16 | HLA-16 | HLA-16 |
|---|---|---|---|---|---|---|
| Station | 552+74.5 | 552+74.5 | 552+74.5 | 552+74.5 | 552+74.5 | 552+74.5 |
| Offset | LT 30.2 | LT 30.2 | LT 30.2 | LT 30.2 | LT 30.2 | LT 30.2 |
| Sample ID | T-2 | SS-26 | SS-28 | T-3 | SS-30 | SS-32 |
| Depth (ft) | 103.0 | 118.5 | 128.5 | 138.0 | 143.5 | 158.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 98.5 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 85.3 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 61.4 | 99.4 | 100.0 | 100.0 | 100.0 |
| #10 SIEVE (2.00mm) | 100.0 | 57.0 | 99.4 | 100.0 | 100.0 | 100.0 |
| #20 SIEVE (0.85mm) | 100.0 | 48.0 | 99.2 | 100.0 | 99.8 | 99.0 |
| #40" SIEVE (425um) | 99.3 | 28.1 | 97.0 | 99.9 | 99.0 | 97.1 |
| #60 SIEVE (250um) | 85.8 | 10.1 | 28.7 | 99.7 | 95.4 | 92.2 |
| #100 SIEVE (150um) | 56.8 | 6.0 | 8.3 | 99.0 | 85.3 | 74.8 |
| #140 SIEVE (106um) | 42.2 | 4.6 | 6.3 | 96.4 | 57.0 | 65.8 |
| #200 SIEVE (75um) | 32.3 | 3.5 | 5.1 | 92.1 | 33.6 | 60.1 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 67.7 | 57.9 | 94.3 | 7.9 | 66.4 | 39.9 |
| Total Gravel | 0.0 | 38.6 | 0.6 | 0.0 | 0.0 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | 30 | NP | NP | 47 | NP | 33 |
| Plastic Limit | 14 | NP | NP | 18 | NP | 11 |
| Plasticity Index | 16 | NP | NP | 29 | NP | 22 |
| | | | | | | |
| USCS | SC | SP | SP-SM | CL | SM | CL |
| AASHTO | A-2-6(1) | A-1-b(0) | A-3(0) | A-7-6(28) | A-2-4(0) | A-6(10) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-16 | HLA-16 | HLA-16 | HLA-16 | HLA-16 | HLA-17 |
|---|---|---|---|---|---|---|
| Station | 552+74.5 | 552+74.5 | 552+74.5 | 552+74.5 | 552+74.5 | 555+44.8 |
| Offset | LT 30.2 | LT 30.2 | LT 30.2 | LT 30.2 | LT 30.2 | RT 35.2 |
| Sample ID | SS-33 | T-4 | SS-37 | SS-39 | SS-40 | SS-2 |
| Depth (ft) | 168.5 | 198.0 | 218.5 | 238.5 | 248.5 | 1.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 98.2 | 99.7 |
| #10 SIEVE (2.00mm) | 100.0 | 100.0 | 100.0 | 100.0 | 97.0 | 98.2 |
| #20 SIEVE (0.85mm) | 99.9 | 98.5 | 99.9 | 99.6 | 94.9 | 92.6 |
| #40" SIEVE (425um) | 99.4 | 94.7 | 99.5 | 98.1 | 87.3 | 70.8 |
| #60 SIEVE (250um) | 97.1 | 86.6 | 94.9 | 86.5 | 64.5 | 33.4 |
| #100 SIEVE (150um) | 80.6 | 75.1 | 93.7 | 56.5 | 37.0 | 8.7 |
| #140 SIEVE (106um) | 62.4 | 72.5 | 92.6 | 39.6 | 28.0 | 5.9 |
| #200 SIEVE (75um) | 53.0 | 66.1 | 91.4 | 23.6 | 22.7 | 4.7 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 47.0 | 33.9 | 8.6 | 76.4 | 75.5 | 95.0 |
| Total Gravel | 0.0 | 0.0 | 0.0 | 0.0 | 1.8 | 0.3 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | 30 | 37 | 30 | NP | NP | NP |
| Plastic Limit | 11 | 11 | 16 | NP | NP | NP |
| Plasticity Index | 19 | 26 | 14 | NP | NP | NP |
| | | | | | | |
| USCS | CL | CL | CL | SM | SM | SP |
| AASHTO | A-6(6) | A-6(14) | A-6(11) | A-2-4(0) | A-2-4(0) | A-3(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-17 | HLA-17 | HLA-17 | HLA-17 | HLA-17 | HLA-17 |
|---|---|---|---|---|---|---|
| Station | 555+44.8 | 555+44.8 | 555+44.8 | 555+44.8 | 555+44.8 | 555+44.8 |
| Offset | RT 35.2 | RT 35.2 | RT 35.2 | RT 35.2 | RT 35.2 | RT 35.2 |
| Sample ID | SS-6 | T-1 | SS-12 | SS-17 | SS-19 | T-2 |
| Depth (ft) | 8.5 | 33.0 | 43.5 | 68.5 | 78.5 | 96.0 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 100.0 | 99.1 | 94.0 | 97.3 | 100.0 |
| #10 SIEVE (2.00mm) | 99.6 | 99.7 | 98.0 | 79.1 | 79.0 | 100.0 |
| #20 SIEVE (0.85mm) | 99.4 | 99.5 | 94.8 | 71.6 | 52.7 | 99.6 |
| #40" SIEVE (425um) | 98.6 | 98.9 | 60.3 | 41.9 | 30.9 | 97.7 |
| #60 SIEVE (250um) | 87.9 | 96.4 | 28.3 | 20.5 | 19.8 | 90.0 |
| #100 SIEVE (150um) | 61.7 | 92.6 | 14.4 | 13.8 | 14.3 | 80.6 |
| #140 SIEVE (106um) | 45.3 | 86.8 | 10.9 | 12.2 | 13.1 | 76.8 |
| #200 SIEVE (75um) | 30.6 | 73.0 | 8.8 | 11.3 | 12.4 | 72.1 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 69.4 | 27.0 | 90.3 | 82.7 | 84.8 | 27.9 |
| Total Gravel | 0.0 | 0.0 | 0.9 | 6.0 | 2.7 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | 51 | NP | NP | NP | 42 |
| Plastic Limit | NP | 17 | NP | NP | NP | 15 |
| Plasticity Index | NP | 34 | NP | NP | NP | 27 |
| | | | | | | |
| USCS | SM | CH | SP-SM | SP-SM | SM | CL |
| AASHTO | A-2-4(0) | A-7-6(24) | A-3(0) | A-1-b(0) | A-1-b(0) | A-7-6(17) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-17 | HLA-17 | HLA-17 | HLA-17 | HLA-17 | HLA-17 |
|---|---|---|---|---|---|---|
| Station | 555+44.8 | 555+44.8 | 555+44.8 | 555+44.8 | 555+44.8 | 555+44.8 |
| Offset | RT 35.2 | RT 35.2 | RT 35.2 | RT 35.2 | RT 35.2 | RT 35.2 |
| Sample ID | SS-26 | T-3 | SS-31 | T-4 | SS-34 | SS-36 |
| Depth (ft) | 113.5 | 138.0 | 143.5 | 158.0 | 178.5 | 198.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 89.3 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 73.4 | 100.0 | 98.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 37.6 | 100.0 | 91.2 | 100.0 | 100.0 | 99.7 |
| #10 SIEVE (2.00mm) | 17.6 | 100.0 | 86.9 | 100.0 | 100.0 | 97.1 |
| #20 SIEVE (0.85mm) | 7.5 | 100.0 | 83.9 | 100.0 | 99.9 | 96.7 |
| #40" SIEVE (425um) | 3.1 | 99.9 | 82.2 | 99.9 | 99.7 | 96.2 |
| #60 SIEVE (250um) | 1.6 | 99.8 | 79.3 | 98.7 | 99.5 | 92.6 |
| #100 SIEVE (150um) | 1.1 | 99.5 | 69.9 | 85.8 | 94.7 | 86.6 |
| #140 SIEVE (106um) | 1.0 | 98.8 | 48.8 | 70.2 | 81.8 | 81.8 |
| #200 SIEVE (75um) | 0.9 | 94.0 | 30.3 | 56.8 | 67.2 | 79.0 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 36.7 | 6.0 | 60.9 | 43.2 | 32.8 | 20.7 |
| Total Gravel | 62.4 | 0.0 | 8.8 | 0.0 | 0.0 | 0.3 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | 31 | 26 | 29 | 24 | 47 |
| Plastic Limit | NP | 22 | 19 | 15 | 15 | 13 |
| Plasticity Index | NP | 9 | 7 | 14 | 9 | 34 |
| | | | | | | |
| USCS | GW | CL | SC-SM | CL | CL | CL |
| AASHTO | A-1-a(0) | A-4(8) | A-2-4(0) | A-6(5) | A-4(3) | A-7-6(26) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-17 | HLA-17 | HLA-18 | HLA-18A | HLA-18A | HLA-18A |
|---|---|---|---|---|---|---|
| Station | 555+44.8 | 555+44.8 | 558+38.5 | 558+44.6 | 558+44.6 | 558+44.6 |
| Offset | RT 35.2 | RT 35.2 | LT 30.2 | LT 67.9 | LT 67.9 | LT 67.9 |
| Sample ID | SS-38 | SS-40 | SS-2 | SS-5 | SS-9 | T-1 |
| Depth (ft) | 218.5 | 238.5 | 1.5 | 6.0 | 23.5 | 28.0 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 91.9 | 100.0 | 100.0 | 97.5 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 91.9 | 93.4 | 100.0 | 97.5 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 89.8 | 93.4 | 100.0 | 97.5 |
| #4 SIEVE (4.75mm) | 100.0 | 100.0 | 80.9 | 90.1 | 100.0 | 96.8 |
| #10 SIEVE (2.00mm) | 100.0 | 99.8 | 73.2 | 88.9 | 99.9 | 96.5 |
| #20 SIEVE (0.85mm) | 99.1 | 99.7 | 67.4 | 88.3 | 99.8 | 96.3 |
| #40" SIEVE (425um) | 98.9 | 98.3 | 58.4 | 87.5 | 99.4 | 95.8 |
| #60 SIEVE (250um) | 98.8 | 86.4 | 45.3 | 84.8 | 96.1 | 93.3 |
| #100 SIEVE (150um) | 98.6 | 55.0 | 34.7 | 61.5 | 83.4 | 84.8 |
| #140 SIEVE (106um) | 98.2 | 38.8 | 26.5 | 33.6 | 70.9 | 73.3 |
| #200 SIEVE (75um) | 93.2 | 25.1 | 19.0 | 16.7 | 60.5 | 59.5 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 6.8 | 74.9 | 61.9 | 73.4 | 39.5 | 37.3 |
| Total Gravel | 0.0 | 0.0 | 19.1 | 9.9 | 0.0 | 3.2 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | 32 | NP | NP | NP | 44 | 40 |
| Plastic Limit | 17 | NP | NP | NP | 14 | 14 |
| Plasticity Index | 15 | NP | NP | NP | 30 | 26 |
| | | | | | | |
| USCS | CL | SM | SM | SM | CL | CL |
| AASHTO | A-6(13) | A-2-4(0) | A-2-4(0) | A-2-4(0) | A-7-6(15) | A-6(12) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-18A | HLA-18A | HLA-18A | HLA-18A | HLA-18A | HLA-18A |
|---|---|---|---|---|---|---|
| Station | 558+44.6 | 558+44.6 | 558+44.6 | 558+44.6 | 558+44.6 | 558+44.6 |
| Offset | LT 67.9 | LT 67.9 | LT 67.9 | LT 67.9 | LT 67.9 | LT 67.9 |
| Sample ID | SS-13 | SS-16 | SS-17 | SS-26 | SS-27 | SS-31 |
| Depth (ft) | 48.5 | 63.5 | 68.5 | 113.5 | 118.5 | 138.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 97.1 | 99.1 | 100.0 | 93.1 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 93.6 | 99.1 | 100.0 | 86.8 | 91.4 | 100.0 |
| #4 SIEVE (4.75mm) | 91.4 | 93.6 | 94.0 | 55.1 | 46.1 | 100.0 |
| #10 SIEVE (2.00mm) | 89.3 | 82.7 | 68.0 | 24.2 | 32.5 | 100.0 |
| #20 SIEVE (0.85mm) | 84.2 | 67.3 | 58.2 | 16.9 | 28.1 | 100.0 |
| #40" SIEVE (425um) | 58.4 | 26.8 | 25.5 | 13.1 | 16.0 | 99.5 |
| #60 SIEVE (250um) | 26.3 | 10.8 | 12.3 | 9.7 | 6.8 | 96.6 |
| #100 SIEVE (150um) | 13.5 | 7.3 | 8.4 | 6.7 | 3.5 | 93.7 |
| #140 SIEVE (106um) | 9.7 | 6.2 | 7.1 | 5.1 | 2.8 | 58.2 |
| #200 SIEVE (75um) | 7.1 | 5.5 | 6.2 | 4.0 | 2.3 | 24.1 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 84.3 | 88.1 | 87.8 | 51.1 | 43.8 | 75.9 |
| Total Gravel | 8.6 | 6.4 | 6.0 | 44.9 | 53.9 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | NP | NP | NP | NP | NP |
| Plastic Limit | NP | NP | NP | NP | NP | NP |
| Plasticity Index | NP | NP | NP | NP | NP | NP |
| | | | | | | |
| USCS | SP-SM | SP-SM | SP-SM | SP | GP | SM |
| AASHTO | A-3(0) | A-1-b(0) | A-1-b(0) | A-1-a(0) | A-1-a(0) | A-2-4(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-18A | HLA-18A | HLA-18A | HLA-18A | HLA-18A | HLA-18A |
|---|---|---|---|---|---|---|
| Station | 558+44.6 | 558+44.6 | 558+44.6 | 558+44.6 | 558+44.6 | 558+44.6 |
| Offset | LT 67.9 | LT 67.9 | LT 67.9 | LT 67.9 | LT 67.9 | LT 67.9 |
| Sample ID | T-2 | SS-33 | T-3 | T-4 | SS-36 | SS-38 |
| Depth (ft) | 148.0 | 158.5 | 168.0 | 188.0 | 218.5 | 238.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #10 SIEVE (2.00mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #20 SIEVE (0.85mm) | 100.0 | 99.8 | 100.0 | 100.0 | 100.0 | 99.9 |
| #40" SIEVE (425um) | 99.9 | 99.2 | 99.8 | 100.0 | 99.9 | 98.7 |
| #60 SIEVE (250um) | 99.2 | 95.7 | 98.3 | 99.9 | 99.7 | 88.5 |
| #100 SIEVE (150um) | 96.3 | 71.9 | 89.9 | 98.9 | 99.5 | 58.2 |
| #140 SIEVE (106um) | 94.9 | 56.4 | 85.1 | 97.5 | 98.0 | 41.8 |
| #200 SIEVE (75um) | 90.9 | 50.2 | 81.0 | 96.0 | 89.3 | 28.0 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 9.1 | 49.8 | 19.0 | 4.0 | 10.7 | 72.0 |
| Total Gravel | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | 41 | 32 | 56 | 47 | 35 | NP |
| Plastic Limit | 17 | 14 | 25 | 16 | 18 | NP |
| Plasticity Index | 24 | 18 | 31 | 31 | 17 | NP |
| | | | | | | |
| USCS | CL | CL | CH | CL | CL | SM |
| AASHTO | A-7-6(22) | A-6(5) | A-7-6(27) | A-7-6(31) | A-6(15) | A-2-4(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-19 | HLA-19 | HLA-19 | HLA-19 | HLA-19 | HLA-19 |
|---|---|---|---|---|---|---|
| Station | 560+80.9 | 560+80.9 | 560+80.9 | 560+80.9 | 560+80.9 | 560+80.9 |
| Offset | LT 131.2 | LT 131.2 | LT 131.2 | LT 131.2 | LT 131.2 | LT 131.2 |
| Sample ID | SS-4 | SS-6 | SS-8 | T-1 | SS-11 | SS-18 |
| Depth (ft) | 4.5 | 8.5 | 18.5 | 28.0 | 40.5 | 73.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 96.9 | 100.0 | 100.0 | 100.0 | 98.1 |
| #4 SIEVE (4.75mm) | 95.8 | 95.1 | 100.0 | 100.0 | 99.5 | 96.4 |
| #10 SIEVE (2.00mm) | 93.5 | 94.2 | 99.9 | 100.0 | 99.2 | 94.9 |
| #20 SIEVE (0.85mm) | 88.8 | 93.6 | 99.7 | 100.0 | 92.6 | 87.7 |
| #40" SIEVE (425um) | 66.5 | 92.9 | 98.6 | 99.8 | 61.3 | 46.8 |
| #60 SIEVE (250um) | 29.5 | 90.6 | 95.9 | 97.4 | 26.0 | 17.7 |
| #100 SIEVE (150um) | 9.9 | 71.1 | 81.8 | 87.1 | 16.7 | 12.4 |
| #140 SIEVE (106um) | 6.7 | 52.3 | 58.6 | 76.9 | 14.6 | 10.1 |
| #200 SIEVE (75um) | 5.0 | 42.6 | 36.6 | 62.7 | 12.2 | 8.2 |
| | | | | | | |
| Clay | | | | 14.0 | | |
| Silt | | | | 48.7 | | |
| Total Sand | 90.9 | 52.5 | 63.3 | 37.3 | 87.3 | 88.3 |
| Total Gravel | 4.2 | 4.9 | 0.0 | 0.0 | 0.5 | 3.6 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | 38 | NP | 45 | NP | NP |
| Plastic Limit | NP | 18 | NP | 16 | NP | NP |
| Plasticity Index | NP | 20 | NP | 29 | NP | NP |
| | | | | | | |
| USCS | SP | SC | SM | CL | SM | SP-SM |
| AASHTO | A-3(0) | A-6(4) | A-4(0) | A-7-6(15) | A-2-4(0) | A-1-b(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-19 | HLA-19 | HLA-19 | HLA-19 | HLA-19 | HLA-19 |
|---|---|---|---|---|---|---|
| Station | 560+80.9 | 560+80.9 | 560+80.9 | 560+80.9 | 560+80.9 | 560+80.9 |
| Offset | LT 131.2 | LT 131.2 | LT 131.2 | LT 131.2 | LT 131.2 | LT 131.2 |
| Sample ID | SS-24 | SS-29 | T-3 | T-4 | SS-33 | T-5 |
| Depth (ft) | 103.5 | 128.5 | 138.0 | 148.0 | 168.5 | 198.0 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 97.8 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 99.7 | 91.1 | 100.0 | 99.8 | 100.0 | 100.0 |
| #10 SIEVE (2.00mm) | 98.3 | 90.5 | 100.0 | 97.6 | 100.0 | 100.0 |
| #20 SIEVE (0.85mm) | 86.6 | 90.2 | 100.0 | 96.3 | 99.9 | 100.0 |
| #40" SIEVE (425um) | 42.0 | 89.8 | 99.9 | 93.4 | 99.5 | 98.0 |
| #60 SIEVE (250um) | 13.3 | 89.2 | 99.7 | 87.8 | 94.9 | 94.4 |
| #100 SIEVE (150um) | 7.7 | 81.4 | 95.5 | 78.4 | 83.3 | 82.7 |
| #140 SIEVE (106um) | 5.8 | 68.8 | 62.2 | 68.8 | 73.6 | 72.1 |
| #200 SIEVE (75um) | 4.4 | 54.5 | 30.0 | 56.3 | 62.9 | 62.3 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 95.3 | 36.6 | 70.0 | 43.5 | 37.1 | 37.7 |
| Total Gravel | 0.3 | 8.9 | 0.0 | 0.2 | 0.0 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | NP | NP | 40 | 36 | 32 |
| Plastic Limit | NP | NP | NP | 12 | 12 | 10 |
| Plasticity Index | NP | NP | NP | 28 | 24 | 22 |
| | | | | | | |
| USCS | SP | ML | SM | CL | CL | CL |
| AASHTO | A-1-b(0) | A-4(0) | A-2-4(0) | A-6(12) | A-6(12) | A-6(10) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-19 | HLA-19 | HLA-19 | HLA-20 | HLA-20 | HLA-20 |
|---|---|---|---|---|---|---|
| Station | 560+80.9 | 560+80.9 | 560+80.9 | 562+20.6 | 562+20.6 | 562+20.6 |
| Offset | LT 131.2 | LT 131.2 | LT 131.2 | RT 90.3 | RT 90.3 | RT 90.3 |
| Sample ID | SS-36 | SS-37 | SS-40 | SS-2 | SS-5 | SS-7 |
| Depth (ft) | 208.5 | 218.5 | 248.5 | 1.5 | 6.0 | 13.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 88.6 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 87.4 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 86.9 |
| #4 SIEVE (4.75mm) | 100.0 | 100.0 | 99.3 | 99.8 | 100.0 | 84.9 |
| #10 SIEVE (2.00mm) | 99.9 | 100.0 | 98.9 | 99.5 | 99.9 | 84.5 |
| #20 SIEVE (0.85mm) | 99.7 | 100.0 | 98.2 | 97.5 | 99.7 | 84.3 |
| #40" SIEVE (425um) | 99.2 | 99.8 | 94.3 | 84.6 | 99.5 | 83.8 |
| #60 SIEVE (250um) | 97.4 | 99.5 | 79.9 | 56.0 | 97.9 | 81.1 |
| #100 SIEVE (150um) | 93.6 | 99.3 | 32.7 | 31.3 | 82.7 | 60.9 |
| #140 SIEVE (106um) | 87.1 | 99.0 | 17.3 | 25.5 | 54.0 | 36.2 |
| #200 SIEVE (75um) | 71.0 | 97.6 | 12.5 | 20.6 | 26.1 | 20.2 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 29.0 | 2.4 | 86.8 | 79.2 | 73.9 | 64.7 |
| Total Gravel | 0.0 | 0.0 | 0.7 | 0.2 | 0.0 | 15.1 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | 29 | 50 | NP | NP | NP | NP |
| Plastic Limit | 15 | 19 | NP | NP | NP | NP |
| Plasticity Index | 14 | 31 | NP | NP | NP | NP |
| | | | | | | |
| USCS | CL | CH | SM | SM | SM | SM |
| AASHTO | A-6(7) | A-7-6(33) | A-2-4(0) | A-2-4(0) | A-2-4(0) | A-2-4(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-20 | HLA-20 | HLA-20 | HLA-20 | HLA-20 | HLA-20 |
|---|---|---|---|---|---|---|
| Station | 562+20.6 | 562+20.6 | 562+20.6 | 562+20.6 | 562+20.6 | 562+20.6 |
| Offset | RT 90.3 | RT 90.3 | RT 90.3 | RT 90.3 | RT 90.3 | RT 90.3 |
| Sample ID | T-1 | T-2 | SS-11 | SS-20 | T-3 | SS-30 |
| Depth (ft) | 23.0 | 33.0 | 43.5 | 88.5 | 133.0 | 143.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #10 SIEVE (2.00mm) | 100.0 | 100.0 | 99.9 | 99.8 | 100.0 | 99.7 |
| #20 SIEVE (0.85mm) | 99.9 | 99.8 | 95.8 | 97.7 | 100.0 | 99.5 |
| #40" SIEVE (425um) | 99.6 | 99.3 | 58.1 | 84.1 | 99.9 | 98.8 |
| #60 SIEVE (250um) | 97.2 | 98.6 | 20.3 | 45.3 | 99.5 | 96.8 |
| #100 SIEVE (150um) | 88.0 | 98.0 | 12.4 | 22.5 | 94.4 | 85.6 |
| #140 SIEVE (106um) | 79.0 | 97.9 | 10.3 | 17.4 | 89.9 | 61.7 |
| #200 SIEVE (75um) | 69.5 | 97.2 | 8.6 | 13.5 | 84.0 | 32.4 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 30.5 | 2.8 | 91.4 | 86.5 | 16.0 | 67.6 |
| Total Gravel | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | 46 | 68 | NP | NP | 42 | 28 |
| Plastic Limit | 15 | 22 | NP | NP | 12 | 19 |
| Plasticity Index | 31 | 46 | NP | NP | 30 | 9 |
| | | | | | | |
| USCS | CL | CH | SP-SM | SM | CL | SC |
| AASHTO | A-7-6(20) | A-7-6(51) | A-3(0) | A-2-4(0) | A-7-6(24) | A-2-4(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-20 | HLA-20 | HLA-20 | HLA-20 | HLA-20 | HLA-20 |
|---|---|---|---|---|---|---|
| Station | 562+20.6 | 562+20.6 | 562+20.6 | 562+20.6 | 562+20.6 | 562+20.6 |
| Offset | RT 90.3 | RT 90.3 | RT 90.3 | RT 90.3 | RT 90.3 | RT 90.3 |
| Sample ID | T-4 | SS-34 | SS-36 | T-5 | SS-37 | SS-39 |
| Depth (ft) | 168.0 | 188.5 | 208.5 | 218.0 | 228.5 | 248.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #10 SIEVE (2.00mm) | 100.0 | 99.6 | 99.9 | 100.0 | 100.0 | 99.9 |
| #20 SIEVE (0.85mm) | 100.0 | 98.4 | 99.6 | 100.0 | 99.8 | 99.7 |
| #40" SIEVE (425um) | 99.9 | 96.5 | 99.2 | 99.9 | 98.2 | 98.7 |
| #60 SIEVE (250um) | 99.6 | 95.4 | 99.0 | 99.6 | 86.4 | 90.5 |
| #100 SIEVE (150um) | 97.3 | 93.0 | 98.1 | 98.7 | 45.2 | 43.7 |
| #140 SIEVE (106um) | 94.8 | 91.0 | 95.2 | 96.5 | 37.1 | 31.2 |
| #200 SIEVE (75um) | 92.4 | 88.9 | 83.7 | 88.5 | 33.0 | 25.1 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 7.6 | 11.1 | 16.3 | 11.5 | 67.0 | 74.9 |
| Total Gravel | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | 60 | 44 | 30 | 37 | 25 | NP |
| Plastic Limit | 20 | 13 | 17 | 17 | 12 | NP |
| Plasticity Index | 40 | 31 | 13 | 20 | 13 | NP |
| | | | | | | |
| USCS | CH | CL | CL | CL | SC | SM |
| AASHTO | A-7-6(40) | A-7-6(27) | A-6(9) | A-6(17) | A-2-6(1) | A-2-4(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-21 | HLA-21 | HLA-21 | HLA-21 | HLA-21 | HLA-21 |
|---|---|---|---|---|---|---|
| Station | 564+40.6 | 564+40.6 | 564+40.6 | 564+40.6 | 564+40.6 | 564+40.6 |
| Offset | LT 21.7 | LT 21.7 | LT 21.7 | LT 21.7 | LT 21.7 | LT 21.7 |
| Sample ID | SS-2 | SS-5 | SS-7 | SS-9 | T-1 | SS-12 |
| Depth (ft) | 1.5 | 6.0 | 13.5 | 23.5 | 33.0 | 43.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 93.7 | 97.7 | 100.0 | | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 81.5 | 84.6 | 99.8 | | 100.0 |
| #10 SIEVE (2.00mm) | 99.4 | 66.7 | 78.4 | 97.9 | | 100.0 |
| #20 SIEVE (0.85mm) | 97.0 | 63.6 | 77.1 | 97.3 | | 99.7 |
| #40" SIEVE (425um) | 85.4 | 58.4 | 76.1 | 96.8 | 100.0 | 80.9 |
| #60 SIEVE (250um) | 61.9 | 40.7 | 73.9 | 95.3 | 99.0 | 25.5 |
| #100 SIEVE (150um) | 36.0 | 15.4 | 60.7 | 90.8 | 89.5 | 10.7 |
| #140 SIEVE (106um) | 29.3 | 10.9 | 38.0 | 85.4 | 82.6 | 7.2 |
| #200 SIEVE (75um) | 24.7 | 8.7 | 19.6 | 75.1 | 77.4 | 5.3 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 75.3 | 72.7 | 65.0 | 24.7 | 22.5 | 94.7 |
| Total Gravel | 0.0 | 18.5 | 15.4 | 0.2 | | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | NP | NP | 42 | 60 | NP |
| Plastic Limit | NP | NP | NP | 25 | 18 | NP |
| Plasticity Index | NP | NP | NP | 17 | 42 | NP |
| | | | | | | |
| USCS | SM | SP-SM | SM | CL | CH | SP-SM |
| AASHTO | A-2-4(0) | A-3(0) | A-2-4(0) | A-7-6(13) | A-7-6(32) | A-3(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-21 | HLA-21 | HLA-21 | HLA-21 | HLA-21 | HLA-21 |
|---|---|---|---|---|---|---|
| Station | 564+40.6 | 564+40.6 | 564+40.6 | 564+40.6 | 564+40.6 | 564+40.6 |
| Offset | LT 21.7 | LT 21.7 | LT 21.7 | LT 21.7 | LT 21.7 | LT 21.7 |
| Sample ID | SS-16 | SS-21 | SS-26 | SS-27 | T-2 | SS-29 |
| Depth (ft) | 63.5 | 88.5 | 113.5 | 123.5 | 133.0 | 138.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 98.1 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 94.3 | 95.2 | 97.8 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 96.0 | 88.1 | 88.2 | 95.3 | 100.0 | 100.0 |
| #10 SIEVE (2.00mm) | 86.8 | 86.7 | 84.9 | 90.1 | 100.0 | 100.0 |
| #20 SIEVE (0.85mm) | 67.1 | 79.4 | 75.7 | 76.4 | 100.0 | 99.7 |
| #40" SIEVE (425um) | 32.7 | 41.8 | 26.6 | 44.9 | 99.7 | 98.6 |
| #60 SIEVE (250um) | 14.0 | 11.8 | 7.2 | 13.5 | 99.1 | 94.9 |
| #100 SIEVE (150um) | 7.9 | 4.3 | 4.2 | 6.9 | 91.9 | 46.0 |
| #140 SIEVE (106um) | 6.0 | 3.1 | 3.3 | 5.4 | 86.9 | 21.9 |
| #200 SIEVE (75um) | 4.6 | 2.5 | 2.6 | 4.3 | 81.5 | 14.6 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 91.4 | 85.6 | 85.6 | 91.0 | 18.5 | 85.4 |
| Total Gravel | 4.0 | 11.9 | 11.8 | 4.7 | 0.0 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | NP | NP | NP | 31 | NP |
| Plastic Limit | NP | NP | NP | NP | 14 | NP |
| Plasticity Index | NP | NP | NP | NP | 17 | NP |
| | | | | | | |
| USCS | SP | SP | SP | SP | CL | SM |
| AASHTO | A-1-b(0) | A-1-b(0) | A-1-b(0) | A-1-b(0) | A-6(12) | A-2-4(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | HLA-21 | HLA-21 | HLA-21 | HLA-21 | HLA-21 | WHLA-01 |
|---|---|---|---|---|---|---|
| Station | 564+40.6 | 564+40.6 | 564+40.6 | 564+40.6 | 564+40.6 | 497+92.5 |
| Offset | LT 21.7 | LT 21.7 | LT 21.7 | LT 21.7 | LT 21.7 | LT 26.8 |
| Sample ID | SS-31 | SS-34 | SS-35 | SS-36 | SS-39 | SS-2 |
| Depth (ft) | 148.5 | 178.5 | 188.5 | 198.5 | 228.5 | 1.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #10 SIEVE (2.00mm) | 100.0 | 100.0 | 100.0 | 99.9 | 100.0 | 99.8 |
| #20 SIEVE (0.85mm) | 99.7 | 99.9 | 100.0 | 99.1 | 99.8 | 99.6 |
| #40" SIEVE (425um) | 98.8 | 99.6 | 99.7 | 98.8 | 98.3 | 98.1 |
| #60 SIEVE (250um) | 97.9 | 99.1 | 99.4 | 97.4 | 84.5 | 78.3 |
| #100 SIEVE (150um) | 94.8 | 98.2 | 98.9 | 92.1 | 52.6 | 32.8 |
| #140 SIEVE (106um) | 91.1 | 96.4 | 98.4 | 87.4 | 37.7 | 18.2 |
| #200 SIEVE (75um) | 86.2 | 92.8 | 97.5 | 81.9 | 28.5 | 12.2 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 13.8 | 7.2 | 2.5 | 18.1 | 71.5 | 87.8 |
| Total Gravel | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | 49 | 47 | 35 | 39 | NP | NP |
| Plastic Limit | 17 | 16 | 17 | 13 | NP | NP |
| Plasticity Index | 32 | 31 | 18 | 26 | NP | NP |
| | | | | | | |
| USCS | CL | CL | CL | CL | SM | SM |
| AASHTO | A-7-6(28) | A-7-6(30) | A-6(17) | A-6(20) | A-2-4(0) | A-2-4(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | WHLA-01 | WHLA-01 | WHLA-01 | WHLA-01 | WHLA-01 | WHLA-01 |
|---|---|---|---|---|---|---|
| Station | 497+92.5 | 497+92.5 | 497+92.5 | 497+92.5 | 497+92.5 | 497+92.5 |
| Offset | LT 26.8 | LT 26.8 | LT 26.8 | LT 26.8 | LT 26.8 | LT 26.8 |
| Sample ID | SS-4 | SS-7 | SS-8 | SS-9 | SS-11 | SS-15 |
| Depth (ft) | 4.5 | 13.5 | 18.5 | 28.5 | 38.5 | 58.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 100.0 | | 100.0 | 99.7 | 99.8 |
| #10 SIEVE (2.00mm) | 100.0 | 100.0 | | 99.9 | 99.5 | 98.9 |
| #20 SIEVE (0.85mm) | 99.9 | 99.8 | | 99.8 | 99.3 | 97.2 |
| #40" SIEVE (425um) | 98.7 | 99.4 | | 86.1 | 77.7 | 90.6 |
| #60 SIEVE (250um) | 78.0 | 92.7 | | 23.3 | 32.0 | 42.0 |
| #100 SIEVE (150um) | 30.9 | 59.0 | | 9.1 | 12.5 | 19.8 |
| #140 SIEVE (106um) | 17.1 | 41.3 | | 6.9 | 8.9 | 17.8 |
| #200 SIEVE (75um) | 11.6 | 33.2 | 46.2 | 5.5 | 7.1 | 16.5 |
| | | | | | | |
| Clay | | | | | | |
| Silt | | | | | | |
| Total Sand | 88.4 | 66.8 | | 94.5 | 92.6 | 83.3 |
| Total Gravel | 0.0 | 0.0 | | 0.0 | 0.3 | 0.2 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | NP | 69 | NP | NP | NP |
| Plastic Limit | NP | NP | 45 | NP | NP | NP |
| Plasticity Index | NP | NP | 24 | NP | NP | NP |
| | | | | | | |
| USCS | SP-SM | SM | SM | SP-SM | SP-SM | SM |
| AASHTO | A-2-4(0) | A-2-4(0) | A-7-5(8) | A-3(0) | A-3(0) | A-2-4(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | WHLA-01 | WHLA-01 | WHLA-01 | WHLA-01 | WHLA-01 | WHLA-01 |
|---|---|---|---|---|---|---|
| Station | 497+92.5 | 497+92.5 | 497+92.5 | 497+92.5 | 497+92.5 | 497+92.5 |
| Offset | LT 26.8 | LT 26.8 | LT 26.8 | LT 26.8 | LT 26.8 | LT 26.8 |
| Sample ID | SS-20 | ST-4 | SS-28 | SS-36 | SS-39 | ST-6 |
| Depth (ft) | 83.5 | 113.5 | 133.5 | 178.5 | 193.5 | 198.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 99.4 | 100.0 | 99.3 | 100.0 | 100.0 | 100.0 |
| #10 SIEVE (2.00mm) | 99.3 | 100.0 | 94.8 | 100.0 | 99.9 | 100.0 |
| #20 SIEVE (0.85mm) | 98.9 | 100.0 | 85.8 | 100.0 | 99.0 | 99.9 |
| #40" SIEVE (425um) | 96.8 | 99.9 | 62.3 | 98.7 | 97.1 | 99.7 |
| #60 SIEVE (250um) | 90.3 | 99.7 | 30.2 | 61.4 | 87.5 | 99.4 |
| #100 SIEVE (150um) | 38.9 | 99.3 | 13.5 | 22.8 | 67.4 | 97.4 |
| #140 SIEVE (106um) | 14.3 | 99.1 | 8.3 | 12.5 | 57.4 | 93.2 |
| #200 SIEVE (75um) | 8.2 | 98.9 | 5.9 | 8.7 | 45.9 | 83.3 |
| | | | | | | |
| Clay | | 80.6 | | | | 28.9 |
| Silt | | 18.3 | | | | 54.4 |
| Total Sand | 91.2 | 1.1 | 93.4 | 91.3 | 54.1 | 16.7 |
| Total Gravel | 0.6 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | 87 | NP | NP | 38 | 30 |
| Plastic Limit | NP | 29 | NP | NP | 21 | 14 |
| Plasticity Index | NP | 58 | NP | NP | 17 | 16 |
| | | | | | | |
| USCS | SP-SM | CH | SP-SM | SP-SM | SC | CL |
| AASHTO | A-3(0) | A-7-6(68) | A-3(0) | A-3(0) | A-6(4) | A-6(11) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | WHLA-01 | WHLA-01 | WHLA-01 | WHLA-03 | WHLA-03 | WHLA-03 |
|---|---|---|---|---|---|---|
| Station | 497+92.5 | 497+92.5 | 497+92.5 | 509+17.5 | 509+17.5 | 509+17.5 |
| Offset | LT 26.8 | LT 26.8 | LT 26.8 | LT 5.8 | LT 5.8 | LT 5.8 |
| Sample ID | ST-7 | ST-8 | SS-43 | SS-2 | SS-4 | SS-9 |
| Depth (ft) | 218.5 | 238.5 | 258.5 | 1.5 | 4.5 | 28.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 93.7 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 91.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 100.0 | 100.0 | 84.6 | 100.0 | 100.0 |
| #10 SIEVE (2.00mm) | 100.0 | 100.0 | 100.0 | 75.5 | 99.3 | 100.0 |
| #20 SIEVE (0.85mm) | 100.0 | 99.6 | 99.9 | 75.5 | 98.4 | 100.0 |
| #40" SIEVE (425um) | 99.9 | 91.2 | 99.2 | 70.7 | 95.8 | 99.2 |
| #60 SIEVE (250um) | 99.3 | 67.4 | 91.1 | 58.8 | 82.8 | 31.6 |
| #100 SIEVE (150um) | 95.0 | 40.8 | 70.1 | 32.8 | 30.0 | 5.9 |
| #140 SIEVE (106um) | 89.8 | 31.1 | 55.6 | 23.8 | 14.9 | 4.2 |
| #200 SIEVE (75um) | 82.9 | 26.0 | 42.2 | 17.8 | 8.3 | 3.4 |
| | | | | | | |
| Clay | 29.2 | 12.6 | | | | |
| Silt | 53.7 | 13.4 | | | | |
| Total Sand | 17.1 | 74.0 | 57.8 | 66.8 | 91.7 | 96.6 |
| Total Gravel | 0.0 | 0.0 | 0.0 | 15.4 | 0.0 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | 36 | NP | NP | NP | NP | NP |
| Plastic Limit | 16 | NP | NP | NP | NP | NP |
| Plasticity Index | 20 | NP | NP | NP | NP | NP |
| | | | | | | |
| USCS | CL | SM | SM | SM | SP-SM | SP |
| AASHTO | A-6(15) | A-2-4(0) | A-4(0) | A-2-4(0) | A-3(0) | A-3(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | WHLA-03 | WHLA-03 | WHLA-03 | WHLA-03 | WHLA-03 | WHLA-03 |
|---|---|---|---|---|---|---|
| Station | 509+17.5 | 509+17.5 | 509+17.5 | 509+17.5 | 509+17.5 | 509+17.5 |
| Offset | LT 5.8 | LT 5.8 | LT 5.8 | LT 5.8 | LT 5.8 | LT 5.8 |
| Sample ID | SS-15 | SS-17 | SS-21 | T-2 | SS-22 | SS-23 |
| Depth (ft) | 58.5 | 68.5 | 88.5 | 93.5 | 103.5 | 113.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 98.8 | 99.5 | 100.0 | | 100.0 |
| #10 SIEVE (2.00mm) | 100.0 | 90.1 | 97.2 | 99.8 | | 99.8 |
| #20 SIEVE (0.85mm) | 98.7 | 69.8 | 91.7 | 99.8 | | 98.9 |
| #40" SIEVE (425um) | 89.9 | 35.9 | 69.6 | 99.6 | | 88.6 |
| #60 SIEVE (250um) | 49.7 | 17.7 | 25.7 | 99.2 | | 63.0 |
| #100 SIEVE (150um) | 18.0 | 12.9 | 11.8 | 98.9 | | 35.9 |
| #140 SIEVE (106um) | 13.2 | 11.6 | 8.8 | 98.7 | | 27.0 |
| #200 SIEVE (75um) | 9.9 | 10.9 | 7.1 | 98.5 | 38.6 | 23.1 |
| | | | | | | |
| Clay | | | | 62.5 | | |
| Silt | | | | 36.0 | | |
| Total Sand | 90.1 | 87.9 | 92.4 | 1.5 | | 76.9 |
| Total Gravel | 0.0 | 1.2 | 0.5 | 0.0 | | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | NP | NP | 81 | 82 | NP |
| Plastic Limit | NP | NP | NP | 25 | 32 | NP |
| Plasticity Index | NP | NP | NP | 56 | 50 | NP |
| | | | | | | |
| USCS | SP-SM | SP-SM | SP-SM | CH | SC | SM |
| AASHTO | A-3(0) | A-1-b(0) | A-3(0) | A-7-6(65) | A-7-5(11) | A-2-4(0) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | WHLA-03 | WHLA-03 | WHLA-03 | WHLA-03 | WHLA-03 | WHLA-03 |
|---|---|---|---|---|---|---|
| Station | 509+17.5 | 509+17.5 | 509+17.5 | 509+17.5 | 509+17.5 | 509+17.5 |
| Offset | LT 5.8 | LT 5.8 | LT 5.8 | LT 5.8 | LT 5.8 | LT 5.8 |
| Sample ID | SS-24 | SS-25 | SS-28 | T-6 | SS-30 | T-8 |
| Depth (ft) | 118.5 | 123.5 | 138.5 | 143.5 | 158.5 | 166.0 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 94.7 | 100.0 | 100.0 | 99.7 | 100.0 |
| #10 SIEVE (2.00mm) | 99.9 | 86.9 | 100.0 | 100.0 | 98.1 | 100.0 |
| #20 SIEVE (0.85mm) | 99.1 | 82.2 | 99.7 | 99.8 | 95.3 | 99.8 |
| #40" SIEVE (425um) | 92.9 | 61.6 | 98.3 | 99.2 | 71.2 | 99.6 |
| #60 SIEVE (250um) | 77.1 | 33.2 | 96.5 | 98.7 | 41.4 | 99.2 |
| #100 SIEVE (150um) | 34.0 | 15.2 | 94.4 | 95.3 | 27.3 | 97.5 |
| #140 SIEVE (106um) | 19.4 | 10.8 | 92.0 | 93.9 | 17.7 | 91.2 |
| #200 SIEVE (75um) | 14.4 | 8.9 | 89.0 | 91.5 | 12.4 | 79.5 |
| | | | | | | |
| Clay | | | | 25.4 | | 21.4 |
| Silt | | | | 66.1 | | 58.1 |
| Total Sand | 85.6 | 85.7 | 11.0 | 8.5 | 87.4 | 20.5 |
| Total Gravel | 0.0 | 5.3 | 0.0 | 0.0 | 0.3 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | NP | NP | 60 | 32 | NP | 48 |
| Plastic Limit | NP | NP | 18 | 16 | NP | 16 |
| Plasticity Index | NP | NP | 42 | 16 | NP | 32 |
| | | | | | | |
| USCS | SM | SP-SM | CH | CL | SM | CL |
| AASHTO | A-2-4(0) | A-3(0) | A-7-6(40) | A-6(14) | A-2-4(0) | A-7-6(25) |

**BMT-5**

Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | WHLA-03 | WHLA-03 | WHLA-03 | WHLA-03 | WHLA-03 | WHLA-03 |
|---|---|---|---|---|---|---|
| Station | 509+17.5 | 509+17.5 | 509+17.5 | 509+17.5 | 509+17.5 | 509+17.5 |
| Offset | LT 5.8 | LT 5.8 | LT 5.8 | LT 5.8 | LT 5.8 | LT 5.8 |
| Sample ID | SS-32 | SS-34 | SS-36 | T-9 | T-11 | SS-38 |
| Depth (ft) | 168.0 | 178.5 | 188.5 | 193.0 | 208.5 | 228.5 |
| TOTAL PASSING (%) | | | | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 99.5 | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 100.0 | 99.0 | 100.0 | 100.0 | 100.0 |
| #10 SIEVE (2.00mm) | 99.9 | 100.0 | 97.9 | 100.0 | 100.0 | 100.0 |
| #20 SIEVE (0.85mm) | 99.8 | 99.9 | 90.4 | 99.8 | 99.7 | 99.9 |
| #40" SIEVE (425um) | 99.4 | 98.5 | 65.8 | 98.9 | 99.3 | 99.3 |
| #60 SIEVE (250um) | 98.9 | 96.3 | 25.7 | 97.0 | 97.6 | 94.8 |
| #100 SIEVE (150um) | 97.3 | 82.5 | 13.7 | 89.3 | 74.7 | 82.5 |
| #140 SIEVE (106um) | 95.5 | 64.6 | 10.1 | 76.5 | 62.3 | 73.3 |
| #200 SIEVE (75um) | 92.5 | 47.0 | 8.4 | 63.4 | 54.9 | 60.5 |
| | | | | | | |
| Clay | | | | 17.1 | 27.0 | |
| Silt | | | | 46.3 | 27.9 | |
| Total Sand | 7.5 | 53.0 | 90.6 | 36.6 | 45.1 | 39.5 |
| Total Gravel | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 |
| | | | | | | |
| ATTERBERG LIMITS | | | | | | |
| Liquid Limit | 45 | NP | NP | 28 | 32 | NP |
| Plastic Limit | 19 | NP | NP | 20 | 11 | NP |
| Plasticity Index | 26 | NP | NP | 8 | 21 | NP |
| | | | | | | |
| USCS | CL | SM | SP-SM | CL | CL | ML |
| AASHTO | A-7-6(26) | A-4(0) | A-3(0) | A-4(3) | A-6(8) | A-4(0) |

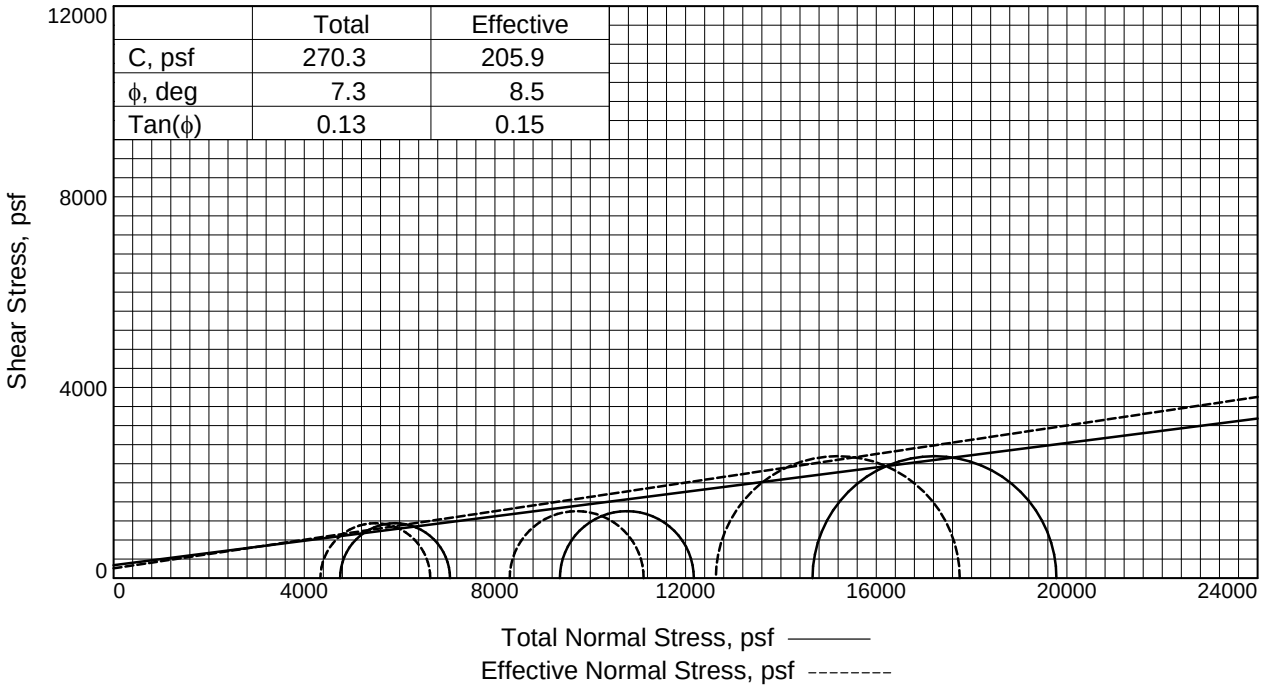
**BMT-5**

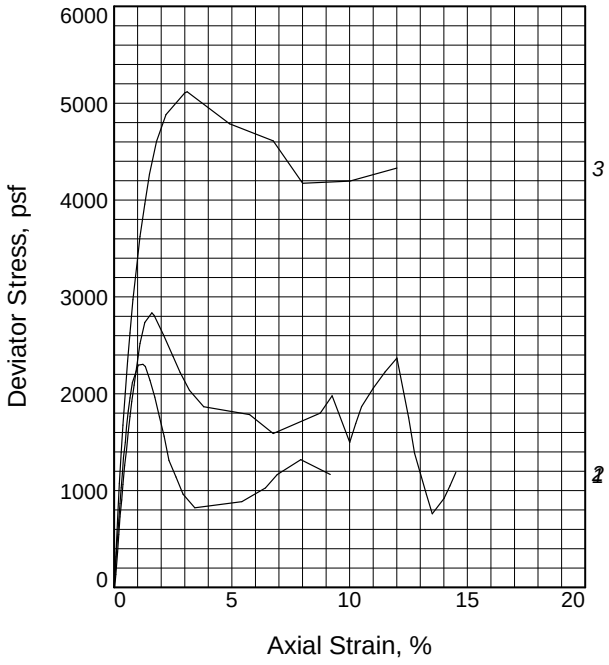
Client: ALDOT
Project: I-10 Mobile River Bridge and Bayway
ALDOT Project No.:15-1101-0228

Project No.: 15-1101-0228
Region: Southwest Region
Date: 01/16/2018

**ALABAMA DEPARTMENT OF TRANSPORTATION**
**SOILS AND BASE COARSE ANALYSIS**

| Boring No. | WHLA-03 | WHLA-03 | WHLA-03 |
|---|---|---|---|
| Station | 509+17.5 | 509+17.5 | 509+17.5 |
| Offset | LT 5.8 | LT 5.8 | LT 5.8 |
| Sample ID | SS-40 | SS-42 | SS-44 |
| Depth (ft) | 248.5 | 268.5 | 288.5 |
| TOTAL PASSING (%) | | | |
| 3" SIEVE (75mm) | 100.0 | 100.0 | 100.0 |
| 2 1/2" SIEVE (63mm) | 100.0 | 100.0 | 100.0 |
| 2" SIEVE (50mm) | 100.0 | 100.0 | 100.0 |
| 1 1/2" SIEVE (37.5mm) | 100.0 | 100.0 | 100.0 |
| 1" SIEVE (25mm) | 100.0 | 100.0 | 100.0 |
| 3/4" SIEVE (19mm) | 100.0 | 100.0 | 100.0 |
| 1/2" SIEVE (12.5mm) | 100.0 | 100.0 | 100.0 |
| 3/8" SIEVE (9.5mm) | 100.0 | 100.0 | 100.0 |
| #4 SIEVE (4.75mm) | 100.0 | 100.0 | 100.0 |
| #10 SIEVE (2.00mm) | 100.0 | 99.9 | 99.9 |
| #20 SIEVE (0.85mm) | 99.9 | 99.2 | 97.6 |
| #40" SIEVE (425um) | 99.0 | 94.4 | 81.0 |
| #60 SIEVE (250um) | 90.1 | 64.7 | 37.4 |
| #100 SIEVE (150um) | 62.6 | 44.3 | 17.3 |
| #140 SIEVE (106um) | 45.1 | 29.0 | 13.5 |
| #200 SIEVE (75um) | 29.2 | 17.3 | 11.1 |
| | | | |
| Clay | | | |
| Silt | | | |
| Total Sand | 70.8 | 82.7 | 88.9 |
| Total Gravel | 0.0 | 0.0 | 0.0 |
| | | | |
| ATTERBERG LIMITS | | | |
| Liquid Limit | NP | NP | NP |
| Plastic Limit | NP | NP | NP |
| Plasticity Index | NP | NP | NP |
| | | | |
| USCS | SM | SM | SP-SM |
| AASHTO | A-2-4(0) | A-2-4(0) | A-2-4(0) |




| Specimen No. | | 1 | 2 | 3 |
|---|---|---|---|---|
| Initial | Water Content, % | 42.6 | 35.6 | 34.6 |
| | Dry Density, pcf | 78.9 | 85.1 | 87.8 |
| | Saturation, % | 102.5 | 99.4 | 103.4 |
| | Void Ratio | 1.1050 | 0.9513 | 0.8913 |
| | Diameter, in. | 1.420 | 1.427 | 1.421 |
| | Height, in. | 2.780 | 2.790 | 2.790 |
| At Test | Water Content, % | 44.5 | 38.9 | 33.6 |
| | Dry Density, pcf | 78.9 | 85.1 | 87.8 |
| | Saturation, % | 107.0 | 108.7 | 100.3 |
| | Void Ratio | 1.1050 | 0.9513 | 0.8913 |
| | Diameter, in. | 1.420 | 1.427 | 1.421 |
| | Height, in. | 2.780 | 2.790 | 2.790 |
| Strain at peak, % | | 1.2 | 1.7 | 3.1 |
| Eff. Cell Pressure, psf | | 4752.0 | 9362.9 | 14662.1 |
| Fail. Stress, psf | | 2303.7 | 2809.6 | 5117.3 |
| Excess Pore Pr., psf | | 413.3 | 1053.0 | 2028.8 |
| Strain, % | | 1.2 | 1.7 | 3.1 |
| Ult. Stress, psf | | 2303.7 | 2809.6 | 5117.3 |
| Excess Pore Pr., psf | | 413.3 | 1053.0 | 2028.8 |
| Strain, % | | 1.2 | 1.7 | 3.1 |
| $\bar{\sigma}_1$ Failure, psf | | 6642.4 | 11119.5 | 17750.6 |
| $\bar{\sigma}_3$ Failure, psf | | 4338.7 | 8309.9 | 12633.3 |

**Type of Test:**
CU with Pore Pressures

**Sample Type:** 3-in. Shelby Tube

**Description:** FAT CLAY(CH A-7-6(72))

**Specific Gravity=** 2.66

**Remarks:**

**Figure** _____

**Client:** ALDOT

**Project:** Mobile River Bridge

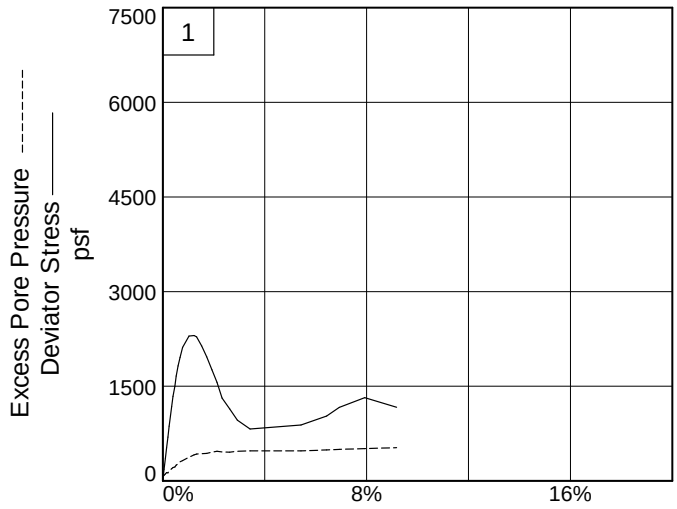
**Source of Sample:** Lab #8076 **Depth:** 133.0'-135.0'

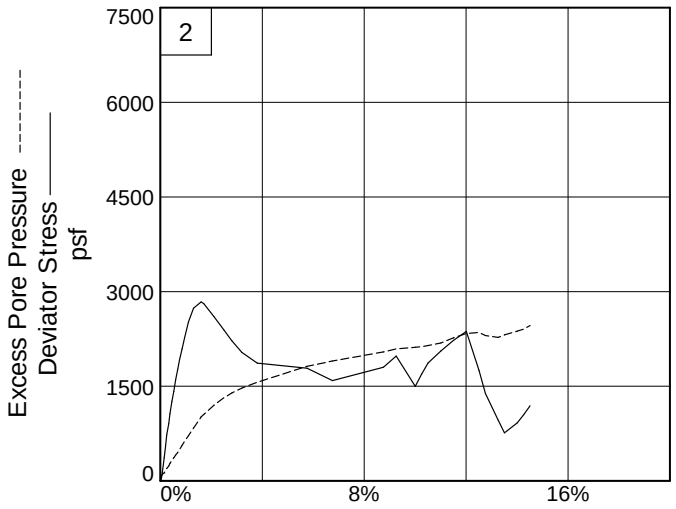
**Sample Number:** HLA-2 T-3

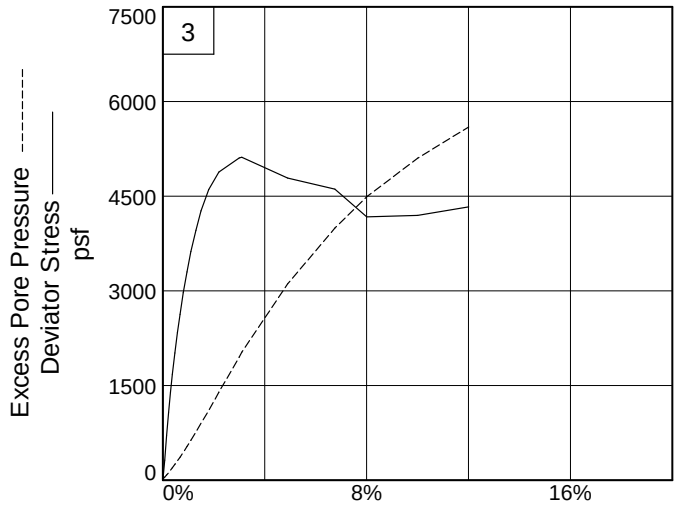
**Proj. No.:** 1511010228 **Date Sampled:**

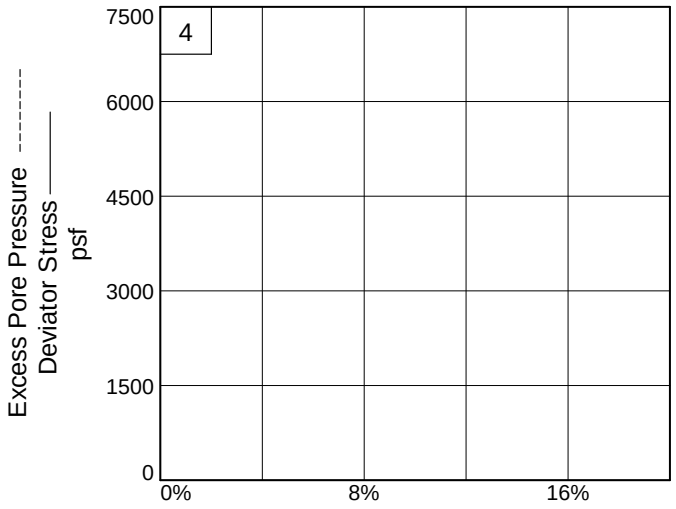
TRIAXIAL SHEAR TEST REPORT

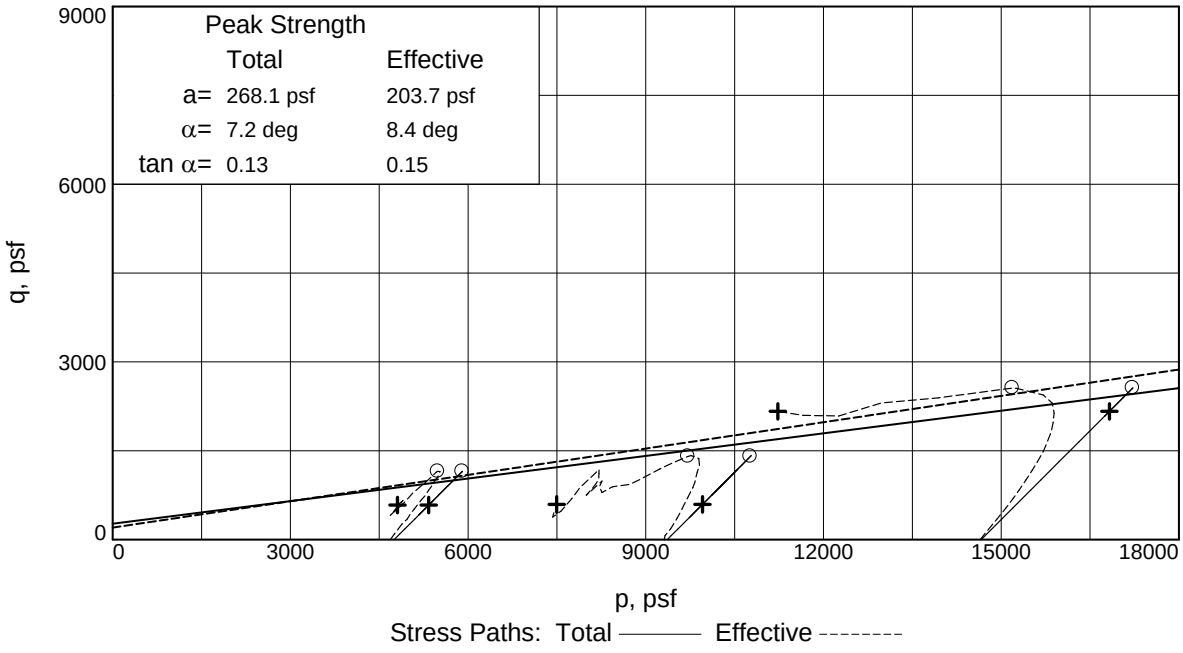
Thompson Engineering
Mobile, Alabama



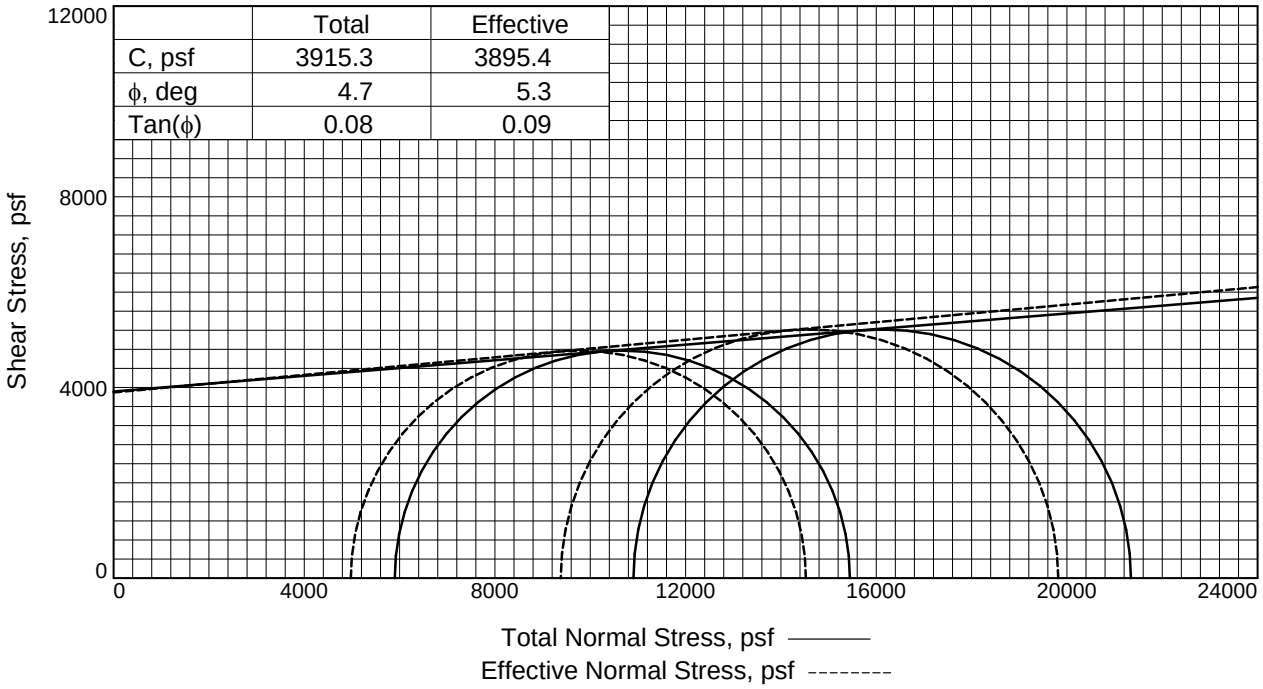

**Client:** ALDOT

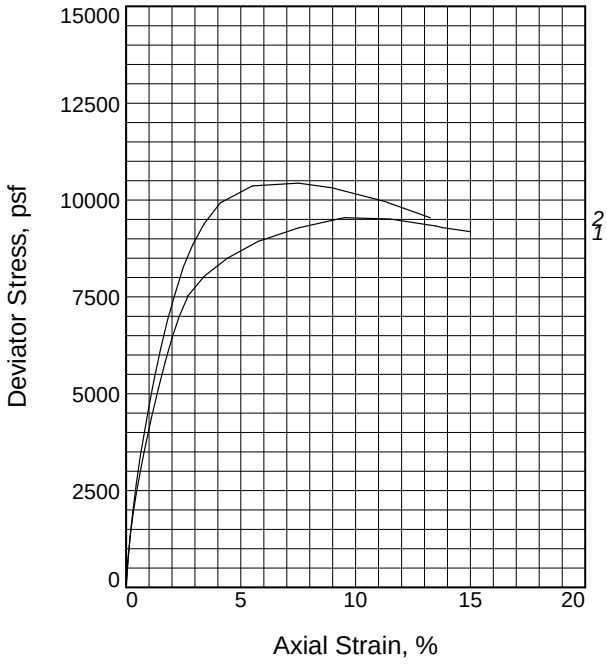
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8076 **Depth:** 133.0'-135.0' **Sample Number:** HLA-2 T-3

**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| Specimen No. | | 1 | 2 |
|---|---|---|---|
| Initial | Water Content, % | 18.6 | 18.3 |
| | Dry Density, pcf | 107.5 | 110.6 |
| | Saturation, % | 91.0 | 97.1 |
| | Void Ratio | 0.5450 | 0.5009 |
| | Diameter, in. | 1.445 | 1.451 |
| | Height, in. | 2.780 | 2.760 |
| At Test | Water Content, % | 14.1 | 19.1 |
| | Dry Density, pcf | 107.5 | 110.6 |
| | Saturation, % | 68.8 | 101.4 |
| | Void Ratio | 0.5450 | 0.5009 |
| | Diameter, in. | 1.445 | 1.451 |
| | Height, in. | 2.780 | 2.760 |
| Strain at peak, % | | 9.5 | 7.5 |
| Eff. Cell Pressure, psf | | 5899.7 | 10905.1 |
| Fail. Stress, psf | | 9546.3 | 10435.8 |
| Excess Pore Pr., psf | | 923.5 | 1524.7 |
| Strain, % | | 9.5 | 7.5 |
| Ult. Stress, psf | | 9546.3 | 10435.8 |
| Excess Pore Pr., psf | | 923.5 | 1524.7 |
| Strain, % | | 9.5 | 7.5 |
| $\bar{\sigma}_1$ Failure, psf | | 14522.5 | 19816.2 |
| $\bar{\sigma}_3$ Failure, psf | | 4976.2 | 9380.4 |

**Type of Test:**
CU with Pore Pressures

**Sample Type:** 3-in. Shelby Tube

**Description:** SANDY FAT CLAY(CH A-7-6(24))

**Specific Gravity=** 2.66

**Remarks:** Specimen #3 highly disturbed. Sample curve removed from report.

**Figure** _____

**Client:** ALDOT

**Project:** Mobile River Bridge

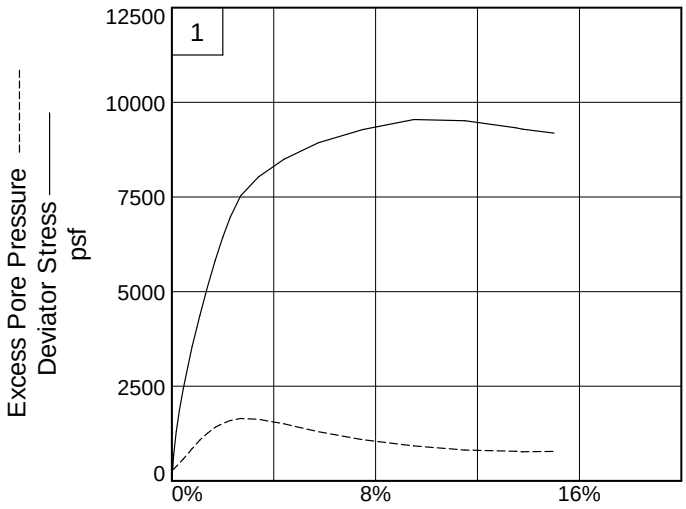
**Source of Sample:** Lab #8076 **Depth:** 113.0'-115.0'

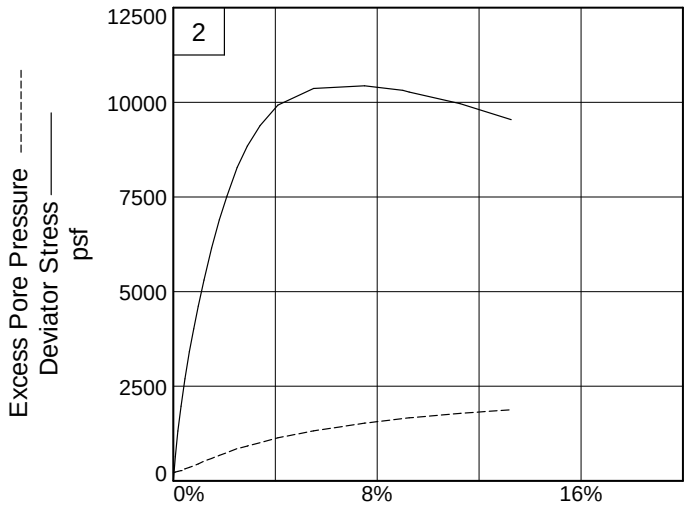
**Sample Number:** HLA-7 T-3

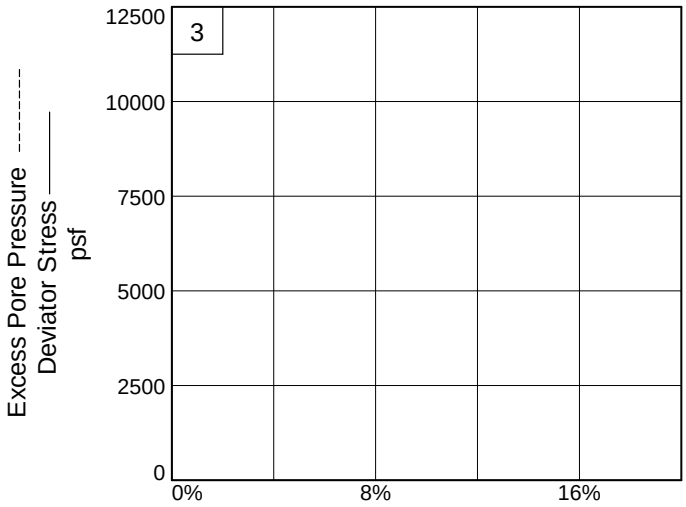
**Proj. No.:** 1511010228 **Date Sampled:**

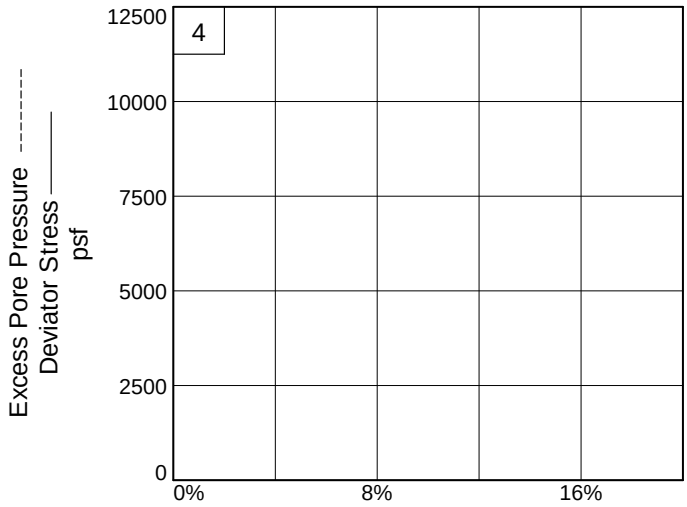
TRIAXIAL SHEAR TEST REPORT

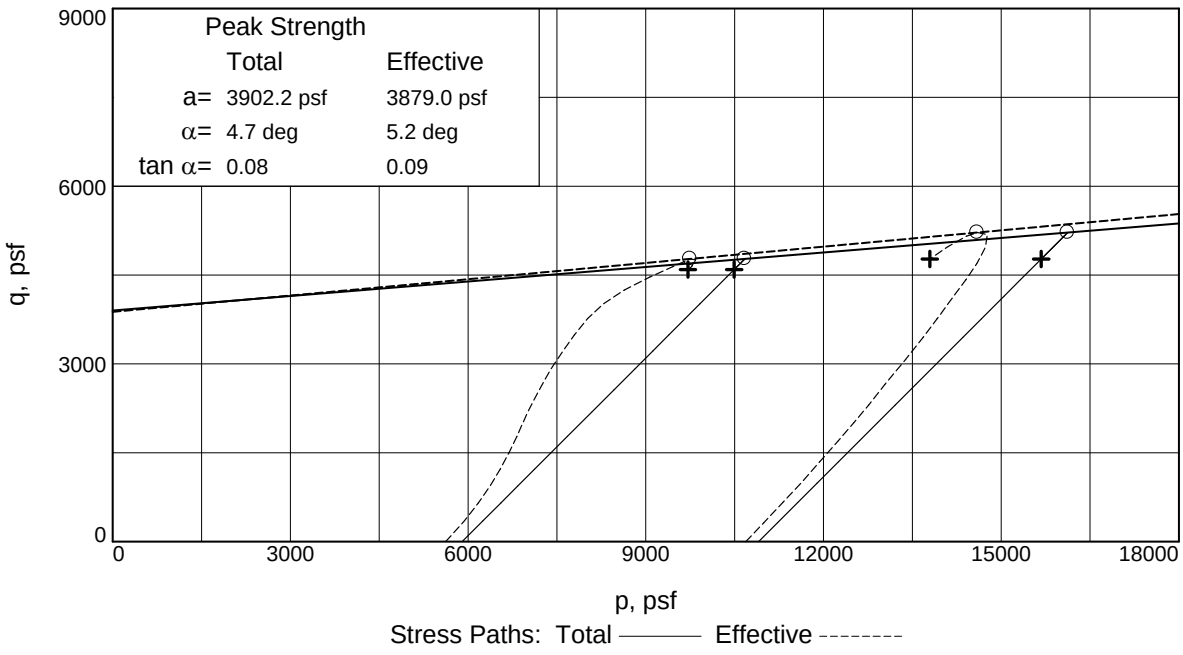
Thompson Engineering
Mobile, Alabama



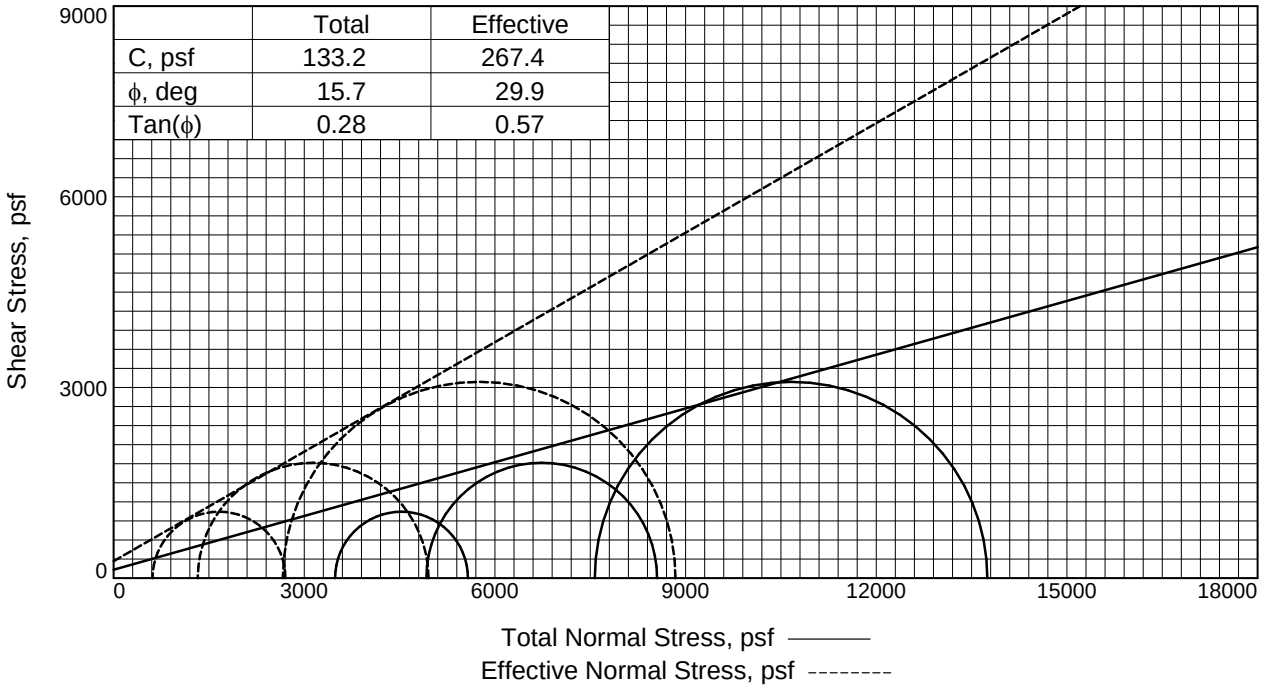

**Client:** ALDOT

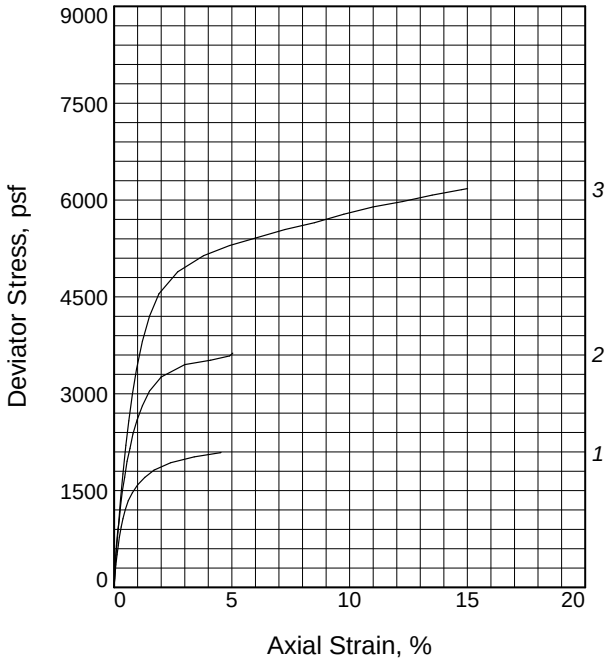
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8076 **Depth:** 113.0'-115.0' **Sample Number:** HLA-7 T-3

**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| Specimen No. | | 1 | 2 | 3 |
|---|---|---|---|---|
| Initial | Water Content, % | 22.2 | 18.7 | 18.5 |
| | Dry Density, pcf | 97.8 | 98.5 | 97.4 |
| | Saturation, % | 84.7 | 72.5 | 70.0 |
| | Void Ratio | 0.6978 | 0.6852 | 0.7050 |
| | Diameter, in. | 2.745 | 2.773 | 2.791 |
| | Height, in. | 4.570 | 4.580 | 4.580 |
| At Test | Water Content, % | 28.4 | 26.8 | 26.4 |
| | Dry Density, pcf | 97.8 | 98.5 | 97.4 |
| | Saturation, % | 108.2 | 103.9 | 99.5 |
| | Void Ratio | 0.6978 | 0.6852 | 0.7050 |
| | Diameter, in. | 2.745 | 2.773 | 2.791 |
| | Height, in. | 4.570 | 4.580 | 4.580 |
| Strain at peak, % | | 4.5 | 5.0 | 15.0 |
| Eff. Cell Pressure, psf | | 3484.8 | 4920.5 | 7570.1 |
| Fail. Stress, psf | | 2089.7 | 3630.2 | 6177.9 |
| Excess Pore Pr., psf | | 2871.8 | 3596.1 | 4907.4 |
| Strain, % | | 4.5 | 5.0 | 15.0 |
| Ult. Stress, psf | | 2089.7 | 3630.2 | 6177.9 |
| Excess Pore Pr., psf | | 2871.8 | 3596.1 | 4907.4 |
| Strain, % | | 4.5 | 5.0 | 15.0 |
| $\bar{\sigma}_1$ Failure, psf | | 2702.7 | 4954.6 | 8840.6 |
| $\bar{\sigma}_3$ Failure, psf | | 613.0 | 1324.4 | 2662.7 |

**Type of Test:**
CU with Pore Pressures

**Sample Type:** 3-in. Shelby Tube

**Description:** SILTY SAND(SM A-1-b(0))

**Specific Gravity=** 2.66

**Remarks:** Speciman very sandy

**Figure** _____

**Client:** ALDOT

**Project:** Mobile River Bridge

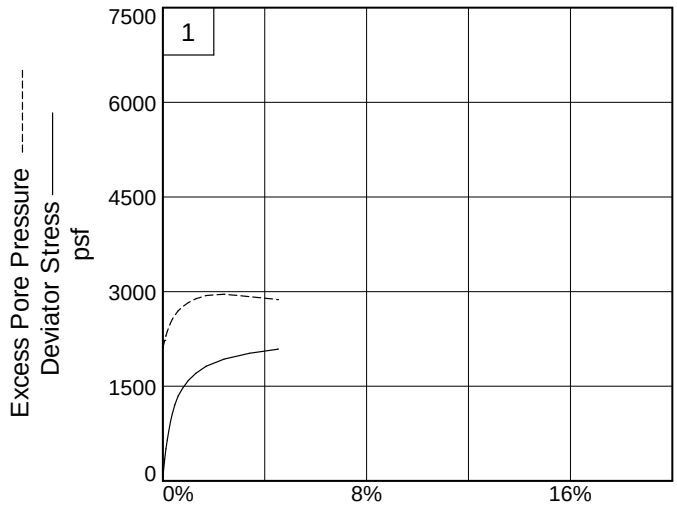
**Source of Sample:** Lab #8076 **Depth:** 28.0'-30.0'

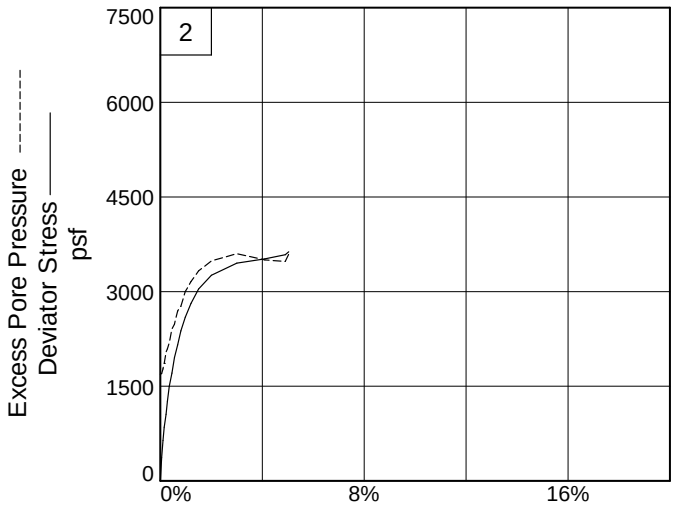
**Sample Number:** HLA-9 T-1

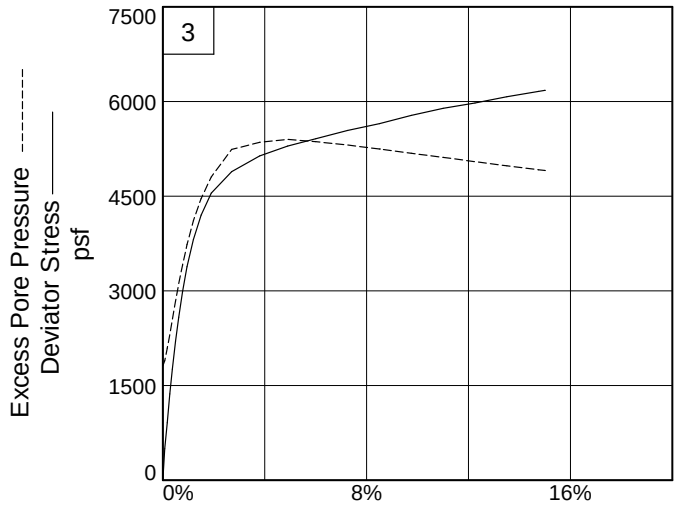
**Proj. No.:** 1511010228 **Date Sampled:**

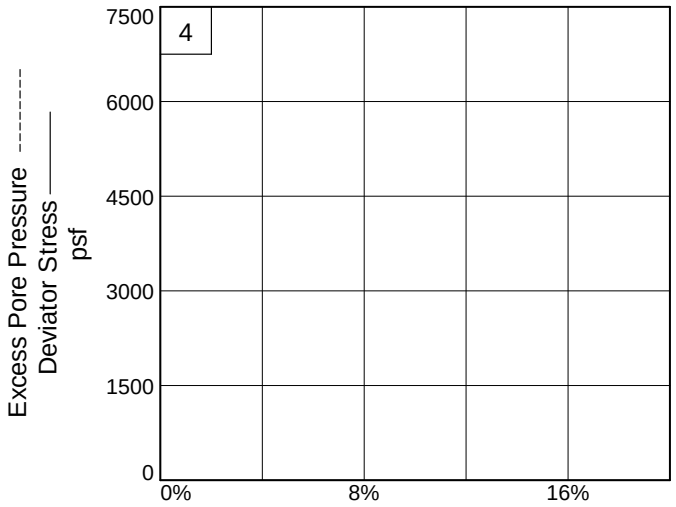
TRIAXIAL SHEAR TEST REPORT

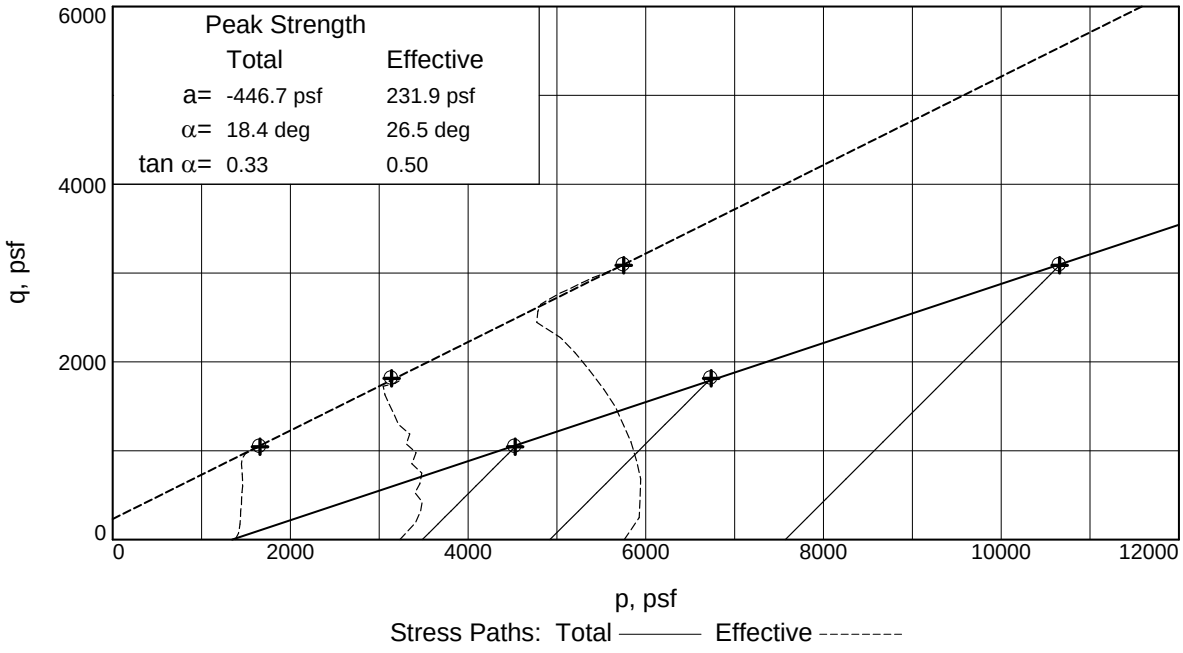
Thompson Engineering
Mobile, Alabama



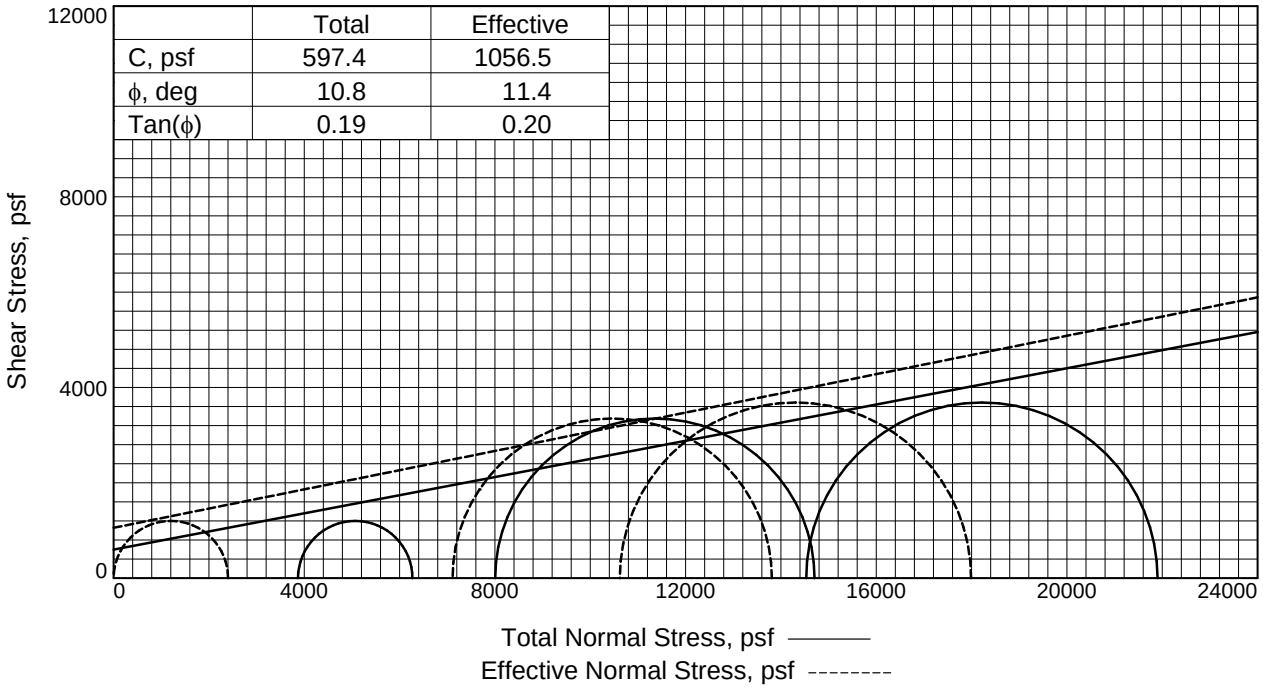

**Client:** ALDOT

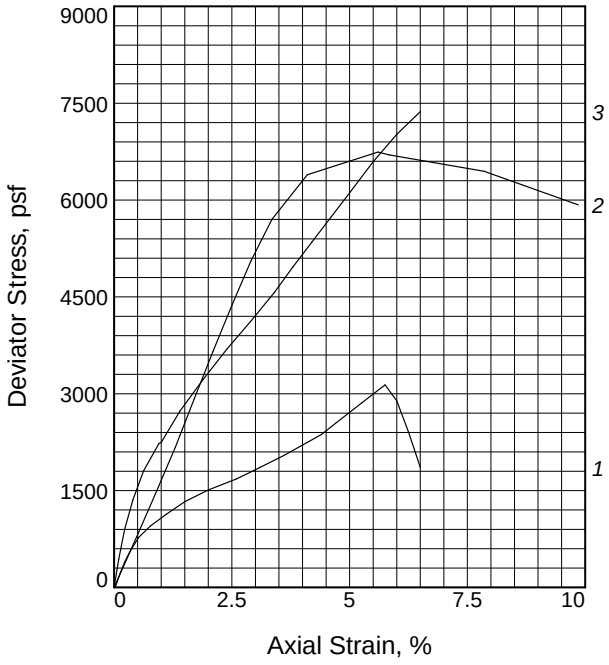
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8076 **Depth:** 28.0'-30.0' **Sample Number:** HLA-9 T-1

**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| Specimen No. | | 1 | 2 | 3 |
|---|---|---|---|---|
| Initial | Water Content, % | 18.6 | 18.3 | 17.9 |
| | Dry Density, pcf | 112.5 | 111.3 | 113.7 |
| | Saturation, % | 103.8 | 98.7 | 103.6 |
| | Void Ratio | 0.4759 | 0.4920 | 0.4600 |
| | Diameter, in. | 1.432 | 1.437 | 1.433 |
| | Height, in. | 2.780 | 2.780 | 2.770 |
| At Test | Water Content, % | 26.0 | 19.2 | 19.2 |
| | Dry Density, pcf | 112.5 | 111.3 | 113.7 |
| | Saturation, % | 145.6 | 103.8 | 111.2 |
| | Void Ratio | 0.4759 | 0.4920 | 0.4600 |
| | Diameter, in. | 1.432 | 1.437 | 1.433 |
| | Height, in. | 2.780 | 2.780 | 2.770 |
| Strain at peak, % | | 6.3 | 5.9 | 6.5 |
| Eff. Cell Pressure, psf | | 3869.3 | 8006.4 | 14531.0 |
| Fail. Stress, psf | | 2400.1 | 6697.9 | 7369.0 |
| Excess Pore Pr., psf | | 3868.2 | 896.0 | 3911.7 |
| Strain, % | | 6.3 | 5.9 | 6.5 |
| Ult. Stress, psf | | 2400.1 | 6697.9 | 7369.0 |
| Excess Pore Pr., psf | | 3868.2 | 896.0 | 3911.7 |
| Strain, % | | 6.3 | 5.9 | 6.5 |
| $\bar{\sigma}_1$ Failure, psf | | 2401.2 | 13808.3 | 17988.4 |
| $\bar{\sigma}_3$ Failure, psf | | 1.1 | 7110.4 | 10619.3 |

**Type of Test:**
CU with Pore Pressures

**Sample Type:**

**Description:** LEAN CLAY with SAND(CL A-7-6(20))

**Specific Gravity=** 2.66

**Remarks:**

**Figure** _____

**Client:** ALDOT

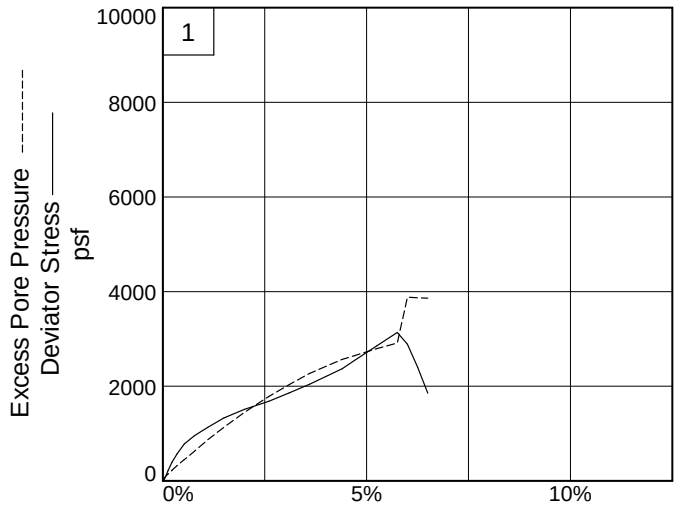
**Project:** Mobile River Bridge

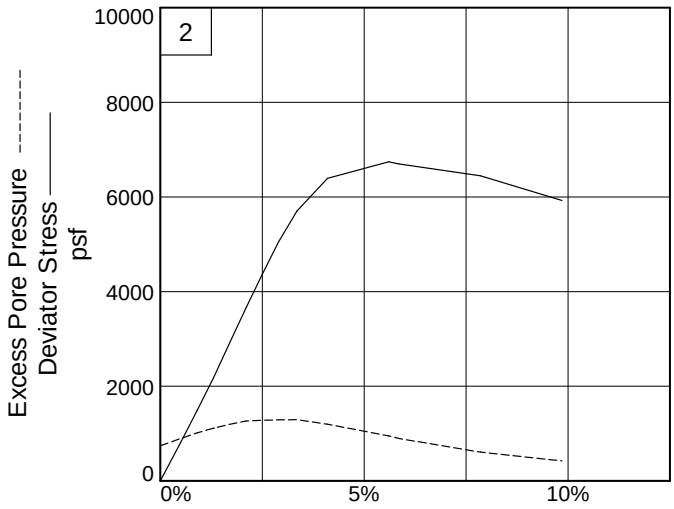
**Source of Sample:** Lab #8068 **Depth:** 158.0'-160.0'

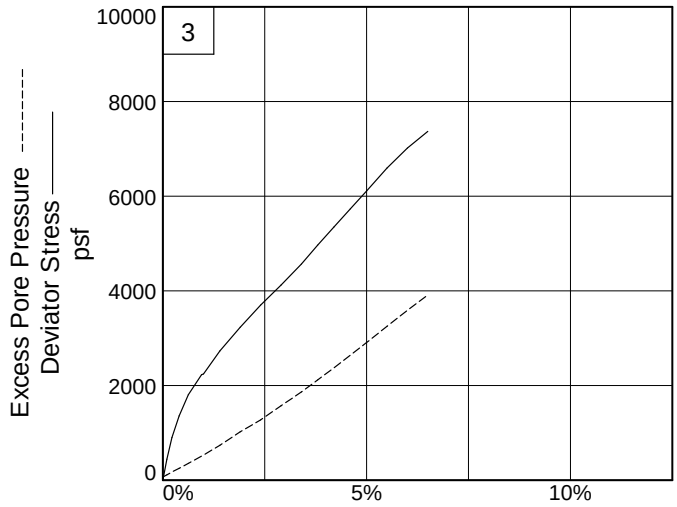
**Sample Number:** HLA-13 T-2

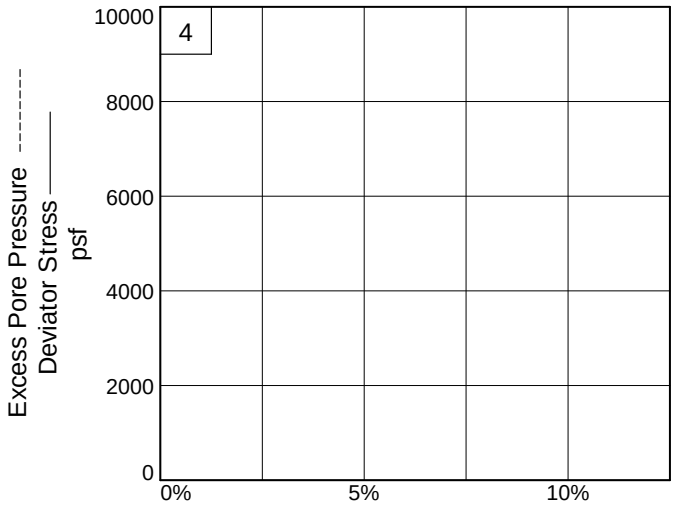
**Proj. No.:** 1511010228 **Date Sampled:**

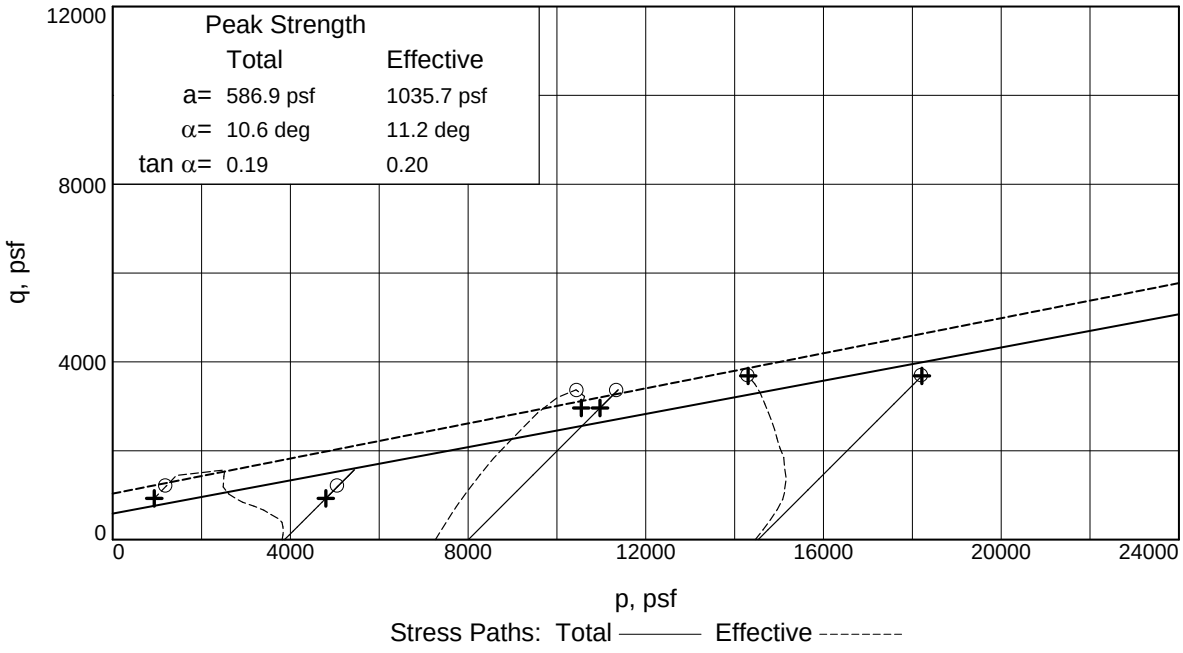
TRIAXIAL SHEAR TEST REPORT
Thompson Engineering
Mobile, Alabama



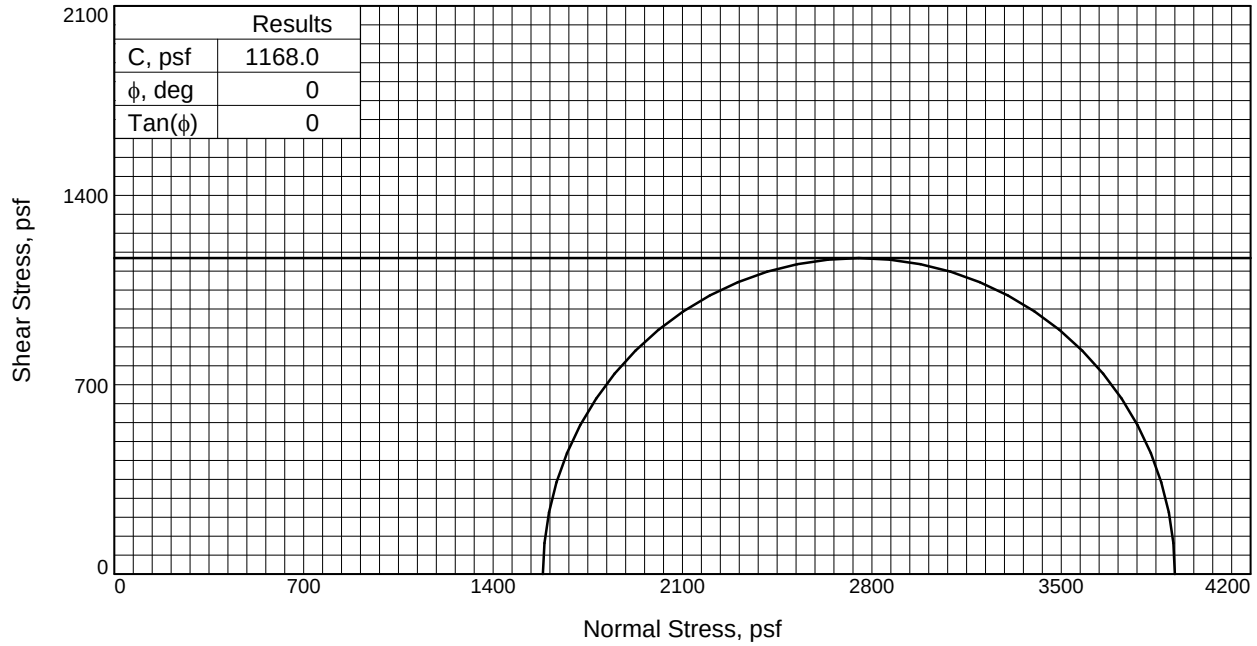

**Client:** ALDOT

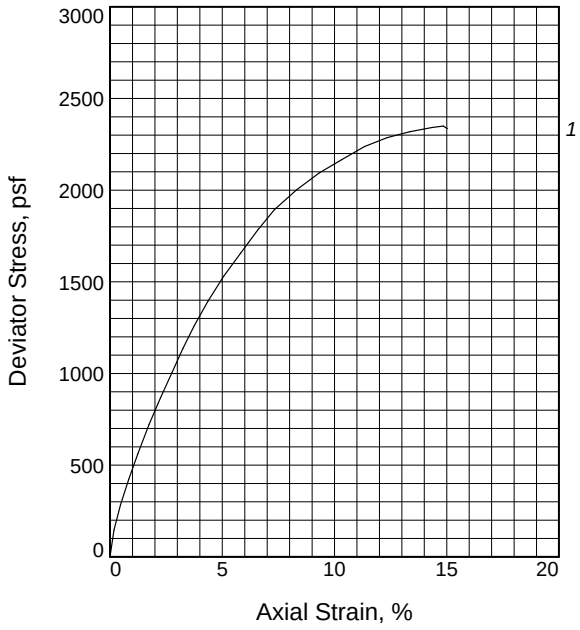
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8068 **Depth:** 158.0'-160.0' **Sample Number:** HLA-13 T-2

**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 26.2 |
| | Dry Density, pcf | 99.2 |
| | Saturation, % | 103.4 |
| | Void Ratio | 0.6732 |
| | Diameter, in. | 2.800 |
| | Height, in. | 5.492 |
| At Test | Water Content, % | 28.3 |
| | Dry Density, pcf | 99.2 |
| | Saturation, % | 111.7 |
| | Void Ratio | 0.6732 |
| | Diameter, in. | 2.800 |
| | Height, in. | 5.492 |
| Strain at peak, % | | 15.0 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 1584.0 |
| Fail. Stress, psf | | 2336.0 |
| Strain, % | | 15.0 |
| Ult. Stress, psf | | 2336.0 |
| Strain, % | | 15.0 |
| $\sigma_1$ Failure, psf | | 3920.0 |
| $\sigma_3$ Failure, psf | | 1584.0 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** CLAYEY SAND (SC A-6(2))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Symmetrical Bulge

**Figure** _____

**Client:** ALDOT

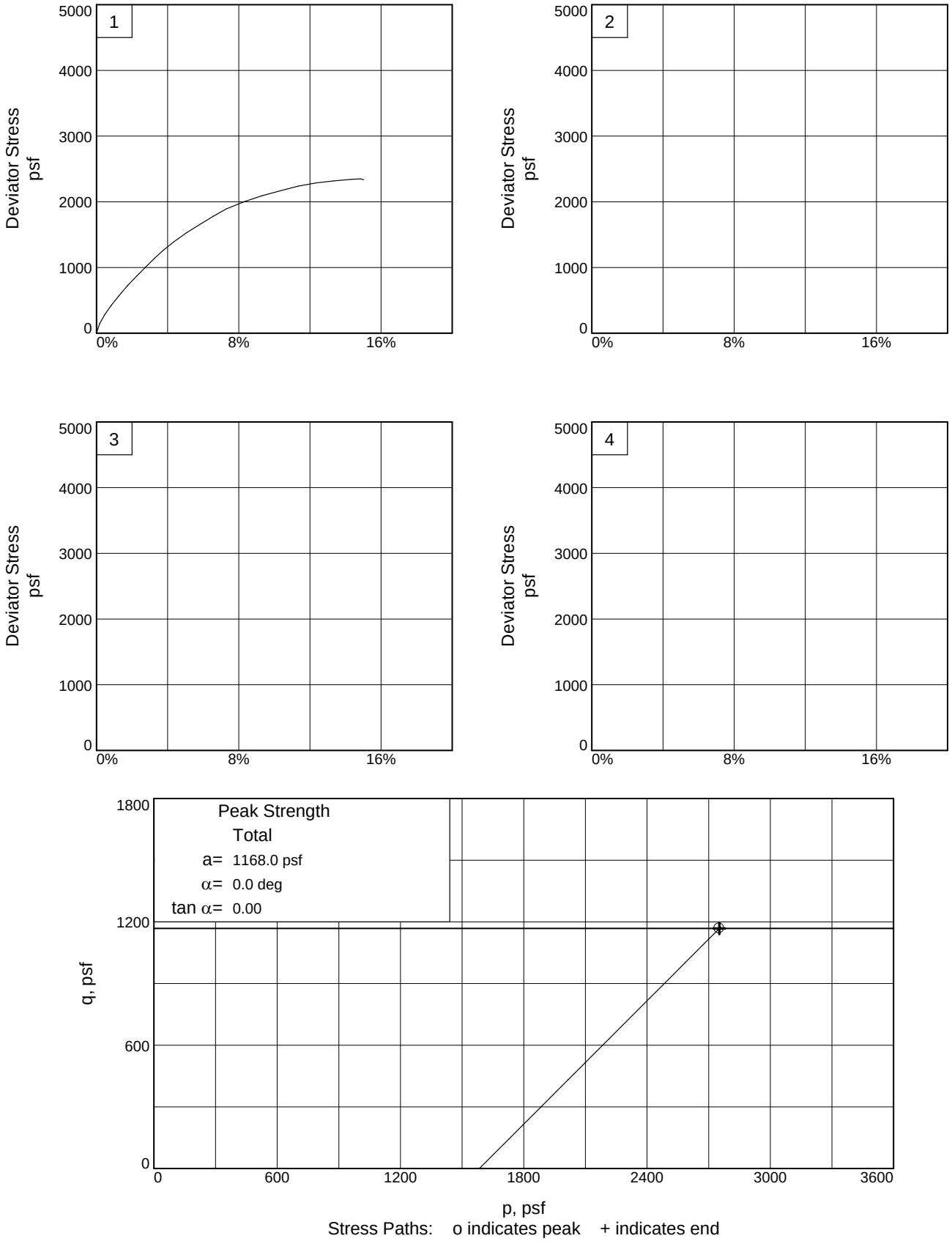
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8060 **Depth:** 15.5'-20.5'

**Sample Number:** HLA-1 T-1

**Proj. No.:** 1511010228 **Date Sampled:**

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Thompson Engineering
Mobile, Alabama



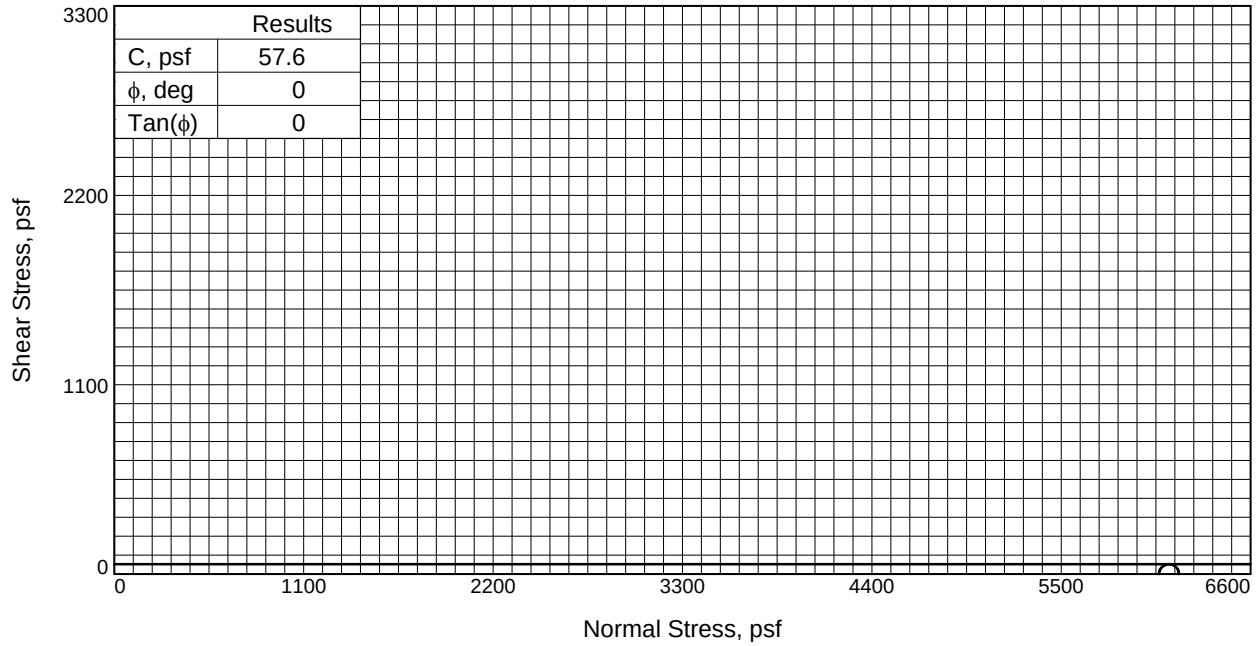

**Client:** ALDOT

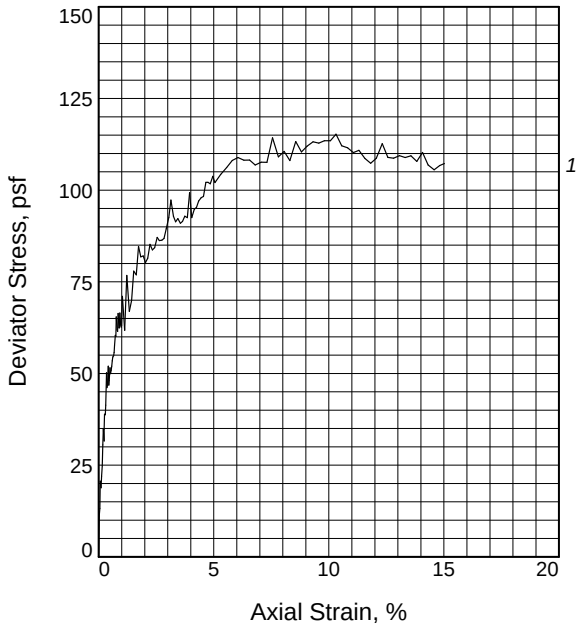
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8060 **Depth:** 15.5'-20.5' **Sample Number:** HLA-1 T-1

**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 72.8 |
| | Dry Density, pcf | 63.9 |
| | Saturation, % | 121.2 |
| | Void Ratio | 1.5977 |
| | Diameter, in. | 2.721 |
| | Height, in. | 5.355 |
| At Test | Water Content, % | 68.6 |
| | Dry Density, pcf | 63.9 |
| | Saturation, % | 114.2 |
| | Void Ratio | 1.5977 |
| | Diameter, in. | 2.721 |
| | Height, in. | 5.355 |
| Strain at peak, % | | 10.3 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 6068.2 |
| Fail. Stress, psf | | 115.3 |
| Strain, % | | 10.3 |
| Ult. Stress, psf | | |
| Strain, % | | |
| $\sigma_1$ Failure, psf | | 6183.4 |
| $\sigma_3$ Failure, psf | | 6068.2 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** SAMPLE DISTURBED

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Symmetrical Bulge

**Figure** _____

**Client:** ALDOT

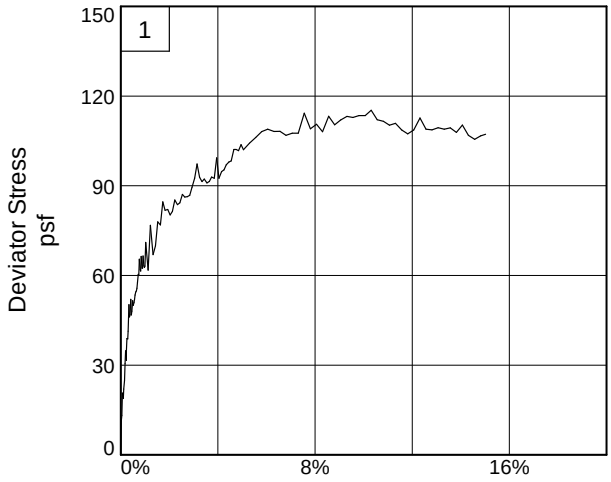
**Project:** Mobile River Bridge

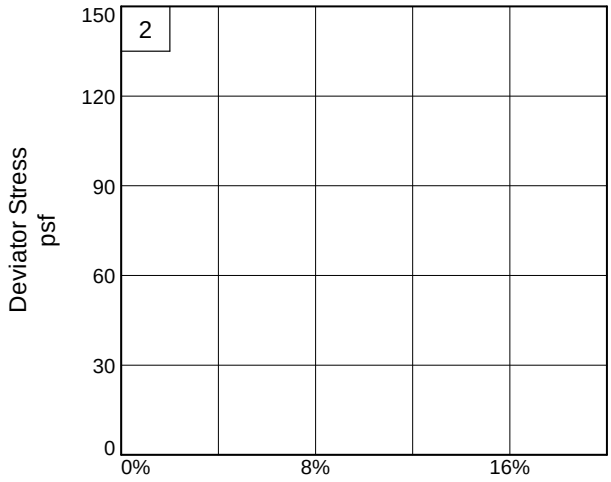
**Source of Sample:** Lab #8060 **Depth:** 113.0'-115.0'

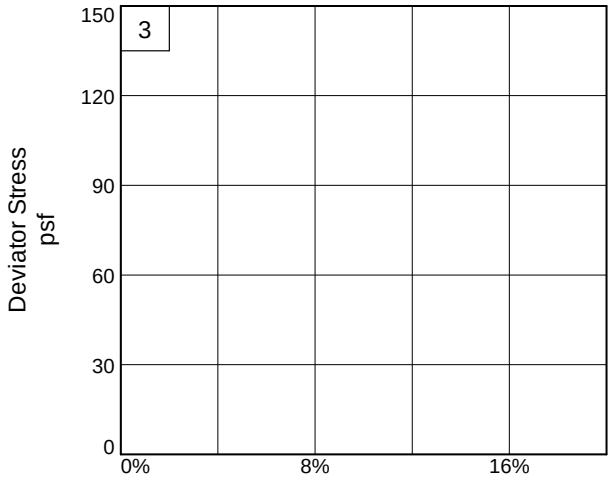
**Sample Number:** HLA-1 T-2

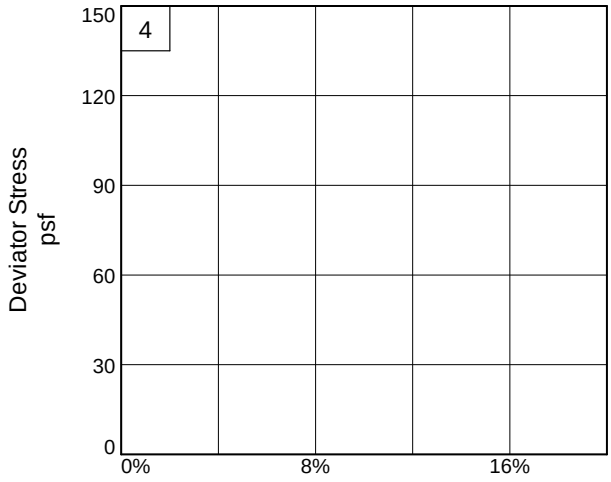
**Proj. No.:** 1511010228 **Date Sampled:**

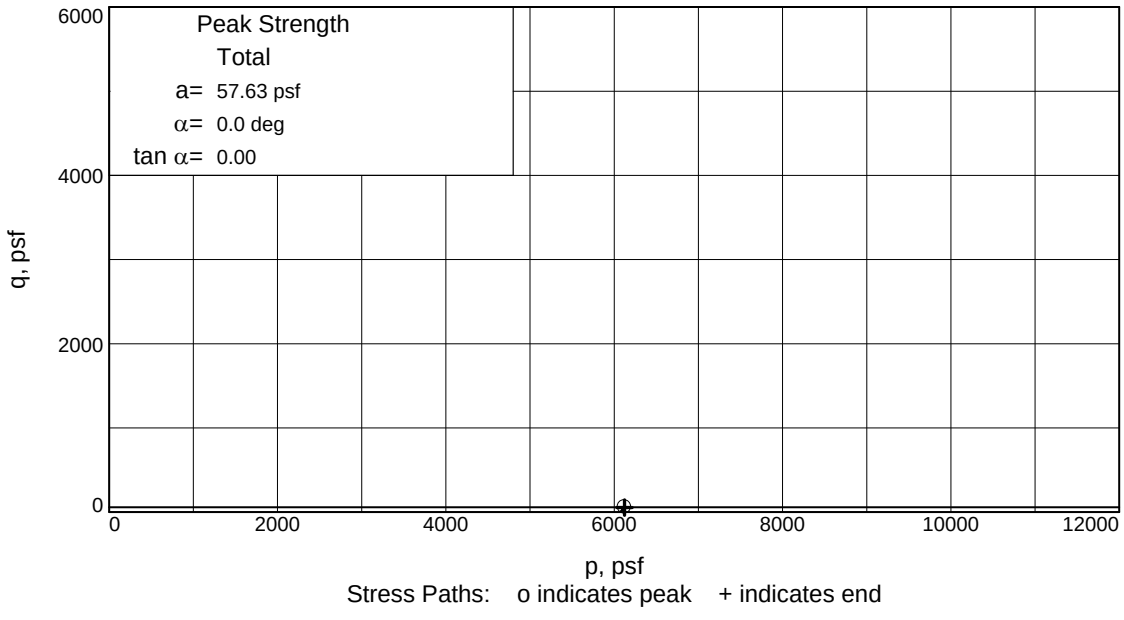
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Thompson Engineering
Mobile, Alabama



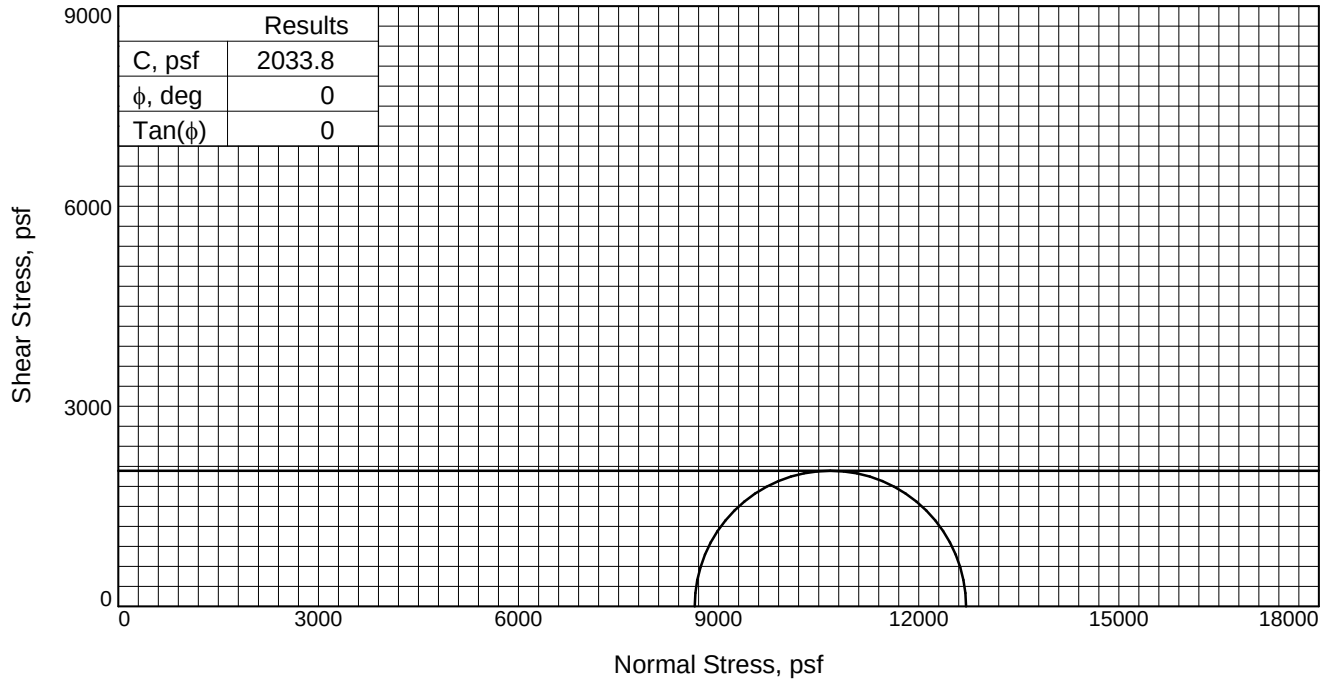



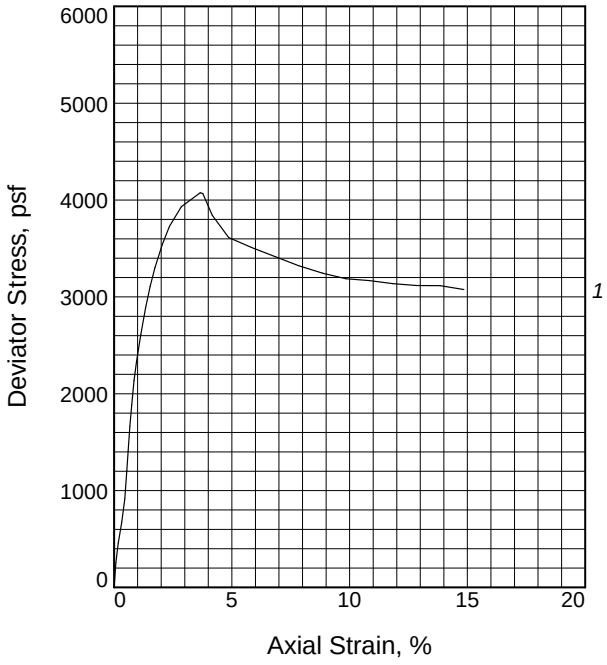




Stress Paths: o indicates peak + indicates end

**Client:** ALDOT
**Project:** Mobile River Bridge
**Source of Sample:** Lab #8060 **Depth:** 113.0'-115.0' **Sample Number:** HLA-1 T-2
**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 46.7 |
| | Dry Density, pcf | 74.9 |
| | Saturation, % | 101.9 |
| | Void Ratio | 1.2185 |
| | Diameter, in. | 2.831 |
| | Height, in. | 5.741 |
| At Test | Water Content, % | 49.9 |
| | Dry Density, pcf | 74.9 |
| | Saturation, % | 108.8 |
| | Void Ratio | 1.2185 |
| | Diameter, in. | 2.831 |
| | Height, in. | 5.741 |
| Strain at peak, % | | 3.8 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 8641.4 |
| Fail. Stress, psf | | 4067.5 |
| Strain, % | | 3.8 |
| Ult. Stress, psf | | 4067.5 |
| Strain, % | | 3.8 |
| $\sigma_1$ Failure, psf | | 12709.0 |
| $\sigma_3$ Failure, psf | | 8641.4 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** FAT CLAY(CH A-7-5(53))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Asymmetrical Shear Plane

**Figure** _____

**Client:** ALDOT

**Project:** Mobile River Bridge

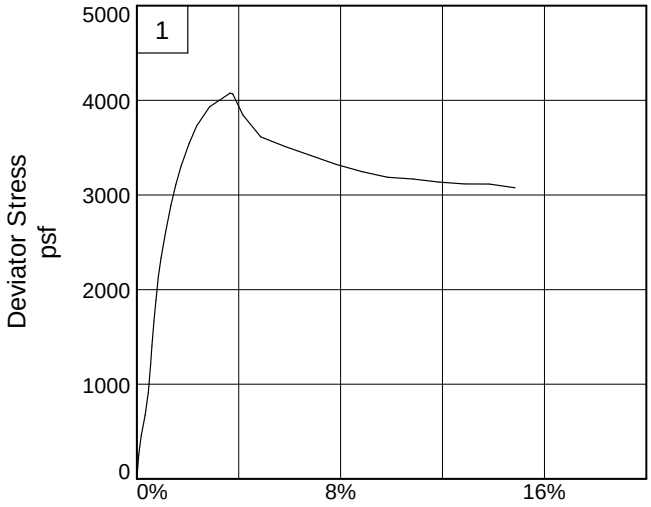
**Source of Sample:** Lab #8076 **Depth:** 123.0'-125.0'

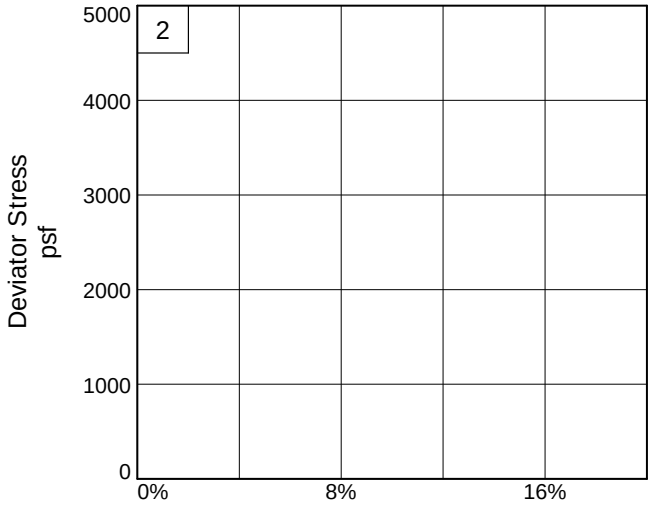
**Sample Number:** HLA-2 T-2

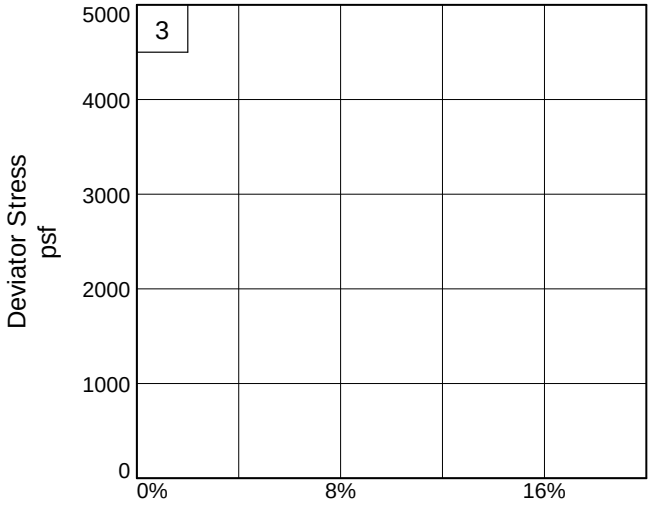
**Proj. No.:** 1511010228 **Date Sampled:**

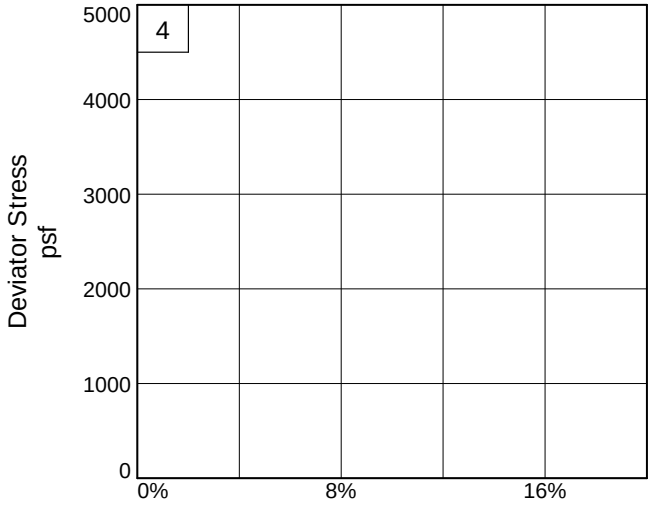
TRIAXIAL SHEAR TEST REPORT

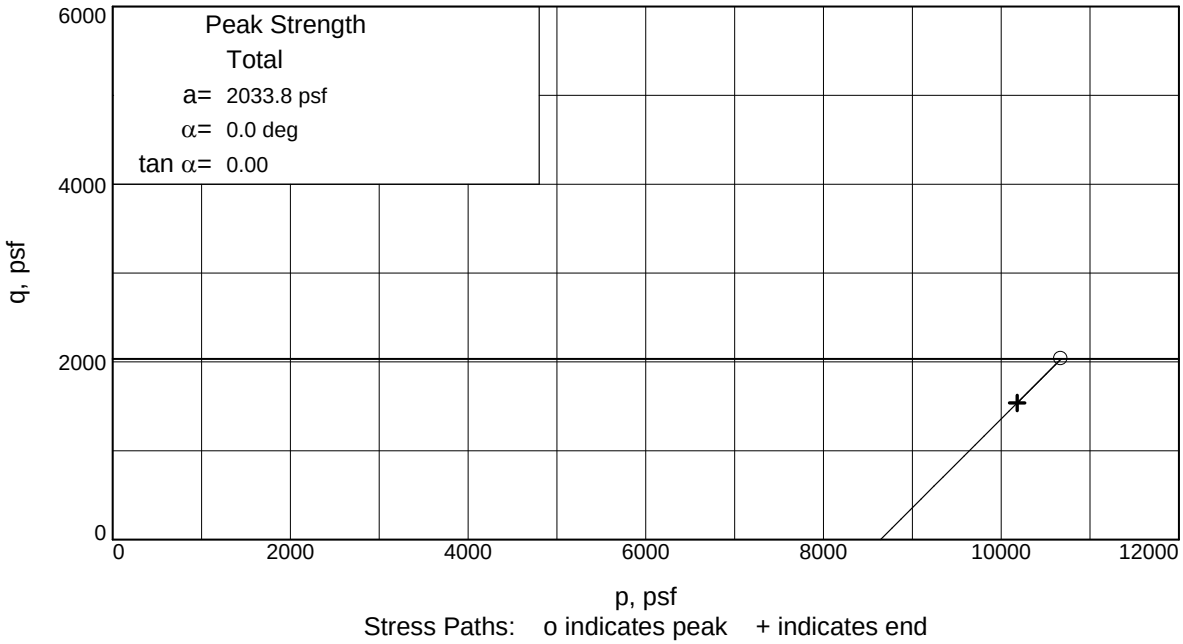
Thompson Engineering
Mobile, Alabama




Stress Paths: o indicates peak + indicates end

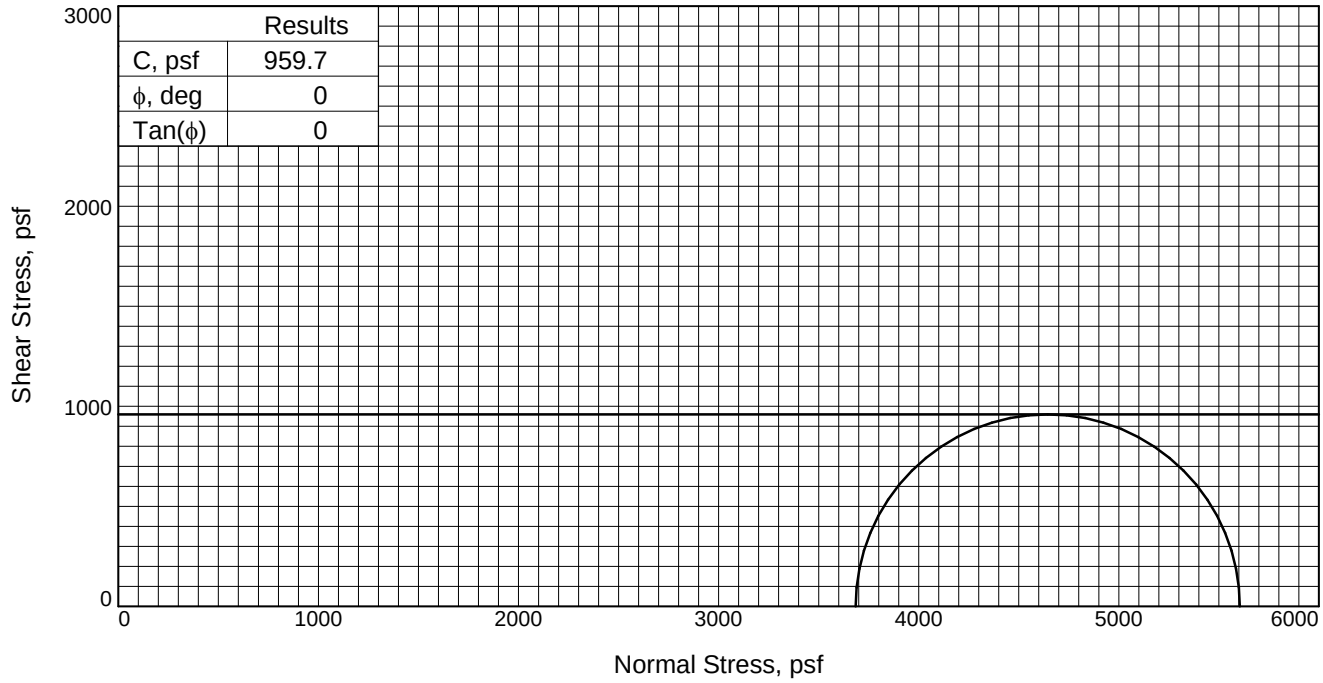
**Client:** ALDOT

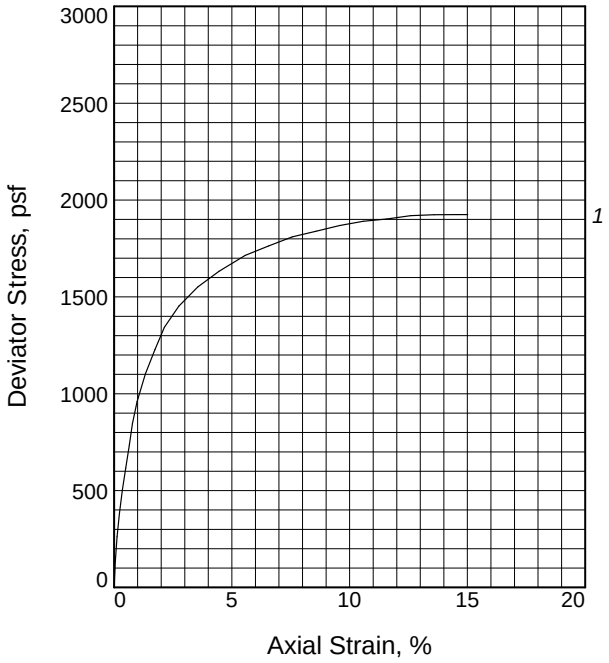
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8076 **Depth:** 123.0'-125.0' **Sample Number:** HLA-2 T-2

**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 32.4 |
| | Dry Density, pcf | 91.4 |
| | Saturation, % | 105.6 |
| | Void Ratio | 0.8173 |
| | Diameter, in. | 2.815 |
| | Height, in. | 5.648 |
| At Test | Water Content, % | 31.4 |
| | Dry Density, pcf | 91.4 |
| | Saturation, % | 102.2 |
| | Void Ratio | 0.8173 |
| | Diameter, in. | 2.815 |
| | Height, in. | 5.648 |
| Strain at peak, % | | 12.6 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 3685.0 |
| Fail. Stress, psf | | 1919.4 |
| Strain, % | | 12.6 |
| Ult. Stress, psf | | 1919.4 |
| Strain, % | | 12.6 |
| $\sigma_1$ Failure, psf | | 5604.3 |
| $\sigma_3$ Failure, psf | | 3685.0 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** SILTY SAND (SM A-4(0))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Symmetrical Bulge

**Figure** _____

**Client:** ALDOT

**Project:** Mobile River Bridge

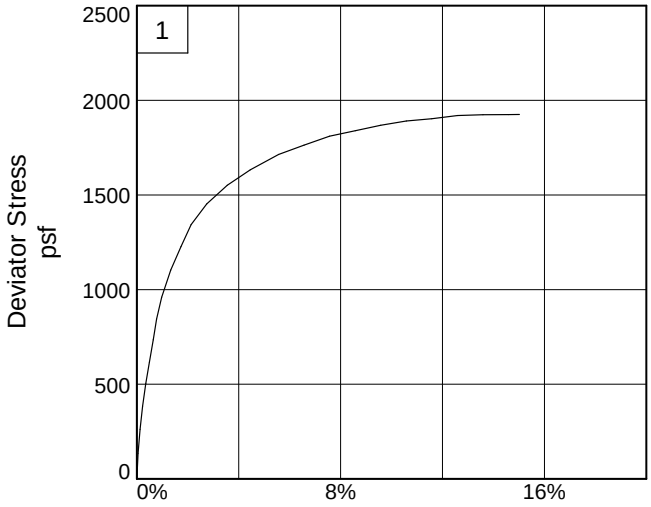
**Source of Sample:** Lab #8081 **Depth:** 34.5'-36.5

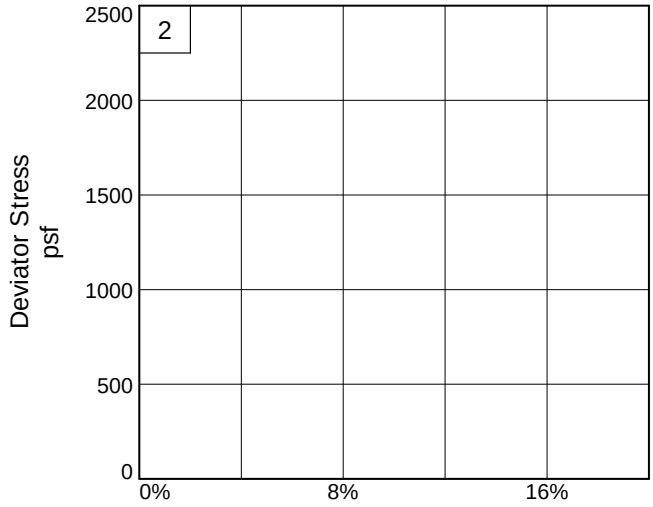
**Sample Number:** HLA-3A T-1

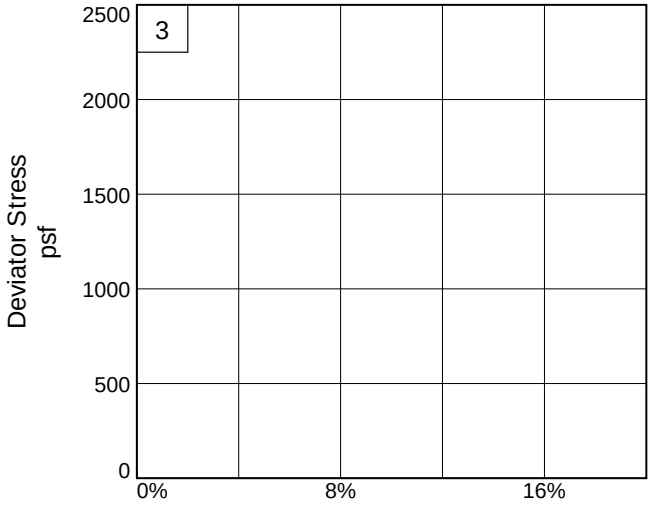
**Proj. No.:** 1511010228 **Date Sampled:**

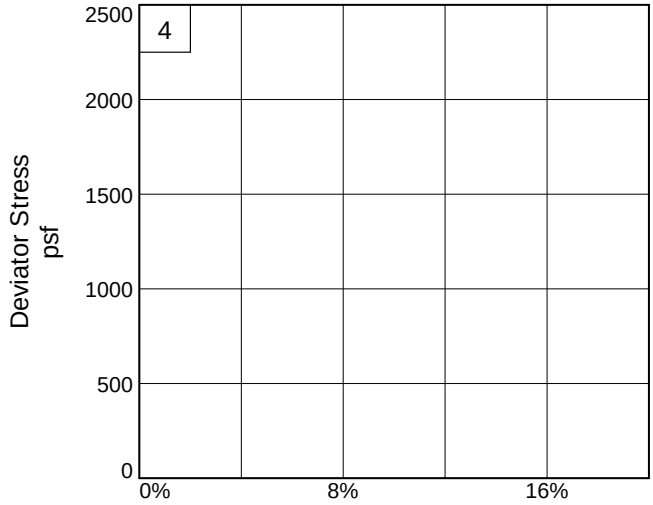
TRIAXIAL SHEAR TEST REPORT

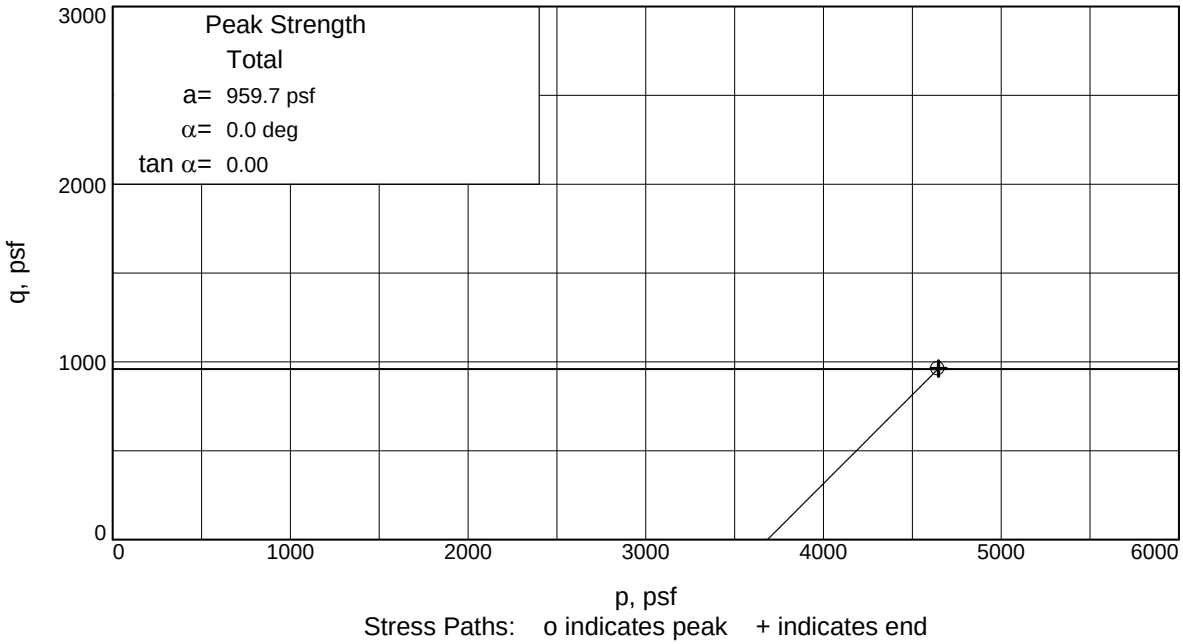
Thompson Engineering
Mobile, Alabama




Stress Paths: o indicates peak + indicates end

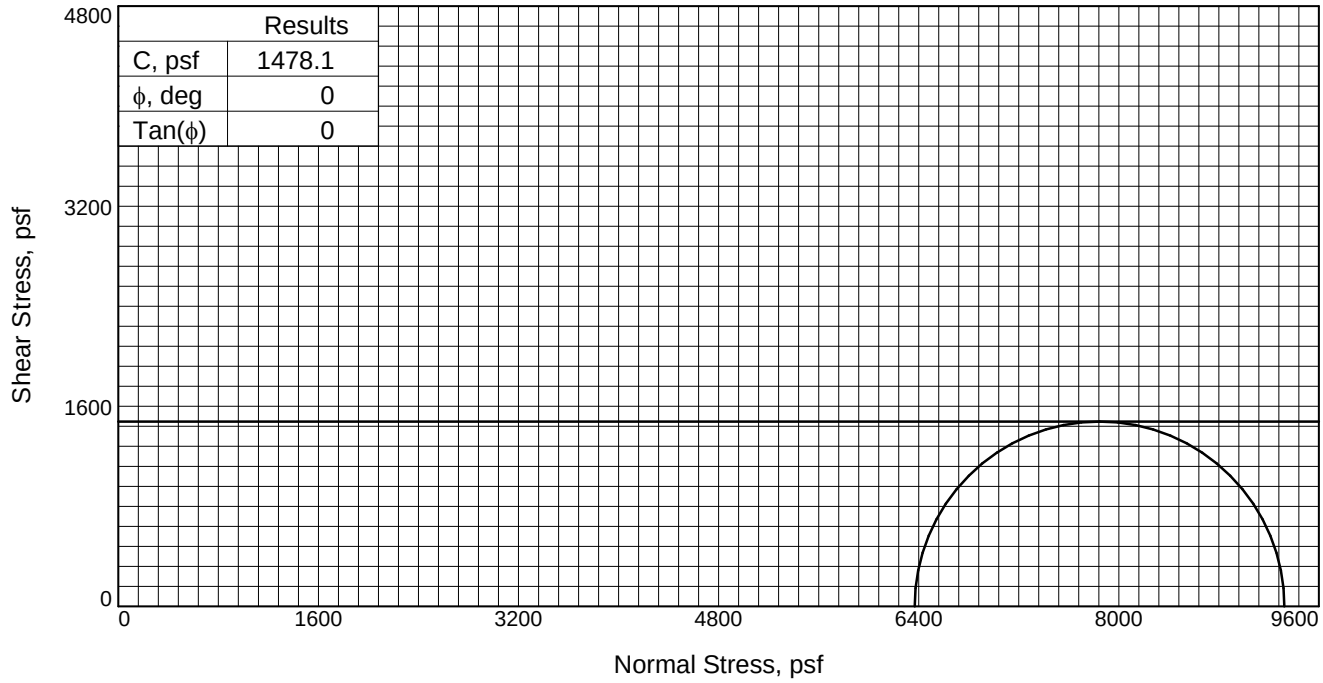
**Client:** ALDOT

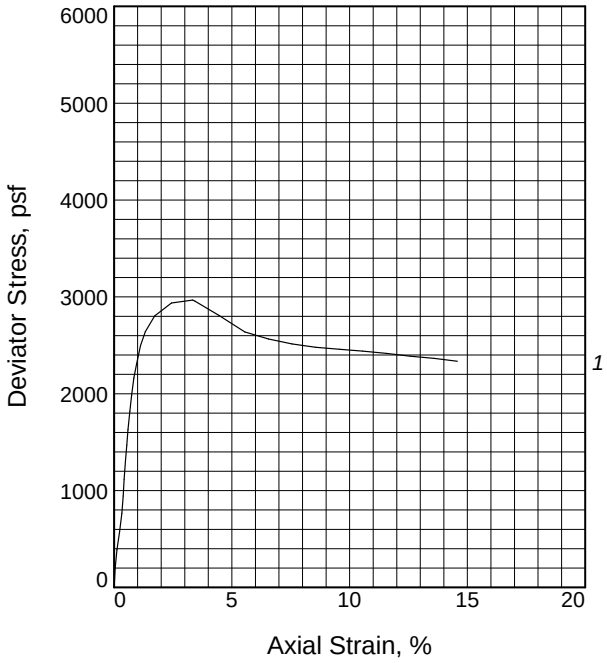
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8081 **Depth:** 34.5'-36.5 **Sample Number:** HLA-3A T-1

**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 39.4 |
| | Dry Density, pcf | 80.0 |
| | Saturation, % | 97.3 |
| | Void Ratio | 1.0763 |
| | Diameter, in. | 2.829 |
| | Height, in. | 5.497 |
| At Test | Water Content, % | 46.3 |
| | Dry Density, pcf | 80.0 |
| | Saturation, % | 114.3 |
| | Void Ratio | 1.0763 |
| | Diameter, in. | 2.829 |
| | Height, in. | 5.497 |
| Strain at peak, % | | 3.4 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 6367.7 |
| Fail. Stress, psf | | 2956.2 |
| Strain, % | | 3.4 |
| Ult. Stress, psf | | 2956.2 |
| Strain, % | | 3.4 |
| $\sigma_1$ Failure, psf | | 9323.8 |
| $\sigma_3$ Failure, psf | | 6367.7 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** SANDY ELASTIC SILT(MH A-7-5(22))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Asymmetrical Shear Plane

**Figure** _____

**Client:** ALDOT

**Project:** Mobile River Bridge

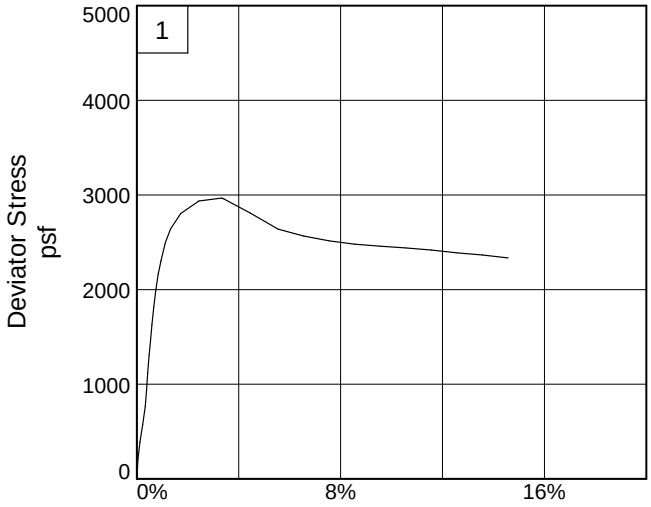
**Source of Sample:** Lab #8081 **Depth:** 119.5'-121.5'

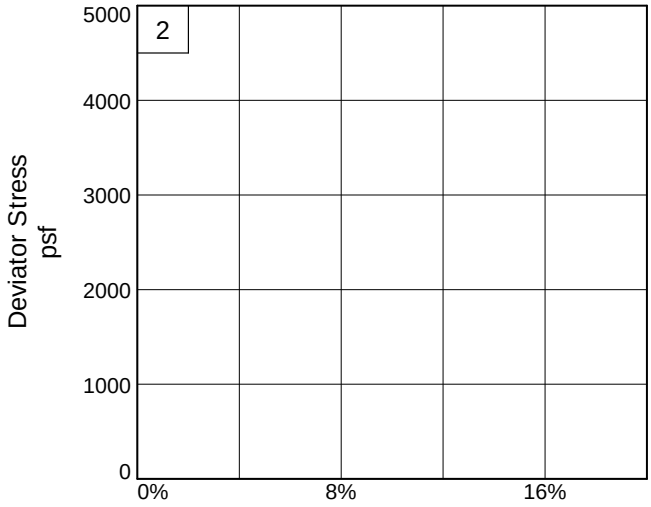
**Sample Number:** HLA-3A T-2

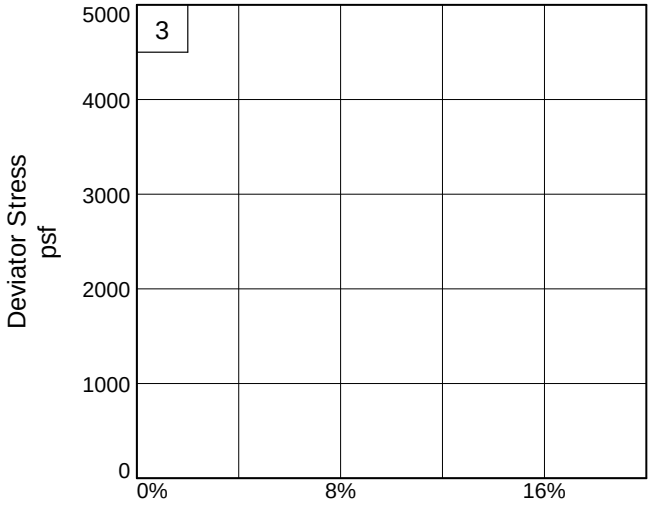
**Proj. No.:** 1511010228 **Date Sampled:**

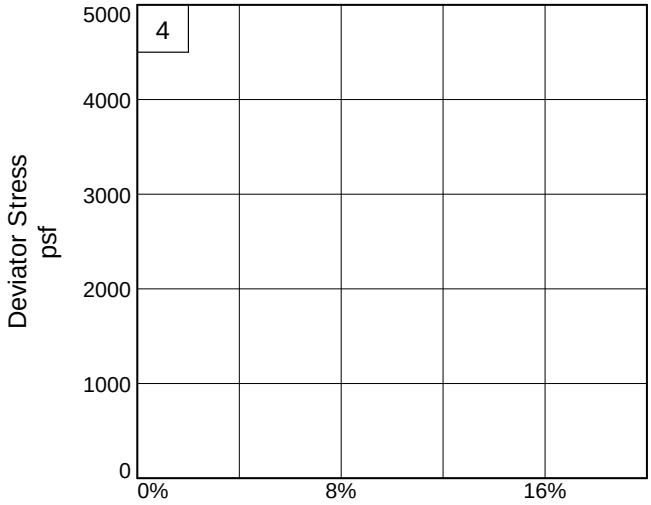
TRIAXIAL SHEAR TEST REPORT

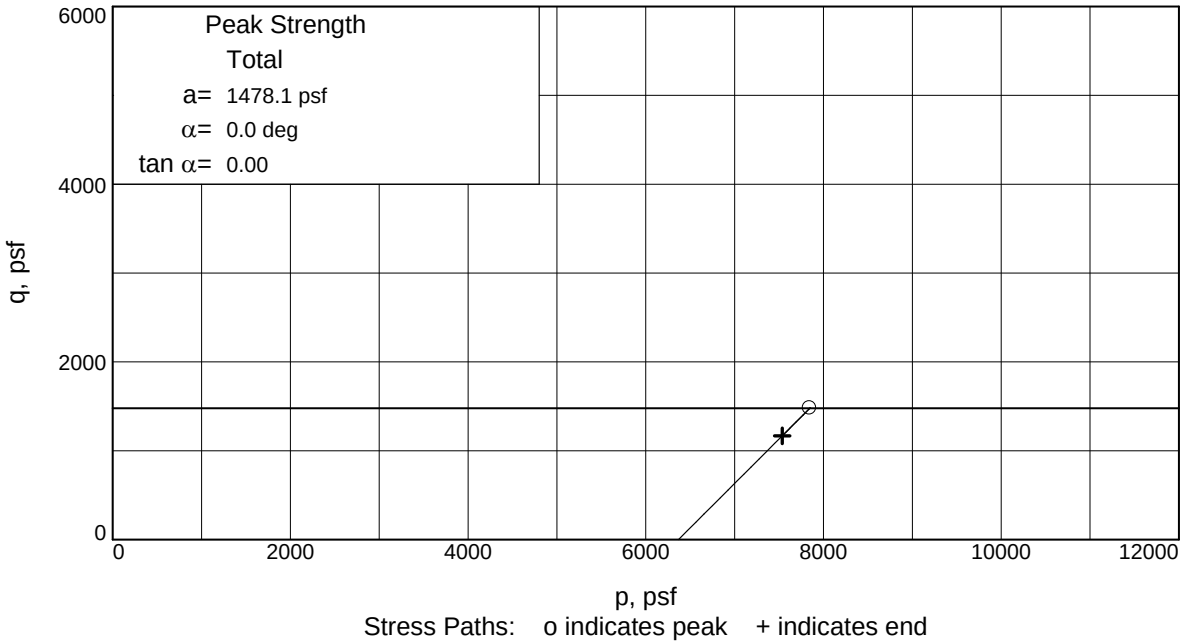
Thompson Engineering
Mobile, Alabama




Stress Paths: o indicates peak + indicates end

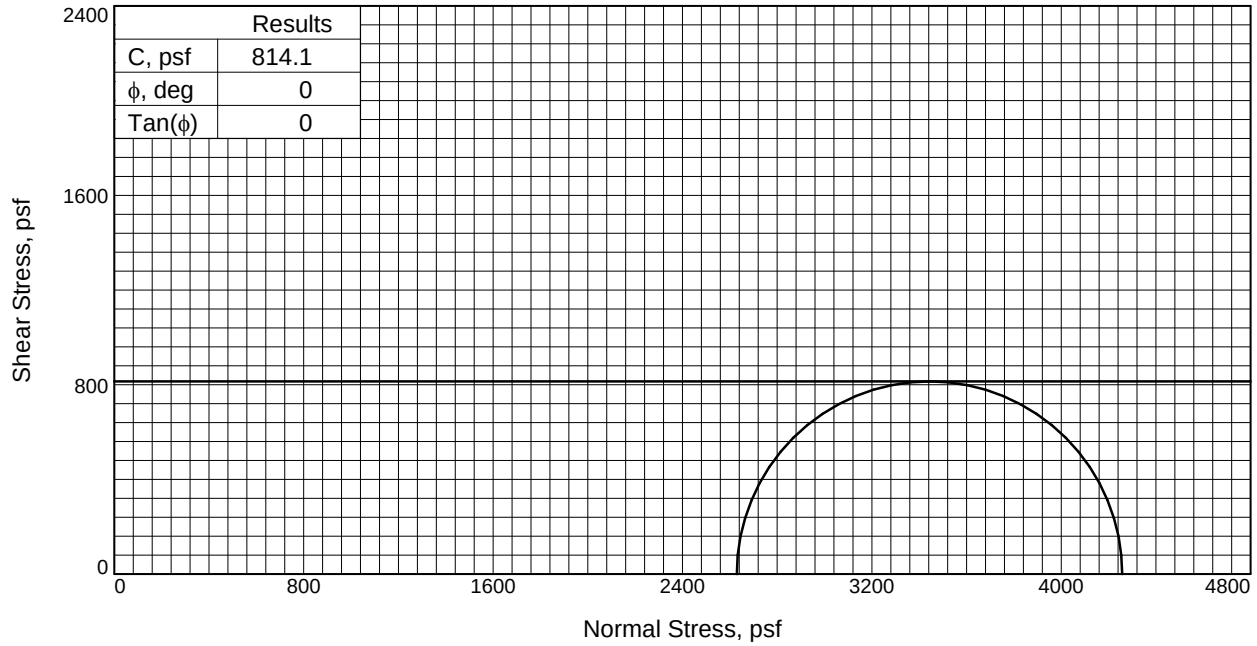
**Client:** ALDOT

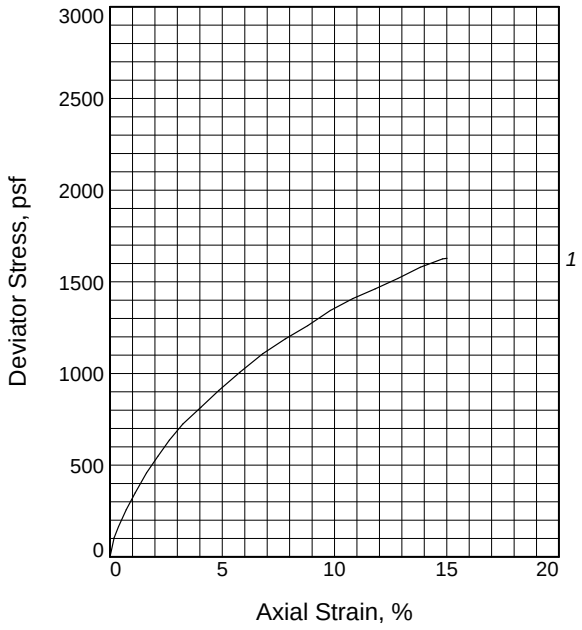
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8081 **Depth:** 119.5'-121.5' **Sample Number:** HLA-3A T-2

**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 26.4 |
| | Dry Density, pcf | 99.1 |
| | Saturation, % | 103.9 |
| | Void Ratio | 0.6751 |
| | Diameter, in. | 2.799 |
| | Height, in. | 5.522 |
| At Test | Water Content, % | 28.5 |
| | Dry Density, pcf | 99.1 |
| | Saturation, % | 112.4 |
| | Void Ratio | 0.6751 |
| | Diameter, in. | 2.799 |
| | Height, in. | 5.522 |
| Strain at peak, % | | 15.0 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 2629.4 |
| Fail. Stress, psf | | 1628.2 |
| Strain, % | | 15.0 |
| Ult. Stress, psf | | 1628.2 |
| Strain, % | | 15.0 |
| $\sigma_1$ Failure, psf | | 4257.6 |
| $\sigma_3$ Failure, psf | | 2629.4 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** SILTY SAND(SM A-2-4(0))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Symmetrical Bulge

**Figure** _____

**Client:** ALDOT

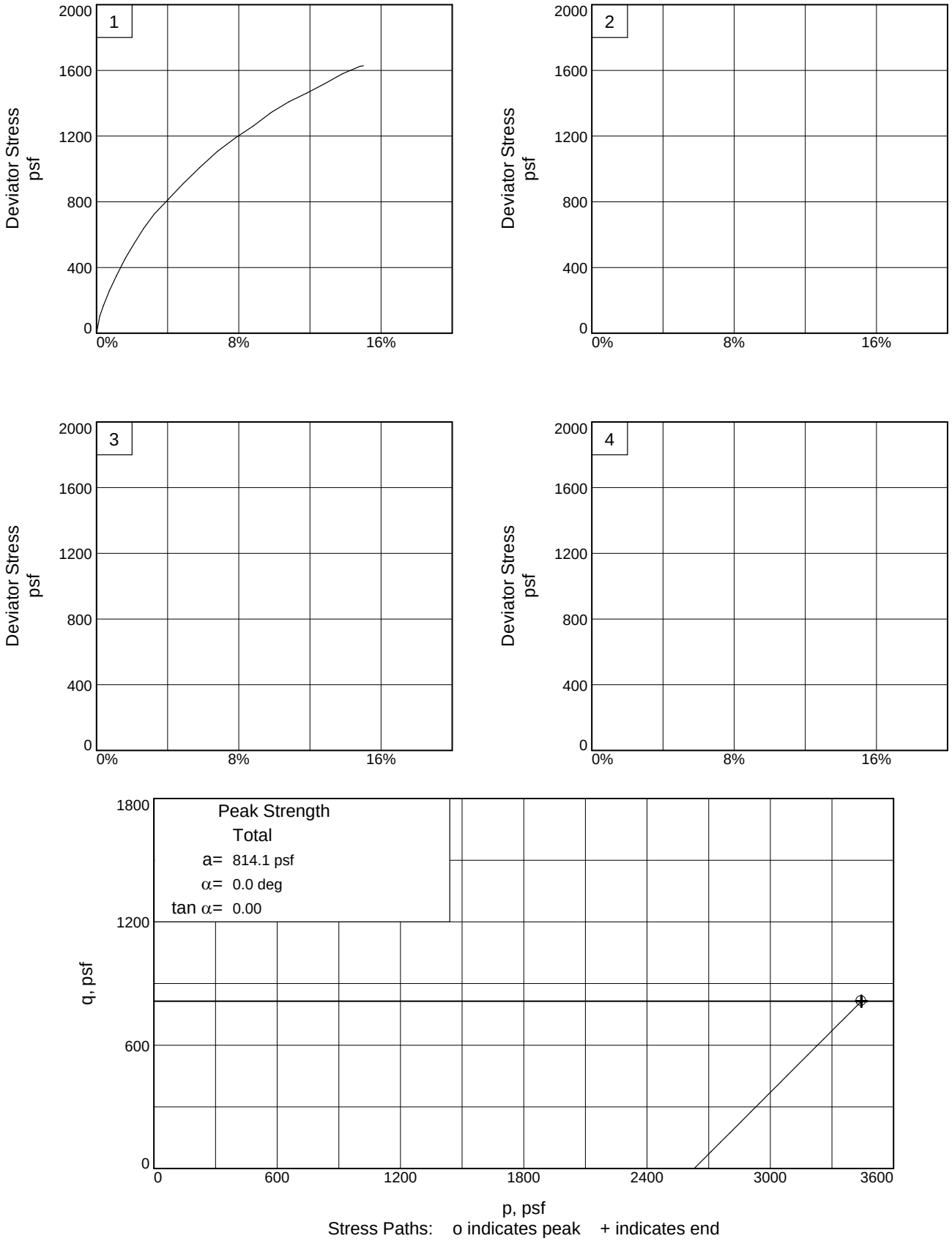
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8060 **Depth:** 28.0'-30.0'

**Sample Number:** HLA-4 T-1

**Proj. No.:** 1511010228 **Date Sampled:**

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Thompson Engineering
Mobile, Alabama



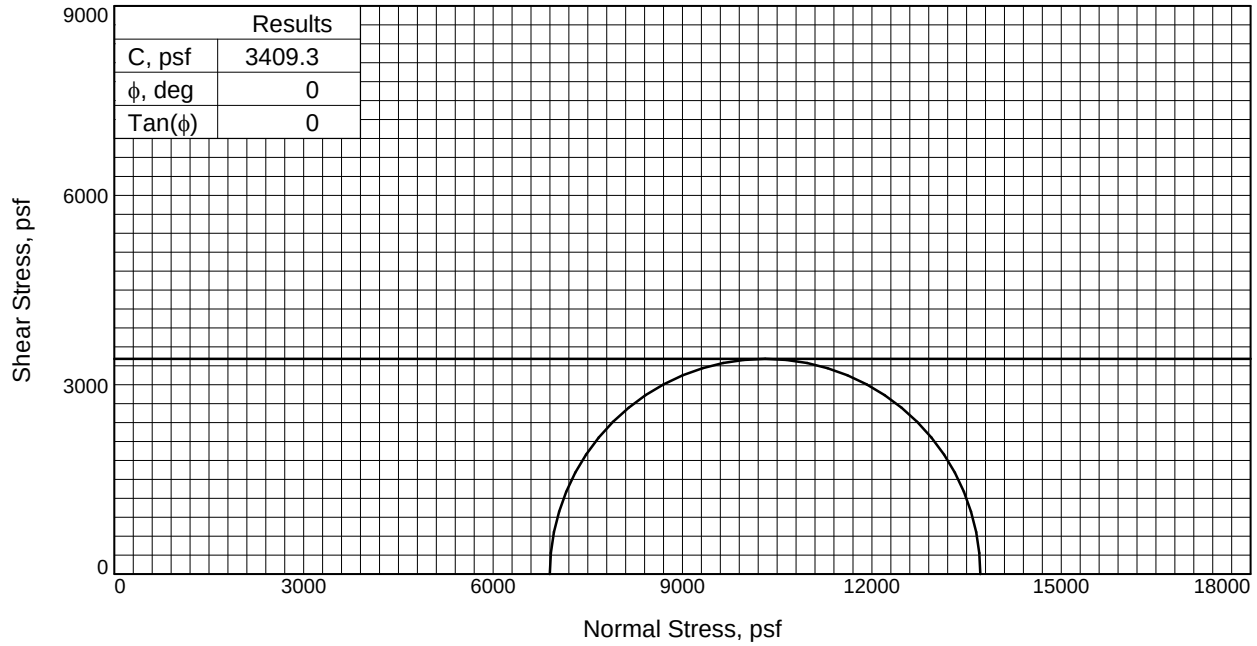

**Client:** ALDOT

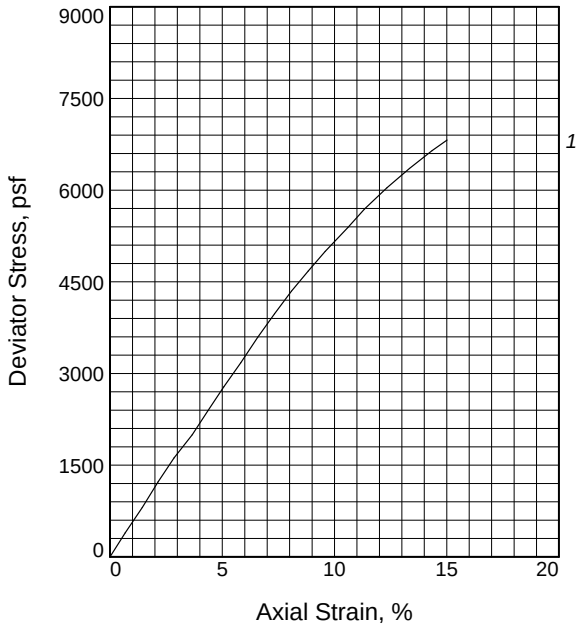
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8060 **Depth:** 28.0'-30.0' **Sample Number:** HLA-4 T-1

**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 23.6 |
| | Dry Density, pcf | 104.8 |
| | Saturation, % | 107.1 |
| | Void Ratio | 0.5852 |
| | Diameter, in. | 2.871 |
| | Height, in. | 5.345 |
| At Test | Water Content, % | 10.6 |
| | Dry Density, pcf | 104.8 |
| | Saturation, % | 48.2 |
| | Void Ratio | 0.5852 |
| | Diameter, in. | 2.871 |
| | Height, in. | 5.345 |
| Strain at peak, % | | 15.0 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 6899.0 |
| Fail. Stress, psf | | 6818.6 |
| Strain, % | | 15.0 |
| Ult. Stress, psf | | 6818.6 |
| Strain, % | | 15.0 |
| $\sigma_1$ Failure, psf | | 13717.7 |
| $\sigma_3$ Failure, psf | | 6899.0 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** SILTY SAND(SM A-2-4(0))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Symmetrical Bulge

**Figure** _____

**Client:** ALDOT

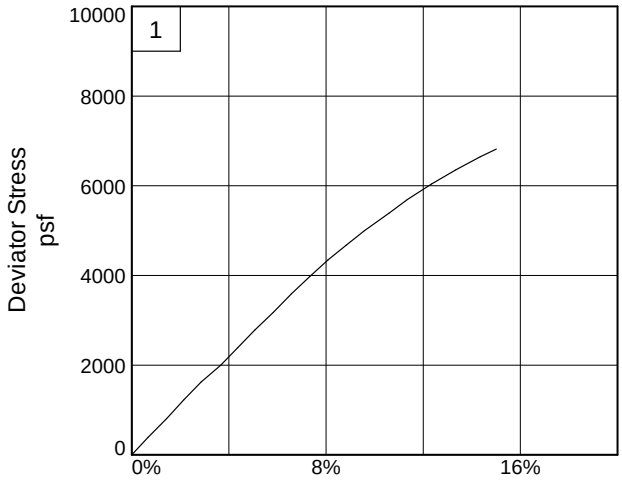
**Project:** Mobile River Bridge

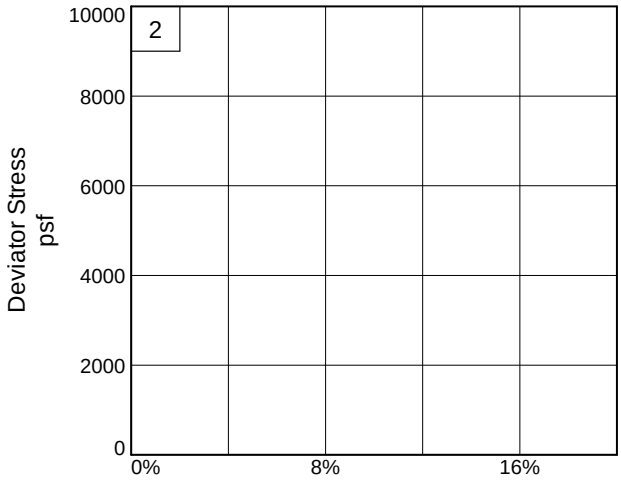
**Source of Sample:** Lab #8060 **Depth:** 118.0'-120.'

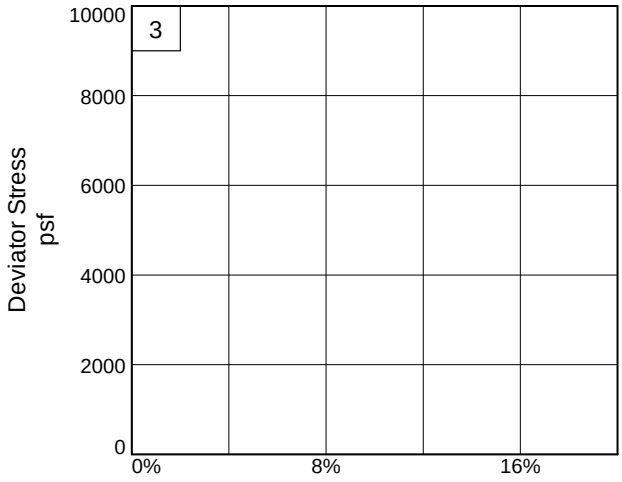
**Sample Number:** HLA-4 T-2

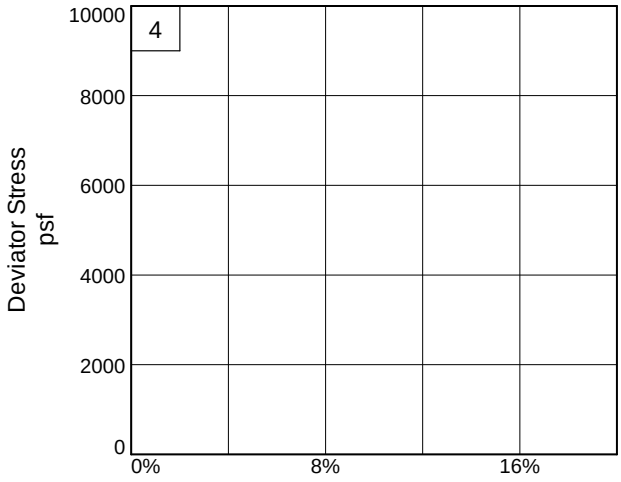
**Proj. No.:** 1511010228 **Date Sampled:**

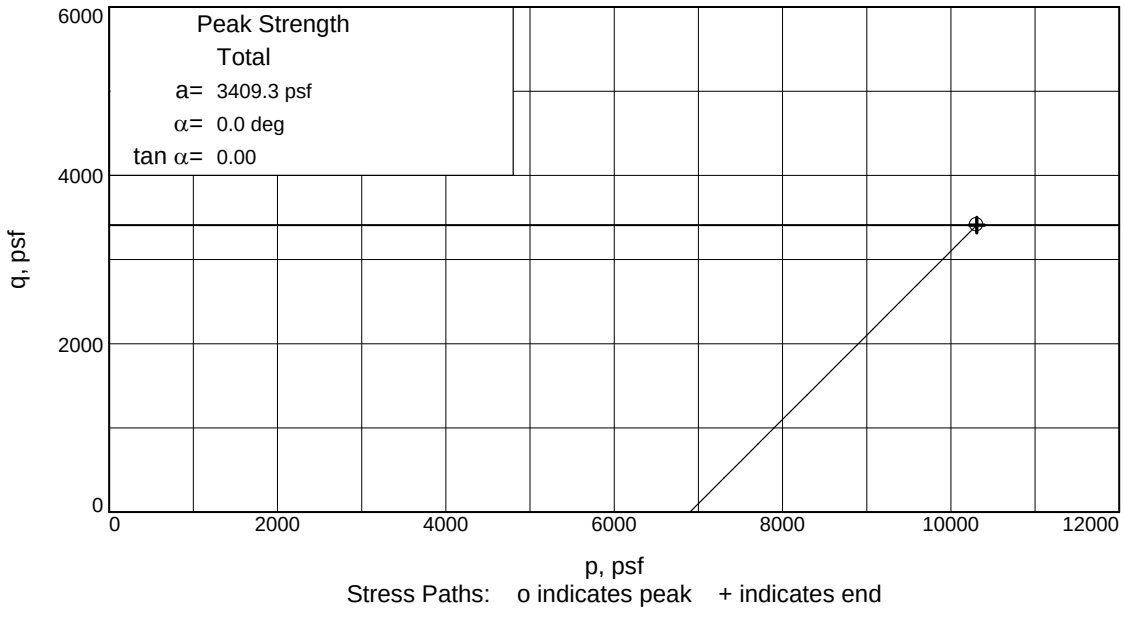
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Mobile, Alabama




Stress Paths: o indicates peak + indicates end

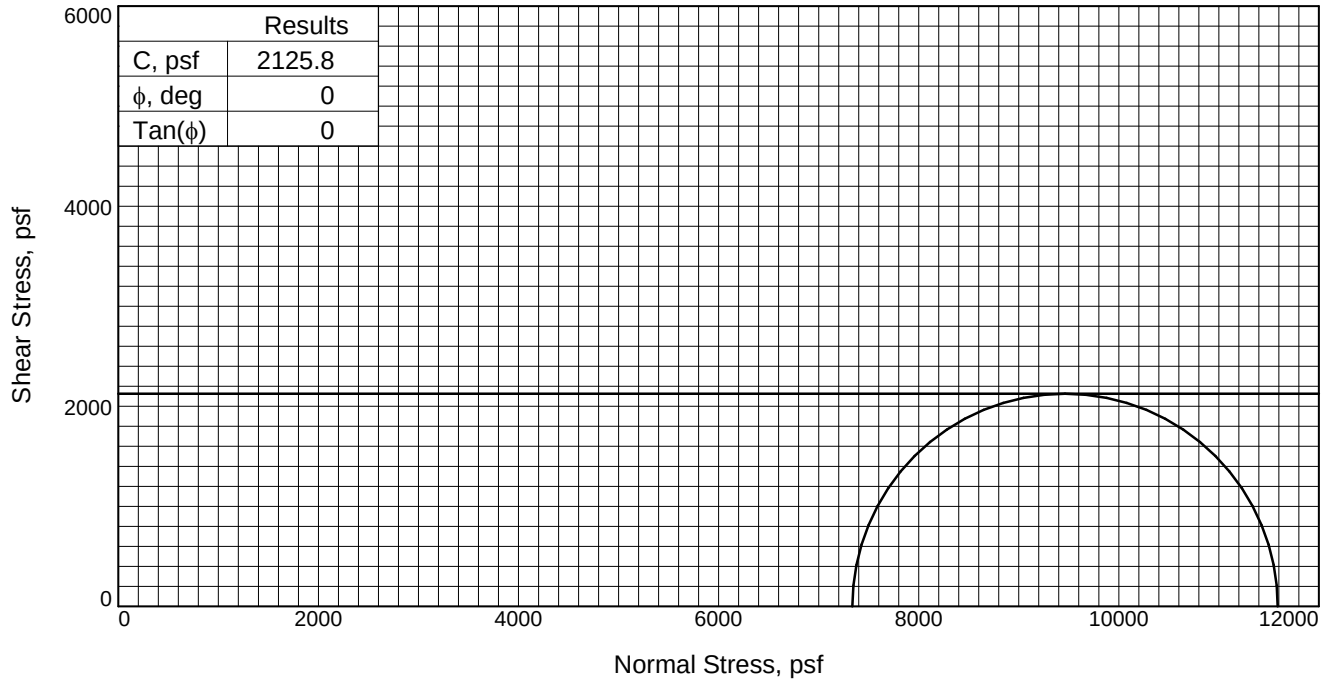
**Client:** ALDOT

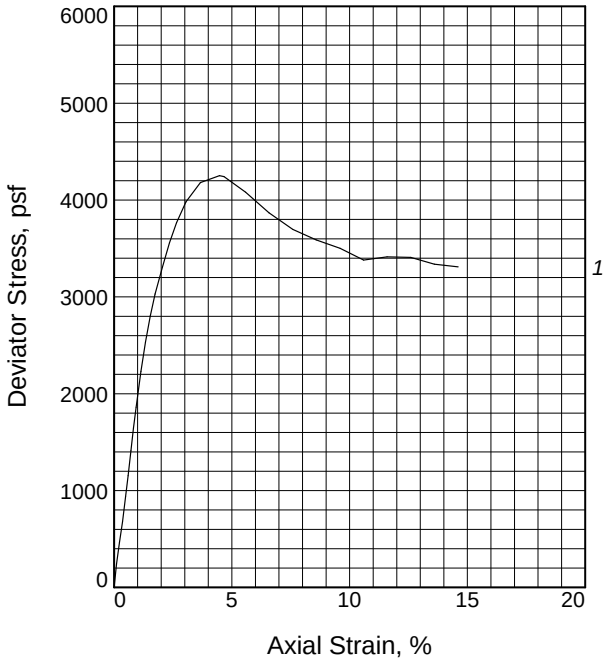
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8060 **Depth:** 118.0'-120.' **Sample Number:** HLA-4 T-2

**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 53.2 |
| | Dry Density, pcf | 68.8 |
| | Saturation, % | 100.0 |
| | Void Ratio | 1.4145 |
| | Diameter, in. | 2.822 |
| | Height, in. | 5.683 |
| At Test | Water Content, % | 53.8 |
| | Dry Density, pcf | 68.8 |
| | Saturation, % | 101.2 |
| | Void Ratio | 1.4145 |
| | Diameter, in. | 2.822 |
| | Height, in. | 5.683 |
| Strain at peak, % | | 4.5 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 7336.8 |
| Fail. Stress, psf | | 4251.6 |
| Strain, % | | 4.5 |
| Ult. Stress, psf | | 4251.6 |
| Strain, % | | 4.5 |
| $\sigma_1$ Failure, psf | | 11588.4 |
| $\sigma_3$ Failure, psf | | 7336.8 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** FAT CLAY(CH A-7-5(51))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Asymmetrical Shear Plane

**Figure** _____

**Client:** ALDOT

**Project:** Mobile River Bridge

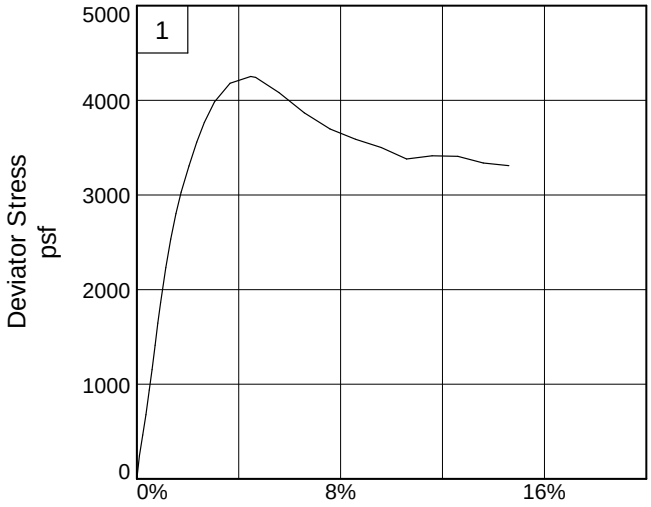
**Source of Sample:** Lab #8076 **Depth:** 108.0'-110.0'

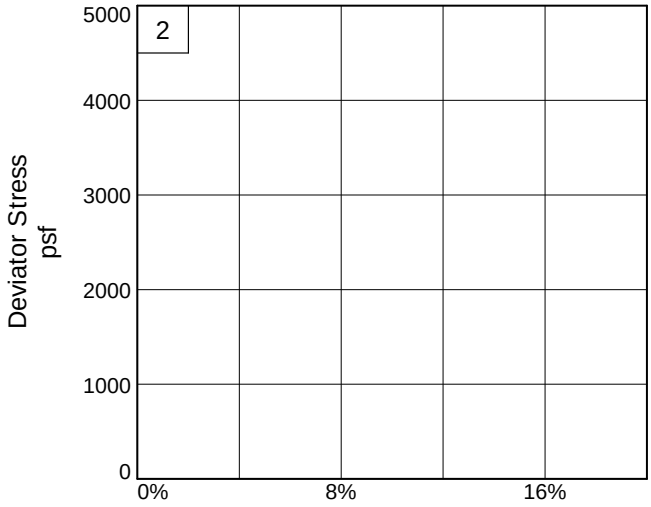
**Sample Number:** HLA-6 T-2

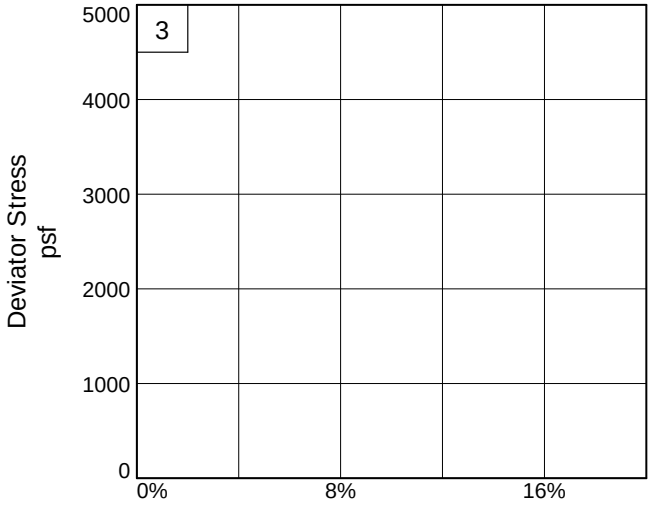
**Proj. No.:** 1511010228 **Date Sampled:**

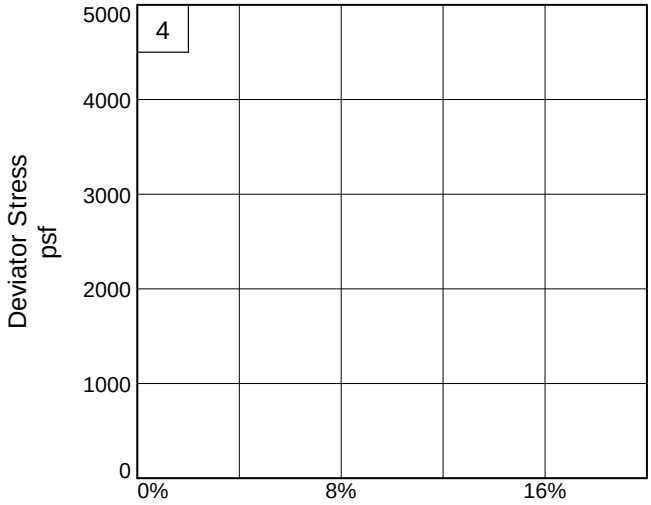
TRIAXIAL SHEAR TEST REPORT

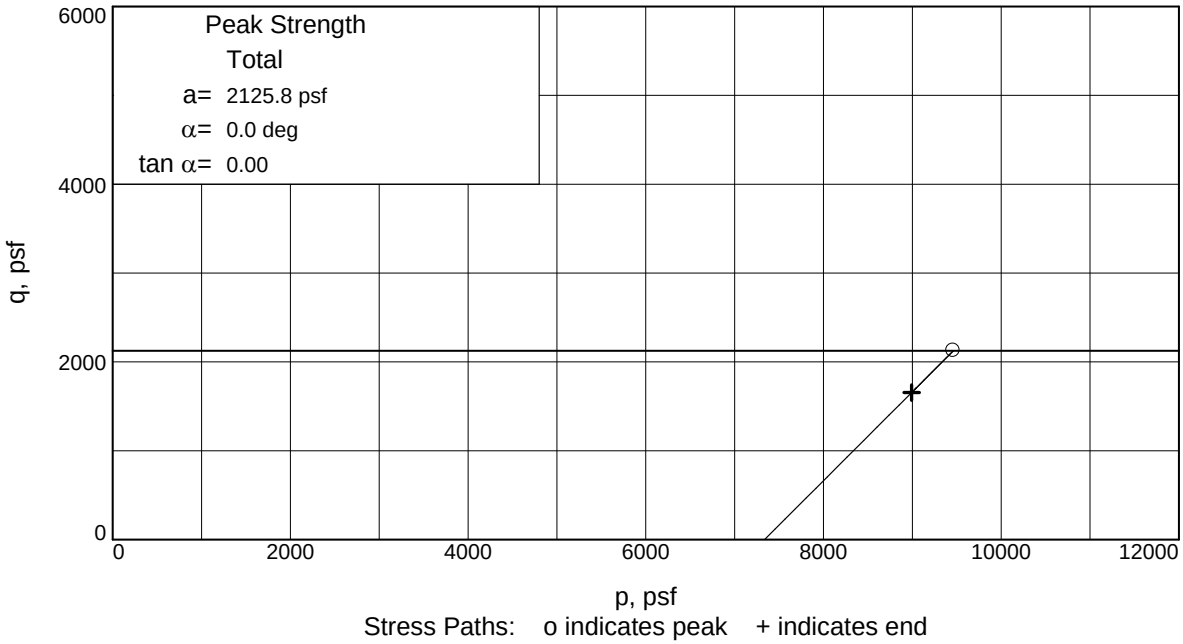
Thompson Engineering
Mobile, Alabama




Stress Paths: o indicates peak + indicates end

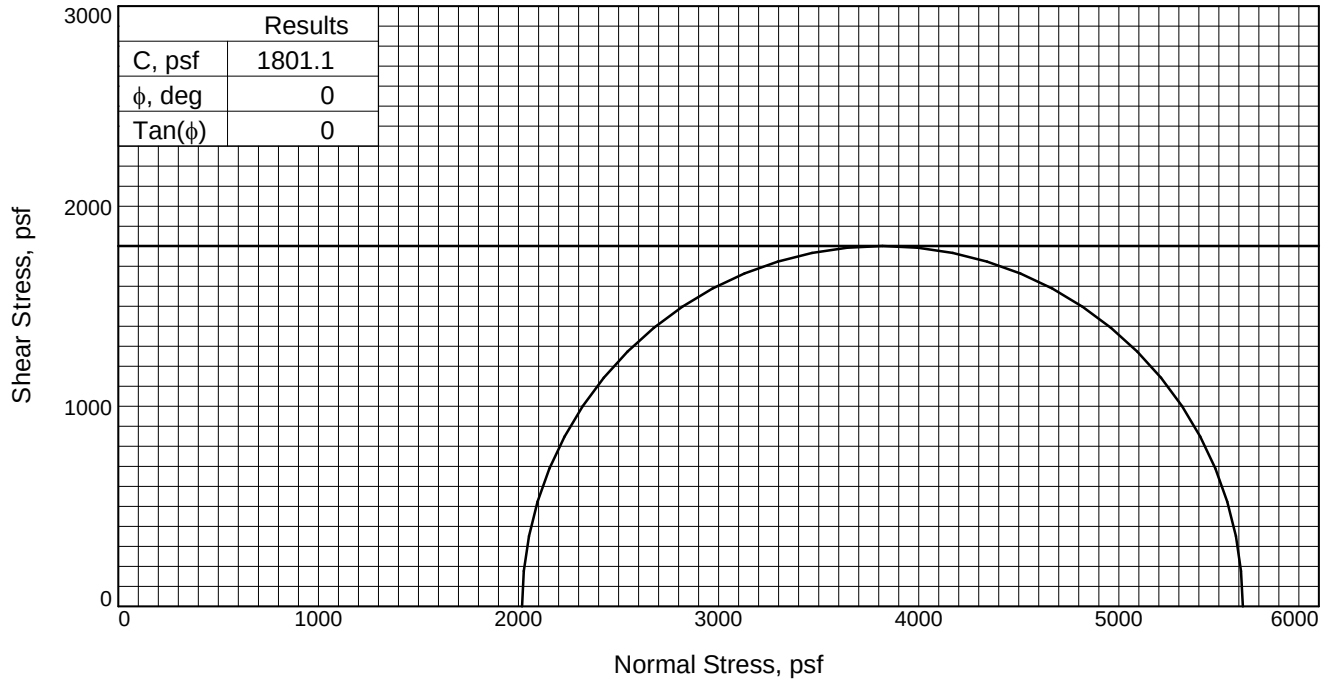
**Client:** ALDOT

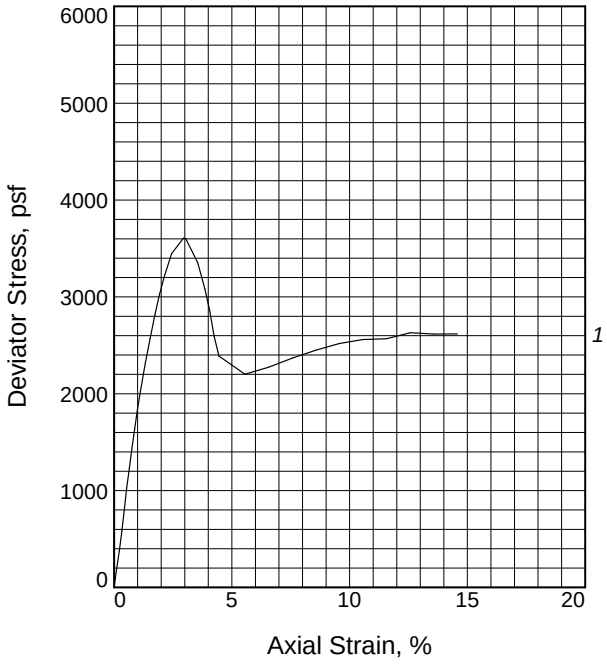
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8076 **Depth:** 108.0'-110.0' **Sample Number:** HLA-6 T-2

**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 104.8 |
| | Dry Density, pcf | 41.3 |
| | Saturation, % | 92.2 |
| | Void Ratio | 3.0234 |
| | Diameter, in. | 2.836 |
| | Height, in. | 5.676 |
| At Test | Water Content, % | 118.7 |
| | Dry Density, pcf | 41.3 |
| | Saturation, % | 104.4 |
| | Void Ratio | 3.0234 |
| | Diameter, in. | 2.836 |
| | Height, in. | 5.676 |
| Strain at peak, % | | 3.0 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 2017.4 |
| Fail. Stress, psf | | 3602.2 |
| Strain, % | | 3.0 |
| Ult. Stress, psf | | 3602.2 |
| Strain, % | | 3.0 |
| $\sigma_1$ Failure, psf | | 5619.6 |
| $\sigma_3$ Failure, psf | | 2017.4 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** SILTY SAND(SM A-7-5(8))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Asymmetrical Shear Plane

**Figure** _____

**Client:** ALDOT

**Project:** Mobile River Bridge

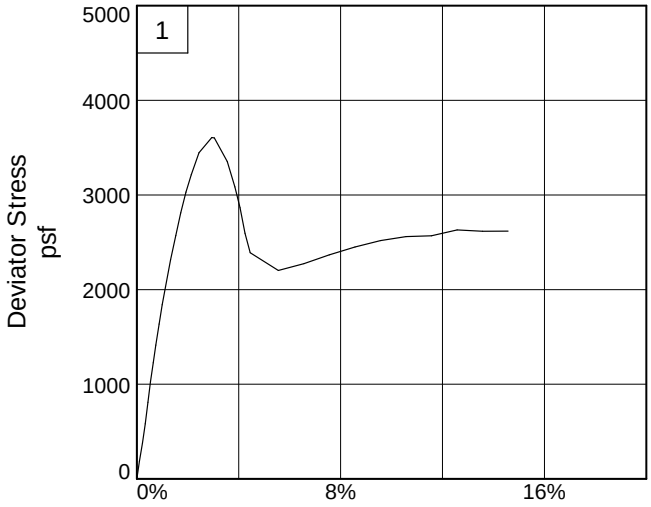
**Source of Sample:** Lab #8076 **Depth:** 23.0-25.0

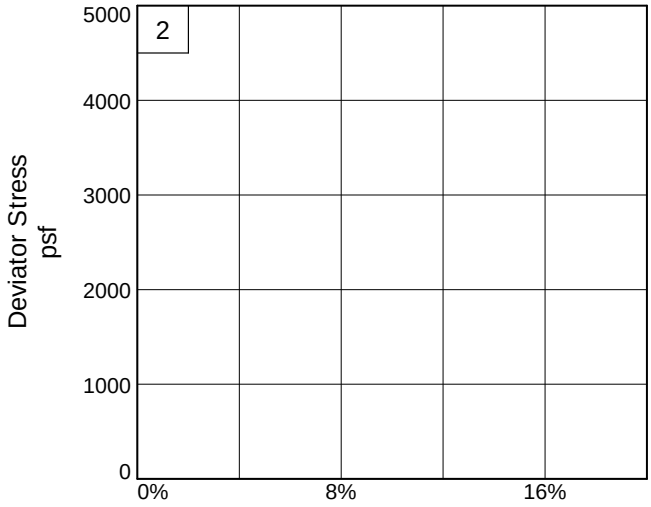
**Sample Number:** HLA-7 T-1

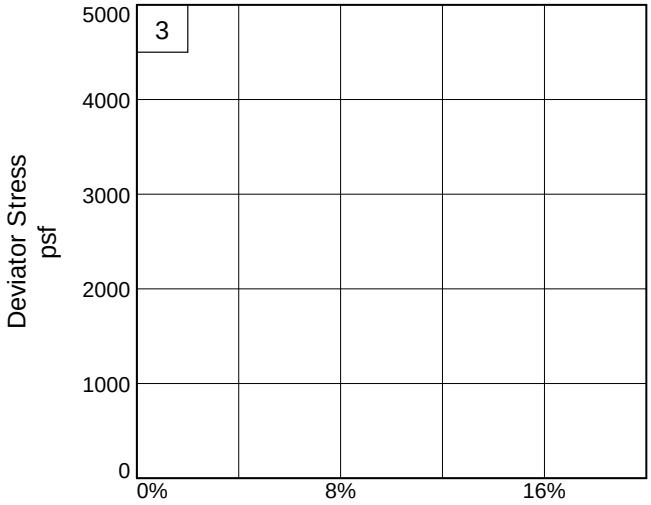
**Proj. No.:** 1511010228 **Date Sampled:**

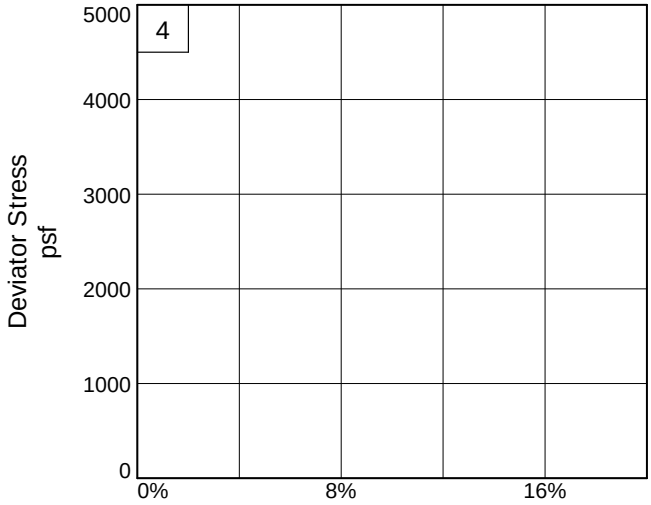
TRIAXIAL SHEAR TEST REPORT

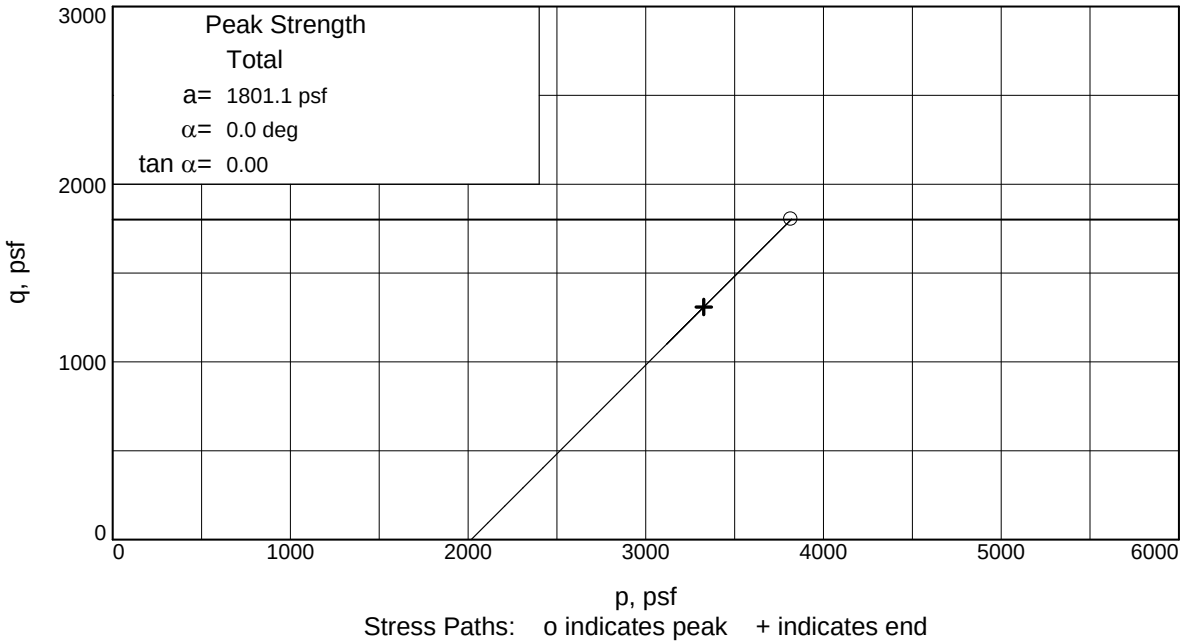
Thompson Engineering
Mobile, Alabama



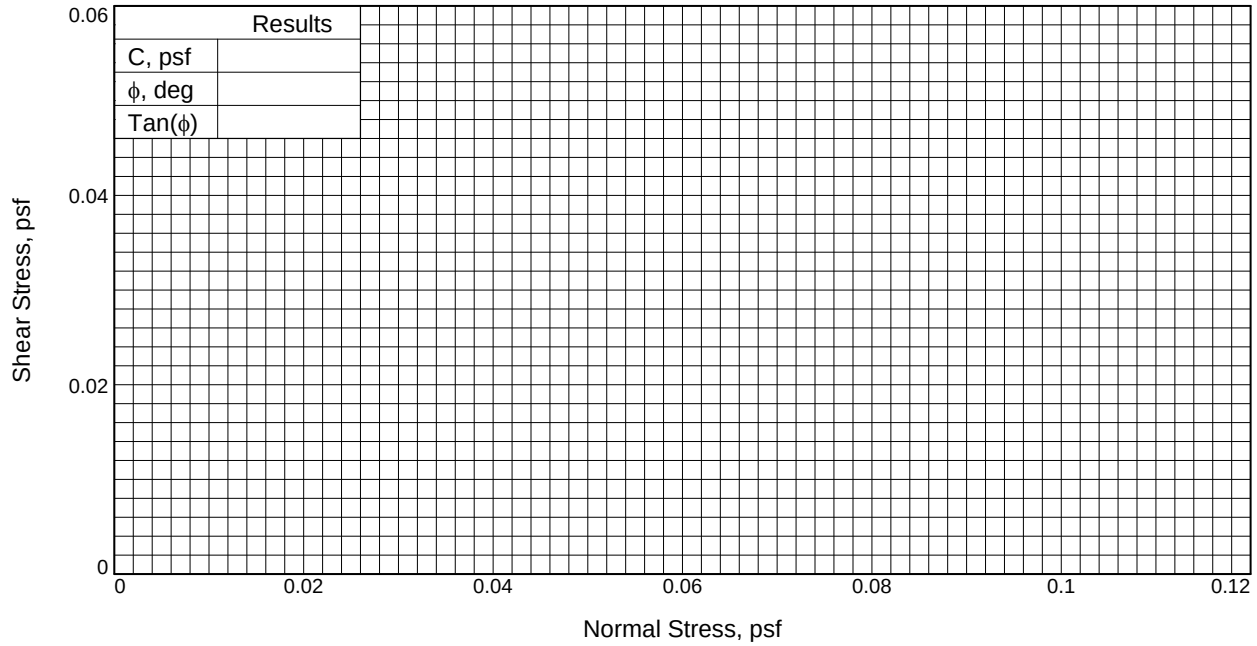



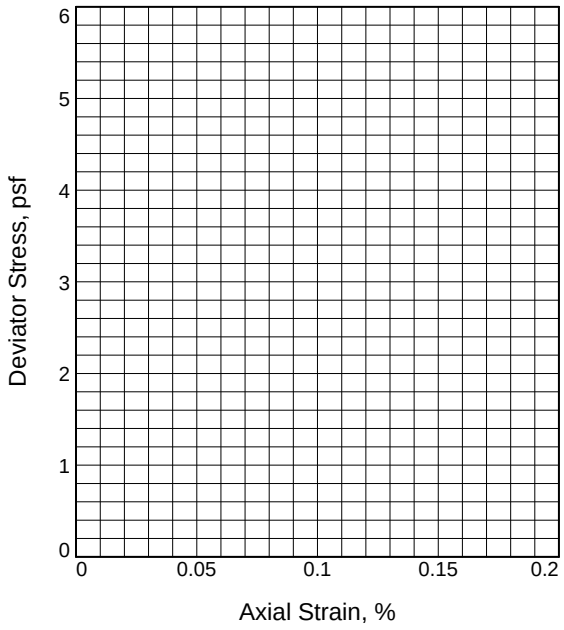




Stress Paths: o indicates peak + indicates end

**Client:** ALDOT
**Project:** Mobile River Bridge
**Source of Sample:** Lab #8076 **Depth:** 23.0-25.0 **Sample Number:** HLA-7 T-1
**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | |
|---|---|
| Specimen No. | |
| Initial | Water Content, %<br>Dry Density, pcf<br>Saturation, %<br>Void Ratio<br>Diameter, in.<br>Height, in. |
| At Test | Water Content, %<br>Dry Density, pcf<br>Saturation, %<br>Void Ratio<br>Diameter, in.<br>Height, in. |
| Strain at peak, % | |
| Back Pressure, psf | |
| Cell Pressure, psf | |
| Fail. Stress, psf | |
| Ult. Stress, psf | |
| $\sigma_1$ Failure, psf | |
| $\sigma_3$ Failure, psf | |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:**

**Description:** Did not test. Sample too soft and sandy

**Specific Gravity=**

**Remarks:**

**Figure** _____

**Client:** ALDOT

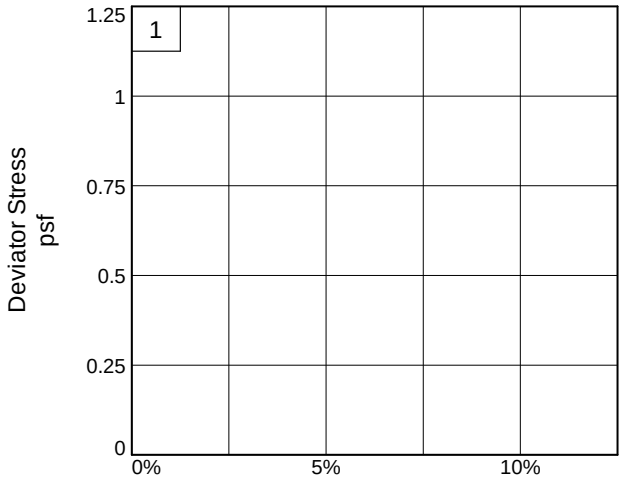
**Project:** Mobile River Bridge

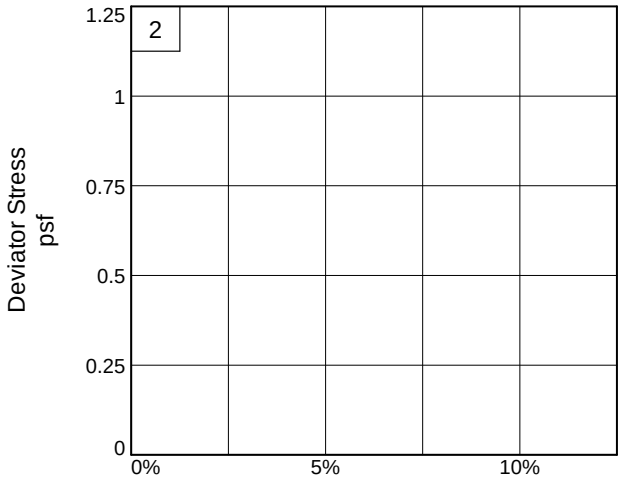
**Source of Sample:** Lab #8060 **Depth:** 113.0'-115.0'

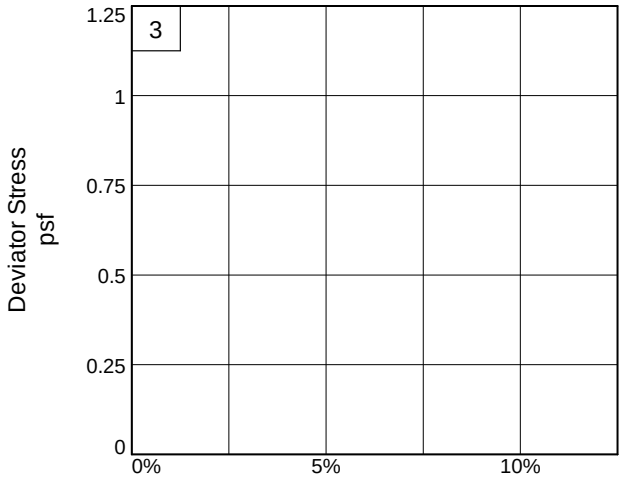
**Sample Number:** HLA-8 T-1

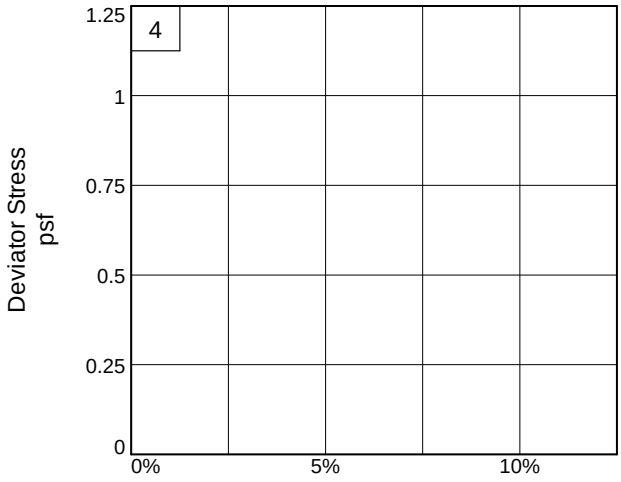
**Proj. No.:** 1511010228 **Date Sampled:**

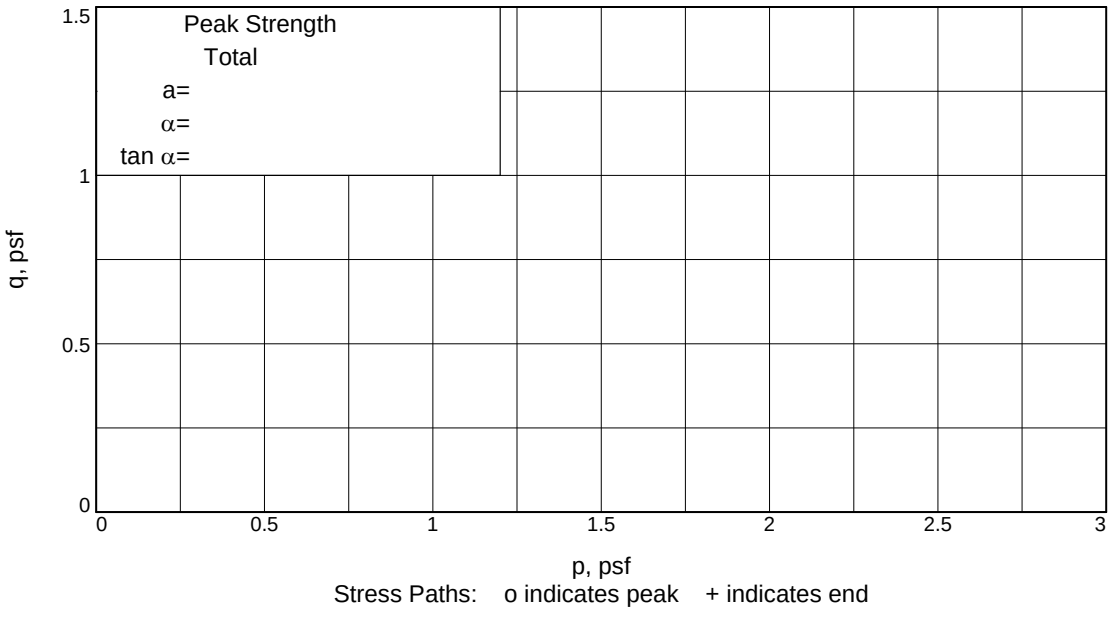
TRIAXIAL SHEAR TEST REPORT
Thompson Engineering
Mobile, Alabama



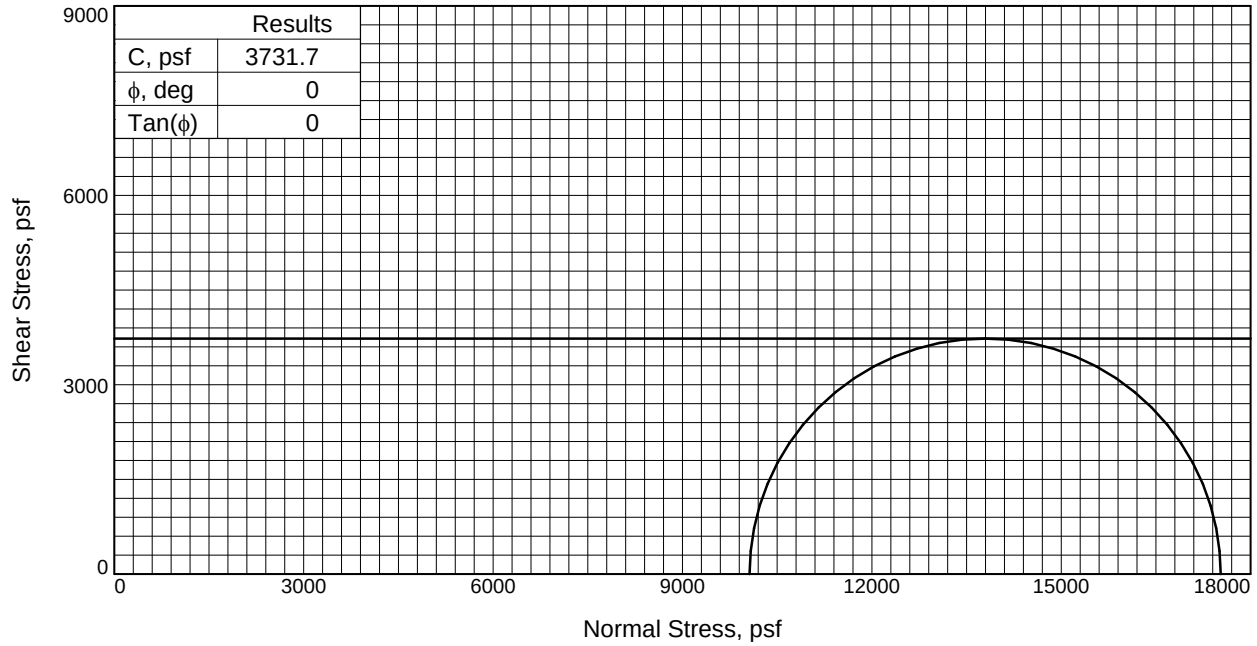



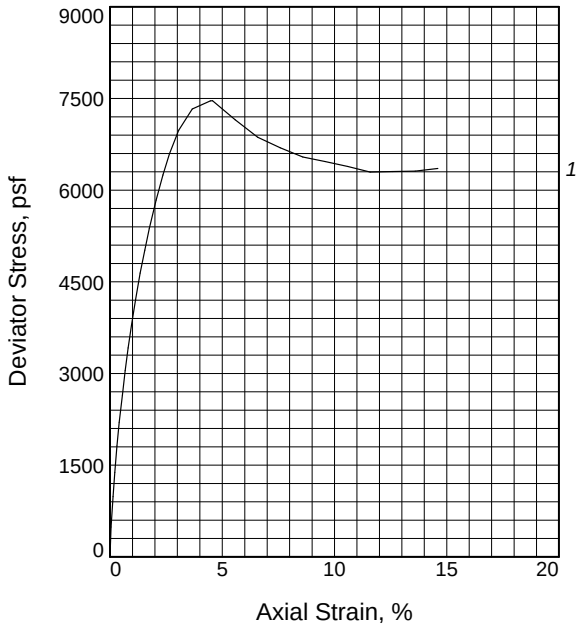




Stress Paths: o indicates peak + indicates end

**Client:** ALDOT
**Project:** Mobile River Bridge
**Source of Sample:** Lab #8060 **Depth:** 113.0'-115.0' **Sample Number:** HLA-8 T-1
**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 17.3 |
| | Dry Density, pcf | 113.6 |
| | Saturation, % | 99.9 |
| | Void Ratio | 0.4620 |
| | Diameter, in. | 2.721 |
| | Height, in. | 5.524 |
| At Test | Water Content, % | 18.8 |
| | Dry Density, pcf | 113.6 |
| | Saturation, % | 108.1 |
| | Void Ratio | 0.4620 |
| | Diameter, in. | 2.721 |
| | Height, in. | 5.524 |
| Strain at peak, % | | 4.6 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 10062.7 |
| Fail. Stress, psf | | 7463.4 |
| Strain, % | | 4.6 |
| Ult. Stress, psf | | 7463.4 |
| Strain, % | | 4.6 |
| $\sigma_1$ Failure, psf | | 17526.1 |
| $\sigma_3$ Failure, psf | | 10062.7 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** LEAN CLAY(CL A-6(9))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Asymmetrical Shear Plane

**Figure** _____

**Client:** ALDOT

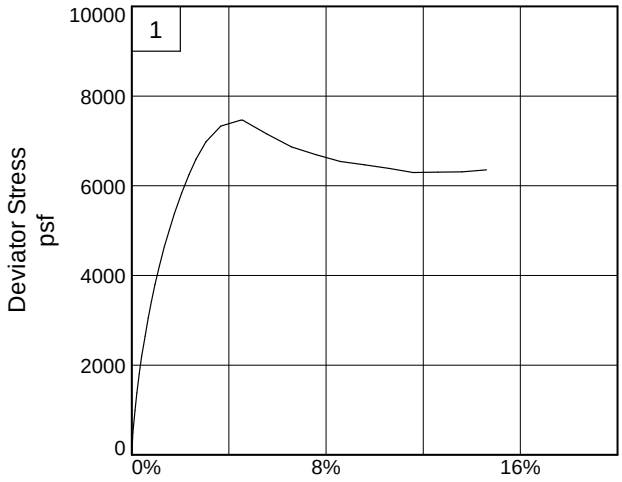
**Project:** Mobile River Bridge

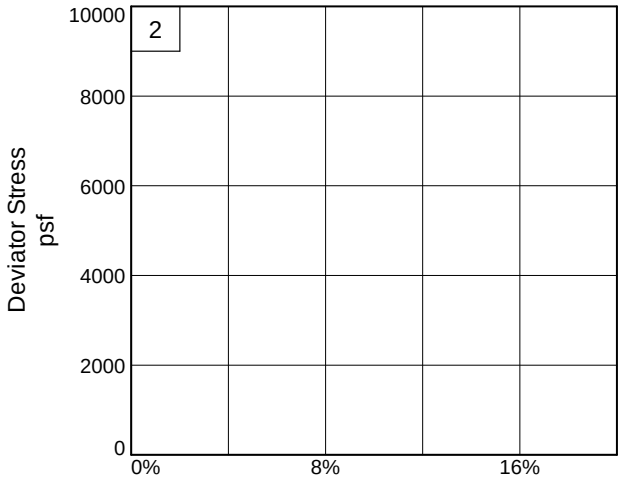
**Source of Sample:** Lab #8063 **Depth:** 208.5'-210.5'

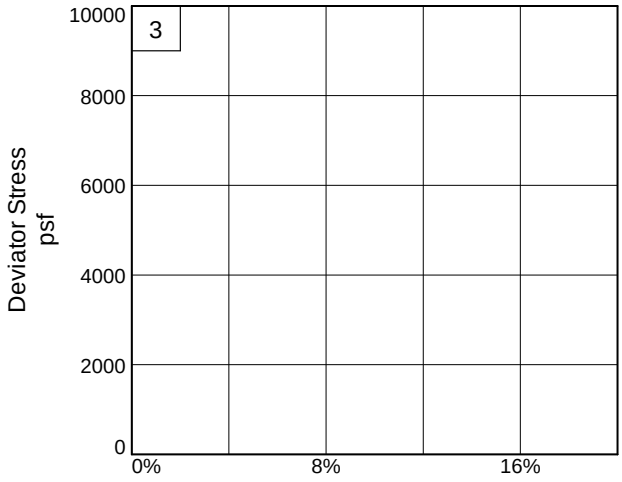
**Sample Number:** HLA-8 T-2

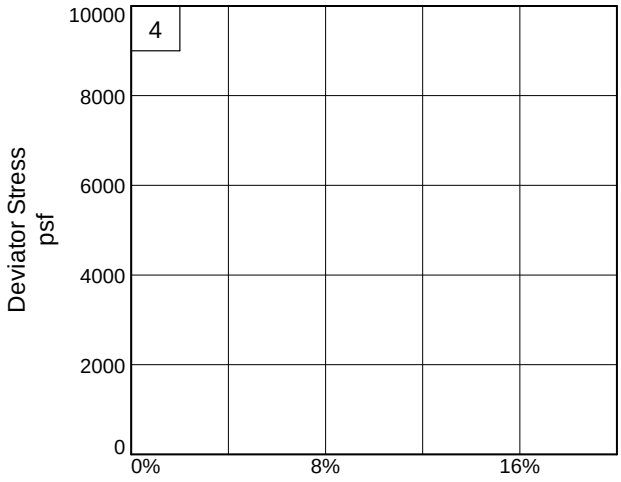
**Proj. No.:** 1511010228 **Date Sampled:**

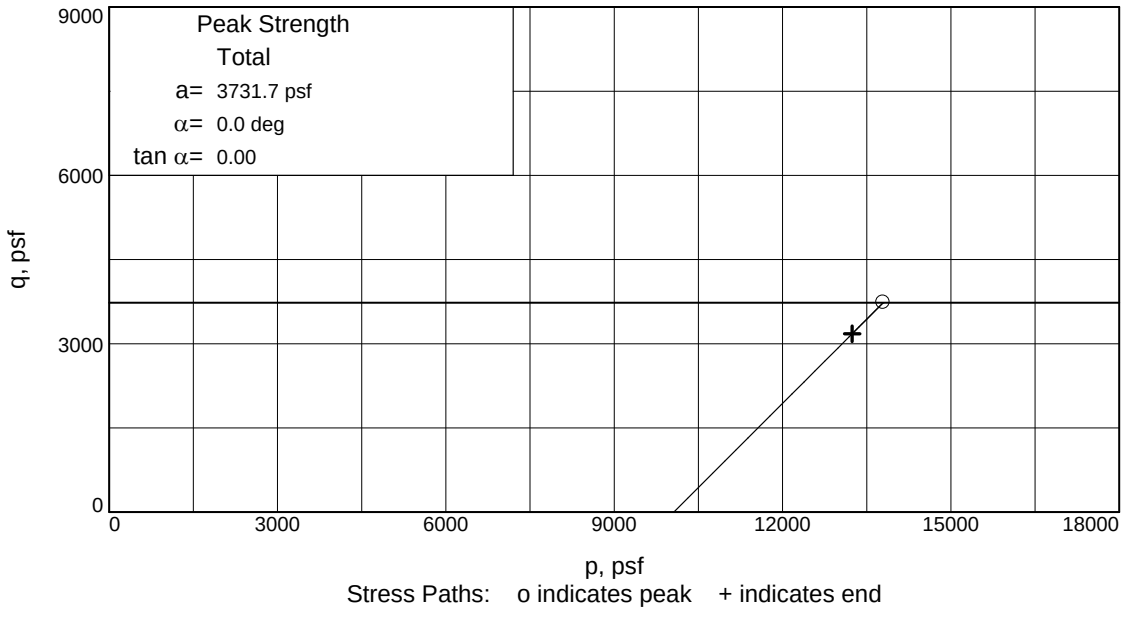
TRIAXIAL SHEAR TEST REPORT
Thompson Engineering
Mobile, Alabama




Stress Paths: o indicates peak + indicates end

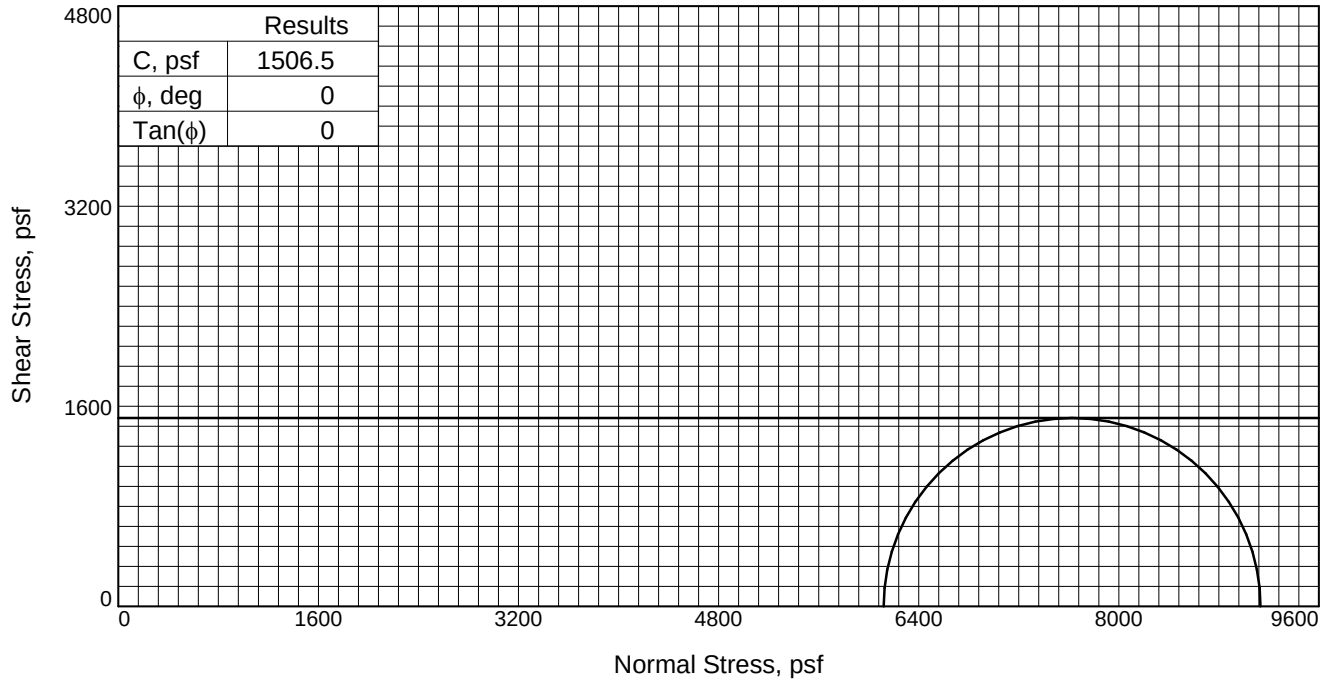
**Client:** ALDOT

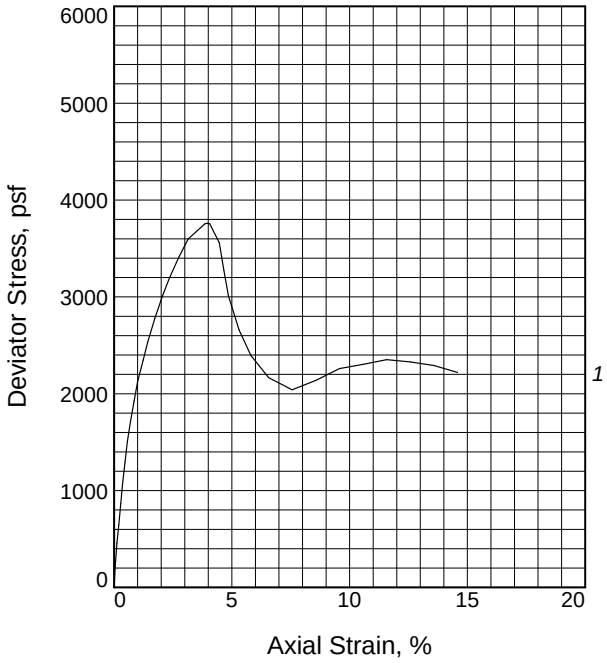
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8063 **Depth:** 208.5'-210.5' **Sample Number:** HLA-8 T-2

**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 45.8 |
| | Dry Density, pcf | 74.7 |
| | Saturation, % | 99.8 |
| | Void Ratio | 1.2222 |
| | Diameter, in. | 2.835 |
| | Height, in. | 5.403 |
| At Test | Water Content, % | 49.3 |
| | Dry Density, pcf | 74.7 |
| | Saturation, % | 107.2 |
| | Void Ratio | 1.2222 |
| | Diameter, in. | 2.835 |
| | Height, in. | 5.403 |
| Strain at peak, % | | 4.9 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 6120.0 |
| Fail. Stress, psf | | 3013.1 |
| Strain, % | | 4.9 |
| Ult. Stress, psf | | 3013.1 |
| Strain, % | | 4.9 |
| $\sigma_1$ Failure, psf | | 9133.1 |
| $\sigma_3$ Failure, psf | | 6120.0 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** FAT CLAY(CH A-7-6(84))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Asymmetrical Shear Plane

**Figure** _____

**Client:** ALDOT

**Project:** Mobile River Bridge

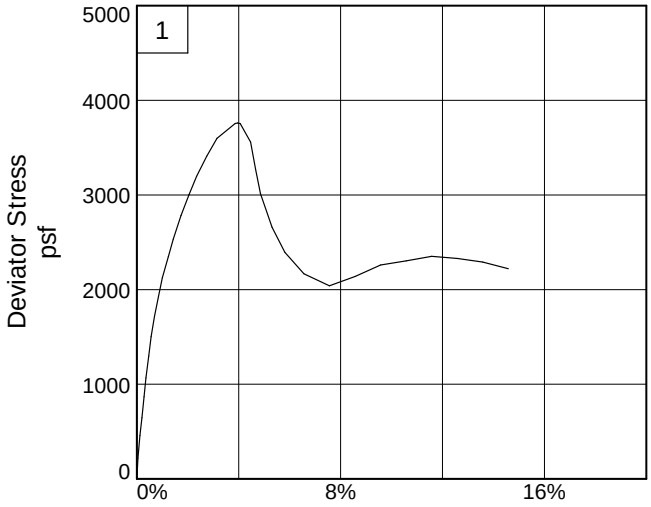
**Source of Sample:** Lab #8086 **Depth:** 108.0'-110.0'

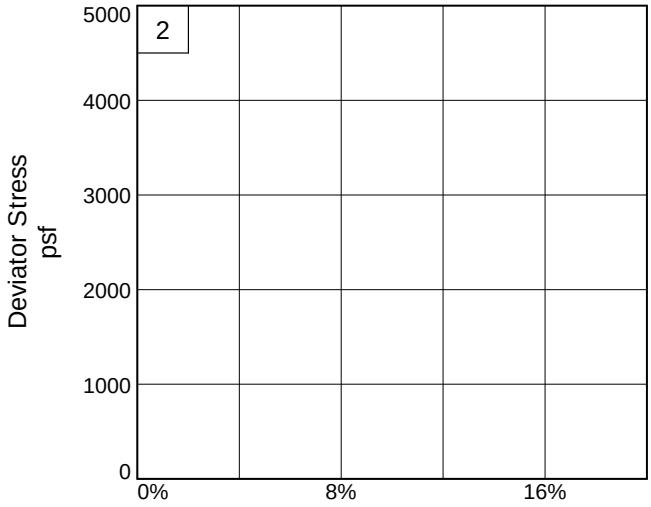
**Sample Number:** HLA-9 T-2

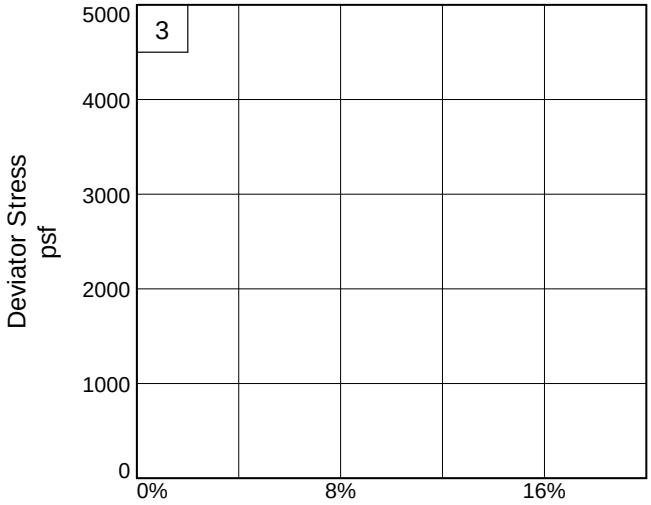
**Proj. No.:** 1511010228 **Date Sampled:**

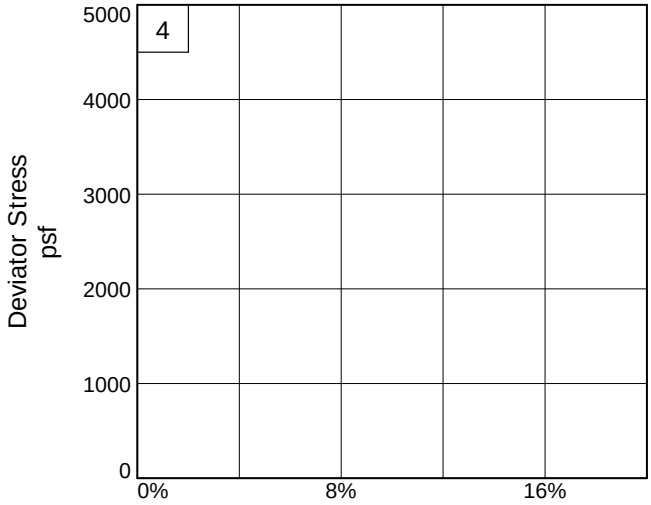
TRIAXIAL SHEAR TEST REPORT

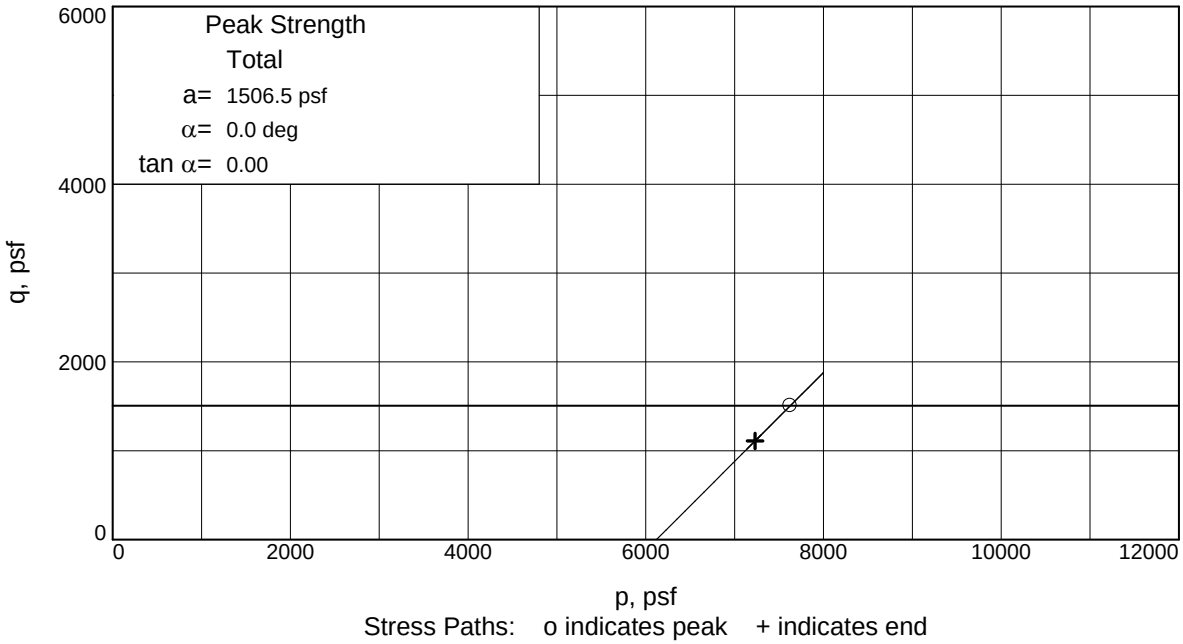
Thompson Engineering
Mobile, Alabama




Stress Paths: o indicates peak + indicates end

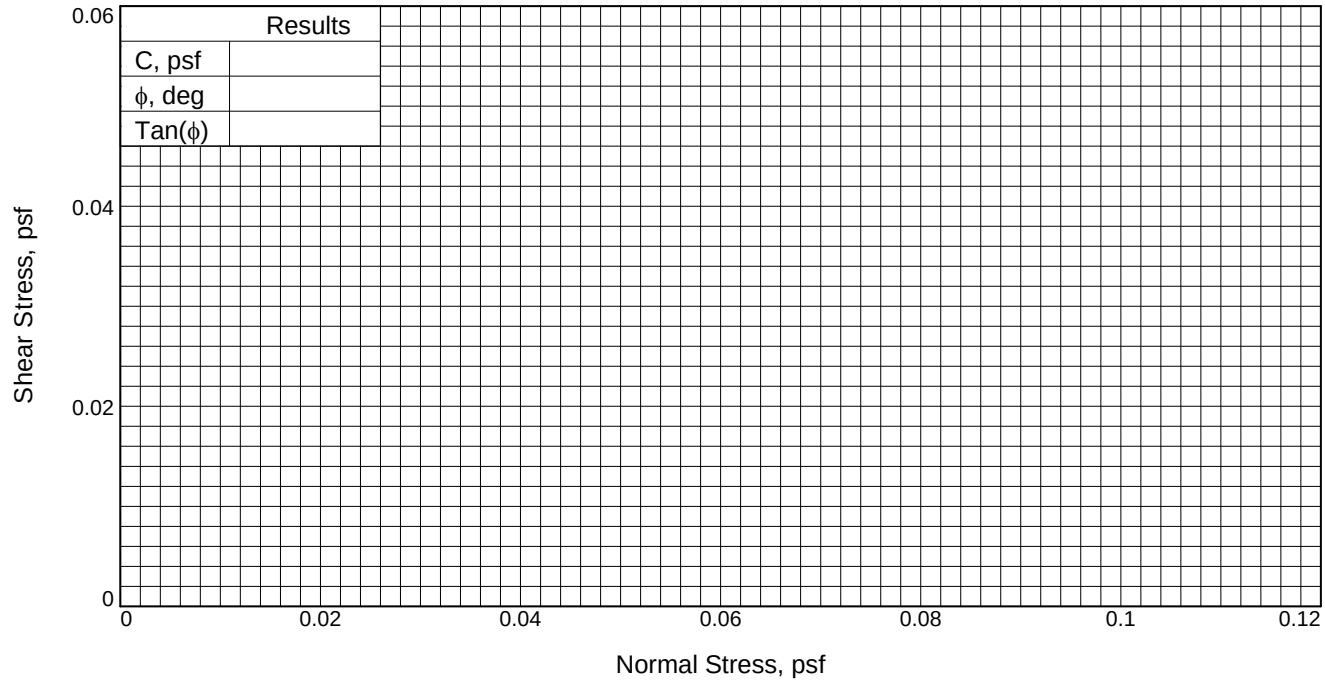
**Client:** ALDOT

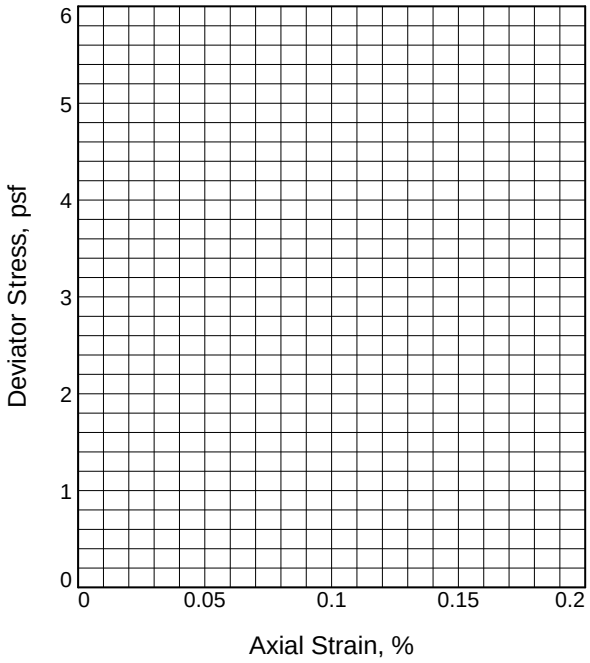
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8086 **Depth:** 108.0'-110.0' **Sample Number:** HLA-9 T-2

**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | |
|---|---|
| Specimen No. | |
| Initial | Water Content, %<br>Dry Density, pcf<br>Saturation, %<br>Void Ratio<br>Diameter, in.<br>Height, in. |
| At Test | Water Content, %<br>Dry Density, pcf<br>Saturation, %<br>Void Ratio<br>Diameter, in.<br>Height, in. |
| Strain at peak, % | |
| Back Pressure, psf | |
| Cell Pressure, psf | |
| Fail. Stress, psf | |
| Strain, % | |
| Ult. Stress, psf | |
| Strain, % | |
| $\sigma_1$ Failure, psf | |
| $\sigma_3$ Failure, psf | |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:**

**Description:** DISTURBED - DID NOT TEST

**Specific Gravity=**

**Remarks:**

**Figure** _____

**Client:** ALDOT

**Project:** Mobile River Bridge

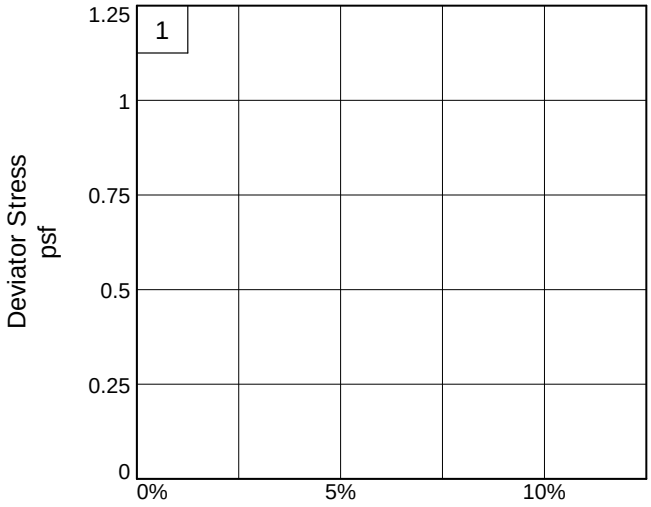
**Source of Sample:** Lab #8086 **Depth:** 168.0'-170.0'

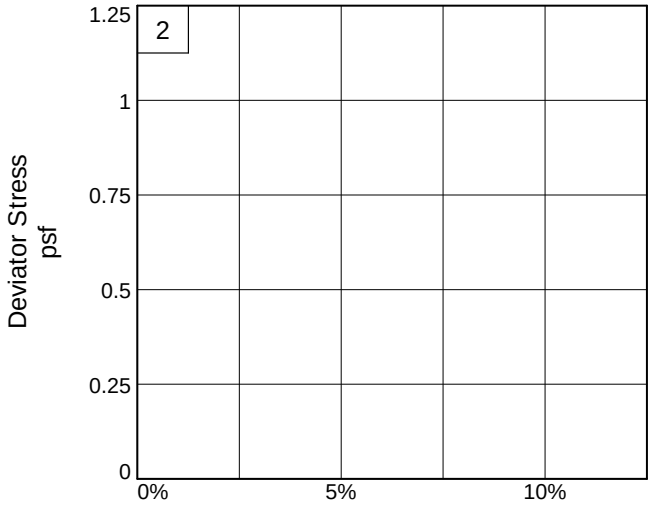
**Sample Number:** HLA-9 T-4

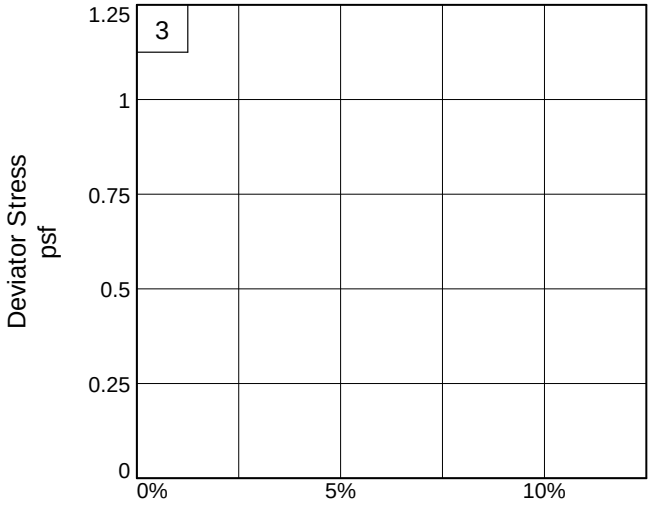
**Proj. No.:** 1511010228 **Date Sampled:**

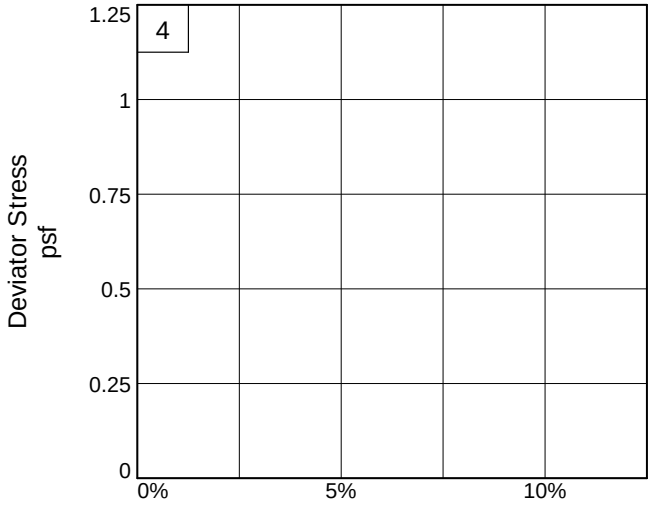
TRIAXIAL SHEAR TEST REPORT

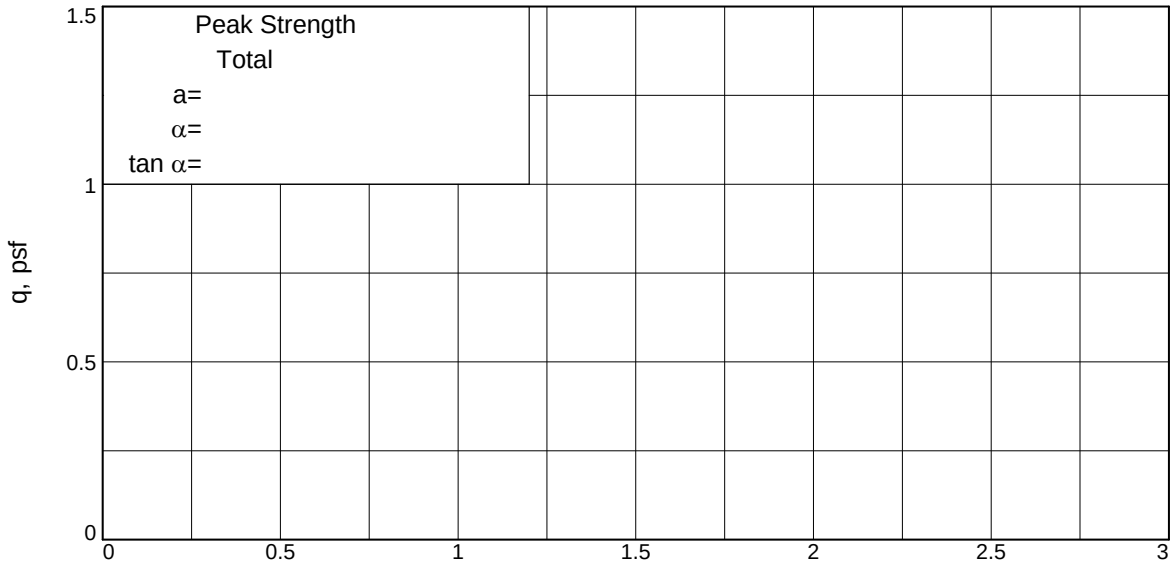
Thompson Engineering
Mobile, Alabama




Stress Paths: o indicates peak + indicates end

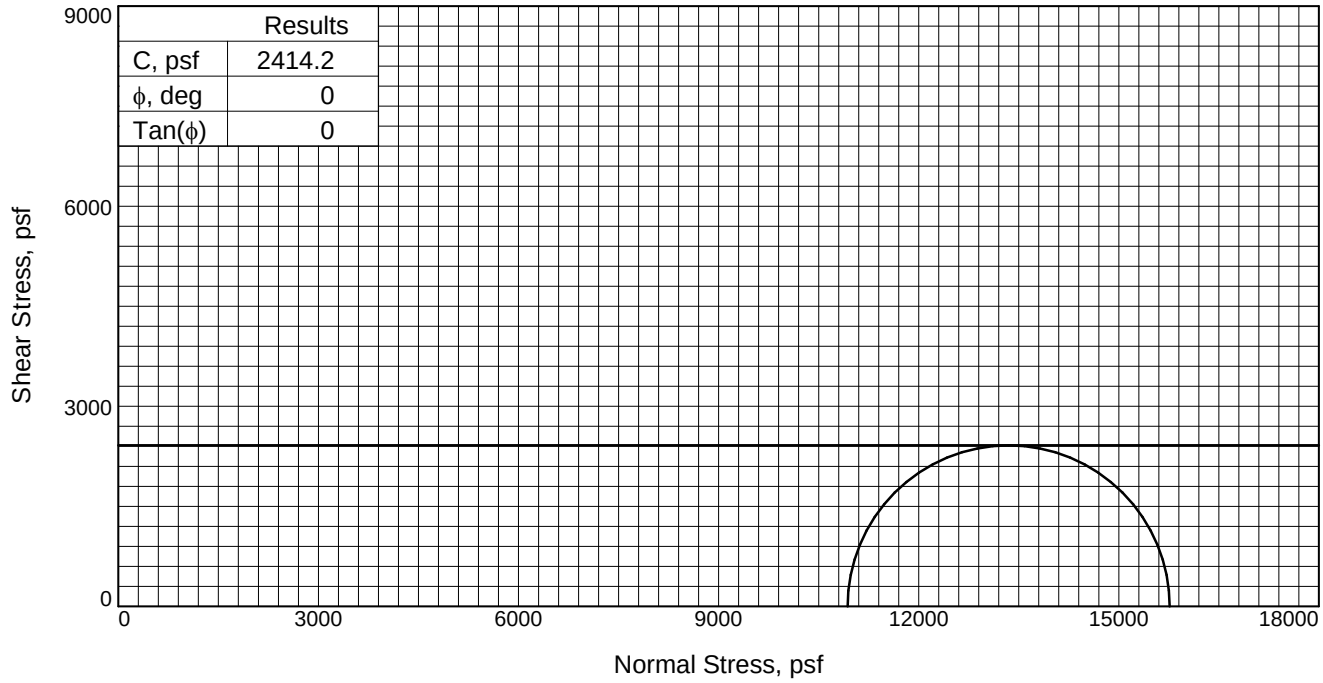
**Client:** ALDOT

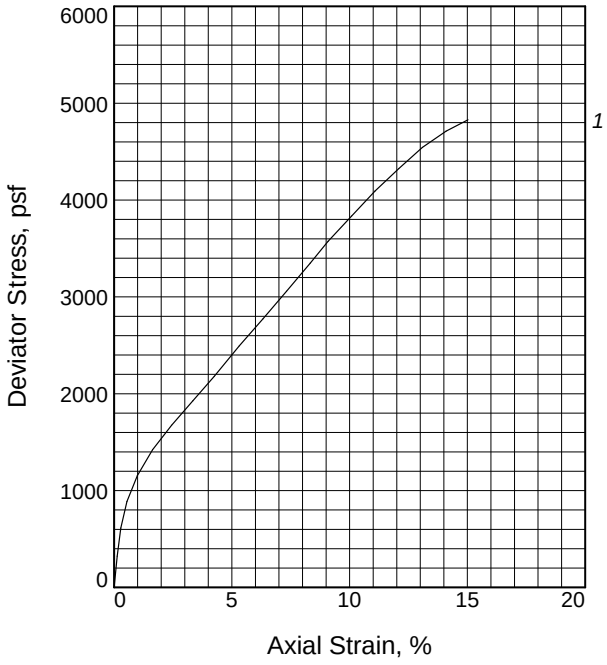
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8086 **Depth:** 168.0'-170.0' **Sample Number:** HLA-9 T-4

**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 23.1 |
| | Dry Density, pcf | 105.2 |
| | Saturation, % | 106.3 |
| | Void Ratio | 0.5789 |
| | Diameter, in. | 2.710 |
| | Height, in. | 5.603 |
| At Test | Water Content, % | 22.3 |
| | Dry Density, pcf | 105.2 |
| | Saturation, % | 102.4 |
| | Void Ratio | 0.5789 |
| | Diameter, in. | 2.710 |
| | Height, in. | 5.603 |
| Strain at peak, % | | 15.0 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 10933.9 |
| Fail. Stress, psf | | 4828.4 |
| Strain, % | | 15.0 |
| Ult. Stress, psf | | 4828.4 |
| Strain, % | | 15.0 |
| $\sigma_1$ Failure, psf | | 15762.3 |
| $\sigma_3$ Failure, psf | | 10933.9 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** LEAN CLAY(CL A-6(18))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Symmetrical Bulge

**Figure** _____

**Client:** ALDOT

**Project:** Mobile River Bridge

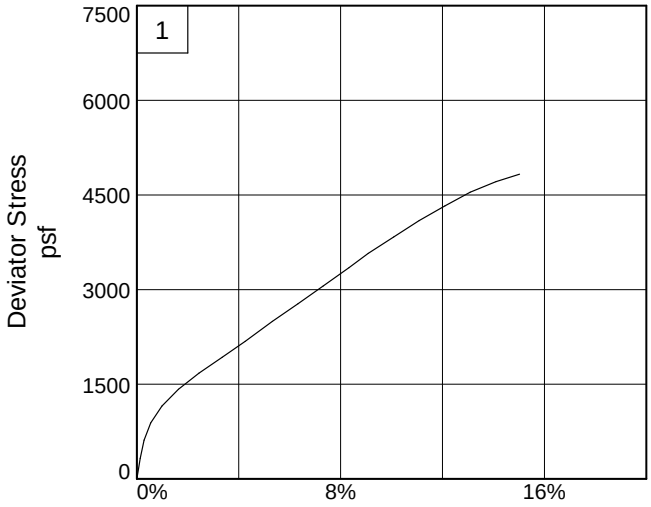
**Source of Sample:** Lab #8086 **Depth:** 208.0'-210.0'

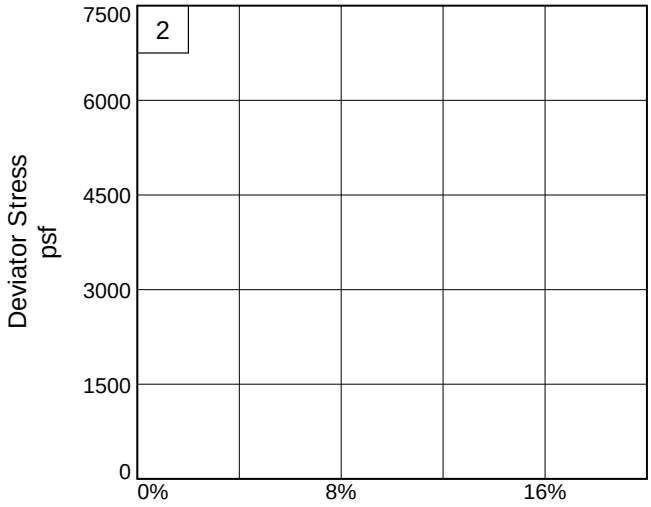
**Sample Number:** HLA-9 T-5

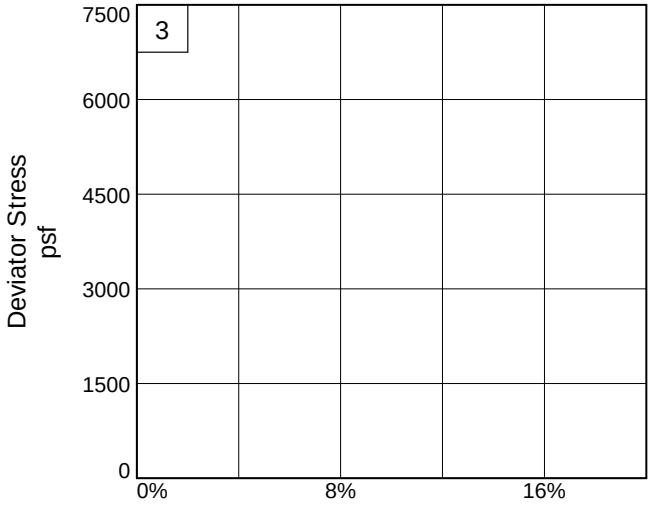
**Proj. No.:** 1511010228 **Date Sampled:**

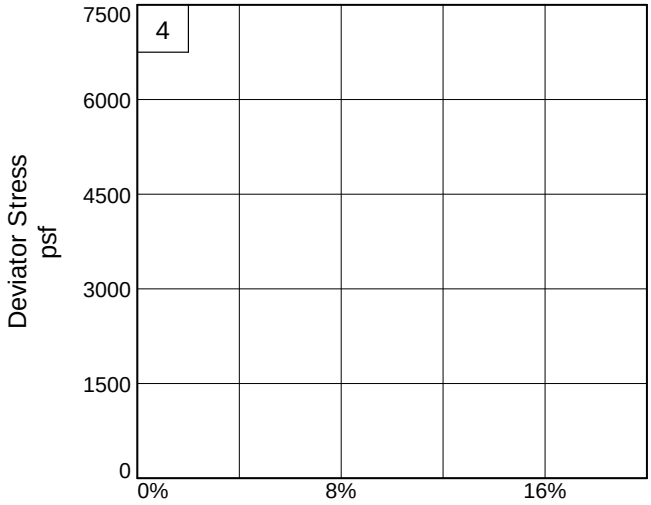
TRIAXIAL SHEAR TEST REPORT

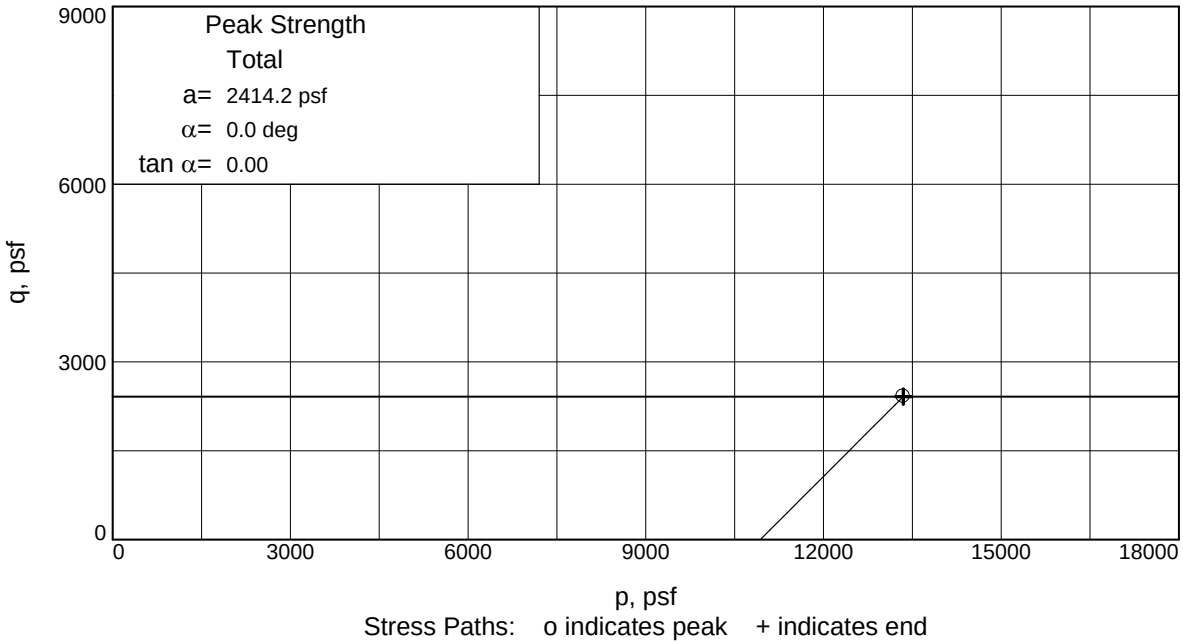
Thompson Engineering
Mobile, Alabama




Stress Paths: o indicates peak + indicates end

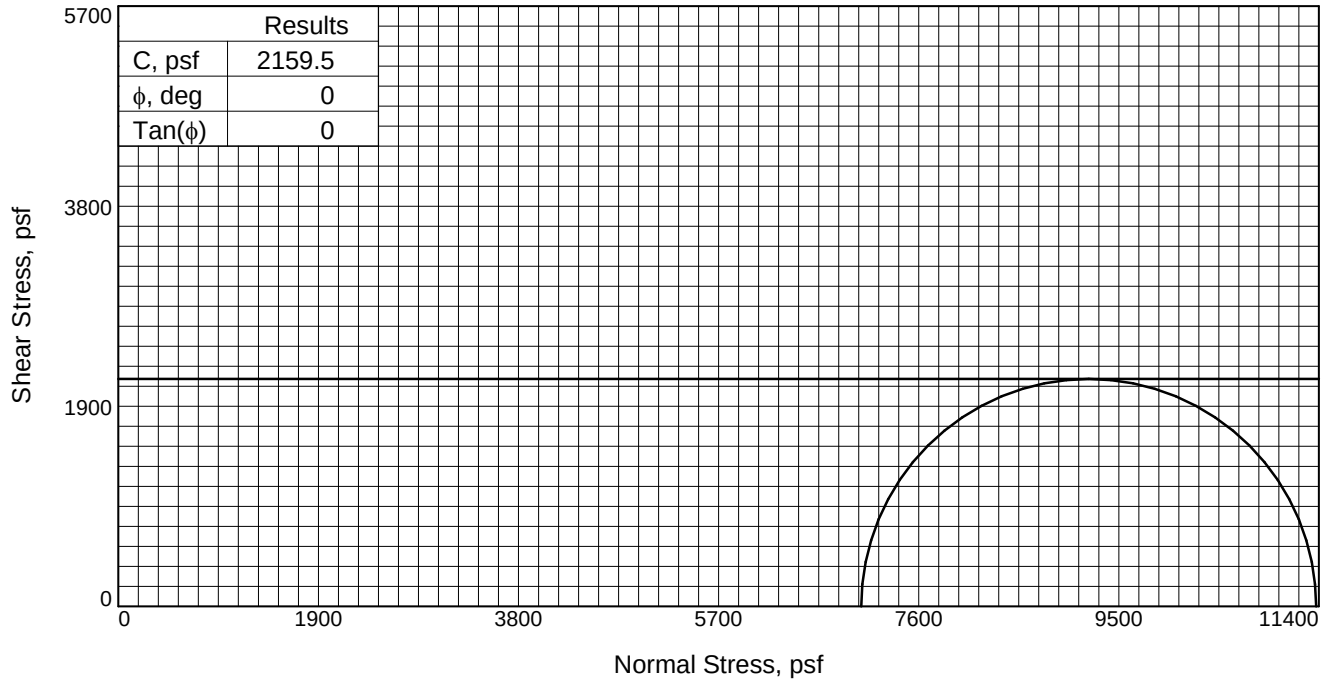
**Client:** ALDOT

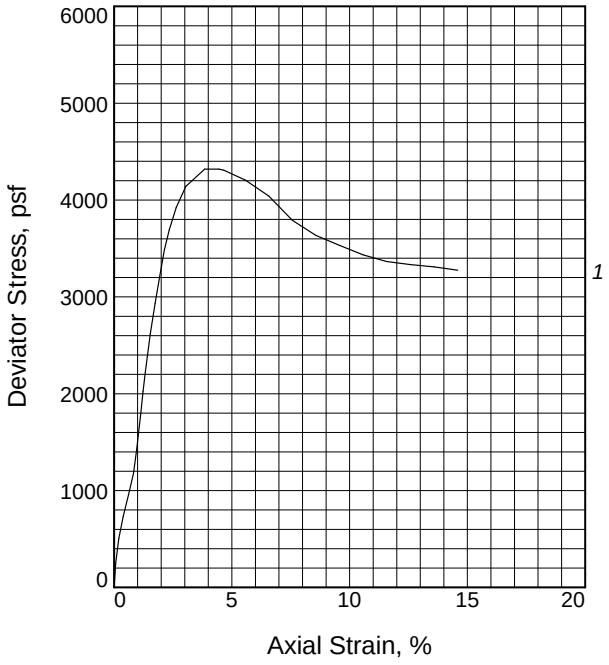
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8086 **Depth:** 208.0'-210.0' **Sample Number:** HLA-9 T-5

**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 54.0 |
| | Dry Density, pcf | 65.9 |
| | Saturation, % | 94.5 |
| | Void Ratio | 1.5191 |
| | Diameter, in. | 2.845 |
| | Height, in. | 5.737 |
| At Test | Water Content, % | 59.2 |
| | Dry Density, pcf | 65.9 |
| | Saturation, % | 103.7 |
| | Void Ratio | 1.5191 |
| | Diameter, in. | 2.845 |
| | Height, in. | 5.737 |
| Strain at peak, % | | 4.5 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 7054.6 |
| Fail. Stress, psf | | 4319.0 |
| Strain, % | | 4.5 |
| Ult. Stress, psf | | 4319.0 |
| Strain, % | | 4.5 |
| $\sigma_1$ Failure, psf | | 11373.6 |
| $\sigma_3$ Failure, psf | | 7054.6 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** FAT CLAY with SAND(CH A-7-5(45))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Asymmetrical Shear Plane

**Figure** _____

**Client:** ALDOT

**Project:** Mobile River Bridge

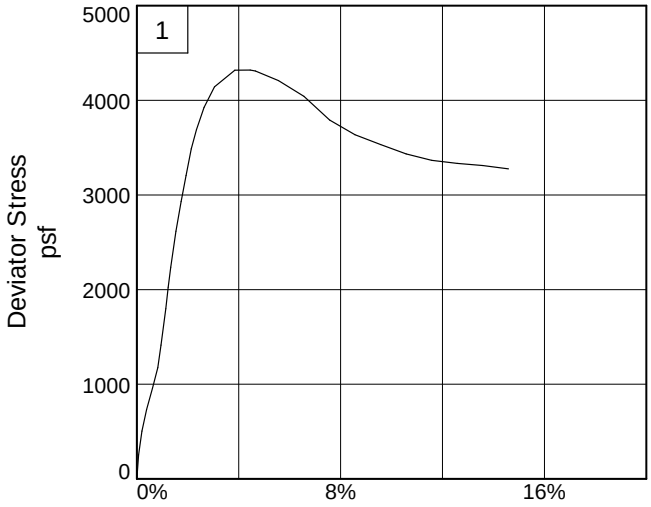
**Source of Sample:** Lab #8076 **Depth:** 103.8'-105.8'

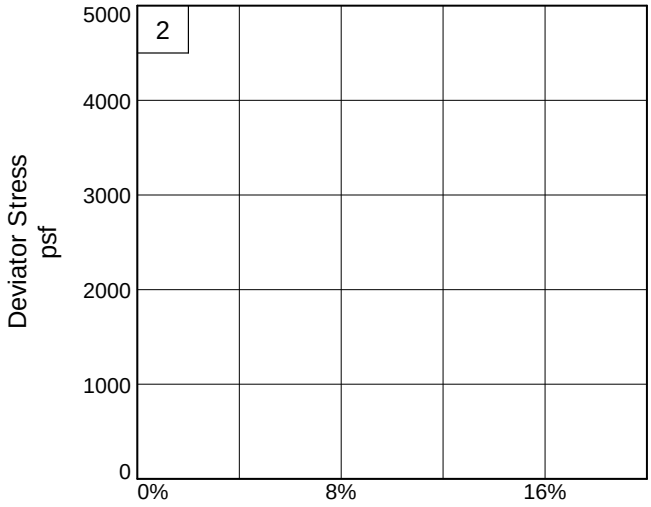
**Sample Number:** HLA-10A T-1

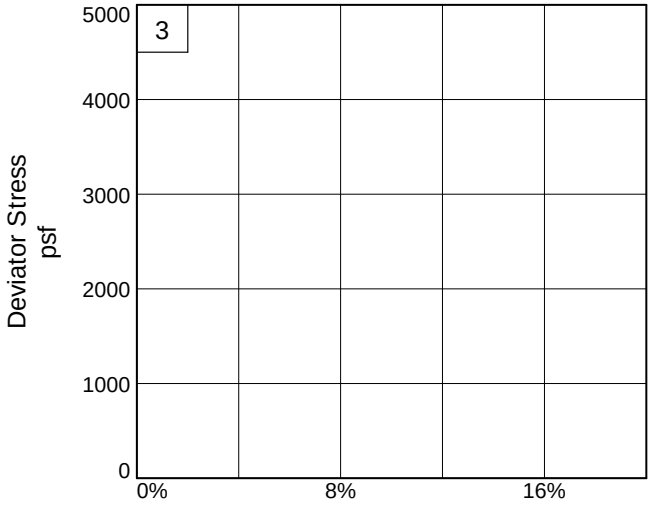
**Proj. No.:** 1511010228 **Date Sampled:**

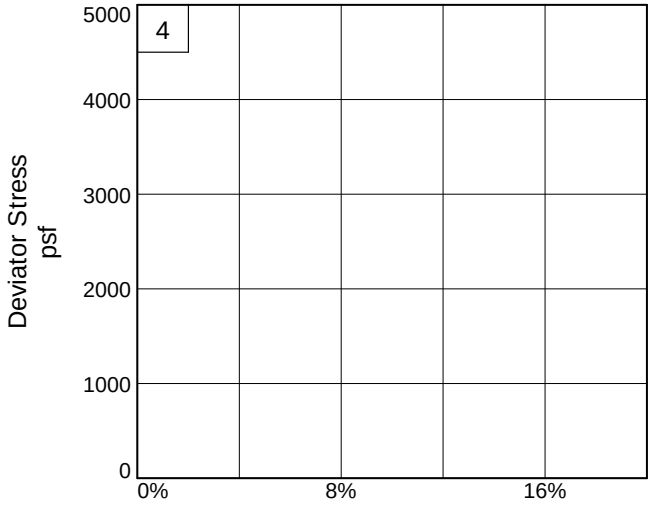
TRIAXIAL SHEAR TEST REPORT

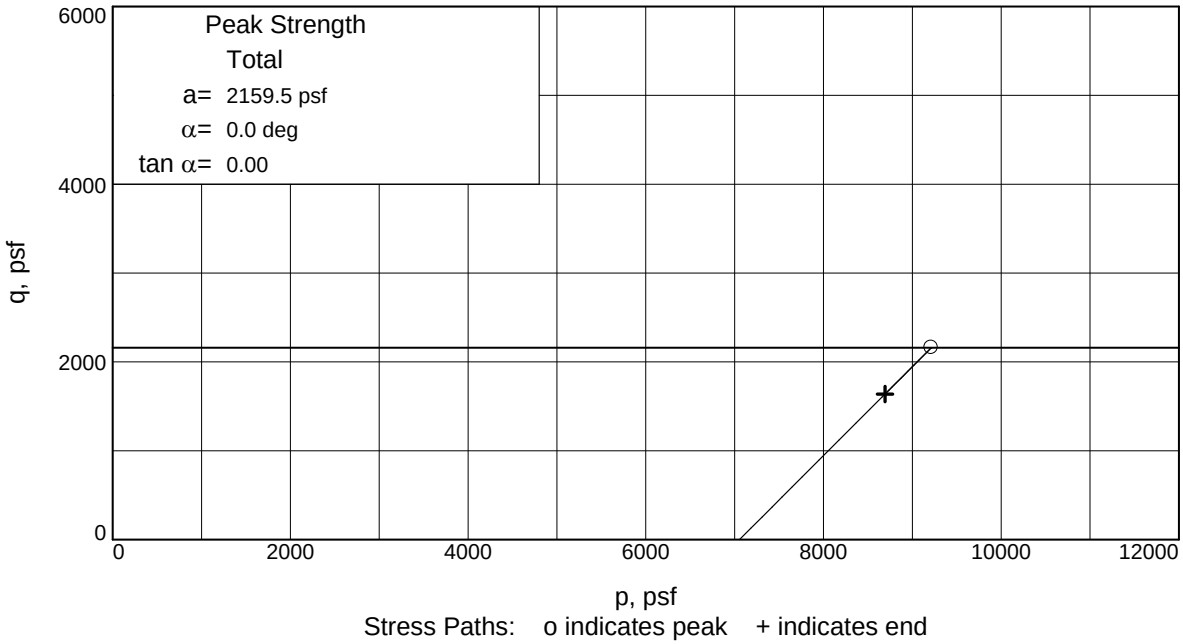
Thompson Engineering
Mobile, Alabama




Stress Paths: o indicates peak + indicates end

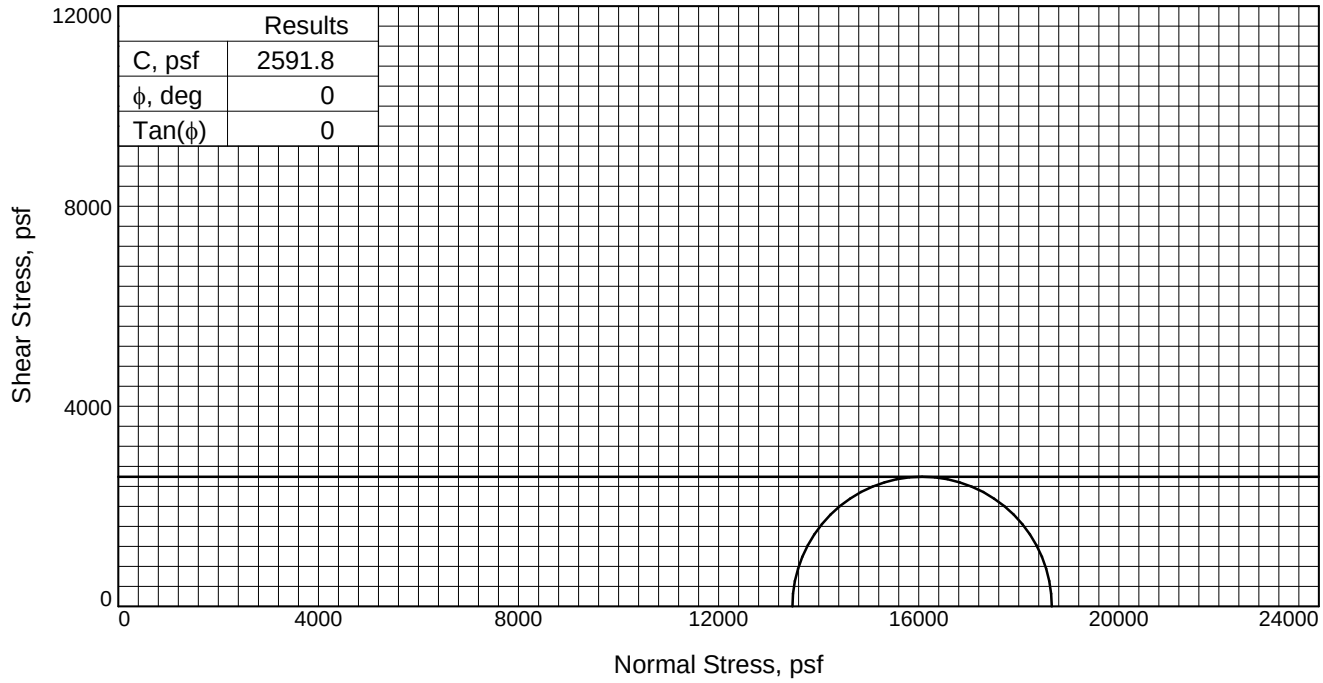
**Client:** ALDOT

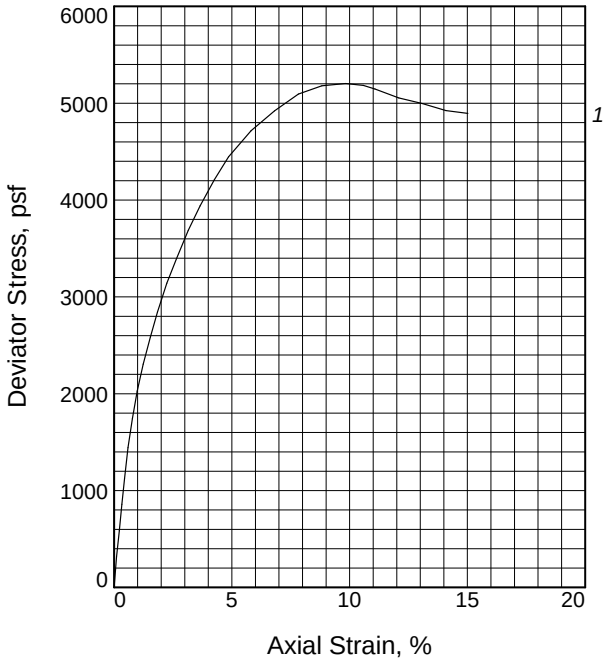
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8076 **Depth:** 103.8'-105.8' **Sample Number:** HLA-10A T-1

**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 23.6 |
| | Dry Density, pcf | 101.3 |
| | Saturation, % | 98.2 |
| | Void Ratio | 0.6394 |
| | Diameter, in. | 2.756 |
| | Height, in. | 5.744 |
| At Test | Water Content, % | 24.6 |
| | Dry Density, pcf | 101.3 |
| | Saturation, % | 102.5 |
| | Void Ratio | 0.6394 |
| | Diameter, in. | 2.756 |
| | Height, in. | 5.744 |
| Strain at peak, % | | 10.6 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 13475.5 |
| Fail. Stress, psf | | 5183.6 |
| Strain, % | | 10.6 |
| Ult. Stress, psf | | 5183.6 |
| Strain, % | | 10.6 |
| $\sigma_1$ Failure, psf | | 18659.1 |
| $\sigma_3$ Failure, psf | | 13475.5 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** FAT CLAY with SAND(CH A-7-6(24))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Symmetrical Bulge

**Figure** _____

**Client:** ALDOT

**Project:** Mobile River Bridge

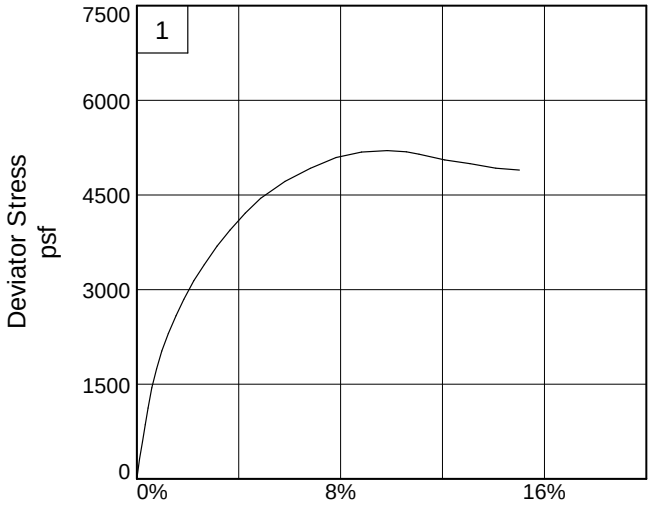
**Source of Sample:** Lab #8076 **Depth:** 198.8'-200.8'

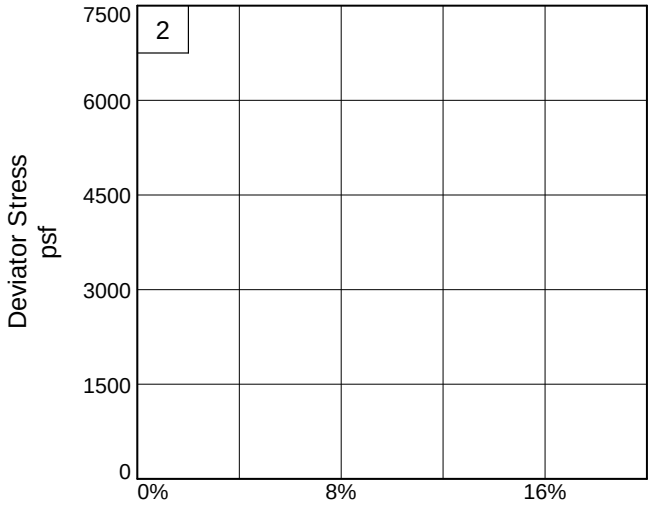
**Sample Number:** HLA-10A T-2

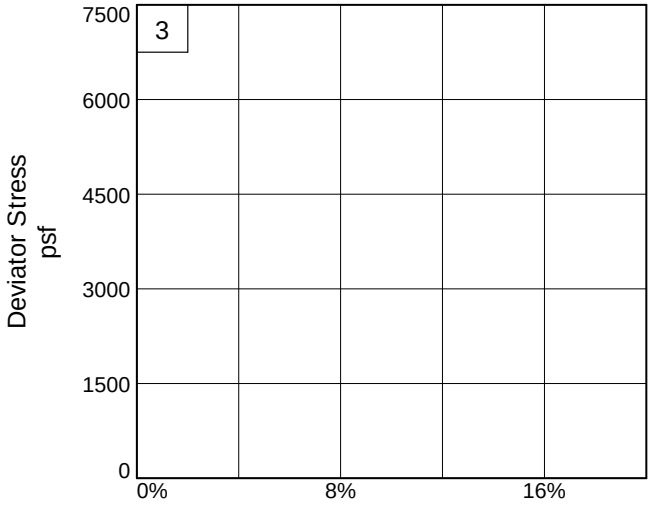
**Proj. No.:** 1511010228 **Date Sampled:**

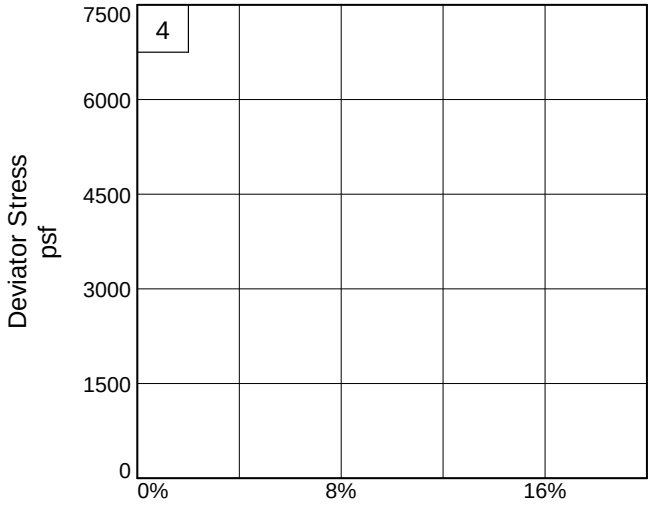
TRIAXIAL SHEAR TEST REPORT

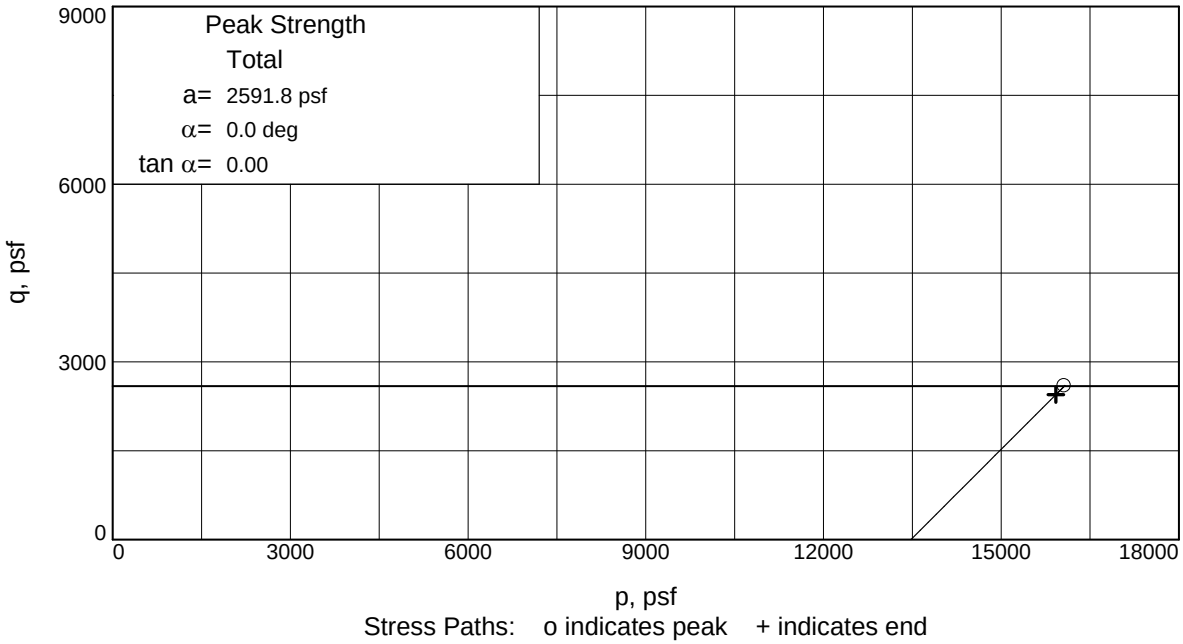
Thompson Engineering
Mobile, Alabama




Stress Paths: o indicates peak + indicates end

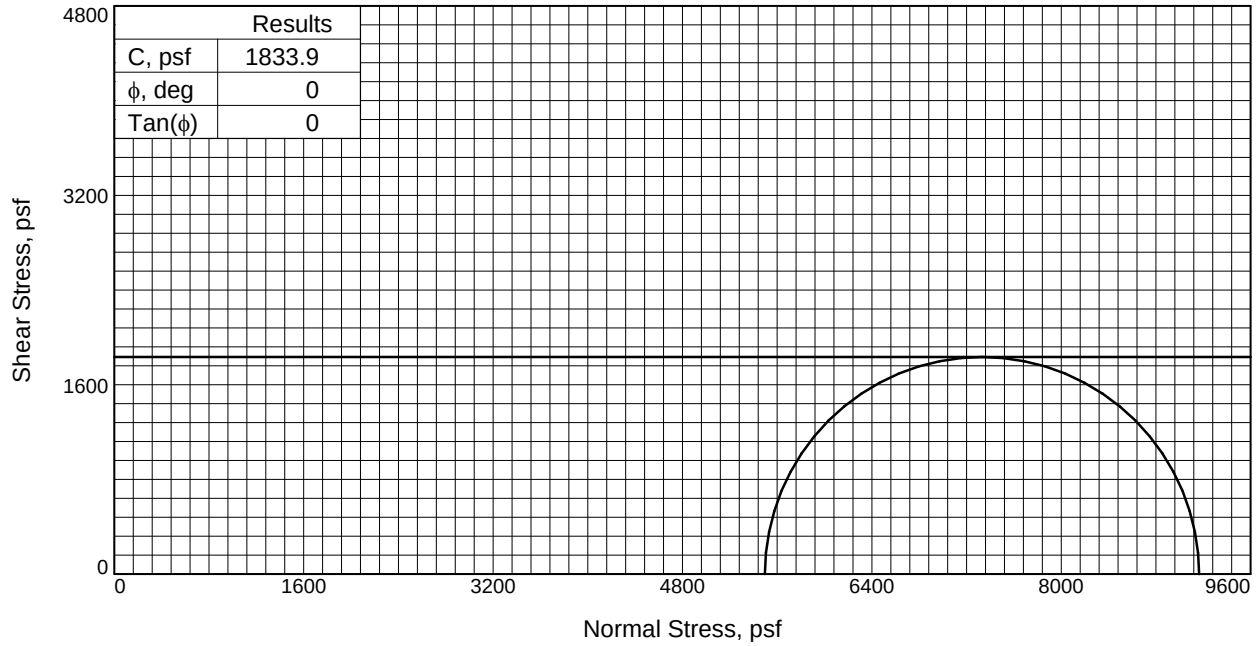
**Client:** ALDOT

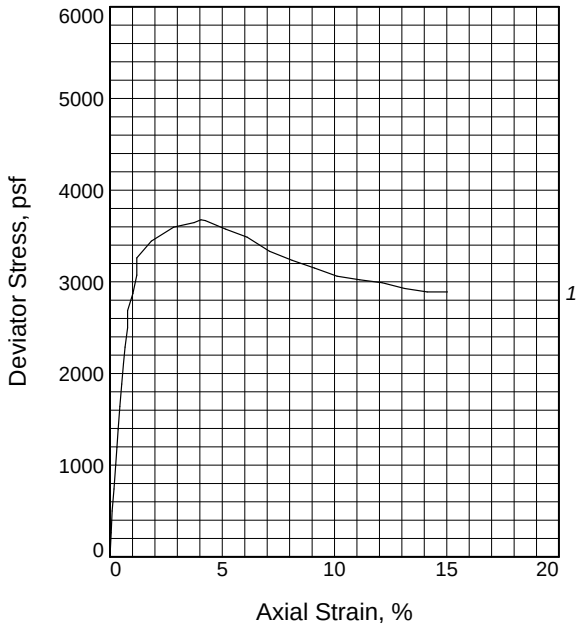
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8076 **Depth:** 198.8'-200.8' **Sample Number:** HLA-10A T-2

**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 35.1 |
| | Dry Density, pcf | 87.6 |
| | Saturation, % | 104.2 |
| | Void Ratio | 0.8962 |
| | Diameter, in. | 2.842 |
| | Height, in. | 5.743 |
| At Test | Water Content, % | 36.3 |
| | Dry Density, pcf | 87.6 |
| | Saturation, % | 107.6 |
| | Void Ratio | 0.8962 |
| | Diameter, in. | 2.842 |
| | Height, in. | 5.743 |
| Strain at peak, % | | 4.2 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 5496.5 |
| Fail. Stress, psf | | 3667.8 |
| Strain, % | | 4.2 |
| Ult. Stress, psf | | 3667.8 |
| Strain, % | | 4.2 |
| $\sigma_1$ Failure, psf | | 9164.3 |
| $\sigma_3$ Failure, psf | | 5496.5 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** FAT CLAY(CH A-7-6(79))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Asymmetrical Shear Plane

**Figure** _____

**Client:** ALDOT

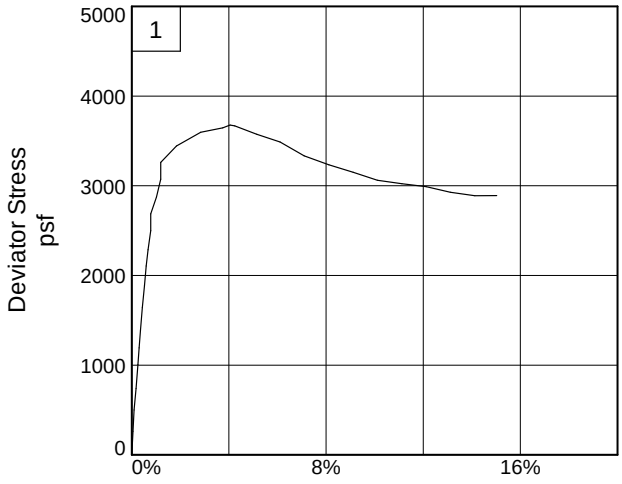
**Project:** Mobile River Bridge

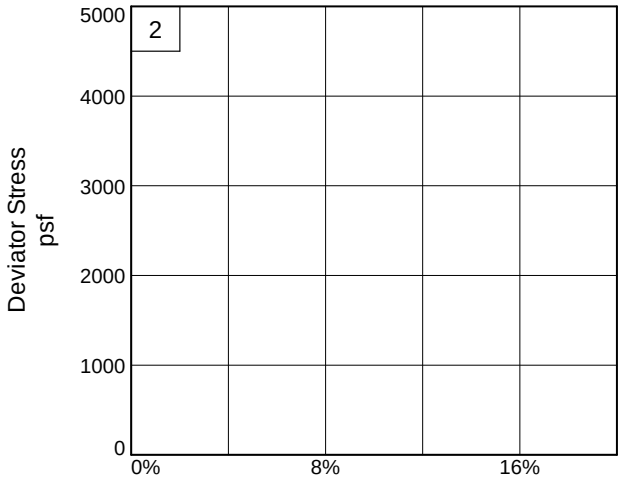
**Source of Sample:** Lab #8060 **Depth:** 108.0'-110.0'

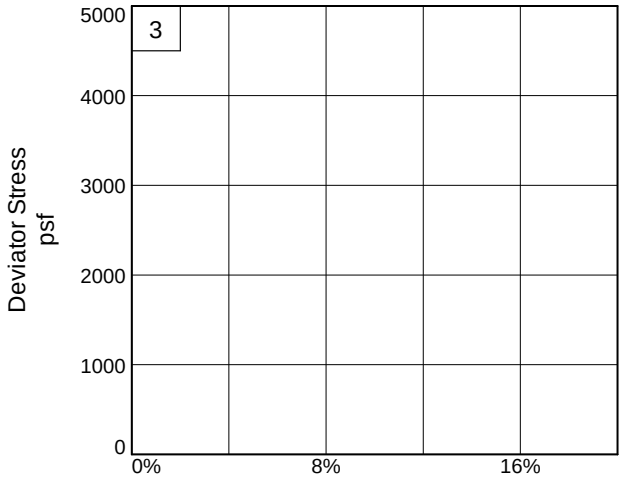
**Sample Number:** HLA-12 T-1

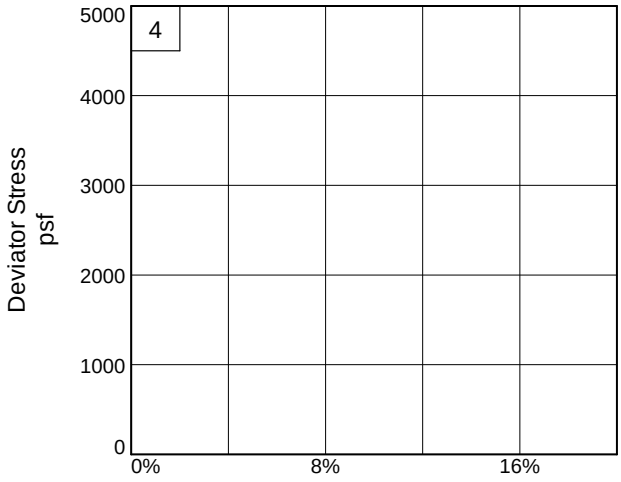
**Proj. No.:** 1511010228 **Date Sampled:**

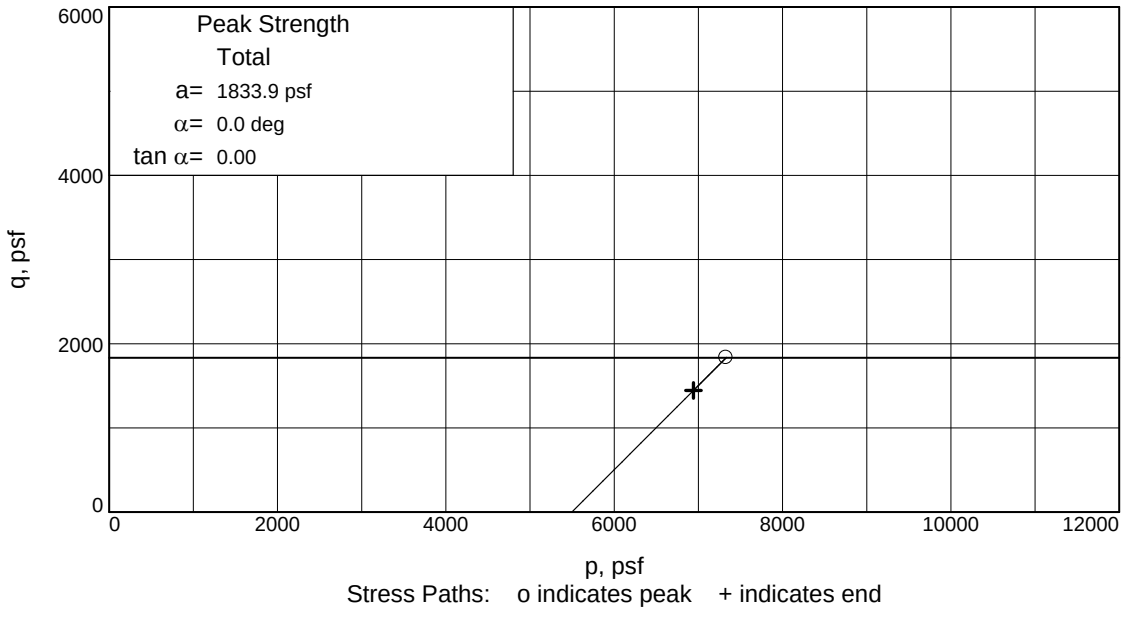
TRIAXIAL SHEAR TEST REPORT
Thompson Engineering
Mobile, Alabama



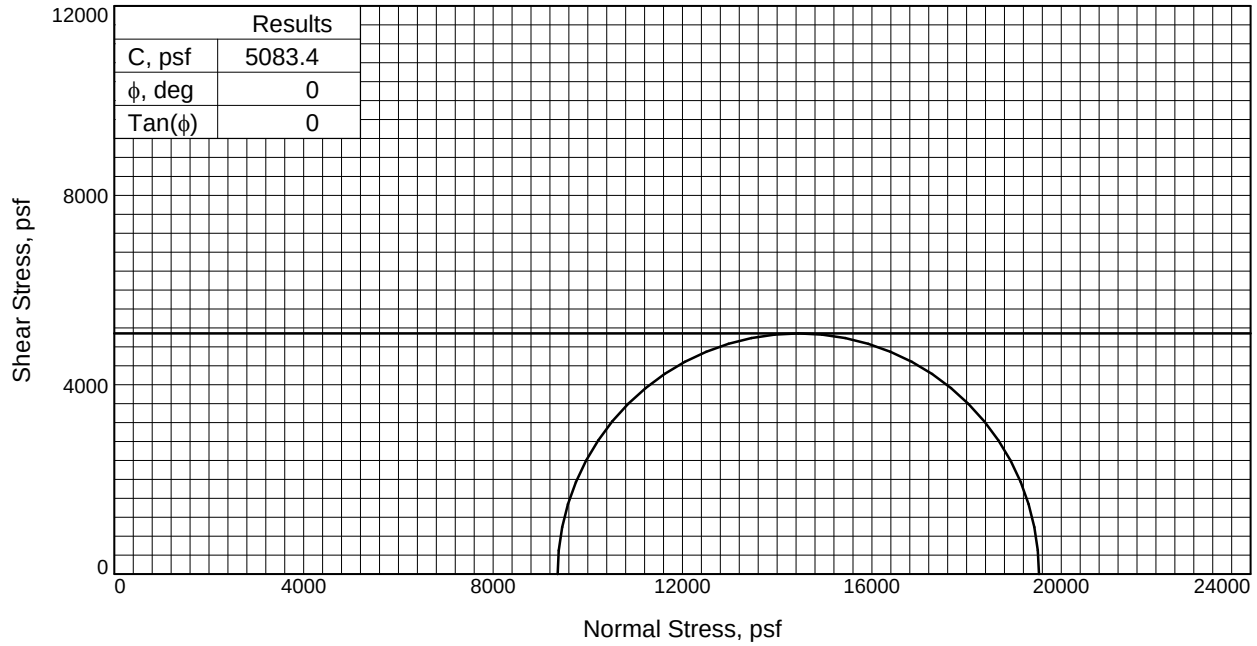



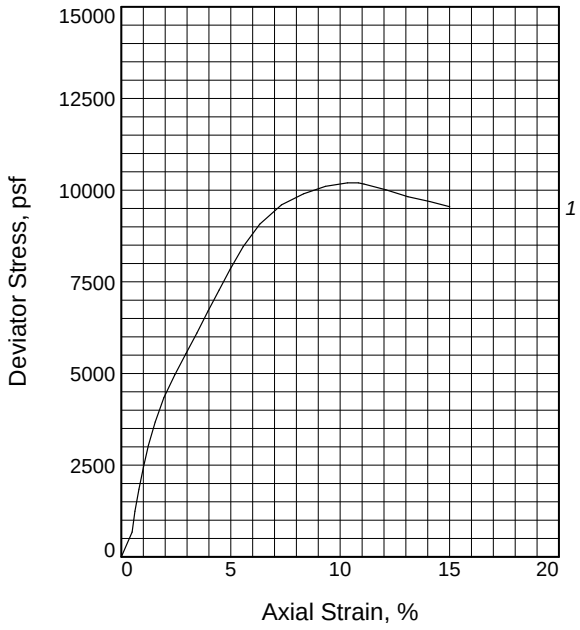




**Client:** ALDOT
**Project:** Mobile River Bridge
**Source of Sample:** Lab #8060 **Depth:** 108.0'-110.0' **Sample Number:** HLA-12 T-1
**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 18.7 |
| | Dry Density, pcf | 113.4 |
| | Saturation, % | 107.1 |
| | Void Ratio | 0.4646 |
| | Diameter, in. | 2.742 |
| | Height, in. | 5.623 |
| At Test | Water Content, % | 18.4 |
| | Dry Density, pcf | 113.4 |
| | Saturation, % | 105.5 |
| | Void Ratio | 0.4646 |
| | Diameter, in. | 2.742 |
| | Height, in. | 5.623 |
| Strain at peak, % | | 11.1 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 9362.9 |
| Fail. Stress, psf | | 10166.8 |
| Strain, % | | 11.1 |
| Ult. Stress, psf | | 10166.8 |
| Strain, % | | 11.1 |
| $\sigma_1$ Failure, psf | | 19529.7 |
| $\sigma_3$ Failure, psf | | 9362.9 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** LEAN CLAY(CL A-6(11))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Asymmetrical Shear Plane

**Figure** _____

**Client:** ALDOT

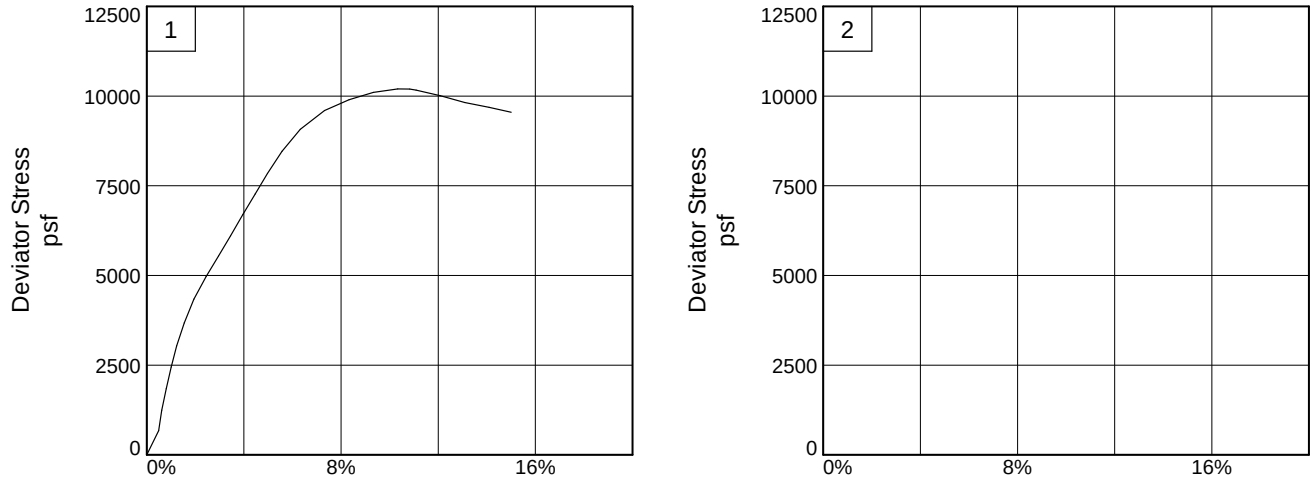
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8060 **Depth:** 185.0'-190.0'

**Sample Number:** HLA-12 T-2

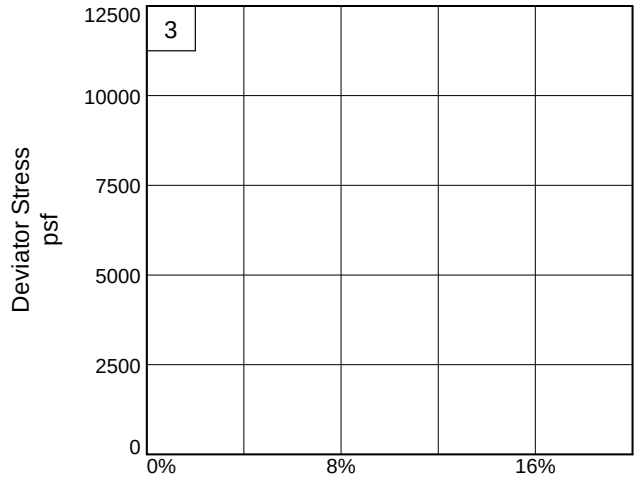
**Proj. No.:** 1511010228 **Date Sampled:**

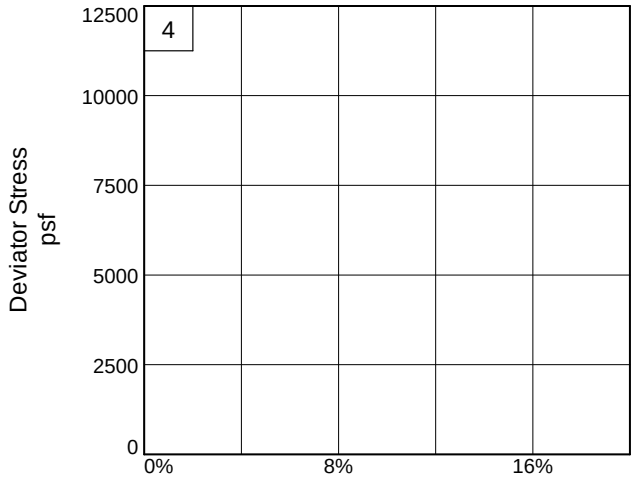
TRIAXIAL SHEAR TEST REPORT
Thompson Engineering
Mobile, Alabama

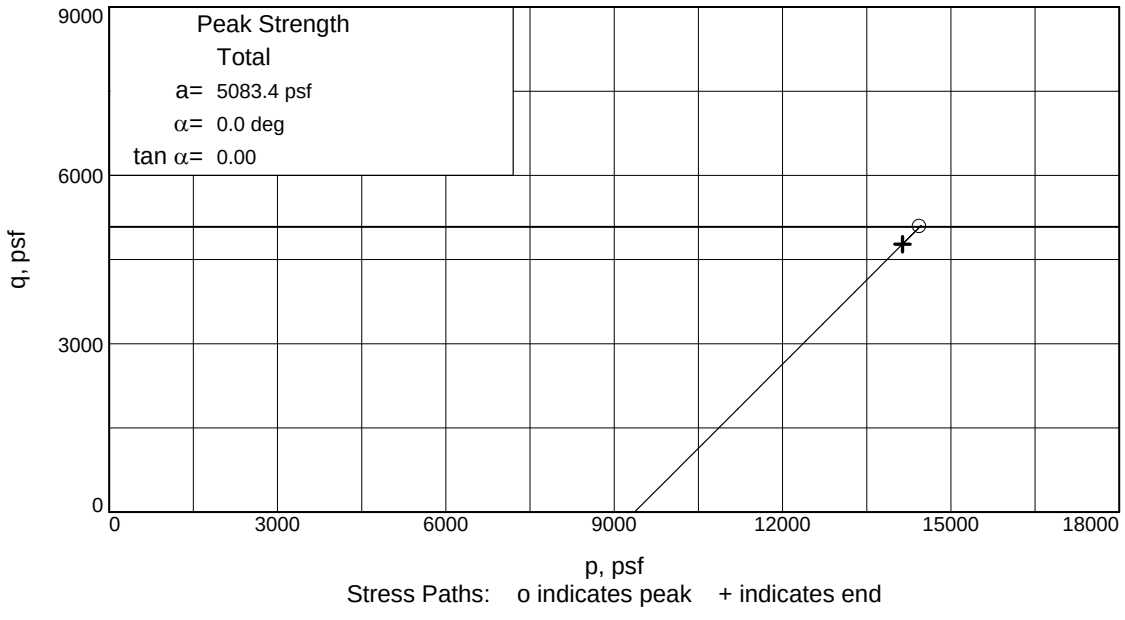








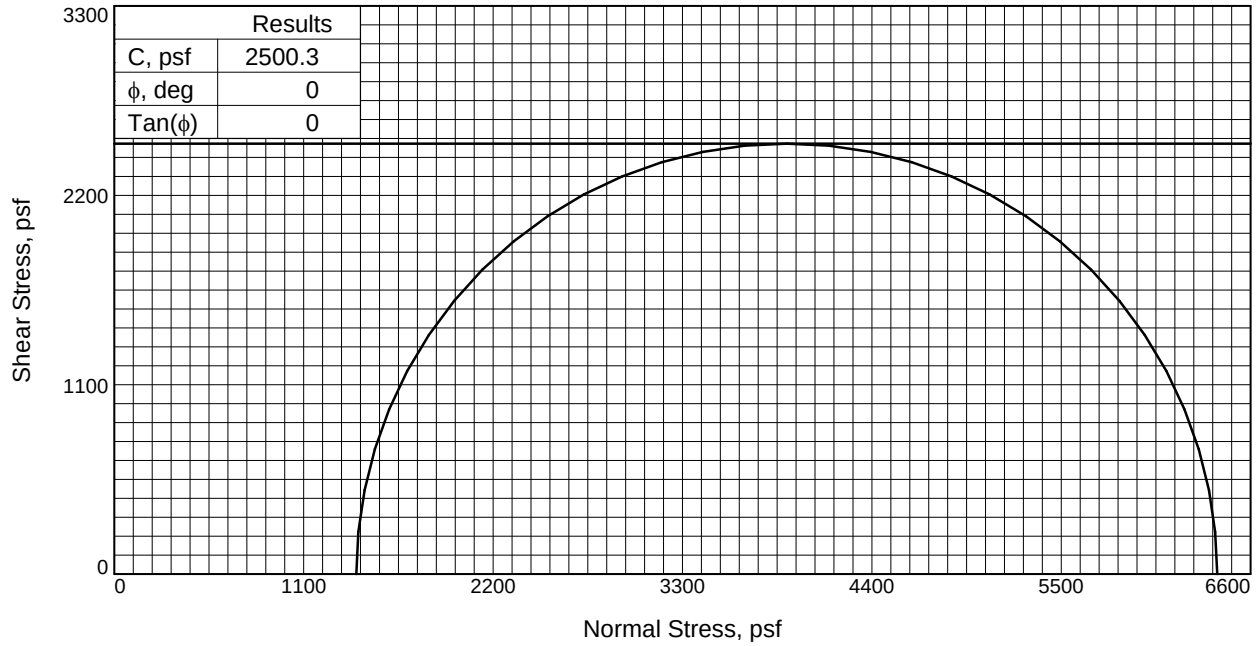



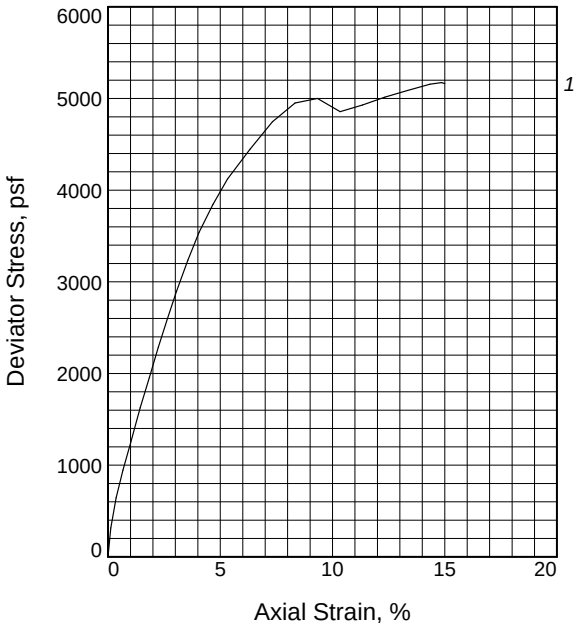




Stress Paths: o indicates peak + indicates end

**Client:** ALDOT
**Project:** Mobile River Bridge
**Source of Sample:** Lab #8060 **Depth:** 185.0'-190.0' **Sample Number:** HLA-12 T-2
**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 17.2 |
| | Dry Density, pcf | 106.8 |
| | Saturation, % | 82.6 |
| | Void Ratio | 0.5543 |
| | Diameter, in. | 2.833 |
| | Height, in. | 5.363 |
| At Test | Water Content, % | 23.0 |
| | Dry Density, pcf | 106.8 |
| | Saturation, % | 110.6 |
| | Void Ratio | 0.5543 |
| | Diameter, in. | 2.833 |
| | Height, in. | 5.363 |
| Strain at peak, % | | 9.3 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 1405.4 |
| Fail. Stress, psf | | 5000.6 |
| Strain, % | | 9.3 |
| Ult. Stress, psf | | 5000.6 |
| Strain, % | | 9.3 |
| $\sigma_1$ Failure, psf | | 6406.0 |
| $\sigma_3$ Failure, psf | | 1405.4 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** SILTY SAND(SM A-2-4(0))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Symmetrical Bulge

**Figure** _____

**Client:** ALDOT

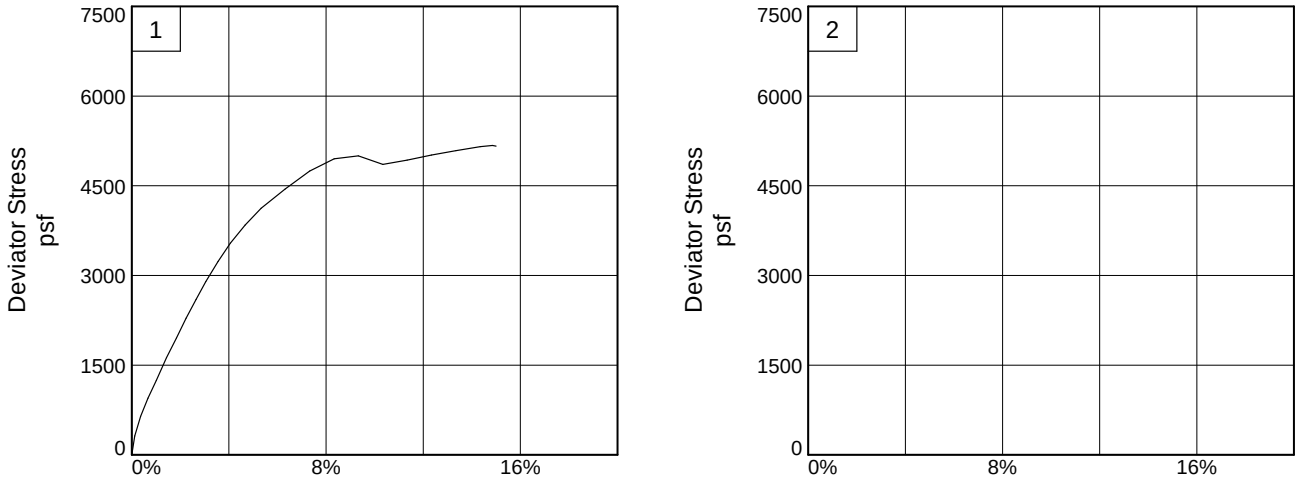
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8068 **Depth:** 18.0'-20.0'

**Sample Number:** HLA-13 T-1

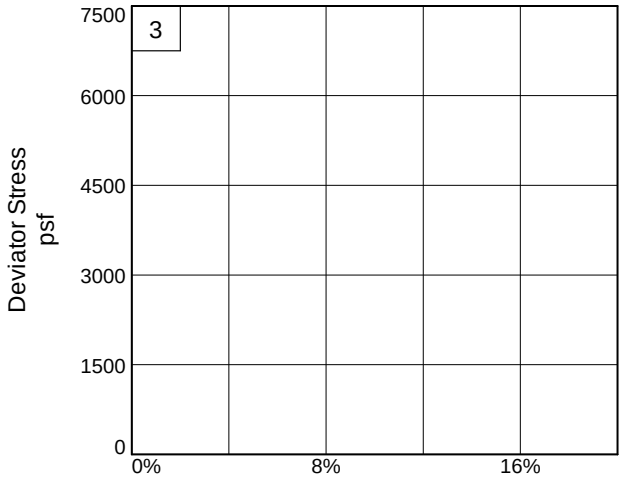
**Proj. No.:** 1511010228 **Date Sampled:**

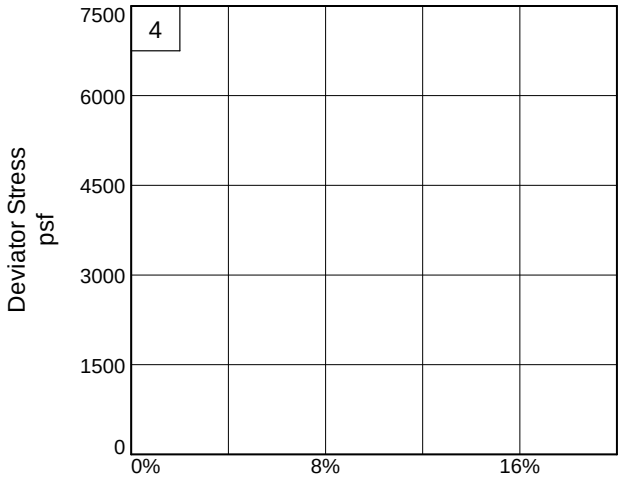
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Thompson Engineering
Mobile, Alabama

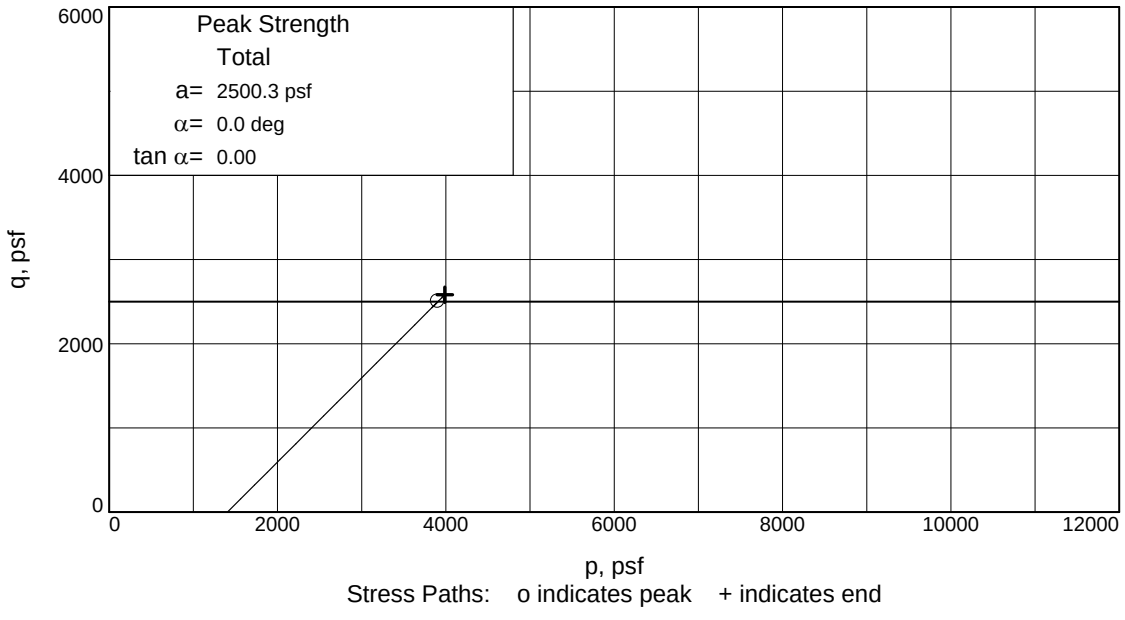






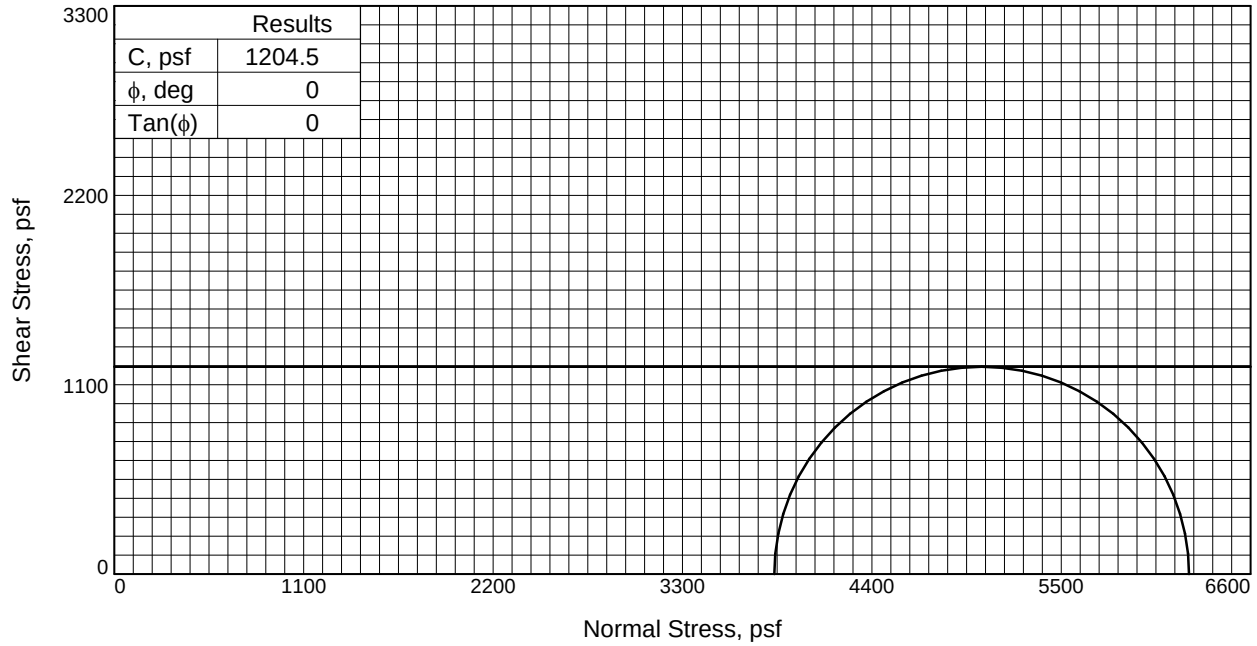


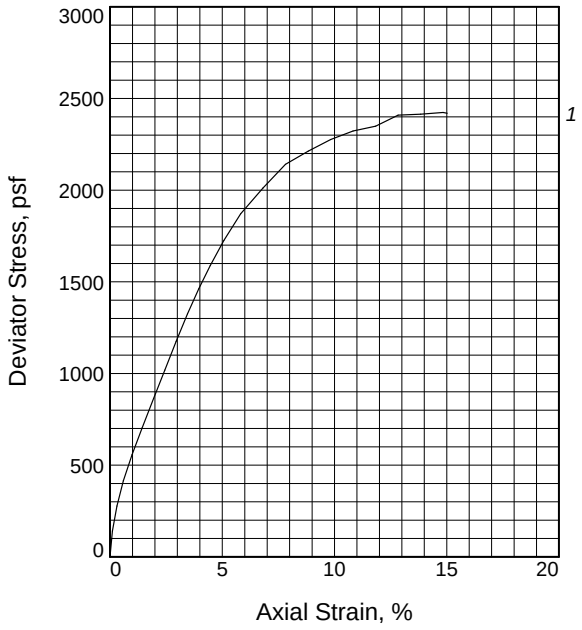




**Client:** ALDOT
**Project:** Mobile River Bridge
**Source of Sample:** Lab #8068 **Depth:** 18.0'-20.0' **Sample Number:** HLA-13 T-1
**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 21.0 |
| | Dry Density, pcf | 102.4 |
| | Saturation, % | 89.8 |
| | Void Ratio | 0.6211 |
| | Diameter, in. | 2.855 |
| | Height, in. | 5.663 |
| At Test | Water Content, % | 28.0 |
| | Dry Density, pcf | 102.4 |
| | Saturation, % | 120.0 |
| | Void Ratio | 0.6211 |
| | Diameter, in. | 2.855 |
| | Height, in. | 5.663 |
| Strain at peak, % | | 12.8 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 3833.3 |
| Fail. Stress, psf | | 2408.9 |
| Strain, % | | 12.8 |
| Ult. Stress, psf | | 2408.9 |
| Strain, % | | 12.8 |
| $\sigma_1$ Failure, psf | | 6242.2 |
| $\sigma_3$ Failure, psf | | 3833.3 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** SANDY LEAN CLAY(CL A-4(2))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Symmetrical Bulge

**Figure** _____

**Client:** ALDOT

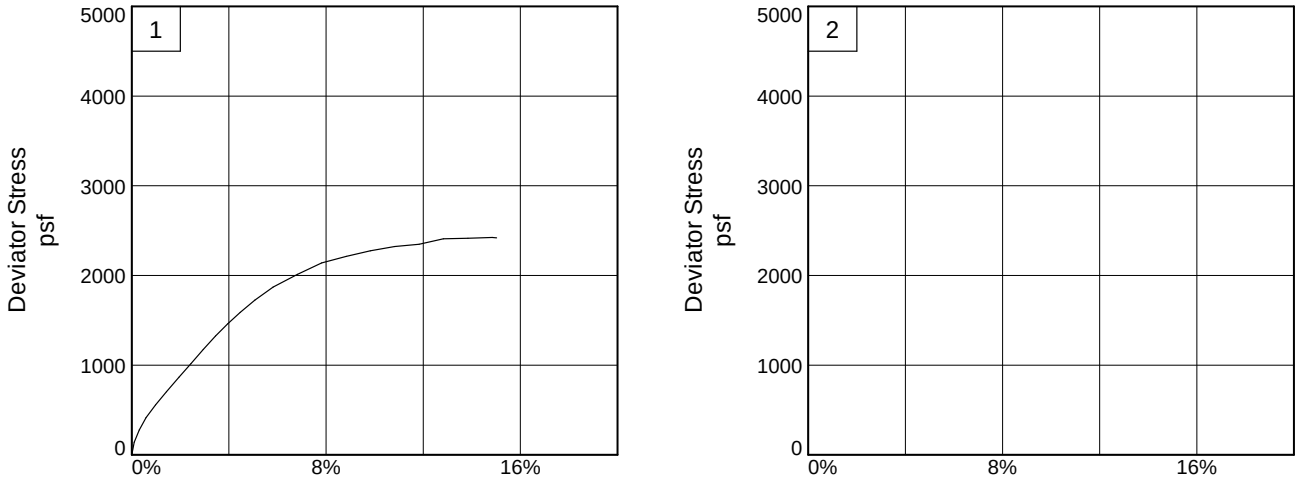
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8068 **Depth:** 68.0'-70.0'

**Sample Number:** HLA-14 T-1

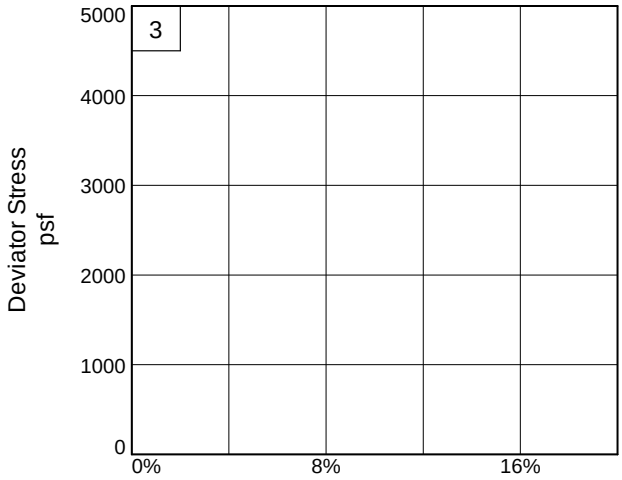
**Proj. No.:** 1511010228 **Date Sampled:**

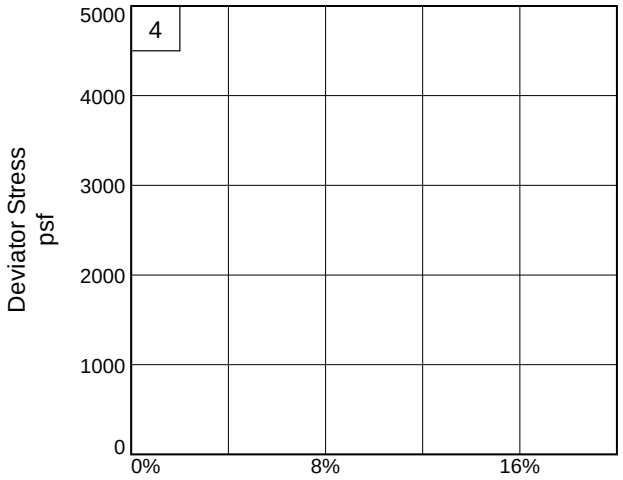
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Mobile, Alabama

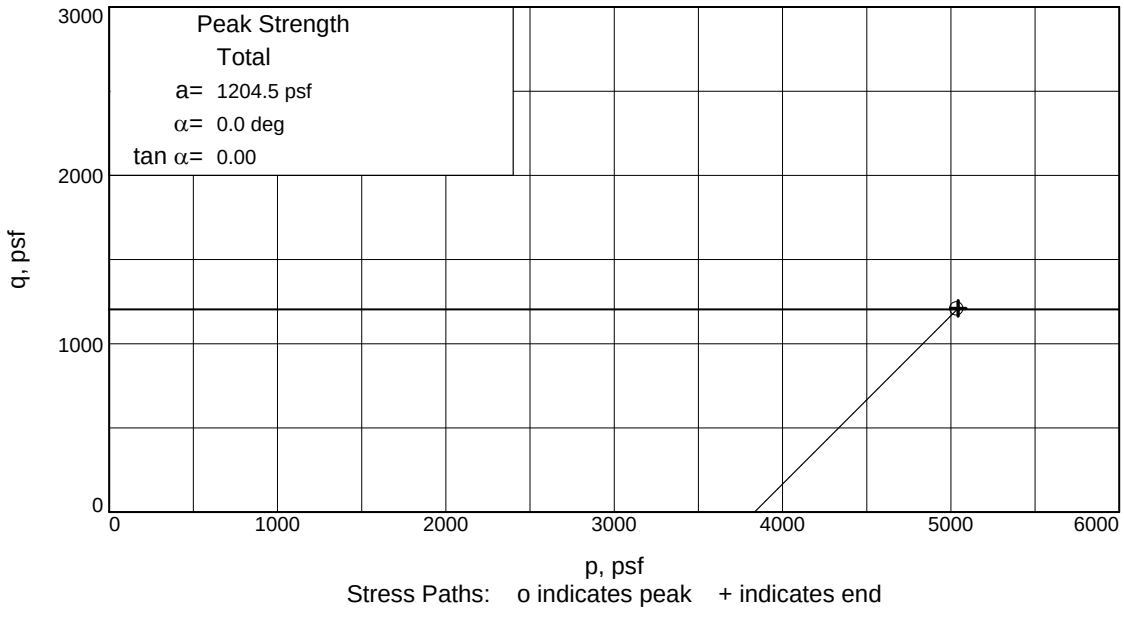






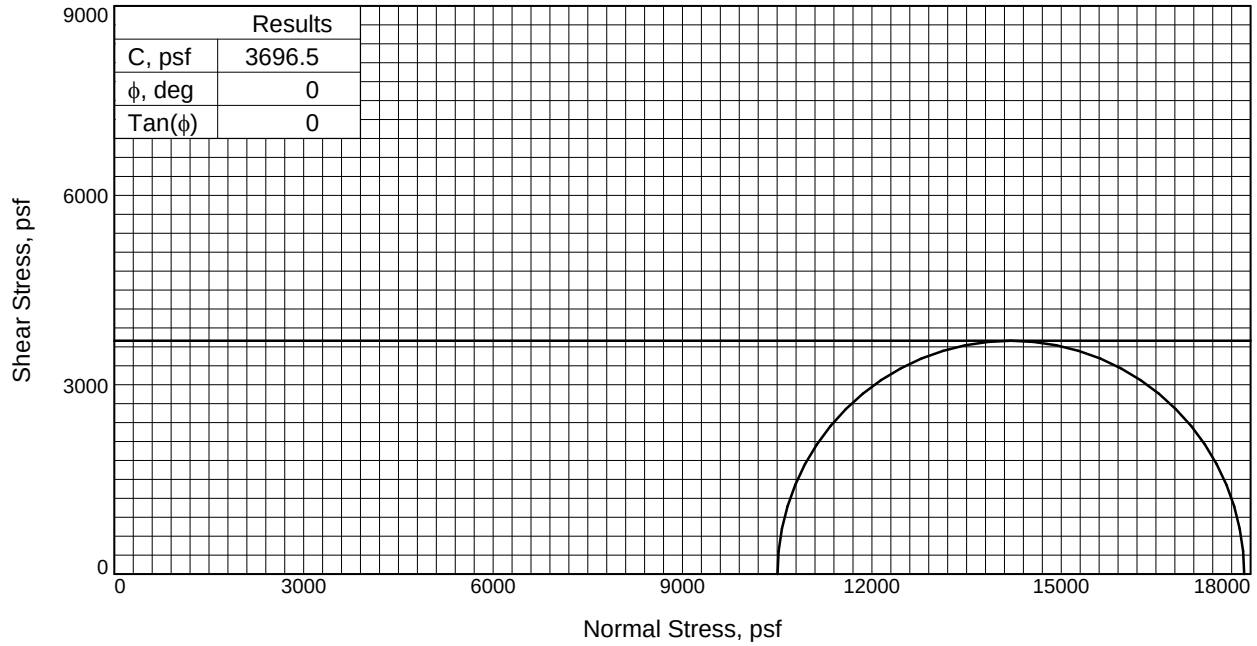


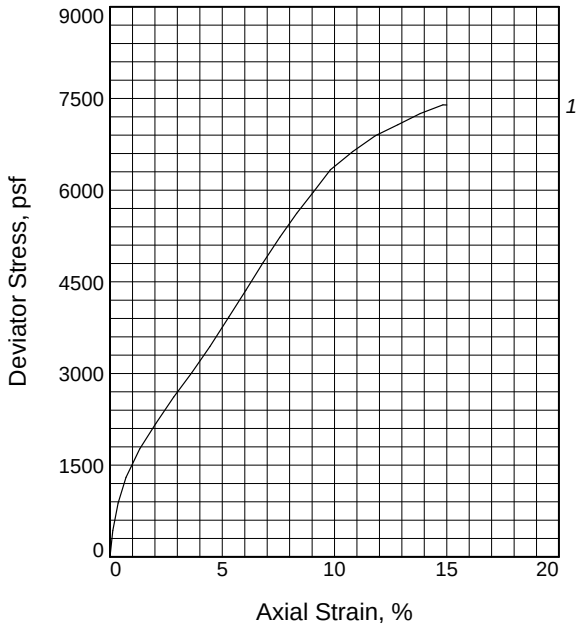




**Client:** ALDOT
**Project:** Mobile River Bridge
**Source of Sample:** Lab #8068 **Depth:** 68.0'-70.0' **Sample Number:** HLA-14 T-1
**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 20.8 |
| | Dry Density, pcf | 109.3 |
| | Saturation, % | 106.6 |
| | Void Ratio | 0.5196 |
| | Diameter, in. | 2.735 |
| | Height, in. | 5.698 |
| At Test | Water Content, % | 20.3 |
| | Dry Density, pcf | 109.3 |
| | Saturation, % | 104.1 |
| | Void Ratio | 0.5196 |
| | Diameter, in. | 2.735 |
| | Height, in. | 5.698 |
| Strain at peak, % | | 15.0 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 10504.8 |
| Fail. Stress, psf | | 7393.0 |
| Strain, % | | 15.0 |
| Ult. Stress, psf | | 7393.0 |
| Strain, % | | 15.0 |
| $\sigma_1$ Failure, psf | | 17897.8 |
| $\sigma_3$ Failure, psf | | 10504.8 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** CLAYEY SAND(SC A-6(1))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Symmetrical Bulge

**Figure** _____

**Client:** ALDOT

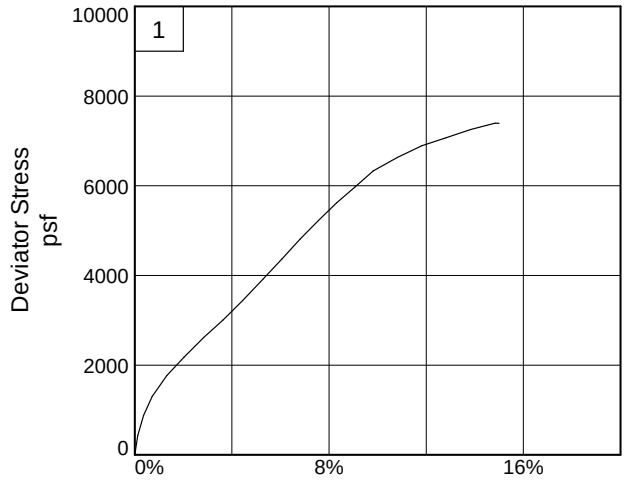
**Project:** Mobile River Bridge

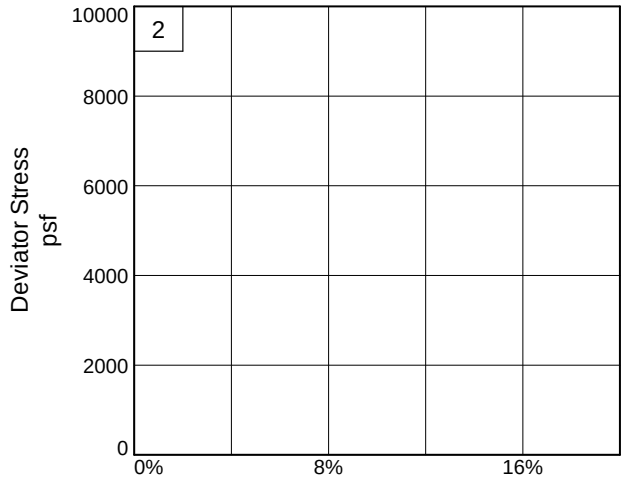
**Source of Sample:** Lab #8068 **Depth:** 208.0'-210.0'

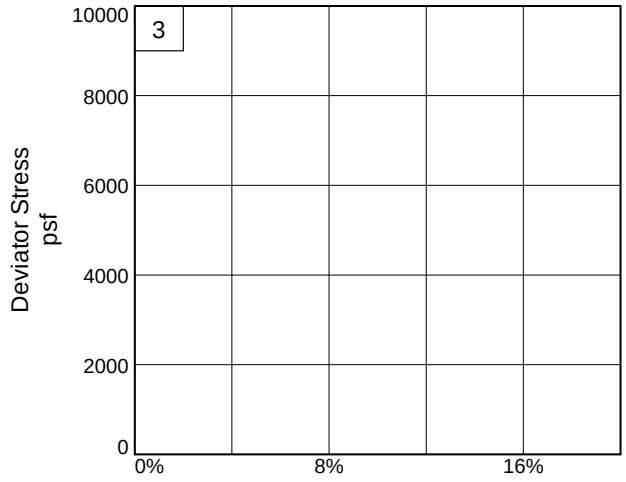
**Sample Number:** HLA-14 T-2

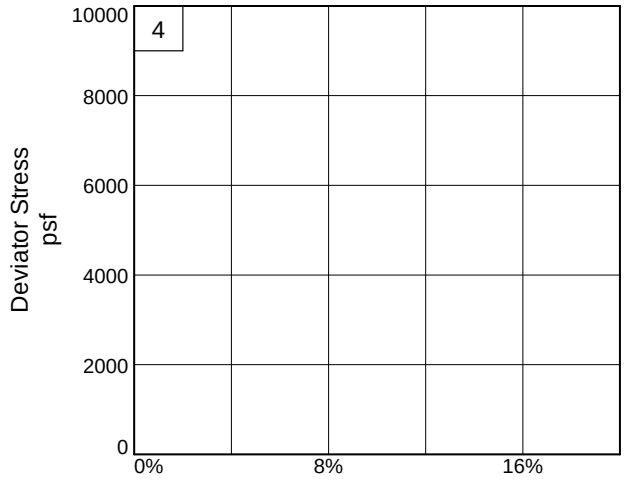
**Proj. No.:** 1511010228 **Date Sampled:**

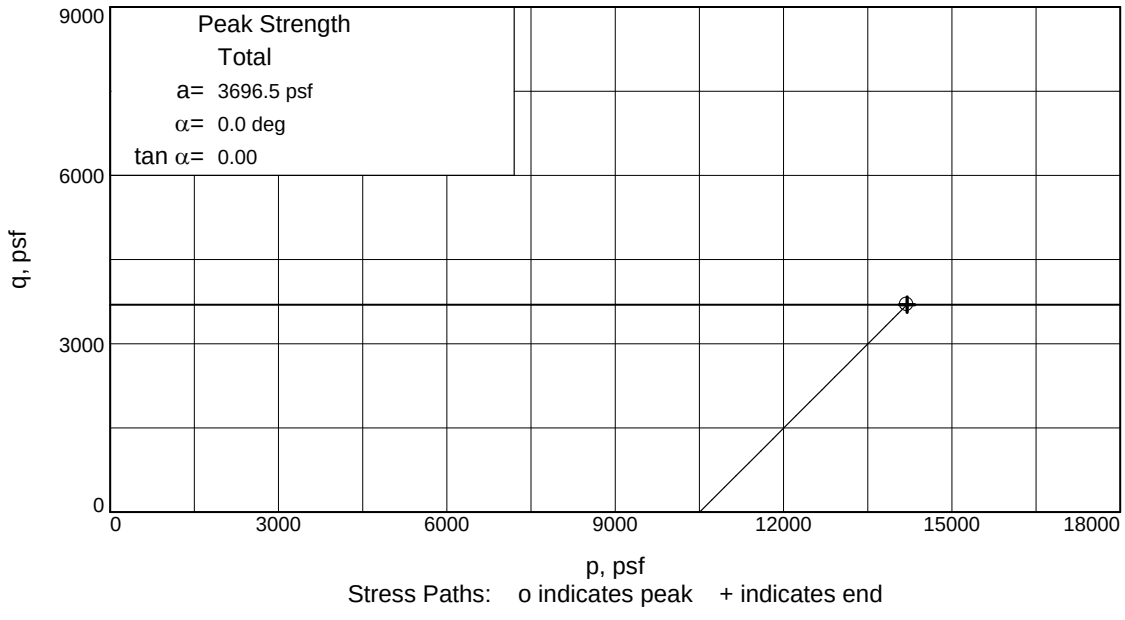
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Thompson Engineering
Mobile, Alabama




Stress Paths: o indicates peak + indicates end

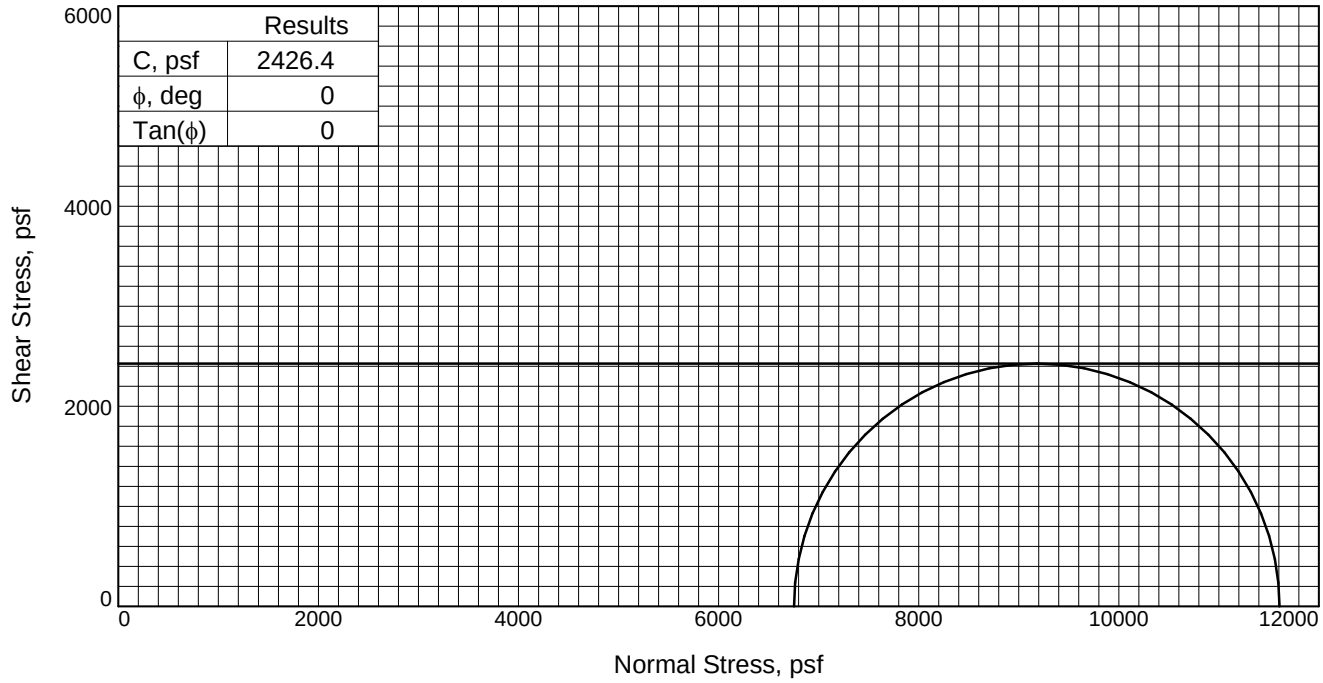
**Client:** ALDOT

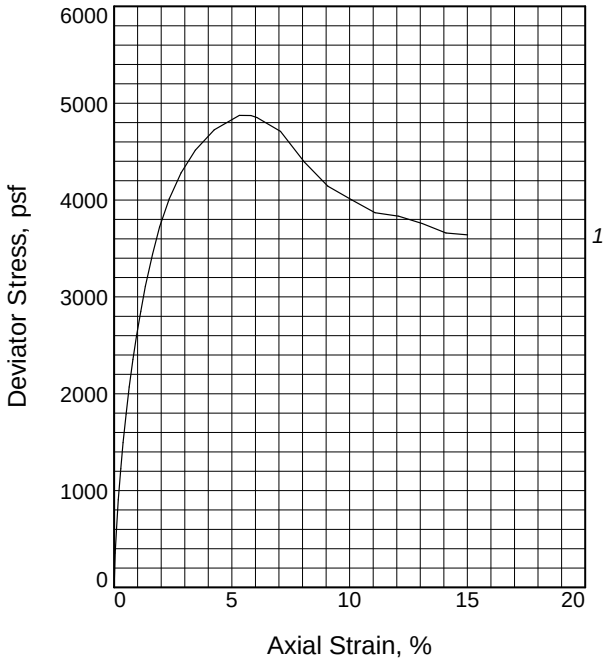
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8068 **Depth:** 208.0'-210.0' **Sample Number:** HLA-14 T-2

**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 30.1 |
| | Dry Density, pcf | 95.3 |
| | Saturation, % | 107.8 |
| | Void Ratio | 0.7419 |
| | Diameter, in. | 2.861 |
| | Height, in. | 5.751 |
| At Test | Water Content, % | 0.0 |
| | Dry Density, pcf | 0.0 |
| | Saturation, % | 0.0 |
| | Void Ratio | N/A |
| | Diameter, in. | 2.861 |
| | Height, in. | 5.751 |
| Strain at peak, % | | 6.1 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 6753.6 |
| Fail. Stress, psf | | 4852.8 |
| Strain, % | | 6.1 |
| Ult. Stress, psf | | 4852.8 |
| Strain, % | | 6.1 |
| $\sigma_1$ Failure, psf | | 11606.4 |
| $\sigma_3$ Failure, psf | | 6753.6 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** POORLY GRADED SAND(SP A-2-7(0))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Asymmetrical Shear Plane

**Figure** _____

**Client:** ALDOT

**Project:** Mobile River Bridge

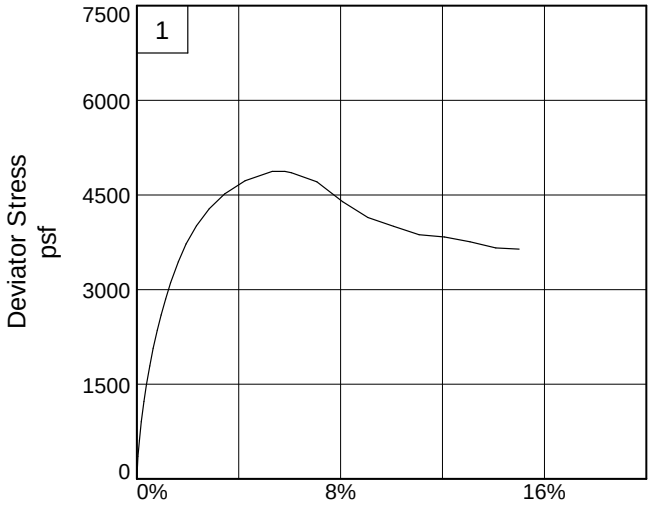
**Source of Sample:** Lab #8076 **Depth:** 103.0'-105.0'

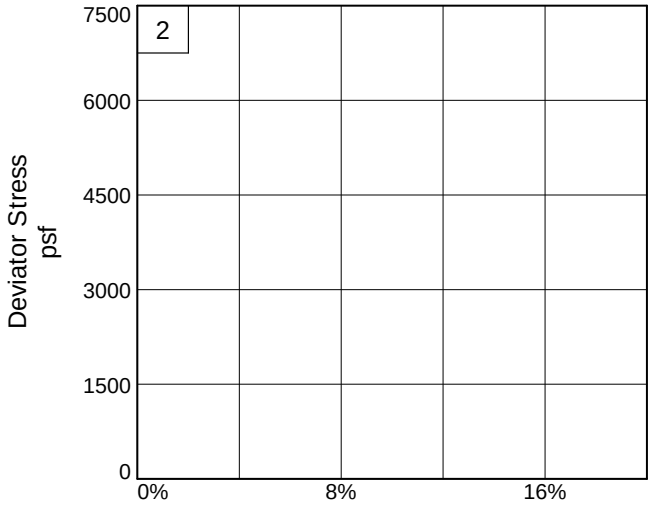
**Sample Number:** HLA-15 T-1

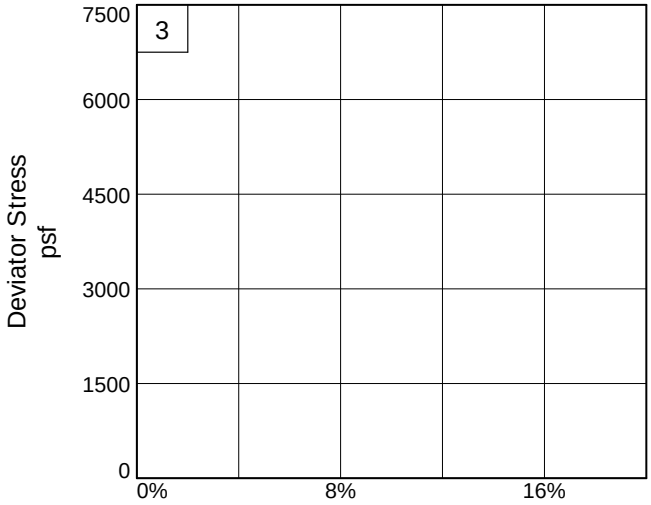
**Proj. No.:** 1511010228 **Date Sampled:**

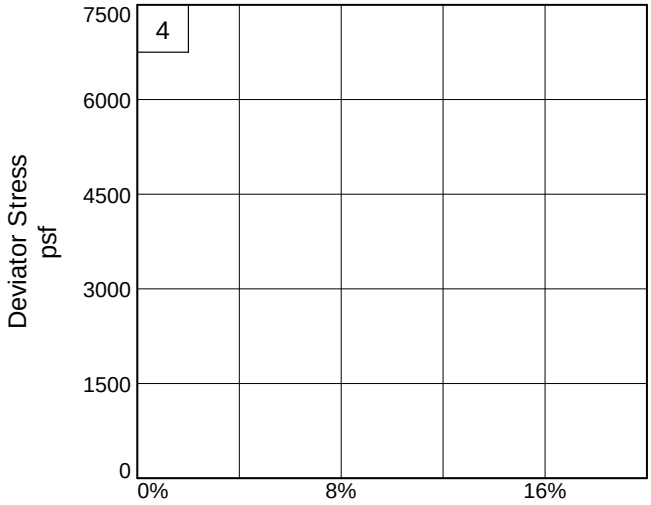
TRIAXIAL SHEAR TEST REPORT

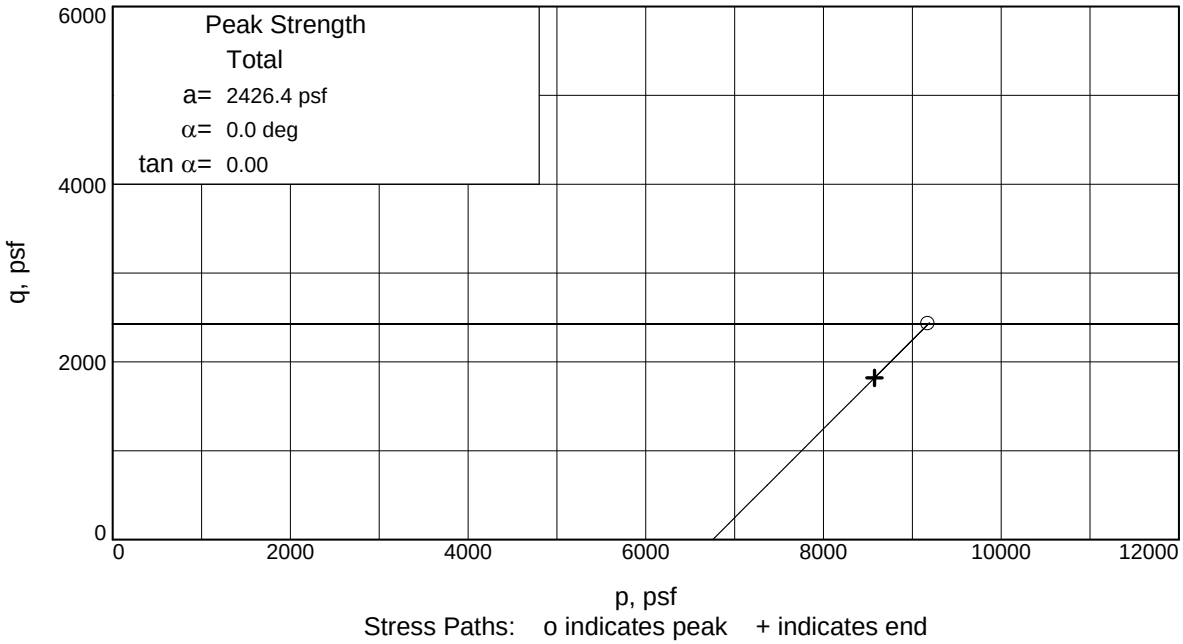
Thompson Engineering
Mobile, Alabama




Stress Paths: o indicates peak + indicates end

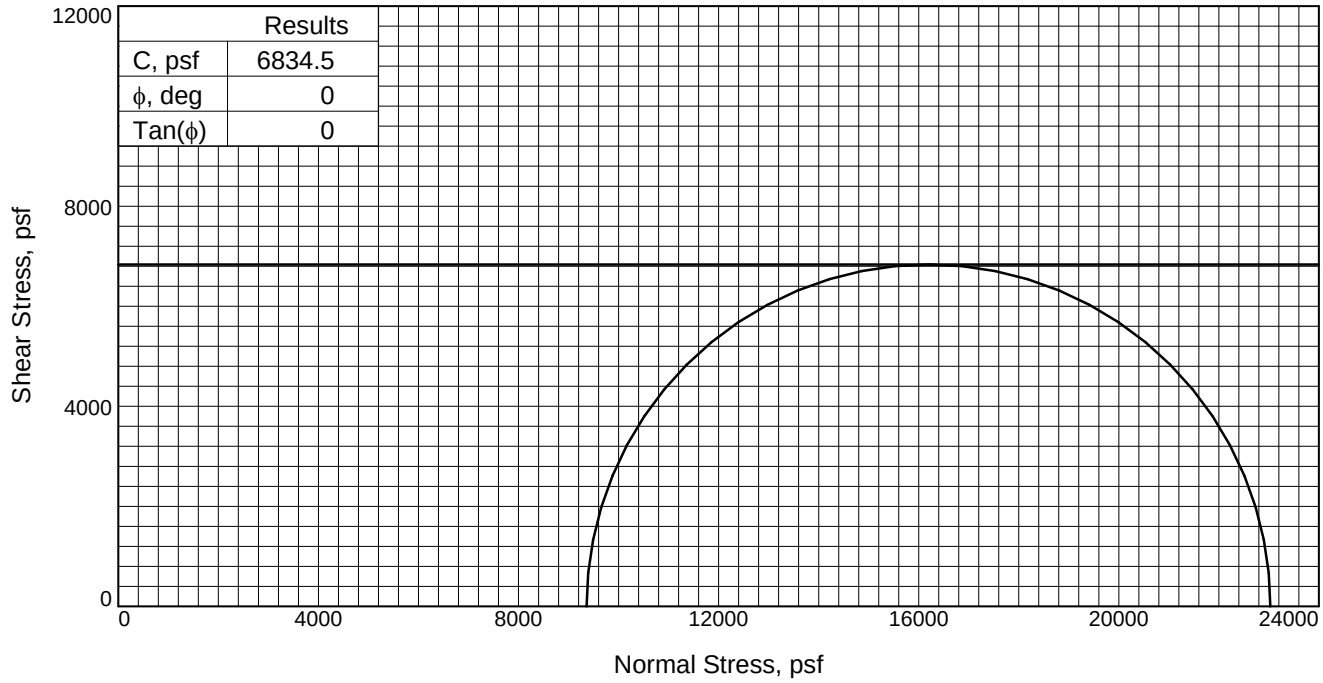
**Client:** ALDOT

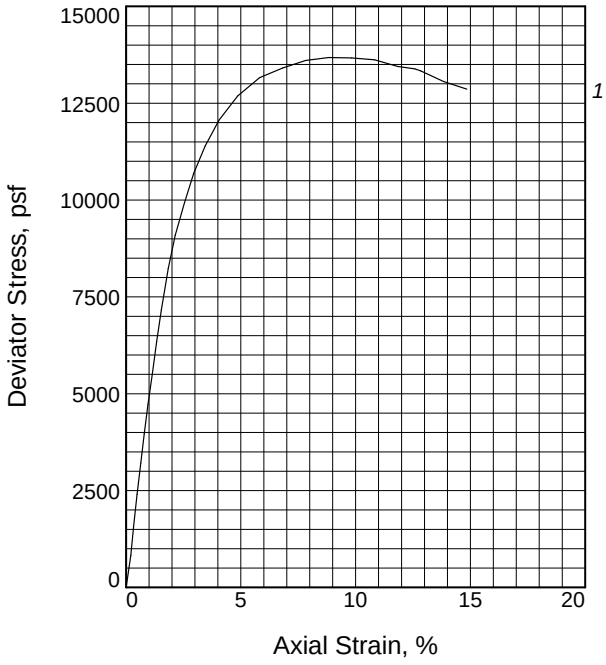
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8076 **Depth:** 103.0'-105.0' **Sample Number:** HLA-15 T-1

**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 19.7 |
| | Dry Density, pcf | 110.4 |
| | Saturation, % | 104.2 |
| | Void Ratio | 0.5036 |
| | Diameter, in. | 2.741 |
| | Height, in. | 5.823 |
| At Test | Water Content, % | 19.9 |
| | Dry Density, pcf | 110.4 |
| | Saturation, % | 105.4 |
| | Void Ratio | 0.5036 |
| | Diameter, in. | 2.741 |
| | Height, in. | 5.823 |
| Strain at peak, % | | 9.8 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 9360.0 |
| Fail. Stress, psf | | 13668.9 |
| Strain, % | | 9.8 |
| Ult. Stress, psf | | 13668.9 |
| Strain, % | | 9.8 |
| $\sigma_1$ Failure, psf | | 23028.9 |
| $\sigma_3$ Failure, psf | | 9360.0 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** LEAN CLAY(CL A-7-6(31))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Asymmetrical Shear Plane

**Figure** _____

**Client:** ALDOT

**Project:** Mobile River Bridge

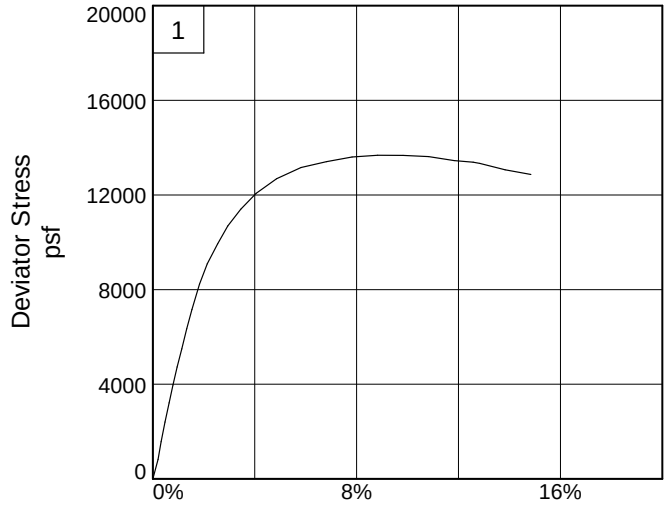
**Source of Sample:** Lab #8076 **Depth:** 143.0'-145.0'

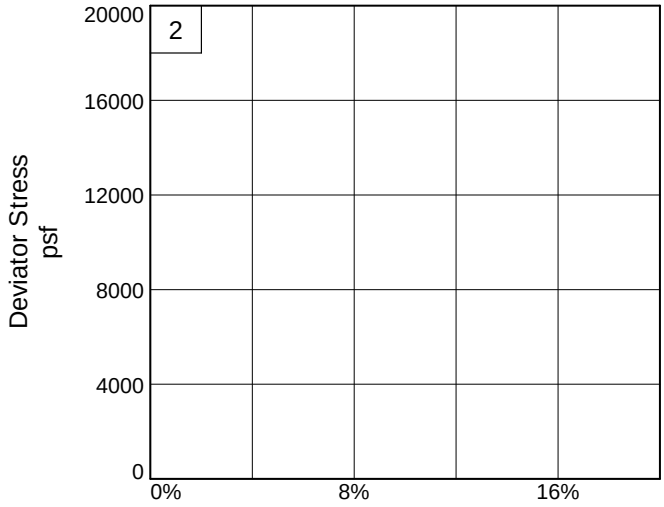
**Sample Number:** HLA-15 T-2

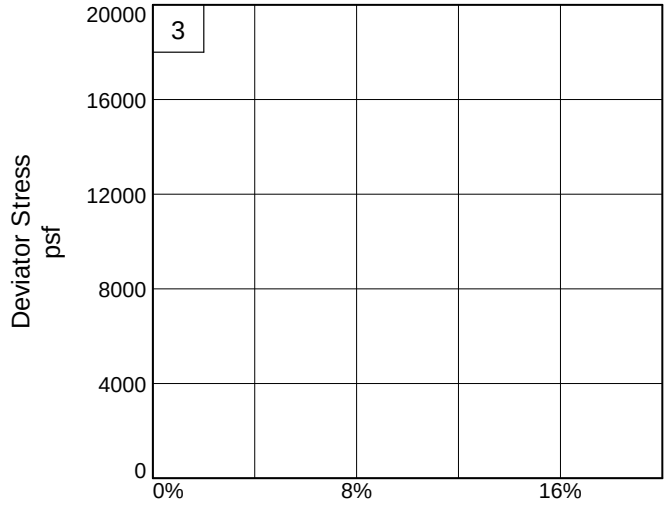
**Proj. No.:** 1511010228 **Date Sampled:**

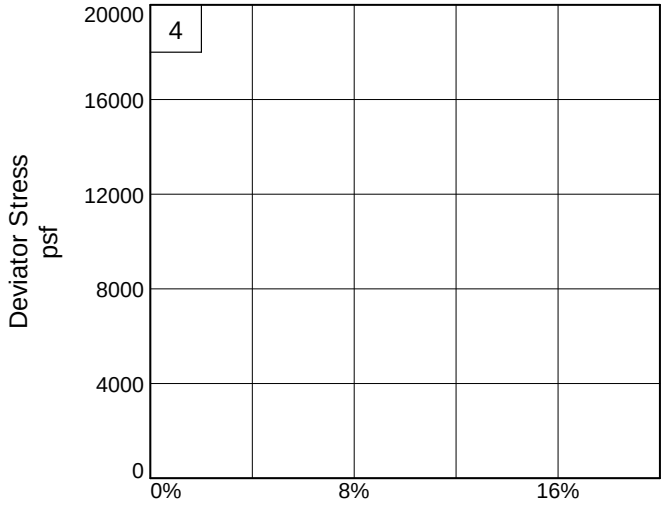
TRIAXIAL SHEAR TEST REPORT

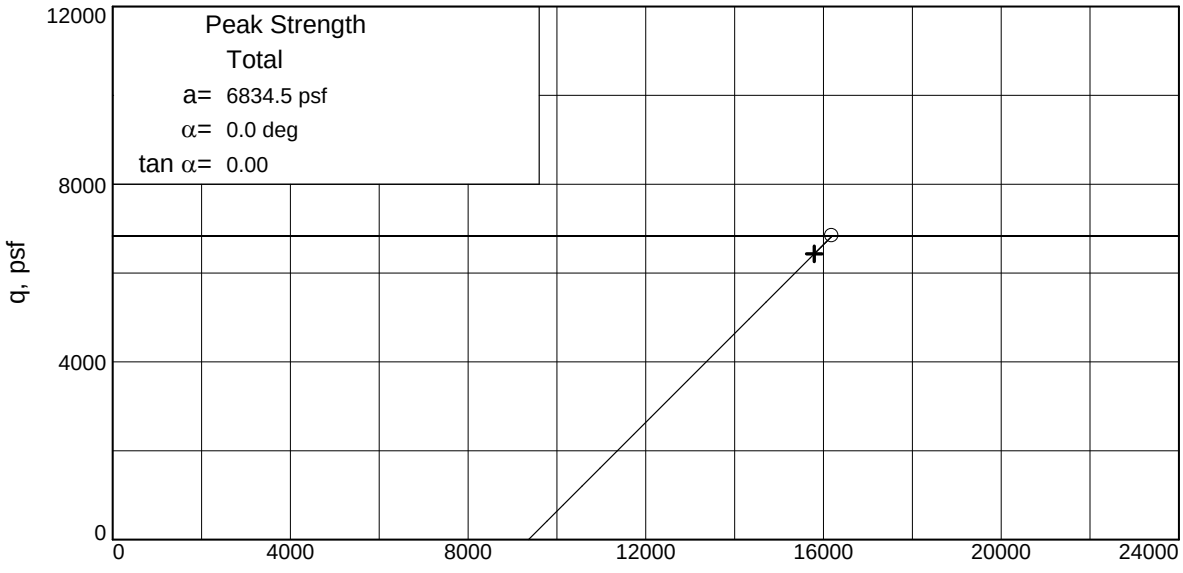
Thompson Engineering
Mobile, Alabama




Stress Paths: o indicates peak + indicates end

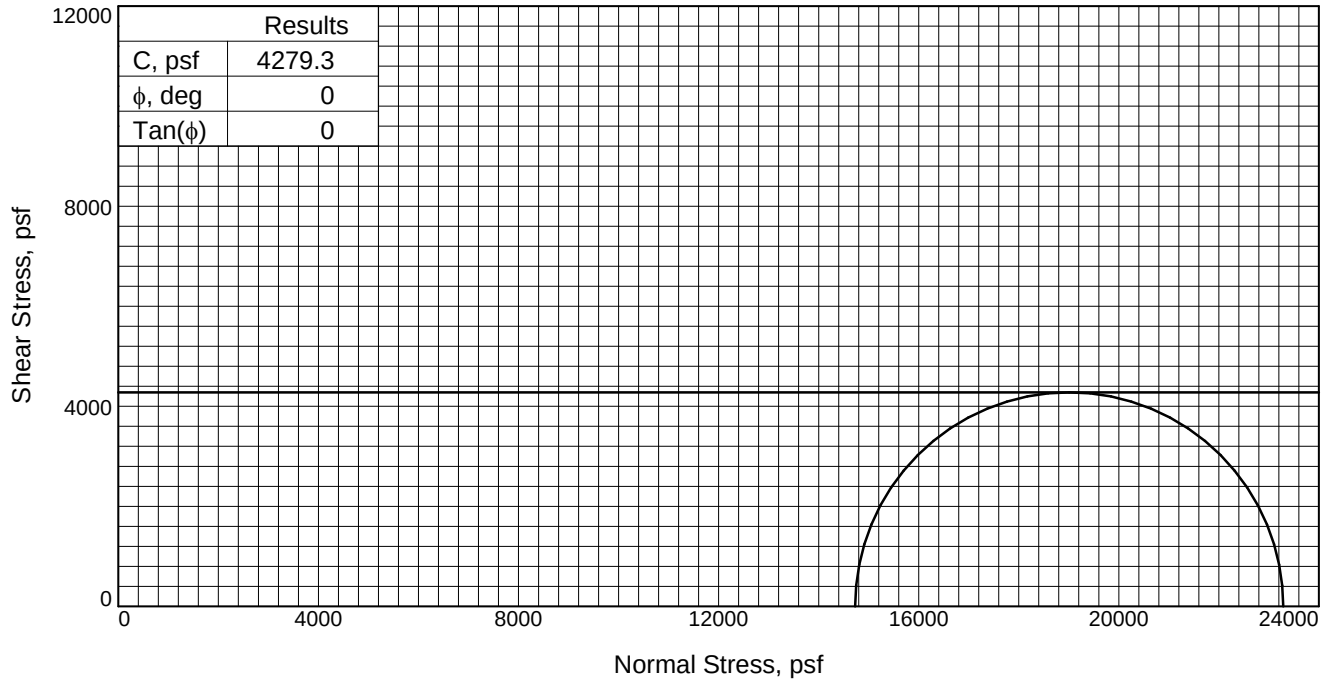
**Client:** ALDOT

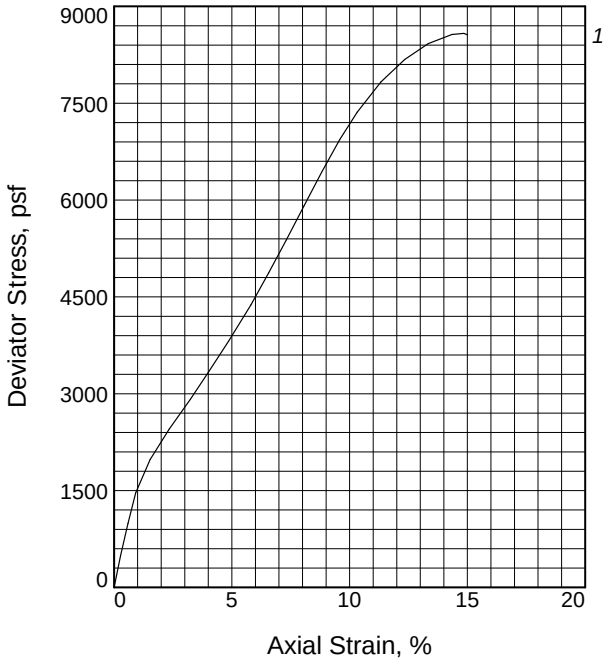
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8076 **Depth:** 143.0'-145.0' **Sample Number:** HLA-15 T-2

**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 23.9 |
| | Dry Density, pcf | 103.7 |
| | Saturation, % | 105.7 |
| | Void Ratio | 0.6009 |
| | Diameter, in. | 2.729 |
| | Height, in. | 5.681 |
| At Test | Water Content, % | 22.8 |
| | Dry Density, pcf | 103.7 |
| | Saturation, % | 101.1 |
| | Void Ratio | 0.6009 |
| | Diameter, in. | 2.729 |
| | Height, in. | 5.681 |
| Strain at peak, % | | 15.0 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 14728.3 |
| Fail. Stress, psf | | 8558.5 |
| Strain, % | | 15.0 |
| Ult. Stress, psf | | 8558.5 |
| Strain, % | | 15.0 |
| $\sigma_1$ Failure, psf | | 23286.9 |
| $\sigma_3$ Failure, psf | | 14728.3 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** LEAN CLAY with SAND(CL A-6(6))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Symmetrical Bulge

**Figure** _____

**Client:** ALDOT

**Project:** Mobile River Bridge

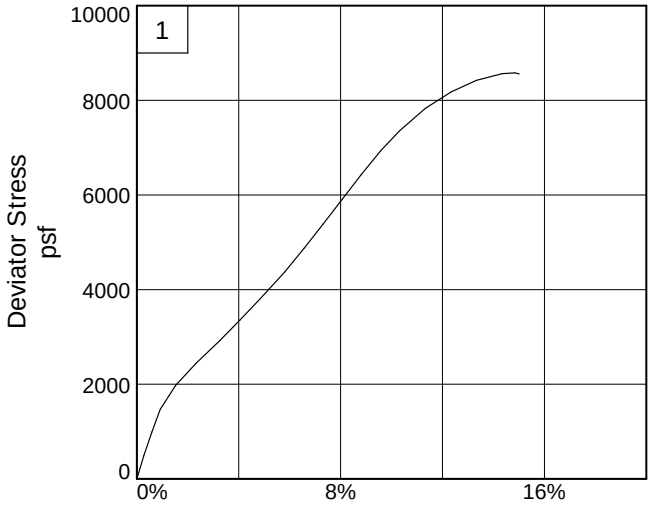
**Source of Sample:** Lab #8076 **Depth:** 228.0'-230.0'

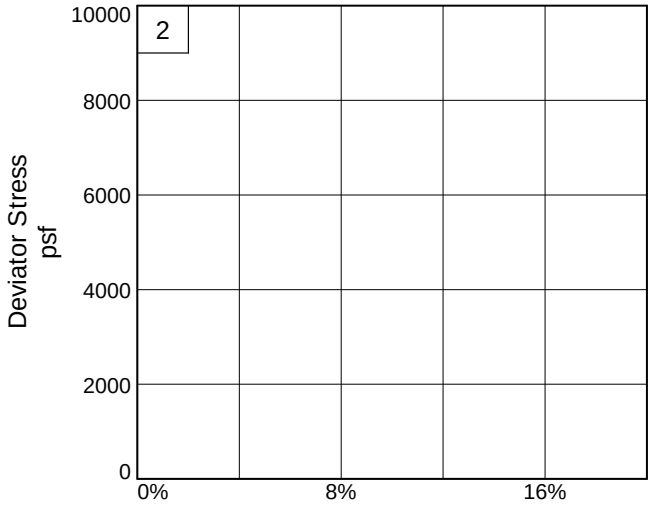
**Sample Number:** HLA-15 T-3

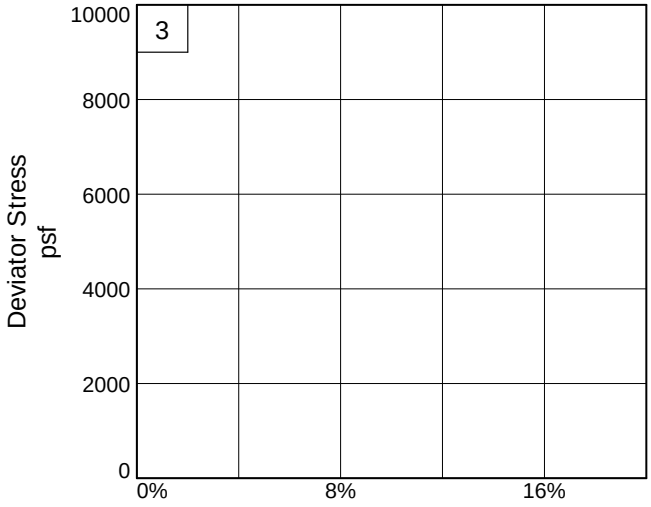
**Proj. No.:** 1511010228 **Date Sampled:**

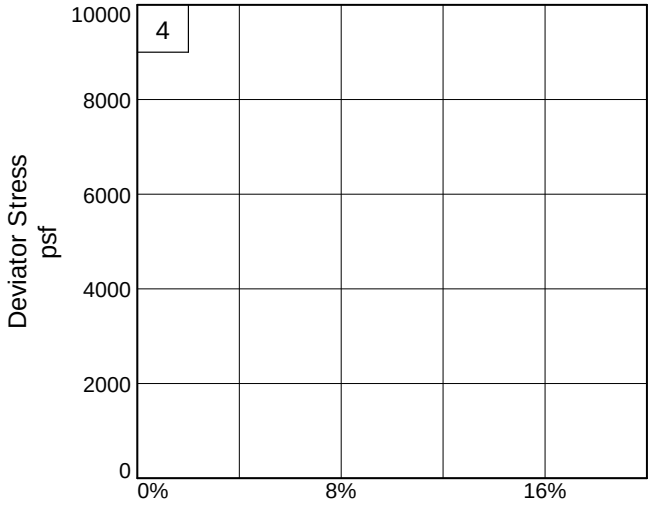
TRIAXIAL SHEAR TEST REPORT

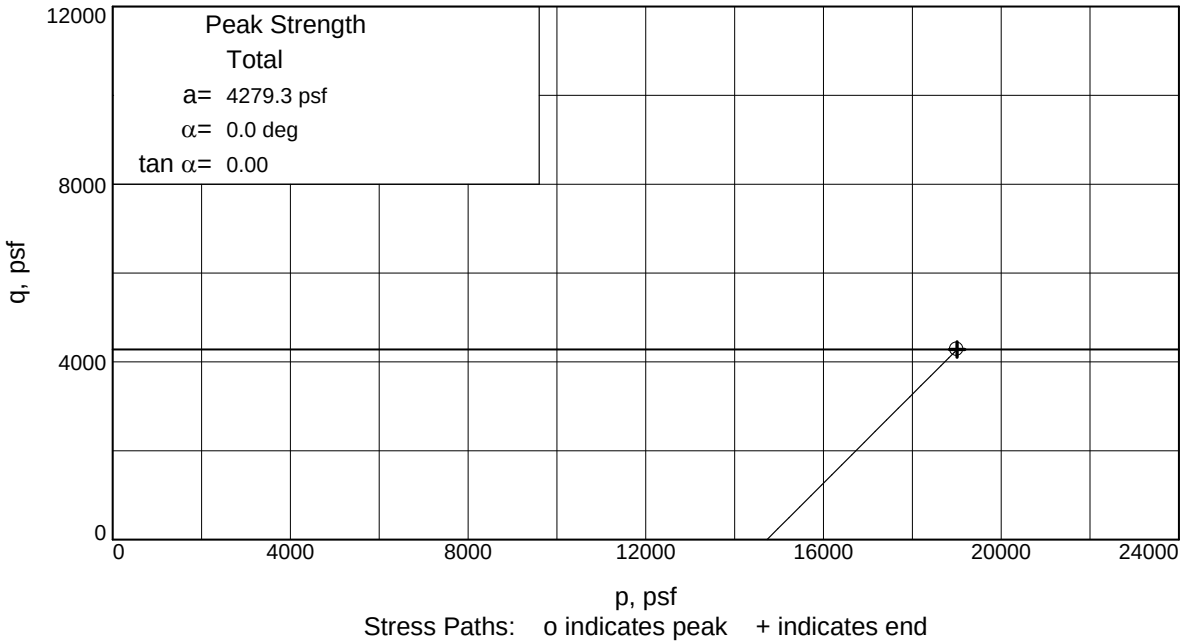
Thompson Engineering
Mobile, Alabama




Stress Paths: o indicates peak + indicates end

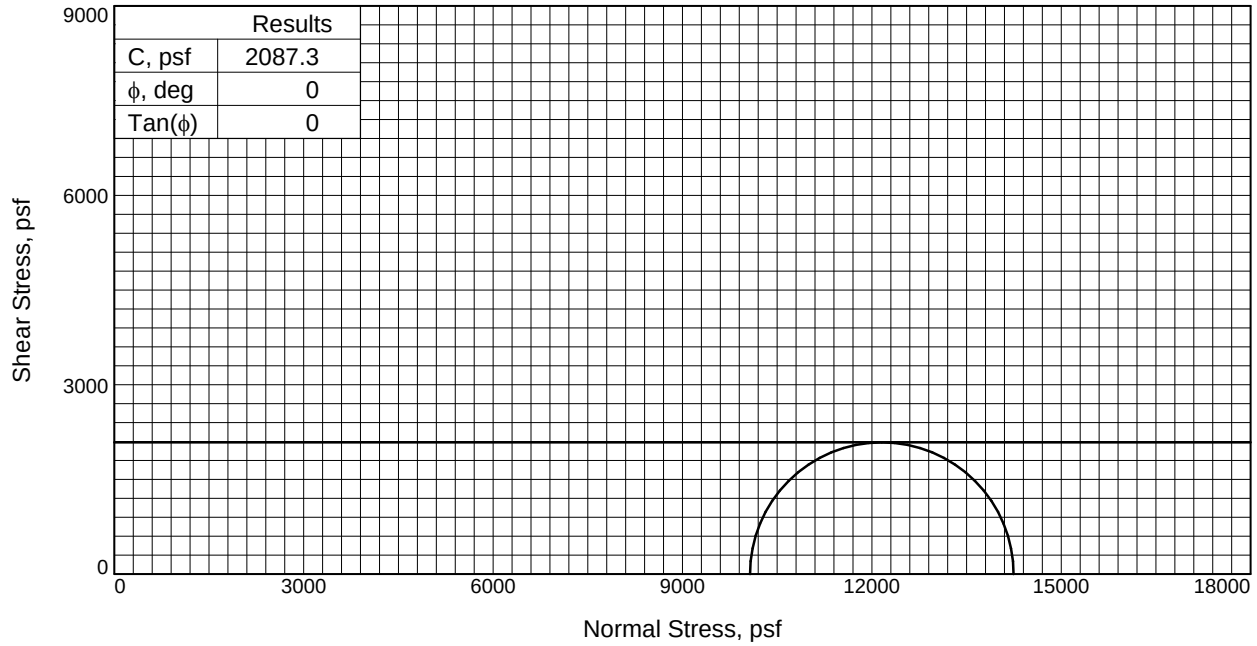
**Client:** ALDOT

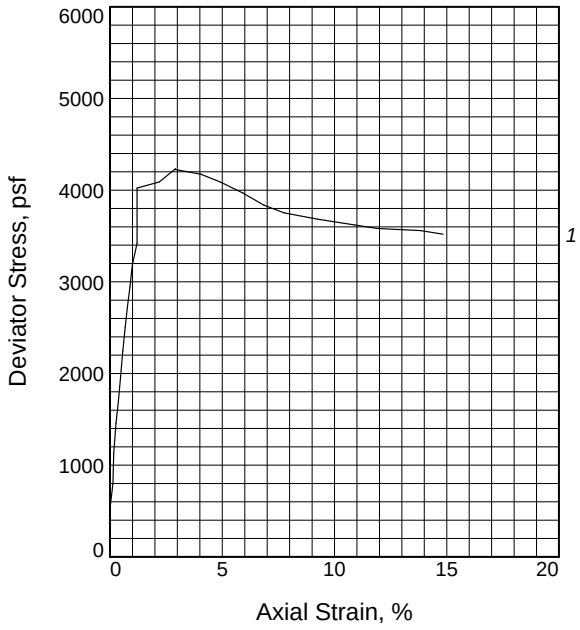
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8076 **Depth:** 228.0'-230.0' **Sample Number:** HLA-15 T-3

**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 25.3 |
| | Dry Density, pcf | 99.9 |
| | Saturation, % | 101.8 |
| | Void Ratio | 0.6624 |
| | Diameter, in. | 2.846 |
| | Height, in. | 5.580 |
| At Test | Water Content, % | 26.6 |
| | Dry Density, pcf | 99.9 |
| | Saturation, % | 106.7 |
| | Void Ratio | 0.6624 |
| | Diameter, in. | 2.846 |
| | Height, in. | 5.580 |
| Strain at peak, % | | 4.0 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 10069.9 |
| Fail. Stress, psf | | 4174.7 |
| Strain, % | | 4.0 |
| Ult. Stress, psf | | 4174.7 |
| Strain, % | | 4.0 |
| $\sigma_1$ Failure, psf | | 14244.6 |
| $\sigma_3$ Failure, psf | | 10069.9 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** CLAYEY SAND(SC A-2-6(1)

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Asymmetrical Shear Plane

**Figure** _____

**Client:** ALDOT

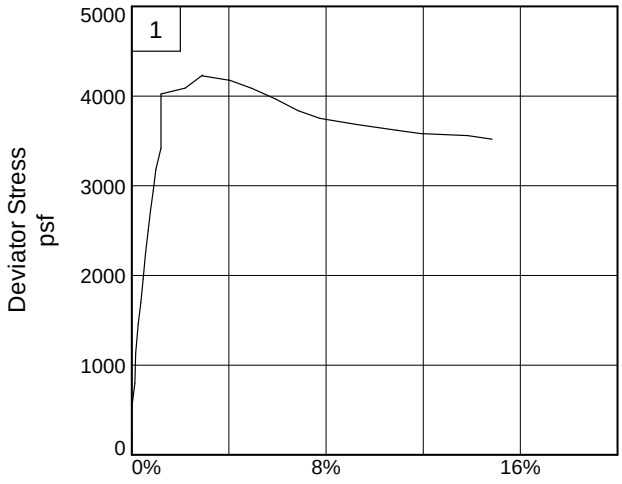
**Project:** Mobile River Bridge

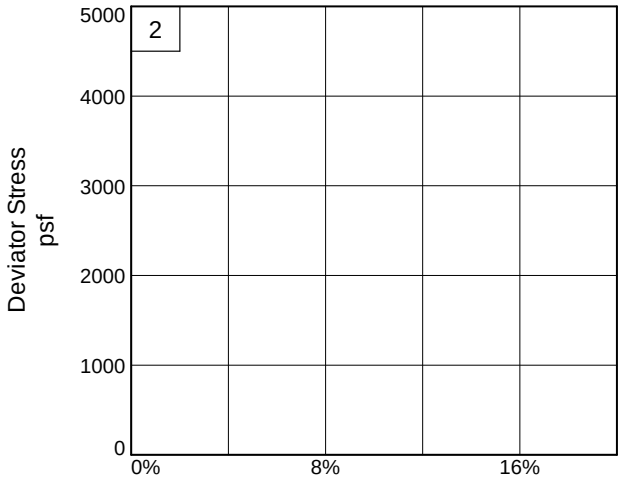
**Source of Sample:** Lab #8063 **Depth:** 103.0-105.0'

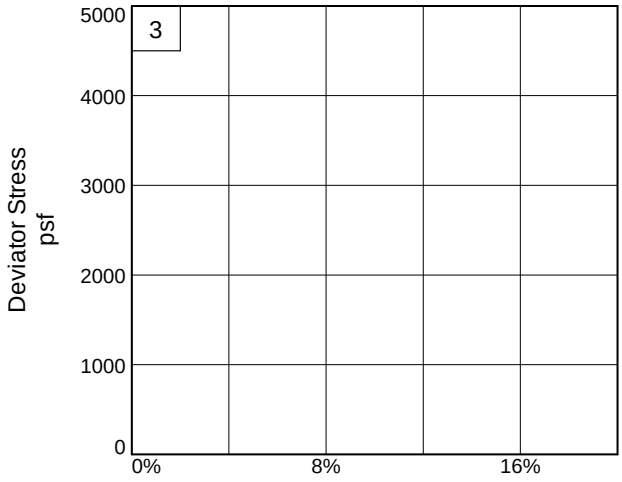
**Sample Number:** HLA-16 T-2

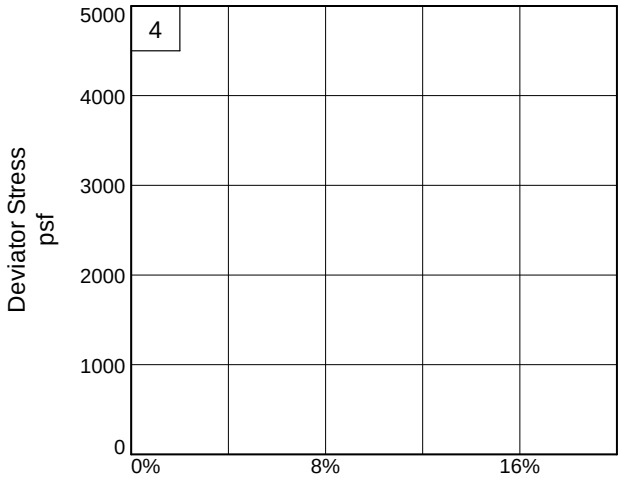
**Proj. No.:** 1511010228 **Date Sampled:**

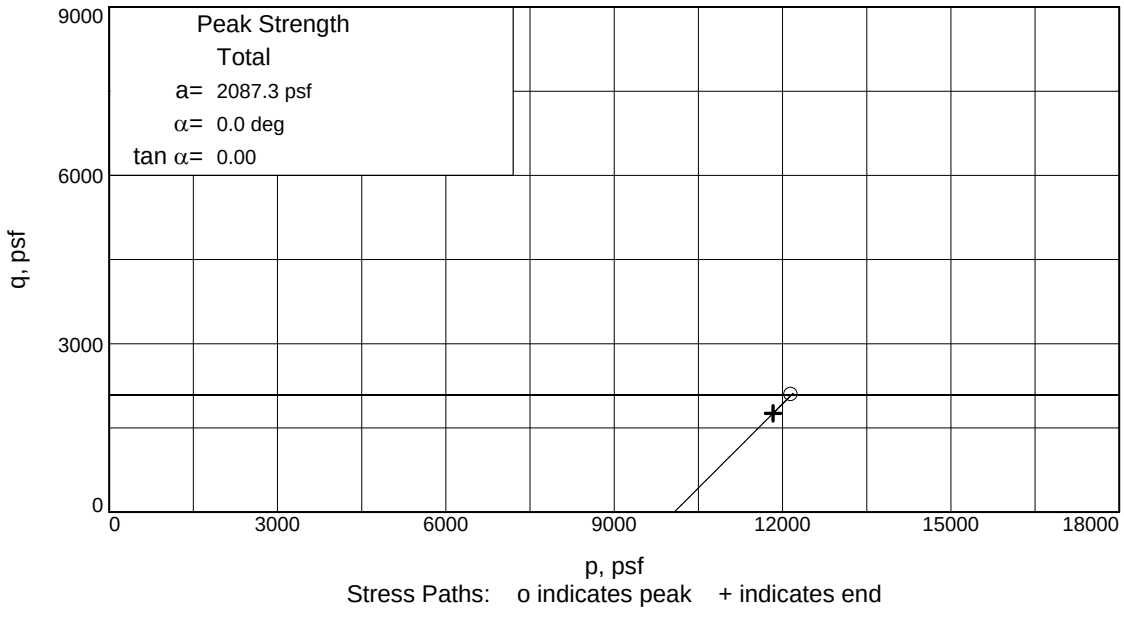
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Thompson Engineering
Mobile, Alabama



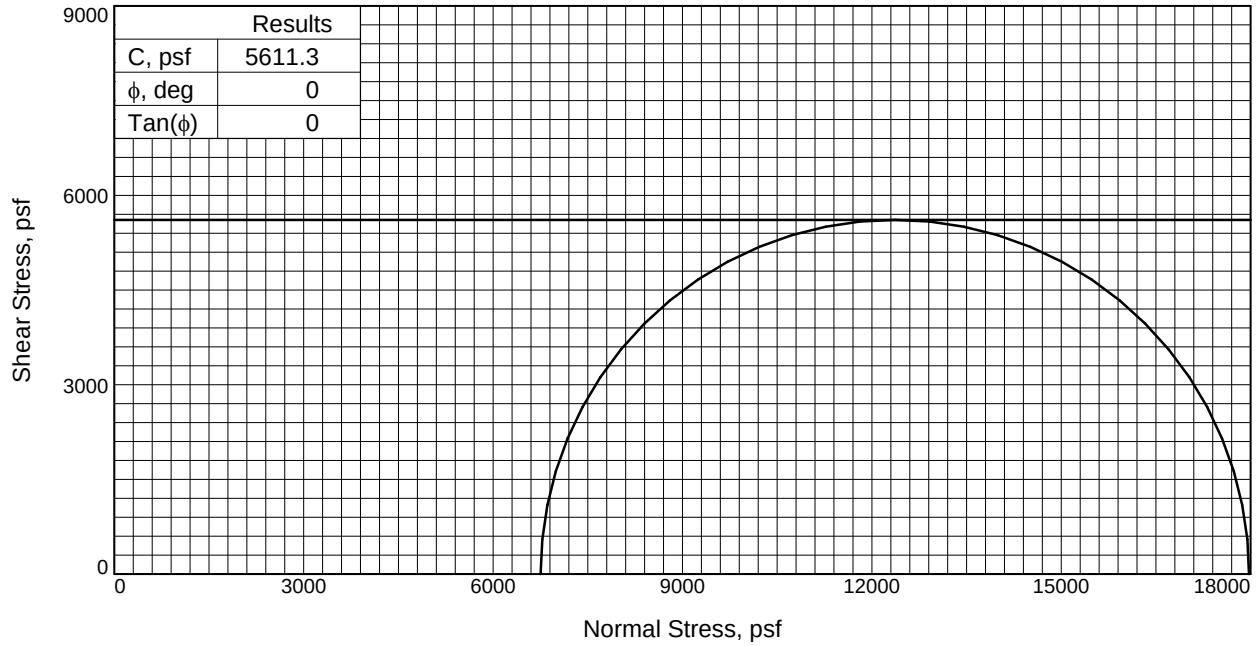



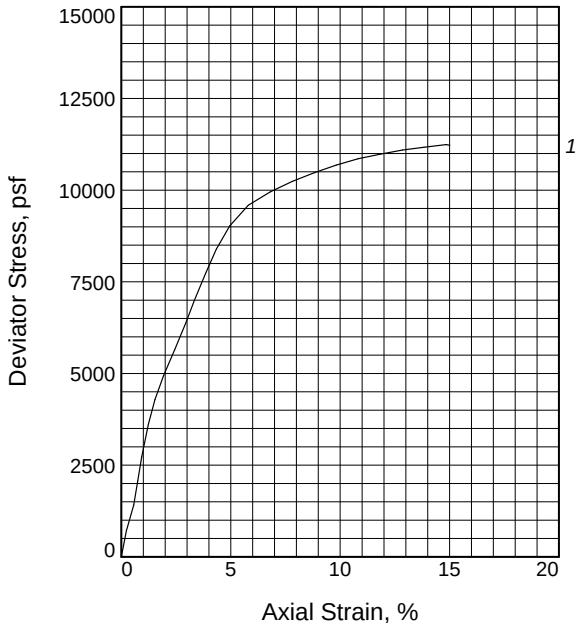




**Client:** ALDOT
**Project:** Mobile River Bridge
**Source of Sample:** Lab #8063 **Depth:** 103.0-105.0' **Sample Number:** HLA-16 T-2
**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 21.3 |
| | Dry Density, pcf | 106.8 |
| | Saturation, % | 102.4 |
| | Void Ratio | 0.5546 |
| | Diameter, in. | 2.746 |
| | Height, in. | 5.802 |
| At Test | Water Content, % | 21.6 |
| | Dry Density, pcf | 106.8 |
| | Saturation, % | 103.7 |
| | Void Ratio | 0.5546 |
| | Diameter, in. | 2.746 |
| | Height, in. | 5.802 |
| Strain at peak, % | | 15.0 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 6752.2 |
| Fail. Stress, psf | | 11222.6 |
| Strain, % | | 15.0 |
| Ult. Stress, psf | | 11222.6 |
| Strain, % | | 15.0 |
| $\sigma_1$ Failure, psf | | 17974.8 |
| $\sigma_3$ Failure, psf | | 6752.2 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** LEAN CLAY(CL A-7-6(28))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Internal Conical

**Figure** _____

**Client:** ALDOT

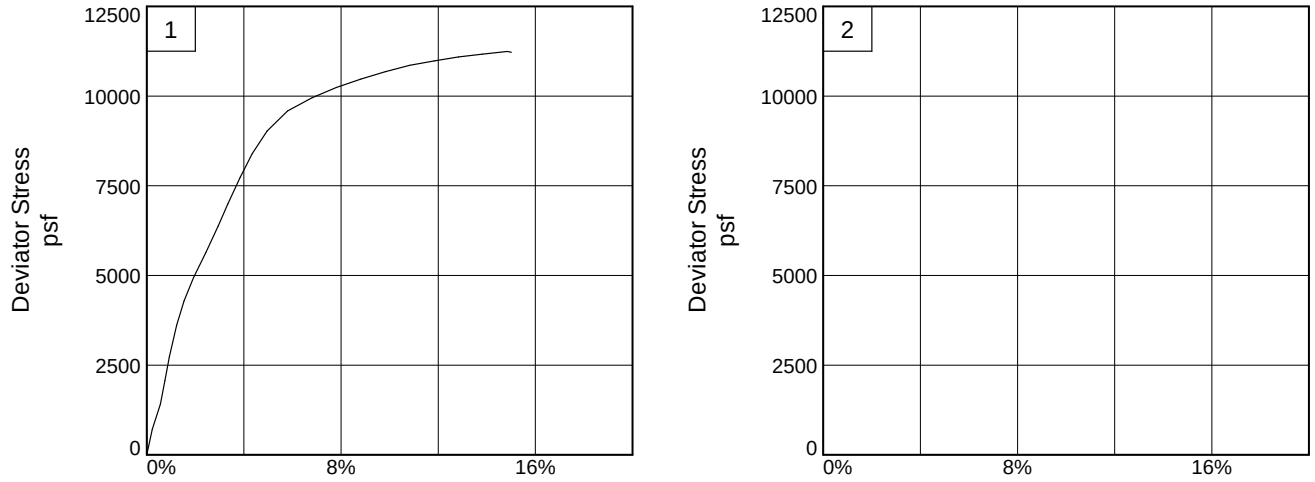
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8063 **Depth:** 138.0'-140.0'

**Sample Number:** HLA-16 T-3

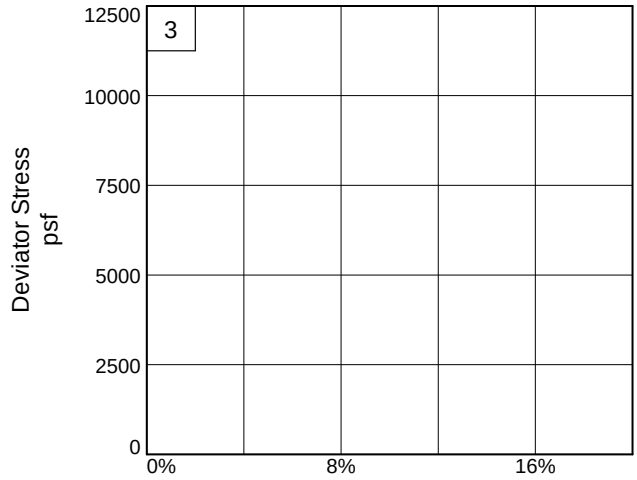
**Proj. No.:** 1511010228 **Date Sampled:**

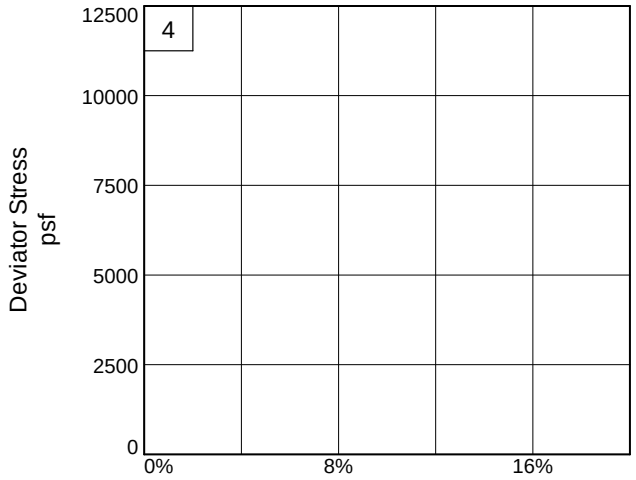
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Mobile, Alabama

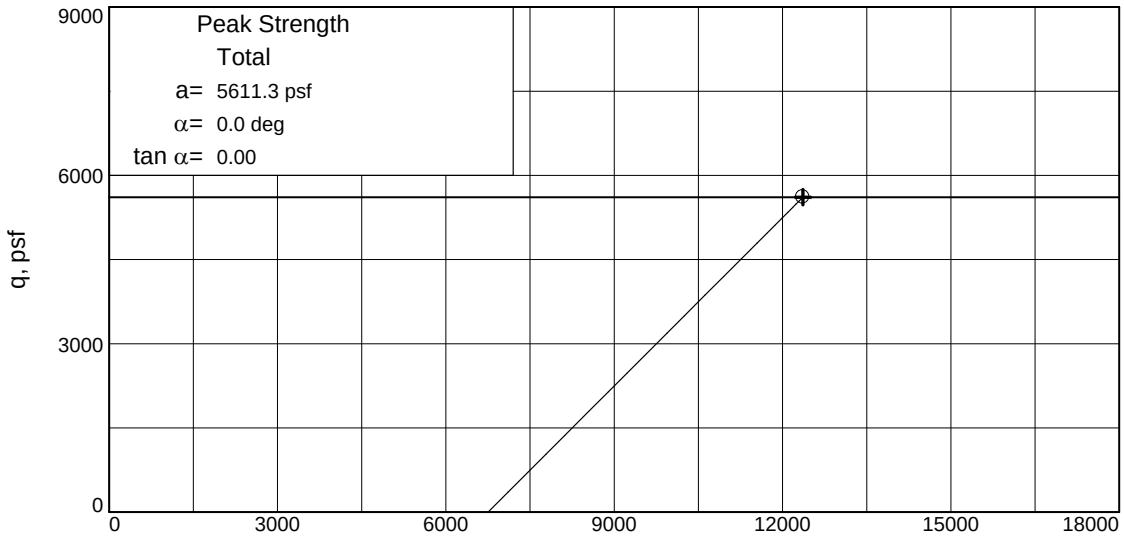








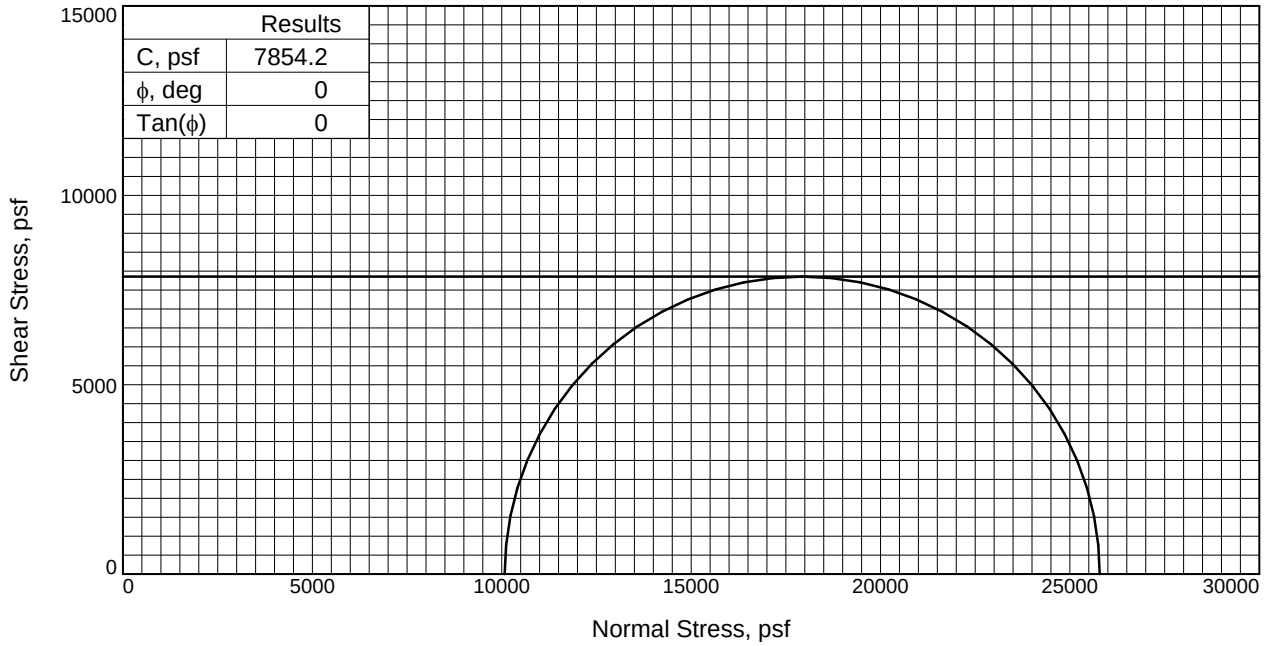



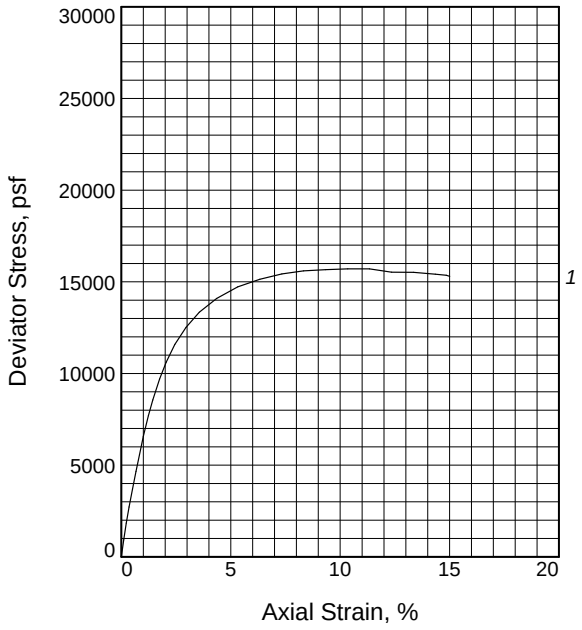




Stress Paths: o indicates peak + indicates end

**Client:** ALDOT
**Project:** Mobile River Bridge
**Source of Sample:** Lab #8063 **Depth:** 138.0'-140.0' **Sample Number:** HLA-16 T-3
**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 16.2 |
| | Dry Density, pcf | 119.7 |
| | Saturation, % | 111.6 |
| | Void Ratio | 0.3868 |
| | Diameter, in. | 2.741 |
| | Height, in. | 5.522 |
| At Test | Water Content, % | 14.4 |
| | Dry Density, pcf | 119.7 |
| | Saturation, % | 99.0 |
| | Void Ratio | 0.3868 |
| | Diameter, in. | 2.741 |
| | Height, in. | 5.522 |
| Strain at peak, % | | 10.3 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 10077.1 |
| Fail. Stress, psf | | 15708.5 |
| Strain, % | | 10.3 |
| Ult. Stress, psf | | 15708.5 |
| Strain, % | | 10.3 |
| $\sigma_1$ Failure, psf | | 25785.6 |
| $\sigma_3$ Failure, psf | | 10077.1 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** SANDY LEAN CLAY(CL A-6(14))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Internal Conical

**Figure** _____

**Client:** ALDOT

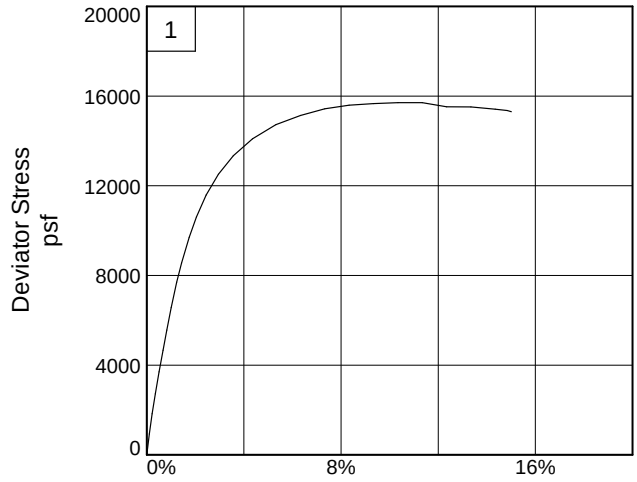
**Project:** Mobile River Bridge

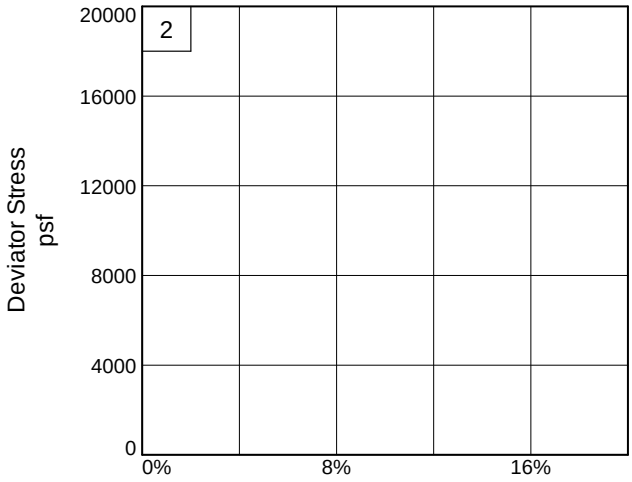
**Source of Sample:** Lab #8063 **Depth:** 198.0'-200.0'

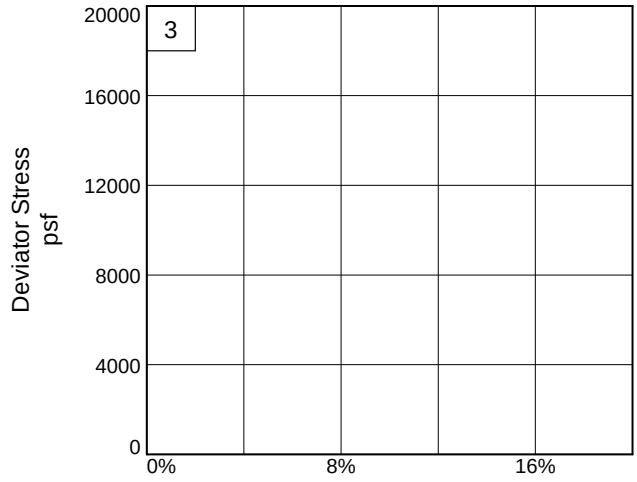
**Sample Number:** HLA-16 T-4

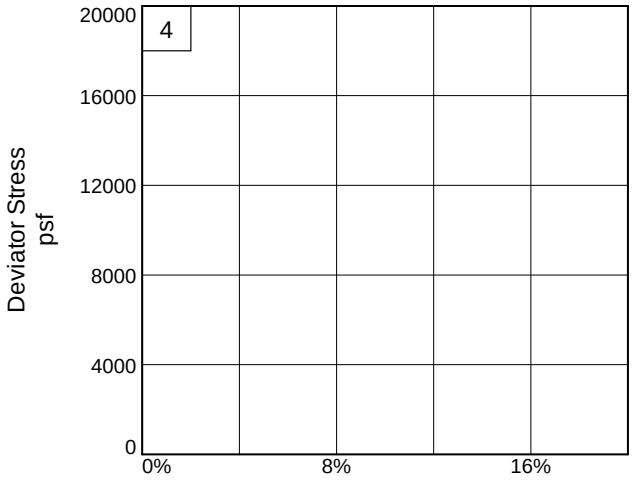
**Proj. No.:** 1511010228 **Date Sampled:**

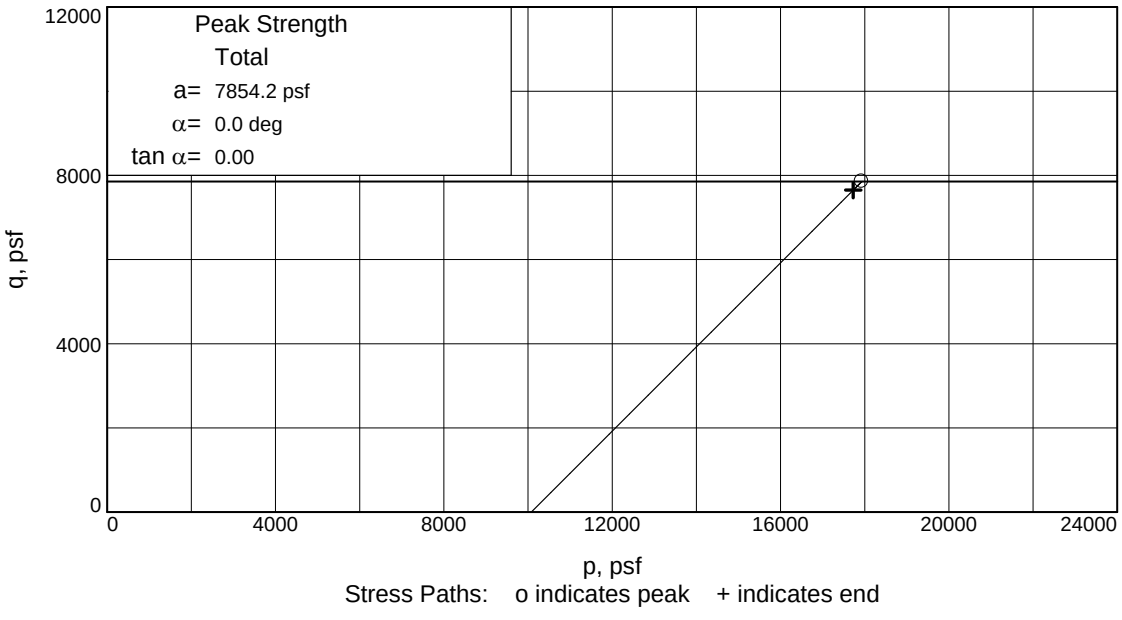
TRIAXIAL SHEAR TEST REPORT
Thompson Engineering
Mobile, Alabama



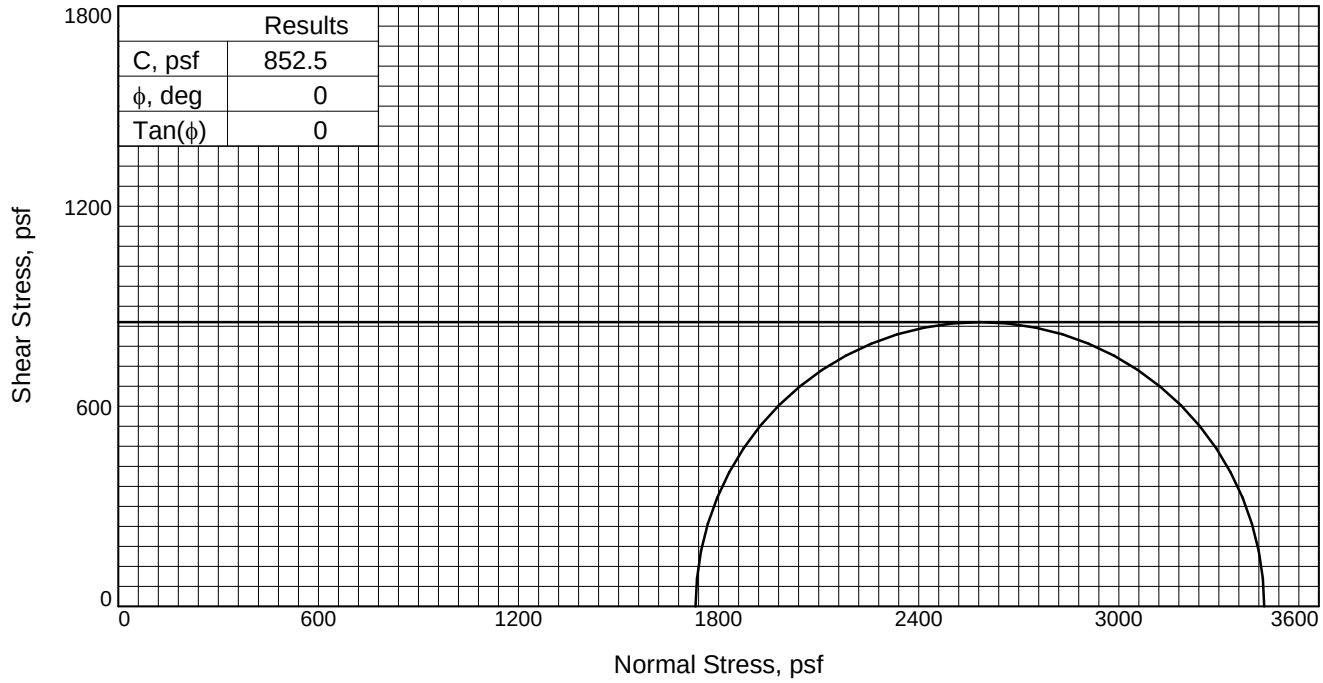



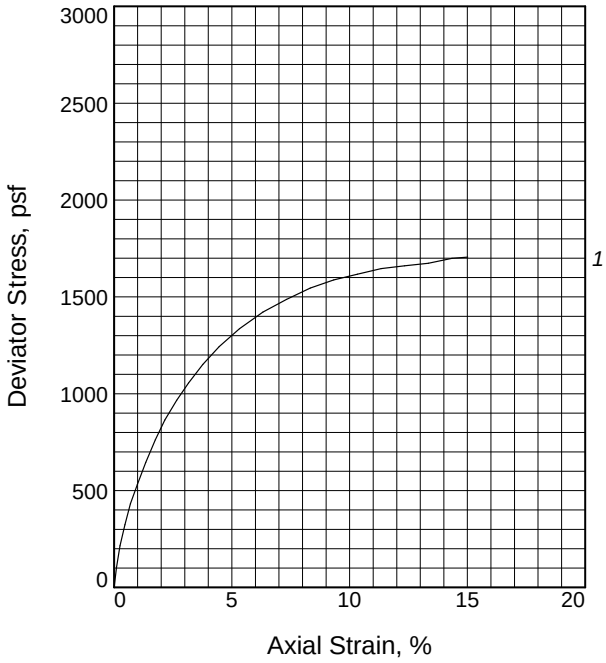




Stress Paths: o indicates peak + indicates end

**Client:** ALDOT
**Project:** Mobile River Bridge
**Source of Sample:** Lab #8063 **Depth:** 198.0'-200.0' **Sample Number:** HLA-16 T-4
**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 27.2 |
| | Dry Density, pcf | 101.0 |
| | Saturation, % | 112.1 |
| | Void Ratio | 0.6448 |
| | Diameter, in. | 2.804 |
| | Height, in. | 5.553 |
| At Test | Water Content, % | 24.2 |
| | Dry Density, pcf | 101.0 |
| | Saturation, % | 100.0 |
| | Void Ratio | 0.6448 |
| | Diameter, in. | 2.804 |
| | Height, in. | 5.553 |
| Strain at peak, % | | 15.0 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 1730.9 |
| Fail. Stress, psf | | 1705.1 |
| Strain, % | | 15.0 |
| Ult. Stress, psf | | 1705.1 |
| Strain, % | | 15.0 |
| $\sigma_1$ Failure, psf | | 3436.0 |
| $\sigma_3$ Failure, psf | | 1730.9 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:**

**Description:** FAT CLAY with SAND(CH A-7-6(24))

**Specific Gravity=** 2.66

**Remarks:**

**Figure** _____

**Client:** ALDOT

**Project:** Mobile River Bridge

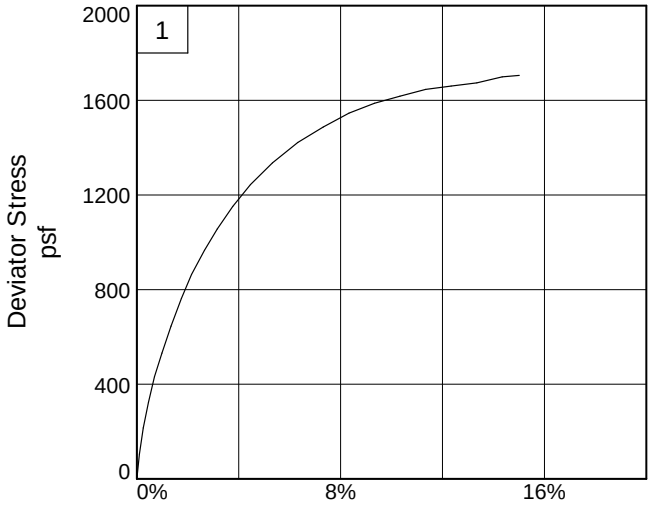
**Source of Sample:** Lab #8085 **Depth:** 33.0'-35.0

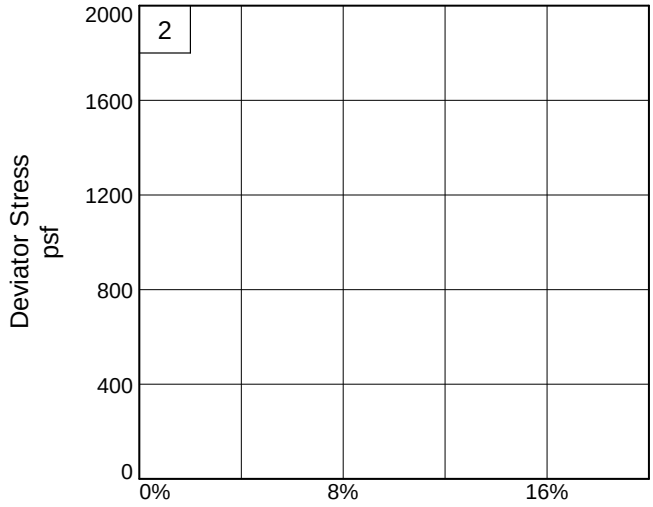
**Sample Number:** HLA-17 T-1

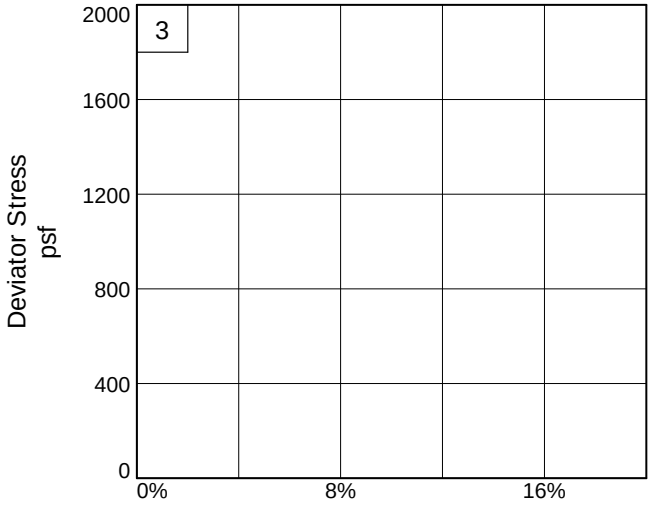
**Proj. No.:** 1511010228 **Date Sampled:**

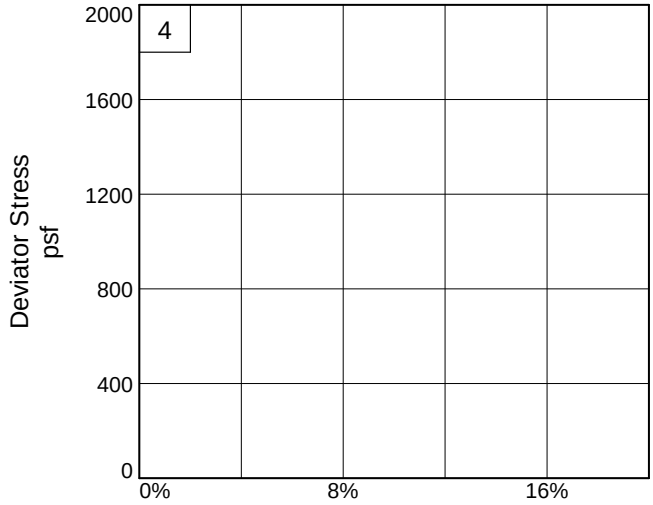
TRIAXIAL SHEAR TEST REPORT

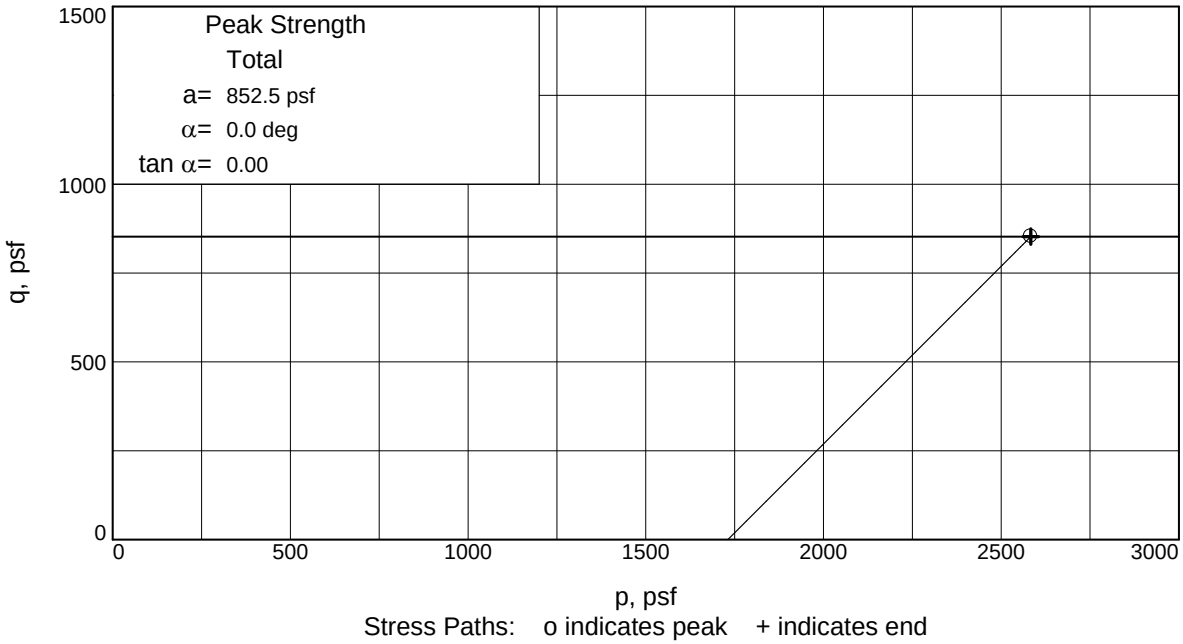
Thompson Engineering
Mobile, Alabama




Stress Paths: o indicates peak + indicates end

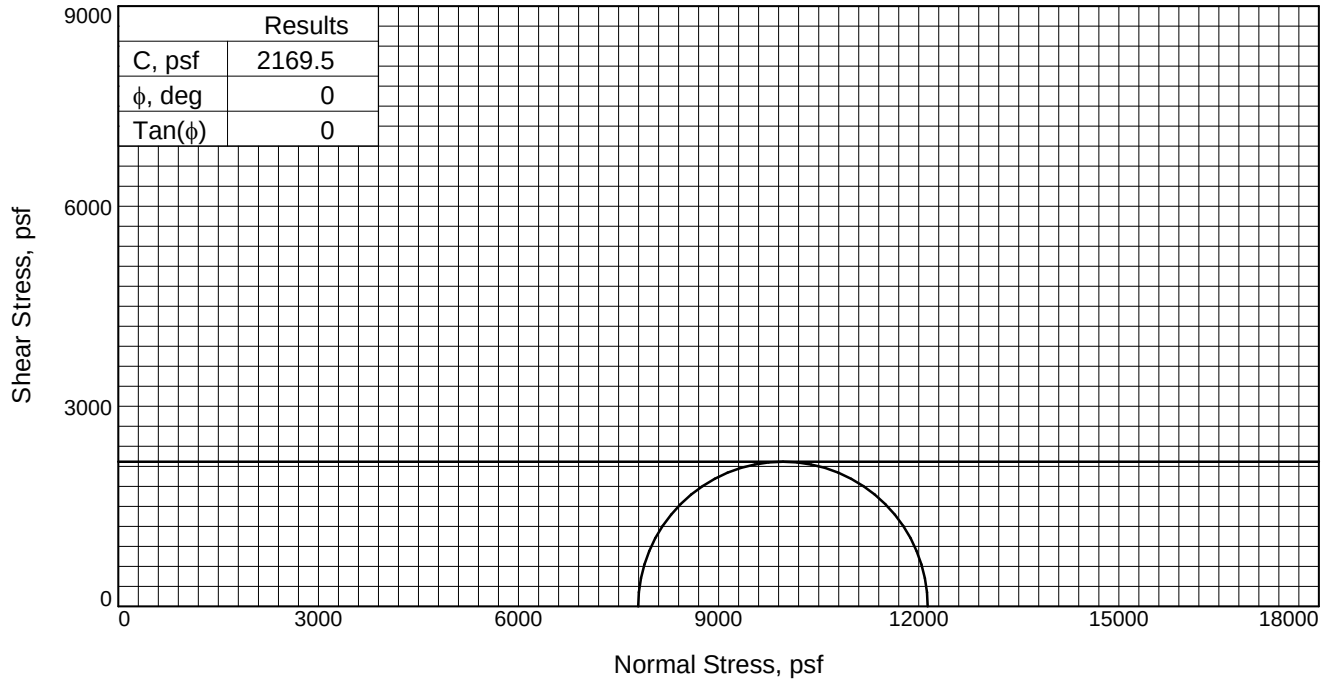
**Client:** ALDOT

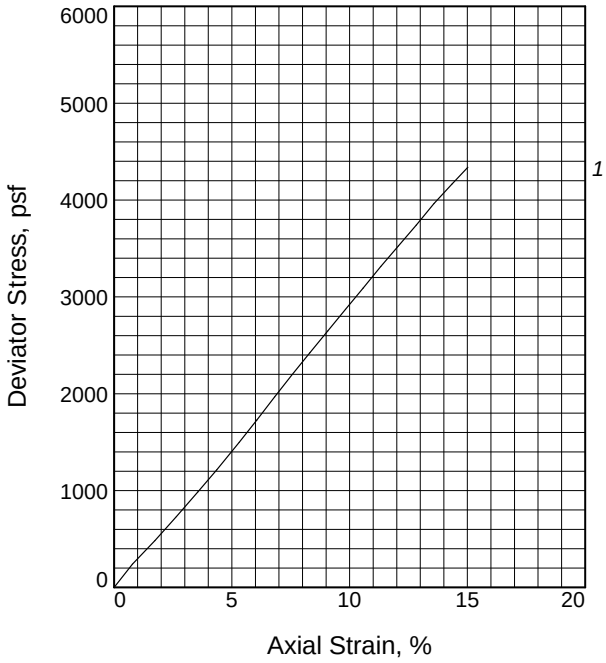
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8085 **Depth:** 33.0'-35.0 **Sample Number:** HLA-17 T-1

**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 27.4 |
| | Dry Density, pcf | 100.5 |
| | Saturation, % | 111.5 |
| | Void Ratio | 0.6527 |
| | Diameter, in. | 2.715 |
| | Height, in. | 5.502 |
| At Test | Water Content, % | 25.7 |
| | Dry Density, pcf | 100.5 |
| | Saturation, % | 104.8 |
| | Void Ratio | 0.6527 |
| | Diameter, in. | 2.715 |
| | Height, in. | 5.502 |
| Strain at peak, % | | 15.0 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 7794.7 |
| Fail. Stress, psf | | 4339.1 |
| Strain, % | | 15.0 |
| Ult. Stress, psf | | |
| Strain, % | | |
| $\sigma_1$ Failure, psf | | 12133.8 |
| $\sigma_3$ Failure, psf | | 7794.7 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** LEAN CLAY(CL A-4(8))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Symmetrical Bulge
Sample Disturbed.

**Figure** _____

**Client:** ALDOT

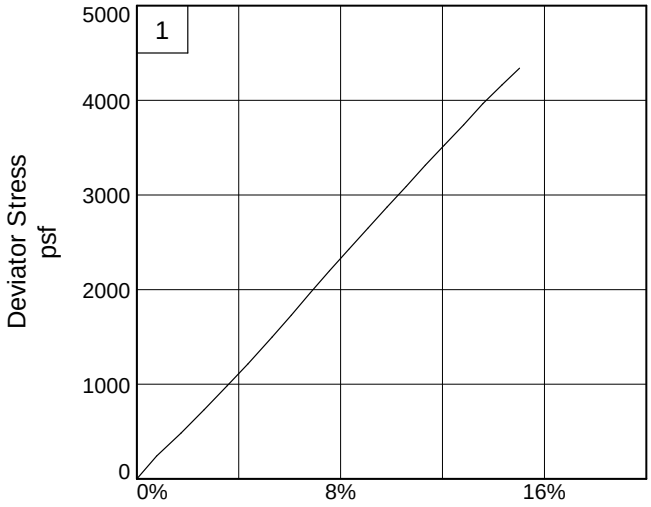
**Project:** Mobile River Bridge

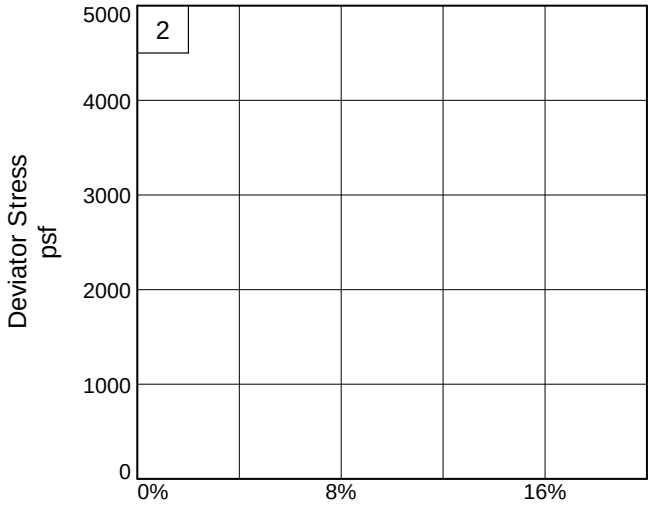
**Source of Sample:** Lab #8085 **Depth:** 138.0'-140.0'

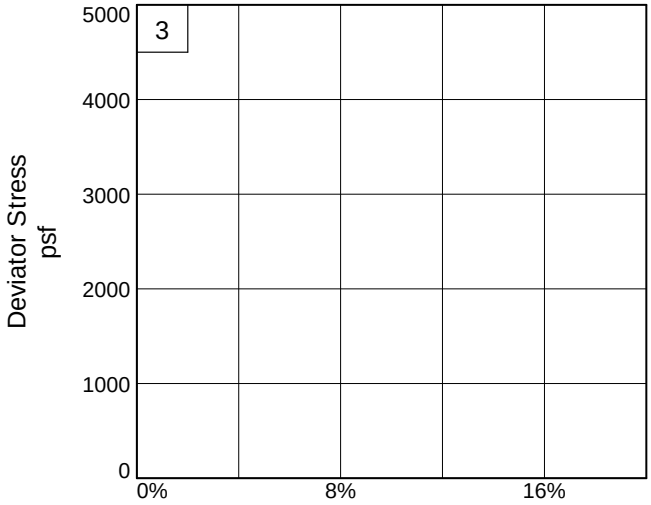
**Sample Number:** HLA-17 T-3

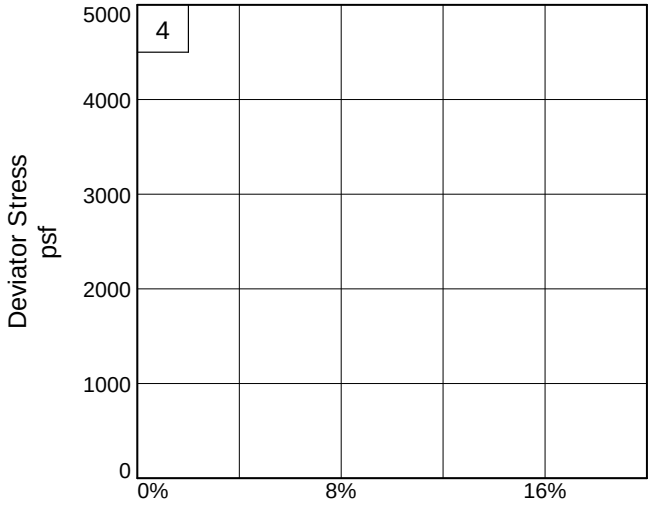
**Proj. No.:** 1511010228 **Date Sampled:**

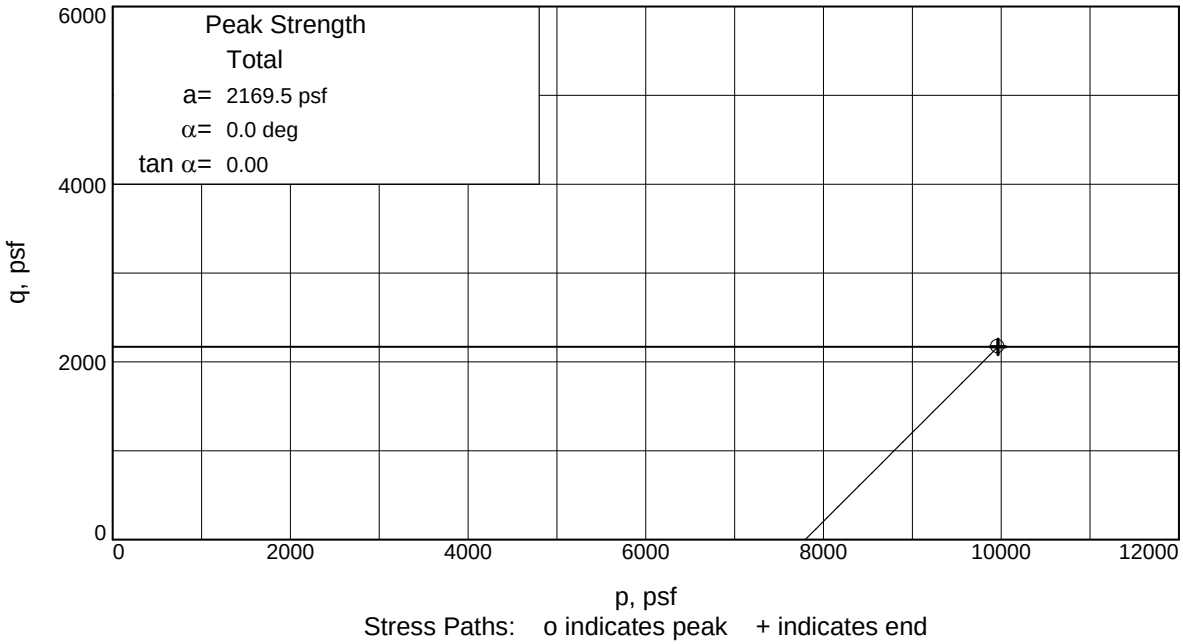
TRIAXIAL SHEAR TEST REPORT
Thompson Engineering
Mobile, Alabama




Stress Paths: o indicates peak + indicates end

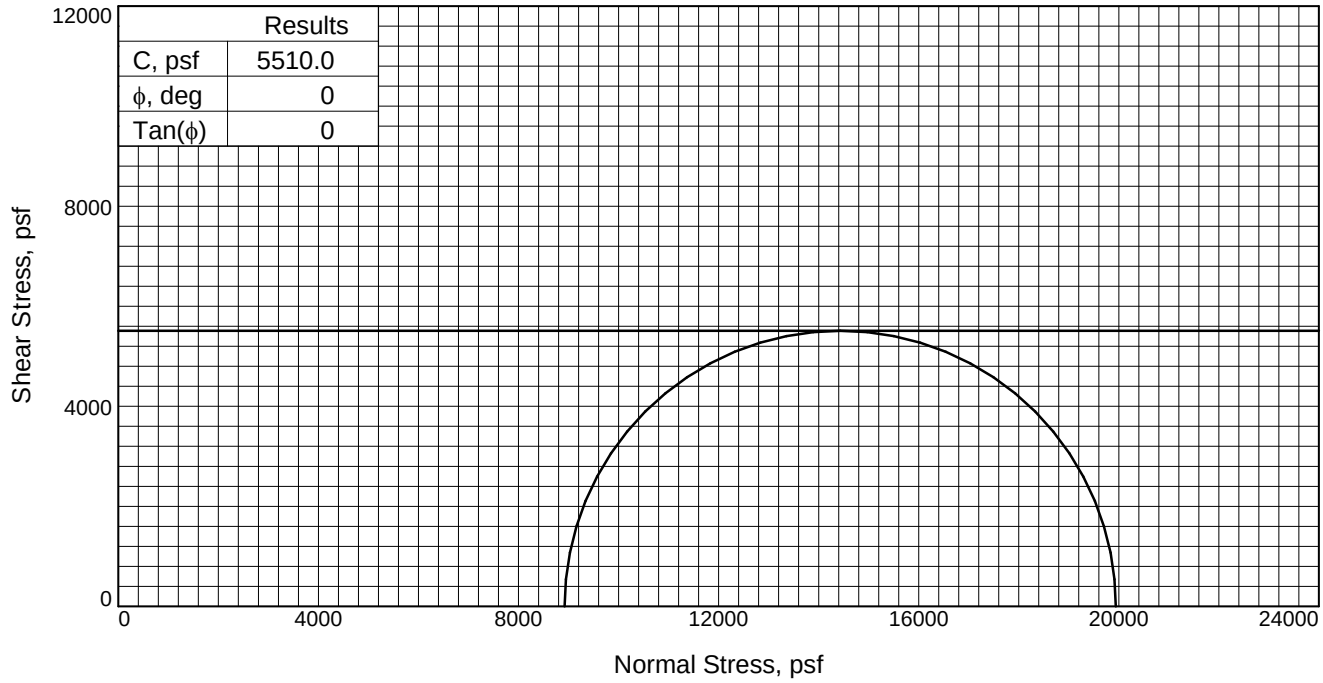
**Client:** ALDOT

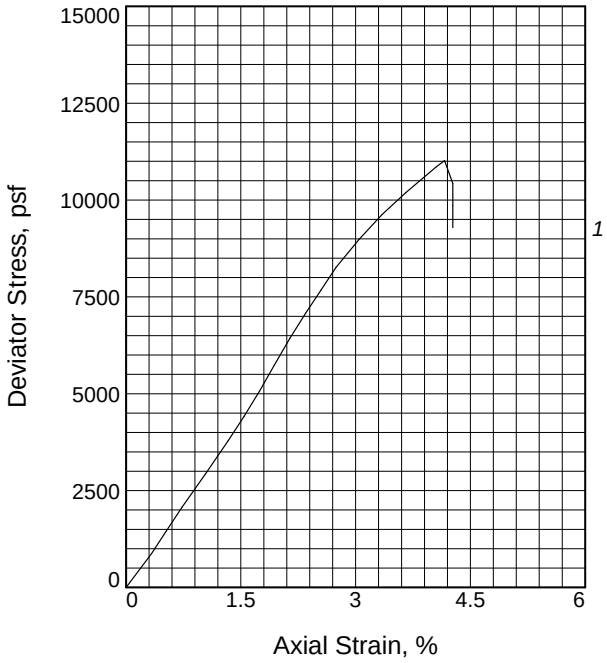
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8085 **Depth:** 138.0'-140.0' **Sample Number:** HLA-17 T-3

**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 16.1 |
| | Dry Density, pcf | 114.6 |
| | Saturation, % | 95.6 |
| | Void Ratio | 0.4491 |
| | Diameter, in. | 2.745 |
| | Height, in. | 5.672 |
| At Test | Water Content, % | 15.9 |
| | Dry Density, pcf | 114.6 |
| | Saturation, % | 94.3 |
| | Void Ratio | 0.4491 |
| | Diameter, in. | 2.745 |
| | Height, in. | 5.672 |
| Strain at peak, % | | 4.2 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 8920.8 |
| Fail. Stress, psf | | 11020.0 |
| Strain, % | | 4.2 |
| Ult. Stress, psf | | 11020.0 |
| Strain, % | | 4.2 |
| $\sigma_1$ Failure, psf | | 19940.8 |
| $\sigma_3$ Failure, psf | | 8920.8 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** SANDY LEAN CLAY(CL A-6(5))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Symmetrical Bulge

**Figure** _____

**Client:** ALDOT

**Project:** Mobile River Bridge

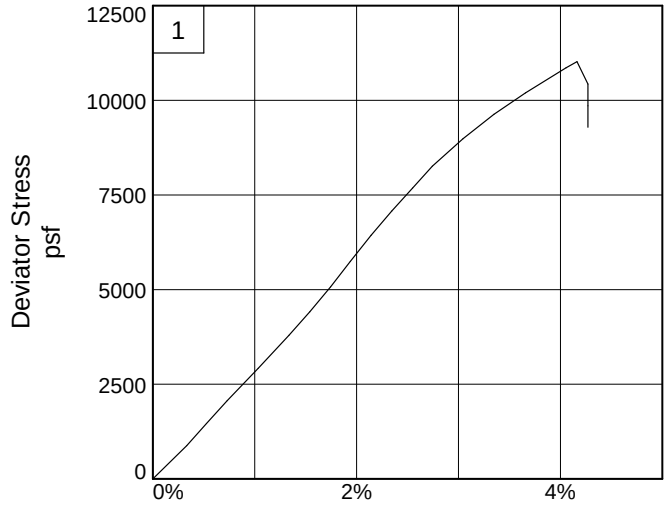
**Source of Sample:** Lab #8085 **Depth:** 158.0'-160.0'

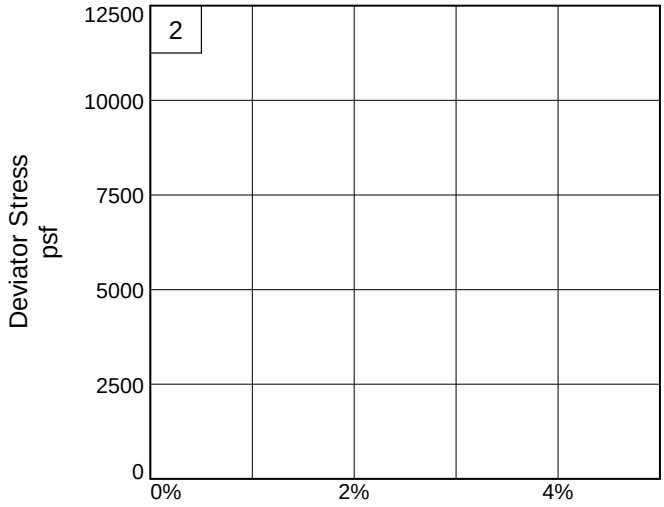
**Sample Number:** HLA-17 T-4

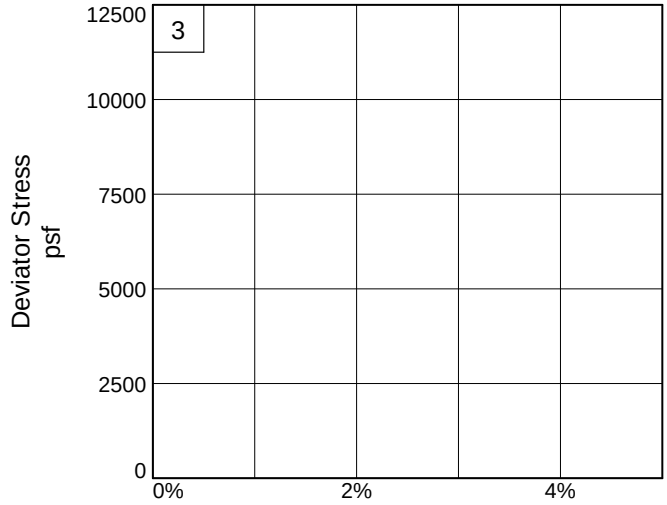
**Proj. No.:** 1511010228 **Date Sampled:**

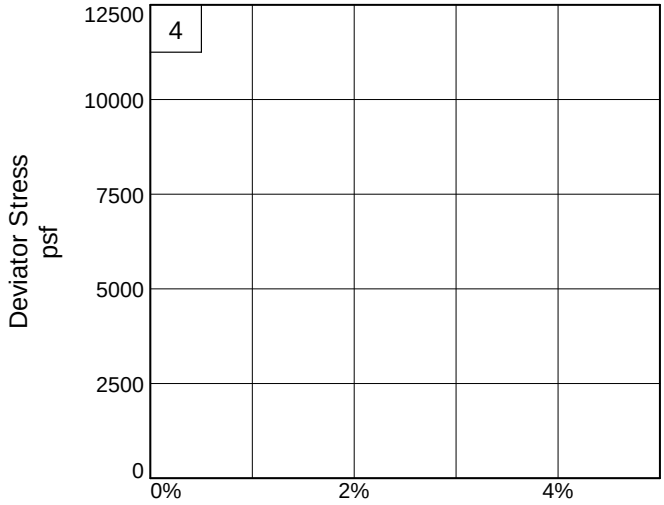
TRIAXIAL SHEAR TEST REPORT

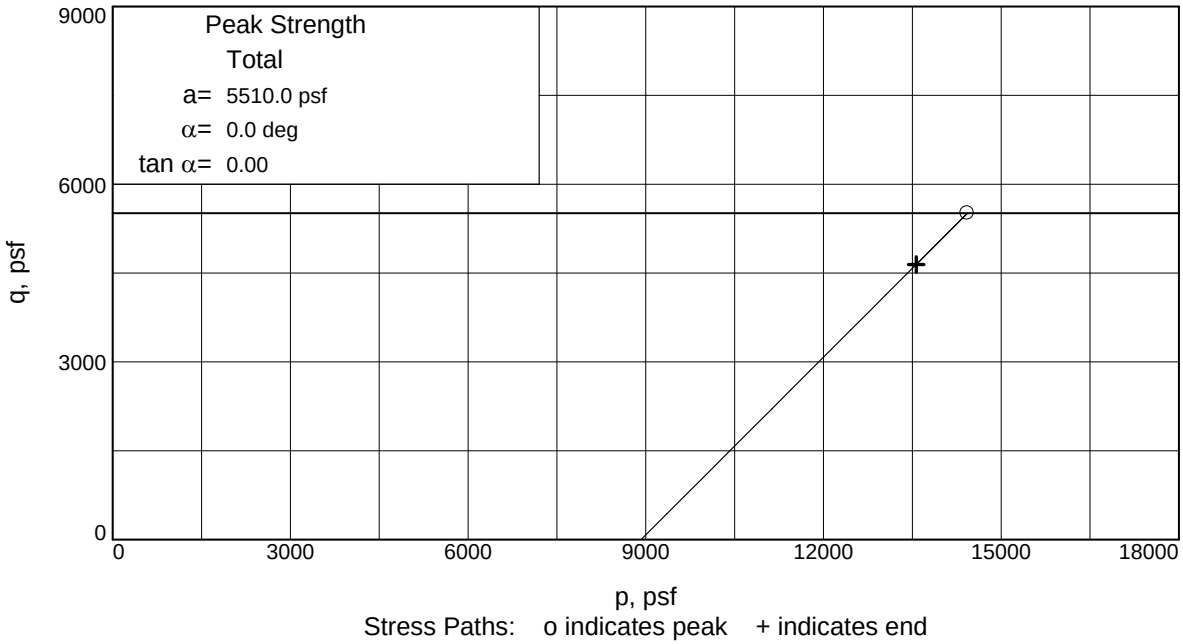
Thompson Engineering
Mobile, Alabama



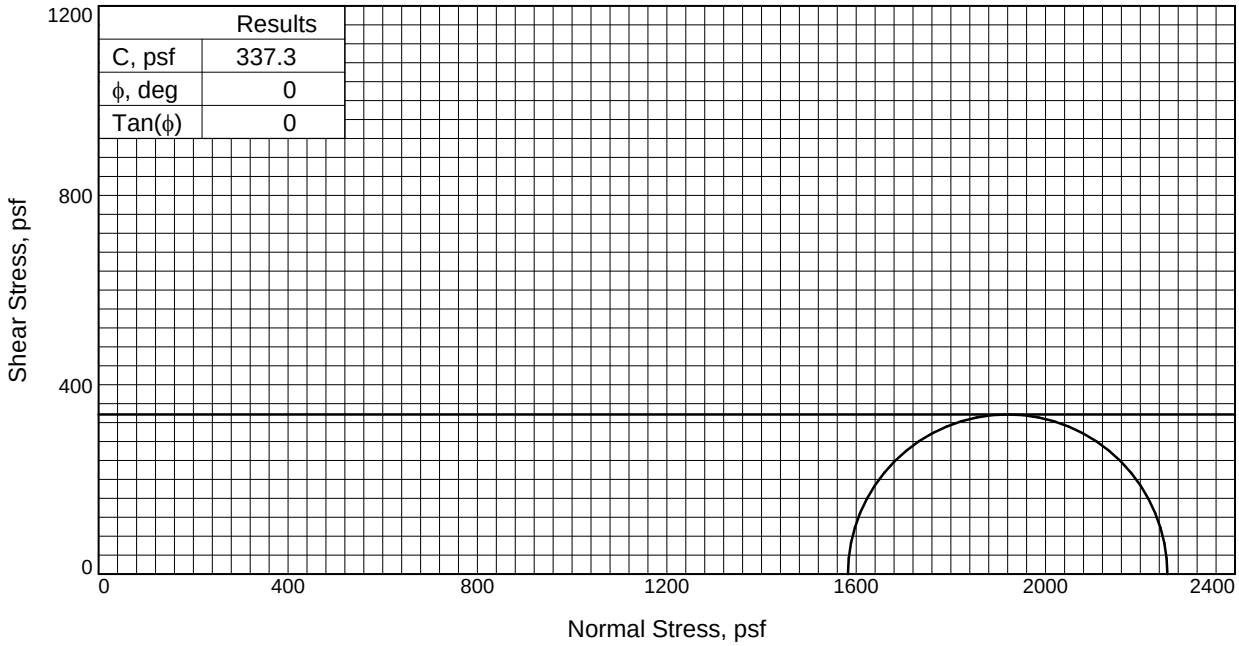



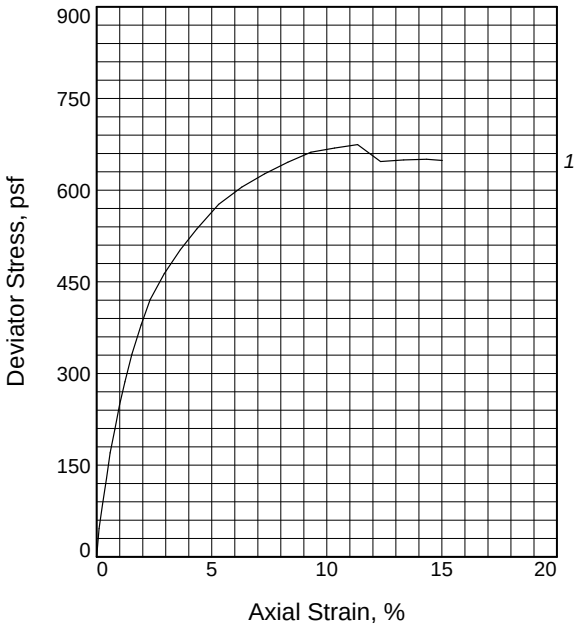




Stress Paths: o indicates peak + indicates end

**Client:** ALDOT
**Project:** Mobile River Bridge
**Source of Sample:** Lab #8085 **Depth:** 158.0'-160.0' **Sample Number:** HLA-17 T-4
**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 36.1 |
| | Dry Density, pcf | 90.7 |
| | Saturation, % | 115.5 |
| | Void Ratio | 0.8303 |
| | Diameter, in. | 2.823 |
| | Height, in. | 5.152 |
| At Test | Water Content, % | 33.4 |
| | Dry Density, pcf | 90.7 |
| | Saturation, % | 107.0 |
| | Void Ratio | 0.8303 |
| | Diameter, in. | 2.823 |
| | Height, in. | 5.152 |
| Strain at peak, % | | 11.3 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 1582.6 |
| Fail. Stress, psf | | 674.6 |
| Strain, % | | 11.3 |
| Ult. Stress, psf | | 674.6 |
| Strain, % | | 11.3 |
| $\sigma_1$ Failure, psf | | 2257.1 |
| $\sigma_3$ Failure, psf | | 1582.6 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** SANDY LEAN CLAY(CL A-6(12))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Symmetrical Bulge

**Figure** _____

**Client:** ALDOT

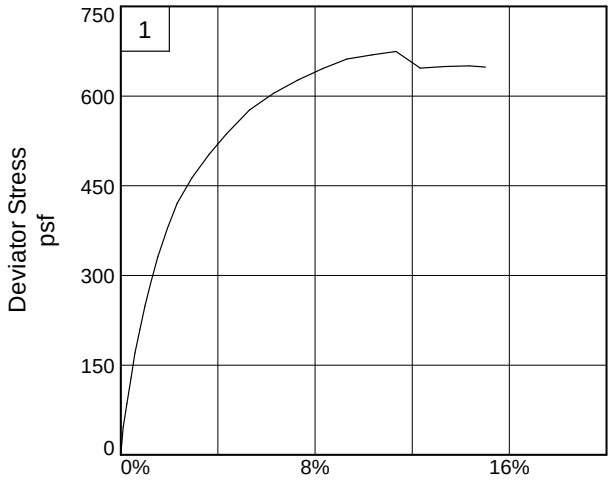
**Project:** Mobile River Bridge

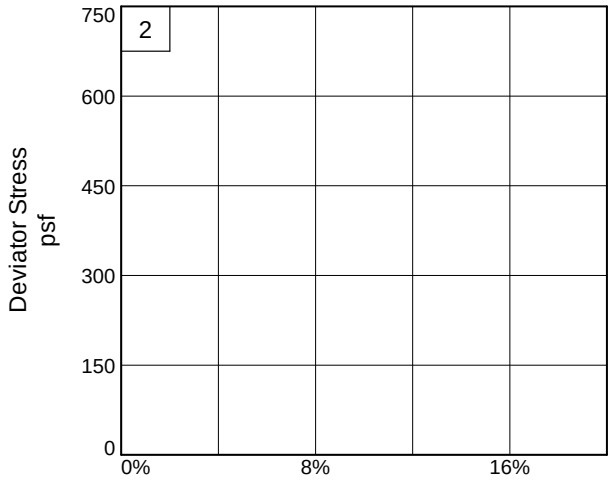
**Source of Sample:** Lab #8031 **Depth:** 28.0'-30.0'

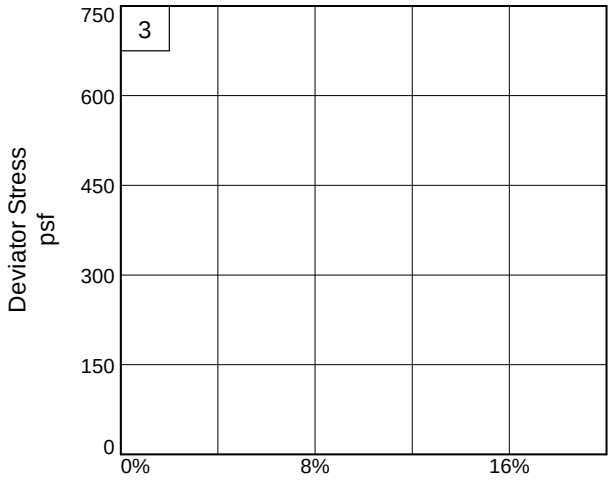
**Sample Number:** HLA-18 T-1

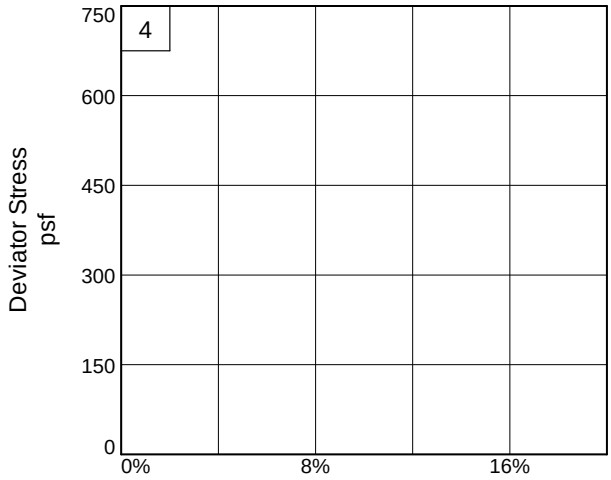
**Proj. No.:** 1511010228 **Date Sampled:**

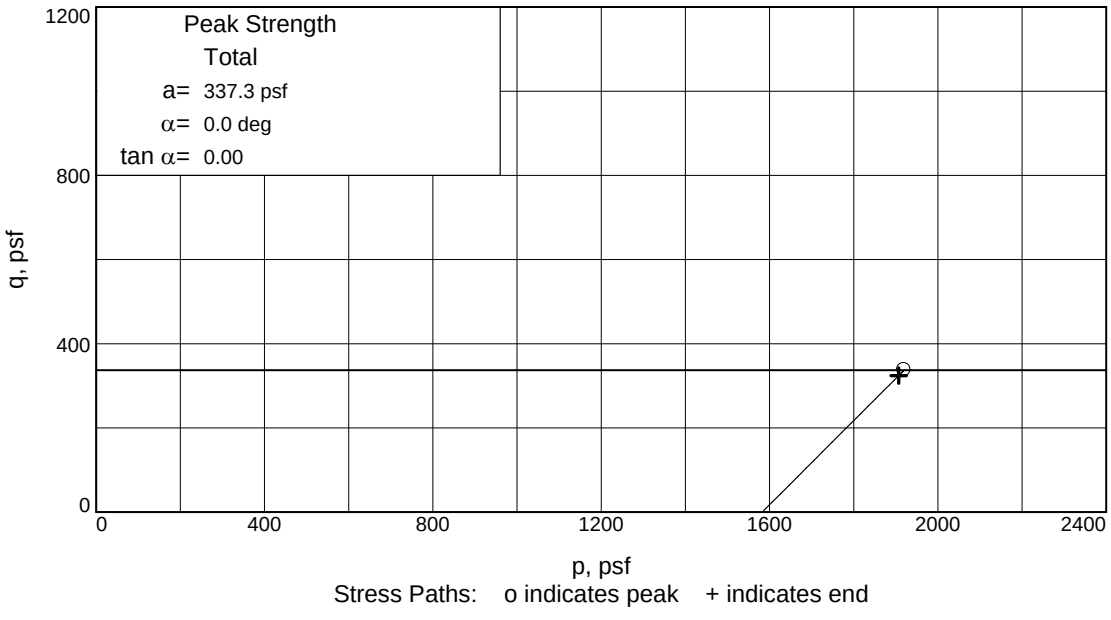
TRIAXIAL SHEAR TEST REPORT
Thompson Engineering
Mobile, Alabama



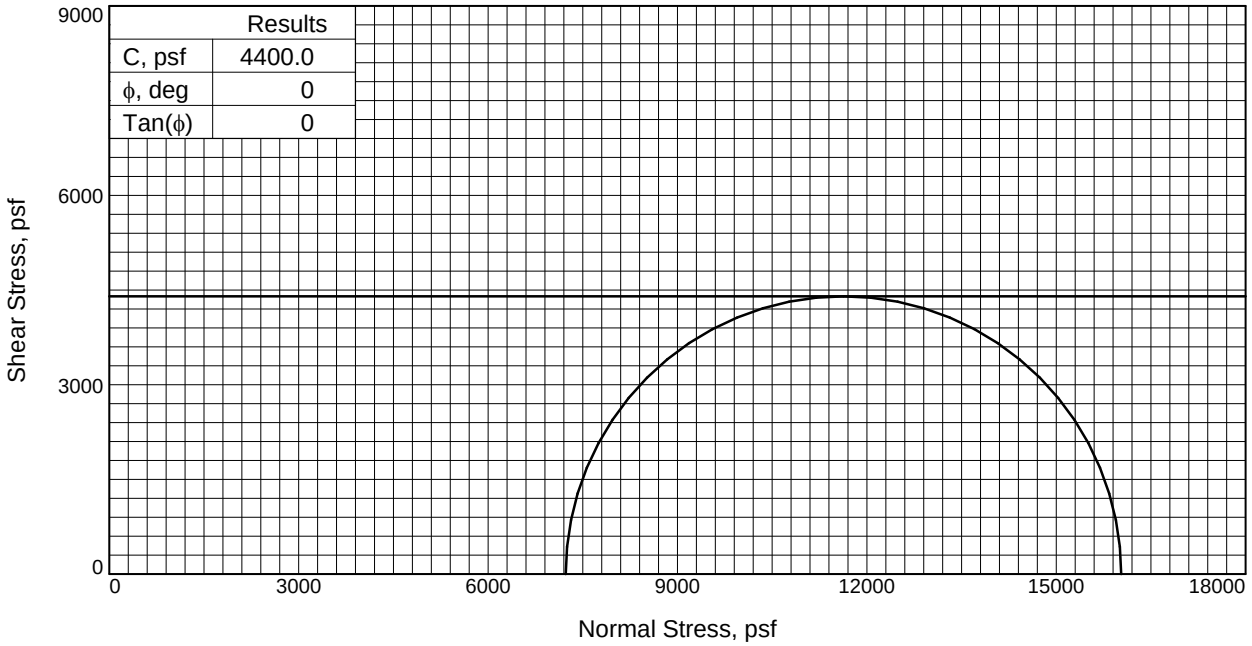



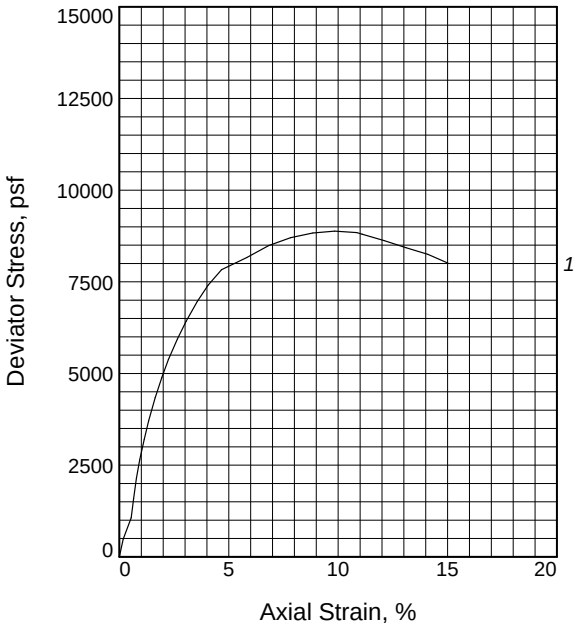




**Client:** ALDOT
**Project:** Mobile River Bridge
**Source of Sample:** Lab #8031 **Depth:** 28.0'-30.0' **Sample Number:** HLA-18 T-1
**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 19.8 |
| | Dry Density, pcf | 110.9 |
| | Saturation, % | 105.7 |
| | Void Ratio | 0.4979 |
| | Diameter, in. | 2.746 |
| | Height, in. | 5.421 |
| At Test | Water Content, % | 20.9 |
| | Dry Density, pcf | 110.9 |
| | Saturation, % | 111.4 |
| | Void Ratio | 0.4979 |
| | Diameter, in. | 2.746 |
| | Height, in. | 5.421 |
| Strain at peak, % | | 11.1 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 7228.8 |
| Fail. Stress, psf | | 8800.0 |
| Strain, % | | 11.1 |
| Ult. Stress, psf | | 8800.0 |
| Strain, % | | 11.1 |
| $\sigma_1$ Failure, psf | | 16028.8 |
| $\sigma_3$ Failure, psf | | 7228.8 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** LEAN CLAY(CL A-7-6(22))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Asymmetrical Shear Plane

**Figure** _____

**Client:** ALDOT

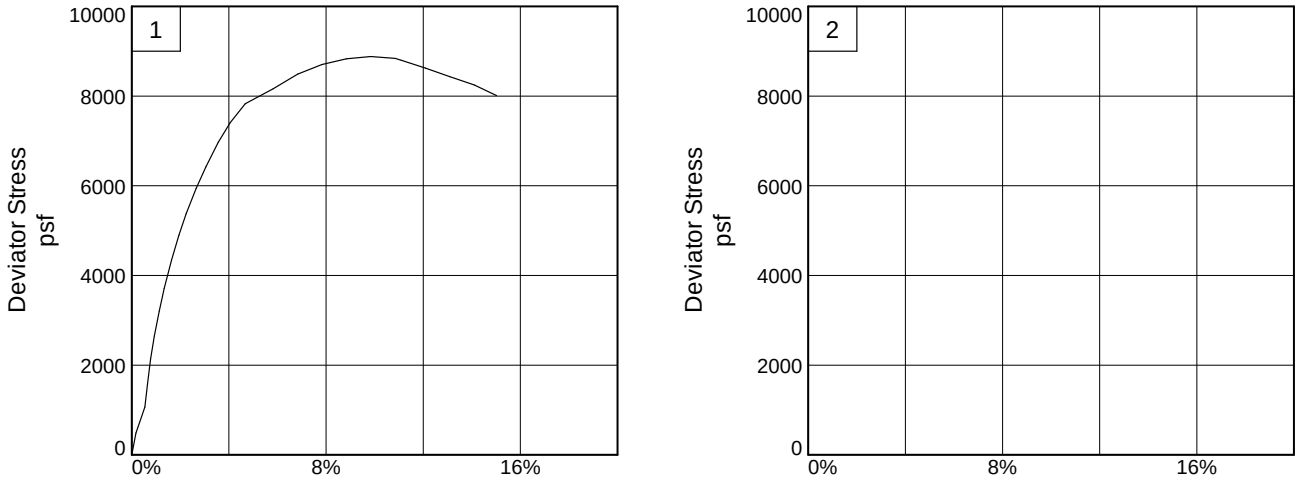
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8031 **Depth:** 148.0'-150.0'

**Sample Number:** HLA-18 T-2

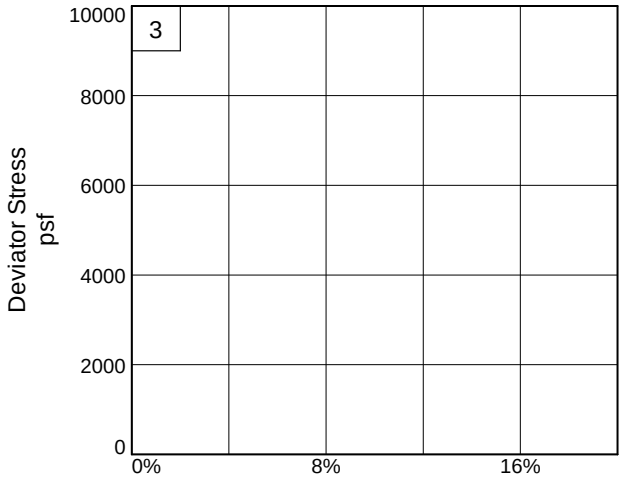
**Proj. No.:** 1511010228 **Date Sampled:**

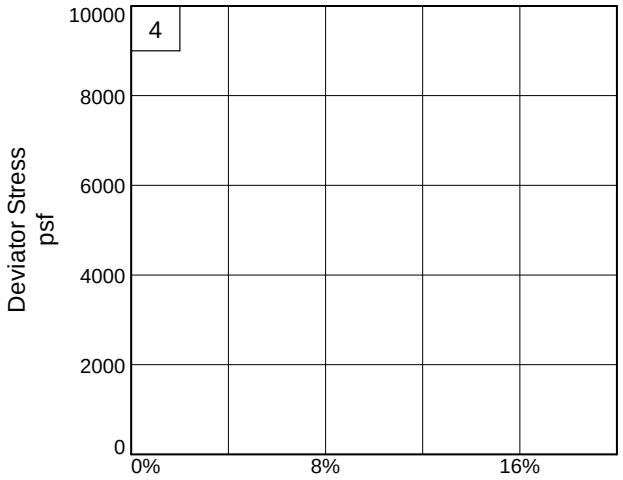
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Mobile, Alabama

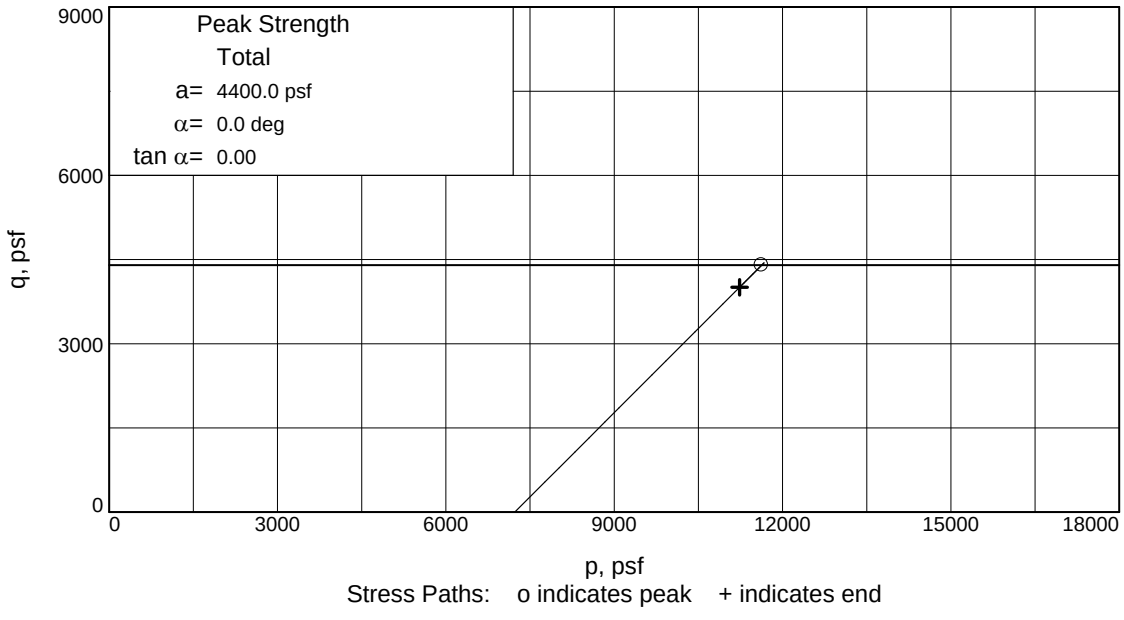






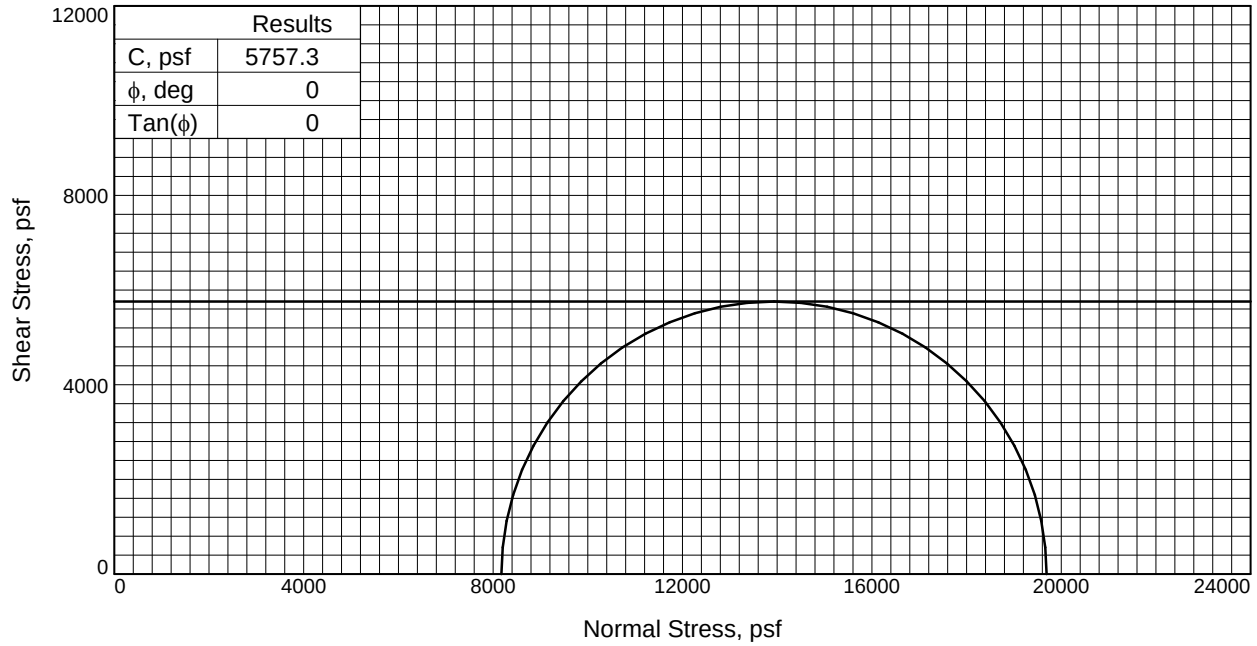


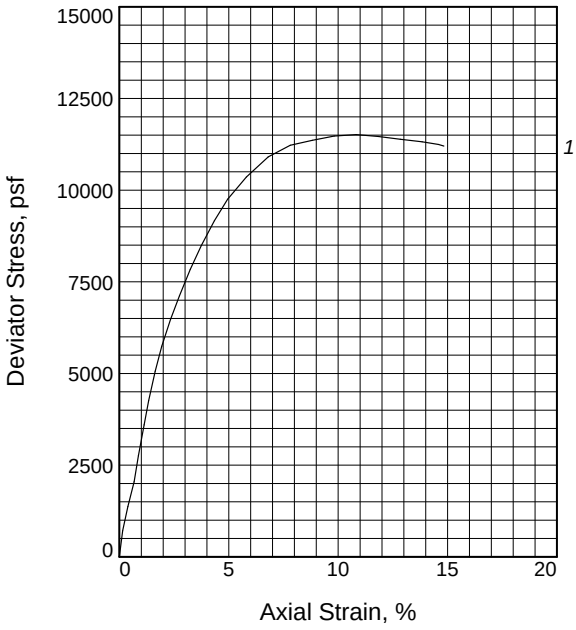




**Client:** ALDOT
**Project:** Mobile River Bridge
**Source of Sample:** Lab #8031 **Depth:** 148.0'-150.0' **Sample Number:** HLA-18 T-2
**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 16.5 |
| | Dry Density, pcf | 116.5 |
| | Saturation, % | 103.0 |
| | Void Ratio | 0.4250 |
| | Diameter, in. | 2.739 |
| | Height, in. | 5.723 |
| At Test | Water Content, % | 17.5 |
| | Dry Density, pcf | 116.5 |
| | Saturation, % | 109.2 |
| | Void Ratio | 0.4250 |
| | Diameter, in. | 2.739 |
| | Height, in. | 5.723 |
| Strain at peak, % | | 10.8 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 8174.9 |
| Fail. Stress, psf | | 11514.7 |
| Strain, % | | 10.8 |
| Ult. Stress, psf | | 11514.7 |
| Strain, % | | 10.8 |
| $\sigma_1$ Failure, psf | | 19689.6 |
| $\sigma_3$ Failure, psf | | 8174.9 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** FAT CLAY with SAND(CH A-7-6(27))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Asymmetrical Shear Plane

**Figure** _____

**Client:** ALDOT

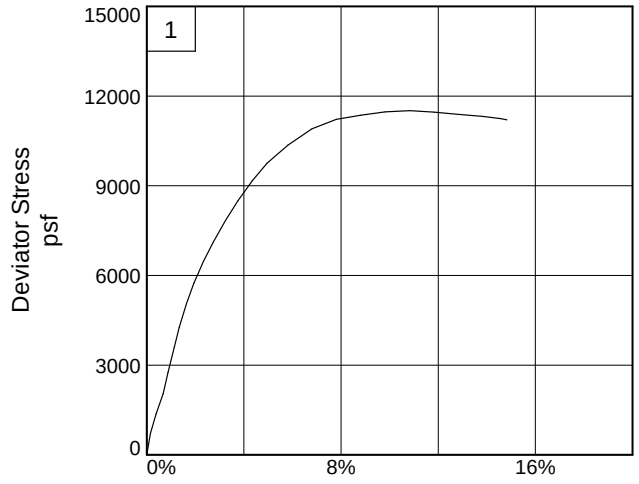
**Project:** Mobile River Bridge

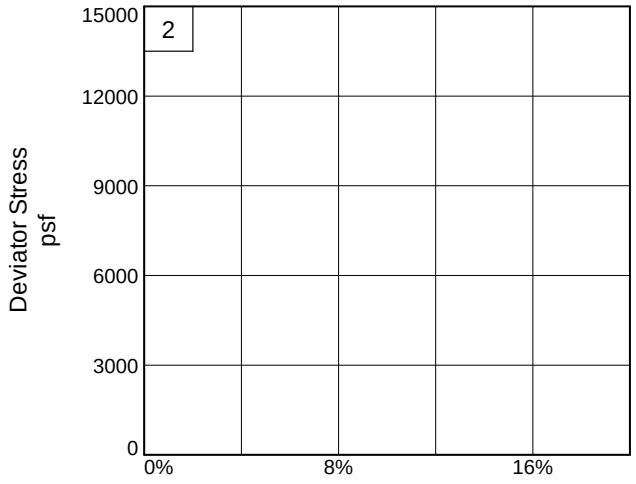
**Source of Sample:** Lab #8031 **Depth:** 168.0'-170.0'

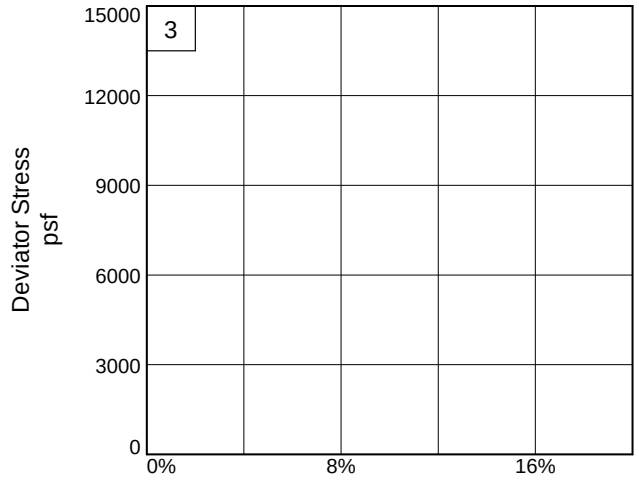
**Sample Number:** HLA-18 T-3

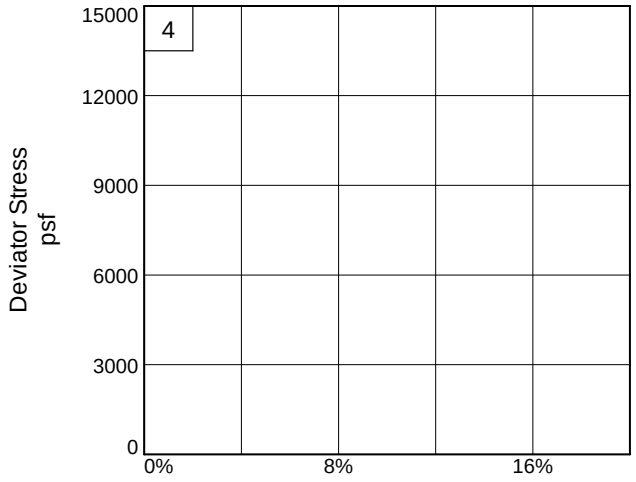
**Proj. No.:** 1511010228 **Date Sampled:**

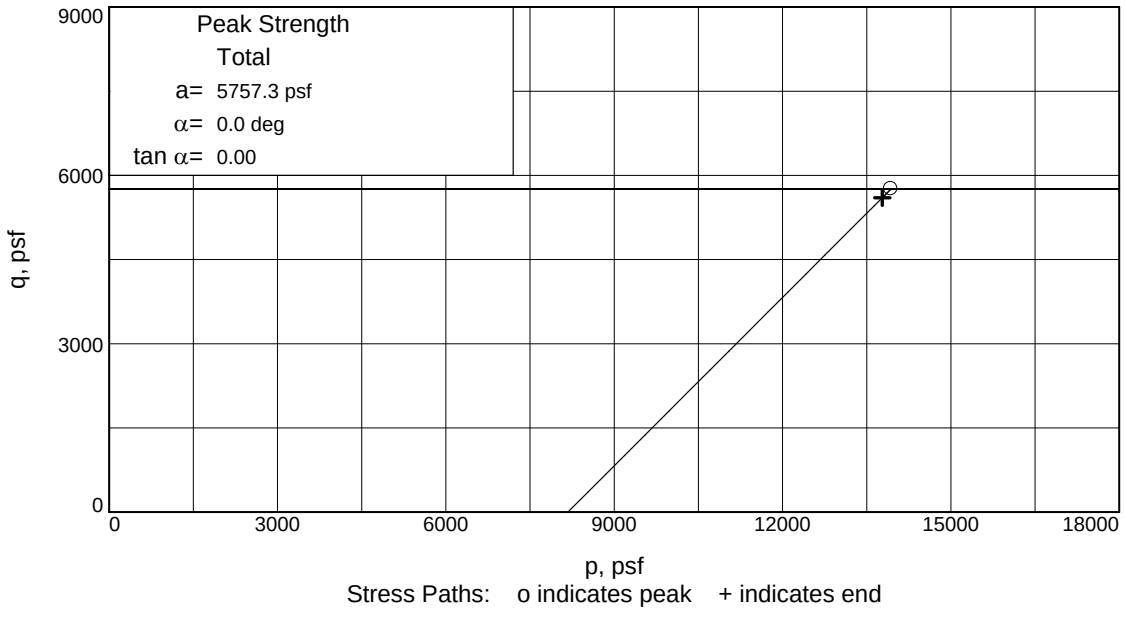
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Mobile, Alabama



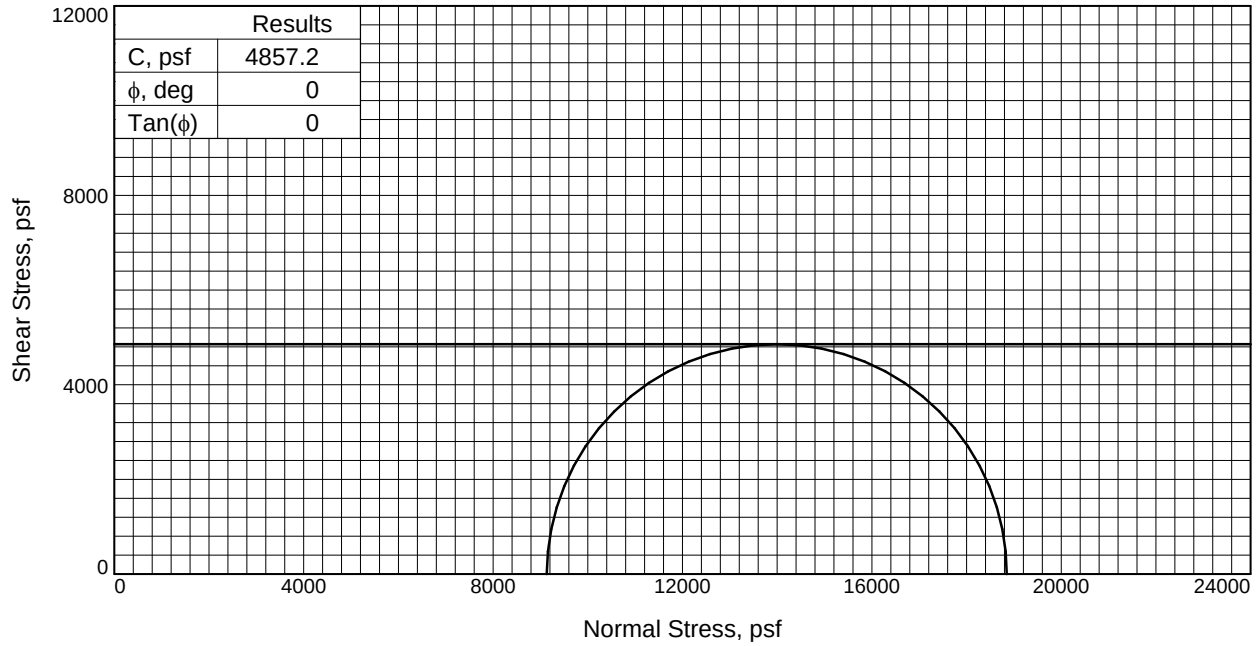



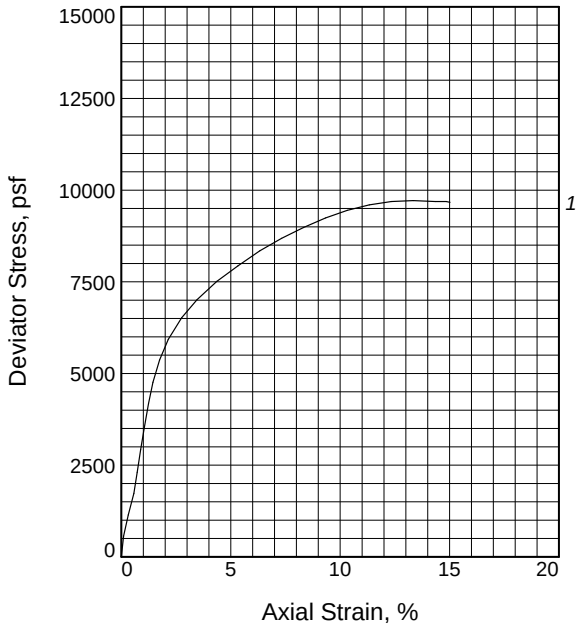




Stress Paths: o indicates peak + indicates end

**Client:** ALDOT
**Project:** Mobile River Bridge
**Source of Sample:** Lab #8031 **Depth:** 168.0'-170.0' **Sample Number:** HLA-18 T-3
**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 20.2 |
| | Dry Density, pcf | 110.7 |
| | Saturation, % | 107.4 |
| | Void Ratio | 0.5004 |
| | Diameter, in. | 2.737 |
| | Height, in. | 5.743 |
| At Test | Water Content, % | 20.1 |
| | Dry Density, pcf | 110.7 |
| | Saturation, % | 106.9 |
| | Void Ratio | 0.5004 |
| | Diameter, in. | 2.737 |
| | Height, in. | 5.743 |
| Strain at peak, % | | 13.3 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 9133.9 |
| Fail. Stress, psf | | 9714.5 |
| Strain, % | | 13.3 |
| Ult. Stress, psf | | 9714.5 |
| Strain, % | | 13.3 |
| $\sigma_1$ Failure, psf | | 18848.4 |
| $\sigma_3$ Failure, psf | | 9133.9 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** LEAN CLAY(CL A-7-6(31))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Asymmetrical Shear Plane

**Figure** _____

**Client:** ALDOT

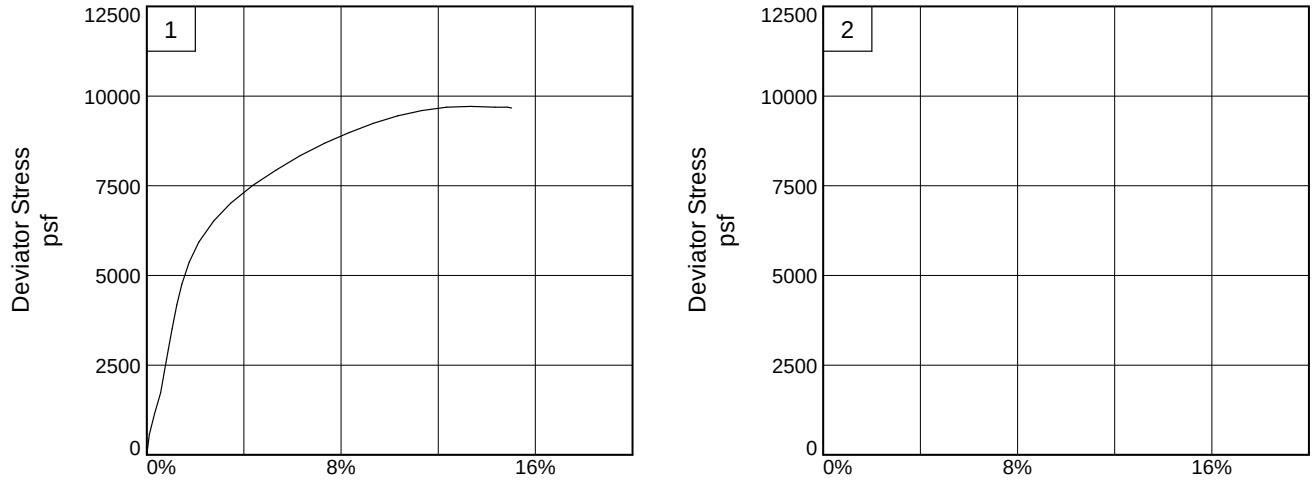
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8031 **Depth:** 188.0'-190.0'

**Sample Number:** HLA-18 T-4

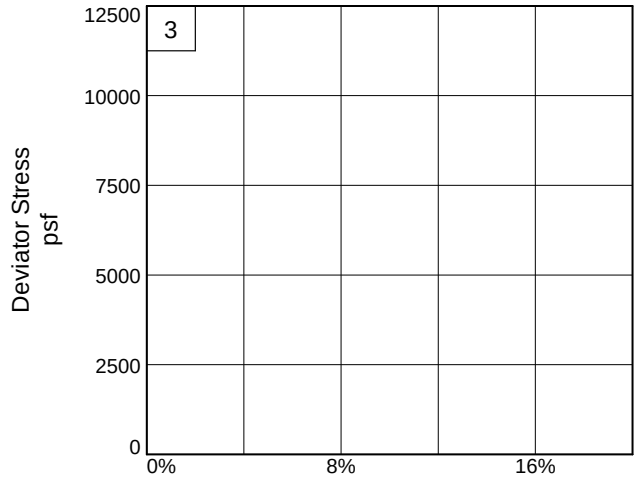
**Proj. No.:** 1511010228 **Date Sampled:**

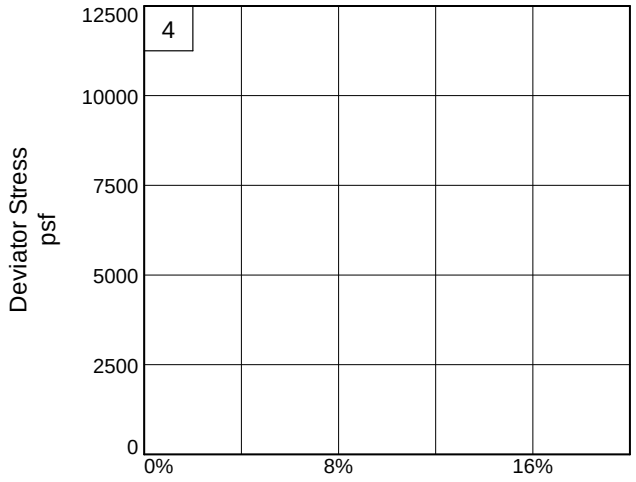
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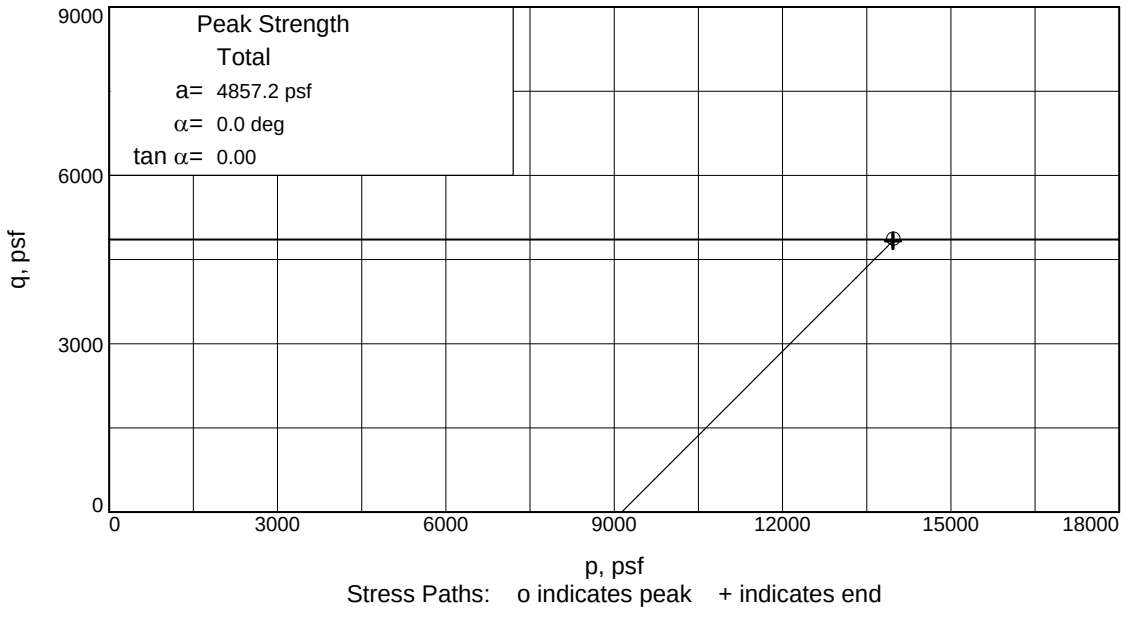








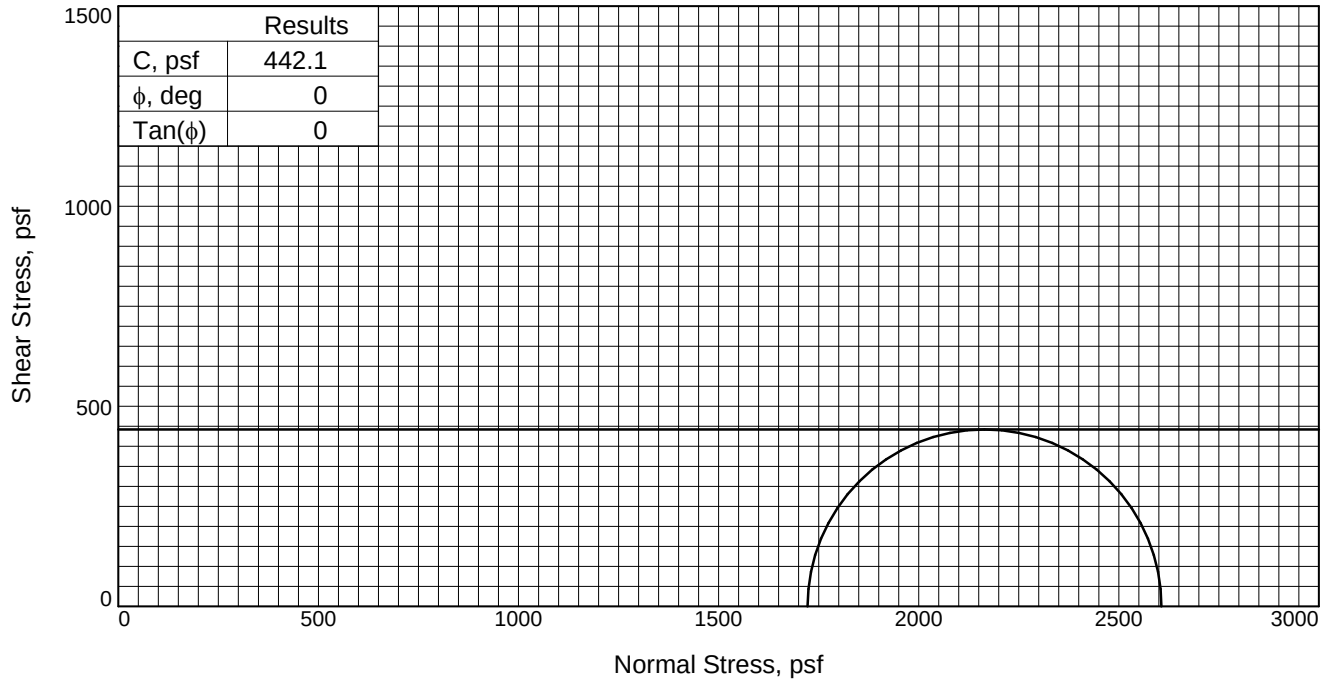



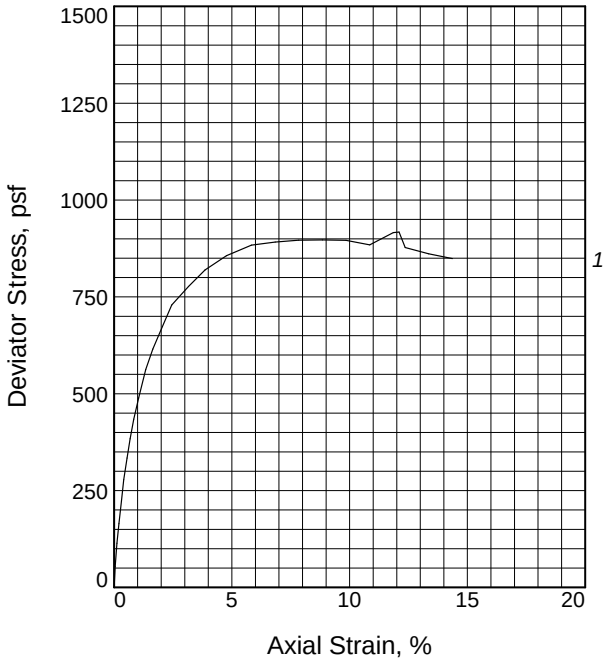




Stress Paths: o indicates peak + indicates end

**Client:** ALDOT
**Project:** Mobile River Bridge
**Source of Sample:** Lab #8031 **Depth:** 188.0'-190.0' **Sample Number:** HLA-18 T-4
**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 35.4 |
| | Dry Density, pcf | 87.4 |
| | Saturation, % | 104.7 |
| | Void Ratio | 0.8990 |
| | Diameter, in. | 2.807 |
| | Height, in. | 5.671 |
| At Test | Water Content, % | 38.2 |
| | Dry Density, pcf | 87.4 |
| | Saturation, % | 113.1 |
| | Void Ratio | 0.8990 |
| | Diameter, in. | 2.807 |
| | Height, in. | 5.671 |
| Strain at peak, % | | 10.9 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 1722.2 |
| Fail. Stress, psf | | 884.2 |
| Strain, % | | 10.9 |
| Ult. Stress, psf | | 884.2 |
| Strain, % | | 10.9 |
| $\sigma_1$ Failure, psf | | 2606.5 |
| $\sigma_3$ Failure, psf | | 1722.2 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** SANDY LEAN CLAY (CL A-7-6(15))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Symmetrical Bulge

**Figure** _____

**Client:** ALDOT

**Project:** Mobile River Bridge

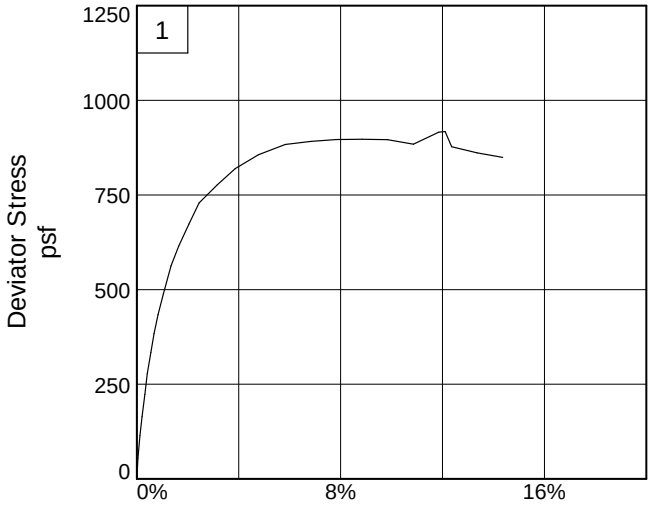
**Source of Sample:** Lab #8041 **Depth:** 28.0'-30.0'

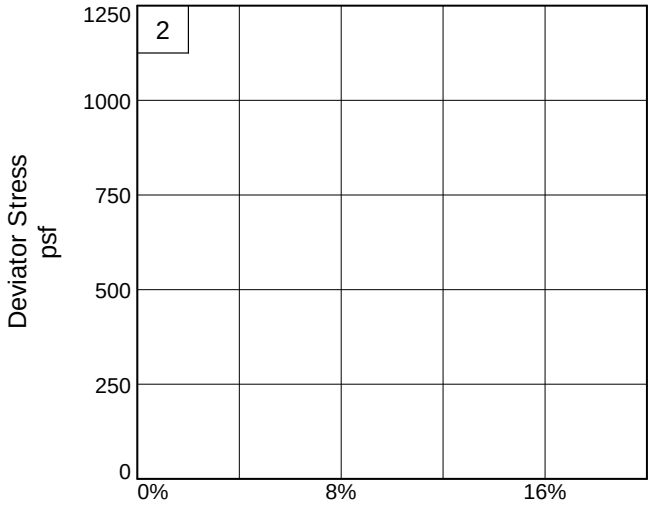
**Sample Number:** HLA-19 T-1

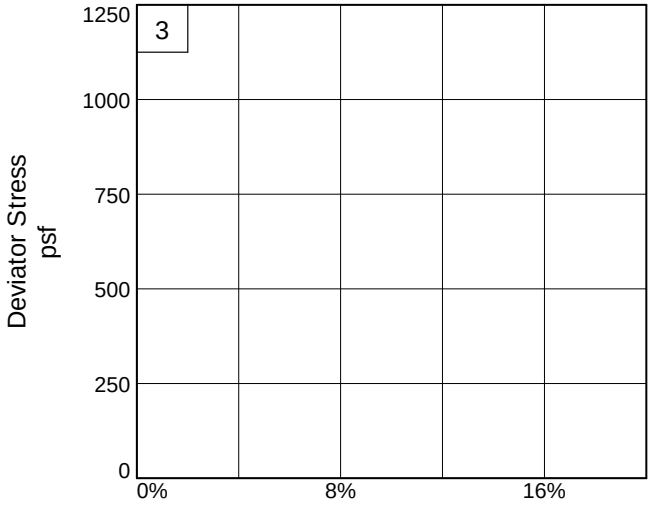
**Proj. No.:** 1511010228 **Date Sampled:**

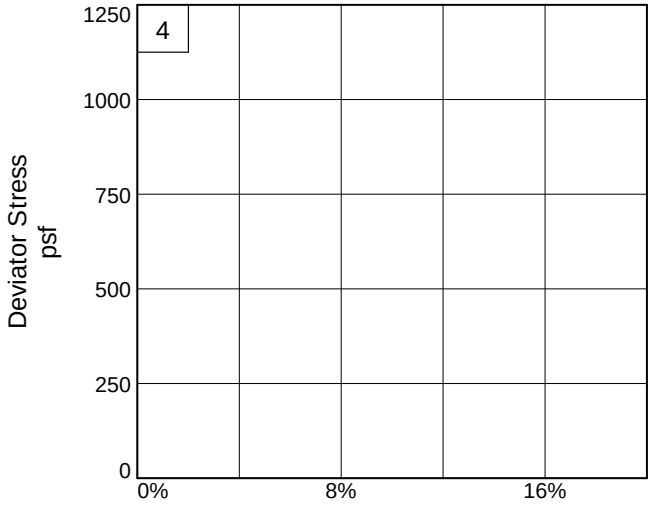
TRIAXIAL SHEAR TEST REPORT

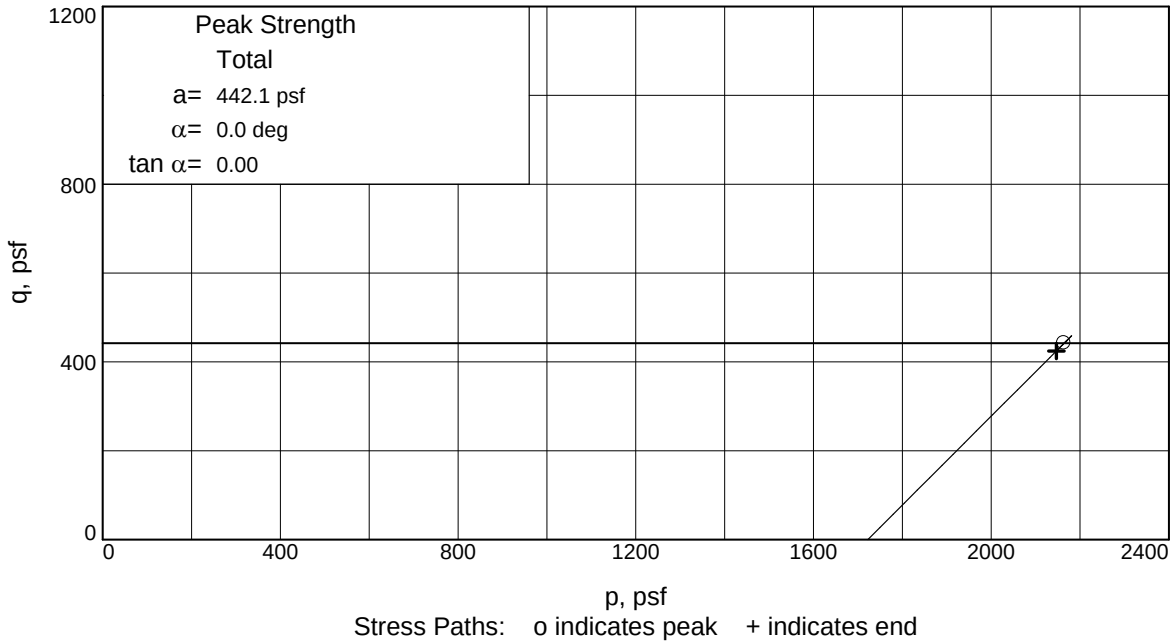
Thompson Engineering
Mobile, Alabama




Stress Paths: o indicates peak + indicates end

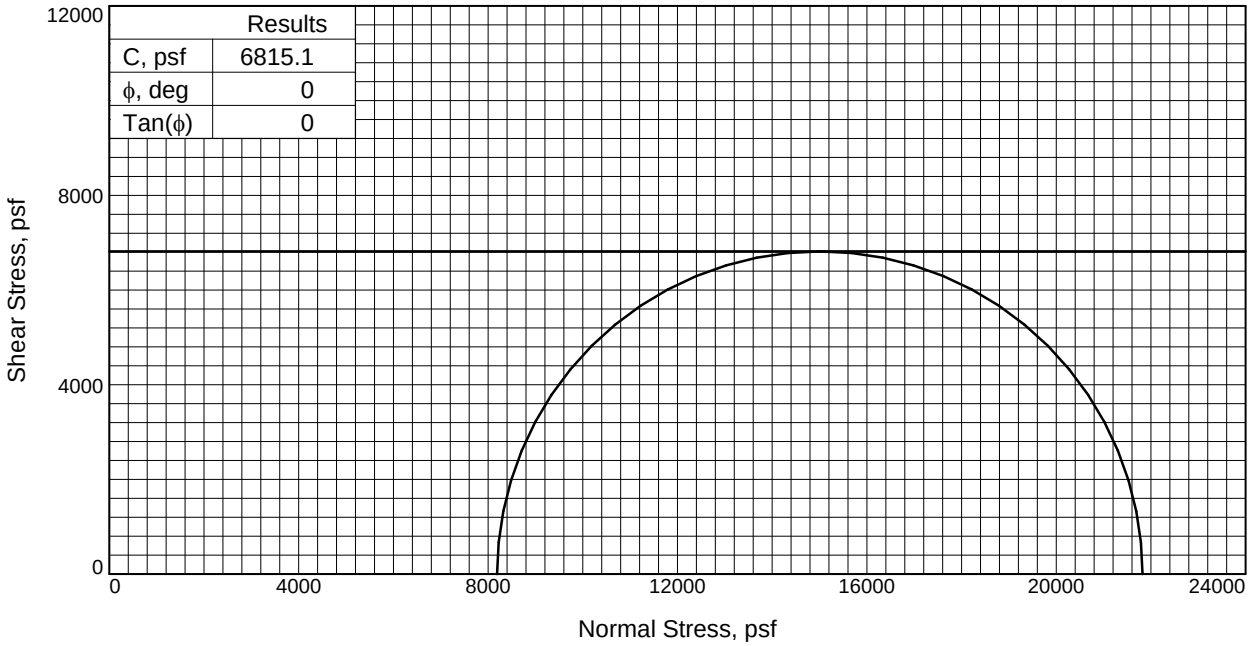
**Client:** ALDOT

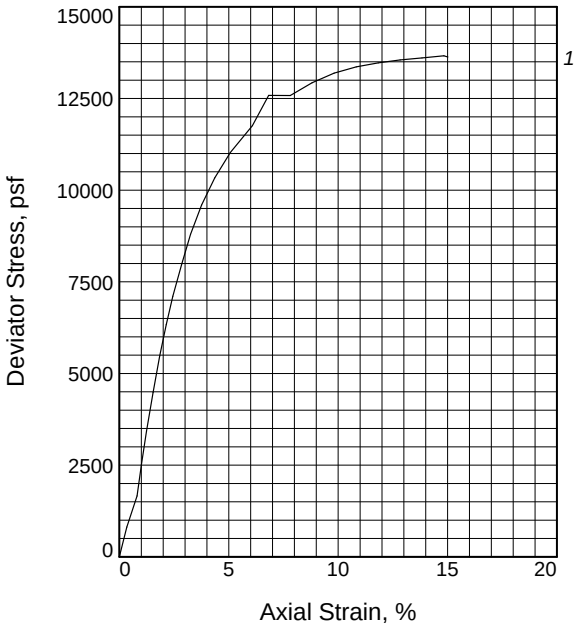
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8041 **Depth:** 28.0'-30.0' **Sample Number:** HLA-19 T-1

**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 16.9 |
| | Dry Density, pcf | 113.7 |
| | Saturation, % | 97.4 |
| | Void Ratio | 0.4605 |
| | Diameter, in. | 2.749 |
| | Height, in. | 5.562 |
| At Test | Water Content, % | 18.4 |
| | Dry Density, pcf | 113.7 |
| | Saturation, % | 106.4 |
| | Void Ratio | 0.4605 |
| | Diameter, in. | 2.749 |
| | Height, in. | 5.562 |
| Strain at peak, % | | 15.0 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 8190.7 |
| Fail. Stress, psf | | 13630.3 |
| Strain, % | | 15.0 |
| Ult. Stress, psf | | 13630.3 |
| Strain, % | | 15.0 |
| $\sigma_1$ Failure, psf | | 21821.0 |
| $\sigma_3$ Failure, psf | | 8190.7 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** SANDY LEAN CLAY(CL A-6(12))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Symmetrical Bulge

**Figure** _____

**Client:** ALDOT

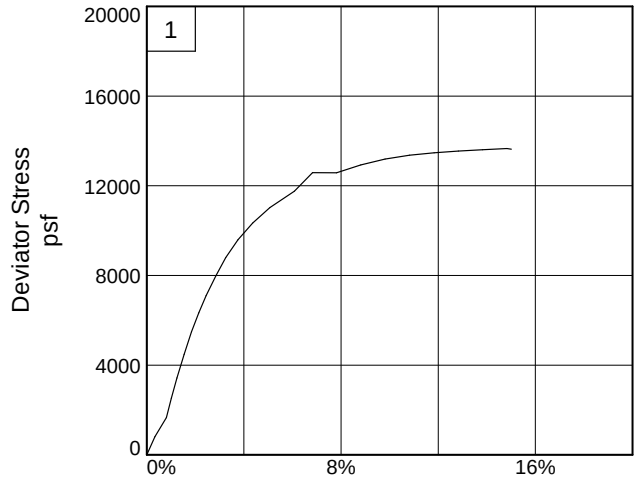
**Project:** Mobile River Bridge

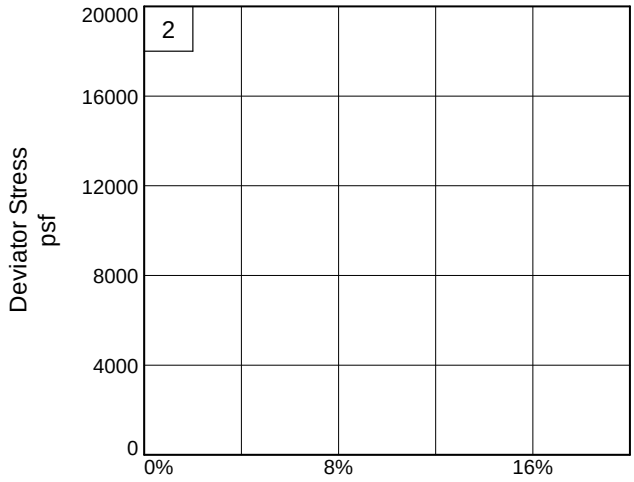
**Source of Sample:** Lab #8041 **Depth:** 148.0'-150.0'

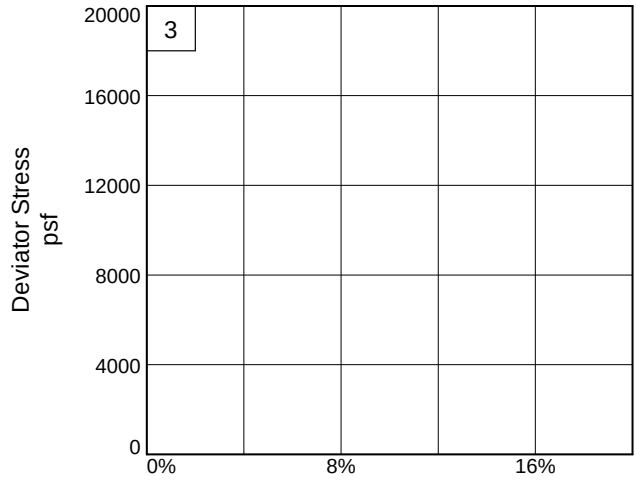
**Sample Number:** HLA-19 T-4

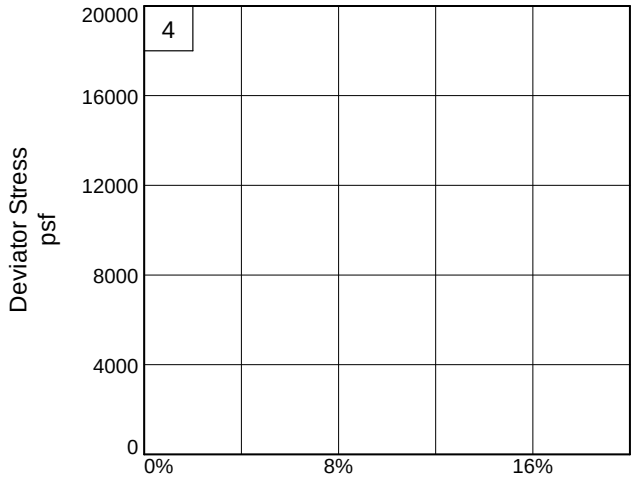
**Proj. No.:** 1511010228 **Date Sampled:**

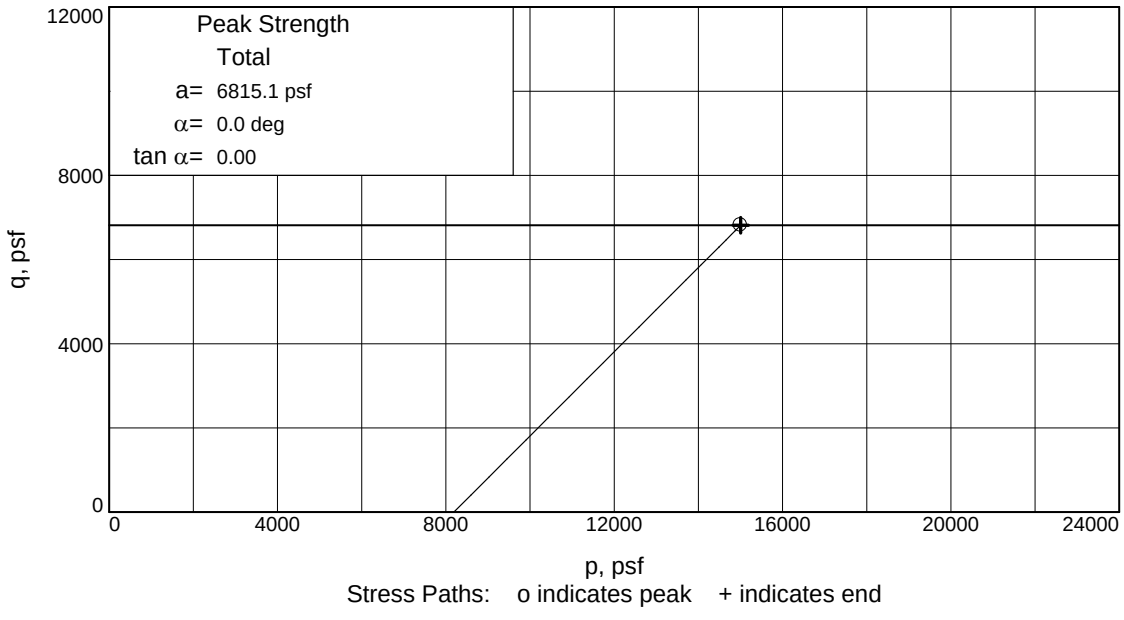
TRIAXIAL SHEAR TEST REPORT
Thompson Engineering
Mobile, Alabama



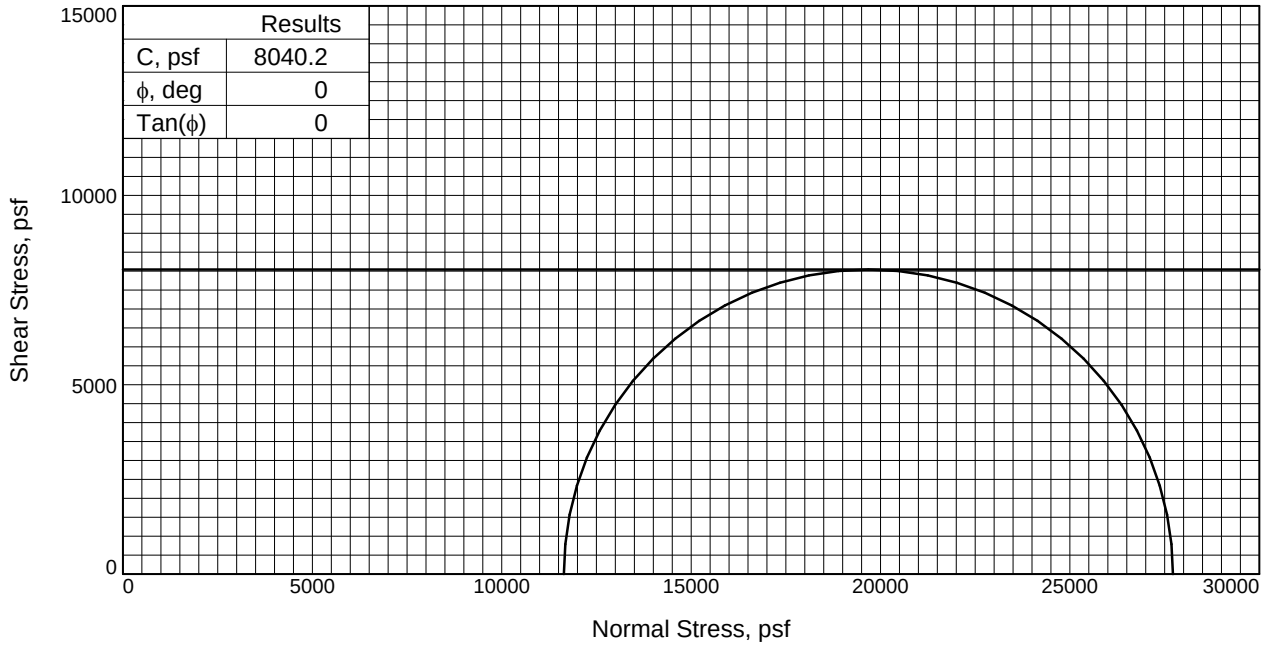



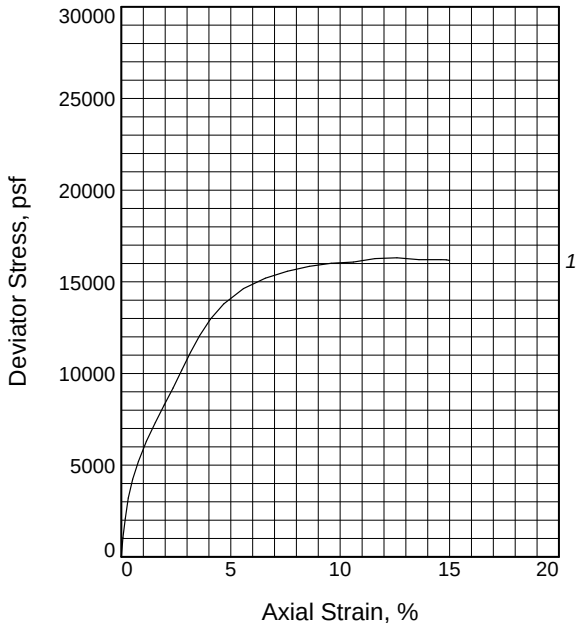




**Client:** ALDOT
**Project:** Mobile River Bridge
**Source of Sample:** Lab #8041 **Depth:** 148.0'-150.0' **Sample Number:** HLA-19 T-4
**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 13.6 |
| | Dry Density, pcf | 123.7 |
| | Saturation, % | 105.6 |
| | Void Ratio | 0.3424 |
| | Diameter, in. | 2.745 |
| | Height, in. | 5.707 |
| At Test | Water Content, % | 14.2 |
| | Dry Density, pcf | 123.7 |
| | Saturation, % | 110.0 |
| | Void Ratio | 0.3424 |
| | Diameter, in. | 2.745 |
| | Height, in. | 5.707 |
| Strain at peak, % | | 10.6 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 11638.1 |
| Fail. Stress, psf | | 16080.3 |
| Strain, % | | 10.6 |
| Ult. Stress, psf | | 16080.3 |
| Strain, % | | 10.6 |
| $\sigma_1$ Failure, psf | | 27718.4 |
| $\sigma_3$ Failure, psf | | 11638.1 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** SANDY LEAN CLAY(CL A-6(10))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Symmetrical Bulge

**Figure** _____

**Client:** ALDOT

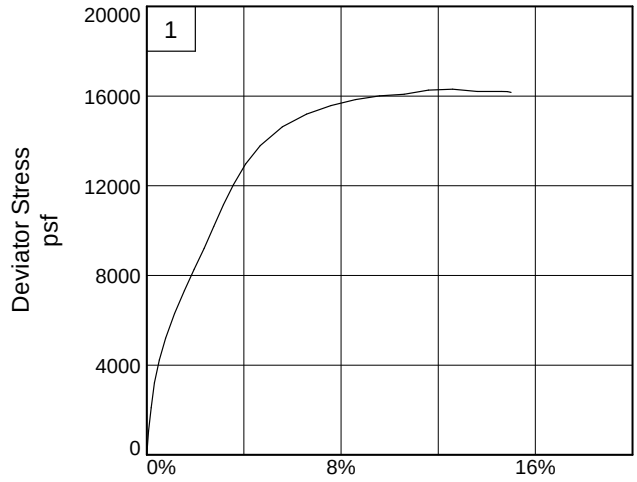
**Project:** Mobile River Bridge

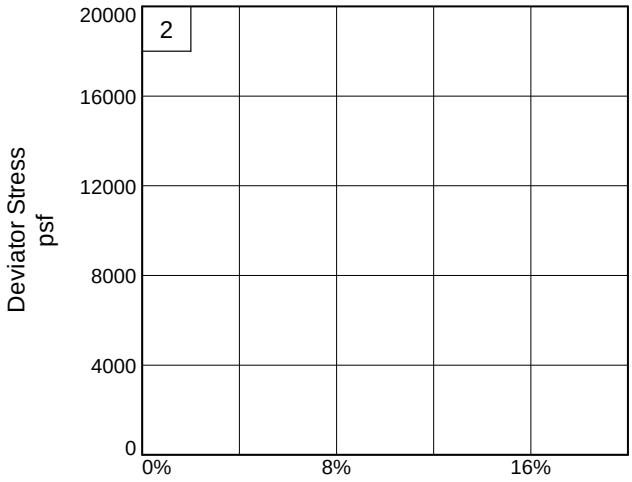
**Source of Sample:** Lab #8041 **Depth:** 198.0'-200.0'

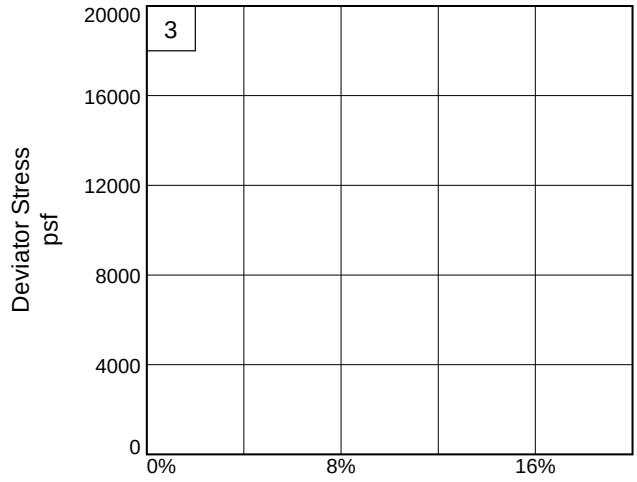
**Sample Number:** HLA-19 T-5

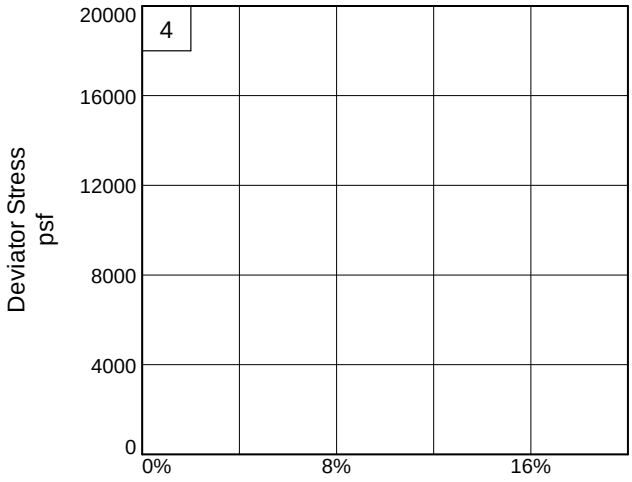
**Proj. No.:** 1511010228 **Date Sampled:**

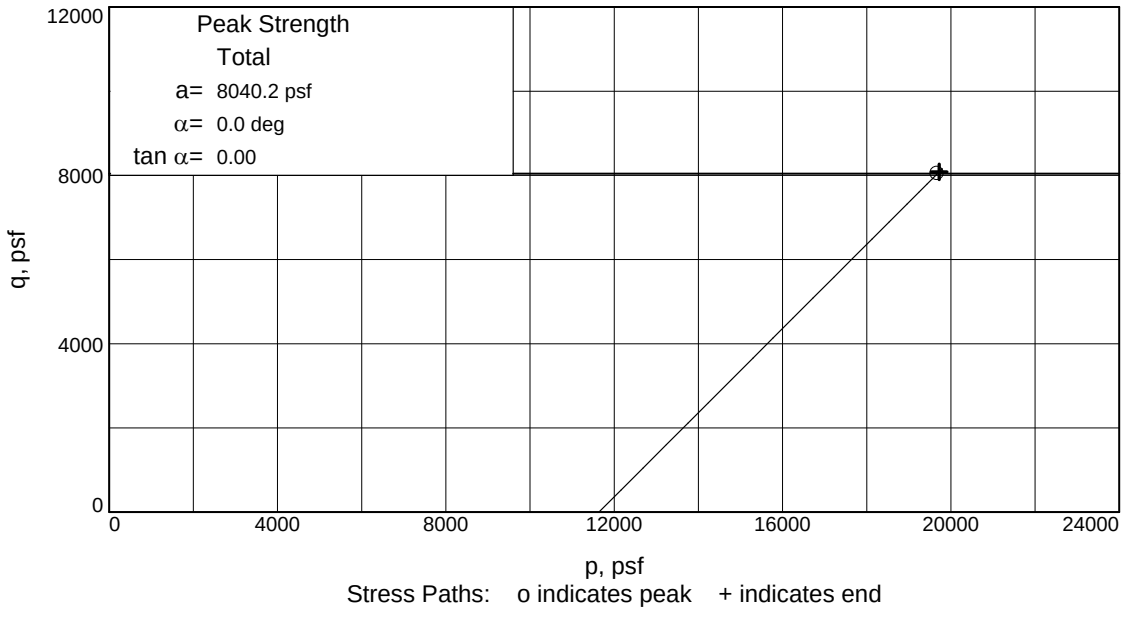
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Thompson Engineering
Mobile, Alabama



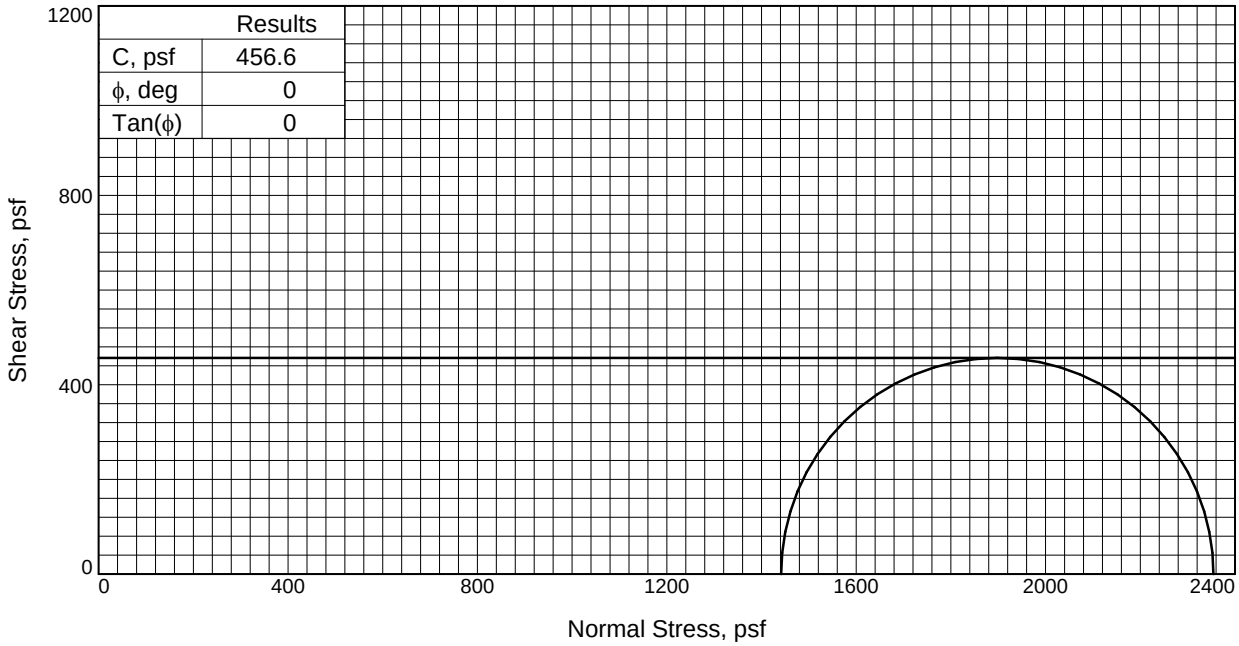



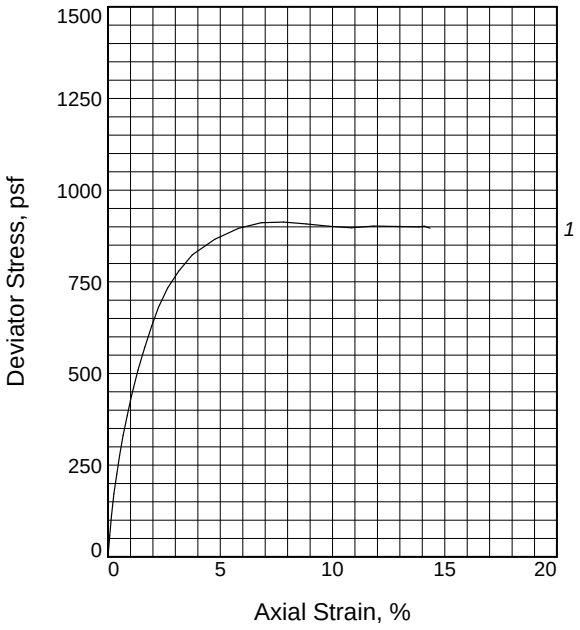




**Client:** ALDOT
**Project:** Mobile River Bridge
**Source of Sample:** Lab #8041 **Depth:** 198.0'-200.0' **Sample Number:** HLA-19 T-5
**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 37.5 |
| | Dry Density, pcf | 85.4 |
| | Saturation, % | 105.6 |
| | Void Ratio | 0.9436 |
| | Diameter, in. | 2.815 |
| | Height, in. | 5.526 |
| At Test | Water Content, % | 39.3 |
| | Dry Density, pcf | 85.4 |
| | Saturation, % | 110.9 |
| | Void Ratio | 0.9436 |
| | Diameter, in. | 2.815 |
| | Height, in. | 5.526 |
| Strain at peak, % | | 7.8 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 1441.4 |
| Fail. Stress, psf | | 913.1 |
| Strain, % | | 7.8 |
| Ult. Stress, psf | | 913.1 |
| Strain, % | | 7.8 |
| $\sigma_1$ Failure, psf | | 2354.5 |
| $\sigma_3$ Failure, psf | | 1441.4 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** SANDY LEAN CLAY(CL A-7-6(20))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Symmetrical Bulge

**Figure** _____

**Client:** ALDOT

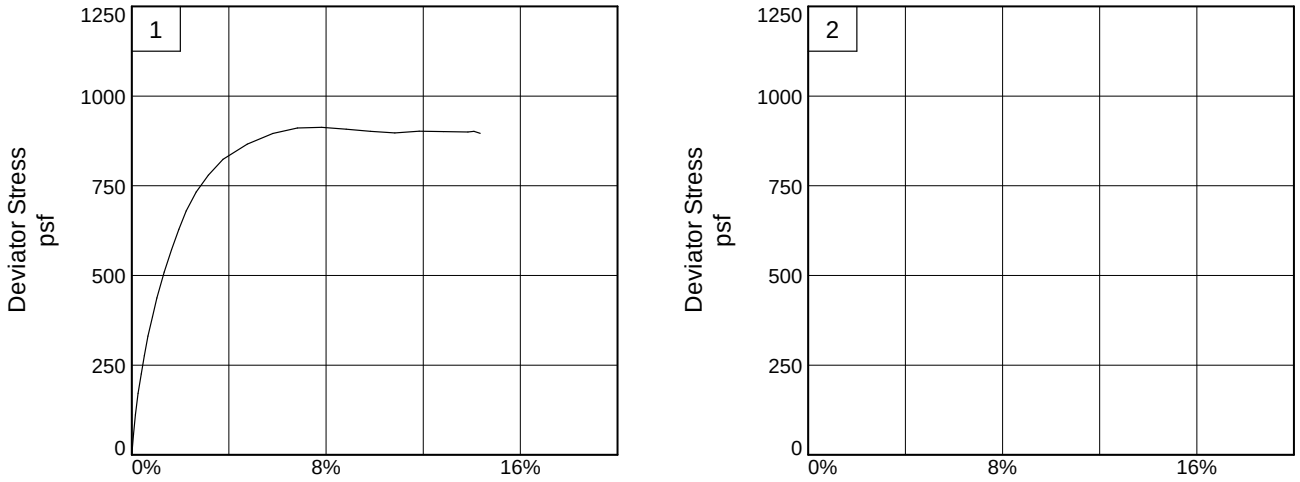
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8041 **Depth:** 23.0'-25.0'

**Sample Number:** HLA-20 T-1

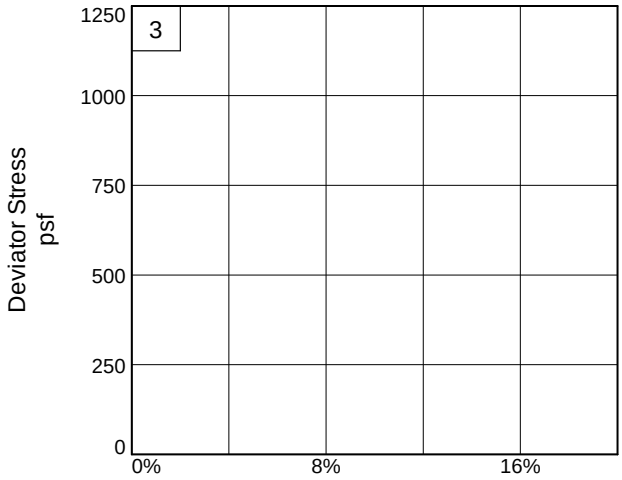
**Proj. No.:** 1511010228 **Date Sampled:**

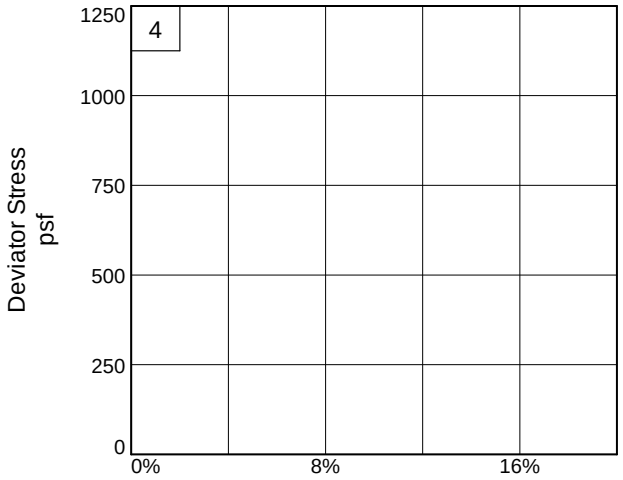
TRIAXIAL SHEAR TEST REPORT
Thompson Engineering
Mobile, Alabama

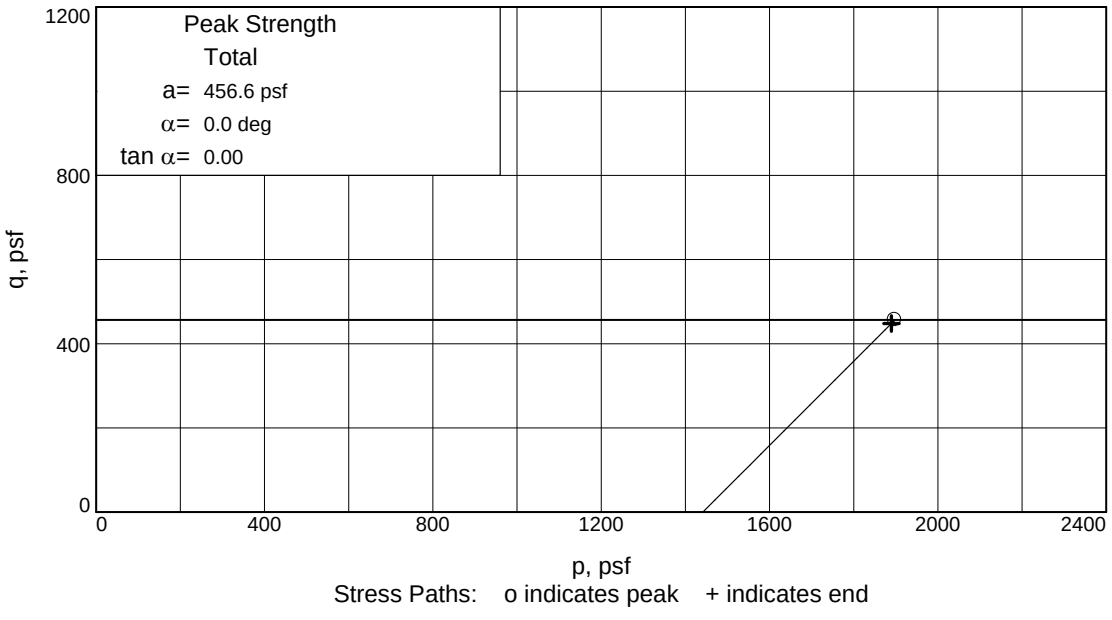






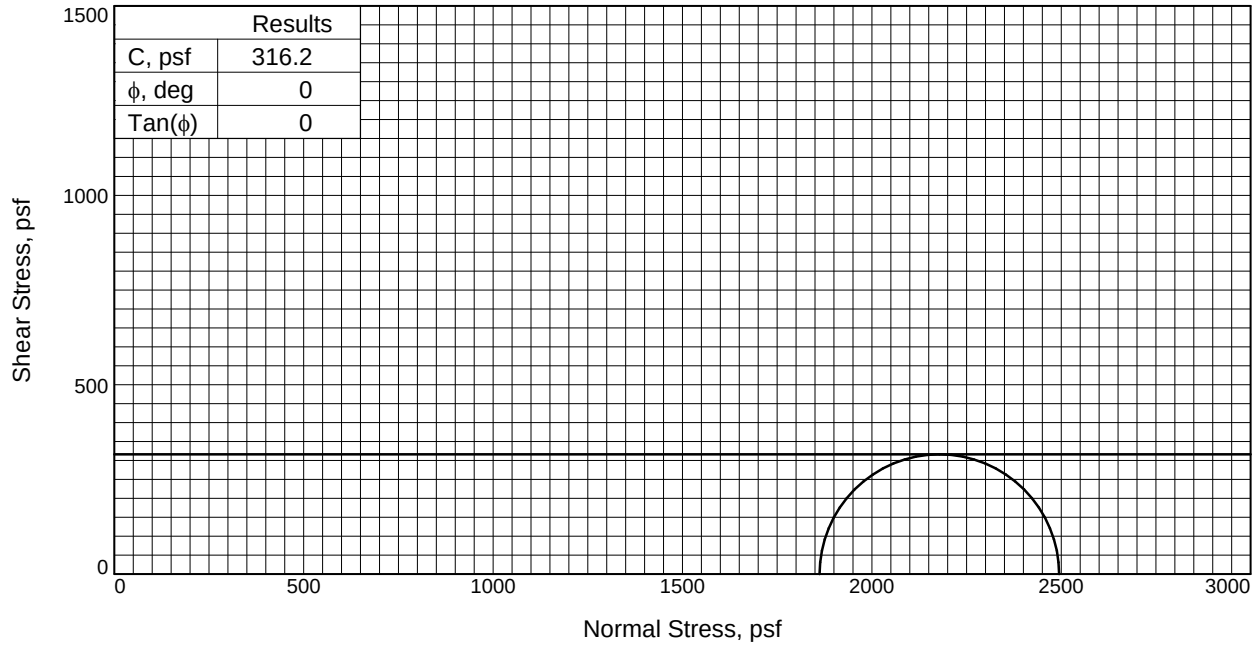


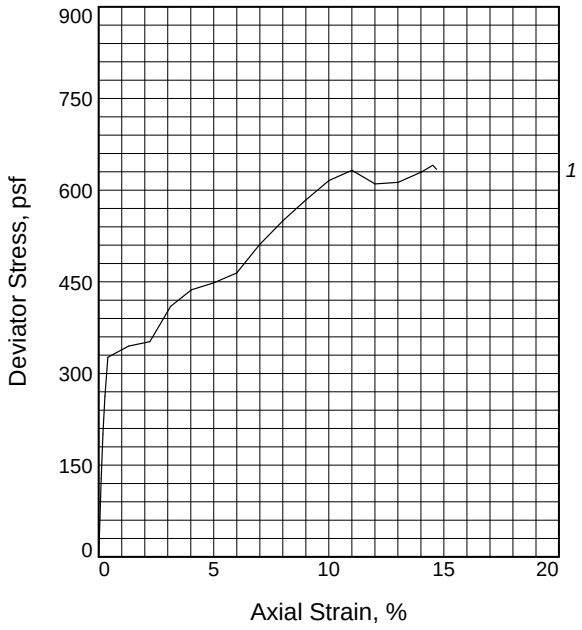




**Client:** ALDOT
**Project:** Mobile River Bridge
**Source of Sample:** Lab #8041 **Depth:** 23.0'-25.0' **Sample Number:** HLA-20 T-1
**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 45.1 |
| | Dry Density, pcf | 76.7 |
| | Saturation, % | 103.1 |
| | Void Ratio | 1.1640 |
| | Diameter, in. | 2.848 |
| | Height, in. | 5.638 |
| At Test | Water Content, % | 45.2 |
| | Dry Density, pcf | 76.7 |
| | Saturation, % | 103.4 |
| | Void Ratio | 1.1640 |
| | Diameter, in. | 2.848 |
| | Height, in. | 5.638 |
| Strain at peak, % | | 11.0 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 1861.9 |
| Fail. Stress, psf | | 632.4 |
| Strain, % | | 11.0 |
| Ult. Stress, psf | | 632.4 |
| Strain, % | | 11.0 |
| $\sigma_1$ Failure, psf | | 2494.3 |
| $\sigma_3$ Failure, psf | | 1861.9 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** FAT CLAY(CH A-7-6(51))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Asymmetrical Shear Plane
Sample very soft

**Figure** _____

**Client:** ALDOT

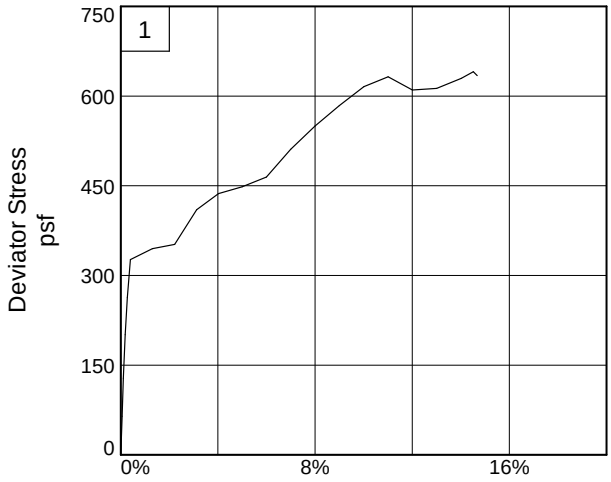
**Project:** Mobile River Bridge

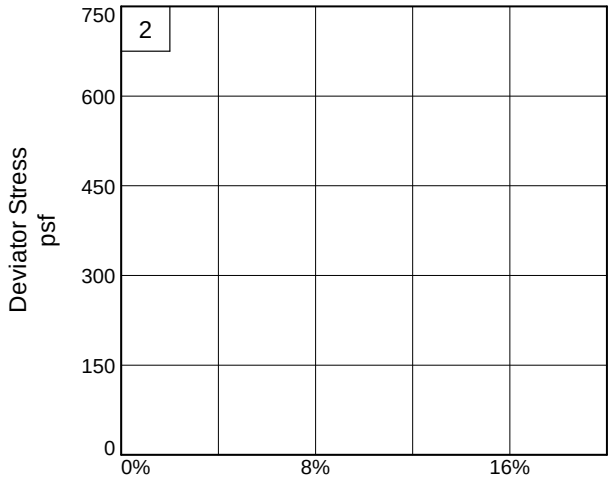
**Source of Sample:** Lab #8041 **Depth:** 33.0'-35.0'

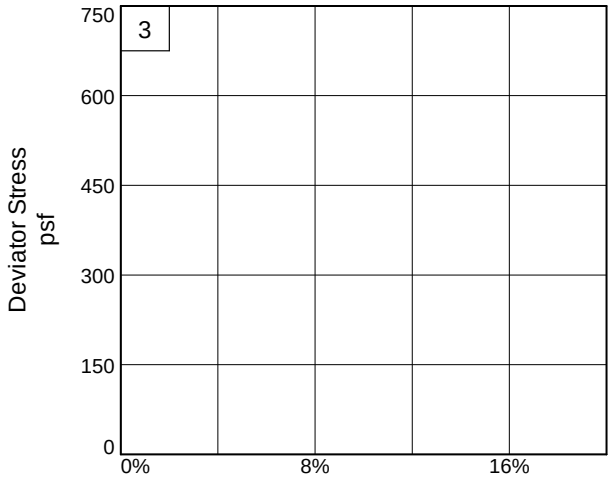
**Sample Number:** HLA-20 T-2

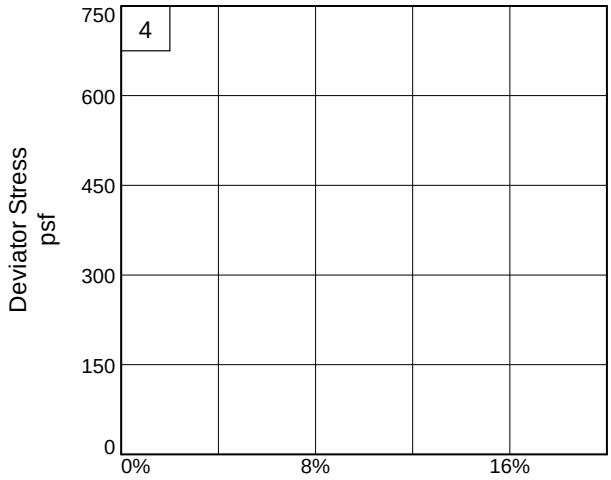
**Proj. No.:** 1511010228 **Date Sampled:**

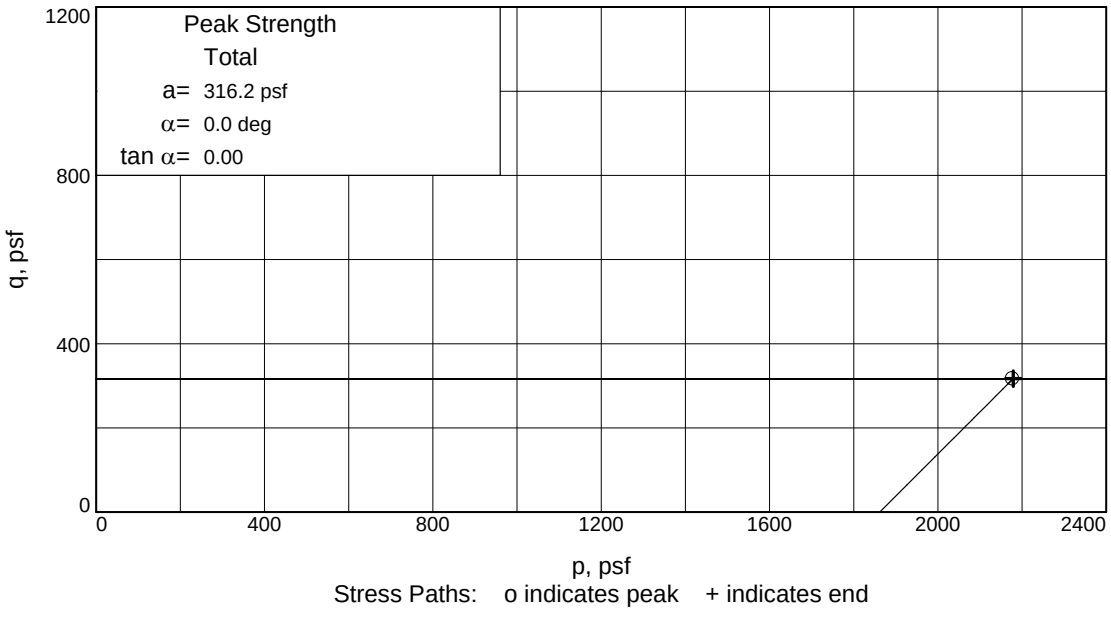
TRIAXIAL SHEAR TEST REPORT
Thompson Engineering
Mobile, Alabama



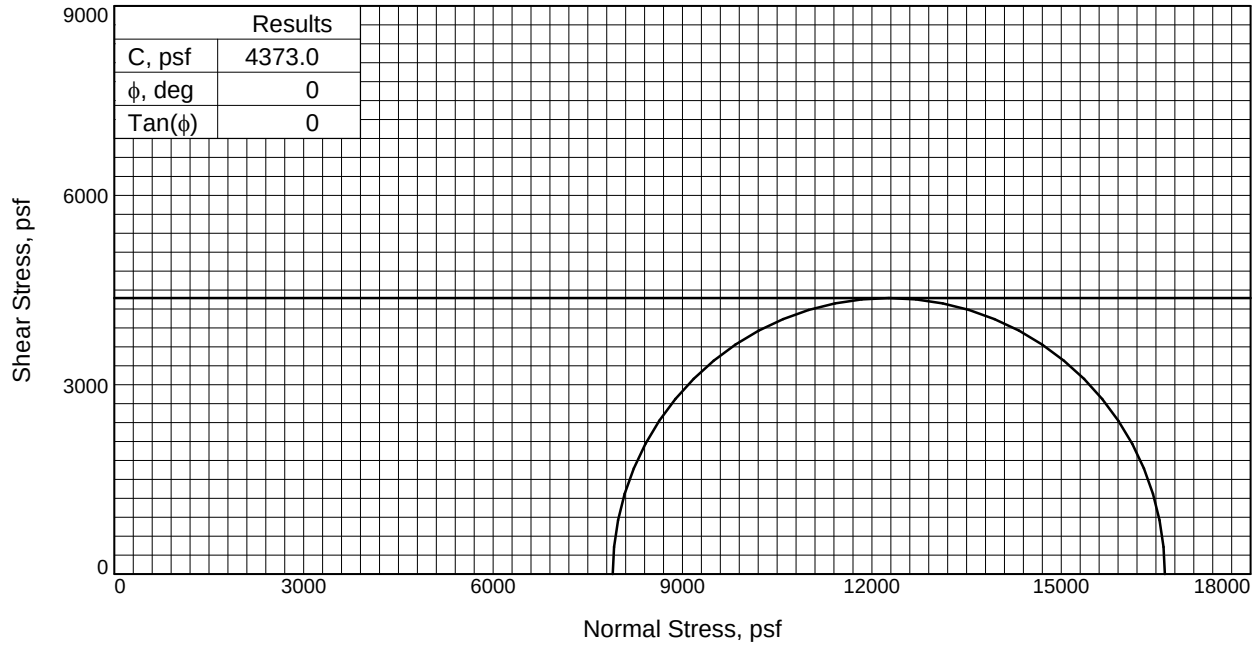



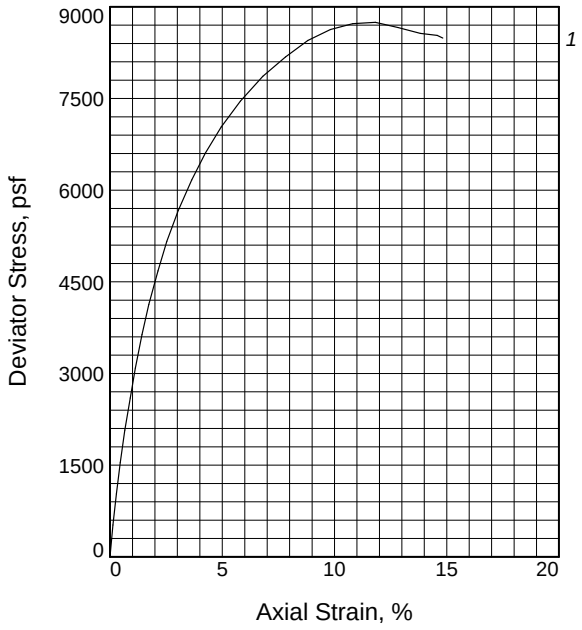




**Client:** ALDOT
**Project:** Mobile River Bridge
**Source of Sample:** Lab #8041 **Depth:** 33.0'-35.0' **Sample Number:** HLA-20 T-2
**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 19.0 |
| | Dry Density, pcf | 110.1 |
| | Saturation, % | 99.2 |
| | Void Ratio | 0.5081 |
| | Diameter, in. | 2.870 |
| | Height, in. | 5.395 |
| At Test | Water Content, % | 19.3 |
| | Dry Density, pcf | 110.1 |
| | Saturation, % | 101.1 |
| | Void Ratio | 0.5081 |
| | Diameter, in. | 2.870 |
| | Height, in. | 5.395 |
| Strain at peak, % | | 11.8 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 7895.5 |
| Fail. Stress, psf | | 8746.0 |
| Strain, % | | 11.8 |
| Ult. Stress, psf | | 8746.0 |
| Strain, % | | 11.8 |
| $\sigma_1$ Failure, psf | | 16641.5 |
| $\sigma_3$ Failure, psf | | 7895.5 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** LEAN CLAY with SAND(CL A-7-6(24))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Asymmetrical Shear Plane

**Figure** _____

**Client:** ALDOT

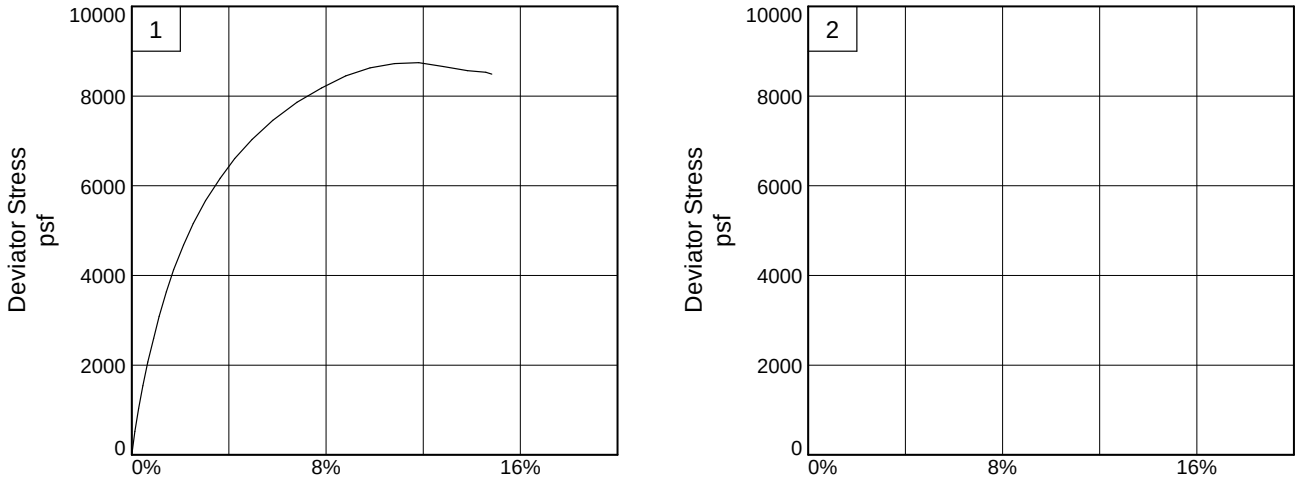
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8041 **Depth:** 133.0'-135.0'

**Sample Number:** HLA-20 T-3

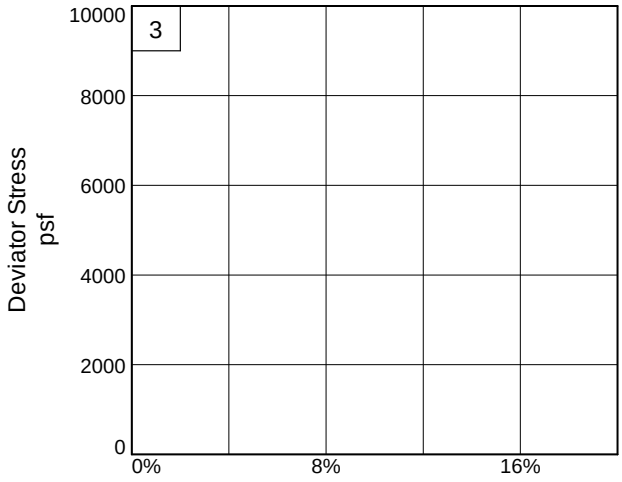
**Proj. No.:** 1511010228 **Date Sampled:**

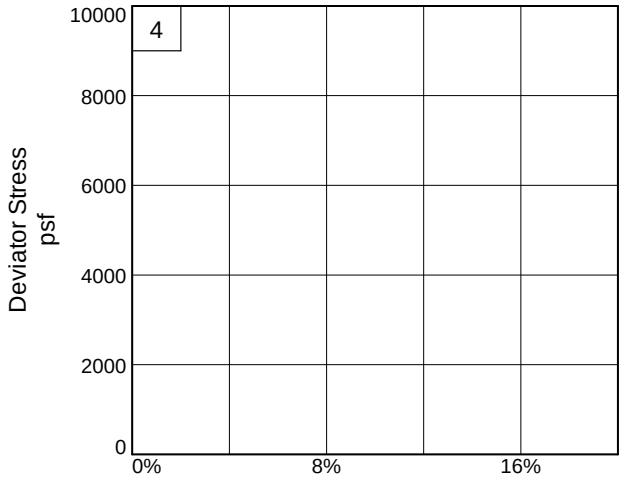
TRIAXIAL SHEAR TEST REPORT
Thompson Engineering
Mobile, Alabama

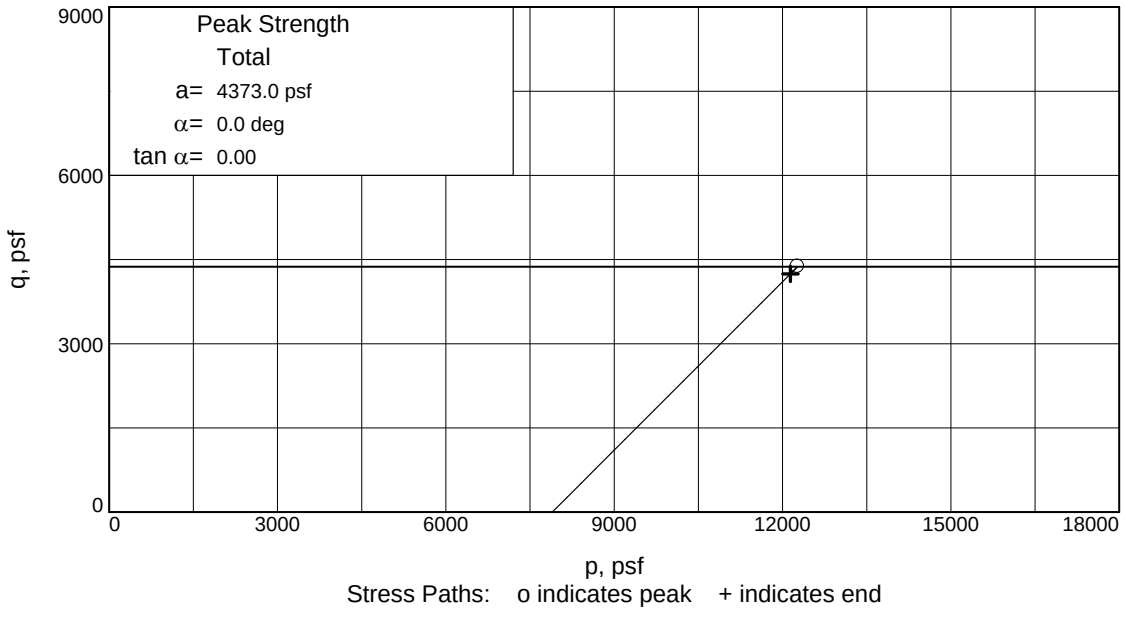








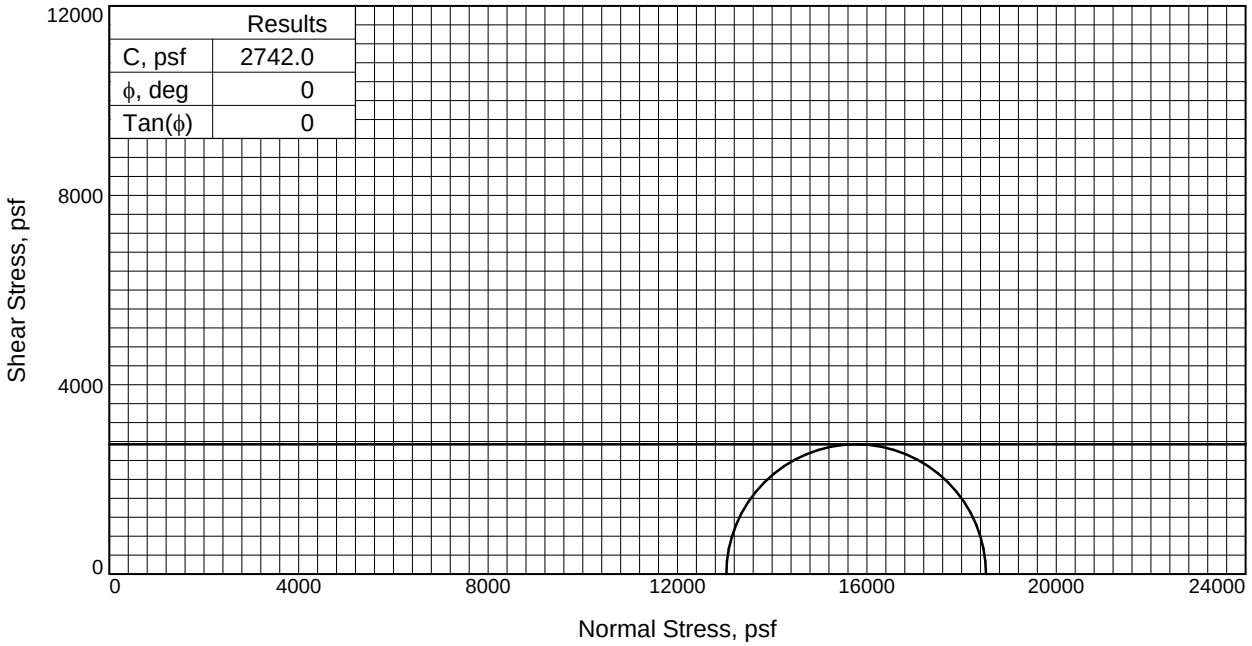



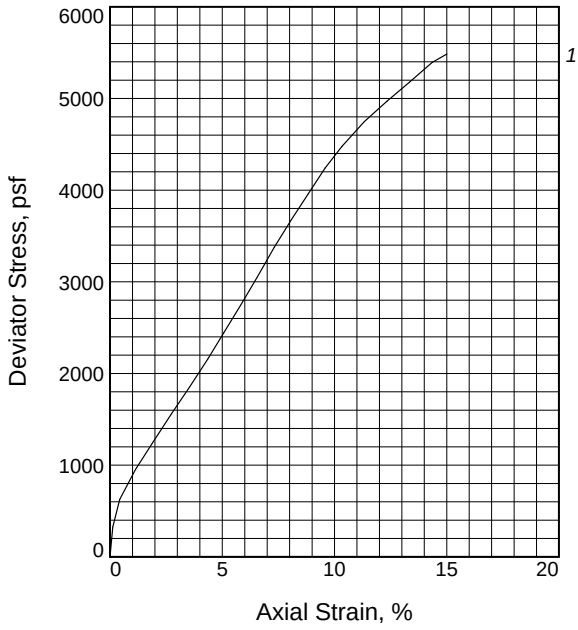




Stress Paths: o indicates peak + indicates end

**Client:** ALDOT
**Project:** Mobile River Bridge
**Source of Sample:** Lab #8041 **Depth:** 133.0'-135.0' **Sample Number:** HLA-20 T-3
**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 25.5 |
| | Dry Density, pcf | 99.8 |
| | Saturation, % | 102.4 |
| | Void Ratio | 0.6636 |
| | Diameter, in. | 2.729 |
| | Height, in. | 5.594 |
| At Test | Water Content, % | 26.1 |
| | Dry Density, pcf | 99.8 |
| | Saturation, % | 104.8 |
| | Void Ratio | 0.6636 |
| | Diameter, in. | 2.729 |
| | Height, in. | 5.594 |
| Strain at peak, % | | 15.0 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 13032.0 |
| Fail. Stress, psf | | 5484.0 |
| Strain, % | | 15.0 |
| Ult. Stress, psf | | 5484.0 |
| Strain, % | | 15.0 |
| $\sigma_1$ Failure, psf | | 18516.0 |
| $\sigma_3$ Failure, psf | | 13032.0 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** LEAN CLAY(CL A-6(17))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Symmetrical Bulge

**Figure** _____

**Client:** ALDOT

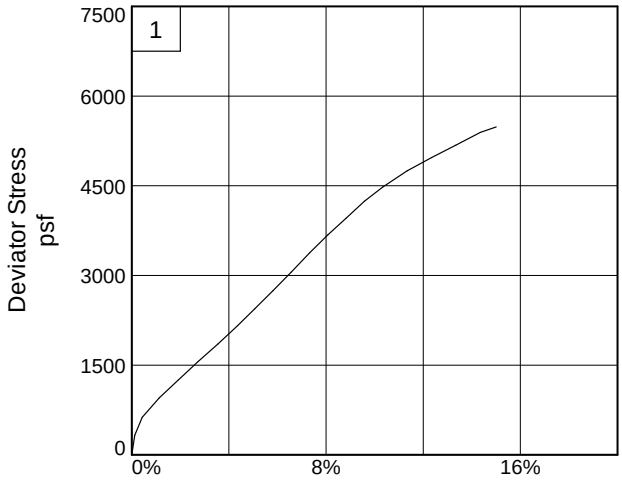
**Project:** Mobile River Bridge

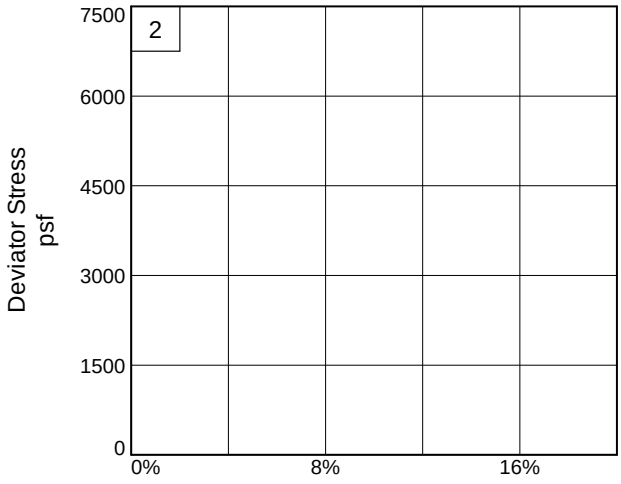
**Source of Sample:** Lab #8041 **Depth:** 218.0'-220.0'

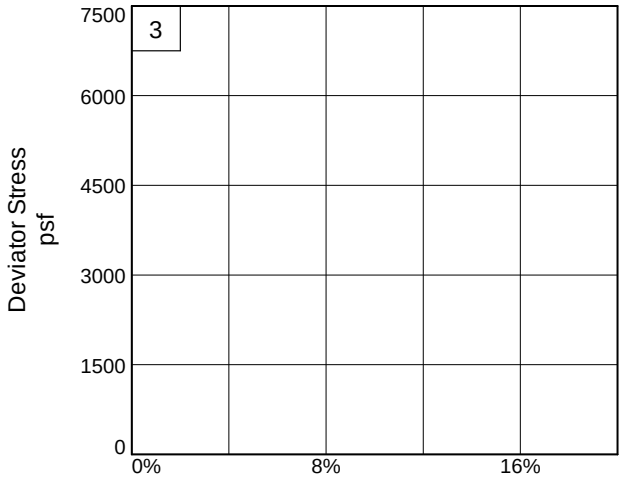
**Sample Number:** HLA-20 T-5

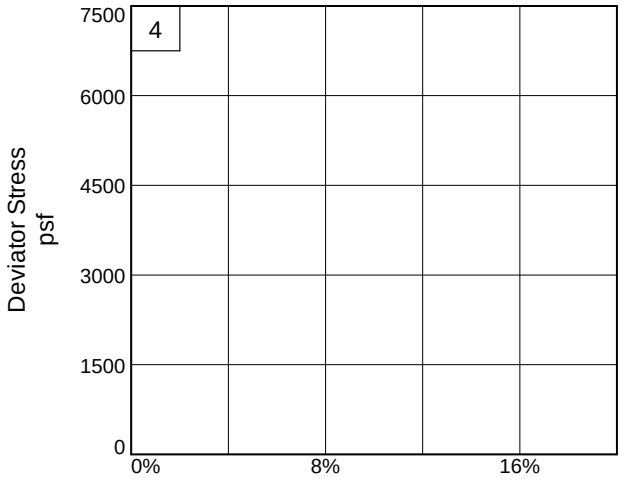
**Proj. No.:** 1511010228 **Date Sampled:**

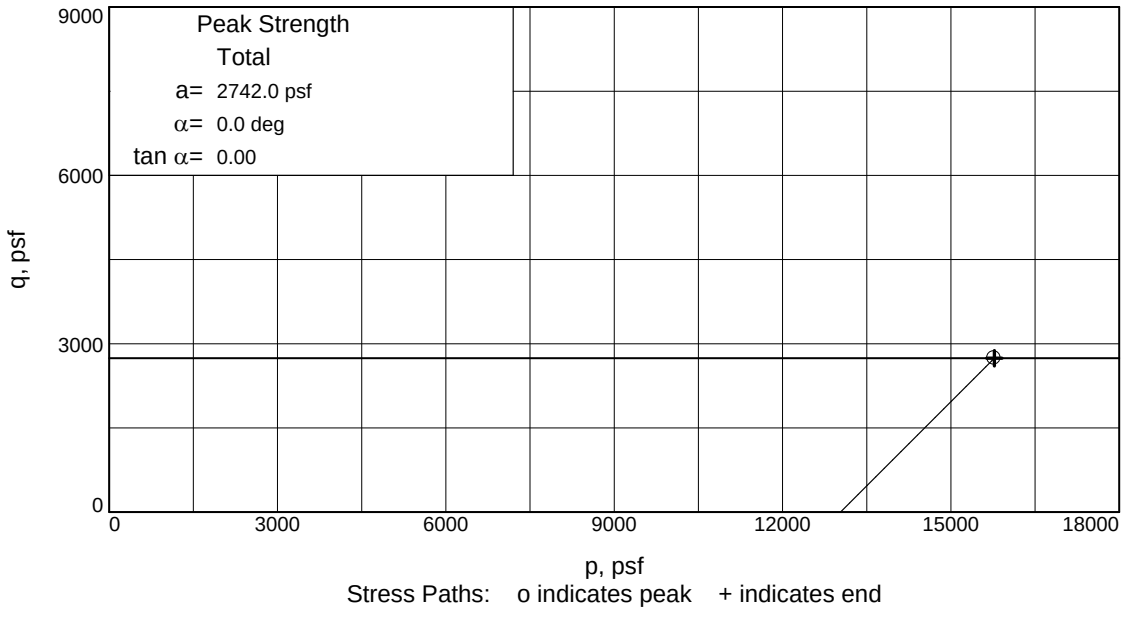
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Mobile, Alabama



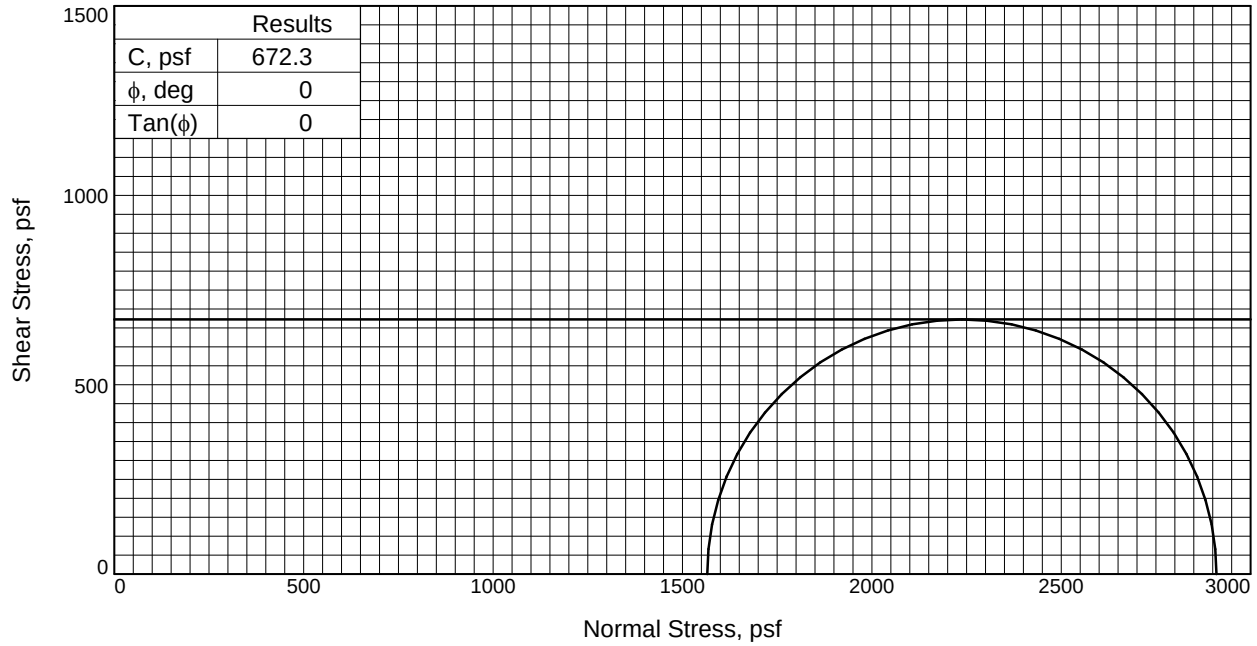



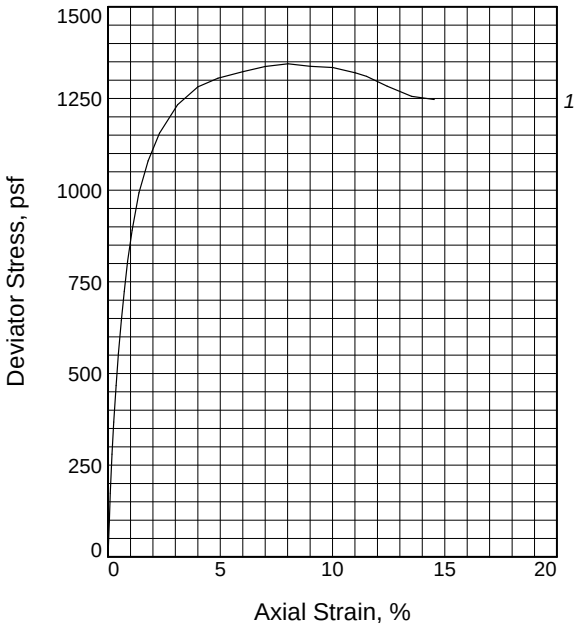




Stress Paths: o indicates peak + indicates end

**Client:** ALDOT
**Project:** Mobile River Bridge
**Source of Sample:** Lab #8041 **Depth:** 218.0'-220.0' **Sample Number:** HLA-20 T-5
**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 33.5 |
| | Dry Density, pcf | 89.6 |
| | Saturation, % | 104.5 |
| | Void Ratio | 0.8534 |
| | Diameter, in. | 2.838 |
| | Height, in. | 5.653 |
| At Test | Water Content, % | 35.5 |
| | Dry Density, pcf | 89.6 |
| | Saturation, % | 110.7 |
| | Void Ratio | 0.8534 |
| | Diameter, in. | 2.838 |
| | Height, in. | 5.653 |
| Strain at peak, % | | 8.0 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 1565.3 |
| Fail. Stress, psf | | 1344.6 |
| Strain, % | | 8.0 |
| Ult. Stress, psf | | 1344.6 |
| Strain, % | | 8.0 |
| $\sigma_1$ Failure, psf | | 2909.9 |
| $\sigma_3$ Failure, psf | | 1565.3 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** FAT CLAY with SAND(CH A-7-6(32))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Asymmetrical Shear Plane

**Figure** _____

**Client:** ALDOT

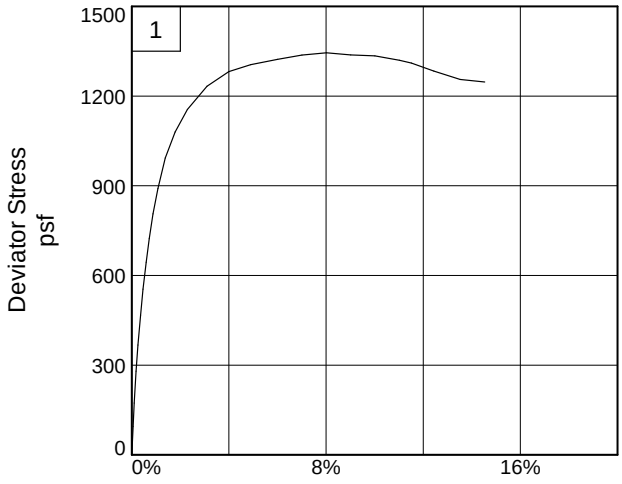
**Project:** Mobile River Bridge

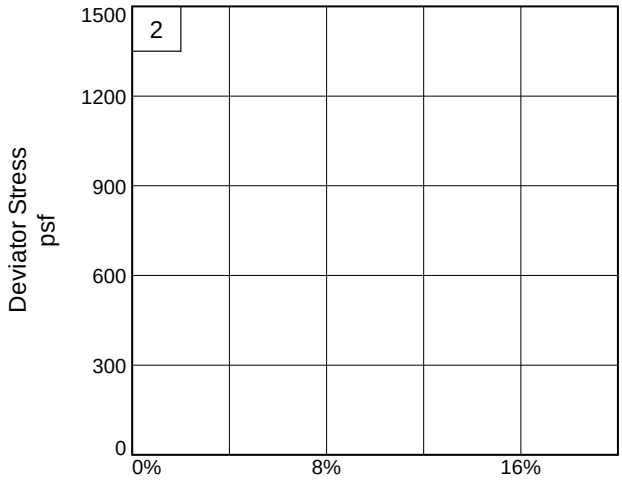
**Source of Sample:** Lab #8047 **Depth:** 33.0'-35.0'

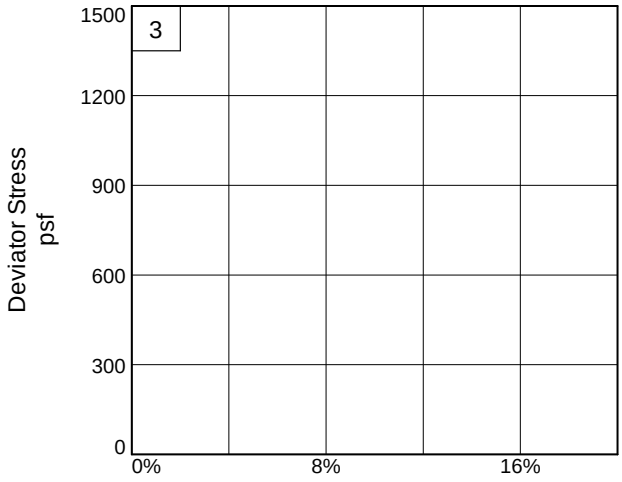
**Sample Number:** HLA-21 T-1

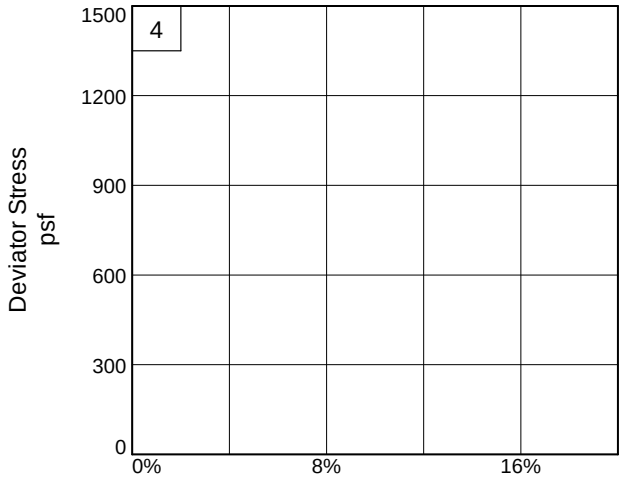
**Proj. No.:** 1511010228 **Date Sampled:**

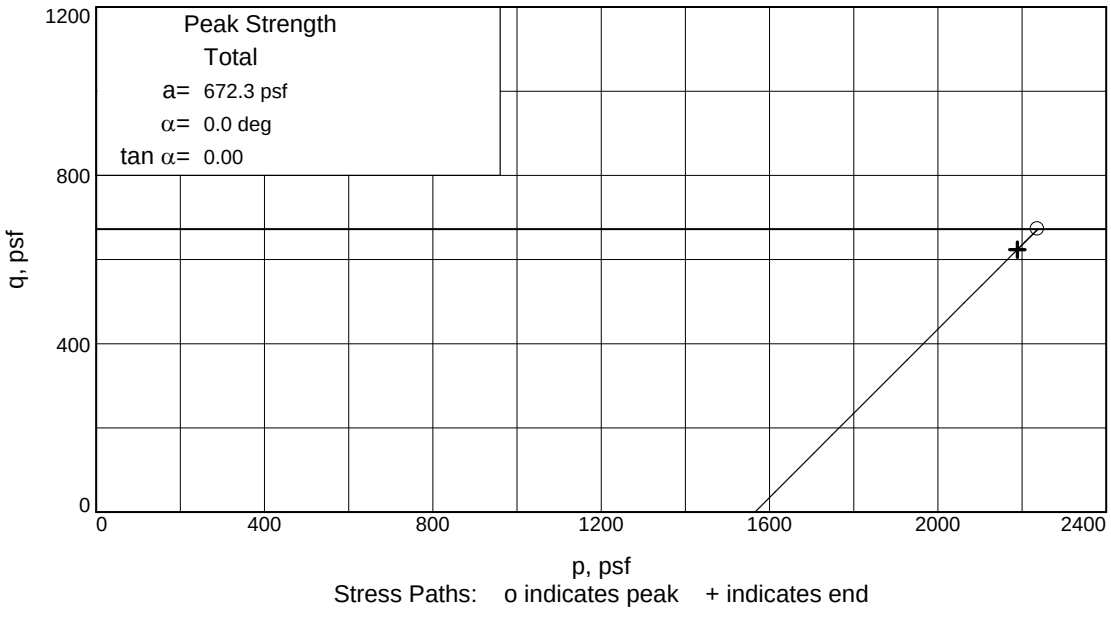
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Thompson Engineering
Mobile, Alabama




Stress Paths: o indicates peak + indicates end

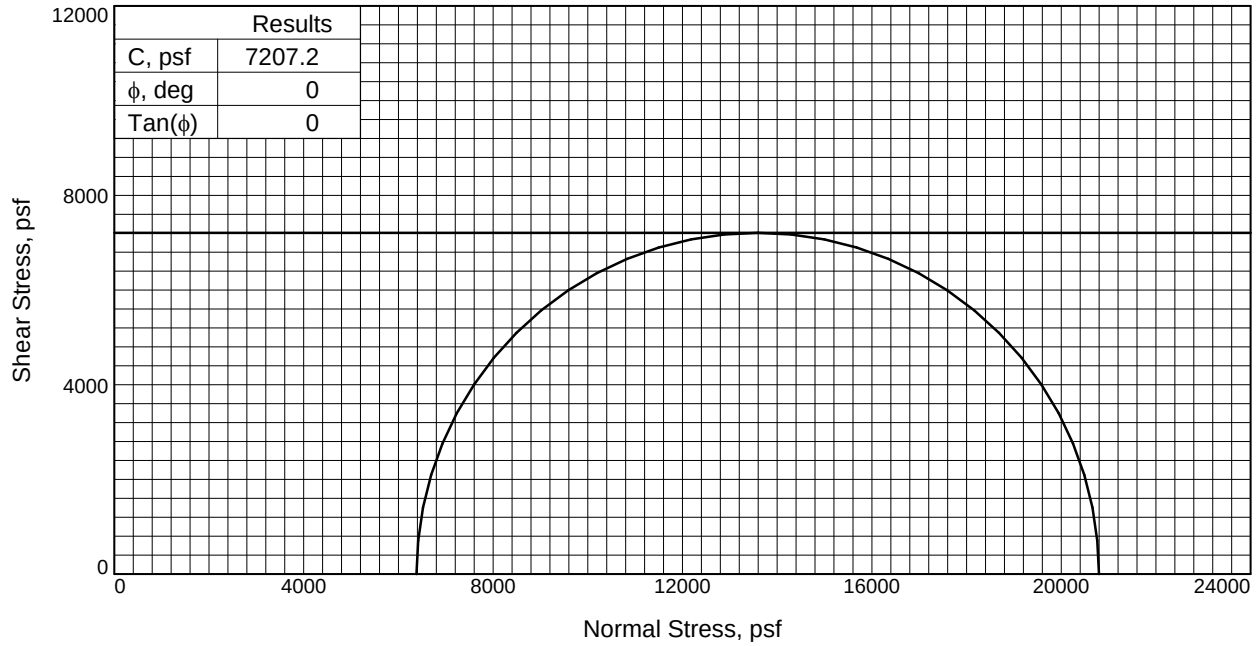
**Client:** ALDOT

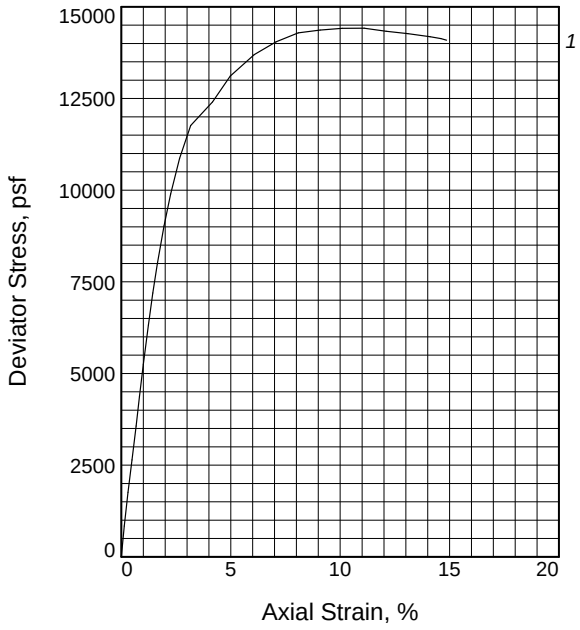
**Project:** Mobile River Bridge

**Source of Sample:** Lab #8047 **Depth:** 33.0'-35.0' **Sample Number:** HLA-21 T-1

**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 18.6 |
| | Dry Density, pcf | 113.1 |
| | Saturation, % | 105.7 |
| | Void Ratio | 0.4685 |
| | Diameter, in. | 2.745 |
| | Height, in. | 5.417 |
| At Test | Water Content, % | 17.8 |
| | Dry Density, pcf | 113.1 |
| | Saturation, % | 101.0 |
| | Void Ratio | 0.4685 |
| | Diameter, in. | 2.745 |
| | Height, in. | 5.417 |
| Strain at peak, % | | 10.1 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 6382.1 |
| Fail. Stress, psf | | 14414.5 |
| Strain, % | | 10.1 |
| Ult. Stress, psf | | 14414.5 |
| Strain, % | | 10.1 |
| $\sigma_1$ Failure, psf | | 20796.6 |
| $\sigma_3$ Failure, psf | | 6382.1 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** LEAN CLAY with SAND(CL A-6(12))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Asymmetrical Shear Plane

**Figure** _____

**Client:** ALDOT

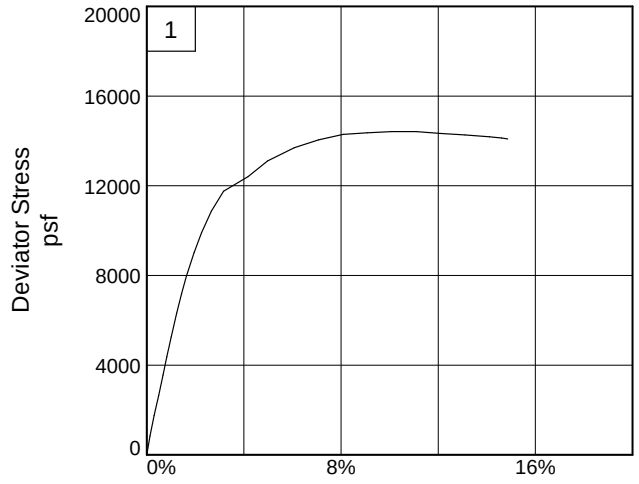
**Project:** Mobile River Bridge

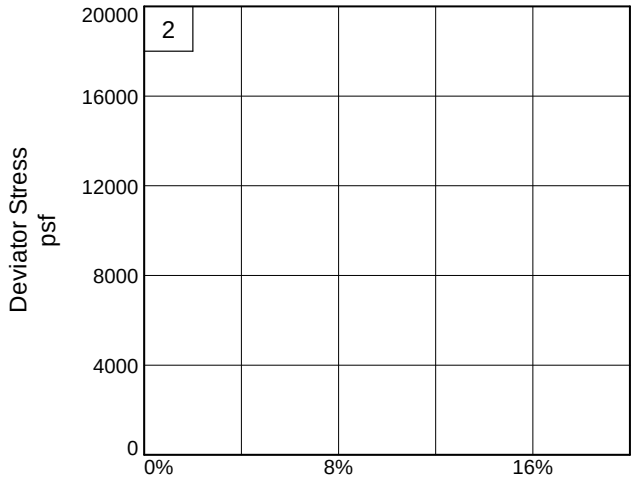
**Source of Sample:** Lab #8047 **Depth:** 133.0'-135.0'

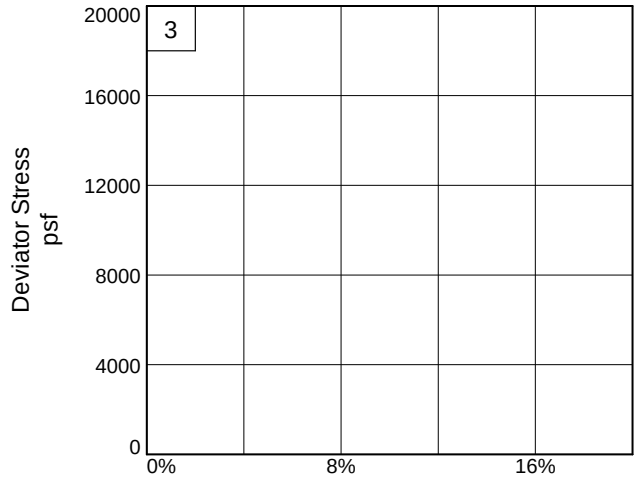
**Sample Number:** HLA-21 T-2

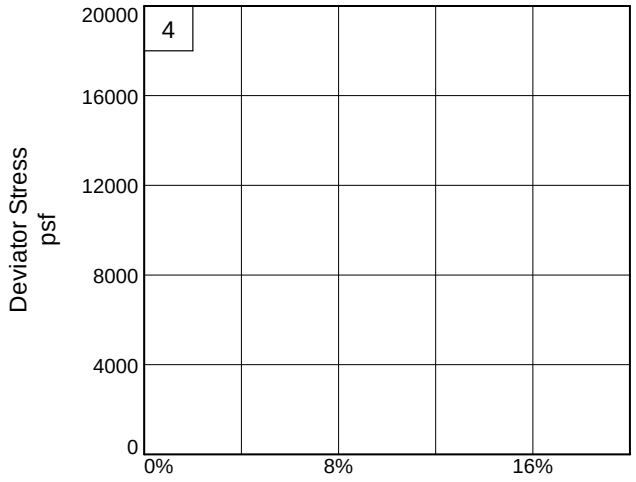
**Proj. No.:** 1511010228 **Date Sampled:**

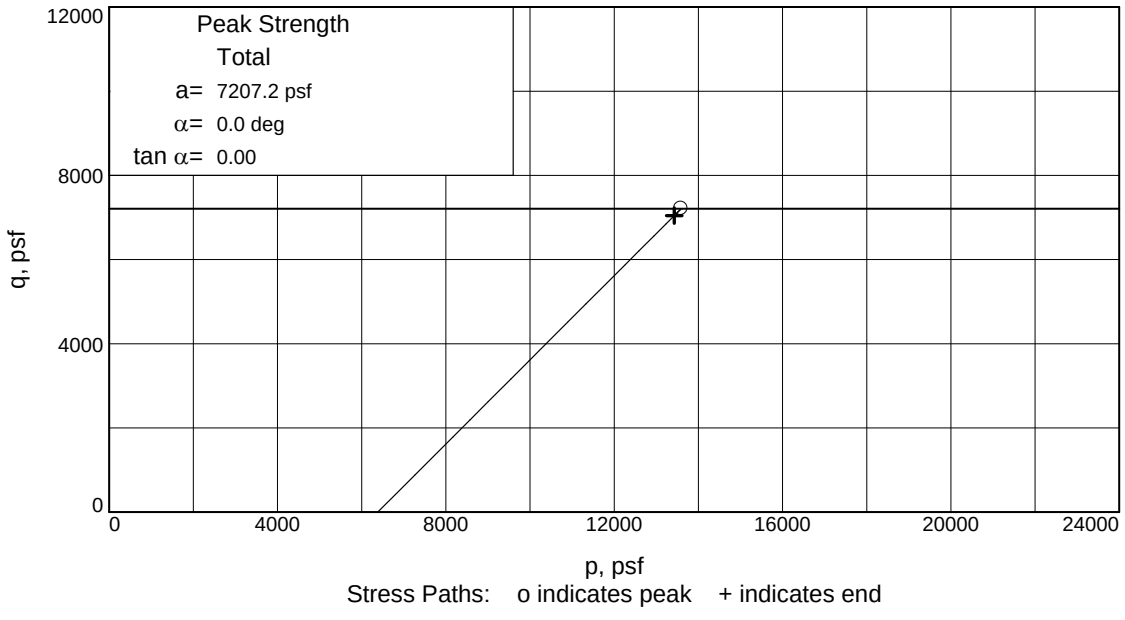
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Mobile, Alabama



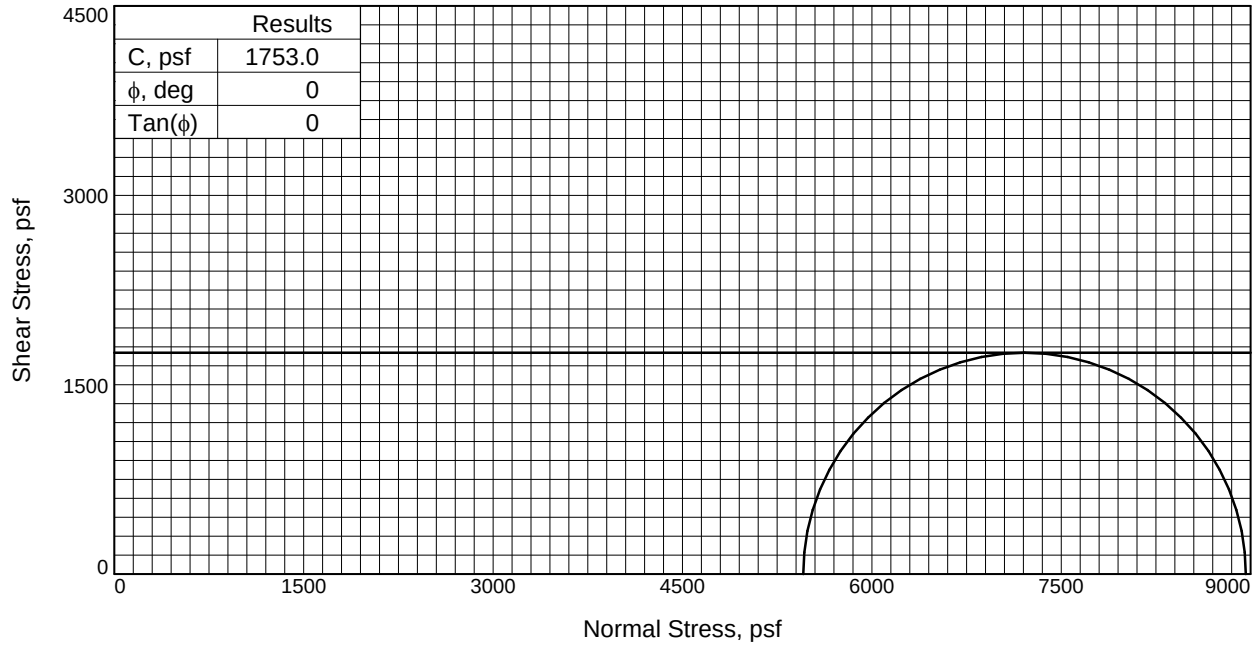



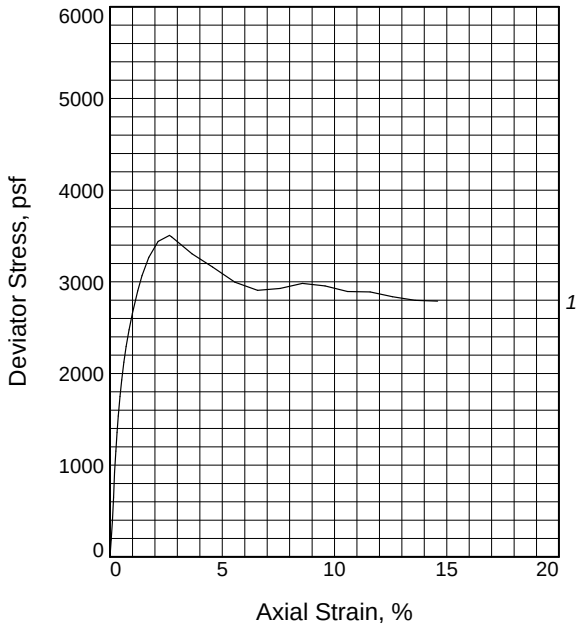




**Client:** ALDOT
**Project:** Mobile River Bridge
**Source of Sample:** Lab #8047 **Depth:** 133.0'-135.0' **Sample Number:** HLA-21 T-2
**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 40.8 |
| | Dry Density, pcf | 80.4 |
| | Saturation, % | 104.9 |
| | Void Ratio | 1.0033 |
| | Diameter, in. | 2.818 |
| | Height, in. | 5.679 |
| At Test | Water Content, % | 45.0 |
| | Dry Density, pcf | 80.4 |
| | Saturation, % | 115.6 |
| | Void Ratio | 1.0033 |
| | Diameter, in. | 2.818 |
| | Height, in. | 5.679 |
| Strain at peak, % | | 2.6 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 5456.2 |
| Fail. Stress, psf | | 3506.0 |
| Strain, % | | 2.6 |
| Ult. Stress, psf | | 3506.0 |
| Strain, % | | 2.6 |
| $\sigma_1$ Failure, psf | | 8962.1 |
| $\sigma_3$ Failure, psf | | 5456.2 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** FAT CLAY(CH A-7-6(68))

**Specific Gravity=** 2.58

**Remarks:** Compression Failure Mode: Asymmetrical Shear Plane

**Figure** _____

**Client:** ALDOT

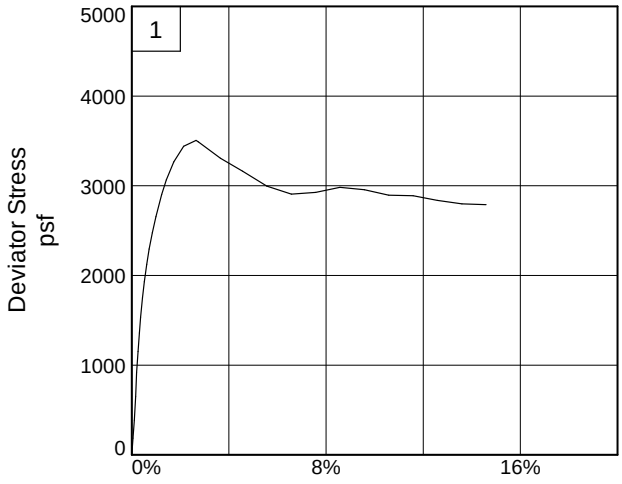
**Project:** Mobile River Bridge

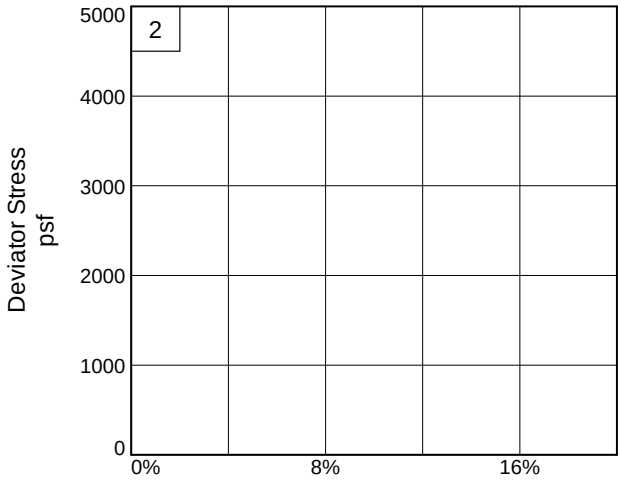
**Source of Sample:** WHLA **Depth:** 113.5'-115.5'

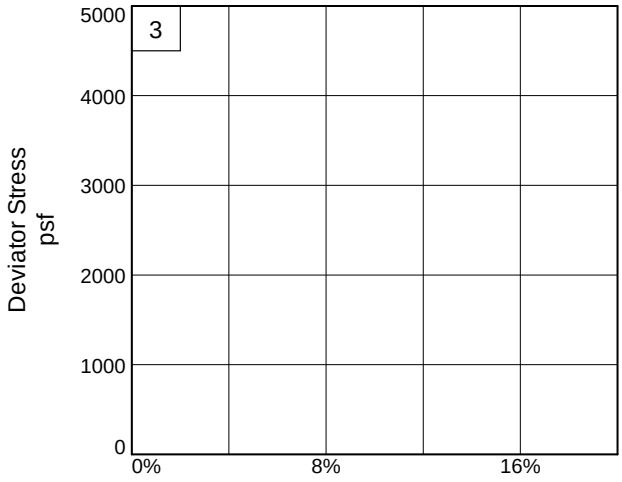
**Sample Number:** WHLA-1 T-4

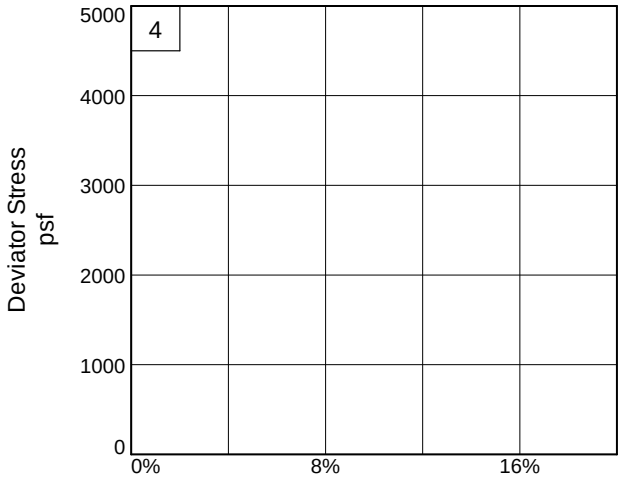
**Proj. No.:** 1511010228 **Date Sampled:**

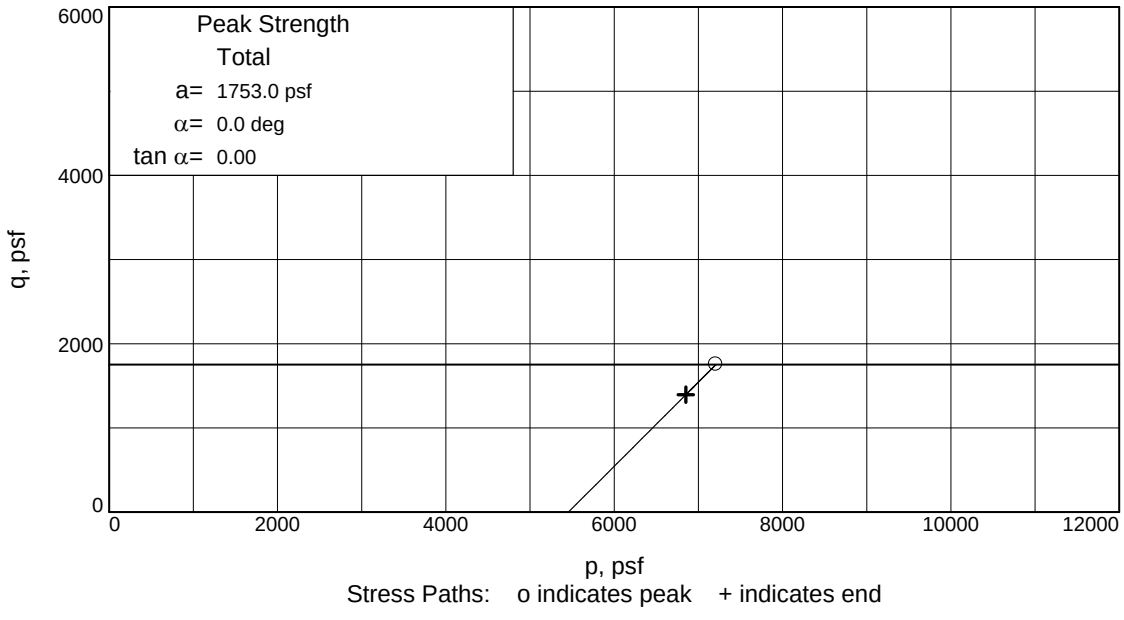
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Mobile, Alabama



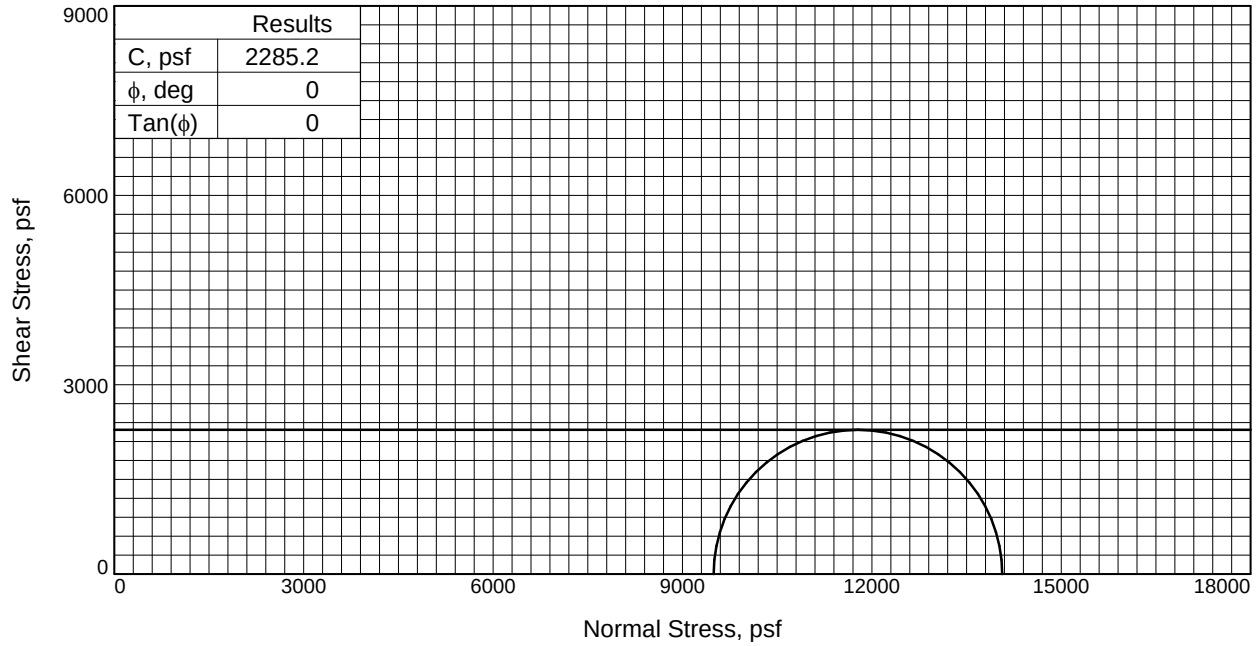



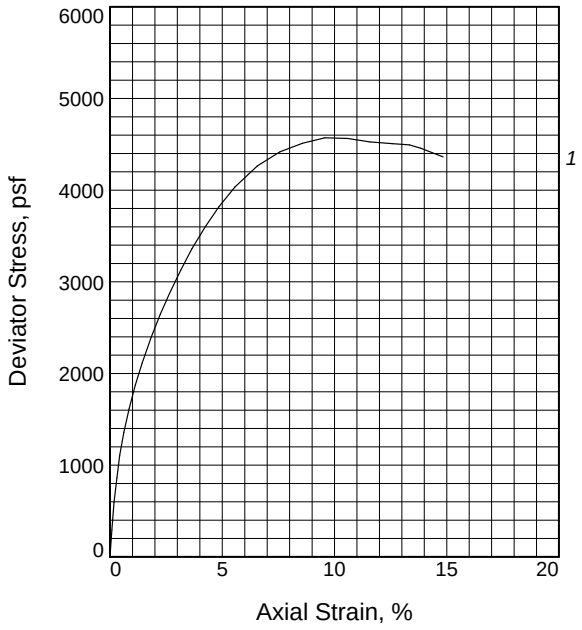




**Client:** ALDOT
**Project:** Mobile River Bridge
**Source of Sample:** WHLA **Depth:** 113.5'-115.5' **Sample Number:** WHLA-1 T-4
**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 25.7 |
| | Dry Density, pcf | 99.5 |
| | Saturation, % | 107.8 |
| | Void Ratio | 0.6122 |
| | Diameter, in. | 2.708 |
| | Height, in. | 5.689 |
| At Test | Water Content, % | 25.8 |
| | Dry Density, pcf | 99.5 |
| | Saturation, % | 108.2 |
| | Void Ratio | 0.6122 |
| | Diameter, in. | 2.708 |
| | Height, in. | 5.689 |
| Strain at peak, % | | 9.6 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 9493.9 |
| Fail. Stress, psf | | 4570.5 |
| Strain, % | | 9.6 |
| Ult. Stress, psf | | 4570.5 |
| Strain, % | | 9.6 |
| $\sigma_1$ Failure, psf | | 14064.4 |
| $\sigma_3$ Failure, psf | | 9493.9 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** LEAN CLAY with SAND(CL A-6(11))

**Specific Gravity=** 2.57

**Remarks:** Compression Failure Mode: Asymmetrical Shear Plane

**Figure** _____

**Client:** ALDOT

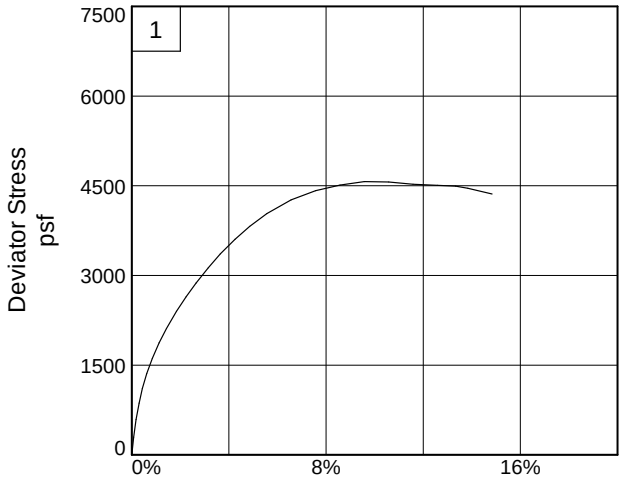
**Project:** Mobile River Bridge

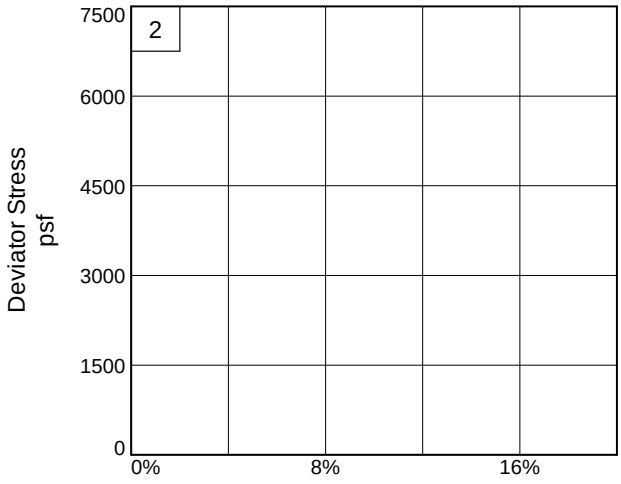
**Source of Sample:** WHLA **Depth:** 198.5'-200.5'

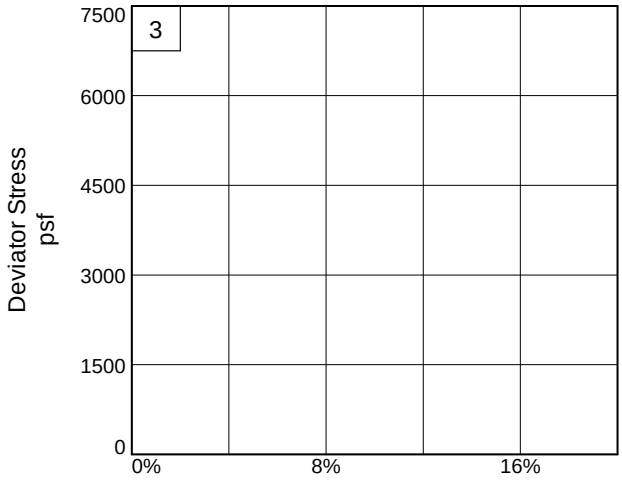
**Sample Number:** WHLA-1 T-6

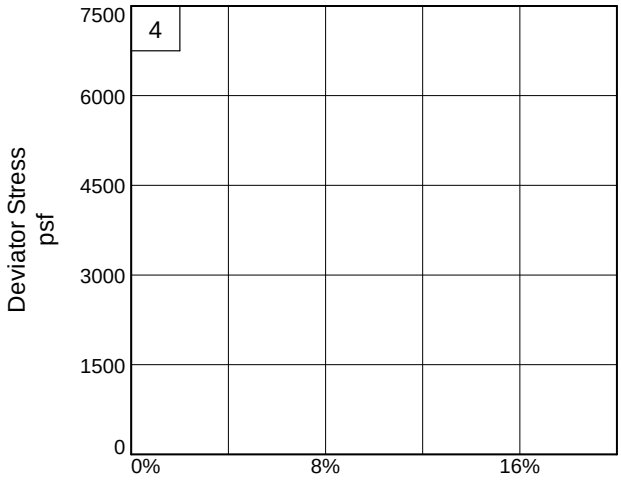
**Proj. No.:** 1511010228 **Date Sampled:**

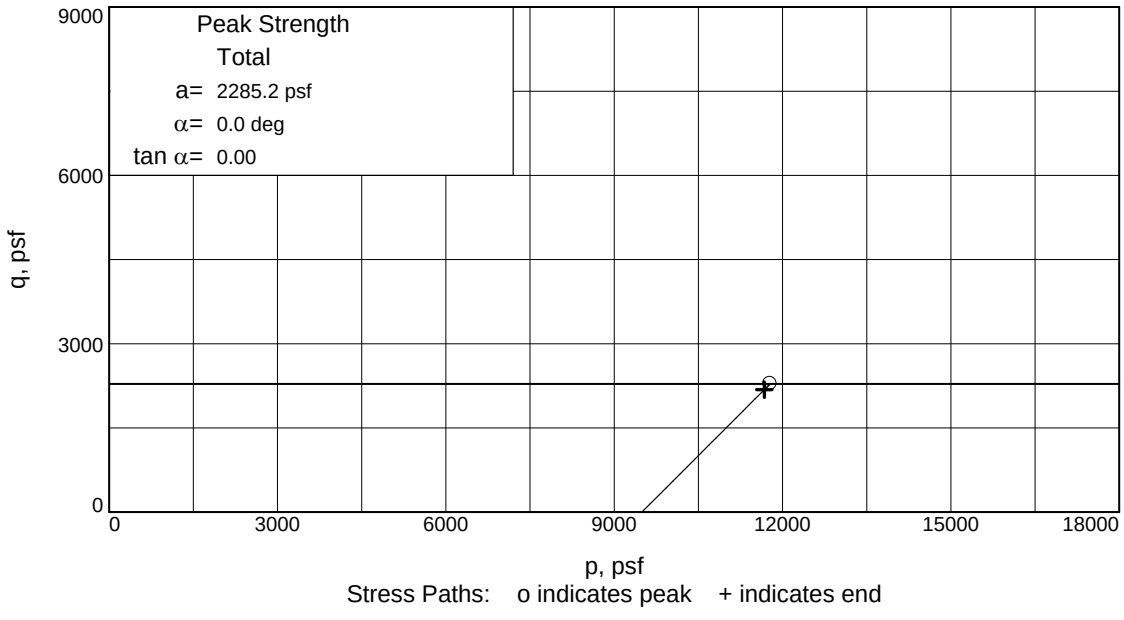
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Stress Paths: o indicates peak + indicates end

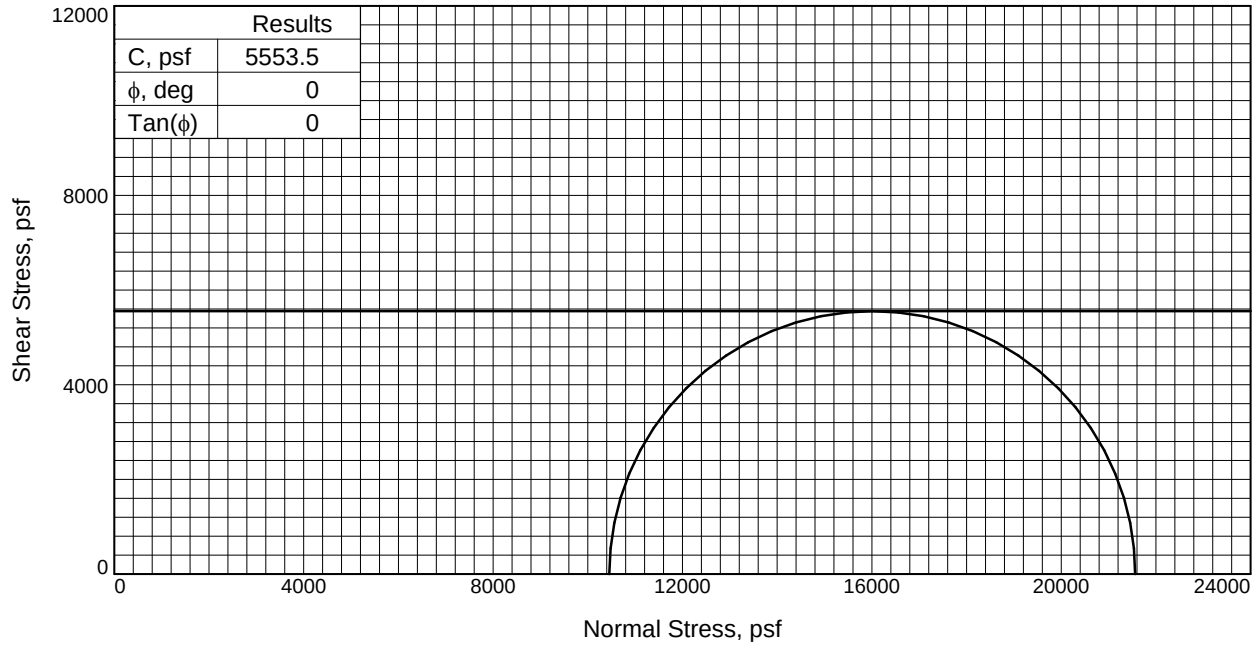
**Client:** ALDOT

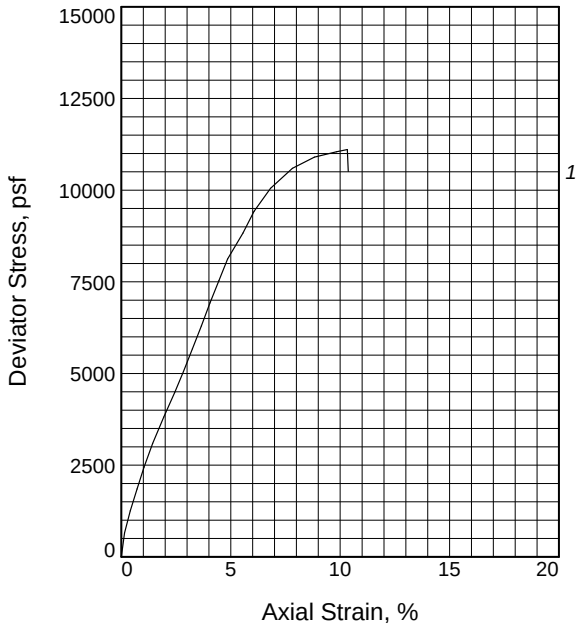
**Project:** Mobile River Bridge

**Source of Sample:** WHLA **Depth:** 198.5'-200.5' **Sample Number:** WHLA-1 T-6

**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 19.9 |
| | Dry Density, pcf | 109.6 |
| | Saturation, % | 110.4 |
| | Void Ratio | 0.4641 |
| | Diameter, in. | 2.720 |
| | Height, in. | 5.589 |
| At Test | Water Content, % | 19.4 |
| | Dry Density, pcf | 109.6 |
| | Saturation, % | 107.5 |
| | Void Ratio | 0.4641 |
| | Diameter, in. | 2.720 |
| | Height, in. | 5.589 |
| Strain at peak, % | | 10.3 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 10454.4 |
| Fail. Stress, psf | | 11107.0 |
| Strain, % | | 10.3 |
| Ult. Stress, psf | | 11107.0 |
| Strain, % | | 10.3 |
| $\sigma_1$ Failure, psf | | 21561.4 |
| $\sigma_3$ Failure, psf | | 10454.4 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** LEAN CLAY with SAND(CL A-6(15))

**Specific Gravity=** 2.57

**Remarks:** Compression Failure Mode: Internal Conical

**Figure** _____

**Client:** ALDOT

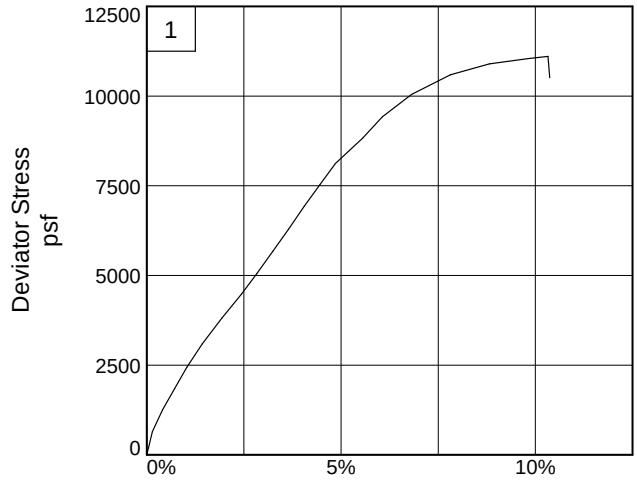
**Project:** Mobile River Bridge

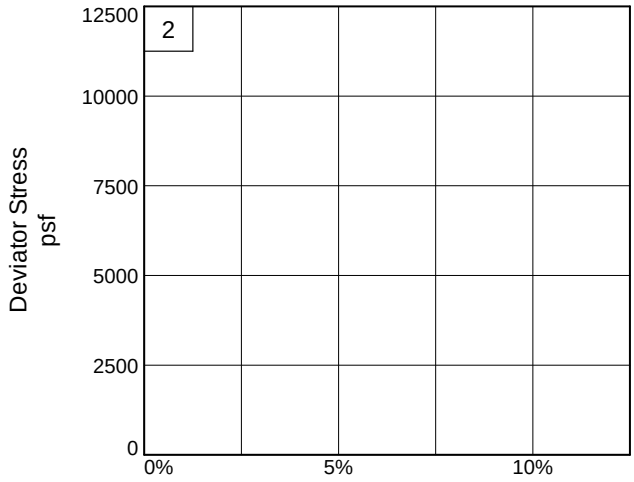
**Source of Sample:** WHLA **Depth:** 218.5'-220.5'

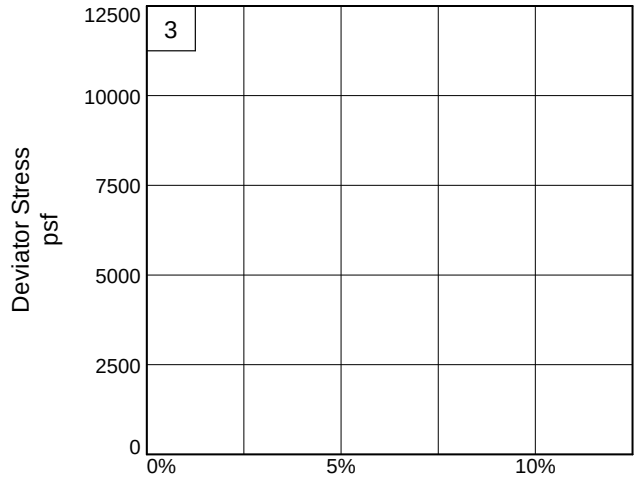
**Sample Number:** WHLA-1 T-7

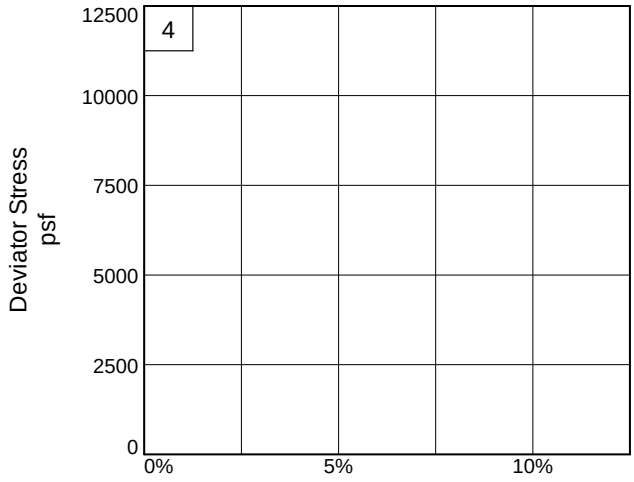
**Proj. No.:** 1511010228 **Date Sampled:**

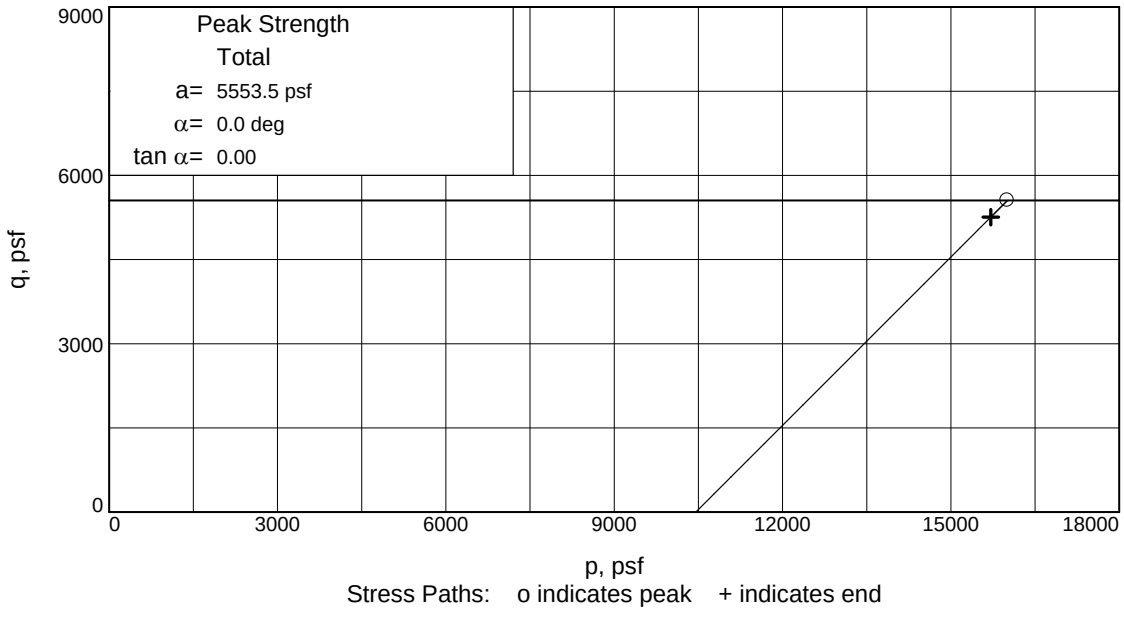
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Mobile, Alabama




Stress Paths: o indicates peak + indicates end

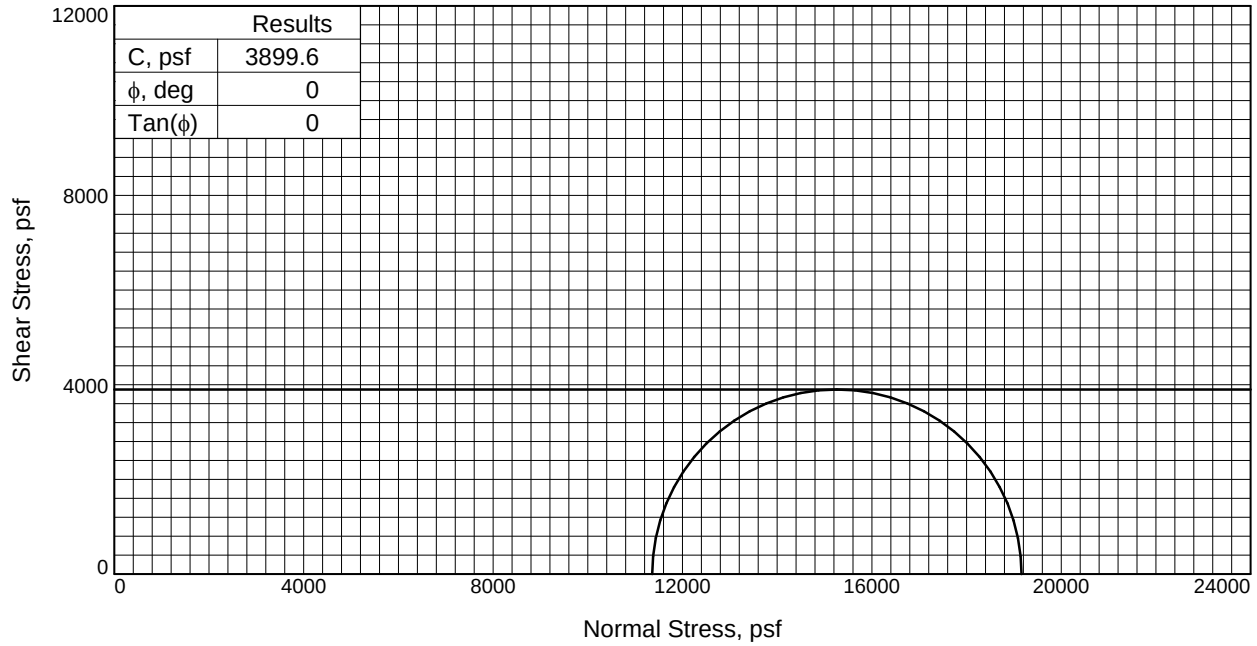
**Client:** ALDOT

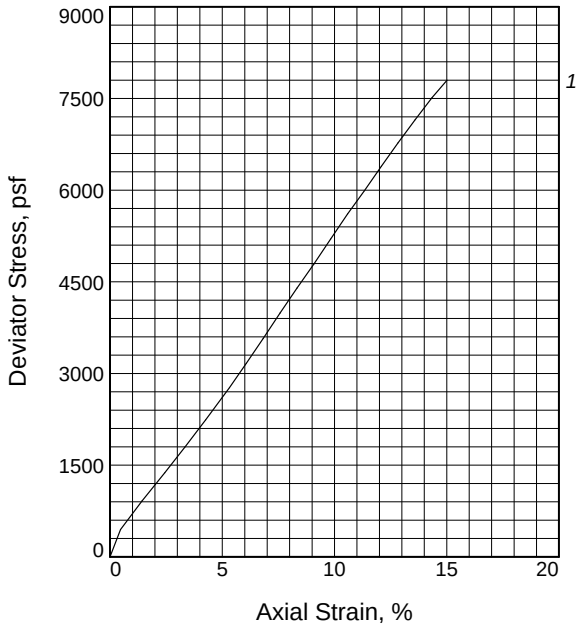
**Project:** Mobile River Bridge

**Source of Sample:** WHLA **Depth:** 218.5'-220.5' **Sample Number:** WHLA-1 T-7

**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 20.1 |
| | Dry Density, pcf | 111.7 |
| | Saturation, % | 116.1 |
| | Void Ratio | 0.4479 |
| | Diameter, in. | 2.834 |
| | Height, in. | 5.398 |
| At Test | Water Content, % | 19.6 |
| | Dry Density, pcf | 111.7 |
| | Saturation, % | 113.4 |
| | Void Ratio | 0.4479 |
| | Diameter, in. | 2.834 |
| | Height, in. | 5.398 |
| Strain at peak, % | | 15.0 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 11361.6 |
| Fail. Stress, psf | | 7799.2 |
| Strain, % | | 15.0 |
| Ult. Stress, psf | | 7799.2 |
| Strain, % | | 15.0 |
| $\sigma_1$ Failure, psf | | 19160.8 |
| $\sigma_3$ Failure, psf | | 11361.6 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** SILTY SAND(SM A-2-4(0))

**Specific Gravity=** 2.59

**Remarks:** Compression Failure Mode: Symmetrical Bulge

**Figure** _____

**Client:** ALDOT

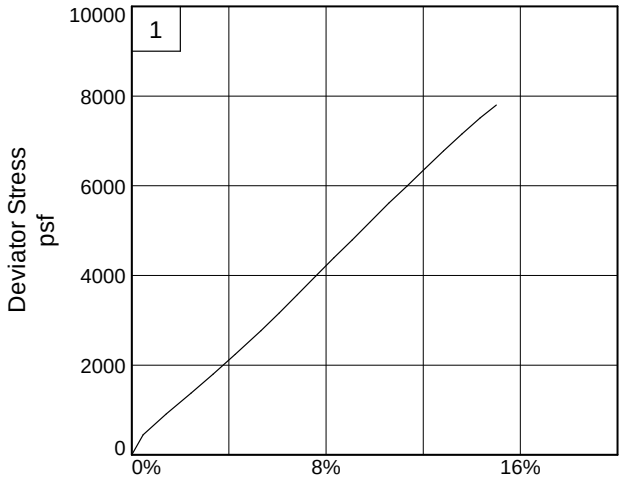
**Project:** Mobile River Bridge

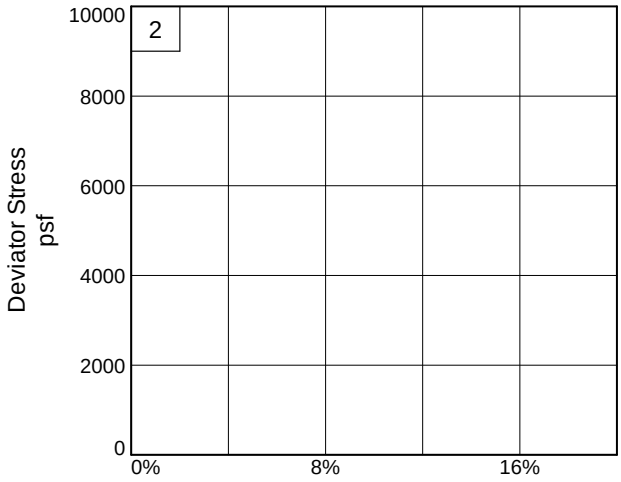
**Source of Sample:** WHLA **Depth:** 238.5'-240.5'

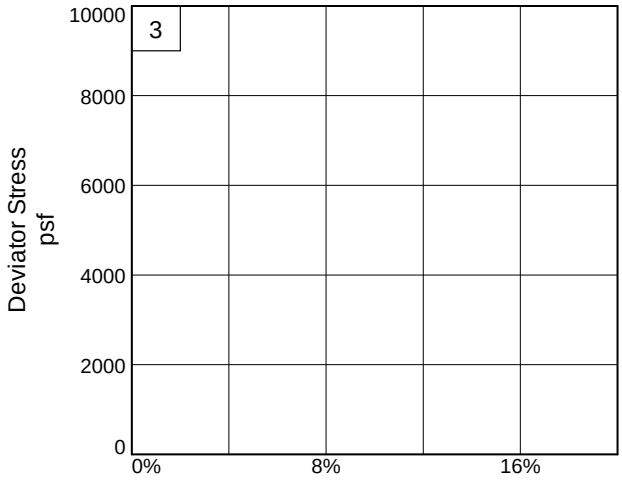
**Sample Number:** WHLA-1 T-8

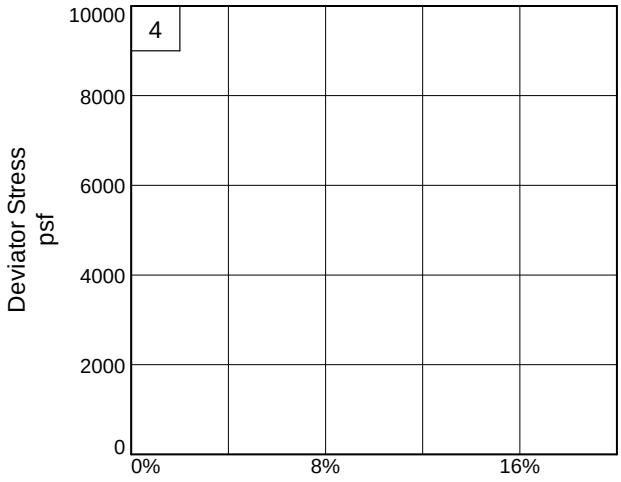
**Proj. No.:** 1511010228 **Date Sampled:**

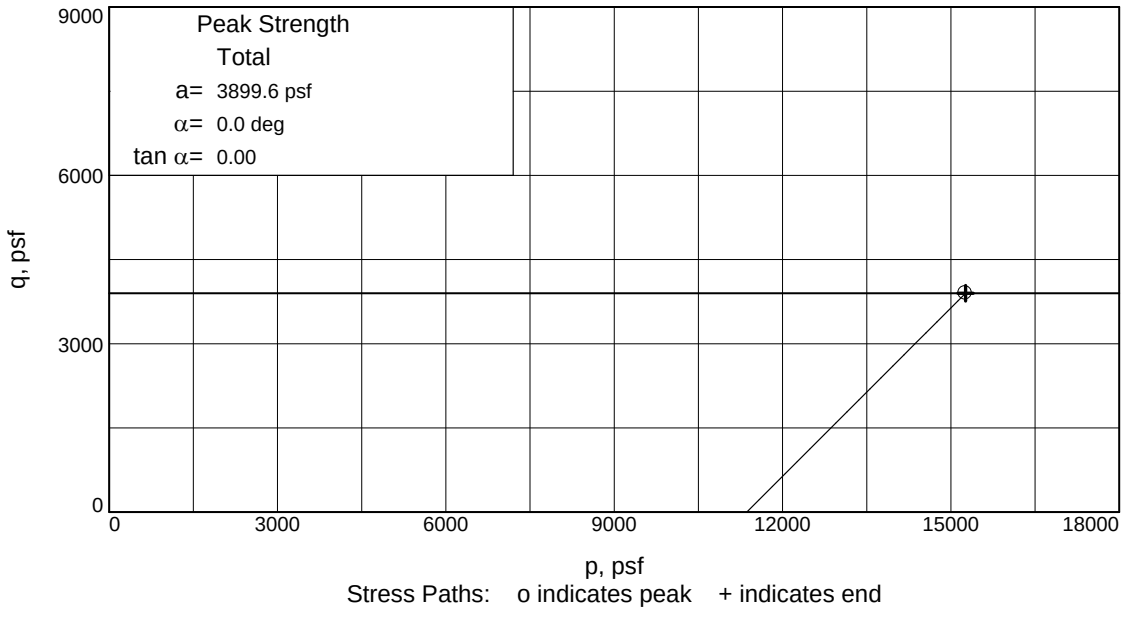
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Mobile, Alabama



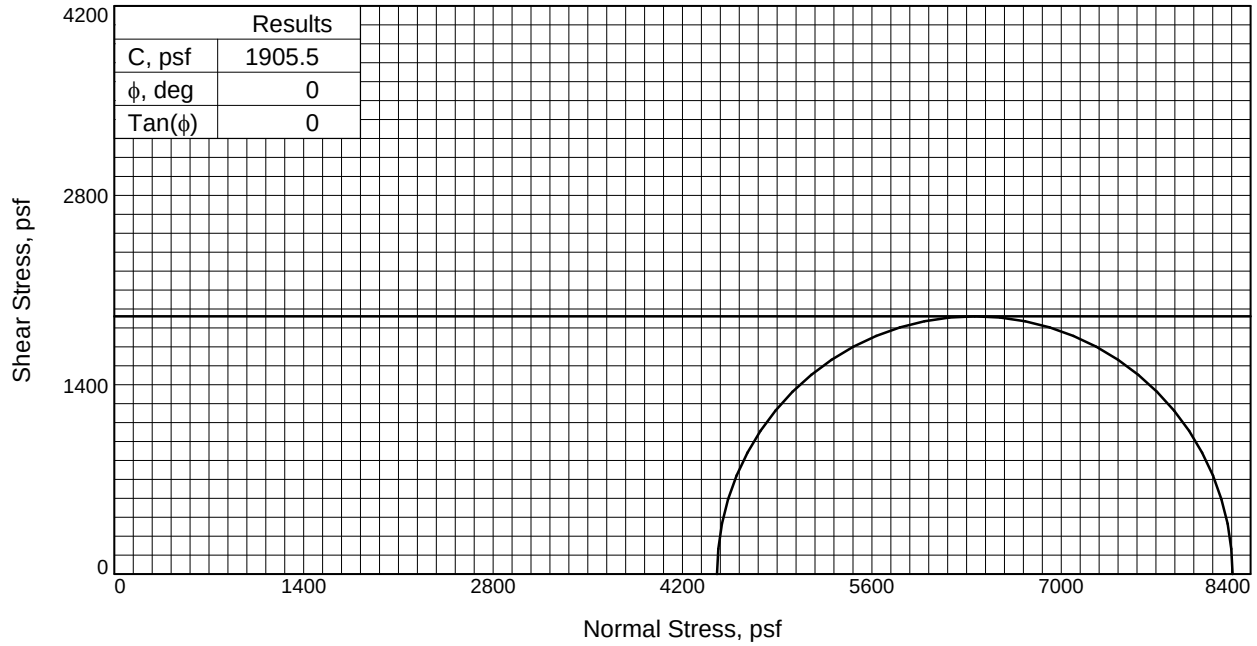



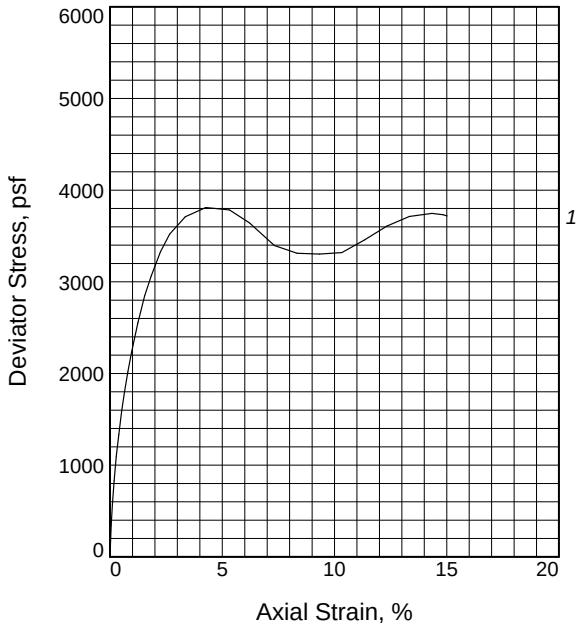




**Client:** ALDOT
**Project:** Mobile River Bridge
**Source of Sample:** WHLA **Depth:** 238.5'-240.5' **Sample Number:** WHLA-1 T-8
**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 41.0 |
| | Dry Density, pcf | 80.4 |
| | Saturation, % | 107.2 |
| | Void Ratio | 0.9722 |
| | Diameter, in. | 2.799 |
| | Height, in. | 5.669 |
| At Test | Water Content, % | 45.3 |
| | Dry Density, pcf | 80.4 |
| | Saturation, % | 118.5 |
| | Void Ratio | 0.9722 |
| | Diameter, in. | 2.799 |
| | Height, in. | 5.669 |
| Strain at peak, % | | 4.3 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 4455.4 |
| Fail. Stress, psf | | 3811.0 |
| Strain, % | | 4.3 |
| Ult. Stress, psf | | 3811.0 |
| Strain, % | | 4.3 |
| $\sigma_1$ Failure, psf | | 8266.3 |
| $\sigma_3$ Failure, psf | | 4455.4 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** FAT CLAY(CH A-7-6(65))

**Specific Gravity=** 2.54

**Remarks:** Compression Failure Mode: Internal Conical

**Figure** _____

**Client:** ALDOT

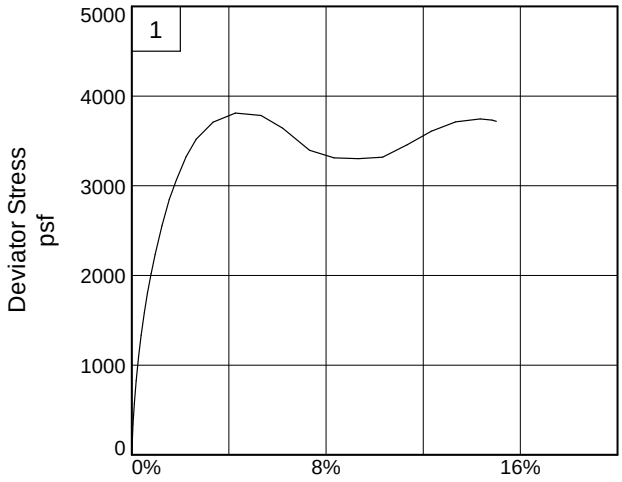
**Project:** Mobile River Bridge

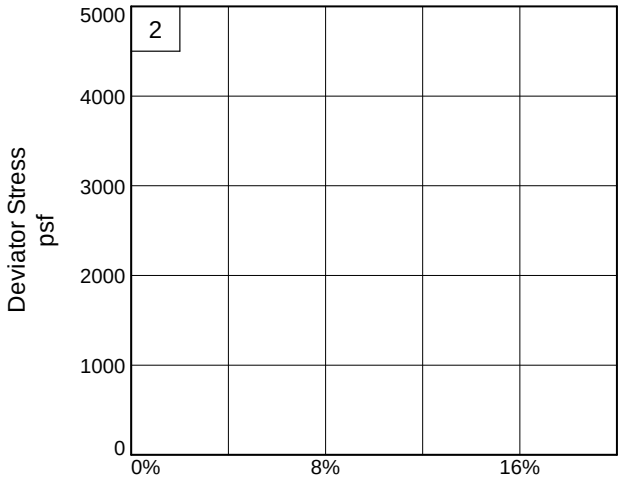
**Source of Sample:** WHLA **Depth:** 43.5'-45.5'

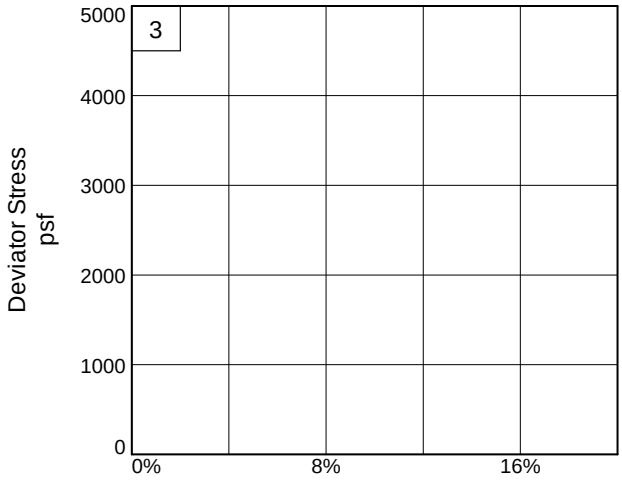
**Sample Number:** WHLA-3 T-2

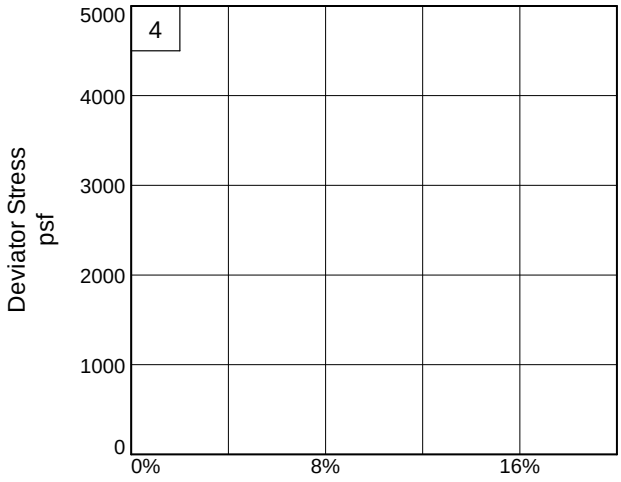
**Proj. No.:** 1511010228 **Date Sampled:**

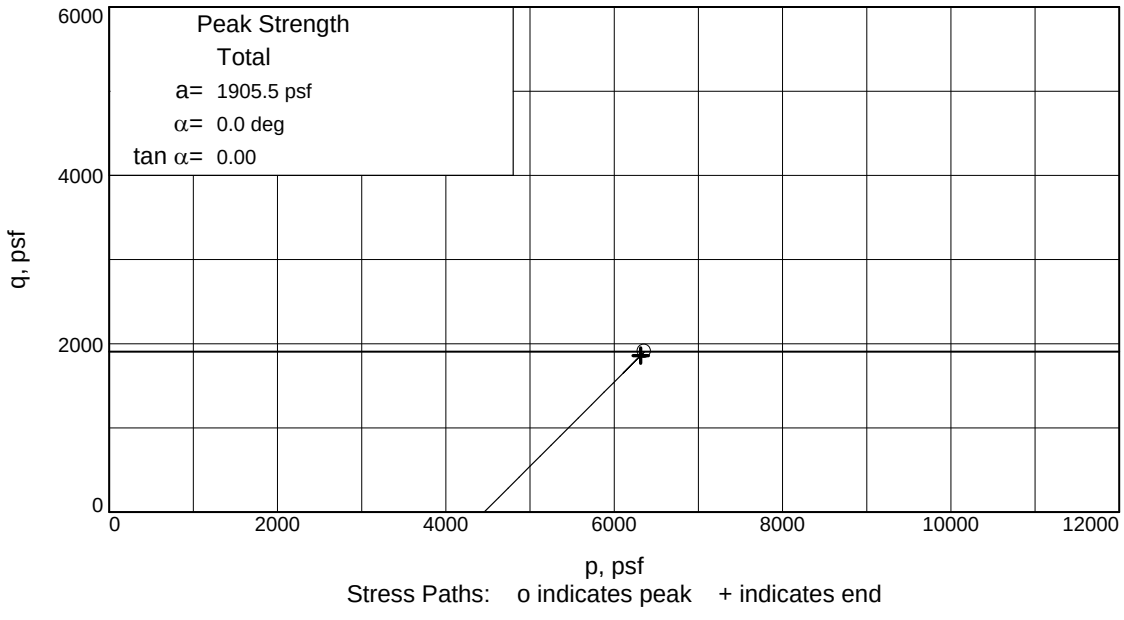
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Thompson Engineering
Mobile, Alabama



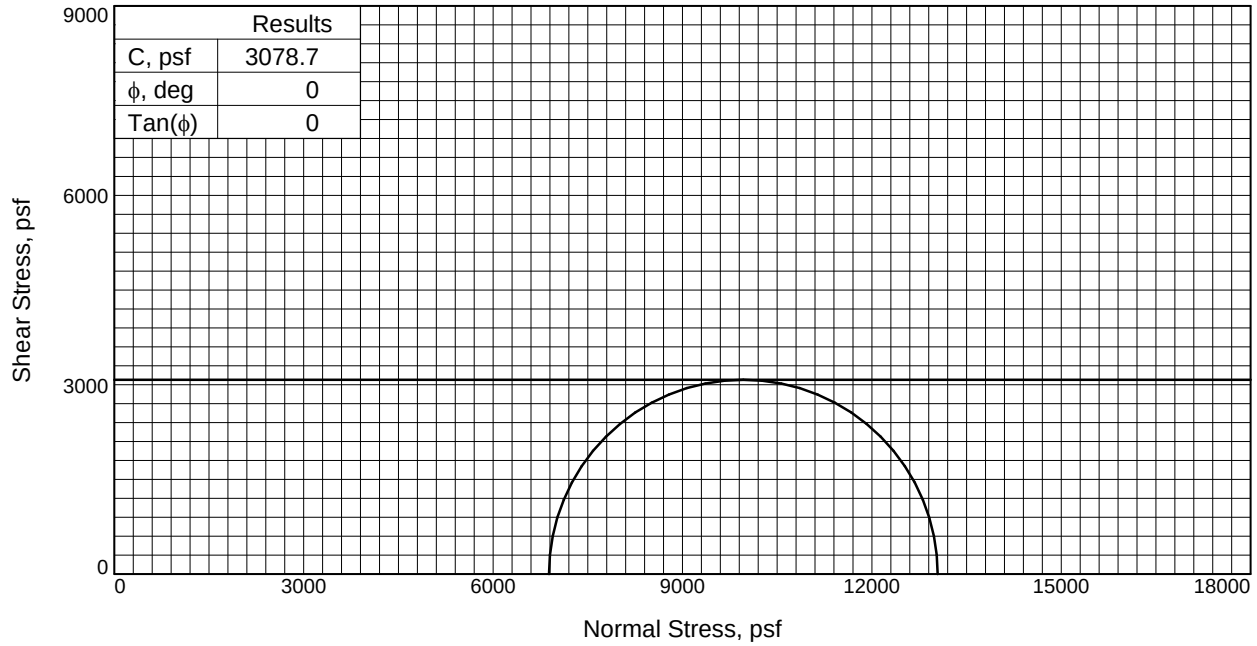

**Client:** ALDOT

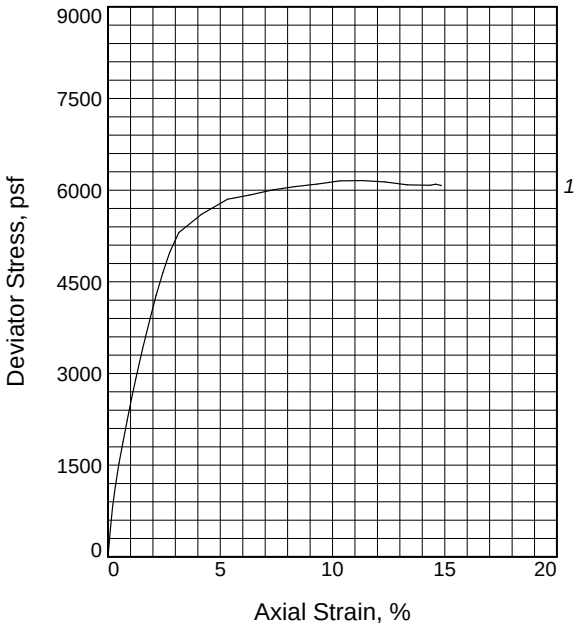
**Project:** Mobile River Bridge

**Source of Sample:** WHLA **Depth:** 43.5'-45.5' **Sample Number:** WHLA-3 T-2

**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 33.5 |
| | Dry Density, pcf | 92.6 |
| | Saturation, % | 113.1 |
| | Void Ratio | 0.7859 |
| | Diameter, in. | 2.855 |
| | Height, in. | 5.498 |
| At Test | Water Content, % | 28.4 |
| | Dry Density, pcf | 92.6 |
| | Saturation, % | 95.6 |
| | Void Ratio | 0.7859 |
| | Diameter, in. | 2.855 |
| | Height, in. | 5.498 |
| Strain at peak, % | | 11.3 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 6884.6 |
| Fail. Stress, psf | | 6157.3 |
| Strain, % | | 11.3 |
| Ult. Stress, psf | | 6157.3 |
| Strain, % | | 11.3 |
| $\sigma_1$ Failure, psf | | 13042.0 |
| $\sigma_3$ Failure, psf | | 6884.6 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** LEAN CLAY(CL A-6(14))

**Specific Gravity=** 2.65

**Remarks:** Compression Failure Mode: Asymmetrical Shear Plane

**Figure** _____

**Client:** ALDOT

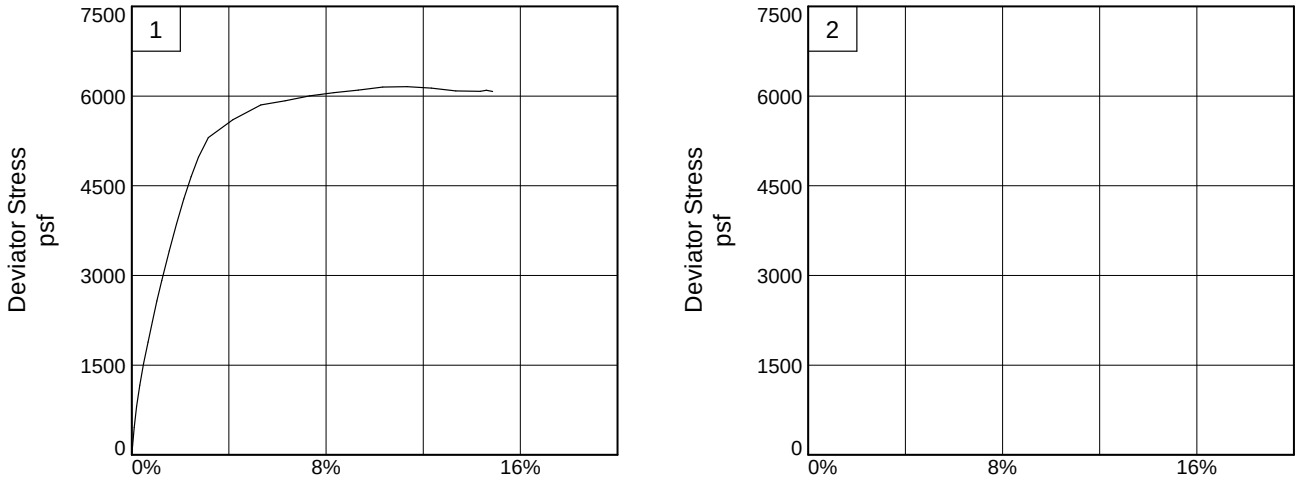
**Project:** Mobile River Bridge

**Source of Sample:** WHLA **Depth:** 143.5'-145.5'

**Sample Number:** WHLA-3 T-6

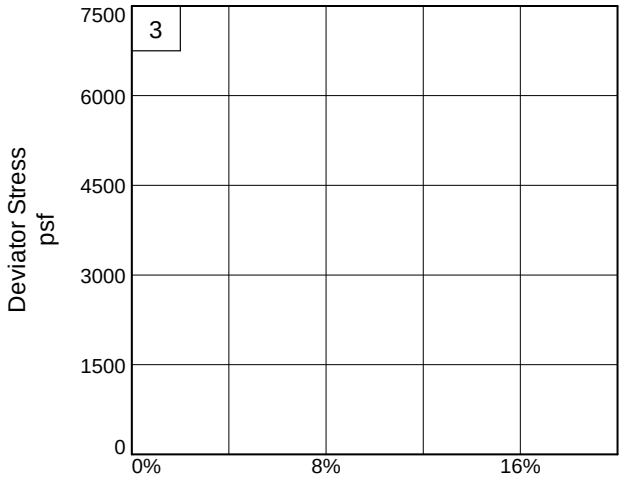
**Proj. No.:** 1511010228 **Date Sampled:**

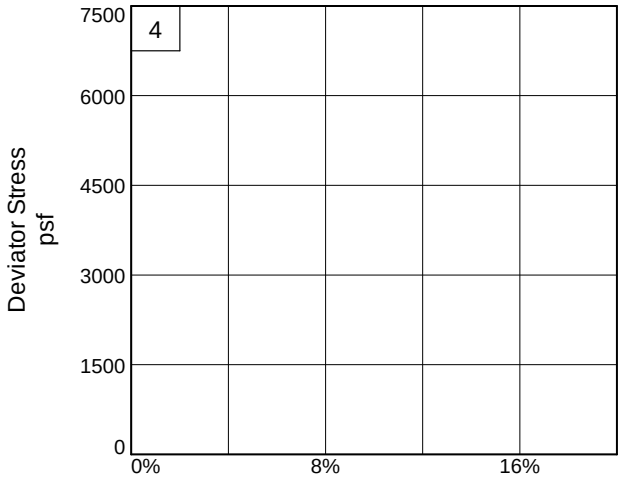
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Thompson Engineering
Mobile, Alabama

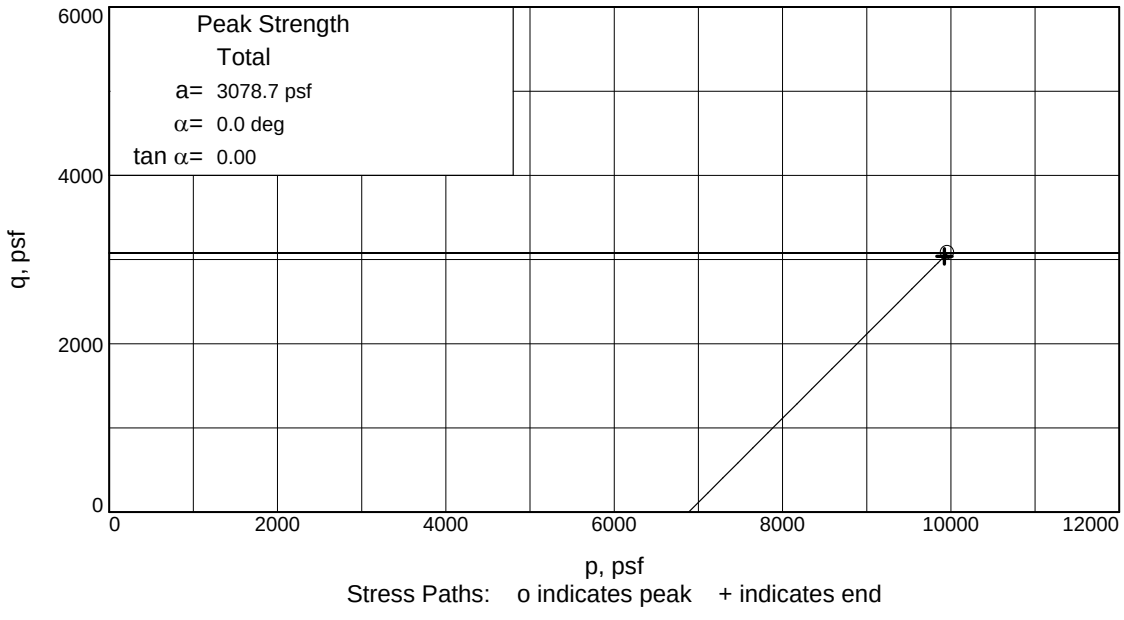






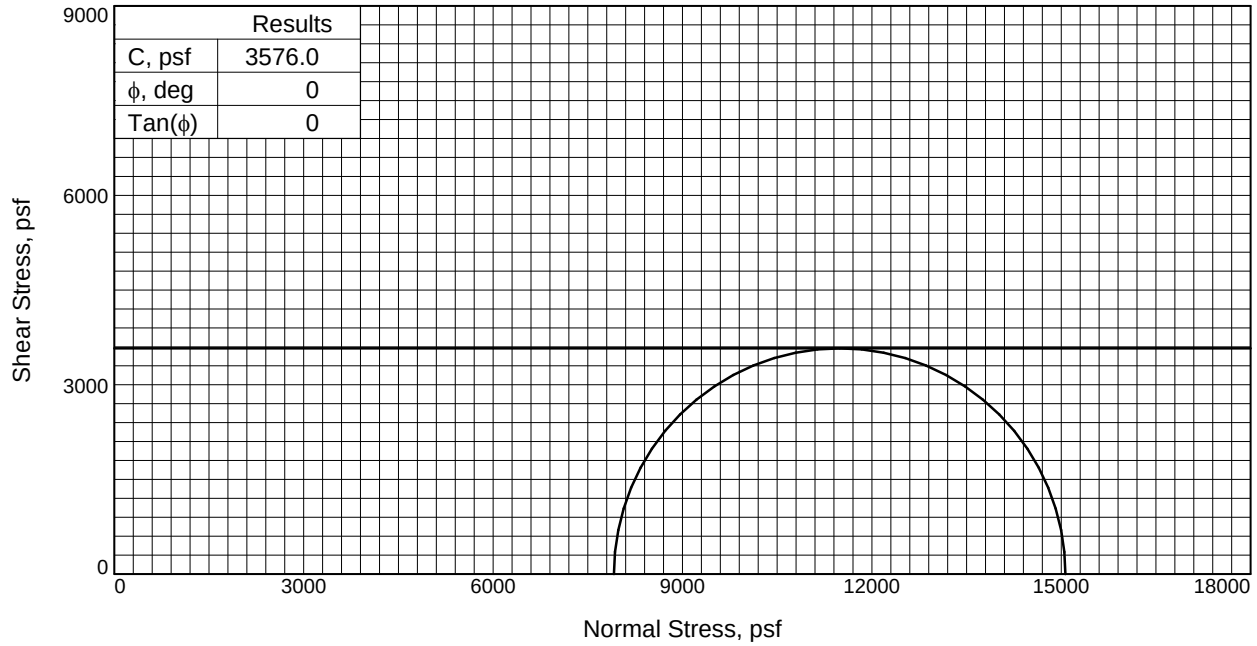


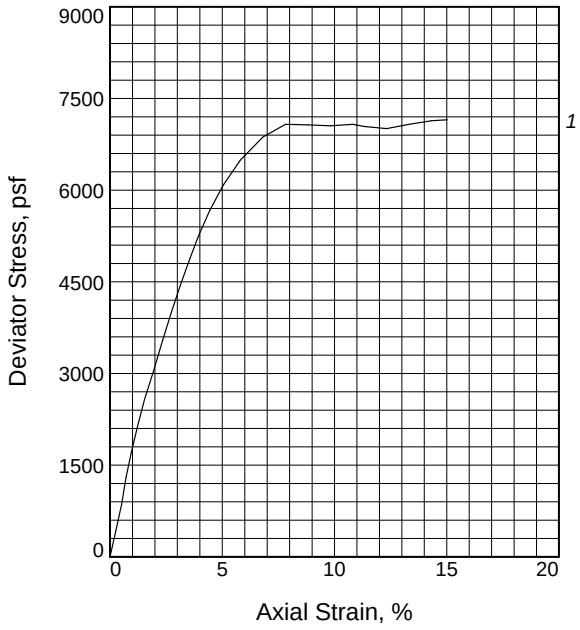




**Client:** ALDOT
**Project:** Mobile River Bridge
**Source of Sample:** WHLA **Depth:** 143.5'-145.5' **Sample Number:** WHLA-3 T-6
**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 30.3 |
| | Dry Density, pcf | 94.2 |
| | Saturation, % | 104.4 |
| | Void Ratio | 0.7770 |
| | Diameter, in. | 2.853 |
| | Height, in. | 5.384 |
| At Test | Water Content, % | 27.8 |
| | Dry Density, pcf | 94.2 |
| | Saturation, % | 95.7 |
| | Void Ratio | 0.7770 |
| | Diameter, in. | 2.853 |
| | Height, in. | 5.384 |
| Strain at peak, % | | 15.0 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 7914.2 |
| Fail. Stress, psf | | 7151.9 |
| Strain, % | | 15.0 |
| Ult. Stress, psf | | 7151.9 |
| Strain, % | | 15.0 |
| $\sigma_1$ Failure, psf | | 15066.1 |
| $\sigma_3$ Failure, psf | | 7914.2 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** LEAN CLAY with SAND(CL A-7-6(25))

**Specific Gravity=** 2.68

**Remarks:** Compression Failure Mode: Asymmetrical Shear Plane

**Figure** _____

**Client:** ALDOT

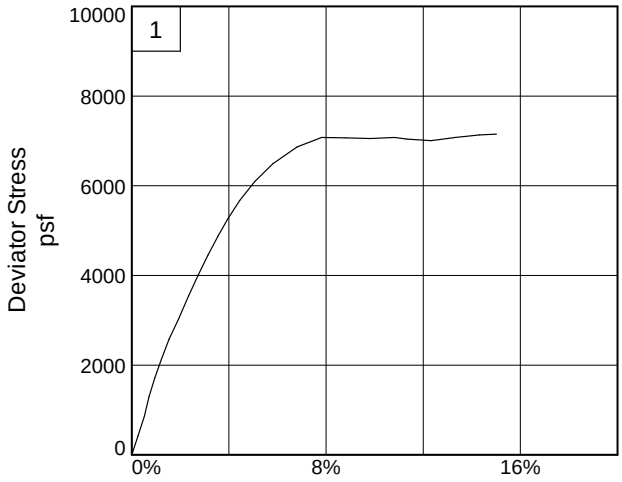
**Project:** Mobile River Bridge

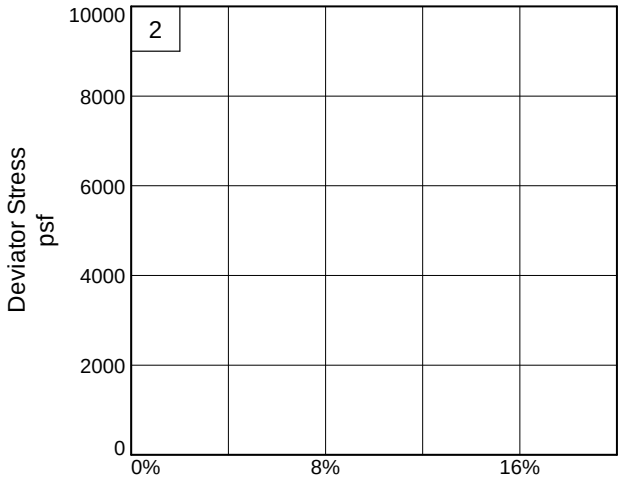
**Source of Sample:** WHLA **Depth:** 166.0'-168.0'

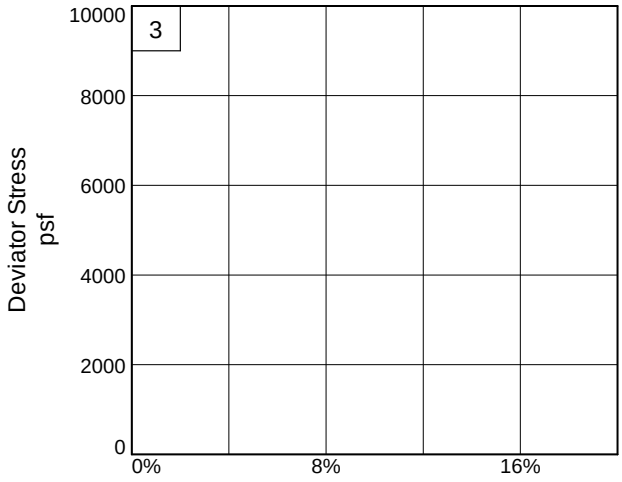
**Sample Number:** WHLA-3 T-8

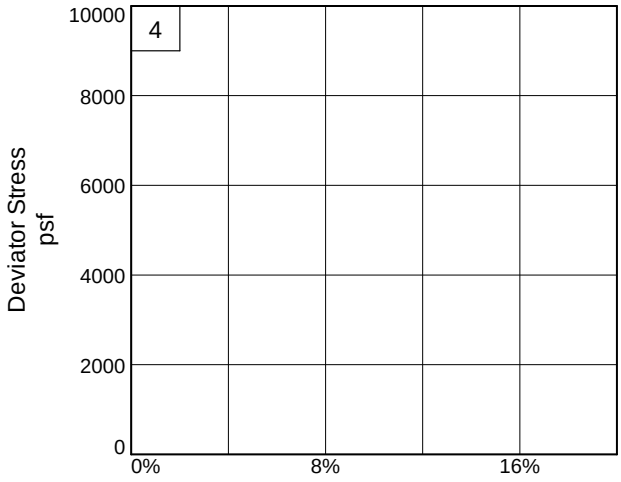
**Proj. No.:** 1511010228 **Date Sampled:**

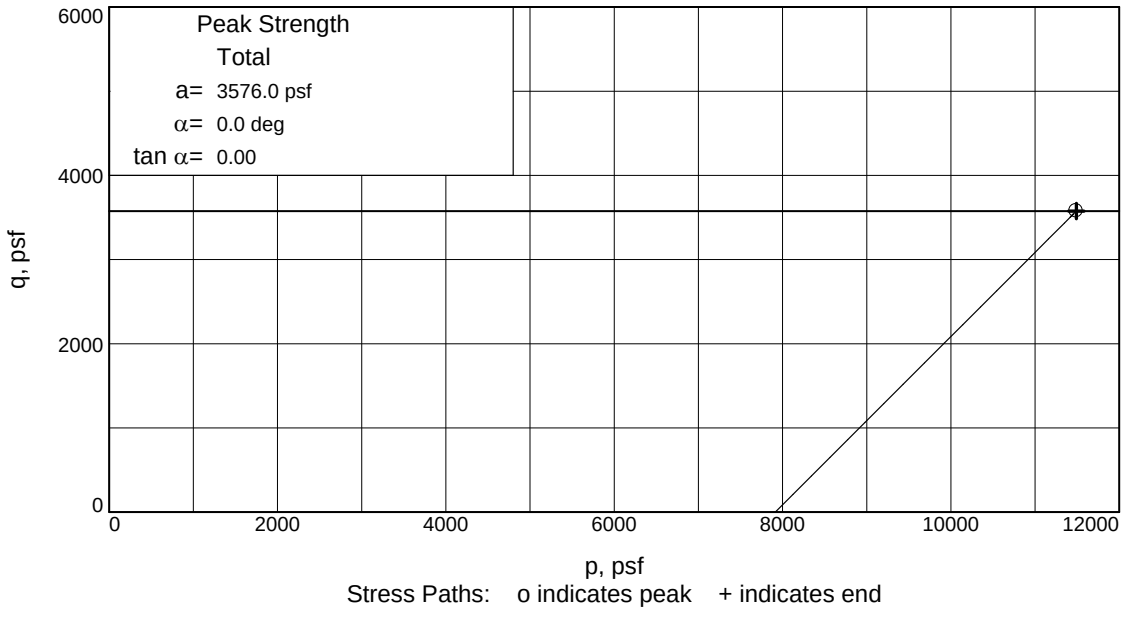
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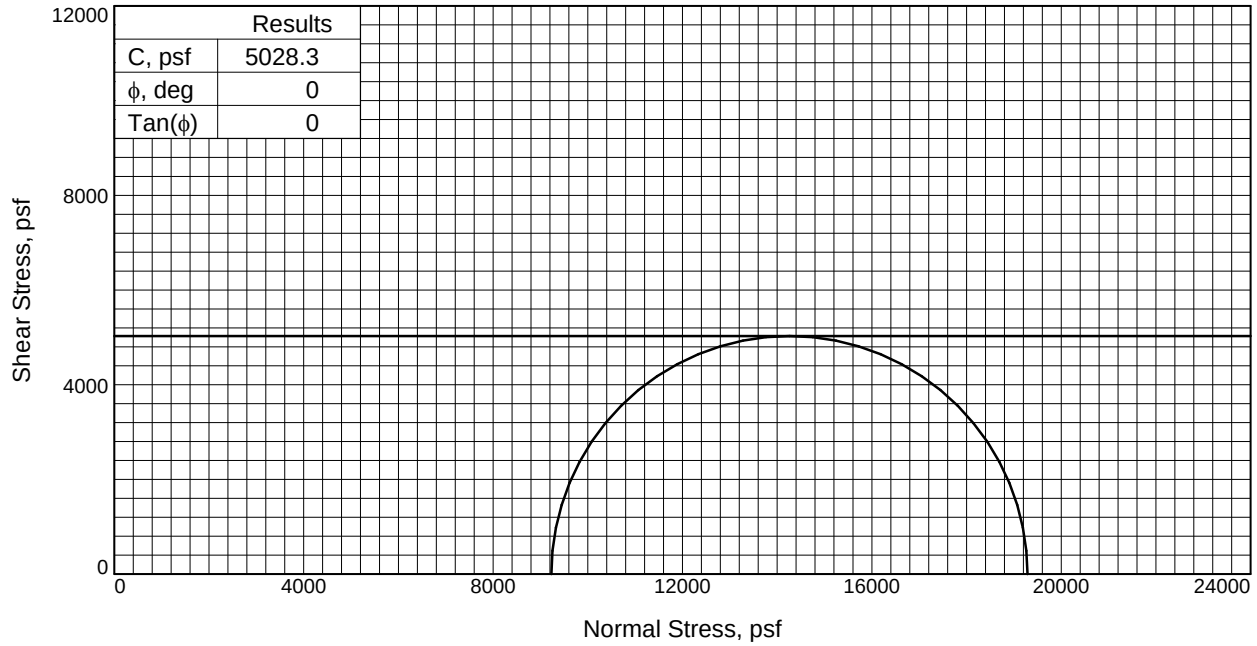



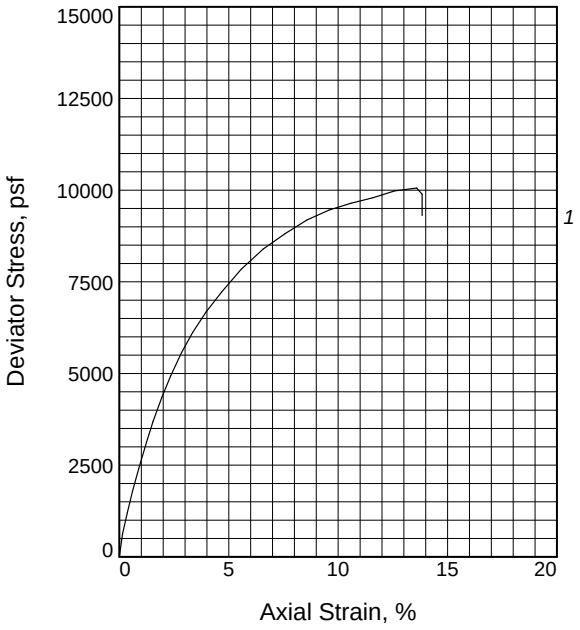




**Client:** ALDOT
**Project:** Mobile River Bridge
**Source of Sample:** WHLA **Depth:** 166.0'-168.0' **Sample Number:** WHLA-3 T-8
**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 19.2 |
| | Dry Density, pcf | 112.2 |
| | Saturation, % | 107.3 |
| | Void Ratio | 0.4742 |
| | Diameter, in. | 2.798 |
| | Height, in. | 5.585 |
| At Test | Water Content, % | 19.6 |
| | Dry Density, pcf | 112.2 |
| | Saturation, % | 109.4 |
| | Void Ratio | 0.4742 |
| | Diameter, in. | 2.798 |
| | Height, in. | 5.585 |
| Strain at peak, % | | 13.6 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 9230.4 |
| Fail. Stress, psf | | 10056.6 |
| Strain, % | | 13.6 |
| Ult. Stress, psf | | 10056.6 |
| Strain, % | | 13.6 |
| $\sigma_1$ Failure, psf | | 19287.0 |
| $\sigma_3$ Failure, psf | | 9230.4 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** SANDY LEAN CLAY(CL A-4(3))

**Specific Gravity=** 2.65

**Remarks:** Compression Failure Mode: Symmetrical Bulge

**Figure** _____

**Client:** ALDOT

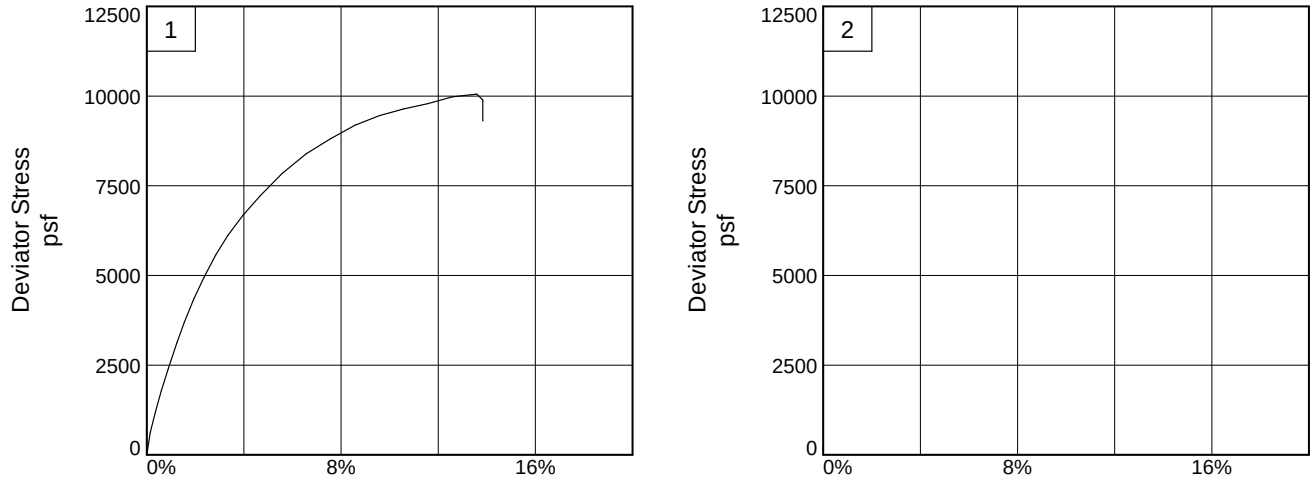
**Project:** Mobile River Bridge

**Source of Sample:** WHLA **Depth:** 193.0'-195.0'

**Sample Number:** WHLA-3 T-9

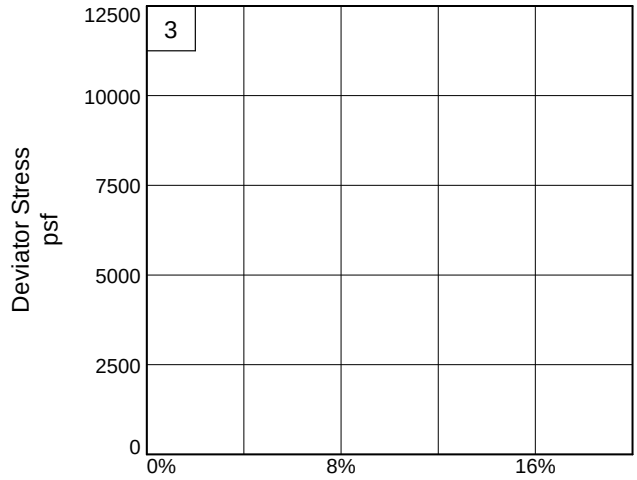
**Proj. No.:** 1511010228 **Date Sampled:**

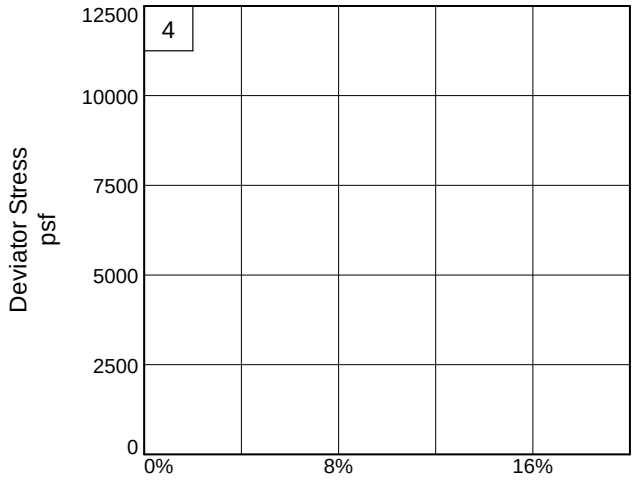
TRIAXIAL SHEAR TEST REPORT
Thompson Engineering
Mobile, Alabama

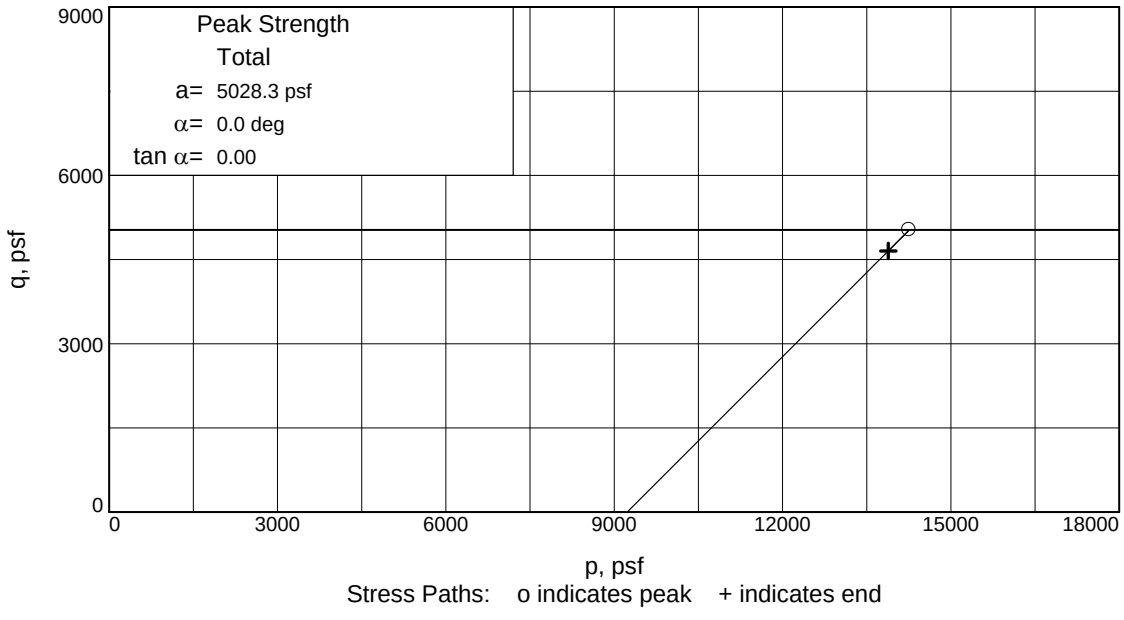






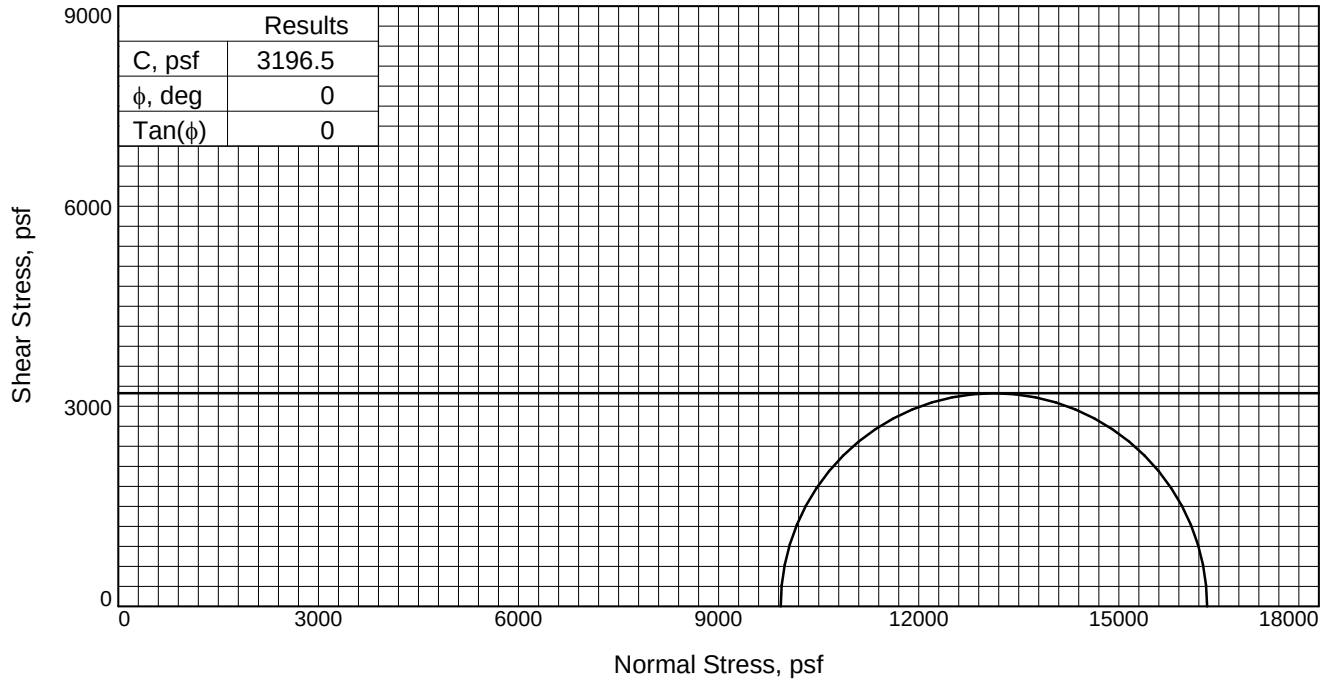


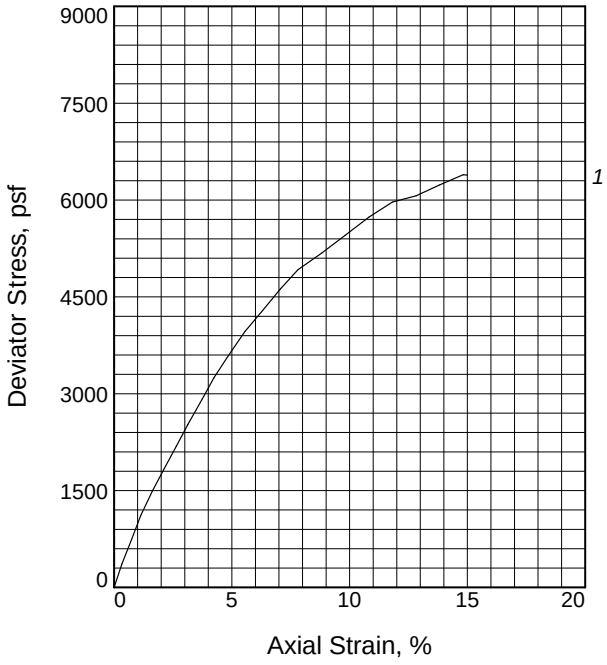




**Client:** ALDOT
**Project:** Mobile River Bridge
**Source of Sample:** WHLA **Depth:** 193.0'-195.0' **Sample Number:** WHLA-3 T-9
**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**




| | | |
|---|---|---|
| Specimen No. | | 1 |
| Initial | Water Content, % | 14.8 |
| | Dry Density, pcf | 121.2 |
| | Saturation, % | 106.5 |
| | Void Ratio | 0.3697 |
| | Diameter, in. | 2.812 |
| | Height, in. | 5.076 |
| At Test | Water Content, % | 13.8 |
| | Dry Density, pcf | 121.2 |
| | Saturation, % | 99.4 |
| | Void Ratio | 0.3697 |
| | Diameter, in. | 2.812 |
| | Height, in. | 5.076 |
| Strain at peak, % | | 14.8 |
| Back Pressure, psf | | 0.0 |
| Cell Pressure, psf | | 9930.2 |
| Fail. Stress, psf | | 6392.9 |
| Strain, % | | 14.8 |
| Ult. Stress, psf | | 6392.9 |
| Strain, % | | 14.8 |
| $\sigma_1$ Failure, psf | | 16323.1 |
| $\sigma_3$ Failure, psf | | 9930.2 |

**Type of Test:**
Unconsolidated Undrained

**Sample Type:** 3-in. Shelby Tube

**Description:** SANDY LEAN CLAY(CL A-6(8))

**Specific Gravity=** 2.66

**Remarks:** Compression Failure Mode: Symmetrical Bulge

**Figure** _____

**Client:** ALDOT

**Project:** Mobile River Bridge

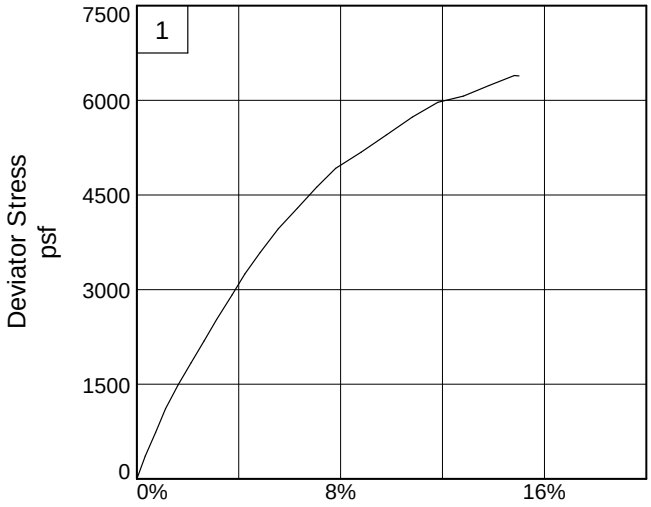
**Source of Sample:** WHLA **Depth:** 208.5'-210.5'

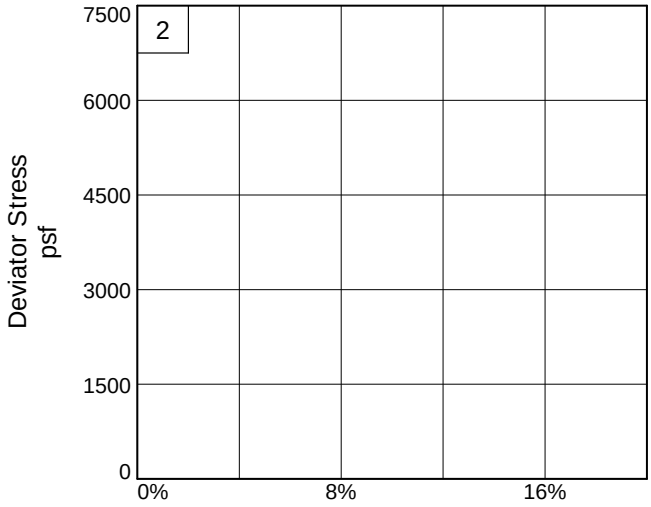
**Sample Number:** WHLA-3 T-11

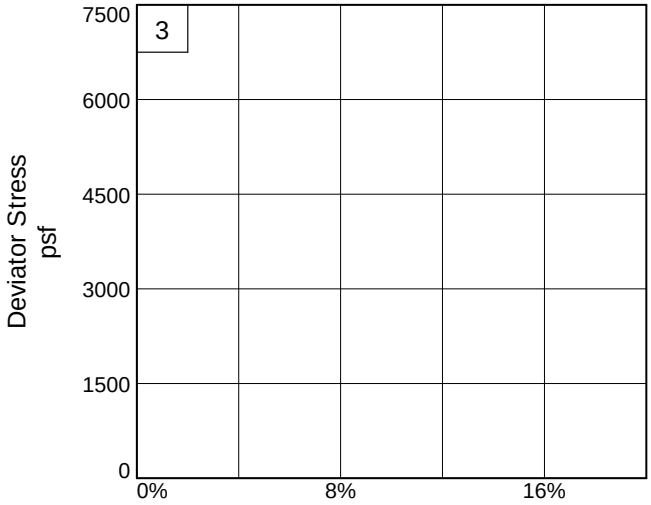
**Proj. No.:** 1511010228 **Date Sampled:**

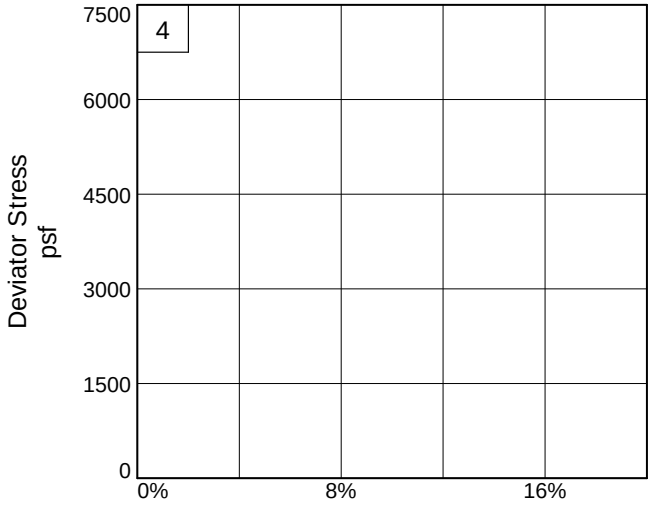
TRIAXIAL SHEAR TEST REPORT

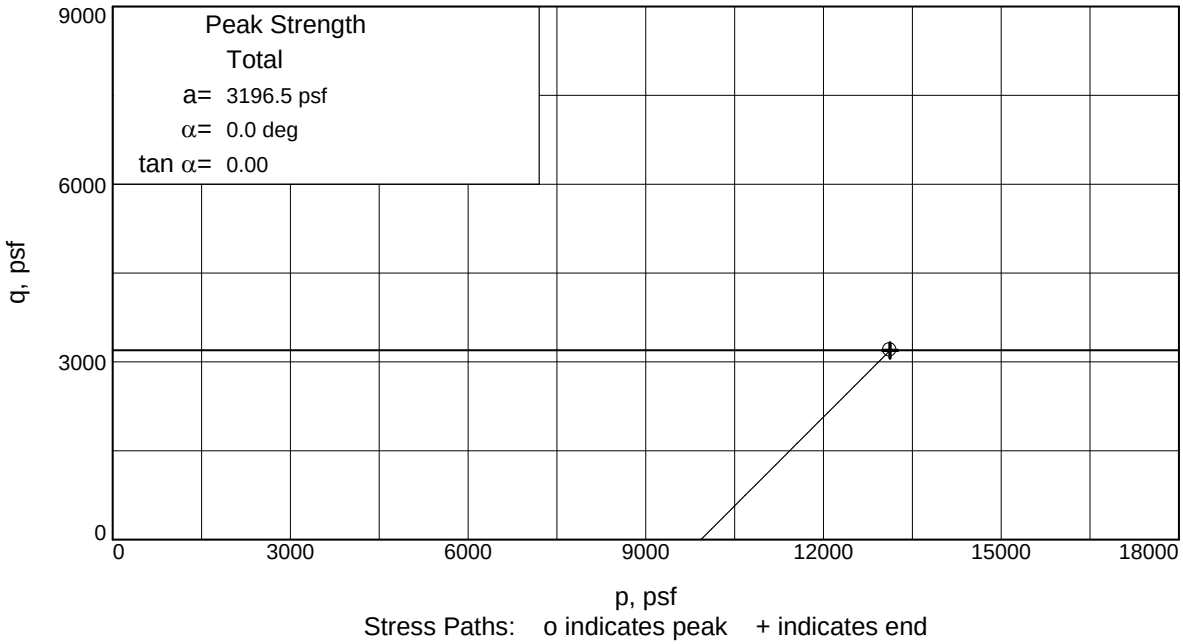
Thompson Engineering
Mobile, Alabama




Stress Paths: o indicates peak + indicates end

**Client:** ALDOT

**Project:** Mobile River Bridge

**Source of Sample:** WHLA **Depth:** 208.5'-210.5' **Sample Number:** WHLA-3 T-11

**Project No.:** 1511010228 **Figure** _____

**Thompson Engineering**

## Thompson Engineering

### Direct Shear Test (ASTM D3080)

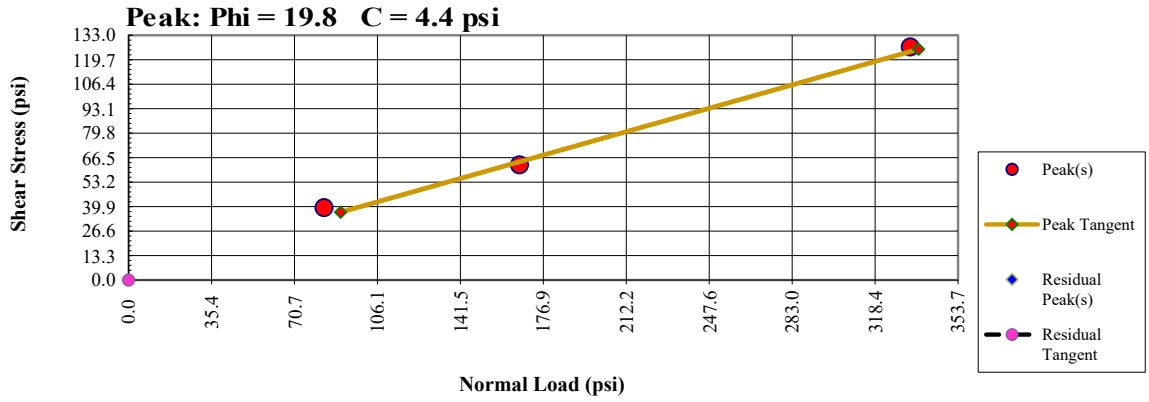
Date

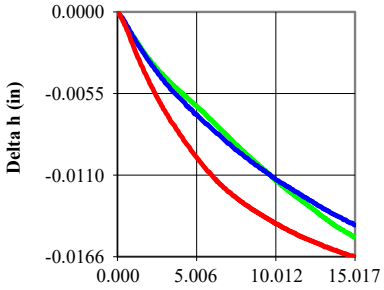
Checked By

Date

Date

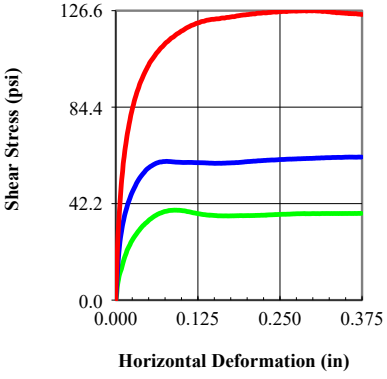
Tested By










| Initial | Specimen A | B | C | D |
|---|---|---|---|---|
| Moisture (%) | 18.01 | 17.52 | 17.20 | |
| Density (pcf) | 111.20 | 111.32 | 112.19 | |
| Void Ratio | 0.460 | 0.458 | 0.447 | |
| Saturation (%) | 100.00 | 99.44 | 100.00 | |
| Diameter (in) | 2.500 | 2.500 | 2.500 | |
| Height (in) | 1.000 | 1.000 | 1.000 | |
| | | | | |

| Final | A | B | C | D |
|---|---|---|---|---|
| Moisture (%) | 17.12 | 16.19 | 14.71 | |
| Density (pcf) | 116.09 | 115.10 | 115.16 | |
| Void Ratio | 0.398 | 0.410 | 0.409 | |
| Saturation (%) | 100.00 | 100.00 | 100.00 | |
| Diameter (in) | 2.500 | 2.500 | 2.500 | |
| Height (in) | 0.934 | 0.912 | 0.894 | |
| Normal Stress (psi) | 83.3 | 166.7 | 333.3 | |
| Peak Stress (psi) | 39.4 | 62.6 | 126.6 | |
| Residual Stress (psi) | | | | |
| Strain (%) | 15.006 | 14.844 | 15.017 | |
| Rate (in/min) | 0.00473 | 0.00703 | 0.00564 | |
| | | | | |

| Project Date | |
|---|---|
| Date | 10/11/17 |

| | |
|---|---|
| **Project:** | Mobile River Bridge Procurement Phase |
| **Location:** | Soils Lab |
| **Project Number:** | 8063 |
| **Boring Number** | HLA-8 |
| **Sample Number:** | T-3 |
| **Depth:** | 238.0-240.0 ft. |
| **Sample Type:** | Undisturbed |
| **Description:** | Olive Gray Clay |
| **Test Type:** | Direct Shear |
| **Remarks:** | |



Failure Photographs

**Thompson Engineering**

**Direct Shear Test (ASTM D3080)**

Date

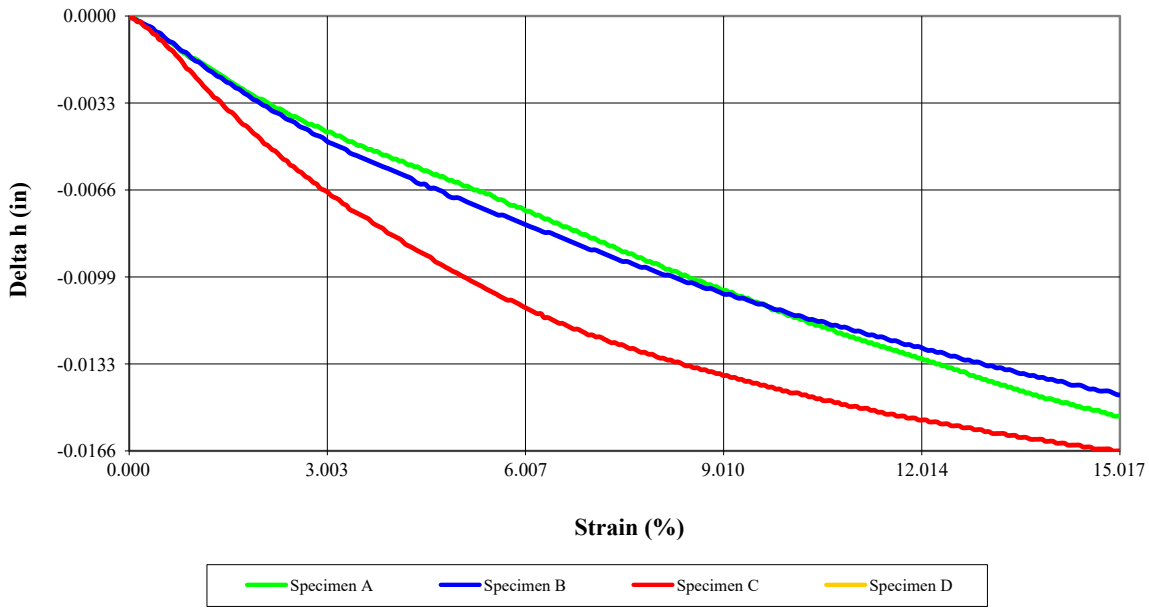
Checked By

Date

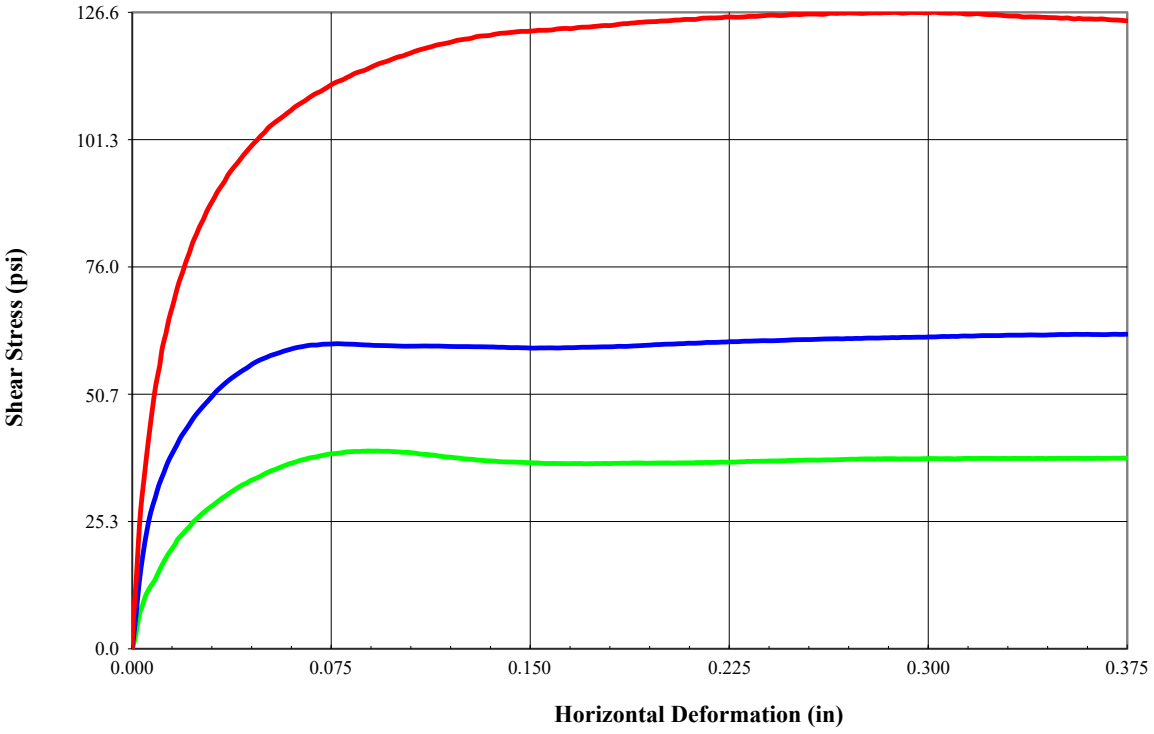
Date

Tested By

## Delta h




## Stress-Deformation




DS 17-1101-0145 HLA-8 T-3.HSD

**Thompson Engineering**

**Direct Shear Test**

Date

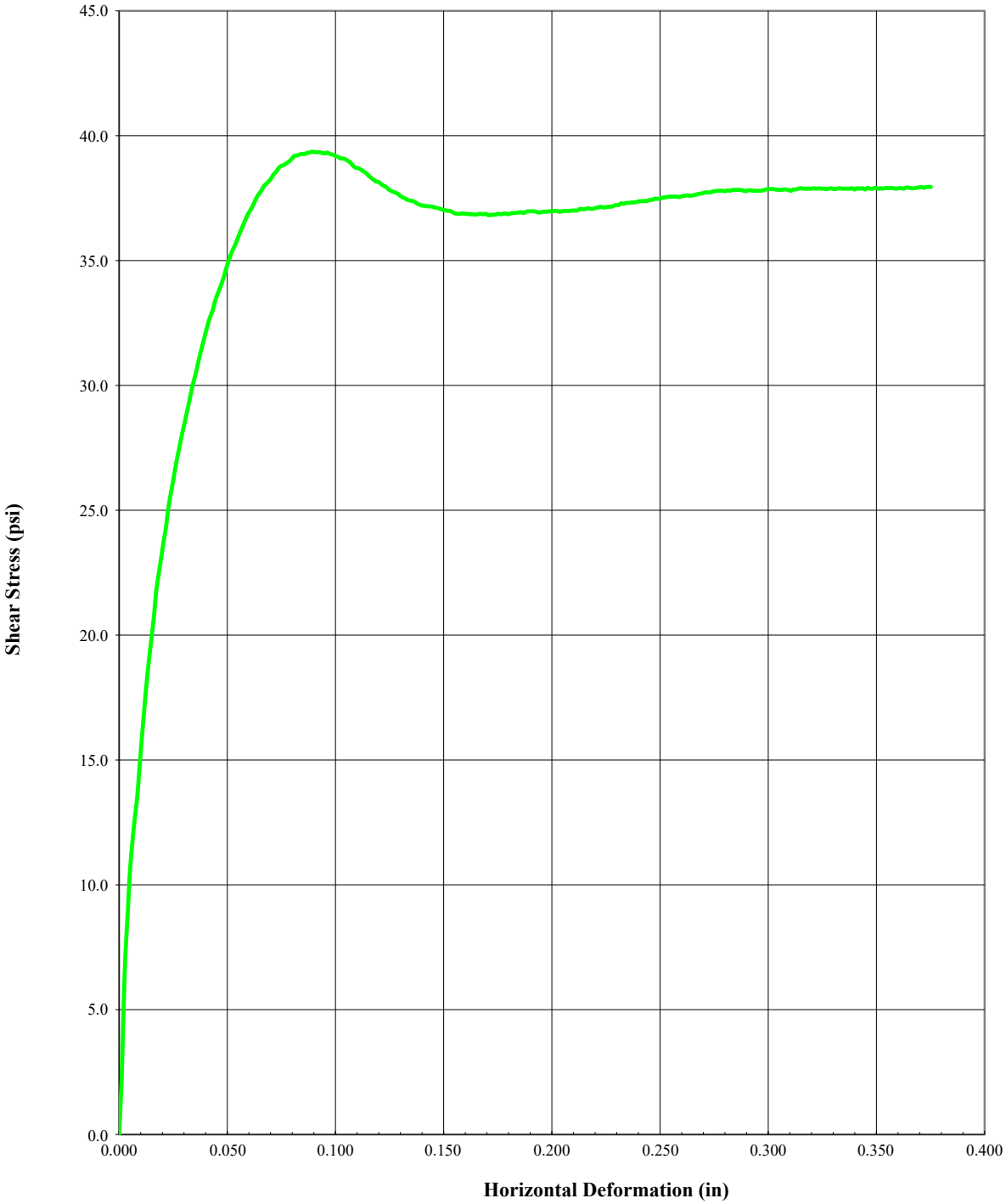
Checked By

Date

Date

Tested By

## Specimen A Stress-Deformation

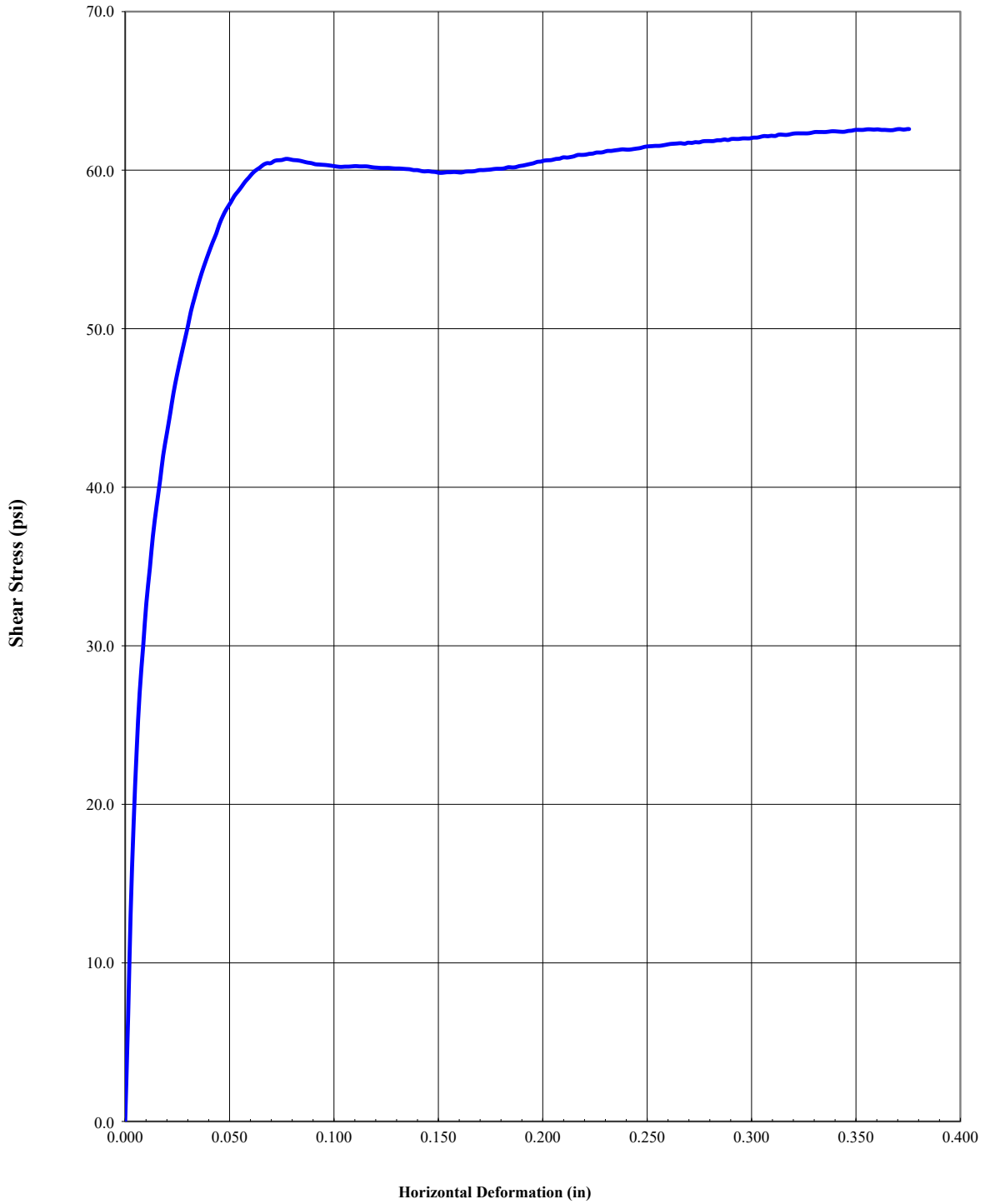



DS 17-1101-0145 HLA-8 T-3.HSD

**Thompson Engineering**

**Direct Shear Test**

## Specimen B Stress-Deformation




Date

Checked By

Date

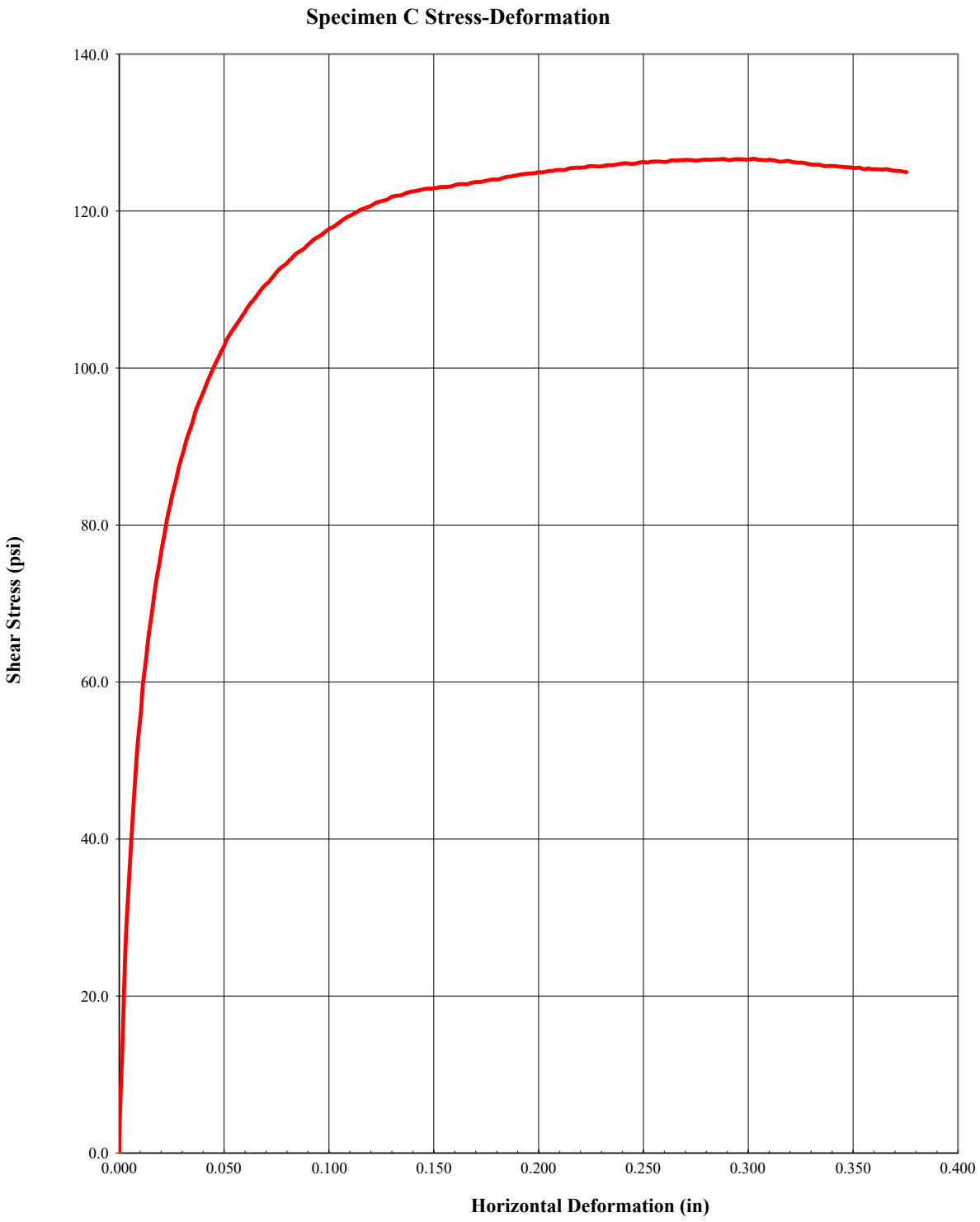
Date

Tested By

DS 17-1101-0145 HLA-8 T-3.HSD

**Thompson Engineering**

**Direct Shear Test**



| Specimen Information<br>Direct Shear Test | Thompson Engineering |
|---|---|

**Project Information**

Project: Mobile River Bridge Procurement Phase
Location: Soils Lab
Project Number: 8063
Client: ALDOT
Sample Location: Soils Lab
Sample Number: T-3
Boring Number: HLA-8

Tested By:
Reduced By:
Checked By:

| Sample Description/Remarks | |
|---|---|
| **Specimen A Description** | Olive Gray Clay |
| **Remarks** | |
| **Specimen B Description** | Olive Gray Clay |
| **Remarks** | |
| **Specimen C Description** | Olive Gray Clay |
| **Remarks** | |
| **Specimen D Description** | |
| **Remarks** | |

**Moisture Density Data**

| | Specimen A | | Specimen B | | Specimen C | | Specimen D | |
|---|---|---|---|---|---|---|---|---|
| | Initial | Final | Initial | Final | Initial | Final | Initial | Final |
| **Height (in)** | 1.000 | 0.934 | 1.000 | 0.912 | 1.000 | 0.894 | | |
| **Diameter (in)** | 2.500 | 2.500 | 2.500 | 2.500 | 2.500 | 2.500 | | |
| **Total Wet Weight of Ring & Soil (g)** | 1208.21 | 1214.30 | 1209.76 | 1213.52 | 1209.94 | 1210.74 | | |
| **Weight of Ring (g)** | 1039.11 | 1039.11 | 1041.19 | 1041.19 | 1040.52 | 1040.52 | | |
| **Wet Weight of Soil (g)** | 169.10 | 175.19 | 168.57 | 172.33 | 169.42 | 170.22 | | |
| **Wt of Wet Soil & Dish (g)** | - | 210.70 | - | 200.31 | - | 291.45 | | |
| **Wt of Dry Soil & Dish (g)** | - | 199.32 | - | 189.66 | - | 270.52 | | |
| **Wt. Of Dish (g)** | - | 132.84 | - | 123.88 | - | 128.21 | | |

**Consolidation Calculations**

| | Specimen A | Specimen B | Specimen C | Specimen D |
|---|---|---|---|---|
| **Initial Ref. Height (in)** | 0.390 | 0.400 | 0.406 | |
| **Final Ref. Height (in)** | 0.323 | 0.312 | 0.300 | |
| **Height after Consol (in)** | 0.934 | 0.912 | 0.894 | |

**Calculations**

| | Specimen A | | Specimen B | | Specimen C | | Specimen D | |
|---|---|---|---|---|---|---|---|---|
| | Initial | Final | Initial | Final | Initial | Final | Initial | Final |
| **Specific Gravity** | 2.600 | 2.600 | 2.600 | 2.600 | 2.600 | 2.600 | | |
| **Area (in2)** | 4.909 | 4.909 | 4.909 | 4.909 | 4.909 | 4.909 | | |
| **Volume (in3)** | 4.9 | 4.9 | 4.9 | 4.9 | 4.9 | 4.9 | | |
| **Moisture Content (%)** | 18.013 | 17.118 | 17.520 | 16.190 | 17.198 | 14.707 | | |
| **Wet Density (pcf)** | 131.233 | 135.959 | 130.822 | 133.740 | 131.481 | 132.102 | | |
| **Dry Density (pcf)** | 111.203 | 116.088 | 111.319 | 115.104 | 112.188 | 115.165 | | |
| **Saturation (%)** | 100.000 | 100.000 | 99.443 | 100.000 | 100.000 | 100.000 | | |
| **Void Ratio** | 0.460 | 0.398 | 0.458 | 0.410 | 0.447 | 0.409 | | |
| **Porosity (%)** | 31.487 | 23.402 | 31.416 | 22.261 | 30.881 | 20.665 | | |

## Thompson Engineering

### Direct Shear Test (ASTM D3080)

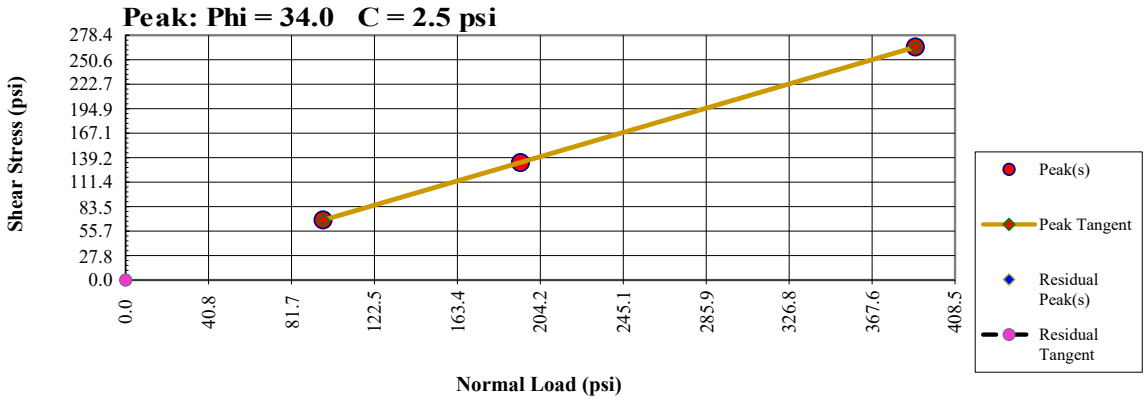
Date

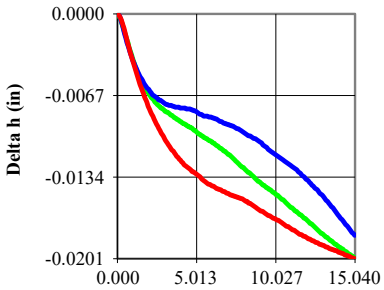
Checked By

Date

Date

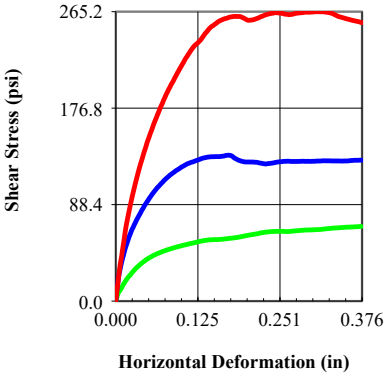
Tested By










| Initial | Specimen A | B | C | D |
|---|---|---|---|---|
| Moisture (%) | 18.35 | 18.95 | 18.88 | |
| Density (pcf) | 108.17 | 109.08 | 109.94 | |
| Void Ratio | 0.501 | 0.488 | 0.476 | |
| Saturation (%) | 95.32 | 100.00 | 100.00 | |
| Diameter (in) | 2.500 | 2.500 | 2.500 | |
| Height (in) | 1.000 | 1.000 | 1.000 | |
| | | | | |

| Final | A | B | C | D |
|---|---|---|---|---|
| Moisture (%) | 18.02 | 16.79 | 16.03 | |
| Density (pcf) | 110.99 | 112.87 | 112.29 | |
| Void Ratio | 0.462 | 0.438 | 0.445 | |
| Saturation (%) | 100.00 | 100.00 | 100.00 | |
| Diameter (in) | 2.500 | 2.500 | 2.500 | |
| Height (in) | 0.928 | 0.922 | 0.892 | |
| Normal Stress (psi) | 97.2 | 194.4 | 388.9 | |
| Peak Stress (psi) | 68.4 | 133.6 | 265.2 | |
| Residual Stress (psi) | | | | |
| Strain (%) | 14.994 | 15.029 | 15.040 | |
| Rate (in/min) | 0.00575 | 0.0081 | 0.00788 | |
| | | | | |

| Project Date | |
|---|---|
| Date | 10/24/17 |

| | |
|---|---|
| **Project:** | Mobile River Bridge Procurment Phase |
| **Location:** | Soils Lab |
| **Project Number:** | 8076 |
| **Boring Number** | HLA-10A |
| **Sample Number:** | T-3 |
| **Depth:** | 218.0-220.0 ft. |
| **Sample Type:** | Undisturbed |
| **Description:** | Olive gray Sandy Clay |
| **Test Type:** | Direct Shear |
| **Remarks:** | |



Failure Photographs

**Thompson Engineering**

**Direct Shear Test (ASTM D3080)**

Date

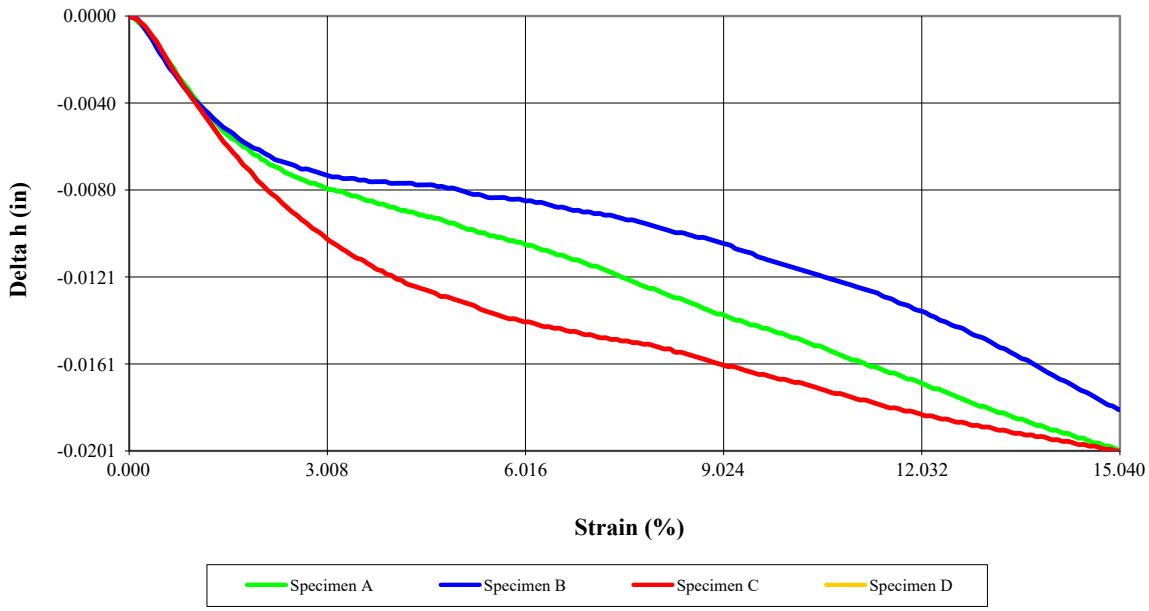
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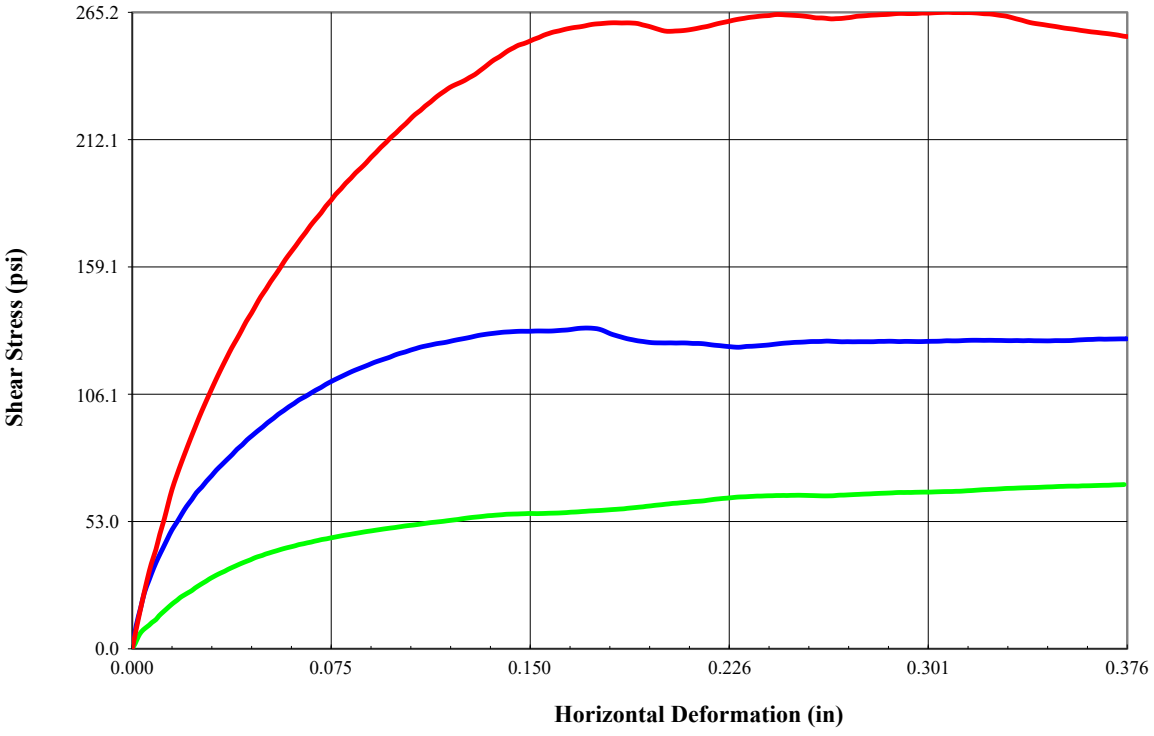
Date

Tested By

## Delta h




## Stress-Deformation



**Thompson Engineering**

**Direct Shear Test**

Date

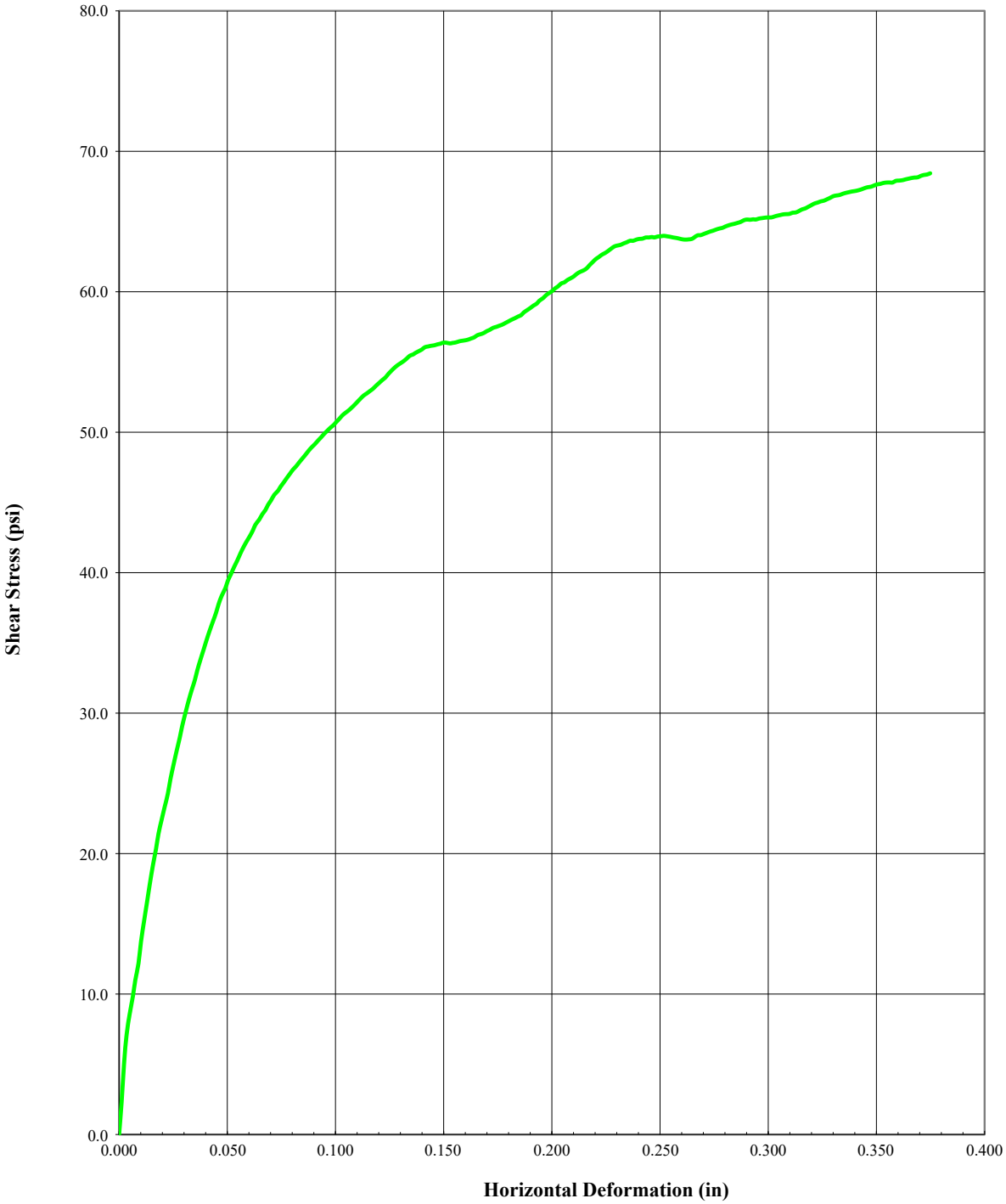
Checked By

Date

Date

Tested By

## Specimen A Stress-Deformation

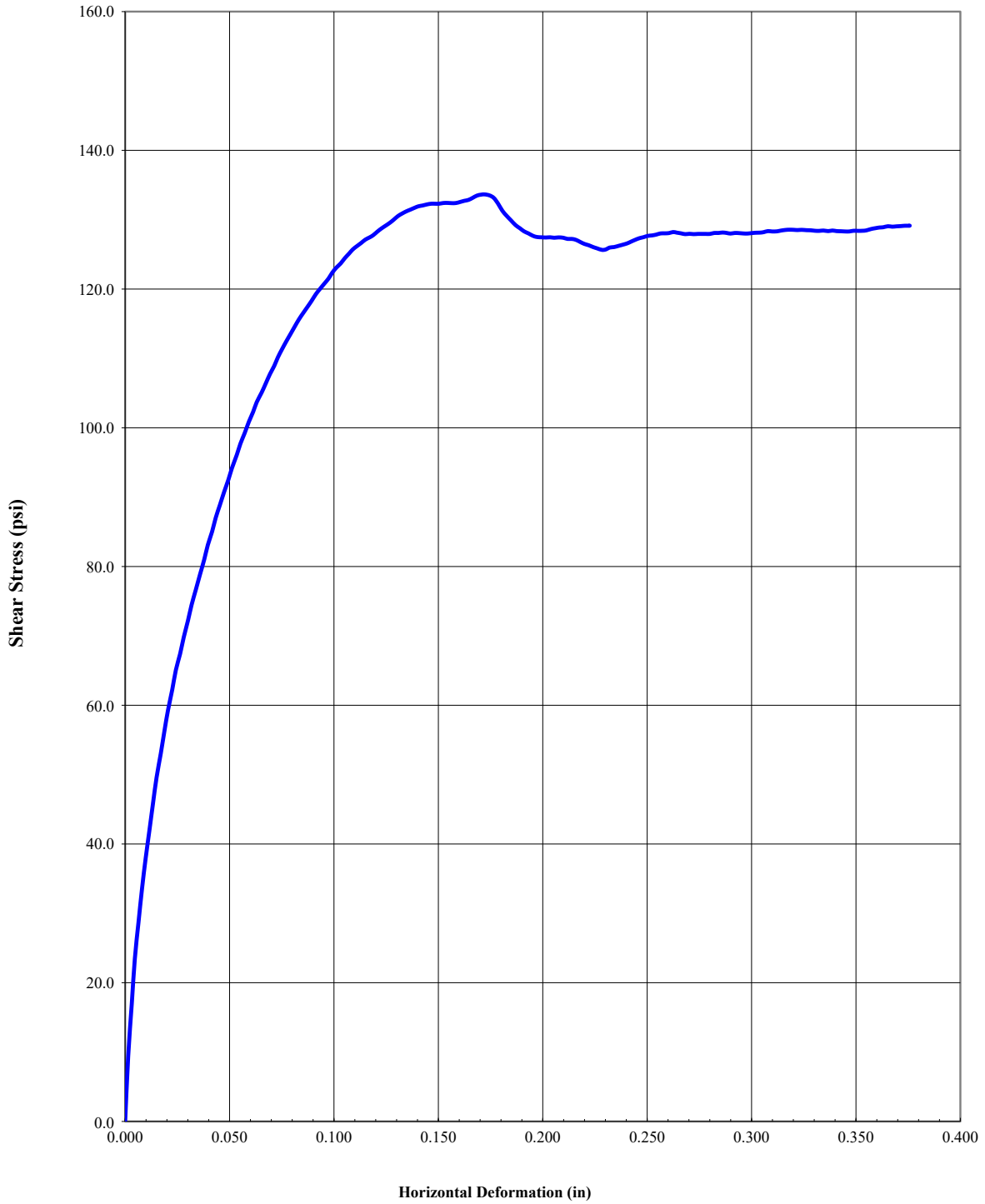



DS 17-1101-0145 HLA-10A T-3.HSD

**Thompson Engineering**

**Direct Shear Test**

## Specimen B Stress-Deformation




Date

Checked By

Date

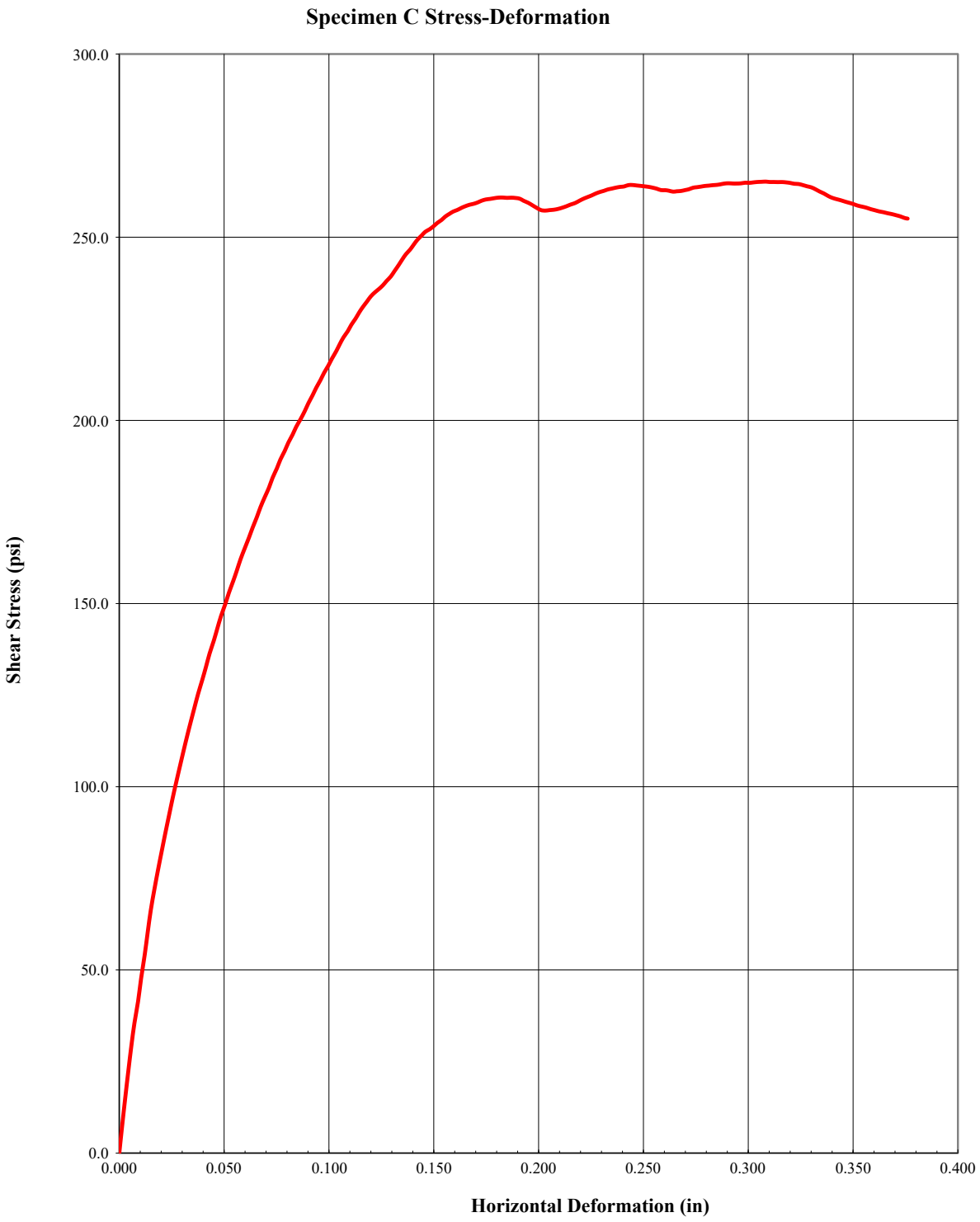
Date

Tested By

DS 17-1101-0145 HLA-10A T-3.HSD

**Thompson Engineering**

**Direct Shear Test**



| Specimen Information<br>Direct Shear Test | Thompson Engineering |
|---|---|

**Project Information**

Project: Mobile River Bridge Procurment Phase
Location: Soils Lab
Project Number: 8076
Client: ALDOT
Sample Location: Soils Lab
Sample Number: T-3
Boring Number: HLA-10A

Tested By:
Reduced By:
Checked By:

| Sample Description/Remarks | |
|---|---|
| **Specimen A Description** | Olive gray Sandy Clay |
| **Remarks** | |
| **Specimen B Description** | Olive gray Sandy Clay |
| **Remarks** | |
| **Specimen C Description** | Olive gray Sandy Clay |
| **Remarks** | |
| **Specimen D Description** | |
| **Remarks** | |

**Moisture Density Data**

| | Specimen A | | Specimen B | | Specimen C | | Specimen D | |
|---|---|---|---|---|---|---|---|---|
| | Initial | Final | Initial | Final | Initial | Final | Initial | Final |
| **Height (in)** | 1.000 | 0.928 | 1.000 | 0.922 | 1.000 | 0.892 | | |
| **Diameter (in)** | 2.500 | 2.500 | 2.500 | 2.500 | 2.500 | 2.500 | | |
| **Total Wet Weight of Ring & Soil (g)** | 1205.16 | 1209.00 | 1205.68 | 1208.36 | 1207.88 | 1207.36 | | |
| **Weight of Ring (g)** | 1040.20 | 1040.20 | 1038.49 | 1038.49 | 1039.47 | 1039.47 | | |
| **Wet Weight of Soil (g)** | 164.96 | 168.80 | 167.19 | 169.87 | 168.41 | 167.89 | | |
| **Wt of Wet Soil & Dish (g)** | - | 208.20 | - | 215.28 | - | 202.59 | | |
| **Wt of Dry Soil & Dish (g)** | - | 195.96 | - | 202.12 | - | 191.69 | | |
| **Wt. Of Dish (g)** | - | 128.05 | - | 123.76 | - | 123.69 | | |

**Consolidation Calculations**

| | Specimen A | Specimen B | Specimen C | Specimen D |
|---|---|---|---|---|
| **Initial Ref. Height (in)** | 0.392 | 0.372 | 0.352 | |
| **Final Ref. Height (in)** | 0.320 | 0.295 | 0.244 | |
| **Height after Consol (in)** | 0.928 | 0.922 | 0.892 | |

**Calculations**

| | Specimen A | | Specimen B | | Specimen C | | Specimen D | |
|---|---|---|---|---|---|---|---|---|
| | Initial | Final | Initial | Final | Initial | Final | Initial | Final |
| **Specific Gravity** | 2.600 | 2.600 | 2.600 | 2.600 | 2.600 | 2.600 | | |
| **Area (in2)** | 4.909 | 4.909 | 4.909 | 4.909 | 4.909 | 4.909 | | |
| **Volume (in3)** | 4.9 | 4.9 | 4.9 | 4.9 | 4.9 | 4.9 | | |
| **Moisture Content (%)** | 18.349 | 18.024 | 18.949 | 16.794 | 18.876 | 16.029 | | |
| **Wet Density (pcf)** | 128.020 | 131.000 | 129.751 | 131.831 | 130.698 | 130.294 | | |
| **Dry Density (pcf)** | 108.171 | 110.995 | 109.081 | 112.874 | 109.944 | 112.294 | | |
| **Saturation (%)** | 95.324 | 100.000 | 100.000 | 100.000 | 100.000 | 100.000 | | |
| **Void Ratio** | 0.501 | 0.462 | 0.488 | 0.438 | 0.476 | 0.445 | | |
| **Porosity (%)** | 33.355 | 26.274 | 32.795 | 24.589 | 32.263 | 22.419 | | |

## Thompson Engineering

### Direct Shear Test (ASTM D3080)

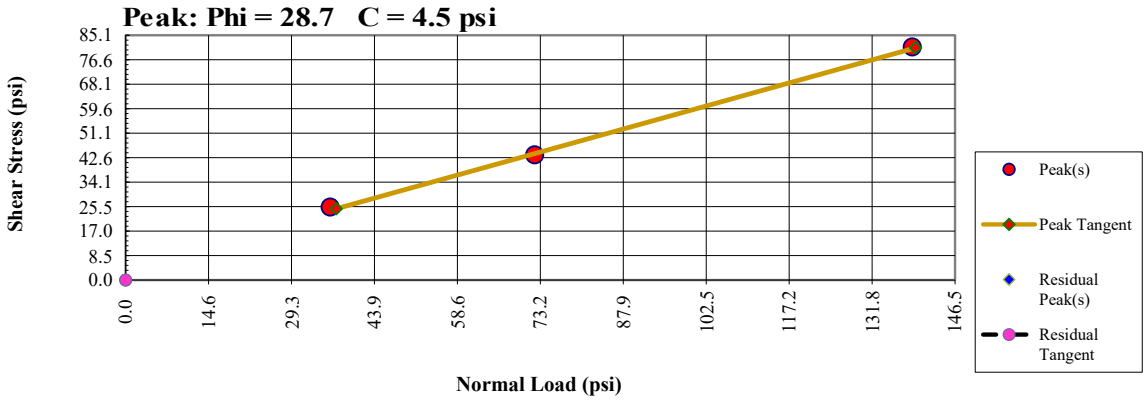
Date

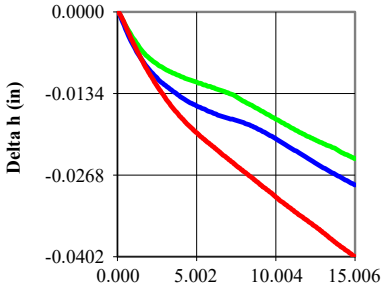
Checked By

Date

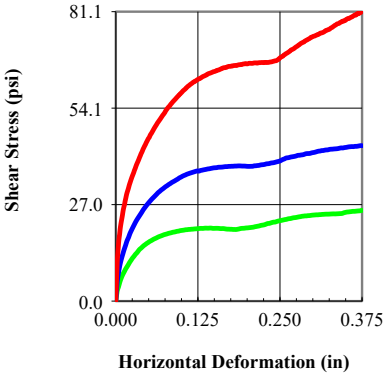
Date

Tested By






| Initial | Specimen A | B | C | D |
|---|---|---|---|---|
| Moisture (%) | 21.54 | 19.33 | 17.97 | |
| Density (pcf) | 102.34 | 97.65 | 103.67 | |
| Void Ratio | 0.586 | 0.662 | 0.566 | |
| Saturation (%) | 95.56 | 75.92 | 82.59 | |
| Diameter (in) | 2.500 | 2.500 | 2.500 | |
| Height (in) | 1.000 | 1.000 | 1.000 | |
| | | | | |

| Final | A | B | C | D |
|---|---|---|---|---|
| Moisture (%) | 21.87 | 24.55 | 19.90 | |
| Density (pcf) | 104.39 | 97.17 | 100.96 | |
| Void Ratio | 0.555 | 0.670 | 0.608 | |
| Saturation (%) | 100.00 | 100.00 | 100.00 | |
| Diameter (in) | 2.500 | 2.500 | 2.500 | |
| Height (in) | 0.938 | 0.908 | 0.863 | |
| Normal Stress (psi) | 36.1 | 72.2 | 138.9 | |
| Peak Stress (psi) | 25.4 | 43.6 | 81.1 | |
| Residual Stress (psi) | | | | |
| Strain (%) | 15.006 | 14.948 | 14.960 | |
| Rate (in/min) | 0.00882 | 0.0092 | 0.00458 | |
| | | | | |

| Project Date | |
|---|---|
| Date | 10/16/17 |

| | |
|---|---|
| **Project:** | Mobile River Bridge Procurement Phase |
| **Location:** | Soils Lab |
| **Project Number:** | 8063 |
| **Boring Number** | HLA-16 |
| **Sample Number:** | T-2 |
| **Depth:** | 103.0-105.0 ft. |
| **Sample Type:** | Undisturbed |
| **Description:** | Gray Sandy Clay |
| **Test Type:** | Direct Shear |
| **Remarks:** | |



Failure Photographs

**Thompson Engineering**

**Direct Shear Test (ASTM D3080)**

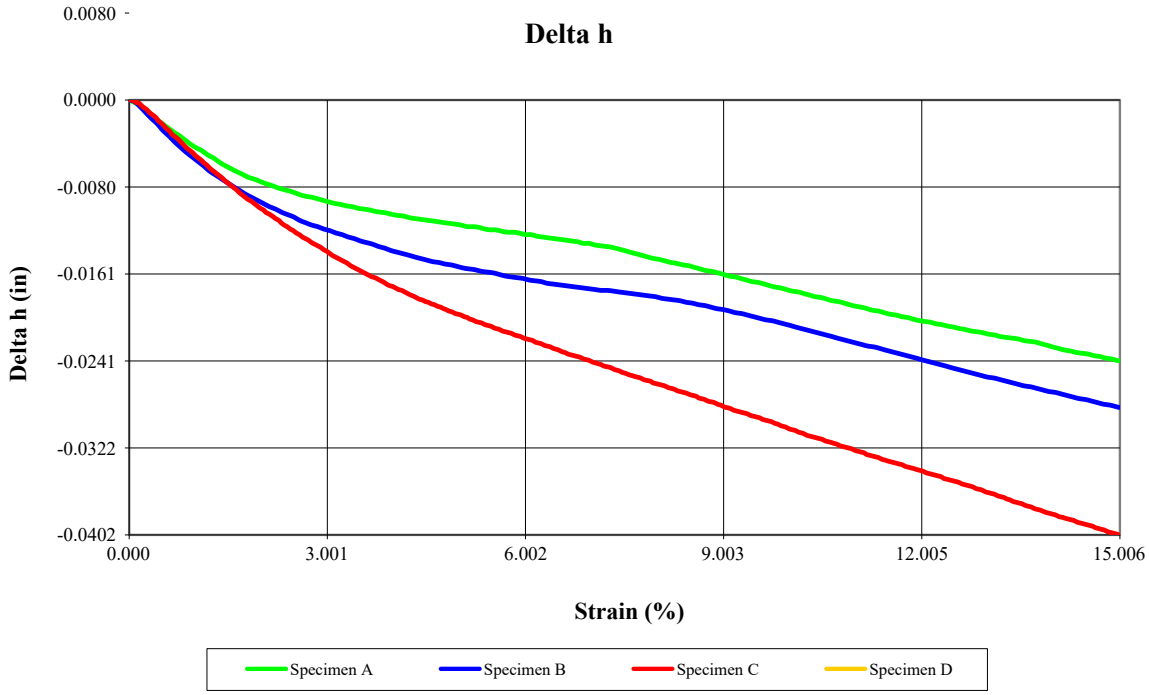
Date

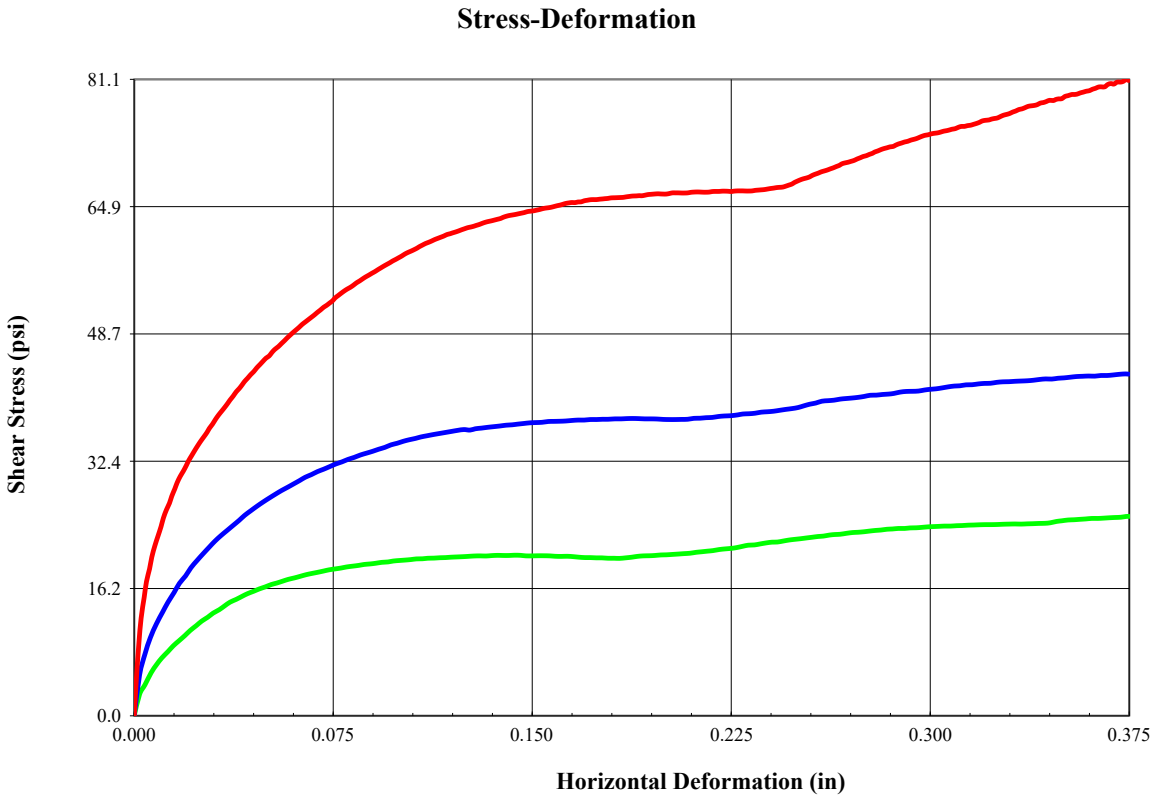
Checked By

Date

Date

Tested By




DS 17-1101-0145 HLA-16 T-2.HSD

**Thompson Engineering**

**Direct Shear Test**

Date

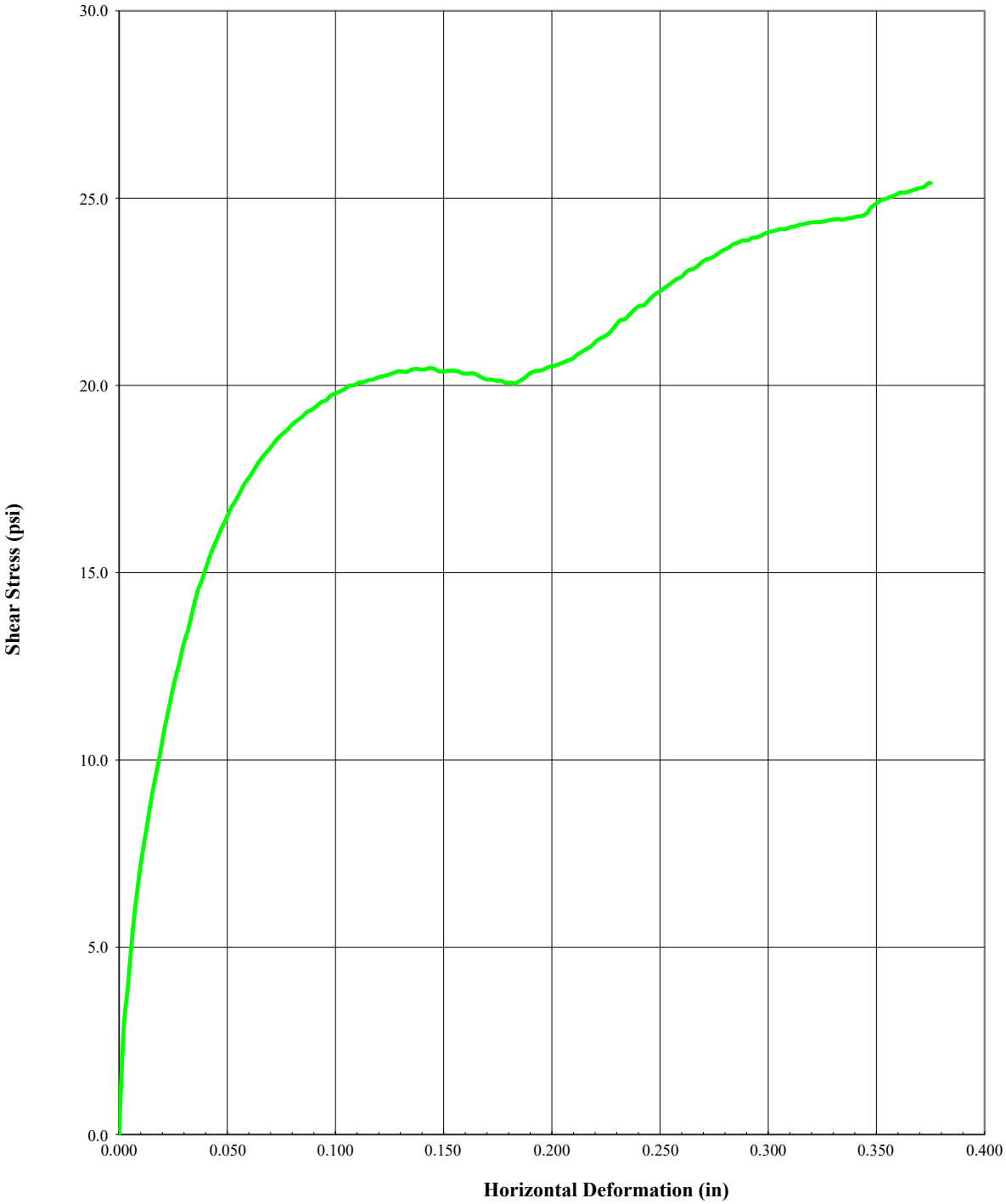
Checked By

Date

Date

Tested By

## Specimen A Stress-Deformation

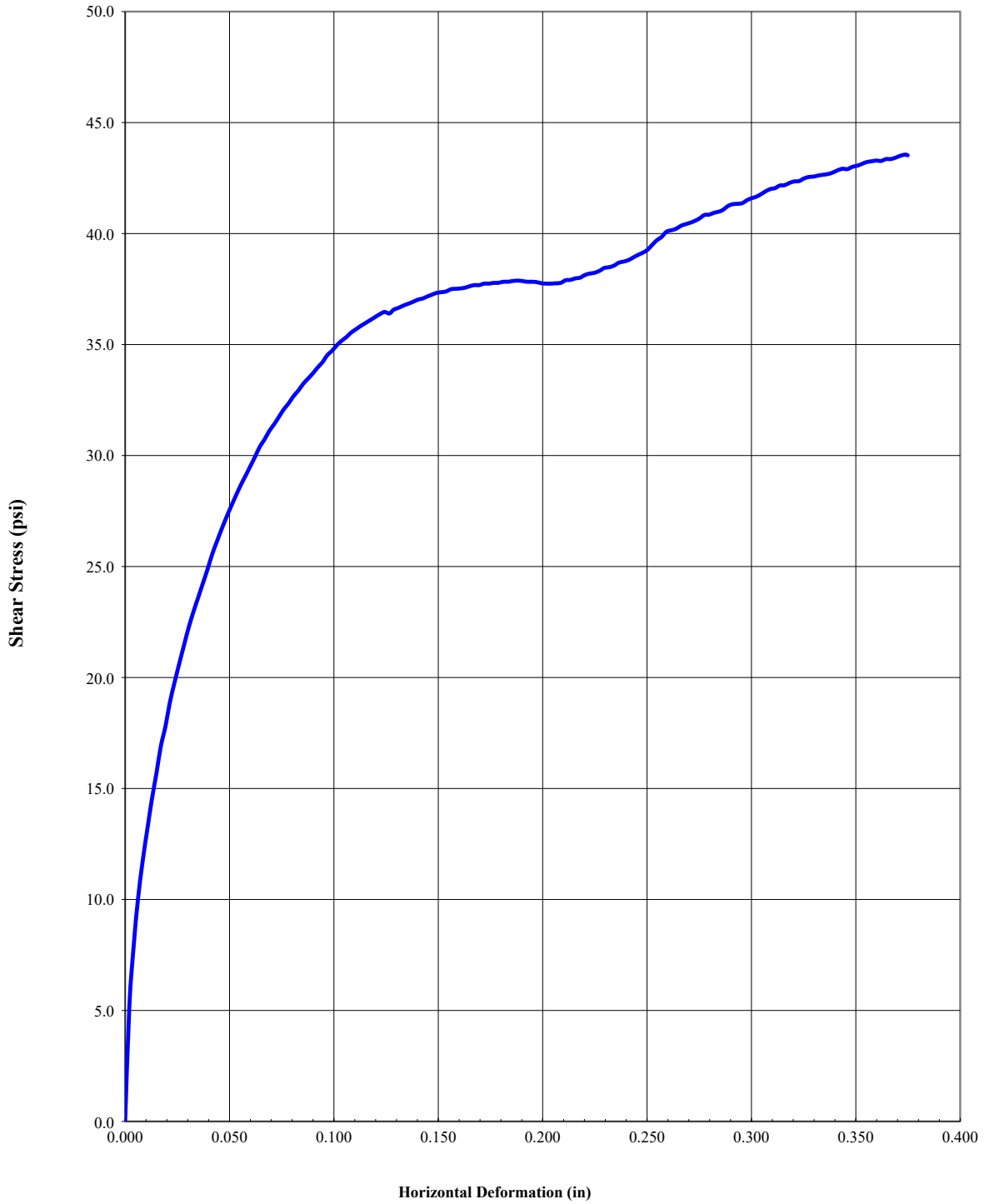



DS 17-1101-0145 HLA-16 T-2.HSD

**Thompson Engineering**

**Direct Shear Test**

## Specimen B Stress-Deformation




Date

Checked By

Date

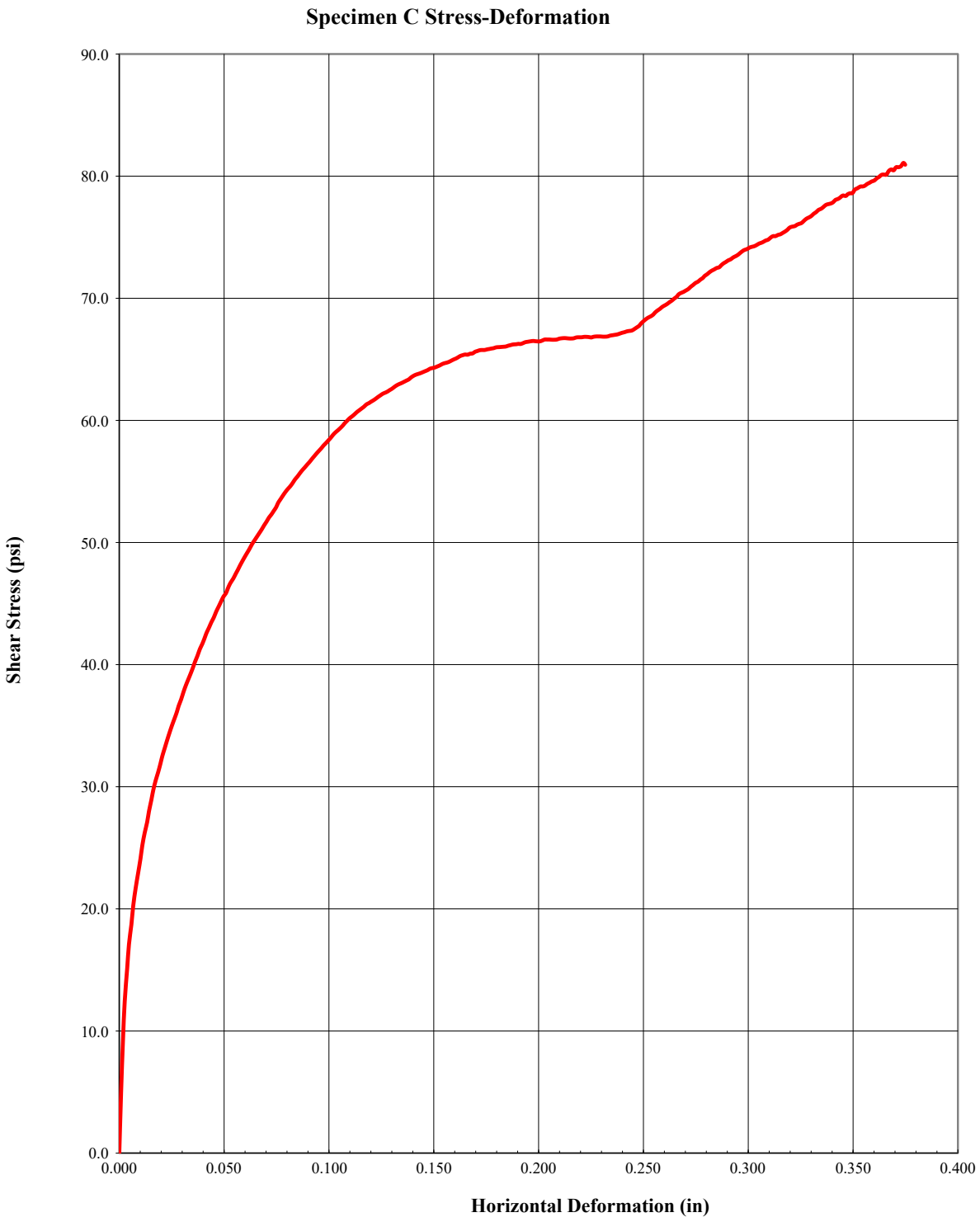
Date

Tested By

DS 17-1101-0145 HLA-16 T-2.HSD

**Thompson Engineering**

**Direct Shear Test**



| Specimen Information<br>Direct Shear Test | Thompson Engineering |
|---|---|

**Project Information**

Project: Mobile River Bridge Procurement Phase
Location: Soils Lab
Project Number: 8063
Client: ALDOT
Sample Location: Soils Lab
Sample Number: T-2
Boring Number: HLA-16

Tested By:
Reduced By:
Checked By:

| Sample Description/Remarks | |
|---|---|
| **Specimen A Description** | Gray Sandy Clay |
| **Remarks** | |
| **Specimen B Description** | Gray Sandy Clay |
| **Remarks** | |
| **Specimen C Description** | Gray Sandy Clay |
| **Remarks** | |
| **Specimen D Description** | |
| **Remarks** | |

**Moisture Density Data**

| | Specimen A | | Specimen B | | Specimen C | | Specimen D | |
|---|---|---|---|---|---|---|---|---|
| | Initial | Final | Initial | Final | Initial | Final | Initial | Final |
| **Height (in)** | 1.000 | 0.938 | 1.000 | 0.908 | 1.000 | 0.863 | | |
| **Diameter (in)** | 2.500 | 2.500 | 2.500 | 2.500 | 2.500 | 2.500 | | |
| **Total Wet Weight of Ring & Soil (g)** | 1199.72 | 1203.38 | 1192.49 | 1198.28 | 1197.07 | 1195.47 | | |
| **Weight of Ring (g)** | 1039.45 | 1039.45 | 1042.33 | 1042.33 | 1039.48 | 1039.48 | | |
| **Wet Weight of Soil (g)** | 160.27 | 163.93 | 150.16 | 155.95 | 157.59 | 155.99 | | |
| **Wt of Wet Soil & Dish (g)** | - | 210.18 | - | 186.13 | - | 202.35 | | |
| **Wt of Dry Soil & Dish (g)** | - | 195.46 | - | 174.99 | - | 190.01 | | |
| **Wt. Of Dish (g)** | - | 128.15 | - | 129.61 | - | 128.01 | | |

**Consolidation Calculations**

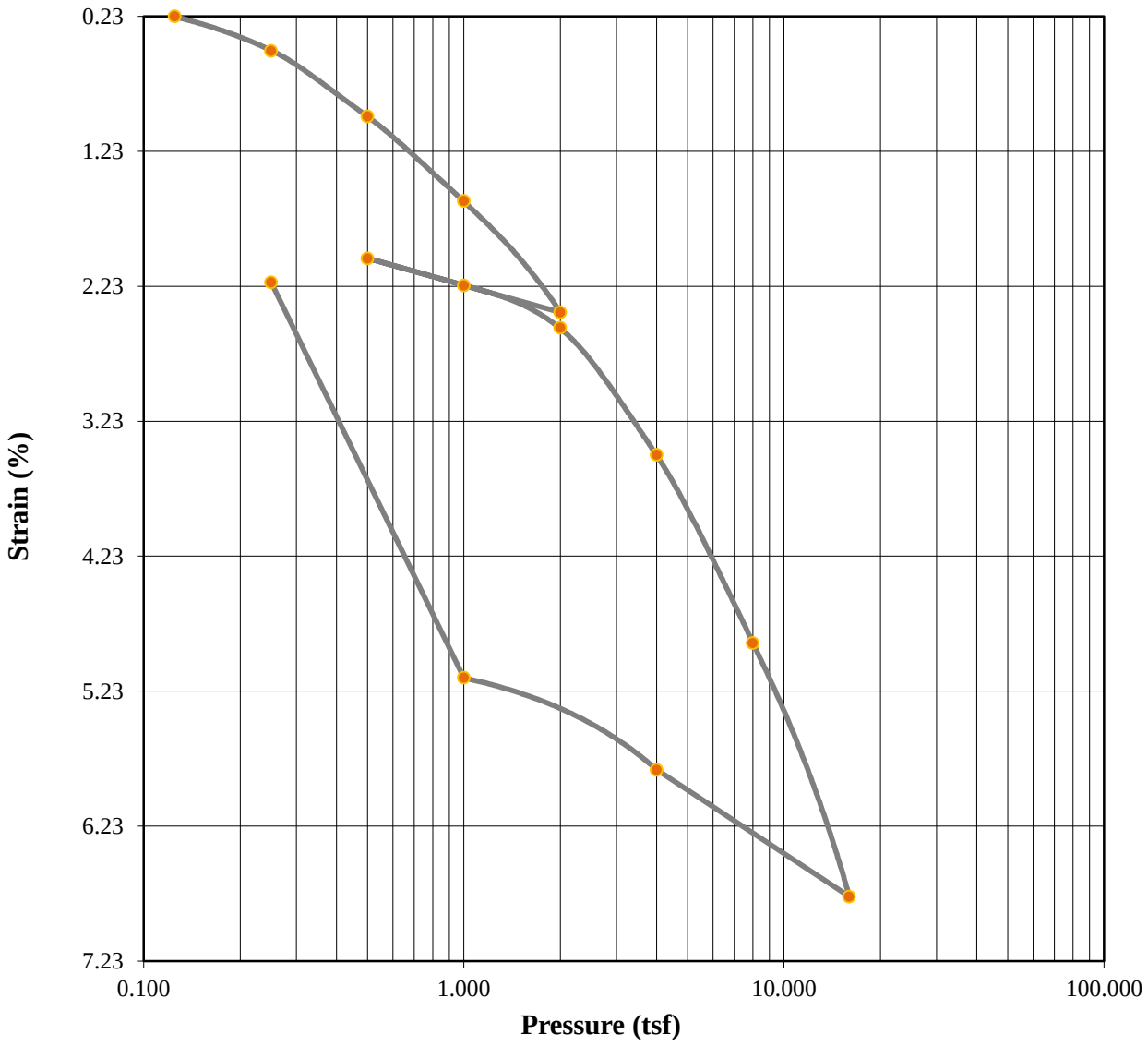
| | Specimen A | Specimen B | Specimen C | Specimen D |
|---|---|---|---|---|
| **Initial Ref. Height (in)** | 0.373 | 0.401 | 0.337 | |
| **Final Ref. Height (in)** | 0.311 | 0.310 | 0.201 | |
| **Height after Consol (in)** | 0.938 | 0.908 | 0.863 | |

**Calculations**

| | Specimen A | | Specimen B | | Specimen C | | Specimen D | |
|---|---|---|---|---|---|---|---|---|
| | Initial | Final | Initial | Final | Initial | Final | Initial | Final |
| **Specific Gravity** | 2.600 | 2.600 | 2.600 | 2.600 | 2.600 | 2.600 | | |
| **Area (in2)** | 4.909 | 4.909 | 4.909 | 4.909 | 4.909 | 4.909 | | |
| **Volume (in3)** | 4.9 | 4.9 | 4.9 | 4.9 | 4.9 | 4.9 | | |
| **Moisture Content (%)** | 21.537 | 21.869 | 19.333 | 24.548 | 17.966 | 19.903 | | |
| **Wet Density (pcf)** | 124.380 | 127.221 | 116.534 | 121.028 | 122.301 | 121.059 | | |
| **Dry Density (pcf)** | 102.339 | 104.392 | 97.655 | 97.173 | 103.675 | 100.964 | | |
| **Saturation (%)** | 95.559 | 100.000 | 75.922 | 100.000 | 82.590 | 100.000 | | |
| **Void Ratio** | 0.586 | 0.555 | 0.662 | 0.670 | 0.566 | 0.608 | | |
| **Porosity (%)** | 36.948 | 31.460 | 39.835 | 34.100 | 36.125 | 27.957 | | |

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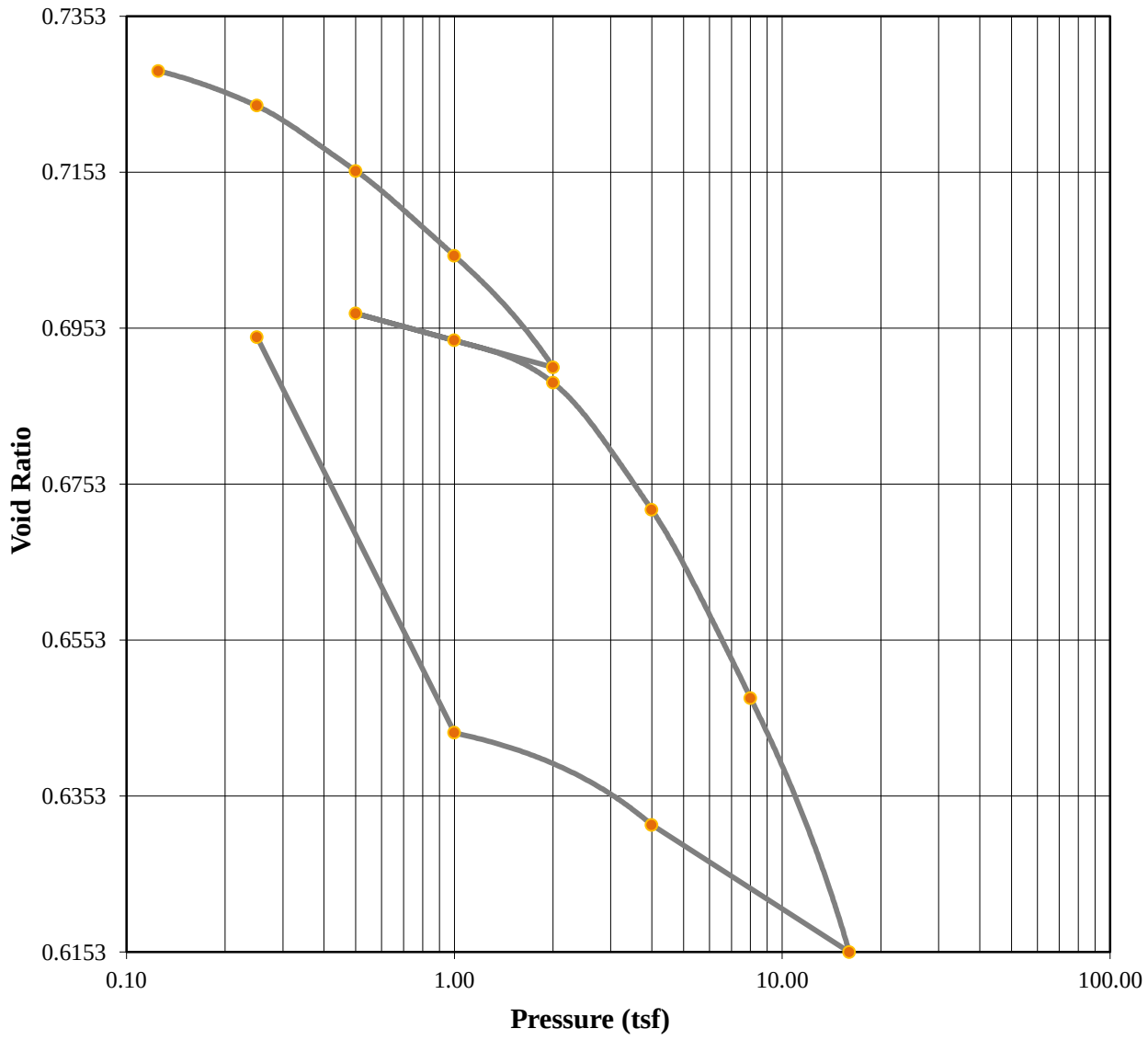
# Consolidation Test
## Test Results




| | Before | After | | | | |
|---|---|---|---|---|---|---|
| | | | **Liquid Limits:** | 0 | **Test Date:** | 9/21/17 |
| **Moisture (%):** | 24.57 | 24.75 | **Plastic Limits:** | 0 | | |
| **Dry Density (pcf):** | 96.52 | 97.81 | **Plasticity Index (%):** | 0 | | |
| **Saturation (%):** | 89.65 | 93.22 | | | | |
| **Void Ratio:** | 0.7323 | 0.6942 | **Specific Gravity:** | 2.683 | Measured | |

| | | | | |
|---|---|---|---|---|
| **Sample Description:** | CLAYEY SAND(SC A-6(2)) | | | |
| **Project Number:** | 8060 | **Depth:** | 18.5-20.5 ft. | **Remarks:** |
| **Sample Number:** | T-1 | **Boring Number:** | HLA-1 | |
| **Project:** | Mobile River Bridge | | | |
| **Client:** | ALDOT | | | |
| **Location:** | Soils Lab | | | |

# Consolidation Test
## Test Results

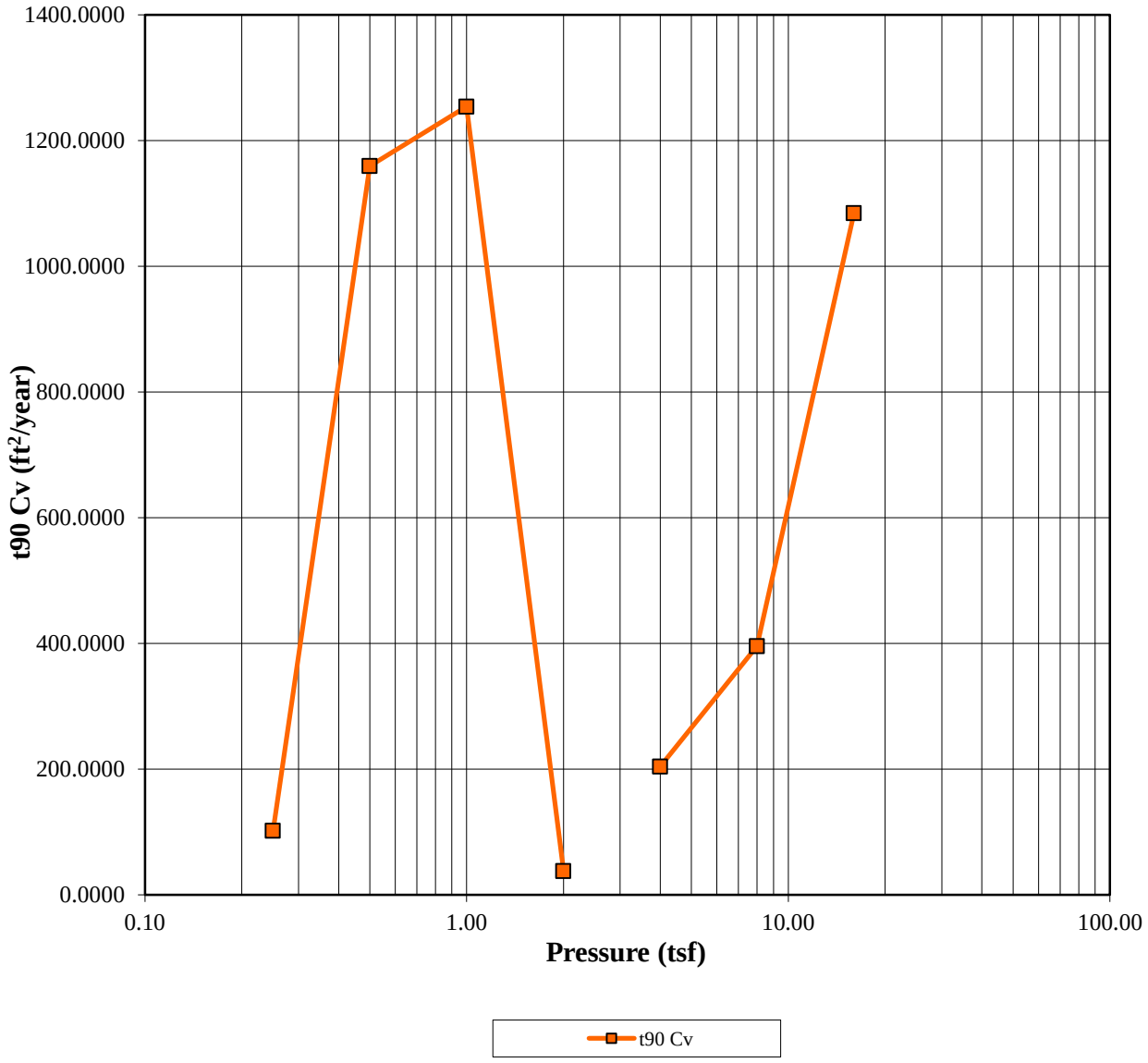



| | Before | After | | | | |
|---|---|---|---|---|---|---|
| **Moisture (%):** | 24.57 | 24.75 | **Liquid Limits:** | 0 | **Test Date:** | 9/21/17 |
| **Dry Density (pcf):** | 96.52 | 97.81 | **Plastic Limits:** | 0 | | |
| **Saturation (%):** | 89.65 | 93.22 | **Plasticity Index (%):** | 0 | | |
| **Void Ratio:** | 0.7323 | 0.6942 | **Specific Gravity:** | 2.683 | Measured | |

| | | | | |
|---|---|---|---|---|
| **Soil Description:** | CLAYEY SAND(SC A-6(2)) | | | |
| **Project Number:** | 8060 | **Depth:** | 18.5-20.5 ft. | **Remarks:** |
| **Sample Number:** | T-1 | **Boring Number:** | HLA-1 | |
| **Project:** | Mobile River Bridge | | | |
| **Client:** | ALDOT | | | |
| **Location:** | Soils Lab | | | |

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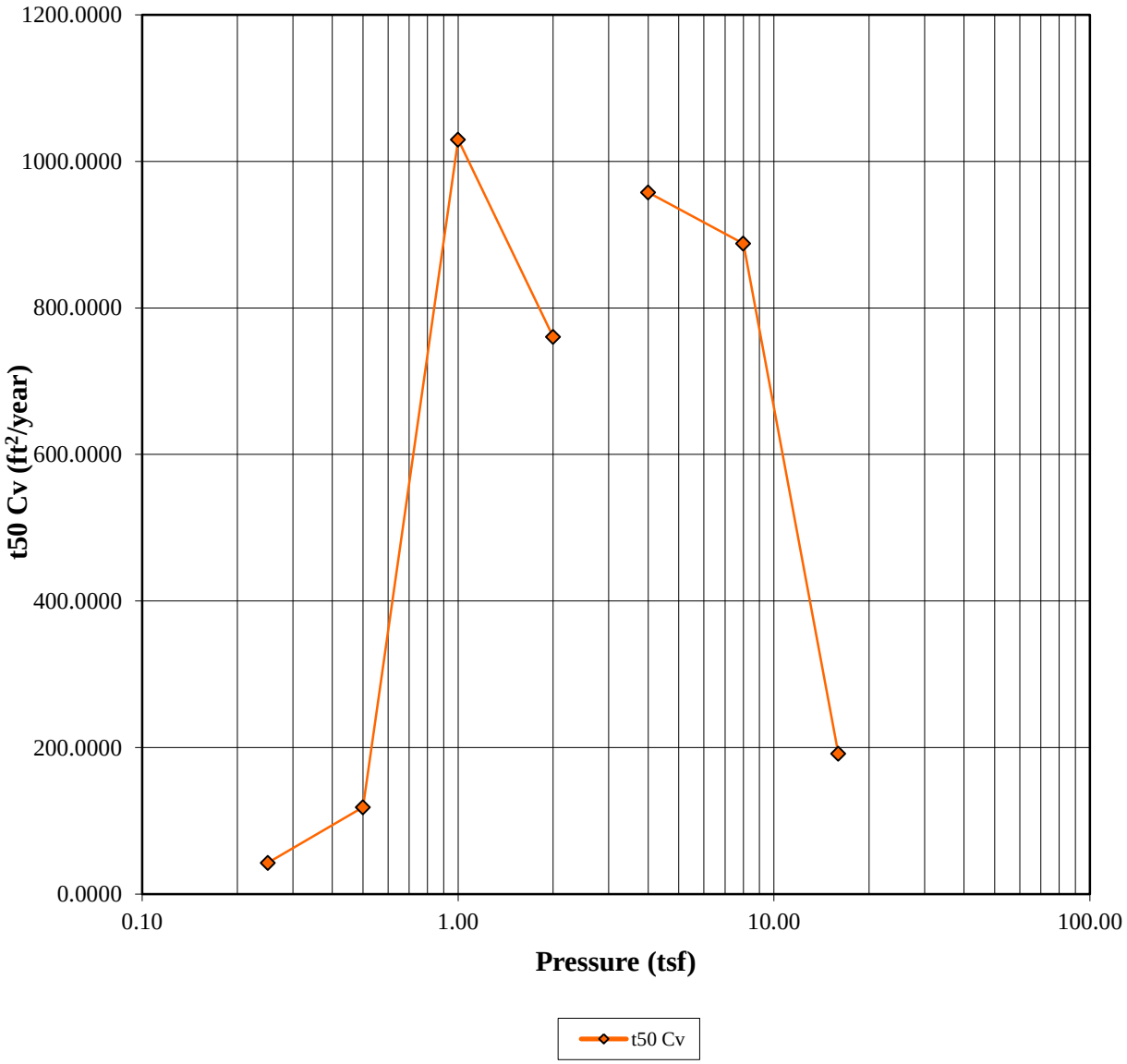
# Consolidation Test
## Test Results




| | Before | After | | | | |
|---|---|---|---|---|---|---|
| **Moisture (%):** | 24.57 | 24.75 | **Liquid Limits:** | 0 | **Test Date:** | 9/21/17 |
| **Dry Density (pcf):** | 96.52 | 97.81 | **Plastic Limits:** | 0 | | |
| **Saturation (%):** | 89.65 | 93.22 | **Plasticity Index (%):** | 0 | | |
| **Void Ratio:** | 0.7323 | 0.6942 | **Specific Gravity:** | 2.683 | Measured | |

| | | | | |
|---|---|---|---|---|
| **Soil Description:** | CLAYEY SAND(SC A-6(2)) | | | |
| **Project Number:** | 8060 | **Depth:** | 18.5-20.5 ft. | **Remarks:** |
| **Sample Number:** | T-1 | **Boring Number:** | HLA-1 | |
| **Project:** | Mobile River Bridge | | | |
| **Client:** | ALDOT | | | |
| **Location:** | Soils Lab | | | |

# Consolidation Test
## Test Results

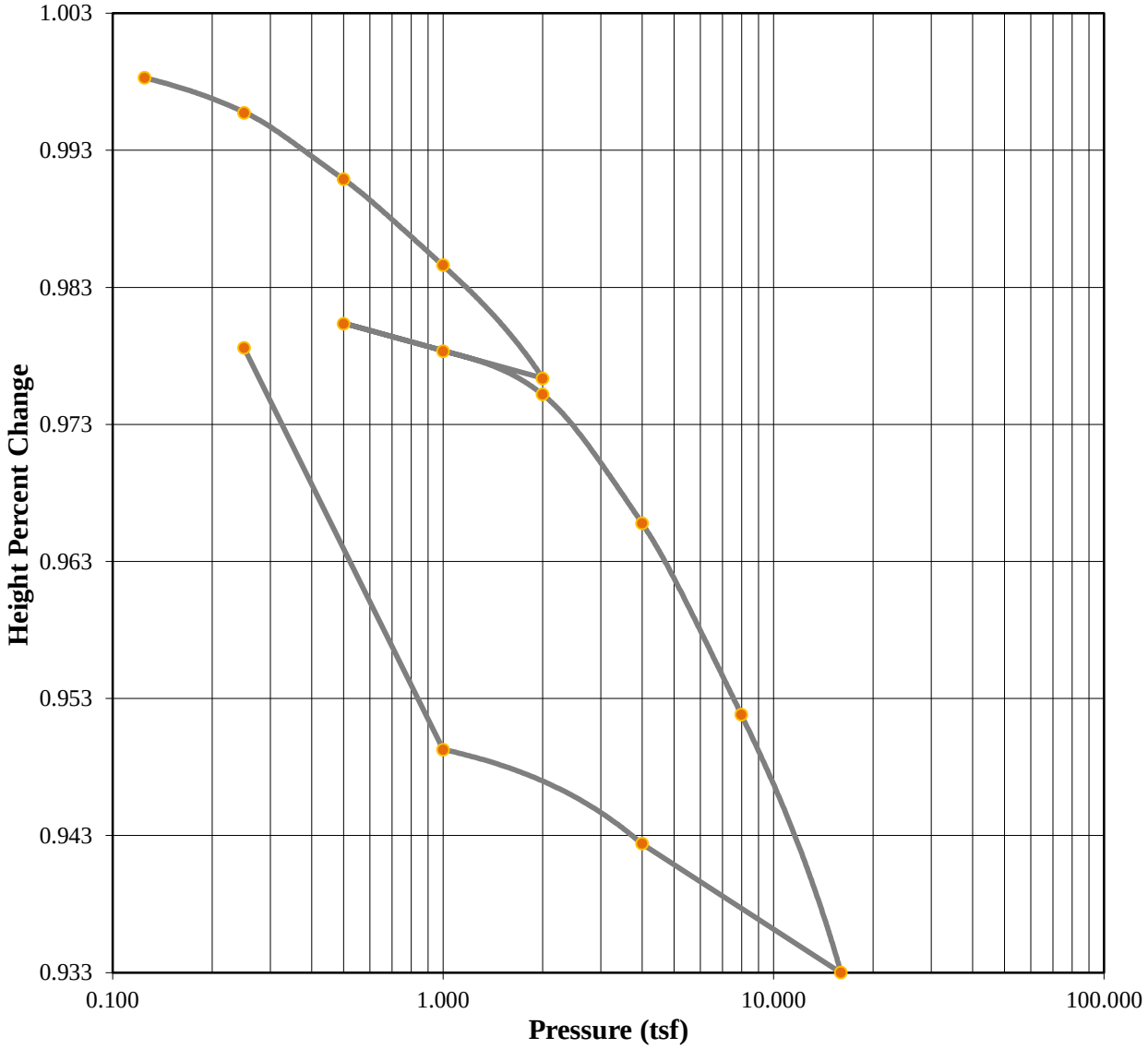



| | Before | After | | | | |
|---|---|---|---|---|---|---|
| **Moisture (%):** | 24.57 | 24.75 | **Liquid Limits:** | 0 | **Test Date:** | 9/21/17 |
| **Dry Density (pcf):** | 96.52 | 97.81 | **Plastic Limits:** | 0 | | |
| **Saturation (%):** | 89.65 | 93.22 | **Plasticity Index (%):** | 0 | | |
| **Void Ratio:** | 0.7323 | 0.6942 | **Specific Gravity:** | 2.683 | Measured | |

| | | | | |
|---|---|---|---|---|
| **Soil Description:** | CLAYEY SAND(SC A-6(2)) | | | |
| **Project Number:** | 8060 | **Depth:** | 18.5-20.5 ft. | **Remarks:** |
| **Sample Number:** | T-1 | **Boring Number:** | HLA-1 | |
| **Project:** | Mobile River Bridge | | | |
| **Client:** | ALDOT | | | |
| **Location:** | Soils Lab | | | |

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# Consolidation Test
## Test Results




| | Before | After | | | | |
|---|---|---|---|---|---|---|
| | | | **Liquid Limits:** | 0 | **Test Date:** | 9/21/17 |
| **Moisture (%):** | 24.57 | 24.75 | **Plastic Limits:** | 0 | | |
| **Dry Density (pcf):** | 96.52 | 97.81 | **Plasticity Index (%):** | 0 | | |
| **Saturation (%):** | 89.65 | 93.22 | | | | |
| **Void Ratio:** | 0.7323 | 0.6942 | **Specific Gravity:** | 2.683 | Measured | |

| | | | | |
|---|---|---|---|---|
| **Soil Description:** | CLAYEY SAND(SC A-6(2)) | | | |
| **Project Number:** | 8060 | **Depth:** | 18.5-20.5 ft. | **Remarks:** |
| **Sample Number:** | T-1 | **Boring Number:** | HLA-1 | |
| **Project:** | Mobile River Bridge | | | |
| **Client:** | ALDOT | | | |
| **Location:** | Soils Lab | | | |

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# Consolidation Test Results
## Summary

**Project:** Mobile River Bridge
**Location:** Soils Lab
**Job Number:** 17-1101-0145

**Project Number:** 8060

**Sample Number:** T-1
**Boring Number:** HLA-1
**Depth:** 18.5-20.5 ft.
**Sample Type:** Undisturbed

**Sample Description:** CLAYEY SAND(SC A-6(2))
**Remarks:**

**Test Number:**
**Test Date:** 9/21/17

| Index | Load Sequence (tsf) | Cummulative Change in Height (in) | Specimen Height (in) | Height of Void (in) | Vertical Strain (%) | Void Ratio | t90 Fitting Time (min) | t50 Fitting Time (min) | t90 Cv (ft2/year) | t50 Cv (ft2/year) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0.000 | 0.0000 | 1.0010 | 0.4231 | 0.00 | 0.7322 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1 | 0.125 | 0.0023 | 0.9987 | 0.4209 | 0.23 | 0.7283 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2 | 0.250 | 0.0048 | 0.9962 | 0.4183 | 0.48 | 0.7238 | 7.503 | * 4.1683 | 102.340 | 42.795 |
| 3 | 0.500 | 0.0097 | 0.9913 | 0.4134 | 0.97 | 0.7155 | 0.656 | 1.487 | 1159.275 | 118.785 |
| 4 | 1.000 | 0.0160 | 0.9850 | 0.4072 | 1.60 | 0.7046 | 0.599 | 0.169 | 1253.761 | 1029.527 |
| 5 | 2.000 | 0.0242 | 0.9768 | 0.3989 | 2.42 | 0.6903 | 19.280 | 0.226 | 38.291 | 760.514 |
| 6 | 0.500 | 0.0202 | 0.9808 | 0.4029 | 2.02 | 0.6972 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7 | 1.000 | 0.0222 | 0.9788 | 0.4009 | 2.22 | 0.6937 | 0.000 | 0.000 | 0.000 | 0.000 |
| 8 | 2.000 | 0.0254 | 0.9756 | 0.3978 | 2.54 | 0.6883 | 0.000 | 0.000 | 0.000 | 0.000 |
| 9 | 4.000 | 0.0348 | 0.9662 | 0.3883 | 3.48 | 0.6720 | 3.534 | 0.175 | 204.417 | 957.543 |
| 10 | 8.000 | 0.0488 | 0.9522 | 0.3744 | 4.87 | 0.6479 | 1.773 | 0.184 | 395.755 | 887.700 |
| 11 | 16.000 | 0.0676 | 0.9334 | 0.3556 | 6.75 | 0.6153 | 0.622 | 0.817 | 1084.688 | 191.632 |
| 12 | 4.000 | 0.0582 | 0.9428 | 0.3650 | 5.81 | 0.6316 | 0.000 | 0.000 | 0.000 | 0.000 |
| 13 | 1.000 | 0.0513 | 0.9497 | 0.3718 | 5.13 | 0.6434 | 0.000 | 0.000 | 0.000 | 0.000 |
| 14 | 0.250 | 0.0220 | 0.9790 | 0.4011 | 2.20 | 0.6942 | 0.000 | 0.000 | 0.000 | 0.000 |

Predicted value indicated with *

**Tested By:** B. Hak

**Checked By:** C. Dugger

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# Consolidation Test
## Consolidation Specimen Information

**Project:** Mobile River Bridge
**Project Number:** 8060
**Location:** Soils Lab
**Job Number:** 17-1101-0145
**Test Date:** 9/21/17

**Sample Number:** T-1
**Sample Description:**
**Boring Number:** HLA-1
CLAYEY SAND(SC A-6(2))
**Depth:** 18.5-20.5 ft.
**Remarks:**
**Sample Type:** Undisturbed

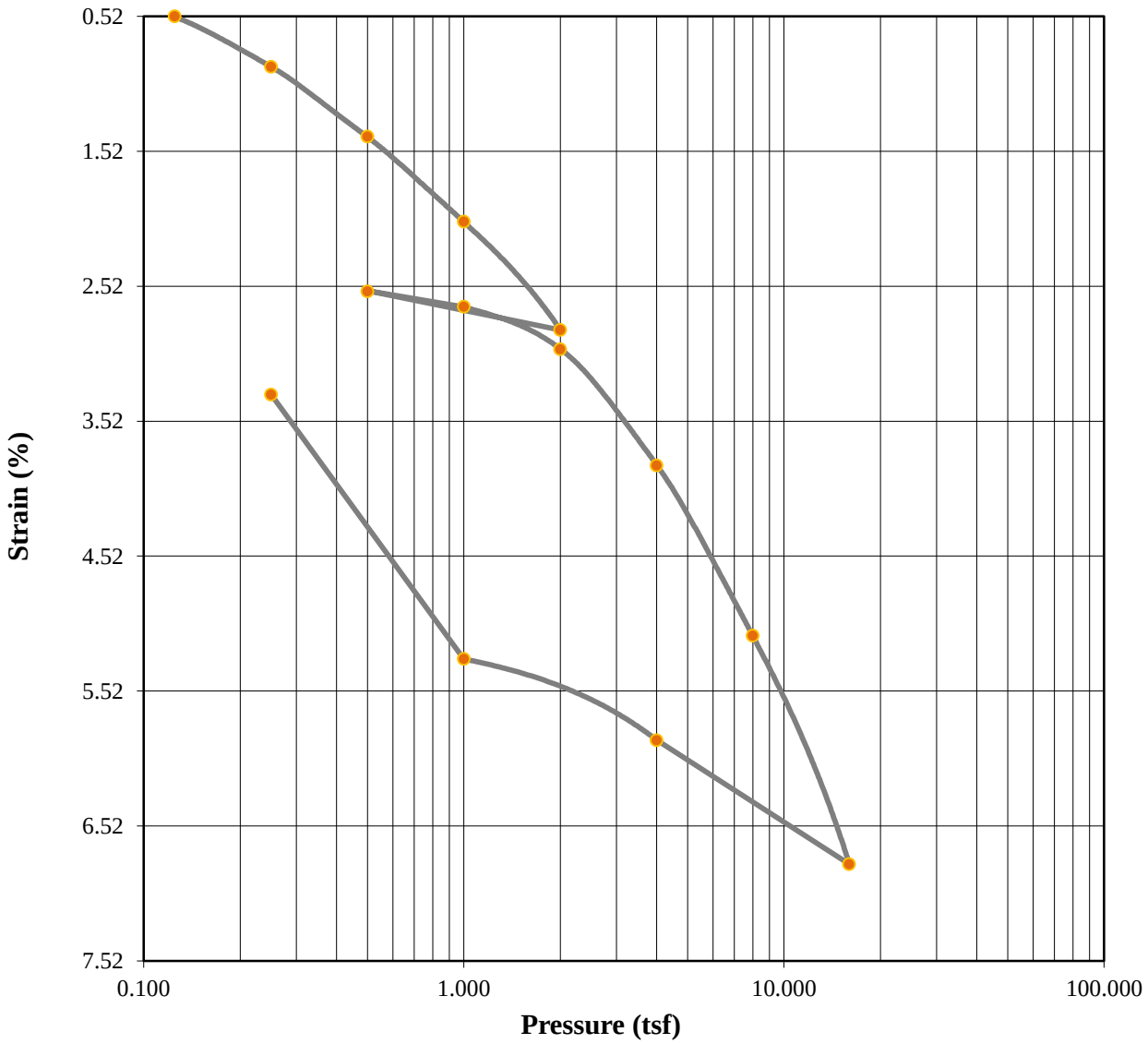
**Test Number:**
**Liquid Limit:** 0.0000
**Initial Void Ratio:** 0.7323
**Initial Height (in):** 1.0010
**Plastic Limit:** 0.0000
**Plasticity Index (%):** 0.0000
**Initial Diameter (in):** 2.5070
**Specific Gravity:** 2.6830 Measured
**Weight of Ring (g):** 111.0700

| Parameters | Initial Specimen | Final Specimen |
|---|---|---|
| Moist Weight + Container (g) | 134.01 | 284.11 |
| Dry Soil + Container (g) | 113.84 | 253.46 |
| Weight of Container (g) | 31.74 | 129.63 |
| Moisture Content (%) | 24.57 | 24.75 |
| Void Ratio | 0.7323 | 0.6942 |
| Saturation (%) | 89.65 | 93.22 |
| Dry Density (pcf) | 96.52 | 97.81 |

**Tested By:** B. Hak
**Checked By:** C. Dugger

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# Consolidation Test
## Test Results




| | Before | After | | | | |
|---|---|---|---|---|---|---|
| | | | **Liquid Limits:** | 0 | **Test Date:** | 11/4/17 |
| **Moisture (%):** | 27.04 | 25.22 | **Plastic Limits:** | 0 | | |
| **Dry Density (pcf):** | 97.66 | 99.83 | **Plasticity Index (%):** | 0 | | |
| **Saturation (%):** | 134.79 | 135.05 | | | | |
| **Void Ratio:** | 0.4562 | 0.4079 | **Specific Gravity:** | 2.280 | Measured | |

**Sample Description:** CLAYEY SAND(SC A-6(6))

**Project Number:** 8076 **Depth:** 33.0-35.0 ft. **Remarks:**

**Sample Number:** T-1 **Boring Number:** HLA-2

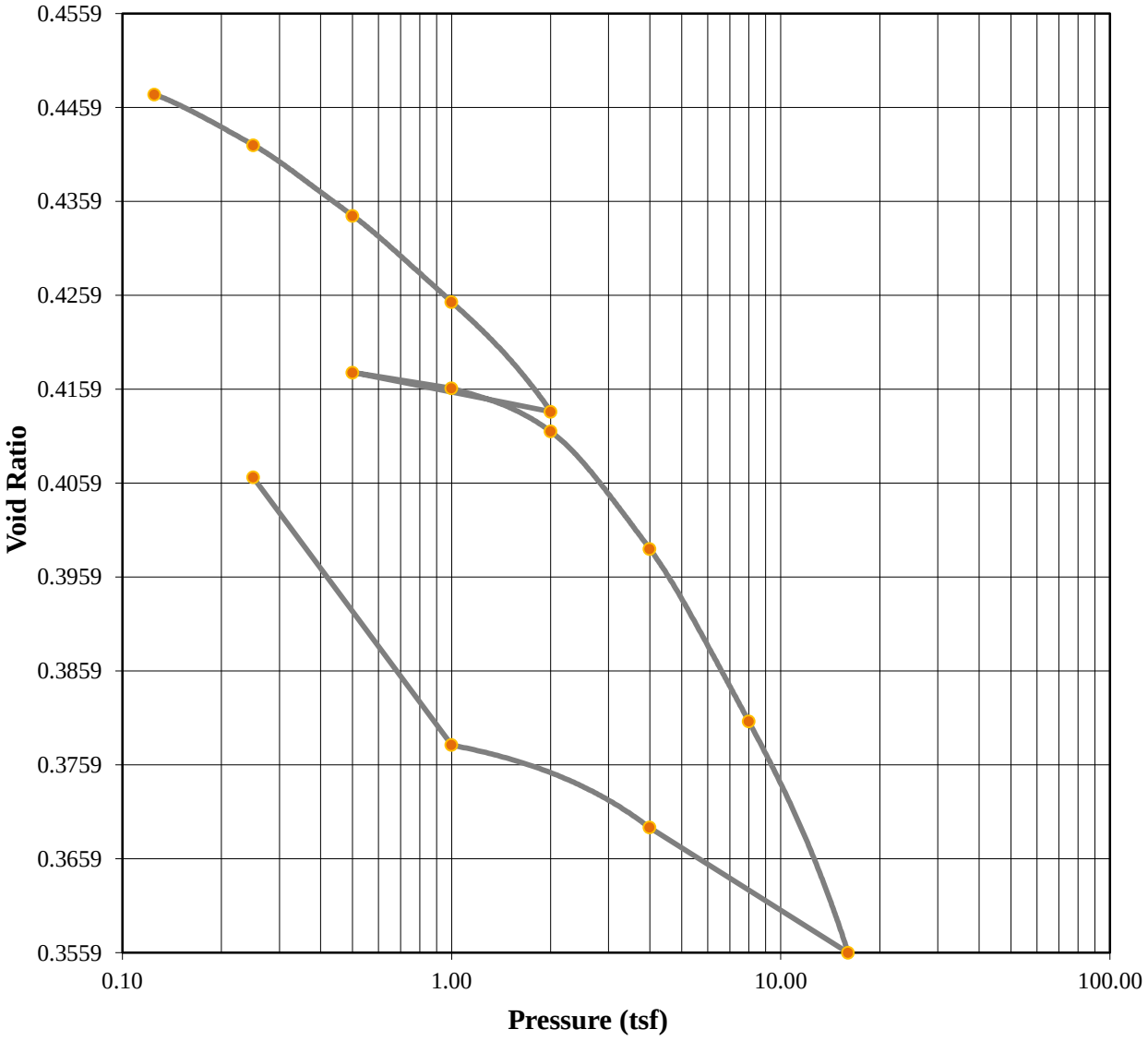
**Project:** Mobile River Bridge

**Client:** ALDOT

**Location:** Soils Lab

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# Consolidation Test
## Test Results

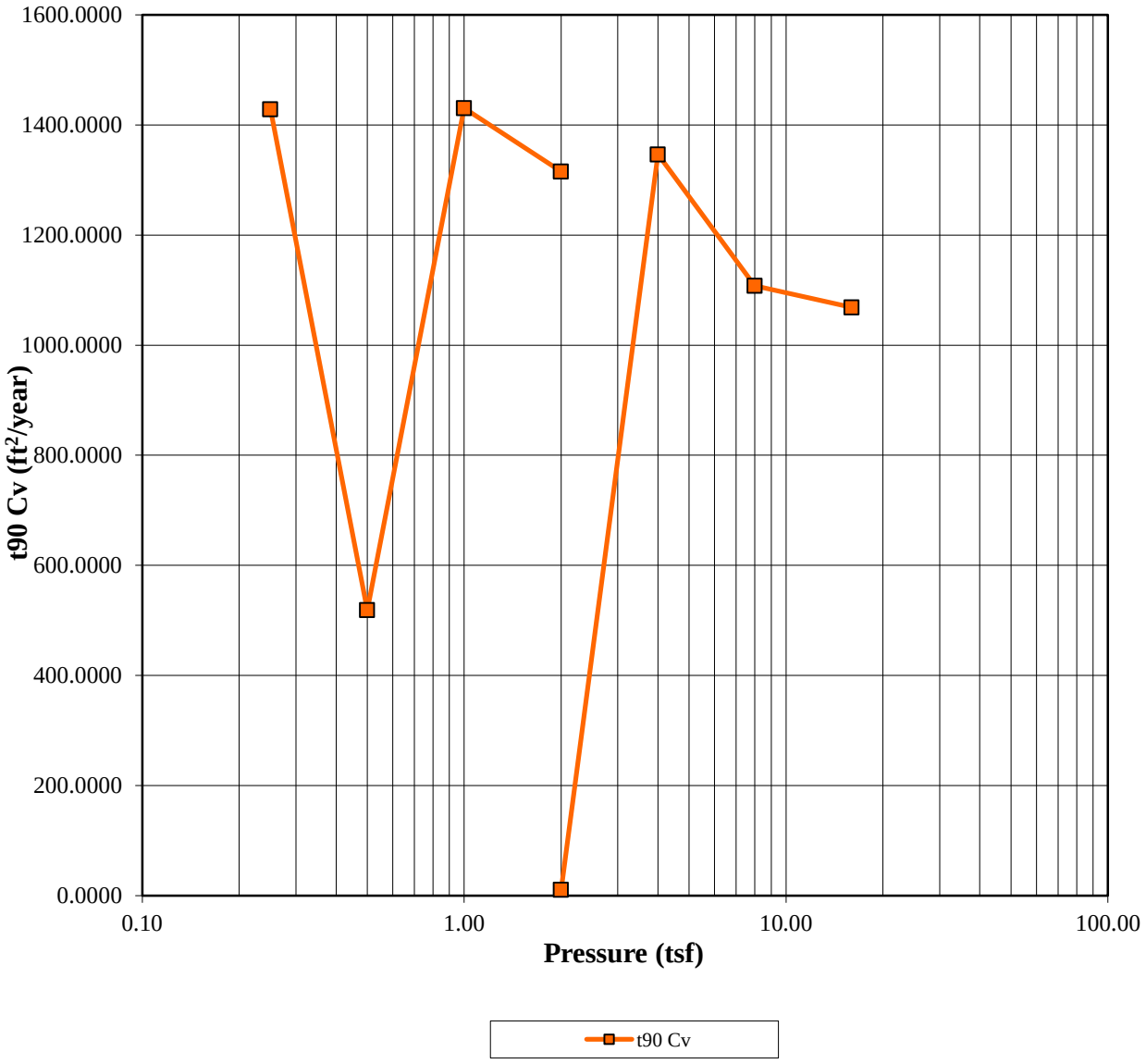



| | Before | After | | | | |
|---|---|---|---|---|---|---|
| **Moisture (%):** | 27.04 | 25.22 | **Liquid Limits:** | 0 | **Test Date:** | 11/4/17 |
| **Dry Density (pcf):** | 97.66 | 99.83 | **Plastic Limits:** | 0 | | |
| **Saturation (%):** | 134.79 | 135.05 | **Plasticity Index (%):** | 0 | | |
| **Void Ratio:** | 0.4562 | 0.4079 | **Specific Gravity:** | 2.280 | Measured | |

| | | | | |
|---|---|---|---|---|
| **Soil Description:** | CLAYEY SAND(SC A-6(6)) | | | |
| **Project Number:** | 8076 | **Depth:** | 33.0-35.0 ft. | **Remarks:** |
| **Sample Number:** | T-1 | **Boring Number:** | HLA-2 | |
| **Project:** | Mobile River Bridge | | | |
| **Client:** | ALDOT | | | |
| **Location:** | Soils Lab | | | |

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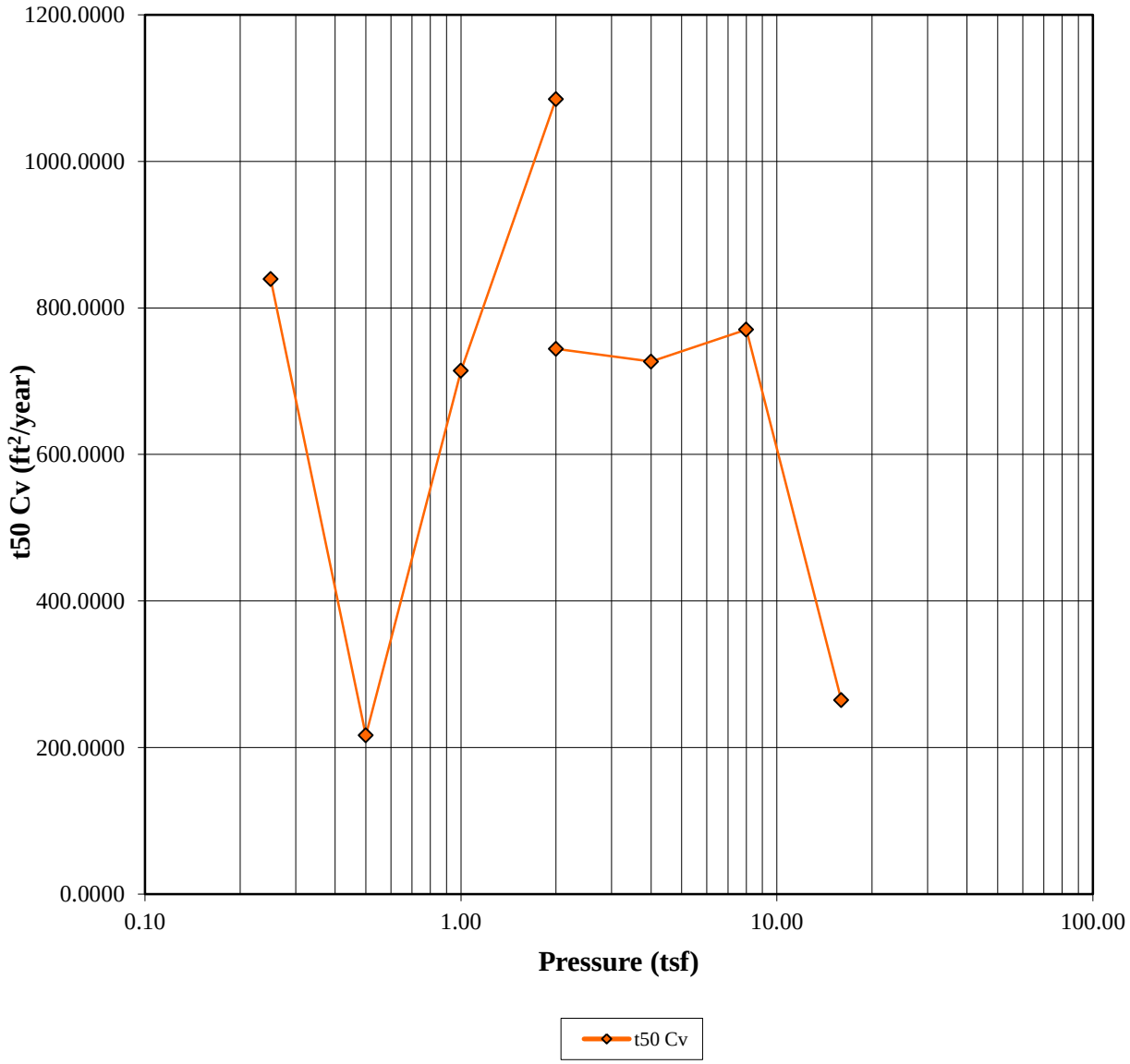
# Consolidation Test
## Test Results




| | Before | After | | | | |
|---|---|---|---|---|---|---|
| **Moisture (%):** | 27.04 | 25.22 | **Liquid Limits:** | 0 | **Test Date:** | 11/4/17 |
| **Dry Density (pcf):** | 97.66 | 99.83 | **Plastic Limits:** | 0 | | |
| **Saturation (%):** | 134.79 | 135.05 | **Plasticity Index (%):** | 0 | | |
| **Void Ratio:** | 0.4562 | 0.4079 | **Specific Gravity:** | 2.280 | Measured | |

| | | | | |
|---|---|---|---|---|
| **Soil Description:** | CLAYEY SAND(SC A-6(6)) | | | |
| **Project Number:** | 8076 | **Depth:** | 33.0-35.0 ft. | **Remarks:** |
| **Sample Number:** | T-1 | **Boring Number:** | HLA-2 | |
| **Project:** | Mobile River Bridge | | | |
| **Client:** | ALDOT | | | |
| **Location:** | Soils Lab | | | |

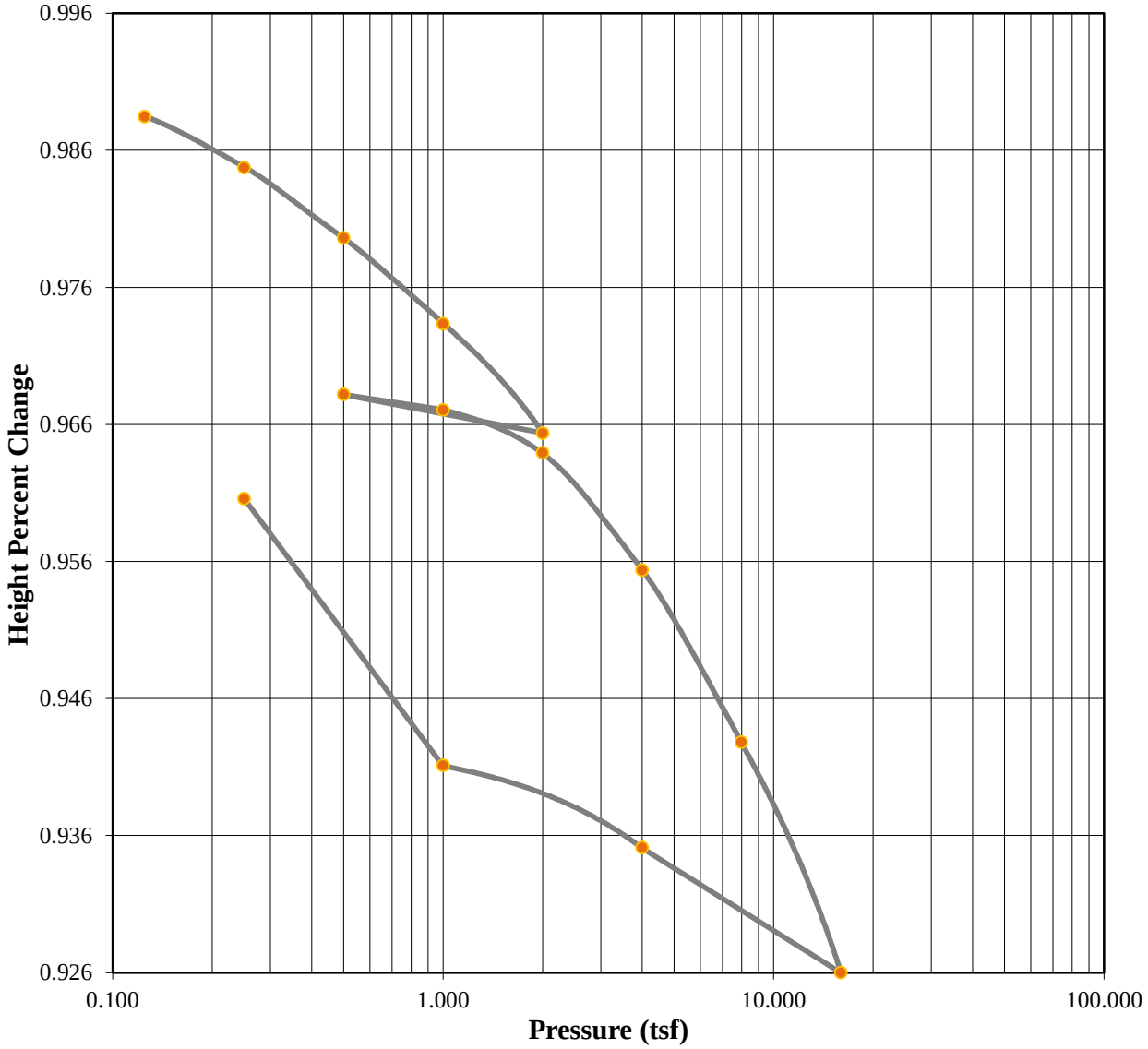
# Consolidation Test
## Test Results




| | Before | After | | | | |
|---|---|---|---|---|---|---|
| **Moisture (%):** | 27.04 | 25.22 | **Liquid Limits:** | 0 | **Test Date:** | 11/4/17 |
| **Dry Density (pcf):** | 97.66 | 99.83 | **Plastic Limits:** | 0 | | |
| **Saturation (%):** | 134.79 | 135.05 | **Plasticity Index (%):** | 0 | | |
| **Void Ratio:** | 0.4562 | 0.4079 | **Specific Gravity:** | 2.280 | Measured | |

| | | | | |
|---|---|---|---|---|
| **Soil Description:** | CLAYEY SAND(SC A-6(6)) | | | |
| **Project Number:** | 8076 | **Depth:** | 33.0-35.0 ft. | **Remarks:** |
| **Sample Number:** | T-1 | **Boring Number:** | HLA-2 | |
| **Project:** | Mobile River Bridge | | | |
| **Client:** | ALDOT | | | |
| **Location:** | Soils Lab | | | |

# Consolidation Test
## Test Results




| | Before | After | | | | |
|---|---|---|---|---|---|---|
| | | | **Liquid Limits:** | 0 | **Test Date:** | 11/4/17 |
| **Moisture (%):** | 27.04 | 25.22 | **Plastic Limits:** | 0 | | |
| **Dry Density (pcf):** | 97.66 | 99.83 | **Plasticity Index (%):** | 0 | | |
| **Saturation (%):** | 134.79 | 135.05 | | | | |
| **Void Ratio:** | 0.4562 | 0.4079 | **Specific Gravity:** | 2.280 | Measured | |

**Soil Description:** CLAYEY SAND(SC A-6(6))

**Project Number:** 8076 **Depth:** 33.0-35.0 ft. **Remarks:**

**Sample Number:** T-1 **Boring Number:** HLA-2

**Project:** Mobile River Bridge

**Client:** ALDOT

**Location:** Soils Lab

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# Consolidation Test Results
## Summary

**Project:** Mobile River Bridge
**Location:** Soils Lab
**Job Number:** 17-1101-0145

**Project Number:** 8076

**Sample Number:** T-1
**Boring Number:** HLA-2
**Depth:** 33.0-35.0 ft.
**Sample Type:** Undisturbed

**Sample Description:** CLAYEY SAND(SC A-6(6))
**Remarks:**

**Test Number:**
**Test Date:** 11/4/17

| Index | Load Sequence (tsf) | Cummulative Change in Height (in) | Specimen Height (in) | Height of Void (in) | Vertical Strain (%) | Void Ratio | t90 Fitting Time (min) | t50 Fitting Time (min) | t90 Cv (ft2/year) | t50 Cv (ft2/year) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0.000 | 0.0000 | 0.9940 | 0.3107 | 0.00 | 0.4548 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1 | 0.125 | 0.0051 | 0.9889 | 0.3056 | 0.52 | 0.4473 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2 | 0.250 | 0.0088 | 0.9852 | 0.3019 | 0.89 | 0.4419 | 0.526 | 0.208 | 1428.445 | 839.224 |
| 3 | 0.500 | 0.0140 | 0.9800 | 0.2968 | 1.41 | 0.4344 | 1.433 | * 0.7960 | 518.687 | 216.902 |
| 4 | 1.000 | 0.0202 | 0.9738 | 0.2905 | 2.04 | 0.4252 | 0.513 | 0.239 | 1430.339 | 714.458 |
| 5 | 2.000 | 0.0282 | 0.9658 | 0.2825 | 2.84 | 0.4135 | 0.549 | 0.155 | 1315.331 | 1084.725 |
| 6 | 0.500 | 0.0254 | 0.9686 | 0.2854 | 2.55 | 0.4177 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7 | 1.000 | 0.0265 | 0.9675 | 0.2842 | 2.67 | 0.4160 | 0.000 | 0.000 | 0.000 | 0.000 |
| 8 | 2.000 | 0.0297 | 0.9643 | 0.2811 | 2.98 | 0.4114 | 65.536 | 0.225 | 10.980 | 744.024 |
| 9 | 4.000 | 0.0382 | 0.9558 | 0.2725 | 3.84 | 0.3989 | 0.525 | 0.226 | 1346.334 | 726.893 |
| 10 | 8.000 | 0.0508 | 0.9432 | 0.2600 | 5.11 | 0.3805 | 0.622 | 0.208 | 1107.639 | 770.491 |
| 11 | 16.000 | 0.0676 | 0.9264 | 0.2432 | 6.80 | 0.3559 | 0.622 | 0.582 | 1068.348 | 264.927 |
| 12 | 4.000 | 0.0585 | 0.9355 | 0.2523 | 5.88 | 0.3692 | 0.000 | 0.000 | 0.000 | 0.000 |
| 13 | 1.000 | 0.0525 | 0.9415 | 0.2583 | 5.28 | 0.3780 | 0.000 | 0.000 | 0.000 | 0.000 |
| 14 | 0.250 | 0.0330 | 0.9610 | 0.2777 | 3.32 | 0.4065 | 0.000 | 0.000 | 0.000 | 0.000 |

Predicted value indicated with *

**Tested By:** B. Hak

**Checked By:** C. Dugger

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# Consolidation Test
## Consolidation Specimen Information

**Project:** Mobile River Bridge
**Project Number:** 8076
**Location:** Soils Lab
**Job Number:** 17-1101-0145
**Test Date:** 11/4/17

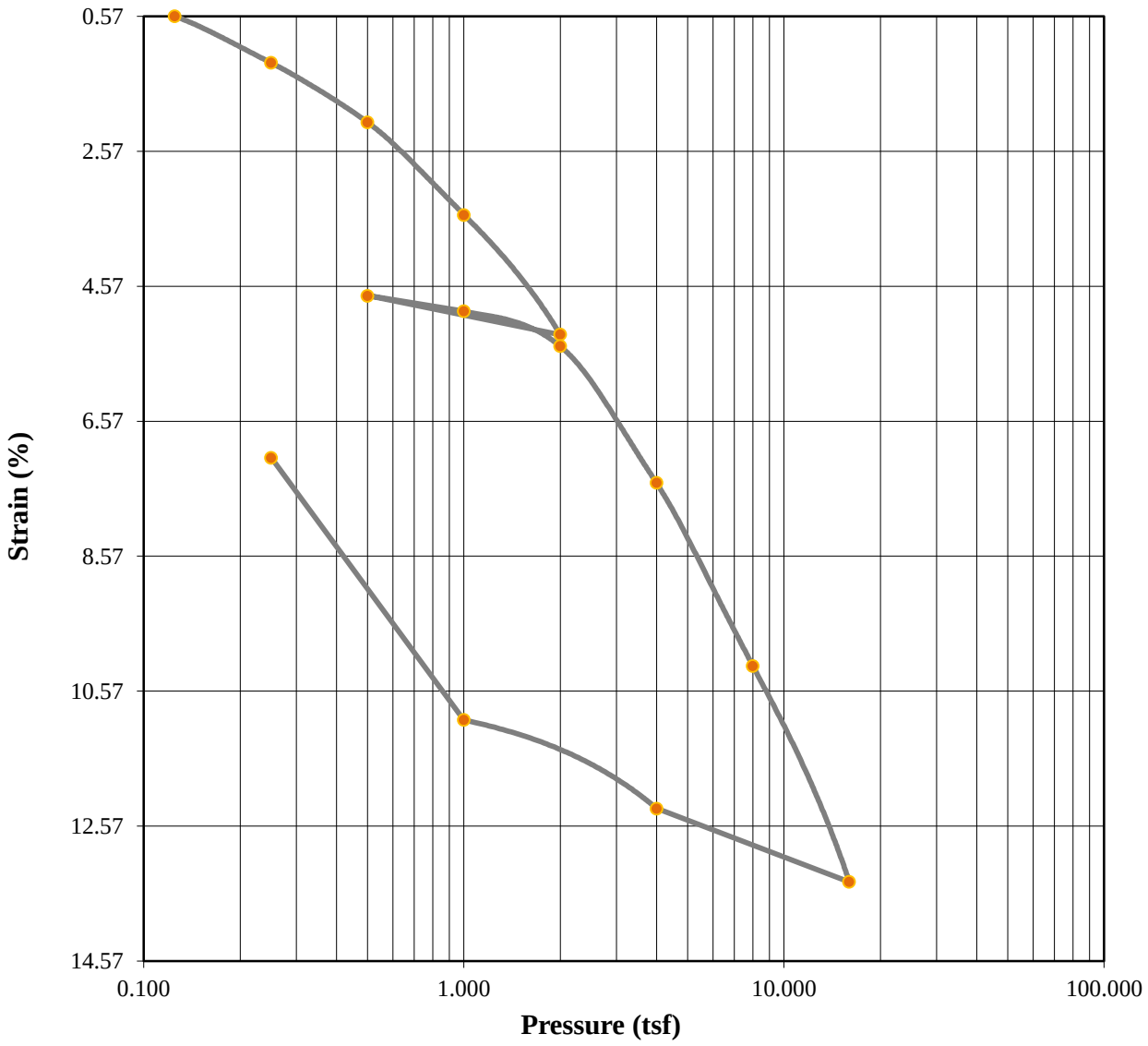
**Sample Number:** T-1
**Sample Description:**
**Boring Number:** HLA-2
CLAYEY SAND(SC A-6(6))
**Depth:** 33.0-35.0 ft.
**Remarks:**
**Sample Type:** Undisturbed

**Test Number:**
**Liquid Limit:** 0.0000
**Initial Void Ratio:** 0.4562
**Initial Height (in):** 0.9940
**Plastic Limit:** 0.0000
**Plasticity Index (%):** 0.0000
**Initial Diameter (in):** 2.4970
**Specific Gravity:** 2.2800 Measured
**Weight of Ring (g):** 98.6400

| Parameters | Initial Specimen | Final Specimen |
|---|---|---|
| Moist Weight + Container (g) | 141.02 | 285.56 |
| Dry Soil + Container (g) | 117.66 | 254.44 |
| Weight of Container (g) | 31.27 | 131.07 |
| Moisture Content (%) | 27.04 | 25.22 |
| Void Ratio | 0.4562 | 0.4079 |
| Saturation (%) | 134.79 | 135.05 |
| Dry Density (pcf) | 97.66 | 99.83 |

**Tested By:** B. Hak
**Checked By:** C. Dugger

# Consolidation Test
## Test Results

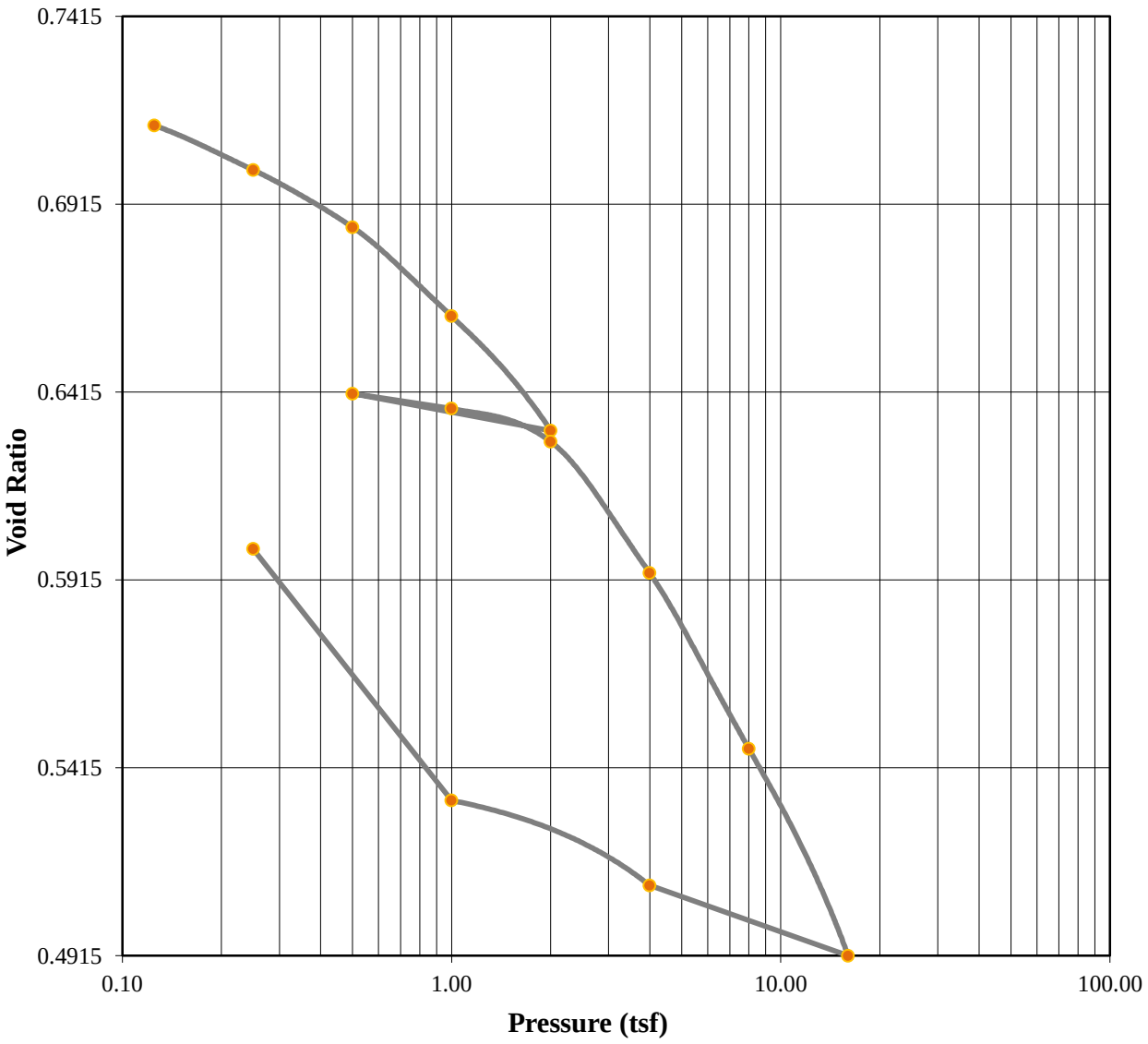



| | Before | After | | | | |
|---|---|---|---|---|---|---|
| **Moisture (%):** | 26.59 | 22.32 | **Liquid Limits:** | 0 | **Test Date:** | 9/25/17 |
| **Dry Density (pcf):** | 97.66 | 104.80 | **Plastic Limits:** | 0 | | |
| **Saturation (%):** | 98.94 | 99.12 | **Plasticity Index (%):** | 0 | | |
| **Void Ratio:** | 0.7242 | 0.6015 | **Specific Gravity:** | 2.699 | Measured | |

| | | | | |
|---|---|---|---|---|
| **Sample Description:** | SILTY SAND(SM A-2-4(0)) | | | |
| **Project Number:** | 8060 | **Depth:** | 28.0-30.0 ft. | **Remarks:** |
| **Sample Number:** | T-1 | **Boring Number:** | HLA-4 | |
| **Project:** | Mobile River Bridge | | | |
| **Client:** | ALDOT | | | |
| **Location:** | Soils Lab | | | |

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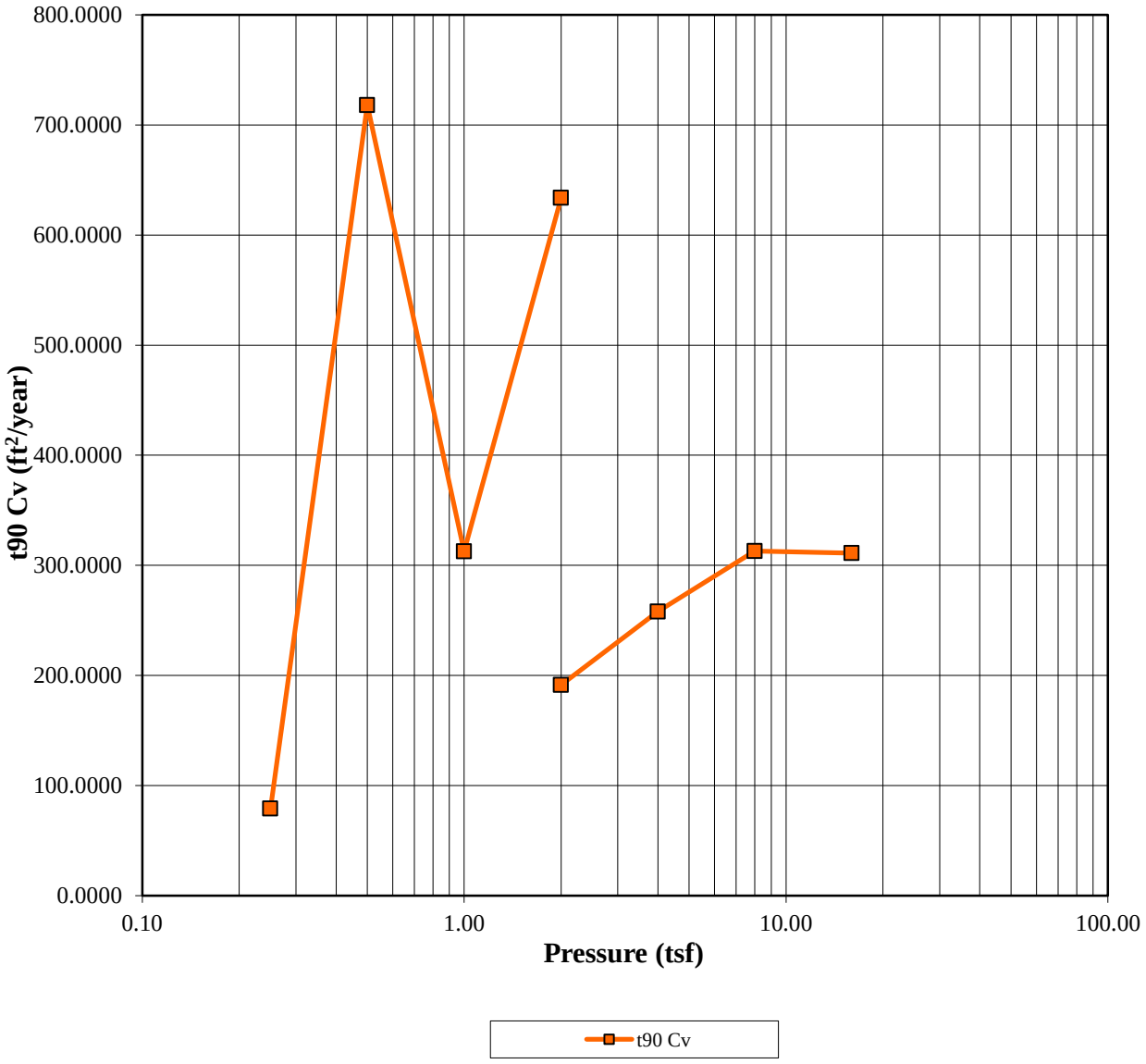
# Consolidation Test
## Test Results




| | Before | After | | | | |
|---|---|---|---|---|---|---|
| **Moisture (%):** | 26.59 | 22.32 | **Liquid Limits:** | 0 | **Test Date:** | 9/25/17 |
| **Dry Density (pcf):** | 97.66 | 104.80 | **Plastic Limits:** | 0 | | |
| **Saturation (%):** | 98.94 | 99.12 | **Plasticity Index (%):** | 0 | | |
| **Void Ratio:** | 0.7242 | 0.6015 | **Specific Gravity:** | 2.699 | Measured | |

| | | | | |
|---|---|---|---|---|
| **Soil Description:** | SILTY SAND(SM A-2-4(0)) | | | |
| **Project Number:** | 8060 | **Depth:** | 28.0-30.0 ft. | **Remarks:** |
| **Sample Number:** | T-1 | **Boring Number:** | HLA-4 | |
| **Project:** | Mobile River Bridge | | | |
| **Client:** | ALDOT | | | |
| **Location:** | Soils Lab | | | |

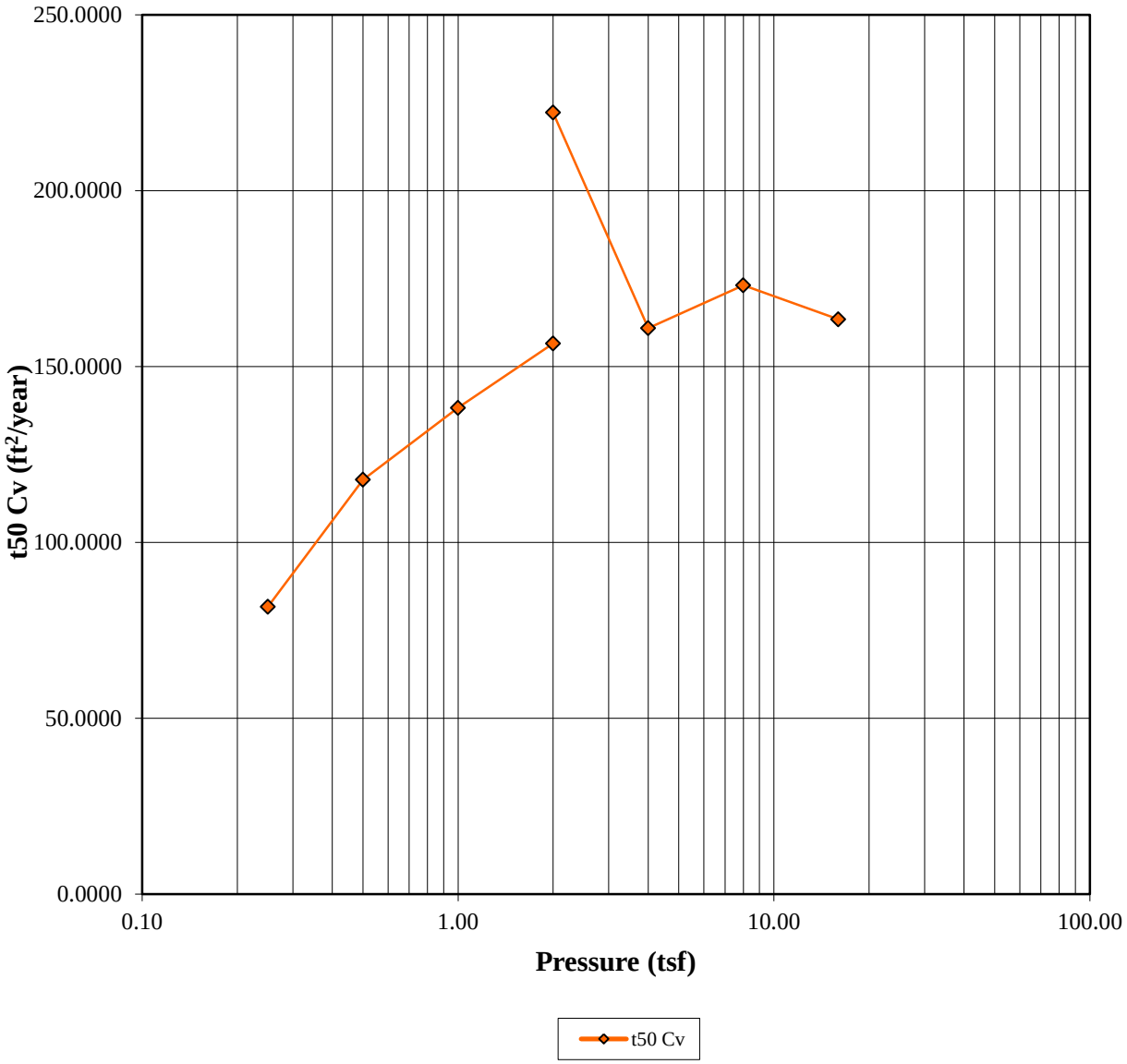
# Consolidation Test
## Test Results




| | Before | After | | | | |
|---|---|---|---|---|---|---|
| **Moisture (%):** | 26.59 | 22.32 | **Liquid Limits:** | 0 | **Test Date:** | 9/25/17 |
| **Dry Density (pcf):** | 97.66 | 104.80 | **Plastic Limits:** | 0 | | |
| **Saturation (%):** | 98.94 | 99.12 | **Plasticity Index (%):** | 0 | | |
| **Void Ratio:** | 0.7242 | 0.6015 | **Specific Gravity:** | 2.699 | Measured | |

| | | | | |
|---|---|---|---|---|
| **Soil Description:** | SILTY SAND(SM A-2-4(0)) | | | |
| **Project Number:** | 8060 | **Depth:** | 28.0-30.0 ft. | **Remarks:** |
| **Sample Number:** | T-1 | **Boring Number:** | HLA-4 | |
| **Project:** | Mobile River Bridge | | | |
| **Client:** | ALDOT | | | |
| **Location:** | Soils Lab | | | |

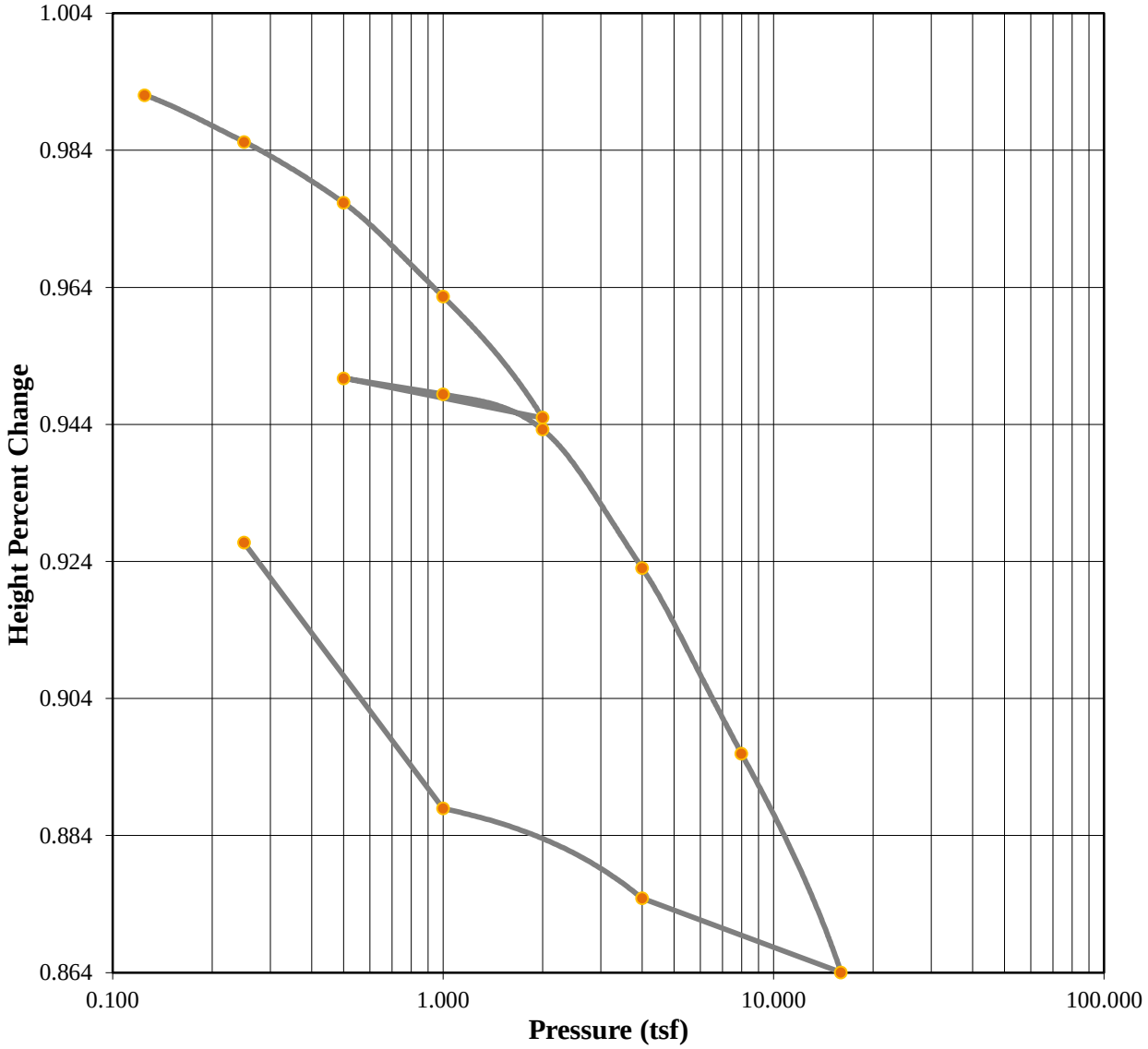
# Consolidation Test
## Test Results




| | Before | After | | | | |
|---|---|---|---|---|---|---|
| | | | **Liquid Limits:** | 0 | **Test Date:** | 9/25/17 |
| **Moisture (%):** | 26.59 | 22.32 | **Plastic Limits:** | 0 | | |
| **Dry Density (pcf):** | 97.66 | 104.80 | **Plasticity Index (%):** | 0 | | |
| **Saturation (%):** | 98.94 | 99.12 | | | | |
| **Void Ratio:** | 0.7242 | 0.6015 | **Specific Gravity:** | 2.699 | Measured | |

| | | | | |
|---|---|---|---|---|
| **Soil Description:** | SILTY SAND(SM A-2-4(0)) | | | |
| **Project Number:** | 8060 | **Depth:** | 28.0-30.0 ft. | **Remarks:** |
| **Sample Number:** | T-1 | **Boring Number:** | HLA-4 | |
| **Project:** | Mobile River Bridge | | | |
| **Client:** | ALDOT | | | |
| **Location:** | Soils Lab | | | |

# Consolidation Test
## Test Results




| | Before | After | | | | |
|---|---|---|---|---|---|---|
| **Moisture (%):** | 26.59 | 22.32 | **Liquid Limits:** | 0 | **Test Date:** | 9/25/17 |
| **Dry Density (pcf):** | 97.66 | 104.80 | **Plastic Limits:** | 0 | | |
| **Saturation (%):** | 98.94 | 99.12 | **Plasticity Index (%):** | 0 | | |
| **Void Ratio:** | 0.7242 | 0.6015 | **Specific Gravity:** | 2.699 | Measured | |

| | | | | |
|---|---|---|---|---|
| **Soil Description:** | SILTY SAND(SM A-2-4(0)) | | | |
| **Project Number:** | 8060 | **Depth:** | 28.0-30.0 ft. | **Remarks:** |
| **Sample Number:** | T-1 | **Boring Number:** | HLA-4 | |
| **Project:** | Mobile River Bridge | | | |
| **Client:** | ALDOT | | | |
| **Location:** | Soils Lab | | | |

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# Consolidation Test Results
## Summary

**Project:** Mobile River Bridge
**Location:** Soils Lab
**Job Number:** 17-1101-0145

**Project Number:** 8060

**Sample Number:** T-1
**Boring Number:** HLA-4
**Depth:** 28.0-30.0 ft.
**Sample Type:** Undisturbed

**Sample Description:** SILTY SAND(SM A-2-4(0))
**Remarks:**

**Test Number:**
**Test Date:** 9/25/17

| Index | Load Sequence (tsf) | Cummulative Change in Height (in) | Specimen Height (in) | Height of Void (in) | Vertical Strain (%) | Void Ratio | t90 Fitting Time (min) | t50 Fitting Time (min) | t90 Cv (ft2/year) | t50 Cv (ft2/year) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0.000 | 0.0000 | 0.9980 | 0.4185 | 0.00 | 0.7223 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1 | 0.125 | 0.0057 | 0.9923 | 0.4128 | 0.57 | 0.7124 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2 | 0.250 | 0.0125 | 0.9855 | 0.4060 | 1.26 | 0.7006 | 9.479 | 2.136 | 79.273 | 81.733 |
| 3 | 0.500 | 0.0214 | 0.9766 | 0.3971 | 2.14 | 0.6854 | 1.028 | 1.455 | 718.101 | 117.841 |
| 4 | 1.000 | 0.0351 | 0.9629 | 0.3835 | 3.51 | 0.6617 | 2.294 | 1.205 | 312.765 | 138.275 |
| 5 | 2.000 | 0.0528 | 0.9452 | 0.3658 | 5.29 | 0.6312 | 1.091 | 1.026 | 633.874 | 156.577 |
| 6 | 0.500 | 0.0470 | 0.9510 | 0.3715 | 4.71 | 0.6411 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7 | 1.000 | 0.0493 | 0.9487 | 0.3692 | 4.94 | 0.6371 | 0.000 | 0.000 | 0.000 | 0.000 |
| 8 | 2.000 | 0.0545 | 0.9435 | 0.3641 | 5.46 | 0.6283 | 3.595 | 0.720 | 191.636 | 222.185 |
| 9 | 4.000 | 0.0747 | 0.9233 | 0.3438 | 7.49 | 0.5933 | 2.555 | 0.952 | 258.194 | 160.916 |
| 10 | 8.000 | 0.1018 | 0.8962 | 0.3167 | 10.20 | 0.5466 | 1.986 | 0.834 | 313.012 | 173.069 |
| 11 | 16.000 | 0.1337 | 0.8643 | 0.2848 | 13.40 | 0.4915 | 1.857 | 0.822 | 311.256 | 163.399 |
| 12 | 4.000 | 0.1229 | 0.8751 | 0.2956 | 12.31 | 0.5102 | 0.000 | 0.000 | 0.000 | 0.000 |
| 13 | 1.000 | 0.1098 | 0.8882 | 0.3088 | 11.00 | 0.5328 | 0.000 | 0.000 | 0.000 | 0.000 |
| 14 | 0.250 | 0.0710 | 0.9270 | 0.3475 | 7.11 | 0.5997 | 0.000 | 0.000 | 0.000 | 0.000 |

Predicted value indicated with *

**Tested By:** B. Hak

**Checked By:** C. Dugger

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# Consolidation Test
## Consolidation Specimen Information

**Project:** Mobile River Bridge
**Project Number:** 8060
**Location:** Soils Lab
**Job Number:** 17-1101-0145
**Test Date:** 9/25/17

**Sample Number:** T-1
**Sample Description:**
**Boring Number:** HLA-4
SILTY SAND(SM A-2-4(0))
**Depth:** 28.0-30.0 ft.
**Remarks:**
**Sample Type:** Undisturbed

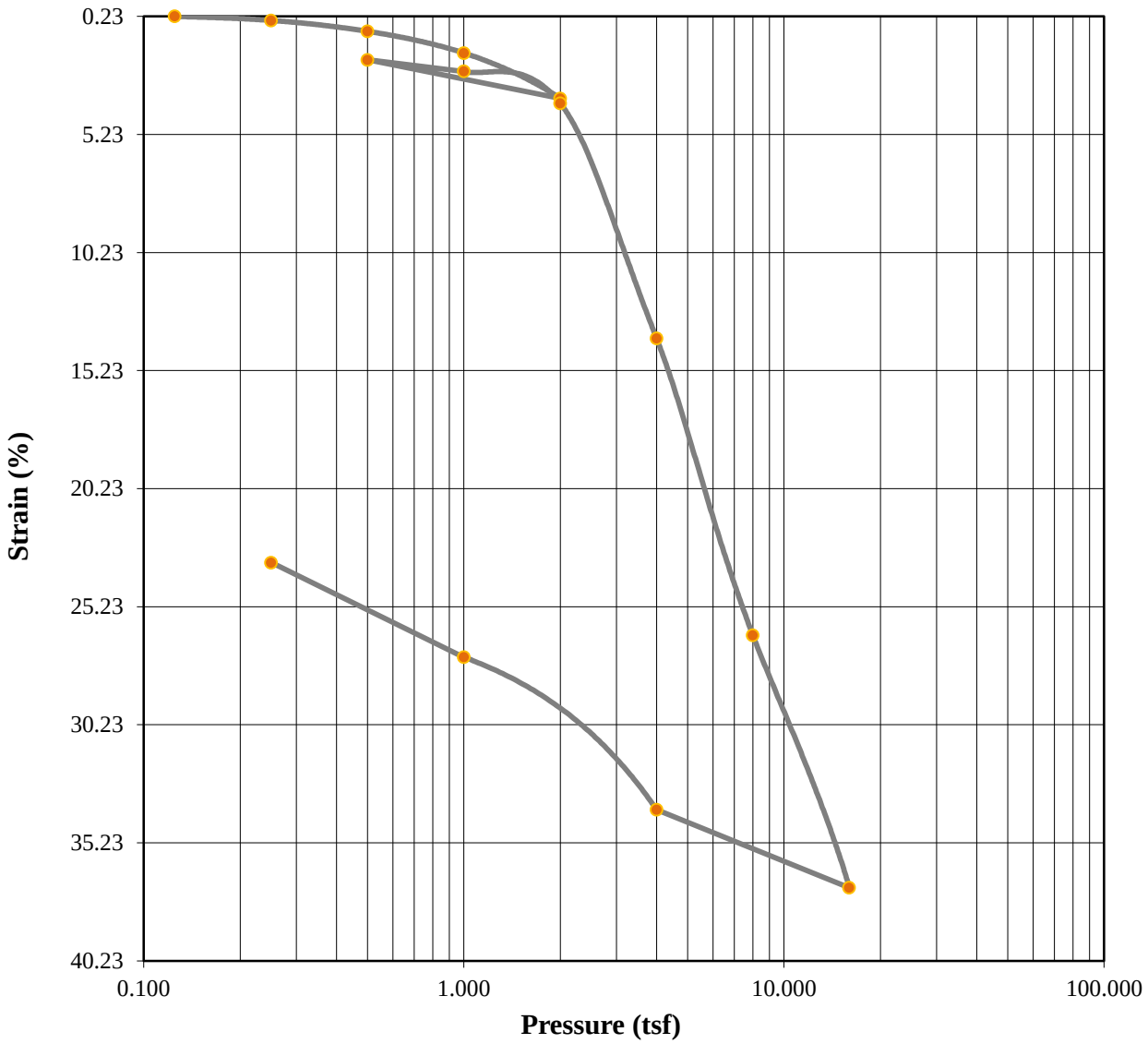
**Test Number:**
**Liquid Limit:** 0.0000
**Initial Void Ratio:** 0.7242
**Initial Height (in):** 0.9980
**Plastic Limit:** 0.0000
**Plasticity Index (%):** 0.0000
**Initial Diameter (in):** 2.5050
**Specific Gravity:** 2.6990 Measured
**Weight of Ring (g):** 110.7200

| Parameters | Initial Specimen | Final Specimen |
|---|---|---|
| Moist Weight + Container (g) | 146.03 | 286.22 |
| Dry Soil + Container (g) | 122.10 | 258.23 |
| Weight of Container (g) | 32.09 | 132.84 |
| Moisture Content (%) | 26.59 | 22.32 |
| Void Ratio | 0.7242 | 0.6015 |
| Saturation (%) | 98.94 | 99.12 |
| Dry Density (pcf) | 97.66 | 104.80 |

**Tested By:** B. Hak
**Checked By:** C. Dugger

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# Consolidation Test
## Test Results

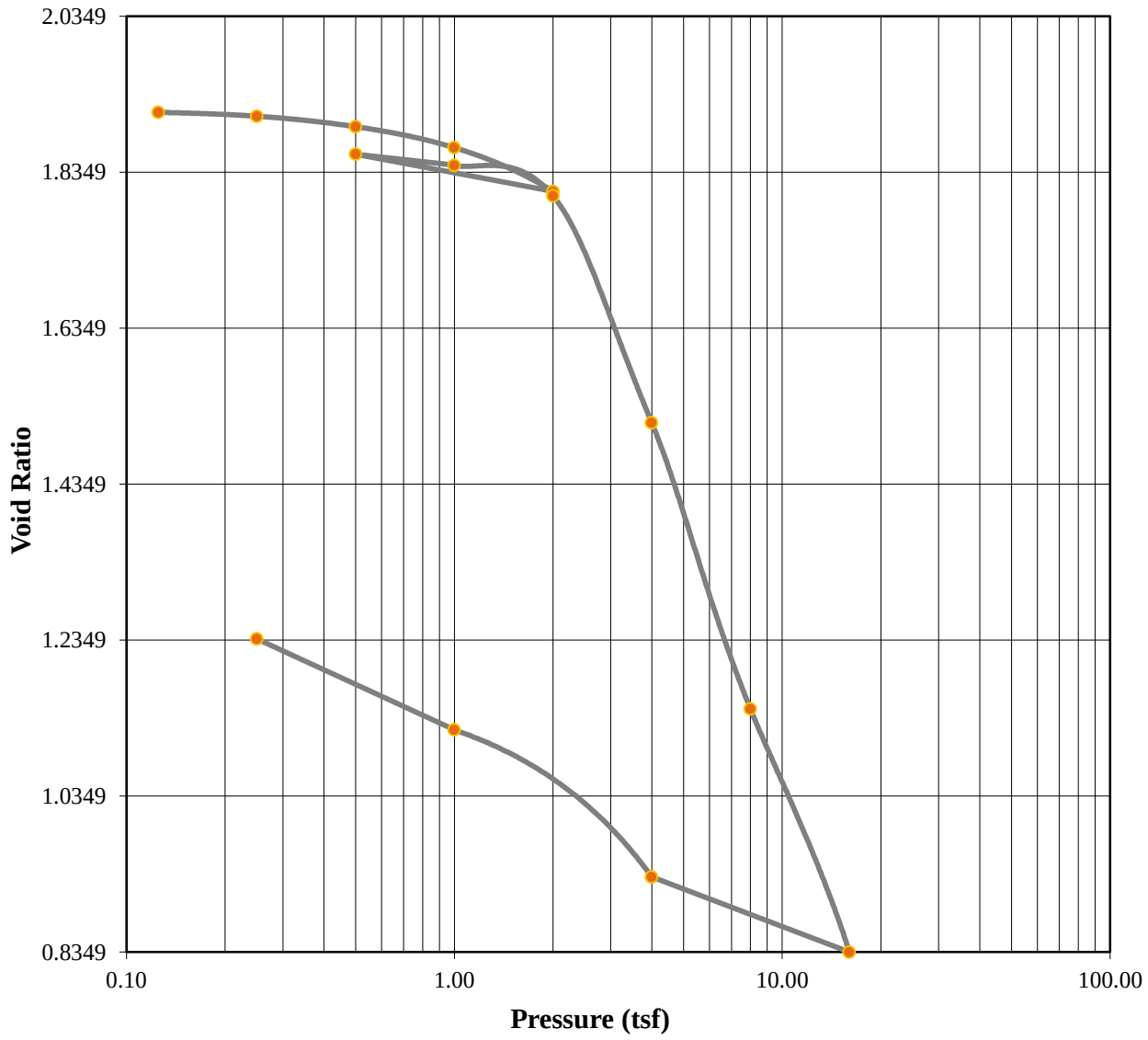



| | Before | After | | | | |
|---|---|---|---|---|---|---|
| **Moisture (%):** | 93.61 | 67.36 | **Liquid Limits:** | 76 | **Test Date:** | 11/9/17 |
| **Dry Density (pcf):** | 45.97 | 58.37 | **Plastic Limits:** | 39 | | |
| **Saturation (%):** | 104.77 | 111.34 | **Plasticity Index (%):** | 0 | | |
| **Void Ratio:** | 1.9148 | 1.2338 | **Specific Gravity:** | 2.153 | Measured | |

| | | | | |
|---|---|---|---|---|
| **Sample Description:** | ELASTIC SILT(MH A-7-5(44)) | | | |
| **Project Number:** | 8076 | **Depth:** | 23.5-25.5 ft. | **Remarks:** |
| **Sample Number:** | T-1 | **Boring Number:** | HLA-5 | |
| **Project:** | Mobile River Bridge | | | |
| **Client:** | ALDOT | | | |
| **Location:** | Soils Lab | | | |

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# Consolidation Test
## Test Results

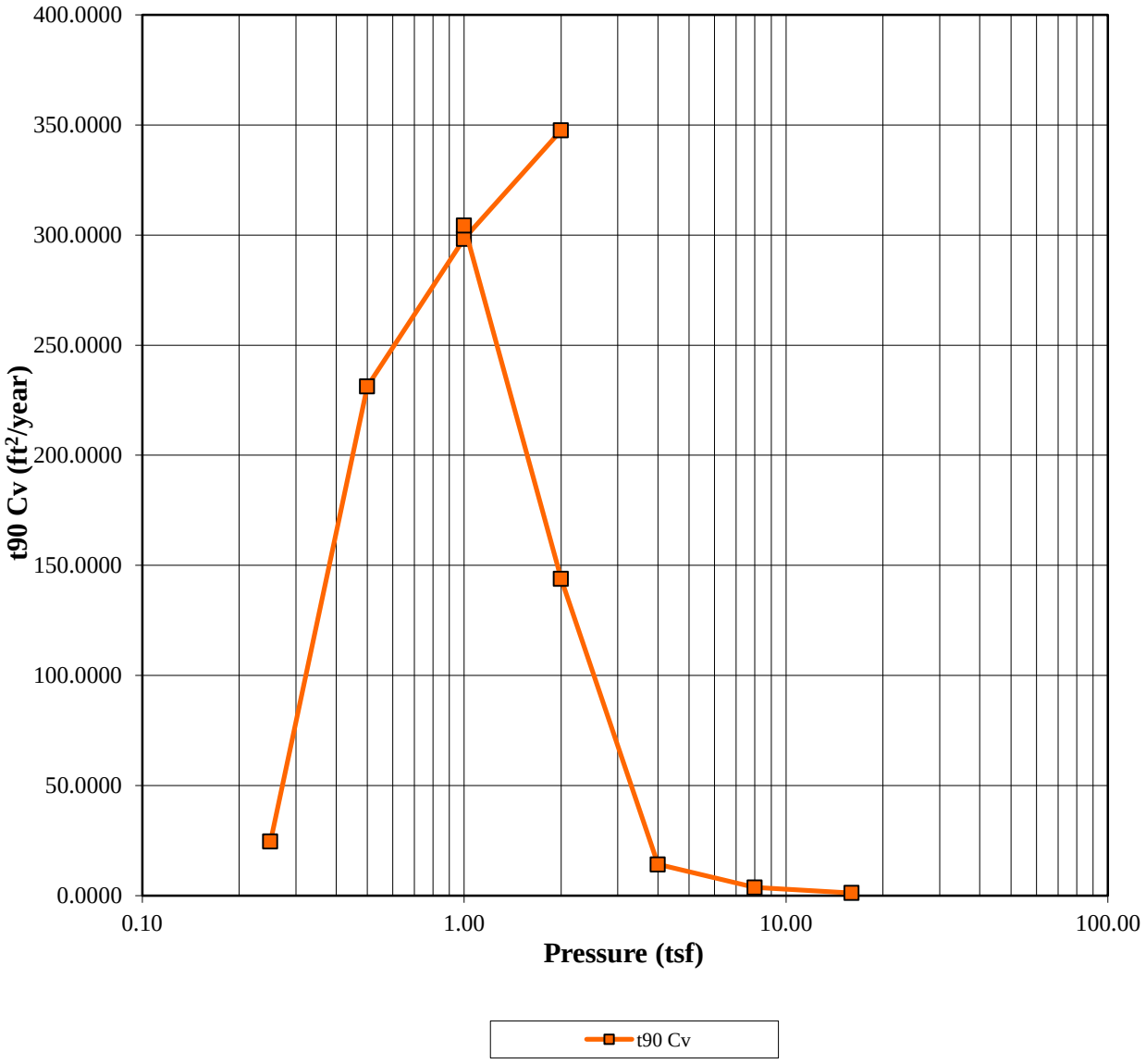



| | Before | After | | | | |
|---|---|---|---|---|---|---|
| **Moisture (%):** | 93.61 | 67.36 | **Liquid Limits:** | 76 | **Test Date:** | 11/9/17 |
| **Dry Density (pcf):** | 45.97 | 58.37 | **Plastic Limits:** | 39 | | |
| **Saturation (%):** | 104.77 | 111.34 | **Plasticity Index (%):** | 0 | | |
| **Void Ratio:** | 1.9148 | 1.2338 | **Specific Gravity:** | 2.153 | Measured | |

| | | | | |
|---|---|---|---|---|
| **Soil Description:** | ELASTIC SILT(MH A-7-5(44)) | | | |
| **Project Number:** | 8076 | **Depth:** | 23.5-25.5 ft. | **Remarks:** |
| **Sample Number:** | T-1 | **Boring Number:** | HLA-5 | |
| **Project:** | Mobile River Bridge | | | |
| **Client:** | ALDOT | | | |
| **Location:** | Soils Lab | | | |

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# Consolidation Test
## Test Results




| | Before | After | | | | |
|---|---|---|---|---|---|---|
| **Moisture (%):** | 93.61 | 67.36 | **Liquid Limits:** | 76 | **Test Date:** | 11/9/17 |
| **Dry Density (pcf):** | 45.97 | 58.37 | **Plastic Limits:** | 39 | | |
| **Saturation (%):** | 104.77 | 111.34 | **Plasticity Index (%):** | 0 | | |
| **Void Ratio:** | 1.9148 | 1.2338 | **Specific Gravity:** | 2.153 | Measured | |

**Soil Description:** ELASTIC SILT(MH A-7-5(44))

**Project Number:** 8076 **Depth:** 23.5-25.5 ft. **Remarks:**

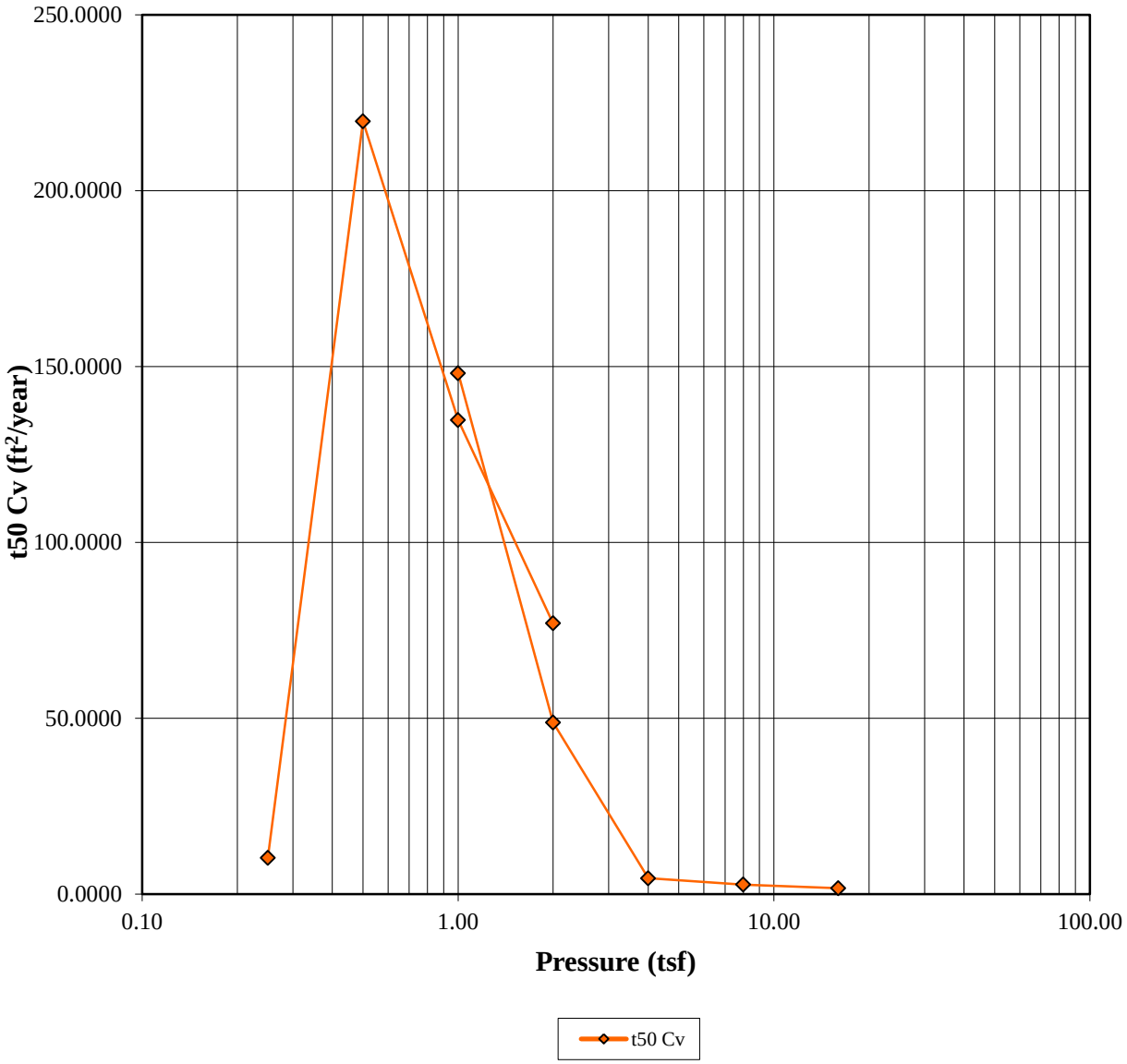
**Sample Number:** T-1 **Boring Number:** HLA-5

**Project:** Mobile River Bridge

**Client:** ALDOT

**Location:** Soils Lab

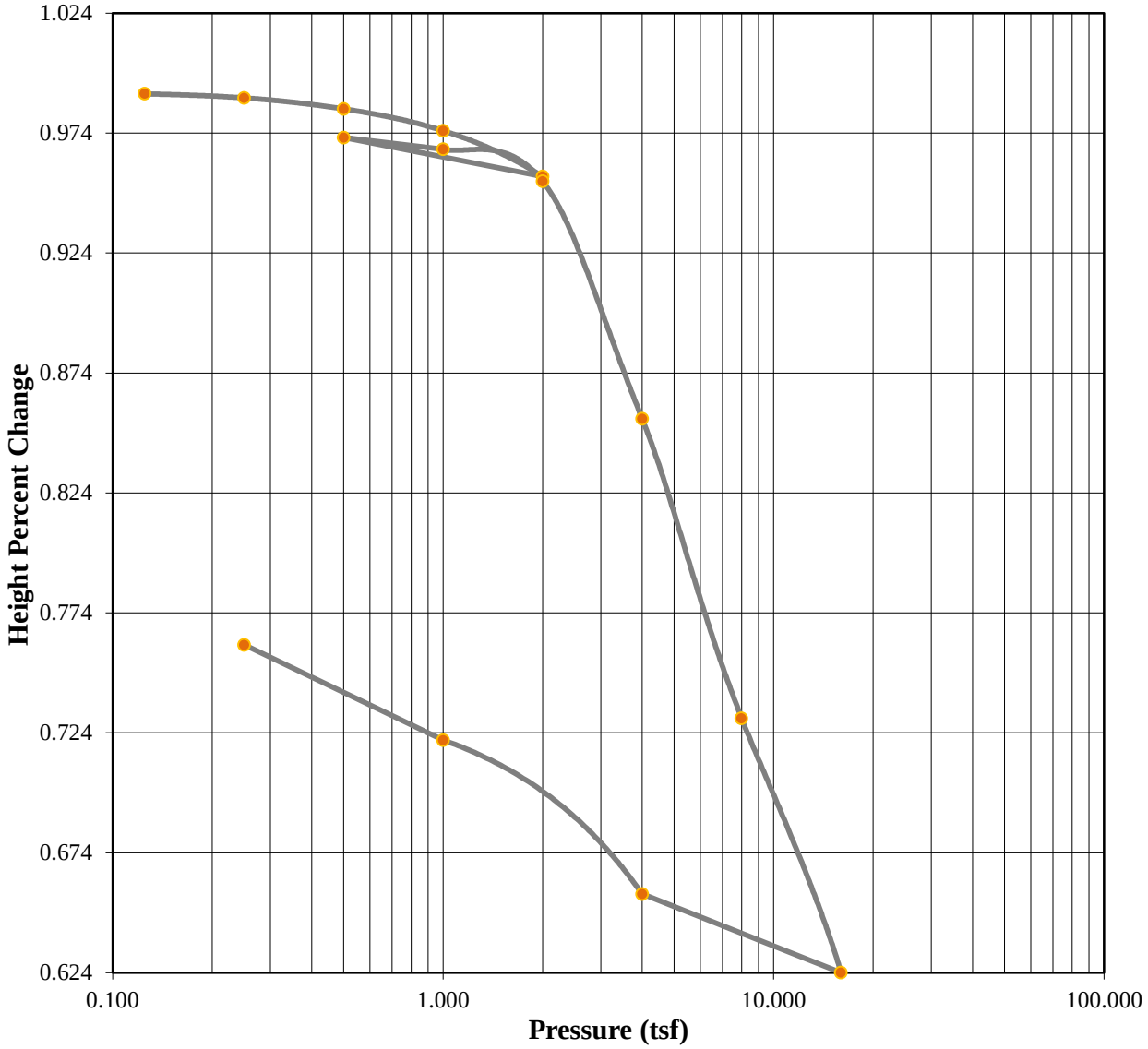
# Consolidation Test
## Test Results




| | Before | After | | | | |
|---|---|---|---|---|---|---|
| **Moisture (%):** | 93.61 | 67.36 | **Liquid Limits:** | 76 | **Test Date:** | 11/9/17 |
| **Dry Density (pcf):** | 45.97 | 58.37 | **Plastic Limits:** | 39 | | |
| **Saturation (%):** | 104.77 | 111.34 | **Plasticity Index (%):** | 0 | | |
| **Void Ratio:** | 1.9148 | 1.2338 | **Specific Gravity:** | 2.153 | Measured | |

| | | | | |
|---|---|---|---|---|
| **Soil Description:** | ELASTIC SILT(MH A-7-5(44)) | | | |
| **Project Number:** | 8076 | **Depth:** | 23.5-25.5 ft. | **Remarks:** |
| **Sample Number:** | T-1 | **Boring Number:** | HLA-5 | |
| **Project:** | Mobile River Bridge | | | |
| **Client:** | ALDOT | | | |
| **Location:** | Soils Lab | | | |

# Consolidation Test
## Test Results




| | Before | After | | | | |
|---|---|---|---|---|---|---|
| | | | **Liquid Limits:** | 76 | **Test Date:** | 11/9/17 |
| **Moisture (%):** | 93.61 | 67.36 | **Plastic Limits:** | 39 | | |
| **Dry Density (pcf):** | 45.97 | 58.37 | **Plasticity Index (%):** | 0 | | |
| **Saturation (%):** | 104.77 | 111.34 | | | | |
| **Void Ratio:** | 1.9148 | 1.2338 | **Specific Gravity:** | 2.153 | Measured | |

**Soil Description:** ELASTIC SILT(MH A-7-5(44))

**Project Number:** 8076 **Depth:** 23.5-25.5 ft.

**Sample Number:** T-1 **Boring Number:** HLA-5

**Project:** Mobile River Bridge

**Client:** ALDOT

**Location:** Soils Lab

**Remarks:**

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# Consolidation Test Results
## Summary

**Project:** Mobile River Bridge
**Location:** Soils Lab
**Job Number:** 17-1101-0145

**Project Number:** 8076

**Sample Number:** T-1
**Boring Number:** HLA-5
**Depth:** 23.5-25.5 ft.
**Sample Type:** Undisturbed

**Sample Description:** ELASTIC SILT(MH A-7-5(44))
**Remarks:**

**Test Number:**
**Test Date:** 11/9/17

| Index | Load Sequence (tsf) | Cummulative Change in Height (in) | Specimen Height (in) | Height of Void (in) | Vertical Strain (%) | Void Ratio | t90 Fitting Time (min) | t50 Fitting Time (min) | t90 Cv (ft2/year) | t50 Cv (ft2/year) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0.000 | 0.0000 | 0.9930 | 0.6528 | 0.00 | 1.9185 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1 | 0.125 | 0.0023 | 0.9907 | 0.6505 | 0.23 | 1.9118 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2 | 0.250 | 0.0040 | 0.9890 | 0.6488 | 0.40 | 1.9068 | 30.656 | * 17.0312 | 24.689 | 10.324 |
| 3 | 0.500 | 0.0086 | 0.9844 | 0.6442 | 0.86 | 1.8934 | 3.243 | 0.793 | 231.267 | 219.731 |
| 4 | 1.000 | 0.0177 | 0.9753 | 0.6351 | 1.78 | 1.8665 | 2.468 | 1.269 | 298.273 | 134.793 |
| 5 | 2.000 | 0.0368 | 0.9562 | 0.6160 | 3.70 | 1.8104 | 2.036 | 2.134 | 347.521 | 77.030 |
| 6 | 0.500 | 0.0205 | 0.9725 | 0.6322 | 2.07 | 1.8582 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7 | 1.000 | 0.0254 | 0.9676 | 0.6274 | 2.56 | 1.8439 | 2.381 | 1.136 | 304.264 | 148.119 |
| 8 | 2.000 | 0.0388 | 0.9542 | 0.6140 | 3.91 | 1.8045 | 4.896 | 3.353 | 143.914 | 48.821 |
| 9 | 4.000 | 0.1377 | 0.8553 | 0.5150 | 13.87 | 1.5137 | 39.691 | 28.847 | 14.261 | 4.558 |
| 10 | 8.000 | 0.2626 | 0.7304 | 0.3901 | 26.45 | 1.1466 | 109.014 | 35.062 | 3.787 | 2.735 |
| 11 | 16.000 | 0.3687 | 0.6243 | 0.2841 | 37.13 | 0.8349 | 225.626 | 39.816 | 1.337 | 1.760 |
| 12 | 4.000 | 0.3359 | 0.6571 | 0.3169 | 33.83 | 0.9313 | 0.000 | 0.000 | 0.000 | 0.000 |
| 13 | 1.000 | 0.2717 | 0.7213 | 0.3810 | 27.37 | 1.1198 | 0.000 | 0.000 | 0.000 | 0.000 |
| 14 | 0.250 | 0.2320 | 0.7610 | 0.4208 | 23.36 | 1.2366 | 0.000 | 0.000 | 0.000 | 0.000 |

Predicted value indicated with *

**Tested By:** B. Hak

**Checked By:** C. Dugger

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# Consolidation Test
## Consolidation Specimen Information

**Project:** Mobile River Bridge
**Project Number:** 8076
**Location:** Soils Lab
**Job Number:** 17-1101-0145
**Test Date:** 11/9/17

**Sample Number:** T-1
**Sample Description:**
**Boring Number:** HLA-5
ELASTIC SILT(MH A-7-5(44))
**Depth:** 23.5-25.5 ft.
**Remarks:**
**Sample Type:** Undisturbed

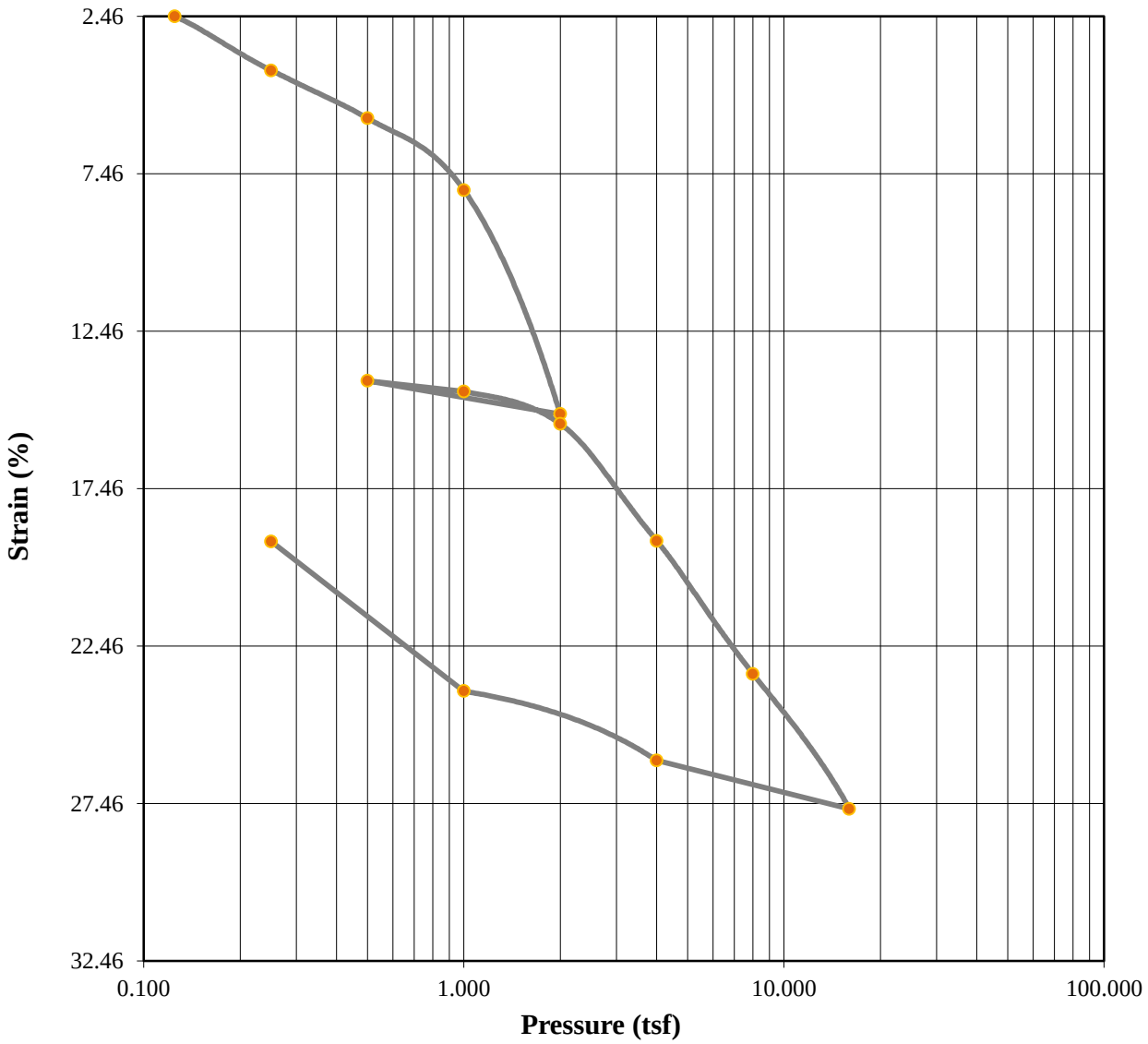
**Test Number:**
**Liquid Limit:** 76.0000
**Initial Void Ratio:** 1.9148
**Initial Height (in):** 0.9930
**Plastic Limit:** 39.0000
**Plasticity Index (%):** 0.0000
**Initial Diameter (in):** 2.4980
**Specific Gravity:** 2.1530 Measured
**Weight of Ring (g):** 98.6500

| Parameters | Initial Specimen | Final Specimen |
|---|---|---|
| Moist Weight + Container (g) | 101.58 | 223.21 |
| Dry Soil + Container (g) | 68.02 | 184.91 |
| Weight of Container (g) | 32.17 | 128.05 |
| Moisture Content (%) | 93.61 | 67.36 |
| Void Ratio | 1.9148 | 1.2338 |
| Saturation (%) | 104.77 | 111.34 |
| Dry Density (pcf) | 45.97 | 58.37 |

**Tested By:** B. Hak
**Checked By:** C. Dugger

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# Consolidation Test
## Test Results

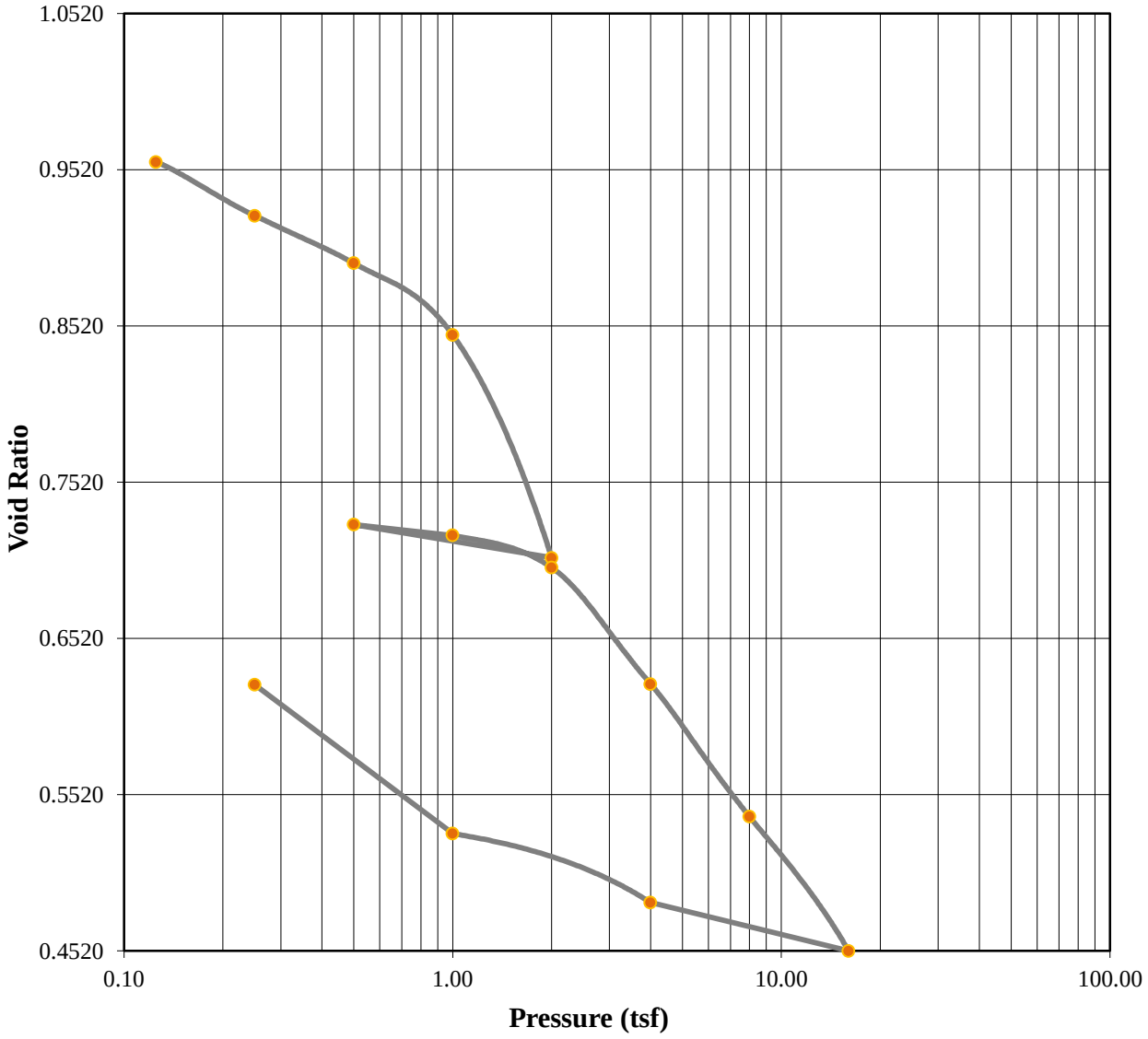



| | Before | After | | | | |
|---|---|---|---|---|---|---|
| | | | **Liquid Limits:** | 0 | **Test Date:** | 11/15/17 |
| **Moisture (%):** | 44.50 | 28.19 | **Plastic Limits:** | 0 | | |
| **Dry Density (pcf):** | 77.09 | 95.44 | **Plasticity Index (%):** | 0 | | |
| **Saturation (%):** | 109.36 | 112.23 | | | | |
| **Void Ratio:** | 1.0053 | 0.6215 | **Specific Gravity:** | 2.482 | Measured | |

| | | | | |
|---|---|---|---|---|
| **Sample Description:** | SILTY SAND(SM A-2-4(0)) | | | |
| **Project Number:** | 8076 | **Depth:** | 28.0-30.0 ft. | **Remarks:** |
| **Sample Number:** | T-1 | **Boring Number:** | HLA-6 | |
| **Project:** | Mobile River Bridge | | | |
| **Client:** | ALDOT | | | |
| **Location:** | Soils Lab | | | |

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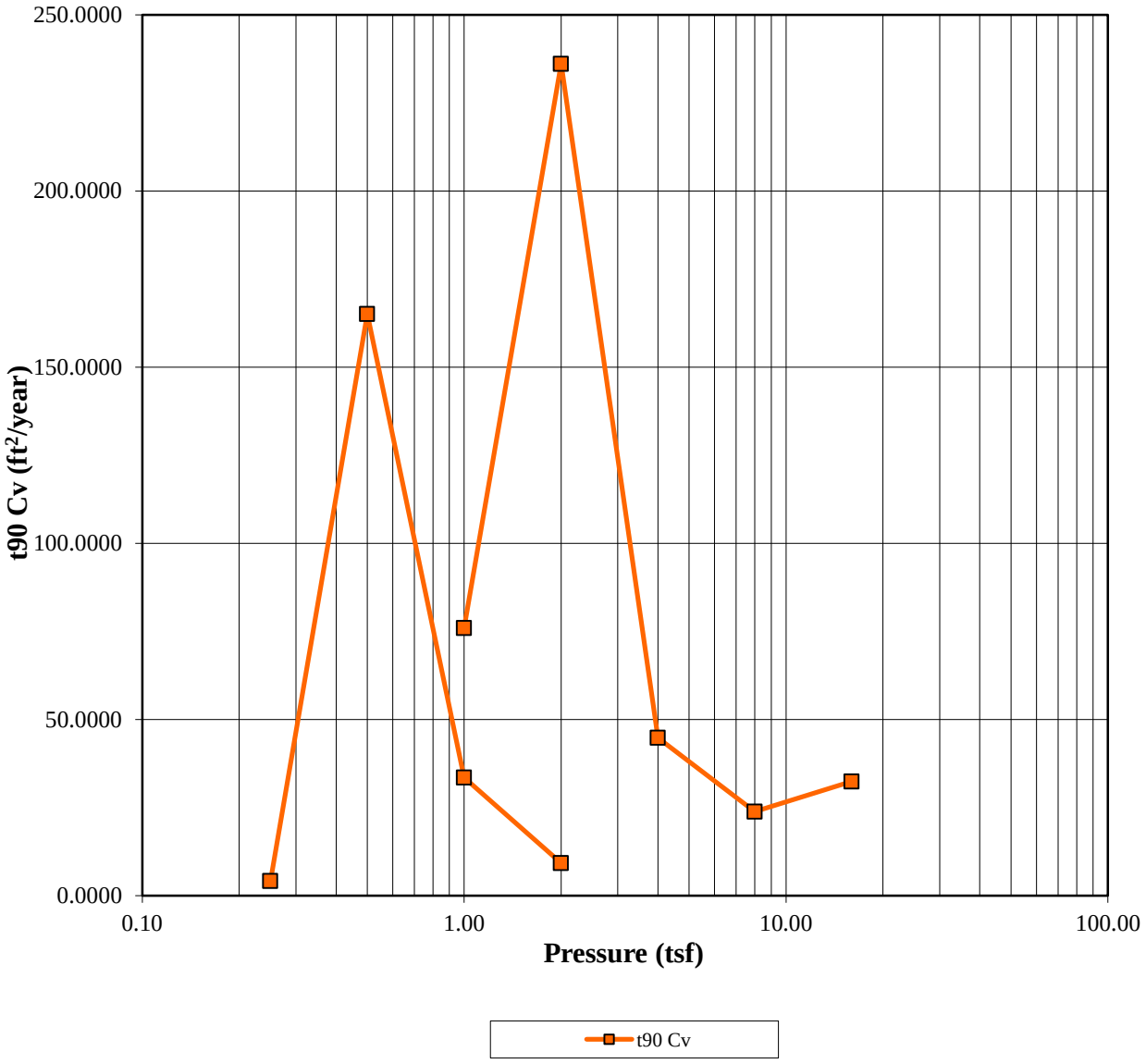
# Consolidation Test
## Test Results




| | Before | After | | | | |
|---|---|---|---|---|---|---|
| **Moisture (%):** | 44.50 | 28.19 | **Liquid Limits:** | 0 | **Test Date:** | 11/15/17 |
| **Dry Density (pcf):** | 77.09 | 95.44 | **Plastic Limits:** | 0 | | |
| **Saturation (%):** | 109.36 | 112.23 | **Plasticity Index (%):** | 0 | | |
| **Void Ratio:** | 1.0053 | 0.6215 | **Specific Gravity:** | 2.482 | Measured | |

| | | | | |
|---|---|---|---|---|
| **Soil Description:** | SILTY SAND(SM A-2-4(0)) | | | |
| **Project Number:** | 8076 | **Depth:** | 28.0-30.0 ft. | **Remarks:** |
| **Sample Number:** | T-1 | **Boring Number:** | HLA-6 | |
| **Project:** | Mobile River Bridge | | | |
| **Client:** | ALDOT | | | |
| **Location:** | Soils Lab | | | |

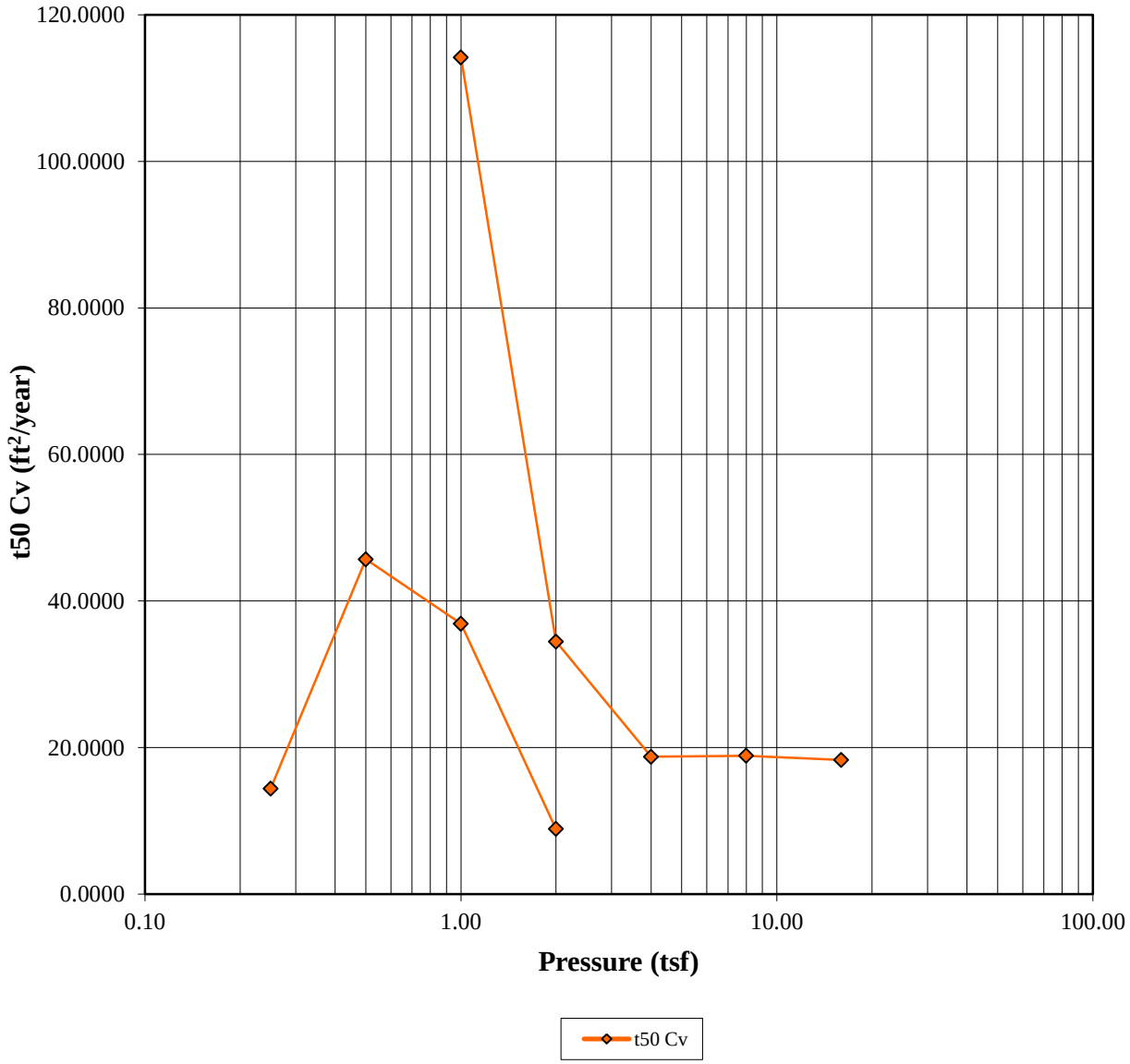
# Consolidation Test
## Test Results




| | Before | After | | | | |
|---|---|---|---|---|---|---|
| **Moisture (%):** | 44.50 | 28.19 | **Liquid Limits:** | 0 | **Test Date:** | 11/15/17 |
| **Dry Density (pcf):** | 77.09 | 95.44 | **Plastic Limits:** | 0 | | |
| **Saturation (%):** | 109.36 | 112.23 | **Plasticity Index (%):** | 0 | | |
| **Void Ratio:** | 1.0053 | 0.6215 | **Specific Gravity:** | 2.482 | Measured | |

| | | | | |
|---|---|---|---|---|
| **Soil Description:** | SILTY SAND(SM A-2-4(0)) | | | |
| **Project Number:** | 8076 | **Depth:** | 28.0-30.0 ft. | **Remarks:** |
| **Sample Number:** | T-1 | **Boring Number:** | HLA-6 | |
| **Project:** | Mobile River Bridge | | | |
| **Client:** | ALDOT | | | |
| **Location:** | Soils Lab | | | |

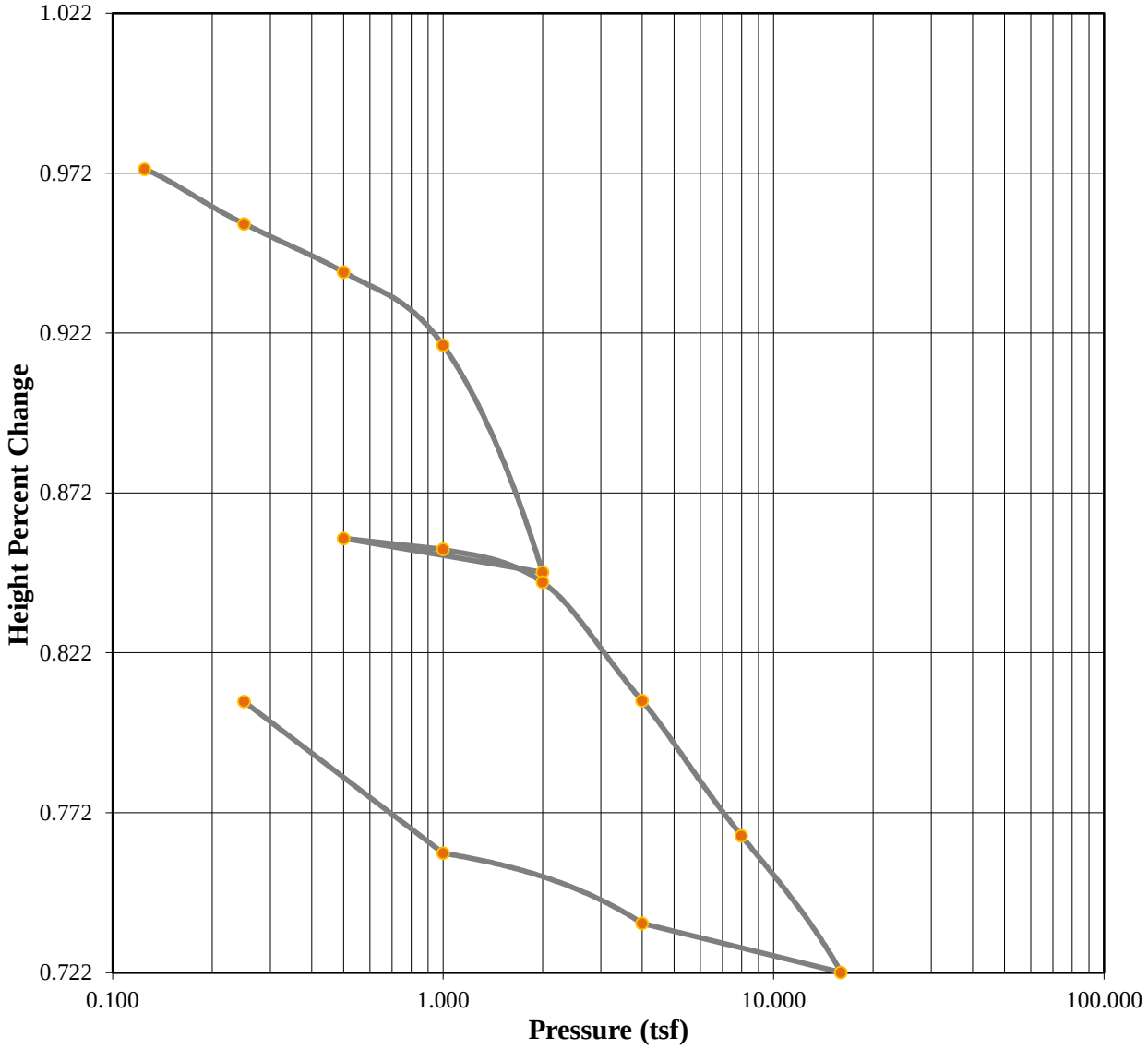
# Consolidation Test
## Test Results




| | Before | After | | | | |
|---|---|---|---|---|---|---|
| **Moisture (%):** | 44.50 | 28.19 | **Liquid Limits:** | 0 | **Test Date:** | 11/15/17 |
| **Dry Density (pcf):** | 77.09 | 95.44 | **Plastic Limits:** | 0 | | |
| **Saturation (%):** | 109.36 | 112.23 | **Plasticity Index (%):** | 0 | | |
| **Void Ratio:** | 1.0053 | 0.6215 | **Specific Gravity:** | 2.482 | Measured | |

| | | | | |
|---|---|---|---|---|
| **Soil Description:** | SILTY SAND(SM A-2-4(0)) | | | |
| **Project Number:** | 8076 | **Depth:** | 28.0-30.0 ft. | **Remarks:** |
| **Sample Number:** | T-1 | **Boring Number:** | HLA-6 | |
| **Project:** | Mobile River Bridge | | | |
| **Client:** | ALDOT | | | |
| **Location:** | Soils Lab | | | |

# Consolidation Test
## Test Results




| | Before | After | | | | |
|---|---|---|---|---|---|---|
| **Moisture (%):** | 44.50 | 28.19 | **Liquid Limits:** | 0 | **Test Date:** | 11/15/17 |
| **Dry Density (pcf):** | 77.09 | 95.44 | **Plastic Limits:** | 0 | | |
| **Saturation (%):** | 109.36 | 112.23 | **Plasticity Index (%):** | 0 | | |
| **Void Ratio:** | 1.0053 | 0.6215 | **Specific Gravity:** | 2.482 | Measured | |

| | | | | |
|---|---|---|---|---|
| **Soil Description:** | SILTY SAND(SM A-2-4(0)) | | | |
| **Project Number:** | 8076 | **Depth:** | 28.0-30.0 ft. | **Remarks:** |
| **Sample Number:** | T-1 | **Boring Number:** | HLA-6 | |
| **Project:** | Mobile River Bridge | | | |
| **Client:** | ALDOT | | | |
| **Location:** | Soils Lab | | | |

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# Consolidation Test Results
## Summary

**Project:** Mobile River Bridge
**Location:** Soils Lab
**Job Number:** 17-1101-0145

**Project Number:** 8076

**Sample Number:** T-1
**Boring Number:** HLA-6
**Depth:** 28.0-30.0 ft.
**Sample Type:** Undisturbed

**Sample Description:** SILTY SAND(SM A-2-4(0))
**Remarks:**

**Test Number:**
**Test Date:** 11/15/17

| Index | Load Sequence (tsf) | Cummulative Change in Height (in) | Specimen Height (in) | Height of Void (in) | Vertical Strain (%) | Void Ratio | t90 Fitting Time (min) | t50 Fitting Time (min) | t90 Cv (ft2/year) | t50 Cv (ft2/year) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0.000 | 0.0000 | 0.9980 | 0.5006 | 0.00 | 1.0064 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1 | 0.125 | 0.0245 | 0.9735 | 0.4761 | 2.46 | 0.9571 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2 | 0.250 | 0.0416 | 0.9564 | 0.4589 | 4.17 | 0.9227 | 168.460 | 11.410 | 4.201 | 14.410 |
| 3 | 0.500 | 0.0567 | 0.9413 | 0.4438 | 5.69 | 0.8923 | 4.151 | 3.486 | 165.145 | 45.686 |
| 4 | 1.000 | 0.0796 | 0.9184 | 0.4210 | 7.97 | 0.8464 | 19.443 | 4.110 | 33.572 | 36.900 |
| 5 | 2.000 | 0.1506 | 0.8474 | 0.3500 | 15.09 | 0.7037 | 59.745 | 14.495 | 9.301 | 8.907 |
| 6 | 0.500 | 0.1400 | 0.8580 | 0.3606 | 14.03 | 0.7249 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7 | 1.000 | 0.1434 | 0.8546 | 0.3572 | 14.37 | 0.7180 | 7.436 | 1.150 | 75.997 | 114.169 |
| 8 | 2.000 | 0.1537 | 0.8443 | 0.3469 | 15.40 | 0.6974 | 2.337 | 3.716 | 236.082 | 34.482 |
| 9 | 4.000 | 0.1908 | 0.8072 | 0.3098 | 19.11 | 0.6229 | 11.244 | * 6.2464 | 44.847 | 18.753 |
| 10 | 8.000 | 0.2330 | 0.7650 | 0.2676 | 23.34 | 0.5380 | 18.981 | 5.568 | 23.860 | 18.897 |
| 11 | 16.000 | 0.2757 | 0.7223 | 0.2248 | 27.63 | 0.4520 | 12.444 | 5.115 | 32.438 | 18.332 |
| 12 | 4.000 | 0.2603 | 0.7377 | 0.2402 | 26.09 | 0.4830 | 0.000 | 0.000 | 0.000 | 0.000 |
| 13 | 1.000 | 0.2384 | 0.7596 | 0.2622 | 23.89 | 0.5271 | 0.000 | 0.000 | 0.000 | 0.000 |
| 14 | 0.250 | 0.1910 | 0.8070 | 0.3096 | 19.14 | 0.6224 | 0.000 | 0.000 | 0.000 | 0.000 |

Predicted value indicated with *

**Tested By:** B. Hak

**Checked By:** C. Dugger

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# Consolidation Test
## Consolidation Specimen Information

**Project:** Mobile River Bridge
**Project Number:** 8076
**Location:** Soils Lab
**Job Number:** 17-1101-0145
**Test Date:** 11/15/17

**Sample Number:** T-1
**Sample Description:**
**Boring Number:** HLA-6
SILTY SAND(SM A-2-4(0))
**Depth:** 28.0-30.0 ft.
**Remarks:**
**Sample Type:** Undisturbed

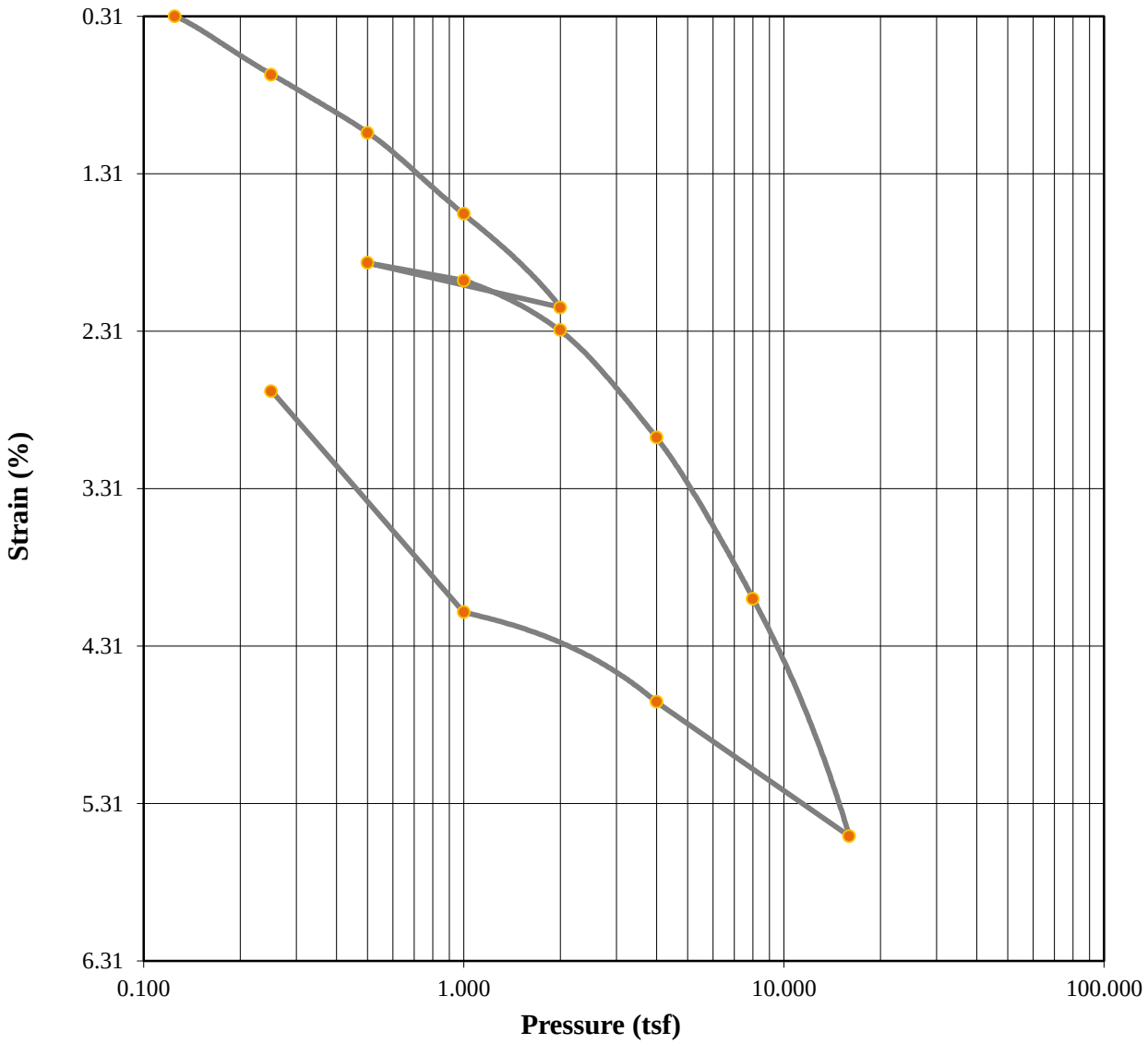
**Test Number:**
**Liquid Limit:** 0.0000
**Initial Void Ratio:** 1.0053
**Initial Height (in):** 0.9980
**Plastic Limit:** 0.0000
**Plasticity Index (%):** 0.0000
**Initial Diameter (in):** 2.5030
**Specific Gravity:** 2.4820 Measured
**Weight of Ring (g):** 110.7200

| Parameters | Initial Specimen | Final Specimen |
|---|---|---|
| Moist Weight + Container (g) | 88.75 | 257.00 |
| Dry Soil + Container (g) | 71.29 | 228.98 |
| Weight of Container (g) | 32.05 | 129.60 |
| Moisture Content (%) | 44.50 | 28.19 |
| Void Ratio | 1.0053 | 0.6215 |
| Saturation (%) | 109.36 | 112.23 |
| Dry Density (pcf) | 77.09 | 95.44 |

**Tested By:** B. Hak
**Checked By:** C. Dugger

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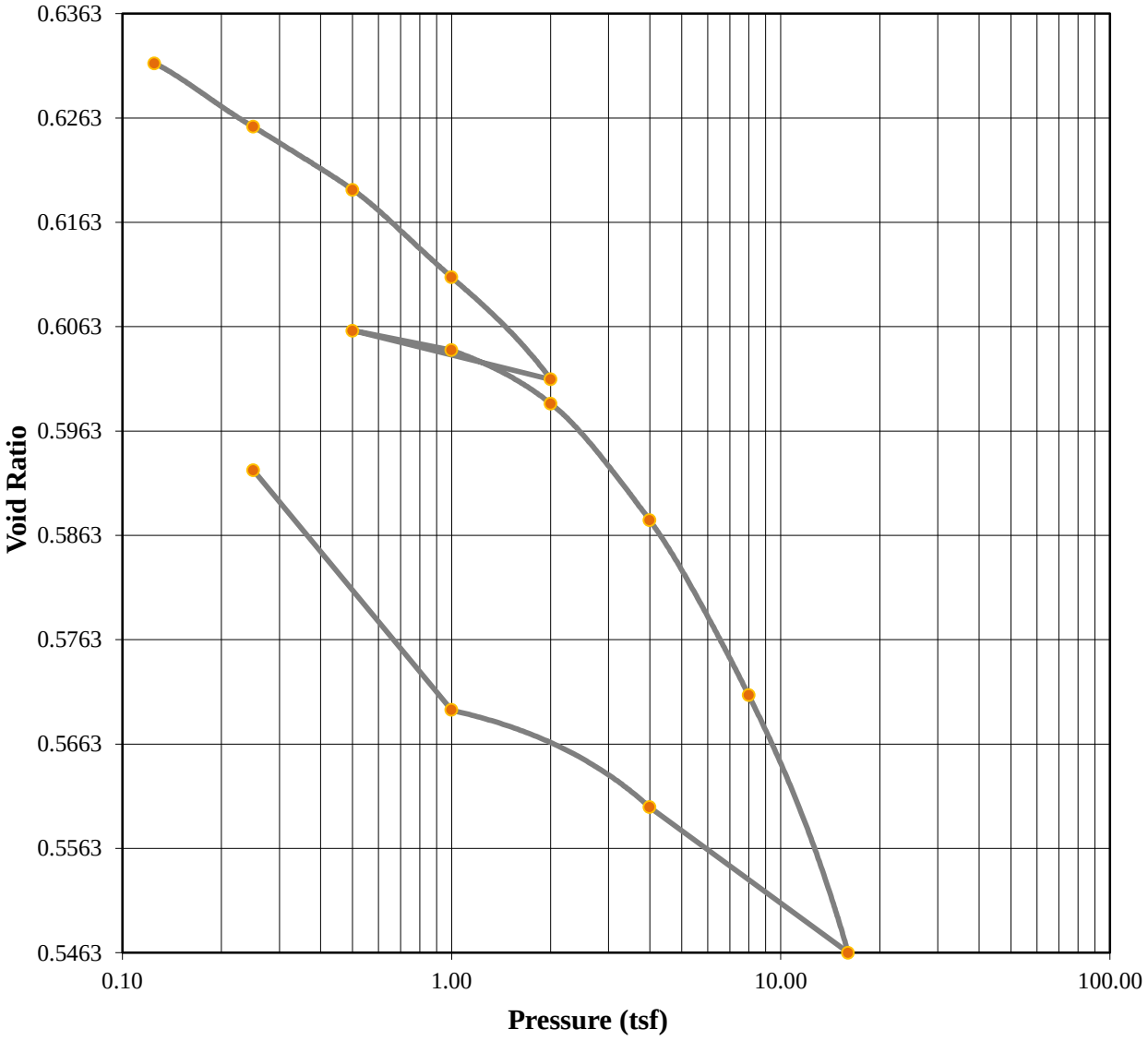
# Consolidation Test
## Test Results




| | Before | After | | | | |
|---|---|---|---|---|---|---|
| **Moisture (%):** | 25.69 | 25.99 | **Liquid Limits:** | 0 | **Test Date:** | 11/1/17 |
| **Dry Density (pcf):** | 95.30 | 97.05 | **Plastic Limits:** | 0 | | |
| **Saturation (%):** | 100.54 | 106.63 | **Plasticity Index (%):** | 0 | | |
| **Void Ratio:** | 0.6352 | 0.5911 | **Specific Gravity:** | 2.503 | Measured | |

| | | | | |
|---|---|---|---|---|
| **Sample Description:** | SILTY SAND(SM A-2-4(0)) | | | |
| **Project Number:** | 8068 | **Depth:** | 18.0-20.0 ft. | **Remarks:** |
| **Sample Number:** | T-1 | **Boring Number:** | HLA-13 | |
| **Project:** | Mobile River Bridge | | | |
| **Client:** | ALDOT | | | |
| **Location:** | Soils Lab | | | |

# Consolidation Test
## Test Results




| | Before | After | | | | |
|---|---|---|---|---|---|---|
| | | | **Liquid Limits:** | 0 | **Test Date:** | 11/1/17 |
| **Moisture (%):** | 25.69 | 25.99 | **Plastic Limits:** | 0 | | |
| **Dry Density (pcf):** | 95.30 | 97.05 | **Plasticity Index (%):** | 0 | | |
| **Saturation (%):** | 100.54 | 106.63 | | | | |
| **Void Ratio:** | 0.6352 | 0.5911 | **Specific Gravity:** | 2.503 | Measured | |

**Soil Description:** SILTY SAND(SM A-2-4(0))

**Project Number:** 8068 **Depth:** 18.0-20.0 ft. **Remarks:**

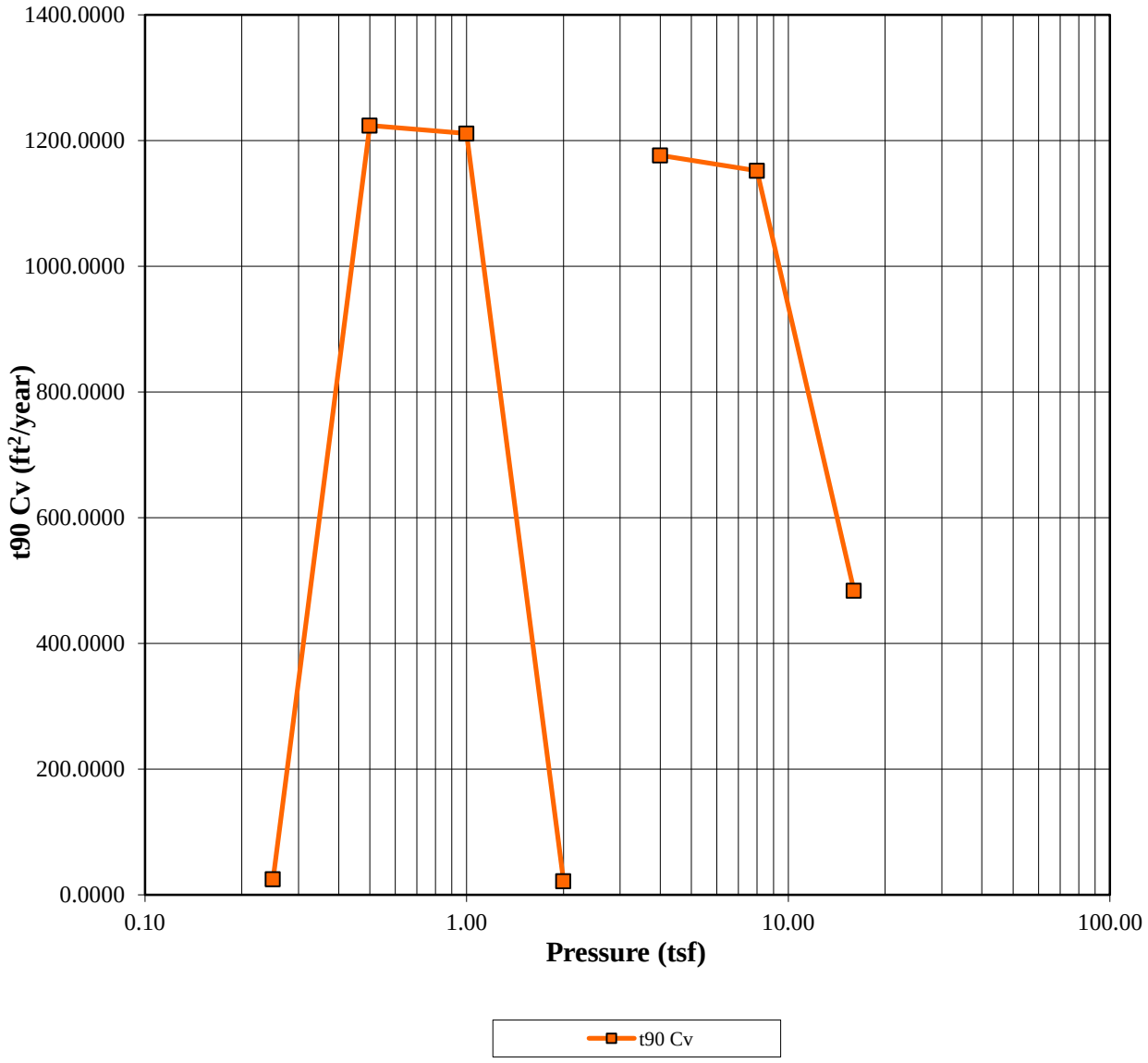
**Sample Number:** T-1 **Boring Number:** HLA-13

**Project:** Mobile River Bridge

**Client:** ALDOT

**Location:** Soils Lab

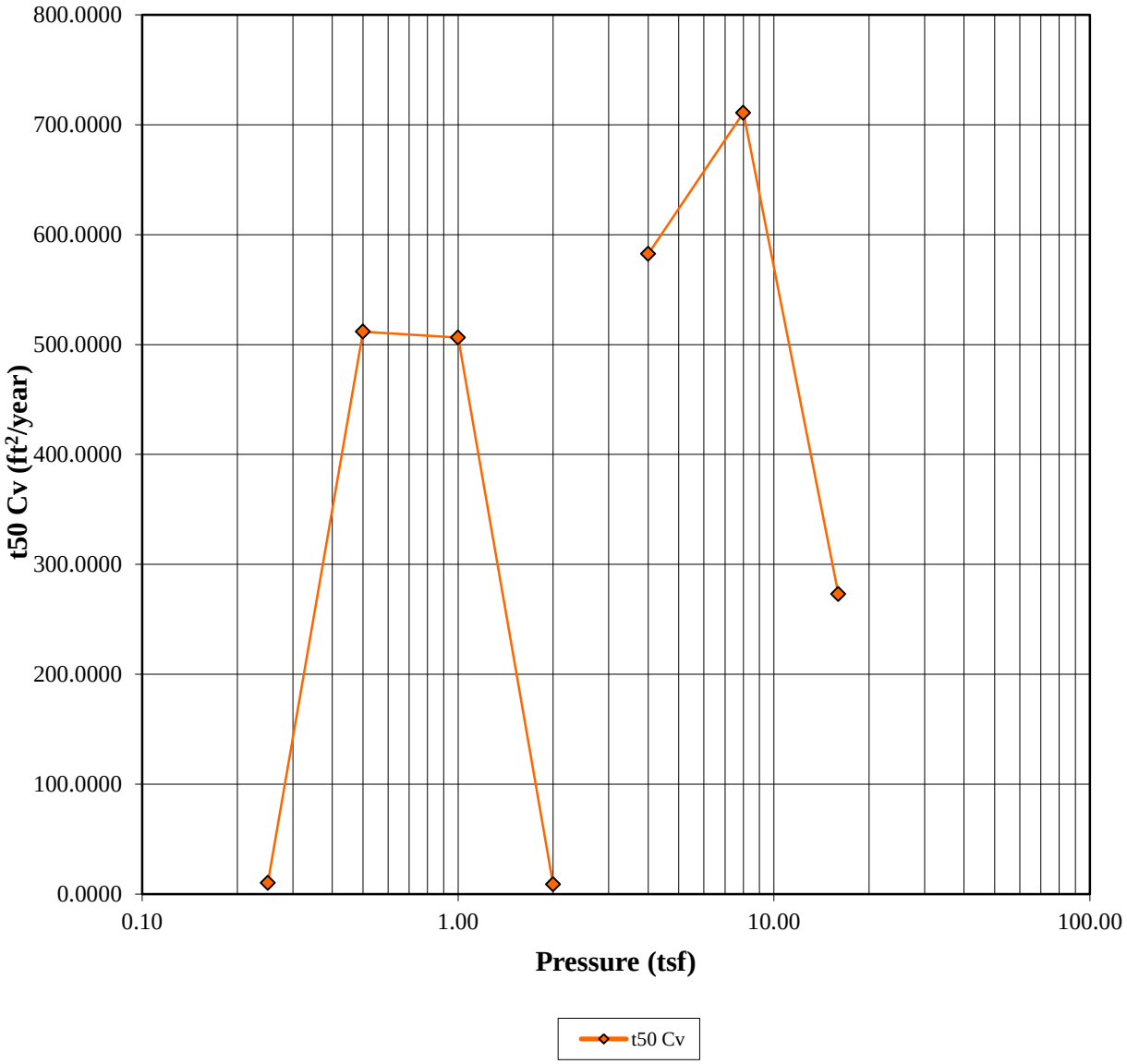
# Consolidation Test
## Test Results




| | Before | After | | | | |
|---|---|---|---|---|---|---|
| **Moisture (%):** | 25.69 | 25.99 | **Liquid Limits:** | 0 | **Test Date:** | 11/1/17 |
| **Dry Density (pcf):** | 95.30 | 97.05 | **Plastic Limits:** | 0 | | |
| **Saturation (%):** | 100.54 | 106.63 | **Plasticity Index (%):** | 0 | | |
| **Void Ratio:** | 0.6352 | 0.5911 | **Specific Gravity:** | 2.503 | Measured | |

| | | | | |
|---|---|---|---|---|
| **Soil Description:** | SILTY SAND(SM A-2-4(0)) | | | |
| **Project Number:** | 8068 | **Depth:** | 18.0-20.0 ft. | **Remarks:** |
| **Sample Number:** | T-1 | **Boring Number:** | HLA-13 | |
| **Project:** | Mobile River Bridge | | | |
| **Client:** | ALDOT | | | |
| **Location:** | Soils Lab | | | |

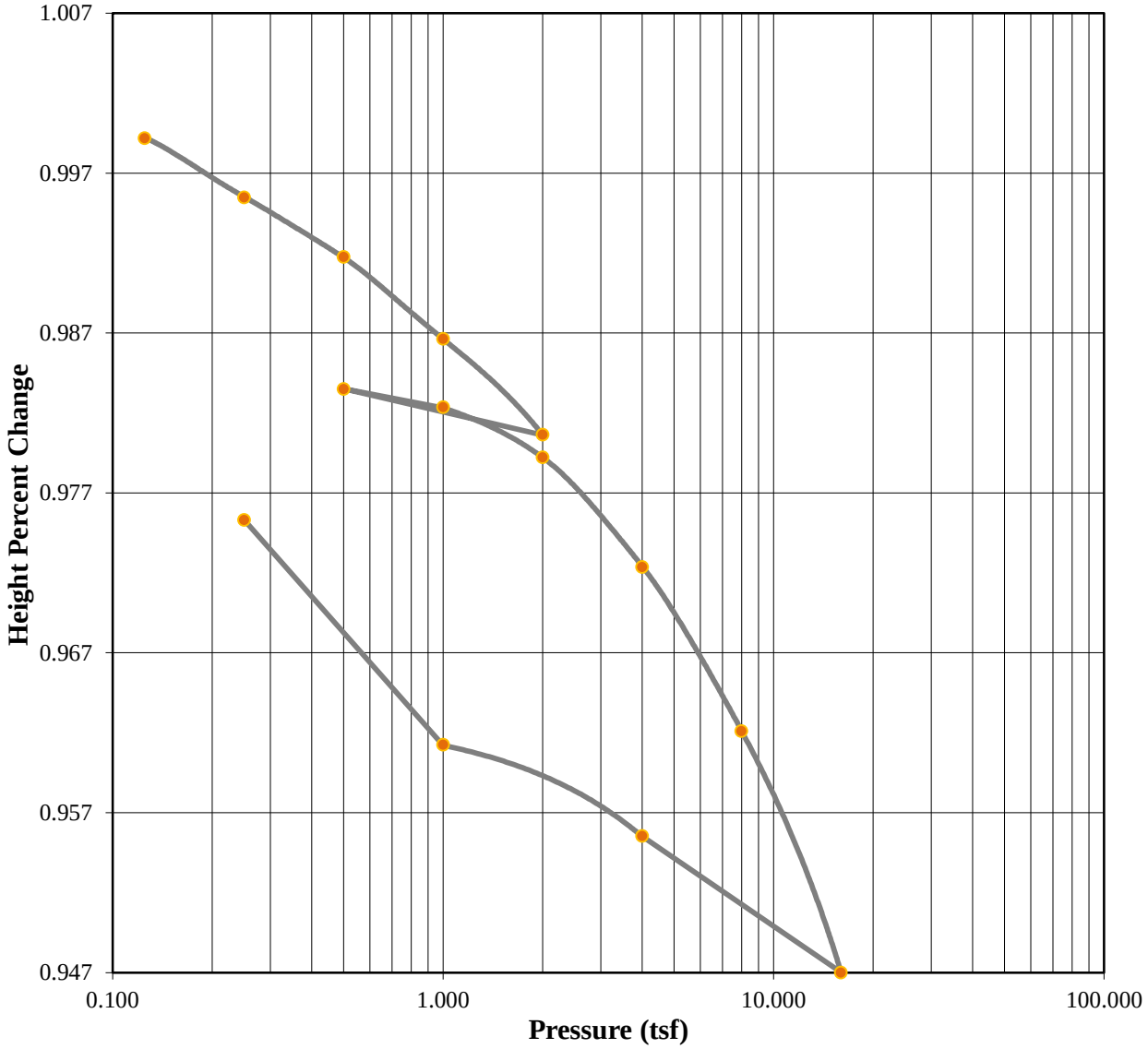
# Consolidation Test
## Test Results




| | Before | After | | | | |
|---|---|---|---|---|---|---|
| **Moisture (%):** | 25.69 | 25.99 | **Liquid Limits:** | 0 | **Test Date:** | 11/1/17 |
| **Dry Density (pcf):** | 95.30 | 97.05 | **Plastic Limits:** | 0 | | |
| **Saturation (%):** | 100.54 | 106.63 | **Plasticity Index (%):** | 0 | | |
| **Void Ratio:** | 0.6352 | 0.5911 | **Specific Gravity:** | 2.503 | Measured | |

| | | | | |
|---|---|---|---|---|
| **Soil Description:** | SILTY SAND(SM A-2-4(0)) | | | |
| **Project Number:** | 8068 | **Depth:** | 18.0-20.0 ft. | **Remarks:** |
| **Sample Number:** | T-1 | **Boring Number:** | HLA-13 | |
| **Project:** | Mobile River Bridge | | | |
| **Client:** | ALDOT | | | |
| **Location:** | Soils Lab | | | |

# Consolidation Test
## Test Results




| | Before | After | | | | |
|---|---|---|---|---|---|---|
| **Moisture (%):** | 25.69 | 25.99 | **Liquid Limits:** | 0 | **Test Date:** | 11/1/17 |
| **Dry Density (pcf):** | 95.30 | 97.05 | **Plastic Limits:** | 0 | | |
| **Saturation (%):** | 100.54 | 106.63 | **Plasticity Index (%):** | 0 | | |
| **Void Ratio:** | 0.6352 | 0.5911 | **Specific Gravity:** | 2.503 | Measured | |

| | | | | |
|---|---|---|---|---|
| **Soil Description:** | SILTY SAND(SM A-2-4(0)) | | | |
| **Project Number:** | 8068 | **Depth:** | 18.0-20.0 ft. | **Remarks:** |
| **Sample Number:** | T-1 | **Boring Number:** | HLA-13 | |
| **Project:** | Mobile River Bridge | | | |
| **Client:** | ALDOT | | | |
| **Location:** | Soils Lab | | | |

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# Consolidation Test Results
## Summary

**Project:** Mobile River Bridge
**Location:** Soils Lab
**Job Number:** 17-1101-0145

**Project Number:** 8068

**Sample Number:** T-1
**Boring Number:** HLA-13
**Depth:** 18.0-20.0 ft.
**Sample Type:** Undisturbed

**Sample Description:** SILTY SAND(SM A-2-4(0))
**Remarks:**

**Test Number:**
**Test Date:** 11/1/17

| Index | Load Sequence (tsf) | Cummulative Change in Height (in) | Specimen Height (in) | Height of Void (in) | Vertical Strain (%) | Void Ratio | t90 Fitting Time (min) | t50 Fitting Time (min) | t90 Cv (ft2/year) | t50 Cv (ft2/year) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0.000 | 0.0000 | 1.0020 | 0.3898 | 0.00 | 0.6366 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1 | 0.125 | 0.0031 | 0.9989 | 0.3866 | 0.31 | 0.6315 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2 | 0.250 | 0.0068 | 0.9952 | 0.3829 | 0.68 | 0.6254 | 30.656 | * 17.0312 | 24.997 | 10.453 |
| 3 | 0.500 | 0.0106 | 0.9914 | 0.3792 | 1.05 | 0.6194 | 0.622 | * 0.3453 | 1223.750 | 511.733 |
| 4 | 1.000 | 0.0157 | 0.9863 | 0.3741 | 1.57 | 0.6110 | 0.622 | * 0.3453 | 1211.113 | 506.449 |
| 5 | 2.000 | 0.0217 | 0.9803 | 0.3681 | 2.16 | 0.6012 | 34.273 | * 19.0405 | 21.698 | 9.073 |
| 6 | 0.500 | 0.0188 | 0.9832 | 0.3709 | 1.88 | 0.6059 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7 | 1.000 | 0.0200 | 0.9820 | 0.3698 | 1.99 | 0.6040 | 0.000 | 0.000 | 0.000 | 0.000 |
| 8 | 2.000 | 0.0231 | 0.9789 | 0.3667 | 2.31 | 0.5989 | 0.000 | 0.000 | 0.000 | 0.000 |
| 9 | 4.000 | 0.0299 | 0.9721 | 0.3598 | 2.99 | 0.5877 | 0.622 | 0.292 | 1176.351 | 582.508 |
| 10 | 8.000 | 0.0402 | 0.9618 | 0.3496 | 4.01 | 0.5709 | 0.622 | 0.234 | 1151.634 | 710.927 |
| 11 | 16.000 | 0.0553 | 0.9467 | 0.3344 | 5.52 | 0.5463 | 1.433 | 0.590 | 483.990 | 273.161 |
| 12 | 4.000 | 0.0468 | 0.9552 | 0.3430 | 4.67 | 0.5602 | 0.000 | 0.000 | 0.000 | 0.000 |
| 13 | 1.000 | 0.0411 | 0.9609 | 0.3487 | 4.10 | 0.5695 | 0.000 | 0.000 | 0.000 | 0.000 |
| 14 | 0.250 | 0.0270 | 0.9750 | 0.3628 | 2.69 | 0.5925 | 0.000 | 0.000 | 0.000 | 0.000 |

Predicted value indicated with *

**Tested By:** B. Hak

**Checked By:** C. Dugger

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# Consolidation Test
## Consolidation Specimen Information

**Project:** Mobile River Bridge **Project Number:** 8068
**Location:** Soils Lab
**Job Number:** 17-1101-0145 **Test Date:** 11/1/17

**Sample Number:** T-1 **Sample Description:**
**Boring Number:** HLA-13 SILTY SAND(SM A-2-4(0))
**Depth:** 18.0-20.0 ft. **Remarks:**
**Sample Type:** Undisturbed

**Test Number:**
**Liquid Limit:** 0.0000 **Initial Void Ratio:** 0.6352 **Initial Height (in):** 1.0020
**Plastic Limit:** 0.0000 **Plasticity Index (%):** 0.0000 **Initial Diameter (in):** 2.5030
**Specific Gravity:** 2.5030 Measured **Weight of Ring (g):** 111.0700

| Parameters | Initial Specimen | Final Specimen |
|---|---|---|
| Moist Weight + Container (g) | 123.25 | 282.54 |
| Dry Soil + Container (g) | 103.25 | 251.00 |
| Weight of Container (g) | 25.40 | 129.63 |
| Moisture Content (%) | 25.69 | 25.99 |
| Void Ratio | 0.6352 | 0.5911 |
| Saturation (%) | 100.54 | 106.63 |
| Dry Density (pcf) | 95.30 | 97.05 |

**Tested By:** B. Hak **Checked By:** C. Dugger

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September 21, 2016

CLIENT: ALDOT

JOB #: 17-1101-0145

PROJECT: Mobile River Bridge High Level Approach

LAB #:

## REPORT OF: Measurement of Soil Resistivity AASHTO T288

| | DATE | TECHNICIAN |
|---|---|---|
| TESTED: | 9-17 &9-21 | Hak |

| Location | Depth (ft) | Resisivity (Ohms-cm) |
|---|---|---|
| WHLA-3 | 3.0 - 5.0 ft. | 5000 |
| WHLA-3 | 5.0 - 7.0 ft. | 5900 |
| WHLA-3 | 8.0 - 10.0 ft. | 4900 |
| WHLA-3 | 10.0 - 12.0 ft. | 4900 |
| WHLA-3 | 28.0 - 32.0 ft. | 7200 |
| WHLA-3 | 18.0 - 22.0 ft. | 8850 |

*Chris Dugger*

MATERIALS ENGINEERING LABORATORY

3707 Cottage Hill Road
Mobile, AL. 36609
251-666-2443 ph / 251-665-5491 fax
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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Tel: (850)474-1001

TestAmerica Job ID: 400-126048-1
Client Project/Site: ALDOT MRB West Pier

For:
Thompson Engineering Inc
2970 Cottage Hill Rd.
Suite 190
Mobile, Alabama 36606

Attn: Mr. Steve O'Hearn

*Authorized for release by:*
*8/31/2016 12:21:49 PM*

Mike Nance, Service Center Manager
(251)706-3210
mike.nance@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

## Qualifiers

### General Chemistry

| Qualifier | Qualifier Description |
|---|---|
| HF | Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. |

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CNF | Contains no Free Liquid |
| DER | Duplicate error ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision level concentration |
| MDA | Minimum detectable activity |
| EDL | Estimated Detection Limit |
| MDC | Minimum detectable concentration |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| NC | Not Calculated |
| ND | Not detected at the reporting limit (or MDL or EDL if shown) |
| PQL | Practical Quantitation Limit |
| QC | Quality Control |
| RER | Relative error ratio |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |

## Job ID: 400-126048-1

### Laboratory: TestAmerica Pensacola

**Narrative**

**Job Narrative**
**400-126048-1**

**Comments**
No additional comments.

**Receipt**
The samples were received on 8/18/2016 1:25 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.5º C.

**Receipt Exceptions**
MRB West Pier MB-1 (400-126048-1), MRB West Pier MHLA-3 (400-126048-2), MRB West Pier MHLA-3 S-1A (400-126048-3), MRB West Pier MHLA-3 S-1B (400-126048-4), MRB West Pier MHLA-3 S-2A (400-126048-5), MRB West Pier MHLA-3 S-2B (400-126048-6), MRB West Pier MHLA-3 S-3A (400-126048-7), MRB West Pier MHLA-3 S-3B (400-126048-8), MRB West Pier MHLA-3 S-4A (400-126048-9), MRB West Pier MHLA-3 S-4B (400-126048-10), MRB West Pier MB-1 S-1A (400-126048-11), MRB West Pier MB-1 S-1B (400-126048-12), MRB West Pier MB-1 S-2A (400-126048-13), MRB West Pier MB-1 S-2B (400-126048-14), MRB West Pier MB-1 S-3A (400-126048-15), MRB West Pier MB-1 S-3B (400-126048-16), MRB West Pier MB-1 S-4A (400-126048-17) and MRB West Pier MB-1 S-4B (400-126048-18) No sample collection time list on COC/container labels.

**HPLC/IC**
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

**General Chemistry**
Method(s) 9050A: The procedure for Resistivity by Method 9050A is applicable to liquid samples and has been modified to provide the enclosed results on the soil matrix. The modification involves a DI leach of the soil followed by electrometric measurement of the leachate. The values provided are a measure of the leachable components resistance for a given mass to volume of water, rather than the resistivity of the soil itself.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**Lab Admin**
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

**Client Sample ID: MRB West Pier MB-1**
**Date Collected: 08/17/16 00:00**
**Date Received: 08/18/16 13:25**

**Lab Sample ID: 400-126048-1**
**Matrix: Water**

## General Chemistry

| Analyte | Result | Qualifier | NONE | NONE | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **pH** | **7.1** | **HF** | | | SU | | | 08/23/16 09:31 | 1 |

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **9.5** | | 2.0 | | mg/L | | | 08/24/16 08:00 | 1 |
| **Specific Conductance** | **730** | | 5.0 | | umhos/cm | | | 08/28/16 13:13 | 1 |
| Resistivity | <2000 | | 2000 | | ohm-m | | | 08/28/16 13:13 | 1 |
| Sulfate | <5.0 | | 5.0 | | mg/L | | | 08/24/16 13:01 | 1 |

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

**Client Sample ID: MRB West Pier MHLA-3**
**Date Collected: 08/18/16 00:00**
**Date Received: 08/18/16 13:25**

**Lab Sample ID: 400-126048-2**
**Matrix: Water**

## General Chemistry

| Analyte | Result | Qualifier | NONE | NONE | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| pH | 7.2 | HF | | | SU | | | 08/23/16 09:31 | 1 |

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 26 | | 2.0 | | mg/L | | | 08/24/16 08:05 | 1 |
| Specific Conductance | 1000 | | 5.0 | | umhos/cm | | | 08/28/16 13:13 | 1 |
| Resistivity | <2000 | | 2000 | | ohm-m | | | 08/28/16 13:13 | 1 |
| Sulfate | 44 | | 25 | | mg/L | | | 08/24/16 14:19 | 5 |

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

**Client Sample ID: MRB West Pier MHLA-3 S-1A** — **Lab Sample ID: 400-126048-3**
**Date Collected: 08/18/16 00:00** — **Matrix: Solid**
**Date Received: 08/18/16 13:25**

## General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Percent Moisture | 20.2 | | 0.1 | | % | | | 08/23/16 14:00 | 1 |

## General Chemistry - Soluble

| Analyte | Result | Qualifier | NONE | NONE | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| pH | 7.2 | HF | | | SU | | | 08/23/16 10:33 | 1 |

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Specific Conductance | 250 | | 100 | | umhos/cm | | | 08/29/16 09:50 | 1 |
| Resistivity | 16000 | | 20 | | ohm-m | | | 08/29/16 09:50 | 1 |

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

**Client Sample ID: MRB West Pier MHLA-3 S-1A**
**Lab Sample ID: 400-126048-3**
**Date Collected: 08/18/16 00:00**
**Matrix: Solid**
**Date Received: 08/18/16 13:25**
**Percent Solids: 79.8**

**Method: 9056 - Anions, Ion Chromatography - Soluble**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <25 | | 25 | | mg/Kg | ☼ | | 08/30/16 02:40 | 1 |
| Sulfate | <25 | | 25 | | mg/Kg | ☼ | | 08/30/16 02:40 | 1 |

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

**Client Sample ID: MRB West Pier MHLA-3 S-1B** — **Lab Sample ID: 400-126048-4**
**Date Collected: 08/18/16 00:00** — **Matrix: Solid**
**Date Received: 08/18/16 13:25**

## General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Percent Moisture | 13.3 | | 0.1 | | % | | | 08/23/16 14:00 | 1 |

## General Chemistry - Soluble

| Analyte | Result | Qualifier | NONE | NONE | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| pH | 8.1 | HF | | | SU | | | 08/23/16 10:33 | 1 |

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Specific Conductance | 630 | | 100 | | umhos/cm | | | 08/29/16 09:50 | 1 |
| Resistivity | 6400 | | 20 | | ohm-m | | | 08/29/16 09:50 | 1 |

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

**Client Sample ID: MRB West Pier MHLA-3 S-1B**
**Lab Sample ID: 400-126048-4**
**Date Collected: 08/18/16 00:00**
**Matrix: Solid**
**Date Received: 08/18/16 13:25**
**Percent Solids: 86.7**

**Method: 9056 - Anions, Ion Chromatography - Soluble**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <23 | | 23 | | mg/Kg | ☼ | | 08/30/16 03:49 | 1 |
| Sulfate | <23 | | 23 | | mg/Kg | ☼ | | 08/30/16 03:49 | 1 |

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

**Client Sample ID: MRB West Pier MHLA-3 S-2A** — **Lab Sample ID: 400-126048-5**
**Date Collected: 08/18/16 00:00** — **Matrix: Solid**
**Date Received: 08/18/16 13:25**

## General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Percent Moisture | 19.6 | | 0.1 | | % | | | 08/23/16 14:00 | 1 |

## General Chemistry - Soluble

| Analyte | Result | Qualifier | NONE | NONE | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| pH | 7.7 | HF | | | SU | | | 08/23/16 10:33 | 1 |

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Specific Conductance | 550 | | 100 | | umhos/cm | | | 08/29/16 09:50 | 1 |
| Resistivity | 7300 | | 20 | | ohm-m | | | 08/29/16 09:50 | 1 |

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

**Client Sample ID: MRB West Pier MHLA-3 S-2A** — **Lab Sample ID: 400-126048-5**
**Date Collected: 08/18/16 00:00** — **Matrix: Solid**
**Date Received: 08/18/16 13:25** — **Percent Solids: 80.4**

**Method: 9056 - Anions, Ion Chromatography - Soluble**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <24 | | 24 | | mg/Kg | ☼ | | 08/30/16 04:12 | 1 |
| Sulfate | <24 | | 24 | | mg/Kg | ☼ | | 08/30/16 04:12 | 1 |

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

**Client Sample ID: MRB West Pier MHLA-3 S-2B** — **Lab Sample ID: 400-126048-6**
**Date Collected: 08/18/16 00:00** — **Matrix: Solid**
**Date Received: 08/18/16 13:25**

## General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Percent Moisture | 20.5 | | 0.1 | | % | | | 08/23/16 14:00 | 1 |

## General Chemistry - Soluble

| Analyte | Result | Qualifier | NONE | NONE | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| pH | 6.8 | HF | | | SU | | | 08/23/16 10:33 | 1 |

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Specific Conductance | 330 | | 100 | | umhos/cm | | | 08/29/16 09:50 | 1 |
| Resistivity | 12000 | | 20 | | ohm-m | | | 08/29/16 09:50 | 1 |

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

**Client Sample ID: MRB West Pier MHLA-3 S-2B**
**Lab Sample ID: 400-126048-6**
**Date Collected: 08/18/16 00:00**
**Matrix: Solid**
**Date Received: 08/18/16 13:25**
**Percent Solids: 79.5**

**Method: 9056 - Anions, Ion Chromatography - Soluble**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <25 | | 25 | | mg/Kg | ☼ | | 08/30/16 05:20 | 1 |
| Sulfate | <25 | | 25 | | mg/Kg | ☼ | | 08/30/16 05:20 | 1 |

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

**Client Sample ID: MRB West Pier MHLA-3 S-3A** — **Lab Sample ID: 400-126048-7**
**Date Collected: 08/18/16 00:00** — **Matrix: Solid**
**Date Received: 08/18/16 13:25**

## General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Percent Moisture | 19.9 | | 0.1 | | % | | | 08/23/16 14:00 | 1 |

## General Chemistry - Soluble

| Analyte | Result | Qualifier | NONE | NONE | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| pH | 7.2 | HF | | | SU | | | 08/23/16 10:33 | 1 |

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Specific Conductance | 150 | | 100 | | umhos/cm | | | 08/29/16 09:50 | 1 |
| Resistivity | 27000 | | 20 | | ohm-m | | | 08/29/16 09:50 | 1 |

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

**Client Sample ID: MRB West Pier MHLA-3 S-3A**
**Lab Sample ID: 400-126048-7**
**Date Collected: 08/18/16 00:00**
**Matrix: Solid**
**Date Received: 08/18/16 13:25**
**Percent Solids: 80.1**

**Method: 9056 - Anions, Ion Chromatography - Soluble**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <24 | | 24 | | mg/Kg | ☼ | | 08/30/16 05:43 | 1 |
| Sulfate | <24 | | 24 | | mg/Kg | ☼ | | 08/30/16 05:43 | 1 |

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

**Client Sample ID: MRB West Pier MHLA-3 S-3B** — **Lab Sample ID: 400-126048-8**
**Date Collected: 08/18/16 00:00** — **Matrix: Solid**
**Date Received: 08/18/16 13:25**

## General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Percent Moisture | 17.7 | | 0.1 | | % | | | 08/23/16 14:00 | 1 |

## General Chemistry - Soluble

| Analyte | Result | Qualifier | NONE | NONE | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| pH | 7.2 | HF | | | SU | | | 08/23/16 10:33 | 1 |

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Specific Conductance | 200 | | 100 | | umhos/cm | | | 08/29/16 09:50 | 1 |
| Resistivity | 20000 | | 20 | | ohm-m | | | 08/29/16 09:50 | 1 |

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

**Client Sample ID: MRB West Pier MHLA-3 S-3B**
**Lab Sample ID: 400-126048-8**
**Date Collected: 08/18/16 00:00**
**Matrix: Solid**
**Date Received: 08/18/16 13:25**
**Percent Solids: 82.3**

**Method: 9056 - Anions, Ion Chromatography - Soluble**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <24 | | 24 | | mg/Kg | ☼ | | 08/30/16 06:06 | 1 |
| **Sulfate** | **31** | | 24 | | mg/Kg | ☼ | | 08/30/16 06:06 | 1 |

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

**Client Sample ID: MRB West Pier MHLA-3 S-4A** — **Lab Sample ID: 400-126048-9**
**Date Collected: 08/18/16 00:00** — **Matrix: Solid**
**Date Received: 08/18/16 13:25**

## General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Percent Moisture | 18.6 | | 0.1 | | % | | | 08/23/16 14:00 | 1 |

## General Chemistry - Soluble

| Analyte | Result | Qualifier | NONE | NONE | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| pH | 8.2 | HF | | | SU | | | 08/23/16 10:33 | 1 |

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Specific Conductance | 260 | | 100 | | umhos/cm | | | 08/29/16 09:50 | 1 |
| Resistivity | 15000 | | 20 | | ohm-m | | | 08/29/16 09:50 | 1 |

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

**Client Sample ID: MRB West Pier MHLA-3 S-4A**
**Lab Sample ID: 400-126048-9**
**Date Collected: 08/18/16 00:00**
**Matrix: Solid**
**Date Received: 08/18/16 13:25**
**Percent Solids: 81.4**

**Method: 9056 - Anions, Ion Chromatography - Soluble**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <24 | | 24 | | mg/Kg | ☼ | | 08/30/16 06:28 | 1 |
| **Sulfate** | **42** | | 24 | | mg/Kg | ☼ | | 08/30/16 06:28 | 1 |

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

**Client Sample ID: MRB West Pier MHLA-3 S-4B**
**Date Collected: 08/18/16 00:00**
**Date Received: 08/18/16 13:25**

**Lab Sample ID: 400-126048-10**
**Matrix: Solid**

## General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Percent Moisture | 15.5 | | 0.1 | | % | | | 08/23/16 14:00 | 1 |

## General Chemistry - Soluble

| Analyte | Result | Qualifier | NONE | NONE | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| pH | 8.3 | HF | | | SU | | | 08/23/16 10:33 | 1 |

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Specific Conductance | 240 | | 100 | | umhos/cm | | | 08/29/16 09:50 | 1 |
| Resistivity | 17000 | | 20 | | ohm-m | | | 08/29/16 09:50 | 1 |

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

**Client Sample ID: MRB West Pier MHLA-3 S-4B**
**Date Collected: 08/18/16 00:00**
**Date Received: 08/18/16 13:25**

**Lab Sample ID: 400-126048-10**
**Matrix: Solid**
**Percent Solids: 84.5**

**Method: 9056 - Anions, Ion Chromatography - Soluble**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <23 | | 23 | | mg/Kg | ☼ | | 08/30/16 06:51 | 1 |
| **Sulfate** | **33** | | 23 | | mg/Kg | ☼ | | 08/30/16 06:51 | 1 |

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

**Client Sample ID: MRB West Pier MB-1 S-1A**
**Date Collected: 08/17/16 00:00**
**Date Received: 08/18/16 13:25**

**Lab Sample ID: 400-126048-11**
**Matrix: Solid**

## General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Percent Moisture | 19.4 | | 0.1 | | % | | | 08/23/16 14:00 | 1 |

## General Chemistry - Soluble

| Analyte | Result | Qualifier | NONE | NONE | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| pH | 7.1 | HF | | | SU | | | 08/23/16 10:33 | 1 |

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Specific Conductance | 1400 | | 100 | | umhos/cm | | | 08/29/16 09:50 | 1 |
| Resistivity | 2900 | | 20 | | ohm-m | | | 08/29/16 09:50 | 1 |

# Client Sample Results

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

**Client Sample ID: MRB West Pier MB-1 S-1A**
**Date Collected: 08/17/16 00:00**
**Date Received: 08/18/16 13:25**

**Lab Sample ID: 400-126048-11**
**Matrix: Solid**
**Percent Solids: 80.6**

**Method: 9056 - Anions, Ion Chromatography - Soluble**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <24 | | 24 | | mg/Kg | ☼ | | 08/30/16 07:14 | 1 |
| Sulfate | <24 | | 24 | | mg/Kg | ☼ | | 08/30/16 07:14 | 1 |

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

**Client Sample ID: MRB West Pier MB-1 S-1B**
**Date Collected: 08/17/16 00:00**
**Date Received: 08/18/16 13:25**

**Lab Sample ID: 400-126048-12**
**Matrix: Solid**

## General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Percent Moisture | 25.4 | | 0.1 | | % | | | 08/23/16 14:00 | 1 |

## General Chemistry - Soluble

| Analyte | Result | Qualifier | NONE | NONE | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| pH | 7.3 | HF | | | SU | | | 08/23/16 10:33 | 1 |

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Specific Conductance | 930 | | 100 | | umhos/cm | | | 08/29/16 09:50 | 1 |
| Resistivity | 4300 | | 20 | | ohm-m | | | 08/29/16 09:50 | 1 |

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

**Client Sample ID: MRB West Pier MB-1 S-1B**
**Date Collected: 08/17/16 00:00**
**Date Received: 08/18/16 13:25**

**Lab Sample ID: 400-126048-12**
**Matrix: Solid**
**Percent Solids: 74.6**

**Method: 9056 - Anions, Ion Chromatography - Soluble**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <27 | | 27 | | mg/Kg | ☼ | | 08/30/16 07:37 | 1 |
| Sulfate | <27 | | 27 | | mg/Kg | ☼ | | 08/30/16 07:37 | 1 |

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

**Client Sample ID: MRB West Pier MB-1 S-2A**
**Date Collected: 08/17/16 00:00**
**Date Received: 08/18/16 13:25**

**Lab Sample ID: 400-126048-13**
**Matrix: Solid**

## General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Percent Moisture | 32.7 | | 0.1 | | % | | | 08/23/16 15:11 | 1 |

## General Chemistry - Soluble

| Analyte | Result | Qualifier | NONE | NONE | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| pH | 7.2 | HF | | | SU | | | 08/23/16 10:33 | 1 |

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Specific Conductance | 760 | | 100 | | umhos/cm | | | 08/29/16 09:50 | 1 |
| Resistivity | 5200 | | 20 | | ohm-m | | | 08/29/16 09:50 | 1 |

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

**Client Sample ID: MRB West Pier MB-1 S-2A**
**Date Collected: 08/17/16 00:00**
**Date Received: 08/18/16 13:25**

**Lab Sample ID: 400-126048-13**
**Matrix: Solid**
**Percent Solids: 67.4**

**Method: 9056 - Anions, Ion Chromatography - Soluble**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <30 | | 30 | | mg/Kg | ☼ | | 08/30/16 08:00 | 1 |
| Sulfate | <30 | | 30 | | mg/Kg | ☼ | | 08/30/16 08:00 | 1 |

# Client Sample Results

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

**Client Sample ID: MRB West Pier MB-1 S-2B**
**Date Collected: 08/17/16 00:00**
**Date Received: 08/18/16 13:25**

**Lab Sample ID: 400-126048-14**
**Matrix: Solid**

## General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Percent Moisture | 38.6 | | 0.1 | | % | | | 08/23/16 15:11 | 1 |

## General Chemistry - Soluble

| Analyte | Result | Qualifier | NONE | NONE | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| pH | 7.2 | HF | | | SU | | | 08/23/16 10:33 | 1 |

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Specific Conductance | 680 | | 100 | | umhos/cm | | | 08/29/16 09:50 | 1 |
| Resistivity | 5800 | | 20 | | ohm-m | | | 08/29/16 09:50 | 1 |

# Client Sample Results

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

**Client Sample ID: MRB West Pier MB-1 S-2B**
**Date Collected: 08/17/16 00:00**
**Date Received: 08/18/16 13:25**

**Lab Sample ID: 400-126048-14**
**Matrix: Solid**
**Percent Solids: 61.4**

**Method: 9056 - Anions, Ion Chromatography - Soluble**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <32 | | 32 | | mg/Kg | ☼ | | 08/30/16 08:45 | 1 |
| Sulfate | <32 | | 32 | | mg/Kg | ☼ | | 08/30/16 08:45 | 1 |

# Client Sample Results

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

**Client Sample ID: MRB West Pier MB-1 S-3A**
**Date Collected: 08/17/16 00:00**
**Date Received: 08/18/16 13:25**

**Lab Sample ID: 400-126048-15**
**Matrix: Solid**

## General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Percent Moisture | 20.3 | | 0.1 | | % | | | 08/23/16 15:11 | 1 |

## General Chemistry - Soluble

| Analyte | Result | Qualifier | NONE | NONE | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| pH | 8.3 | HF | | | SU | | | 08/23/16 10:33 | 1 |

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Specific Conductance | 150 | | 100 | | umhos/cm | | | 08/29/16 09:50 | 1 |
| Resistivity | 27000 | | 20 | | ohm-m | | | 08/29/16 09:50 | 1 |

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

**Client Sample ID: MRB West Pier MB-1 S-3A**
**Date Collected: 08/17/16 00:00**
**Date Received: 08/18/16 13:25**

**Lab Sample ID: 400-126048-15**
**Matrix: Solid**
**Percent Solids: 79.7**

**Method: 9056 - Anions, Ion Chromatography - Soluble**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <26 | | 26 | | mg/Kg | ☼ | | 08/30/16 09:54 | 1 |
| Sulfate | <26 | | 26 | | mg/Kg | ☼ | | 08/30/16 09:54 | 1 |

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

**Client Sample ID: MRB West Pier MB-1 S-3B**
**Date Collected: 08/17/16 00:00**
**Date Received: 08/18/16 13:25**

**Lab Sample ID: 400-126048-16**
**Matrix: Solid**

## General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Percent Moisture | 21.8 | | 0.1 | | % | | | 08/23/16 15:11 | 1 |

## General Chemistry - Soluble

| Analyte | Result | Qualifier | NONE | NONE | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| pH | 7.4 | HF | | | SU | | | 08/23/16 10:33 | 1 |

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Specific Conductance | 380 | | 100 | | umhos/cm | | | 08/29/16 09:50 | 1 |
| Resistivity | 11000 | | 20 | | ohm-m | | | 08/29/16 09:50 | 1 |

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

**Client Sample ID: MRB West Pier MB-1 S-3B**
**Date Collected: 08/17/16 00:00**
**Date Received: 08/18/16 13:25**

**Lab Sample ID: 400-126048-16**
**Matrix: Solid**
**Percent Solids: 78.2**

**Method: 9056 - Anions, Ion Chromatography - Soluble**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <26 | | 26 | | mg/Kg | ☼ | | 08/30/16 10:17 | 1 |
| **Sulfate** | **28** | | 26 | | mg/Kg | ☼ | | 08/30/16 10:17 | 1 |

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

**Client Sample ID: MRB West Pier MB-1 S-4A**
**Date Collected: 08/17/16 00:00**
**Date Received: 08/18/16 13:25**

**Lab Sample ID: 400-126048-17**
**Matrix: Solid**

## General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Percent Moisture | 18.7 | | 0.1 | | % | | | 08/23/16 15:11 | 1 |

## General Chemistry - Soluble

| Analyte | Result | Qualifier | NONE | NONE | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| pH | 8.1 | HF | | | SU | | | 08/23/16 10:33 | 1 |

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Specific Conductance | 260 | | 100 | | umhos/cm | | | 08/29/16 09:50 | 1 |
| Resistivity | 16000 | | 20 | | ohm-m | | | 08/29/16 09:50 | 1 |

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

**Client Sample ID: MRB West Pier MB-1 S-4A**
**Date Collected: 08/17/16 00:00**
**Date Received: 08/18/16 13:25**

**Lab Sample ID: 400-126048-17**
**Matrix: Solid**
**Percent Solids: 81.4**

**Method: 9056 - Anions, Ion Chromatography - Soluble**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <24 | | 24 | | mg/Kg | ☼ | | 08/30/16 10:39 | 1 |
| Sulfate | <24 | | 24 | | mg/Kg | ☼ | | 08/30/16 10:39 | 1 |

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

**Client Sample ID: MRB West Pier MB-1 S-4B**
**Date Collected: 08/17/16 00:00**
**Date Received: 08/18/16 13:25**

**Lab Sample ID: 400-126048-18**
**Matrix: Solid**

## General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Percent Moisture | 19.4 | | 0.1 | | % | | | 08/23/16 15:11 | 1 |

## General Chemistry - Soluble

| Analyte | Result | Qualifier | NONE | NONE | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| pH | 8.6 | HF | | | SU | | | 08/23/16 10:33 | 1 |

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Specific Conductance | 360 | | 100 | | umhos/cm | | | 08/29/16 09:50 | 1 |
| Resistivity | 11000 | | 20 | | ohm-m | | | 08/29/16 09:50 | 1 |

# Client Sample Results

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

**Client Sample ID: MRB West Pier MB-1 S-4B**
**Date Collected: 08/17/16 00:00**
**Date Received: 08/18/16 13:25**

**Lab Sample ID: 400-126048-18**
**Matrix: Solid**
**Percent Solids: 80.6**

**Method: 9056 - Anions, Ion Chromatography - Soluble**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <25 | | 25 | | mg/Kg | ☼ | | 08/30/16 11:02 | 1 |
| **Sulfate** | **30** | | 25 | | mg/Kg | ☼ | | 08/30/16 11:02 | 1 |

## Method: 9056 - Anions, Ion Chromatography

**Lab Sample ID: MB 400-320657/1-A**
**Matrix: Solid**
**Analysis Batch: 320720**

**Client Sample ID: Method Blank**
**Prep Type: Soluble**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <20 | | 20 | | mg/Kg | | | 08/30/16 01:32 | 1 |
| Sulfate | <20 | | 20 | | mg/Kg | | | 08/30/16 01:32 | 1 |

**Lab Sample ID: LCS 400-320657/2-A**
**Matrix: Solid**
**Analysis Batch: 320720**

**Client Sample ID: Lab Control Sample**
**Prep Type: Soluble**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 100 | 101 | | mg/Kg | | 101 | 80 - 120 | | |
| Sulfate | | | 100 | 101 | | mg/Kg | | 101 | 80 - 120 | | |

**Lab Sample ID: LCSD 400-320657/3-A**
**Matrix: Solid**
**Analysis Batch: 320720**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Soluble**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 100 | 103 | | mg/Kg | | 103 | 80 - 120 | 2 | 15 |
| Sulfate | | | 100 | 109 | | mg/Kg | | 109 | 80 - 120 | 7 | 15 |

**Lab Sample ID: 400-126048-3 MS**
**Matrix: Solid**
**Analysis Batch: 320720**

**Client Sample ID: MRB West Pier MHLA-3 S-1A**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <25 | | 126 | 134 | | mg/Kg | ☼ | 100 | 80 - 120 | | |
| Sulfate | <25 | | 126 | 159 | | mg/Kg | ☼ | 109 | 80 - 120 | | |

**Lab Sample ID: 400-126048-3 MSD**
**Matrix: Solid**
**Analysis Batch: 320720**

**Client Sample ID: MRB West Pier MHLA-3 S-1A**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <25 | | 126 | 136 | | mg/Kg | ☼ | 102 | 80 - 120 | 1 | 15 |
| Sulfate | <25 | | 126 | 163 | | mg/Kg | ☼ | 113 | 80 - 120 | 3 | 15 |

**Lab Sample ID: 400-126048-13 MS**
**Matrix: Solid**
**Analysis Batch: 320720**

**Client Sample ID: MRB West Pier MB-1 S-2A**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <30 | | 146 | 159 | | mg/Kg | ☼ | 100 | 80 - 120 | | |
| Sulfate | <30 | | 146 | 157 | | mg/Kg | ☼ | 97 | 80 - 120 | | |

## Method: 325.2 - Chloride

**Lab Sample ID: MB 400-319860/6**
**Matrix: Water**
**Analysis Batch: 319860**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <2.0 | | 2.0 | | mg/L | | | 08/24/16 07:42 | 1 |

**Lab Sample ID: LCS 400-319860/7**
**Matrix: Water**
**Analysis Batch: 319860**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Chloride | 30.0 | 30.9 | | mg/L | | 103 | 90 - 110 |

**Lab Sample ID: MRL 400-319860/3**
**Matrix: Water**
**Analysis Batch: 319860**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | MRL Result | MRL Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Chloride | 2.00 | <2.0 | | mg/L | | 81 | 50 - 150 |

## Method: 9045C - pH

**Lab Sample ID: 400-126048-8 DU**
**Matrix: Solid**
**Analysis Batch: 319708**

**Client Sample ID: MRB West Pier MHLA-3 S-3B**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|
| pH | 7.2 | HF | 7.2 | | SU | | 0 | 5 |

## Method: 9050A - Specific Conductance

**Lab Sample ID: MB 400-320589/1**
**Matrix: Water**
**Analysis Batch: 320589**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Specific Conductance | <5.0 | | 5.0 | | umhos/cm | | | 08/28/16 13:13 | 1 |
| Resistivity | NA | | 2000 | | Mohm-cm | | | 08/28/16 13:13 | 1 |

**Lab Sample ID: LCS 400-320589/2**
**Matrix: Water**
**Analysis Batch: 320589**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Specific Conductance | 10.0 | 10.0 | | umhos/cm | | 100 | 98 - 102 |

**Lab Sample ID: LCS 400-320608/20**
**Matrix: Solid**
**Analysis Batch: 320608**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Specific Conductance | 10.0 | 10.1 | | umhos/cm | | 101 | 98 - 102 |

## Method: 9050A - Specific Conductance (Continued)

**Lab Sample ID: MB 400-320598/1-A**
**Matrix: Solid**
**Analysis Batch: 320608**

**Client Sample ID: Method Blank**
**Prep Type: Soluble**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Specific Conductance | <100 | | 100 | | umhos/cm | | | 08/29/16 09:50 | 1 |
| Resistivity | NA | | 20 | | Mohm-cm | | | 08/29/16 09:50 | 1 |

**Lab Sample ID: 400-126048-13 DU**
**Matrix: Solid**
**Analysis Batch: 320608**

**Client Sample ID: MRB West Pier MB-1 S-2A**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | | DU Result | DU Qualifier | Unit | D | | | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Specific Conductance | 760 | | | 766 | | umhos/cm | | | | 0.4 | 2 |
| Resistivity | 5200 | | | 5220 | | ohm-m | | | | NC | 2 |

## Method: SM 4500 SO4 E - Sulfate, Total

**Lab Sample ID: MB 400-319996/6**
**Matrix: Water**
**Analysis Batch: 319996**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | <5.0 | | 5.0 | | mg/L | | | 08/24/16 12:03 | 1 |

**Lab Sample ID: LCS 400-319996/7**
**Matrix: Water**
**Analysis Batch: 319996**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | | | 15.0 | 15.5 | | mg/L | | 103 | 90 - 110 | | |

**Lab Sample ID: MRL 400-319996/3**
**Matrix: Water**
**Analysis Batch: 319996**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | MRL Result | MRL Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | | | 5.00 | <5.0 | | mg/L | | 83 | 50 - 150 | | |

## Client Sample ID: MRB West Pier MB-1

**Lab Sample ID: 400-126048-1**
**Date Collected: 08/17/16 00:00**
**Matrix: Water**
**Date Received: 08/18/16 13:25**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 150.1 | | 1 | | | 319682 | 08/23/16 09:31 | LSS | TAL PEN |
| Total/NA | Analysis | 325.2 | | 1 | 10 mL | 10 mL | 319860 | 08/24/16 08:00 | LSS | TAL PEN |
| Total/NA | Analysis | 9050A | | 1 | | | 320589 | 08/28/16 13:13 | CAC | TAL PEN |
| Total/NA | Analysis | SM 4500 SO4 E | | 1 | 10 mL | 10 mL | 319996 | 08/24/16 13:01 | LSS | TAL PEN |

## Client Sample ID: MRB West Pier MHLA-3

**Lab Sample ID: 400-126048-2**
**Date Collected: 08/18/16 00:00**
**Matrix: Water**
**Date Received: 08/18/16 13:25**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 150.1 | | 1 | | | 319682 | 08/23/16 09:31 | LSS | TAL PEN |
| Total/NA | Analysis | 325.2 | | 1 | 10 mL | 10 mL | 319860 | 08/24/16 08:05 | LSS | TAL PEN |
| Total/NA | Analysis | 9050A | | 1 | | | 320589 | 08/28/16 13:13 | CAC | TAL PEN |
| Total/NA | Analysis | SM 4500 SO4 E | | 5 | 10 mL | 10 mL | 319996 | 08/24/16 14:19 | LSS | TAL PEN |

## Client Sample ID: MRB West Pier MHLA-3 S-1A

**Lab Sample ID: 400-126048-3**
**Date Collected: 08/18/16 00:00**
**Matrix: Solid**
**Date Received: 08/18/16 13:25**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 20 g | 20 mL | 319685 | 08/23/16 09:38 | LSS | TAL PEN |
| Soluble | Analysis | 9045C | | 1 | | | 319708 | 08/23/16 10:33 | LSS | TAL PEN |
| Soluble | Leach | DI Leach | | | 5 g | 100 mL | 320598 | 08/28/16 12:10 | CAC | TAL PEN |
| Soluble | Analysis | 9050A | | 1 | | | 320608 | 08/29/16 09:50 | CAC | TAL PEN |
| Total/NA | Analysis | Moisture | | 1 | | | 319780 | 08/23/16 14:00 | JLB | TAL PEN |

## Client Sample ID: MRB West Pier MHLA-3 S-1A

**Lab Sample ID: 400-126048-3**
**Date Collected: 08/18/16 00:00**
**Matrix: Solid**
**Date Received: 08/18/16 13:25**
**Percent Solids: 79.8**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 2.51 g | 50 mL | 320657 | 08/29/16 14:39 | KH1 | TAL PEN |
| Soluble | Analysis | 9056 | | 1 | | | 320720 | 08/30/16 02:40 | KH1 | TAL PEN |

## Client Sample ID: MRB West Pier MHLA-3 S-1B

**Lab Sample ID: 400-126048-4**
**Date Collected: 08/18/16 00:00**
**Matrix: Solid**
**Date Received: 08/18/16 13:25**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 20 g | 20 mL | 319685 | 08/23/16 09:38 | LSS | TAL PEN |
| Soluble | Analysis | 9045C | | 1 | | | 319708 | 08/23/16 10:33 | LSS | TAL PEN |
| Soluble | Leach | DI Leach | | | 5 g | 100 mL | 320598 | 08/28/16 12:10 | CAC | TAL PEN |

## Client Sample ID: MRB West Pier MHLA-3 S-1B
**Lab Sample ID: 400-126048-4**
**Date Collected: 08/18/16 00:00**
**Matrix: Solid**
**Date Received: 08/18/16 13:25**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Analysis | 9050A | | 1 | | | 320608 | 08/29/16 09:50 | CAC | TAL PEN |
| Total/NA | Analysis | Moisture | | 1 | | | 319780 | 08/23/16 14:00 | JLB | TAL PEN |

## Client Sample ID: MRB West Pier MHLA-3 S-1B
**Lab Sample ID: 400-126048-4**
**Date Collected: 08/18/16 00:00**
**Matrix: Solid**
**Date Received: 08/18/16 13:25**
**Percent Solids: 86.7**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 2.46 g | 50 mL | 320657 | 08/29/16 14:39 | KH1 | TAL PEN |
| Soluble | Analysis | 9056 | | 1 | | | 320720 | 08/30/16 03:49 | KH1 | TAL PEN |

## Client Sample ID: MRB West Pier MHLA-3 S-2A
**Lab Sample ID: 400-126048-5**
**Date Collected: 08/18/16 00:00**
**Matrix: Solid**
**Date Received: 08/18/16 13:25**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 20 g | 20 mL | 319685 | 08/23/16 09:38 | LSS | TAL PEN |
| Soluble | Analysis | 9045C | | 1 | | | 319708 | 08/23/16 10:33 | LSS | TAL PEN |
| Soluble | Leach | DI Leach | | | 5 g | 100 mL | 320598 | 08/28/16 12:10 | CAC | TAL PEN |
| Soluble | Analysis | 9050A | | 1 | | | 320608 | 08/29/16 09:50 | CAC | TAL PEN |
| Total/NA | Analysis | Moisture | | 1 | | | 319780 | 08/23/16 14:00 | JLB | TAL PEN |

## Client Sample ID: MRB West Pier MHLA-3 S-2A
**Lab Sample ID: 400-126048-5**
**Date Collected: 08/18/16 00:00**
**Matrix: Solid**
**Date Received: 08/18/16 13:25**
**Percent Solids: 80.4**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 2.55 g | 50 mL | 320657 | 08/29/16 14:39 | KH1 | TAL PEN |
| Soluble | Analysis | 9056 | | 1 | | | 320720 | 08/30/16 04:12 | KH1 | TAL PEN |

## Client Sample ID: MRB West Pier MHLA-3 S-2B
**Lab Sample ID: 400-126048-6**
**Date Collected: 08/18/16 00:00**
**Matrix: Solid**
**Date Received: 08/18/16 13:25**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 20 g | 20 mL | 319685 | 08/23/16 09:38 | LSS | TAL PEN |
| Soluble | Analysis | 9045C | | 1 | | | 319708 | 08/23/16 10:33 | LSS | TAL PEN |
| Soluble | Leach | DI Leach | | | 5 g | 100 mL | 320598 | 08/28/16 12:10 | CAC | TAL PEN |
| Soluble | Analysis | 9050A | | 1 | | | 320608 | 08/29/16 09:50 | CAC | TAL PEN |
| Total/NA | Analysis | Moisture | | 1 | | | 319780 | 08/23/16 14:00 | JLB | TAL PEN |

# Lab Chronicle

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

## Client Sample ID: MRB West Pier MHLA-3 S-2B — Lab Sample ID: 400-126048-6

**Date Collected: 08/18/16 00:00** — **Matrix: Solid**
**Date Received: 08/18/16 13:25** — **Percent Solids: 79.5**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 2.51 g | 50 mL | 320657 | 08/29/16 14:39 | KH1 | TAL PEN |
| Soluble | Analysis | 9056 | | 1 | | | 320720 | 08/30/16 05:20 | KH1 | TAL PEN |

## Client Sample ID: MRB West Pier MHLA-3 S-3A — Lab Sample ID: 400-126048-7

**Date Collected: 08/18/16 00:00** — **Matrix: Solid**
**Date Received: 08/18/16 13:25**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 20 g | 20 mL | 319685 | 08/23/16 09:38 | LSS | TAL PEN |
| Soluble | Analysis | 9045C | | 1 | | | 319708 | 08/23/16 10:33 | LSS | TAL PEN |
| Soluble | Leach | DI Leach | | | 5 g | 100 mL | 320598 | 08/28/16 12:10 | CAC | TAL PEN |
| Soluble | Analysis | 9050A | | 1 | | | 320608 | 08/29/16 09:50 | CAC | TAL PEN |
| Total/NA | Analysis | Moisture | | 1 | | | 319780 | 08/23/16 14:00 | JLB | TAL PEN |

## Client Sample ID: MRB West Pier MHLA-3 S-3A — Lab Sample ID: 400-126048-7

**Date Collected: 08/18/16 00:00** — **Matrix: Solid**
**Date Received: 08/18/16 13:25** — **Percent Solids: 80.1**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 2.56 g | 50 mL | 320657 | 08/29/16 14:39 | KH1 | TAL PEN |
| Soluble | Analysis | 9056 | | 1 | | | 320720 | 08/30/16 05:43 | KH1 | TAL PEN |

## Client Sample ID: MRB West Pier MHLA-3 S-3B — Lab Sample ID: 400-126048-8

**Date Collected: 08/18/16 00:00** — **Matrix: Solid**
**Date Received: 08/18/16 13:25**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 20 g | 20 mL | 319685 | 08/23/16 09:38 | LSS | TAL PEN |
| Soluble | Analysis | 9045C | | 1 | | | 319708 | 08/23/16 10:33 | LSS | TAL PEN |
| Soluble | Leach | DI Leach | | | 5 g | 100 mL | 320598 | 08/28/16 12:10 | CAC | TAL PEN |
| Soluble | Analysis | 9050A | | 1 | | | 320608 | 08/29/16 09:50 | CAC | TAL PEN |
| Total/NA | Analysis | Moisture | | 1 | | | 319780 | 08/23/16 14:00 | JLB | TAL PEN |

## Client Sample ID: MRB West Pier MHLA-3 S-3B — Lab Sample ID: 400-126048-8

**Date Collected: 08/18/16 00:00** — **Matrix: Solid**
**Date Received: 08/18/16 13:25** — **Percent Solids: 82.3**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 2.49 g | 50 mL | 320657 | 08/29/16 14:39 | KH1 | TAL PEN |
| Soluble | Analysis | 9056 | | 1 | | | 320720 | 08/30/16 06:06 | KH1 | TAL PEN |

## Client Sample ID: MRB West Pier MHLA-3 S-4A
**Lab Sample ID: 400-126048-9**
**Date Collected: 08/18/16 00:00**
**Matrix: Solid**
**Date Received: 08/18/16 13:25**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 20 g | 20 mL | 319685 | 08/23/16 09:38 | LSS | TAL PEN |
| Soluble | Analysis | 9045C | | 1 | | | 319708 | 08/23/16 10:33 | LSS | TAL PEN |
| Soluble | Leach | DI Leach | | | 5 g | 100 mL | 320598 | 08/28/16 12:10 | CAC | TAL PEN |
| Soluble | Analysis | 9050A | | 1 | | | 320608 | 08/29/16 09:50 | CAC | TAL PEN |
| Total/NA | Analysis | Moisture | | 1 | | | 319780 | 08/23/16 14:00 | JLB | TAL PEN |

## Client Sample ID: MRB West Pier MHLA-3 S-4A
**Lab Sample ID: 400-126048-9**
**Date Collected: 08/18/16 00:00**
**Matrix: Solid**
**Date Received: 08/18/16 13:25**
**Percent Solids: 81.4**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 2.57 g | 50 mL | 320657 | 08/29/16 14:39 | KH1 | TAL PEN |
| Soluble | Analysis | 9056 | | 1 | | | 320720 | 08/30/16 06:28 | KH1 | TAL PEN |

## Client Sample ID: MRB West Pier MHLA-3 S-4B
**Lab Sample ID: 400-126048-10**
**Date Collected: 08/18/16 00:00**
**Matrix: Solid**
**Date Received: 08/18/16 13:25**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 20 g | 20 mL | 319685 | 08/23/16 09:38 | LSS | TAL PEN |
| Soluble | Analysis | 9045C | | 1 | | | 319708 | 08/23/16 10:33 | LSS | TAL PEN |
| Soluble | Leach | DI Leach | | | 5 g | 100 mL | 320598 | 08/28/16 12:10 | CAC | TAL PEN |
| Soluble | Analysis | 9050A | | 1 | | | 320608 | 08/29/16 09:50 | CAC | TAL PEN |
| Total/NA | Analysis | Moisture | | 1 | | | 319780 | 08/23/16 14:00 | JLB | TAL PEN |

## Client Sample ID: MRB West Pier MHLA-3 S-4B
**Lab Sample ID: 400-126048-10**
**Date Collected: 08/18/16 00:00**
**Matrix: Solid**
**Date Received: 08/18/16 13:25**
**Percent Solids: 84.5**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 2.52 g | 50 mL | 320657 | 08/29/16 14:39 | KH1 | TAL PEN |
| Soluble | Analysis | 9056 | | 1 | | | 320720 | 08/30/16 06:51 | KH1 | TAL PEN |

## Client Sample ID: MRB West Pier MB-1 S-1A
**Lab Sample ID: 400-126048-11**
**Date Collected: 08/17/16 00:00**
**Matrix: Solid**
**Date Received: 08/18/16 13:25**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 20 g | 20 mL | 319685 | 08/23/16 09:38 | LSS | TAL PEN |
| Soluble | Analysis | 9045C | | 1 | | | 319708 | 08/23/16 10:33 | LSS | TAL PEN |
| Soluble | Leach | DI Leach | | | 5 g | 100 mL | 320598 | 08/28/16 12:10 | CAC | TAL PEN |
| Soluble | Analysis | 9050A | | 1 | | | 320608 | 08/29/16 09:50 | CAC | TAL PEN |
| Total/NA | Analysis | Moisture | | 1 | | | 319780 | 08/23/16 14:00 | JLB | TAL PEN |

## Client Sample ID: MRB West Pier MB-1 S-1A
**Lab Sample ID: 400-126048-11**
**Date Collected: 08/17/16 00:00**
**Matrix: Solid**
**Date Received: 08/18/16 13:25**
**Percent Solids: 80.6**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 2.54 g | 50 mL | 320657 | 08/29/16 14:39 | KH1 | TAL PEN |
| Soluble | Analysis | 9056 | | 1 | | | 320720 | 08/30/16 07:14 | KH1 | TAL PEN |

## Client Sample ID: MRB West Pier MB-1 S-1B
**Lab Sample ID: 400-126048-12**
**Date Collected: 08/17/16 00:00**
**Matrix: Solid**
**Date Received: 08/18/16 13:25**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 20 g | 20 mL | 319685 | 08/23/16 09:38 | LSS | TAL PEN |
| Soluble | Analysis | 9045C | | 1 | | | 319708 | 08/23/16 10:33 | LSS | TAL PEN |
| Soluble | Leach | DI Leach | | | 5 g | 100 mL | 320598 | 08/28/16 12:10 | CAC | TAL PEN |
| Soluble | Analysis | 9050A | | 1 | | | 320608 | 08/29/16 09:50 | CAC | TAL PEN |
| Total/NA | Analysis | Moisture | | 1 | | | 319780 | 08/23/16 14:00 | JLB | TAL PEN |

## Client Sample ID: MRB West Pier MB-1 S-1B
**Lab Sample ID: 400-126048-12**
**Date Collected: 08/17/16 00:00**
**Matrix: Solid**
**Date Received: 08/18/16 13:25**
**Percent Solids: 74.6**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 2.51 g | 50 mL | 320657 | 08/29/16 14:39 | KH1 | TAL PEN |
| Soluble | Analysis | 9056 | | 1 | | | 320720 | 08/30/16 07:37 | KH1 | TAL PEN |

## Client Sample ID: MRB West Pier MB-1 S-2A
**Lab Sample ID: 400-126048-13**
**Date Collected: 08/17/16 00:00**
**Matrix: Solid**
**Date Received: 08/18/16 13:25**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 20 g | 20 mL | 319685 | 08/23/16 09:38 | LSS | TAL PEN |
| Soluble | Analysis | 9045C | | 1 | | | 319708 | 08/23/16 10:33 | LSS | TAL PEN |
| Soluble | Leach | DI Leach | | | 5 g | 100 mL | 320598 | 08/28/16 12:10 | CAC | TAL PEN |
| Soluble | Analysis | 9050A | | 1 | | | 320608 | 08/29/16 09:50 | CAC | TAL PEN |
| Total/NA | Analysis | Moisture | | 1 | | | 319780 | 08/23/16 15:11 | JLB | TAL PEN |

## Client Sample ID: MRB West Pier MB-1 S-2A
**Lab Sample ID: 400-126048-13**
**Date Collected: 08/17/16 00:00**
**Matrix: Solid**
**Date Received: 08/18/16 13:25**
**Percent Solids: 67.4**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 2.49 g | 50 mL | 320657 | 08/29/16 14:39 | KH1 | TAL PEN |
| Soluble | Analysis | 9056 | | 1 | | | 320720 | 08/30/16 08:00 | KH1 | TAL PEN |

## Client Sample ID: MRB West Pier MB-1 S-2B
**Lab Sample ID: 400-126048-14**
**Date Collected: 08/17/16 00:00**
**Matrix: Solid**
**Date Received: 08/18/16 13:25**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 20 g | 20 mL | 319685 | 08/23/16 09:38 | LSS | TAL PEN |
| Soluble | Analysis | 9045C | | 1 | | | 319708 | 08/23/16 10:33 | LSS | TAL PEN |
| Soluble | Leach | DI Leach | | | 5 g | 100 mL | 320598 | 08/28/16 12:10 | CAC | TAL PEN |
| Soluble | Analysis | 9050A | | 1 | | | 320608 | 08/29/16 09:50 | CAC | TAL PEN |
| Total/NA | Analysis | Moisture | | 1 | | | 319780 | 08/23/16 15:11 | JLB | TAL PEN |

## Client Sample ID: MRB West Pier MB-1 S-2B
**Lab Sample ID: 400-126048-14**
**Date Collected: 08/17/16 00:00**
**Matrix: Solid**
**Date Received: 08/18/16 13:25**
**Percent Solids: 61.4**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 2.56 g | 50 mL | 320657 | 08/29/16 14:39 | KH1 | TAL PEN |
| Soluble | Analysis | 9056 | | 1 | | | 320720 | 08/30/16 08:45 | KH1 | TAL PEN |

## Client Sample ID: MRB West Pier MB-1 S-3A
**Lab Sample ID: 400-126048-15**
**Date Collected: 08/17/16 00:00**
**Matrix: Solid**
**Date Received: 08/18/16 13:25**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 20 g | 20 mL | 319685 | 08/23/16 09:38 | LSS | TAL PEN |
| Soluble | Analysis | 9045C | | 1 | | | 319708 | 08/23/16 10:33 | LSS | TAL PEN |
| Soluble | Leach | DI Leach | | | 5 g | 100 mL | 320598 | 08/28/16 12:10 | CAC | TAL PEN |
| Soluble | Analysis | 9050A | | 1 | | | 320608 | 08/29/16 09:50 | CAC | TAL PEN |
| Total/NA | Analysis | Moisture | | 1 | | | 319780 | 08/23/16 15:11 | JLB | TAL PEN |

## Client Sample ID: MRB West Pier MB-1 S-3A
**Lab Sample ID: 400-126048-15**
**Date Collected: 08/17/16 00:00**
**Matrix: Solid**
**Date Received: 08/18/16 13:25**
**Percent Solids: 79.7**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 2.46 g | 50 mL | 320657 | 08/29/16 14:39 | KH1 | TAL PEN |
| Soluble | Analysis | 9056 | | 1 | | | 320720 | 08/30/16 09:54 | KH1 | TAL PEN |

## Client Sample ID: MRB West Pier MB-1 S-3B
**Lab Sample ID: 400-126048-16**
**Date Collected: 08/17/16 00:00**
**Matrix: Solid**
**Date Received: 08/18/16 13:25**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 20 g | 20 mL | 319685 | 08/23/16 09:38 | LSS | TAL PEN |
| Soluble | Analysis | 9045C | | 1 | | | 319708 | 08/23/16 10:33 | LSS | TAL PEN |
| Soluble | Leach | DI Leach | | | 5 g | 100 mL | 320598 | 08/28/16 12:10 | CAC | TAL PEN |
| Soluble | Analysis | 9050A | | 1 | | | 320608 | 08/29/16 09:50 | CAC | TAL PEN |
| Total/NA | Analysis | Moisture | | 1 | | | 319780 | 08/23/16 15:11 | JLB | TAL PEN |

## Client Sample ID: MRB West Pier MB-1 S-3B

**Lab Sample ID: 400-126048-16**
**Date Collected: 08/17/16 00:00**
**Matrix: Solid**
**Date Received: 08/18/16 13:25**
**Percent Solids: 78.2**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 2.49 g | 50 mL | 320657 | 08/29/16 14:39 | KH1 | TAL PEN |
| Soluble | Analysis | 9056 | | 1 | | | 320720 | 08/30/16 10:17 | KH1 | TAL PEN |

## Client Sample ID: MRB West Pier MB-1 S-4A

**Lab Sample ID: 400-126048-17**
**Date Collected: 08/17/16 00:00**
**Matrix: Solid**
**Date Received: 08/18/16 13:25**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 20 g | 20 mL | 319685 | 08/23/16 09:38 | LSS | TAL PEN |
| Soluble | Analysis | 9045C | | 1 | | | 319708 | 08/23/16 10:33 | LSS | TAL PEN |
| Soluble | Leach | DI Leach | | | 5 g | 100 mL | 320598 | 08/28/16 12:10 | CAC | TAL PEN |
| Soluble | Analysis | 9050A | | 1 | | | 320608 | 08/29/16 09:50 | CAC | TAL PEN |
| Total/NA | Analysis | Moisture | | 1 | | | 319780 | 08/23/16 15:11 | JLB | TAL PEN |

## Client Sample ID: MRB West Pier MB-1 S-4A

**Lab Sample ID: 400-126048-17**
**Date Collected: 08/17/16 00:00**
**Matrix: Solid**
**Date Received: 08/18/16 13:25**
**Percent Solids: 81.4**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 2.54 g | 50 mL | 320657 | 08/29/16 14:39 | KH1 | TAL PEN |
| Soluble | Analysis | 9056 | | 1 | | | 320720 | 08/30/16 10:39 | KH1 | TAL PEN |

## Client Sample ID: MRB West Pier MB-1 S-4B

**Lab Sample ID: 400-126048-18**
**Date Collected: 08/17/16 00:00**
**Matrix: Solid**
**Date Received: 08/18/16 13:25**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 20 g | 20 mL | 319685 | 08/23/16 09:38 | LSS | TAL PEN |
| Soluble | Analysis | 9045C | | 1 | | | 319708 | 08/23/16 10:33 | LSS | TAL PEN |
| Soluble | Leach | DI Leach | | | 5 g | 100 mL | 320598 | 08/28/16 12:10 | CAC | TAL PEN |
| Soluble | Analysis | 9050A | | 1 | | | 320608 | 08/29/16 09:50 | CAC | TAL PEN |
| Total/NA | Analysis | Moisture | | 1 | | | 319780 | 08/23/16 15:11 | JLB | TAL PEN |

## Client Sample ID: MRB West Pier MB-1 S-4B

**Lab Sample ID: 400-126048-18**
**Date Collected: 08/17/16 00:00**
**Matrix: Solid**
**Date Received: 08/18/16 13:25**
**Percent Solids: 80.6**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 2.51 g | 50 mL | 320657 | 08/29/16 14:44 | KH1 | TAL PEN |
| Soluble | Analysis | 9056 | | 1 | | | 320720 | 08/30/16 11:02 | KH1 | TAL PEN |

# Lab Chronicle

Client: Thompson Engineering Inc
Project/Site: ALDOT MRB West Pier

TestAmerica Job ID: 400-126048-1

## Client Sample ID: Method Blank
**Lab Sample ID: MB 400-319860/6**
**Date Collected: N/A**
**Matrix: Water**
**Date Received: N/A**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 325.2 | | 1 | 10 mL | 10 mL | 319860 | 08/24/16 07:42 | LSS | TAL PEN |

## Client Sample ID: Method Blank
**Lab Sample ID: MB 400-319996/6**
**Date Collected: N/A**
**Matrix: Water**
**Date Received: N/A**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | SM 4500 SO4 E | | 1 | 10 mL | 10 mL | 319996 | 08/24/16 12:03 | LSS | TAL PEN |

## Client Sample ID: Method Blank
**Lab Sample ID: MB 400-320589/1**
**Date Collected: N/A**
**Matrix: Water**
**Date Received: N/A**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 9050A | | 1 | | | 320589 | 08/28/16 13:13 | CAC | TAL PEN |

## Client Sample ID: Method Blank
**Lab Sample ID: MB 400-320598/1-A**
**Date Collected: N/A**
**Matrix: Solid**
**Date Received: N/A**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 5 g | 100 mL | 320598 | 08/28/16 12:10 | CAC | TAL PEN |
| Soluble | Analysis | 9050A | | 1 | | | 320608 | 08/29/16 09:50 | CAC | TAL PEN |

## Client Sample ID: Method Blank
**Lab Sample ID: MB 400-320657/1-A**
**Date Collected: N/A**
**Matrix: Solid**
**Date Received: N/A**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 2.52 g | 50 mL | 320657 | 08/29/16 14:39 | KH1 | TAL PEN |
| Soluble | Analysis | 9056 | | 1 | | | 320720 | 08/30/16 01:32 | KH1 | TAL PEN |

## Client Sample ID: Lab Control Sample
**Lab Sample ID: LCS 400-319682/4**
**Date Collected: N/A**
**Matrix: Water**
**Date Received: N/A**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 150.1 | | 1 | | | 319682 | 08/23/16 09:31 | LSS | TAL PEN |

**Client Sample ID: Lab Control Sample** — **Lab Sample ID: LCS 400-319685/1-A**
**Date Collected: N/A** — **Matrix: Solid**
**Date Received: N/A**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 20 g | 20 mL | 319685 | 08/23/16 09:38 | LSS | TAL PEN |
| Soluble | Analysis | 9045C | | 1 | | | 319708 | 08/23/16 10:33 | LSS | TAL PEN |

**Client Sample ID: Lab Control Sample** — **Lab Sample ID: LCS 400-319860/7**
**Date Collected: N/A** — **Matrix: Water**
**Date Received: N/A**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 325.2 | | 1 | 10 mL | 10 mL | 319860 | 08/24/16 07:42 | LSS | TAL PEN |

**Client Sample ID: Lab Control Sample** — **Lab Sample ID: LCS 400-319996/7**
**Date Collected: N/A** — **Matrix: Water**
**Date Received: N/A**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | SM 4500 SO4 E | | 1 | 10 mL | 10 mL | 319996 | 08/24/16 12:03 | LSS | TAL PEN |

**Client Sample ID: Lab Control Sample** — **Lab Sample ID: LCS 400-320589/2**
**Date Collected: N/A** — **Matrix: Water**
**Date Received: N/A**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 9050A | | 1 | | | 320589 | 08/28/16 13:13 | CAC | TAL PEN |

**Client Sample ID: Lab Control Sample** — **Lab Sample ID: LCS 400-320608/20**
**Date Collected: N/A** — **Matrix: Solid**
**Date Received: N/A**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 9050A | | 1 | | | 320608 | 08/29/16 09:51 | CAC | TAL PEN |

**Client Sample ID: Lab Control Sample** — **Lab Sample ID: LCS 400-320657/2-A**
**Date Collected: N/A** — **Matrix: Solid**
**Date Received: N/A**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 2.50 g | 50 mL | 320657 | 08/29/16 14:39 | KH1 | TAL PEN |
| Soluble | Analysis | 9056 | | 1 | | | 320720 | 08/30/16 01:55 | KH1 | TAL PEN |

## Client Sample ID: Lab Control Sample Dup

**Lab Sample ID: LCSD 400-320657/3-A**

**Date Collected: N/A**

**Matrix: Solid**

**Date Received: N/A**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 2.49 g | 50 mL | 320657 | 08/29/16 14:39 | KH1 | TAL PEN |
| Soluble | Analysis | 9056 | | 1 | | | 320720 | 08/30/16 02:17 | KH1 | TAL PEN |

## Client Sample ID: Lab Control Sample

**Lab Sample ID: MRL 400-319860/3**

**Date Collected: N/A**

**Matrix: Water**

**Date Received: N/A**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 325.2 | | 1 | 10 mL | 10 mL | 319860 | 08/24/16 07:42 | LSS | TAL PEN |

## Client Sample ID: Lab Control Sample

**Lab Sample ID: MRL 400-319996/3**

**Date Collected: N/A**

**Matrix: Water**

**Date Received: N/A**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | SM 4500 SO4 E | | 1 | 10 mL | 10 mL | 319996 | 08/24/16 12:03 | LSS | TAL PEN |

## Client Sample ID: MRB West Pier MHLA-3 S-1A

**Lab Sample ID: 400-126048-3 MS**

**Date Collected: 08/18/16 00:00**

**Matrix: Solid**

**Date Received: 08/18/16 13:25**

**Percent Solids: 79.8**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 2.48 g | 50 mL | 320657 | 08/29/16 14:39 | KH1 | TAL PEN |
| Soluble | Analysis | 9056 | | 1 | | | 320720 | 08/30/16 03:03 | KH1 | TAL PEN |

## Client Sample ID: MRB West Pier MHLA-3 S-1A

**Lab Sample ID: 400-126048-3 MSD**

**Date Collected: 08/18/16 00:00**

**Matrix: Solid**

**Date Received: 08/18/16 13:25**

**Percent Solids: 79.8**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 2.49 g | 50 mL | 320657 | 08/29/16 14:39 | KH1 | TAL PEN |
| Soluble | Analysis | 9056 | | 1 | | | 320720 | 08/30/16 03:26 | KH1 | TAL PEN |

## Client Sample ID: MRB West Pier MB-1 S-2A

**Lab Sample ID: 400-126048-13 MS**

**Date Collected: 08/17/16 00:00**

**Matrix: Solid**

**Date Received: 08/18/16 13:25**

**Percent Solids: 67.4**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 2.55 g | 50 mL | 320657 | 08/29/16 14:39 | KH1 | TAL PEN |
| Soluble | Analysis | 9056 | | 1 | | | 320720 | 08/30/16 08:23 | KH1 | TAL PEN |

**Laboratory References:**

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

# CHAIN-OF-CUSTODY

PAGE ___ OF ___

thompson ENGINEERING
3707 Cottage Hill Rd.
Mobile, Alabama 36609
(251) 666-2443

400-126048 COC

JOB NO.: 15-1101-0110

CLIENT: ALDOT

PROJECT: MRB West Pier

| LAB USE ONLY LAB I.D. | DATE | TIME | COMP | GRAB | SAMPLE IDENTIFICATION | NUMBER OF CONTAINERS | TESTS ASSIGNED | REMARKS |
|---|---|---|---|---|---|---|---|---|
| | 8/17/16 | | | | 2 Water Samples | 2 | | For MB-1 + WHLA 3 |
| | 8/18/16 | | | | MB-1 S-1A thru S-4B | 8 | | |
| | 8/18/16 | | | | WHLA-3 S-1A thru S-4B | 8 | | |

SAMPLED BY AND TITLE: (SIGNATURE) — DATE/TIME 8/18/16 12:00

RELINQUISHED BY: (SIGNATURE) — DATE/TIME 8/18/16 12:30

RECEIVED BY: (SIGNATURE)

RELINQUISHED BY: (SIGNATURE) — DATE/TIME

RECEIVED BY: (SIGNATURE)

RELINQUISHED BY: (SIGNATURE) — DATE/TIME 8/18/16 1:25pm

RECEIVED BY LAB: (SIGNATURE) — DATE/TIME 8/18/16 1:25

REMARKS To go to Test America for PH, Resistivity, Sulfates, + Chloride tests. Must stay on Ice !!

SAMPLE SHIPPED VIA ☐UPS ☐BUS ☐OTHER

AIR/BUS BILL NUMBER

DISTRIBUTION: ORIGINAL - ACCOMPANIES SHIPMENT. COPY 1 - COORDINATOR FIELD FILES. COPY 2 - CLIENT

NOM 158291 1.5°C #5592 Charles Tisher

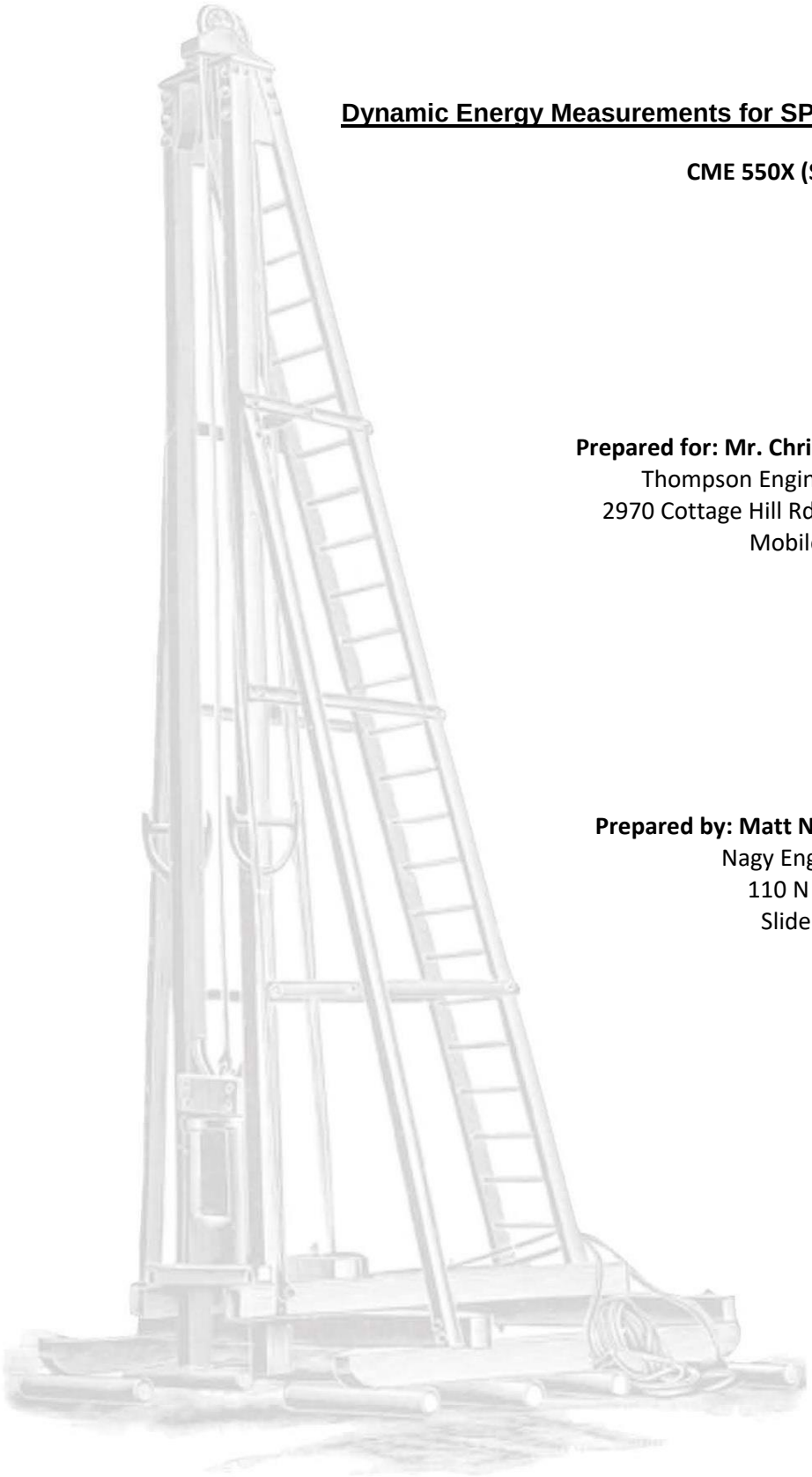


8/31/2016

# APPENDIX D

- **Drill Rig Hammer Energy Reports**

# Nagy Engineers, Inc.



## Dynamic Energy Measurements for SPT Hammer

**CME 550X (S/N 355273)**

**Prepared for: Mr. Chris Dugger of**
Thompson Engineering, Inc.
2970 Cottage Hill Rd., Suite 190
Mobile, AL 36606

**Prepared by: Matt Nagy, P.E. of**
Nagy Engineers, Inc.
110 N Queens Dr.
Slidell, LA 70458

Nagy Engineers, Inc.
- Deep Foundation Specialty Testing -

September 13, 2017

Mr. Chris Dugger
Thompson Engineering, Inc.
2970 Cottage Hill Road, Suite 190
Mobile, AL 36606

**Re: SPT Hammer Calibration using Dynamic Energy Measurements**
Thompson Engineering Drill Rig – CME 550X (S/N 355273)
Nagy Engineers Job No. 171044-1

Dear Mr. Dugger:

This report summarizes the results from SPT Energy Measurement Testing performed in Mobile, Alabama near the intersection of Interstate 10 and Old Spanish Trail on September 11, 2017. The testing was conducted to calibrate a CME 550X automatic SPT hammer. The hammer reportedly had a 140 lb drop weight and a 2.5 ft drop height. Appendix A gives a summary of the field dynamic test data and results while Appendix B contains the equipment calibration sheets. An overall summary of the test results is presented in Table 1.

## OBJECTIVES

The objective of the testing was to perform SPT Energy Measurements according to ASTM D4633-10. These objectives were met using our Pile Driving Analyzer®, Model PAX – SPT Software, which acquired the SPT hammer's transfer energies using an instrumented NWJ rod section and two piezoresistive accelerometers.

## TESTING AND EQUIPMENT

### *Drilling and SPT Hammer Equipment*

SPT energy measurements were collected for a CME 550X automatic SPT hammer. The serial number on the rig was s/n 355273. Energy records were collected at various increments between the depths of 13.5 ft and 35.0 ft. The drilling method was mud rotary. Appendix A contains a photo of the CME 550X rig that was tested.

### *Instrumentation*

A Model PAX Pile Driving Analyzer® (PDA) data acquisition system was used to collect and process the dynamic measurements of force and velocity. The PAX is a digital system having a low pass filter cutoff frequency of 5 kHz. The sampling frequency was therefore set to 10 times the low pass filter, or 50 kHz. A

two foot long section of NWJ rod subsection was instrumented with one full bridge foil resistance strain gage and two piezoresistive accelerometers mounted at the midpoint location of the instrumented subsection. Strain and acceleration signals were conditioned, digitized, stored and processed using the PDA. Selected output from the PDA for each recorded impact included the maximum calculated rod top force (FMX), maximum rod top velocity (VMX), maximum average compressive stress (CSX), maximum energy transfer (EMX), energy transfer ratio (ETR) and the hammer operating rate (BPM).

## MEASUREMENTS AND CALCULATIONS

### *FV Method (EMX)*

Energy transfer to the PDA gage location, EMX, was computed by the PDA using force, F(t), and velocity, v(t), records as follows:

$$EMX = \int_a^b F(t) \cdot v(t) dt$$

The time "a" corresponds to the start of the record when the energy transfer begins, and "b" is the time at which energy transferred to the rod reaches a maximum value. The FV Method is currently recognized in ASTM D4633-10, and is the theoretically correct result; therefore, no other energy calculation methods are reported.

## RESULTS

Upon return to the office, the records collected by the PDA were checked for consistency and accuracy. For example, records from very weak startup or final impacts were not included in the results. Appendix A contains a representative plot of force and normalized velocity versus time and PDIPLOT results for all hammer blows at each dynamically monitored sampling depth. The PDA results include the EMX (transferred energy by the EMX method, as recommended by ASTM D4633-10), ETR (energy transfer ratio), BPM (hammer operating rate), FMX (maximum rod top force), CSX (maximum compressive stress), and VMX (maximum rod top velocity). The plots show each calculated PDA result versus sampling spoon penetration while the tables show statistical summaries for each 6 inch increment. At the end of each table, on the next page, is a statistical evaluation of the results which only include the blows that correspond to the N-Value for that sample.

Table 1 summarizes the average transfer energy values calculated by the EMX method. The records averaged consist only of the hammer blows at each dynamically monitored sampling depth that correspond to the N-Values (i.e. the blows in the initial 6 inches of split spoon driving were not considered

as part of the average). The “energy transfer ratio” (ETR) is defined as the ratio of maximum transferred energy EMX divided by the theoretical hammer potential energy of 350 ft-lbs. The average hammer operating rate is reported in blows per minute (BPM).

## CONCLUSIONS

**RIG: CME 550X (s/n: 355273) - 140 lbs Hammer – 2.5 ft Drop Height**

The average maximum energy transfer (EMX) to the NWJ SPT rod using the 140 lbs drop weight was 314 ft-lbs which is 90% of the 350 ft-lbs potential energy of the hammer. The standard deviation of the transfer efficiency was 3% over the eight samples that were collected. The average hammer operation rate during the time of testing was 51.5 blows/min.

We have appreciated this opportunity to be of assistance to you on this project, please contact our office if you have any questions regarding this report, or if we may be of further service.

Very truly yours,
Nagy Engineers, Inc.

Matthew Nagy, P.E. AL # 33853

Firm COA Number: 4718

Enclosed: Appendices A and B

# TABLE 1: Summary of SPT Energy Measurements

## CME 550X Automatic SPT Hammer (S/N 355273)

| Rod Length Below Gages *LE* | Depth Below Top of Ground | Reported SPT Blow Counts | Maximum Transfer Force *FMX* | Maximum Compressive Stress *CSX* | Average Hammer Blow Rate *BPM* | Average Energy Transfer *EMX* | Average Transfer Efficiency *ETR* |
|---|---|---|---|---|---|---|---|
| ft | ft | blows/6" | kips | ksi | blows/min | ft-lbs | % |
| 19.0 | 13.5 to 15.0 | 3,7,11 | 42 | 29.5 | 43.7 | 290 | 83% |
| 24.0 | 18.5 to 20.0 | 2,3,8 | 43 | 30.6 | 54.4 | 310 | 89% |
| 27.0 | 21.0 to 22.5 | 13,23,21 | 43 | 30.3 | 56.6 | 313 | 89% |
| 29.0 | 23.5 to 25.0 | 8,8,5 | 43 | 30.0 | 50.5 | 314 | 90% |
| 32.0 | 26.0 to 27.5 | 7,5,5 | 44 | 30.7 | 55.5 | 327 | 93% |
| 34.0 | 28.5 to 30.0 | 5,9,15 | 43 | 30.0 | 50.4 | 327 | 93% |
| 37.0 | 31.0 to 32.5 | 6,4,8 | 43 | 30.0 | 50.4 | 314 | 90% |
| 39.0 | 33.5 to 35.0 | 9,12,12 | 43 | 30.5 | 50.5 | 318 | 91% |
| | | **Overall Average** | | | **51.5** | **314** | **90%** |
| | | **Standard Deviation** | | | **4.1** | **12** | **3%** |

**Notes**

*LE* - Length from the bottom of the spoon to the PDA gage location.
FMX - Maximum Force Meaused at PDA gage locationn.
CSX - Maximum Average Compressive Stress at PDA gage location.
*BPM* - Hammer operation rate (blows/minute)
*EMX* - Computed, from $\int$ Fv dt, maximum energy transferred to PDA gage location.
*ETR* - Computed, from EMX/PE, maximum energy transfer efficiency

# Appendix A

# Results from SPT Dynamic Energy Measurements

Thompson Engineering SPT Rig Calibration

CMX 550X

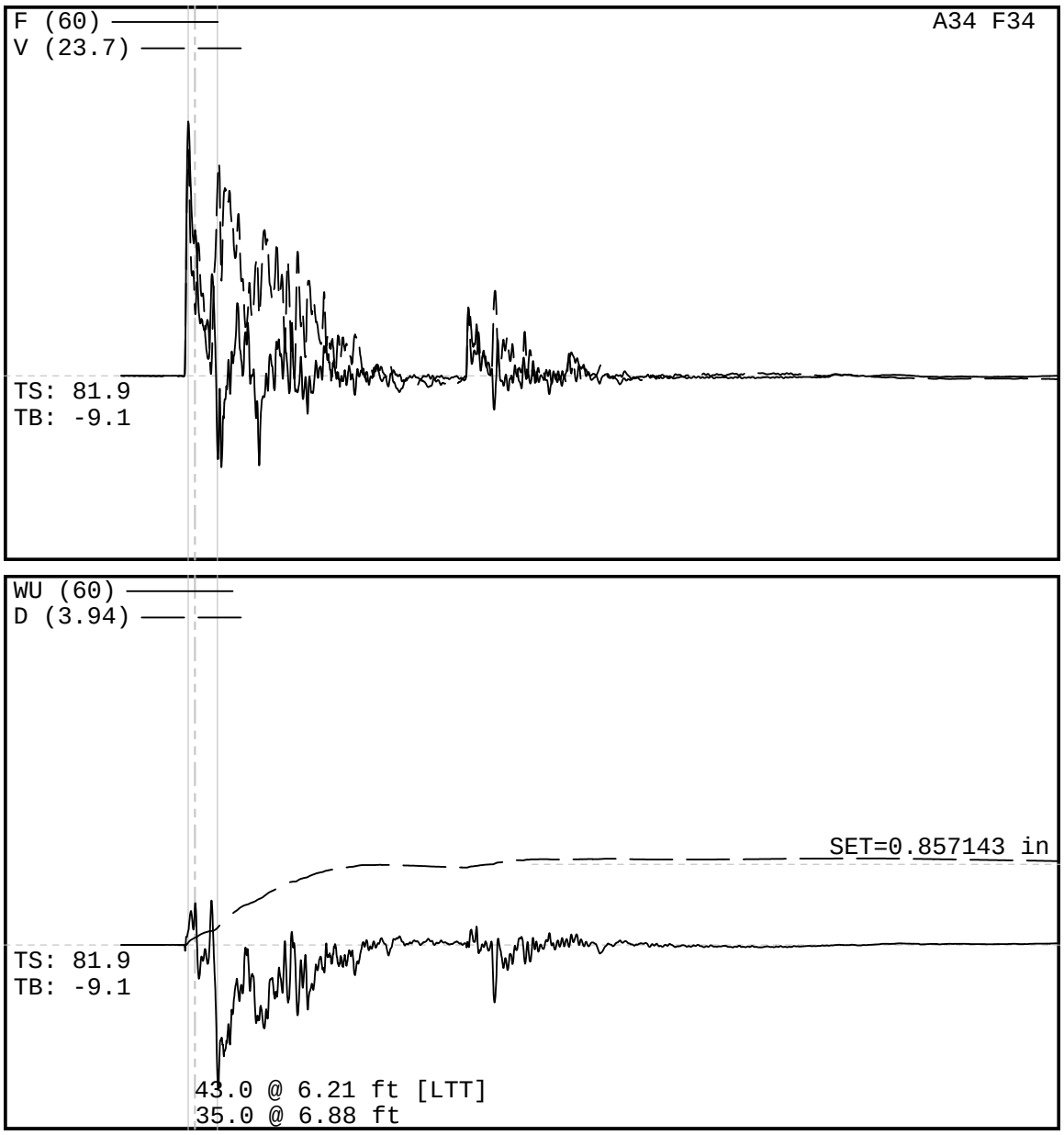
S/N 355273

(NWJ Rod –Mud Rotary)



**Thompson Engineering's CME 550X (S/N 355273)**

Thompson Engineering SPT Calibration CME 550X (SN 355273) - 13.5 to 15.0 ft




*Project Information*

PROJECT: Thompson Engineering SPT Calibratic
PILE NAME: CME 550X (SN 355273) - 13.5 to 1
DESCR: NWJ Rod - Mud Rotary
OPERATOR: MJN
FILE: CME 550X (SN 355273)
9/11/2017 1:11:19 PM
Blow Number 7

*Pile Properties*

| | | |
|---|---|---|
| LE | 19.00 | ft |
| AR | 1.42 | in^2 |
| EM | 30000 | ksi |
| SP | 0.492 | k/ft3 |
| WS | 16807.9 | f/s |
| EA/C | 2.5 | ksec/ft |
| 2L/C | 2.26 | ms |
| JC | | [] |
| LP | 14.29 | ft |

*Quantity Results*

| | | |
|---|---|---|
| CSX | 29.03 | ksi |
| CSI f | 29.28 | ksi |
| EMX | 0.286 | k-ft |
| ETR | 81.7 | (%) |
| BPM | 43.7 | bpm |
| FMX | 41 | kips |
| VMX | 14.5 | f/s |
| QNV | 0.00 | [] |
| QNV | 0.00 | [] |

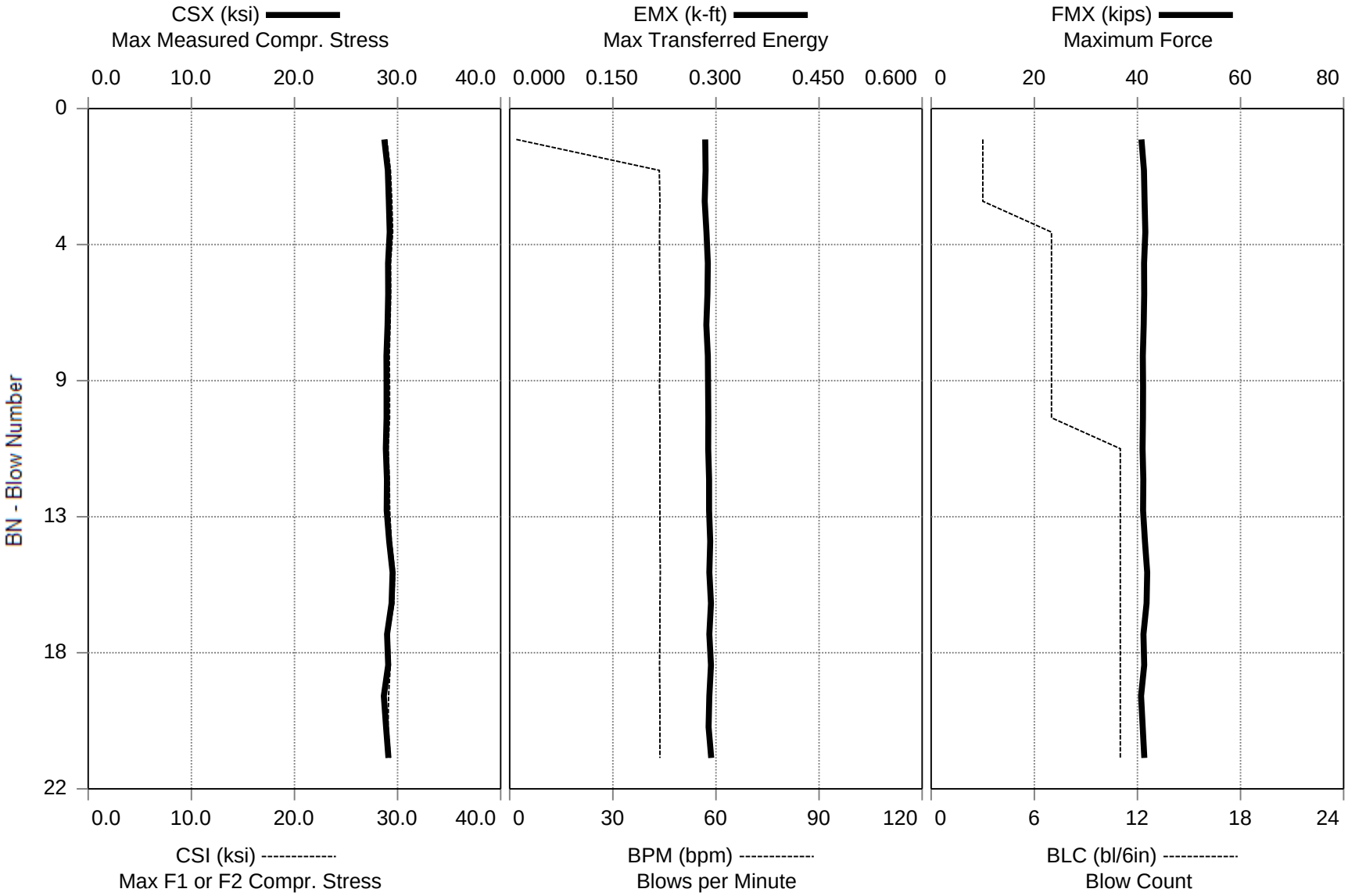
*Sensors*

F3: [413 NWJ-1] 212.28 (1)
F4: [413 NWJ-2] 213.94 (1)
A3: [K3773] 380 mv/5000g's (1)
A4: [K4822] 355 mv/5000g's (1)
CLIP: OK

Nagy Engineers, Inc. - PDIPLOT2 Ver 2016.1.56.1 - Case Method & iCAP® Results

Printed: 13-September-2017 Test started: 11-September-2017

Thompson Engineering SPT Calibration - CME 550X (SN 355273) - 13.5 to 15.0 ft - NWJ Rod - Mud Rotary



Thompson Engineering SPT Calibration - CME 550X (SN 355273) - 13.5 to 15.0 ft NWJ Rod - Mud Rotary
OP: MJN Date: 11-September-2017

| | | | |
|---|---|---|---|
| AR: | 1.42 in² | SP: | 0.492 k/ft³ |
| LE: | 19.00 ft | EM: | 30,000 ksi |
| WS: | 16,807.9 f/s | JC: | 0.00 [] |

CSX: Max Measured Compr. Stress
CSI: Max F1 or F2 Compr. Stress
EMX: Max Transferred Energy
ETR: Energy Transfer Ratio
BPM: Blows per Minute
FMX: Maximum Force
VMX: Maximum Velocity

| BL# | Depth ft | BLC bl/6in | TYPE | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 14.00 | 3 | AV3 | 29.0 | 29.2 | 0.284 | 81.2 | 29.7 | 41 | 14.5 |
| | | | MAX | 29.2 | 29.4 | 0.285 | 81.4 | 43.7 | 41 | 14.8 |
| 10 | 14.50 | 7 | AV7 | 29.0 | 29.3 | 0.288 | 82.2 | 43.7 | 41 | 14.5 |
| | | | MAX | 29.2 | 29.5 | 0.289 | 82.6 | 43.7 | 42 | 14.6 |
| 21 | 15.00 | 11 | AV11 | 29.1 | 29.3 | 0.291 | 83.1 | 43.7 | 41 | 14.6 |
| | | | MAX | 29.5 | 29.7 | 0.293 | 83.7 | 43.8 | 42 | 14.7 |
| | | | Average | 29.0 | 29.3 | 0.289 | 82.5 | 41.7 | 41 | 14.6 |
| | | | Maximum | 29.5 | 29.7 | 0.293 | 83.7 | 43.8 | 42 | 14.8 |

Total number of blows analyzed: 21

BL# Sensors

1-21 F3: [413 NWJ-1] 212.3 (1.00); F4: [413 NWJ-2] 213.9 (1.00); A3: [K3773] 380.0 (1.00); A4: [K4822] 355.0 (1.00)

Time Summary

Drive 27 seconds 1:11 PM - 1:11 PM BN 1 - 21

Thompson Engineering SPT Calibration - CME 550X (SN 355273) - 13.5 to 15.0 ft NWJ Rod - Mud Rotary
OP: MJN Date: 11-September-2017

AR: 1.42 in² SP: 0.492 k/ft³
LE: 19.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|
| 4 | 14.07 | 7 | 29.2 | 29.5 | 0.286 | 81.7 | 43.6 | 42 | 14.3 |
| 5 | 14.14 | 7 | 29.1 | 29.3 | 0.288 | 82.4 | 43.6 | 41 | 14.4 |
| 6 | 14.21 | 7 | 29.1 | 29.3 | 0.288 | 82.2 | 43.7 | 41 | 14.5 |
| 7 | 14.29 | 7 | 29.0 | 29.3 | 0.286 | 81.7 | 43.7 | 41 | 14.5 |
| 8 | 14.36 | 7 | 28.9 | 29.2 | 0.288 | 82.4 | 43.7 | 41 | 14.6 |
| 9 | 14.43 | 7 | 28.9 | 29.2 | 0.289 | 82.4 | 43.6 | 41 | 14.6 |
| 10 | 14.50 | 7 | 28.9 | 29.2 | 0.289 | 82.6 | 43.7 | 41 | 14.6 |
| 11 | 14.55 | 11 | 28.9 | 29.1 | 0.289 | 82.5 | 43.7 | 41 | 14.5 |
| 12 | 14.59 | 11 | 29.0 | 29.2 | 0.290 | 82.9 | 43.7 | 41 | 14.6 |
| 13 | 14.64 | 11 | 28.9 | 29.2 | 0.290 | 82.9 | 43.7 | 41 | 14.6 |
| 14 | 14.68 | 11 | 29.2 | 29.4 | 0.292 | 83.3 | 43.7 | 41 | 14.6 |
| 15 | 14.73 | 11 | 29.5 | 29.7 | 0.290 | 82.9 | 43.8 | 42 | 14.7 |
| 16 | 14.77 | 11 | 29.4 | 29.6 | 0.293 | 83.6 | 43.7 | 42 | 14.6 |
| 17 | 14.82 | 11 | 29.0 | 29.2 | 0.290 | 83.0 | 43.7 | 41 | 14.6 |
| 18 | 14.86 | 11 | 29.1 | 29.3 | 0.293 | 83.7 | 43.6 | 41 | 14.7 |
| 19 | 14.91 | 11 | 28.7 | 29.1 | 0.290 | 83.0 | 43.7 | 41 | 14.5 |
| 20 | 14.95 | 11 | 28.9 | 29.1 | 0.289 | 82.6 | 43.7 | 41 | 14.6 |
| 21 | 15.00 | 11 | 29.1 | 29.3 | 0.293 | 83.7 | 43.7 | 41 | 14.7 |
| | | Average | 29.0 | 29.3 | 0.290 | 82.7 | 43.7 | 41 | 14.6 |
| | | Maximum | 29.5 | 29.7 | 0.293 | 83.7 | 43.8 | 42 | 14.7 |

Total number of blows analyzed: 18

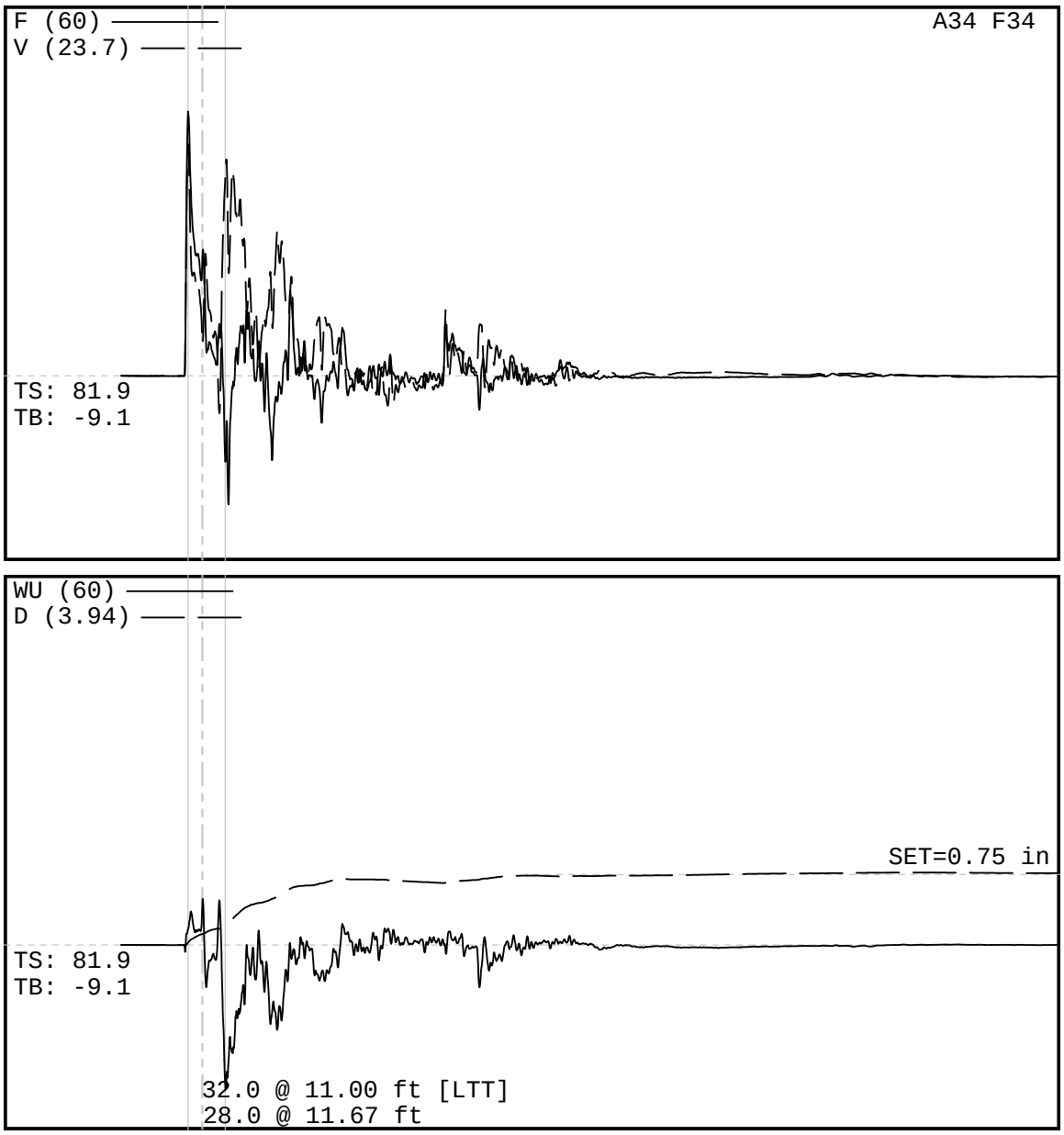
BL# Sensors

4-21 F3: [413 NWJ-1] 212.3 (1.00); F4: [413 NWJ-2] 213.9 (1.00); A3: [K3773] 380.0 (1.00); A4: [K4822] 355.0 (1.00)

Time Summary

Drive 27 seconds 1:11 PM - 1:11 PM BN 1 - 21

Thompson Engineering SPT Calibration CME 550X (SN 355273) - 18.5 to 20.0 ft




*Project Information*

PROJECT: Thompson Engineering SPT Calibratic
PILE NAME: CME 550X (SN 355273) - 18.5 to 2
DESCR: NWJ Rod - Mud Rotary
OPERATOR: MJN
FILE: CME 550X (SN 355273)_1
9/11/2017 1:23:52 PM
Blow Number 8

*Pile Properties*

| | | |
|---|---|---|
| LE | 24.00 | ft |
| AR | 1.42 | in^2 |
| EM | 30000 | ksi |
| SP | 0.492 | k/ft3 |
| WS | 16807.9 | f/s |
| EA/C | 2.5 | ksec/ft |
| 2L/C | 2.88 | ms |
| JC | | [] |
| LP | 19.69 | ft |

*Quantity Results*

| | | |
|---|---|---|
| CSX | 30.17 | ksi |
| CSI f | 30.53 | ksi |
| EMX | 0.312 | k-ft |
| ETR | 89.0 | (%) |
| BPM | 54.1 | bpm |
| FMX | 43 | kips |
| VMX | 14.8 | f/s |
| QNV | 0.00 | [] |
| QNV | 0.00 | [] |

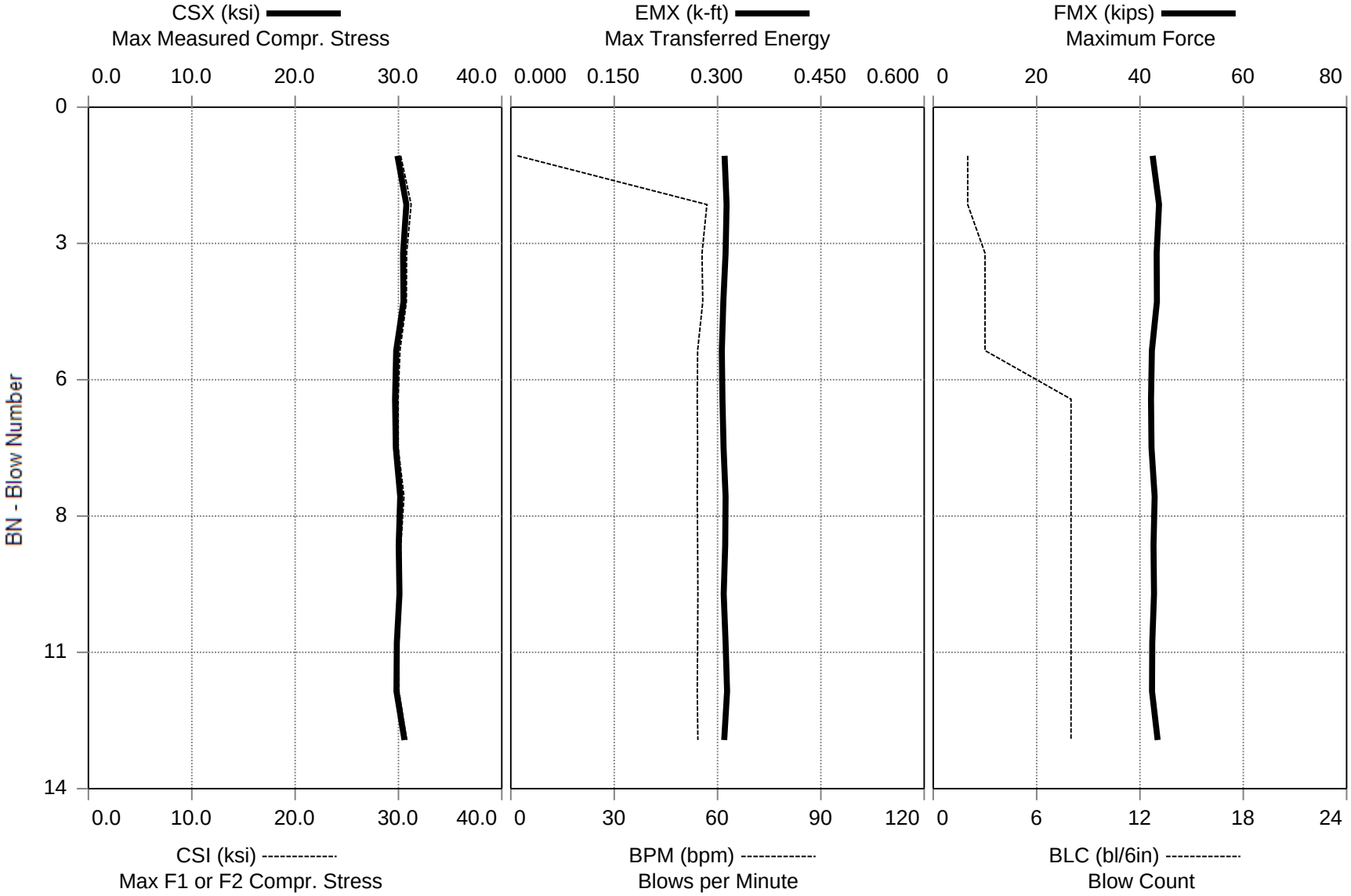
*Sensors*

F3: [413 NWJ-1] 212.28 (1)
F4: [413 NWJ-2] 213.94 (1)
A3: [K3773] 380 mv/5000g's (1)
A4: [K4822] 355 mv/5000g's (1)
CLIP: OK

Nagy Engineers, Inc. - PDIPLOT2 Ver 2016.1.56.1 - Case Method & iCAP® Results

Printed: 13-September-2017 Test started: 11-September-2017

Thompson Engineering SPT Calibration - CME 550X (SN 355273) - 18.5 to 20.0 ft - NWJ Rod - Mud Rotary



Thompson Engineering SPT Calibration - CME 550X (SN 355273) - 18.5 to 20.0 ft NWJ Rod - Mud Rotary
OP: MJN Date: 11-September-2017

AR: 1.42 in² SP: 0.492 k/ft³
LE: 24.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | TYPE | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 19.00 | 2 | AV2 | 30.3 | 30.7 | 0.312 | 89.0 | 29.4 | 43 | 16.4 |
| | | | MAX | 30.8 | 31.2 | 0.313 | 89.4 | 56.9 | 44 | 16.4 |
| 5 | 19.50 | 3 | AV3 | 30.2 | 30.6 | 0.309 | 88.2 | 55.1 | 43 | 15.8 |
| | | | MAX | 30.5 | 30.8 | 0.312 | 89.1 | 55.7 | 43 | 16.2 |
| 13 | 20.00 | 8 | AV8 | 30.0 | 30.2 | 0.310 | 88.7 | 54.2 | 43 | 14.8 |
| | | | MAX | 30.6 | 30.8 | 0.314 | 89.6 | 54.3 | 43 | 15.0 |
| | | | Average | 30.1 | 30.4 | 0.310 | 88.6 | 50.6 | 43 | 15.3 |
| | | | Maximum | 30.8 | 31.2 | 0.314 | 89.6 | 56.9 | 44 | 16.4 |

Total number of blows analyzed: 13

BL# Sensors

1-13 F3: [413 NWJ-1] 212.3 (1.00); F4: [413 NWJ-2] 213.9 (1.00); A3: [K3773] 380.0 (1.00); A4: [K4822] 355.0 (1.00)

Time Summary

Drive 13 seconds 1:23 PM - 1:23 PM BN 1 - 13

Thompson Engineering SPT Calibration - CME 550X (SN 355273) - 18.5 to 20.0 ft NWJ Rod - Mud Rotary
OP: MJN Date: 11-September-2017

AR: 1.42 in² SP: 0.492 k/ft³
LE: 24.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 19.17 | 3 | 30.4 | 30.8 | 0.312 | 89.1 | 55.5 | 43 | 15.8 |
| 4 | 19.33 | 3 | 30.5 | 30.8 | 0.308 | 88.1 | 55.7 | 43 | 16.2 |
| 5 | 19.50 | 3 | 29.8 | 30.1 | 0.306 | 87.5 | 54.2 | 42 | 15.5 |
| 6 | 19.56 | 8 | 29.7 | 30.0 | 0.307 | 87.8 | 54.1 | 42 | 14.9 |
| 7 | 19.63 | 8 | 29.7 | 30.0 | 0.309 | 88.2 | 54.2 | 42 | 14.6 |
| 8 | 19.69 | 8 | 30.2 | 30.5 | 0.312 | 89.0 | 54.1 | 43 | 14.8 |
| 9 | 19.75 | 8 | 30.0 | 30.2 | 0.311 | 88.9 | 54.2 | 43 | 14.8 |
| 10 | 19.81 | 8 | 30.1 | 30.2 | 0.309 | 88.3 | 54.3 | 43 | 14.8 |
| 11 | 19.88 | 8 | 29.8 | 30.0 | 0.312 | 89.0 | 54.2 | 42 | 14.8 |
| 12 | 19.94 | 8 | 29.8 | 30.0 | 0.314 | 89.6 | 54.1 | 42 | 14.9 |
| 13 | 20.00 | 8 | 30.6 | 30.8 | 0.310 | 88.5 | 54.3 | 43 | 15.0 |
| | | Average | 30.1 | 30.3 | 0.310 | 88.5 | 54.4 | 43 | 15.1 |
| | | Maximum | 30.6 | 30.8 | 0.314 | 89.6 | 55.7 | 43 | 16.2 |

Total number of blows analyzed: 11

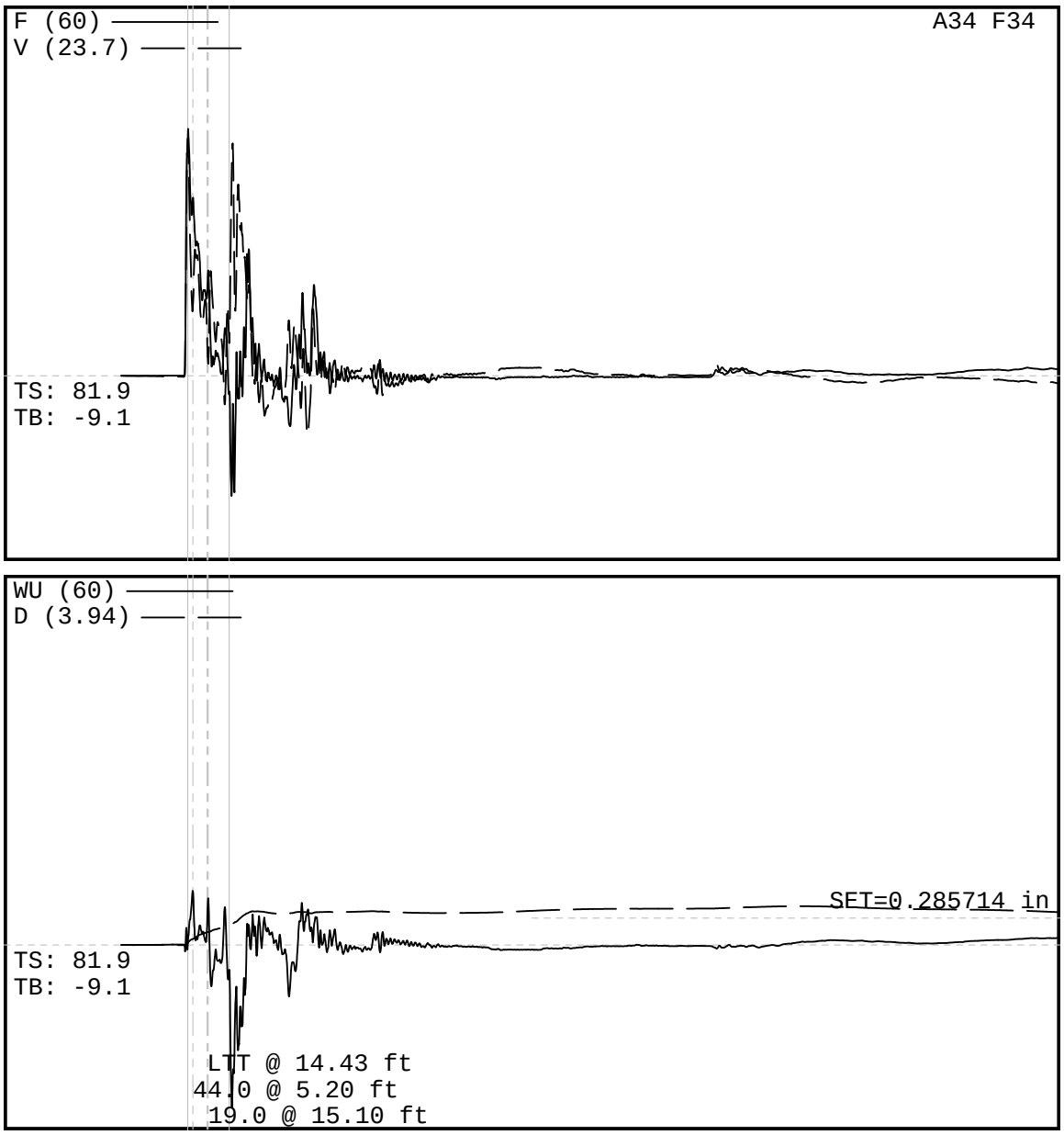
BL# Sensors

3-13 F3: [413 NWJ-1] 212.3 (1.00); F4: [413 NWJ-2] 213.9 (1.00); A3: [K3773] 380.0 (1.00); A4: [K4822] 355.0 (1.00)

Time Summary

Drive 13 seconds 1:23 PM - 1:23 PM BN 1 - 13

Thompson Engineering SPT Calibration CME 550X (SN 355273) - 21.0 to 22.5 ft




*Project Information*

PROJECT: Thompson Engineering SPT Calibratic
PILE NAME: CME 550X (SN 355273) - 21.0 to 2
DESCR: NWJ Rod - Mud Rotary
OPERATOR: MJN
FILE: CME 550X (SN 355273)_2
9/11/2017 1:35:14 PM
Blow Number 37

*Pile Properties*

| | | |
|---|---|---|
| LE | 27.00 | ft |
| AR | 1.42 | in^2 |
| EM | 30000 | ksi |
| SP | 0.492 | k/ft3 |
| WS | 16807.9 | f/s |
| EA/C | 2.5 | ksec/ft |
| 2L/C | 3.22 | ms |
| JC | | [] |
| LP | 22.02 | ft |

*Quantity Results*

| | | |
|---|---|---|
| CSX | 28.20 | ksi |
| CSI f | 28.81 | ksi |
| EMX | 0.314 | k-ft |
| ETR | 89.6 | (%) |
| BPM | 56.4 | bpm |
| FMX | 40 | kips |
| VMX | 15.2 | f/s |
| QNV | 0.00 | [] |
| QNV | 0.00 | [] |

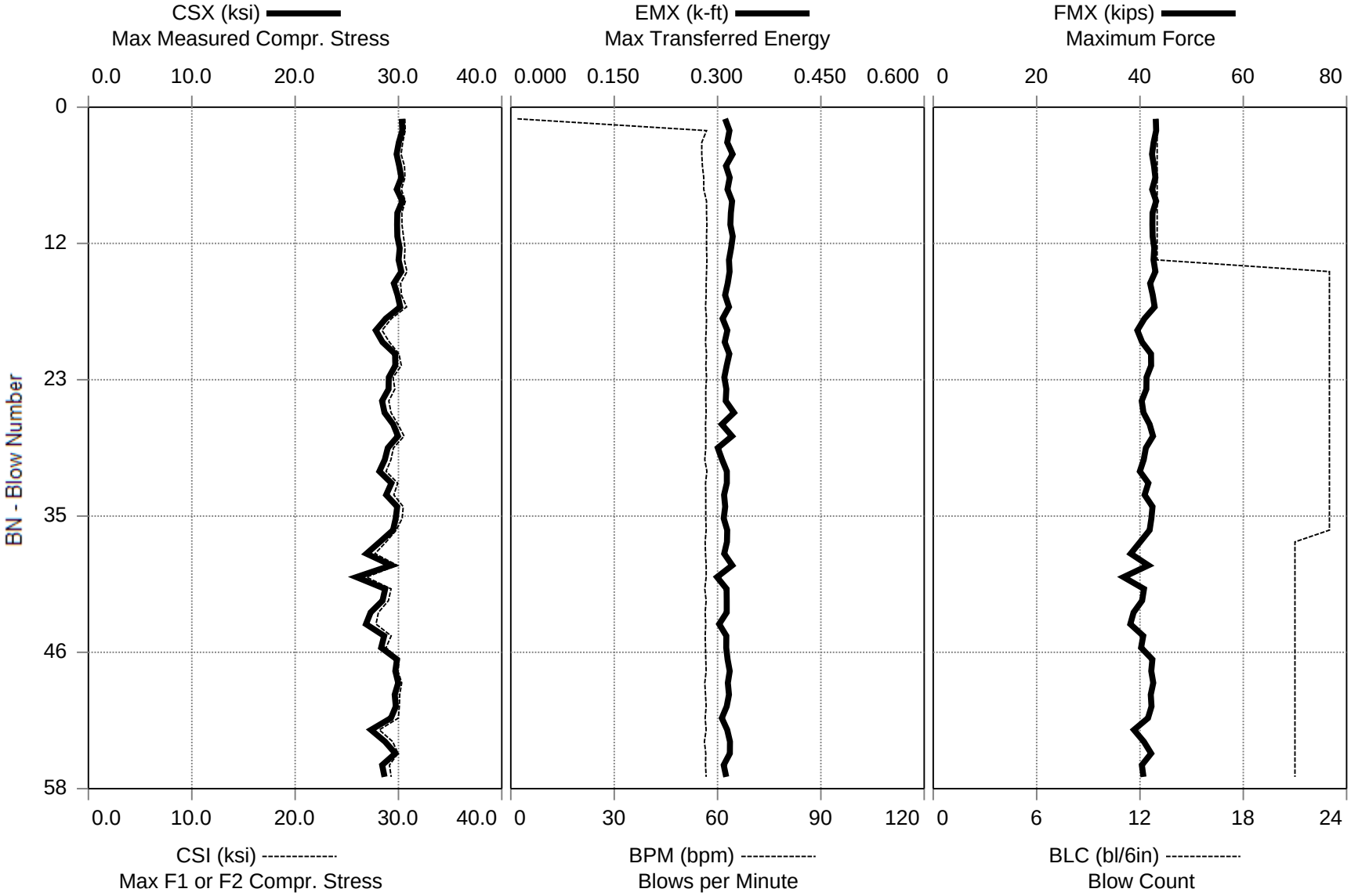
*Sensors*

F3: [413 NWJ-1] 212.28 (1)
F4: [413 NWJ-2] 213.94 (1)
A3: [K3773] 380 mv/5000g's (1)
A4: [K4822] 355 mv/5000g's (1)
CLIP: OK

Nagy Engineers, Inc. - PDIPLOT2 Ver 2016.1.56.1 - Case Method & iCAP® Results

Printed: 13-September-2017 Test started: 11-September-2017

Thompson Engineering SPT Calibration - CME 550X (SN 355273) - 21.0 to 22.5 ft - NWJ Rod - Mud Rotary



Thompson Engineering SPT Calibration - CME 550X (SN 355273) - 21.0 to 22.5 ft NWJ Rod - Mud Rotary
OP: MJN Date: 11-September-2017

AR: 1.42 in² SP: 0.492 k/ft³
LE: 27.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | TYPE | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|---|
| 13 | 21.50 | 13 | AV13 | 30.1 | 30.5 | 0.317 | 90.7 | 52.2 | 43 | 15.0 |
| | | | MAX | 30.4 | 30.7 | 0.322 | 92.0 | 56.9 | 43 | 15.2 |
| 36 | 22.00 | 23 | AV23 | 29.2 | 29.8 | 0.312 | 89.3 | 56.6 | 41 | 15.0 |
| | | | MAX | 30.3 | 30.8 | 0.324 | 92.5 | 56.9 | 43 | 15.5 |
| 57 | 22.50 | 21 | AV21 | 28.6 | 29.1 | 0.313 | 89.3 | 56.5 | 41 | 15.6 |
| | | | MAX | 30.0 | 30.3 | 0.321 | 91.8 | 56.7 | 43 | 16.2 |
| | | | Average | 29.2 | 29.7 | 0.314 | 89.6 | 55.6 | 41 | 15.2 |
| | | | Maximum | 30.4 | 30.8 | 0.324 | 92.5 | 56.9 | 43 | 16.2 |

Total number of blows analyzed: 57

BL# Sensors

1-57 F3: [413 NWJ-1] 212.3 (1.00); F4: [413 NWJ-2] 213.9 (1.00); A3: [K3773] 380.0 (1.00); A4: [K4822] 355.0 (1.00)

Time Summary

Drive 59 seconds 1:34 PM - 1:35 PM BN 1 - 57

Thompson Engineering SPT Calibration - CME 550X (SN 355273) - 21.0 to 22.5 ft NWJ Rod - Mud Rotary
OP: MJN Date: 11-September-2017

AR: 1.42 in² SP: 0.492 k/ft³
LE: 27.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress
CSI: Max F1 or F2 Compr. Stress
EMX: Max Transferred Energy
ETR: Energy Transfer Ratio
BPM: Blows per Minute
FMX: Maximum Force
VMX: Maximum Velocity

| BL# | Depth ft | BLC bl/6in | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|
| 14 | 21.52 | 23 | 30.3 | 30.8 | 0.317 | 90.7 | 56.8 | 43 | 15.3 |
| 15 | 21.54 | 23 | 29.6 | 30.2 | 0.315 | 89.9 | 56.7 | 42 | 15.0 |
| 16 | 21.57 | 23 | 29.9 | 30.3 | 0.311 | 88.8 | 56.7 | 42 | 15.2 |
| 17 | 21.59 | 23 | 30.2 | 30.8 | 0.317 | 90.5 | 56.5 | 43 | 14.9 |
| 18 | 21.61 | 23 | 28.8 | 29.3 | 0.307 | 87.8 | 56.8 | 41 | 15.2 |
| 19 | 21.63 | 23 | 27.8 | 28.4 | 0.314 | 89.8 | 56.7 | 39 | 15.4 |
| 20 | 21.65 | 23 | 28.5 | 29.1 | 0.310 | 88.7 | 56.5 | 40 | 15.2 |
| 21 | 21.67 | 23 | 29.7 | 30.0 | 0.317 | 90.6 | 56.8 | 42 | 14.9 |
| 22 | 21.70 | 23 | 29.7 | 30.3 | 0.313 | 89.5 | 56.6 | 42 | 14.8 |
| 23 | 21.72 | 23 | 29.1 | 29.5 | 0.310 | 88.5 | 56.8 | 41 | 15.1 |
| 25 | 21.76 | 23 | 28.4 | 29.1 | 0.312 | 89.1 | 56.6 | 40 | 15.3 |
| 27 | 21.80 | 23 | 29.5 | 30.0 | 0.306 | 87.5 | 56.5 | 42 | 15.2 |
| 29 | 21.85 | 23 | 29.0 | 29.5 | 0.300 | 85.8 | 56.6 | 41 | 14.5 |
| 31 | 21.89 | 23 | 28.2 | 28.8 | 0.314 | 89.6 | 56.9 | 40 | 15.1 |
| 33 | 21.93 | 23 | 28.8 | 29.6 | 0.309 | 88.4 | 56.6 | 41 | 15.0 |
| 35 | 21.98 | 23 | 29.7 | 30.4 | 0.309 | 88.3 | 56.6 | 42 | 14.4 |
| 37 | 22.02 | 21 | 28.2 | 28.8 | 0.314 | 89.6 | 56.4 | 40 | 15.2 |
| 39 | 22.07 | 21 | 29.3 | 29.9 | 0.321 | 91.8 | 56.7 | 42 | 15.2 |
| 41 | 22.12 | 21 | 28.7 | 29.3 | 0.313 | 89.5 | 56.3 | 41 | 15.2 |
| 43 | 22.17 | 21 | 27.3 | 28.1 | 0.313 | 89.5 | 56.4 | 39 | 15.6 |
| 45 | 22.21 | 21 | 28.6 | 29.3 | 0.313 | 89.4 | 56.4 | 41 | 15.5 |
| 47 | 22.26 | 21 | 29.9 | 30.1 | 0.315 | 89.9 | 56.6 | 42 | 15.3 |
| 49 | 22.31 | 21 | 30.0 | 30.3 | 0.315 | 90.0 | 56.3 | 43 | 15.2 |
| 51 | 22.36 | 21 | 29.7 | 30.1 | 0.313 | 89.5 | 56.7 | 42 | 15.6 |
| 53 | 22.40 | 21 | 27.3 | 28.1 | 0.314 | 89.7 | 56.7 | 39 | 16.2 |
| 55 | 22.45 | 21 | 29.7 | 29.9 | 0.318 | 90.8 | 56.6 | 42 | 15.8 |
| 57 | 22.50 | 21 | 28.7 | 29.3 | 0.313 | 89.3 | 56.7 | 41 | 15.9 |
| | | Average | 28.9 | 29.5 | 0.313 | 89.3 | 56.6 | 41 | 15.3 |
| | | Maximum | 30.3 | 30.8 | 0.324 | 92.5 | 56.9 | 43 | 16.2 |

Total number of blows analyzed: 44

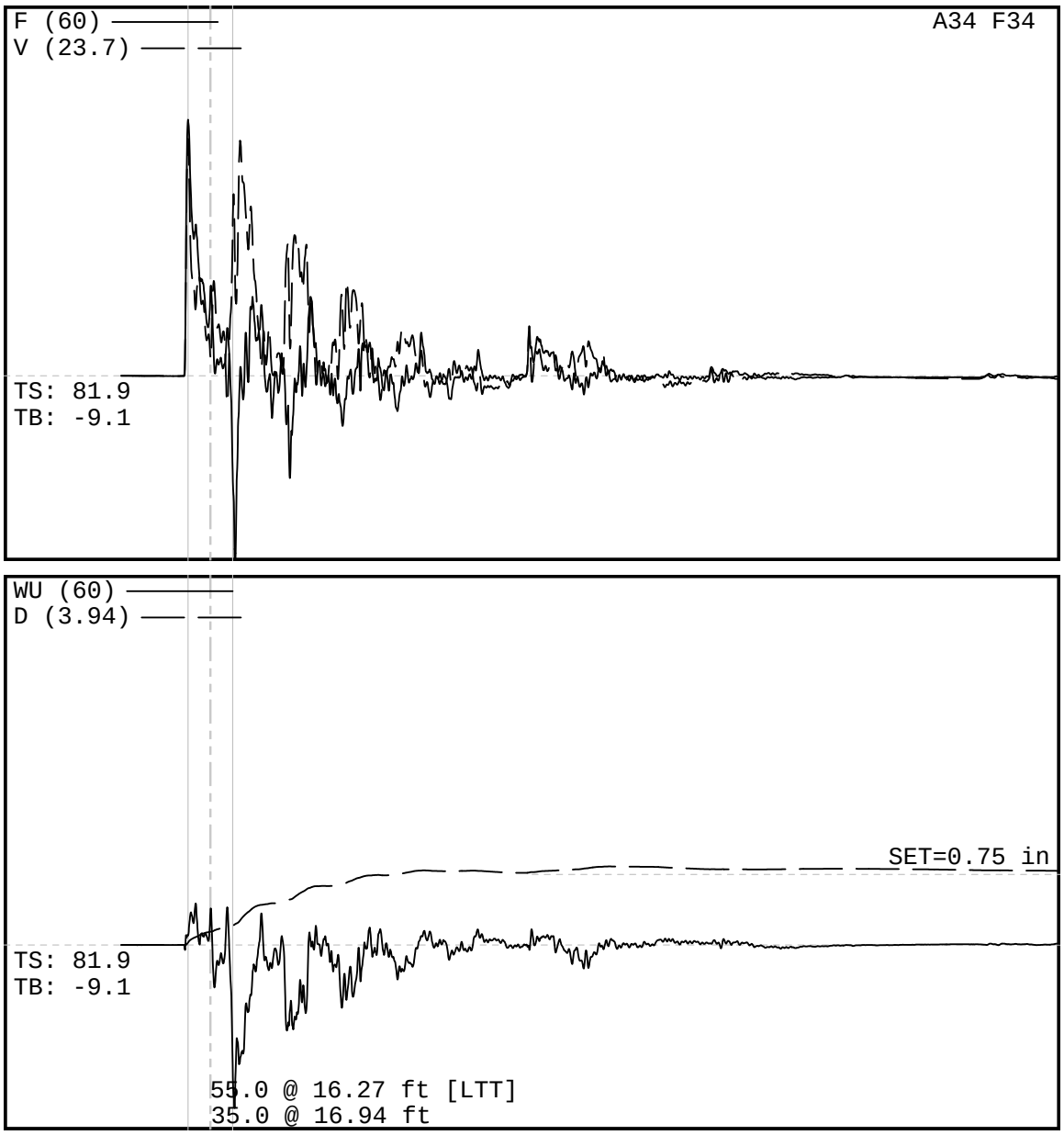
BL# Sensors

14-57 F3: [413 NWJ-1] 212.3 (1.00); F4: [413 NWJ-2] 213.9 (1.00); A3: [K3773] 380.0 (1.00); A4: [K4822] 355.0 (1.00)

Time Summary

Drive 59 seconds 1:34 PM - 1:35 PM BN 1 - 57

Thompson Engineering SPT Calibration CME 550X (SN 355273) - 23.5 to 25.0 ft




## *Project Information*

PROJECT: Thompson Engineering SPT Calibratic
PILE NAME: CME 550X (SN 355273) - 23.5 to 2
DESCR: NWJ Rod - Mud Rotary
OPERATOR: MJN
FILE: CME 550X (SN 355273)_3
9/11/2017 1:45:51 PM
Blow Number 10

## *Pile Properties*

| | | |
|---|---|---|
| LE | 29.00 | ft |
| AR | 1.42 | in^2 |
| EM | 30000 | ksi |
| SP | 0.492 | k/ft3 |
| WS | 16807.9 | f/s |
| EA/C | 2.5 | ksec/ft |
| 2L/C | 3.46 | ms |
| JC | | [] |
| LP | 24.13 | ft |

## *Quantity Results*

| | | |
|---|---|---|
| CSX | 29.23 | ksi |
| CSI f | 29.76 | ksi |
| EMX | 0.314 | k-ft |
| ETR | 89.7 | (%) |
| BPM | 50.5 | bpm |
| FMX | 42 | kips |
| VMX | 15.2 | f/s |
| QNV | 0.00 | [] |
| QNV | 0.00 | [] |

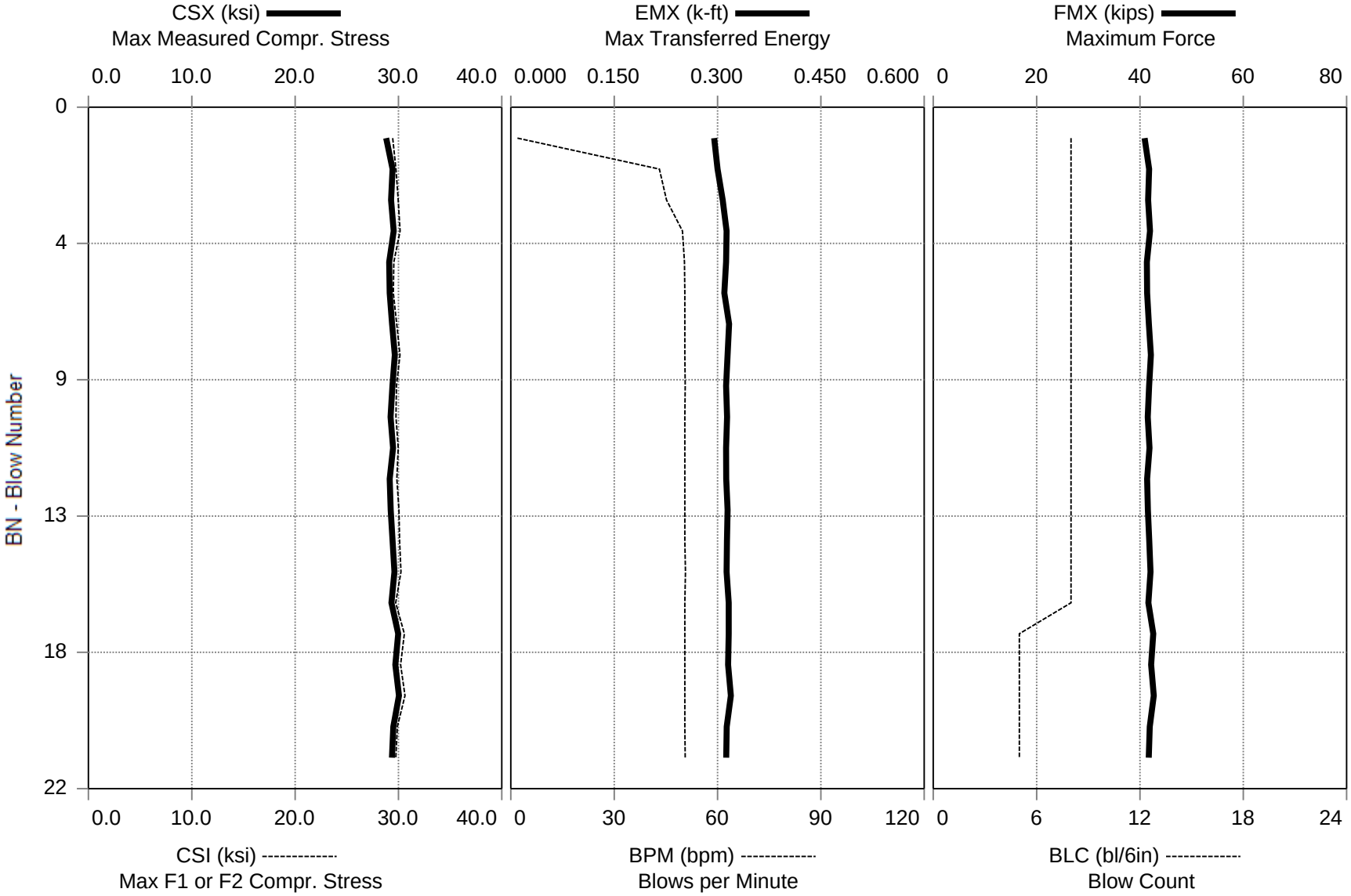
## *Sensors*

F3: [413 NWJ-1] 212.28 (1)
F4: [413 NWJ-2] 213.94 (1)
A3: [K3773] 380 mv/5000g's (1)
A4: [K4822] 355 mv/5000g's (1)
CLIP: OK

Nagy Engineers, Inc. - PDIPLOT2 Ver 2016.1.56.1 - Case Method & iCAP® Results

Printed: 13-September-2017 Test started: 11-September-2017

Thompson Engineering SPT Calibration - CME 550X (SN 355273) - 23.5 to 25.0 ft - NWJ Rod - Mud Rotary



Thompson Engineering SPT Calibration - CME 550X (SN 355273) - 23.5 to 25.0 ft NWJ Rod - Mud Rotary
OP: MJN Date: 11-September-2017

AR: 1.42 in² SP: 0.492 k/ft³
LE: 29.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | TYPE | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 24.00 | 8 | AV8 | 29.3 | 29.8 | 0.309 | 88.2 | 42.7 | 42 | 15.4 |
| | | | MAX | 29.6 | 30.2 | 0.317 | 90.5 | 50.5 | 42 | 16.1 |
| 16 | 24.50 | 8 | AV8 | 29.4 | 29.9 | 0.314 | 89.6 | 50.5 | 42 | 15.2 |
| | | | MAX | 29.6 | 30.2 | 0.316 | 90.4 | 50.7 | 42 | 15.4 |
| 21 | 25.00 | 5 | AV5 | 29.7 | 30.2 | 0.315 | 90.1 | 50.5 | 42 | 16.3 |
| | | | MAX | 30.0 | 30.6 | 0.319 | 91.2 | 50.6 | 43 | 17.1 |
| | | | Average | 29.4 | 29.9 | 0.312 | 89.2 | 47.6 | 42 | 15.6 |
| | | | Maximum | 30.0 | 30.6 | 0.319 | 91.2 | 50.7 | 43 | 17.1 |

Total number of blows analyzed: 21

BL# Sensors

1-21 F3: [413 NWJ-1] 212.3 (1.00); F4: [413 NWJ-2] 213.9 (1.00); A3: [K3773] 380.0 (1.00); A4: [K4822] 355.0 (1.00)

Time Summary

Drive 24 seconds 1:45 PM - 1:46 PM BN 1 - 21

Thompson Engineering SPT Calibration - CME 550X (SN 355273) - 23.5 to 25.0 ft NWJ Rod - Mud Rotary
OP: MJN Date: 11-September-2017

AR: 1.42 in² SP: 0.492 k/ft³
LE: 29.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|
| 9 | 24.06 | 8 | 29.4 | 29.8 | 0.312 | 89.3 | 50.6 | 42 | 15.1 |
| 10 | 24.13 | 8 | 29.2 | 29.8 | 0.314 | 89.7 | 50.5 | 42 | 15.2 |
| 11 | 24.19 | 8 | 29.5 | 30.0 | 0.312 | 89.2 | 50.5 | 42 | 15.2 |
| 12 | 24.25 | 8 | 29.1 | 29.8 | 0.313 | 89.3 | 50.5 | 41 | 15.1 |
| 13 | 24.31 | 8 | 29.2 | 30.0 | 0.315 | 89.9 | 50.5 | 42 | 15.3 |
| 14 | 24.38 | 8 | 29.4 | 30.1 | 0.314 | 89.6 | 50.5 | 42 | 15.2 |
| 15 | 24.44 | 8 | 29.6 | 30.2 | 0.313 | 89.5 | 50.7 | 42 | 15.4 |
| 16 | 24.50 | 8 | 29.3 | 29.7 | 0.316 | 90.4 | 50.5 | 42 | 15.2 |
| 17 | 24.60 | 5 | 30.0 | 30.6 | 0.316 | 90.4 | 50.5 | 43 | 15.5 |
| 18 | 24.70 | 5 | 29.7 | 30.2 | 0.315 | 90.1 | 50.5 | 42 | 15.9 |
| 19 | 24.80 | 5 | 30.0 | 30.6 | 0.319 | 91.2 | 50.5 | 43 | 16.3 |
| 20 | 24.90 | 5 | 29.5 | 29.9 | 0.313 | 89.5 | 50.5 | 42 | 17.1 |
| 21 | 25.00 | 5 | 29.4 | 29.7 | 0.313 | 89.3 | 50.6 | 42 | 16.9 |
| | | Average | 29.5 | 30.0 | 0.314 | 89.8 | 50.5 | 42 | 15.6 |
| | | Maximum | 30.0 | 30.6 | 0.319 | 91.2 | 50.7 | 43 | 17.1 |

Total number of blows analyzed: 13

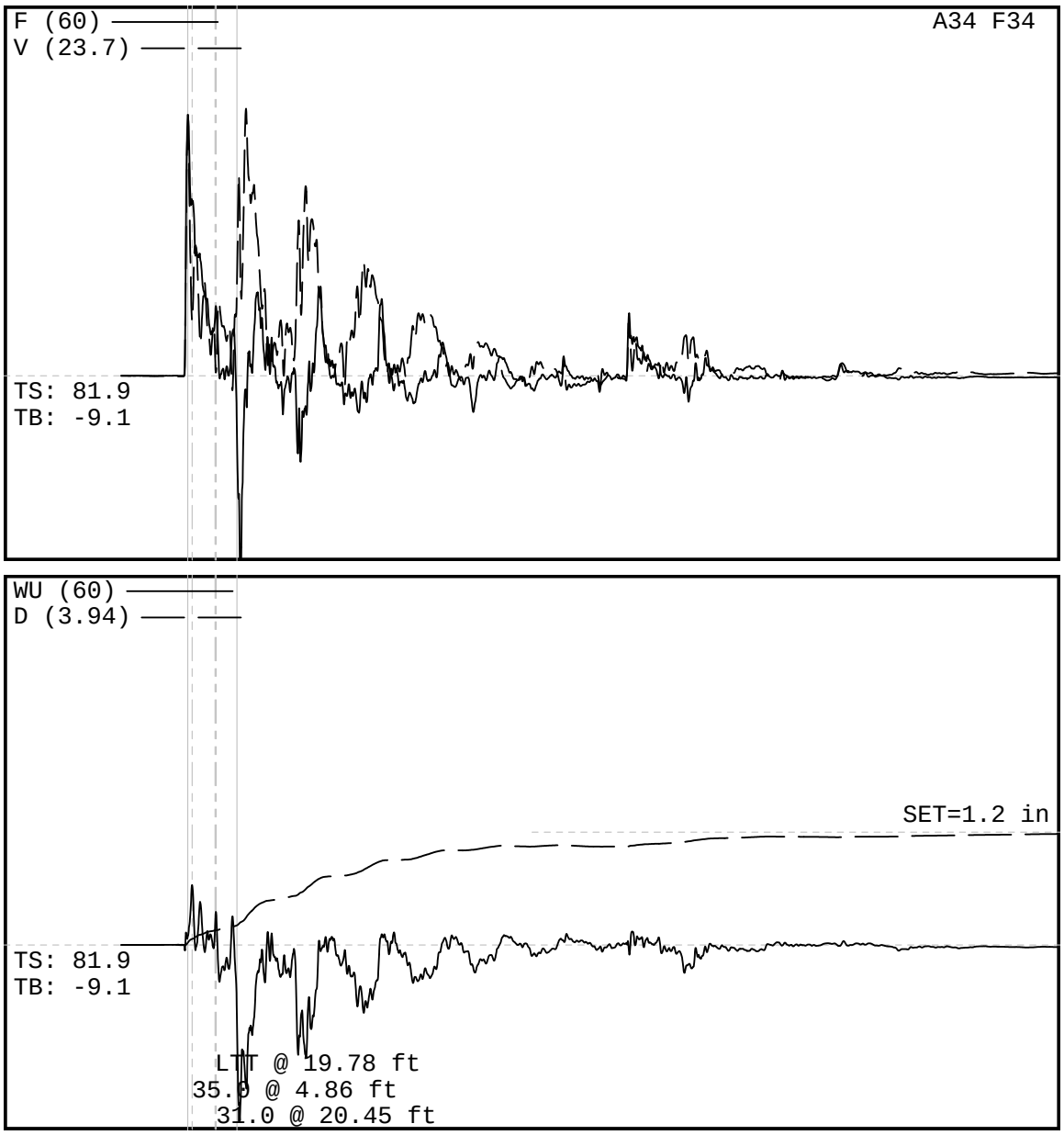
BL# Sensors

9-21 F3: [413 NWJ-1] 212.3 (1.00); F4: [413 NWJ-2] 213.9 (1.00); A3: [K3773] 380.0 (1.00); A4: [K4822] 355.0 (1.00)

Time Summary

Drive 24 seconds 1:45 PM - 1:46 PM BN 1 - 21

Thompson Engineering SPT Calibration CME 550X (SN 355273) - 26.0 to 27.5 ft




## *Project Information*

PROJECT: Thompson Engineering SPT Calibratic
PILE NAME: CME 550X (SN 355273) - 26.0 to 2
DESCR: NWJ Rod - Mud Rotary
OPERATOR: MJN
FILE: CME 550X (SN 355273)_4
9/11/2017 1:53:32 PM
Blow Number 8

## *Pile Properties*

| | | |
|---|---|---|
| LE | 32.00 | ft |
| AR | 1.42 | in^2 |
| EM | 30000 | ksi |
| SP | 0.492 | k/ft3 |
| WS | 16807.9 | f/s |
| EA/C | 2.5 | ksec/ft |
| 2L/C | 3.82 | ms |
| JC | | [] |
| LP | 26.60 | ft |

## *Quantity Results*

| | | |
|---|---|---|
| CSX | 29.81 | ksi |
| CSI f | 30.00 | ksi |
| EMX | 0.326 | k-ft |
| ETR | 93.2 | (%) |
| BPM | 55.6 | bpm |
| FMX | 42 | kips |
| VMX | 17.1 | f/s |
| QNV | 0.00 | [] |
| QNV | 0.00 | [] |

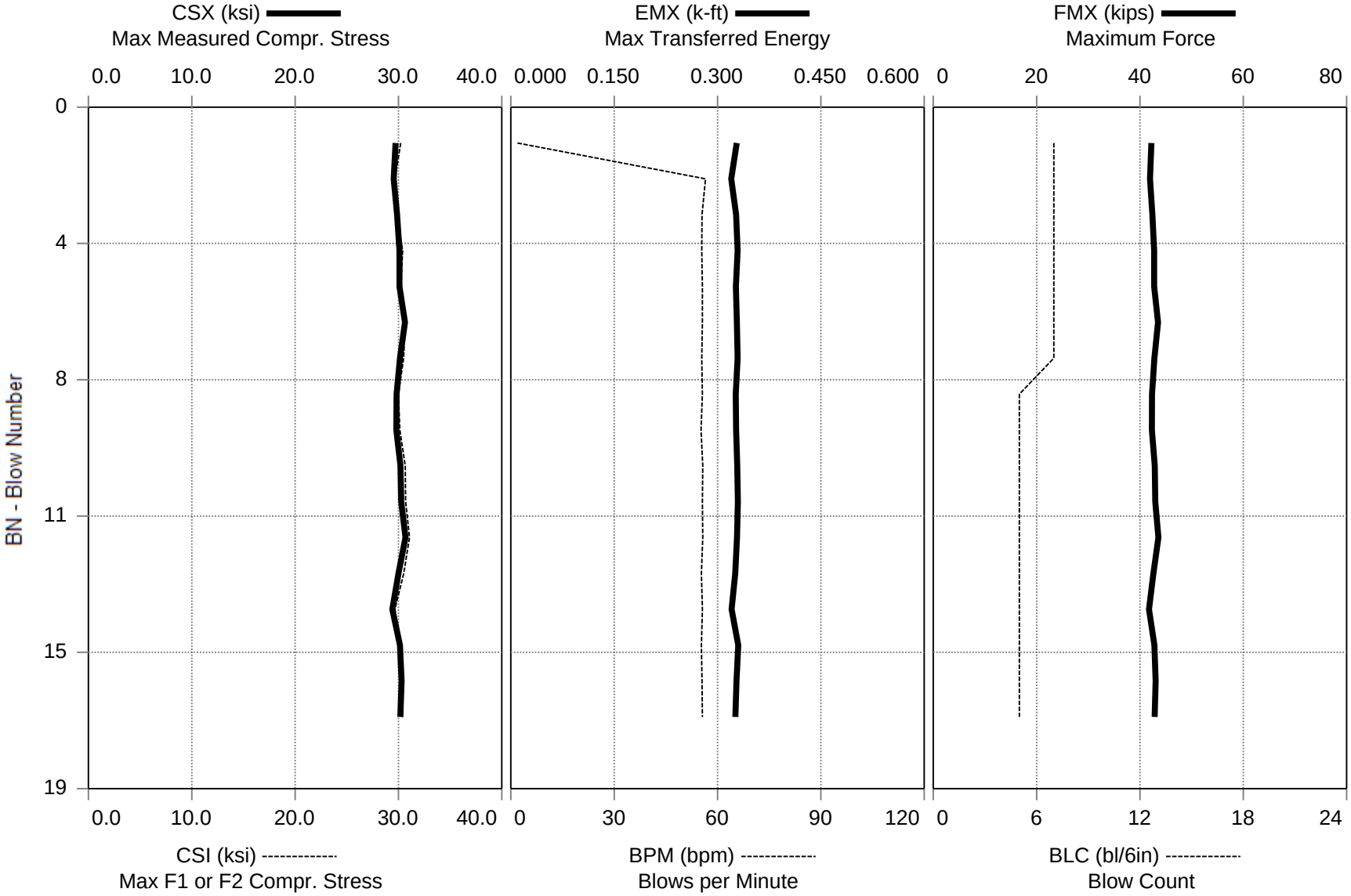
## *Sensors*

F3: [413 NWJ-1] 212.28 (1)
F4: [413 NWJ-2] 213.94 (1)
A3: [K3773] 380 mv/5000g's (1)
A4: [K4822] 355 mv/5000g's (1)
CLIP: OK

Nagy Engineers, Inc. - PDIPLOT2 Ver 2016.1.56.1 - Case Method & iCAP® Results

Printed: 13-September-2017 Test started: 11-September-2017

Thompson Engineering SPT Calibration - CME 550X (SN 355273) - 26.0 to 27.5 ft - NWJ Rod - Mud Rotary



Thompson Engineering SPT Calibration - CME 550X (SN 355273) - 26.0 to 27.5 ft NWJ Rod - Mud Rotary
OP: MJN Date: 11-September-2017

AR: 1.42 in² SP: 0.492 k/ft³
LE: 32.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress
CSI: Max F1 or F2 Compr. Stress
EMX: Max Transferred Energy
ETR: Energy Transfer Ratio
BPM: Blows per Minute
FMX: Maximum Force
VMX: Maximum Velocity

| BL# | Depth ft | BLC bl/6in | TYPE | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 26.50 | 7 | AV7 | 30.0 | 30.2 | 0.327 | 93.4 | 48.0 | 43 | 17.3 |
| | | | MAX | 30.6 | 30.7 | 0.329 | 94.0 | 56.5 | 44 | 18.2 |
| 12 | 27.00 | 5 | AV5 | 30.1 | 30.5 | 0.328 | 93.7 | 55.6 | 43 | 17.8 |
| | | | MAX | 30.7 | 31.1 | 0.330 | 94.2 | 55.7 | 44 | 18.4 |
| 17 | 27.50 | 5 | AV5 | 30.0 | 30.2 | 0.326 | 93.1 | 55.5 | 43 | 17.9 |
| | | | MAX | 30.3 | 30.5 | 0.330 | 94.3 | 55.6 | 43 | 18.1 |
| | | | Average | 30.0 | 30.3 | 0.327 | 93.4 | 52.4 | 43 | 17.6 |
| | | | Maximum | 30.7 | 31.1 | 0.330 | 94.3 | 56.5 | 44 | 18.4 |

Total number of blows analyzed: 17

BL# Sensors

1-17 F3: [413 NWJ-1] 212.3 (1.00); F4: [413 NWJ-2] 213.9 (1.00); A3: [K3773] 380.0 (1.00); A4: [K4822] 355.0 (1.00)

Time Summary

Drive 18 seconds 1:53 PM - 1:53 PM BN 1 - 18

Thompson Engineering SPT Calibration - CME 550X (SN 355273) - 26.0 to 27.5 ft NWJ Rod - Mud Rotary
OP: MJN Date: 11-September-2017

AR: 1.42 in² SP: 0.492 k/ft³
LE: 32.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|
| 8 | 26.60 | 5 | 29.8 | 30.0 | 0.326 | 93.2 | 55.6 | 42 | 17.1 |
| 9 | 26.70 | 5 | 29.8 | 30.1 | 0.327 | 93.4 | 55.2 | 42 | 17.7 |
| 10 | 26.80 | 5 | 30.2 | 30.7 | 0.329 | 93.9 | 55.7 | 43 | 17.8 |
| 11 | 26.90 | 5 | 30.3 | 30.7 | 0.330 | 94.2 | 55.6 | 43 | 18.4 |
| 12 | 27.00 | 5 | 30.7 | 31.1 | 0.328 | 93.8 | 55.7 | 44 | 18.1 |
| 13 | 27.10 | 5 | 30.0 | 30.5 | 0.326 | 93.1 | 55.3 | 43 | 18.1 |
| 14 | 27.20 | 5 | 29.4 | 29.7 | 0.320 | 91.5 | 55.6 | 42 | 18.1 |
| 15 | 27.30 | 5 | 30.1 | 30.2 | 0.330 | 94.3 | 55.3 | 43 | 18.0 |
| 16 | 27.40 | 5 | 30.3 | 30.4 | 0.327 | 93.6 | 55.5 | 43 | 17.6 |
| 17 | 27.50 | 5 | 30.2 | 30.4 | 0.326 | 93.1 | 55.6 | 43 | 17.8 |
| | | Average | 30.1 | 30.4 | 0.327 | 93.4 | 55.5 | 43 | 17.9 |
| | | Maximum | 30.7 | 31.1 | 0.330 | 94.3 | 55.7 | 44 | 18.4 |

Total number of blows analyzed: 10

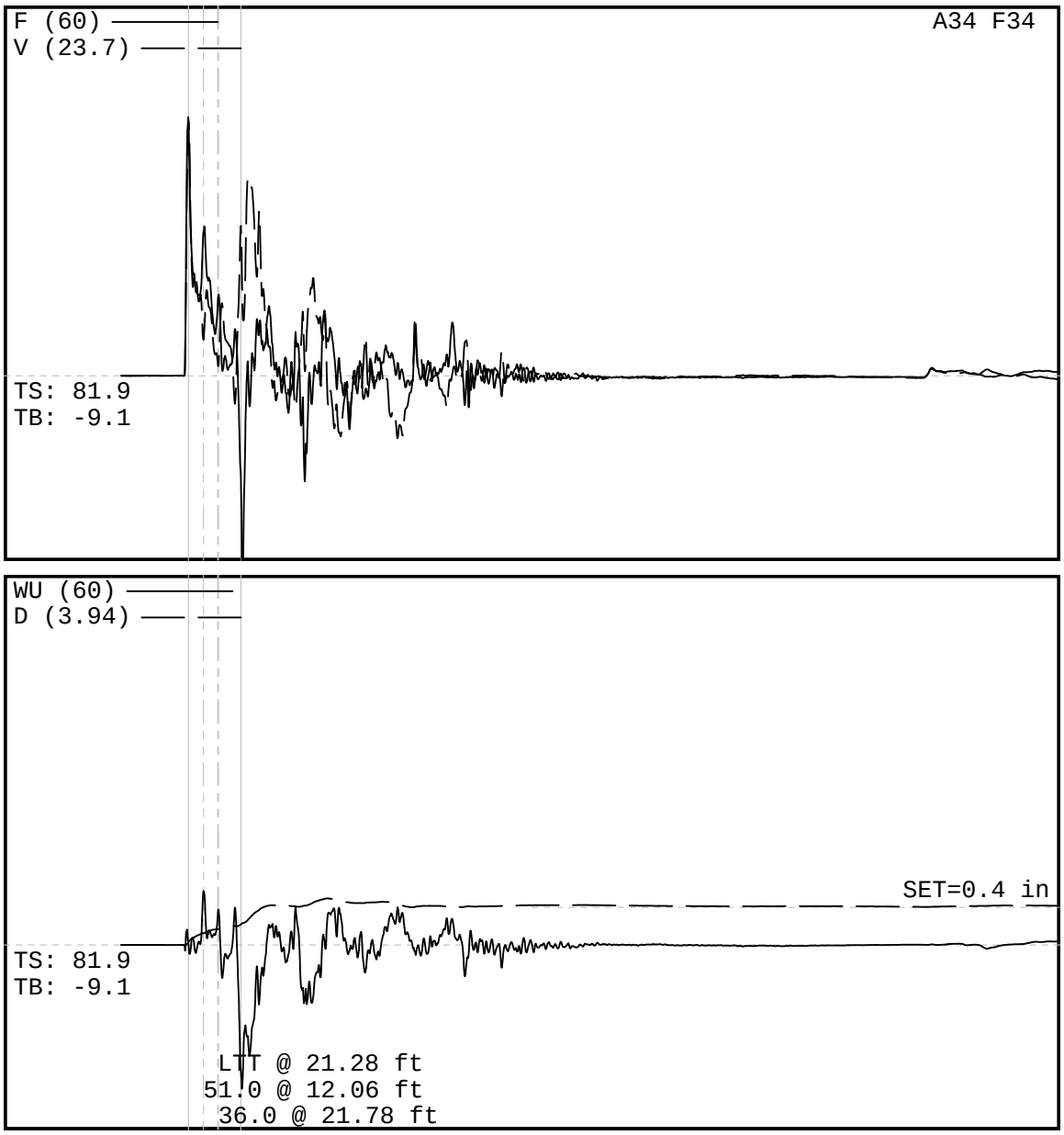
BL# Sensors

8-17 F3: [413 NWJ-1] 212.3 (1.00); F4: [413 NWJ-2] 213.9 (1.00); A3: [K3773] 380.0 (1.00); A4: [K4822] 355.0 (1.00)

Time Summary

Drive 18 seconds 1:53 PM - 1:53 PM BN 1 - 18

Thompson Engineering SPT Calibration CME 550X (SN 355273) - 28.5 to 30.0 ft




## *Project Information*

PROJECT: Thompson Engineering SPT Calibratic
PILE NAME: CME 550X (SN 355273) - 28.5 to 3
DESCR: NWJ Rod - Mud Rotary
OPERATOR: MJN
FILE: CME 550X (SN 355273)_5
9/11/2017 2:03:38 PM
Blow Number 18

## *Pile Properties*

| | | |
|---|---|---|
| LE | 34.00 | ft |
| AR | 1.42 | in^2 |
| EM | 30000 | ksi |
| SP | 0.492 | k/ft3 |
| WS | 16807.9 | f/s |
| EA/C | 2.5 | ksec/ft |
| 2L/C | 4.06 | ms |
| JC | | [] |
| LP | 29.63 | ft |

## *Quantity Results*

| | | |
|---|---|---|
| CSX | 29.53 | ksi |
| CSI f | 29.80 | ksi |
| EMX | 0.325 | k-ft |
| ETR | 92.9 | (%) |
| BPM | 50.5 | bpm |
| FMX | 42 | kips |
| VMX | 16.3 | f/s |
| QNV | 0.00 | [] |
| QNV | 0.00 | [] |

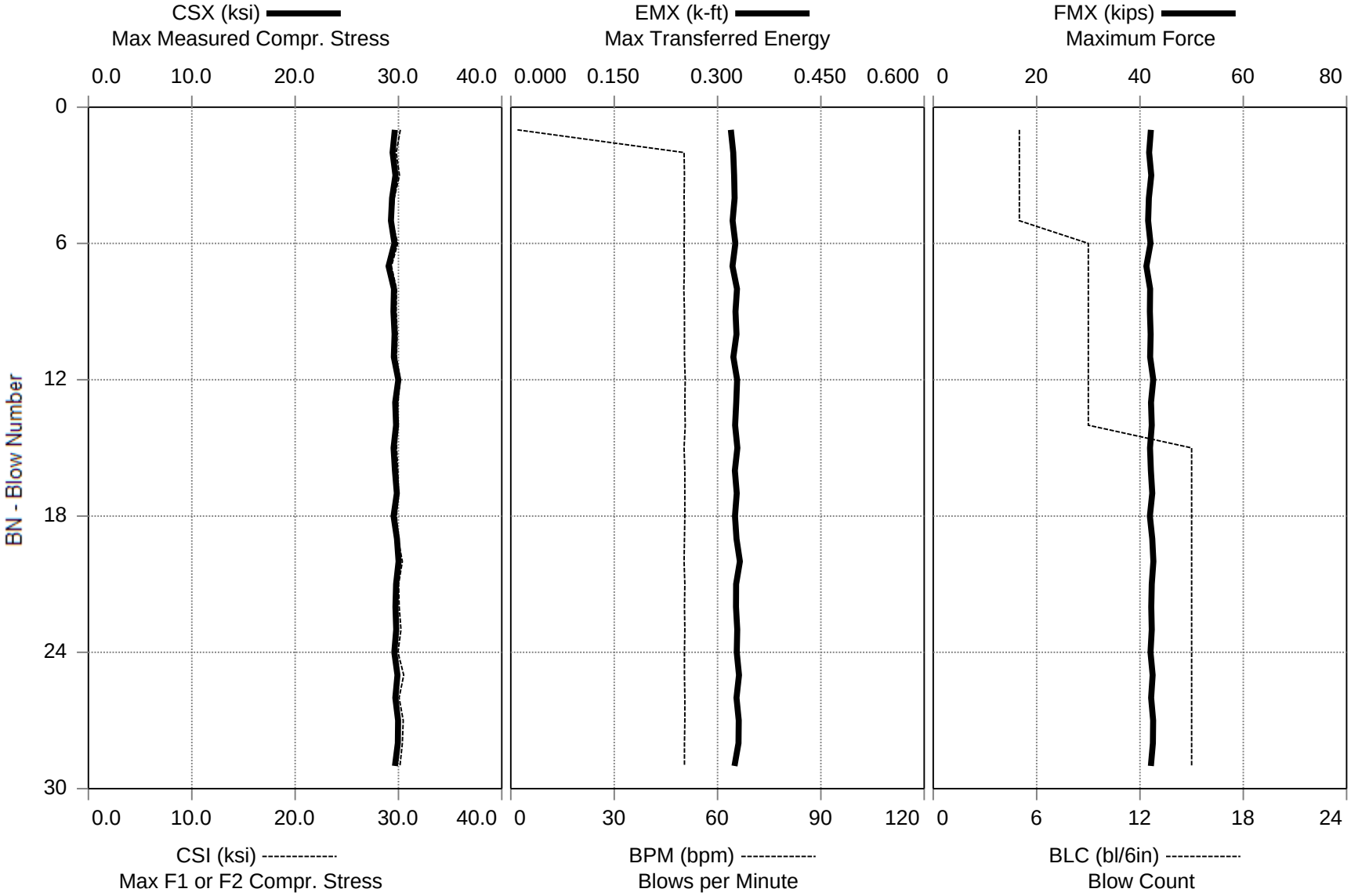
## *Sensors*

F3: [413 NWJ-1] 212.28 (1)
F4: [413 NWJ-2] 213.94 (1)
A3: [K3773] 380 mv/5000g's (1)
A4: [K4822] 355 mv/5000g's (1)
CLIP: OK

Nagy Engineers, Inc. - PDIPLOT2 Ver 2016.1.56.1 - Case Method & iCAP® Results

Printed: 13-September-2017 Test started: 11-September-2017

Thompson Engineering SPT Calibration - CME 550X (SN 355273) - 28.5 to 30.0 ft - NWJ Rod - Mud Rotary



Thompson Engineering SPT Calibration - CME 550X (SN 355273) - 28.5 to 30.0 ft NWJ Rod - Mud Rotary
OP: MJN Date: 11-September-2017

AR: 1.42 in² SP: 0.492 k/ft³
LE: 34.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress
CSI: Max F1 or F2 Compr. Stress
EMX: Max Transferred Energy
ETR: Energy Transfer Ratio
BPM: Blows per Minute
FMX: Maximum Force
VMX: Maximum Velocity

| BL# | Depth ft | BLC bl/6in | TYPE | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 29.00 | 5 | AV5 | 29.5 | 29.8 | 0.323 | 92.2 | 40.7 | 42 | 16.2 |
| | | | MAX | 29.7 | 30.2 | 0.325 | 92.8 | 50.4 | 42 | 16.3 |
| 14 | 29.50 | 9 | AV9 | 29.6 | 29.8 | 0.326 | 93.1 | 50.4 | 42 | 16.3 |
| | | | MAX | 30.0 | 30.2 | 0.328 | 93.9 | 50.6 | 43 | 16.5 |
| 29 | 30.00 | 15 | AV15 | 29.8 | 30.1 | 0.328 | 93.7 | 50.4 | 42 | 16.4 |
| | | | MAX | 30.0 | 30.5 | 0.332 | 95.0 | 50.5 | 43 | 16.6 |
| | | | Average | 29.7 | 30.0 | 0.326 | 93.3 | 48.7 | 42 | 16.4 |
| | | | Maximum | 30.0 | 30.5 | 0.332 | 95.0 | 50.6 | 43 | 16.6 |

Total number of blows analyzed: 29

BL# Sensors

1-29 F3: [413 NWJ-1] 212.3 (1.00); F4: [413 NWJ-2] 213.9 (1.00); A3: [K3773] 380.0 (1.00); A4: [K4822] 355.0 (1.00)

Time Summary

Drive 33 seconds 2:03 PM - 2:03 PM BN 1 - 29

Thompson Engineering SPT Calibration - CME 550X (SN 355273) - 28.5 to 30.0 ft NWJ Rod - Mud Rotary
OP: MJN Date: 11-September-2017

AR: 1.42 in² SP: 0.492 k/ft³
LE: 34.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|
| 6 | 29.06 | 9 | 29.6 | 29.9 | 0.326 | 93.1 | 50.3 | 42 | 16.3 |
| 7 | 29.11 | 9 | 29.0 | 29.3 | 0.322 | 91.9 | 50.4 | 41 | 16.1 |
| 8 | 29.17 | 9 | 29.6 | 29.8 | 0.328 | 93.8 | 50.2 | 42 | 16.4 |
| 9 | 29.22 | 9 | 29.5 | 29.8 | 0.326 | 93.2 | 50.4 | 42 | 16.3 |
| 10 | 29.28 | 9 | 29.6 | 29.9 | 0.327 | 93.6 | 50.4 | 42 | 16.3 |
| 11 | 29.33 | 9 | 29.5 | 29.8 | 0.323 | 92.3 | 50.4 | 42 | 16.3 |
| 12 | 29.39 | 9 | 30.0 | 30.2 | 0.328 | 93.9 | 50.6 | 43 | 16.5 |
| 13 | 29.44 | 9 | 29.7 | 30.0 | 0.327 | 93.5 | 50.5 | 42 | 16.3 |
| 14 | 29.50 | 9 | 29.8 | 29.8 | 0.326 | 93.0 | 50.6 | 42 | 16.3 |
| 15 | 29.53 | 15 | 29.5 | 29.8 | 0.329 | 94.0 | 50.3 | 42 | 16.3 |
| 16 | 29.57 | 15 | 29.7 | 29.9 | 0.325 | 92.9 | 50.5 | 42 | 16.3 |
| 17 | 29.60 | 15 | 29.8 | 30.0 | 0.328 | 93.7 | 50.5 | 42 | 16.4 |
| 18 | 29.63 | 15 | 29.5 | 29.8 | 0.325 | 92.9 | 50.5 | 42 | 16.3 |
| 19 | 29.67 | 15 | 29.8 | 30.0 | 0.327 | 93.5 | 50.4 | 42 | 16.4 |
| 20 | 29.70 | 15 | 30.0 | 30.4 | 0.332 | 95.0 | 50.3 | 43 | 16.6 |
| 21 | 29.73 | 15 | 29.8 | 30.0 | 0.327 | 93.4 | 50.5 | 42 | 16.4 |
| 22 | 29.77 | 15 | 29.7 | 30.1 | 0.327 | 93.4 | 50.4 | 42 | 16.4 |
| 23 | 29.80 | 15 | 29.8 | 30.2 | 0.329 | 93.9 | 50.5 | 42 | 16.5 |
| 24 | 29.83 | 15 | 29.6 | 29.9 | 0.328 | 93.7 | 50.4 | 42 | 16.3 |
| 25 | 29.87 | 15 | 29.9 | 30.5 | 0.331 | 94.6 | 50.4 | 42 | 16.6 |
| 26 | 29.90 | 15 | 29.7 | 30.1 | 0.327 | 93.6 | 50.5 | 42 | 16.4 |
| 27 | 29.93 | 15 | 30.0 | 30.5 | 0.331 | 94.5 | 50.5 | 43 | 16.6 |
| 28 | 29.97 | 15 | 29.9 | 30.4 | 0.330 | 94.4 | 50.4 | 43 | 16.6 |
| 29 | 30.00 | 15 | 29.7 | 30.1 | 0.325 | 92.7 | 50.4 | 42 | 16.4 |
| | | Average | 29.7 | 30.0 | 0.327 | 93.5 | 50.4 | 42 | 16.4 |
| | | Maximum | 30.0 | 30.5 | 0.332 | 95.0 | 50.6 | 43 | 16.6 |

Total number of blows analyzed: 24

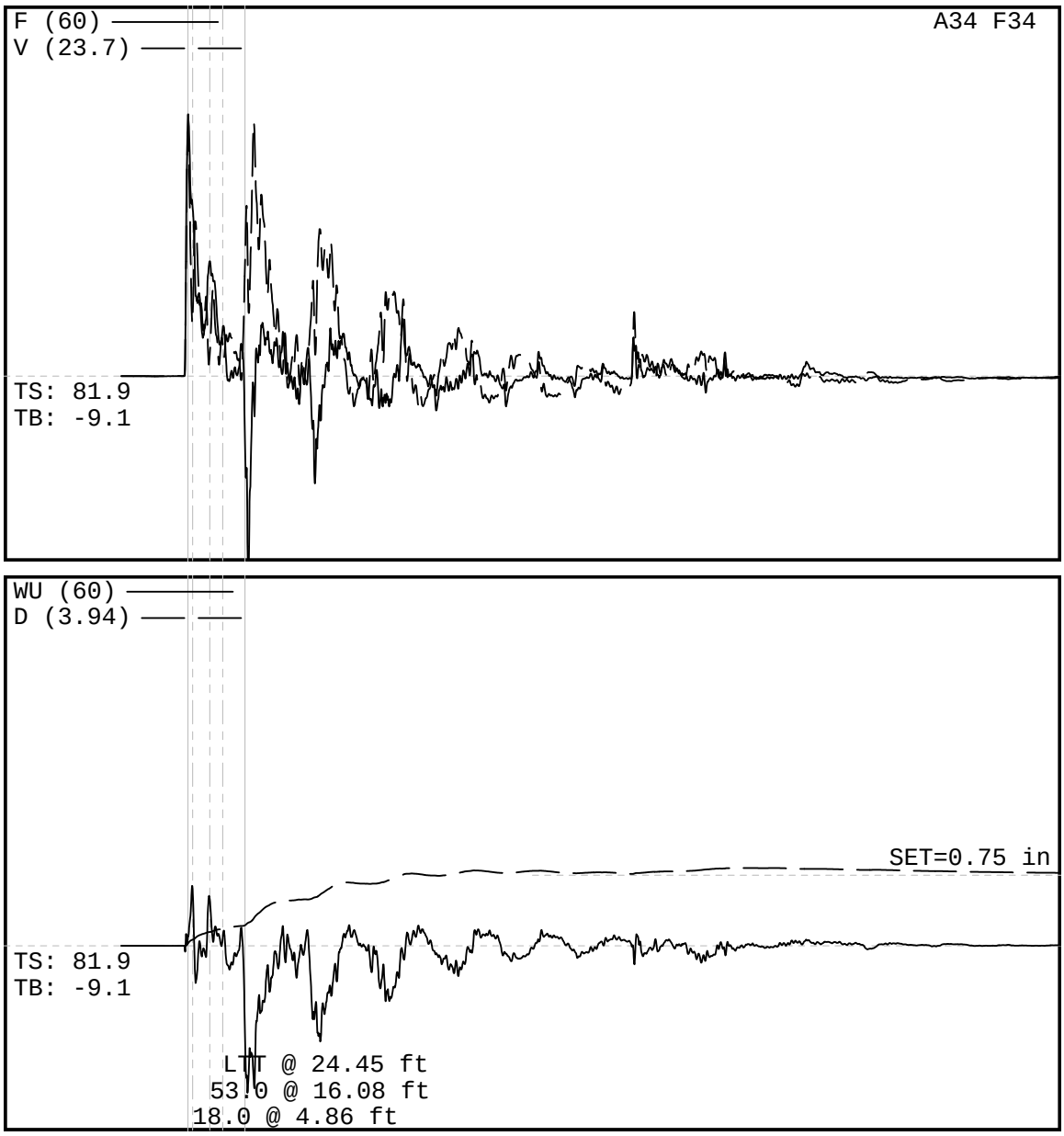
BL# Sensors

6-29 F3: [413 NWJ-1] 212.3 (1.00); F4: [413 NWJ-2] 213.9 (1.00); A3: [K3773] 380.0 (1.00); A4: [K4822] 355.0 (1.00)

Time Summary

Drive 33 seconds 2:03 PM - 2:03 PM BN 1 - 29

Thompson Engineering SPT Calibration CME 550X (SN 355273) - 31.0 to 32.5 ft




## *Project Information*

PROJECT: Thompson Engineering SPT Calibratic
PILE NAME: CME 550X (SN 355273) - 31.0 to 3
DESCR: NWJ Rod - Mud Rotary
OPERATOR: MJN
FILE: CME 550X (SN 355273)_6
9/11/2017 2:13:12 PM
Blow Number 12

## *Pile Properties*

| | | |
|---|---|---|
| LE | 37.00 | ft |
| AR | 1.42 | in^2 |
| EM | 30000 | ksi |
| SP | 0.492 | k/ft3 |
| WS | 16807.9 | f/s |
| EA/C | 2.5 | ksec/ft |
| 2L/C | 4.42 | ms |
| JC | | [] |
| LP | 32.13 | ft |

## *Quantity Results*

| | | |
|---|---|---|
| CSX | 29.87 | ksi |
| CSI f | 30.48 | ksi |
| EMX | 0.322 | k-ft |
| ETR | 91.9 | (%) |
| BPM | 50.4 | bpm |
| FMX | 42 | kips |
| VMX | 16.2 | f/s |
| QNV | 0.00 | [] |
| QNV | 0.00 | [] |

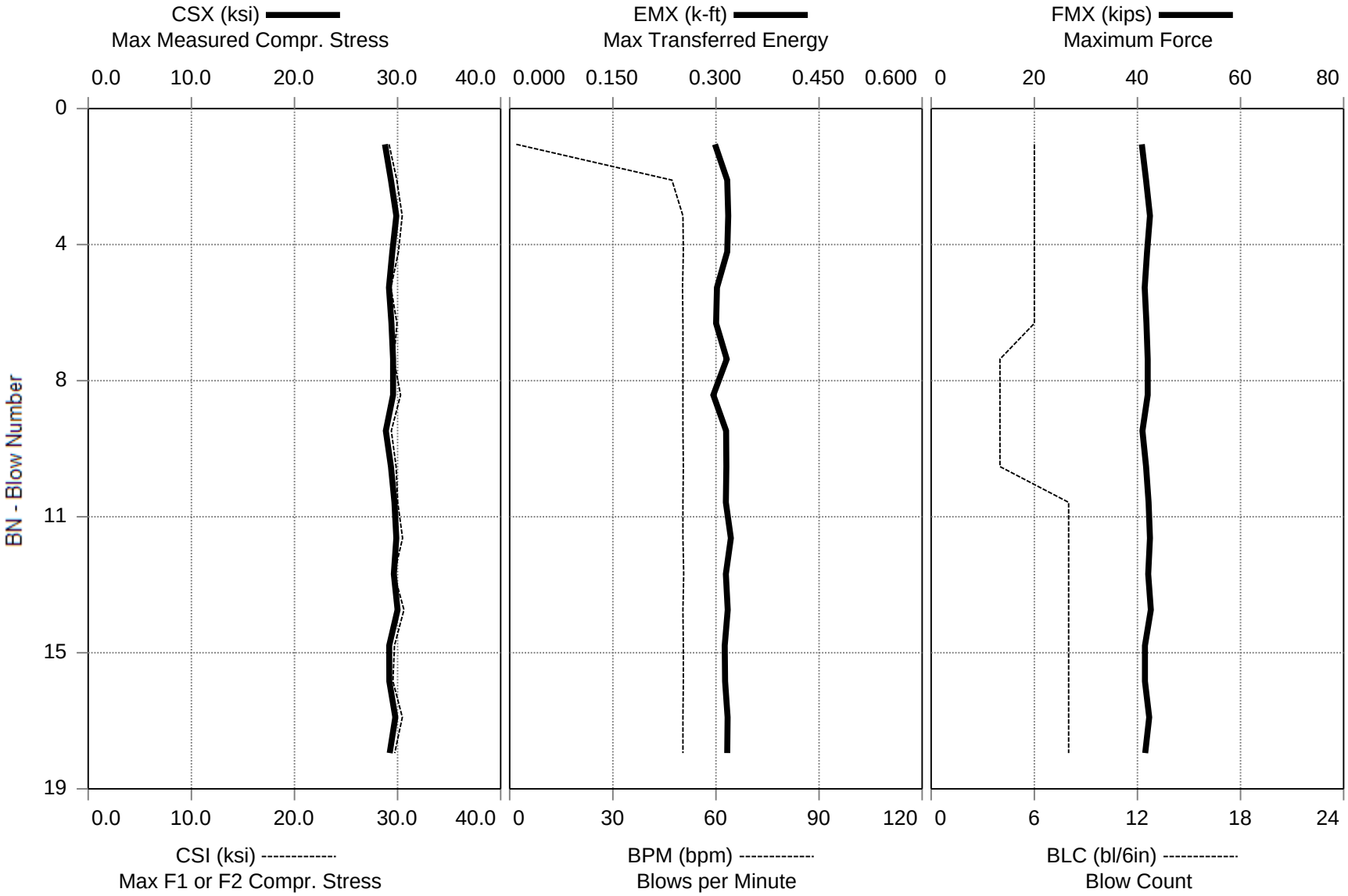
## *Sensors*

F3: [413 NWJ-1] 212.28 (1)
F4: [413 NWJ-2] 213.94 (1)
A3: [K3773] 380 mv/5000g's (1)
A4: [K4822] 355 mv/5000g's (1)
CLIP: OK

Nagy Engineers, Inc. - PDIPLOT2 Ver 2016.1.56.1 - Case Method & iCAP® Results

Printed: 13-September-2017 Test started: 11-September-2017

Thompson Engineering SPT Calibration - CME 550X (SN 355273) - 31.0 to 32.5 ft - NWJ Rod - Mud Rotary



Thompson Engineering SPT Calibration - CME 550X (SN 355273) - 31.0 to 32.5 ft NWJ Rod - Mud Rotary
OP: MJN Date: 11-September-2017

AR: 1.42 in² SP: 0.492 k/ft³
LE: 37.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | TYPE | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|---|
| 6 | 31.50 | 6 | AV6 | 29.3 | 29.8 | 0.308 | 88.1 | 41.8 | 42 | 15.2 |
| | | | MAX | 29.9 | 30.4 | 0.318 | 90.8 | 50.5 | 42 | 15.5 |
| 10 | 32.00 | 4 | AV4 | 29.3 | 29.8 | 0.310 | 88.7 | 50.4 | 42 | 16.0 |
| | | | MAX | 29.6 | 30.3 | 0.316 | 90.2 | 50.5 | 42 | 16.4 |
| 18 | 32.50 | 8 | AV8 | 29.6 | 30.0 | 0.316 | 90.3 | 50.5 | 42 | 15.6 |
| | | | MAX | 30.0 | 30.6 | 0.322 | 91.9 | 50.6 | 43 | 16.2 |
| | | | Average | 29.4 | 29.9 | 0.312 | 89.2 | 47.6 | 42 | 15.5 |
| | | | Maximum | 30.0 | 30.6 | 0.322 | 91.9 | 50.6 | 43 | 16.4 |

Total number of blows analyzed: 18

BL# Sensors

1-18 F3: [413 NWJ-1] 212.3 (1.00); F4: [413 NWJ-2] 213.9 (1.00); A3: [K3773] 380.0 (1.00); A4: [K4822] 355.0 (1.00)

Time Summary

Drive 20 seconds 2:12 PM - 2:13 PM BN 1 - 18

Thompson Engineering SPT Calibration - CME 550X (SN 355273) - 31.0 to 32.5 ft NWJ Rod - Mud Rotary
OP: MJN Date: 11-September-2017

AR: 1.42 in² SP: 0.492 k/ft³
LE: 37.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|
| 7 | 31.63 | 4 | 29.6 | 29.6 | 0.316 | 90.2 | 50.4 | 42 | 16.1 |
| 8 | 31.75 | 4 | 29.6 | 30.3 | 0.296 | 84.6 | 50.4 | 42 | 15.8 |
| 9 | 31.88 | 4 | 28.9 | 29.4 | 0.315 | 89.9 | 50.4 | 41 | 15.5 |
| 10 | 32.00 | 4 | 29.4 | 29.9 | 0.315 | 90.0 | 50.5 | 42 | 16.4 |
| 11 | 32.06 | 8 | 29.7 | 30.0 | 0.314 | 89.8 | 50.4 | 42 | 15.4 |
| 12 | 32.13 | 8 | 29.9 | 30.5 | 0.322 | 91.9 | 50.4 | 42 | 16.2 |
| 13 | 32.19 | 8 | 29.6 | 29.7 | 0.314 | 89.8 | 50.6 | 42 | 15.9 |
| 14 | 32.25 | 8 | 30.0 | 30.6 | 0.317 | 90.6 | 50.4 | 43 | 15.9 |
| 15 | 32.31 | 8 | 29.2 | 29.7 | 0.313 | 89.3 | 50.5 | 41 | 15.2 |
| 16 | 32.38 | 8 | 29.2 | 29.6 | 0.313 | 89.5 | 50.5 | 41 | 15.3 |
| 17 | 32.44 | 8 | 29.8 | 30.5 | 0.317 | 90.6 | 50.4 | 42 | 15.6 |
| 18 | 32.50 | 8 | 29.2 | 29.7 | 0.316 | 90.4 | 50.4 | 42 | 15.2 |
| | | Average | 29.5 | 29.9 | 0.314 | 89.7 | 50.4 | 42 | 15.7 |
| | | Maximum | 30.0 | 30.6 | 0.322 | 91.9 | 50.6 | 43 | 16.4 |

Total number of blows analyzed: 12

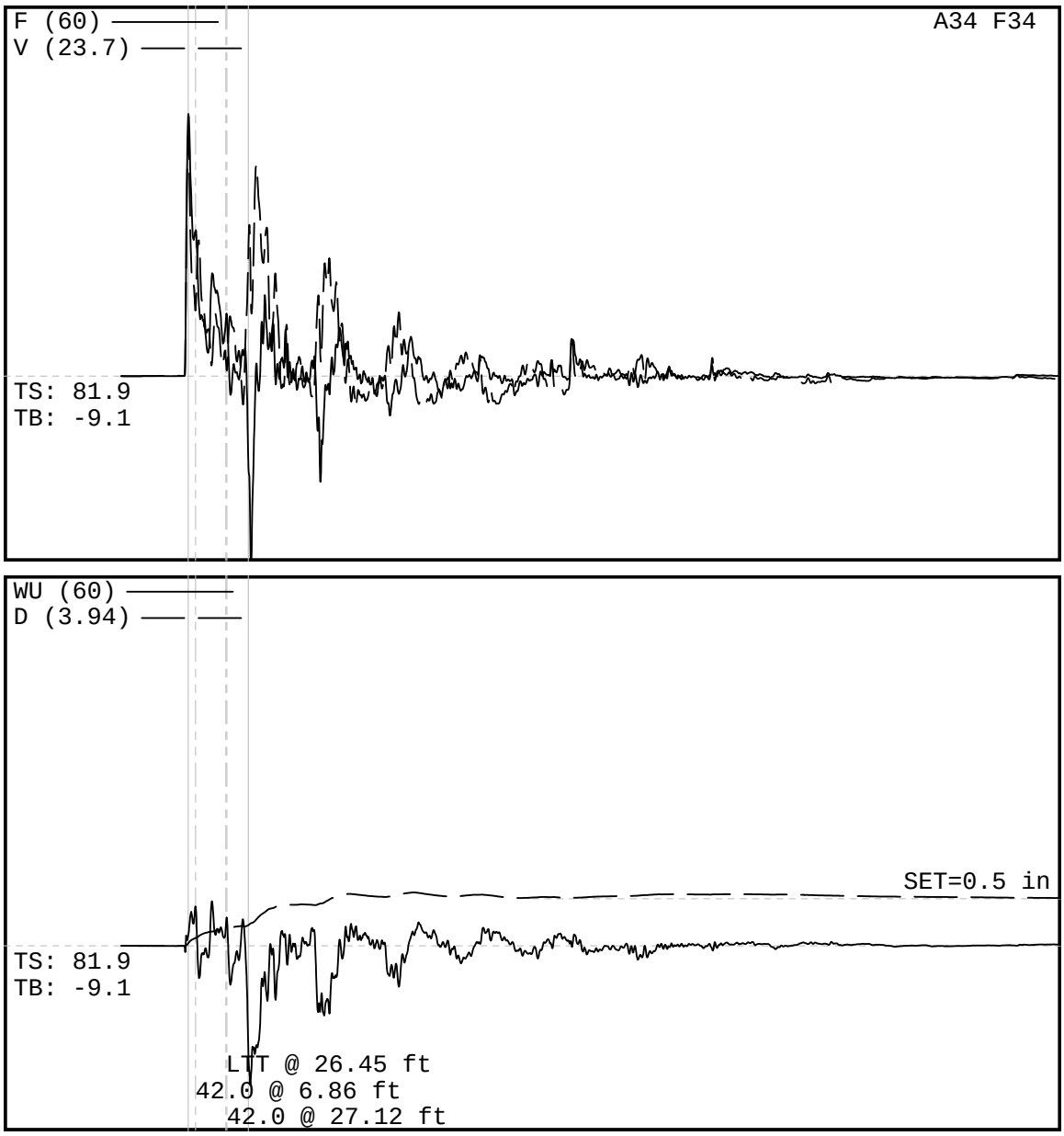
BL# Sensors

7-18 F3: [413 NWJ-1] 212.3 (1.00); F4: [413 NWJ-2] 213.9 (1.00); A3: [K3773] 380.0 (1.00); A4: [K4822] 355.0 (1.00)

Time Summary

Drive 20 seconds 2:12 PM - 2:13 PM BN 1 - 18

Thompson Engineering SPT Calibration CME 550X (SN 355273) - 33.5 to 35.0 ft




*Project Information*

PROJECT: Thompson Engineering SPT Calibratic
PILE NAME: CME 550X (SN 355273) - 33.5 to 3
DESCR: NWJ Rod - Mud Rotary
OPERATOR: MJN
FILE: CME 550X (SN 355273)_7
9/11/2017 2:22:47 PM
Blow Number 22

*Pile Properties*

| | |
|---|---|
| LE | 39.00 ft |
| AR | 1.42 in^2 |
| EM | 30000 ksi |
| SP | 0.492 k/ft3 |
| WS | 16807.9 f/s |
| EA/C | 2.5 ksec/ft |
| 2L/C | 4.66 ms |
| JC | [] |
| LP | 34.54 ft |

*Quantity Results*

| | |
|---|---|
| CSX | 29.91 ksi |
| CSI f | 30.50 ksi |
| EMX | 0.320 k-ft |
| ETR | 91.3 (%) |
| BPM | 50.6 bpm |
| FMX | 42 kips |
| VMX | 15.4 f/s |
| QNV | 0.00 [] |
| QNV | 0.00 [] |

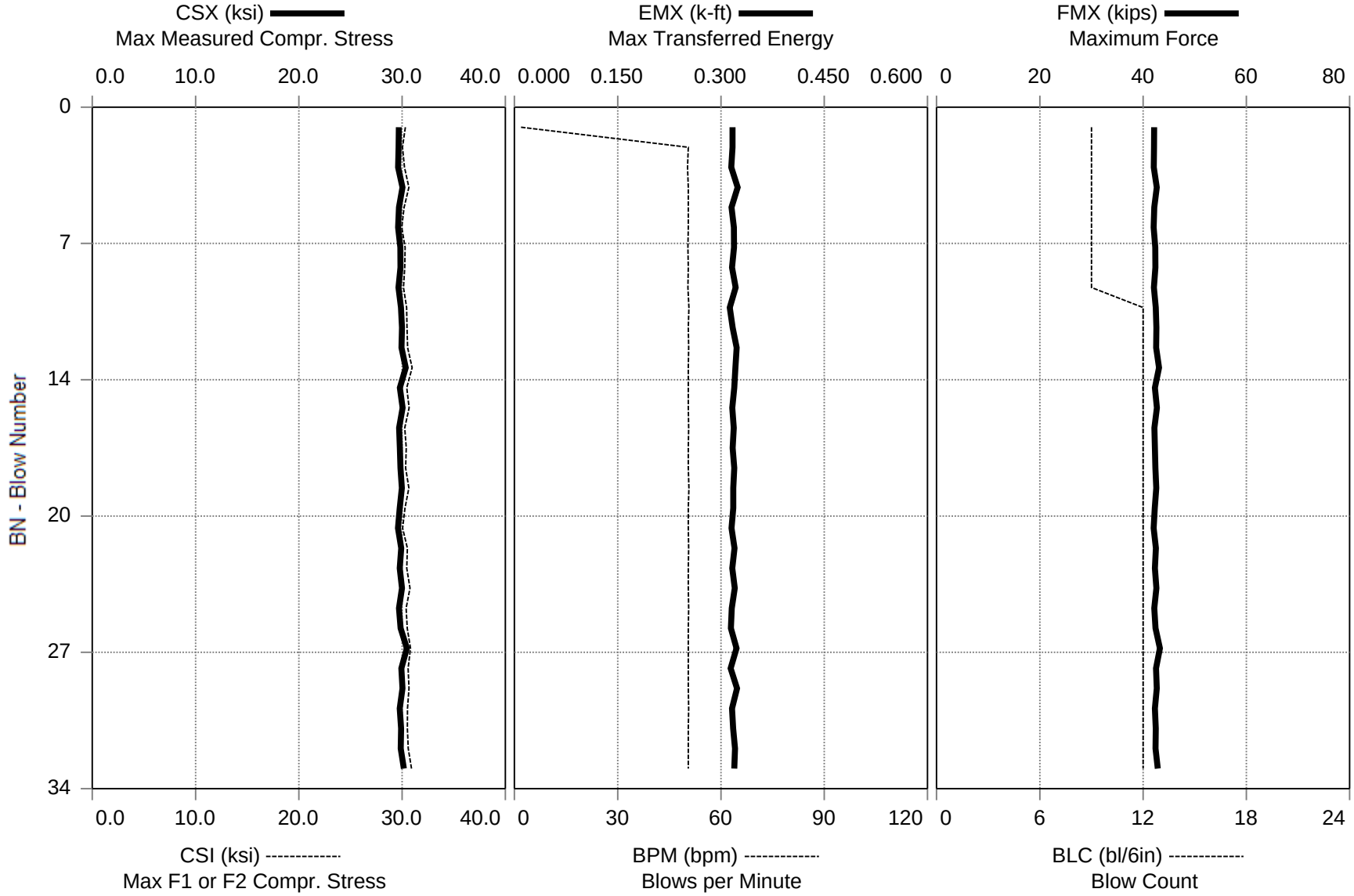
*Sensors*

F3: [413 NWJ-1] 212.28 (1)
F4: [413 NWJ-2] 213.94 (1)
A3: [K3773] 380 mv/5000g's (1)
A4: [K4822] 355 mv/5000g's (1)
CLIP: OK

Nagy Engineers, Inc. - PDIPLOT2 Ver 2016.1.56.1 - Case Method & iCAP® Results

Printed: 13-September-2017 Test started: 11-September-2017

Thompson Engineering SPT Calibration - CME 550X (SN 355273) - 33.5 to 35.0 ft - NWJ Rod - Mud Rotary



Thompson Engineering SPT Calibration - CME 550X (SN 355273) - 33.5 to 35.0 ft NWJ Rod - Mud Rotary
OP: MJN Date: 11-September-2017

AR: 1.42 in² SP: 0.492 k/ft³
LE: 39.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | TYPE | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | 34.00 | 9 | AV9 | 29.7 | 30.2 | 0.318 | 90.9 | 45.1 | 42 | 15.2 |
| | | | MAX | 30.0 | 30.6 | 0.324 | 92.6 | 50.5 | 43 | 15.5 |
| 21 | 34.50 | 12 | AV12 | 29.9 | 30.5 | 0.318 | 90.8 | 50.6 | 42 | 15.3 |
| | | | MAX | 30.3 | 31.0 | 0.323 | 92.2 | 50.7 | 43 | 15.6 |
| 33 | 35.00 | 12 | AV12 | 29.9 | 30.6 | 0.318 | 90.9 | 50.5 | 43 | 15.4 |
| | | | MAX | 30.5 | 30.9 | 0.323 | 92.4 | 50.6 | 43 | 15.7 |
| | | | Average | 29.9 | 30.4 | 0.318 | 90.9 | 49.0 | 42 | 15.3 |
| | | | Maximum | 30.5 | 31.0 | 0.324 | 92.6 | 50.7 | 43 | 15.7 |

Total number of blows analyzed: 33

BL# Sensors

1-33 F3: [413 NWJ-1] 212.3 (1.00); F4: [413 NWJ-2] 213.9 (1.00); A3: [K3773] 380.0 (1.00); A4: [K4822] 355.0 (1.00)

Time Summary

Drive 37 seconds 2:22 PM - 2:23 PM BN 1 - 33

Thompson Engineering SPT Calibration - CME 550X (SN 355273) - 33.5 to 35.0 ft NWJ Rod - Mud Rotary
OP: MJN Date: 11-September-2017

AR: 1.42 in² SP: 0.492 k/ft³
LE: 39.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|
| 10 | 34.04 | 12 | 29.9 | 30.4 | 0.313 | 89.3 | 50.7 | 42 | 15.3 |
| 11 | 34.08 | 12 | 30.0 | 30.5 | 0.317 | 90.5 | 50.5 | 43 | 15.4 |
| 12 | 34.13 | 12 | 29.9 | 30.5 | 0.323 | 92.2 | 50.6 | 43 | 15.4 |
| 13 | 34.17 | 12 | 30.3 | 31.0 | 0.321 | 91.7 | 50.5 | 43 | 15.6 |
| 14 | 34.21 | 12 | 29.8 | 30.4 | 0.319 | 91.2 | 50.5 | 42 | 15.3 |
| 15 | 34.25 | 12 | 30.0 | 30.7 | 0.316 | 90.4 | 50.5 | 43 | 15.4 |
| 16 | 34.29 | 12 | 29.7 | 30.2 | 0.319 | 91.0 | 50.6 | 42 | 15.2 |
| 17 | 34.33 | 12 | 29.8 | 30.4 | 0.317 | 90.6 | 50.5 | 42 | 15.3 |
| 18 | 34.38 | 12 | 29.8 | 30.3 | 0.319 | 91.2 | 50.5 | 42 | 15.2 |
| 19 | 34.42 | 12 | 30.0 | 30.6 | 0.318 | 90.8 | 50.7 | 43 | 15.4 |
| 20 | 34.46 | 12 | 29.8 | 30.3 | 0.318 | 90.8 | 50.5 | 42 | 15.3 |
| 21 | 34.50 | 12 | 29.6 | 30.1 | 0.315 | 90.1 | 50.5 | 42 | 15.1 |
| 22 | 34.54 | 12 | 29.9 | 30.5 | 0.320 | 91.3 | 50.6 | 42 | 15.4 |
| 23 | 34.58 | 12 | 29.8 | 30.4 | 0.316 | 90.4 | 50.5 | 42 | 15.3 |
| 24 | 34.63 | 12 | 30.0 | 30.8 | 0.320 | 91.4 | 50.5 | 43 | 15.4 |
| 25 | 34.67 | 12 | 29.7 | 30.4 | 0.316 | 90.2 | 50.6 | 42 | 15.2 |
| 26 | 34.71 | 12 | 29.9 | 30.5 | 0.314 | 89.8 | 50.5 | 42 | 15.3 |
| 27 | 34.75 | 12 | 30.5 | 30.8 | 0.323 | 92.2 | 50.5 | 43 | 15.7 |
| 28 | 34.79 | 12 | 29.9 | 30.6 | 0.314 | 89.7 | 50.5 | 42 | 15.3 |
| 29 | 34.83 | 12 | 30.0 | 30.7 | 0.323 | 92.4 | 50.5 | 43 | 15.4 |
| 30 | 34.88 | 12 | 29.8 | 30.5 | 0.316 | 90.3 | 50.6 | 42 | 15.3 |
| 31 | 34.92 | 12 | 29.9 | 30.5 | 0.318 | 90.8 | 50.5 | 42 | 15.3 |
| 32 | 34.96 | 12 | 29.9 | 30.6 | 0.320 | 91.5 | 50.5 | 42 | 15.4 |
| 33 | 35.00 | 12 | 30.2 | 30.9 | 0.319 | 91.2 | 50.5 | 43 | 15.4 |
| | | Average | 29.9 | 30.5 | 0.318 | 90.9 | 50.5 | 42 | 15.3 |
| | | Maximum | 30.5 | 31.0 | 0.323 | 92.4 | 50.7 | 43 | 15.7 |

Total number of blows analyzed: 24

BL# Sensors

10-33 F3: [413 NWJ-1] 212.3 (1.00); F4: [413 NWJ-2] 213.9 (1.00); A3: [K3773] 380.0 (1.00); A4: [K4822] 355.0 (1.00)

Time Summary

Drive 37 seconds 2:22 PM - 2:23 PM BN 1 - 33

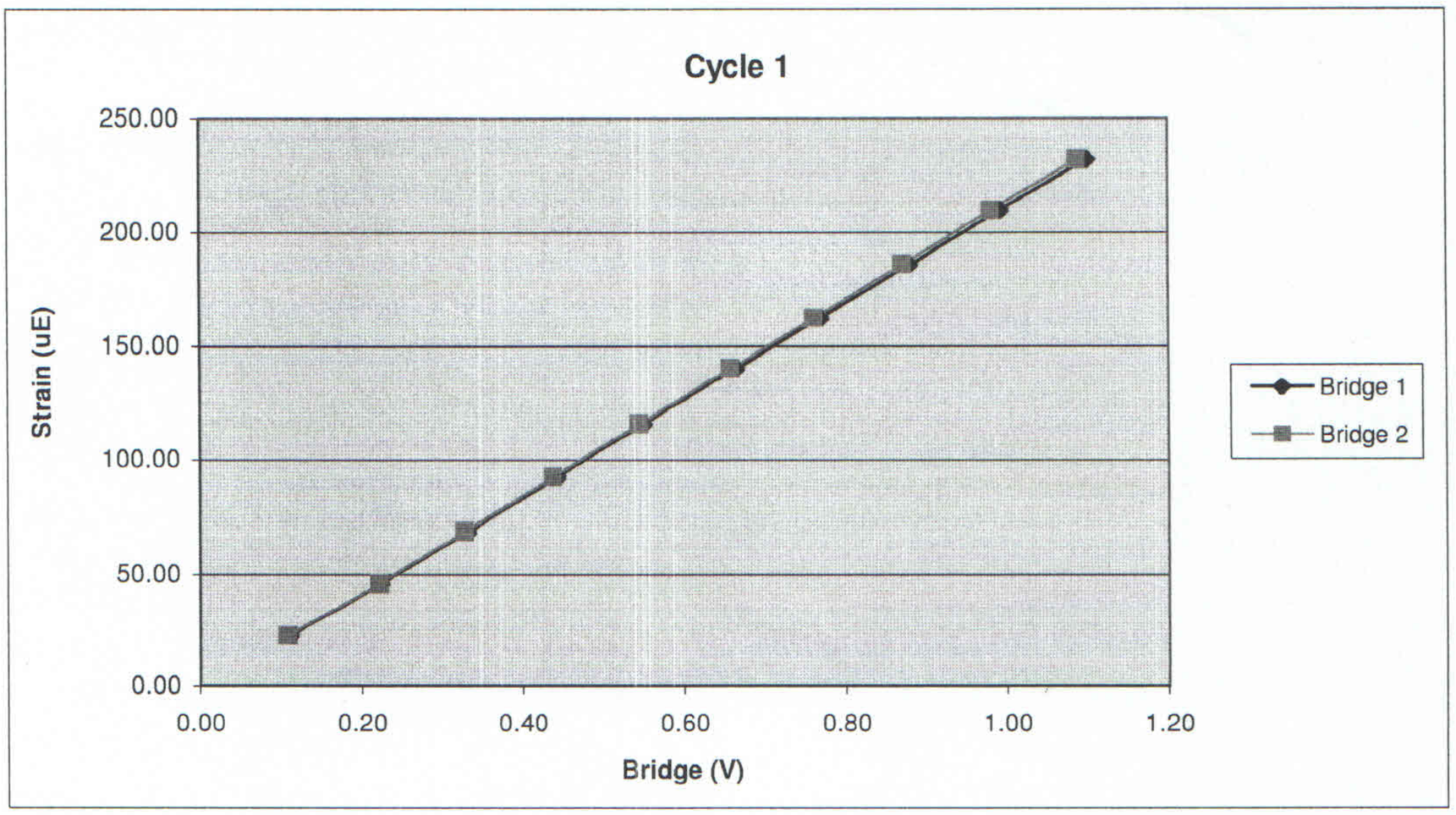
# Appendix B

# Dynamic Measurement Calibration Sheets

| 413NWJ | | Cycle 1 | | |
|---|---|---|---|---|
| **Sample** | **Force (lb)** | **Strain (µE)** | **Bridge 1 (V)** | **Bridge 2 (V)** |
| 1 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2 | 990.99 | 22.25 | 0.11 | 0.11 |
| 3 | 2002.63 | 46.15 | 0.22 | 0.22 |
| 4 | 2988.10 | 69.17 | 0.33 | 0.33 |
| 5 | 3994.04 | 92.72 | 0.44 | 0.44 |
| 6 | 4963.98 | 115.99 | 0.55 | 0.54 |
| 7 | 5994.11 | 140.04 | 0.66 | 0.66 |
| 8 | 6930.41 | 162.12 | 0.77 | 0.76 |
| 9 | 7939.49 | 185.78 | 0.88 | 0.87 |
| 10 | 8950.34 | 209.60 | 0.99 | 0.98 |
| 11 | 9926.18 | 232.15 | 1.10 | 1.09 |

| **Bridge 1** | | **Bridge 2** | |
|---|---|---|---|
| **Force Calibration (lb/V)** | **9036.37** | **Force Calibration (lb/V)** | **9125.33** |
| Offset | -9.46 | Offset | -2.08 |
| Correlation | 1.000000 | Correlation | 0.999997 |
| **Strain Calibration (µE/V)** | **212.51** | **Strain Calibration (µE/V)** | **214.61** |
| Offset | -1.22 | Offset | -1.05 |
| Correlation | 0.999996 | Correlation | 0.999998 |

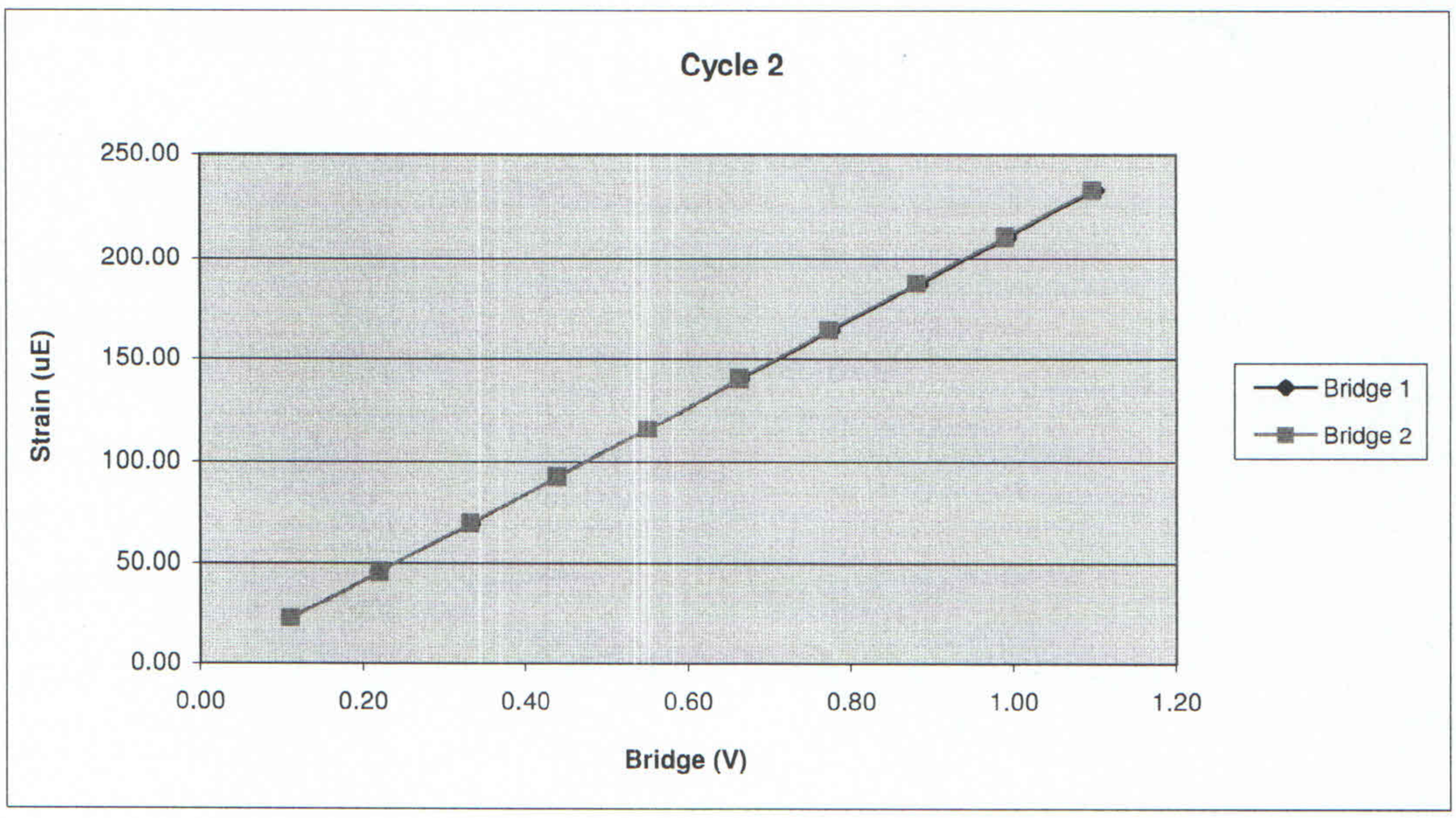
| **Force Strain Calibration** | |
|---|---|
| **EA (Kips)** | **42521.15** |
| Offset | 42.49 |
| Correlation | 0.999997 |



| 413NWJ | | Cycle 2 | | |
|---|---|---|---|---|
| **Sample** | **Force (lb)** | **Strain (µE)** | **Bridge 1 (V)** | **Bridge 2 (V)** |
| 1 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2 | 987.05 | 22.73 | 0.11 | 0.11 |
| 3 | 1966.04 | 45.88 | 0.22 | 0.22 |
| 4 | 2986.33 | 69.92 | 0.33 | 0.33 |
| 5 | 3951.35 | 92.68 | 0.44 | 0.44 |
| 6 | 4949.03 | 116.49 | 0.55 | 0.55 |
| 7 | 5960.47 | 140.42 | 0.66 | 0.66 |
| 8 | 6953.03 | 163.97 | 0.78 | 0.77 |
| 9 | 7934.77 | 187.50 | 0.88 | 0.88 |
| 10 | 8928.90 | 210.76 | 0.99 | 0.99 |
| 11 | 9905.13 | 233.34 | 1.10 | 1.10 |

| **Bridge 1** | | **Bridge 2** | |
|---|---|---|---|
| **Force Calibration (lb/V)** | **8992.65** | **Force Calibration (lb/V)** | **9034.81** |
| Offset | **-7.95** | Offset | **-19.15** |
| Correlation | **0.999996** | Correlation | **0.999998** |
| **Strain Calibration (µE/V)** | **212.81** | **Strain Calibration (µE/V)** | **213.81** |
| Offset | **-0.84** | Offset | **-1.11** |
| Correlation | **0.999997** | Correlation | **0.999996** |

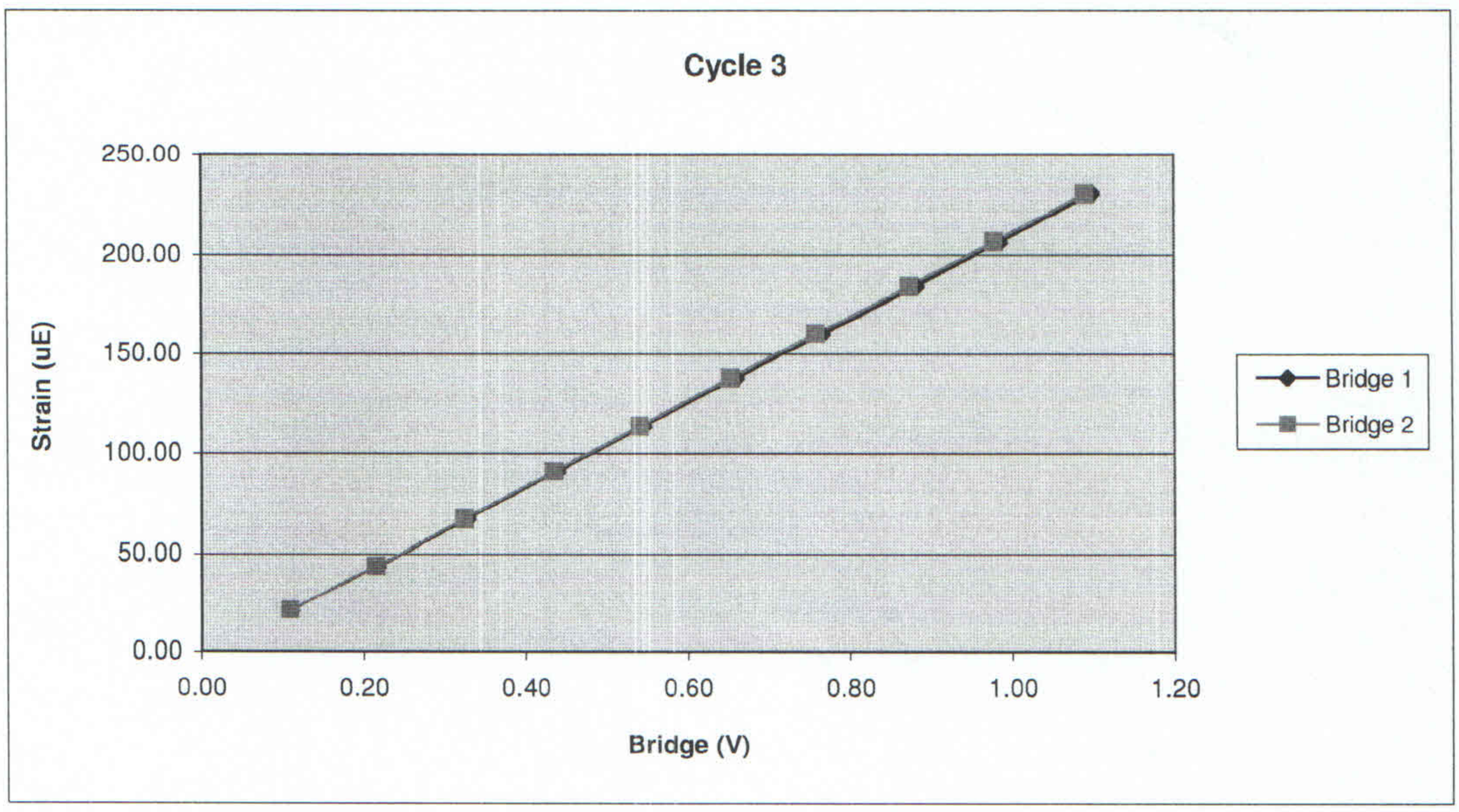
| **Force Strain Calibration** | |
|---|---|
| **EA (Kips)** | **42256.93** |
| Offset | **27.76** |
| Correlation | **0.999996** |



| 413NWJ | | Cycle 3 | | |
|---|---|---|---|---|
| **Sample** | **Force (lb)** | **Strain (µE)** | **Bridge 1 (V)** | **Bridge 2 (V)** |
| 1 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2 | 978.00 | 21.53 | 0.11 | 0.11 |
| 3 | 1923.94 | 43.44 | 0.22 | 0.21 |
| 4 | 2938.53 | 67.46 | 0.33 | 0.32 |
| 5 | 3944.67 | 91.22 | 0.44 | 0.44 |
| 6 | 4898.87 | 113.58 | 0.54 | 0.54 |
| 7 | 5921.72 | 137.82 | 0.66 | 0.65 |
| 8 | 6874.74 | 160.10 | 0.77 | 0.76 |
| 9 | 7926.90 | 184.40 | 0.88 | 0.87 |
| 10 | 8859.86 | 206.60 | 0.98 | 0.98 |
| 11 | 9889.59 | 230.60 | 1.10 | 1.09 |

| **Bridge 1** | | **Bridge 2** | |
|---|---|---|---|
| **Force Calibration (lb/V)** | **9008.15** | **Force Calibration (lb/V)** | **9088.85** |
| Offset | **-7.86** | Offset | **-13.21** |
| Correlation | **0.999998** | Correlation | **0.999998** |
| **Strain Calibration (µE/V)** | **211.51** | **Strain Calibration (µE/V)** | **213.41** |
| Offset | **-1.67** | Offset | **-1.80** |
| Correlation | **0.999995** | Correlation | **0.999993** |

| **Force Strain Calibration** | |
|---|---|
| **EA (Kips)** | **42588.80** |
| Offset | **63.31** |
| Correlation | **0.999997** |



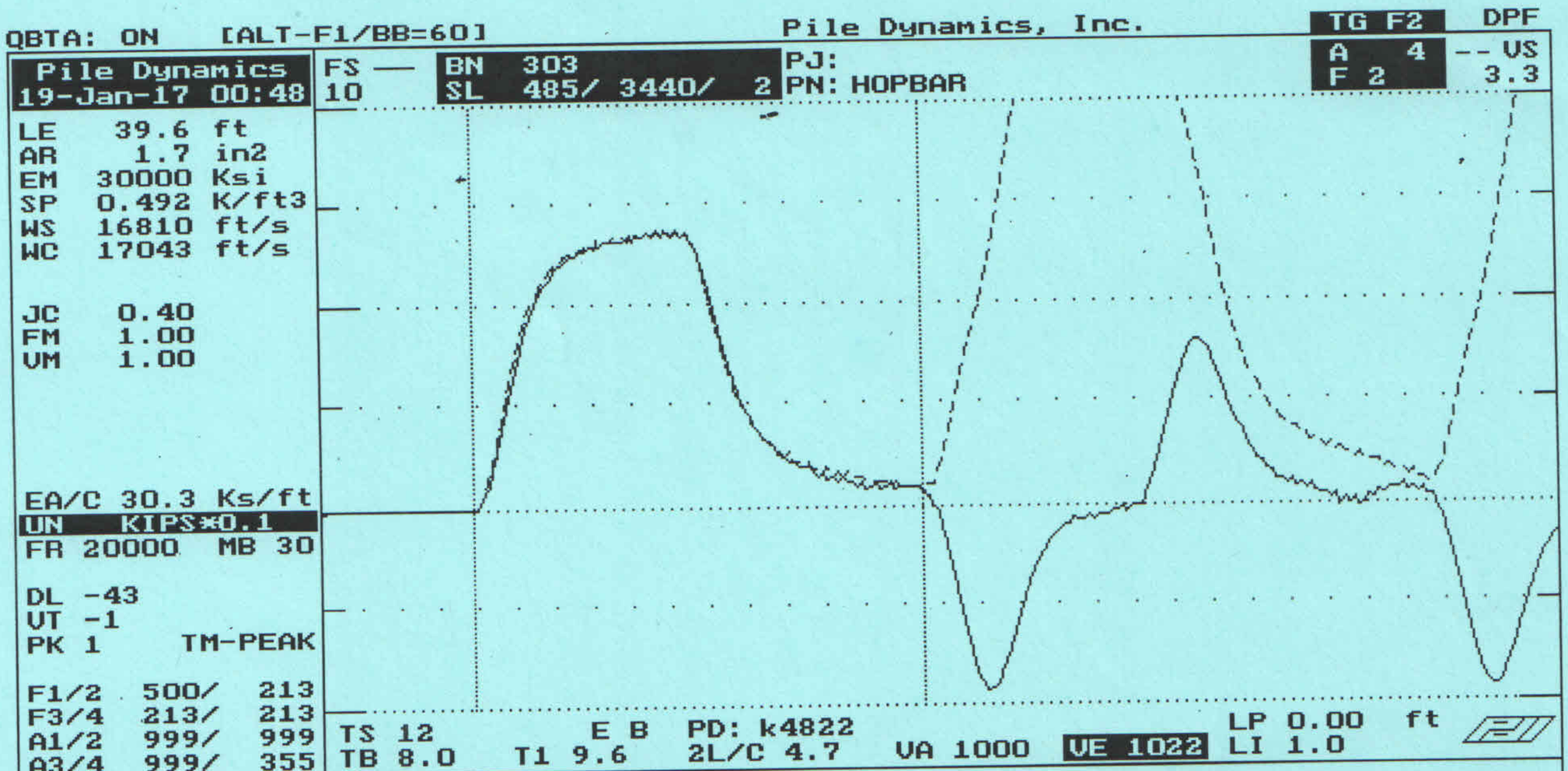
Bridge Excitation (V) 5
Shunt Resitor (ohm) 60.4k

| Calibration Factors | 413NWJ | | |
|---|---|---|---|
| Bridge 1 (µE/V) | 212.28 | Bridge 2 (µE/V) | 213.94 |
| EA Factor (Kips) | 42455.63 | Area (in^2) | 1.42 |

Calibrated by: _____
Calibrated Date: 6/10/2016

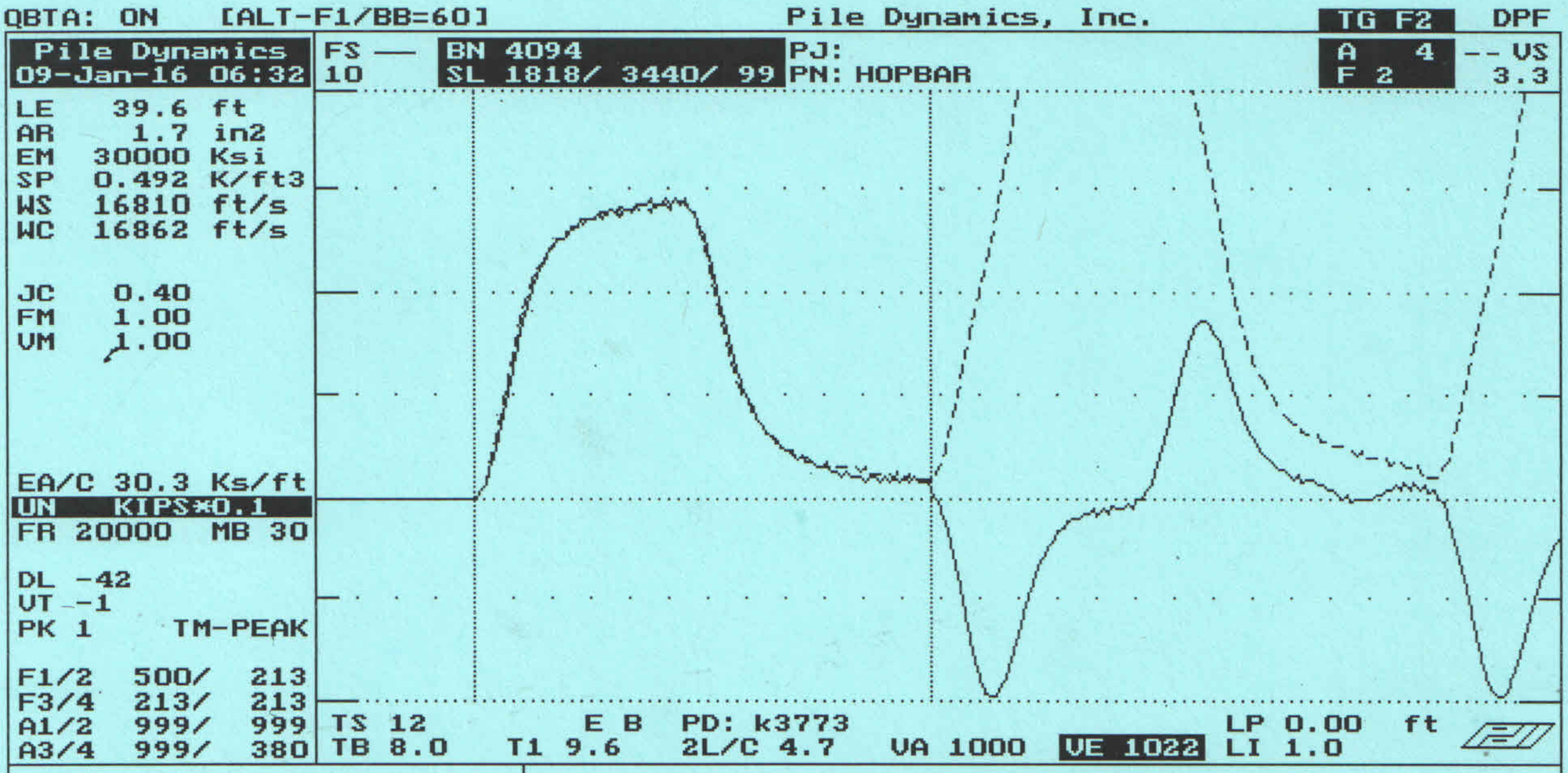
Pile Dynamics Inc
30725 Aurora Rd
Solon, OH 44139

Traceable to N.I.S.T.




**Smart Sensor**

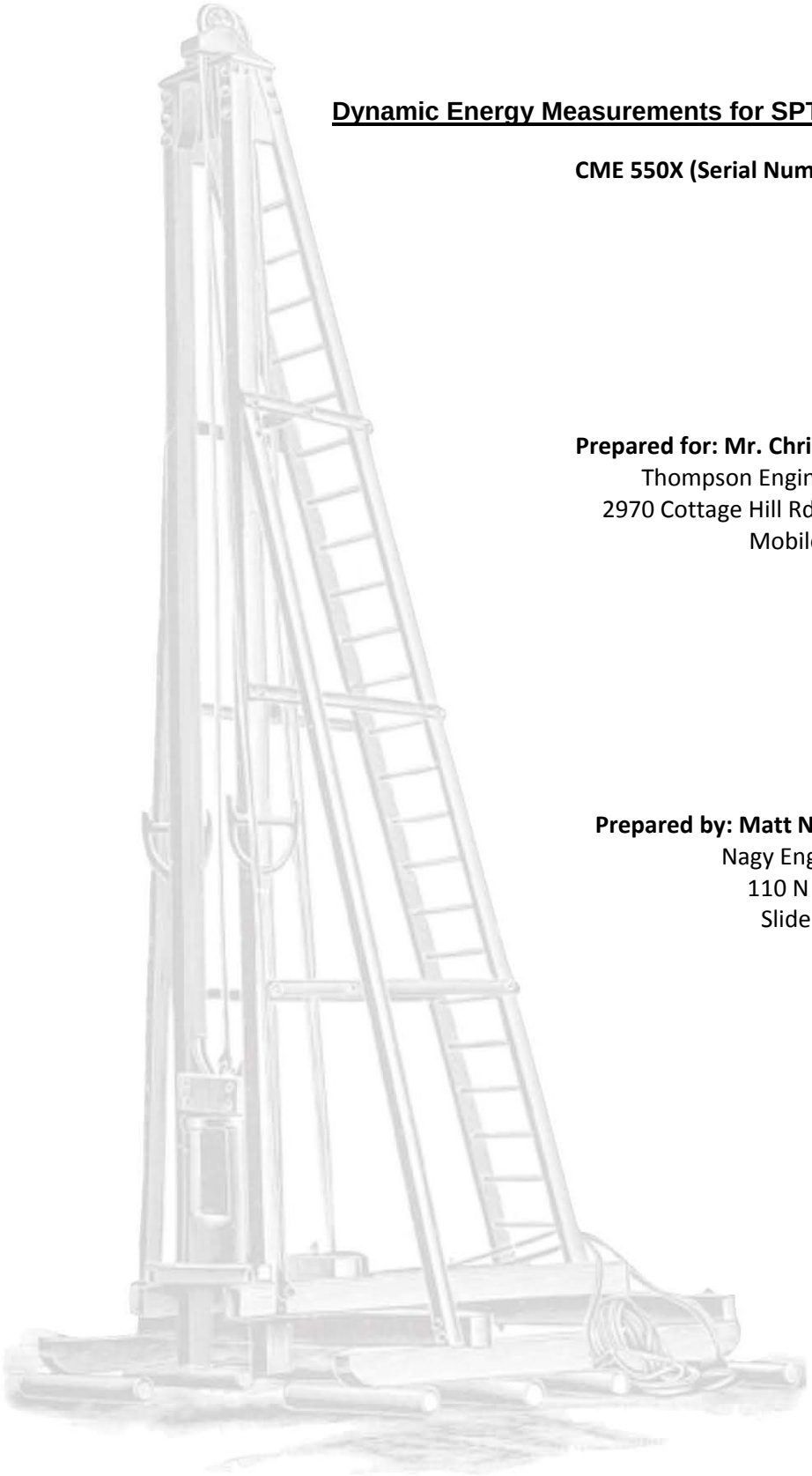
**Smart Chip Programmed By** R.M.W. **on** 19JAN17 **CRC Value** 5839




**Smart Sensor**

**Smart Chip Programmed By** T.M.W. **on** 14JAN16 **CRC Value** 317C

# Nagy Engineers, Inc.



## Dynamic Energy Measurements for SPT Hammer

**CME 550X (Serial Number 327443)**

**Prepared for: Mr. Chris Dugger of**
Thompson Engineering, Inc.
2970 Cottage Hill Rd., Suite 190
Mobile, AL 36606

**Prepared by: Matt Nagy, P.E. of**
Nagy Engineers, Inc.
110 N Queens Dr.
Slidell, LA 70458

Nagy Engineers, Inc.
- Deep Foundation Specialty Testing -

October 5, 2016

Mr. Chris Dugger
Thompson Engineering, Inc.
2970 Cottage Hill Road, Suite 190
Mobile, AL 36606

**Re: SPT Hammer Calibration using Dynamic Energy Measurements**
Thompson Engineering Drill Rig – CME 550X (S/N 327443)
Nagy Engineers Job No. 161037-1

Dear Mr. Dugger:

This report summarizes the results from SPT Energy Measurement Testing performed at the Mobile River Bridge project on September 28, 2016. The testing was conducted to calibrate a CME 550X automatic SPT hammer. The hammer reportedly had a 140 lb drop weight and a 2.5 ft drop height. Appendix A gives a summary of the field dynamic test data and results while Appendix B contains the equipment calibration sheets. An overall summary of the test results is presented in Table 1.

## OBJECTIVES

The objective of the testing was to perform SPT Energy Measurements according to ASTM D4633-10. These objectives were met using our Pile Driving Analyzer®, Model PAX – SPT Software, which acquired the SPT hammer's transfer energies using an instrumented NWJ rod section and two piezoresistive accelerometers.

## TESTING AND EQUIPMENT

### *Drilling and SPT Hammer Equipment*

SPT energy measurements were collected for a CME 550X automatic SPT hammer. The serial number on the rig was s/n 327443. Energy records were collected at various increments between the depths of 68.5 ft and 100 ft. The drilling method was mud rotary. Appendix A contains a photo of the CME 550X rig that was tested.

### *Instrumentation*

A Model PAX Pile Driving Analyzer® (PDA) data acquisition system was used to collect and process the dynamic measurements of force and velocity. The PAX is a digital system having a low pass filter cutoff frequency of 5 kHz. The sampling frequency was therefore set to 10 times the low pass filter, or 50 kHz. A two foot long section of NWJ rod subsection was instrumented with one full bridge foil resistance strain

gage and two piezoresistive accelerometers mounted at the midpoint location of the instrumented subsection. Strain and acceleration signals were conditioned, digitized, stored and processed using the PDA. Selected output from the PDA for each recorded impact included the maximum calculated rod top force (FMX), maximum rod top velocity (VMX), maximum average compressive stress (CSX), maximum energy transfer (EMX), energy transfer ratio (ETR) and the hammer operating rate (BPM).

## MEASUREMENTS AND CALCULATIONS

### *FV Method (EMX)*

Energy transfer to the PDA gage location, EMX, was computed by the PDA using force, F(t), and velocity, v(t), records as follows:

$$EMX = \int_a^b F(t) \cdot v(t) dt$$

The time "a" corresponds to the start of the record when the energy transfer begins, and "b" is the time at which energy transferred to the rod reaches a maximum value. The FV Method is currently recognized in ASTM D4633-10, and is the theoretically correct result; therefore, no other energy calculation methods are reported.

## RESULTS

Upon return to the office, the records collected by the PDA were checked for consistency and accuracy. For example, records from very weak startup or final impacts were not included in the results. Appendix A contains a representative plot of force and normalized velocity versus time and PDIPLOT results for all hammer blows at each dynamically monitored sampling depth. The PDA results include the EMX (transferred energy by the EMX method, as recommended by ASTM D4633-10), ETR (energy transfer ratio), BPM (hammer operating rate), FMX (maximum rod top force), CSX (maximum compressive stress), and VMX (maximum rod top velocity). The plots show each calculated PDA result versus sampling spoon penetration while the tables show statistical summaries for each 6 inch increment. At the end of each table, on the next page, is a statistical evaluation of the results which only include the blows that correspond to the N-Value for that sample.

Table 1 summarizes the average transfer energy values calculated by the EMX method. The records averaged consist only of the hammer blows at each dynamically monitored sampling depth that correspond to the N-Values (i.e. the blows in the initial 6 inches of split spoon driving were not considered as part of the average). The “energy transfer ratio” (ETR) is defined as the ratio of maximum transferred

energy EMX divided by the theoretical hammer potential energy of 350 ft-lbs. The average hammer operating rate is reported in blows per minute (BPM).

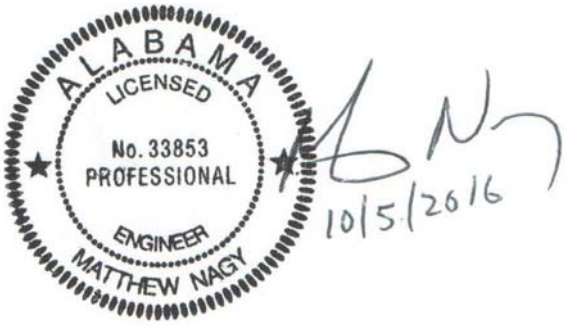
## CONCLUSIONS

**RIG: CME 550X (s/n: 327443) - 140 lbs Hammer – 2.5 ft Drop Height**

The average maximum energy transfer (EMX) to the NWJ SPT rod using the 140 lbs drop weight was 307 ft-lbs which is approximately 88% of the 350 ft-lbs potential energy of the hammer. The standard deviation of the transfer efficiency was 1% over the seven samples that were collected. The average hammer operation rate during the time of testing was 49.2 blows/min.

We have appreciated this opportunity to be of assistance to you on this project, please contact our office if you have any questions regarding this report, or if we may be of further service.

Very truly yours,
Nagy Engineers, Inc.




Matthew Nagy, P.E. AL # 33853
Project Engineer

Firm COA Number: 4718

enclosed: Appendices A and B

# TABLE 1: Summary of SPT Energy Measurements

## CME 550X Automatic SPT Hammer (S/N 327443)

| Rod Length Below Gages *LE* | Depth Below Top of Ground | Reported SPT Blow Counts | Maximum Transfer Force *FMX* | Maximum Compressive Stress *CSX* | Average Hammer Blow Rate *BPM* | Average Energy Transfer *EMX* | Average Transfer Efficiency *ETR* |
|---|---|---|---|---|---|---|---|
| ft | ft | blows/6" | kips | ksi | blows/min | ft-lbs | % |
| 86.0 | 68.5 to 70.0 | 5,6,10 | 42 | 29.2 | 47.2 | 305 | 87% |
| 91.0 | 73.5 to 75.0 | 6,11,15 | 42 | 29.4 | 49.5 | 310 | 88% |
| 96.0 | 78.5 to 80.0 | 8,18,20 | 41 | 29.0 | 49.4 | 312 | 89% |
| 101.0 | 83.5 to 85.0 | 11,14,18 | 41 | 29.2 | 49.5 | 308 | 88% |
| 106.0 | 88.5 to 90.0 | 11,13,16 | 39 | 27.2 | 49.4 | 304 | 87% |
| 111.0 | 93.5 to 95.0 | 12,14,19 | 40 | 28.4 | 50.0 | 302 | 86% |
| 116.0 | 98.5 to 100.0 | 12,12,8 | 38 | 27.0 | 49.6 | 308 | 88% |
| | | **Overall Average** | | | **49.2** | **307** | **88%** |
| | | **Standard Deviation** | | | **0.9** | **4** | **1%** |

**Notes**

*LE* - Length from the bottom of the spoon to the PDA gage location.
FMX - Maximum Force Meaused at PDA gage locationn.
CSX - Maximum Average Compressive Stress at PDA gage location.
*BPM* - Hammer operation rate (blows/minute)
*EMX* - Computed, from $\int Fv\,dt$, maximum energy transferred to PDA gage location.
*ETR* - Computed, from EMX/PE, maximum energy transfer efficiency

# Appendix A

# Results from SPT Dynamic Energy Measurements

Thompson Engineering SPT Rig Calibration

CME 550X

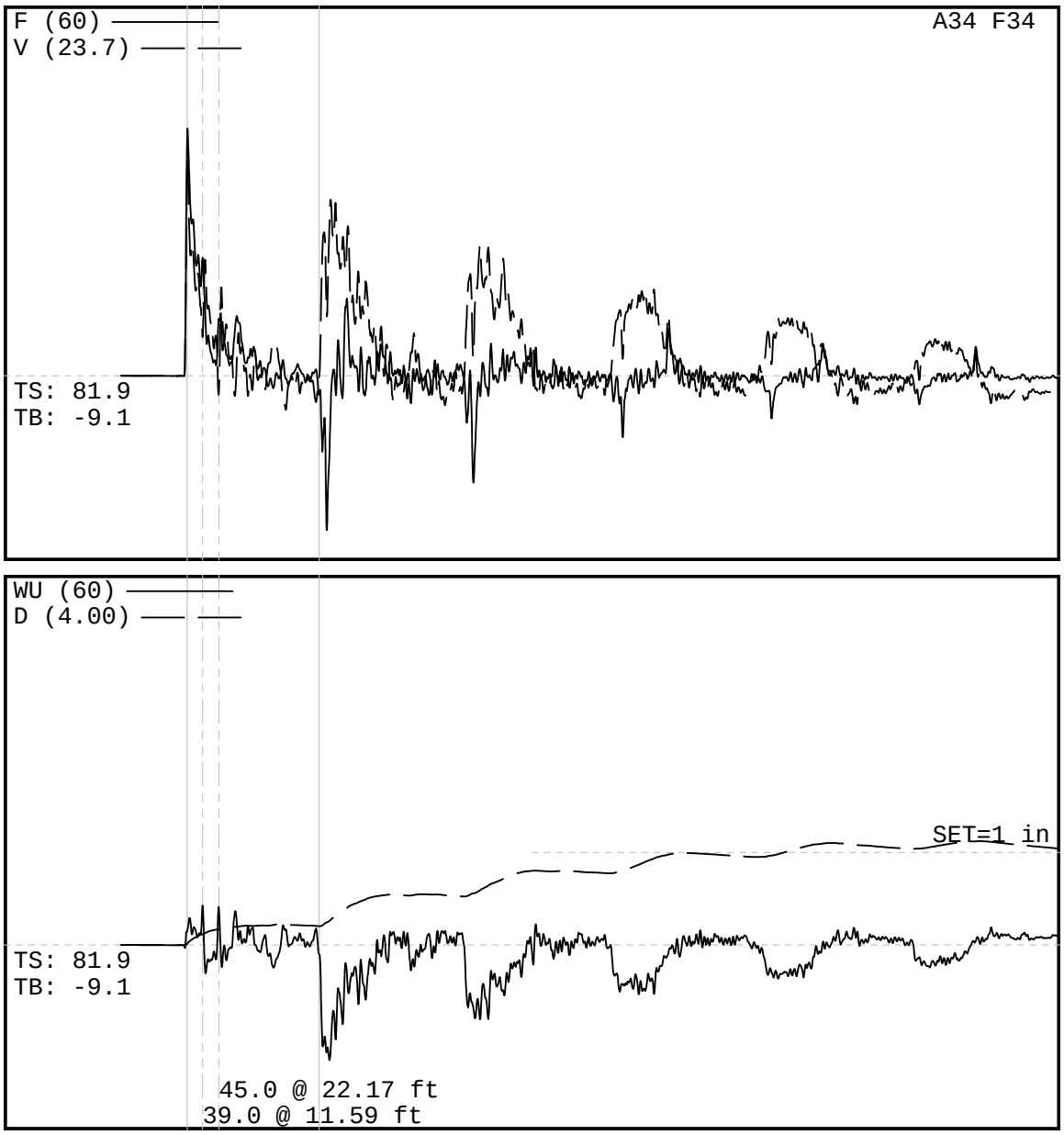
S/N 327443

(NWJ Rod – Mud Rotary)



**Thompson Engineering's CME 550X (S/N 327443)**

Thompson Engineering SPT Calibration CME 550X (SN 327443) - 68.5 to 70.0 ft




*Project Information*

PROJECT: Thompson Engineering SPT Calibratic
PILE NAME: CME 550X (SN 327443) - 68.5 to 7
DESCR: NWJ Rod - Mud Rotary
OPERATOR: MBP
FILE: CME 550X (SN 327443) - 68.5 to 70.0 ft
9/28/2016 9:26:10 AM
Blow Number 1

*Pile Properties*

| | | |
|---|---|---|
| LE | 86.00 | ft |
| AR | 1.42 | in^2 |
| EM | 30000 | ksi |
| SP | 0.492 | k/ft3 |
| WS | 16807.9 | f/s |
| EA/C | 2.5 | ksec/ft |
| 2L/C | 10.24 | ms |
| JC | | [] |
| LP | 68.60 | ft |

*Quantity Results*

| | | |
|---|---|---|
| CSX | 28.23 | ksi |
| CSI f | 28.76 | ksi |
| EMX | 0.3 | k-ft |
| ETR | 86.1 | (%) |
| BPM | 1.9 | bpm |
| FMX | 40 | kips |
| VMX | 13.9 | f/s |
| QNV | 0.00 | [] |
| QNV | 0.00 | [] |

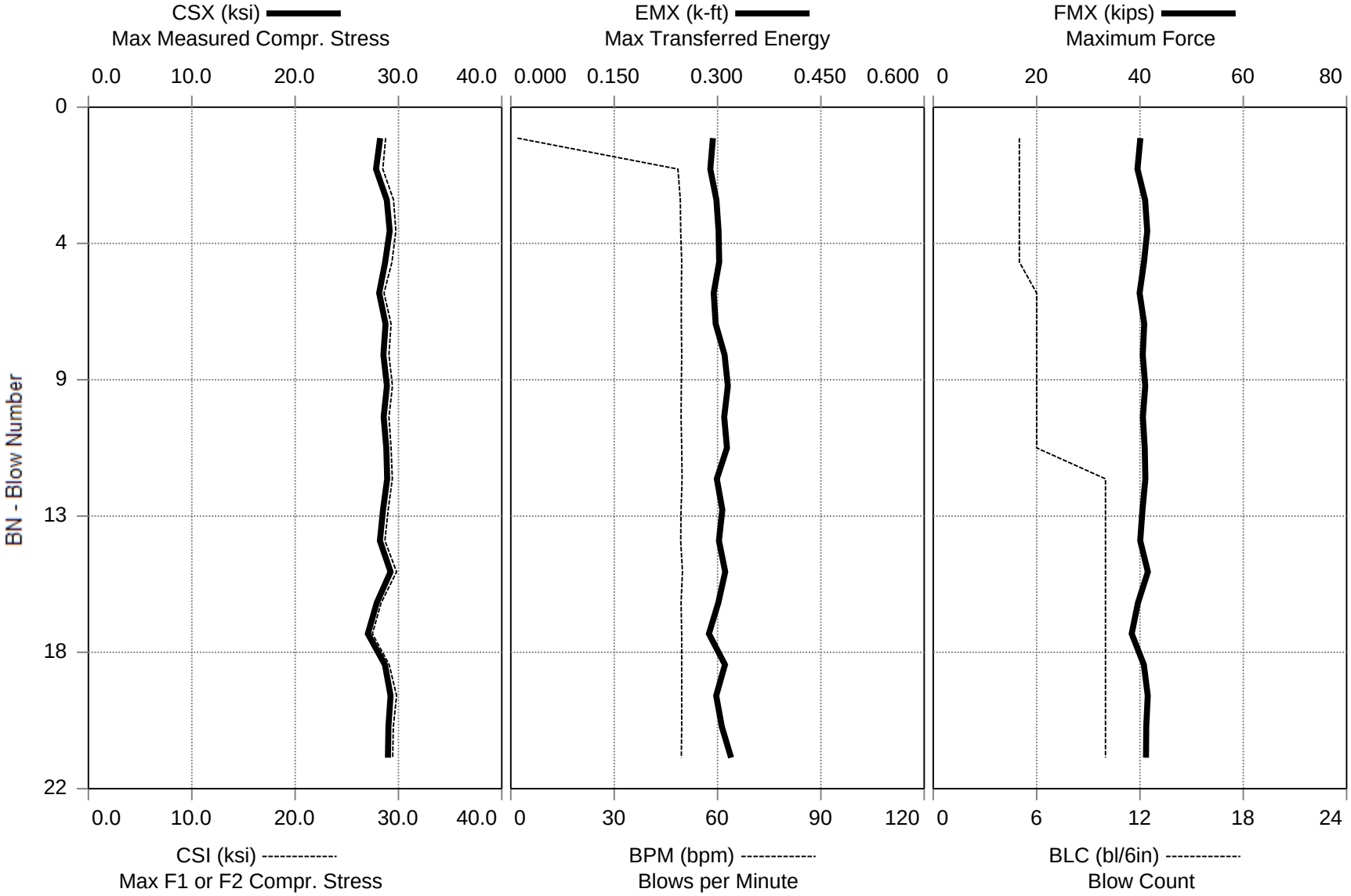
*Sensors*

F3: [413 NWJ-2] 213.94 (1)
F4: [413 NWJ-1] 212.28 (1)
A3: [K4676] 390 mv/5000g's (1)
A4: [K4120] 388 mv/5000g's (1)
CLIP: OK

Nagy Engineers, Inc. - PDIPLOT2 Ver 2016.1.56.1 - Case Method & iCAP® Results

Printed: 29-September-2016 Test started: 28-September-2016

Thompson Engineering SPT Calibration - CME 550X (SN 327443) - 68.5 to 70.0 ft - NWJ Rod - Mud Rotary



Thompson Engineering SPT Calibration - CME 550X (SN 327443) - 68.5 to 70.0 ft NWJ Rod - Mud Rotary
OP: MBP Date: 28-September-2016

AR: 1.42 in² SP: 0.492 k/ft³
LE: 86.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress FMX: Maximum Force
CSI: Max F1 or F2 Compr. Stress ETR: Energy Transfer Ratio
EMX: Max Transferred Energy VMX: Maximum Velocity
BPM: Blows per Minute

| BL# | Depth ft | BLC bl/6in | TYPE | CSX ksi | CSI ksi | EMX k-ft | BPM bpm | FMX kips | ETR (%) | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 69.00 | 5 | AV5 | 28.6 | 29.2 | 0.297 | 39.7 | 41 | 84.9 | 14.1 |
| | | | MAX | 29.2 | 29.7 | 0.302 | 49.6 | 41 | 86.4 | 14.3 |
| 11 | 69.50 | 6 | AV6 | 28.6 | 29.1 | 0.307 | 49.5 | 41 | 87.6 | 14.3 |
| | | | MAX | 28.9 | 29.4 | 0.315 | 49.6 | 41 | 90.0 | 14.4 |
| 21 | 70.00 | 10 | AV10 | 28.6 | 29.1 | 0.304 | 49.6 | 41 | 86.9 | 14.4 |
| | | | MAX | 29.2 | 29.8 | 0.320 | 49.8 | 42 | 91.4 | 14.7 |
| | | | Average | 28.6 | 29.1 | 0.303 | 47.2 | 41 | 86.6 | 14.3 |
| | | | Maximum | 29.2 | 29.8 | 0.320 | 49.8 | 42 | 91.4 | 14.7 |

Total number of blows analyzed: 21

BL# Sensors

1-21 F3: [413 NWJ-2] 213.9 (1.00); F4: [413 NWJ-1] 212.3 (1.00); A3: [K4676] 390.0 (1.00); A4: [K4120] 388.0 (1.00)

Time Summary

Drive 24 seconds 9:26 AM - 9:26 AM BN 1 - 21

Thompson Engineering SPT Calibration - CME 550X (SN 327443) - 68.5 to 70.0 ft NWJ Rod - Mud Rotary
OP: MBP Date: 28-September-2016

AR: 1.42 in² SP: 0.492 k/ft³
LE: 86.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|
| 6 | 69.08 | 6 | 28.1 | 28.6 | 0.294 | 84.1 | 49.5 | 40 | 13.9 |
| 7 | 69.17 | 6 | 28.7 | 29.3 | 0.297 | 84.9 | 49.5 | 41 | 14.3 |
| 8 | 69.25 | 6 | 28.5 | 29.1 | 0.310 | 88.6 | 49.6 | 41 | 14.3 |
| 9 | 69.33 | 6 | 28.9 | 29.4 | 0.315 | 90.0 | 49.5 | 41 | 14.4 |
| 10 | 69.42 | 6 | 28.6 | 29.1 | 0.310 | 88.5 | 49.4 | 41 | 14.3 |
| 11 | 69.50 | 6 | 28.8 | 29.3 | 0.314 | 89.6 | 49.6 | 41 | 14.4 |
| 12 | 69.55 | 10 | 28.9 | 29.4 | 0.299 | 85.4 | 49.7 | 41 | 14.5 |
| 13 | 69.60 | 10 | 28.5 | 29.0 | 0.307 | 87.7 | 49.4 | 40 | 14.3 |
| 14 | 69.65 | 10 | 28.2 | 28.7 | 0.302 | 86.3 | 49.3 | 40 | 14.3 |
| 15 | 69.70 | 10 | 29.2 | 29.8 | 0.311 | 88.9 | 49.8 | 42 | 14.7 |
| 16 | 69.75 | 10 | 27.9 | 28.3 | 0.301 | 86.0 | 49.4 | 40 | 13.9 |
| 17 | 69.80 | 10 | 27.0 | 27.5 | 0.287 | 82.1 | 49.6 | 38 | 13.6 |
| 18 | 69.85 | 10 | 28.7 | 29.1 | 0.311 | 88.8 | 49.6 | 41 | 14.3 |
| 19 | 69.90 | 10 | 29.2 | 29.8 | 0.298 | 85.1 | 49.6 | 42 | 14.7 |
| 20 | 69.95 | 10 | 29.0 | 29.5 | 0.306 | 87.5 | 49.6 | 41 | 14.7 |
| 21 | 70.00 | 10 | 29.0 | 29.4 | 0.320 | 91.4 | 49.5 | 41 | 14.6 |
| | | Average | 28.6 | 29.1 | 0.305 | 87.2 | 49.5 | 41 | 14.3 |
| | | Maximum | 29.2 | 29.8 | 0.320 | 91.4 | 49.8 | 42 | 14.7 |

Total number of blows analyzed: 16

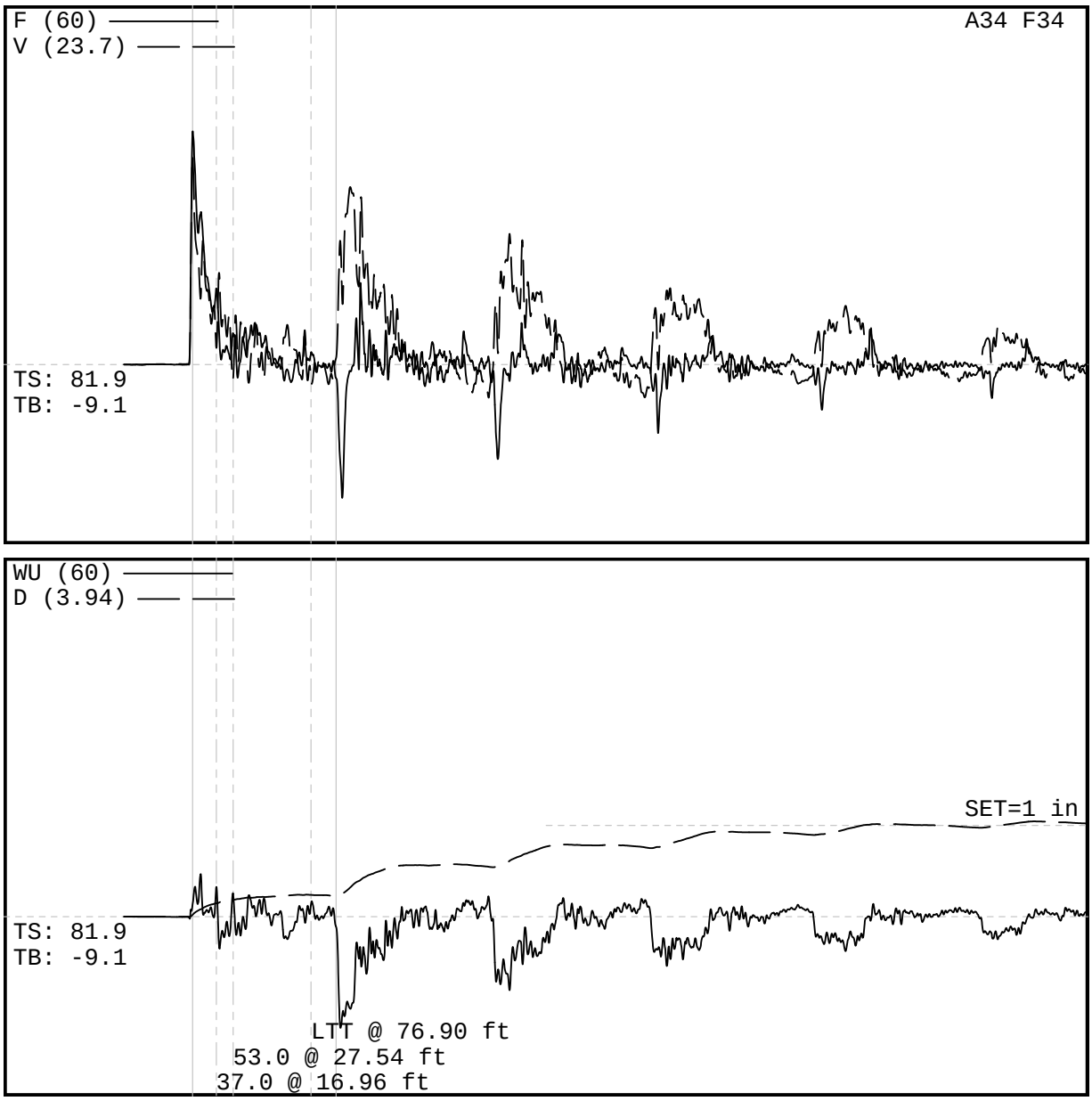
BL# Sensors

6-21 F3: [413 NWJ-2] 213.9 (1.00); F4: [413 NWJ-1] 212.3 (1.00); A3: [K4676] 390.0 (1.00); A4: [K4120] 388.0 (1.00)

Time Summary

Drive 24 seconds 9:26 AM - 9:26 AM BN 1 - 21

Thompson Engineering SPT Calibration CME 550X (SN 327443) - 73.5 to 75.0 ft




## *Project Information*

PROJECT: Thompson Engineering SPT Calibratic
PILE NAME: CME 550X (SN 327443) - 73.5 to 7
DESCR: NWJ Rod - Mud Rotary
OPERATOR: MBP
FILE: CME 550X (SN 327443) - 73.5 to 75.0 ft
9/28/2016 9:46:38 AM
Blow Number 1

## *Pile Properties*

| | | |
|---|---|---|
| LE | 91.00 | ft |
| AR | 1.42 | in^2 |
| EM | 30000 | ksi |
| SP | 0.492 | k/ft3 |
| WS | 16807.9 | f/s |
| EA/C | 2.5 | ksec/ft |
| 2L/C | 10.84 | ms |
| JC | [] | |
| LP | 73.58 | ft |

## *Quantity Results*

| | | |
|---|---|---|
| CSX | 27.44 | ksi |
| CSI f | 27.98 | ksi |
| EMX | 0.3 | k-ft |
| ETR | 87.6 | (%) |
| BPM | 1.9 | bpm |
| FMX | 39 | kips |
| VMX | 13.8 | f/s |
| QNV | 0.00 | [] |
| QNV | 0.00 | [] |

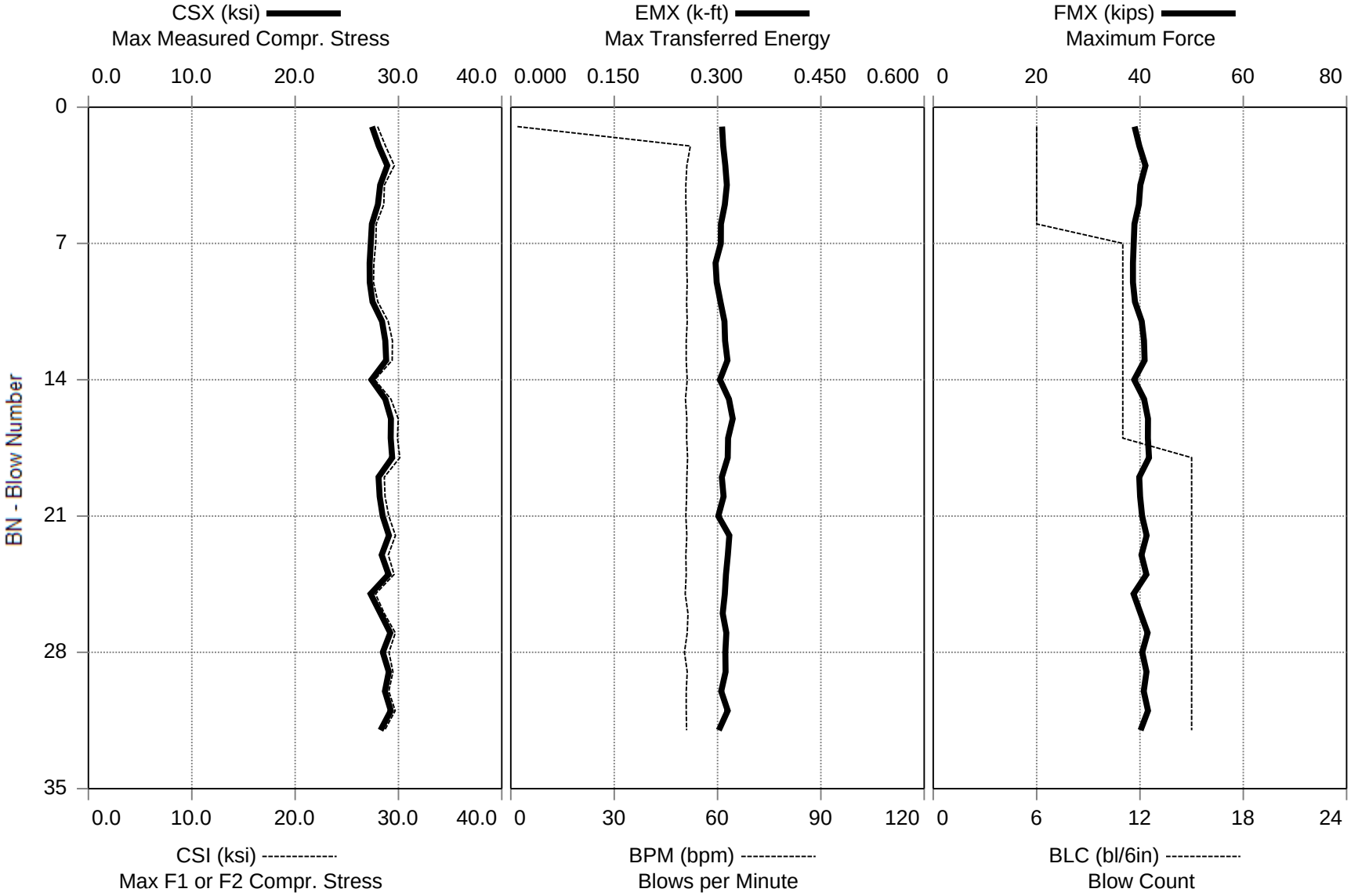
## *Sensors*

F3: [413 NWJ-2] 213.94 (1)
F4: [413 NWJ-1] 212.28 (1)
A3: [K4676] 390 mv/5000g's (1)
A4: [K4120] 388 mv/5000g's (1)
CLIP: OK

Nagy Engineers, Inc. - PDIPLOT2 Ver 2016.1.56.1 - Case Method & iCAP® Results

Printed: 29-September-2016 Test started: 28-September-2016

Thompson Engineering SPT Calibration - CME 550X (SN 327443) - 73.5 to 75.0 ft - NWJ Rod - Mud Rotary



Thompson Engineering SPT Calibration - CME 550X (SN 327443) - 73.5 to 75.0 ft NWJ Rod - Mud Rotary
OP: MBP Date: 28-September-2016

AR: 1.42 in² SP: 0.492 k/ft³
LE: 91.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | TYPE | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|---|
| 6 | 74.00 | 6 | AV6 | 28.0 | 28.6 | 0.309 | 88.3 | 43.0 | 40 | 14.2 |
| | | | MAX | 28.9 | 29.6 | 0.313 | 89.6 | 52.1 | 41 | 14.8 |
| 17 | 74.50 | 11 | AV11 | 28.2 | 28.7 | 0.309 | 88.3 | 51.0 | 40 | 14.3 |
| | | | MAX | 29.3 | 30.0 | 0.322 | 92.0 | 51.2 | 42 | 15.0 |
| 32 | 75.00 | 15 | AV15 | 28.6 | 29.1 | 0.310 | 88.6 | 51.0 | 41 | 14.8 |
| | | | MAX | 29.4 | 30.1 | 0.317 | 90.6 | 51.4 | 42 | 15.1 |
| | | | Average | 28.3 | 28.9 | 0.309 | 88.4 | 49.5 | 40 | 14.5 |
| | | | Maximum | 29.4 | 30.1 | 0.322 | 92.0 | 52.1 | 42 | 15.1 |

Total number of blows analyzed: 32

BL# Sensors

1-32 F3: [413 NWJ-2] 213.9 (1.00); F4: [413 NWJ-1] 212.3 (1.00); A3: [K4676] 390.0 (1.00); A4: [K4120] 388.0 (1.00)

Time Summary

Drive 36 seconds 9:46 AM - 9:47 AM BN 1 - 32

Thompson Engineering SPT Calibration - CME 550X (SN 327443) - 73.5 to 75.0 ft NWJ Rod - Mud Rotary
OP: MBP Date: 28-September-2016

AR: 1.42 in² SP: 0.492 k/ft³
LE: 91.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|
| 7 | 74.05 | 11 | 27.3 | 27.8 | 0.305 | 87.1 | 51.1 | 39 | 13.8 |
| 8 | 74.09 | 11 | 27.2 | 27.6 | 0.297 | 84.9 | 51.0 | 39 | 13.4 |
| 9 | 74.14 | 11 | 27.2 | 27.6 | 0.299 | 85.3 | 51.2 | 39 | 13.6 |
| 10 | 74.18 | 11 | 27.5 | 28.0 | 0.304 | 86.9 | 51.0 | 39 | 14.0 |
| 11 | 74.23 | 11 | 28.4 | 29.0 | 0.310 | 88.6 | 51.2 | 40 | 14.7 |
| 12 | 74.27 | 11 | 28.7 | 29.4 | 0.311 | 88.8 | 50.9 | 41 | 14.7 |
| 13 | 74.32 | 11 | 28.8 | 29.4 | 0.314 | 89.8 | 50.9 | 41 | 14.8 |
| 14 | 74.36 | 11 | 27.4 | 27.7 | 0.304 | 86.7 | 51.2 | 39 | 13.7 |
| 15 | 74.41 | 11 | 28.7 | 29.3 | 0.317 | 90.5 | 50.7 | 41 | 14.9 |
| 16 | 74.45 | 11 | 29.3 | 30.0 | 0.322 | 92.0 | 51.1 | 42 | 15.0 |
| 17 | 74.50 | 11 | 29.2 | 29.9 | 0.315 | 90.1 | 51.0 | 42 | 15.0 |
| 18 | 74.53 | 15 | 29.4 | 30.1 | 0.315 | 90.0 | 51.3 | 42 | 15.1 |
| 19 | 74.57 | 15 | 28.1 | 28.6 | 0.306 | 87.5 | 51.1 | 40 | 14.4 |
| 20 | 74.60 | 15 | 28.2 | 28.7 | 0.309 | 88.2 | 51.0 | 40 | 14.8 |
| 21 | 74.63 | 15 | 28.5 | 29.1 | 0.301 | 86.0 | 50.8 | 40 | 14.7 |
| 22 | 74.67 | 15 | 29.1 | 29.7 | 0.317 | 90.6 | 51.1 | 41 | 15.0 |
| 23 | 74.70 | 15 | 28.4 | 29.0 | 0.315 | 90.0 | 50.8 | 40 | 14.7 |
| 24 | 74.73 | 15 | 29.0 | 29.6 | 0.312 | 89.2 | 50.9 | 41 | 15.0 |
| 25 | 74.77 | 15 | 27.3 | 27.8 | 0.311 | 88.7 | 50.6 | 39 | 14.0 |
| 26 | 74.80 | 15 | 28.3 | 28.6 | 0.307 | 87.8 | 51.4 | 40 | 14.7 |
| 27 | 74.83 | 15 | 29.2 | 29.7 | 0.313 | 89.4 | 51.2 | 41 | 15.0 |
| 28 | 74.87 | 15 | 28.5 | 29.1 | 0.311 | 88.9 | 50.4 | 40 | 14.7 |
| 29 | 74.90 | 15 | 29.1 | 29.5 | 0.312 | 89.0 | 51.2 | 41 | 15.1 |
| 30 | 74.93 | 15 | 28.7 | 29.1 | 0.305 | 87.2 | 50.9 | 41 | 14.8 |
| 31 | 74.97 | 15 | 29.3 | 29.7 | 0.315 | 89.9 | 50.9 | 42 | 15.0 |
| 32 | 75.00 | 15 | 28.3 | 28.7 | 0.302 | 86.3 | 51.0 | 40 | 14.6 |
| | | Average | 28.4 | 28.9 | 0.310 | 88.4 | 51.0 | 40 | 14.6 |
| | | Maximum | 29.4 | 30.1 | 0.322 | 92.0 | 51.4 | 42 | 15.1 |

Total number of blows analyzed: 26

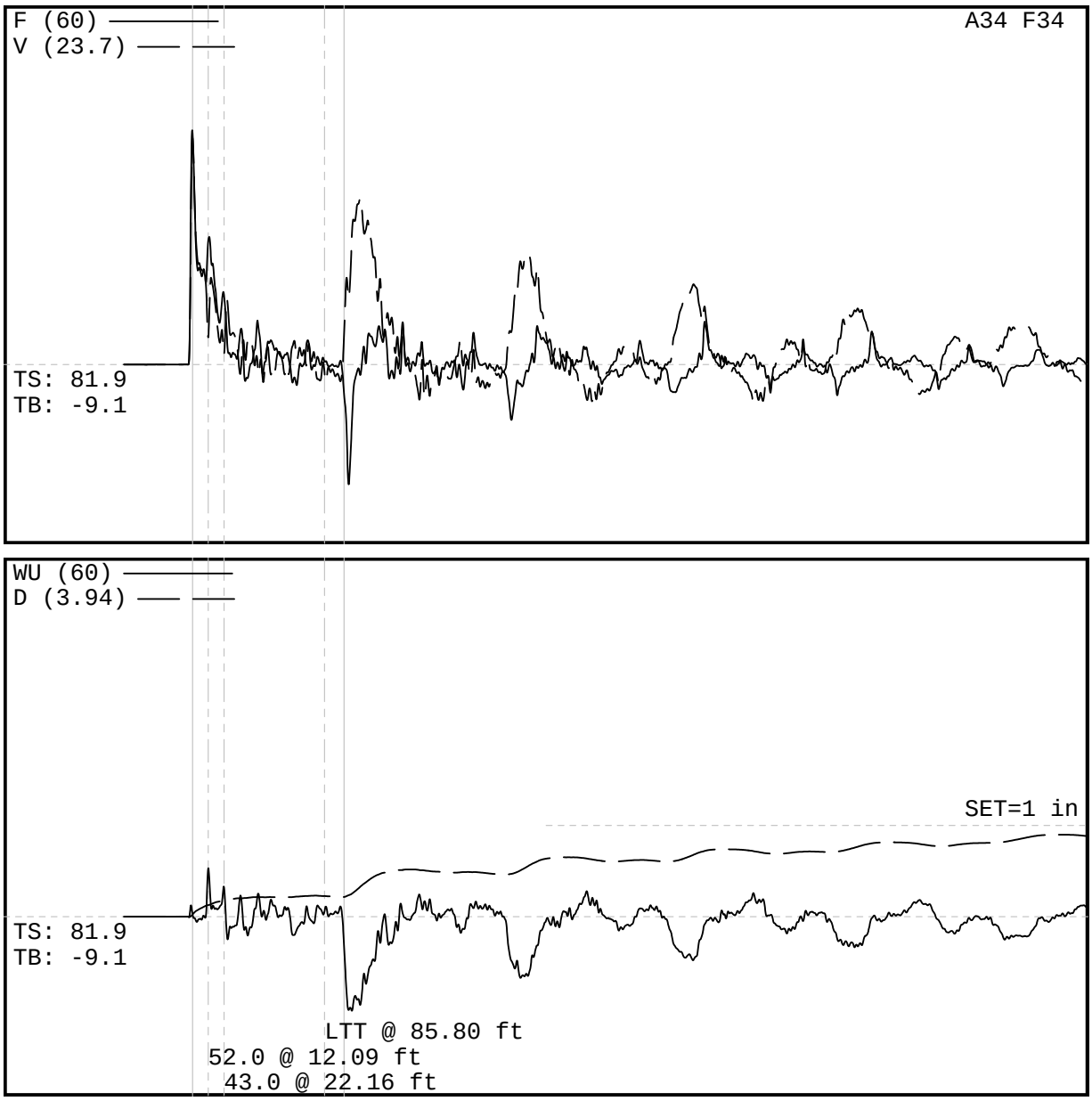
BL# Sensors

7-32 F3: [413 NWJ-2] 213.9 (1.00); F4: [413 NWJ-1] 212.3 (1.00); A3: [K4676] 390.0 (1.00); A4: [K4120] 388.0 (1.00)

Time Summary

Drive 36 seconds 9:46 AM - 9:47 AM BN 1 - 32

Thompson Engineering SPT Calibration CME 550X (SN 327443) - 78.5 to 80.0 ft




*Project Information*

PROJECT: Thompson Engineering SPT Calibratic
PILE NAME: CME 550X (SN 327443) - 78.5 to 8
DESCR: NWJ Rod - Mud Rotary
OPERATOR: MBP
FILE: CME 550X (SN 327443) - 78.5 to 80.0 ft
9/28/2016 10:08:12 AM
Blow Number 1

*Pile Properties*

| | | |
|---|---|---|
| LE | 96.00 | ft |
| AR | 1.42 | in^2 |
| EM | 30000 | ksi |
| SP | 0.492 | k/ft3 |
| WS | 16807.9 | f/s |
| EA/C | 2.5 | ksec/ft |
| 2L/C | 11.44 | ms |
| JC | [] | |
| LP | 78.56 | ft |

*Quantity Results*

| | | |
|---|---|---|
| CSX | 27.57 | ksi |
| CSI f | 28.06 | ksi |
| EMX | 0.3 | k-ft |
| ETR | 89.0 | (%) |
| BPM | 1.9 | bpm |
| FMX | 39 | kips |
| VMX | 14.9 | f/s |
| QNV | 0.00 | [] |
| QNV | 0.00 | [] |

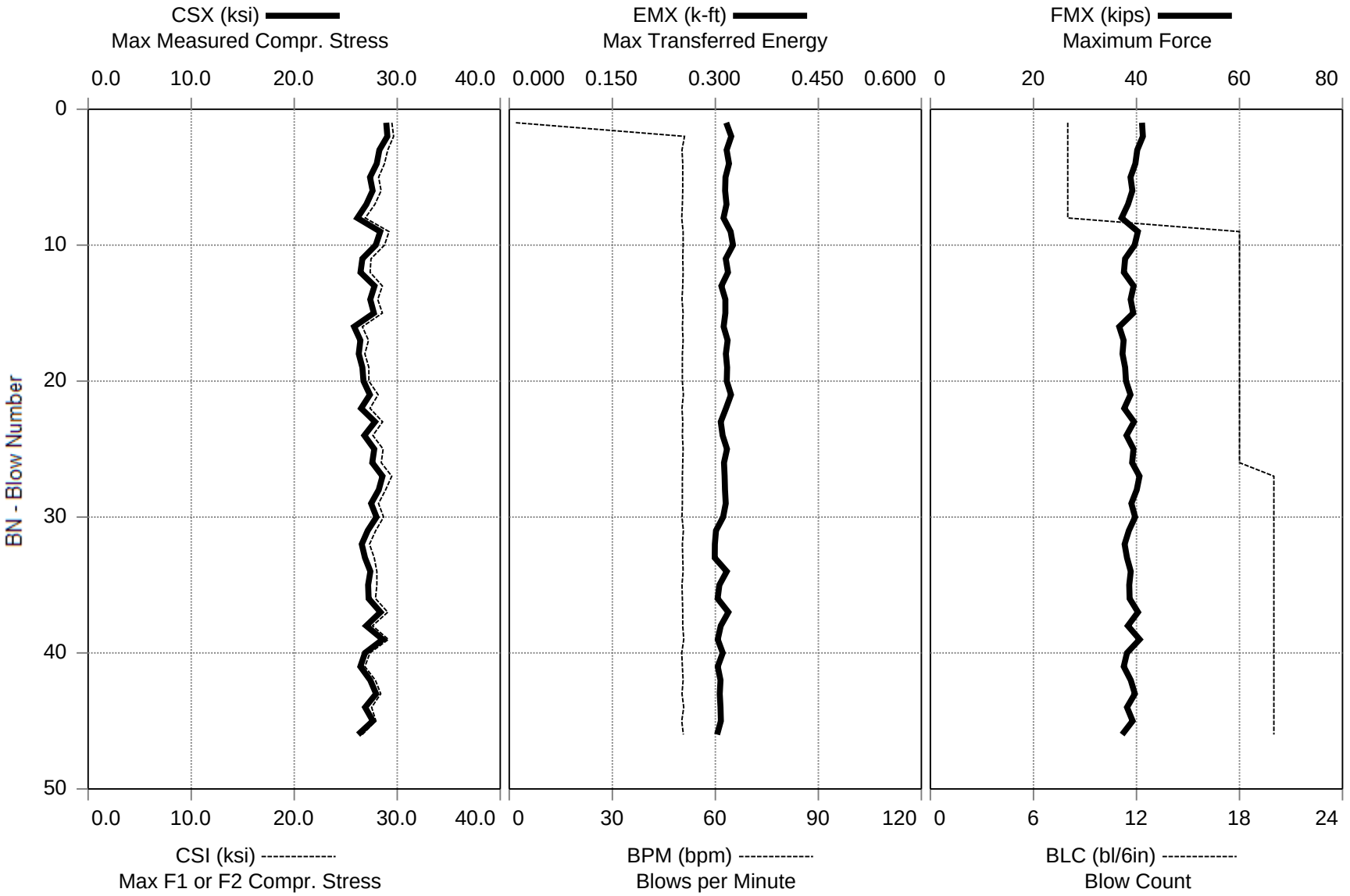
*Sensors*

F3: [413 NWJ-2] 213.94 (1)
F4: [413 NWJ-1] 212.28 (1)
A3: [K4676] 390 mv/5000g's (1)
A4: [K4120] 388 mv/5000g's (1)
CLIP: OK

Nagy Engineers, Inc. - PDIPLOT2 Ver 2016.1.56.1 - Case Method & iCAP® Results

Printed: 29-September-2016 Test started: 28-September-2016

Thompson Engineering SPT Calibration - CME 550X (SN 327443) - 78.5 to 80.0 ft - NWJ Rod - Mud Rotary



Thompson Engineering SPT Calibration - CME 550X (SN 327443) - 78.5 to 80.0 ft NWJ Rod - Mud Rotary
OP: MBP Date: 28-September-2016

AR: 1.42 in² SP: 0.492 k/ft³
LE: 96.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | TYPE | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 79.00 | 8 | AV8 | 27.8 | 28.5 | 0.317 | 90.4 | 44.4 | 39 | 15.6 |
| | | | MAX | 29.0 | 29.7 | 0.323 | 92.3 | 51.0 | 41 | 15.9 |
| 26 | 79.50 | 18 | AV18 | 27.1 | 27.9 | 0.316 | 90.2 | 50.5 | 38 | 16.1 |
| | | | MAX | 28.4 | 29.2 | 0.326 | 93.1 | 50.7 | 40 | 16.6 |
| 46 | 80.00 | 20 | AV20 | 27.4 | 28.0 | 0.308 | 87.9 | 50.5 | 39 | 15.9 |
| | | | MAX | 28.6 | 29.5 | 0.319 | 91.1 | 50.8 | 41 | 17.0 |
| | | | Average | 27.3 | 28.1 | 0.312 | 89.3 | 49.4 | 39 | 15.9 |
| | | | Maximum | 29.0 | 29.7 | 0.326 | 93.1 | 51.0 | 41 | 17.0 |

Total number of blows analyzed: 46

BL# Sensors

1-46 F3: [413 NWJ-2] 213.9 (1.00); F4: [413 NWJ-1] 212.3 (1.00); A3: [K4676] 390.0 (1.00); A4: [K4120] 388.0 (1.00)

Time Summary

Drive 53 seconds 10:08 AM - 10:09 AM BN 1 - 46

Thompson Engineering SPT Calibration - CME 550X (SN 327443) - 78.5 to 80.0 ft NWJ Rod - Mud Rotary
OP: MBP Date: 28-September-2016

AR: 1.42 in² SP: 0.492 k/ft³
LE: 96.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|
| 9 | 79.03 | 18 | 28.4 | 29.2 | 0.322 | 92.0 | 50.6 | 40 | 16.0 |
| 10 | 79.06 | 18 | 27.9 | 28.8 | 0.326 | 93.1 | 50.6 | 40 | 16.5 |
| 11 | 79.08 | 18 | 26.6 | 27.4 | 0.315 | 90.1 | 50.5 | 38 | 15.8 |
| 12 | 79.11 | 18 | 26.4 | 27.4 | 0.318 | 91.0 | 50.6 | 38 | 16.5 |
| 13 | 79.14 | 18 | 27.8 | 28.6 | 0.309 | 88.2 | 50.5 | 39 | 16.3 |
| 14 | 79.17 | 18 | 27.4 | 28.1 | 0.315 | 89.9 | 50.3 | 39 | 15.1 |
| 15 | 79.19 | 18 | 27.7 | 28.5 | 0.315 | 89.9 | 50.6 | 39 | 16.5 |
| 16 | 79.22 | 18 | 25.8 | 26.6 | 0.312 | 89.2 | 50.4 | 37 | 15.2 |
| 17 | 79.25 | 18 | 26.4 | 27.2 | 0.318 | 90.8 | 50.6 | 38 | 16.1 |
| 18 | 79.28 | 18 | 26.3 | 26.9 | 0.315 | 90.1 | 50.4 | 37 | 16.0 |
| 19 | 79.31 | 18 | 26.6 | 27.2 | 0.317 | 90.6 | 50.4 | 38 | 16.4 |
| 20 | 79.33 | 18 | 26.7 | 27.2 | 0.317 | 90.5 | 50.4 | 38 | 16.1 |
| 21 | 79.36 | 18 | 27.3 | 28.1 | 0.323 | 92.2 | 50.7 | 39 | 16.6 |
| 22 | 79.39 | 18 | 26.5 | 27.4 | 0.315 | 90.1 | 50.3 | 38 | 16.5 |
| 23 | 79.42 | 18 | 27.8 | 28.6 | 0.308 | 87.9 | 50.5 | 40 | 16.4 |
| 24 | 79.44 | 18 | 26.8 | 27.6 | 0.311 | 88.7 | 50.4 | 38 | 15.3 |
| 25 | 79.47 | 18 | 27.8 | 28.6 | 0.317 | 90.5 | 50.6 | 39 | 16.1 |
| 26 | 79.50 | 18 | 27.6 | 28.4 | 0.313 | 89.3 | 50.5 | 39 | 16.2 |
| 27 | 79.53 | 20 | 28.6 | 29.5 | 0.313 | 89.5 | 50.4 | 41 | 16.2 |
| 28 | 79.55 | 20 | 28.2 | 28.9 | 0.314 | 89.7 | 50.4 | 40 | 16.5 |
| 29 | 79.58 | 20 | 27.5 | 28.2 | 0.315 | 90.0 | 50.4 | 39 | 16.1 |
| 30 | 79.60 | 20 | 28.0 | 28.7 | 0.311 | 88.9 | 50.3 | 40 | 16.9 |
| 31 | 79.63 | 20 | 27.1 | 27.9 | 0.301 | 86.0 | 50.7 | 39 | 16.5 |
| 32 | 79.65 | 20 | 26.6 | 27.3 | 0.299 | 85.5 | 50.4 | 38 | 17.0 |
| 33 | 79.68 | 20 | 26.9 | 27.8 | 0.299 | 85.5 | 50.5 | 38 | 16.6 |
| 34 | 79.70 | 20 | 27.4 | 28.0 | 0.317 | 90.4 | 50.6 | 39 | 15.9 |
| 35 | 79.73 | 20 | 27.2 | 28.0 | 0.306 | 87.4 | 50.3 | 39 | 16.5 |
| 36 | 79.75 | 20 | 27.2 | 27.9 | 0.303 | 86.7 | 50.4 | 39 | 16.5 |
| 37 | 79.78 | 20 | 28.4 | 29.1 | 0.319 | 91.1 | 50.5 | 40 | 16.3 |
| 38 | 79.80 | 20 | 27.0 | 27.6 | 0.308 | 87.9 | 50.5 | 38 | 15.8 |
| 39 | 79.83 | 20 | 28.6 | 29.1 | 0.303 | 86.7 | 50.8 | 41 | 15.5 |
| 40 | 79.85 | 20 | 26.9 | 27.4 | 0.311 | 88.8 | 50.2 | 38 | 15.2 |
| 41 | 79.88 | 20 | 26.4 | 26.9 | 0.303 | 86.7 | 50.4 | 38 | 14.5 |
| 42 | 79.90 | 20 | 27.4 | 27.9 | 0.308 | 87.9 | 50.6 | 39 | 14.9 |
| 43 | 79.93 | 20 | 27.9 | 28.4 | 0.306 | 87.5 | 50.3 | 40 | 15.2 |
| 44 | 79.95 | 20 | 26.9 | 27.5 | 0.308 | 87.9 | 50.8 | 38 | 15.7 |
| 45 | 79.98 | 20 | 27.6 | 27.9 | 0.308 | 88.0 | 50.2 | 39 | 15.1 |
| 46 | 80.00 | 20 | 26.2 | 26.6 | 0.303 | 86.4 | 50.7 | 37 | 14.4 |
| | | Average | 27.3 | 28.0 | 0.312 | 89.0 | 50.5 | 39 | 16.0 |
| | | Maximum | 28.6 | 29.5 | 0.326 | 93.1 | 50.8 | 41 | 17.0 |

Total number of blows analyzed: 38

BL# Sensors

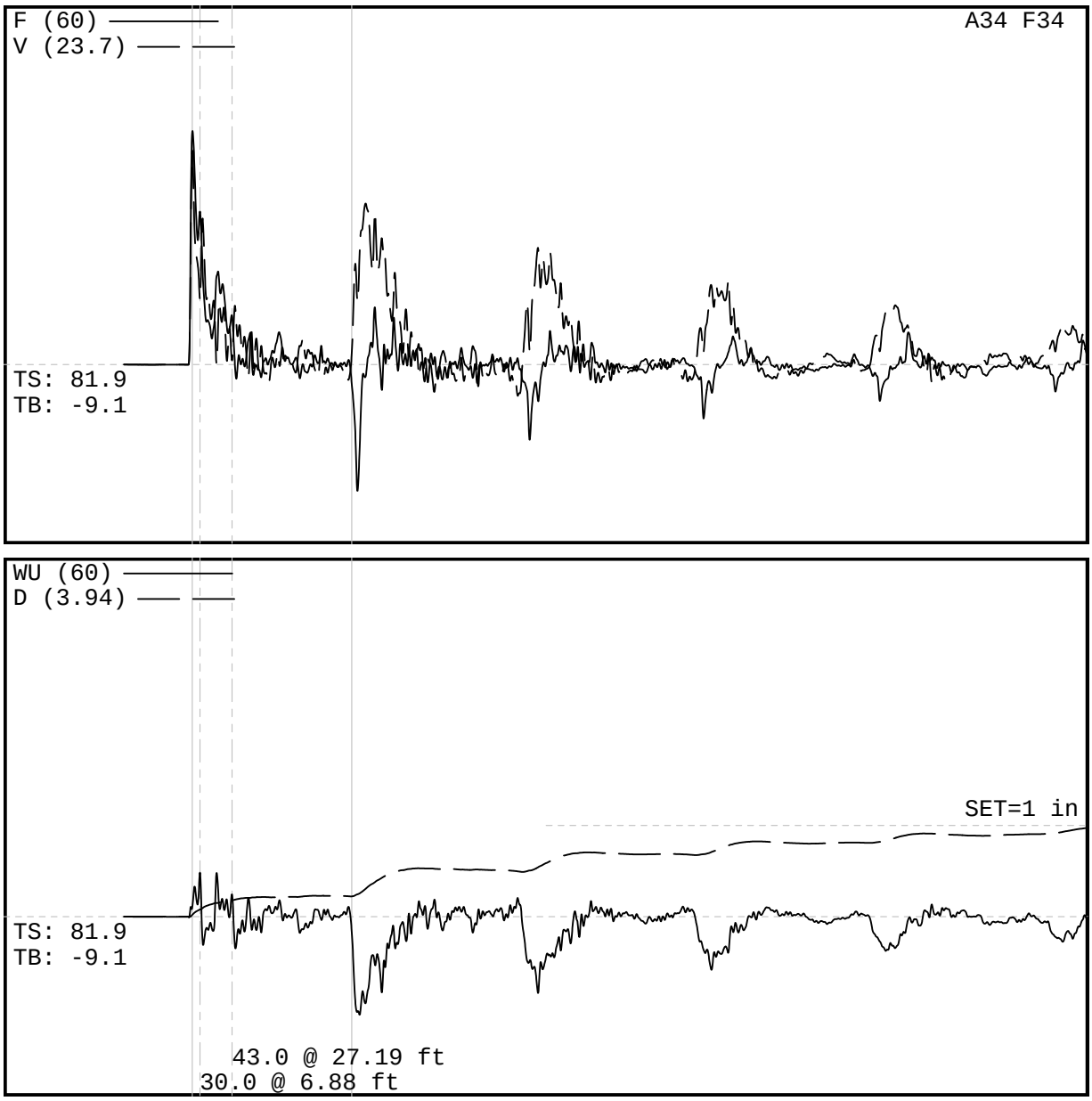
9-46 F3: [413 NWJ-2] 213.9 (1.00); F4: [413 NWJ-1] 212.3 (1.00); A3: [K4676] 390.0 (1.00); A4: [K4120] 388.0 (1.00)

Thompson Engineering SPT Calibration - CME 550X (SN 327443) - 78.5 to 80.0 ft NWJ Rod - Mud Rotary
OP: MBP Date: 28-September-2016

Time Summary

Drive 53 seconds 10:08 AM - 10:09 AM BN 1 - 46

Thompson Engineering SPT Calibration CME 550X (SN 327443) - 83.5 to 85.0 ft




*Project Information*

PROJECT: Thompson Engineering SPT Calibratic
PILE NAME: CME 550X (SN 327443) - 83.5 to 8
DESCR: NWJ Rod - Mud Rotary
OPERATOR: MBP
FILE: CME 550X (SN 327443) - 83.5 to 85.0 ft
9/28/2016 10:33:36 AM
Blow Number 1

*Pile Properties*

| | | |
|---|---|---|
| LE | 101.00 | ft |
| AR | 1.42 | in^2 |
| EM | 30000 | ksi |
| SP | 0.492 | k/ft3 |
| WS | 16807.9 | f/s |
| EA/C | 2.5 | ksec/ft |
| 2L/C | 12.04 | ms |
| JC | | [] |
| LP | 83.55 | ft |

*Quantity Results*

| | | |
|---|---|---|
| CSX | 27.50 | ksi |
| CSI f | 27.93 | ksi |
| EMX | 0.3 | k-ft |
| ETR | 85.0 | (%) |
| BPM | 1.9 | bpm |
| FMX | 39 | kips |
| VMX | 14.1 | f/s |
| QNV | 0.00 | [] |
| QNV | 0.00 | [] |

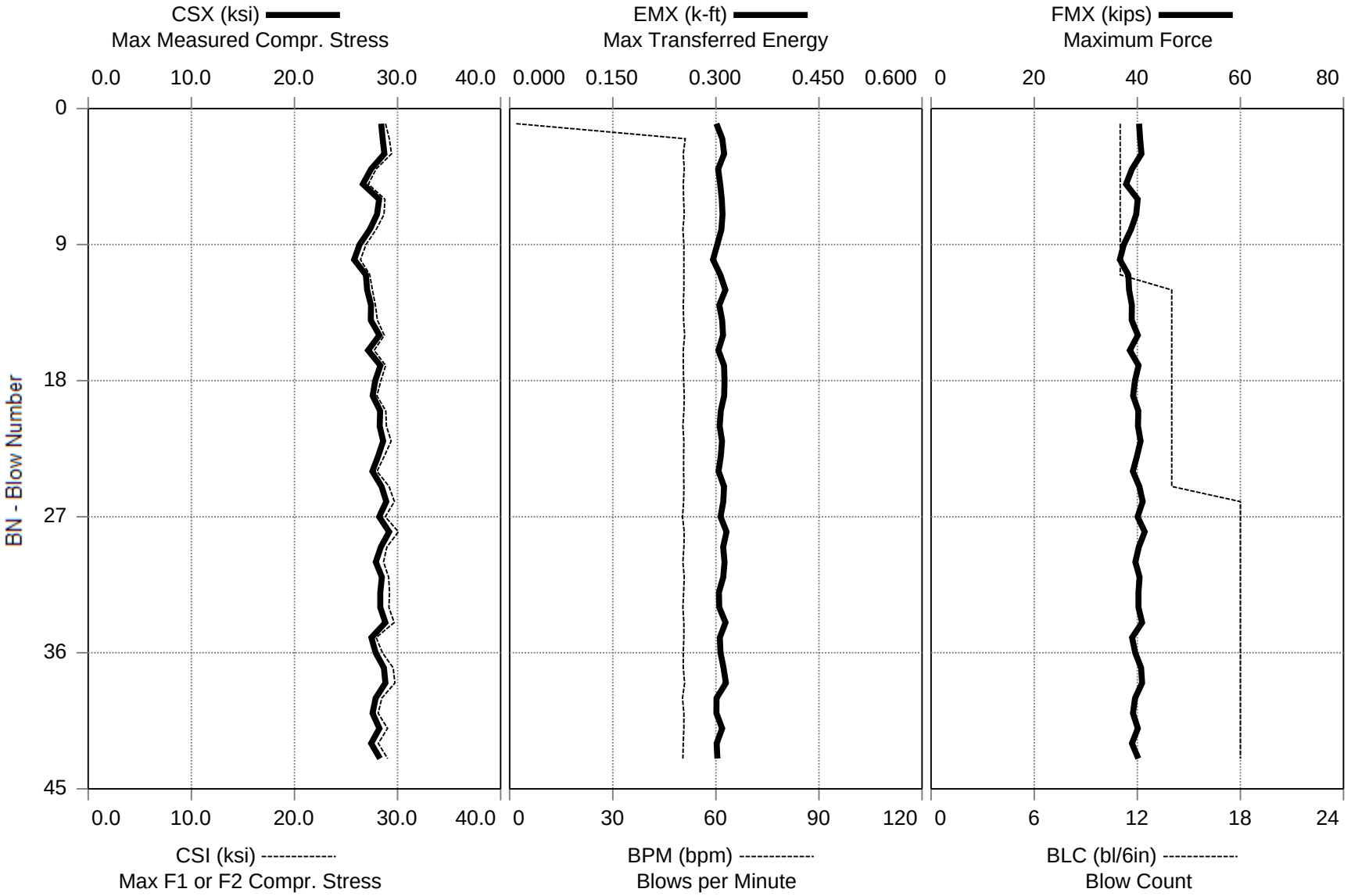
*Sensors*

F3: [413 NWJ-2] 213.94 (1)
F4: [413 NWJ-1] 212.28 (1)
A3: [K4676] 390 mv/5000g's (1)
A4: [K4120] 388 mv/5000g's (1)
CLIP: OK

Nagy Engineers, Inc. - PDIPLOT2 Ver 2016.1.56.1 - Case Method & iCAP® Results

Printed: 29-September-2016 Test started: 28-September-2016

Thompson Engineering SPT Calibration - CME 550X (SN 327443) - 83.5 to 85.0 ft - NWJ Rod - Mud Rotary



Thompson Engineering SPT Calibration - CME 550X (SN 327443) - 83.5 to 85.0 ft NWJ Rod - Mud Rotary
OP: MBP Date: 28-September-2016

AR: 1.42 in² SP: 0.492 k/ft³
LE: 101.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | TYPE | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 84.00 | 11 | AV11 | 27.5 | 28.1 | 0.306 | 87.3 | 46.2 | 39 | 14.2 |
| | | | MAX | 28.7 | 29.4 | 0.312 | 89.1 | 51.1 | 41 | 15.0 |
| 25 | 84.50 | 14 | AV14 | 27.9 | 28.4 | 0.309 | 88.2 | 50.6 | 40 | 14.7 |
| | | | MAX | 28.6 | 29.4 | 0.314 | 89.7 | 50.9 | 41 | 15.1 |
| 43 | 85.00 | 18 | AV18 | 28.3 | 29.0 | 0.308 | 88.0 | 50.6 | 40 | 15.0 |
| | | | MAX | 29.2 | 30.1 | 0.316 | 90.2 | 50.9 | 41 | 15.7 |
| | | | Average | 27.9 | 28.6 | 0.308 | 87.9 | 49.5 | 40 | 14.7 |
| | | | Maximum | 29.2 | 30.1 | 0.316 | 90.2 | 51.1 | 41 | 15.7 |

Total number of blows analyzed: 43

BL# Sensors

1-43 F3: [413 NWJ-2] 213.9 (1.00); F4: [413 NWJ-1] 212.3 (1.00); A3: [K4676] 390.0 (1.00); A4: [K4120] 388.0 (1.00)

Time Summary

Drive 49 seconds 10:33 AM - 10:34 AM BN 1 - 43

Thompson Engineering SPT Calibration - CME 550X (SN 327443) - 83.5 to 85.0 ft NWJ Rod - Mud Rotary
OP: MBP Date: 28-September-2016

AR: 1.42 in² SP: 0.492 k/ft³
LE: 101.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|
| 12 | 84.04 | 14 | 27.0 | 27.6 | 0.314 | 89.7 | 50.7 | 38 | 14.0 |
| 13 | 84.07 | 14 | 27.4 | 27.9 | 0.305 | 87.1 | 50.5 | 39 | 14.4 |
| 14 | 84.11 | 14 | 27.4 | 28.0 | 0.309 | 88.3 | 50.6 | 39 | 14.3 |
| 15 | 84.14 | 14 | 28.2 | 28.7 | 0.310 | 88.7 | 50.9 | 40 | 14.8 |
| 16 | 84.18 | 14 | 27.2 | 27.7 | 0.304 | 86.8 | 50.5 | 39 | 14.6 |
| 17 | 84.21 | 14 | 28.3 | 28.8 | 0.312 | 89.1 | 50.5 | 40 | 14.7 |
| 18 | 84.25 | 14 | 27.8 | 28.4 | 0.312 | 89.3 | 50.6 | 40 | 14.9 |
| 19 | 84.29 | 14 | 27.6 | 28.0 | 0.312 | 89.2 | 50.8 | 39 | 14.4 |
| 20 | 84.32 | 14 | 28.3 | 28.9 | 0.307 | 87.7 | 50.7 | 40 | 14.7 |
| 21 | 84.36 | 14 | 28.3 | 28.9 | 0.305 | 87.3 | 50.4 | 40 | 14.8 |
| 22 | 84.39 | 14 | 28.6 | 29.4 | 0.309 | 88.3 | 50.7 | 41 | 15.1 |
| 23 | 84.43 | 14 | 28.1 | 28.7 | 0.307 | 87.7 | 50.6 | 40 | 15.1 |
| 24 | 84.46 | 14 | 27.6 | 28.0 | 0.304 | 86.8 | 50.6 | 39 | 14.4 |
| 25 | 84.50 | 14 | 28.4 | 29.2 | 0.312 | 89.1 | 50.7 | 40 | 15.0 |
| 26 | 84.53 | 18 | 28.9 | 29.7 | 0.311 | 88.8 | 50.6 | 41 | 15.1 |
| 27 | 84.56 | 18 | 28.2 | 28.8 | 0.307 | 87.7 | 50.3 | 40 | 15.0 |
| 28 | 84.58 | 18 | 29.2 | 30.1 | 0.316 | 90.2 | 50.8 | 41 | 15.3 |
| 29 | 84.61 | 18 | 28.4 | 29.0 | 0.311 | 88.7 | 50.7 | 40 | 14.7 |
| 30 | 84.64 | 18 | 27.9 | 28.6 | 0.313 | 89.3 | 50.4 | 40 | 14.7 |
| 31 | 84.67 | 18 | 28.5 | 29.1 | 0.311 | 88.8 | 50.8 | 40 | 15.0 |
| 32 | 84.69 | 18 | 28.3 | 29.2 | 0.304 | 87.0 | 50.6 | 40 | 15.0 |
| 33 | 84.72 | 18 | 28.3 | 29.2 | 0.305 | 87.1 | 50.4 | 40 | 15.0 |
| 34 | 84.75 | 18 | 28.8 | 29.7 | 0.314 | 89.7 | 50.7 | 41 | 15.2 |
| 35 | 84.78 | 18 | 27.5 | 27.9 | 0.306 | 87.3 | 50.7 | 39 | 14.1 |
| 36 | 84.81 | 18 | 27.9 | 28.5 | 0.307 | 87.7 | 50.5 | 40 | 14.6 |
| 37 | 84.83 | 18 | 28.7 | 29.6 | 0.311 | 88.9 | 50.5 | 41 | 15.2 |
| 38 | 84.86 | 18 | 28.8 | 29.7 | 0.315 | 89.9 | 50.9 | 41 | 15.2 |
| 39 | 84.89 | 18 | 27.9 | 28.5 | 0.301 | 86.0 | 50.3 | 40 | 15.1 |
| 40 | 84.92 | 18 | 27.6 | 28.1 | 0.301 | 85.9 | 50.7 | 39 | 14.3 |
| 41 | 84.94 | 18 | 28.2 | 29.0 | 0.309 | 88.3 | 50.7 | 40 | 15.7 |
| 42 | 84.97 | 18 | 27.4 | 28.1 | 0.301 | 86.0 | 50.5 | 39 | 15.1 |
| 43 | 85.00 | 18 | 28.3 | 29.0 | 0.302 | 86.3 | 50.4 | 40 | 15.4 |
| | | Average | 28.1 | 28.8 | 0.308 | 88.1 | 50.6 | 40 | 14.8 |
| | | Maximum | 29.2 | 30.1 | 0.316 | 90.2 | 50.9 | 41 | 15.7 |

Total number of blows analyzed: 32

BL# Sensors

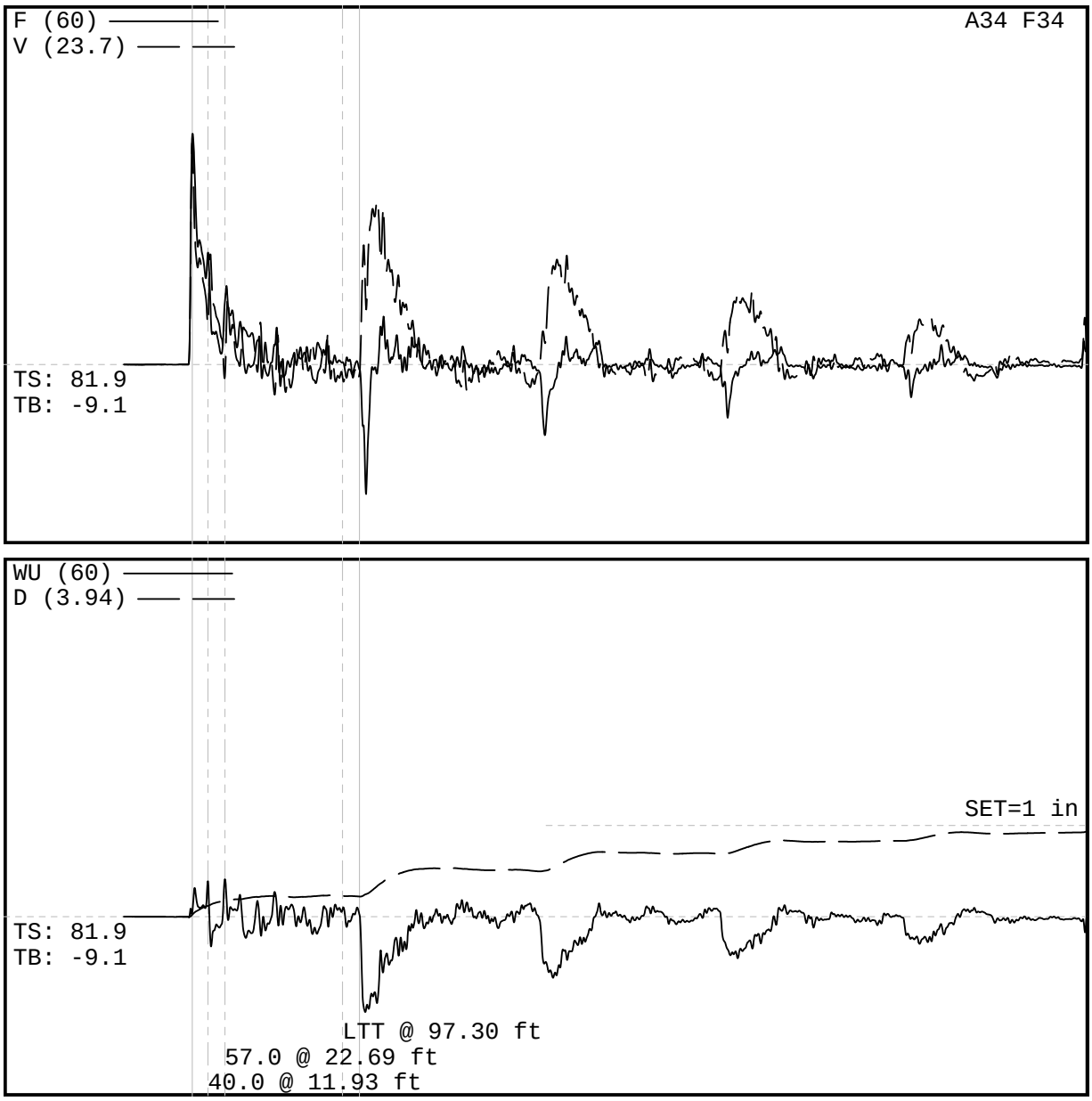
12-43 F3: [413 NWJ-2] 213.9 (1.00); F4: [413 NWJ-1] 212.3 (1.00); A3: [K4676] 390.0 (1.00); A4: [K4120] 388.0 (1.00)

Thompson Engineering SPT Calibration - CME 550X (SN 327443) - 83.5 to 85.0 ft NWJ Rod - Mud Rotary
OP: MBP Date: 28-September-2016

Time Summary

Drive 49 seconds 10:33 AM - 10:34 AM BN 1 - 43

Thompson Engineering SPT Calibration CME 550X (SN 327443) - 88.5 to 90.0 ft




*Project Information*

PROJECT: Thompson Engineering SPT Calibratic
PILE NAME: CME 550X (SN 327443) - 88.5 to 9
DESCR: NWJ Rod - Mud Rotary
OPERATOR: MBP
FILE: CME 550X (SN 327443) - 88.5 to 90.0 ft
9/28/2016 10:51:53 AM
Blow Number 1

*Pile Properties*

| | | |
|---|---|---|
| LE | 106.00 | ft |
| AR | 1.42 | in^2 |
| EM | 30000 | ksi |
| SP | 0.492 | k/ft3 |
| WS | 16807.9 | f/s |
| EA/C | 2.5 | ksec/ft |
| 2L/C | 12.62 | ms |
| JC | | [] |
| LP | 88.55 | ft |

*Quantity Results*

| | | |
|---|---|---|
| CSX | 27.17 | ksi |
| CSI f | 27.38 | ksi |
| EMX | 0.3 | k-ft |
| ETR | 86.6 | (%) |
| BPM | 1.9 | bpm |
| FMX | 39 | kips |
| VMX | 14.6 | f/s |
| QNV | 0.00 | [] |
| QNV | 0.00 | [] |

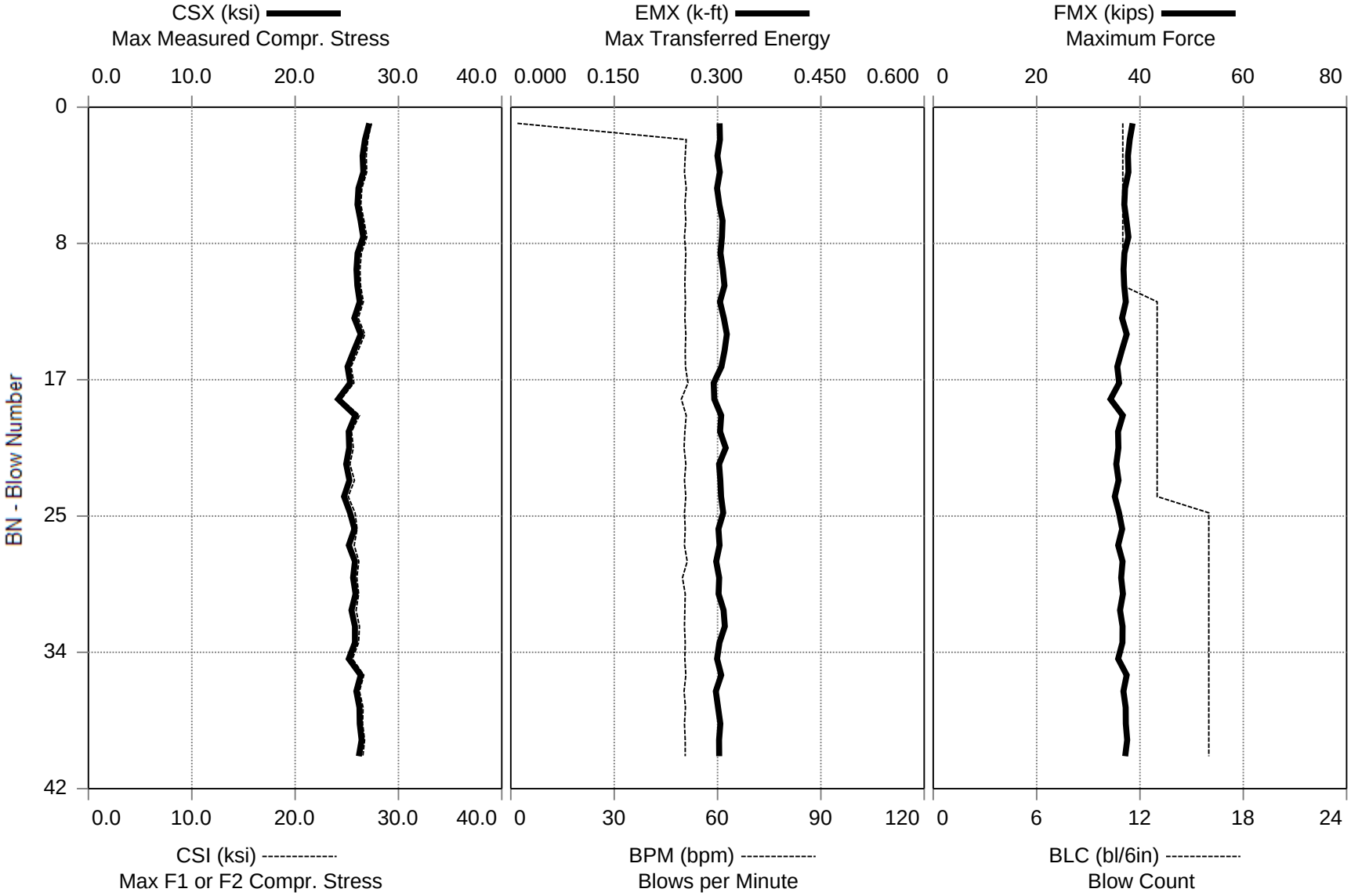
*Sensors*

F3: [413 NWJ-2] 213.94 (1)
F4: [413 NWJ-1] 212.28 (1)
A3: [K4676] 390 mv/5000g's (1)
A4: [K4120] 388 mv/5000g's (1)
CLIP: OK

Nagy Engineers, Inc. - PDIPLOT2 Ver 2016.1.56.1 - Case Method & iCAP® Results

Printed: 29-September-2016 Test started: 28-September-2016

Thompson Engineering SPT Calibration - CME 550X (SN 327443) - 88.5 to 90.0 ft - NWJ Rod - Mud Rotary



Thompson Engineering SPT Calibration - CME 550X (SN 327443) - 88.5 to 90.0 ft NWJ Rod - Mud Rotary
OP: MBP Date: 28-September-2016

AR: 1.42 in² SP: 0.492 k/ft³
LE: 106.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | TYPE | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 89.00 | 11 | AV11 | 26.4 | 26.7 | 0.304 | 86.9 | 46.2 | 37 | 15.3 |
| | | | MAX | 27.2 | 27.4 | 0.310 | 88.6 | 50.9 | 39 | 16.1 |
| 24 | 89.50 | 13 | AV13 | 25.4 | 25.7 | 0.305 | 87.1 | 50.6 | 36 | 15.6 |
| | | | MAX | 26.4 | 26.7 | 0.313 | 89.6 | 51.4 | 37 | 16.4 |
| 40 | 90.00 | 16 | AV16 | 25.8 | 26.2 | 0.303 | 86.6 | 50.5 | 37 | 15.5 |
| | | | MAX | 26.4 | 26.7 | 0.311 | 88.8 | 51.2 | 38 | 16.5 |
| | | | Average | 25.8 | 26.2 | 0.304 | 86.8 | 49.4 | 37 | 15.5 |
| | | | Maximum | 27.2 | 27.4 | 0.313 | 89.6 | 51.4 | 39 | 16.5 |

Total number of blows analyzed: 40

BL# Sensors

1-40 F3: [413 NWJ-2] 213.9 (1.00); F4: [413 NWJ-1] 212.3 (1.00); A3: [K4676] 390.0 (1.00); A4: [K4120] 388.0 (1.00)

Time Summary

Drive 46 seconds 10:51 AM - 10:52 AM BN 1 - 40

Thompson Engineering SPT Calibration - CME 550X (SN 327443) - 88.5 to 90.0 ft NWJ Rod - Mud Rotary
OP: MBP Date: 28-September-2016

AR: 1.42 in² SP: 0.492 k/ft³
LE: 106.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|
| 12 | 89.04 | 13 | 26.2 | 26.6 | 0.303 | 86.7 | 50.7 | 37 | 15.8 |
| 13 | 89.08 | 13 | 25.7 | 26.1 | 0.309 | 88.3 | 50.5 | 37 | 16.4 |
| 14 | 89.12 | 13 | 26.4 | 26.7 | 0.313 | 89.6 | 50.8 | 37 | 16.2 |
| 15 | 89.15 | 13 | 25.7 | 26.1 | 0.310 | 88.6 | 50.6 | 36 | 15.8 |
| 16 | 89.19 | 13 | 25.1 | 25.4 | 0.306 | 87.4 | 50.7 | 36 | 15.7 |
| 17 | 89.23 | 13 | 25.3 | 25.7 | 0.294 | 84.1 | 51.4 | 36 | 15.6 |
| 18 | 89.27 | 13 | 24.2 | 24.5 | 0.295 | 84.4 | 49.5 | 34 | 14.6 |
| 19 | 89.31 | 13 | 25.8 | 26.2 | 0.305 | 87.2 | 50.9 | 37 | 16.0 |
| 20 | 89.35 | 13 | 25.2 | 25.5 | 0.304 | 86.8 | 50.5 | 36 | 15.3 |
| 21 | 89.38 | 13 | 25.2 | 25.6 | 0.312 | 89.1 | 50.3 | 36 | 15.9 |
| 22 | 89.42 | 13 | 24.9 | 25.3 | 0.302 | 86.3 | 50.8 | 35 | 14.0 |
| 23 | 89.46 | 13 | 25.3 | 25.7 | 0.304 | 86.9 | 50.4 | 36 | 16.4 |
| 24 | 89.50 | 13 | 24.7 | 25.1 | 0.305 | 87.2 | 50.8 | 35 | 15.1 |
| 25 | 89.53 | 16 | 25.3 | 25.8 | 0.308 | 88.1 | 50.4 | 36 | 16.5 |
| 26 | 89.56 | 16 | 25.7 | 26.0 | 0.301 | 86.1 | 50.6 | 37 | 14.6 |
| 27 | 89.59 | 16 | 25.2 | 25.7 | 0.303 | 86.6 | 50.4 | 36 | 15.7 |
| 28 | 89.63 | 16 | 25.8 | 26.2 | 0.298 | 85.2 | 51.2 | 37 | 15.0 |
| 29 | 89.66 | 16 | 25.6 | 26.0 | 0.302 | 86.4 | 49.8 | 36 | 15.8 |
| 30 | 89.69 | 16 | 25.8 | 26.2 | 0.301 | 86.1 | 50.6 | 37 | 15.2 |
| 31 | 89.72 | 16 | 25.5 | 25.9 | 0.309 | 88.2 | 50.5 | 36 | 16.1 |
| 32 | 89.75 | 16 | 25.8 | 26.2 | 0.311 | 88.8 | 50.4 | 37 | 15.9 |
| 33 | 89.78 | 16 | 25.8 | 26.1 | 0.303 | 86.5 | 50.6 | 37 | 15.8 |
| 34 | 89.81 | 16 | 25.2 | 25.5 | 0.299 | 85.5 | 50.5 | 36 | 15.8 |
| 35 | 89.84 | 16 | 26.4 | 26.6 | 0.305 | 87.2 | 50.8 | 37 | 14.9 |
| 36 | 89.88 | 16 | 25.9 | 26.2 | 0.297 | 85.0 | 50.3 | 37 | 15.0 |
| 37 | 89.91 | 16 | 26.2 | 26.6 | 0.301 | 85.9 | 50.7 | 37 | 15.3 |
| 38 | 89.94 | 16 | 26.2 | 26.5 | 0.304 | 86.9 | 50.4 | 37 | 15.4 |
| 39 | 89.97 | 16 | 26.4 | 26.7 | 0.302 | 86.3 | 50.6 | 38 | 15.2 |
| 40 | 90.00 | 16 | 26.2 | 26.6 | 0.302 | 86.4 | 50.6 | 37 | 15.2 |
| | | Average | 25.6 | 26.0 | 0.304 | 86.8 | 50.6 | 36 | 15.5 |
| | | Maximum | 26.4 | 26.7 | 0.313 | 89.6 | 51.4 | 38 | 16.5 |

Total number of blows analyzed: 29

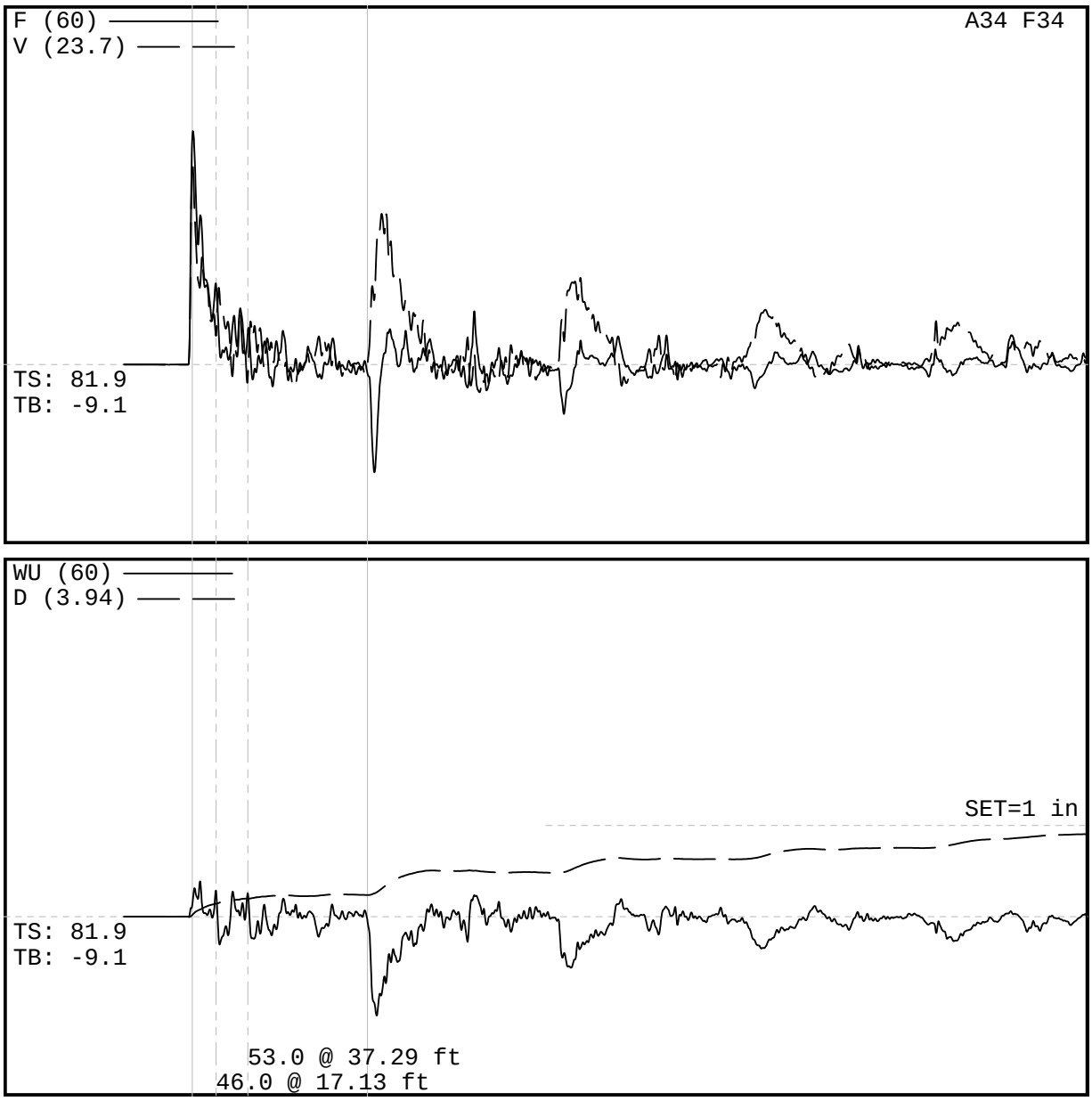
BL# Sensors

12-40 F3: [413 NWJ-2] 213.9 (1.00); F4: [413 NWJ-1] 212.3 (1.00); A3: [K4676] 390.0 (1.00); A4: [K4120] 388.0 (1.00)

Time Summary

Drive 46 seconds 10:51 AM - 10:52 AM BN 1 - 40

Thompson Engineering SPT Calibration CME 550X (SN 327443) - 93.5 to 95.0 ft




*Project Information*

PROJECT: Thompson Engineering SPT Calibratic
PILE NAME: CME 550X (SN 327443) - 93.5 to 9
DESCR: NWJ Rod - Mud Rotary
OPERATOR: MBP
FILE: CME 550X (SN 327443) - 93.5 to 95.0 ft
9/28/2016 11:26:27 AM
Blow Number 1

*Pile Properties*

| | | |
|---|---|---|
| LE | 111.00 | ft |
| AR | 1.42 | in^2 |
| EM | 30000 | ksi |
| SP | 0.492 | k/ft3 |
| WS | 16807.9 | f/s |
| EA/C | 2.5 | ksec/ft |
| 2L/C | 13.22 | ms |
| JC | [] | |
| LP | 93.54 | ft |

*Quantity Results*

| | | |
|---|---|---|
| CSX | 27.47 | ksi |
| CSI f | 27.80 | ksi |
| EMX | 0.3 | k-ft |
| ETR | 86.5 | (%) |
| BPM | 1.9 | bpm |
| FMX | 39 | kips |
| VMX | 13.5 | f/s |
| QNV | 0.00 | [] |
| QNV | 0.00 | [] |

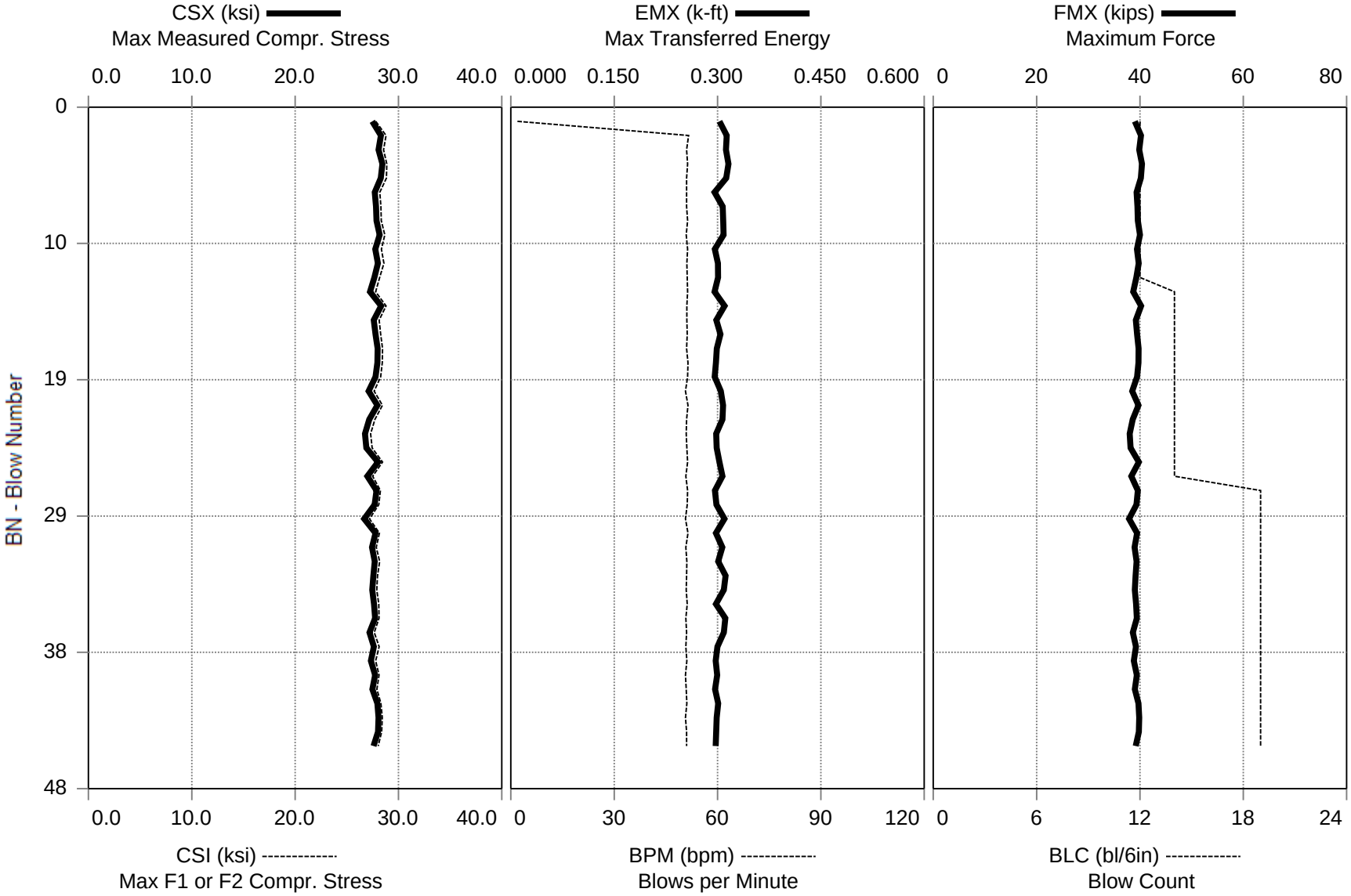
*Sensors*

F3: [413 NWJ-2] 213.94 (1)
F4: [413 NWJ-1] 212.28 (1)
A3: [K4676] 390 mv/5000g's (1)
A4: [K4120] 388 mv/5000g's (1)
CLIP: OK

Nagy Engineers, Inc. - PDIPLOT2 Ver 2016.1.56.1 - Case Method & iCAP® Results

Printed: 29-September-2016 Test started: 28-September-2016

Thompson Engineering SPT Calibration - CME 550X (SN 327443) - 93.5 to 95.0 ft - NWJ Rod - Mud Rotary



Thompson Engineering SPT Calibration - CME 550X (SN 327443) - 93.5 to 95.0 ft NWJ Rod - Mud Rotary
OP: MBP Date: 28-September-2016

AR: 1.42 in² SP: 0.492 k/ft³
LE: 111.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | TYPE | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|---|
| 12 | 94.00 | 12 | AV12 | 28.0 | 28.5 | 0.306 | 87.5 | 47.1 | 40 | 14.4 |
| | | | MAX | 28.4 | 28.9 | 0.316 | 90.3 | 51.6 | 40 | 15.0 |
| 26 | 94.50 | 14 | AV14 | 27.5 | 28.0 | 0.302 | 86.3 | 51.1 | 39 | 14.1 |
| | | | MAX | 28.3 | 28.8 | 0.310 | 88.6 | 51.4 | 40 | 14.8 |
| 45 | 95.00 | 19 | AV19 | 27.6 | 28.0 | 0.302 | 86.3 | 51.0 | 39 | 14.3 |
| | | | MAX | 28.1 | 28.4 | 0.312 | 89.0 | 51.4 | 40 | 14.7 |
| | | | Average | 27.7 | 28.1 | 0.303 | 86.6 | 50.0 | 39 | 14.3 |
| | | | Maximum | 28.4 | 28.9 | 0.316 | 90.3 | 51.6 | 40 | 15.0 |

Total number of blows analyzed: 45

BL# Sensors

1-45 F3: [413 NWJ-2] 213.9 (1.00); F4: [413 NWJ-1] 212.3 (1.00); A3: [K4676] 390.0 (1.00); A4: [K4120] 388.0 (1.00)

Time Summary

Drive 51 seconds 11:26 AM - 11:27 AM BN 1 - 45

Thompson Engineering SPT Calibration - CME 550X (SN 327443) - 93.5 to 95.0 ft NWJ Rod - Mud Rotary
OP: MBP Date: 28-September-2016

AR: 1.42 in² SP: 0.492 k/ft³
LE: 111.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|
| 13 | 94.04 | 14 | 27.2 | 27.8 | 0.296 | 84.5 | 51.3 | 39 | 13.8 |
| 14 | 94.07 | 14 | 28.3 | 28.8 | 0.310 | 88.6 | 51.1 | 40 | 14.7 |
| 15 | 94.11 | 14 | 27.6 | 28.1 | 0.298 | 85.2 | 51.1 | 39 | 14.0 |
| 16 | 94.14 | 14 | 27.8 | 28.3 | 0.304 | 86.9 | 51.2 | 39 | 14.0 |
| 17 | 94.18 | 14 | 28.0 | 28.5 | 0.299 | 85.4 | 51.0 | 40 | 14.8 |
| 18 | 94.21 | 14 | 28.0 | 28.4 | 0.298 | 85.0 | 51.4 | 40 | 14.6 |
| 19 | 94.25 | 14 | 27.8 | 28.3 | 0.296 | 84.5 | 51.3 | 39 | 14.7 |
| 20 | 94.29 | 14 | 27.1 | 27.6 | 0.305 | 87.1 | 50.7 | 38 | 13.5 |
| 21 | 94.32 | 14 | 28.0 | 28.4 | 0.308 | 88.0 | 51.4 | 40 | 14.8 |
| 22 | 94.36 | 14 | 27.2 | 27.7 | 0.307 | 87.7 | 51.0 | 39 | 13.8 |
| 23 | 94.39 | 14 | 26.8 | 27.3 | 0.298 | 85.1 | 50.9 | 38 | 13.3 |
| 24 | 94.43 | 14 | 26.9 | 27.5 | 0.299 | 85.4 | 51.1 | 38 | 13.4 |
| 25 | 94.46 | 14 | 28.0 | 28.5 | 0.303 | 86.5 | 51.3 | 40 | 14.6 |
| 26 | 94.50 | 14 | 27.0 | 27.5 | 0.307 | 87.7 | 50.8 | 38 | 14.0 |
| 27 | 94.53 | 19 | 27.9 | 28.2 | 0.296 | 84.6 | 51.3 | 40 | 14.6 |
| 28 | 94.55 | 19 | 27.7 | 28.1 | 0.298 | 85.3 | 51.2 | 39 | 14.5 |
| 29 | 94.58 | 19 | 26.7 | 27.2 | 0.310 | 88.6 | 50.7 | 38 | 13.3 |
| 30 | 94.61 | 19 | 27.8 | 28.2 | 0.298 | 85.0 | 51.4 | 39 | 14.5 |
| 31 | 94.63 | 19 | 27.4 | 27.8 | 0.307 | 87.7 | 50.8 | 39 | 14.4 |
| 32 | 94.66 | 19 | 27.7 | 28.2 | 0.301 | 86.0 | 51.1 | 39 | 14.5 |
| 33 | 94.68 | 19 | 27.6 | 28.0 | 0.312 | 89.0 | 51.0 | 39 | 14.5 |
| 34 | 94.71 | 19 | 27.5 | 27.9 | 0.309 | 88.3 | 50.9 | 39 | 14.3 |
| 35 | 94.74 | 19 | 27.6 | 28.1 | 0.298 | 85.1 | 51.2 | 39 | 14.4 |
| 36 | 94.76 | 19 | 27.7 | 28.1 | 0.311 | 88.9 | 50.8 | 39 | 14.5 |
| 37 | 94.79 | 19 | 27.2 | 27.7 | 0.309 | 88.3 | 51.0 | 39 | 14.0 |
| 38 | 94.82 | 19 | 27.6 | 28.1 | 0.300 | 85.7 | 50.8 | 39 | 14.4 |
| 39 | 94.84 | 19 | 27.3 | 27.8 | 0.297 | 84.9 | 51.1 | 39 | 14.1 |
| 40 | 94.87 | 19 | 27.7 | 28.1 | 0.299 | 85.5 | 50.7 | 39 | 14.5 |
| 41 | 94.89 | 19 | 27.5 | 27.9 | 0.296 | 84.7 | 50.9 | 39 | 14.3 |
| 42 | 94.92 | 19 | 28.0 | 28.3 | 0.301 | 86.0 | 51.1 | 40 | 14.7 |
| 43 | 94.95 | 19 | 28.1 | 28.4 | 0.299 | 85.3 | 50.7 | 40 | 14.6 |
| 44 | 94.97 | 19 | 28.0 | 28.4 | 0.298 | 85.2 | 51.0 | 40 | 14.6 |
| 45 | 95.00 | 19 | 27.6 | 28.0 | 0.297 | 84.9 | 51.0 | 39 | 14.0 |
| | | Average | 27.6 | 28.0 | 0.302 | 86.3 | 51.0 | 39 | 14.3 |
| | | Maximum | 28.3 | 28.8 | 0.312 | 89.0 | 51.4 | 40 | 14.8 |

Total number of blows analyzed: 33

BL# Sensors

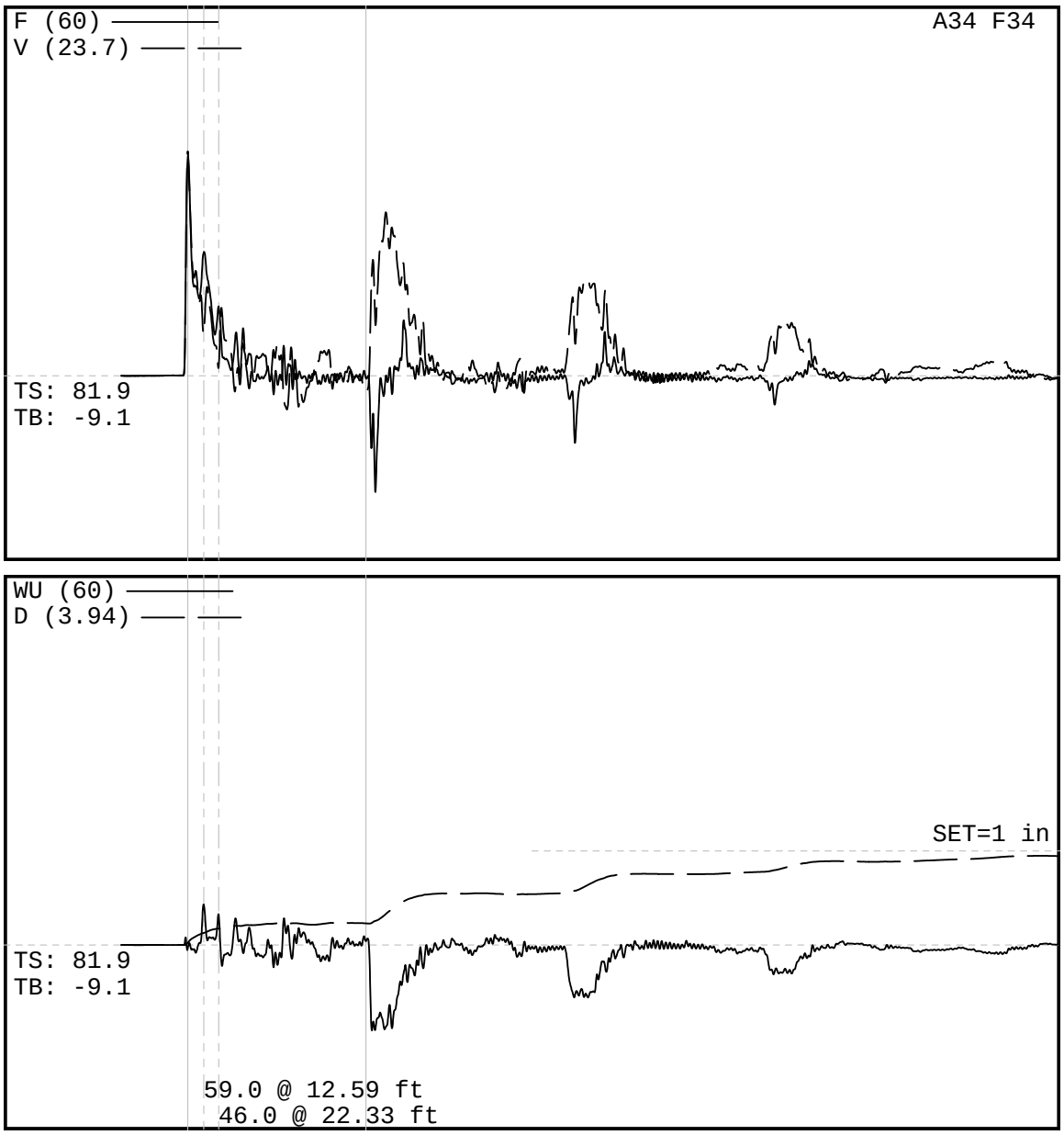
13-45 F3: [413 NWJ-2] 213.9 (1.00); F4: [413 NWJ-1] 212.3 (1.00); A3: [K4676] 390.0 (1.00); A4: [K4120] 388.0 (1.00)

Thompson Engineering SPT Calibration - CME 550X (SN 327443) - 93.5 to 95.0 ft NWJ Rod - Mud Rotary
OP: MBP Date: 28-September-2016

Time Summary

Drive 51 seconds 11:26 AM - 11:27 AM BN 1 - 45

Thompson Engineering SPT Calibration CME 550X (SN 327443) - 98.5 to 100.0 ft




*Project Information*

PROJECT: Thompson Engineering SPT Calibratic
PILE NAME: CME 550X (SN 327443) - 98.5 to 1
DESCR: NWJ Rod - Mud Rotary
OPERATOR: MBP
FILE: CME 550X (SN 327443) - 98.5 to 100.0 ft
9/28/2016 11:50:26 AM
Blow Number 32

*Pile Properties*

| | | |
|---|---|---|
| LE | 116.00 | ft |
| AR | 1.42 | in^2 |
| EM | 30000 | ksi |
| SP | 0.492 | k/ft3 |
| WS | 16807.9 | f/s |
| EA/C | 2.5 | ksec/ft |
| 2L/C | 13.82 | ms |
| JC | | [] |
| LP | 100.00 | ft |

*Quantity Results*

| | | |
|---|---|---|
| CSX | 25.12 | ksi |
| CSI0 | 25.34 | ksi |
| EMX | 0.3 | k-ft |
| ETR | 86.5 | (%) |
| BPM | 51.0 | bpm |
| FMX | 36 | kips |
| VMX | 14.4 | f/s |
| QNV | 0.00 | [] |
| QNV | 0.00 | [] |

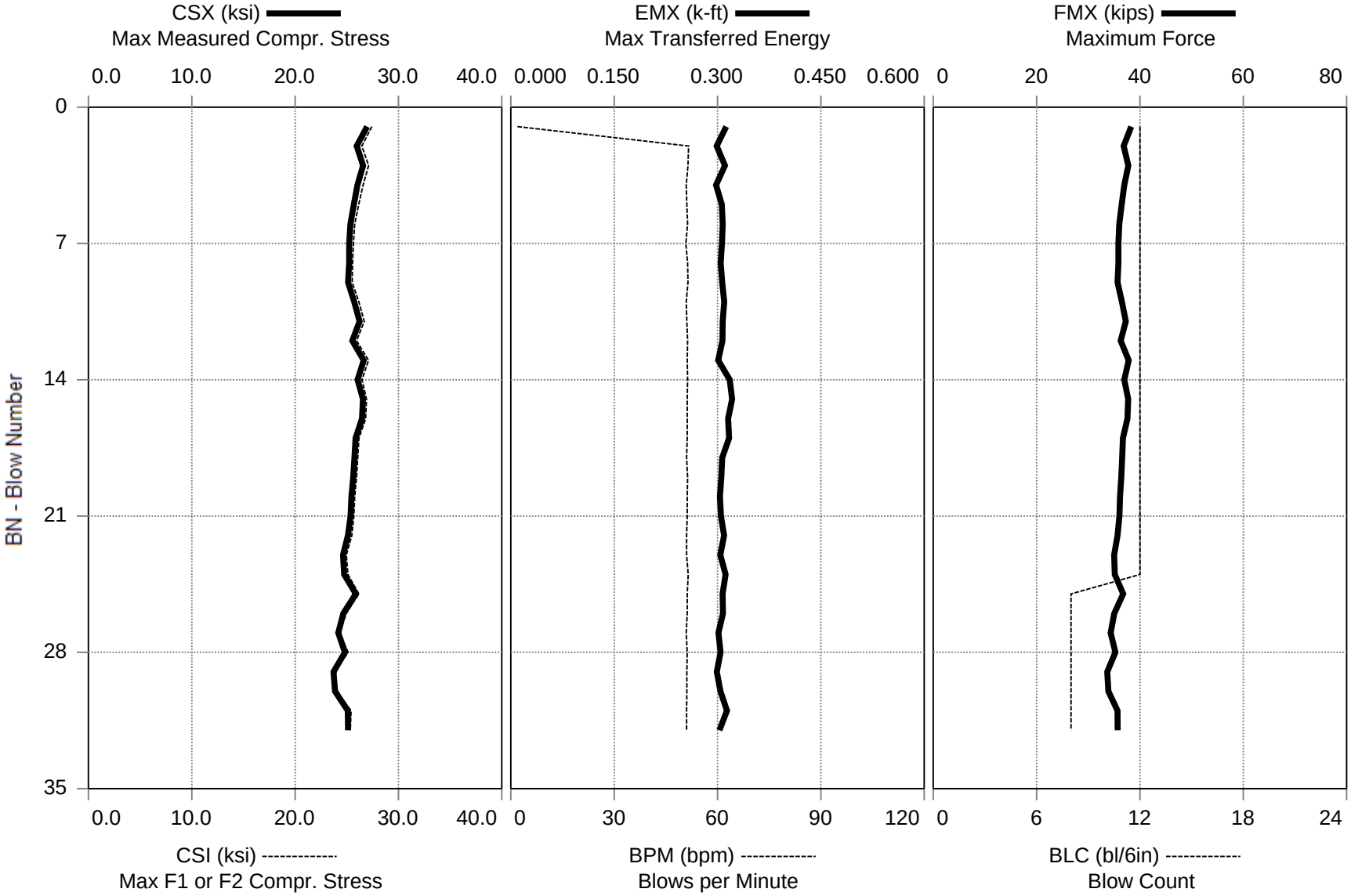
*Sensors*

F3: [413 NWJ-2] 213.94 (1)
F4: [413 NWJ-1] 212.28 (1)
A3: [K4676] 390 mv/5000g's (1)
A4: [K4120] 388 mv/5000g's (1)
CLIP: OK

Nagy Engineers, Inc. - PDIPLOT2 Ver 2016.1.56.1 - Case Method & iCAP® Results

Printed: 29-September-2016 Test started: 28-September-2016

Thompson Engineering SPT Calibration - CME 550X (SN 327443) - 98.5 to 100.0 ft - NWJ Rod - Mud Rotary



Thompson Engineering SPT Calibration - CME 550X (SN 327443) - 98.5 to 100.0 ft NWJ Rod - Mud Rotary
OP: MBP Date: 28-September-2016

AR: 1.42 in² SP: 0.492 k/ft³
LE: 116.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | TYPE | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|---|
| 12 | 99.00 | 12 | AV12 | 25.8 | 26.2 | 0.306 | 87.5 | 47.1 | 37 | 15.5 |
| | | | MAX | 27.0 | 27.4 | 0.313 | 89.3 | 51.6 | 38 | 16.0 |
| 24 | 99.50 | 12 | AV12 | 25.7 | 26.0 | 0.310 | 88.5 | 51.2 | 36 | 16.2 |
| | | | MAX | 26.6 | 27.1 | 0.321 | 91.7 | 51.5 | 38 | 17.1 |
| 32 | 100.00 | 8 | AV8 | 24.7 | 24.9 | 0.305 | 87.1 | 51.1 | 35 | 15.9 |
| | | | MAX | 25.9 | 26.2 | 0.314 | 89.6 | 51.2 | 37 | 16.8 |
| | | | Average | 25.5 | 25.8 | 0.307 | 87.8 | 49.6 | 36 | 15.9 |
| | | | Maximum | 27.0 | 27.4 | 0.321 | 91.7 | 51.6 | 38 | 17.1 |

Total number of blows analyzed: 32

BL# Sensors

1-32 F3: [413 NWJ-2] 213.9 (1.00); F4: [413 NWJ-1] 212.3 (1.00); A3: [K4676] 390.0 (1.00); A4: [K4120] 388.0 (1.00)

Time Summary

Drive 36 seconds 11:49 AM - 11:50 AM BN 1 - 32

Thompson Engineering SPT Calibration - CME 550X (SN 327443) - 98.5 to 100.0 ft NWJ Rod - Mud Rotary
OP: MBP Date: 28-September-2016

AR: 1.42 in² SP: 0.492 k/ft³
LE: 116.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|
| 13 | 99.04 | 12 | 26.6 | 27.1 | 0.301 | 86.0 | 51.2 | 38 | 15.5 |
| 14 | 99.08 | 12 | 26.0 | 26.5 | 0.318 | 90.8 | 51.3 | 37 | 16.2 |
| 15 | 99.13 | 12 | 26.6 | 26.9 | 0.321 | 91.7 | 51.2 | 38 | 16.0 |
| 16 | 99.17 | 12 | 26.5 | 26.8 | 0.315 | 90.1 | 51.2 | 38 | 16.0 |
| 17 | 99.21 | 12 | 25.9 | 26.2 | 0.317 | 90.5 | 51.2 | 37 | 16.4 |
| 18 | 99.25 | 12 | 25.7 | 26.1 | 0.307 | 87.6 | 51.0 | 37 | 15.9 |
| 19 | 99.29 | 12 | 25.6 | 25.9 | 0.306 | 87.3 | 51.3 | 36 | 16.0 |
| 20 | 99.33 | 12 | 25.5 | 25.8 | 0.304 | 86.7 | 51.2 | 36 | 15.9 |
| 21 | 99.38 | 12 | 25.4 | 25.7 | 0.305 | 87.1 | 51.2 | 36 | 16.0 |
| 22 | 99.42 | 12 | 25.1 | 25.5 | 0.309 | 88.4 | 51.0 | 36 | 16.6 |
| 23 | 99.46 | 12 | 24.6 | 24.9 | 0.304 | 86.8 | 51.0 | 35 | 16.7 |
| 24 | 99.50 | 12 | 24.7 | 25.1 | 0.312 | 89.1 | 51.5 | 35 | 17.1 |
| 25 | 99.56 | 8 | 25.9 | 26.2 | 0.307 | 87.8 | 51.2 | 37 | 15.9 |
| 26 | 99.63 | 8 | 24.7 | 25.0 | 0.308 | 88.0 | 51.2 | 35 | 16.8 |
| 27 | 99.69 | 8 | 24.2 | 24.3 | 0.301 | 86.1 | 50.9 | 34 | 15.2 |
| 28 | 99.75 | 8 | 24.8 | 25.1 | 0.304 | 87.0 | 51.2 | 35 | 16.7 |
| 29 | 99.81 | 8 | 23.7 | 23.8 | 0.299 | 85.4 | 51.1 | 34 | 15.4 |
| 30 | 99.88 | 8 | 23.9 | 24.0 | 0.304 | 86.9 | 51.1 | 34 | 15.9 |
| 31 | 99.94 | 8 | 25.1 | 25.4 | 0.314 | 89.6 | 51.0 | 36 | 16.8 |
| 32 | 100.00 | 8 | 25.1 | 25.3 | 0.303 | 86.5 | 51.0 | 36 | 14.4 |
| | | Average | 25.3 | 25.6 | 0.308 | 88.0 | 51.2 | 36 | 16.1 |
| | | Maximum | 26.6 | 27.1 | 0.321 | 91.7 | 51.5 | 38 | 17.1 |

Total number of blows analyzed: 20

BL# Sensors

13-32 F3: [413 NWJ-2] 213.9 (1.00); F4: [413 NWJ-1] 212.3 (1.00); A3: [K4676] 390.0 (1.00); A4: [K4120] 388.0 (1.00)

Time Summary

Drive 36 seconds 11:49 AM - 11:50 AM BN 1 - 32

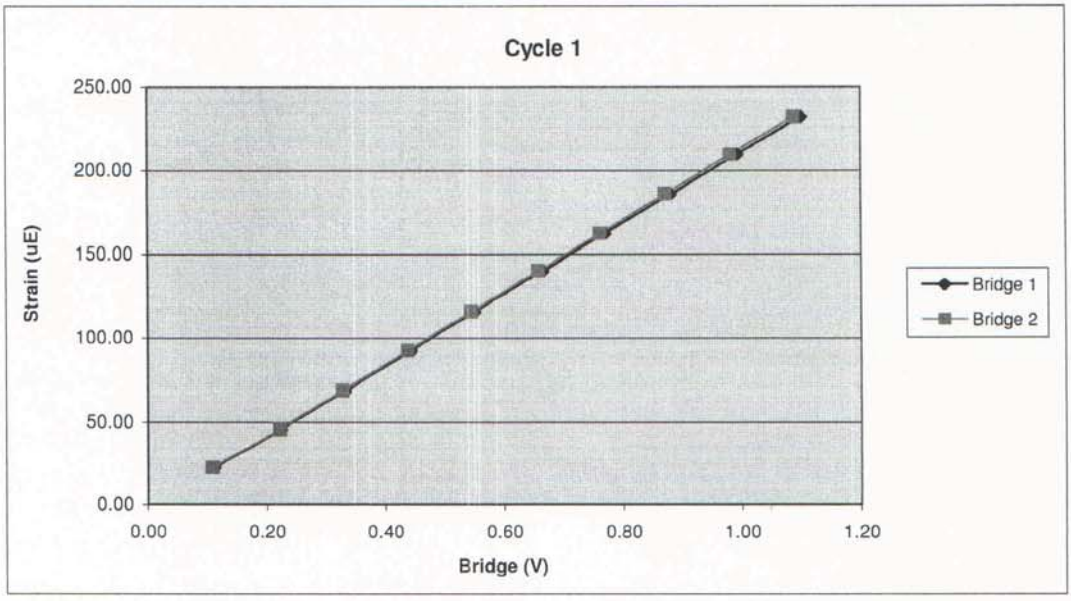
# Appendix B

# Dynamic Measurement Calibration Sheets

| 413NWJ | | Cycle 1 | | |
|---|---|---|---|---|
| **Sample** | **Force (lb)** | **Strain (µE)** | **Bridge 1 (V)** | **Bridge 2 (V)** |
| 1 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2 | 990.99 | 22.25 | 0.11 | 0.11 |
| 3 | 2002.63 | 46.15 | 0.22 | 0.22 |
| 4 | 2988.10 | 69.17 | 0.33 | 0.33 |
| 5 | 3994.04 | 92.72 | 0.44 | 0.44 |
| 6 | 4963.98 | 115.99 | 0.55 | 0.54 |
| 7 | 5994.11 | 140.04 | 0.66 | 0.66 |
| 8 | 6930.41 | 162.12 | 0.77 | 0.76 |
| 9 | 7939.49 | 185.78 | 0.88 | 0.87 |
| 10 | 8950.34 | 209.60 | 0.99 | 0.98 |
| 11 | 9926.18 | 232.15 | 1.10 | 1.09 |

| **Bridge 1** | | **Bridge 2** | |
|---|---|---|---|
| **Force Calibration (lb/V)** | **9036.37** | **Force Calibration (lb/V)** | **9125.33** |
| Offset | -9.46 | Offset | -2.08 |
| Correlation | 1.000000 | Correlation | 0.999997 |
| **Strain Calibration (µE/V)** | **212.51** | **Strain Calibration (µE/V)** | **214.61** |
| Offset | -1.22 | Offset | -1.05 |
| Correlation | 0.999996 | Correlation | 0.999998 |

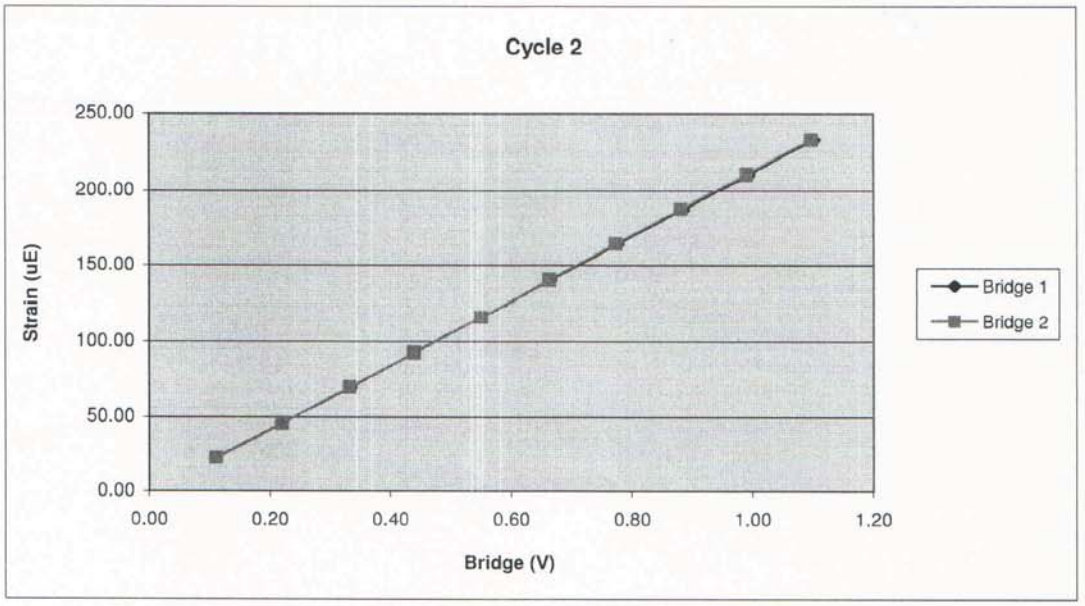
| **Force Strain Calibration** | |
|---|---|
| **EA (Kips)** | **42521.15** |
| Offset | 42.49 |
| Correlation | 0.999997 |



| 413NWJ | | Cycle 2 | | |
|---|---|---|---|---|
| **Sample** | **Force (lb)** | **Strain (µE)** | **Bridge 1 (V)** | **Bridge 2 (V)** |
| 1 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2 | 987.05 | 22.73 | 0.11 | 0.11 |
| 3 | 1966.04 | 45.88 | 0.22 | 0.22 |
| 4 | 2986.33 | 69.92 | 0.33 | 0.33 |
| 5 | 3951.35 | 92.68 | 0.44 | 0.44 |
| 6 | 4949.03 | 116.49 | 0.55 | 0.55 |
| 7 | 5960.47 | 140.42 | 0.66 | 0.66 |
| 8 | 6953.03 | 163.97 | 0.78 | 0.77 |
| 9 | 7934.77 | 187.50 | 0.88 | 0.88 |
| 10 | 8928.90 | 210.76 | 0.99 | 0.99 |
| 11 | 9905.13 | 233.34 | 1.10 | 1.10 |

| **Bridge 1** | | **Bridge 2** | |
|---|---|---|---|
| **Force Calibration (lb/V)** | **8992.65** | **Force Calibration (lb/V)** | **9034.81** |
| Offset | **-7.95** | Offset | **-19.15** |
| Correlation | **0.999996** | Correlation | **0.999998** |
| **Strain Calibration (µE/V)** | **212.81** | **Strain Calibration (µE/V)** | **213.81** |
| Offset | **-0.84** | Offset | **-1.11** |
| Correlation | **0.999997** | Correlation | **0.999996** |

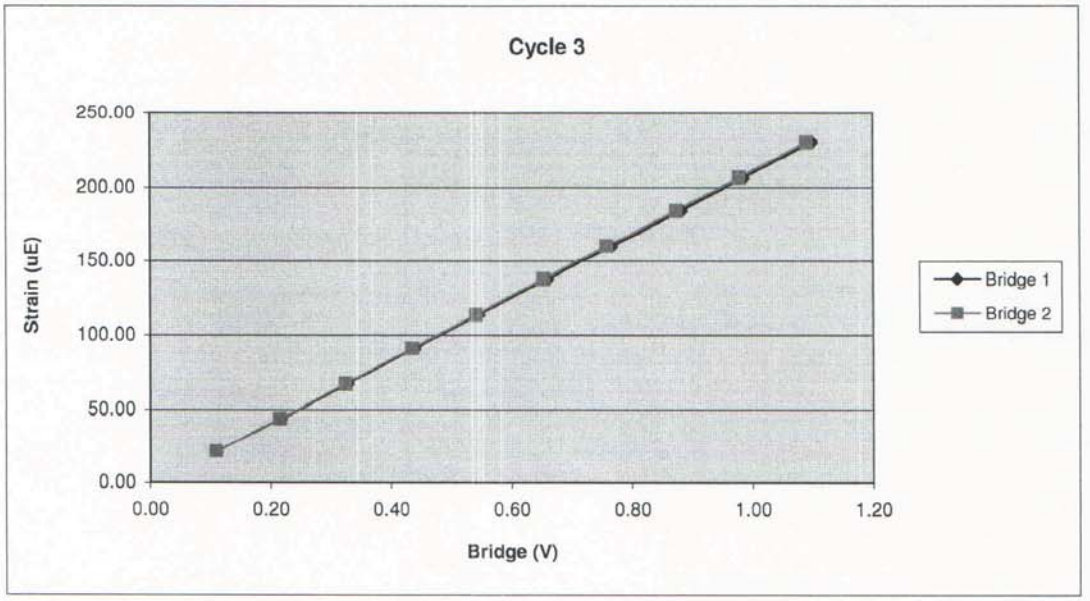
| **Force Strain Calibration** | |
|---|---|
| **EA (Kips)** | **42256.93** |
| Offset | **27.76** |
| Correlation | **0.999996** |



| 413NWJ | | Cycle 3 | | |
|---|---|---|---|---|
| **Sample** | **Force (lb)** | **Strain (µE)** | **Bridge 1 (V)** | **Bridge 2 (V)** |
| 1 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2 | 978.00 | 21.53 | 0.11 | 0.11 |
| 3 | 1923.94 | 43.44 | 0.22 | 0.21 |
| 4 | 2938.53 | 67.46 | 0.33 | 0.32 |
| 5 | 3944.67 | 91.22 | 0.44 | 0.44 |
| 6 | 4898.87 | 113.58 | 0.54 | 0.54 |
| 7 | 5921.72 | 137.82 | 0.66 | 0.65 |
| 8 | 6874.74 | 160.10 | 0.77 | 0.76 |
| 9 | 7926.90 | 184.40 | 0.88 | 0.87 |
| 10 | 8859.86 | 206.60 | 0.98 | 0.98 |
| 11 | 9889.59 | 230.60 | 1.10 | 1.09 |

| **Bridge 1** | | **Bridge 2** | |
|---|---|---|---|
| **Force Calibration (lb/V)** | **9008.15** | **Force Calibration (lb/V)** | **9088.85** |
| Offset | **-7.86** | Offset | **-13.21** |
| Correlation | **0.999998** | Correlation | **0.999998** |
| **Strain Calibration (µE/V)** | **211.51** | **Strain Calibration (µE/V)** | **213.41** |
| Offset | **-1.67** | Offset | **-1.80** |
| Correlation | **0.999995** | Correlation | **0.999993** |

| **Force Strain Calibration** | |
|---|---|
| **EA (Kips)** | **42588.80** |
| Offset | **63.31** |
| Correlation | **0.999997** |



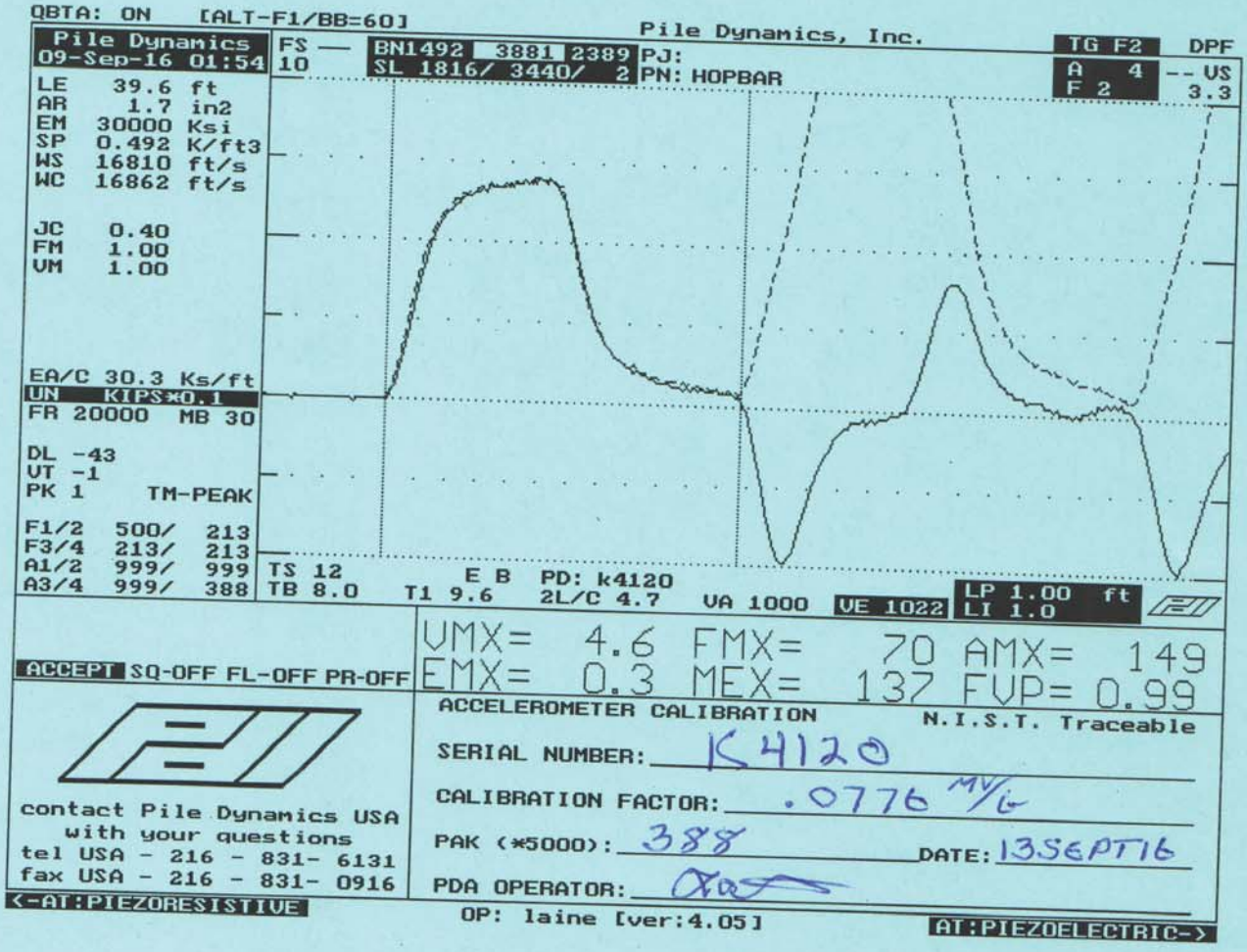
Bridge Excitation (V) 5
Shunt Resitor (ohm) 60.4k

| Calibration Factors | 413NWJ | | |
|---|---|---|---|
| Bridge 1 (µE/V) | 212.28 | Bridge 2 (µE/V) | 213.94 |
| EA Factor (Kips) | 42455.63 | Area (in^2) | 1.42 |

Calibrated by: David Brunell
Calibrated Date: 6/10/2016

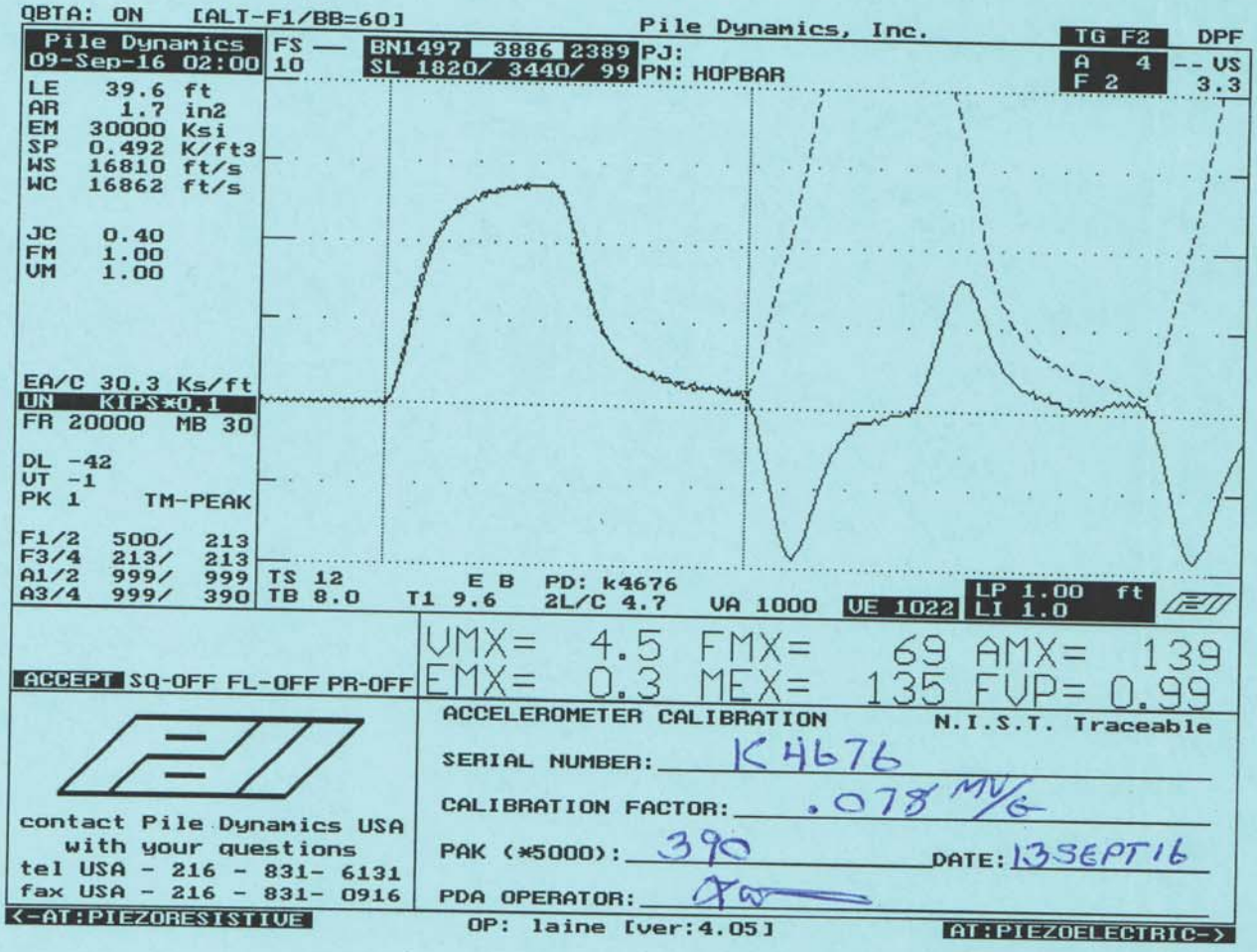
Pile Dynamics Inc
30725 Aurora Rd
Solon, OH 44139

Traceable to N.I.S.T.




**Smart Sensor**

**Smart Chip Programmed By** D.M.W. **on** 13SEPT16 **CRC Value** 2F02

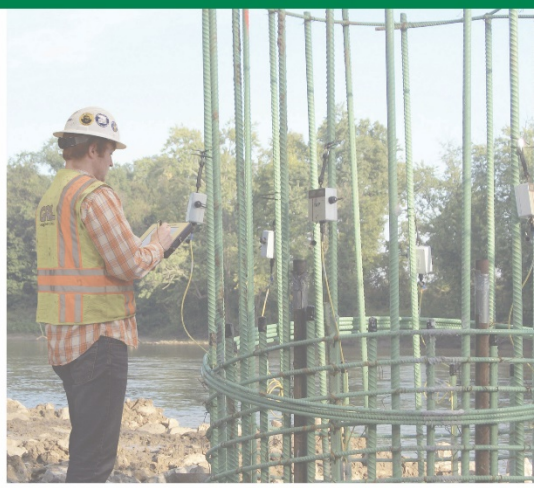


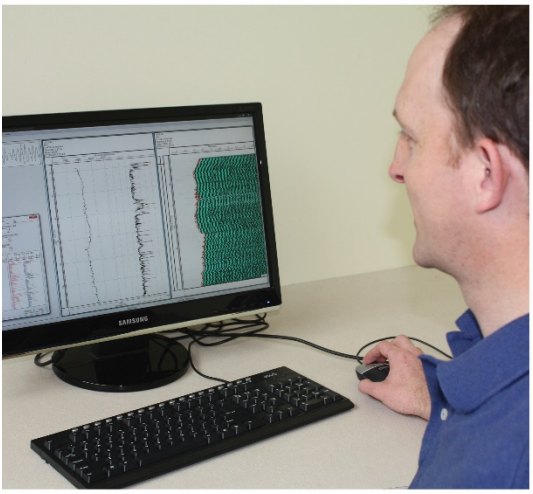

**Smart Sensor**

**Smart Chip Programmed By** A.M.W **on** 13SEPT16 **CRC Value** C6ED



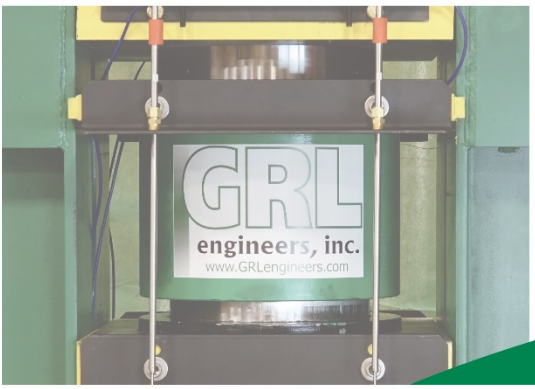















**Job No. 179034-1**

Report on: Standard Penetration Test Energy Measurements
Chattanooga, TN

Prepared for Thompson Engineering
By Thomas G. Hyatt and Joel S. Webster, E.I.

June 28, 2017

GRL engineers, inc.
Dynamic Measurements and Analyses

June 28, 2017

Blake Ellis
Thompson Engineering
3707 Cottage Hill Road
Mobile, AL 36609

**Re: Standard Penetration Test Energy Measurements**
Chattanooga, TN
GRL Job No. 179034-1

Dear Mr. Ellis,

This report presents results of energy measurements obtained on June 21, 2017 during Standard Penetration Tests (SPT) sampling. One automatic hammer mounted a Diedrich D-50 drill rig that was tested generally following ASTM D4633-10 standards. All dynamic tests were performed on NWJ drill rods. GRL Engineers, Inc. obtained the dynamic measurements with an instrumented NWJ subsection and a Model 8G Pile Driving Analyzer®. This report describes the testing procedures and summarizes the test results. Appendix A describes our measurement and analysis methods, Appendix B contains calibration information for the gages and equipment used, and Appendix C is a summary of the field data.

## PURPOSE AND SCOPE OF WORK

At the request of Thompson Engineering, GRL conducted SPT energy measurements in Chattanooga, TN generally following the ASTM D4633-10 recommendations. Specifically, we recorded SPT energy measurements at five-foot sample intervals between 13.5 and 40.0 feet below the existing ground surface. SPT samples were taken every five feet from the ground surface until a boring depth of about 40.0 feet was reached. All SPT samples were driven for a total of 3 six-inch increments, or 1.5 feet.

## EQUIPMENT

### *Drilling and SPT Hammer Equipment*

**Diedrich D-50 (Serial # 310)**

SPT energy measurements were made on an automatic hammer mounted on a Diedrich D-50 drill rig. The drilling method used to advance the boring was hollow stem auger. Energy measurements for this drill rig were collected at a borehole located in Chattanooga, TN. SPT energy measurements were performed at 5-foot sampling intervals between 13.5 and 40.0 feet. A total of six energy measurement events were performed for this drill rig.

### *Instrumentation*

A Model 8G Pile Driving Analyzer (PDA) data acquisition system (SN# 4613LE) was used to collect and process the dynamic measurements of force and velocity. The data was collected using a two foot long section of NWJ rod subsection (SN# 231NWJ) with a cross sectional area of 1.46 square inches and instrumented with two full bridge foil resistance strain gages and two piezoresistive accelerometers mounted in the midpoint location of the instrumented rod.

Analog signals from the strain gages and accelerometers were conditioned, digitized, stored and processed with the PDA. The sampling frequency used during the SPT testing was 50 kHz. Selected output from the PDA for each recorded impact included the energy transfer ratio (ETR), maximum rod top velocity (VMX), maximum energy transfer (EFV), maximum rod top force (FMX), and the hammer operating rate (BPM).

## MEASUREMENTS AND CALCULATIONS

### *FV Method (EFV)*

Energy transfer to the PDA gage location, EFV, was computed by the PDA using force, F(t), and velocity, v(t), records as follows:

$$EFV = \int_a^b F(t) \cdot v(t) dt$$

The time "a" corresponds to the start of the record when the energy transfer begins, and "b" is the time at which energy transferred to the rod reaches a maximum value. The FV Method is currently recognized in ASTM D4633-10, and is the theoretically correct result; therefore, no other energy calculation methods are reported.

### Corrected SPT number ($N_{60}$)

While the primary purpose of SPT energy testing is to calculate the maximum transferred energy (ETR) of each hammer blow, the overall average EFV value can be used to calculate the corrected SPT number ($N_{60}$). To adjust the SPT N-values for hammer performance, the following correction as suggested by Seed for N-value adjustment to 60% transfer efficiency (e.g. 210 ft-pounds) was used:

$$N_{60} = \left( \frac{E_m}{210} \right) N_m$$

Where:

$N_{60}$ = Corrected N-value
$E_m$ = overall average measured energy transfer (EFV)
$N_m$ =number of blows for last 12 inches of sampler penetration

A general introduction to dynamic SPT testing methods is included in this report as Appendix A. References for more detailed descriptions of our testing and analysis methods are available upon request.

Any cross-sectional area difference between the GRL rod subsection and the drill rods, any loose connections or changes in area at section joints, or any cross-sectional area differences between the individual drill rod sections will result in stress wave reflections that can potentially influence the energy transfer. The EFV transferred energy calculation method, utilizing both force and velocity records, is theoretically correct and gives energy transfer results that are not adversely affected by cross-sectional area changes or loose connectors. The EFV results are included in Appendix C for all records collected and accepted after checking them for consistency.

## RESULTS

Upon return to the office, the records collected by the PDA were checked for consistency and accuracy. For example, records from very weak startup or final impacts were not included in average results. Appendix C contains a representative plot of force and normalized velocity versus time, as well as tables of PDA results for all hammer blows at each dynamically monitored sampling depth. The results include the EFV (transferred energy by the FV method, as recommended by ASTM D4633-10), ETR (energy transfer efficiency for the EFV method), BPM (hammer operating rate), FMX (maximum rod top force) and VMX (maximum rod top velocity). The tables show statistical summaries for the final two 6 inch increments over which the SPT N value is calculated. At the end of each table is a statistical evaluation of these results which include the average and standard deviation.

The table below and the summary tables in Appendix C summarize the average transferred energy values calculated by the EFV method. The records consist of averaged hammer blows from the last 12 inches (i.e. N value) at each dynamically monitored sampling depth. The “energy transfer ratio” (ETR) is defined as the ratio of maximum transferred energy EFV divided by the theoretical hammer potential energy of 350 ft-lbs (i.e., computed per the 140 lb SPT hammer and the standard 30 inch drop as specified by ASTM D1586-08). The average hammer operating rate is reported in blows per minute (BPM). A summary of the dynamic measurements of the energy transfer to the drill rods using the EFV equation is provided in the table below.

| Drill Rig | Avg. EFV (ft-lbs) | Avg ETR (%) | Range of EFV (ft-lbs) | Range of ETR (%) |
|---|---|---|---|---|
| Diedrich D-50 SN 310 | 329 | 94 | 299 – 357 | 86 – 102 |

## CONCLUSIONS

Based upon the dynamic test data obtained, the following conclusions are presented:

1. Loose connections in the drill string were sometimes observed in the force and velocity records. However, energy transfer values calculated using the EFV equation are not adversely affected by the connectors and therefore are considered a better indication of transferred energy.

2. Dynamic measurements of the transferred energy to the drill rods using the EFV equation ranged from 299 to 357 ft-lbs for the Diedrich D-50, SN 310 drill rig. This corresponds to a transfer efficiency ranging from 86 to 102% of the SPT hammer energy of 350 ft-lbs.

3. The average transferred energy (EFV) and energy transfer ratio (ETR) for the Diedrich D-50 drill rig tested was as follows:

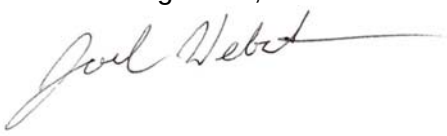
   Diedrich D-50, SN 310: Average EFV = 329 ft-lbs; Average ETR = 94%

Please review both ASTM D4633-10 and ASTM D1586-08 prior to applying these test results. The energy calibrations reported herein are valid for the same hammer/drill rig, with the same drill operator, same anvil dimensions, and same drilling methods.

We appreciate the opportunity to be of assistance to you on this project. Please contact our office should you have any questions regarding this submittal, require additional information, or if we may be of further service.

Sincerely,

GRL Engineers, Inc.



Joel S. Webster, E.I.



Thomas G. Hyatt

TGH:JSW:dms

# Appendix A

## *An Introduction into SPT Dynamic Pile Testing*

# APPENDIX A
# AN INTRODUCTION INTO SPT DYNAMIC PILE TESTING

The following has been written by GRL Engineers, Inc. and may only be copied with its written permission.

## 1. BACKGROUND

The Standard Penetration Test is frequently conducted as an in-situ assessment of soil strength. This test requires that a 140 lb weight is dropped 30 inches onto a drive rod at whose bottom a sampler is usually installed. The sampler is driven for 18 inches; the number of blows required for the last 12 inches of driving is the so-called N-value. The N-value may be used as a strength indicator for foundation design or as a means of assessing the liquefaction potential of soils.

Obviously, the SPT hammer efficiency is an important consideration when using the N-values for design purposes. Measurements have indicated that the energy in the drive rod is sometimes only 30% and and may reach 90% of the potential or rated energy of the SPT hammer (E-rated = 0.35 kip-ft or 0.475 kJ). The type of hammer used to drive the rod is the main reason for these variations. On the average, the energy in the drive rod is 60% of the standard rated energy.

Because of the variability of energy, methods based on N-values are considered unreliable. However, measurements during SPT testing using the Case Method can be done on a routine basis and these measurements yield the transferred energy values. With measured energy, EMX, known, an adjustment of the measured N-value, $N_m$, can be made as follows.

$$N_{60} = N_m [E_m / (0.6E_r)] \quad (1)$$

Thus, if the measured energy value is equal to the normally expected transferred energy of 60% of E-rated then the adjusted and measured N-values are identical. On the other hand, if the measured energy is only 30% then the adjusted blow count will be reduced by 50%.

## 2. DYNAMIC TESTING AND ANALYSIS METHODS APPLIED TO SPT

The Case Method of dynamic pile testing, named after the Case Institute of Technology where it was developed between 1964 and 1975, requires that a substantial ram mass (e.g. a pile driving hammer) impacts the pile top such that the pile undergoes at least a small permanent set. Thus, the method is also referred to as a “High Strain Method”. The Case Method requires dynamic measurements on the pile or shaft under the ram impact and then a calculation of various quantities. Conveniently, for SPT applications, the measurements and analyses are done by a single piece of equipment: the SPT Analyzer. The Pile Driving Analyzer® (PDA) is also suitable to perform these measurements and data processing.

A related analysis method is the “Wave Equation Analysis” which calculates a relationship between bearing capacity, pile stresses, transferred energy and field blow count. The GRLWEAP™ program performs this analysis and provides a complete set of helpful information and input data. This program can be used very effectively to simulate the SPT driving process.

## 3. MEASUREMENTS

GRL uses equipment manufactured by Pile Dynamics, Inc. The system includes either an SPT-Analyzer™ (SPTA) or a Pile Driving Analyzer® (PDA), an instrumented rod section and two accelerometers. SPT energy testing is very closely related to and borrows procedures from dynamic pile testing. Those interested in the basis of the SPT energy testing method may obtain extensive literature on dynamic pile testing from GRL Engineers, Inc.

### *3.1 SPT Analyzer or Pile Driving Analyzer*

The basis for the results calculated by the SPTA or PDA are strain and acceleration measured in an instrumented rod section. These signals are converted to rod top force, F(t), and rod top velocity, v(t). The SPTA or PDA conditions, calibrates and displays these signals and immediately computes average pile force and velocity thereby eliminating bending effects. The product of these two

measurements is then integrated over time which yields the energy transferred to the instrumented section as a function of time (see Section 4.1).

For convenience and accuracy, strain measurements are usually taken on an instrumented section of SPT drive rod. Ideally, the section properties of the instrumented rod and those of the drive rod are the same, however, using subs, other sections can also be utilized.

For the instrumented section, PDI provides a force calibration in such a way that the output of the instrumented rod is directly calculated without the need for an accurate elastic modulus or cross sectional area of the rod section.

The acceleration measurements are often demanding in the SPT environment, because of high frequency and high acceleration motion components. An experienced measurement engineer, therefore, has to evaluate the quality of this data before final conclusions are drawn from the numerical results calculated by SPTA or PDA.

SPTA or PDA records are taken while the standard N-value is acquired in the conventional manner. This then allows a direct correlation between N-value and average transferred energy.

### *3.2 HPA*

The SPT hammer's ram velocity may be directly obtained using radar technology in the Hammer Performance Analyzer™. The impact velocity results can be automatically processed with a PC or recorded on a strip chart. HPA measurements yield a hammer kinetic energy, but not the energy transferred to the drive rod.

## 4 RECORD EVALUATION BY SPTA OR PDA

### *4.1 HAMMER PERFORMANCE*

The PDA calculates the energy transferred to the pile top from:

$$E(t) = {}_0\int^t F(\tau)v(\tau)\, d\tau \qquad (2)$$

The maximum of the E(t) curve is often called **ENTHRU or EMX;** it is the most important quantity for an overall evaluation of the performance of a hammer and driving system. **EMX** allows for a classification of the hammer's performance when presented as, $e_T$, the rated transfer efficiency, also called energy transfer ratio (**ETR**) or global efficiency.

$$e_T = EMX/E_R \qquad (3)$$

where $E_R$ is the hammer manufacturer's rated energy value or 0.35 kip-ft (0.475 kJ) in the case of the SPT hammer.

Often in the SPT literature one finds also reference to the EF2 energy. This evaluation is based on assumed proportionality between force and velocity (see also Section 5):

$$v(t) = F(t) / Z \qquad (4)$$

where Z = EA/c is the pile impedance, E is the elastic modulus, A is the cross sectional area and c is the speed of the stress wave in the pile material..

Combining equations 2 and 4 leads to

$$EF(t) = {}_0\int^t F(\tau)^2 / Z\, d\tau \qquad (5)$$

The EF2 transferred energy value is the EF-value at the time t = 2L/c, where L is the drive rod length and c is the stress wave speed in steel (16,800 ft/s or 5,124 m/s). Since the force is easier to measure than both force and velocity, Equation 5 is preferred by some test engineers. However, the EF method is fraught with errors and certain correction factors have to be applied to make it approximately correct. Among the error sources are the following:

- Proportionality is often violated prior to time 2L/c. The proportionality between force and velocity in a downward traveling wave only holds if the wave does not encounter a disturbance prior to reflecting off the pile toe. Such disturbances include a change in cross sectional area, an open or loose splice or joint, or resistance along the shaft.

- Using only one force measurement precludes a data quality check based on the proportionality between force and velocity. Thus, a force measurement that is for some reason in error may not be detectable, which will lead to errors in the EF2 value. Data quality checks will be discussed further in Section 5.

The use if EF2 is therefore not recommended but it is often included in result presentations for the sake of completeness.

### *4.2 STRESSES*

During SPT monitoring, it is also of interest to monitor compressive stresses at both the top of the drive rod and at its bottom.

At the pile top (location of sensors) the maximum compression stress averaged over the rod's cross section, **CSX**, is directly obtained from the measurements. Note that this stress value refers to the instrumented section. If the rod has a different cross sectional area then the stress in the rod will be different from CSX.

The SPTA or PDA can also calculate, in an approximate manner, the force at the rod bottom, **CFB**. To obtain the corresponding stress, this force value should be divided by the appropriate cross sectional area, e.g. by the rod area just above the sampler or by the sampler area itself. Of course, non-uniform stress components as they might occur at the sampler tip due to a sloping rock are not considered in this calculation.

## 5. DATA QUALITY CHECKS

Quality data is the first and foremost requirement for accurate dynamic testing results. It is therefore important that the measurement engineer performing SPTA or PDA tests has the experience necessary to recognize measurement problems and take appropriate corrective action should problems develop. Fortunately, dynamic pile testing allows for certain data quality checks because two independent measurements are taken that have to conform to the so-called proportionality relationship.

As long as there is only a wave traveling in one direction, as is the case during impact when only a downward traveling wave exists in the rod, force and velocity measured at its top are proportional

$$F = v\,Z \qquad (5)$$

where Z is again the pile impedance, Z = EA/c. This relationship can also be expressed in terms of stress

$$\sigma = F/A = v\,(E/c) \qquad (6)$$

or strain

$$\epsilon = \sigma/E = v / c \qquad (7)$$

This means that the early portion of strain times wave speed must be equal to the velocity unless the proportionality is affected by high friction near the pile top or by a pile cross sectional change not far below the sensors. Checking the proportionality is an excellent means of assuring meaningful measurements but is only truly meaningful for perfectly uniform rods. Open or loose splices, for example, will lead to a non-proportionality. For SPT rods it is fortunate that usually no soil resistance acts along the shaft and for that reason, proportionality can exist until the stress wave returns from sampler top or rod bottom unless connectors are not sufficiently tightened or have a significant mass.

Velocity data quality can also be checked by looking at the final displacement, DFN, which is calculated from the acceleration by double integration. If the calculated final displacement is much higher or lower than indicated by the N-value, the accelerometer attachment may be loose or the sensor may be faulty. If major drift in the velocity is observed, the EMX value may be in error, even though proportionality from impact to time 2L/c exists. In this case, it may be useful to evaluate the energy transferred to the drill rod at time 2L/c, which is calculated by the PDA or SPTA as the E2E quantity.

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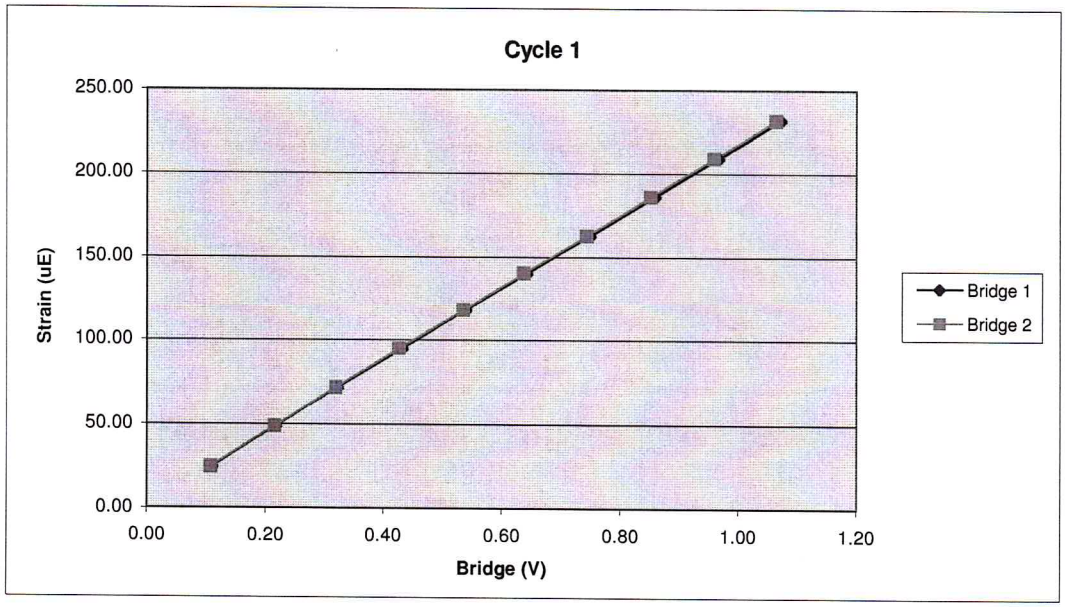
# APPENDIX B

# Instrumentation Calibration Information

| 231NWJ | | Cycle 1 | | |
|---|---|---|---|---|
| **Sample** | **Force (lb)** | **Strain (µE)** | **Bridge 1 (V)** | **Bridge 2 (V)** |
| 1 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2 | 1012.13 | 24.71 | 0.11 | 0.11 |
| 3 | 2008.29 | 48.73 | 0.22 | 0.22 |
| 4 | 2984.34 | 71.57 | 0.32 | 0.32 |
| 5 | 3989.18 | 95.13 | 0.43 | 0.43 |
| 6 | 4994.80 | 117.95 | 0.54 | 0.54 |
| 7 | 5955.87 | 139.98 | 0.64 | 0.64 |
| 8 | 6944.74 | 162.72 | 0.75 | 0.74 |
| 9 | 7955.89 | 186.14 | 0.86 | 0.85 |
| 10 | 8962.89 | 209.00 | 0.97 | 0.96 |
| 11 | 9948.41 | 231.79 | 1.07 | 1.06 |

| **Bridge 1** | | **Bridge 2** | |
|---|---|---|---|
| **Force Calibration (lb/V)** | **9283.84** | **Force Calibration (lb/V)** | **9345.66** |
| Offset | -6.70 | Offset | -0.19 |
| Correlation | 0.999999 | Correlation | 0.999999 |
| **Strain Calibration (µE/V)** | **214.44** | **Strain Calibration (µE/V)** | **215.86** |
| Offset | 2.14 | Offset | 2.29 |
| Correlation | 0.999981 | Correlation | 0.999982 |

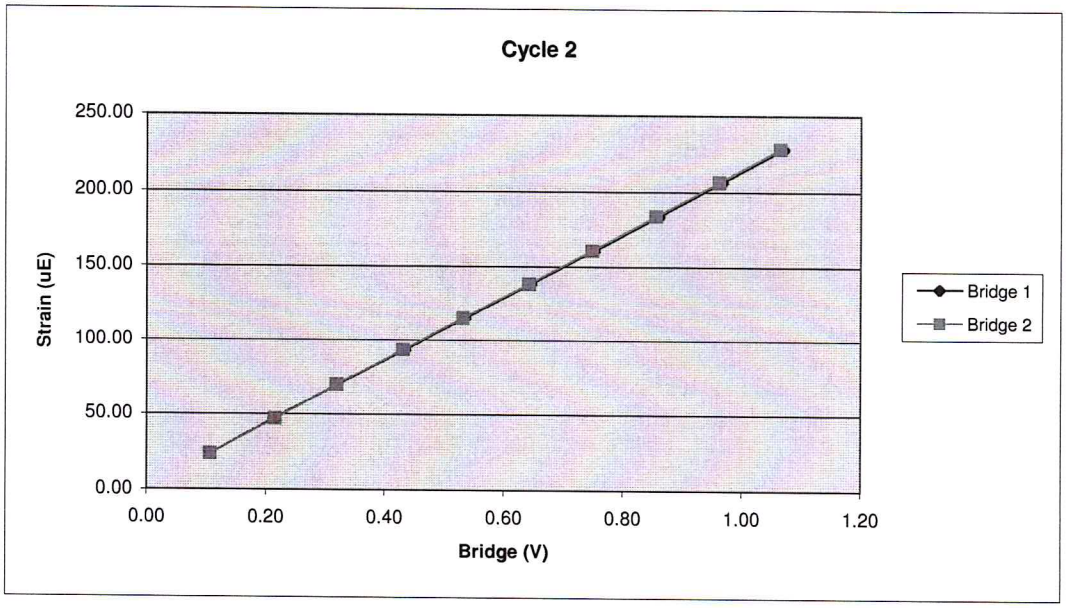
| **Force Strain Calibration** | |
|---|---|
| **EA (Kips)** | **43292.53** |
| Offset | -99.16 |
| Correlation | 0.999979 |



| 231NWJ | | Cycle 2 | | |
|---|---|---|---|---|
| **Sample** | **Force (lb)** | **Strain (µE)** | **Bridge 1 (V)** | **Bridge 2 (V)** |
| 1 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2 | 976.64 | 23.62 | 0.11 | 0.11 |
| 3 | 1976.95 | 47.01 | 0.21 | 0.22 |
| 4 | 2948.66 | 69.69 | 0.32 | 0.32 |
| 5 | 3992.73 | 93.38 | 0.43 | 0.43 |
| 6 | 4928.56 | 115.08 | 0.53 | 0.53 |
| 7 | 5953.31 | 138.50 | 0.64 | 0.64 |
| 8 | 6923.84 | 160.74 | 0.75 | 0.75 |
| 9 | 7942.09 | 183.61 | 0.86 | 0.85 |
| 10 | 8927.21 | 206.62 | 0.97 | 0.96 |
| 11 | 9887.09 | 228.02 | 1.07 | 1.06 |

| **Bridge 1** | | **Bridge 2** | |
|---|---|---|---|
| **Force Calibration (lb/V)** | **9250.68** | **Force Calibration (lb/V)** | **9301.08** |
| Offset | **-9.91** | Offset | **-18.55** |
| Correlation | **0.999998** | Correlation | **0.999998** |
| **Strain Calibration (µE/V)** | **212.11** | **Strain Calibration (µE/V)** | **213.27** |
| Offset | **1.53** | Offset | **1.33** |
| Correlation | **0.999994** | Correlation | **0.999994** |

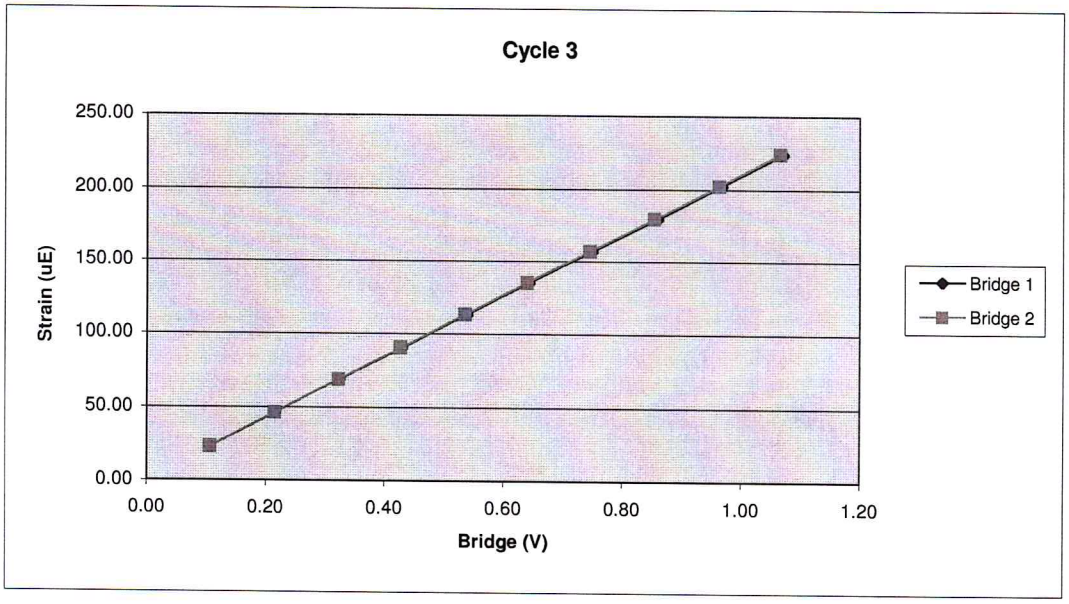
| **Force Strain Calibration** | |
|---|---|
| **EA (Kips)** | **43611.25** |
| Offset | **-76.62** |
| Correlation | **0.999990** |



| 231NWJ | | Cycle 3 | | |
|---|---|---|---|---|
| **Sample** | **Force (lb)** | **Strain (µE)** | **Bridge 1 (V)** | **Bridge 2 (V)** |
| 1 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2 | 976.05 | 22.97 | 0.11 | 0.11 |
| 3 | 1980.69 | 46.32 | 0.21 | 0.21 |
| 4 | 2977.64 | 68.91 | 0.32 | 0.32 |
| 5 | 3954.48 | 90.43 | 0.43 | 0.43 |
| 6 | 4961.09 | 113.14 | 0.54 | 0.54 |
| 7 | 5931.03 | 135.05 | 0.64 | 0.64 |
| 8 | 6916.55 | 156.82 | 0.75 | 0.74 |
| 9 | 7928.09 | 179.47 | 0.86 | 0.85 |
| 10 | 8932.14 | 202.49 | 0.97 | 0.96 |
| 11 | 9894.98 | 224.03 | 1.07 | 1.07 |

| **Bridge 1** | | **Bridge 2** | |
|---|---|---|---|
| **Force Calibration (lb/V)** | **9251.71** | **Force Calibration (lb/V)** | **9303.81** |
| Offset | **-8.61** | Offset | **-17.09** |
| Correlation | **0.999998** | Correlation | **0.999998** |
| **Strain Calibration (µE/V)** | **208.00** | **Strain Calibration (µE/V)** | **209.17** |
| Offset | **1.35** | Offset | **1.16** |
| Correlation | **0.999992** | Correlation | **0.999996** |

| **Force Strain Calibration** | |
|---|---|
| **EA (Kips)** | **44479.19** |
| Offset | **-68.49** |
| Correlation | **0.999991** |



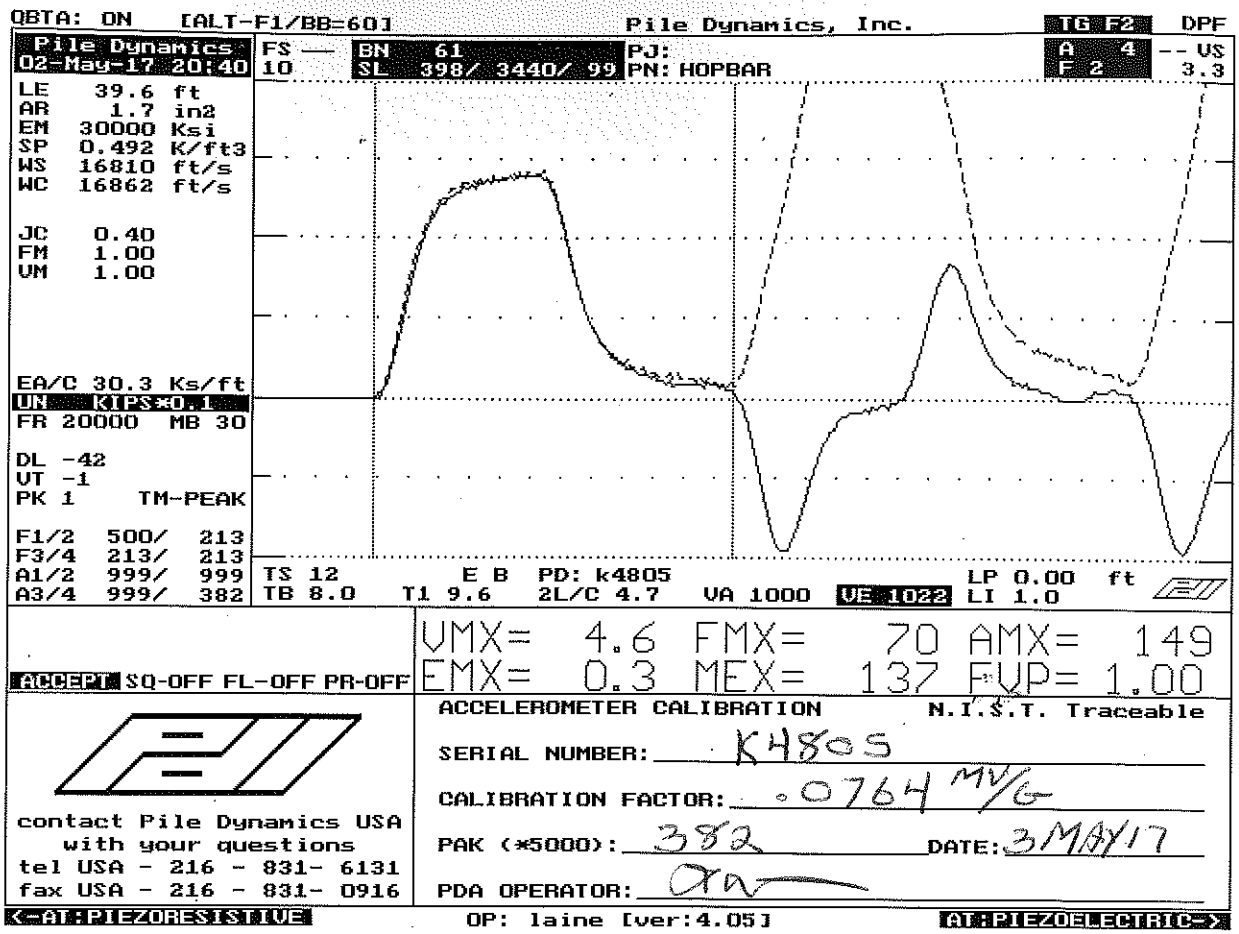
Bridge Excitation (V) 5
Shunt Resitor (ohm) 60.4k

| Calibration Factors | 231NWJ | | |
|---|---|---|---|
| Bridge 1 (µE/V) | 211.52 | Bridge 2 (µE/V) | 212.77 |
| EA Factor (Kips) | 43794.32 | Area (in^2) | 1.46 |

Calibrated by: David Beck
Calibrated Date: 9/28/2015

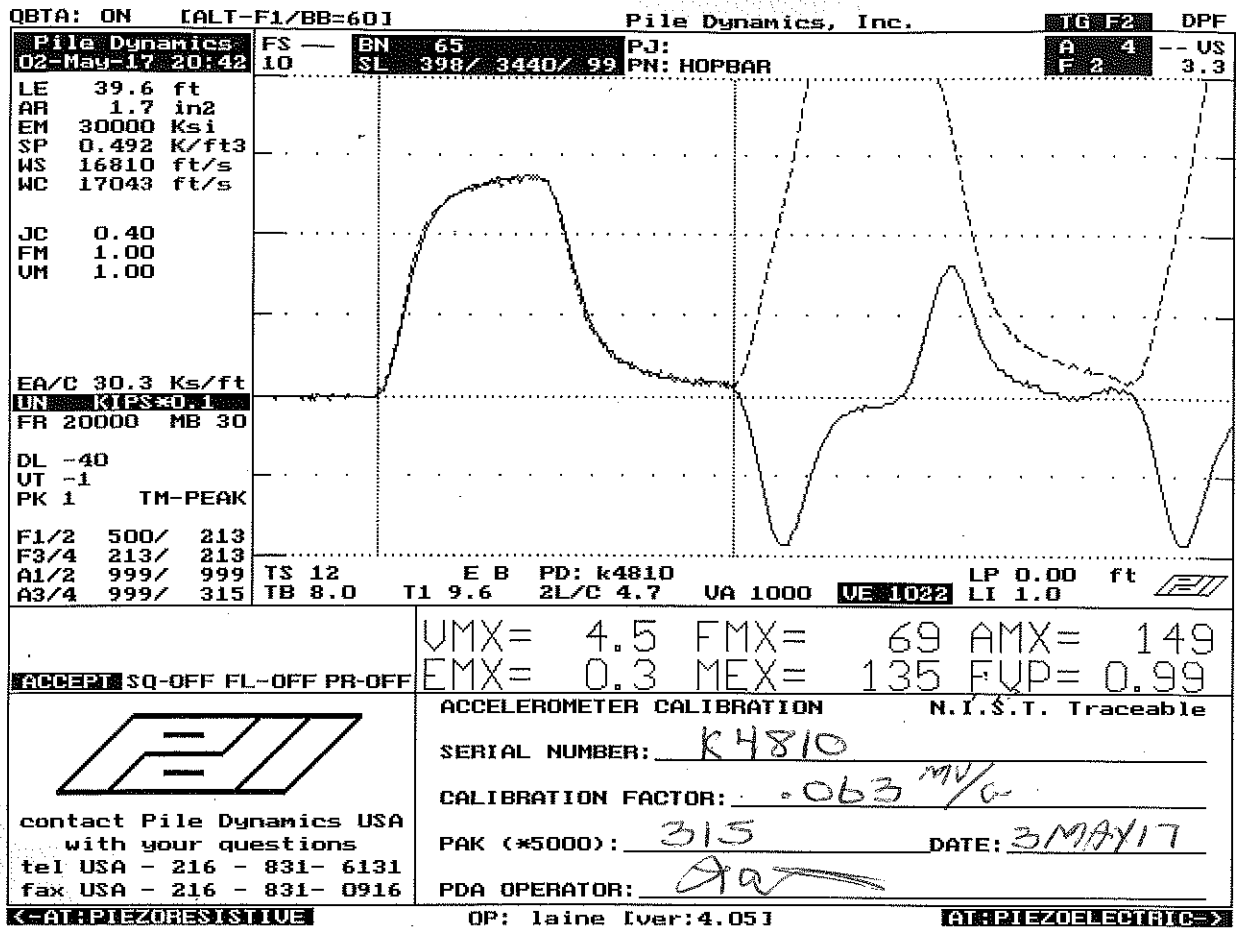
Pile Dynamics Inc
30725 Aurora Rd
Solon, OH 44139

Traceable to N.I.S.T.




**Smart Sensor**

**Smart Chip Programmed By** A.M.W **on** 3MAY17 **CRC Value** BC78


QBTA: ON [ALT-F1/BB=60]
Pile Dynamics, Inc.
TG F2
DPF
Pile Dynamics
02-May-17 20:42
FS —
10
BN 65
SL 398/ 3440/ 99
PJ:
PN: HOPBAR
A 4
F 2
-- VS
3.3
LE 39.6 ft
AR 1.7 in2
EM 30000 Ksi
SP 0.492 K/ft3
WS 16810 ft/s
WC 17043 ft/s
JC 0.40
FM 1.00
VM 1.00
EA/C 30.3 Ks/ft
UN KIPS*0.1
FR 20000 MB 30
DL -40
VT -1
PK 1 TM-PEAK
F1/2 500/ 213
F3/4 213/ 213
A1/2 999/ 999
A3/4 999/ 315
TS 12 E B PD: k4810
TB 8.0 T1 9.6 2L/C 4.7 VA 1000 VE 1022
LP 0.00 ft
LI 1.0
VMX= 4.5 FMX= 69 AMX= 149
EMX= 0.3 MEX= 135 FVP= 0.99
ACCEPT SQ-OFF FL-OFF PR-OFF
contact Pile Dynamics USA
with your questions
tel USA - 216 - 831- 6131
fax USA - 216 - 831- 0916
ACCELEROMETER CALIBRATION
N.I.S.T. Traceable
SERIAL NUMBER: K4810
CALIBRATION FACTOR: .063 mV/g
PAK (*5000): 315
DATE: 3MAY17
PDA OPERATOR:
<-AT:PIEZORESISTIVE
OP: laine [ver:4.05]
AT:PIEZOELECTRIC->
Smart Sensor
Smart Chip Programmed By T.M.W. on 3MAY17 CRC Value 9E7B

# Certificate of Calibration

## Pile Dynamics, Inc. certifies that the

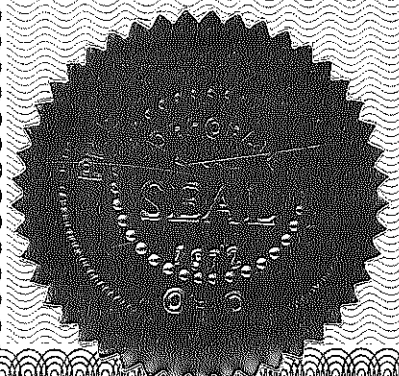
Pile Driving Analyzer®, Model 8G

Serial Number: 4613 LE

was calibrated on 4 May 2017

using a PDA Calibration Box whose output was calibrated with test equipment traceable to NIST.

This certificate is valid for 2 years from above date.



Tested by: _____

Pile Dynamics, Inc.
30725 Aurora Road
Cleveland, Ohio 44139 USA

# Appendix C

## *SPT Calibration Results*

GRL Engineers, Inc.
SPT Analyzer Results

PDA-S Ver. 2017.18 - Printed: 6/23/2017

**Summary of SPT Test Results**

Project: Diedrich D-50 SN310, Test Date: 6/21/2017

FMX: Maximum Force
VMX: Maximum Velocity
BPM: Blows/Minute
EFV: Maximum Energy

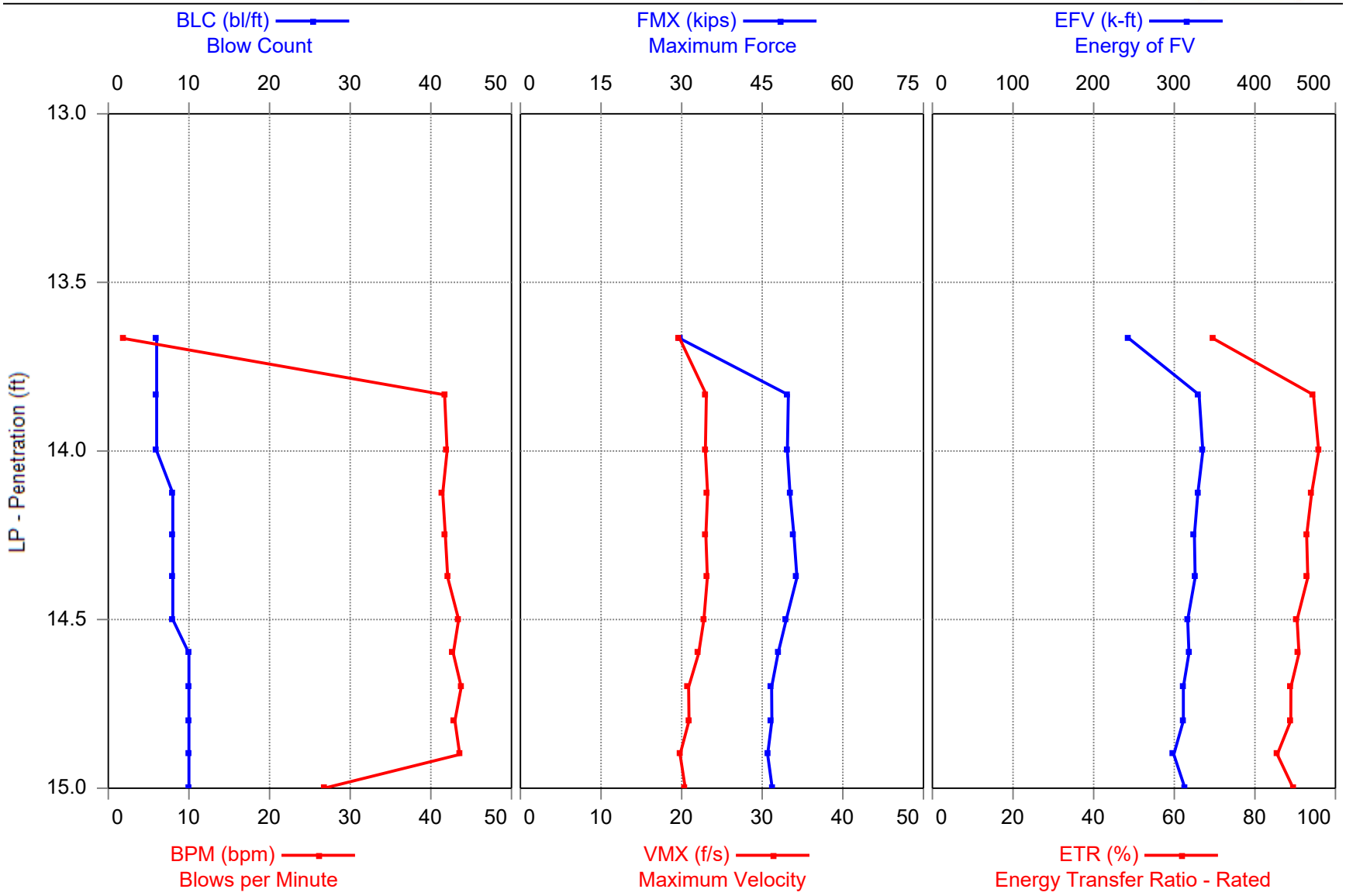
ETR: Energy Transfer Ratio - Rated
DFN: Final Displacement
FVP: Force/Velocity Proportionality

| Instr. Length ft | Blows Applied /6" | Start Depth ft | Final Depth ft | **N Value** | **N60 Value** | Average FMX kips | Average VMX ft/s | Average BPM bpm | Average EFV ft-lb | Average ETR (%) | Average DFN in | Average FVP [] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 19.00 | **3-4-5** | 13.50 | 15.00 | **9** | **14** | 48 | 21.8 | 41.0 | 317 | 90.5 | 1.33 | 0.9 |
| 24.00 | **3-6-8** | 18.50 | 20.00 | **14** | **21** | 50 | 19.4 | 44.4 | 326 | 93.0 | 0.86 | 0.9 |
| 29.00 | **4-8-11** | 23.50 | 25.00 | **19** | **29** | 50 | 19.0 | 44.5 | 340 | 97.1 | 0.63 | 0.9 |
| 34.00 | **5-6-9** | 28.50 | 30.00 | **15** | **23** | 48 | 17.0 | 44.8 | 323 | 92.4 | 0.80 | 1.0 |
| 39.00 | **7-10-15** | 33.50 | 35.00 | **25** | **39** | 49 | 17.5 | 44.6 | 325 | 92.8 | 0.47 | 1.1 |
| 46.00 | **4-4-6** | 38.50 | 40.00 | **10** | **15** | 46 | 17.9 | 44.2 | 340 | 97.0 | 1.20 | 0.9 |
| | | | | **Overall Average Values:** | | 49 | 18.5 | 44.2 | 329 | 93.9 | 0.78 | 1.0 |
| | | | | **Standard Deviation:** | | 2 | 1.6 | 1.9 | 12 | 3.5 | 0.32 | 0.1 |
| | | | | **Overall Maximum Value:** | | 52 | 23.2 | 45.4 | 357 | 102.1 | 1.50 | 1.1 |
| | | | | **Overall Minimum Value:** | | 44 | 15.9 | 26.8 | 299 | 85.5 | 0.39 | 0.8 |

GRL Engineers, Inc. - PDIPLOT2 Ver 2016.2.57.6 - Case Method & iCAP® Results

Printed: 23-June-2017 Test started: 21-June-2017

Diedrich D-50 SN310 - SS 13.5-15



Diedrich D-50 SN310 - SS 13.5-15 B2-4
OP: JW Date: 21-June-2017

AR: 1.46 in² SP: 0.492 k/ft³
LE: 19.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.90 []

BPM: Blows per Minute
FMX: Maximum Force
VMX: Maximum Velocity
EFV: Energy of FV
ETR: Energy Transfer Ratio - Rated
CSX: Max Measured Compr. Stress
DMX: Maximum Displacement
DFN: Final Displacement
FVP: Force/Velocity proportionality

| BL# | Depth ft | BLC bl/ft | TYPE | BPM bpm | FMX kips | VMX f/s | EFV k-ft | ETR (%) | CSX ksi | DMX in | DFN in | FVP [] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 14.0 | 6 | AV3 | 29 | 43 | 21.9 | 303 | 87 | 29.5 | 2.39 | 2.00 | 0.90 |
| 7 | 14.5 | 8 | AV4 | 42 | 50 | 23.0 | 324 | 93 | 34.6 | 2.09 | 1.50 | 0.88 |
| 12 | 15.0 | 10 | AV5 | 40 | 47 | 20.8 | 311 | 89 | 32.1 | 1.30 | 1.20 | 0.89 |
| | | | Average | 38 | 47 | 21.8 | 313 | 90 | 32.3 | 1.83 | 1.50 | 0.89 |

Total number of blows analyzed: 12

Sensors

Blows: 1-12

| Sensor | Type | Serial Nr. | Calibration | Replay Factor |
|---|---|---|---|---|
| F2 | Strain | 231NWJ1 | 211.5 | 1.00 |
| F4 | Strain | 231NWJ2 | 212.8 | 1.00 |
| A1 | PR Accel | K4810 | 315.0 | 1.00 |
| A3 | PR Accel | K4805 | 382.0 | 1.00 |

Time Summary

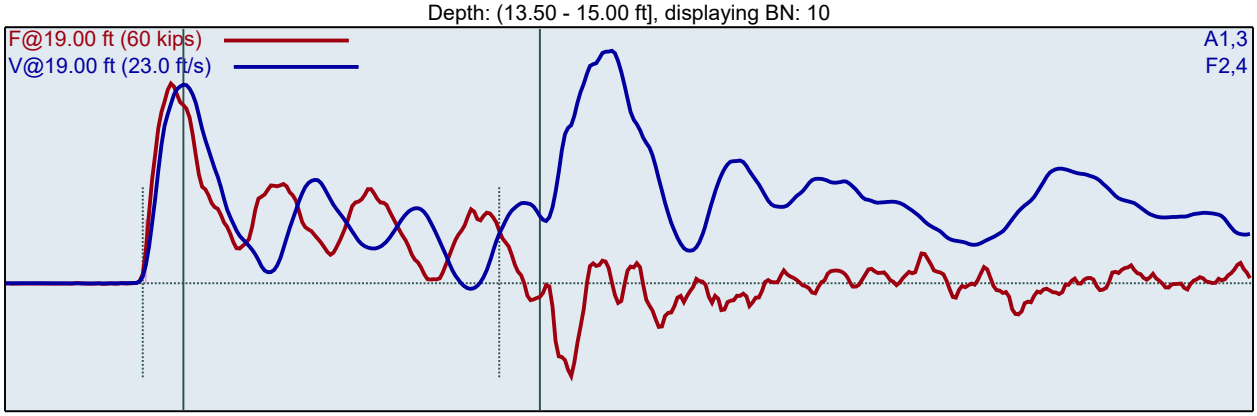
Drive 16 seconds 9:00 AM - 9:00 AM BN 1 - 12

GRL Engineers, Inc.
SPT Analyzer Results

PDA-S Ver. 2017.18 - Printed: 6/23/2017

Diedrich D-50 SN310 — SS 13.5-15
JW — Test date: 6/21/2017
AR: 1.46 in^2 — SP: 0.492 k/ft3
LE: 19.00 ft — EM: 30000 ksi
WS: 16807.9 ft/s

Depth: (13.50 - 15.00 ft], displaying BN: 10




FMX: Maximum Force
VMX: Maximum Velocity
BPM: Blows/Minute
EFV: Maximum Energy

ETR: Energy Transfer Ratio - Rated
DFN: Final Displacement
FVP: Force/Velocity Proportionality

| BL# | BC /6" | LP ft | FMX kips | VMX ft/s | BPM bpm | EFV ft-lb | ETR (%) | DFN in | FVP [] |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 3 | 13.67 | 30 | 19.8 | 1.9 | 244 | 69.7 | 2.00 | 0.9 |
| 2 | 3 | 13.83 | 50 | 23.1 | 41.7 | 331 | 94.5 | 2.00 | 0.9 |
| 3 | 3 | 14.00 | 50 | 22.9 | 42.0 | 335 | 95.8 | 2.00 | 0.9 |
| 4 | 4 | 14.13 | 50 | 23.2 | 41.5 | 329 | 94.1 | 1.50 | 0.9 |
| 5 | 4 | 14.25 | 51 | 23.0 | 41.8 | 325 | 92.9 | 1.50 | 0.9 |
| 6 | 4 | 14.38 | 51 | 23.2 | 42.1 | 326 | 93.1 | 1.50 | 0.9 |
| 7 | 4 | 14.50 | 49 | 22.8 | 43.4 | 317 | 90.5 | 1.50 | 0.9 |
| 8 | 5 | 14.60 | 48 | 22.1 | 42.8 | 318 | 90.9 | 1.20 | 0.9 |
| 9 | 5 | 14.70 | 47 | 20.9 | 43.8 | 311 | 88.9 | 1.20 | 0.9 |
| 10 | 5 | 14.80 | 47 | 20.9 | 43.0 | 311 | 88.9 | 1.20 | 0.9 |
| 11 | 5 | 14.90 | 46 | 19.8 | 43.6 | 299 | 85.5 | 1.20 | 0.9 |
| 12 | 5 | 15.00 | 47 | 20.4 | 26.8 | 313 | 89.5 | 1.20 | 0.9 |
| | | Average | 48 | 21.8 | 41.0 | 317 | 90.5 | 1.33 | 0.9 |
| | | Std Dev | 2 | 1.2 | 5.1 | 9 | 2.5 | 0.15 | 0.0 |
| | | Maximum | 51 | 23.2 | 43.8 | 329 | 94.1 | 1.50 | 0.9 |
| | | Minimum | 46 | 19.8 | 26.8 | 299 | 85.5 | 1.20 | 0.9 |
| | | | | N-value: 9 | | | | | |

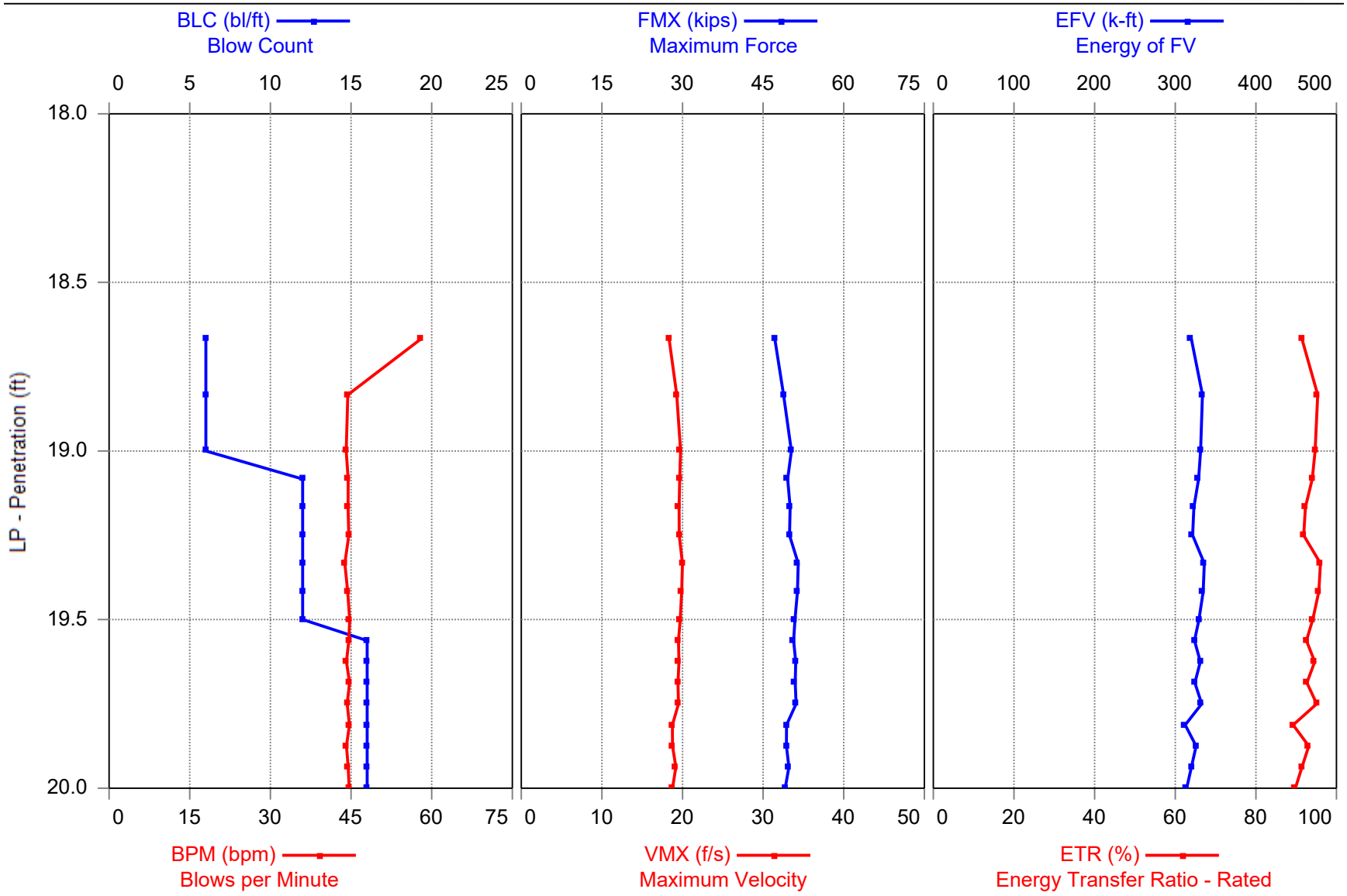
Sample Interval Time: 16.33 seconds.

GRL Engineers, Inc. - PDIPLOT2 Ver 2016.2.57.6 - Case Method & iCAP® Results

Printed: 23-June-2017

Test started: 21-June-2017

Diedrich D-50 SN310 - SS 18.5-20



Diedrich D-50 SN310 - SS 18.5-20 B2-4
OP: JW Date: 21-June-2017

AR: 1.46 in² SP: 0.492 k/ft³
LE: 24.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.90 []

BPM: Blows per Minute
FMX: Maximum Force
VMX: Maximum Velocity
EFV: Energy of FV
ETR: Energy Transfer Ratio - Rated
CSX: Max Measured Compr. Stress
DMX: Maximum Displacement
DFN: Final Displacement
FVP: Force/Velocity proportionality

| BL# | Depth ft | BLC bl/ft | TYPE | BPM bpm | FMX kips | VMX f/s | EFV k-ft | ETR (%) | CSX ksi | DMX in | DFN in | FVP [] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 19.0 | 6 | AV3 | 49 | 49 | 19.1 | 328 | 94 | 33.4 | 2.41 | 2.00 | 0.86 |
| 9 | 19.5 | 12 | AV6 | 44 | 51 | 19.7 | 329 | 94 | 34.6 | 1.38 | 1.00 | 0.85 |
| 17 | 20.0 | 16 | AV8 | 44 | 50 | 19.2 | 323 | 92 | 34.4 | 1.08 | 0.75 | 0.87 |
| | | | Average | 45 | 50 | 19.4 | 326 | 93 | 34.3 | 1.42 | 1.06 | 0.86 |

Total number of blows analyzed: 17

Sensors

Blows: 1-17

| Sensor | Type | Serial Nr. | Calibration | Replay Factor |
|---|---|---|---|---|
| F2 | Strain | 231NWJ1 | 211.5 | 1.00 |
| F4 | Strain | 231NWJ2 | 212.8 | 1.00 |
| A1 | PR Accel | K4810 | 315.0 | 1.00 |
| A3 | PR Accel | K4805 | 382.0 | 1.00 |

Time Summary

Drive 21 seconds 9:09 AM - 9:09 AM BN 1 - 17

GRL Engineers, Inc.
SPT Analyzer Results

PDA-S Ver. 2017.18 - Printed: 6/23/2017

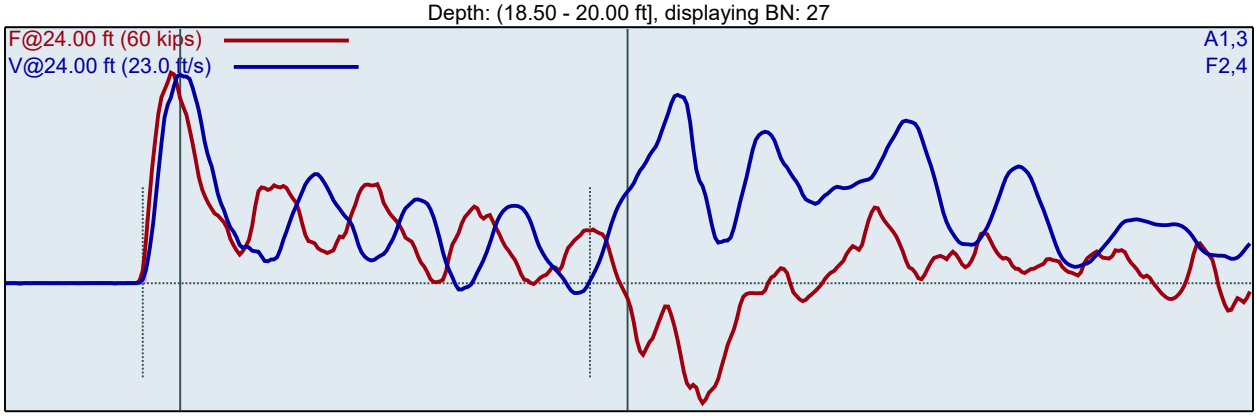
Diedrich D-50 SN310
JW

SS 13.5-15
Test date: 6/21/2017

AR: 1.46 in^2
LE: 24.00 ft
WS: 16807.9 ft/s

SP: 0.492 k/ft3
EM: 30000 ksi

Depth: (18.50 - 20.00 ft], displaying BN: 27




| BL# | BC /6" | LP ft | FMX kips | VMX ft/s | BPM bpm | EFV ft-lb | ETR (%) | DFN in | FVP [] |
|---|---|---|---|---|---|---|---|---|---|
| 13 | 3 | 18.67 | 47 | 18.3 | 58.1 | 320 | 91.4 | 2.00 | 0.9 |
| 14 | 3 | 18.83 | 49 | 19.3 | 44.4 | 334 | 95.3 | 2.00 | 0.9 |
| 15 | 3 | 19.00 | 50 | 19.8 | 44.1 | 331 | 94.7 | 2.00 | 0.8 |
| 16 | 6 | 19.08 | 50 | 19.7 | 44.5 | 329 | 94.0 | 1.00 | 0.9 |
| 17 | 6 | 19.17 | 50 | 19.6 | 44.4 | 323 | 92.3 | 1.00 | 0.8 |
| 18 | 6 | 19.25 | 50 | 19.6 | 44.6 | 322 | 91.9 | 1.00 | 0.9 |
| 19 | 6 | 19.33 | 52 | 20.0 | 43.8 | 336 | 96.0 | 1.00 | 0.8 |
| 20 | 6 | 19.42 | 51 | 19.9 | 44.4 | 335 | 95.6 | 1.00 | 0.8 |
| 21 | 6 | 19.50 | 51 | 19.7 | 44.7 | 329 | 94.1 | 1.00 | 0.9 |
| 22 | 8 | 19.56 | 51 | 19.5 | 44.6 | 324 | 92.5 | 0.75 | 0.8 |
| 23 | 8 | 19.63 | 51 | 19.6 | 44.2 | 331 | 94.6 | 0.75 | 0.9 |
| 24 | 8 | 19.69 | 51 | 19.4 | 44.7 | 324 | 92.7 | 0.75 | 0.9 |
| 25 | 8 | 19.75 | 51 | 19.5 | 44.3 | 333 | 95.1 | 0.75 | 0.9 |
| 26 | 8 | 19.81 | 49 | 18.7 | 44.7 | 312 | 89.2 | 0.75 | 0.9 |
| 27 | 8 | 19.88 | 49 | 18.8 | 44.2 | 326 | 93.1 | 0.75 | 0.9 |
| 28 | 8 | 19.94 | 50 | 19.2 | 44.5 | 320 | 91.4 | 0.75 | 0.9 |
| 29 | 8 | 20.00 | 49 | 18.8 | 44.7 | 314 | 89.8 | 0.75 | 0.9 |
| | | Average | 50 | 19.4 | 44.4 | 326 | 93.0 | 0.86 | 0.9 |
| | | Std Dev | 1 | 0.4 | 0.3 | 7 | 2.0 | 0.12 | 0.0 |
| | | Maximum | 52 | 20.0 | 44.7 | 336 | 96.0 | 1.00 | 0.9 |
| | | Minimum | 49 | 18.7 | 43.8 | 312 | 89.2 | 0.75 | 0.8 |
| | | | | N-value: 14 | | | | | |

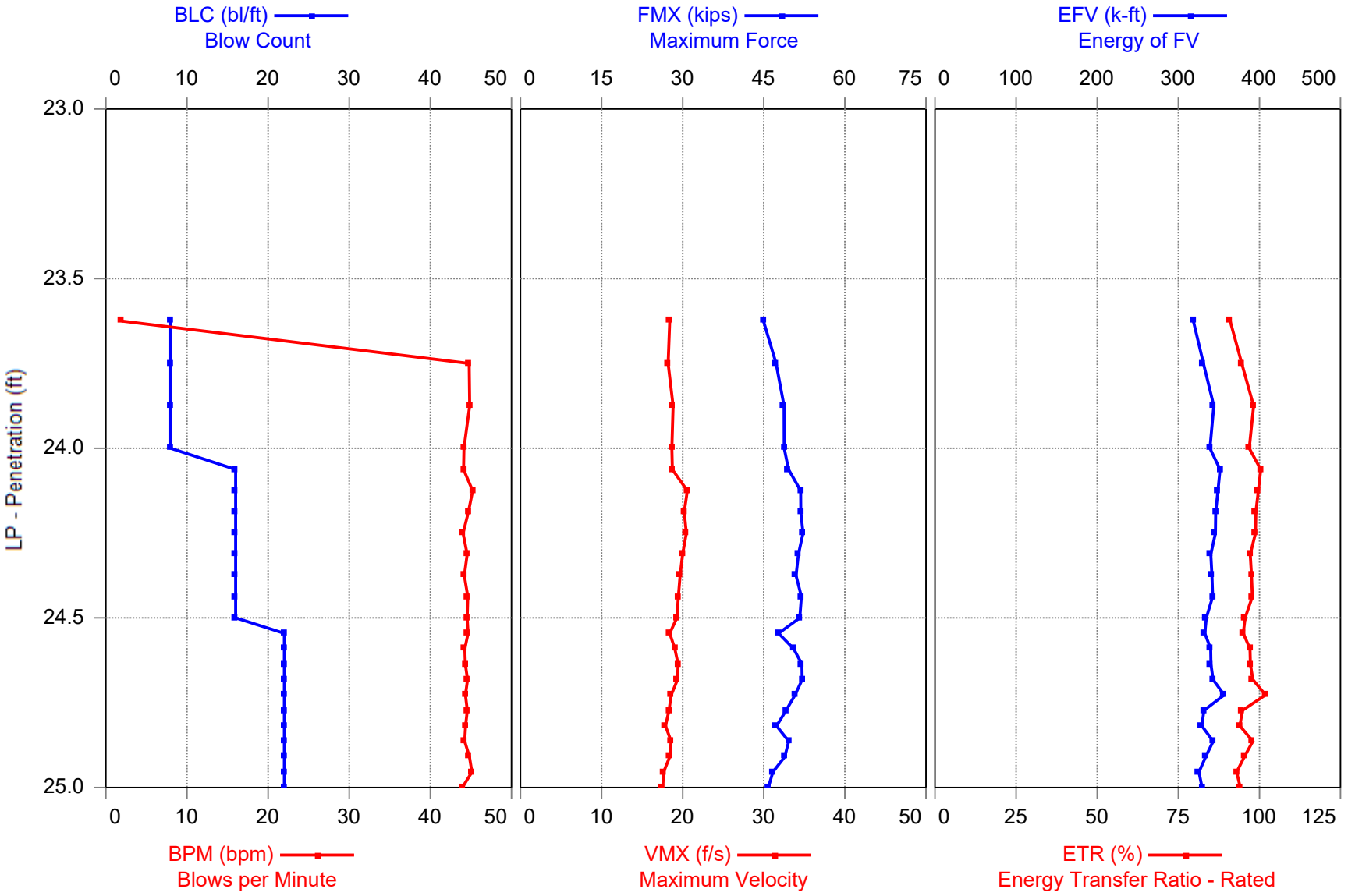
Sample Interval Time: 21.59 seconds.

GRL Engineers, Inc. - PDIPLOT2 Ver 2016.2.57.6 - Case Method & iCAP® Results

Printed: 23-June-2017

Test started: 21-June-2017

Diedrich D-50 SN310 - SS 23.5-25



Diedrich D-50 SN310 - SS 23.5-25 B2-4
OP: JW Date: 21-June-2017

AR: 1.46 in² SP: 0.492 k/ft³
LE: 29.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.90 []

BPM: Blows per Minute
FMX: Maximum Force
VMX: Maximum Velocity
EFV: Energy of FV
ETR: Energy Transfer Ratio - Rated
CSX: Max Measured Compr. Stress
DMX: Maximum Displacement
DFN: Final Displacement
FVP: Force/Velocity proportionality

| BL# | Depth ft | BLC bl/ft | TYPE | BPM bpm | FMX kips | VMX f/s | EFV k-ft | ETR (%) | CSX ksi | DMX in | DFN in | FVP [] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 24.0 | 8 | AV4 | 34 | 47 | 18.5 | 333 | 95 | 32.5 | 1.86 | 1.50 | 0.93 |
| 12 | 24.5 | 16 | AV8 | 44 | 51 | 19.8 | 344 | 98 | 35.2 | 1.26 | 0.75 | 0.90 |
| 23 | 25.0 | 22 | AV11 | 44 | 49 | 18.5 | 337 | 96 | 33.7 | 1.01 | 0.55 | 0.88 |
| | | | Average | 43 | 50 | 18.9 | 339 | 97 | 34.0 | 1.24 | 0.78 | 0.89 |

Total number of blows analyzed: 23

Sensors

Blows: 1-23

| Sensor | Type | Serial Nr. | Calibration | Replay Factor |
|---|---|---|---|---|
| F2 | Strain | 231NWJ1 | 211.5 | 1.00 |
| F4 | Strain | 231NWJ2 | 212.8 | 1.00 |
| A1 | PR Accel | K4810 | 315.0 | 1.00 |
| A3 | PR Accel | K4805 | 382.0 | 1.00 |

Time Summary

Drive 29 seconds 9:18 AM - 9:19 AM BN 1 - 23

GRL Engineers, Inc.
SPT Analyzer Results

PDA-S Ver. 2017.18 - Printed: 6/23/2017

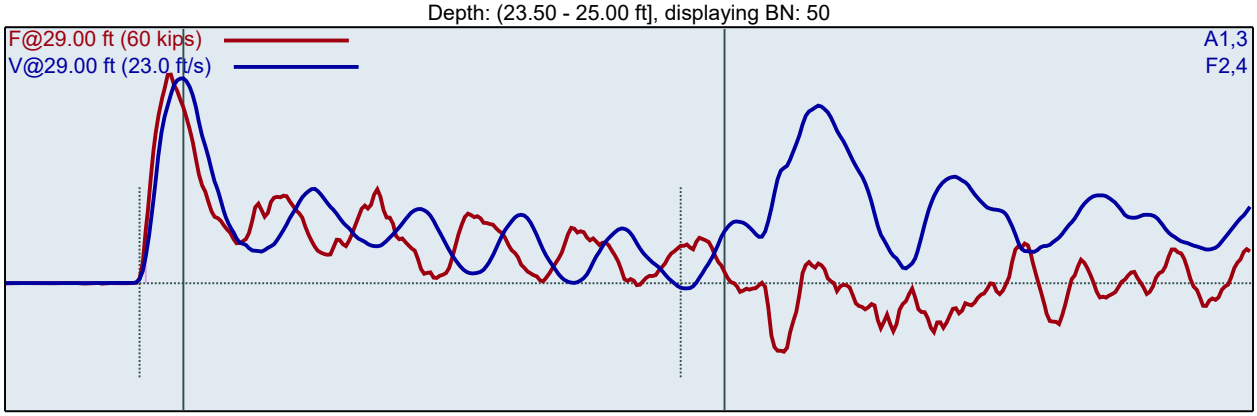
Diedrich D-50 SN310
JW

SS 13.5-15
Test date: 6/21/2017

AR: 1.46 in^2
LE: 29.00 ft
WS: 16807.9 ft/s

SP: 0.492 k/ft3
EM: 30000 ksi

Depth: (23.50 - 25.00 ft], displaying BN: 50




| BL# | BC /6" | LP ft | FMX kips | VMX ft/s | BPM bpm | EFV ft-lb | ETR (%) | DFN in | FVP [] |
|---|---|---|---|---|---|---|---|---|---|
| 30 | 4 | 23.63 | 45 | 18.4 | 1.9 | 318 | 91.0 | 1.50 | 0.9 |
| 31 | 4 | 23.75 | 47 | 18.2 | 44.8 | 331 | 94.6 | 1.50 | 0.9 |
| 32 | 4 | 23.88 | 49 | 18.8 | 44.8 | 344 | 98.2 | 1.50 | 0.9 |
| 33 | 4 | 24.00 | 49 | 18.7 | 44.1 | 339 | 96.8 | 1.50 | 0.9 |
| 34 | 8 | 24.06 | 50 | 18.7 | 44.1 | 351 | 100.4 | 0.75 | 0.9 |
| 35 | 8 | 24.13 | 52 | 20.6 | 45.2 | 349 | 99.7 | 0.75 | 0.9 |
| 36 | 8 | 24.19 | 52 | 20.2 | 44.7 | 346 | 98.9 | 0.75 | 0.9 |
| 37 | 8 | 24.25 | 52 | 20.5 | 44.0 | 346 | 98.8 | 0.75 | 0.9 |
| 38 | 8 | 24.31 | 51 | 20.0 | 44.5 | 340 | 97.2 | 0.75 | 0.9 |
| 39 | 8 | 24.38 | 51 | 19.7 | 44.2 | 341 | 97.6 | 0.75 | 0.9 |
| 40 | 8 | 24.44 | 52 | 19.5 | 44.6 | 342 | 97.8 | 0.75 | 0.9 |
| 41 | 8 | 24.50 | 52 | 19.3 | 44.5 | 335 | 95.6 | 0.75 | 0.9 |
| 42 | 11 | 24.55 | 48 | 18.4 | 44.6 | 333 | 95.0 | 0.54 | 0.9 |
| 43 | 11 | 24.59 | 51 | 19.0 | 44.2 | 340 | 97.1 | 0.55 | 0.9 |
| 44 | 11 | 24.64 | 52 | 19.4 | 44.3 | 340 | 97.2 | 0.55 | 0.8 |
| 45 | 11 | 24.68 | 52 | 19.4 | 44.6 | 343 | 98.0 | 0.55 | 0.8 |
| 46 | 11 | 24.73 | 51 | 18.6 | 44.3 | 356 | 101.9 | 0.55 | 0.9 |
| 47 | 11 | 24.77 | 49 | 18.3 | 44.6 | 332 | 94.8 | 0.54 | 0.9 |
| 48 | 11 | 24.82 | 47 | 17.9 | 44.3 | 329 | 94.0 | 0.54 | 0.9 |
| 49 | 11 | 24.86 | 50 | 18.6 | 44.2 | 343 | 98.0 | 0.55 | 0.9 |
| 50 | 11 | 24.91 | 49 | 18.4 | 44.8 | 334 | 95.4 | 0.54 | 0.9 |
| 51 | 11 | 24.95 | 47 | 17.7 | 45.1 | 325 | 93.0 | 0.55 | 0.9 |
| 52 | 11 | 25.00 | 46 | 17.5 | 43.9 | 329 | 94.1 | 0.55 | 0.9 |
| | | Average | 50 | 19.0 | 44.5 | 340 | 97.1 | 0.63 | 0.9 |
| | | Std Dev | 2 | 0.9 | 0.3 | 8 | 2.3 | 0.10 | 0.0 |
| | | Maximum | 52 | 20.6 | 45.2 | 356 | 101.9 | 0.75 | 0.9 |
| | | Minimum | 46 | 17.5 | 43.9 | 325 | 93.0 | 0.54 | 0.8 |
| | | | | N-value: 19 | | | | | |

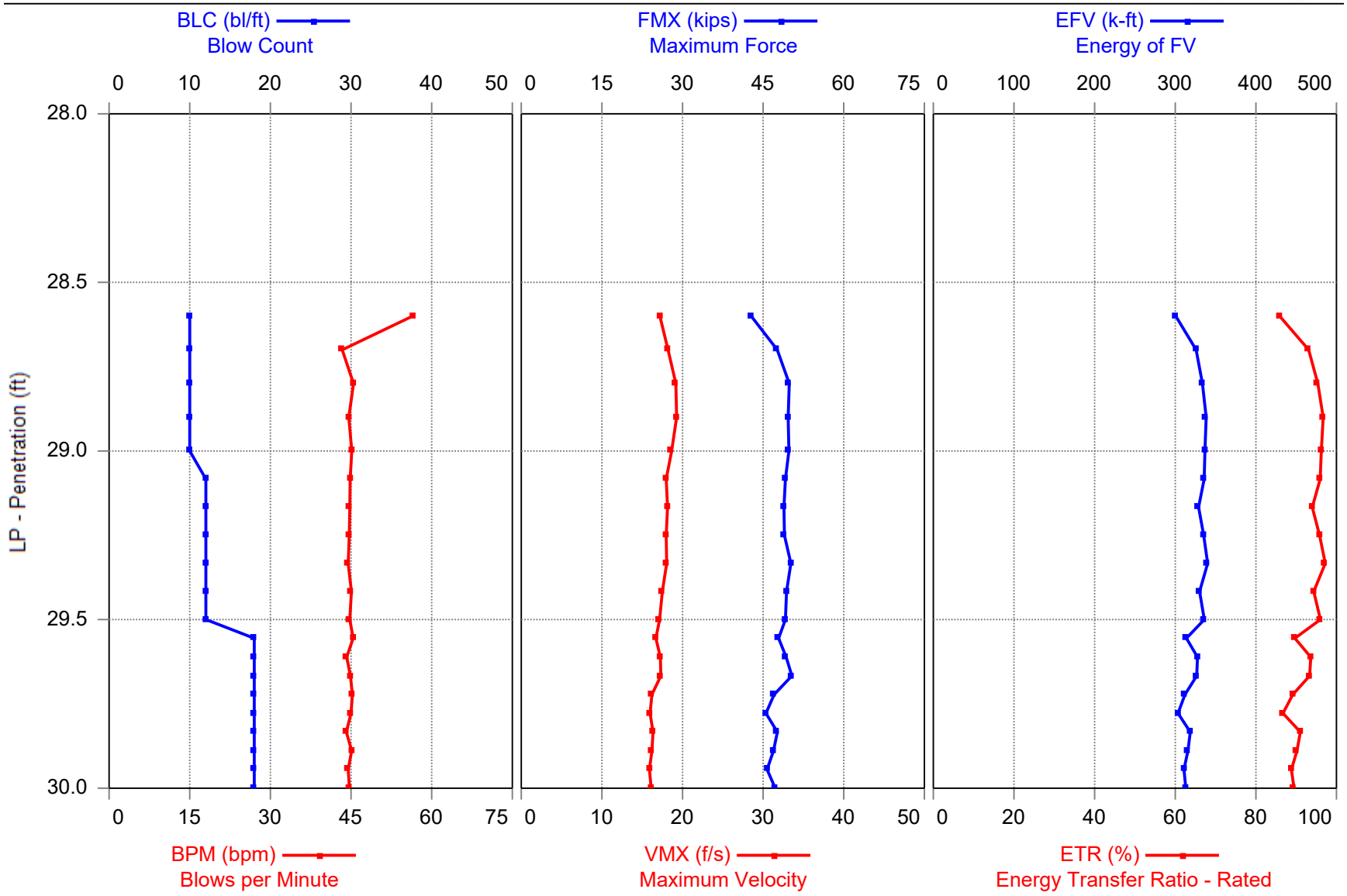
Sample Interval Time: 29.69 seconds.

GRL Engineers, Inc. - PDIPLOT2 Ver 2016.2.57.6 - Case Method & iCAP® Results

Printed: 23-June-2017

Test started: 21-June-2017

Diedrich D-50 SN310 - SS 28.5-30



Diedrich D-50 SN310 - SS 28.5-30 B2-4
OP: JW Date: 21-June-2017

AR: 1.46 in² SP: 0.492 k/ft³
LE: 34.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.90 []

BPM: Blows per Minute
FMX: Maximum Force
VMX: Maximum Velocity
EFV: Energy of FV
ETR: Energy Transfer Ratio - Rated
CSX: Max Measured Compr. Stress
DMX: Maximum Displacement
DFN: Final Displacement
FVP: Force/Velocity proportionality

| BL# | Depth ft | BLC bl/ft | TYPE | BPM bpm | FMX kips | VMX f/s | EFV k-ft | ETR (%) | CSX ksi | DMX in | DFN in | FVP [] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 29.0 | 10 | AV5 | 47 | 48 | 18.5 | 327 | 93 | 32.8 | 1.40 | 1.19 | 1.00 |
| 11 | 29.5 | 12 | AV6 | 45 | 49 | 17.8 | 334 | 96 | 33.8 | 1.01 | 1.00 | 1.04 |
| 20 | 30.0 | 18 | AV9 | 45 | 48 | 16.4 | 316 | 90 | 32.5 | 0.74 | 0.66 | 1.05 |
| | | | Average | 45 | 48 | 17.4 | 324 | 93 | 33.0 | 0.99 | 0.90 | 1.04 |

Total number of blows analyzed: 20

Sensors

Blows: 1-20

| Sensor | Type | Serial Nr. | Calibration | Replay Factor |
|---|---|---|---|---|
| F2 | Strain | 231NWJ1 | 211.5 | 1.00 |
| F4 | Strain | 231NWJ2 | 212.8 | 1.00 |
| A1 | PR Accel | K4810 | 315.0 | 1.00 |
| A3 | PR Accel | K4805 | 382.0 | 1.00 |

Time Summary

Drive 25 seconds 9:28 AM - 9:28 AM BN 1 - 20

GRL Engineers, Inc.
SPT Analyzer Results

PDA-S Ver. 2017.18 - Printed: 6/23/2017

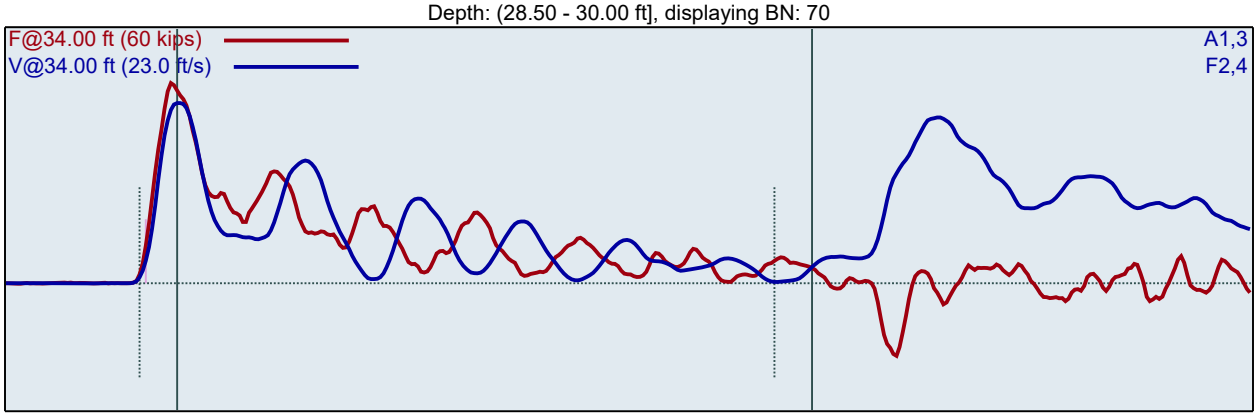
Diedrich D-50 SN310
JW

SS 13.5-15
Test date: 6/21/2017

AR: 1.46 in^2
LE: 34.00 ft
WS: 16807.9 ft/s

SP: 0.492 k/ft3
EM: 30000 ksi

Depth: (28.50 - 30.00 ft], displaying BN: 70




| BL# | BC /6" | LP ft | FMX kips | VMX ft/s | BPM bpm | EFV ft-lb | ETR (%) | DFN in | FVP [] |
|---|---|---|---|---|---|---|---|---|---|
| 53 | 5 | 28.60 | 43 | 17.2 | 56.5 | 301 | 85.9 | 1.20 | 0.9 |
| 54 | 5 | 28.70 | 48 | 18.2 | 43.4 | 326 | 93.1 | 1.19 | 1.0 |
| 55 | 5 | 28.80 | 50 | 19.2 | 45.5 | 334 | 95.4 | 1.19 | 1.0 |
| 56 | 5 | 28.90 | 50 | 19.3 | 44.6 | 338 | 96.7 | 1.19 | 1.0 |
| 57 | 5 | 29.00 | 50 | 18.7 | 45.1 | 337 | 96.2 | 1.20 | 1.0 |
| 58 | 6 | 29.08 | 49 | 18.0 | 44.8 | 336 | 96.0 | 1.00 | 1.0 |
| 59 | 6 | 29.17 | 49 | 18.1 | 44.8 | 329 | 94.0 | 1.00 | 1.1 |
| 60 | 6 | 29.25 | 49 | 18.0 | 44.7 | 335 | 95.8 | 1.00 | 1.0 |
| 61 | 6 | 29.33 | 50 | 18.0 | 44.5 | 340 | 97.2 | 1.00 | 1.0 |
| 62 | 6 | 29.42 | 49 | 17.5 | 45.1 | 330 | 94.4 | 1.00 | 1.0 |
| 63 | 6 | 29.50 | 49 | 17.2 | 44.8 | 336 | 96.0 | 1.00 | 1.1 |
| 64 | 9 | 29.56 | 48 | 16.7 | 45.4 | 314 | 89.7 | 0.66 | 1.1 |
| 65 | 9 | 29.61 | 49 | 17.2 | 44.2 | 328 | 93.6 | 0.66 | 1.0 |
| 66 | 9 | 29.67 | 50 | 17.3 | 44.9 | 327 | 93.3 | 0.66 | 1.0 |
| 67 | 9 | 29.72 | 47 | 16.2 | 45.2 | 312 | 89.2 | 0.66 | 1.1 |
| 68 | 9 | 29.78 | 46 | 16.0 | 45.0 | 304 | 86.7 | 0.66 | 1.0 |
| 69 | 9 | 29.83 | 48 | 16.4 | 44.1 | 319 | 91.0 | 0.66 | 1.1 |
| 70 | 9 | 29.89 | 47 | 16.2 | 45.1 | 316 | 90.2 | 0.66 | 1.1 |
| 71 | 9 | 29.94 | 46 | 15.9 | 44.5 | 311 | 88.8 | 0.66 | 1.1 |
| 72 | 9 | 30.00 | 47 | 16.1 | 44.7 | 313 | 89.4 | 0.66 | 1.1 |
| | | Average | 48 | 17.0 | 44.8 | 323 | 92.4 | 0.80 | 1.0 |
| | | Std Dev | 1 | 0.8 | 0.4 | 11 | 3.1 | 0.16 | 0.0 |
| | | Maximum | 50 | 18.1 | 45.4 | 340 | 97.2 | 1.00 | 1.1 |
| | | Minimum | 46 | 15.9 | 44.1 | 304 | 86.7 | 0.66 | 1.0 |
| | | | | N-value: 15 | | | | | |

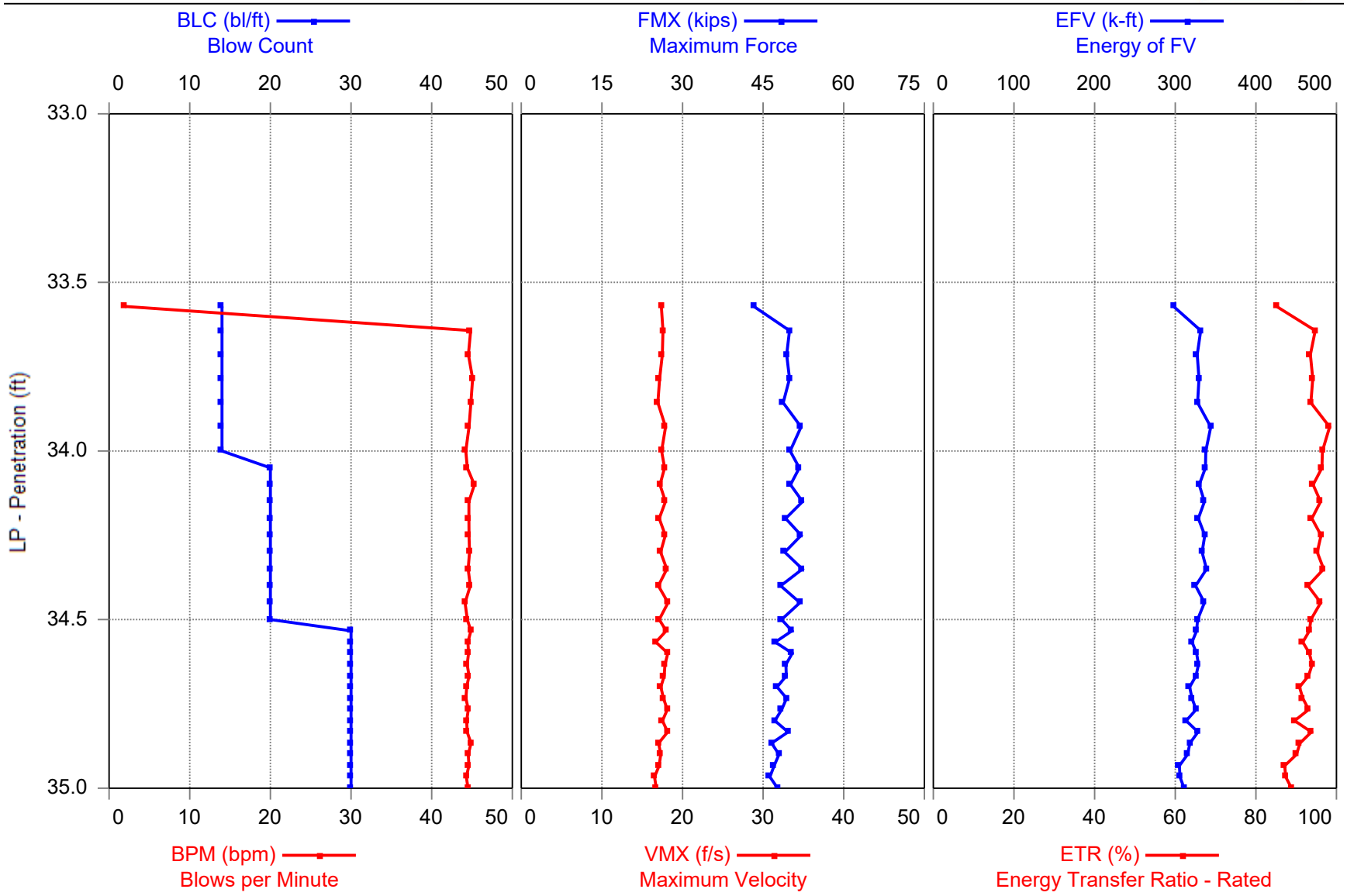
Sample Interval Time: 25.44 seconds.

GRL Engineers, Inc. - PDIPLOT2 Ver 2016.2.57.6 - Case Method & iCAP® Results

Printed: 23-June-2017

Test started: 21-June-2017

Diedrich D-50 SN310 - SS 33.5-35



Diedrich D-50 SN310 - SS 33.5-35 B2-4
OP: JW Date: 21-June-2017

AR: 1.46 in² SP: 0.492 k/ft³
LE: 39.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.90 []

BPM: Blows per Minute
FMX: Maximum Force
VMX: Maximum Velocity
EFV: Energy of FV
ETR: Energy Transfer Ratio - Rated
CSX: Max Measured Compr. Stress
DMX: Maximum Displacement
DFN: Final Displacement
FVP: Force/Velocity proportionality

| BL# | Depth ft | BLC bl/ft | TYPE | BPM bpm | FMX kips | VMX f/s | EFV k-ft | ETR (%) | CSX ksi | DMX in | DFN in | FVP [] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 34.0 | 14 | AV7 | 39 | 49 | 17.4 | 328 | 94 | 33.6 | 0.93 | 0.85 | 1.05 |
| 17 | 34.5 | 20 | AV10 | 45 | 51 | 17.6 | 333 | 95 | 34.6 | 0.63 | 0.59 | 1.09 |
| 32 | 35.0 | 30 | AV15 | 45 | 48 | 17.5 | 319 | 91 | 33.1 | 0.47 | 0.40 | 1.05 |
| | | | Average | 43 | 49 | 17.5 | 325 | 93 | 33.7 | 0.62 | 0.56 | 1.06 |

Total number of blows analyzed: 32

Sensors

Blows: 1-32

| Sensor | Type | Serial Nr. | Calibration | Replay Factor |
|---|---|---|---|---|
| F2 | Strain | 231NWJ1 | 211.5 | 1.00 |
| F4 | Strain | 231NWJ2 | 212.8 | 1.00 |
| A1 | PR Accel | K4810 | 315.0 | 1.00 |
| A3 | PR Accel | K4805 | 382.0 | 1.00 |

Time Summary

Drive 41 seconds 9:38 AM - 9:39 AM BN 1 - 32

GRL Engineers, Inc.
SPT Analyzer Results

PDA-S Ver. 2017.18 - Printed: 6/23/2017

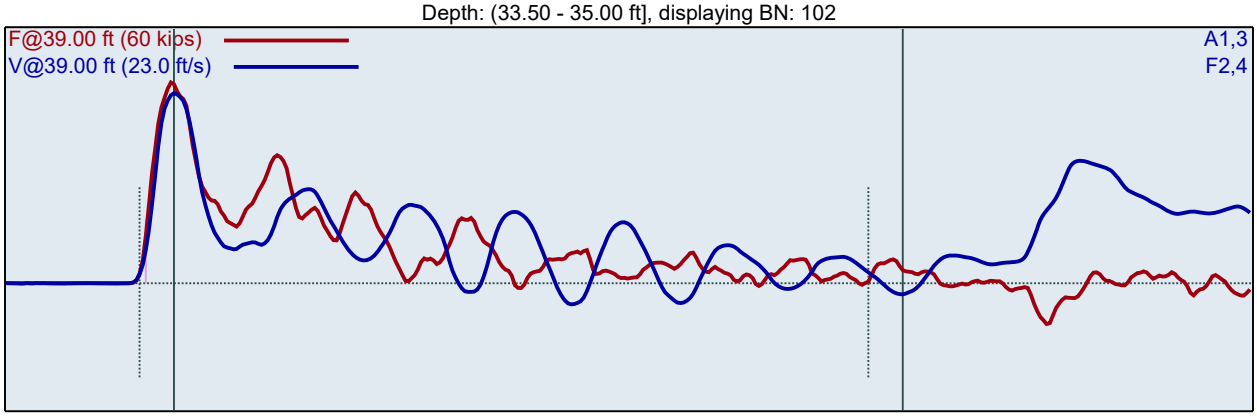
Diedrich D-50 SN310
JW

SS 13.5-15
Test date: 6/21/2017

AR: 1.46 in^2
LE: 39.00 ft
WS: 16807.9 ft/s

SP: 0.492 k/ft3
EM: 30000 ksi

Depth: (33.50 - 35.00 ft], displaying BN: 102




| BL# | BC /6" | LP ft | FMX kips | VMX ft/s | BPM bpm | EFV ft-lb | ETR (%) | DFN in | FVP [] |
|---|---|---|---|---|---|---|---|---|---|
| 73 | 7 | 33.57 | 43 | 17.4 | 1.9 | 298 | 85.1 | 0.84 | 1.0 |
| 74 | 7 | 33.64 | 50 | 17.6 | 44.8 | 332 | 94.7 | 0.85 | 1.1 |
| 75 | 7 | 33.71 | 49 | 17.5 | 44.6 | 327 | 93.5 | 0.85 | 1.0 |
| 76 | 7 | 33.79 | 50 | 17.2 | 45.1 | 329 | 94.1 | 0.85 | 1.1 |
| 77 | 7 | 33.86 | 49 | 16.9 | 44.9 | 328 | 93.6 | 0.85 | 1.1 |
| 78 | 7 | 33.93 | 52 | 17.9 | 44.6 | 344 | 98.3 | 0.85 | 1.1 |
| 79 | 7 | 34.00 | 50 | 17.4 | 44.2 | 338 | 96.5 | 0.85 | 1.1 |
| 80 | 10 | 34.05 | 52 | 17.8 | 44.4 | 337 | 96.4 | 0.59 | 1.1 |
| 81 | 10 | 34.10 | 50 | 17.2 | 45.3 | 330 | 94.2 | 0.59 | 1.1 |
| 82 | 10 | 34.15 | 52 | 17.9 | 44.6 | 336 | 96.1 | 0.59 | 1.1 |
| 83 | 10 | 34.20 | 49 | 17.1 | 44.6 | 329 | 93.9 | 0.59 | 1.1 |
| 84 | 10 | 34.25 | 52 | 17.9 | 44.6 | 337 | 96.2 | 0.59 | 1.1 |
| 85 | 10 | 34.30 | 49 | 17.3 | 44.7 | 333 | 95.2 | 0.60 | 1.1 |
| 86 | 10 | 34.35 | 52 | 18.1 | 44.5 | 339 | 96.8 | 0.60 | 1.1 |
| 87 | 10 | 34.40 | 48 | 17.0 | 44.8 | 325 | 92.9 | 0.59 | 1.1 |
| 88 | 10 | 34.45 | 52 | 18.2 | 44.1 | 336 | 96.1 | 0.60 | 1.1 |
| 89 | 10 | 34.50 | 48 | 17.1 | 44.4 | 328 | 93.6 | 0.59 | 1.1 |
| 90 | 15 | 34.53 | 50 | 18.0 | 44.9 | 326 | 93.3 | 0.40 | 1.0 |
| 91 | 15 | 34.57 | 47 | 16.7 | 44.5 | 321 | 91.7 | 0.40 | 1.1 |
| 92 | 15 | 34.60 | 50 | 18.2 | 44.6 | 326 | 93.3 | 0.40 | 1.1 |
| 93 | 15 | 34.63 | 49 | 17.8 | 44.4 | 329 | 93.9 | 0.40 | 1.1 |
| 94 | 15 | 34.67 | 49 | 17.7 | 44.6 | 326 | 93.1 | 0.40 | 1.0 |
| 95 | 15 | 34.70 | 48 | 17.3 | 44.3 | 318 | 90.8 | 0.40 | 1.0 |
| 96 | 15 | 34.73 | 49 | 17.6 | 44.2 | 321 | 91.7 | 0.39 | 1.1 |
| 97 | 15 | 34.77 | 48 | 18.1 | 44.5 | 326 | 93.1 | 0.39 | 1.0 |
| 98 | 15 | 34.80 | 47 | 17.5 | 44.3 | 314 | 89.6 | 0.39 | 1.0 |
| 99 | 15 | 34.83 | 50 | 18.2 | 44.4 | 328 | 93.8 | 0.39 | 1.0 |
| 100 | 15 | 34.87 | 47 | 17.0 | 44.9 | 318 | 90.9 | 0.40 | 1.0 |
| 101 | 15 | 34.90 | 48 | 17.3 | 44.5 | 315 | 90.1 | 0.40 | 1.0 |
| 102 | 15 | 34.93 | 47 | 17.1 | 44.6 | 305 | 87.2 | 0.40 | 1.0 |
| 103 | 15 | 34.97 | 46 | 16.5 | 44.3 | 306 | 87.4 | 0.40 | 1.1 |
| 104 | 15 | 35.00 | 48 | 16.7 | 44.5 | 311 | 88.8 | 0.40 | 1.1 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Average | 49 | 17.5 | 44.6 | 325 | 92.8 | 0.47 | 1.1 |
| Std Dev | 2 | 0.5 | 0.2 | 9 | 2.7 | 0.10 | 0.0 |
| Maximum | 52 | 18.2 | 45.3 | 339 | 96.8 | 0.60 | 1.1 |
| Minimum | 46 | 16.5 | 44.1 | 305 | 87.2 | 0.39 | 1.0 |

N-value: 25

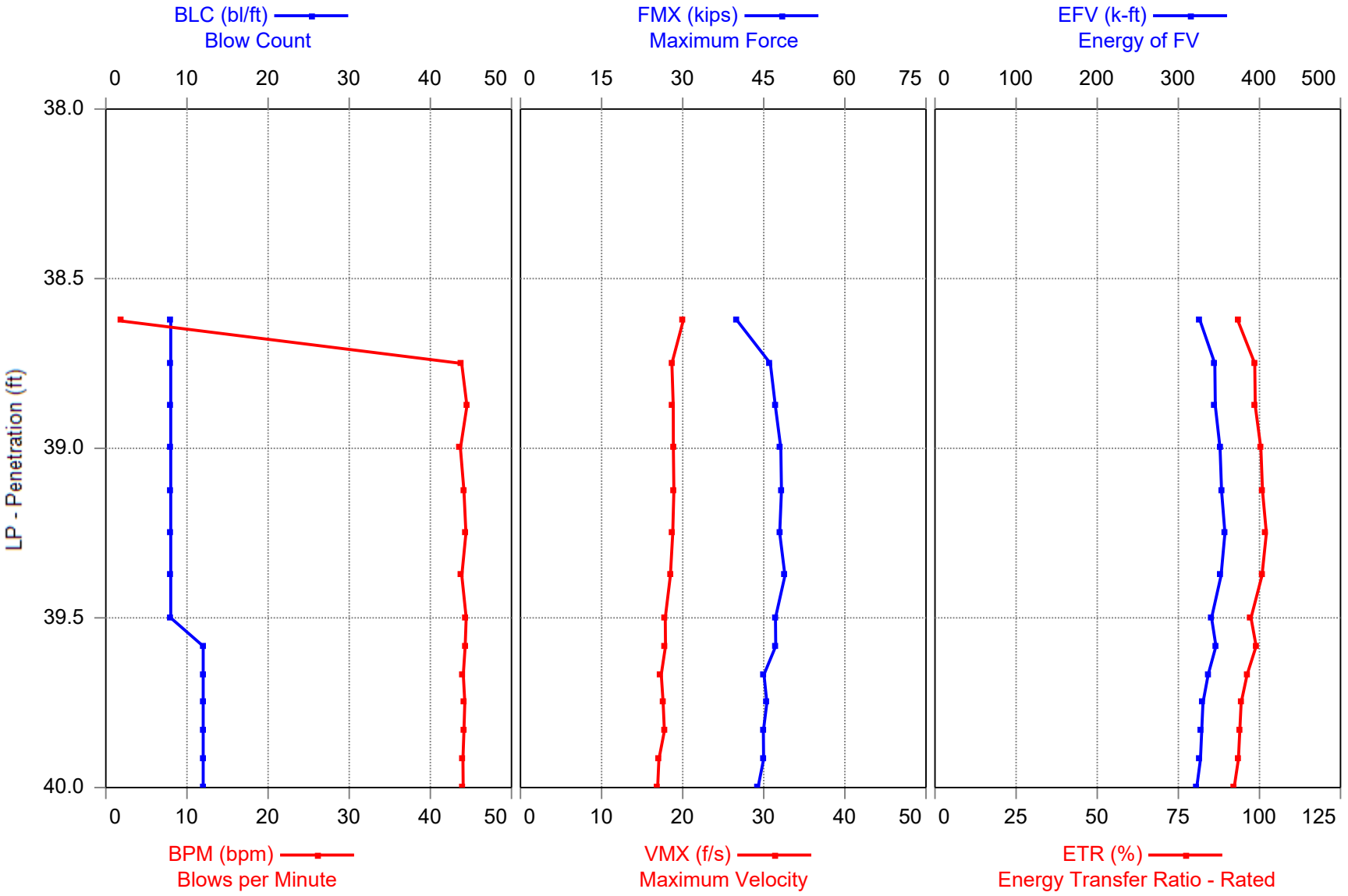
Sample Interval Time: 41.75 seconds.

GRL Engineers, Inc. - PDIPLOT2 Ver 2016.2.57.6 - Case Method & iCAP® Results

Printed: 23-June-2017

Test started: 21-June-2017

Diedrich D-50 SN310 - SS 38.5-40



Diedrich D-50 SN310 - SS 38.5-40 B2-4
OP: JW Date: 21-June-2017

AR: 1.46 in² SP: 0.492 k/ft³
LE: 46.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.90 []

BPM: Blows per Minute
FMX: Maximum Force
VMX: Maximum Velocity
EFV: Energy of FV
ETR: Energy Transfer Ratio - Rated
CSX: Max Measured Compr. Stress
DMX: Maximum Displacement
DFN: Final Displacement
FVP: Force/Velocity proportionality

| BL# | Depth ft | BLC bl/ft | TYPE | BPM bpm | FMX kips | VMX f/s | EFV k-ft | ETR (%) | CSX ksi | DMX in | DFN in | FVP [] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 39.0 | 8 | AV4 | 34 | 45 | 19.1 | 342 | 98 | 31.1 | 1.83 | 1.50 | 0.87 |
| 8 | 39.5 | 8 | AV4 | 44 | 48 | 18.5 | 351 | 100 | 32.9 | 1.81 | 1.50 | 0.94 |
| 14 | 40.0 | 12 | AV6 | 44 | 45 | 17.4 | 332 | 95 | 31.0 | 1.52 | 1.00 | 0.95 |
| | | | Average | 41 | 46 | 18.2 | 340 | 97 | 31.6 | 1.69 | 1.29 | 0.92 |

Total number of blows analyzed: 14

Sensors

Blows: 1-14

| Sensor | Type | Serial Nr. | Calibration | Replay Factor |
|---|---|---|---|---|
| F2 | Strain | 231NWJ1 | 211.5 | 1.00 |
| F4 | Strain | 231NWJ2 | 212.8 | 1.00 |
| A1 | PR Accel | K4810 | 315.0 | 1.00 |
| A3 | PR Accel | K4805 | 382.0 | 1.00 |

Time Summary

Drive 17 seconds 9:51 AM - 9:51 AM BN 1 - 14

GRL Engineers, Inc.
SPT Analyzer Results

PDA-S Ver. 2017.18 - Printed: 6/27/2017

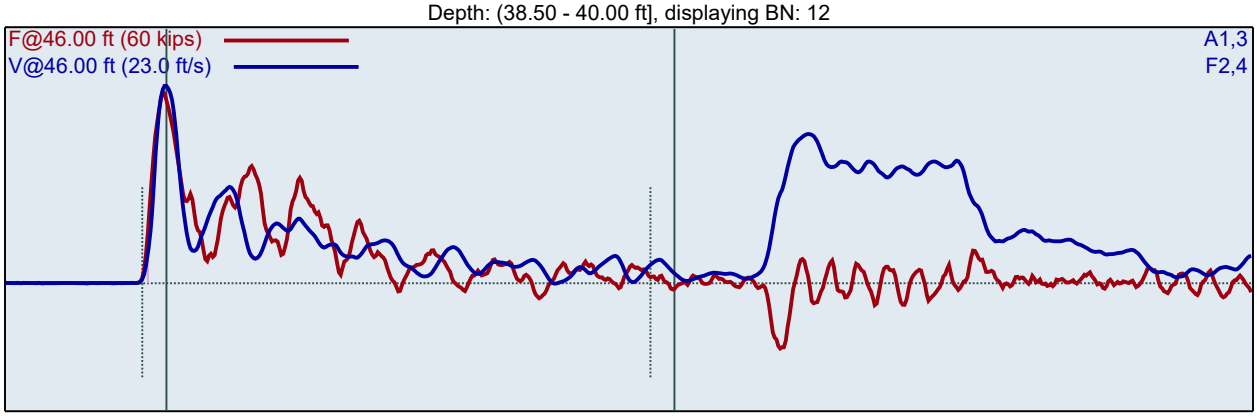
Diedrich D-50 SN310
JW

SS 38.5-40
Test date: 6/21/2017

AR: 1.46 in^2
LE: 46.00 ft
WS: 16807.9 ft/s

SP: 0.492 k/ft3
EM: 30000 ksi

Depth: (38.50 - 40.00 ft], displaying BN: 12



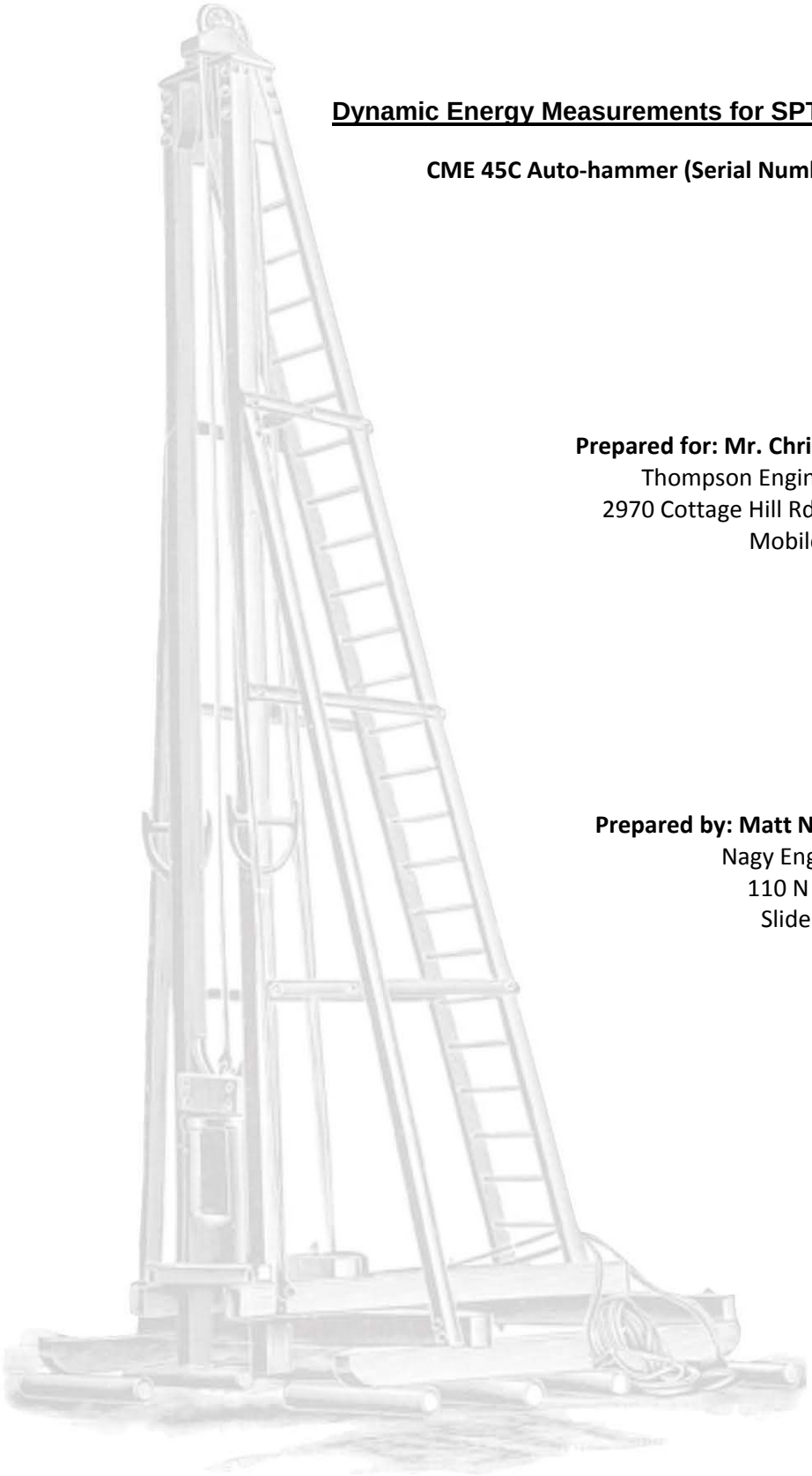

FMX: Maximum Force
VMX: Maximum Velocity
BPM: Blows/Minute
EFV: Maximum Energy

ETR: Energy Transfer Ratio - Rated
DFN: Final Displacement
FVP: Force/Velocity Proportionality

| BL# | BC /6" | LP ft | FMX kips | VMX ft/s | BPM bpm | EFV ft-lb | ETR (%) | DFN in | FVP [] |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 4 | 38.63 | 40 | 20.1 | 1.9 | 327 | 93.4 | 1.50 | 0.8 |
| 2 | 4 | 38.75 | 46 | 18.7 | 43.9 | 345 | 98.6 | 1.50 | 0.9 |
| 3 | 4 | 38.88 | 47 | 18.8 | 44.5 | 346 | 98.7 | 1.50 | 0.9 |
| 4 | 4 | 39.00 | 48 | 18.9 | 43.7 | 352 | 100.4 | 1.50 | 0.9 |
| 5 | 4 | 39.13 | 48 | 18.9 | 44.1 | 353 | 101.0 | 1.50 | 0.9 |
| 6 | 4 | 39.25 | 48 | 18.8 | 44.4 | 357 | 102.1 | 1.50 | 0.9 |
| 7 | 4 | 39.38 | 49 | 18.5 | 43.9 | 353 | 100.8 | 1.50 | 1.0 |
| 8 | 4 | 39.50 | 47 | 17.8 | 44.4 | 341 | 97.4 | 1.50 | 0.9 |
| 9 | 6 | 39.58 | 47 | 17.9 | 44.3 | 346 | 99.0 | 1.00 | 0.9 |
| 10 | 6 | 39.67 | 45 | 17.4 | 44.1 | 337 | 96.2 | 1.00 | 1.0 |
| 11 | 6 | 39.75 | 46 | 17.6 | 44.2 | 330 | 94.4 | 1.00 | 1.0 |
| 12 | 6 | 39.83 | 45 | 17.7 | 44.1 | 329 | 93.9 | 1.00 | 0.9 |
| 13 | 6 | 39.92 | 45 | 17.1 | 44.0 | 327 | 93.5 | 1.00 | 1.0 |
| 14 | 6 | 40.00 | 44 | 16.9 | 44.1 | 323 | 92.2 | 1.00 | 1.0 |
| | | Average | 46 | 17.9 | 44.2 | 340 | 97.0 | 1.20 | 0.9 |
| | | Std Dev | 2 | 0.6 | 0.2 | 12 | 3.4 | 0.24 | 0.0 |
| | | Maximum | 49 | 18.9 | 44.4 | 357 | 102.1 | 1.50 | 1.0 |
| | | Minimum | 44 | 16.9 | 43.9 | 323 | 92.2 | 1.00 | 0.9 |
| | | | | N-value: 10 | | | | | |

Sample Interval Time: 17.69 seconds.

# Nagy Engineers, Inc.



## Dynamic Energy Measurements for SPT Hammer

**CME 45C Auto-hammer (Serial Number 244224)**

**Prepared for: Mr. Chris Dugger of**
Thompson Engineering, Inc.
2970 Cottage Hill Rd., Suite 190
Mobile, AL 36606

**Prepared by: Matt Nagy, P.E. of**
Nagy Engineers, Inc.
110 N Queens Dr.
Slidell, LA 70458

Nagy Engineers, Inc.
- Deep Foundation Specialty Testing -

June 1, 2016

Mr. Chris Dugger
Thompson Engineering, Inc.
2970 Cottage Hill Road, Suite 190
Mobile, AL 36606

**Re: SPT Hammer Calibration using Dynamic Energy Measurements**
Thompson Engineering Drill Rig – CME 45C Auto Hammer (S/N 244224)
Nagy Engineers Job No. 161011-1

Dear Mr. Dugger:

This report summarizes the results from SPT Energy Measurement Testing performed at the Mobile River Bridge Project on April 26, 2016. The testing was conducted to calibrate a CME 45C Automatic SPT hammer. The hammer reportedly had a 140 lb drop weight and a 2.5 ft drop height. Appendix A gives a summary of the field dynamic test data and results while Appendix B contains the equipment calibration sheets. An overall summary of the test results is presented in Table 1.

## OBJECTIVES

The objective of the testing was to perform SPT Energy Measurements according to ASTM D4633-10. These objectives were met using our Pile Driving Analyzer®, Model PAX – SPT Software, which acquired the SPT hammer's transfer energies using an instrumented AWJ rod section and two piezoresistive accelerometers.

## TESTING AND EQUIPMENT

### *Drilling and SPT Hammer Equipment*

SPT energy measurements were collected for a CME 45C Automatic SPT hammer. The serial number on the rig was s/n 244224. Energy records were collected at various increments between the depths of 78.5 ft and 105.0 ft. The drilling method was side discharge mud rotary. Appendix A contains a photo of the CME 45C rig that was tested.

### *Instrumentation*

A Model PAX Pile Driving Analyzer® (PDA) data acquisition system was used to collect and process the dynamic measurements of force and velocity. The PAX is a digital system having a low pass filter cutoff frequency of 5 kHz. The sampling frequency was therefore set to 10 times the low pass filter, or 50 kHz. A two foot long section of AWJ rod subsection was instrumented with one full bridge foil resistance strain

gage and two piezoresistive accelerometers mounted at the midpoint location of the instrumented subsection. Strain and acceleration signals were conditioned, digitized, stored and processed using the PDA. Selected output from the PDA for each recorded impact included the maximum calculated rod top force (FMX), maximum rod top velocity (VMX), maximum average compressive stress (CSX), maximum energy transfer (EMX), energy transfer ratio (ETR) and the hammer operating rate (BPM).

## MEASUREMENTS AND CALCULATIONS

### *FV Method (EMX)*

Energy transfer to the PDA gage location, EMX, was computed by the PDA using force, F(t), and velocity, v(t), records as follows:

$$EMX = \int_a^b F(t) \cdot v(t) dt$$

The time "a" corresponds to the start of the record when the energy transfer begins, and "b" is the time at which energy transferred to the rod reaches a maximum value. The FV Method is currently recognized in ASTM D4633-10, and is the theoretically correct result; therefore, no other energy calculation methods are reported.

## RESULTS

Upon return to the office, the records collected by the PDA were checked for consistency and accuracy. For example, records from very weak startup or final impacts were not included in the results. Appendix A contains a representative plot of force and normalized velocity versus time and PDIPLOT results for all hammer blows at each dynamically monitored sampling depth. The PDA results include the EMX (transferred energy by the EMX method, as recommended by ASTM D4633-10), ETR (energy transfer ratio), BPM (hammer operating rate), FMX (maximum rod top force), CSX (maximum compressive stress), and VMX (maximum rod top velocity). The plots show each calculated PDA result versus sampling spoon penetration while the tables show statistical summaries for each 6 inch increment. At the end of each table, on the next page, is a statistical evaluation of the results which only include the blows that correspond to the N-Value for that sample.

Table 1 summarizes the average transfer energy values calculated by the EMX method. The records averaged consist only of the hammer blows at each dynamically monitored sampling depth that correspond to the N-Values (i.e. the blows in the initial 6 inches of split spoon driving were not considered as part of the average). The “energy transfer ratio” (ETR) is defined as the ratio of maximum transferred

energy EMX divided by the theoretical hammer potential energy of 350 ft-lbs. The average hammer operating rate is reported in blows per minute (BPM).

## CONCLUSIONS

**RIG: CME 45C Auto-hammer (s/n: 244224) - 140 lbs Hammer – 2.5 ft Drop Height**

The average maximum energy transfer (EMX) to the AWJ SPT rod using the 140 lbs drop weight was 323 ft-lbs which is 92% of the 350 ft-lbs potential energy of the hammer. The standard deviation of the transfer efficiency was 1% over the six samples that were collected. The average hammer operation rate during the time of testing was 54.5 blows/min.

We have appreciated this opportunity to be of assistance to you on this project, please contact our office if you have any questions regarding this report, or if we may be of further service.

Very truly yours,
Nagy Engineers, Inc.




Matthew Nagy, P.E. AL # 33853
Project Engineer

Firm COA Number: 4718

enclosed: Appendices A and B

# TABLE 1: Summary of SPT Energy Measurements

## CME 45C Automatic SPT Hammer (S/N 244224)

| Rod Length Below Gages *LE* | Depth Below Top of Ground | Reported SPT Blow Counts | Maximum Transfer Force *FMX* | Maximum Compressive Stress *CSX* | Average Hammer Blow Rate *BPM* | Average Energy Transfer *EMX* | Average Transfer Efficiency *ETR* |
|---|---|---|---|---|---|---|---|
| ft | ft | blows/6" | kips | ksi | blows/min | ft-lbs | % |
| 91.0 | 78.5 to 80.0 | 8, 9, 10 | 30 | 25.3 | 54.7 | 329 | 94% |
| 96.0 | 83.5 to 85.0 | 5, 8, 8 | 30 | 25.5 | 54.4 | 323 | 92% |
| 101.0 | 88.5 to 90.0 | 4, 5, 6 | 30 | 25.1 | 54.6 | 326 | 93% |
| 106.0 | 93.5 to 95.0 | 10, 18, 22 | 30 | 25.3 | 54.3 | 321 | 92% |
| 111.0 | 98.5 to 100.0 | 20, 21, 24 | 30 | 25.7 | 54.5 | 318 | 91% |
| 116.0 | 103.5 to 105.0 | 8, 21, 17 | 30 | 25.3 | 54.5 | 320 | 91% |
| | | **Overall Average** | | | **54.5** | **323** | **92%** |
| | | **Standard Deviation** | | | **0.1** | **4** | **1%** |

*LE* - Length from the bottom of the spoon to the PDA gage location.
FMX - Maximum Force Measured at PDA gage location.
CSX - Maximum Average Compressive Stress at PDA gage location.
*BPM* - Hammer operation rate (blows/minute)
*EMX* - Computed, from $\int F v\, dt$, maximum energy transferred to PDA gage location.
*ETR* - Computed, from EMX/PE, maximum energy transfer efficiency

# Appendix A

## Results from SPT Dynamic Energy Measurements

Thompson Engineering SPT Rig Calibration

CME 45C Auto Hammer

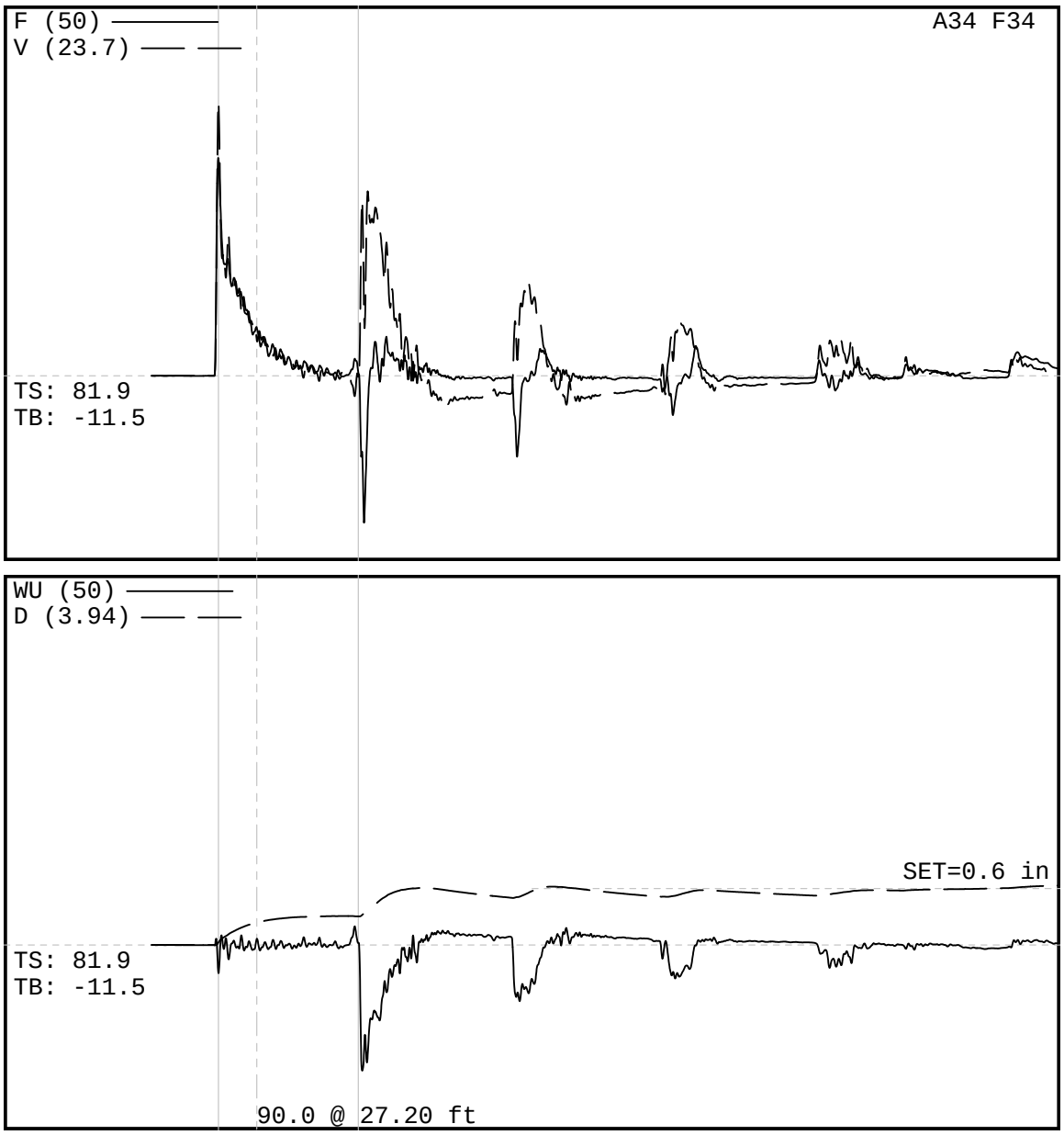
S/N 244224

(AWJ Rod – Side Discharge Mud Rotary)




**Thompson Engineering's CME 45C (S/N 244224)**

Thompson SPT Calibration CME 45C (SN 244224)_1




*Project Information*

PROJECT: Thompson SPT Calibration
PILE NAME: CME 45C (SN 244224)_1
DESCR: AWJ Rod - Mud Rotary
OPERATOR: MJN
FILE: CME 45C (SN 244224)_1
4/26/2016 11:00:06 AM
Blow Number 18

*Pile Properties*

| | | |
|---|---|---|
| LE | 91.00 | ft |
| AR | 1.18 | in^2 |
| EM | 30000 | ksi |
| SP | 0.492 | k/ft3 |
| WS | 16807.9 | f/s |
| EA/C | 2.1 | ksec/ft |
| 2L/C | 10.84 | ms |
| JC | | [] |
| LP | 79.55 | ft |

*Quantity Results*

| | | |
|---|---|---|
| CSX | 24.9 | ksi |
| CSI | 25.0 | ksi |
| EMX | 0.328 | k-ft |
| ETR | 93.6 | (%) |
| BPM | 54.6 | bpm |
| FMX | 29 | kips |
| VMX | 17.6 | f/s |
| QNV | 0.00 | [] |
| QNV | 0.00 | [] |

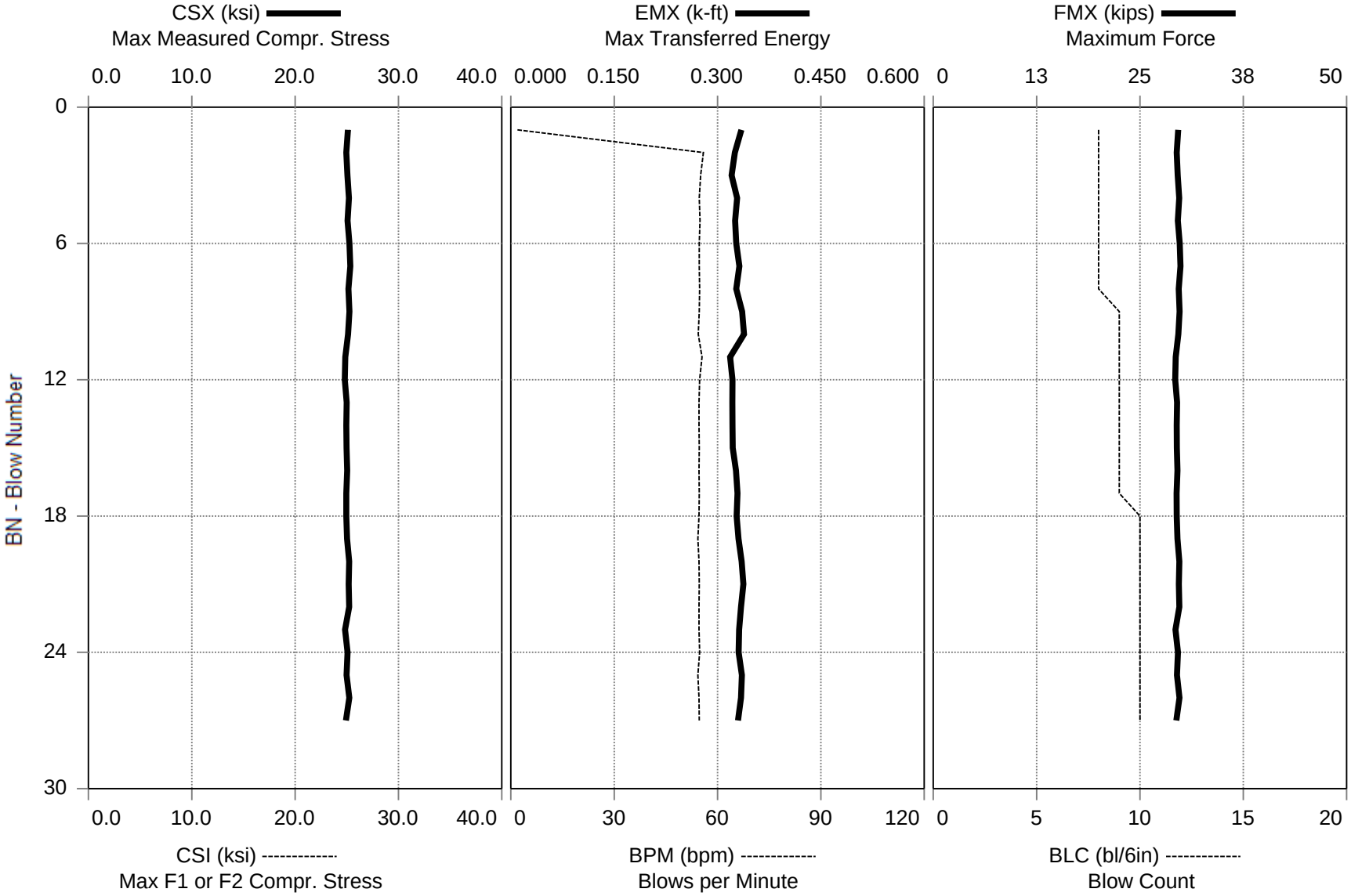
*Sensors*

F3: [421-AWJ-1] 206.94 (1)
F4: [421-AWJ-2] 206.29 (1)
A3: [K4120] 390 mv/5000g's (1)
A4: [K3774] 382 mv/5000g's (1)
CLIP: OK

Nagy Engineers, Inc. - PDIPLOT2 Ver 2016.1.56.1 - Case Method & iCAP® Results

Printed: 01-June-2016 Test started: 26-April-2016

Thompson SPT Calibration - CME 45C (SN 244224)_1 - AWJ Rod - Mud Rotary



Thompson SPT Calibration - CME 45C (SN 244224)_1 AWJ Rod - Mud Rotary
OP: MJN Date: 26-April-2016

AR: 1.18 in² SP: 0.492 k/ft³
LE: 91.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | TYPE | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 79.0 | 8 | AV8 | 25.1 | 25.2 | 0.328 | 93.6 | 48.3 | 30 | 17.1 |
| | | | MAX | 25.3 | 25.4 | 0.335 | 95.6 | 55.9 | 30 | 17.6 |
| 17 | 79.5 | 9 | AV9 | 25.0 | 25.0 | 0.326 | 93.2 | 54.7 | 29 | 17.5 |
| | | | MAX | 25.3 | 25.3 | 0.338 | 96.7 | 55.5 | 30 | 17.8 |
| 27 | 80.0 | 10 | AV10 | 25.1 | 25.1 | 0.333 | 95.0 | 54.6 | 30 | 17.4 |
| | | | MAX | 25.2 | 25.3 | 0.337 | 96.4 | 54.8 | 30 | 17.6 |
| | | | Average | 25.1 | 25.1 | 0.329 | 94.0 | 52.8 | 30 | 17.4 |
| | | | Maximum | 25.3 | 25.4 | 0.338 | 96.7 | 55.9 | 30 | 17.8 |

Total number of blows analyzed: 27

BL# Sensors

1-16 F3: [421-AWJ-1] 206.9 (1.00); F4: [421-AWJ-2] 206.3 (1.00); A3: [K4120] 390.0 (1.00); A4: [K3774] 382.0 (1.00)
17 F3: [421-AWJ-1] 206.9 (1.00); F4: [421-AWJ-2] 206.3 (1.00); A3: [K4120] 390.0 (1.00); A4: off
18-27 F3: [421-AWJ-1] 206.9 (1.00); F4: [421-AWJ-2] 206.3 (1.00); A3: [K4120] 390.0 (1.00); A4: [K3774] 382.0 (1.00)

Time Summary

Drive 28 seconds 10:59 AM - 11:00 AM BN 1 - 27

Thompson SPT Calibration - CME 45C (SN 244224)_1 AWJ Rod - Mud Rotary
OP: MJN Date: 26-April-2016

AR: 1.18 in² SP: 0.492 k/ft³
LE: 91.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|
| 9 | 79.1 | 9 | 25.3 | 25.3 | 0.336 | 95.9 | 54.7 | 30 | 17.3 |
| 10 | 79.1 | 9 | 25.1 | 25.1 | 0.338 | 96.7 | 54.4 | 30 | 17.5 |
| 11 | 79.2 | 9 | 24.9 | 24.9 | 0.318 | 90.9 | 55.5 | 29 | 17.2 |
| 12 | 79.2 | 9 | 24.8 | 24.8 | 0.322 | 91.9 | 54.8 | 29 | 17.4 |
| 13 | 79.3 | 9 | 25.0 | 25.0 | 0.322 | 91.9 | 54.6 | 29 | 17.5 |
| 14 | 79.3 | 9 | 25.0 | 25.0 | 0.322 | 91.9 | 54.6 | 29 | 17.6 |
| 15 | 79.4 | 9 | 25.0 | 25.0 | 0.322 | 92.0 | 54.7 | 29 | 17.6 |
| 16 | 79.4 | 9 | 25.0 | 25.1 | 0.327 | 93.4 | 54.6 | 30 | 17.6 |
| 17 | 79.5 | 9 | 24.9 | 25.0 | 0.329 | 94.0 | 54.7 | 29 | 17.8 |
| 18 | 79.6 | 10 | 24.9 | 25.0 | 0.328 | 93.6 | 54.6 | 29 | 17.6 |
| 19 | 79.6 | 10 | 25.0 | 25.1 | 0.330 | 94.4 | 54.3 | 30 | 17.6 |
| 20 | 79.7 | 10 | 25.2 | 25.3 | 0.335 | 95.7 | 54.6 | 30 | 17.2 |
| 21 | 79.7 | 10 | 25.2 | 25.3 | 0.337 | 96.4 | 54.7 | 30 | 17.6 |
| 22 | 79.8 | 10 | 25.2 | 25.3 | 0.334 | 95.4 | 54.6 | 30 | 17.5 |
| 23 | 79.8 | 10 | 24.8 | 24.9 | 0.331 | 94.7 | 54.6 | 29 | 17.4 |
| 24 | 79.9 | 10 | 25.1 | 25.2 | 0.331 | 94.4 | 54.8 | 30 | 17.5 |
| 25 | 79.9 | 10 | 25.0 | 25.1 | 0.335 | 95.8 | 54.3 | 29 | 17.4 |
| 26 | 80.0 | 10 | 25.2 | 25.3 | 0.334 | 95.4 | 54.6 | 30 | 17.2 |
| 27 | 80.0 | 10 | 24.9 | 25.0 | 0.330 | 94.2 | 54.7 | 29 | 17.1 |
| | | Average | 25.0 | 25.1 | 0.329 | 94.1 | 54.7 | 30 | 17.5 |
| | | Maximum | 25.3 | 25.3 | 0.338 | 96.7 | 55.5 | 30 | 17.8 |

Total number of blows analyzed: 19

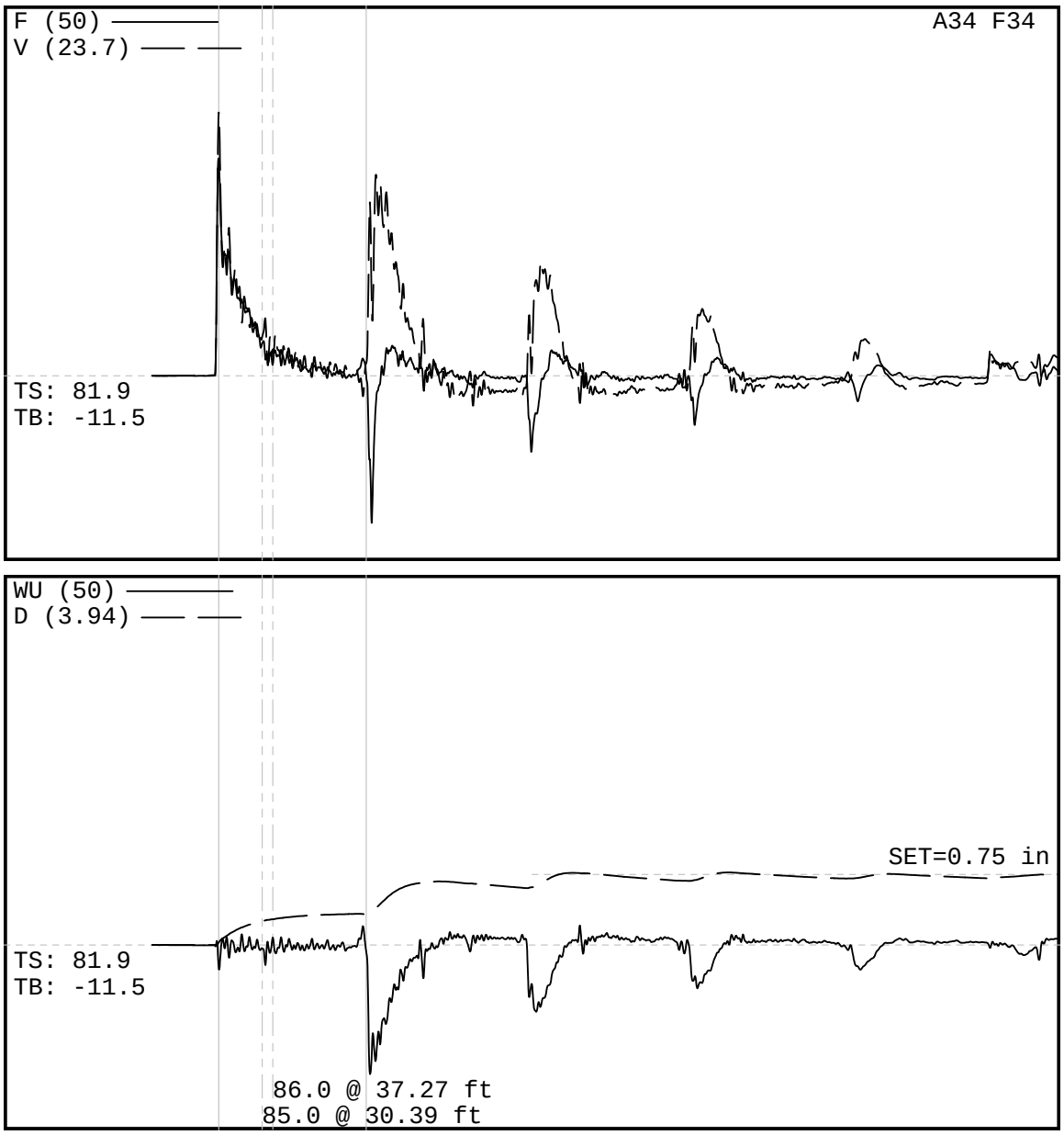
BL# Sensors

9-16 F3: [421-AWJ-1] 206.9 (1.00); F4: [421-AWJ-2] 206.3 (1.00); A3: [K4120] 390.0 (1.00); A4: [K3774] 382.0 (1.00)
17 F3: [421-AWJ-1] 206.9 (1.00); F4: [421-AWJ-2] 206.3 (1.00); A3: [K4120] 390.0 (1.00); A4: off
18-27 F3: [421-AWJ-1] 206.9 (1.00); F4: [421-AWJ-2] 206.3 (1.00); A3: [K4120] 390.0 (1.00); A4: [K3774] 382.0 (1.00)

Time Summary

Drive 28 seconds 10:59 AM - 11:00 AM BN 1 - 27

Thompson SPT Calibration CME 45C (SN 244224)_2




*Project Information*

PROJECT: Thompson SPT Calibration
PILE NAME: CME 45C (SN 244224)_2
DESCR: AWJ Rod - Mud Rotary
OPERATOR: MJN
FILE: CME 45C (SN 244224)_2
4/26/2016 11:21:40 AM
Blow Number 16

*Pile Properties*

| | | |
|---|---|---|
| LE | 96.00 | ft |
| AR | 1.18 | in^2 |
| EM | 30000 | ksi |
| SP | 0.492 | k/ft3 |
| WS | 16807.9 | f/s |
| EA/C | 2.1 | ksec/ft |
| 2L/C | 11.44 | ms |
| JC | | [] |
| LP | 84.69 | ft |

*Quantity Results*

| | | |
|---|---|---|
| CSX | 24.9 | ksi |
| CSI | 24.9 | ksi |
| EMX | 0.328 | k-ft |
| ETR | 93.7 | (%) |
| BPM | 54.3 | bpm |
| FMX | 29 | kips |
| VMX | 16.9 | f/s |
| QNV | 0.00 | [] |
| QNV | 0.00 | [] |

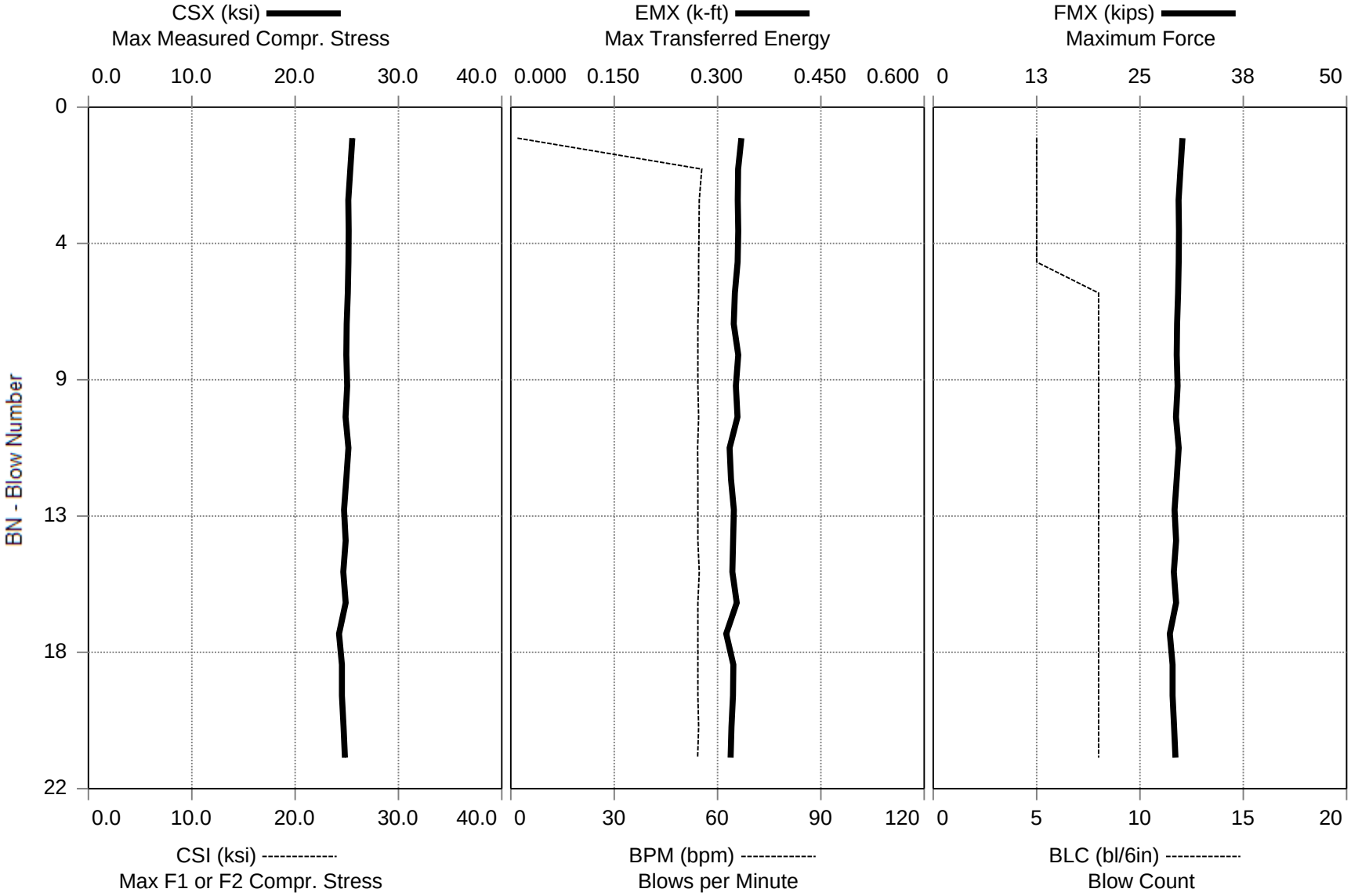
*Sensors*

F3: [421-AWJ-1] 206.94 (1)
F4: [421-AWJ-2] 206.29 (1)
A3: [K4120] 390 mv/5000g's (1)
A4: [K3774] 382 mv/5000g's (1)
CLIP: OK

Nagy Engineers, Inc. - PDIPLOT2 Ver 2016.1.56.1 - Case Method & iCAP® Results

Printed: 01-June-2016 Test started: 26-April-2016

Thompson SPT Calibration - CME 45C (SN 244224)_2 - AWJ Rod - Mud Rotary



Thompson SPT Calibration - CME 45C (SN 244224)_2 AWJ Rod - Mud Rotary
OP: MJN Date: 26-April-2016

AR: 1.18 in² SP: 0.492 k/ft³
LE: 96.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | TYPE | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 84.0 | 5 | AV5 | 25.3 | 25.4 | 0.331 | 94.5 | 44.2 | 30 | 17.1 |
| | | | MAX | 25.5 | 25.6 | 0.335 | 95.6 | 55.4 | 30 | 17.2 |
| 13 | 84.5 | 8 | AV8 | 25.0 | 25.0 | 0.324 | 92.7 | 54.3 | 29 | 17.1 |
| | | | MAX | 25.2 | 25.2 | 0.330 | 94.3 | 54.5 | 30 | 17.3 |
| 21 | 85.0 | 8 | AV8 | 24.7 | 24.7 | 0.321 | 91.8 | 54.4 | 29 | 16.8 |
| | | | MAX | 24.9 | 24.9 | 0.328 | 93.7 | 54.7 | 29 | 16.9 |
| | | | Average | 24.9 | 25.0 | 0.325 | 92.7 | 51.9 | 29 | 17.0 |
| | | | Maximum | 25.5 | 25.6 | 0.335 | 95.6 | 55.4 | 30 | 17.3 |

Total number of blows analyzed: 21

BL# Sensors

1-21 F3: [421-AWJ-1] 206.9 (1.00); F4: [421-AWJ-2] 206.3 (1.00); A3: [K4120] 390.0 (1.00); A4: [K3774] 382.0 (1.00)

Time Summary

Drive 22 seconds 11:21 AM - 11:21 AM BN 1 - 21

Thompson SPT Calibration - CME 45C (SN 244224)_2 AWJ Rod - Mud Rotary
OP: MJN Date: 26-April-2016

AR: 1.18 in² SP: 0.492 k/ft³
LE: 96.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|
| 6 | 84.1 | 8 | 25.1 | 25.2 | 0.325 | 92.9 | 54.5 | 30 | 17.1 |
| 7 | 84.1 | 8 | 25.0 | 25.1 | 0.324 | 92.4 | 54.3 | 29 | 17.2 |
| 8 | 84.2 | 8 | 25.0 | 25.0 | 0.330 | 94.3 | 54.3 | 29 | 17.3 |
| 9 | 84.3 | 8 | 25.0 | 25.1 | 0.327 | 93.3 | 54.3 | 30 | 17.1 |
| 10 | 84.3 | 8 | 24.9 | 24.9 | 0.329 | 94.0 | 54.5 | 29 | 17.1 |
| 11 | 84.4 | 8 | 25.2 | 25.2 | 0.318 | 90.7 | 54.2 | 30 | 17.1 |
| 12 | 84.4 | 8 | 25.0 | 25.0 | 0.319 | 91.3 | 54.3 | 29 | 17.0 |
| 13 | 84.5 | 8 | 24.7 | 24.7 | 0.324 | 92.5 | 54.3 | 29 | 17.0 |
| 14 | 84.6 | 8 | 24.9 | 24.9 | 0.323 | 92.2 | 54.3 | 29 | 16.9 |
| 15 | 84.6 | 8 | 24.7 | 24.7 | 0.322 | 91.9 | 54.7 | 29 | 16.8 |
| 16 | 84.7 | 8 | 24.9 | 24.9 | 0.328 | 93.7 | 54.3 | 29 | 16.9 |
| 17 | 84.8 | 8 | 24.2 | 24.2 | 0.313 | 89.3 | 54.3 | 29 | 16.7 |
| 18 | 84.8 | 8 | 24.5 | 24.5 | 0.323 | 92.3 | 54.3 | 29 | 16.8 |
| 19 | 84.9 | 8 | 24.5 | 24.6 | 0.322 | 92.1 | 54.3 | 29 | 16.8 |
| 20 | 84.9 | 8 | 24.7 | 24.7 | 0.320 | 91.5 | 54.5 | 29 | 16.7 |
| 21 | 85.0 | 8 | 24.8 | 24.9 | 0.319 | 91.1 | 54.2 | 29 | 16.8 |
| | | Average | 24.8 | 24.8 | 0.323 | 92.2 | 54.4 | 29 | 17.0 |
| | | Maximum | 25.2 | 25.2 | 0.330 | 94.3 | 54.7 | 30 | 17.3 |

Total number of blows analyzed: 16

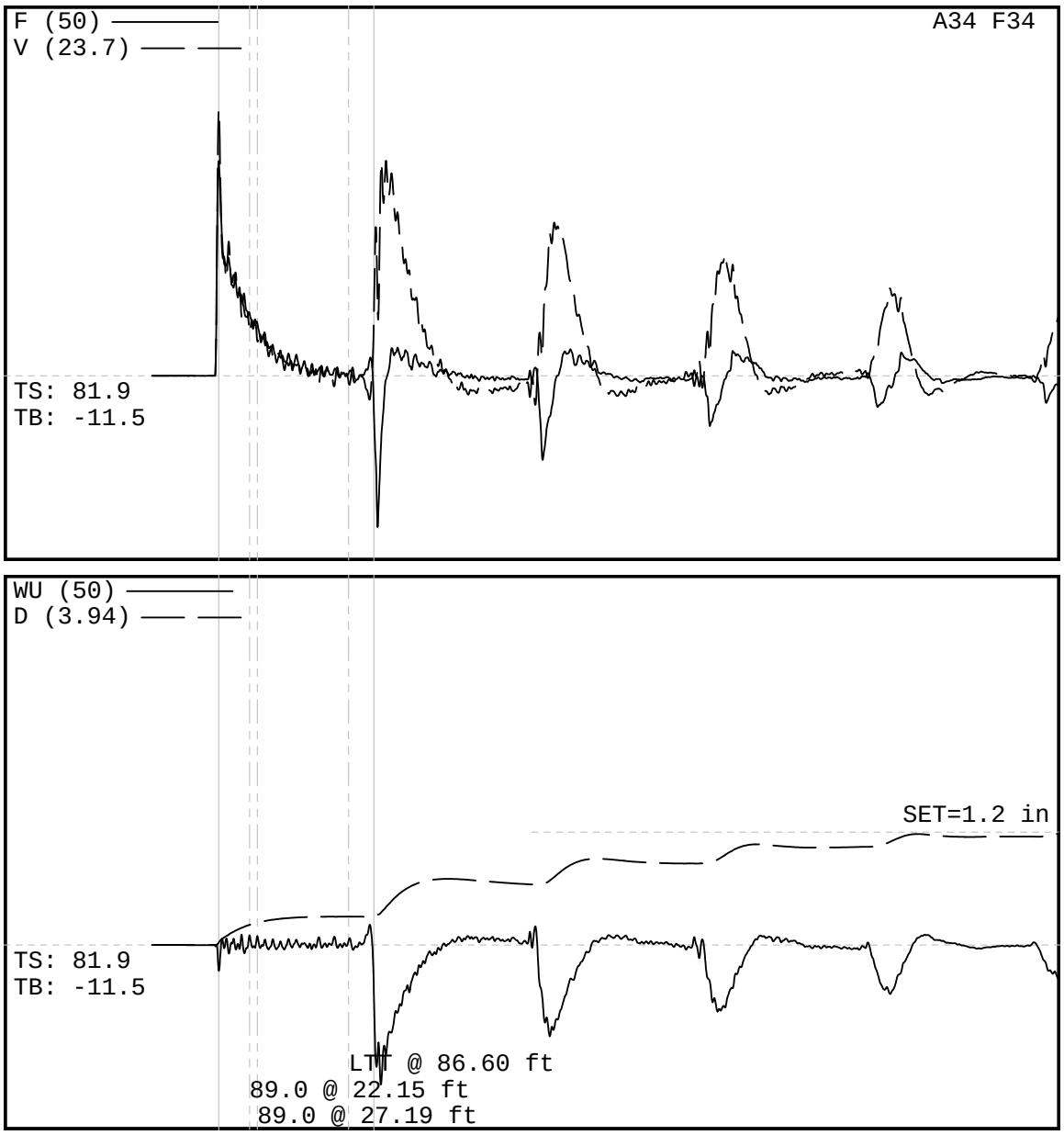
BL# Sensors

6-21 F3: [421-AWJ-1] 206.9 (1.00); F4: [421-AWJ-2] 206.3 (1.00); A3: [K4120] 390.0 (1.00); A4: [K3774] 382.0 (1.00)

Time Summary

Drive 22 seconds 11:21 AM - 11:21 AM BN 1 - 21

Thompson SPT Calibration CME 45C (SN 244224)_3




*Project Information*

PROJECT: Thompson SPT Calibration
PILE NAME: CME 45C (SN 244224)_3
DESCR: AWJ Rod - Mud Rotary
OPERATOR: MJN
FILE: CME 45C (SN 244224)_3
4/26/2016 11:52:44 AM
Blow Number 5

*Pile Properties*

| | | |
|---|---|---|
| LE | 101.00 | ft |
| AR | 1.18 | in^2 |
| EM | 30000 | ksi |
| SP | 0.492 | k/ft3 |
| WS | 16807.9 | f/s |
| EA/C | 2.1 | ksec/ft |
| 2L/C | 12.04 | ms |
| JC | | [] |
| LP | 89.10 | ft |

*Quantity Results*

| | | |
|---|---|---|
| CSX | 24.6 | ksi |
| CSI | 24.6 | ksi |
| EMX | 0.323 | k-ft |
| ETR | 92.4 | (%) |
| BPM | 54.7 | bpm |
| FMX | 29 | kips |
| VMX | 17.1 | f/s |
| QNV | 0.00 | [] |
| QNV | 0.00 | [] |

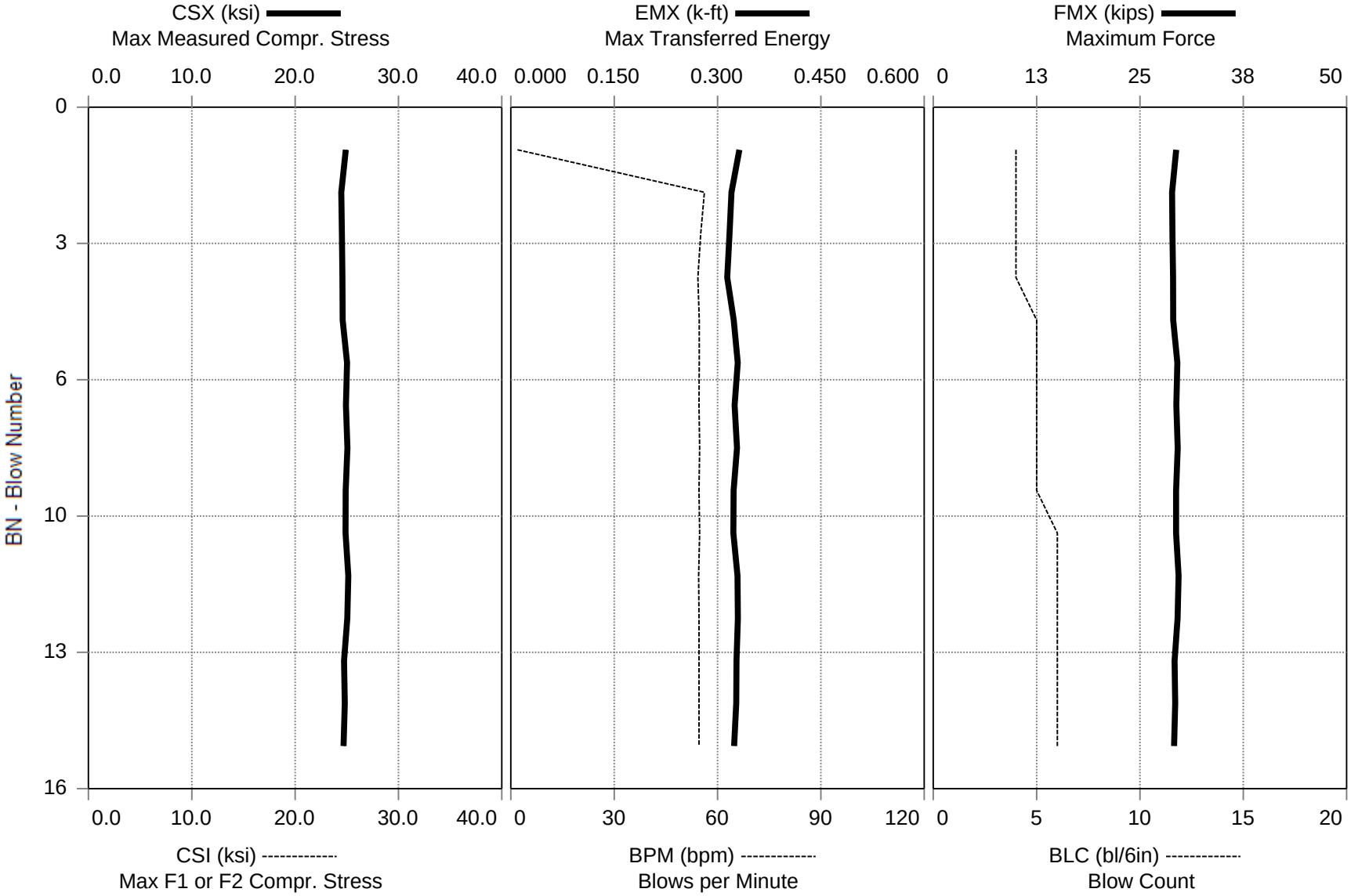
*Sensors*

F3: [421-AWJ-1] 206.94 (1)
F4: [421-AWJ-2] 206.29 (1)
A3: [K4120] 390 mv/5000g's (1)
A4: [K3774] 382 mv/5000g's (1)
CLIP: OK

Nagy Engineers, Inc. - PDIPLOT2 Ver 2016.1.56.1 - Case Method & iCAP® Results

Printed: 01-June-2016 Test started: 26-April-2016

Thompson SPT Calibration - CME 45C (SN 244224)_3 - AWJ Rod - Mud Rotary



Thompson SPT Calibration - CME 45C (SN 244224)_3 AWJ Rod - Mud Rotary
OP: MJN Date: 26-April-2016

AR: 1.18 in² SP: 0.492 k/ft³
LE: 101.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | TYPE | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 89.0 | 4 | AV4 | 24.6 | 24.7 | 0.321 | 91.7 | 41.9 | 29 | 16.8 |
| | | | MAX | 24.9 | 25.0 | 0.332 | 94.8 | 56.2 | 29 | 16.9 |
| 9 | 89.5 | 5 | AV5 | 24.9 | 24.9 | 0.326 | 93.1 | 54.7 | 29 | 17.1 |
| | | | MAX | 25.1 | 25.1 | 0.329 | 94.1 | 54.8 | 30 | 17.2 |
| 15 | 90.0 | 6 | AV6 | 24.9 | 24.9 | 0.327 | 93.3 | 54.6 | 29 | 17.1 |
| | | | MAX | 25.1 | 25.2 | 0.329 | 94.1 | 54.8 | 30 | 17.2 |
| | | | Average | 24.8 | 24.9 | 0.325 | 92.8 | 51.2 | 29 | 17.0 |
| | | | Maximum | 25.1 | 25.2 | 0.332 | 94.8 | 56.2 | 30 | 17.2 |

Total number of blows analyzed: 15

BL# Sensors

1-15 F3: [421-AWJ-1] 206.9 (1.00); F4: [421-AWJ-2] 206.3 (1.00); A3: [K4120] 390.0 (1.00); A4: [K3774] 382.0 (1.00)

Time Summary

Drive 15 seconds 11:52 AM - 11:52 AM BN 1 - 15

Thompson SPT Calibration - CME 45C (SN 244224)_3 AWJ Rod - Mud Rotary
OP: MJN Date: 26-April-2016

AR: 1.18 in² SP: 0.492 k/ft³
LE: 101.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|
| 5 | 89.1 | 5 | 24.6 | 24.6 | 0.323 | 92.4 | 54.7 | 29 | 17.1 |
| 6 | 89.2 | 5 | 25.0 | 25.0 | 0.329 | 94.1 | 54.7 | 30 | 17.1 |
| 7 | 89.3 | 5 | 24.9 | 24.9 | 0.325 | 92.8 | 54.6 | 29 | 17.1 |
| 8 | 89.4 | 5 | 25.1 | 25.1 | 0.328 | 93.8 | 54.8 | 30 | 17.2 |
| 9 | 89.5 | 5 | 24.9 | 24.9 | 0.323 | 92.4 | 54.6 | 29 | 17.1 |
| 10 | 89.6 | 6 | 24.9 | 24.9 | 0.323 | 92.3 | 54.8 | 29 | 17.0 |
| 11 | 89.7 | 6 | 25.1 | 25.2 | 0.329 | 94.0 | 54.5 | 30 | 17.2 |
| 12 | 89.8 | 6 | 25.0 | 25.1 | 0.329 | 94.1 | 54.6 | 30 | 17.2 |
| 13 | 89.8 | 6 | 24.7 | 24.8 | 0.327 | 93.6 | 54.6 | 29 | 17.2 |
| 14 | 89.9 | 6 | 24.8 | 24.9 | 0.327 | 93.5 | 54.6 | 29 | 17.1 |
| 15 | 90.0 | 6 | 24.7 | 24.8 | 0.324 | 92.6 | 54.6 | 29 | 17.1 |
| | | Average | 24.9 | 24.9 | 0.326 | 93.2 | 54.6 | 29 | 17.1 |
| | | Maximum | 25.1 | 25.2 | 0.329 | 94.1 | 54.8 | 30 | 17.2 |

Total number of blows analyzed: 11

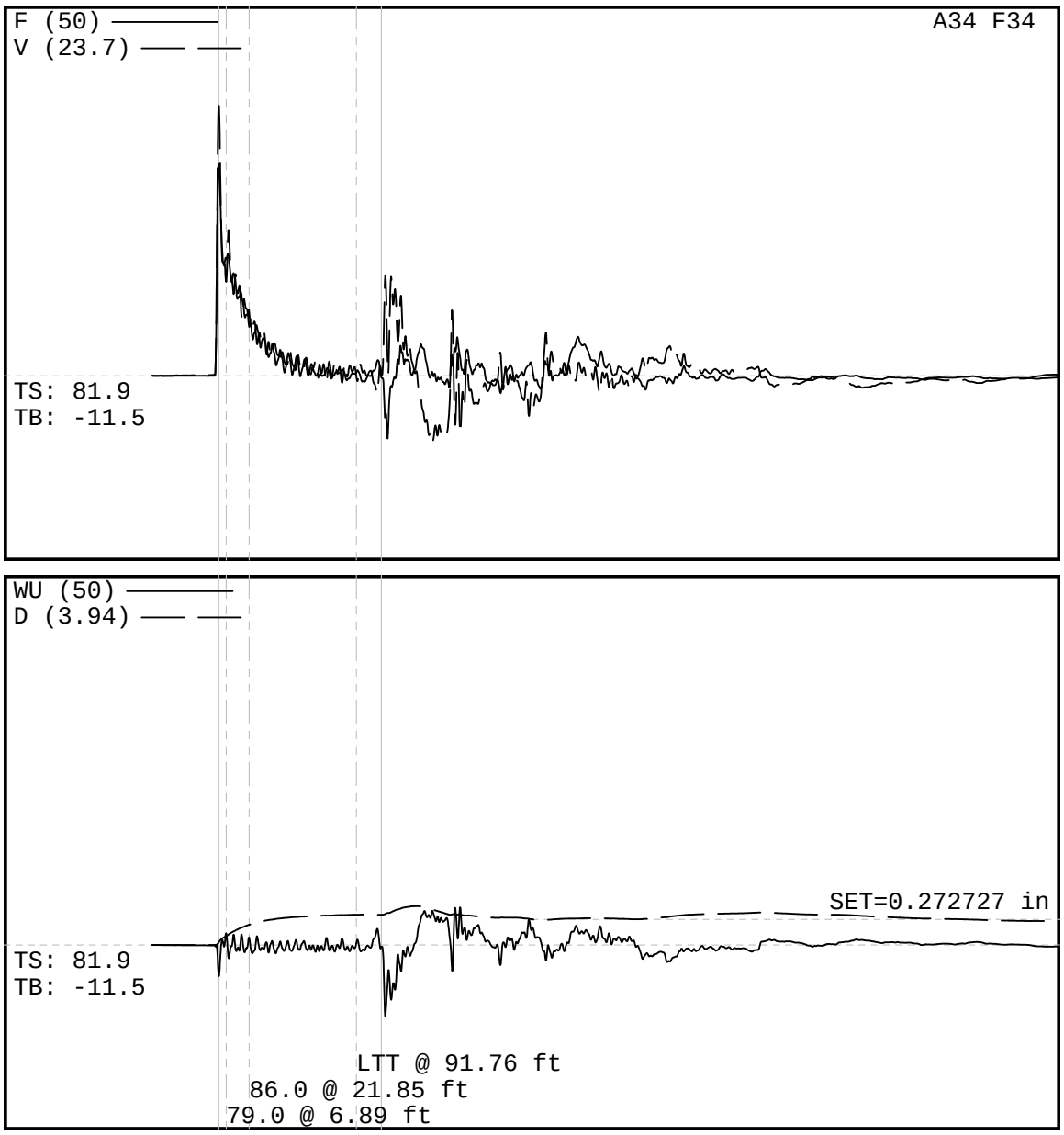
BL# Sensors

5-15 F3: [421-AWJ-1] 206.9 (1.00); F4: [421-AWJ-2] 206.3 (1.00); A3: [K4120] 390.0 (1.00); A4: [K3774] 382.0 (1.00)

Time Summary

Drive 15 seconds 11:52 AM - 11:52 AM BN 1 - 15

Thompson SPT Calibration CME 45C (SN 244224)_4




*Project Information*

PROJECT: Thompson SPT Calibration
PILE NAME: CME 45C (SN 244224)_4
DESCR: AWJ Rod - Mud Rotary
OPERATOR: MJN
FILE: CME 45C (SN 244224)_4
4/26/2016 12:21:04 PM
Blow Number 44

*Pile Properties*

LE 106.00 ft
AR 1.18 in^2
EM 30000 ksi
SP 0.492 k/ft3
WS 16807.9 f/s
EA/C 2.1 ksec/ft
2L/C 12.62 ms
JC []
LP 94.86 ft

*Quantity Results*

CSX 24.4 ksi
CSI 24.4 ksi
EMX 0.322 k-ft
ETR 92.0 (%)
BPM 54.2 bpm
FMX 29 kips
VMX 17.6 f/s
QNV 0.00 []
QNV 0.00 []

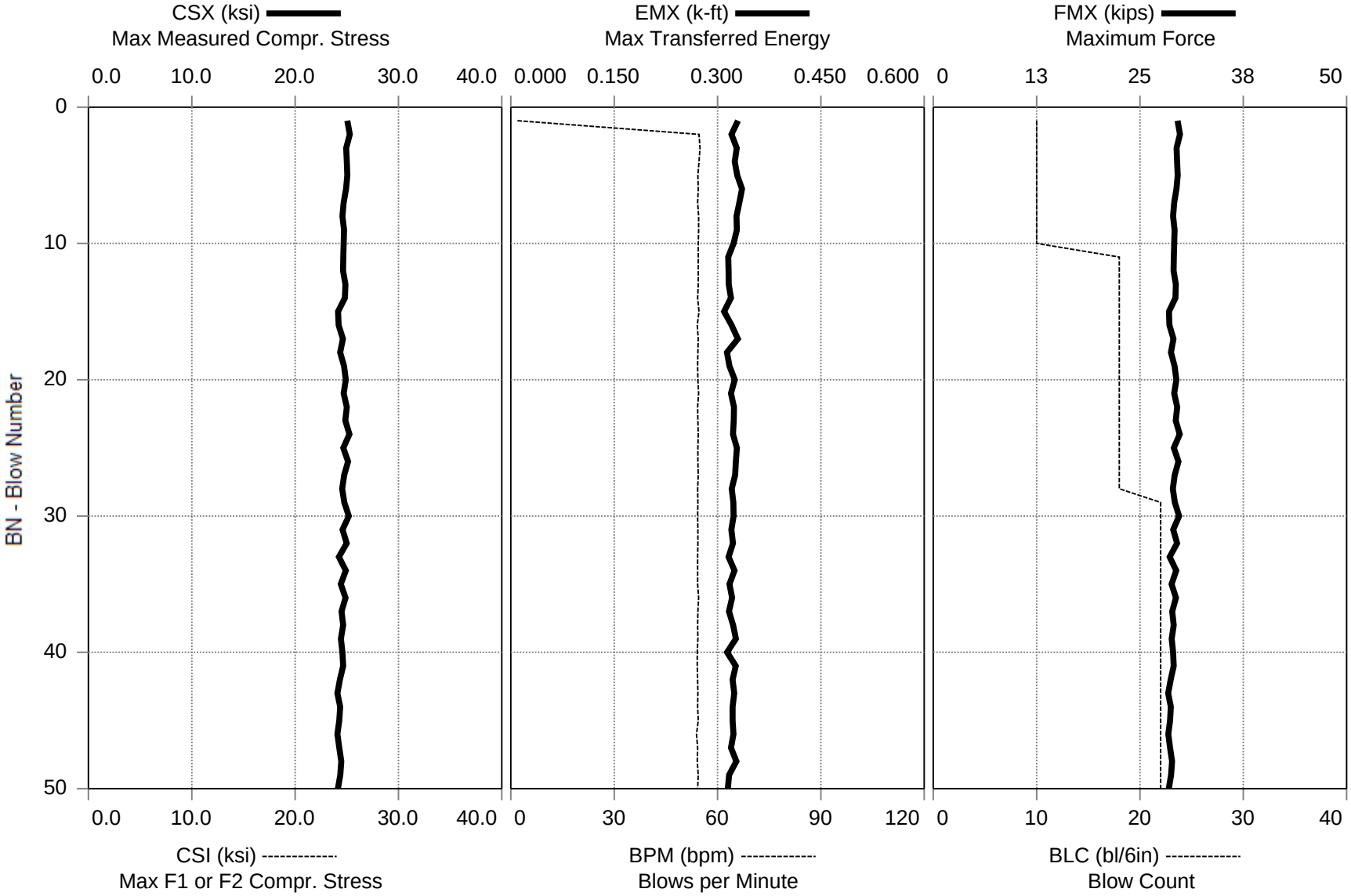
*Sensors*

F3: [421-AWJ-1] 206.94 (1)
F4: [421-AWJ-2] 206.29 (1)
A3: [K4120] 390 mv/5000g's (1)
A4: [K3774] 382 mv/5000g's (1)
CLIP: OK

Nagy Engineers, Inc. - PDIPLOT2 Ver 2016.1.56.1 - Case Method & iCAP® Results

Printed: 01-June-2016 Test started: 26-April-2016

Thompson SPT Calibration - CME 45C (SN 244224)_4 - AWJ Rod - Mud Rotary



Thompson SPT Calibration - CME 45C (SN 244224)_4 AWJ Rod - Mud Rotary
OP: MJN Date: 26-April-2016

AR: 1.18 in² SP: 0.492 k/ft³
LE: 106.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | TYPE | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 94.0 | 10 | AV10 | 24.9 | 24.9 | 0.328 | 93.6 | 49.2 | 29 | 17.4 |
| | | | MAX | 25.3 | 25.3 | 0.336 | 95.9 | 54.9 | 30 | 17.5 |
| 28 | 94.5 | 18 | AV18 | 24.7 | 24.7 | 0.321 | 91.6 | 54.3 | 29 | 17.4 |
| | | | MAX | 25.3 | 25.3 | 0.329 | 94.1 | 54.6 | 30 | 17.6 |
| 50 | 95.0 | 22 | AV22 | 24.5 | 24.5 | 0.321 | 91.8 | 54.2 | 29 | 17.5 |
| | | | MAX | 25.2 | 25.2 | 0.327 | 93.5 | 54.5 | 30 | 17.7 |
| | | | Average | 24.7 | 24.7 | 0.322 | 92.1 | 53.3 | 29 | 17.4 |
| | | | Maximum | 25.3 | 25.3 | 0.336 | 95.9 | 54.9 | 30 | 17.7 |

Total number of blows analyzed: 50

BL# Sensors

1-50 F3: [421-AWJ-1] 206.9 (1.00); F4: [421-AWJ-2] 206.3 (1.00); A3: [K4120] 390.0 (1.00); A4: [K3774] 382.0 (1.00)

Time Summary

Drive 54 seconds 12:20 PM - 12:21 PM BN 1 - 50

Thompson SPT Calibration - CME 45C (SN 244224)_4 AWJ Rod - Mud Rotary
OP: MJN Date: 26-April-2016

AR: 1.18 in² SP: 0.492 k/ft³
LE: 106.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|
| 11 | 94.0 | 18 | 24.7 | 24.7 | 0.316 | 90.2 | 54.4 | 29 | 17.4 |
| 12 | 94.1 | 18 | 24.6 | 24.7 | 0.316 | 90.3 | 54.4 | 29 | 17.4 |
| 13 | 94.1 | 18 | 24.9 | 24.9 | 0.316 | 90.3 | 54.4 | 29 | 17.6 |
| 14 | 94.1 | 18 | 24.8 | 24.8 | 0.319 | 91.3 | 54.2 | 29 | 17.5 |
| 15 | 94.1 | 18 | 24.2 | 24.2 | 0.310 | 88.4 | 54.6 | 29 | 17.1 |
| 16 | 94.2 | 18 | 24.2 | 24.2 | 0.320 | 91.5 | 54.1 | 29 | 17.3 |
| 17 | 94.2 | 18 | 24.6 | 24.6 | 0.329 | 94.1 | 54.4 | 29 | 17.5 |
| 18 | 94.2 | 18 | 24.4 | 24.4 | 0.314 | 89.6 | 54.3 | 29 | 17.4 |
| 19 | 94.3 | 18 | 24.7 | 24.8 | 0.317 | 90.6 | 54.2 | 29 | 17.4 |
| 20 | 94.3 | 18 | 24.9 | 24.9 | 0.325 | 92.8 | 54.3 | 29 | 17.5 |
| 21 | 94.3 | 18 | 24.7 | 24.7 | 0.319 | 91.3 | 54.5 | 29 | 17.3 |
| 22 | 94.3 | 18 | 25.0 | 25.0 | 0.324 | 92.5 | 54.2 | 30 | 17.4 |
| 23 | 94.4 | 18 | 24.9 | 24.9 | 0.324 | 92.4 | 54.3 | 29 | 17.5 |
| 24 | 94.4 | 18 | 25.3 | 25.3 | 0.322 | 92.1 | 54.4 | 30 | 17.3 |
| 25 | 94.4 | 18 | 24.7 | 24.7 | 0.328 | 93.7 | 54.3 | 29 | 17.5 |
| 26 | 94.4 | 18 | 25.1 | 25.1 | 0.327 | 93.3 | 54.3 | 30 | 17.4 |
| 27 | 94.5 | 18 | 24.7 | 24.8 | 0.325 | 93.0 | 54.4 | 29 | 17.4 |
| 28 | 94.5 | 18 | 24.6 | 24.6 | 0.321 | 91.6 | 54.2 | 29 | 17.4 |
| 29 | 94.5 | 22 | 24.8 | 24.8 | 0.323 | 92.2 | 54.3 | 29 | 17.5 |
| 30 | 94.5 | 22 | 25.2 | 25.2 | 0.323 | 92.4 | 54.2 | 30 | 17.4 |
| 31 | 94.6 | 22 | 24.6 | 24.6 | 0.320 | 91.5 | 54.3 | 29 | 17.5 |
| 32 | 94.6 | 22 | 25.0 | 25.0 | 0.322 | 92.1 | 54.3 | 29 | 17.5 |
| 33 | 94.6 | 22 | 24.2 | 24.2 | 0.316 | 90.3 | 54.2 | 29 | 17.2 |
| 34 | 94.6 | 22 | 24.9 | 24.9 | 0.325 | 92.8 | 54.2 | 29 | 17.5 |
| 35 | 94.7 | 22 | 24.4 | 24.4 | 0.317 | 90.7 | 54.2 | 29 | 17.3 |
| 36 | 94.7 | 22 | 24.9 | 24.9 | 0.321 | 91.7 | 54.5 | 29 | 17.6 |
| 37 | 94.7 | 22 | 24.5 | 24.5 | 0.317 | 90.4 | 54.3 | 29 | 17.4 |
| 38 | 94.7 | 22 | 24.7 | 24.7 | 0.323 | 92.2 | 54.2 | 29 | 17.6 |
| 39 | 94.8 | 22 | 24.4 | 24.4 | 0.327 | 93.3 | 54.3 | 29 | 17.5 |
| 40 | 94.8 | 22 | 24.6 | 24.6 | 0.314 | 89.7 | 54.1 | 29 | 17.5 |
| 41 | 94.8 | 22 | 24.6 | 24.6 | 0.326 | 93.3 | 54.1 | 29 | 17.7 |
| 42 | 94.8 | 22 | 24.3 | 24.3 | 0.322 | 92.0 | 54.2 | 29 | 17.6 |
| 43 | 94.8 | 22 | 24.1 | 24.1 | 0.324 | 92.7 | 54.3 | 28 | 17.4 |
| 44 | 94.9 | 22 | 24.4 | 24.4 | 0.322 | 92.0 | 54.2 | 29 | 17.6 |
| 45 | 94.9 | 22 | 24.3 | 24.3 | 0.322 | 92.0 | 54.4 | 29 | 17.5 |
| 46 | 94.9 | 22 | 24.1 | 24.1 | 0.323 | 92.3 | 53.9 | 28 | 17.4 |
| 47 | 94.9 | 22 | 24.3 | 24.3 | 0.319 | 91.3 | 54.2 | 29 | 17.5 |
| 48 | 95.0 | 22 | 24.5 | 24.5 | 0.327 | 93.5 | 54.1 | 29 | 17.6 |
| 49 | 95.0 | 22 | 24.4 | 24.4 | 0.317 | 90.5 | 54.4 | 29 | 17.5 |
| 50 | 95.0 | 22 | 24.1 | 24.2 | 0.315 | 90.0 | 54.2 | 28 | 17.4 |
| | | Average | 24.6 | 24.6 | 0.321 | 91.7 | 54.3 | 29 | 17.4 |
| | | Maximum | 25.3 | 25.3 | 0.329 | 94.1 | 54.6 | 30 | 17.7 |

Total number of blows analyzed: 40

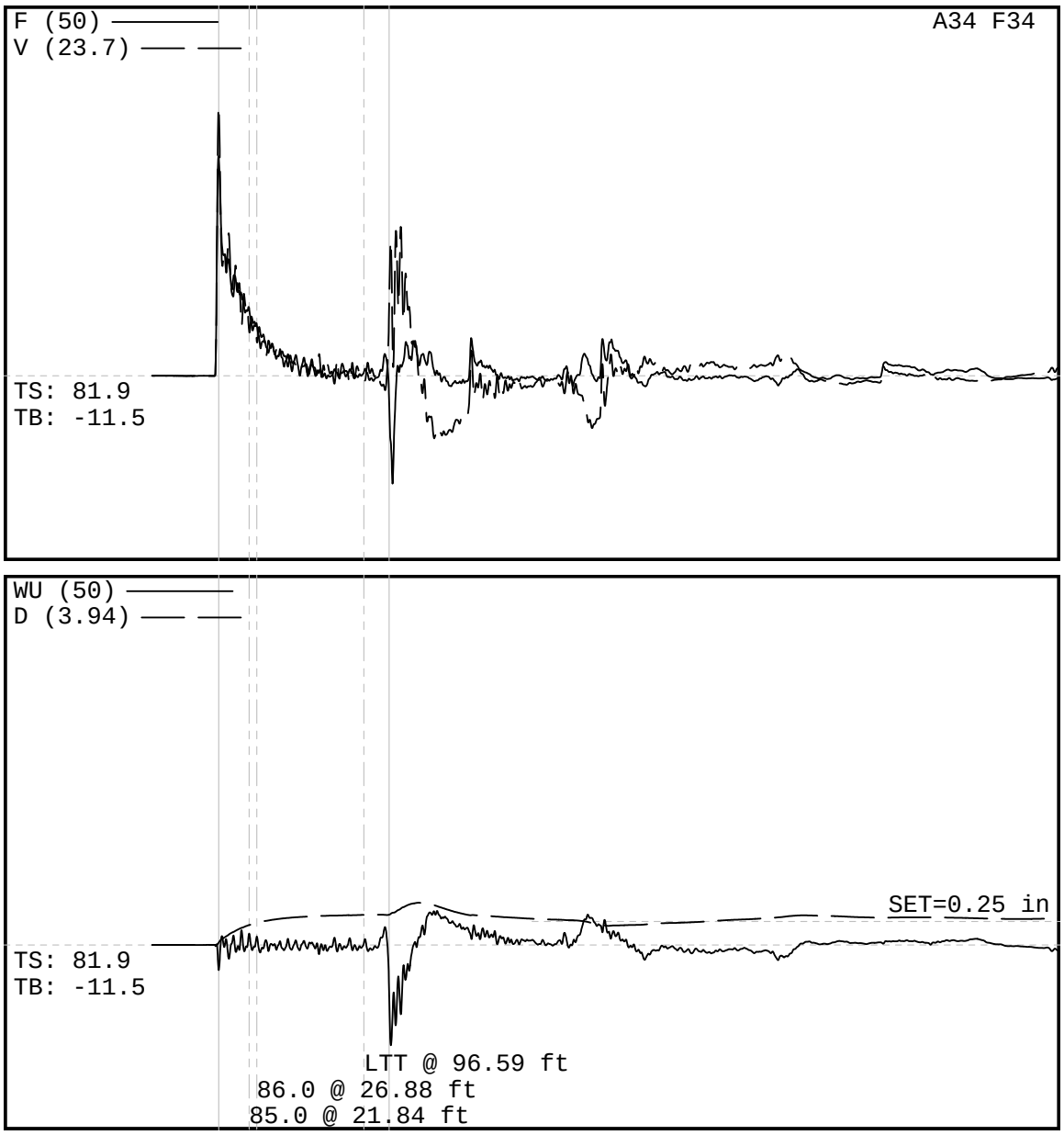
Thompson SPT Calibration - CME 45C (SN 244224)_4 AWJ Rod - Mud Rotary
OP: MJN Date: 26-April-2016

| BL# | Sensors |
|---|---|
| 11-50 | F3: [421-AWJ-1] 206.9 (1.00); F4: [421-AWJ-2] 206.3 (1.00); A3: [K4120] 390.0 (1.00); A4: [K3774] 382.0 (1.00) |

Time Summary

Drive 54 seconds 12:20 PM - 12:21 PM BN 1 - 50

Thompson SPT Calibration CME 45C (SN 244224)_5




*Project Information*

PROJECT: Thompson SPT Calibration
PILE NAME: CME 45C (SN 244224)_5
DESCR: AWJ Rod - Mud Rotary
OPERATOR: MJN
FILE: CME 45C (SN 244224)_5
4/26/2016 12:56:07 PM
Blow Number 46

*Pile Properties*

| | | |
|---|---|---|
| LE | 111.00 | ft |
| AR | 1.18 | in^2 |
| EM | 30000 | ksi |
| SP | 0.492 | k/ft3 |
| WS | 16807.9 | f/s |
| EA/C | 2.1 | ksec/ft |
| 2L/C | 13.22 | ms |
| JC | | [] |
| LP | 99.60 | ft |

*Quantity Results*

| | | |
|---|---|---|
| CSX | 25.1 | ksi |
| CSI | 25.2 | ksi |
| EMX | 0.326 | k-ft |
| ETR | 93.1 | (%) |
| BPM | 54.3 | bpm |
| FMX | 30 | kips |
| VMX | 17.3 | f/s |
| QNV | 0.00 | [] |
| QNV | 0.00 | [] |

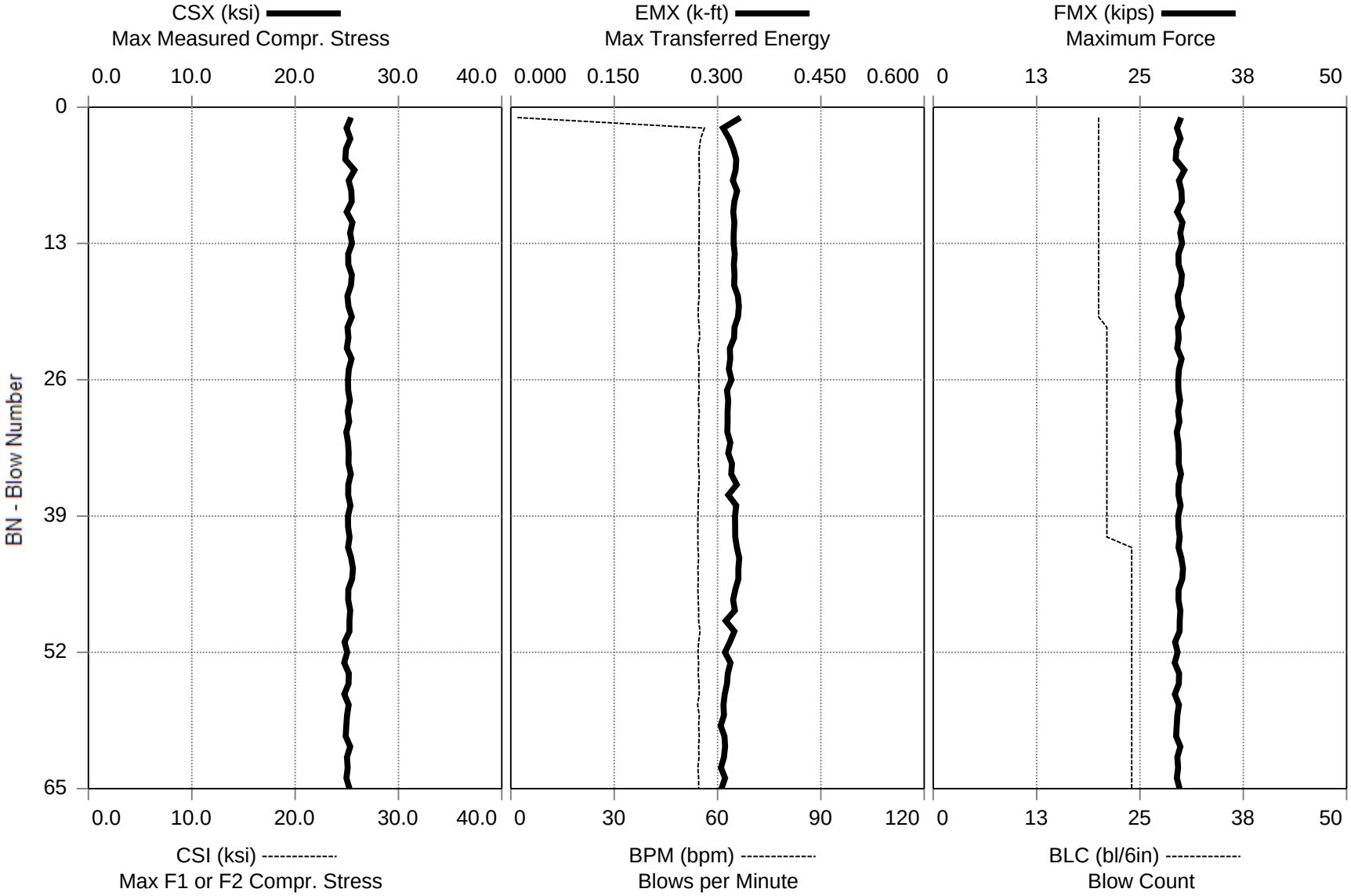
*Sensors*

F3: [421-AWJ-1] 206.94 (1)
F4: [421-AWJ-2] 206.29 (1)
A3: [K4120] 390 mv/5000g's (1)
A4: [K3774] 382 mv/5000g's (1)
CLIP: OK

Nagy Engineers, Inc. - PDIPLOT2 Ver 2016.1.56.1 - Case Method & iCAP® Results

Printed: 01-June-2016 Test started: 26-April-2016

Thompson SPT Calibration - CME 45C (SN 244224)_5 - AWJ Rod - Mud Rotary



Thompson SPT Calibration - CME 45C (SN 244224)_5 AWJ Rod - Mud Rotary
OP: MJN Date: 26-April-2016

AR: 1.18 in² SP: 0.492 k/ft³
LE: 111.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | TYPE | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|---|
| 20 | 99.0 | 20 | AV20 | 25.3 | 25.3 | 0.325 | 92.7 | 52.1 | 30 | 17.1 |
| | | | MAX | 25.7 | 25.8 | 0.333 | 95.2 | 56.2 | 30 | 17.3 |
| 41 | 99.5 | 21 | AV21 | 25.2 | 25.2 | 0.320 | 91.4 | 54.5 | 30 | 17.3 |
| | | | MAX | 25.5 | 25.5 | 0.328 | 93.7 | 54.8 | 30 | 17.5 |
| 65 | 100.0 | 24 | AV24 | 25.1 | 25.2 | 0.316 | 90.4 | 54.5 | 30 | 17.4 |
| | | | MAX | 25.6 | 25.6 | 0.331 | 94.7 | 54.9 | 30 | 17.7 |
| | | | Average | 25.2 | 25.2 | 0.320 | 91.4 | 53.8 | 30 | 17.3 |
| | | | Maximum | 25.7 | 25.8 | 0.333 | 95.2 | 56.2 | 30 | 17.7 |

Total number of blows analyzed: 65

BL# Sensors

1-65 F3: [421-AWJ-1] 206.9 (1.00); F4: [421-AWJ-2] 206.3 (1.00); A3: [K4120] 390.0 (1.00); A4: [K3774] 382.0 (1.00)

Time Summary

Drive 1 minute 10 seconds 12:55 PM - 12:56 PM BN 1 - 65

Thompson SPT Calibration - CME 45C (SN 244224)_5 AWJ Rod - Mud Rotary
OP: MJN Date: 26-April-2016

AR: 1.18 in² SP: 0.492 k/ft³
LE: 111.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|
| 21 | 99.0 | 21 | 25.1 | 25.1 | 0.325 | 92.7 | 54.7 | 30 | 17.1 |
| 22 | 99.0 | 21 | 25.2 | 25.2 | 0.324 | 92.6 | 54.8 | 30 | 17.2 |
| 23 | 99.1 | 21 | 25.0 | 25.1 | 0.318 | 90.8 | 54.3 | 29 | 17.0 |
| 24 | 99.1 | 21 | 25.5 | 25.5 | 0.318 | 91.0 | 54.6 | 30 | 17.5 |
| 25 | 99.1 | 21 | 25.2 | 25.2 | 0.316 | 90.4 | 54.6 | 30 | 17.1 |
| 26 | 99.1 | 21 | 25.1 | 25.2 | 0.320 | 91.5 | 54.5 | 30 | 17.2 |
| 27 | 99.2 | 21 | 25.1 | 25.2 | 0.314 | 89.6 | 54.7 | 30 | 17.3 |
| 28 | 99.2 | 21 | 25.3 | 25.4 | 0.316 | 90.1 | 54.4 | 30 | 17.3 |
| 29 | 99.2 | 21 | 25.1 | 25.1 | 0.315 | 89.9 | 54.7 | 30 | 17.2 |
| 30 | 99.2 | 21 | 25.2 | 25.3 | 0.315 | 89.9 | 54.5 | 30 | 17.4 |
| 31 | 99.3 | 21 | 25.0 | 25.0 | 0.314 | 89.8 | 54.5 | 29 | 17.3 |
| 32 | 99.3 | 21 | 25.1 | 25.1 | 0.319 | 91.0 | 54.4 | 30 | 17.5 |
| 33 | 99.3 | 21 | 25.2 | 25.2 | 0.316 | 90.2 | 54.5 | 30 | 17.5 |
| 34 | 99.3 | 21 | 25.2 | 25.2 | 0.321 | 91.7 | 54.4 | 30 | 17.4 |
| 35 | 99.4 | 21 | 25.4 | 25.4 | 0.320 | 91.4 | 54.7 | 30 | 17.4 |
| 36 | 99.4 | 21 | 25.1 | 25.2 | 0.328 | 93.7 | 54.6 | 30 | 17.4 |
| 37 | 99.4 | 21 | 25.1 | 25.2 | 0.316 | 90.2 | 54.4 | 30 | 17.2 |
| 38 | 99.4 | 21 | 25.3 | 25.4 | 0.327 | 93.5 | 54.4 | 30 | 17.5 |
| 39 | 99.5 | 21 | 25.1 | 25.1 | 0.325 | 92.9 | 54.3 | 30 | 17.3 |
| 40 | 99.5 | 21 | 25.1 | 25.1 | 0.325 | 93.0 | 54.3 | 30 | 17.3 |
| 41 | 99.5 | 21 | 25.3 | 25.3 | 0.326 | 93.0 | 54.3 | 30 | 17.4 |
| 42 | 99.5 | 24 | 25.1 | 25.1 | 0.328 | 93.7 | 54.3 | 30 | 17.4 |
| 43 | 99.5 | 24 | 25.4 | 25.5 | 0.331 | 94.7 | 54.5 | 30 | 17.4 |
| 44 | 99.6 | 24 | 25.6 | 25.6 | 0.330 | 94.4 | 54.3 | 30 | 17.4 |
| 45 | 99.6 | 24 | 25.5 | 25.6 | 0.330 | 94.4 | 54.4 | 30 | 17.4 |
| 46 | 99.6 | 24 | 25.1 | 25.2 | 0.326 | 93.1 | 54.3 | 30 | 17.3 |
| 47 | 99.6 | 24 | 25.1 | 25.1 | 0.323 | 92.2 | 54.4 | 30 | 17.3 |
| 48 | 99.6 | 24 | 25.3 | 25.3 | 0.325 | 92.9 | 54.5 | 30 | 17.4 |
| 49 | 99.7 | 24 | 25.3 | 25.3 | 0.312 | 89.1 | 54.5 | 30 | 17.4 |
| 50 | 99.7 | 24 | 25.3 | 25.3 | 0.324 | 92.7 | 54.9 | 30 | 17.4 |
| 51 | 99.7 | 24 | 24.8 | 24.8 | 0.318 | 90.9 | 54.5 | 29 | 17.0 |
| 52 | 99.7 | 24 | 25.0 | 25.1 | 0.311 | 88.8 | 54.3 | 30 | 17.2 |
| 53 | 99.8 | 24 | 24.7 | 24.8 | 0.319 | 91.1 | 54.5 | 29 | 17.0 |
| 54 | 99.8 | 24 | 25.2 | 25.3 | 0.315 | 90.0 | 54.4 | 30 | 17.5 |
| 55 | 99.8 | 24 | 25.2 | 25.2 | 0.314 | 89.6 | 54.6 | 30 | 17.4 |
| 56 | 99.8 | 24 | 24.8 | 24.8 | 0.310 | 88.7 | 54.7 | 29 | 17.1 |
| 57 | 99.8 | 24 | 25.2 | 25.2 | 0.309 | 88.2 | 54.2 | 30 | 17.5 |
| 58 | 99.9 | 24 | 25.0 | 25.0 | 0.309 | 88.4 | 54.7 | 30 | 17.4 |
| 59 | 99.9 | 24 | 25.0 | 25.0 | 0.305 | 87.0 | 54.5 | 29 | 17.3 |
| 60 | 99.9 | 24 | 24.9 | 24.9 | 0.310 | 88.6 | 54.7 | 29 | 17.4 |
| 61 | 99.9 | 24 | 25.3 | 25.3 | 0.311 | 88.9 | 54.5 | 30 | 17.7 |
| 62 | 99.9 | 24 | 25.0 | 25.1 | 0.309 | 88.4 | 54.6 | 30 | 17.5 |
| 63 | 100.0 | 24 | 25.1 | 25.1 | 0.305 | 87.1 | 54.3 | 30 | 17.5 |
| 64 | 100.0 | 24 | 25.0 | 25.0 | 0.311 | 88.8 | 54.5 | 29 | 17.5 |
| 65 | 100.0 | 24 | 25.3 | 25.3 | 0.306 | 87.4 | 54.5 | 30 | 17.7 |
| | | Average | 25.2 | 25.2 | 0.318 | 90.8 | 54.5 | 30 | 17.3 |

Thompson SPT Calibration - CME 45C (SN 244224)_5 AWJ Rod - Mud Rotary
OP: MJN Date: 26-April-2016

| BL# | Depth | BLC | CSX | CSI | EMX | ETR | BPM | FMX | VMX |
|---|---|---|---|---|---|---|---|---|---|
| | ft | bl/6in | ksi | ksi | k-ft | (%) | bpm | kips | f/s |
| | | Maximum | 25.6 | 25.6 | 0.331 | 94.7 | 54.9 | 30 | 17.7 |

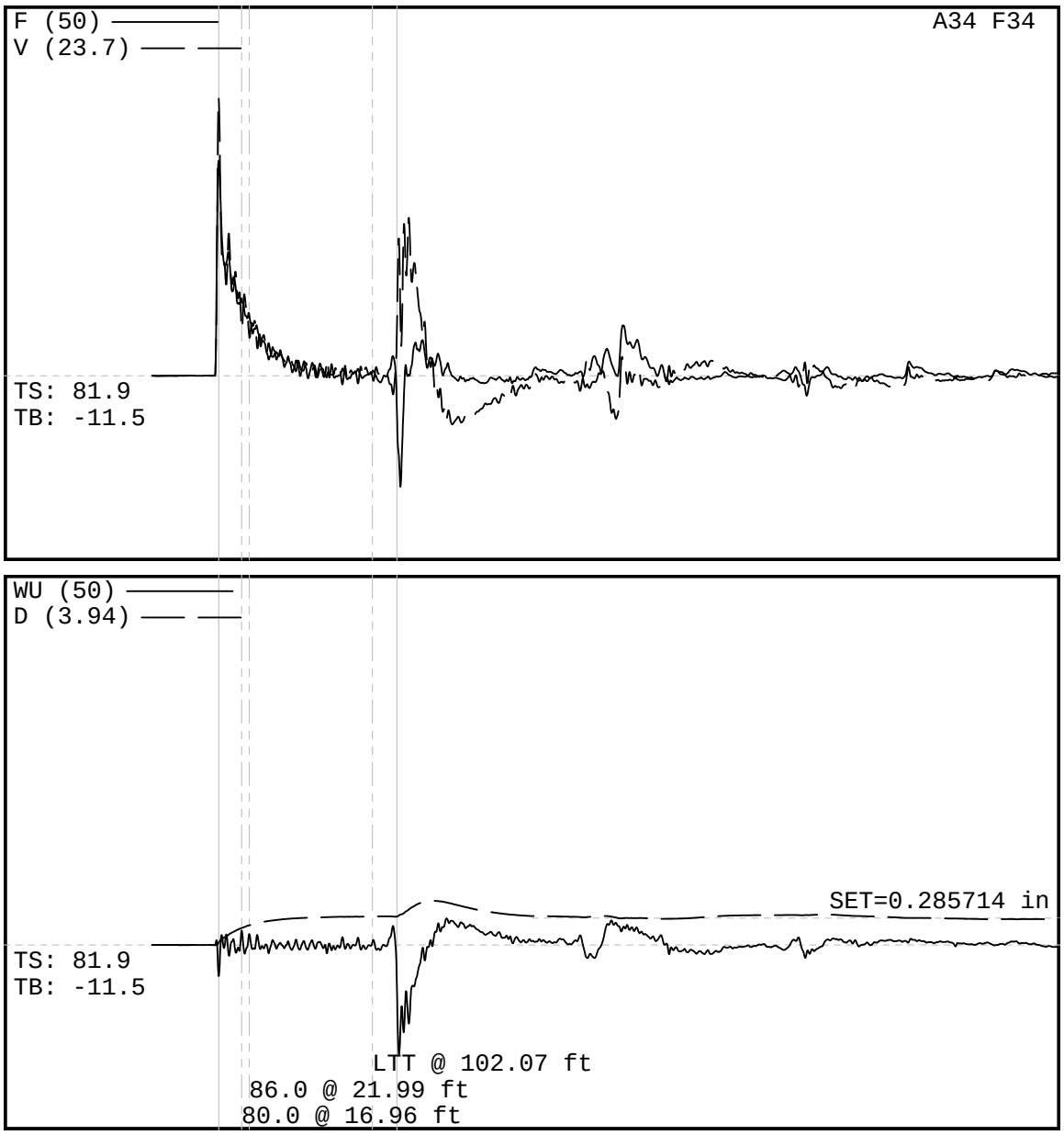
Total number of blows analyzed: 45

| BL# | Sensors |
|---|---|
| 21-65 | F3: [421-AWJ-1] 206.9 (1.00); F4: [421-AWJ-2] 206.3 (1.00); A3: [K4120] 390.0 (1.00); A4: [K3774] 382.0 (1.00) |

Time Summary

Drive 1 minute 10 seconds 12:55 PM - 12:56 PM BN 1 - 65

Thompson SPT Calibration CME 45C (SN 244224)_6




*Project Information*

PROJECT: Thompson SPT Calibration
PILE NAME: CME 45C (SN 244224)_6
DESCR: AWJ Rod - Mud Rotary
OPERATOR: MJN
FILE: CME 45C (SN 244224)_6
4/26/2016 1:25:14 PM
Blow Number 29

*Pile Properties*

LE 116.00 ft
AR 1.18 in^2
EM 30000 ksi
SP 0.492 k/ft3
WS 16807.9 f/s
EA/C 2.1 ksec/ft
2L/C 13.82 ms
JC []
LP 104.50 ft

*Quantity Results*

CSX 24.6 ksi
CSI 24.7 ksi
EMX 0.315 k-ft
ETR 89.9 (%)
BPM 54.7 bpm
FMX 29 kips
VMX 17.8 f/s
QNV 0.00 []
QNV 0.00 []

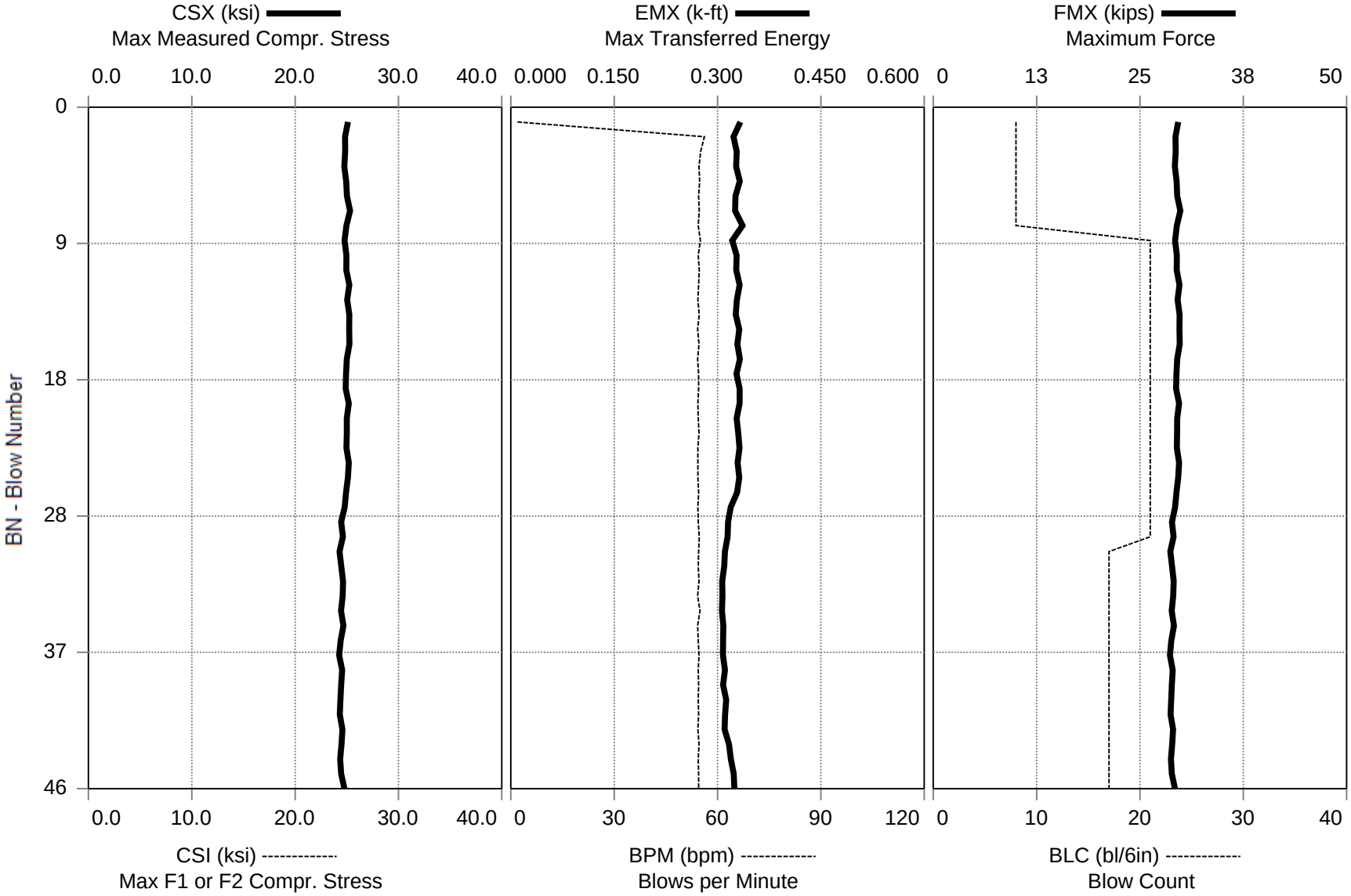
*Sensors*

F3: [421-AWJ-1] 206.94 (1)
F4: [421-AWJ-2] 206.29 (1)
A3: [K4120] 390 mv/5000g's (1)
A4: [K3774] 382 mv/5000g's (1)
CLIP: OK

Nagy Engineers, Inc. - PDIPLOT2 Ver 2016.1.56.1 - Case Method & iCAP® Results

Printed: 01-June-2016 Test started: 26-April-2016

Thompson SPT Calibration - CME 45C (SN 244224)_6 - AWJ Rod - Mud Rotary



Thompson SPT Calibration - CME 45C (SN 244224)_6 AWJ Rod - Mud Rotary
OP: MJN Date: 26-April-2016

AR: 1.18 in² SP: 0.492 k/ft³
LE: 116.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | TYPE | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 104.0 | 8 | AV8 | 25.0 | 25.0 | 0.329 | 94.0 | 48.3 | 29 | 17.7 |
| | | | MAX | 25.3 | 25.4 | 0.336 | 96.1 | 56.2 | 30 | 18.0 |
| 29 | 104.5 | 21 | AV21 | 25.0 | 25.0 | 0.327 | 93.5 | 54.5 | 29 | 17.9 |
| | | | MAX | 25.3 | 25.3 | 0.332 | 95.0 | 55.0 | 30 | 18.1 |
| 46 | 105.0 | 17 | AV17 | 24.5 | 24.5 | 0.312 | 89.1 | 54.5 | 29 | 17.9 |
| | | | MAX | 24.8 | 24.8 | 0.324 | 92.7 | 54.9 | 29 | 18.4 |
| | | | Average | 24.8 | 24.8 | 0.322 | 92.0 | 53.4 | 29 | 17.9 |
| | | | Maximum | 25.3 | 25.4 | 0.336 | 96.1 | 56.2 | 30 | 18.4 |

Total number of blows analyzed: 46

BL# Sensors

1-46 F3: [421-AWJ-1] 206.9 (1.00); F4: [421-AWJ-2] 206.3 (1.00); A3: [K4120] 390.0 (1.00); A4: [K3774] 382.0 (1.00)

Time Summary

Drive 49 seconds 1:24 PM - 1:25 PM BN 1 - 46

Thompson SPT Calibration - CME 45C (SN 244224)_6 AWJ Rod - Mud Rotary
OP: MJN Date: 26-April-2016

AR: 1.18 in² SP: 0.492 k/ft³
LE: 116.00 ft EM: 30,000 ksi
WS: 16,807.9 f/s JC: 0.00 []

CSX: Max Measured Compr. Stress BPM: Blows per Minute
CSI: Max F1 or F2 Compr. Stress FMX: Maximum Force
EMX: Max Transferred Energy VMX: Maximum Velocity
ETR: Energy Transfer Ratio

| BL# | Depth ft | BLC bl/6in | CSX ksi | CSI ksi | EMX k-ft | ETR (%) | BPM bpm | FMX kips | VMX f/s |
|---|---|---|---|---|---|---|---|---|---|
| 9 | 104.0 | 21 | 24.8 | 24.8 | 0.321 | 91.8 | 55.0 | 29 | 17.7 |
| 10 | 104.0 | 21 | 25.0 | 25.0 | 0.328 | 93.6 | 54.4 | 29 | 17.9 |
| 11 | 104.1 | 21 | 25.0 | 25.0 | 0.327 | 93.5 | 54.7 | 29 | 17.8 |
| 12 | 104.1 | 21 | 25.2 | 25.2 | 0.332 | 94.9 | 54.5 | 30 | 17.9 |
| 13 | 104.1 | 21 | 25.0 | 25.1 | 0.328 | 93.7 | 54.3 | 30 | 17.9 |
| 14 | 104.1 | 21 | 25.2 | 25.3 | 0.326 | 93.2 | 54.7 | 30 | 17.9 |
| 15 | 104.2 | 21 | 25.2 | 25.3 | 0.331 | 94.7 | 54.2 | 30 | 17.9 |
| 16 | 104.2 | 21 | 25.3 | 25.3 | 0.329 | 93.9 | 54.6 | 30 | 18.0 |
| 17 | 104.2 | 21 | 25.0 | 25.0 | 0.332 | 95.0 | 54.2 | 30 | 17.9 |
| 18 | 104.2 | 21 | 24.9 | 25.0 | 0.327 | 93.6 | 54.5 | 29 | 17.9 |
| 19 | 104.3 | 21 | 24.9 | 24.9 | 0.332 | 94.9 | 54.5 | 29 | 17.8 |
| 20 | 104.3 | 21 | 25.2 | 25.2 | 0.332 | 94.9 | 54.3 | 30 | 18.0 |
| 21 | 104.3 | 21 | 25.0 | 25.0 | 0.328 | 93.6 | 54.4 | 30 | 18.0 |
| 22 | 104.3 | 21 | 25.0 | 25.0 | 0.330 | 94.3 | 54.6 | 29 | 18.0 |
| 23 | 104.4 | 21 | 25.0 | 25.0 | 0.332 | 94.8 | 54.3 | 29 | 17.9 |
| 24 | 104.4 | 21 | 25.2 | 25.2 | 0.329 | 94.1 | 54.3 | 30 | 18.0 |
| 25 | 104.4 | 21 | 25.1 | 25.1 | 0.332 | 94.7 | 54.3 | 30 | 18.1 |
| 26 | 104.4 | 21 | 24.9 | 25.0 | 0.328 | 93.8 | 54.5 | 29 | 17.8 |
| 27 | 104.5 | 21 | 24.8 | 24.8 | 0.319 | 91.2 | 54.3 | 29 | 17.9 |
| 28 | 104.5 | 21 | 24.5 | 24.5 | 0.315 | 90.1 | 54.4 | 29 | 17.4 |
| 29 | 104.5 | 21 | 24.6 | 24.7 | 0.315 | 89.9 | 54.7 | 29 | 17.8 |
| 30 | 104.5 | 17 | 24.3 | 24.3 | 0.311 | 88.8 | 54.5 | 29 | 17.5 |
| 31 | 104.6 | 17 | 24.5 | 24.5 | 0.310 | 88.5 | 54.4 | 29 | 17.6 |
| 32 | 104.6 | 17 | 24.6 | 24.7 | 0.307 | 87.7 | 54.6 | 29 | 18.0 |
| 33 | 104.6 | 17 | 24.6 | 24.6 | 0.307 | 87.7 | 54.2 | 29 | 17.8 |
| 34 | 104.6 | 17 | 24.4 | 24.5 | 0.306 | 87.5 | 54.9 | 29 | 17.8 |
| 35 | 104.7 | 17 | 24.7 | 24.7 | 0.308 | 88.1 | 54.2 | 29 | 17.9 |
| 36 | 104.7 | 17 | 24.4 | 24.4 | 0.308 | 88.0 | 54.4 | 29 | 17.8 |
| 37 | 104.7 | 17 | 24.3 | 24.3 | 0.308 | 88.0 | 54.6 | 29 | 17.7 |
| 38 | 104.8 | 17 | 24.5 | 24.6 | 0.311 | 88.8 | 54.4 | 29 | 17.9 |
| 39 | 104.8 | 17 | 24.5 | 24.5 | 0.308 | 88.0 | 54.5 | 29 | 17.9 |
| 40 | 104.8 | 17 | 24.4 | 24.4 | 0.312 | 89.3 | 54.4 | 29 | 18.0 |
| 41 | 104.9 | 17 | 24.3 | 24.3 | 0.311 | 88.8 | 54.5 | 29 | 17.8 |
| 42 | 104.9 | 17 | 24.6 | 24.6 | 0.310 | 88.6 | 54.3 | 29 | 18.1 |
| 43 | 104.9 | 17 | 24.5 | 24.5 | 0.317 | 90.5 | 54.6 | 29 | 18.1 |
| 44 | 104.9 | 17 | 24.4 | 24.4 | 0.319 | 91.2 | 54.4 | 29 | 18.0 |
| 45 | 105.0 | 17 | 24.4 | 24.5 | 0.323 | 92.4 | 54.5 | 29 | 18.1 |
| 46 | 105.0 | 17 | 24.8 | 24.8 | 0.324 | 92.7 | 54.5 | 29 | 18.4 |
| | | Average | 24.8 | 24.8 | 0.320 | 91.5 | 54.5 | 29 | 17.9 |
| | | Maximum | 25.3 | 25.3 | 0.332 | 95.0 | 55.0 | 30 | 18.4 |

Total number of blows analyzed: 38

BL# Sensors

9-46 F3: [421-AWJ-1] 206.9 (1.00); F4: [421-AWJ-2] 206.3 (1.00); A3: [K4120] 390.0 (1.00); A4: [K3774] 382.0 (1.00)

Time Summary

Drive 49 seconds 1:24 PM - 1:25 PM BN 1 - 46

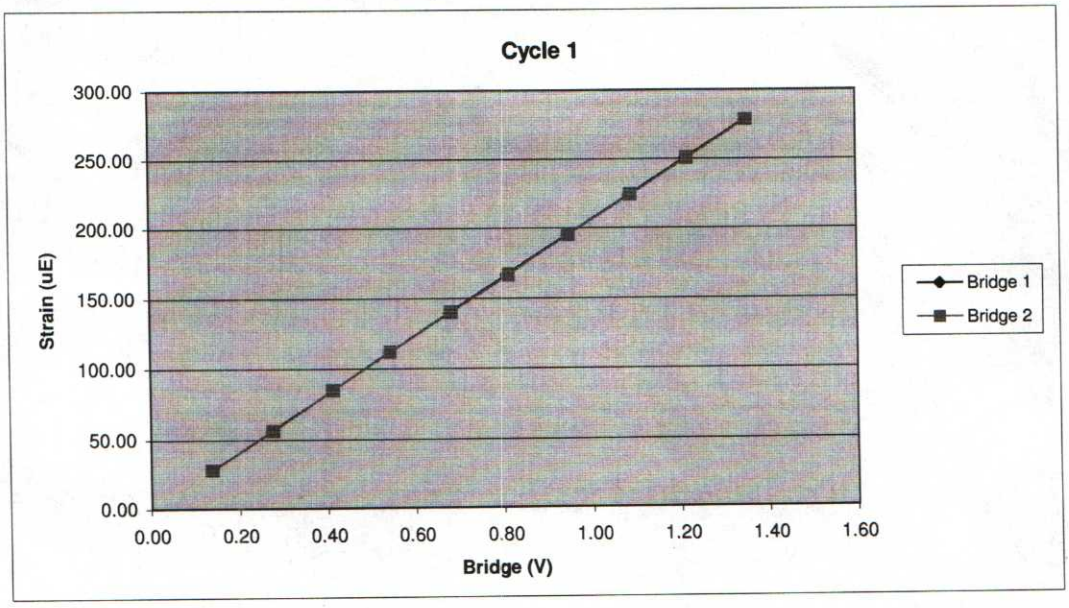
# Appendix B

# Dynamic Measurement Calibration Sheets

| 421AWJ | | Cycle 1 | | |
|---|---|---|---|---|
| **Sample** | **Force (lb)** | **Strain (µE)** | **Bridge 1 (V)** | **Bridge 2 (V)** |
| 1 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2 | 1005.85 | 28.00 | 0.14 | 0.14 |
| 3 | 2005.01 | 56.43 | 0.28 | 0.28 |
| 4 | 3011.46 | 84.81 | 0.41 | 0.41 |
| 5 | 3966.73 | 111.62 | 0.54 | 0.54 |
| 6 | 4968.65 | 139.87 | 0.68 | 0.68 |
| 7 | 5932.98 | 166.69 | 0.81 | 0.81 |
| 8 | 6924.86 | 194.99 | 0.95 | 0.95 |
| 9 | 7977.35 | 223.97 | 1.09 | 1.09 |
| 10 | 8904.68 | 250.51 | 1.22 | 1.22 |
| 11 | 9905.42 | 278.24 | 1.35 | 1.35 |

| **Bridge 1** | | **Bridge 2** | |
|---|---|---|---|
| **Force Calibration (lb/V)** | **7338.09** | **Force Calibration (lb/V)** | **7328.21** |
| Offset | -12.00 | Offset | -14.97 |
| Correlation | 0.999998 | Correlation | 0.999996 |
| **Strain Calibration (µE/V)** | **206.26** | **Strain Calibration (µE/V)** | **205.98** |
| Offset | -0.31 | Offset | -0.39 |
| Correlation | 0.999999 | Correlation | 0.999998 |

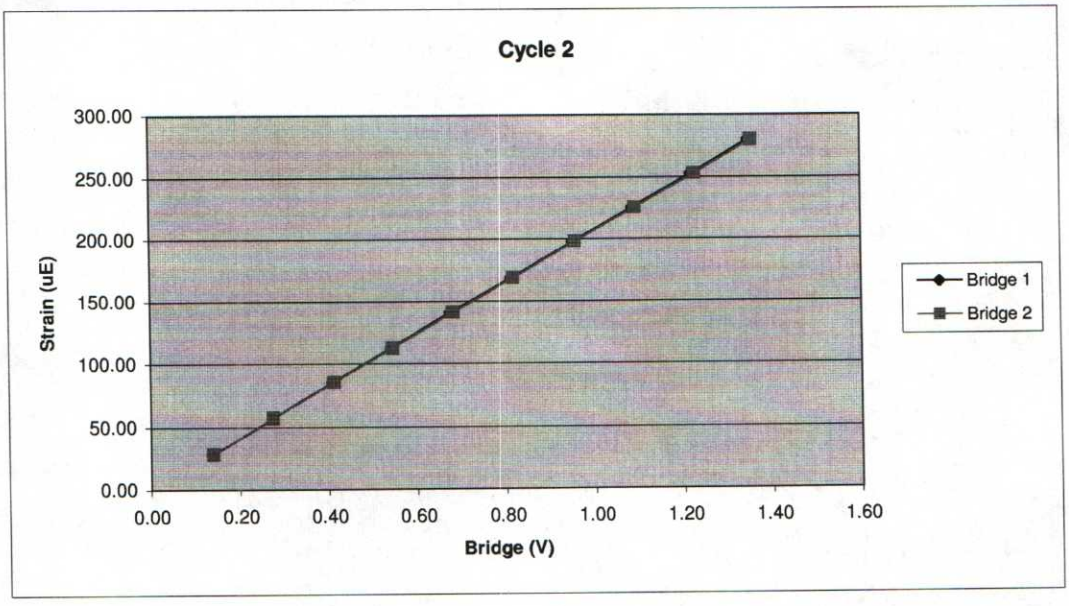
| **Force Strain Calibration** | |
|---|---|
| **EA (Kips)** | **35576.37** |
| Offset | -1.11 |
| Correlation | 0.999997 |



| 421AWJ | | Cycle 2 | | |
|---|---|---|---|---|
| **Sample** | **Force (lb)** | **Strain (µE)** | **Bridge 1 (V)** | **Bridge 2 (V)** |
| 1 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2 | 1014.51 | 28.67 | 0.14 | 0.14 |
| 3 | 2007.38 | 57.15 | 0.27 | 0.27 |
| 4 | 3000.63 | 85.60 | 0.41 | 0.41 |
| 5 | 3978.15 | 112.52 | 0.54 | 0.54 |
| 6 | 4953.69 | 140.78 | 0.68 | 0.68 |
| 7 | 5958.76 | 168.64 | 0.81 | 0.82 |
| 8 | 6990.39 | 197.75 | 0.95 | 0.96 |
| 9 | 7981.49 | 225.38 | 1.09 | 1.09 |
| 10 | 8970.81 | 253.13 | 1.22 | 1.23 |
| 11 | 9917.43 | 279.98 | 1.35 | 1.35 |

| **Bridge 1** | | **Bridge 2** | |
|---|---|---|---|
| **Force Calibration (lb/V)** | **7353.83** | **Force Calibration (lb/V)** | **7322.44** |
| Offset | **-12.14** | Offset | **-15.23** |
| Correlation | **0.999996** | Correlation | **0.999994** |
| **Strain Calibration (µE/V)** | **207.22** | **Strain Calibration (µE/V)** | **206.34** |
| Offset | **0.27** | Offset | **0.19** |
| Correlation | **0.999995** | Correlation | **0.999996** |

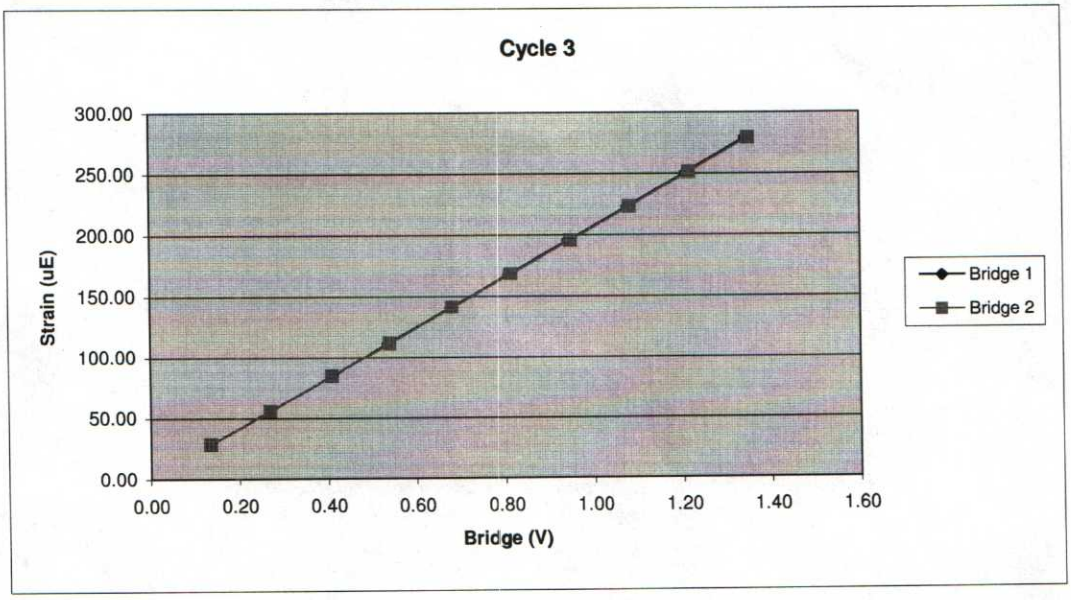
| **Force Strain Calibration** | |
|---|---|
| **EA (Kips)** | **35487.78** |
| Offset | **-21.84** |
| Correlation | **0.999992** |



| 421AWJ | | Cycle 3 | | |
|---|---|---|---|---|
| **Sample** | **Force (lb)** | **Strain (µE)** | **Bridge 1 (V)** | **Bridge 2 (V)** |
| 1 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2 | 979.68 | 28.50 | 0.13 | 0.13 |
| 3 | 1973.72 | 55.64 | 0.27 | 0.27 |
| 4 | 2996.50 | 84.67 | 0.41 | 0.41 |
| 5 | 3948.43 | 111.32 | 0.54 | 0.54 |
| 6 | 4995.02 | 140.86 | 0.68 | 0.68 |
| 7 | 5952.86 | 168.03 | 0.81 | 0.81 |
| 8 | 6933.71 | 195.66 | 0.94 | 0.95 |
| 9 | 7917.53 | 223.31 | 1.08 | 1.08 |
| 10 | 8902.52 | 251.28 | 1.21 | 1.22 |
| 11 | 9894.99 | 279.28 | 1.34 | 1.35 |

| **Bridge 1** | | **Bridge 2** | |
|---|---|---|---|
| **Force Calibration (lb/V)** | **7358.39** | **Force Calibration (lb/V)** | **7331.09** |
| Offset | **-8.35** | Offset | **-3.80** |
| Correlation | **0.999998** | Correlation | **0.999998** |
| **Strain Calibration (µE/V)** | **207.33** | **Strain Calibration (µE/V)** | **206.56** |
| Offset | **0.08** | Offset | **0.21** |
| Correlation | **0.999994** | Correlation | **0.999993** |

| **Force Strain Calibration** | |
|---|---|
| **EA (Kips)** | **35491.62** |
| Offset | **-11.08** |
| Correlation | **0.999996** |



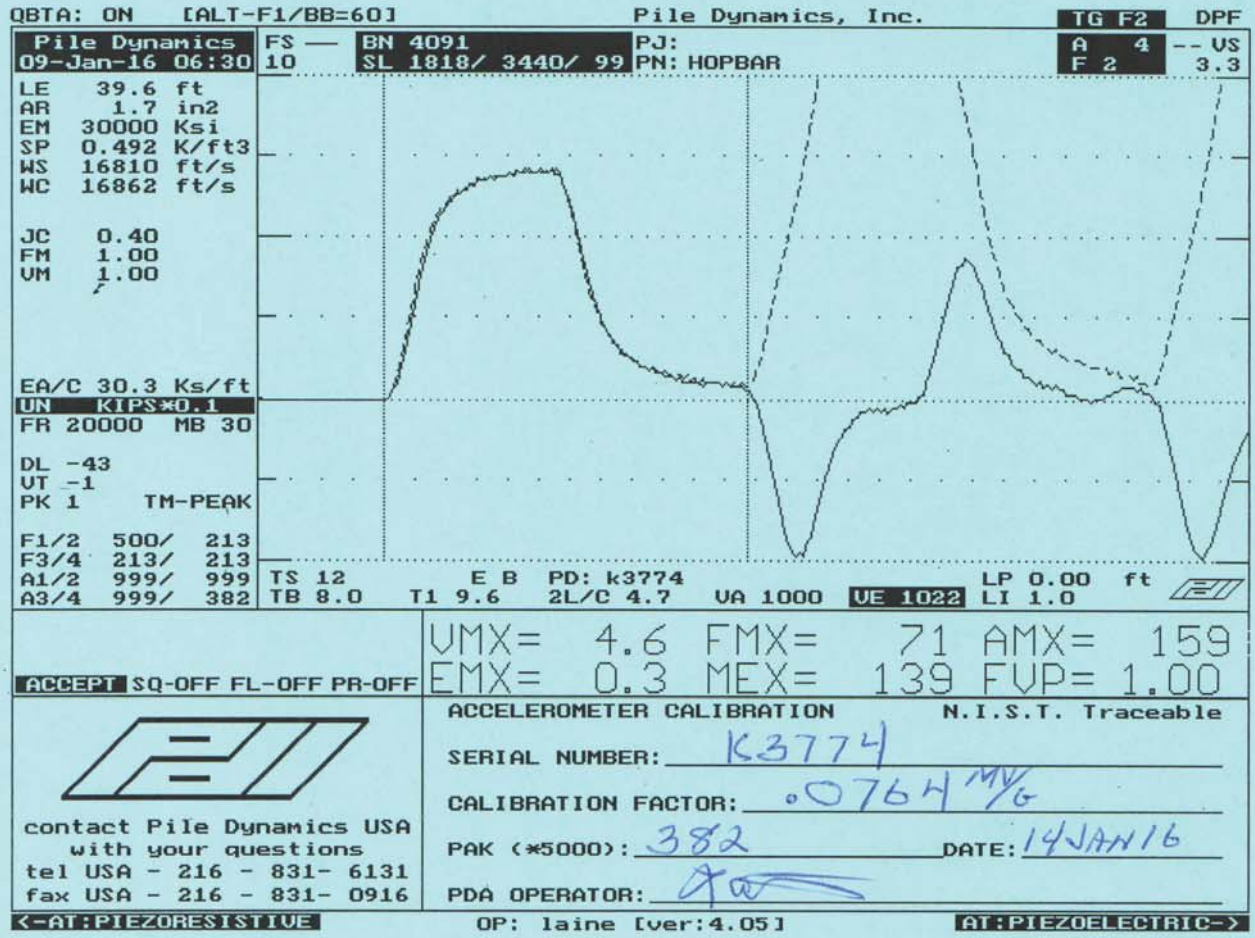
Bridge Excitation (V) 5
Shunt Resitor (ohm) 60.4k

| Calibration Factors | 421AWJ | | |
|---|---|---|---|
| Bridge 1 (µE/V) | 206.94 | Bridge 2 (µE/V) | 206.29 |
| EA Factor (Kips) | 35518.59 | Area (in^2) | 1.18 |

Calibrated by: _____
Calibrated Date: 8/25/2014

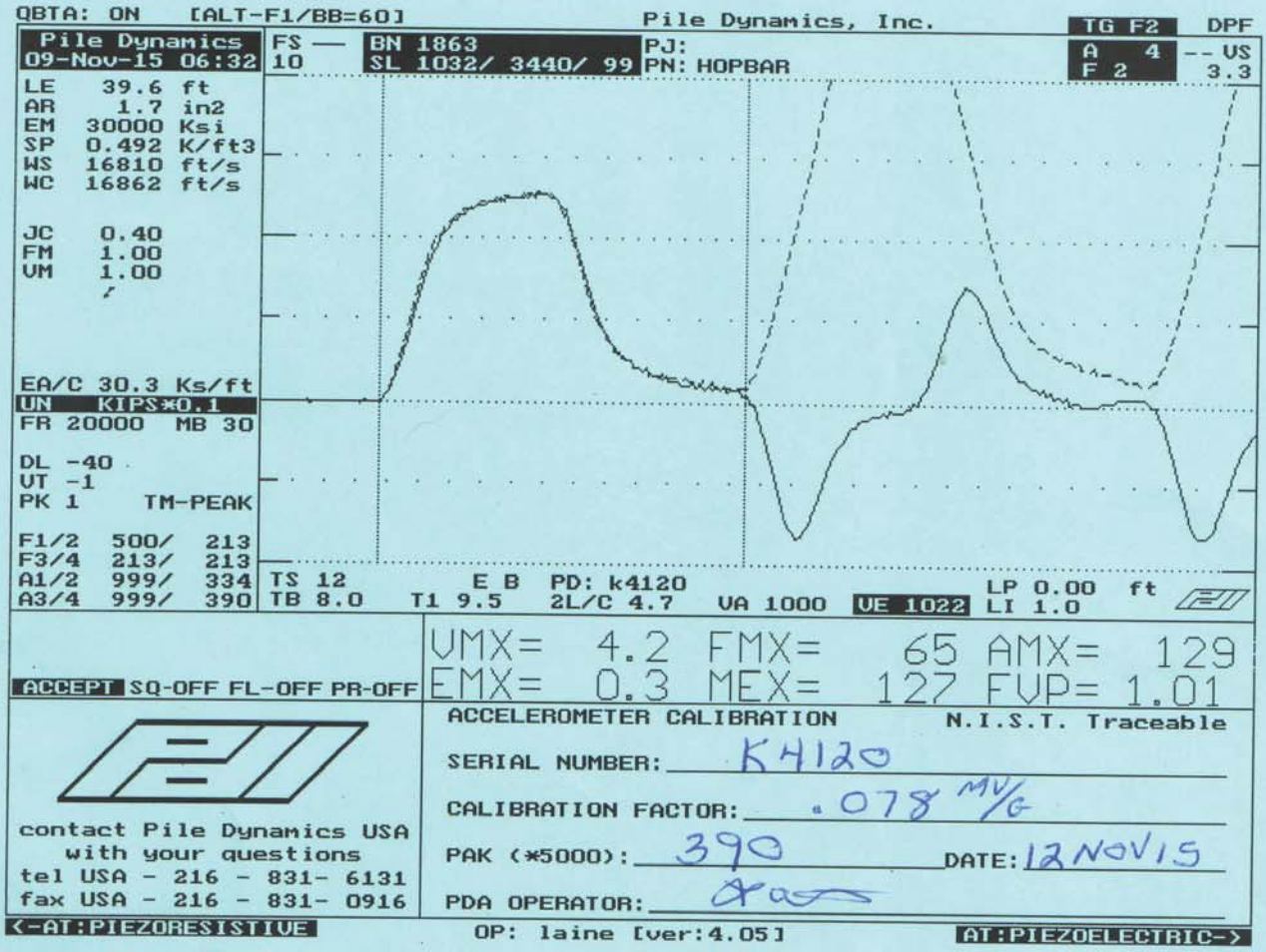
Pile Dynamics Inc
30725 Aurora Rd
Solon, OH 44139

Traceable to N.I.S.T.




**Smart Sensor**

**Smart Chip Programmed By** T.M.W. **on** 14JAN16 **CRC Value** B078




**Smart Sensor**

**Smart Chip Programmed By** J.M.W. **on** 12NOV15 **CRC Value** 980A