

**UNI-739-6.06  
ODOT PID NO: 112878  
UNION COUNTY, OHIO**

**DRAFT SUBGRADE  
EXPLORATION REPORT**

*Prepared For:*  
**ODOT District Six  
400 East William Street  
Delaware, OH 43015**

*Prepared By:*  
**Resource International, Inc.  
6350 Presidential Gateway  
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**Rii Project No. W-20-160**

**April 2021**





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April 21, 2021

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**Re: Draft Subgrade Exploration Report  
UNI-739-6.06  
ODOT PID No. 112878  
Union County, Ohio  
Rii Project No. W-20-160**

Mr. Turowski:

Resource International, Inc. (Rii) is pleased to submit this draft subgrade exploration report for the above referenced project. Engineering logs have been prepared and are attached to this report along with the results of laboratory testing. This report includes recommendations for the proposed improvements along SR 739 between SLM 6.06 and 14.13 in Union County, Ohio.

We sincerely appreciate the opportunity to be of service to you on this project. If you have any questions regarding the Subgrade exploration or this report, please contact us.

Sincerely,

**RESOURCE INTERNATIONAL, INC.**

Peyman P. Majidi, P.E.  
Project Engineer

Jonathan P. Sterenberg, P.E.  
Vice President – Geotechnical Services

Enclosure: Draft Subgrade Exploration Report

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## EXECUTIVE SUMMARY

Resource International, Inc. (Rii) has completed a subgrade exploration performed for the design and construction of the proposed improvements to the eastbound and westbound shoulders of State Route 739 between SLM 6.06 and 14.13 in Union County. It is understood that consideration is being given to full depth reclamation (FDR) for the shoulder reconstruction.

### Exploration and Findings

Between March 1 and 9, 2021, a total of fifty-four (54) borings, designated as B-001-0-20 through B-106-0-20 were drilled to completion depths of 7.0 to 7.5 feet below the existing ground surface. In addition, fifty-three (53) dynamic cone penetrometer (DCP), designated as D-003-0-20 through D-107-0-20 were performed to depth of between 60 to 75 inches below the bottom of the existing pavement. The boring and DCP locations are illustrated on the boring plan presented in Appendix I of this report.

All borings and DCP tests were performed within the existing pavement. Pavement cores were obtained from selected boring and DCP locations. The borings and pavement cores encountered between 7.5 to 12.0 inches of asphalt overlaying 2.0 to 14.0 inches of aggregate base.

Underlying the pavement materials in the borings, predominantly natural cohesive soils with seams of granular soils were encountered to boring termination depths. The cohesive soils were described as brown, brownish gray, dark gray clay, silt and clay, silty clay, sandy silt and silt (ODOT A-7-6, A-6b, A-6a and A-4a). Seams of granular soils was encountered in B-065-0-20 and described as brownish gray coarse and fine sand (ODOT A-3a).

## Analysis and Recommendations

### Pavement Subgrade Recommendations

The subgrade soils along the alignment, within the project corridor, are anticipated to consist of predominantly cohesive materials comprised of soft to hard clay, silty clay, silt and clay, sandy silt and coarse and fine sand (ODOT A-7-6, A-6b, A-6, A-4a and A-3a). Based on the soil conditions encountered during the drilling phase, it is estimated that the subgrade soils within the upper portions of the proposed subgrade will require some level of stabilization under ODOT GB1. Based on the results of the GB1 analysis, the overall average site parameters based on all of the soil borings performed as part of this exploration are as follows:



### Overall Average Site Parameters

| Average<br>N <sub>60L</sub> | Average<br>PI | Average<br>Moisture | Average Optimum<br>Moisture | Average<br>Group Index | Design<br>CBR |
|-----------------------------|---------------|---------------------|-----------------------------|------------------------|---------------|
| 12                          | 19            | 18                  | 16                          | 12                     | 5             |

Applying the averages in the preceding table, GB-1 recommends the following global stabilization option within the project limits:

- Option 1. Chemically stabilize the entire subgrade with 12-inches of cement, as per ODOT Construction and Materials Specification (CMS) Item 206. For estimating purposes, utilize a cement content of 5.0 percent by weight of soil. Actual application rates shall be verified by the contractor under Item 206.06 Mixture Design for Chemically Stabilized Soils.**
- Option 2. Stabilize the entire subgrade via a 12-inch undercut and replacement with ODOT item 703.16C granular material, Type B, C or D installed over ODOT Item 712.09 Geotextile Fabric, Type D as detailed in accordance with ODOT Item 204.**

Per ODOT GB1 requirements the entire subgrade should be stabilized using one of the global stabilization options provided above. Upon completion of the stabilization, the entire subgrade should be proof rolled to verify that stability has been achieved.

California Bearing Ratio (CBR) values from the soil borings had an average of 5, while DCP values displayed average CBR values ranging from 1 to 12 with average site CBR value of 10. Based on the conditions encountered across the subject site, **it is recommended that pavement design be based on a CBR value of 6** with a corresponding resilient modulus, MR, of 7,200 psi. Correlation charts indicate a modulus of subgrade reaction (K) of 150 pci and a soil support value (SSV) of 4.4.

It is understood that ODOT is considering full depth reclamation (FDR) for the reconstruction of the shoulder pavement. Rii recommends the use of FDR with cement as a stabilizing agent.

Mix designs for the FDR should be performed in accordance with ODOT Special Provision for FDR Chemical Stabilization, dated March 24, 2010. Rii can be available to provide a mix design for the full depth reclamation using samples of the existing materials and the stabilizing agent (cement). For preliminary estimating purposes, a cement content of 6 percent may be considered, along with a total treatment depth of 12 inches from the top of the pavement surface.

Please note that this executive summary does not contain all the information presented in the report. The unabridged Subgrade exploration report should be read in its entirety to obtain a more complete understanding of the information presented.



## 1.0 INTRODUCTION

This report is a presentation of the subgrade exploration performed for the design and construction of the proposed improvements to the eastbound and westbound shoulders of State Route 739 between SLM 6.06 and 14.13 in Union County. It is understood that consideration is being given to full depth reclamation (FDR) for the shoulder reconstruction. The project area is shown on the vicinity map presented in Appendix I.

## 2.0 GEOLOGY AND OBSERVATIONS OF THE PROJECT

### 2.1 Site Geology

Both the Illinoian and Wisconsinan glaciers advanced over two-thirds of the state of Ohio, leaving behind glacial till, kame deposits, lacustrine deposits and outwash terraces. The glacial and non-glacial regions comprise five physiographic sections based on geological age, depositional process and geomorphic occurrence. Geologically, the site lies in the Central Ohio Clayey Till Plain Region of the Till Plains Section. This region can be characterized as having well defined end moraines with intervening flat-lying ground moraines, and intermorainal lake basins. The surface is covered with silty clay till to clayey till moving northward, and about a dozen silt, clay, and till filled lake basins. These lake basins can range in area from a few to over 200 square miles. Boulder belts are not common and few large streams leave limited sand and gravel outwash.

Based on bedrock geology and topography maps obtained from Ohio Department of Natural Resources (ODNR), the bedrock beneath the project site consists of the two Silurian-aged units which can intertongue and intergrade, the Salina Group and the Tymochtee and Greenfield Dolomites, undivided. The majority of the project is underlain by the Salina Group, the younger of the two units, which is gray to brown in color, thin bedded, and ranges in thickness from 235 to 335 feet. It can be characterized by argillaceous partings, brecciated intervals, anhydrite/gypsum zones, and algal laminations. The Tymochtee and Greenfield Dolomites only underlie small sections of the project just north of Raymond and only a tiny portion where County Road 739 intersects State Route 31. The Tymochtee Dolomite is gray and brown, finely crystalline and occurs in thin to massive beds and features carbonaceous shale partings and ranges between 0 to 140 feet thick. The Greenfield Dolomite is gray and brown, very finely to coarsely crystalline and occurs as laminae to massively bedded and features the absence of shale laminae in comparison to the overlying unit as well as sedimentary breccias zones and ranges between 0 to 80 feet thick.

The bedrock surface generally slopes gradually downward to the east across most of the site from the northern project limit southward to Hoover Bault Road (TR 219). The elevation ranges from approximate elevations of 1020 feet msl (mean sea level) to 1000 feet msl. From the southern project limit northward to approximately Hoover Bault Road, the project is underlain by a small, very irregularly shaped bedrock valley. The valley trends in a northwest-southeast direction, generally underlying Mill Creek. The bedrock



surface ranges between approximate elevations of 1020 feet to 960 feet msl. While the bedrock surface is relatively shallow in areas along the alignment, none of the borings drilled for this project encountered bedrock above their completion depths which ranged from 7.0 to 7.5 feet below the ground surface.

## 2.2 Existing Site Conditions

The project site is located along the alignment of Union-Cardington Road East, SR 739 in the southeast part of city of Union, the county seat of Union County, Ohio. SR 739 is classified as a major collector within the limits of the project and is situated in an east-west direction. The roadway accommodates one lane of traffic in each direction and predominantly spans farm fields.

## 3.0 EXPLORATION

Between March 1 and 9, 2021, a total of fifty-four (54) borings, designated as B-001-0-20 through B-106-0-20 were drilled to completion depths of 7.0 to 7.5 feet below the existing ground surface. In addition, fifty-three (53) dynamic cone penetrometer (DCP), designated as D-003-0-20 through D-107-0-20 were performed to depth of between 60 to 75 inches below the bottom of the existing pavement. The boring and DCP locations are illustrated on the boring plan presented in Appendix I of this report.

GPS coordinates of the boring and DCP locations were obtained by Rii using a handheld GPS unit. Ground surface elevations were estimated using Google Earth.

The borings were drilled with a CME-55 truck mounted rotary drilling machine, utilizing a 3.25-inch inside diameter, hollow stem auger to advance the holes. In general, standard penetration test (SPT) and split spoon sampling were performed using continuous sampling to the boring termination depth within each of the borings. The SPT, per the American Society for Testing and Materials (ASTM) designation D1586, is conducted using a 140-pound hammer falling 30.0 inches to drive a 2.0-inch outside diameter split spoon sampler 18.0 inches. Rii utilized a calibrated automatic drop hammer to generate consistent energy transfer to the sampler. Driving resistance is recorded on the boring logs in terms of blows per 6.0-inch interval of the driving distance. The second and third intervals are added to obtain the number of blows per foot (N). Standard penetration blow counts aid in determining soil properties applicable in pavement and foundation system design. Measured blow count (N) values are corrected to an equivalent (60%) energy ratio,  $N_{60}$ , by the following equation. Both values are represented on boring logs in Appendix III.





$$N_{60} = N_m * (ER/60)$$

Where:

$N_m$  = measured N value

ER = drill rod energy ratio, expressed as a percent, for the system used

The automatic hammer for the CME-55 drill rig used for this project was calibrated on September 15, 2020 and has a drill rod energy ratio of 83.6 percent. Upon completion of drilling, the borings were backfilled with either soil cuttings generated during the drilling process or a mixture of soil cuttings and bentonite hole plug. Where borings penetrated the existing subgrade, the pavement surface was patched with an equivalent thickness of quickset concrete. During drilling, Rii personnel prepared field logs showing the encountered subsurface conditions. Soil samples obtained from the drilling operation were preserved and sealed in glass jars and delivered to the soil laboratory. In the laboratory, the soil samples were visually classified and select samples were tested, as noted in Table 1.

**Table 1. Laboratory Test Schedule**

| Laboratory Test                       | Test Designation | Number of Tests Performed |
|---------------------------------------|------------------|---------------------------|
| Natural Moisture Content              | ASTM D 2216      | 217                       |
| Plastic and Liquid Limits             | AASHTO T89, T90  | 110                       |
| Gradation – Sieve/Hydrometer          | AASHTO T88       | 110                       |
| Sulfate Content – Colorimetric Method | ODOT S1122       | 53                        |

The tests performed are necessary to classify existing soil according to the Ohio Department of Transportation (ODOT) classification system and to estimate engineering properties of importance for pavement and foundation design and construction recommendations. Results of the laboratory testing are presented on the boring logs in Appendix III. A description of the soil terms used throughout this report is presented in Appendix II.

Hand penetrometer readings, which provide a rough estimate of the unconfined compressive strength of the soil, were reported on the boring logs in units of tons per square foot (tsf) and were utilized to classify the consistency of the cohesive soil in each layer. An indirect estimate of the unconfined compressive strength of the cohesive split spoon samples can also be made from a correlation with the blow counts ( $N_{60}$ ). Please note that split spoon samples are considered to be disturbed and the laboratory determination of their shear strengths may vary from undisturbed conditions.



## 4.0 FINDINGS

Interpreted engineering logs have been prepared based on the field logs, visual examination of samples and laboratory test results. Classification follows the current version of the ODOT Specifications for Subgrade Explorations (SGE). The following is a summary of what was found in the test borings and what is represented on the boring logs.

### 4.1 Surface Materials

Pavement cores were obtained from selected boring and DCP locations. Table 2 displays the pavement thickness and aggregate base in each boring.

**Table 2. Summary of Pavement Cores**

| <b>Boring ID</b> | <b>Asphalt Thickness (in)</b> | <b>Aggregate Base Thickness (in)</b> |
|------------------|-------------------------------|--------------------------------------|
| D-004-0-20       | 9.25                          | 3.25                                 |
| B-009-0-20       | 8.5                           | 3.0                                  |
| B-014-0-20       | 11.0                          | 7.0                                  |
| D-019-0-20       | 9.5                           | 4.0                                  |
| D-024-0-20       | 9.5                           | 2.0                                  |
| B-029-0-20       | 8.5                           | 3.0                                  |
| B-034-0-20       | 12.0                          | 6.0                                  |
| D-039-0-20       | 11.5                          | 3.5                                  |
| D-044-0-20       | 11.5                          | 2.0                                  |
| B-049-0-20       | 9.5                           | 4.0                                  |
| B-054-0-20       | 11.0                          | 7.0                                  |
| D-059-0-20       | 7.5                           | 11.5                                 |
| D-064-0-20       | 11.0                          | 15.0                                 |
| B-069-0-20       | 9.5                           | 2.5                                  |
| B-074-0-20       | 12.0                          | 6.0                                  |
| D-079-0-20       | 9.0                           | 15.0                                 |
| D-084-0-20       | 9.0                           | 14.0                                 |
| B-089-0-20       | 9.5                           | 8.5                                  |
| B-094-0-20       | 7.5                           | 4.5                                  |
| D-099-0-20       | 9.0                           | 14.0                                 |
| D-104-0-20       | 9.5                           | 12.0                                 |



In general, all boring were performed within the existing pavement. The borings generally encountered between 7.5 to 12.0 inches of asphalt overlaying 2.0 to 14.0 inches of aggregate base. The cores showed surface wear and deterioration to various degree, while others appeared intact. For further details and photographic logs of the pavement cores please see Appendix IV.

## 4.2 Subsurface Soils

Underlying the pavement materials in the borings, predominantly natural cohesive soils with seams of granular soils were encountered to boring termination depths. The cohesive soils were described as brown, brownish gray, dark gray clay, silt and clay, silty clay, sandy silt and silt (ODOT A-7-6, A-6b, A-6a and A-4a). Seams of granular soils was encountered in B-065-0-20 and described as brownish gray coarse and fine sand (ODOT A-3a).

The shear strength and consistency of the cohesive soils are primarily derived from the hand penetrometer values (HP). The cohesive soils encountered across the site ranged from medium stiff ( $0.5 < HP \leq 1.0$  tsf) to hard ( $4.5 < HP$  tsf). The unconfined compressive strength of the cohesive soil samples tested, obtained from the hand penetrometer, ranged from 1.0 tsf to over 4.5 tsf (limit of instrument). The relative density of granular soils is primarily derived from SPT blow counts ( $N_{60}$ ). Based on the SPT blow counts obtained, the granular soils encountered ranged in medium dense ( $10 \leq N_{60} \leq 30$  blows per foot [bpf]). Blow counts ( $N_{60}$ ) recorded from the SPT sampling was 17 bpf.

Natural moisture contents of the soil samples tested ranged from 5 to 35 percent. In general, the soils exhibited natural moisture contents estimated to be slightly above optimum moisture levels.

Sulfate testing was performed in all of the borings in accordance with the ODOT S1122 Colorimetric Method in the upper soils of the existing subgrade along the proposed alignments, as outlined in the current ODOT SGE and Geotechnical Bulletin Number 1: Plan Subgrades (GB1). Based on the results of the testing, the sulfate contents of the subgrade soils range from 13 to 1213 parts per million (ppm or mg/kg of material). Results of the sulfate testing at each boring location tested are provided on the respective boring log in Appendix III.

## 4.3 Bedrock

Bedrock was not encountered in any of the borings performed for this investigation.



#### **4.4 Groundwater**

Groundwater seepage was encountered in boring B-106-0-20 at the depth of 2.5 feet below existing grade. Beyond seepage, groundwater was not encountered in any remaining borings, either during or at completion of drilling.

Please note that short-term water level readings, especially in cohesive soils, are not necessarily an accurate indication of the actual groundwater level. In addition, groundwater levels or the presence of groundwater are considered to be dependent on seasonal fluctuations in precipitation. A more comprehensive description of what was encountered during the drilling process may be found on the boring logs in Appendix III.

#### **4.5 DCP Test Results**

The DCP tests, where performed, were conducted to depths ranging from 4.8 to 82.3 inches below the existing pavement section or surface materials (slag/gravel) along the project alignment. Where refusal on bedrock or very dense granular soil was not encountered, the tests were terminated when the maximum stroke of the drive rods was achieved (which varies based on the existing pavement section at each test location). The cumulative penetration depth of the drive rods and number of blows from the hammer were recorded at approximate 5.0 cm intervals, and these values were reduced to provide a penetration rate (PR) in units of millimeters per blow (mm/blow) of the soil. The PR of the soil for each individual test location was determined based on the average PR of the data set for the respective test. In general, the PR recorded over the project length ranged from 1.8 to 49.0 mm/blow. All depth measurements for the DCP are referenced to the top of the subgrade (bottom of slag or aggregate base. Results of the DCP testing performed for the current investigation are presented Appendix IV.

### **5.0 ANALYSES AND RECOMMENDATIONS**

Data obtained from the drilling and testing program have been used to determine pavement foundation and support capabilities for the soils encountered at the site. These parameters have been used to provide guidelines for the design of the pavement foundation systems, as well as the construction specifications related to the placement of the pavement and general earthwork recommendations, which are discussed in the following paragraphs. It is understood that the District is considering full-depth reclamation (FDR) to repair the shoulders along this alignment.

#### **5.1 Pavement Subgrade Recommendations**

The subgrade soils along the alignment, within the project corridor, are anticipated to consist of predominantly cohesive materials comprised of soft to hard clay, silty clay, silt and clay, sandy silt and coarse and fine sand (ODOT A-7-6, A-6b, A-6, A-4a and A-3a). Based on the soil conditions encountered during the drilling phase, it is estimated that the



subgrade soils within the upper portions of the proposed subgrade will require some level of stabilization under ODOT GB1. Profile information was not available at the time of this report; however, it is anticipated that the proposed subgrade will generally match the existing subgrade, and that minor amounts of earthwork cut or fill may be required to achieve the proposed subgrade elevations.

### 5.1.1 Subgrade Stabilization

Based on the ODOT GB1 guidelines, when approximately 30 percent or more of the subgrade area requires stabilization, consideration should be given to utilizing a global stabilization option. For this project, approximately 61 percent of the subgrade area is anticipated to require stabilization based on the soil borings performed. Per ODOT GB1, global stabilization recommendations are based upon the overall average site parameters, as noted in Table 3.

**Table 3. Average Site Parameters**

| Average N <sub>60L</sub> | Average PI | Average Moisture | Average Optimum Moisture | Average Group Index | Average CBR |
|--------------------------|------------|------------------|--------------------------|---------------------|-------------|
| 12                       | 19         | 18               | 16                       | 12                  | 5           |

Applying the averages in Table 3 and based on the results of the GB-1 analysis the following global stabilization options within the project limits:

- Option 1. Chemically stabilize the entire subgrade with 12-inches of cement, as per ODOT Construction and Materials Specification (CMS) Item 206. For estimating purposes, utilize a cement content of 5.0 percent by weight of soil. Actual application rates shall be verified by the contractor under Item 206.06 Mixture Design for Chemically Stabilized Soils.**
- Option 2. Stabilize the entire subgrade via a 12-inch undercut and replacement with ODOT item 703.16C granular material, Type B, C or D installed over ODOT Item 712.09 Geotextile Fabric, Type D as detailed in accordance with ODOT Item 204.**

Per ODOT GB1 requirements the entire subgrade should be stabilized using one of the global stabilization options provided above. Upon completion of the stabilization, the entire subgrade should be proof rolled to verify that stability has been achieved.



### 5.1.2 Subgrade Design Considerations

California Bearing Ratio (CBR) values from the soil borings ranged from 3 to 12 with an average of 5.

Based on our experience with the site soils encountered across the subject site, **it is recommended that pavement design be based on a CBR value of 5** with a corresponding resilient modulus,  $M_R$ , of 6,000 psi. Correlation charts indicate a modulus of subgrade reaction (K) of 135 pci and a soil support value (SSV) of 3.8.

Per ODOT GB1, soils with sulfate content in excess of 5,000 ppm cannot be chemically stabilized due to the potential for sulfate heave in the soil. Based on the results of the testing, the sulfate contents of the subgrade soils range from 13 to 1213 ppm. Therefore, soil with sulfate content greater than 5,000 ppm was not encountered in any boring.

Please note that the recommended CBR values assume that the materials utilized for the subgrade in fill areas are equivalent to, or better than materials at the existing subgrade elevation. Sources of borrow material should be designated in advance of construction. The material should be tested in the laboratory to verify the soil exhibits a minimum design CBR value of 5.

Pavement design is dependent on the inclusion of adequate surface and subsurface drainage in order to maintain the compacted subgrade near optimum moisture conditions throughout the lifetime of the pavement. If underdrain systems are considered, they should be installed in accordance to the specifications presented in Item 204 of the ODOT CMS.

### 5.1.3 DCP Subgrade Analysis

Using the criterion presented in Section 4.5, the average PR observed from the DCP tests ranged from 1.8 to 49.0 mm/blow, with an average PR for all tests performed of 17.6 mm/blow. The PR values can be correlated to CBR values for use in the evaluation of the subgrade soils using the Army Corps of Engineers developed equations presented in ASTM D6951/D6951M as follows:

$$CBR = \frac{292}{(DCPI)^{1.12}};$$

$$CBR = \frac{1}{(0.017019 \times DCPI)^2} \text{ for CL (A-6a, A-6b, A-7-6) soils with CBR} < 10 \text{ from above;}$$

Where:

$$DCPI = PR * (\text{Hammer Factor})$$



Hammer Factor = 1.0 for a 17.6 lb hammer

Please note that the selection of the appropriate correlation for each test is a matter of professional judgment and was based on a comparison with the soil borings conducted for this exploration. To account for the presence of very dense granular seams or hard cohesive soils where low PR and refusal on bedrock were encountered, the correlated CBR value was limited to a maximum value of 12.

**The correlated CBR values from the DCP testing range from 1 to 12 with an average in-situ CBR value of 10 (calculated from the average PR over the entire site).** It should be noted that the CBR values obtained from DCP testing represent the in-situ subsurface conditions at the time of the testing.

As noted in Section 4.5, DCP tests were conducted to depths ranging from 1.8 to 49.0 inches below the existing pavement sections. Based on the results of the DCP analysis, 40 percent of the test locations indicated high PR values above average. The high PR values are indicative of weak subgrade soils present within these depths.

## 5.2 Full Depth Reclamation

Rii recommends the use of full depth reclamation using cement as a stabilizing agent. This method is a process where the existing wearing asphalt is milled, while the remaining material including base, subbase as well as portions of the subgrade section is pulverized and mixed with sufficient water and stabilizing agent (i.e. cement). This mix is then used as an asphalt treated base course. After the pavement has had time to cure, a wearing surface is then applied to the reclaimed surface. This is primarily used to protect the recycled pavement from water entering into the mix and causing distress or early failures.

Among the benefits of this option are: increased structural capacity and durability, as well as a shortened construction schedule. There would be minimal need to haul off the millings, as the majority of these would be incorporated into the mix of the stabilized base course.

Mix designs for the FDR should be performed in accordance with ODOT Special Provision for FDR Chemical Stabilization, dated March 24, 2010. Rii can be available to provide a mix design for the full depth reclamation using samples of the existing materials and the stabilizing agent (cement). For preliminary estimating purposes, a cement content of 6 percent may be considered, along with a total treatment depth of 12 inches from the top of the pavement surface.



### 5.3 Construction Considerations

All site work shall conform to local codes, and to the latest ODOT Construction and Materials Specifications (CMS), including that all excavation and embankment preparation and construction should follow ODOT Item 200 (Earthwork).

#### 5.3.1 Excavation Considerations

All excavations should be shored / braced or laid back at a safe angle in accordance to Occupational Safety and Health Administration (OSHA) guidelines. During excavation, if slopes cannot be laid back to OSHA Standards due to adjacent structures or other obstructions, temporary shoring may be required. The following table should be utilized as a general guide for implementing OSHA guidelines when estimating excavation back slopes at the various boring locations. Actual excavation back slopes must be field verified by qualified personnel at the time of excavation in strict accordance with OSHA guidelines.

**Table 4. Excavation Back Slopes**

| Soil  | Maximum Back Slope | Notes                                   |
|---|--------------------|---|
| Soft to Medium Stiff Cohesive   | 1.5 : 1.0          | Above Ground Water Table and No Seepage |
| Stiff Cohesive  | 1.0 : 1.0          | Above Ground Water Table and No Seepage |
| Very Stiff to Hard Cohesive   | 0.75 : 1.0         | Above Ground Water Table and No Seepage |
| All Granular & Cohesive Soil Below Ground Water Table or with Seepage | 1.5 : 1.0          | None                                    |

### 5.4 Groundwater Considerations

Based on the groundwater observations made during drilling, seepage and/or groundwater is not anticipated to be encountered during construction at the site. Where/if groundwater is encountered, proper groundwater control measures should be implemented to prevent disturbance to excavation bottoms consisting of cohesive soil, and to prevent the possible development of a quick or “boiling” condition if soft/loose silts and/or fine sands are encountered. It is preferable that the groundwater level, if encountered, be maintained at least 24.0 inches below the deepest excavation. Any seepage or groundwater encountered at this site should be able to be controlled by pumping from temporary sumps. Note that determining and maintaining actual groundwater levels during construction is the responsibility of the contractor.





## 6.0 LIMITATIONS OF STUDY

The above recommendations are predicated upon construction inspection by a qualified soil technician under the direct supervision of a professional Subgrade engineer. Adequate testing and inspection during construction are considered necessary to assure an adequate foundation system and are part of these recommendations.

The recommendations for this project were developed utilizing soil and bedrock information obtained from the test borings that were made at the proposed site for the current investigation. Resource International is not responsible for the data, conclusions, opinions or recommendations made by others during previous investigations at this site. At this time we would like to point out that soil borings only depict the soil and bedrock conditions at the specific locations and time at which they were made. The conditions at other locations on the site may differ from those occurring at the boring locations.

The conclusions and recommendations herein have been based upon the available soil and bedrock information and the design details furnished by a representative of the owner of the proposed project. Any revision in the plans for the proposed construction from those anticipated in this report should be brought to the attention of the Subgrade engineer to determine whether any changes in the foundation or earthwork recommendations are necessary. If deviations from the noted subsurface conditions are encountered during construction, they should also be brought to the attention of the Subgrade engineer.

The scope of our services does not include any environmental assessment or investigation for the presence or absence of hazardous or toxic materials in the soil, groundwater or surface water within or beyond the site studied. Any statements in this report or on the test boring logs regarding odors, staining of soils or other unusual conditions observed are strictly for the information of our client.

Our professional services have been performed, our findings obtained and our recommendations prepared in accordance with generally accepted Subgrade engineering principles and practices. Resource International is not responsible for the conclusions, opinions or recommendations made by others based upon the data included.

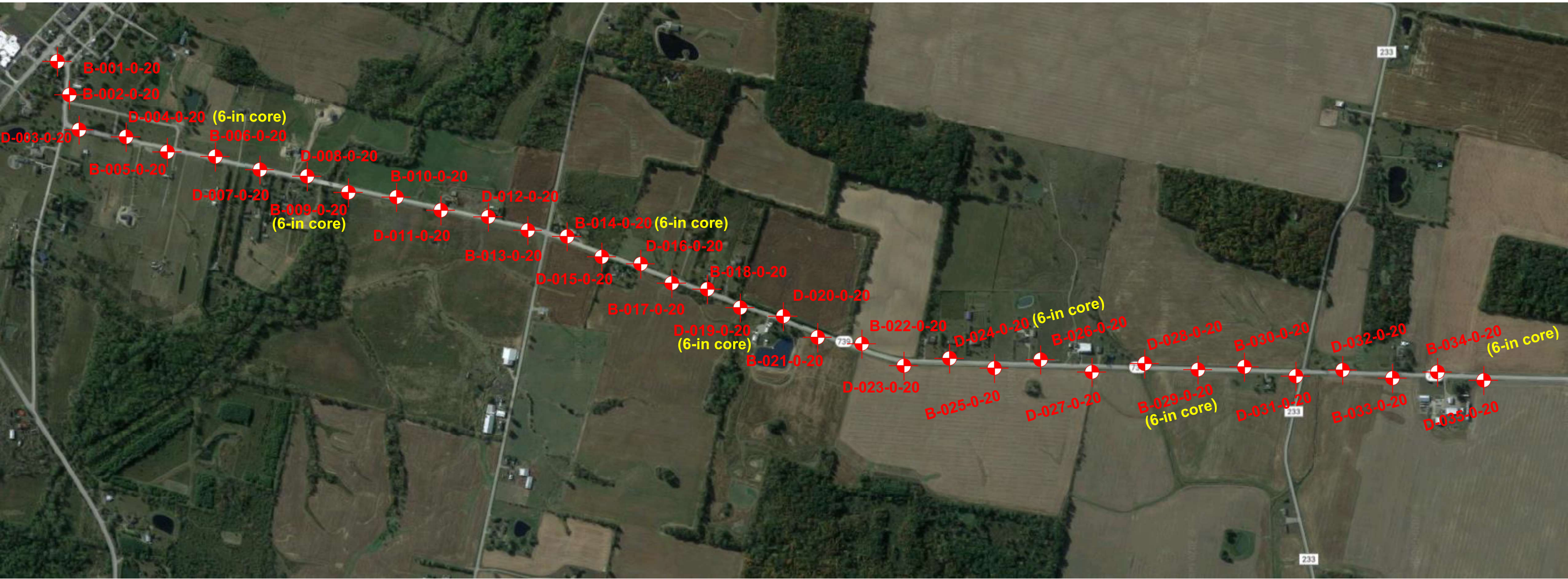


# **APPENDIX I**

## **VICINITY MAP AND BORING PLAN**

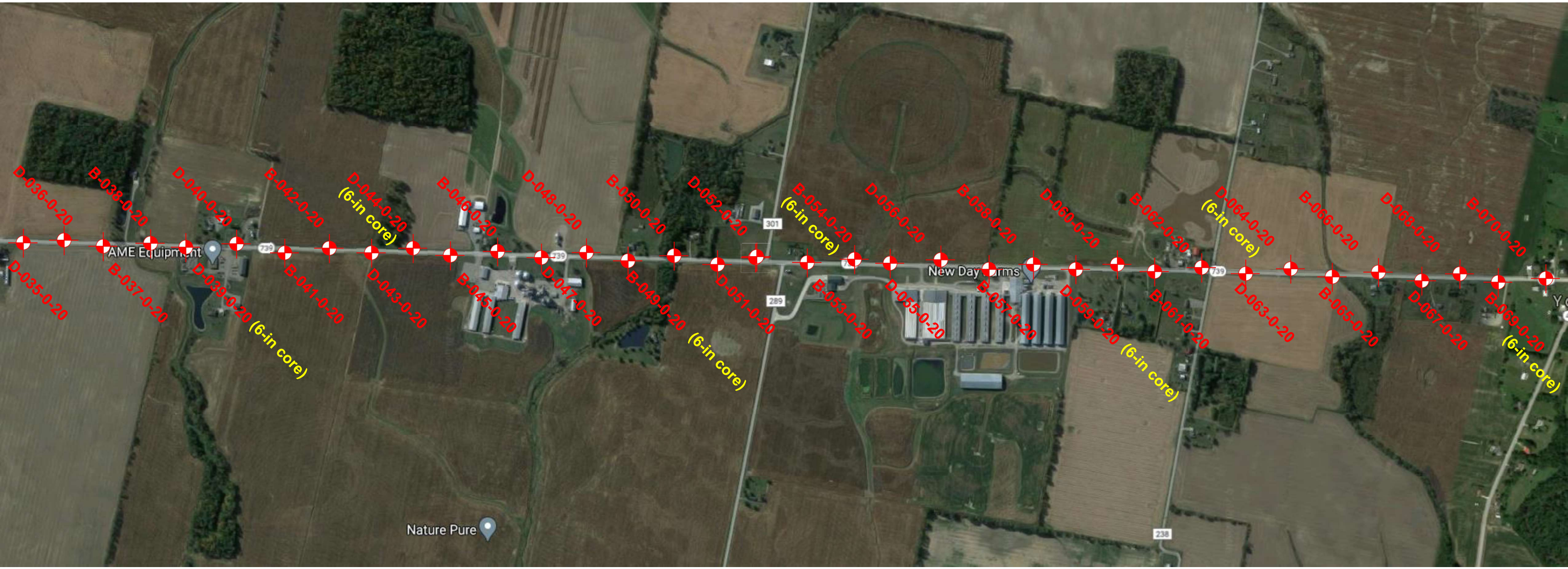


ODOT District 6 GES Task 6-M  
UNI-739-6.06  
Boring Plan  
Rii Project No. W-20-160  
April 12, 2021



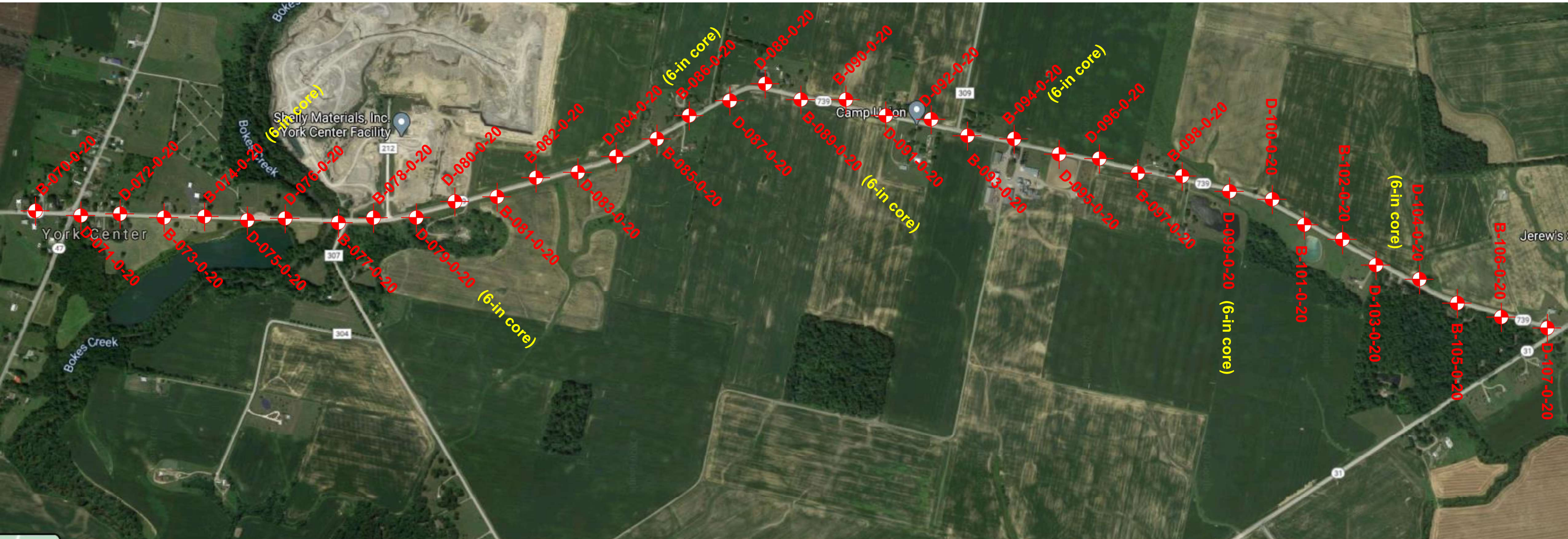


ODOT District 6 GES Task 6-M  
UNI-739-6.06  
Boring Plan  
Rii Project No. W-20-160  
April 12, 2021





ODOT District 6 GES Task 6-M  
UNI-739-6.06  
Boring Plan  
Rii Project No. W-20-160  
April 12, 2021



# **APPENDIX II**

## **DESCRIPTION OF SOIL TERMS**

### DESCRIPTION OF SOIL TERMS

The following terminology was used to describe soils throughout this report and is generally adapted from ASTM 2487/2488 and ODOT Specifications for Geotechnical Explorations.

**Granular Soils** - The relative compactness of granular soils is described as:  
ODOT A-1, A-2, A-3, A-4 (non-plastic) or USCS GW, GP, GM, GC, SW, SP, SM, SC, ML (non-plastic)

| <u>Description</u> | <u>Blows per foot – SPT (N<sub>60</sub>)</u> |      |
|--------------------|--|------|
| Very Loose         | Below  | 5    |
| Loose              | 5  | - 10 |
| Medium Dense       | 11   | - 30 |
| Dense              | 31   | - 50 |
| Very Dense         | Over   | 50   |

**Cohesive Soils** - The relative consistency of cohesive soils is described as:  
ODOT A-4, A-5, A-6, A-7, A-8 or USCS ML, CL, OL, MH, CH, OH, PT

| <u>Description</u> | <u>Unconfined<br/>Compression (tsf)</u> |       |
|--------------------|---|-------|
| Very Soft          | Less than                               | 0.25  |
| Soft               | 0.25                                    | - 0.5 |
| Medium Stiff       | 0.5                                     | - 1.0 |
| Stiff              | 1.0                                     | - 2.0 |
| Very Stiff         | 2.0                                     | - 4.0 |
| Hard               | Over                                    | 4.0   |

**Gradation** - The following size-related denominations are used to describe soils:

| <u>Soil Fraction</u> | <u>USCS Size</u>                        | <u>ODOT Size</u>                        |
|----------------------|---|---|
| Boulders             | Larger than 12"                         | Larger than 12"                         |
| Cobbles              | 12" to 3"                               | 12" to 3"                               |
| Gravel coarse        | 3" to ¾"                                | 3" to ¾"                                |
| Gravel fine          | ¾" to 4.75 mm (¾" to #4 Sieve)          | ¾" to 2.0 mm (¾" to #10 Sieve)          |
| Sand coarse          | 4.75 mm to 2.0 mm (#4 to #10 Sieve)     | 2.0 mm to 0.42 mm (#10 to #40 Sieve)    |
| Sand medium          | 2.0 mm to 0.42 mm (#10 to #40 Sieve)    | -                                       |
| Sand fine            | 0.42 mm to 0.074 mm (#40 to #200 Sieve) | 0.42 mm to 0.074 mm (#40 to #200 Sieve) |
| Silt                 | 0.074 mm to 0.005 mm (#200 to 0.005 mm) | 0.074 mm to 0.005 mm (#200 to 0.005 mm) |
| Clay                 | Smaller than 0.005 mm                   | Smaller than 0.005 mm                   |

**Modifiers of Components** - Modifiers of components are as follows:

| <u>Term</u> | <u>Range</u> |       |
|-------------|--------------|-------|
| Trace       | 0%           | - 10% |
| Little      | 10%          | - 20% |
| Some        | 20%          | - 35% |
| And         | 35%          | - 50% |

**Moisture Table** - The following moisture-related denominations are used to describe cohesive soils:

| <u>Term</u> | <u>Range - USCS</u>                | <u>Range - ODOT</u>      |
|-------------|------------------------------------|--------------------------|
| Dry         | 0% to 10%                          | Well below Plastic Limit |
| Damp        | >2% below Plastic Limit            | Below Plastic Limit      |
| Moist       | 2% below to 2% above Plastic Limit | Above PL to 3% below LL  |
| Very Moist  | >2% above Plastic Limit            |                          |
| Wet         | ≥ Liquid Limit                     | 3% below LL to above LL  |

**Organic Content** – The following terms are used to describe organic soils:

| <u>Term</u>        | <u>Organic Content (%)</u> |
|--------------------|----------------------------|
| Slightly organic   | 2-4                        |
| Moderately organic | 4-10                       |
| Highly organic     | >10                        |

**Bedrock** – The following terms are used to describe the relative strength of bedrock:

| <u>Description</u> | <u>Field Parameter</u>   |
|--------------------|--|
| Very Weak          | Can be carved with knife and scratched by fingernail. Pieces 1 in. thick can be broken by finger pressure. |
| Weak               | Can be grooved or gouged with knife readily. Small, thin pieces can be broken by finger pressure.          |
| Slightly Strong    | Can be grooved or gouged 0.05 in deep with knife. 1 in. size pieces from hard blows of geologist hammer.   |
| Moderately Strong  | Can be scratched with knife or pick. 1/4 in. size grooves or gouges from blows of geologist hammer.        |
| Strong             | Can be scratched with knife or pick with difficulty. Hard hammer blows to detach hand specimen.            |
| Very Strong        | Cannot be scratched by knife or pick. Hard repeated blows of geologist hammer to detach hand specimen.     |
| Extremely Strong   | Cannot be scratched by knife or pick. Hard repeated blows of geologist hammer to chip hand specimen.       |



# CLASSIFICATION OF SOILS

Ohio Department of Transportation

(The classification of a soil is found by proceeding from top to bottom of the chart. The first classification that the test data fits is the correct classification.)

| SYMBOL                                   | DESCRIPTION  | Classification |                              | LL <sub>O</sub> /LL × 100* | % Pass #40    | % Pass #200 | Liquid Limit (LL) | Plastic Index (PI) | Group Index Max. | REMARKS  |
|--|--|----------------|------------------------------|----------------------------|---------------|-------------|-------------------|--------------------|------------------|--|
|  |  | AASHTO         | OHIO                         |                            |               |             |                   |                    |                  |  |
|  | Gravel and/or Stone Fragments                          | A-1-a          |                              |                            | 30 Max.       | 15 Max.     |                   | 6 Max.             | 0                | Min. of 50% combined gravel, cobble and boulder sizes          |
|  | Gravel and/or Stone Fragments with Sand                | A-1-b          |                              |                            | 50 Max.       | 25 Max.     |                   | 6 Max.             | 0                |  |
|  | Fine Sand  | A-3            |                              |                            | 51 Min.       | 10 Max.     | NON-PLASTIC       |                    | 0                |  |
|  | Coarse and Fine Sand                                   | --             | A-3a                         |                            |               | 35 Max.     |                   | 6 Max.             | 0                | Min. of 50% combined coarse and fine sand sizes                |
|  | Gravel and/or Stone Fragments with Sand and Silt       | A-2-4          |                              |                            |               | 35 Max.     | 40 Max.           | 10 Max.            | 0                |  |
|  |  | A-2-5          |                              |                            | 41 Min.       |             |                   |                    |                  |  |
|  | Gravel and/or Stone Fragments with Sand, Silt and Clay | A-2-6          |                              |                            |               | 35 Max.     | 40 Max.           | 11 Min.            | 4                |  |
|  |  | A-2-7          |                              |                            | 41 Min.       |             |                   |                    |                  |  |
|  | Sandy Silt   | A-4            | A-4a                         | 76 Min.                    |               | 36 Min.     | 40 Max.           | 10 Max.            | 8                | Less than 50% silt sizes                                       |
|  | Silt   | A-4            | A-4b                         | 76 Min.                    |               | 50 Min.     | 40 Max.           | 10 Max.            | 8                | 50% or more silt sizes   |
|  | Elastic Silt and Clay                                  | A-5            |                              | 76 Min.                    |               | 36 Min.     | 41 Min.           | 10 Max.            | 12               |  |
|  | Silt and Clay  | A-6            | A-6a                         | 76 Min.                    |               | 36 Min.     | 40 Max.           | 11 - 15            | 10               |  |
|  | Silty Clay   | A-6            | A-6b                         | 76 Min.                    |               | 36 Min.     | 40 Max.           | 16 Min.            | 16               |  |
|  | Elastic Clay   | A-7-5          |                              | 76 Min.                    |               | 36 Min.     | 41 Min.           | ≤ LL-30            | 20               |  |
|  | Clay   | A-7-6          |                              | 76 Min.                    |               | 36 Min.     | 41 Min.           | > LL-30            | 20               |  |
|  | Organic Silt   | A-8            | A-8a                         | 75 Max.                    |               | 36 Min.     |                   |                    |                  | W/o organics would classify as A-4a or A-4b                    |
|  | Organic Clay   | A-8            | A-8b                         | 75 Max.                    |               | 36 Min.     |                   |                    |                  | W/o organics would classify as A-5, A-6a, A-6b, A-7-5 or A-7-6 |
| MATERIAL CLASSIFIED BY VISUAL INSPECTION |  |                |                              |                            |               |             |                   |                    |                  |  |
|  | Sod and Topsoil  |                | Uncontrolled Fill (Describe) |                            | Bouldery Zone |             | Peat              |                    |                  |  |
|  | Pavement or Base                                       |                |                              |                            |               |             |                   |                    |                  |  |

\* Only perform the oven-dried liquid limit test and this calculation if organic material is present in the sample.



# **APPENDIX III**

**BORING LOGS:**

**B-001-0-20 through B-106-0-20**

# BORING LOGS

## Definitions of Abbreviations

|                 |   |   |
|-----------------|---|---|
| AS              | = | Auger sample  |
| GI              | = | Group index as determined from the Ohio Department of Transportation classification system  |
| HP              | = | Unconfined compressive strength as determined by a hand penetrometer (tons per square foot)   |
| LL <sub>o</sub> | = | Oven-dried liquid limit as determined by ASTM D4318. Per ASTM D2487, if LL <sub>o</sub> /LL is less than 75 percent, soil is classified as "organic". |
| LOI             | = | Percent organic content (by weight) as determined by ASTM D2974 (loss on ignition test)   |
| PID             | = | Photo-ionization detector reading (parts per million)   |
| QR              | = | Unconfined compressive strength of intact rock core sample as determined by ASTM D2938 (pounds per square inch)                                       |
| QU              | = | Unconfined compressive strength of soil sample as determined by ASTM D2166 (pounds per square foot)   |
| RC              | = | Rock core sample  |
| REC             | = | Ratio of total length of recovered soil or rock to the total sample length, expressed as a percentage   |
| RQD             | = | Rock quality designation – estimate of the degree of jointing or fracture in a rock mass, expressed as a percentage:                                  |

$$\frac{\sum \text{segments equal to or longer than 4.0 inches}}{\text{core run length}} \times 100$$

|                 |   |  |
|-----------------|---|--|
| S               | = | Sulfate content (parts per million)  |
| SPT             | = | Standard penetration test blow counts, per ASTM D1586. Driving resistance recorded in terms of blows per 6-inch interval while letting a 140-pound hammer free fall 30 inches to drive a 2-inch outer diameter (O.D.) split spoon sampler a total of 18 inches. The second and third intervals are added to obtain the number of blows per foot (N <sub>m</sub> ). |
| N <sub>60</sub> | = | Measured blow counts corrected to an equivalent (60 percent) energy ratio (ER) by the following equation: N <sub>60</sub> = N <sub>m</sub> *(ER/60)  |
| SS              | = | Split spoon sample   |
| 2S              | = | For instances of no recovery from standard SS interval, a 2.5 inch O.D. split spoon is driven the full length of the standard SS interval plus an additional 6.0 inches to obtain a representative sample. Only the final 6.0 inches of sample is retained. Blow counts from 2S sampling are not correlated with N <sub>60</sub> values.                           |
| 3S              | = | Same as 2S, but using a 3.0 inch O.D. split spoon sampler.   |
| TR              | = | Top of rock  |
| W               | = | Initial water level measured during drilling   |
| ▼               | = | Water level measured at completion of drilling   |


### Classification Test Data

Gradation (as defined on Description of Soil Terms):

|    |   |          |
|----|---|----------|
| GR | = | % Gravel |
| SA | = | % Sand   |
| SI | = | % Silt   |
| CL | = | % Clay   |

Atterberg Limits:


|    |   |                   |
|----|---|-------------------|
| LL | = | Liquid limit      |
| PL | = | Plastic limit     |
| PI | = | Plasticity Index  |
| WC | = | Water content (%) |

|  |                           |                                       |                            |                                      |                              |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|------------------------------|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | EXPLORATION ID<br>B-001-0-20 |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |                              |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1077.0 (MSL) EOB: 7.0 ft. | PAGE<br>1 OF 1               |
|  | START: 3/1/20 END: 3/1/20 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 244506.612 N, 1699551.886 E   |                              |

| MATERIAL DESCRIPTION<br>AND NOTES   | ELEV.  | DEPTHS         | SPT/<br>RQD    | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |    |    |    |    | ATTERBERG |    |    | WC        | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|---|--------|----------------|----------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|-----------|--------------------|------------|--------------|
|   |        |                |                |                 |            |              |             | GR            | CS | FS | SI | CL | LL        | PL | PI |           |                    |            |              |
| 0.7' - ASPHALT (8.0")   | 1077.0 |                |                |                 |            |              |             |               |    |    |    |    |           |    |    |           |                    |            |              |
| 0.3' - AGGREGATE BASE (4.0")  | 1076.3 |                |                |                 |            |              |             |               |    |    |    |    |           |    |    |           |                    |            |              |
| VERY STIFF TO HARD, BROWNISH GRAY TO BROWN<br><b>CLAY</b> , SOME SILT, TRACE COARSE TO FINE SAND,<br>DAMP TO MOIST. | 1076.0 | 1              | 4              |                 |            |              |             |               |    |    |    |    |           |    |    |           |                    |            |              |
|   |        | 2              | 5<br>5         | 14              | 72         | SS-1         | 3.75        | 0             | 0  | 1  | 30 | 69 | 60        | 24 | 36 | 25        | A-7-6 (20)         | 660        | [Pattern]    |
|   |        | 3              | 7<br>11<br>13  | 34              | 75         | SS-2         | 4.5+        | 0             | 1  | 1  | 28 | 70 | 45        | 24 | 21 | 20        | A-7-6 (13)         | -          | [Pattern]    |
|   |        | 4              | 11<br>13<br>17 | 42              | 100        | SS-3         | 4.5+        | -             | -  | -  | -  | -  | -         | -  | -  | 20        | A-7-6 (V)          | -          | [Pattern]    |
|   | 5      | 13<br>17<br>19 | 51             | 100             | SS-4       | 4.5+         | -           | -             | -  | -  | -  | -  | -         | -  | 19 | A-7-6 (V) | -                  | [Pattern]  |              |
|   | 6      | EOB            | 7              |                 |            |              |             |               |    |    |    |    |           |    |    |           |                    |            |              |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:03 - U:\G\8\PROJECTS\2020\W-20-160.GPJ


NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.

|  |                           |                                    |                            |                                      |  |
|--|---------------------------|------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-002-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC   | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA          | CALIBRATION DATE: 9/14/20  | ELEVATION: 1071.0 (MSL) EOB: 7.5 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/5/21 END: 3/5/21 | SAMPLING METHOD: SPT               | ENERGY RATIO (%): 84.2     | COORD: 244563.803 N, 1699916.971 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES  | ELEV.<br>1071.0 | DEPTH | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |      |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |   |   |
|--|-----------------|-------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|----|--------------------|------------|--------------|---|---|
|  |                 |       |             |                 |            |              |             | GR            | CS   | FS | SI | CL | LL        | PL | PI |    |                    |            |              |   |   |
| 0.9' - ASPHALT (11.0")   | 1070.1          | 1     |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    | X          |              |   |   |
| 0.6' - AGGREGATE BASE (7.0")   | 1069.5          | 2     | 2           |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    | X          |              |   |   |
| VERY STIFF TO HARD, MOTTLED BROWN AND GRAY<br><b>CLAY</b> , SOME SILT, TRACE COARSE TO FINE SAND,<br>TRACE FINE GRAVEL, DAMP TO MOIST. |                 | 3     | 4           | 4               | 11         | 61           | SS-1        | 3.75          | 0    | 1  | 3  | 35 | 61        | 49 | 22 | 27 | 23                 | A-7-6 (17) | 830          | X |   |
|  |                 | 4     | 6           | 9               | 13         | 31           | 94          | SS-2          | 4.5+ | 4  | 1  | 2  | 28        | 65 | 45 | 22 | 23                 | 19         | A-7-6 (14)   | - | X |
|  |                 | 5     | 8           | 11              | 16         | 38           | 100         | SS-3          | 4.5+ | -  | -  | -  | -         | -  | -  | -  | -                  | 20         | A-7-6 (V)    | - | X |
|  |                 | 6     | 23          | 29              | 26         | 77           | 100         | SS-4          | 4.5+ | -  | -  | -  | -         | -  | -  | -  | -                  | 19         | A-7-6 (V)    | - | X |
|  | 1063.5          | 7     |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   | X |
|  |                 | EOB   |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   | X |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:03 - U:\G\8\PROJECTS\2020\W-20-160.GPJ

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.


|  |                           |                                       |                            |                                      |  |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-005-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1054.0 (MSL) EOB: 7.0 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/1/20 END: 3/1/20 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 245477.264 N, 1700384.509 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES   | ELEV.  | DEPTH | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |      |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |   |
|---|--------|-------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|----|--------------------|------------|--------------|---|
|   |        |       |             |                 |            |              |             | GR            | CS   | FS | SI | CL | LL        | PL | PI |    |                    |            |              |   |
| 0.7' - ASPHALT (8.0")   | 1054.0 |       |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
| 0.3' - AGGREGATE BASE (4.0")  | 1053.3 |       |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
| VERY STIFF, DARK BROWN <b>SILT AND CLAY</b> , SOME FINE TO COARSE SAND, LITTLE FINE GRAVEL, DAMP. | 1053.0 | 1     | 5           | 7               | 17         | 44           | SS-1        | 4.00          | 16   | 15 | 8  | 30 | 31        | 31 | 18 | 13 | 12                 | A-6a (6)   | 100          |   |
|   | 1051.5 | 2     | 3           | 5               | 6          | 15           | 61          | SS-2          | 3.00 | 0  | 0  | 1  | 34        | 65 | 54 | 24 | 30                 | 25         | A-7-6 (19)   | - |
| VERY STIFF TO HARD, BROWN <b>CLAY</b> , SOME SILT, TRACE FINE SAND, DAMP TO MOIST.                |        | 3     | 6           | 11              | 13         | 34           | 100         | SS-3          | 3.00 | -  | -  | -  | -         | -  | -  | -  | -                  | 18         | A-7-6 (V)    | - |
|   |        | 4     |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
|   |        | 5     |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
|   |        | 6     |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
|   | 1047.0 | 6     | 13          | 19              | 20         | 55           | 100         | SS-4          | 4.5+ | -  | -  | -  | -         | -  | -  | -  | -                  | 20         | A-7-6 (V)    | - |
|   |        | 7     |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
|   |        | EOB   |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:03 - U:\G\8\PROJECTS\2020\W-20-160.GPJ

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING


ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.

|  |                           |                                    |                            |                                      |  |
|--|---------------------------|------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-006-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC   | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA          | CALIBRATION DATE: 9/14/20  | ELEVATION: 1049.0 (MSL) EOB: 7.5 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/5/21 END: 3/5/21 | SAMPLING METHOD: SPT               | ENERGY RATIO (%): 84.2     | COORD: 245871.380 N, 1700464.990 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES   | ELEV.<br>1049.0 | DEPTH | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |      |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |   |   |
|---|-----------------|-------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|----|--------------------|------------|--------------|---|---|
|   |                 |       |             |                 |            |              |             | GR            | CS   | FS | SI | CL | LL        | PL | PI |    |                    |            |              |   |   |
| 0.9' - ASPHALT (11.0")  | 1048.1          | 1     |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    | X          |              |   |   |
| 0.6' - AGGREGATE BASE (7.0")  | 1047.5          | 2     | 3           |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    | X          |              |   |   |
| HARD, MOTTLED BROWN AND GRAY <b>CLAY</b> , SOME SILT, TRACE COARSE AND FINE SAND, DAMP. |                 | 3     | 5           | 8               | 18         | 64           | SS-1        | 4.5+          | 0    | 1  | 1  | 27 | 71        | 50 | 23 | 27 | 20                 | A-7-6 (17) | 1200         | X |   |
|   |                 | 4     | 7           | 10              | 17         | 38           | 83          | SS-2          | 4.5+ | 0  | 0  | 1  | 24        | 75 | 49 | 24 | 25                 | 21         | A-7-6 (16)   | - | X |
|   |                 | 5     | 8           | 17              | 18         | 49           | 100         | SS-3          | 4.5+ | -  | -  | -  | -         | -  | -  | -  | -                  | 20         | A-7-6 (V)    | - | X |
|   |                 | 6     | 14          | 20              | 24         | 62           | 100         | SS-4          | 4.5+ | -  | -  | -  | -         | -  | -  | -  | -                  | 19         | A-7-6 (V)    | - | X |
|   | 1041.5          | 7     |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    | EOB        |              |   |   |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:03 - U:\G\8\PROJECTS\2020\W-20-160.GPJ


NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.

|  |                           |                                       |                            |                                      |  |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-009-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1038.0 (MSL) EOB: 7.0 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/1/20 END: 3/1/20 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 247041.270 N, 1700745.180 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES  | ELEV.  | DEPTHS | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |      |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|--|--------|--------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|----|--------------------|------------|--------------|
|  |        |        |             |                 |            |              |             | GR            | CS   | FS | SI | CL | LL        | PL | PI |    |                    |            |              |
| 0.7' - ASPHALT (8.5")  | 1038.0 |        |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |
| 0.3' - AGGREGATE BASE (4.0")   | 1037.3 |        |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |
| <b>FILL: HARD, BROWN CLAY, SOME SILT, TRACE COARSE TO FINE SAND, TRACE FINE GRAVEL, MOIST.</b>                   | 1037.0 | 1      | 5           |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |
|  |        | 2      | 2           | 3               | 7          | 31           | SS-1        | 4.5+          | 7    | 4  | 5  | 33 | 51        | 41 | 20 | 21 | 20                 | A-7-6 (13) | 350          |
|  | 1035.5 | 3      | 3           | 20              | 39         | 89           | SS-2        | 3.00          | 21   | 9  | 7  | 28 | 35        | 40 | 21 | 19 | 17                 | A-6b (9)   | -            |
| <b>VERY STIFF TO HARD, GRAY TO BROWNISH GRAY SILTY CLAY, SOME FINE GRAVEL, LITTLE FINE TO COARSE SAND, DAMP.</b> |        | 4      | 8           |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |
|  |        | 5      | 8           | 8               | 22         | 78           | SS-3        | 4.5+          | -    | -  | -  | -  | -         | -  | -  | -  | 17                 | A-6b (V)   | -            |
|  |        | 6      | 7           | 8               | 9          | 24           | 100         | SS-4          | 3.50 | -  | -  | -  | -         | -  | -  | -  | 16                 | A-6b (V)   | -            |
|  | 1031.0 | 7      |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |
|  |        | EOB    |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:03 - U:\G\8\PROJECTS\2020\W-20-160.GPJ

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.


|  |                           |                                    |                            |                                      |  |
|--|---------------------------|------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-010-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC   | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA          | CALIBRATION DATE: 9/14/20  | ELEVATION: 1036.0 (MSL) EOB: 7.5 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/5/21 END: 3/5/21 | SAMPLING METHOD: SPT               | ENERGY RATIO (%): 84.2     | COORD: 247434.690 N, 1700827.180 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES  | ELEV.  | DEPTHS | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |      |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |   |
|--|--------|--------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|----|--------------------|------------|--------------|---|
|  |        |        |             |                 |            |              |             | GR            | CS   | FS | SI | CL | LL        | PL | PI |    |                    |            |              |   |
| 0.9' - ASPHALT (11.0")   | 1036.0 |        |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
| 0.6' - AGGREGATE BASE (7.0")   | 1035.1 | 1      |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
| STIFF TO VERY STIFF, GRAYISH BROWN <b>SILTY CLAY</b> , LITTLE COARSE TO FINE SAND, TRACE FINE GRAVEL, MOIST. | 1034.5 | 2      | 6           | 4               | 11         | 50           | SS-1        | 3.00          | 6    | 5  | 11 | 40 | 38        | 34 | 18 | 16 | 19                 | A-6b (10)  | 220          |   |
|  |        | 3      | 2           | 3               | 4          | 10           | 78          | SS-2          | 2.75 | 0  | 2  | 13 | 45        | 40 | 37 | 20 | 17                 | 21         | A-6b (11)    | - |
|  |        | 4      | 2           | 3               | 4          | 10           | 81          | SS-3          | 1.50 | -  | -  | -  | -         | -  | -  | -  | -                  | 23         | A-6b (V)     | - |
|  |        | 5      | 4           | 5               | 6          | 15           | 100         | SS-4          | 2.25 | -  | -  | -  | -         | -  | -  | -  | -                  | 32         | A-6b (V)     | - |
|  | 1028.5 | 7      |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
|  |        | EOB    |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:03 - U:\G\8\PROJECTS\2020\W-20-160.GPJ

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.




|  |                           |                                       |                            |                                      |  |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-013-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1055.0 (MSL) EOB: 7.0 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/1/20 END: 3/1/20 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 248607.610 N, 1701110.690 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES   | ELEV.  | DEPTHS | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |    |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|---|--------|--------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|------------|--------------|
|   |        |        |             |                 |            |              |             | GR            | CS | FS | SI | CL | LL        | PL | PI |    |                    |            |              |
| 0.7' - ASPHALT (8.0")   | 1055.0 |        |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| 0.3' - AGGREGATE BASE (4.0")  | 1054.3 |        |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| VERY STIFF, BROWNISH GRAY <b>SILT AND CLAY</b> ,<br>SOME COARSE TO FINE SAND, TRACE FINE GRAVEL,<br>DAMP. | 1054.0 | 1      | 7           | 14              | 36         | SS-1         | 4.00        | 4             | 6  | 15 | 43 | 32 | 31        | 17 | 14 | 16 | A-6a (10)          | 150        |              |
| HARD, BROWN <b>CLAY</b> , "AND" SILT, LITTLE COARSE<br>TO FINE SAND, TRACE FINE GRAVEL, DAMP TO<br>MOIST. | 1052.5 | 2      | 2           | 14              | 72         | SS-2         | 4.50        | 1             | 3  | 8  | 36 | 52 | 50        | 21 | 29 | 27 | A-7-6 (18)         | -          |              |
|   |        | 3      | 4           | 6               |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|   |        | 4      | 6           | 11              | 34         | 89           | SS-3        | 4.5+          | -  | -  | -  | -  | -         | -  | -  | 19 | A-7-6 (V)          | -          |              |
|   |        | 5      | 11          | 13              |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|   |        | 6      | 10          | 13              | 41         | 83           | SS-4        | 4.5+          | -  | -  | -  | -  | -         | -  | -  | 20 | A-7-6 (V)          | -          |              |
|   | 1048.0 | 7      | 10          | 13              | 16         |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|   |        | EOB    |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:03 - U:\G\8\PROJECTS\2020\W-20-160.GPJ

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.


|  |                           |                                    |                            |                                      |  |
|--|---------------------------|------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-014-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC   | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA          | CALIBRATION DATE: 9/14/20  | ELEVATION: 1067.0 (MSL) EOB: 7.5 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/5/21 END: 3/5/21 | SAMPLING METHOD: SPT               | ENERGY RATIO (%): 84.2     | COORD: 248993.510 N, 1701218.920 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES  | ELEV.  | DEPTH | SPT/<br>RQD    | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |    |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|--|--------|-------|----------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|------------|--------------|
|  |        |       |                |                 |            |              |             | GR            | CS | FS | SI | CL | LL        | PL | PI |    |                    |            |              |
| 0.9' - ASPHALT (11.0")   | 1067.0 |       |                |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| 0.6' - AGGREGATE BASE (7.0")   | 1066.1 | 1     |                |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|  | 1065.5 |       |                |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| HARD, MOTTLED GRAY AND BROWN <b>SILT AND CLAY</b> , LITTLE COARSE TO FINE SAND, TRACE FINE GRAVEL, DAMP. | 1064.0 | 2     | 3<br>6<br>7    | 18              | 89         | SS-1         | 4.5+        | 9             | 7  | 11 | 35 | 38 | 32        | 18 | 14 | 16 | A-6a (9)           | <100       |              |
|  |        | 3     | 7              |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| HARD, BROWNISH GRAY <b>SANDY SILT</b> , SOME CLAY, TRACE FINE GRAVEL, DAMP.                              |        | 4     | 10<br>14       | 34              | 100        | SS-2         | 4.5+        | 10            | 10 | 17 | 36 | 27 | 25        | 15 | 10 | 13 | A-4a (6)           | -          |              |
|  |        | 5     | 7<br>11<br>14  | 35              | 100        | SS-3         | 4.5+        | -             | -  | -  | -  | -  | -         | -  | -  | 13 | A-4a (V)           | -          |              |
|  |        | 6     |                |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|  |        | 7     | 12<br>14<br>16 | 42              | -          | SS-4         | 4.5+        | -             | -  | -  | -  | -  | -         | -  | -  | 12 | A-4a (V)           | -          |              |
|  | 1059.5 | EOB   |                |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:03 - U:\G\8\PROJECTS\2020\W-20-160.GPJ

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING


ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.

|  |                           |                                       |                            |                                      |  |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-017-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1074.0 (MSL) EOB: 7.0 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/1/20 END: 3/1/20 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 250117.030 N, 1701663.280 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES  | ELEV.  | DEPTHS | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |    |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|--|--------|--------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|------------|--------------|
|  |        |        |             |                 |            |              |             | GR            | CS | FS | SI | CL | LL        | PL | PI |    |                    |            |              |
| 0.7' - ASPHALT (8.0")  | 1074.0 |        |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| 0.3' - AGGREGATE BASE (4.0")   | 1073.3 |        |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| VERY STIFF TO HARD, DARK BROWN TO BROWN<br><b>SILT AND CLAY</b> , LITTLE TO SOME COARSE TO FINE<br>SAND, TRACE FINE GRAVEL, DAMP TO MOIST. | 1073.0 | 1      | 6           | 15              | 67         | SS-1         | 3.00        | 0             | 6  | 13 | 45 | 36 | 30        | 18 | 12 | 17 | A-6a (9)           | 260        |              |
|  |        | 2      | 6           | 7               | 27         | 94           | SS-2        | 3.50          | 6  | 10 | 15 | 38 | 31        | 28 | 17 | 11 | 14                 | A-6a (7)   | -            |
|  |        | 3      | 9           | 11              | 32         | 100          | SS-3        | 4.5+          | -  | -  | -  | -  | -         | -  | -  | -  | 11                 | A-6a (V)   | -            |
|  |        | 4      | 12          | 15              | 45         | 89           | SS-4        | 4.5+          | -  | -  | -  | -  | -         | -  | -  | -  | 16                 | A-6a (V)   | -            |
|  | 1067.0 | EOB    | 7           |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:03 - U:\G\8\PROJECTS\2020\W-20-160.GPJ


NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.

|  |                           |                                    |                            |                                      |  |
|--|---------------------------|------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-018-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC   | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA          | CALIBRATION DATE: 9/14/20  | ELEVATION: 1081.0 (MSL) EOB: 7.5 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/5/21 END: 3/5/21 | SAMPLING METHOD: SPT               | ENERGY RATIO (%): 84.2     | COORD: 250495.350 N, 1701796.750 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES  | ELEV.  | DEPTHS | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |      |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |           |
|--|--------|--------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|----|--------------------|------------|--------------|-----------|
|  |        |        |             |                 |            |              |             | GR            | CS   | FS | SI | CL | LL        | PL | PI |    |                    |            |              |           |
| 1.0' - ASPHALT (12.0")   | 1081.0 |        |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |           |
| 0.5' - AGGREGATE BASE (6.0")   | 1080.0 | 1      |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |           |
| STIFF, DARK GRAY <b>CLAY</b> , SOME TO "AND" SILT,<br>TRACE TO LITTLE COARSE TO FINE SAND, TRACE<br>FINE GRAVEL, MOIST.                | 1079.5 | 2      | 3           | 5               | 6          | 15           | 89          | SS-1          | 2.00 | 2  | 3  | 10 | 42        | 43 | 43 | 19 | 24                 | 23         | A-7-6 (14)   | <100      |
|  | 1076.5 | 3      | 2           | 3               | 4          | 10           | 78          | SS-2          | 1.75 | 1  | 2  | 7  | 35        | 55 | 56 | 20 | 36                 | 26         | A-7-6 (19)   | -         |
|  |        | 4      | 2           | 4               | 5          | 13           | 83          | SS-3          | 3.00 | -  | -  | -  | -         | -  | -  | -  | -                  | -          | 24           | A-7-6 (V) |
| VERY STIFF TO HARD, MOTTLED BROWN AND GRAY<br><b>CLAY</b> , SOME SILT, TRACE COARSE TO FINE SAND,<br>TRACE FINE GRAVEL, DAMP TO MOIST. | 1073.5 | 5      | 6           | 9               | 11         | 28           | 100         | SS-4          | 4.50 | -  | -  | -  | -         | -  | -  | -  | -                  | 15         | A-7-6 (V)    | -         |
|  |        | 6      |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |           |
|  |        | 7      |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |           |
|  |        | EOB    |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |           |

02019 RII STAND ODOT LOG.SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:03 - U:\G\8\PROJECTS\2020\W-20-160.GPJ


NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.

|  |                           |                                       |                            |                                      |  |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-021-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1086.0 (MSL) EOB: 7.0 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/1/20 END: 3/1/20 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 251615.940 N, 1702236.000 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES   | ELEV.  | DEPTHS | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |      |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|---|--------|--------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|----|--------------------|------------|--------------|
|   |        |        |             |                 |            |              |             | GR            | CS   | FS | SI | CL | LL        | PL | PI |    |                    |            |              |
| 0.7' - ASPHALT (8.0")   | 1086.0 |        |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |
| 0.3' - AGGREGATE BASE (4.0")  | 1085.3 |        |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |
| VERY STIFF, BROWN <b>CLAY</b> , "AND" SILT, TRACE COARSE AND FINE SAND, MOIST.                        | 1085.0 | 1      | 6           |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |
|   |        | 2      | 3           | 5               | 11         | 39           | SS-1        | 3.25          | 0    | 2  | 2  | 39 | 57        | 49 | 22 | 27 | 22                 | A-7-6 (17) | 230          |
| VERY STIFF TO HARD, BROWN <b>SILT AND CLAY</b> , "AND" COARSE TO FINE SAND, TRACE FINE GRAVEL, MOIST. | 1083.5 | 3      | 4           |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |
|   |        | 4      | 3           | 7               | 14         | 83           | SS-2        | 2.50          | 8    | 14 | 22 | 31 | 25        | 28 | 15 | 13 | 17                 | A-6a (5)   | -            |
|   |        | 5      | 6           |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |
|   |        | 6      | 7           | 7               | 20         | 100          | SS-3        | 4.5+          | -    | -  | -  | -  | -         | -  | -  | -  | 15                 | A-6a (V)   | -            |
|   |        | 7      | 10          | 13              | 15         | 39           | 94          | SS-4          | 4.5+ | -  | -  | -  | -         | -  | -  | -  | 16                 | A-6a (V)   | -            |
|   | 1079.0 | EOB    |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:03 - U:\G\8\PROJECTS\2020\W-20-160.GPJ


NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.

|  |                           |                                    |                            |                                      |  |
|--|---------------------------|------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-022-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC   | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA          | CALIBRATION DATE: 9/14/20  | ELEVATION: 1081.0 (MSL) EOB: 7.5 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/5/21 END: 3/5/21 | SAMPLING METHOD: SPT               | ENERGY RATIO (%): 84.2     | COORD: 252001.000 N, 1702344.570 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES   | ELEV.  | DEPTHS | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |    |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|---|--------|--------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|------------|--------------|
|   |        |        |             |                 |            |              |             | GR            | CS | FS | SI | CL | LL        | PL | PI |    |                    |            |              |
| 1.0' - ASPHALT (12.0")  | 1081.0 |        |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| 0.5' - AGGREGATE BASE (6.0")  | 1080.0 | 1      |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| HARD, MOTTLED BROWN AND GRAY <b>SILTY CLAY</b> ,<br>LITTLE COARSE TO FINE SAND, TRACE FINE GRAVEL,<br>DAMP. | 1079.5 | 2      | 5           | 18              | 72         | SS-1         | 4.50        | 6             | 5  | 10 | 36 | 43 | 37        | 17 | 20 | 15 | A-6b (12)          | 560        |              |
|   |        | 3      | 5           | 31              | 94         | SS-2         | 4.5+        | 6             | 6  | 10 | 36 | 42 | 34        | 17 | 17 | 15 | A-6b (11)          | -          |              |
|   |        | 4      | 9           | 38              | 100        | SS-3         | 4.5+        | -             | -  | -  | -  | -  | -         | -  | -  | 15 | A-6b (V)           | -          |              |
|   |        | 5      | 12          | 67              | 100        | SS-4         | 4.5+        | -             | -  | -  | -  | -  | -         | -  | -  | 15 | A-6b (V)           | -          |              |
|   | 1073.5 | 7      | 18          | 23              | 25         |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|   |        | EOB    |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:03 - U:\G\8\PROJECTS\2020\W-20-160.GPJ


NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.

|  |                           |                                       |                            |                                      |  |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-025-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1079.0 (MSL) EOB: 7.0 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/1/20 END: 3/1/20 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 253204.380 N, 1702410.850 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES  | ELEV.  | DEPTHS | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |      |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |   |
|--|--------|--------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|----|--------------------|------------|--------------|---|
|  |        |        |             |                 |            |              |             | GR            | CS   | FS | SI | CL | LL        | PL | PI |    |                    |            |              |   |
| 0.7' - ASPHALT (8.0")  | 1079.0 |        |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
| 0.3' - AGGREGATE BASE (4.0")   | 1078.3 |        |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
| STIFF, BROWNISH GRAY <b>SILT AND CLAY</b> , LITTLE COARSE TO FINE SAND, TRACE FINE GRAVEL, DRY.      | 1078.0 | 1      | 7           |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
|  |        | 2      | 6           | 5               | 15         | 56           | SS-1        | 2.00          | 2    | 4  | 11 | 54 | 29        | 28 | 17 | 11 | 5                  | A-6a (8)   | 410          |   |
|  | 1076.5 | 3      | 3           | 4               | 5          | 13           | 72          | SS-2          | 2.25 | 1  | 4  | 11 | 44        | 40 | 39 | 17 | 22                 | 23         | A-6b (13)    | - |
| STIFF TO VERY STIFF, BROWN <b>SILTY CLAY</b> , LITTLE COARSE TO FINE SAND, TRACE FINE GRAVEL, MOIST. |        | 4      | 2           | 3               | 5          | 11           | 100         | SS-3          | 1.25 | -  | -  | -  | -         | -  | -  | -  | -                  | 23         | A-6b (V)     | - |
|  | 1073.5 | 5      | 3           | 5               |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
| HARD, MOTTLE BROWN AND GRAY <b>SANDY SILT</b> , TRACE CLAY, TRACE FINE GRAVEL, MOIST.                |        | 6      | 7           | 9               | 11         | 28           | 100         | SS-4          | 4.5+ | -  | -  | -  | -         | -  | -  | -  | -                  | 18         | A-4a (V)     | - |
|  | 1072.0 | 7      |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
|  |        | EOB    |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:03 - U:\G\8\PROJECTS\2020\NW-20-160.GPJ

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.


|  |                           |                                    |                            |                                      |  |
|--|---------------------------|------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-026-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC   | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA          | CALIBRATION DATE: 9/14/20  | ELEVATION: 1075.0 (MSL) EOB: 7.5 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/5/21 END: 3/5/21 | SAMPLING METHOD: SPT               | ENERGY RATIO (%): 84.2     | COORD: 253606.720 N, 1702417.660 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES   | ELEV.  | DEPTHS | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |    |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|---|--------|--------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|------------|--------------|
|   |        |        |             |                 |            |              |             | GR            | CS | FS | SI | CL | LL        | PL | PI |    |                    |            |              |
| 1.0' - ASPHALT (12.0")  | 1075.0 |        |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| 0.5' - AGGREGATE BASE (6.0")  | 1074.0 | 1      |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| HARD, GRAYISH BROWN <b>CLAY</b> , SOME SILT, LITTLE COARSE TO FINE SAND, TRACE FINE GRAVEL, MOIST.    | 1073.5 | 2      | 5           | 15              | 67         | SS-1         | 4.5+        | 2             | 5  | 10 | 35 | 48 | 44        | 18 | 26 | 18 | A-7-6 (15)         | 170        |              |
|   | 1072.0 | 3      | 4           |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| HARD, MOTTLED BROWN AND GRAY <b>SILTY CLAY</b> , LITTLE COARSE TO FINE SAND, TRACE FINE GRAVEL, DAMP. |        | 4      | 5           | 20              | 83         | SS-2         | 4.5+        | 4             | 6  | 10 | 37 | 43 | 37        | 18 | 19 | 16 | A-6b (12)          | -          |              |
|   |        | 5      | 9           | 34              | 100        | SS-3         | 4.5+        | -             | -  | -  | -  | -  | -         | -  | -  | 16 | A-6b (V)           | -          |              |
|   |        | 6      | 11          | 13              |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|   |        | 7      | 13          | 15              | 48         | 100          | SS-4        | 4.5+          | -  | -  | -  | -  | -         | -  | -  | 15 | A-6b (V)           | -          |              |
|   | 1067.5 | EOB    | 19          |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:03 - U:\G\8\PROJECTS\2020\W-20-160.GPJ

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.




|  |                           |                                       |                            |                                      |  |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-029-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1068.0 (MSL) EOB: 7.0 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/1/20 END: 3/1/20 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 254809.130 N, 1702472.480 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES   | ELEV.  | DEPTH | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |      |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |   |
|---|--------|-------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|----|--------------------|------------|--------------|---|
|   |        |       |             |                 |            |              |             | GR            | CS   | FS | SI | CL | LL        | PL | PI |    |                    |            |              |   |
| 0.7' - ASPHALT (8.0")   | 1068.0 |       |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
| 0.3' - AGGREGATE BASE (4.0")  | 1067.3 |       |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
| STIFF TO HARD, BROWNISH GRAY TO DARK GRAY<br><b>SILTY CLAY</b> , LITTLE COARSE TO FINE SAND, TRACE<br>FINE GRAVEL, DAMP TO MOIST. | 1067.0 | 1     | 7           |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
|   |        | 2     | 6           | 5               | 15         | 56           | SS-1        | 2.00          | 4    | 4  | 7  | 38 | 47        | 38 | 18 | 20 | 21                 | A-6b (12)  | <100         |   |
|   |        | 3     | 3           | 4               | 5          | 13           | 72          | SS-2          | 2.25 | 3  | 4  | 9  | 38        | 46 | 36 | 18 | 18                 | 19         | A-6b (11)    | - |
|   |        | 4     | 2           | 3               | 5          | 11           | 100         | SS-3          | 1.25 | -  | -  | -  | -         | -  | -  | -  | -                  | 10         | A-6b (V)     | - |
|   |        | 5     | 7           | 9               | 11         | 28           | 100         | SS-4          | 4.5+ | -  | -  | -  | -         | -  | -  | -  | -                  | 18         | A-6b (V)     | - |
|   | 1061.0 | EOB   | 7           |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:03 - U:\G\8\PROJECTS\2020\W-20-160.GPJ


NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.

|  |                           |                                    |                            |                                      |  |
|--|---------------------------|------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-030-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC   | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA          | CALIBRATION DATE: 9/14/20  | ELEVATION: 1064.0 (MSL) EOB: 7.5 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/5/21 END: 3/5/21 | SAMPLING METHOD: SPT               | ENERGY RATIO (%): 84.2     | COORD: 255209.320 N, 1702476.230 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES   | ELEV.  | DEPTHS | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |    |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|---|--------|--------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|------------|--------------|
|   |        |        |             |                 |            |              |             | GR            | CS | FS | SI | CL | LL        | PL | PI |    |                    |            |              |
| 0.9' - ASPHALT (11.0")  | 1064.0 |        |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| 0.6' - AGGREGATE BASE (7.0")  | 1063.1 | 1      |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| VERY STIFF, GRAYISH BROWN TO BROWN <b>CLAY</b> ,<br>SOME SILT, LITTLE COARSE TO FINE SAND, TRACE<br>FINE GRAVEL, MOIST. | 1062.5 | 2      | 4           | 15              | 83         | SS-1         | 4.00        | 2             | 3  | 8  | 34 | 53 | 50        | 19 | 31 | 23 | A-7-6 (18)         | <100       |              |
|   | 1061.0 | 3      | 3           |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| HARD, MOTTLED BROWN AND GRAY <b>SILTY CLAY</b> ,<br>LITTLE COARSE TO FINE SAND, TRACE FINE GRAVEL,<br>DAMP.             |        | 4      | 5           | 17              | 75         | SS-2         | 4.5+        | 5             | 6  | 10 | 36 | 43 | 37        | 18 | 19 | 16 | A-6b (12)          | -          |              |
|   |        | 5      | 9           | 41              | 100        | SS-3         | 4.5+        | -             | -  | -  | -  | -  | -         | -  | -  | 16 | A-6b (V)           | -          |              |
|   |        | 6      | 13          |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|   |        | 7      | 21          | 65              | 100        | SS-4         | 4.5+        | -             | -  | -  | -  | -  | -         | -  | -  | 16 | A-6b (V)           | -          |              |
|   | 1056.5 | EOB    | 23          |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:03 - U:\G\8\PROJECTS\2020\W-20-160.GPJ

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.


|  |                           |                                       |                            |                                      |  |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-033-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1053.0 (MSL) EOB: 7.0 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/1/20 END: 3/1/20 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 256415.700 N, 1702535.870 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES  | ELEV.  | DEPTHS | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |      |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |   |
|--|--------|--------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|----|--------------------|------------|--------------|---|
|  |        |        |             |                 |            |              |             | GR            | CS   | FS | SI | CL | LL        | PL | PI |    |                    |            |              |   |
| 0.7' - ASPHALT (8.0")  | 1053.0 |        |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
| 0.3' - AGGREGATE BASE (4.0")   | 1052.3 |        |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
| VERY STIFF, GRAY <b>SANDY SILT</b> , SOME CLAY, TRACE FINE GRAVEL, MOIST.                                | 1052.0 | 1      | 7           | 5               | 14         | 67           | SS-1        | 2.75          | 3    | 7  | 12 | 49 | 29        | 27 | 17 | 10 | 17                 | A-4a (8)   | 100          |   |
| STIFF TO HARD, DARK BROWN <b>CLAY</b> , "AND" SILT, TRACE COARSE TO FINE SAND, TRACE FINE GRAVEL, MOIST. | 1050.5 | 2      | 3           | 4               | 8          | 17           | 94          | SS-2          | 2.00 | 1  | 2  | 5  | 45        | 47 | 52 | 20 | 32                 | 24         | A-7-6 (18)   | - |
|  |        | 3      | 8           | 9               | 12         | 29           | 100         | SS-3          | 4.5+ | -  | -  | -  | -         | -  | -  | -  | -                  | 23         | A-7-6 (V)    | - |
|  |        | 4      |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
|  |        | 5      |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
|  |        | 6      |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
|  | 1046.0 | 7      |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
|  |        | EOB    |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:03 - U:\G\8\PROJECTS\2020\W-20-160.GPJ

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING


ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.

|  |                           |                                    |                            |                                      |  |
|--|---------------------------|------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-034-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC   | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA          | CALIBRATION DATE: 9/14/20  | ELEVATION: 1054.0 (MSL) EOB: 7.5 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/5/21 END: 3/5/21 | SAMPLING METHOD: SPT               | ENERGY RATIO (%): 84.2     | COORD: 256817.430 N, 1702539.610 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES   | ELEV.  | DEPTH | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |    |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|---|--------|-------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|------------|--------------|
|   |        |       |             |                 |            |              |             | GR            | CS | FS | SI | CL | LL        | PL | PI |    |                    |            |              |
| 1.0' - ASPHALT (12.0")  | 1054.0 |       |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| 0.5' - AGGREGATE BASE (6.0")  | 1053.0 | 1     |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| VERY STIFF TO HARD, GRAYISH BROWN TO MOTTLED GRAY AND BROWN <b>CLAY</b> , "AND" SILT, LITTLE COARSE TO FINE SAND, TRACE FINE GRAVEL, MOIST. | 1052.5 | 2     | 6           | 11              | 83         | SS-1         | 3.75        | 1             | 3  | 8  | 42 | 46 | 41        | 18 | 23 | 22 | A-7-6 (13)         | <100       |              |
|   |        | 3     | 4           | 20              | 56         | SS-2         | 4.50        | 5             | 4  | 10 | 37 | 44 | 46        | 19 | 27 | 20 | A-7-6 (16)         | -          |              |
|   |        | 4     | 6           | 8               |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|   |        | 5     | 6           | 9               | 32         | 100          | SS-3        | 4.50          | -  | -  | -  | -  | -         | -  | -  | -  | 16                 | A-7-6 (V)  | -            |
|   |        | 6     |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|   |        | 7     | 15          | 56              | 100        | SS-4         | 4.50        | -             | -  | -  | -  | -  | -         | -  | -  | 15 | A-7-6 (V)          | -          |              |
|   | 1046.5 | EOB   | 19          | 21              |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |

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NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.


|  |                           |                                       |                            |                                      |  |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-037-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1047.0 (MSL) EOB: 7.0 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/1/20 END: 3/1/20 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 258021.310 N, 1702595.420 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES   | ELEV.  | DEPTHS | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |    |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|---|--------|--------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|------------|--------------|
|   |        |        |             |                 |            |              |             | GR            | CS | FS | SI | CL | LL        | PL | PI |    |                    |            |              |
| 0.7' - ASPHALT (8.0")   | 1047.0 |        |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| 0.3' - AGGREGATE BASE (4.0")  | 1046.3 |        |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| VERY STIFF, GRAY <b>SILTY CLAY</b> , LITTLE COARSE TO FINE SAND, TRACE FINE GRAVEL, MOIST.  | 1046.0 | 1      | 7           |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|   |        | 2      | 3           | 4               | 10         | 67           | SS-1        | 3.25          | 1  | 4  | 9  | 42 | 44        | 40 | 18 | 22 | 23                 | A-6b (13)  | 140          |
|   | 1044.5 | 3      | 3           | 5               | 7          | 17           | SS-2        | 3.25          | 4  | 4  | 8  | 38 | 46        | 50 | 19 | 31 | 23                 | A-7-6 (18) | -            |
| VERY STIFF TO HARD, DARK BROWNISH GRAY TO BROWN <b>CLAY</b> , "AND" SILT, LITTLE COARSE TO FINE SAND, TRACE FINE GRAVEL, DAMP TO MOIST. |        | 4      |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|   |        | 5      | 3           | 6               | 7          | 18           | SS-3        | 4.00          | -  | -  | -  | -  | -         | -  | -  | -  | 15                 | A-7-6 (V)  | -            |
|   |        | 6      | 10          | 12              | 13         | 35           | SS-4        | 4.5+          | -  | -  | -  | -  | -         | -  | -  | -  | 14                 | A-7-6 (V)  | -            |
|   | 1040.0 | 7      |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |

EOB

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.


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|  |                           |                                    |                            |                                      |  |
|--|---------------------------|------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-038-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC   | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA          | CALIBRATION DATE: 9/14/20  | ELEVATION: 1047.0 (MSL) EOB: 7.5 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/4/21 END: 3/4/21 | SAMPLING METHOD: SPT               | ENERGY RATIO (%): 84.2     | COORD: 258422.620 N, 1702600.640 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES  | ELEV.  | DEPTHS | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |    |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|--|--------|--------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|------------|--------------|
|  |        |        |             |                 |            |              |             | GR            | CS | FS | SI | CL | LL        | PL | PI |    |                    |            |              |
| 0.9' - ASPHALT (11.0")   | 1047.0 |        |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| 0.6' - AGGREGATE BASE (7.0")   | 1046.1 | 1      |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| HARD, BROWNISH GRAY <b>CLAY</b> , SOME SILT, SOME FINE TO COARSE SAND, LITTLE FINE GRAVEL, MOIST.        | 1045.5 | 2      | 3           | 5               | 14         | 78           | SS-1        | 4.5+          | 11 | 14 | 9  | 31 | 35        | 47 | 20 | 27 | 20                 | A-7-6 (14) | <100         |
|  | 1044.0 | 3      | 6           | 9               | 29         | 89           | SS-2        | 4.5+          | 7  | 8  | 12 | 38 | 35        | 30 | 16 | 14 | 15                 | A-6a (9)   | -            |
| HARD, MOTTLED BROWN AND GRAY <b>SILT AND CLAY</b> , LITTLE COARSE TO FINE SAND, TRACE FINE GRAVEL, DAMP. |        | 4      |             | 10              |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|  |        | 5      |             | 11              | 34         | 100          | SS-3        | 4.5+          | -  | -  | -  | -  | -         | -  | -  | -  | 15                 | A-6a (V)   | -            |
|  |        | 6      |             | 12              |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|  |        | 7      |             | 16              | 49         | 100          | SS-4        | 4.5+          | -  | -  | -  | -  | -         | -  | -  | -  | 15                 | A-6a (V)   | -            |
|  | 1039.5 | EOB    |             | 17              |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|  |        |        |             | 18              |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:04 - U:\G\8\PROJECTS\2020\W-20-160.GPJ

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.

|  |                           |                                       |                            |                                      |  |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-041-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1053.0 (MSL) EOB: 7.0 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/2/21 END: 3/2/21 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 259629.100 N, 1702661.010 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES   | ELEV.  | DEPTHS | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |    |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|---|--------|--------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|------------|--------------|
|   |        |        |             |                 |            |              |             | GR            | CS | FS | SI | CL | LL        | PL | PI |    |                    |            |              |
| 0.7' - ASPHALT (8.0")   | 1053.0 |        |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| 0.3' - AGGREGATE BASE (4.0")  | 1052.3 |        |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| VERY STIFF, GRAY <b>SILTY CLAY</b> , LITTLE COARSE TO FINE SAND, TRACE FINE GRAVEL, DAMP. | 1052.0 | 1      | 6           |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|   |        | 2      | 5           | 6               | 15         | 83           | SS-1        | 4.00          | 2  | 6  | 9  | 47 | 36        | 36 | 19 | 17 | 18                 | A-6b (11)  | <100         |
| VERY STIFF, GRAYISH BROWN <b>CLAY</b> , "AND" SILT, TRACE COARSE TO FINE SAND, MOIST.     | 1050.5 | 3      | 2           | 3               | 6          | 13           | SS-2        | 3.00          | 0  | 1  | 3  | 44 | 52        | 50 | 20 | 30 | 24                 | A-7-6 (18) | -            |
|   |        | 4      | 6           |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| VERY STIFF TO HARD, BROWN <b>SANDY SILT</b> , LITTLE CLAY, TRACE FINE GRAVEL, DAMP.       | 1049.0 | 5      | 6           | 9               | 21         | 100          | SS-3        | 3.50          | -  | -  | -  | -  | -         | -  | -  | -  | 15                 | A-4a (V)   | -            |
|   |        | 6      | 6           | 11              | 14         | 35           | SS-4        | 4.5+          | -  | -  | -  | -  | -         | -  | -  | -  | 15                 | A-4a (V)   | -            |
|   | 1046.0 | 7      |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |

EOB

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NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.


|  |                           |                                    |                            |                                      |  |
|--|---------------------------|------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-042-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC   | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA          | CALIBRATION DATE: 9/14/20  | ELEVATION: 1052.0 (MSL) EOB: 7.5 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/4/21 END: 3/4/21 | SAMPLING METHOD: SPT               | ENERGY RATIO (%): 84.2     | COORD: 260030.920 N, 1702663.220 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES   | ELEV.  | DEPTH | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |      |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |   |
|---|--------|-------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|----|--------------------|------------|--------------|---|
|   |        |       |             |                 |            |              |             | GR            | CS   | FS | SI | CL | LL        | PL | PI |    |                    |            |              |   |
| 0.7' - ASPHALT (8.0")   | 1052.0 |       |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
| 0.3' - AGGREGATE BASE (4.0")  | 1051.3 |       |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
| VERY STIFF TO HARD, GRAY TO BROWN <b>SILTY CLAY</b> , LITTLE COARSE TO FINE SAND, TRACE FINE GRAVEL, DAMP TO MOIST. | 1051.0 | 1     |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
|   |        | 2     | 4           | 4               | 14         | 78           | SS-1        | 4.00          | 7    | 5  | 11 | 39 | 38        | 37 | 17 | 20 | 20                 | A-6b (12)  | 110          |   |
|   |        | 3     |             | 5               |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
|   |        | 4     |             | 6               | 6          | 22           | 100         | SS-2          | 4.5+ | 9  | 6  | 10 | 37        | 38 | 36 | 18 | 18                 | 16         | A-6b (11)    | - |
|   |        | 5     |             | 8               | 11         | 34           | 100         | SS-3          | 4.5+ | -  | -  | -  | -         | -  | -  | -  | -                  | 15         | A-6b (V)     | - |
|   | 6      |       |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
|   | 7      |       |             | 15              | 18         | 59           | 100         | SS-4          | 4.5+ | -  | -  | -  | -         | -  | -  | -  | 15                 | A-6b (V)   | -            |   |
|   | 1044.5 | EOB   |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:04 - U:\G\8\PROJECTS\2020\W-20-160.GPJ

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.




|  |                           |                                       |                            |                                      |  |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-045-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1052.0 (MSL) EOB: 7.0 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/2/21 END: 3/2/21 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 261230.650 N, 1702719.340 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES  | ELEV.  | DEPTHS | SPT/<br>RQD    | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |    |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|--|--------|--------|----------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|------------|--------------|
|  |        |        |                |                 |            |              |             | GR            | CS | FS | SI | CL | LL        | PL | PI |    |                    |            |              |
| 0.7' - ASPHALT (8.0")  | 1052.0 |        |                |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| 0.3' - AGGREGATE BASE (4.0")   | 1051.0 | 1      | 7              |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| HARD, GRAY <b>SANDY SILT</b> , SOME FINE GRAVEL,<br>LITTLE CLAY, DAMP.<br>-ROOT FIBERS IN SS-1     | 1049.5 | 2      | 6<br>5         | 15              | 22         | SS-1         | 4.50        | 33            | 19 | 12 | 25 | 11 | 26        | 18 | 8  | 10 | A-4a (0)           | <100       |              |
| VERY STIFF, BROWN <b>CLAY</b> , SOME SILT, TRACE<br>COARSE TO FINE SAND, TRACE FINE GRAVEL, MOIST. | 1048.0 | 3      | 6<br>5<br>6    | 15              | 78         | SS-2         | 3.50        | 2             | 3  | 7  | 34 | 54 | 56        | 22 | 34 | 25 | A-7-6 (19)         | -          |              |
| HARD, BROWNISH GRAY TO BROWN <b>SANDY SILT</b> ,<br>LITTLE CLAY, LITTLE FINE GRAVEL, DAMP.         |        | 4      | 5              |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|  |        | 5      | 8<br>12        | 28              | 100        | SS-3         | 4.5+        | -             | -  | -  | -  | -  | -         | -  | -  | 15 | A-4a (V)           | -          |              |
|  |        | 6      | 10<br>12<br>14 | 36              | 100        | SS-4         | 4.5+        | -             | -  | -  | -  | -  | -         | -  | -  | 15 | A-4a (V)           | -          |              |
|  | 1045.0 | 7      |                |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |

EOB

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:04 - U:\G\8\PROJECTS\2020\W-20-160.GPJ

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.


|  |                           |                                    |                            |                                      |  |
|--|---------------------------|------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-046-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC   | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA          | CALIBRATION DATE: 9/14/20  | ELEVATION: 1049.0 (MSL) EOB: 7.5 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/4/21 END: 3/4/21 | SAMPLING METHOD: SPT               | ENERGY RATIO (%): 84.2     | COORD: 261631.900 N, 1702725.570 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES  | ELEV.  | DEPTH | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |      |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |           |   |
|--|--------|-------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|----|--------------------|------------|--------------|-----------|---|
|  |        |       |             |                 |            |              |             | GR            | CS   | FS | SI | CL | LL        | PL | PI |    |                    |            |              |           |   |
| 0.9' - ASPHALT (11.0")   | 1049.0 |       |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |           |   |
| 0.6' - AGGREGATE BASE (7.0")   | 1048.1 | 1     |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |           |   |
| STIFF, DARK GRAY <b>SILTY CLAY</b> , LITTLE COARSE TO FINE SAND, TRACE FINE GRAVEL, MOIST.                               | 1047.5 | 2     | 4           | 4               | 11         | 81           | SS-1        | 2.00          | 8    | 7  | 8  | 38 | 39        | 38 | 18 | 20 | 26                 | A-6b (12)  | <100         |           |   |
| VERY STIFF TO HARD, BROWNISH GRAY <b>CLAY</b> , SOME SILT, LITTLE COARSE TO FINE SAND, TRACE FINE GRAVEL, DAMP TO MOIST. | 1046.0 | 3     | 2           | 4               | 6          | 14           | 67          | SS-2          | 2.25 | 4  | 4  | 9  | 34        | 49 | 54 | 19 | 35                 | 25         | A-7-6 (19)   | -         |   |
|  |        | 4     | 4           | 7               | 8          | 21           | 100         | SS-3          | 4.5+ | -  | -  | -  | -         | -  | -  | -  | -                  | 18         | A-7-6 (V)    | -         |   |
|  |        | 5     | 10          | 15              | 18         | 46           | 100         | SS-4          | 4.5+ | -  | -  | -  | -         | -  | -  | -  | -                  | -          | 15           | A-7-6 (V) | - |
|  | 1041.5 | 7     |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |           |   |

EOB

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.


02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:04 - U:\G\8\PROJECTS\2020\W-20-160.GPJ

|  |                           |                                       |                            |                                      |  |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-049-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1043.0 (MSL) EOB: 7.0 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/2/21 END: 3/2/21 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 262834.850 N, 1702783.190 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES   | ELEV.  | DEPTHS | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |    |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|---|--------|--------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|------------|--------------|
|   |        |        |             |                 |            |              |             | GR            | CS | FS | SI | CL | LL        | PL | PI |    |                    |            |              |
| 0.7' - ASPHALT (8.0")   | 1043.0 |        |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| 0.3' - AGGREGATE BASE (4.0")  | 1042.3 |        |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| HARD, BROWN SILTY CLAY, LITTLE TO SOME<br>COARSE TO FINE SAND, TRACE FINE GRAVEL, DAMP. | 1042.0 | 1      | 5           | 15              | 67         | SS-1         | 4.5+        | 4             | 7  | 13 | 39 | 37 | 35        | 17 | 18 | 15 | A-6b (11)          | <100       |              |
|   |        | 2      | 5           | 10              | 31         | 92           | SS-2        | 4.5+          | 4  | 6  | 11 | 40 | 39        | 34 | 17 | 17 | 14                 | A-6b (11)  | -            |
|   |        | 3      | 6           | 12              | 36         | 100          | SS-3        | 4.5+          | -  | -  | -  | -  | -         | -  | -  | -  | 15                 | A-6b (V)   | -            |
|   |        | 4      | 14          | 22              | 72         | 100          | SS-4        | 4.5+          | -  | -  | -  | -  | -         | -  | -  | -  | 15                 | A-6b (V)   | -            |
|   | 1036.0 | EOB    | 7           |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:04 - U:\G\8\PROJECTS\2020\W-20-160.GPJ


NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.

|  |                           |                                    |                            |                                      |  |
|--|---------------------------|------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-050-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC   | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA          | CALIBRATION DATE: 9/14/20  | ELEVATION: 1039.0 (MSL) EOB: 7.5 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/4/21 END: 3/4/21 | SAMPLING METHOD: SPT               | ENERGY RATIO (%): 84.2     | COORD: 263237.080 N, 1702785.710 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES  | ELEV.  | DEPTHS | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |    |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|--|--------|--------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|------------|--------------|
|  |        |        |             |                 |            |              |             | GR            | CS | FS | SI | CL | LL        | PL | PI |    |                    |            |              |
| 0.9' - ASPHALT (11.0")   | 1039.0 |        |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| 0.6' - AGGREGATE BASE (7.0")   | 1038.1 | 1      |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| VERY STIFF, DARK GRAY <b>SILTY CLAY</b> , LITTLE<br>COARSE TO FINE SAND, TRACE FINE GRAVEL, DAMP.                      | 1037.5 | 2      | 4           |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|  | 1036.0 | 3      | 5           | 14              | 94         | SS-1         | 3.25        | 4             | 4  | 13 | 45 | 34 | 40        | 19 | 21 | 18 | A-6b (12)          | <100       |              |
| 4  |        | 3      | 2           | 8               | 78         | SS-2         | 2.25        | 5             | 1  | 5  | 27 | 62 | 67        | 22 | 45 | 30 | A-7-6 (20)         | -          |              |
| STIFF TO VERY STIFF, GRAYISH BROWN <b>CLAY</b> ,<br>SOME SILT, TRACE COARSE TO FINE SAND, TRACE<br>FINE GRAVEL, MOIST. | 1036.0 | 5      | 4           | 11              | 89         | SS-3         | 2.50        | -             | -  | -  | -  | -  | -         | -  | -  | 26 | A-7-6 (V)          | -          |              |
|  |        | 6      | 4           | 4               |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|  | 1031.5 | 7      | 8           | 25              | 56         | SS-4         | 1.25        | -             | -  | -  | -  | -  | -         | -  | -  | 35 | A-7-6 (V)          | -          |              |
| EOB  |        |        | 10          |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:04 - U:\G\8\PROJECTS\2020\W-20-160.GPJ


NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.

|  |                           |                                       |                            |                                      |  |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-053-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1045.0 (MSL) EOB: 7.0 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/2/21 END: 3/2/21 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 264379.510 N, 1702842.430 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES   | ELEV.  | DEPTHS | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |    |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|---|--------|--------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|------------|--------------|
|   |        |        |             |                 |            |              |             | GR            | CS | FS | SI | CL | LL        | PL | PI |    |                    |            |              |
| 0.7' - ASPHALT (8.0")   | 1045.0 |        |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| 0.3' - AGGREGATE BASE (4.0")  | 1044.3 |        |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| MEDIUM STIFF TO VERY STIFF, BROWNISH GRAY<br><b>SILTY CLAY</b> , SOME COARSE TO FINE SAND, TRACE<br>FINE GRAVEL, MOIST. | 1044.0 | 1      | 3           | 10              | 75         | SS-1         | 2.75        | 3             | 6  | 15 | 46 | 30 | 35        | 16 | 19 | 17 | A-6b (12)          | 210        |              |
|   |        | 2      | 3           | 3               | 8          | 83           | SS-2        | 1.00          | 1  | 5  | 18 | 46 | 30        | 40 | 18 | 22 | 25                 | A-6b (13)  | -            |
|   | 1041.0 | 3      | 3           | 3               | 8          | 83           | SS-2        | 1.00          | 1  | 5  | 18 | 46 | 30        | 40 | 18 | 22 | 25                 | A-6b (13)  | -            |
| HARD, BROWNISH GRAY <b>SANDY SILT</b> , LITTLE CLAY,<br>TRACE FINE GRAVEL, MOIST.                                       |        | 4      | 6           | 8               | 25         | 100          | SS-3        | 4.5+          | -  | -  | -  | -  | -         | -  | -  | -  | 17                 | A-4a (V)   | -            |
|   |        | 5      | 8           | 10              | 25         | 100          | SS-3        | 4.5+          | -  | -  | -  | -  | -         | -  | -  | -  | 17                 | A-4a (V)   | -            |
|   |        | 6      | 10          | 14              | 48         | 100          | SS-4        | 4.5+          | -  | -  | -  | -  | -         | -  | -  | -  | 16                 | A-4a (V)   | -            |
|   | 1038.0 | 6      | 10          | 14              | 48         | 100          | SS-4        | 4.5+          | -  | -  | -  | -  | -         | -  | -  | -  | 16                 | A-4a (V)   | -            |
|   |        | 7      | 20          |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|   |        | EOB    |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:04 - U:\G\8\PROJECTS\2020\W-20-160.GPJ


NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.

|  |                           |                                    |                            |                                      |  |
|--|---------------------------|------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-054-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC   | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA          | CALIBRATION DATE: 9/14/20  | ELEVATION: 1036.0 (MSL) EOB: 7.5 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/4/21 END: 3/4/21 | SAMPLING METHOD: SPT               | ENERGY RATIO (%): 84.2     | COORD: 264779.040 N, 1702844.840 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES   | ELEV.  | DEPTH | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |    |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|---|--------|-------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|------------|--------------|
|   |        |       |             |                 |            |              |             | GR            | CS | FS | SI | CL | LL        | PL | PI |    |                    |            |              |
| 0.9' - ASPHALT (11.0")  | 1036.0 |       |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| 0.6' - AGGREGATE BASE (7.0")  | 1035.1 | 1     |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| VERY STIFF, DARK GRAYISH BROWN <b>SILTY CLAY</b> ,<br>LITTLE COARSE TO FINE SAND, TRACE FINE GRAVEL,<br>MOIST.                | 1034.5 | 2     | 3           | 5               | 14         | 89           | SS-1        | 4.00          | 2  | 3  | 11 | 50 | 34        | 40 | 20 | 20 | 21                 | A-6b (12)  | 110          |
|   | 1033.0 | 3     | 3           | 5               | 13         | 100          | SS-2        | 2.50          | 1  | 5  | 15 | 36 | 43        | 47 | 18 | 29 | 22                 | A-7-6 (17) | -            |
| STIFF TO VERY STIFF, DARK GRAYISH BROWN<br><b>CLAY</b> , "AND" SILT, LITTLE COARSE TO FINE SAND,<br>TRACE FINE GRAVEL, MOIST. |        | 4     | 3           | 4               | 10         | 92           | SS-3        | 2.00          | -  | -  | -  | -  | -         | -  | -  | -  | 28                 | A-7-6 (V)  | -            |
|   |        | 5     | 3           | 4               | 10         | 92           | SS-3        | 2.00          | -  | -  | -  | -  | -         | -  | -  | -  | 28                 | A-7-6 (V)  | -            |
|   |        | 6     | 5           | 4               | 13         | 100          | SS-4        | 1.50          | -  | -  | -  | -  | -         | -  | -  | -  | 28                 | A-7-6 (V)  | -            |
|   | 1028.5 | 7     | 4           | 5               | 13         | 100          | SS-4        | 1.50          | -  | -  | -  | -  | -         | -  | -  | -  | 28                 | A-7-6 (V)  | -            |
|   |        | EOB   |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:04 - U:\G\8\PROJECTS\2020\W-20-160.GPJ


NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.

|  |                           |                                       |                            |                                      |  |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-057-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1044.0 (MSL) EOB: 7.0 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/2/21 END: 3/2/21 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 265978.410 N, 1702898.410 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES   | ELEV.  | DEPTHS | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |      |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |   |
|---|--------|--------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|----|--------------------|------------|--------------|---|
|   |        |        |             |                 |            |              |             | GR            | CS   | FS | SI | CL | LL        | PL | PI |    |                    |            |              |   |
| 0.7' - ASPHALT (8.0")   | 1044.0 |        |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
| 0.3' - AGGREGATE BASE (4.0")  | 1043.3 |        |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
| VERY STIFF, GRAY <b>SILT AND CLAY</b> , SOME COARSE TO FINE SAND, TRACE FINE GRAVEL, MOIST.                 | 1043.0 | 1      | 6           | 15              | 64         | SS-1         | 2.75        | 2             | 5    | 14 | 53 | 26 | 30        | 17 | 13 | 18 | A-6a (9)           | 110        |              |   |
| HARD, BROWNISH GRAY <b>CLAY</b> , "AND" SILT, LITTLE COARSE TO FINE SAND, TRACE FINE GRAVEL, DAMP TO MOIST. | 1041.5 | 2      | 3           | 4               | 6          | 14           | 58          | SS-2          | 4.5+ | 3  | 5  | 9  | 36        | 47 | 47 | 18 | 29                 | 23         | A-7-6 (17)   | - |
|   |        | 3      | 5           | 6               | 8          | 20           | 100         | SS-3          | 4.5+ | -  | -  | -  | -         | -  | -  | -  | -                  | 23         | A-7-6 (V)    | - |
|   | 1037.0 | 6      | 11          | 13              | 16         | 41           | 100         | SS-4          | 4.5+ | -  | -  | -  | -         | -  | -  | -  | 14                 | A-7-6 (V)  | -            |   |
|   |        | 7      |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:04 - U:\G\8\PROJECTS\2020\W-20-160.GPJ

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.

|  |                           |                                    |                            |                                      |  |
|--|---------------------------|------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-058-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC   | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA          | CALIBRATION DATE: 9/14/20  | ELEVATION: 1043.0 (MSL) EOB: 7.5 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/4/21 END: 3/4/21 | SAMPLING METHOD: SPT               | ENERGY RATIO (%): 84.2     | COORD: 266379.260 N, 1702899.800 E   |  |


| MATERIAL DESCRIPTION<br>AND NOTES  | ELEV.  | DEPTHS | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |      |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |   |
|--|--------|--------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|----|--------------------|------------|--------------|---|
|  |        |        |             |                 |            |              |             | GR            | CS   | FS | SI | CL | LL        | PL | PI |    |                    |            |              |   |
| 0.7' - ASPHALT (8.0")  | 1043.0 |        |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
| 0.8' - AGGREGATE BASE (10.0")  | 1042.3 | 1      |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
| STIFF TO VERY STIFF, DARK GRAYISH BROWN TO MOTTLED GRAY AND BROWN CLAY, SOME TO "AND" SILT, TRACE TO LITTLE COARSE TO FINE SAND, TRACE FINE GRAVEL, MOIST. | 1041.5 | 2      | 4           | 6               | 17         | 100          | SS-1        | 3.50          | 1    | 2  | 8  | 44 | 45        | 45 | 23 | 22 | 23                 | A-7-6 (14) | 290          |   |
|  |        | 3      | 4           | 4               | 5          | 13           | 83          | SS-2          | 2.75 | 1  | 3  | 8  | 33        | 55 | 52 | 21 | 31                 | 25         | A-7-6 (18)   | - |
|  |        | 4      | 5           | 3               | 5          | 14           | 100         | SS-3          | 1.75 | -  | -  | -  | -         | -  | -  | -  | -                  | 25         | A-7-6 (V)    | - |
|  |        | 5      | 6           | 4               | 4          | 13           | 100         | SS-4          | 1.50 | -  | -  | -  | -         | -  | -  | -  | -                  | 29         | A-7-6 (V)    | - |
|  | 1035.5 | 7      |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |

EOB

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.

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|  |                           |                                       |                            |                                      |  |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-061-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1041.0 (MSL) EOB: 7.0 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/2/21 END: 3/2/21 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 267585.650 N, 1702950.300 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES   | ELEV.  | DEPTHS | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |    |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|---|--------|--------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|------------|--------------|
|   |        |        |             |                 |            |              |             | GR            | CS | FS | SI | CL | LL        | PL | PI |    |                    |            |              |
| 0.7' - ASPHALT (8.0")   | 1041.0 |        |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| 0.3' - AGGREGATE BASE (4.0")  | 1040.3 | 1      | 7           |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| STIFF TO VERY STIFF, GRAY TO BROWNISH GRAY<br><b>CLAY</b> , SOME TO "AND" SILT, TRACE COARSE TO<br>FINE SAND, TRACE FINE GRAVEL, MOIST. | 1040.0 | 2      | 5<br>4      | 13              | 67         | SS-1         | 3.50        | 1             | 3  | 8  | 43 | 45 | 50        | 24 | 26 | 24 | A-7-6 (16)         | 120        |              |
|   |        | 3      | 3<br>4      | 10              | 83         | SS-2         | 2.50        | 0             | 1  | 7  | 35 | 57 | 64        | 22 | 42 | 25 | A-7-6 (20)         | -          |              |
|   |        | 4      | 3           |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|   |        | 5      | 3<br>3      | 8               | 83         | SS-3         | 2.00        | -             | -  | -  | -  | -  | -         | -  | -  | 30 | A-7-6 (V)          | -          |              |
|   |        | 6      | 3<br>4      | 14              | 100        | SS-4         | 1.25        | -             | -  | -  | -  | -  | -         | -  | -  | 29 | A-7-6 (V)          | -          |              |
|   | 1034.0 | 7      | 6           |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|   |        | EOB    |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |

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NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.

|  |                           |                                    |                            |                                      |  |
|--|---------------------------|------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-062-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC   | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA          | CALIBRATION DATE: 9/14/20  | ELEVATION: 1041.0 (MSL) EOB: 7.5 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/4/21 END: 3/4/21 | SAMPLING METHOD: SPT               | ENERGY RATIO (%): 84.2     | COORD: 267986.380 N, 1702954.710 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES  | ELEV.  | DEPTHS | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |      |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |   |
|--|--------|--------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|----|--------------------|------------|--------------|---|
|  |        |        |             |                 |            |              |             | GR            | CS   | FS | SI | CL | LL        | PL | PI |    |                    |            |              |   |
| 0.7' - ASPHALT (8.0")  | 1041.0 |        |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
| 0.8' - AGGREGATE BASE (10.0")  | 1040.3 | 1      |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
| VERY STIFF TO HARD, MOTTLED BROWN AND GRAY<br><b>SILTY CLAY</b> , LITTLE COARSE TO FINE SAND, TRACE<br>FINE GRAVEL, MOIST. | 1039.5 | 2      | 8           | 4               | 2          | 8            | 17          | SS-1          | 4.00 | -  | -  | -  | -         | -  | -  | -  | 25                 | A-6b (V)   | 180          |   |
|  | 1036.5 | 3      | 4           | 7               | 12         | 27           | 61          | SS-2          | 4.5+ | 10 | 9  | 10 | 32        | 39 | 38 | 18 | 20                 | 21         | A-6b (11)    | - |
|  |        | 4      | 11          | 12              | 20         | 45           | 67          | SS-3          | 4.5+ | 8  | 8  | 11 | 30        | 43 | 32 | 18 | 14                 | 15         | A-6a (9)     | - |
| HARD, BROWN <b>SILT AND CLAY</b> , LITTLE COARSE TO<br>FINE SAND, TRACE FINE GRAVEL, DAMP.                                 | 1033.5 | 5      | 12          | 12              | 13         | 35           | 78          | SS-4          | 4.5+ | -  | -  | -  | -         | -  | -  | -  | 16                 | A-6a (V)   | -            |   |
|  |        | 6      |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
|  |        | 7      |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
|  |        | EOB    |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:04 - U:\G\8\PROJECTS\2020\W-20-160.GPJ

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.


|  |                           |                                       |                            |                                      |  |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-065-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1037.0 (MSL) EOB: 7.0 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/2/21 END: 3/2/21 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 269189.000 N, 1703008.070 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES  | ELEV.  | DEPTHS | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |    |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|--|--------|--------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|------------|--------------|
|  |        |        |             |                 |            |              |             | GR            | CS | FS | SI | CL | LL        | PL | PI |    |                    |            |              |
| 0.7' - ASPHALT (8.0")  | 1037.0 |        |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| 0.3' - AGGREGATE BASE (4.0")   | 1036.3 |        |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| MEDIUM DENSE, BROWNISH GRAY <b>COARSE AND FINE SAND</b> , LITTLE FINE GRAVEL, LITTLE SILT, LITTLE CLAY, MOIST.<br>-LARGE GRAVEL FRAGMENT IN SS-1 | 1036.0 | 1      | 7           |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|  | 1034.5 | 2      | 6           | 17              | 56         | SS-1         | -           | 19            | 39 | 11 | 20 | 11 | NP        | NP | NP | 8  | A-3a (0)           | 280        |              |
| VERY STIFF, DARK GRAY TO BROWNISH GRAY <b>SILT AND CLAY</b> , LITTLE FINE GRAVEL, TRACE COARSE TO FINE SAND, DAMP TO MOIST.<br>-ORGANICS IN SS-2 |        | 3      | 5           | 15              | 33         | SS-2         | 2.25        | -             | -  | -  | -  | -  | -         | -  | -  | 26 | A-6a (V)           | -          |              |
|  |        | 4      | 5           | 6               |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|  |        | 5      | 2           | 8               | 100        | SS-3         | 2.75        | 20            | 4  | 6  | 25 | 45 | 39        | 26 | 13 | 25 | A-6a (8)           | -          |              |
|  |        | 6      | 2           | 4               |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|  |        | 7      | 5           | 6               | 7          | SS-4         | 2.75        | -             | -  | -  | -  | -  | -         | -  | -  | 28 | A-6a (V)           | -          |              |
|  | 1030.0 | EOB    |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:04 - U:\G\8\PROJECTS\2020\W-20-160.GPJ

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING


ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.

|  |                           |                                    |                            |                                      |  |
|--|---------------------------|------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-066-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC   | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA          | CALIBRATION DATE: 9/14/20  | ELEVATION: 1039.0 (MSL) EOB: 7.5 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/4/21 END: 3/4/21 | SAMPLING METHOD: SPT               | ENERGY RATIO (%): 84.2     | COORD: 269588.350 N, 1703009.760 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES   | ELEV.  | DEPTHS | SPT/<br>RQD    | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |    |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|---|--------|--------|----------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|------------|--------------|
|   |        |        |                |                 |            |              |             | GR            | CS | FS | SI | CL | LL        | PL | PI |    |                    |            |              |
| 0.7' - ASPHALT (8.0")   | 1039.0 |        |                |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| 0.9' - AGGREGATE BASE (10.0")   | 1038.3 | 1      |                |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| VERY STIFF TO HARD, BROWNISH GRAY <b>SILTY CLAY</b> , LITTLE COARSE TO FINE SAND, TRACE FINE GRAVEL, DAMP TO MOIST. | 1037.5 | 2      | 5              |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|   |        | 3      | 5<br>8         | 18              | 100        | SS-1         | 4.00        | 5             | 4  | 9  | 30 | 52 | 40        | 19 | 21 | 20 | A-6b (12)          | 530        |              |
|   |        | 4      | 7<br>10<br>15  | 35              | 83         | SS-2         | 4.5+        | 10            | 7  | 10 | 31 | 42 | 34        | 18 | 16 | 15 | A-6b (10)          | -          |              |
|   |        | 5      | 10<br>14<br>18 | 45              | 89         | SS-3         | 4.5+        | -             | -  | -  | -  | -  | -         | -  | -  | -  | 13                 | A-6b (V)   | -            |
|   |        | 6      | 26<br>26<br>30 | 79              | 100        | SS-4         | 4.5+        | -             | -  | -  | -  | -  | -         | -  | -  | -  | 15                 | A-6b (V)   | -            |
|   | 1031.5 | 7      |                |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|   |        | EOB    |                |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |

02019 RII STAND ODOT LOG.SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:04 - U:\G\8\PROJECTS\2020\W-20-160.GPJ


NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.

|  |                           |                                       |                            |                                      |                              |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|------------------------------|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | EXPLORATION ID<br>B-069-0-20 |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |                              |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1032.0 (MSL) EOB: 7.0 ft. | PAGE<br>1 OF 1               |
|  | START: 3/2/21 END: 3/2/21 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 270757.720 N, 1703059.120 E   |                              |

| MATERIAL DESCRIPTION<br>AND NOTES  | ELEV.  | DEPTHS         | SPT/<br>RQD    | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |    |    |    |    | ATTERBERG |    |    | WC       | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|--|--------|----------------|----------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----------|--------------------|------------|--------------|
|  |        |                |                |                 |            |              |             | GR            | CS | FS | SI | CL | LL        | PL | PI |          |                    |            |              |
| 0.8' - ASPHALT (9.5")  | 1032.0 |                |                |                 |            |              |             |               |    |    |    |    |           |    |    |          |                    |            |              |
| 0.3' - AGGREGATE BASE (4.0")   | 1031.2 |                |                |                 |            |              |             |               |    |    |    |    |           |    |    |          |                    |            |              |
| VERY STIFF TO HARD, BROWNISH GRAY TO BROWN<br><b>SILT AND CLAY</b> , LITTLE COARSE TO FINE SAND,<br>TRACE TO LITTLE FINE GRAVEL, DAMP. | 1031.0 | 1              | 4              |                 |            |              |             |               |    |    |    |    |           |    |    |          |                    |            |              |
|  |        | 2              | 5<br>4         | 13              | 67         | SS-1         | 3.75        | 11            | 7  | 8  | 30 | 44 | 34        | 19 | 15 | 17       | A-6a (10)          | 330        |              |
|  |        | 3              | 5<br>7<br>9    | 22              | 94         | SS-2         | 4.5+        | 10            | 10 | 9  | 27 | 44 | 34        | 19 | 15 | 16       | A-6a (9)           | -          |              |
|  |        | 4              | 10<br>10<br>11 | 29              | 100        | SS-3         | 4.5+        | -             | -  | -  | -  | -  | -         | -  | -  | 16       | A-6a (V)           | -          |              |
|  | 5      | 14<br>17<br>20 | 52             | 100             | SS-4       | 4.5+         | -           | -             | -  | -  | -  | -  | -         | -  | 15 | A-6a (V) | -                  |            |              |
|  | 6      | EOB            |                |                 |            |              |             |               |    |    |    |    |           |    |    |          |                    |            |              |
|  | 1025.0 |                |                |                 |            |              |             |               |    |    |    |    |           |    |    |          |                    |            |              |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:04 - U:\G\8\PROJECTS\2020\W-20-160.GPJ

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.


|  |                           |                                    |                            |                                      |  |
|--|---------------------------|------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-070-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC   | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA          | CALIBRATION DATE: 9/14/20  | ELEVATION: 1033.0 (MSL) EOB: 7.5 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/4/21 END: 3/4/21 | SAMPLING METHOD: SPT               | ENERGY RATIO (%): 84.2     | COORD: 271172.940 N, 1703060.020 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES  | ELEV.  | DEPTHS | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |      |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |     |  |
|--|--------|--------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|----|--------------------|------------|--------------|-----|--|
|  |        |        |             |                 |            |              |             | GR            | CS   | FS | SI | CL | LL        | PL | PI |    |                    |            |              |     |  |
| 0.7' - ASPHALT (8.0")  | 1033.0 |        |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |     |  |
| 0.9' - AGGREGATE BASE (10.0")  | 1032.3 | 1      |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |     |  |
| VERY STIFF, DARK GRAY <b>SILTY CLAY</b> , LITTLE<br>COARSE TO FINE SAND, TRACE FINE GRAVEL, MOIST.               | 1031.5 | 2      | 8           | 3               | 5          | 11           | 89          | SS-1          | 4.00 | 3  | 5  | 11 | 34        | 47 | 39 | 18 | 21                 | 22         | A-6b (12)    | 380 |  |
|  | 1030.0 | 3      | 3           | 5               | 9          | 20           | 67          | SS-2          | 4.5+ | 11 | 4  | 8  | 25        | 52 | 44 | 19 | 25                 | 22         | A-7-6 (15)   | -   |  |
| HARD, BROWNISH GRAY <b>CLAY</b> , SOME SILT, LITTLE<br>COARSE TO FINE SAND, TRACE FINE GRAVEL, DAMP<br>TO MOIST. |        | 4      | 7           | 11              | 15         | 36           | 100         | SS-3          | 4.5+ | -  | -  | -  | -         | -  | -  | -  | -                  | 15         | A-7-6 (V)    | -   |  |
|  |        | 5      | 19          | 21              | 22         | 60           | 100         | SS-4          | 4.5+ | -  | -  | -  | -         | -  | -  | -  | -                  | 15         | A-7-6 (V)    | -   |  |
|  | 1025.5 | 7      |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |     |  |

EOB

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.


02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:04 - U:\G\8\PROJECTS\2020\W-20-160.GPJ

|  |                           |                                       |                            |                                      |  |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-073-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1031.0 (MSL) EOB: 7.5 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/2/21 END: 3/2/21 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 272378.480 N, 1703116.740 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES   | ELEV.  | DEPTHS | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |      |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|---|--------|--------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|----|--------------------|------------|--------------|
|   |        |        |             |                 |            |              |             | GR            | CS   | FS | SI | CL | LL        | PL | PI |    |                    |            |              |
| 0.7' - ASPHALT (8.0")   | 1031.0 |        |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |
| 0.3' - AGGREGATE BASE (4.0")  | 1030.3 |        |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |
| HARD, BROWNISH GRAY TO BROWN <b>SILT AND CLAY</b> , SOME FINE GRAVEL, LITTLE COARSE TO FINE SAND, DAMP. | 1030.0 | 1      | 7           | 5               | 14         | 11           | SS-1        | 4.5+          | 26   | 9  | 8  | 29 | 28        | 34 | 19 | 15 | 12                 | A-6a (6)   | 390          |
|   |        | 2      | 14          | -               | 100        | 2S-1A        | 4.5+        | 23            | 9    | 8  | 30 | 30 | 34        | 19 | 15 | 14 | A-6a (7)           | -          |              |
|   |        | 3      | 7           | 11              | 32         | 100          | SS-2        | 4.5+          | -    | -  | -  | -  | -         | -  | -  | -  | 14                 | A-6a (V)   | -            |
|   |        | 4      | 8           | 11              | 39         | 100          | SS-3        | 4.5+          | -    | -  | -  | -  | -         | -  | -  | -  | 15                 | A-6a (V)   | -            |
|   |        | 5      | 21          | 24              | 26         | 70           | 100         | SS-4          | 4.5+ | -  | -  | -  | -         | -  | -  | -  | 15                 | A-6a (V)   | -            |
|   | 1023.5 | 7      |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |
|   |        | EOB    |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |

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NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.


|  |                           |                                    |                            |                                      |  |
|--|---------------------------|------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-074-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC   | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA          | CALIBRATION DATE: 9/14/20  | ELEVATION: 1024.0 (MSL) EOB: 7.5 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/3/21 END: 3/3/21 | SAMPLING METHOD: SPT               | ENERGY RATIO (%): 84.2     | COORD: 272781.330 N, 1703119.510 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES  | ELEV.  | DEPTH | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |    |    |    |    | ATTERBERG |    |    | WC       | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|--|--------|-------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----------|--------------------|------------|--------------|
|  |        |       |             |                 |            |              |             | GR            | CS | FS | SI | CL | LL        | PL | PI |          |                    |            |              |
| 1.0' - ASPHALT (12.0")   | 1024.0 |       |             |                 |            |              |             |               |    |    |    |    |           |    |    |          |                    |            |              |
| 0.5' - AGGREGATE BASE (6.0")   | 1023.0 | 1     |             |                 |            |              |             |               |    |    |    |    |           |    |    |          |                    |            |              |
| VERY STIFF, BROWN <b>CLAY</b> , SOME SILT, LITTLE COARSE TO FINE SAND, TRACE FINE GRAVEL, MOIST.   | 1022.5 | 2     | 5           | 18              | 72         | SS-1         | 3.50        | 8             | 4  | 9  | 28 | 51 | 45        | 21 | 24 | 22       | A-7-6 (15)         | 440        |              |
| VERY STIFF TO HARD, BROWN <b>SILTY CLAY</b> , LITTLE COARSE TO FINE SAND, TRACE FINE GRAVEL, DAMP. | 1021.0 | 3     | 3           | 17              | 89         | SS-2         | 4.00        | 5             | 8  | 11 | 33 | 43 | 37        | 19 | 18 | 17       | A-6b (11)          | -          |              |
|  |        | 4     | 5           |                 |            |              |             |               |    |    |    |    |           |    |    |          |                    |            |              |
|  |        | 5     | 7           | 31              | 100        | SS-3         | 4.5+        | -             | -  | -  | -  | -  | -         | -  | -  | 12       | A-6b (V)           | -          |              |
|  |        | 6     | 10          |                 |            |              |             |               |    |    |    |    |           |    |    |          |                    |            |              |
|  |        | 7     | 12          | 44              | 100        | SS-4         | 4.00        | -             | -  | -  | -  | -  | -         | -  | 12 | A-6b (V) | -                  |            |              |
|  |        | 7     | 15          |                 |            |              |             |               |    |    |    |    |           |    |    |          |                    |            |              |
|  | 1016.5 | EOB   | 16          |                 |            |              |             |               |    |    |    |    |           |    |    |          |                    |            |              |

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NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.




|  |                           |                                       |                            |                                      |  |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-077-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1025.0 (MSL) EOB: 7.5 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/2/21 END: 3/2/21 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 273991.990 N, 1703173.020 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES   | ELEV.  | DEPTH | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |    |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|---|--------|-------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|------------|--------------|
|   |        |       |             |                 |            |              |             | GR            | CS | FS | SI | CL | LL        | PL | PI |    |                    |            |              |
| 0.8' - ASPHALT (9.5")   | 1025.0 |       |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| 0.2' - AGGREGATE BASE (2.5")  | 1024.2 |       |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| STIFF TO HARD, BROWN TO BROWNISH GRAY SILT AND CLAY, LITTLE TO SOME FINE GRAVEL, LITTLE COARSE TO FINE SAND, DAMP TO MOIST. | 1024.0 | 1     |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|   |        | 2     | 7           |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|   |        | 3     | 4           | 13              | 50         | SS-1         | 4.5+        | 22            | 7  | 7  | 35 | 29 | 34        | 21 | 13 | 16 | A-6a (7)           | 450        |              |
|   |        | 4     | 2           | 3               | 11         | 78           | SS-2        | 2.00          | 19 | 9  | 8  | 23 | 41        | 33 | 20 | 13 | 21                 | A-6a (7)   | -            |
|   | 5      | 3     | 3           | 10              | 100        | SS-3         | 2.00        | -             | -  | -  | -  | -  | -         | -  | -  | 24 | A-6a (V)           | -          |              |
|   | 6      | 4     | 3           | 4               |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|   | 7      | 4     | 4           | 13              | 94         | SS-4         | 2.75        | -             | -  | -  | -  | -  | -         | -  | -  | 24 | A-6a (V)           | -          |              |
|   | 1017.5 | EOB   |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:04 - U:\G\8\PROJECTS\2020\W-20-160.GPJ

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING


ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.

|  |                           |                                       |                            |                                      |                              |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|------------------------------|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | EXPLORATION ID<br>B-078-0-20 |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |                              |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1029.0 (MSL) EOB: 7.0 ft. | PAGE<br>1 OF 1               |
|  | START: 3/3/21 END: 3/3/21 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 274377.110 N, 1703166.300 E   |                              |

| MATERIAL DESCRIPTION<br>AND NOTES   | ELEV.<br>1029.0 | DEPTH  | SPT/<br>RQD   | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |    |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|---|-----------------|--------|---------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|------------|--------------|
|   |                 |        |               |                 |            |              |             | GR            | CS | FS | SI | CL | LL        | PL | PI |    |                    |            |              |
| 0.5' - ASPHALT (6.0")   | 1028.5          |        |               |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    | X          |              |
| 0.5' - AGGREGATE BASE (6.0")  | 1028.0          |        |               |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    | X          |              |
| VERY STIFF TO HARD, BROWN TO BROWNISH GRAY<br><b>CLAY</b> , SOME SILT, LITTLE COARSE TO FINE SAND,<br>TRACE FINE GRAVEL, DAMP TO MOIST. |                 | 1      | 21            |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    | X          |              |
|   |                 | 2      | 9<br>5        | 20              | 72         | SS-1         | 4.5+        | -             | -  | -  | -  | -  | -         | -  | -  | 19 | A-7-6 (V)          | -          | X            |
|   |                 | 3      | 3<br>5<br>6   | 15              | 61         | SS-2         | 2.75        | 7             | 6  | 9  | 30 | 48 | 41        | 19 | 22 | 19 | A-7-6 (13)         | -          | X            |
|   |                 | 4      | 3             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            | X            |
|   |                 | 5      | 5<br>7        | 17              | 100        | SS-3         | 3.75        | 7             | 5  | 8  | 32 | 48 | 43        | 21 | 22 | 18 | A-7-6 (13)         | -          | X            |
|   |                 | 6      | 7<br>10<br>11 | 29              | 100        | SS-4         | 4.5+        | -             | -  | -  | -  | -  | -         | -  | -  | 17 | A-7-6 (V)          | -          | X            |
|   |                 | 1022.0 | EOB           | 7               |            |              |             |               |    |    |    |    |           |    |    |    |                    |            | X            |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:04 - U:\G\8\PROJECTS\2020\W-20-160.GPJ

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.


|  |                           |                                       |                            |                                      |  |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-081-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1033.0 (MSL) EOB: 7.5 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/2/21 END: 3/2/21 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 275522.080 N, 1702913.110 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES   | ELEV.  | DEPTHS | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |    |    |    |    | ATTERBERG |    |    | WC       | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|---|--------|--------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----------|--------------------|------------|--------------|
|   |        |        |             |                 |            |              |             | GR            | CS | FS | SI | CL | LL        | PL | PI |          |                    |            |              |
| 0.8' - ASPHALT (9.5")   | 1033.0 |        |             |                 |            |              |             |               |    |    |    |    |           |    |    |          |                    |            |              |
| 0.2' - AGGREGATE BASE (2.5")  | 1032.2 | 1      | 7           |                 |            |              |             |               |    |    |    |    |           |    |    |          |                    |            |              |
| VERY STIFF TO HARD, BROWN TO MOTTLED BROWN AND GRAY SILT AND CLAY, LITTLE TO SOME COARSE TO FINE SAND, TRACE FINE GRAVEL, DAMP. | 1032.0 | 2      | 2           | 8               | 28         | SS-1         | 3.75        | -             | -  | -  | -  | -  | -         | -  | 18 | A-6a (V) | 500                |            |              |
|   |        | 3      | 4           |                 |            |              |             |               |    |    |    |    |           |    |    |          |                    |            |              |
|   |        | 4      | 8           | 28              | 83         | SS-2         | 4.5+        | 6             | 17 | 9  | 34 | 34 | 32        | 19 | 13 | 14       | A-6a (8)           | -          |              |
|   |        | 5      | 9           | 12              | 39         | 100          | SS-3        | 4.5+          | 8  | 12 | 8  | 37 | 35        | 32 | 19 | 13       | 14                 | A-6a (9)   | -            |
|   |        | 6      |             |                 |            |              |             |               |    |    |    |    |           |    |    |          |                    |            |              |
|   |        | 7      | 17          | 60              | 100        | SS-4         | 4.5+        | -             | -  | -  | -  | -  | -         | -  | 12 | A-6a (V) | -                  |            |              |
|   | 1025.5 | EOB    |             |                 |            |              |             |               |    |    |    |    |           |    |    |          |                    |            |              |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:04 - U:\G\8\PROJECTS\2020\W-20-160.GPJ

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING


ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.

|  |                           |                                       |                            |                                      |  |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-082-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1034.0 (MSL) EOB: 7.0 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/3/21 END: 3/3/21 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 275910.520 N, 1702800.100 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES   | ELEV.  | DEPTHS | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |      |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |   |
|---|--------|--------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|----|--------------------|------------|--------------|---|
|   |        |        |             |                 |            |              |             | GR            | CS   | FS | SI | CL | LL        | PL | PI |    |                    |            |              |   |
| 0.9' - ASPHALT (11.0")  | 1034.0 |        |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
| 0.6' - AGGREGATE BASE (7.0")  | 1033.1 | 1      | 6           |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
| VERY STIFF, MOTTLED BROWN AND GRAY <b>SILT AND CLAY</b> , LITTLE COARSE TO FINE SAND, LITTLE FINE GRAVEL, DAMP. | 1032.5 | 2      | 2           | 3               | 7          | 44           | SS-1        | 3.75          | 12   | 8  | 10 | 28 | 42        | 32 | 18 | 14 | 17                 | A-6a (9)   | 250          |   |
|   | 1031.0 | 3      | 5           | 6               | 7          | 18           | 75          | SS-2          | 4.50 | 7  | 8  | 11 | 30        | 44 | 34 | 18 | 16                 | 16         | A-6b (10)    | - |
| HARD, BROWN <b>SILTY CLAY</b> , LITTLE COARSE TO FINE SAND, TRACE FINE GRAVEL, DAMP.                            |        | 4      |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
|   |        | 5      | 11          | 12              | 14         | 36           | 100         | SS-3          | 4.5+ | -  | -  | -  | -         | -  | -  | -  | -                  | 14         | A-6b (V)     | - |
|   |        | 6      | 11          | 14              | 17         | 44           | 100         | SS-4          | 4.5+ | -  | -  | -  | -         | -  | -  | -  | -                  | 15         | A-6b (V)     | - |
|   | 1027.0 | EOB    |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:04 - U:\G\8\PROJECTS\2020\W-20-160.GPJ

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.

|  |                           |                                       |                            |                                      |  |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-085-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1040.0 (MSL) EOB: 7.5 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/2/21 END: 3/2/21 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 277029.100 N, 1702402.830 E   |  |


| MATERIAL DESCRIPTION<br>AND NOTES  | ELEV.<br>1040.0 | DEPTHS | SPT/<br>RQD    | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |    |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|--|-----------------|--------|----------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|------------|--------------|
|  |                 |        |                |                 |            |              |             | GR            | CS | FS | SI | CL | LL        | PL | PI |    |                    |            |              |
| 0.8' - ASPHALT (9.5")  | 1039.2          |        |                |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| 0.7' - AGGREGATE BASE (8.5")   | 1038.5          | 1      |                |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| VERY STIFF TO HARD, BROWNISH GRAY TO DARK BROWN <b>SILT AND CLAY</b> , LITTLE TO SOME COARSE TO FINE SAND, TRACE FINE GRAVEL, DAMP TO MOIST. |                 | 2      | 4              |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|  |                 |        | 3              | 5<br>6          | 15         | 83           | SS-1        | 4.00          | 6  | 10 | 6  | 32 | 46        | 32 | 19 | 13 | 22                 | A-6a (9)   | 260          |
|  |                 |        | 4              | 6<br>7<br>8     | 21         | 100          | SS-2        | 4.00          | 9  | 12 | 8  | 36 | 35        | 31 | 19 | 12 | 15                 | A-6a (8)   | -            |
|  |                 |        | 5              | 7<br>11<br>13   | 34         | 100          | SS-3        | 4.5+          | 10 | 19 | 11 | 35 | 25        | 31 | 19 | 12 | 13                 | A-6a (6)   | -            |
|  | 1032.5          | 6      | 17<br>18<br>21 | 55              | 36         | SS-4         | 4.5+        | -             | -  | -  | -  | -  | -         | -  | -  | -  | 15                 | A-6a (V)   | -            |
|  |                 | 7      |                |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |

EOB

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING

ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.


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|  |                           |                                       |                            |                                      |  |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-086-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1043.0 (MSL) EOB: 7.0 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/2/21 END: 3/2/21 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 277372.090 N, 1702204.250 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES  | ELEV.  | DEPTHS | SPT/<br>RQD   | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |    |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|--|--------|--------|---------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|------------|--------------|
|  |        |        |               |                 |            |              |             | GR            | CS | FS | SI | CL | LL        | PL | PI |    |                    |            |              |
| 0.8' - ASPHALT (9.5")  | 1043.0 |        |               |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| 0.2' - AGGREGATE BASE (2.5")   | 1042.2 | 1      | 6             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| VERY STIFF, BROWN <b>SILT AND CLAY</b> , LITTLE COARSE TO FINE SAND, LITTLE FINE GRAVEL, MOIST.      | 1042.0 | 2      | 5<br>6        | 15              | 72         | SS-1         | 3.50        | 12            | 6  | 6  | 40 | 36 | 34        | 19 | 15 | 20 | A-6a (10)          | <100       |              |
|  |        | 3      | 3<br>5<br>6   | 15              | 83         | SS-2         | 2.75        | 13            | 10 | 8  | 38 | 31 | 31        | 20 | 11 | 20 | A-6a (7)           | -          |              |
|  | 1039.0 | 4      | 5             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| VERY STIFF TO HARD, MOTTLED BROWN AND GRAY <b>SANDY SILT</b> , LITTLE CLAY, TRACE FINE GRAVEL, DAMP. |        | 5      | 12<br>15      | 38              | 100        | SS-3         | 4.5+        | -             | -  | -  | -  | -  | -         | -  | -  | 15 | A-4a (V)           | -          |              |
|  |        | 6      | 7<br>10<br>13 | 32              | 100        | SS-4         | 4.00        | -             | -  | -  | -  | -  | -         | -  | -  | 14 | A-4a (V)           | -          |              |
|  | 1036.0 | 7      |               |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|  |        | EOB    |               |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:04 - U:\G\8\PROJECTS\2020\W-20-160.GPJ

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.


|  |                           |                                       |                            |                                      |  |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-089-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1049.0 (MSL) EOB: 7.5 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/2/21 END: 3/2/21 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 278345.100 N, 1702058.220 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES   | ELEV.  | DEPTHS | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |    |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|---|--------|--------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|------------|--------------|
|   |        |        |             |                 |            |              |             | GR            | CS | FS | SI | CL | LL        | PL | PI |    |                    |            |              |
| 0.8' - ASPHALT (9.5")   | 1049.0 |        |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| 0.7' - AGGREGATE BASE (8.5")  | 1048.2 | 1      |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| VERY STIFF, BROWNISH GRAY <b>SILTY CLAY</b> , TRACE COARSE TO FINE SAND, TRACE FINE GRAVEL, DAMP.       | 1047.5 | 2      | 3           | 3               | 8          | 72           | SS-1        | 2.75          | 9  | 5  | 5  | 43 | 38        | 33 | 17 | 16 | 21                 | A-6b (10)  | <100         |
| VERY STIFF, BROWNISH GRAY <b>SILT AND CLAY</b> , LITTLE COARSE TO FINE SAND, LITTLE FINE GRAVEL, MOIST. | 1046.0 | 3      | 3           | 5               | 11         | 83           | SS-2        | 2.25          | 20 | 7  | 9  | 34 | 30        | 34 | 22 | 12 | 23                 | A-6a (7)   | -            |
|   |        | 4      | 5           | 6               | 15         | 100          | SS-3        | 2.50          | -  | -  | -  | -  | -         | -  | -  | -  | 21                 | A-6a (V)   | -            |
| HARD, MOTTLED BROWN AND GRAY <b>SANDY SILT</b> , LITTLE CLAY, TRACE FINE GRAVEL, DAMP.                  | 1043.0 | 5      | 5           | 9               | 27         | 100          | SS-4        | 4.5+          | -  | -  | -  | -  | -         | -  | -  | -  | 17                 | A-4a (V)   | -            |
|   | 1041.5 | 6      | 10          |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|   |        | 7      |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |

EOB

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.

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|  |                           |                                       |                            |                                      |  |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-090-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1046.0 (MSL) EOB: 7.0 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/3/21 END: 3/3/21 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 278754.340 N, 1702140.640 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES  | ELEV.  | DEPTHS | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |      |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |   |
|--|--------|--------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|----|--------------------|------------|--------------|---|
|  |        |        |             |                 |            |              |             | GR            | CS   | FS | SI | CL | LL        | PL | PI |    |                    |            |              |   |
| 0.7' - ASPHALT (8.0")  | 1046.0 |        |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
| 0.3' - AGGREGATE BASE (4.0")   | 1045.3 |        |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
| VERY STIFF, GRAY <b>SILT AND CLAY</b> , LITTLE COARSE TO FINE SAND, LITTLE FINE GRAVEL, MOIST. | 1045.0 | 1      | 6           | 15              | 78         | SS-1         | 3.50        | 11            | 9    | 5  | 39 | 36 | 33        | 22 | 11 | 22 | A-6a (8)           | <100       |              |   |
| HARD, BROWNISH GRAY <b>SANDY SILT</b> , SOME CLAY, LITTLE FINE GRAVEL, DAMP.                   | 1043.5 | 2      | 3           | 4               | 6          | 14           | 81          | SS-2          | 4.5+ | 9  | 11 | 8  | 39        | 33 | 27 | 18 | 9                  | 16         | A-4a (7)     | - |
|  |        | 3      | 7           | 10              | 12         | 31           | 89          | SS-3          | 4.5+ | -  | -  | -  | -         | -  | -  | -  | -                  | 15         | A-4a (V)     | - |
|  |        | 4      |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
|  |        | 5      |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
|  |        | 6      |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
|  | 1039.0 | 6      | 11          | 13              | 17         | 42           | 100         | SS-4          | 4.5+ | 15 | 27 | 19 | 15        | 24 | 27 | 18 | 9                  | 12         | A-4a (1)     | - |
|  |        | 7      |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |
|  |        | EOB    |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |   |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:04 - U:\G\8\PROJECTS\2020\W-20-160.GPJ

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.




|  |                           |                                       |                            |                                      |                              |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|------------------------------|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | EXPLORATION ID<br>B-093-0-20 |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |                              |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1043.0 (MSL) EOB: 7.5 ft. | PAGE<br>1 OF 1               |
|  | START: 3/3/21 END: 3/3/21 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 279922.300 N, 1702418.620 E   |                              |

| MATERIAL DESCRIPTION<br>AND NOTES   | ELEV.<br>1043.0 | DEPTH | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |      |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm            | BACK<br>FILL        |                     |                     |
|---|-----------------|-------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|----|--------------------|-----------------------|---------------------|---------------------|---------------------|
|   |                 |       |             |                 |            |              |             | GR            | CS   | FS | SI | CL | LL        | PL | PI |    |                    |                       |                     |                     |                     |
| 0.8' - ASPHALT (9.5")   | 1042.2          | 1     |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    | [Cross-hatch pattern] |                     |                     |                     |
| 0.7' - AGGREGATE BASE (8.5")  | 1041.5          | 2     | 5           |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    | [Aggregate pattern]   |                     |                     |                     |
| HARD, GRAY SILT AND CLAY, LITTLE COARSE TO FINE SAND, TRACE FINE GRAVEL, DAMP TO MOIST. |                 | 3     | 4           | 5               | 13         | 67           | SS-1        | 4.25          | 8    | 7  | 7  | 37 | 41        | 34 | 19 | 15 | 21                 | A-6a (10)             | <100                | [Aggregate pattern] |                     |
|   |                 | 4     | 5           | 7               | 17         | 86           | SS-2        | 4.5+          | 5    | 13 | 7  | 36 | 39        | 33 | 20 | 13 | 15                 | A-6a (9)              | -                   | [Aggregate pattern] |                     |
|   |                 | 5     | 9           | 11              | 12         | 32           | 100         | SS-3          | 4.5+ | -  | -  | -  | -         | -  | -  | -  | -                  | 15                    | A-6a (V)            | -                   | [Aggregate pattern] |
|   |                 | 6     | 12          | 10              | 18         | 39           | 100         | SS-4          | 4.5+ | -  | -  | -  | -         | -  | -  | -  | -                  | 16                    | A-6a (V)            | -                   | [Aggregate pattern] |
|   | 1035.5          | 7     |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    | EOB                   | [Aggregate pattern] |                     |                     |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:04 - U:\G\8\PROJECTS\2020\W-20-160.GPJ


NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.

|  |                           |                                       |                            |                                      |                              |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|------------------------------|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | EXPLORATION ID<br>B-094-0-20 |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |                              |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1045.0 (MSL) EOB: 7.0 ft. | PAGE<br>1 OF 1               |
|  | START: 3/3/21 END: 3/3/21 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 280308.700 N, 1702495.510 E   |                              |

| MATERIAL DESCRIPTION<br>AND NOTES  | ELEV.  | DEPTHS | SPT/<br>RQD    | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |    |    |    |    | ATTERBERG |    |    | WC       | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|--|--------|--------|----------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----------|--------------------|------------|--------------|
|  |        |        |                |                 |            |              |             | GR            | CS | FS | SI | CL | LL        | PL | PI |          |                    |            |              |
| 0.7' - ASPHALT (8.0")  | 1045.0 |        |                |                 |            |              |             |               |    |    |    |    |           |    |    |          |                    |            |              |
| 0.3' - AGGREGATE BASE (4.0")   | 1044.3 |        |                |                 |            |              |             |               |    |    |    |    |           |    |    |          |                    |            |              |
| VERY STIFF TO HARD, BROWN SILT AND CLAY,<br>LITTLE COARSE TO FINE SAND, TRACE TO SOME<br>FINE GRAVEL, DAMP TO MOIST. | 1044.0 | 1      | 8              |                 |            |              |             |               |    |    |    |    |           |    |    |          |                    |            |              |
|  |        | 2      | 5<br>6         | 15              | 67         | SS-1         | 3.00        | 10            | 6  | 6  | 49 | 29 | 33        | 21 | 12 | 20       | A-6a (9)           | 110        |              |
|  |        | 3      | 4<br>6         | 14              | 67         | SS-2         | 3.50        | 26            | 9  | 7  | 27 | 31 | 33        | 19 | 14 | 22       | A-6a (6)           | -          |              |
|  |        | 4      | 8              |                 |            |              |             |               |    |    |    |    |           |    |    |          |                    |            |              |
|  |        | 5      | 9<br>11        | 28              | 100        | SS-3         | 4.5+        | -             | -  | -  | -  | -  | -         | -  | 13 | A-6a (V) | -                  |            |              |
|  |        | 6      | 18<br>21<br>23 | 62              | 100        | SS-4         | 4.5+        | -             | -  | -  | -  | -  | -         | -  | 14 | A-6a (V) | -                  |            |              |
|  | 1038.0 | 7      |                |                 |            |              |             |               |    |    |    |    |           |    |    |          |                    |            |              |
|  |        | EOB    |                |                 |            |              |             |               |    |    |    |    |           |    |    |          |                    |            |              |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:04 - U:\G\8\PROJECTS\2020\W-20-160.GPJ


NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.

|  |                           |                                       |                            |                                      |  |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-097-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1045.0 (MSL) EOB: 7.0 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/3/21 END: 3/3/21 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 281492.290 N, 1702778.360 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES  | ELEV.  | DEPTHS | SPT/<br>RQD    | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |    |    |    |    | ATTERBERG |    |    | WC       | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|--|--------|--------|----------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----------|--------------------|------------|--------------|
|  |        |        |                |                 |            |              |             | GR            | CS | FS | SI | CL | LL        | PL | PI |          |                    |            |              |
| 0.8' - ASPHALT (9.5")  | 1045.0 |        |                |                 |            |              |             |               |    |    |    |    |           |    |    |          |                    |            |              |
| 0.7' - AGGREGATE BASE (8.5")   | 1044.2 | 1      |                |                 |            |              |             |               |    |    |    |    |           |    |    |          |                    |            |              |
| VERY STIFF TO HARD, BROWN SILT AND CLAY,<br>LITTLE FINE TO COARSE SAND, TRACE TO SOME<br>FINE GRAVEL, DAMP.<br>-GRAVEL FRAGMENTS IN SS-1 | 1043.5 | 2      | 3<br>5         | 14              | 53         | SS-1         | 3.50        | 22            | 8  | 5  | 33 | 32 | 33        | 20 | 13 | 20       | A-6a (7)           | 520        |              |
|  |        | 3      | 4<br>6         | 22              | 94         | SS-2         | 4.5+        | 9             | 11 | 9  | 40 | 31 | 32        | 20 | 12 | 14       | A-6a (8)           | -          |              |
|  |        | 4      | 6<br>10        | 34              | 100        | SS-3         | 4.5+        | -             | -  | -  | -  | -  | -         | -  | -  | 14       | A-6a (V)           | -          |              |
|  |        | 5      | 10<br>14       | 34              | 100        | SS-3         | 4.5+        | -             | -  | -  | -  | -  | -         | -  | -  | 14       | A-6a (V)           | -          |              |
| -GRAVEL FRAGMENTS IN SS-3  |        | 6      | 10<br>16       | 53              | 83         | SS-4         | 4.50        | -             | -  | -  | -  | -  | -         | -  | 18 | A-6a (V) | -                  |            |              |
|  | 1038.0 | 7      | 10<br>16<br>22 | 53              | 83         | SS-4         | 4.50        | -             | -  | -  | -  | -  | -         | -  | 18 | A-6a (V) | -                  |            |              |
|  |        | EOB    |                |                 |            |              |             |               |    |    |    |    |           |    |    |          |                    |            |              |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:04 - U:\G\8\PROJECTS\2020\W-20-160.GPJ


NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.

|  |                           |                                       |                            |                                      |  |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-098-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1041.0 (MSL) EOB: 7.0 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/3/21 END: 3/3/21 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 281885.220 N, 1702855.400 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES  | ELEV.  | DEPTHS | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |    |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|--|--------|--------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|------------|--------------|
|  |        |        |             |                 |            |              |             | GR            | CS | FS | SI | CL | LL        | PL | PI |    |                    |            |              |
| 0.7' - ASPHALT (8.0")  | 1041.0 |        |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| 0.3' - AGGREGATE BASE (4.0")   | 1040.3 |        |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| VERY STIFF, GRAY TO BROWNISH GRAY <b>SILT AND CLAY</b> , LITTLE COARSE TO FINE SAND, TRACE FINE GRAVEL, DAMP TO MOIST. | 1040.0 | 1      | 8           | 15              | 61         | SS-1         | 3.00        | 8             | 7  | 6  | 48 | 31 | 33        | 20 | 13 | 22 | A-6a (9)           | 420        |              |
|  |        | 2      | 3           | 10              | 50         | SS-2         | 2.00        | 9             | 8  | 7  | 43 | 33 | 32        | 21 | 11 | 24 | A-6a (8)           | -          |              |
|  |        | 3      | 3           | 11              | 100        | SS-3         | 2.25        | -             | -  | -  | -  | -  | -         | -  | -  | 18 | A-6a (V)           | -          |              |
|  |        | 4      | 3           | 11              | 100        | SS-4         | 4.00        | -             | -  | -  | -  | -  | -         | -  | -  | 15 | A-6a (V)           | -          |              |
|  | 1034.0 | EOB    | 7           |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:04 - U:\G\8\PROJECTS\2020\W-20-160.GPJ


NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.

|  |                           |                                       |                            |                                      |                              |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|------------------------------|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | EXPLORATION ID<br>B-101-0-20 |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |                              |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1039.0 (MSL) EOB: 7.0 ft. | PAGE<br>1 OF 1               |
|  | START: 3/3/21 END: 3/3/21 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 283038.060 N, 1703279.110 E   |                              |

| MATERIAL DESCRIPTION<br>AND NOTES   | ELEV.  | DEPTH | SPT/<br>RQD    | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |    |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |   |
|---|--------|-------|----------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|------------|--------------|---|
|   |        |       |                |                 |            |              |             | GR            | CS | FS | SI | CL | LL        | PL | PI |    |                    |            |              |   |
| 0.7' - ASPHALT (8.0")   | 1039.0 |       |                |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |   |
| 0.3' - AGGREGATE BASE (4.0")  | 1038.3 | 1     | 5              |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    | X          |              |   |
| VERY STIFF, GRAY <b>SILT AND CLAY</b> , LITTLE COARSE TO FINE SAND, TRACE FINE GRAVEL, MOIST.         | 1038.0 | 2     | 3<br>4         | 10              | 72         | SS-1         | 3.00        | 2             | 4  | 9  | 50 | 35 | 32        | 18 | 14 | 20 | A-6a (10)          | 390        | X            |   |
| HARD, BROWNISH GRAY TO BROWN <b>SILTY CLAY</b> , LITTLE COARSE TO FINE SAND, TRACE FINE GRAVEL, DAMP. | 1036.5 | 3     | 3<br>5<br>8    | 18              | 100        | SS-2         | 4.5+        | 9             | 7  | 9  | 33 | 42 | 37        | 18 | 19 | 15 | A-6b (12)          | -          | X            |   |
|   |        | 4     | 8<br>10<br>12  | 31              | 100        | SS-3         | 4.5+        | -             | -  | -  | -  | -  | -         | -  | -  | 12 | A-6b (V)           | -          | X            |   |
|   |        | 5     | 18<br>22<br>26 | 67              | 100        | SS-4         | 4.5+        | -             | -  | -  | -  | -  | -         | -  | -  | 10 | A-6b (V)           | -          | X            |   |
|   | 1032.0 | 6     |                |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              | X |
|   |        | 7     |                |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              | X |
|   |        | EOB   |                |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              | X |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:04 - U:\G\8\PROJECTS\2020\W-20-160.GPJ


NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.

|  |                           |                                       |                            |                                      |  |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-102-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1036.0 (MSL) EOB: 7.0 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/3/21 END: 3/3/21 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 283390.740 N, 1703467.380 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES   | ELEV.  | DEPTHS | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |      |    |    |    | ATTERBERG |    |    | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |           |   |
|---|--------|--------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|--------------------|------------|--------------|-----------|---|
|   |        |        |             |                 |            |              |             | GR            | CS   | FS | SI | CL | LL        | PL | PI |                    |            |              | WC        |   |
| 0.7' - ASPHALT (8.0")   | 1036.0 |        |             |                 |            |              |             |               |      |    |    |    |           |    |    |                    |            |              |           |   |
| 0.3' - AGGREGATE BASE (4.0")  | 1035.3 |        |             |                 |            |              |             |               |      |    |    |    |           |    |    |                    |            |              |           |   |
| VERY STIFF, DARK BROWNISH GRAY CLAY, SOME SILT, LITTLE COARSE TO FINE SAND, TRACE FINE GRAVEL, MOIST. | 1035.0 | 1      | 5           | 5               | 14         | 75           | SS-1        | 3.75          | 1    | 4  | 12 | 30 | 53        | 43 | 19 | 24                 | 21         | A-7-6 (14)   | 350       |   |
| HARD, BROWN SILTY CLAY, LITTLE COARSE TO FINE SAND, TRACE FINE GRAVEL, DAMP.                          | 1033.5 | 2      | 3           | 5               | 6          | 15           | 64          | SS-2          | 4.5+ | 9  | 6  | 11 | 32        | 42 | 36 | 17                 | 19         | 14           | A-6b (11) | - |
|   |        | 3      | 8           | 12              | 14         | 36           | 100         | SS-3          | 4.5+ | -  | -  | -  | -         | -  | -  | -                  | -          | 15           | A-6b (V)  | - |
|   |        | 4      | 14          | 16              | 18         | 48           | 100         | SS-4          | 4.5+ | -  | -  | -  | -         | -  | -  | -                  | -          | 11           | A-6b (V)  | - |
|   | 1029.0 | 6      |             |                 |            |              |             |               |      |    |    |    |           |    |    |                    |            |              |           |   |
|   |        | 7      |             |                 |            |              |             |               |      |    |    |    |           |    |    |                    |            |              |           |   |
|   |        | EOB    |             |                 |            |              |             |               |      |    |    |    |           |    |    |                    |            |              |           |   |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:04 - U:\G\8\PROJECTS\2020\W-20-160.GPJ


NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.

|  |                           |                                       |                            |                                      |  |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-105-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1034.0 (MSL) EOB: 7.0 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/3/21 END: 3/3/21 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 284448.700 N, 1704041.040 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES   | ELEV.  | DEPTHS | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |      |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|---|--------|--------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|----|--------------------|------------|--------------|
|   |        |        |             |                 |            |              |             | GR            | CS   | FS | SI | CL | LL        | PL | PI |    |                    |            |              |
| 0.7' - ASPHALT (8.0")   | 1034.0 |        |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |
| 0.3' - AGGREGATE BASE (4.0")  | 1033.3 |        |             |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |
| VERY STIFF TO HARD, GRAY TO BROWN <b>SILTY CLAY</b> , LITTLE TO SOME COARSE TO FINE SAND, TRACE FINE GRAVEL, DAMP TO MOIST. | 1033.0 | 1      | 5           |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |
|   |        | 2      | 6           | 18              | 72         | SS-1         | 3.75        | 3             | 8    | 17 | 41 | 31 | 31        | 15 | 16 | 18 | A-6b (10)          | <100       |              |
|   |        | 3      | 3           | 5               | 15         | 81           | SS-2        | 2.75          | 5    | 7  | 12 | 32 | 44        | 40 | 18 | 22 | 18                 | A-6b (13)  | -            |
|   |        | 4      |             | 3               |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |
|   |        | 5      | 5           | 5               | 17         | 100          | SS-3        | 4.5+          | -    | -  | -  | -  | -         | -  | -  | -  | 14                 | A-6b (V)   | -            |
|   |        | 6      | 11          | 22              | 24         | 65           | 100         | SS-4          | 4.5+ | -  | -  | -  | -         | -  | -  | -  | 14                 | A-6b (V)   | -            |
|   | 1027.0 | EOB    | 7           |                 |            |              |             |               |      |    |    |    |           |    |    |    |                    |            |              |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:04 - U:\G\8\PROJECTS\2020\W-20-160.GPJ

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.

|  |                           |                                       |                            |                                      |  |
|--|---------------------------|---------------------------------------|----------------------------|--------------------------------------|--|
|  | PROJECT: UNI-739-6.06     | DRILLING FIRM / OPERATOR: RII / TG/JP | DRILL RIG: CME 55 (386345) | STATION / OFFSET: NA / '             | <b>EXPLORATION ID</b><br><b>B-106-0-20</b> |
|  | TYPE: ROADWAY             | SAMPLING FIRM / LOGGER: RII / NC      | HAMMER: AUTOMATIC          | ALIGNMENT: SR 739                    |  |
|  | PID: 112878 SFN: NA       | DRILLING METHOD: 4.5" CFA             | CALIBRATION DATE: 9/14/20  | ELEVATION: 1029.0 (MSL) EOB: 7.0 ft. | PAGE<br>1 OF 1                             |
|  | START: 3/3/21 END: 3/3/21 | SAMPLING METHOD: SPT                  | ENERGY RATIO (%): 84.2     | COORD: 284835.470 N, 1704140.760 E   |  |

| MATERIAL DESCRIPTION<br>AND NOTES  | ELEV.  | DEPTHS | SPT/<br>RQD | N <sub>60</sub> | REC<br>(%) | SAMPLE<br>ID | HP<br>(tsf) | GRADATION (%) |    |    |    |    | ATTERBERG |    |    | WC | ODOT<br>CLASS (GI) | SO4<br>ppm | BACK<br>FILL |
|--|--------|--------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|------------|--------------|
|  |        |        |             |                 |            |              |             | GR            | CS | FS | SI | CL | LL        | PL | PI |    |                    |            |              |
| 0.7' - ASPHALT (8.0")  | 1029.0 |        |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| 0.3' - AGGREGATE BASE (4.0")   | 1028.3 |        |             |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| <b>FILL: HARD, GRAY SILT AND CLAY, SOME COARSE AND FINE SAND, TRACE FINE GRAVEL, MOIST.</b>                      | 1028.0 | 1      | 5           |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|  |        |        | 3           | 11              | 61         | SS-1         | 4.50        | 7             | 11 | 11 | 42 | 29 | 29        | 18 | 11 | 18 | A-6a (8)           | <100       |              |
|  | 1026.5 | 2      | 5           |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| <b>FILL: MEDIUM STIFF, BROWNISH GRAY CLAY, "AND" SILT, LITTLE COARSE TO FINE SAND, TRACE FINE GRAVEL, MOIST.</b> |        |        | 3           |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|  | 1025.0 | 3      | 4           | 14              | 100        | SS-2         | 1.00        | 1             | 4  | 12 | 40 | 43 | 41        | 19 | 22 | 25 | A-7-6 (13)         | -          |              |
|  |        |        | 6           |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
| <b>VERY STIFF TO HARD, BROWN SILT AND CLAY, LITTLE COARSE TO FINE SAND, TRACE FINE GRAVEL, MOIST.</b>            |        |        | 3           |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|  | 1025.0 | 4      | 3           | 11              | 89         | SS-3         | 2.25        | -             | -  | -  | -  | -  | -         | -  | -  | 18 | A-6a (V)           | -          |              |
|  |        |        | 5           |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|  |        |        | 3           |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|  | 1022.0 | 5      | 3           | 11              | 89         | SS-3         | 2.25        | -             | -  | -  | -  | -  | -         | -  | -  | 18 | A-6a (V)           | -          |              |
|  |        |        | 5           |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|  |        |        | 10          |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|  |        |        | 14          | 45              | 100        | SS-4         | 4.5+        | -             | -  | -  | -  | -  | -         | -  | -  | 18 | A-6a (V)           | -          |              |
|  |        |        | 18          |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |
|  |        | EOB    | 7           |                 |            |              |             |               |    |    |    |    |           |    |    |    |                    |            |              |

02019 RII STAND ODOT LOG SULF (8.5 X 11) - OH DOT.GDT - 4/12/21 12:04 - U:\G\8\PROJECTS\2020\W-20-160.GPJ

NOTES: SEEPAGE @ 2.5'  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: Compacted with the auger 12.5 lbs bentonite chips and soil cuttings. Pavement patched with asphalt cold patch.



# **APPENDIX IV**

**DCP logs**



6350 Presidential Gateway  
Columbus, Ohio 43231  
Telephone: (614) 823-4949  
Fax Number: (614) 823-4990

### Automated Dynamic Cone Penetrometer Summary (ASTM D6951)

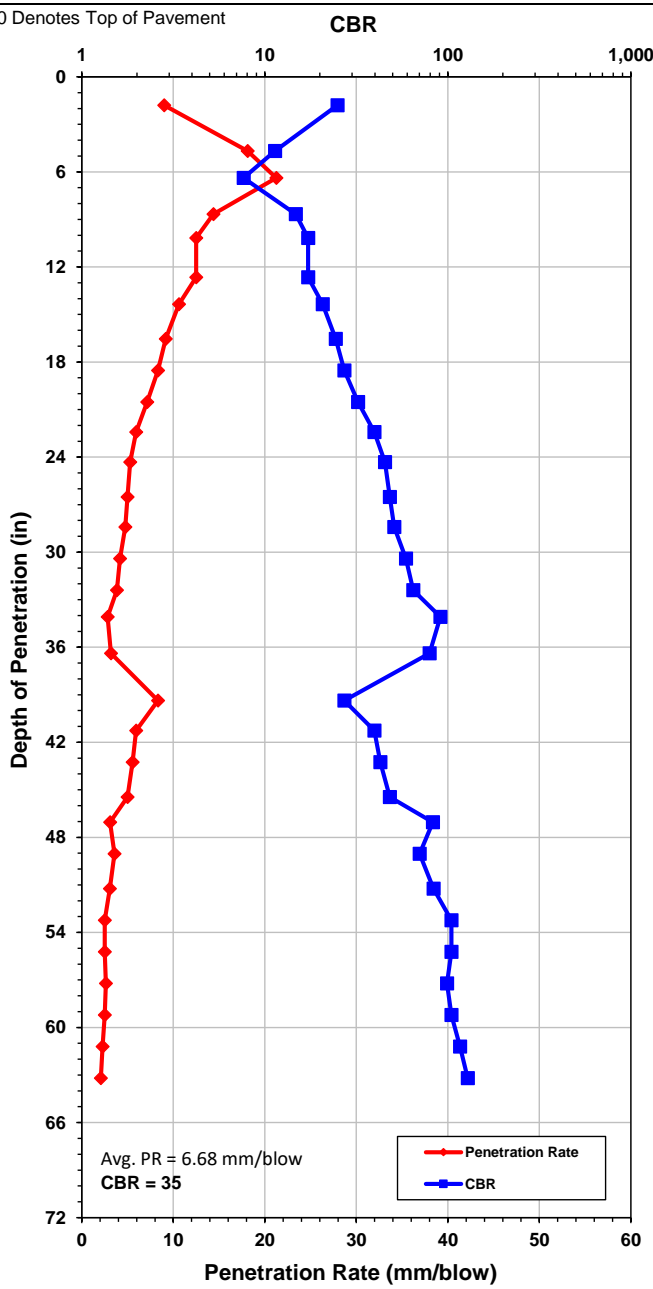
PROJECT: UNI-739-6.06 FDR  
LOCATION: SR 739  
RII JOB No.: W-20-160 ODOT PID No.: 112878  
ADCP No.: D-003-0-20  
DATE TEST PERFORMED: 3/8/2021

|                         |                               |                    |             |
|-------------------------|-------------------------------|--------------------|-------------|
| Test Location:          | N: 244702.59, E: 1700209.78   | Hammer Type:       | Kessler DCP |
| Surface Elevation:      | 1072 ft msl                   | Hammer Weight:     | 17.6 lb     |
| Testing Personnel:      | Travis, Kole                  | Drop Height:       | 22.6 in     |
| Surface Mat'l / Thick.: | Asphalt, 8 in/Agg. Base, 4 in | Output File Name:  | N/A         |
| Test Elevation:         | 1071 ft msl                   | Termination Depth: | 63.19 in    |

ADCP Summary

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR   |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|-------|
| 5            | 1.79                        | 45.00                         | 9.00                           | 9.00           | 24.9  |
| 4            | 4.68                        | 72.50                         | 18.13                          | 18.13          | 11.4  |
| 2            | 6.38                        | 42.50                         | 21.25                          | 21.25          | 7.7   |
| 4            | 8.67                        | 57.50                         | 14.38                          | 14.38          | 14.8  |
| 3            | 10.17                       | 37.50                         | 12.50                          | 12.50          | 17.3  |
| 5            | 12.66                       | 62.50                         | 12.50                          | 12.50          | 17.3  |
| 4            | 14.35                       | 42.50                         | 10.63                          | 10.63          | 20.7  |
| 6            | 16.55                       | 55.00                         | 9.17                           | 9.17           | 24.4  |
| 6            | 18.54                       | 50.00                         | 8.33                           | 8.33           | 27.2  |
| 7            | 20.53                       | 50.00                         | 7.14                           | 7.14           | 32.3  |
| 8            | 22.43                       | 47.50                         | 5.94                           | 5.94           | 39.7  |
| 9            | 24.32                       | 47.50                         | 5.28                           | 5.28           | 45.3  |
| 11           | 26.51                       | 55.00                         | 5.00                           | 5.00           | 48.1  |
| 10           | 28.41                       | 47.50                         | 4.75                           | 4.75           | 51.0  |
| 12           | 30.40                       | 50.00                         | 4.17                           | 4.17           | 59.0  |
| 13           | 32.39                       | 50.00                         | 3.85                           | 3.85           | 64.6  |
| 15           | 34.09                       | 42.50                         | 2.83                           | 2.83           | 91.0  |
| 18           | 36.38                       | 57.50                         | 3.19                           | 3.19           | 79.5  |
| 9            | 39.37                       | 75.00                         | 8.33                           | 8.33           | 27.2  |
| 8            | 41.27                       | 47.50                         | 5.94                           | 5.94           | 39.7  |
| 9            | 43.26                       | 50.00                         | 5.56                           | 5.56           | 42.8  |
| 11           | 45.45                       | 55.00                         | 5.00                           | 5.00           | 48.1  |
| 13           | 47.05                       | 40.00                         | 3.08                           | 3.08           | 82.9  |
| 14           | 49.04                       | 50.00                         | 3.57                           | 3.57           | 70.2  |
| 18           | 51.23                       | 55.00                         | 3.06                           | 3.06           | 83.6  |
| 20           | 53.23                       | 50.00                         | 2.50                           | 2.50           | 104.6 |
| 20           | 55.22                       | 50.00                         | 2.50                           | 2.50           | 104.6 |
| 19           | 57.21                       | 50.00                         | 2.63                           | 2.63           | 98.8  |
| 20           | 59.21                       | 50.00                         | 2.50                           | 2.50           | 104.6 |
| 22           | 61.20                       | 50.00                         | 2.27                           | 2.27           | 116.4 |
| 24           | 63.19                       | 50.00                         | 2.08                           | 2.08           | 128.3 |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |

Graphical Penetration Rate Plot



Notes: Pavement thickness estimated using measurements from adjacent borings.



6350 Presidential Gateway  
Columbus, Ohio 43231  
Telephone: (614) 823-4949  
Fax Number: (614) 823-4990

## Automated Dynamic Cone Penetrometer Summary (ASTM D6951)

PROJECT: UNI-739-6.06 FDR  
LOCATION: SR 739  
RII JOB No.: W-20-160 ODOT PID No.: 112878  
ADCP No.: D-004-0-20  
DATE TEST PERFORMED: 3/8/2021

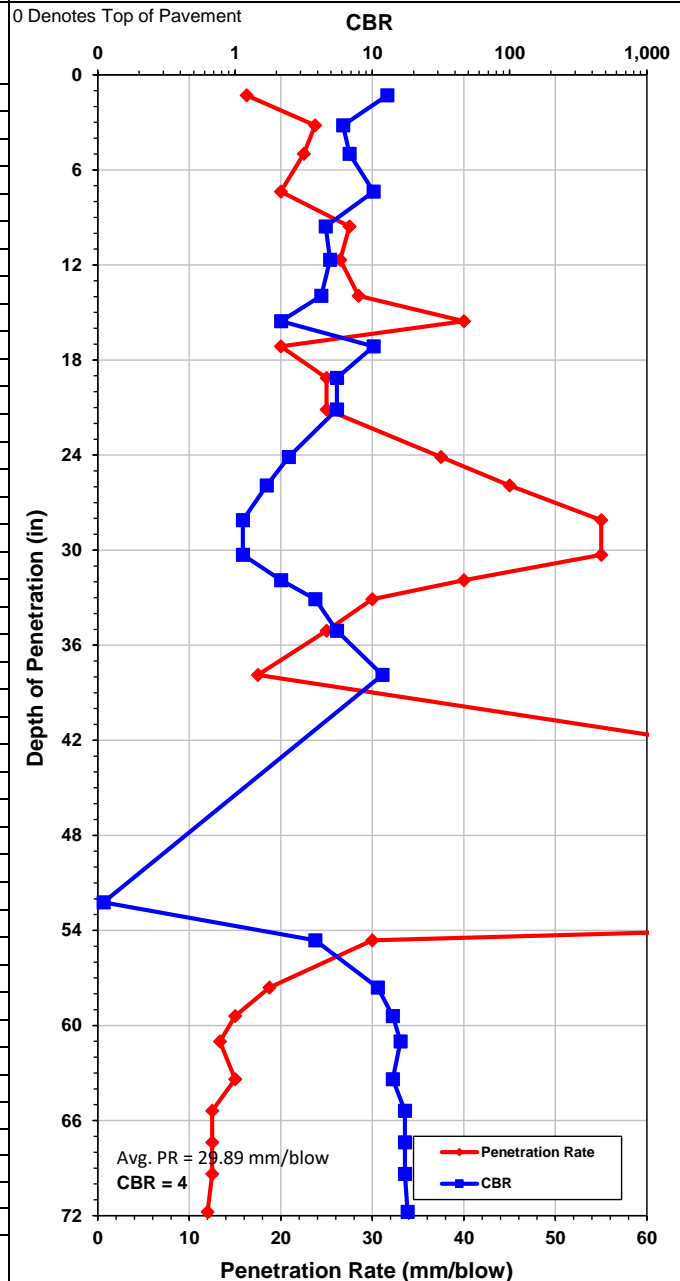
Test Location: N: 245093.64, E: 1700285.38  
Surface Elevation: 1061 ft msl  
Testing Personnel: Travis, Kole  
Surface Mat'l / Thick.: Asphalt, 9.25 in/Agg. Base, 3.25 in  
Test Elevation: 1059.96 ft msl

Hammer Type: Kessler DCP  
Hammer Weight: 17.6 lb  
Drop Height: 22.6 in  
Output File Name: N/A  
Termination Depth: 75.75 in

ADCP Summary

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR  |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|------|
| 2            | 1.30                        | 32.50                         | 16.25                          | 16.25          | 12.9 |
| 2            | 3.19                        | 47.50                         | 23.75                          | 23.75          | 6.1  |
| 2            | 4.98                        | 45.00                         | 22.50                          | 22.50          | 6.8  |
| 3            | 7.38                        | 60.00                         | 20.00                          | 20.00          | 10.2 |
| 2            | 9.57                        | 55.00                         | 27.50                          | 27.50          | 4.6  |
| 2            | 11.68                       | 53.00                         | 26.50                          | 26.50          | 4.9  |
| 2            | 13.95                       | 57.00                         | 28.50                          | 28.50          | 4.3  |
| 1            | 15.55                       | 40.00                         | 40.00                          | 40.00          | 2.2  |
| 2            | 17.14                       | 40.00                         | 20.00                          | 20.00          | 10.2 |
| 2            | 19.14                       | 50.00                         | 25.00                          | 25.00          | 5.5  |
| 2            | 21.13                       | 50.00                         | 25.00                          | 25.00          | 5.5  |
| 2            | 24.12                       | 75.00                         | 37.50                          | 37.50          | 2.5  |
| 1            | 25.92                       | 45.00                         | 45.00                          | 45.00          | 1.7  |
| 1            | 28.11                       | 55.00                         | 55.00                          | 55.00          | 1.1  |
| 1            | 30.30                       | 55.00                         | 55.00                          | 55.00          | 1.1  |
| 1            | 31.90                       | 40.00                         | 40.00                          | 40.00          | 2.2  |
| 1            | 33.09                       | 30.00                         | 30.00                          | 30.00          | 3.8  |
| 2            | 35.09                       | 50.00                         | 25.00                          | 25.00          | 5.5  |
| 4            | 37.88                       | 70.00                         | 17.50                          | 17.50          | 11.8 |
| 2            | 52.23                       | 360.00                        | 180.00                         | 180.00         | 0.1  |
| 2            | 54.62                       | 60.00                         | 30.00                          | 30.00          | 3.8  |
| 4            | 57.61                       | 75.00                         | 18.75                          | 18.75          | 11.0 |
| 3            | 59.41                       | 45.00                         | 15.00                          | 15.00          | 14.1 |
| 3            | 61.00                       | 40.00                         | 13.33                          | 13.33          | 16.0 |
| 4            | 63.39                       | 60.00                         | 15.00                          | 15.00          | 14.1 |
| 4            | 65.39                       | 50.00                         | 12.50                          | 12.50          | 17.3 |
| 4            | 67.38                       | 50.00                         | 12.50                          | 12.50          | 17.3 |
| 4            | 69.37                       | 50.00                         | 12.50                          | 12.50          | 17.3 |
| 5            | 71.77                       | 60.00                         | 12.00                          | 12.00          | 18.1 |
| 4            | 73.76                       | 50.00                         | 12.50                          | 12.50          | 17.3 |
| 4            | 75.75                       | 50.00                         | 12.50                          | 12.50          | 17.3 |

Graphical Penetration Rate Plot



Notes: Pavement thickness measured using pavement core obtained at this location.



6350 Presidential Gateway  
Columbus, Ohio 43231  
Telephone: (614) 823-4949  
Fax Number: (614) 823-4990

### Automated Dynamic Cone Penetrometer Summary (ASTM D6951)

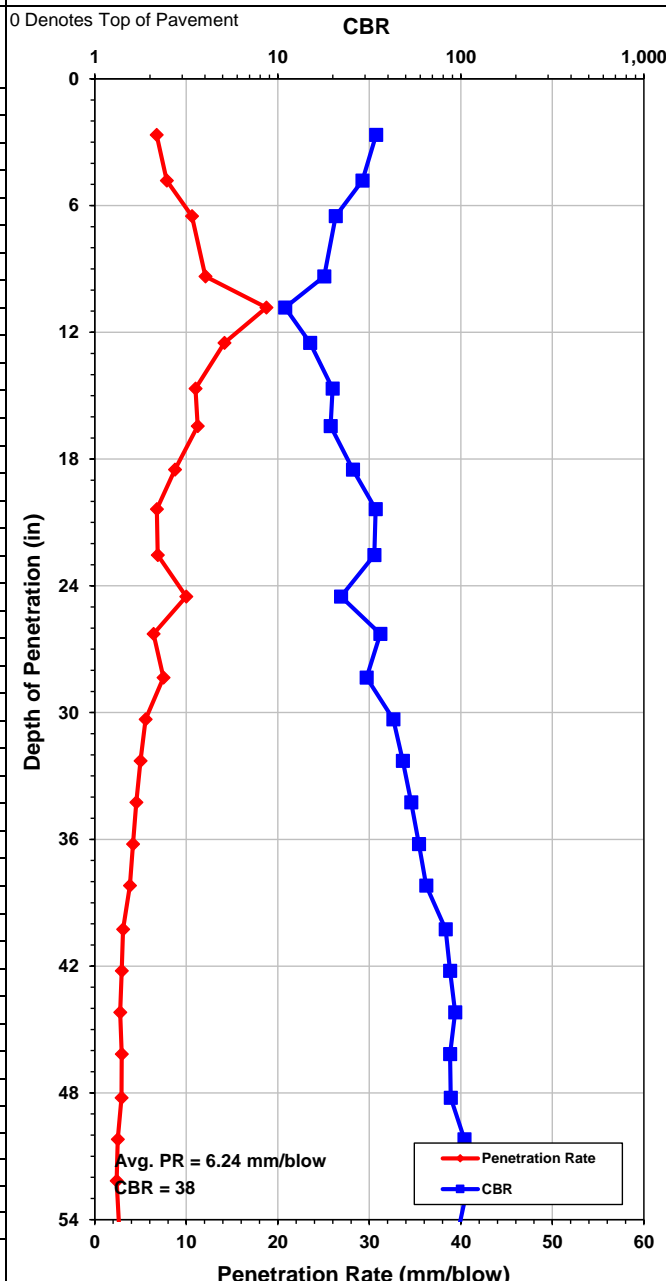
|                     |                  |              |        |
|---------------------|------------------|--------------|--------|
| PROJECT             | UNI-739-6.06 FDR |              |        |
| LOCATION            | SR 739           |              |        |
| RII JOB No.         | W-20-160         | ODOT PID No. | 112878 |
| ADCP No.            | D-007-0-20       |              |        |
| DATE TEST PERFORMED | 3/8/2021         |              |        |

|                         |                                  |                    |             |
|-------------------------|----------------------------------|--------------------|-------------|
| Test Location:          | N: 246259.96, E: 1700565.6       | Hammer Type:       | Kessler DCP |
| Surface Elevation:      | 1045 ft msl                      | Hammer Weight:     | 17.6 lb     |
| Testing Personnel:      | Barry Scheiderer                 | Drop Height:       | 22.6 in     |
| Surface Mat'l / Thick.: | Asphalt, 8.25 in/Agg. Base, 4 in | Output File Name:  | N/A         |
| Test Elevation:         | 1043.98 ft msl                   | Termination Depth: | 62.01 in    |

ADCP Summary

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR   |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|-------|
| 10           | 2.66                        | 67.50                         | 6.75                           | 6.75           | 34.4  |
| 7            | 4.82                        | 55.00                         | 7.86                           | 7.86           | 29.0  |
| 4            | 6.50                        | 42.50                         | 10.63                          | 10.63          | 20.7  |
| 6            | 9.35                        | 72.50                         | 12.08                          | 12.08          | 17.9  |
| 2            | 10.83                       | 37.50                         | 18.75                          | 18.75          | 11.0  |
| 3            | 12.50                       | 42.50                         | 14.17                          | 14.17          | 15.0  |
| 5            | 14.67                       | 55.00                         | 11.00                          | 11.00          | 19.9  |
| 4            | 16.44                       | 45.00                         | 11.25                          | 11.25          | 19.4  |
| 6            | 18.50                       | 52.50                         | 8.75                           | 8.75           | 25.7  |
| 7            | 20.37                       | 47.50                         | 6.79                           | 6.79           | 34.2  |
| 8            | 22.54                       | 55.00                         | 6.88                           | 6.88           | 33.7  |
| 5            | 24.51                       | 50.00                         | 10.00                          | 10.00          | 22.2  |
| 7            | 26.28                       | 45.00                         | 6.43                           | 6.43           | 36.3  |
| 7            | 28.35                       | 52.50                         | 7.50                           | 7.50           | 30.6  |
| 9            | 30.31                       | 50.00                         | 5.56                           | 5.56           | 42.8  |
| 10           | 32.28                       | 50.00                         | 5.00                           | 5.00           | 48.1  |
| 11           | 34.25                       | 50.00                         | 4.55                           | 4.55           | 53.6  |
| 12           | 36.22                       | 50.00                         | 4.17                           | 4.17           | 59.0  |
| 13           | 38.19                       | 50.00                         | 3.85                           | 3.85           | 64.6  |
| 17           | 40.26                       | 52.50                         | 3.09                           | 3.09           | 82.6  |
| 17           | 42.22                       | 50.00                         | 2.94                           | 2.94           | 87.2  |
| 18           | 44.19                       | 50.00                         | 2.78                           | 2.78           | 93.0  |
| 17           | 46.16                       | 50.00                         | 2.94                           | 2.94           | 87.2  |
| 18           | 48.23                       | 52.50                         | 2.92                           | 2.92           | 88.0  |
| 20           | 50.20                       | 50.00                         | 2.50                           | 2.50           | 104.6 |
| 21           | 52.17                       | 50.00                         | 2.38                           | 2.38           | 110.5 |
| 19           | 54.13                       | 50.00                         | 2.63                           | 2.63           | 98.8  |
| 20           | 56.10                       | 50.00                         | 2.50                           | 2.50           | 104.6 |
| 20           | 58.07                       | 50.00                         | 2.50                           | 2.50           | 104.6 |
| 22           | 60.04                       | 50.00                         | 2.27                           | 2.27           | 116.4 |
| 23           | 62.01                       | 50.00                         | 2.17                           | 2.17           | 122.4 |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |

Graphical Penetration Rate Plot



Notes: Pavement thickness estimated using measurements from adjacent borings.



6350 Presidential Gateway  
 Columbus, Ohio 43231  
 Telephone: (614) 823-4949  
 Fax Number: (614) 823-4990

### Automated Dynamic Cone Penetrometer Summary (ASTM D6951)

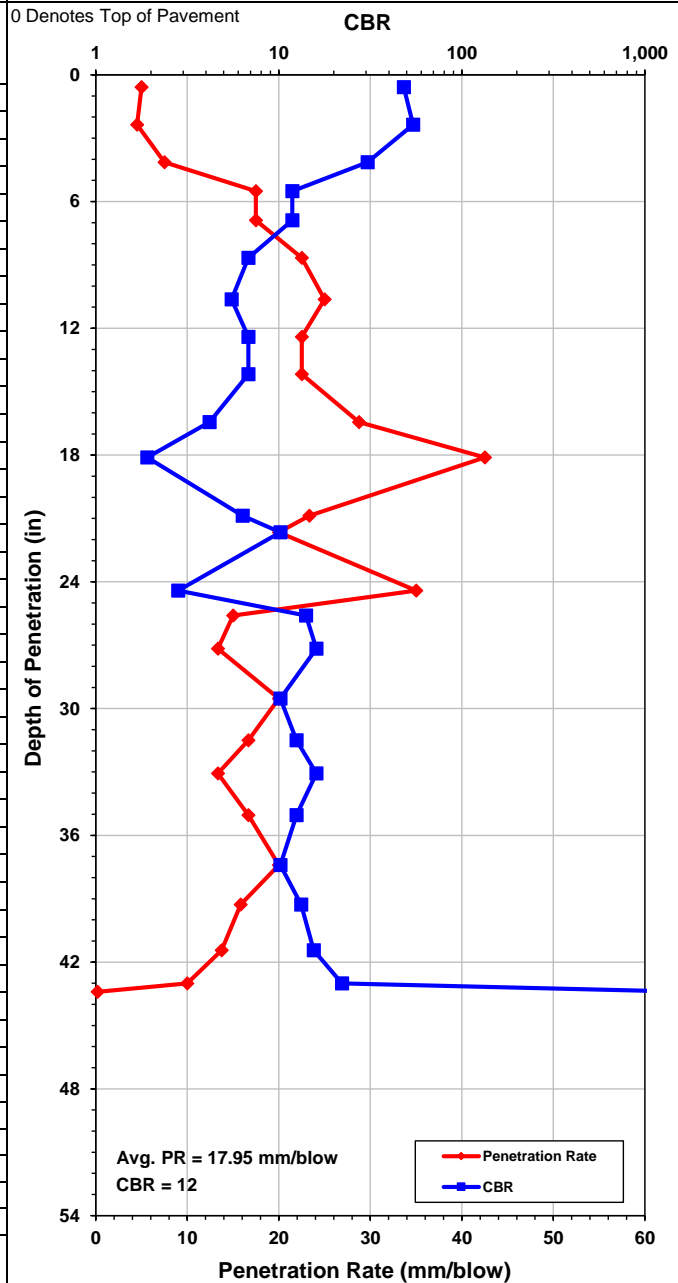
PROJECT: UNI-739-6.06 FDR  
 LOCATION: SR 739  
 RII JOB No.: W-20-160 ODOT PID No.: 112878  
 ADCP No.: D-008-0-20  
 DATE TEST PERFORMED: 3/8/2021

Test Location: N: 246653.77, E: 1700645.49  
 Surface Elevation: 1042 ft msl  
 Testing Personnel: Barry Scheiderer  
 Surface Mat'l / Thick.: Asphalt, 11 in/Agg. Base, 7 in  
 Test Elevation: 1040.5 ft msl  
 Hammer Type: Kessler DCP  
 Hammer Weight: 17.6 lb  
 Drop Height: 22.6 in  
 Output File Name: N/A  
 Termination Depth: 43.41 in

#### ADCP Summary

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR    |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|--------|
| 3            | 0.59                        | 15.00                         | 5.00                           | 5.00           | 48.1   |
| 10           | 2.36                        | 45.00                         | 4.50                           | 4.50           | 54.2   |
| 6            | 4.13                        | 45.00                         | 7.50                           | 7.50           | 30.6   |
| 2            | 5.51                        | 35.00                         | 17.50                          | 17.50          | 11.8   |
| 2            | 6.89                        | 35.00                         | 17.50                          | 17.50          | 11.8   |
| 2            | 8.66                        | 45.00                         | 22.50                          | 22.50          | 6.8    |
| 2            | 10.63                       | 50.00                         | 25.00                          | 25.00          | 5.5    |
| 2            | 12.40                       | 45.00                         | 22.50                          | 22.50          | 6.8    |
| 2            | 14.17                       | 45.00                         | 22.50                          | 22.50          | 6.8    |
| 2            | 16.44                       | 57.50                         | 28.75                          | 28.75          | 4.2    |
| 1            | 18.11                       | 42.50                         | 42.50                          | 42.50          | 1.9    |
| 3            | 20.87                       | 70.00                         | 23.33                          | 23.33          | 6.3    |
| 1            | 21.65                       | 20.00                         | 20.00                          | 20.00          | 10.2   |
| 2            | 24.41                       | 70.00                         | 35.00                          | 35.00          | 2.8    |
| 2            | 25.59                       | 30.00                         | 15.00                          | 15.00          | 14.1   |
| 3            | 27.17                       | 40.00                         | 13.33                          | 13.33          | 16.0   |
| 3            | 29.53                       | 60.00                         | 20.00                          | 20.00          | 10.2   |
| 3            | 31.50                       | 50.00                         | 16.67                          | 16.67          | 12.5   |
| 3            | 33.07                       | 40.00                         | 13.33                          | 13.33          | 16.0   |
| 3            | 35.04                       | 50.00                         | 16.67                          | 16.67          | 12.5   |
| 3            | 37.40                       | 60.00                         | 20.00                          | 20.00          | 10.2   |
| 3            | 39.27                       | 47.50                         | 15.83                          | 15.83          | 13.2   |
| 4            | 41.44                       | 55.00                         | 13.75                          | 13.75          | 15.5   |
| 4            | 43.01                       | 40.00                         | 10.00                          | 10.00          | 22.2   |
| 50           | 43.41                       | 10.00                         | 0.20                           | 0.20           | 1771.0 |

#### Graphical Penetration Rate Plot



Notes: Pavement thickness estimated using measurements from adjacent borings.



6350 Presidential Gateway  
 Columbus, Ohio 43231  
 Telephone: (614) 823-4949  
 Fax Number: (614) 823-4990

### Automated Dynamic Cone Penetrometer Summary (ASTM D6951)

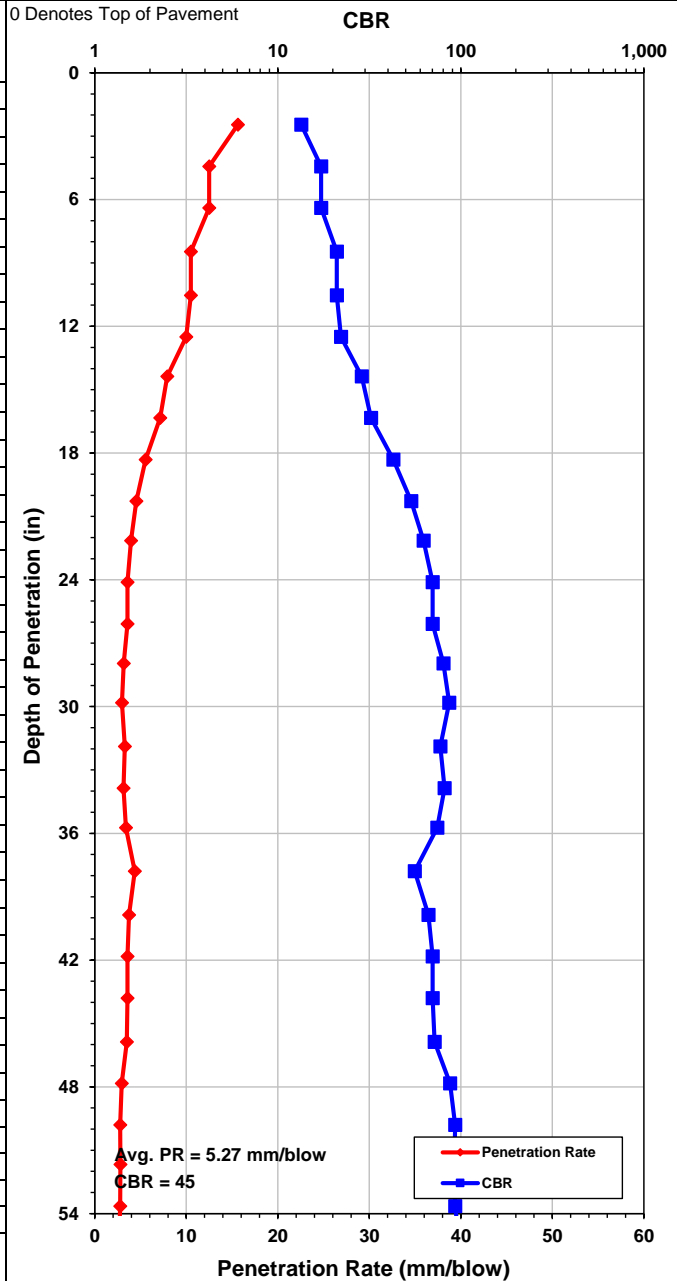
PROJECT: UNI-739-6.06 FDR  
 LOCATION: SR 739  
 RII JOB No.: W-20-160 ODOT PID No.: 112878  
 ADCP No.: D-011-0-20  
 DATE TEST PERFORMED: 3/8/2021

Test Location: N: 247823.93, E: 1700926.05  
 Surface Elevation: 1042 ft msl  
 Testing Personnel: Barry Scheiderer  
 Surface Mat'l / Thick.: Asphalt, 8.25 in/Agg. Base, 4 in  
 Test Elevation: 1040.98 ft msl  
 Hammer Type: Kessler DCP  
 Hammer Weight: 17.6 lb  
 Drop Height: 22.6 in  
 Output File Name: N/A  
 Termination Depth: 61.42 in

#### ADCP Summary

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR   |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|-------|
| 4            | 2.46                        | 62.50                         | 15.63                          | 15.63          | 13.4  |
| 4            | 4.43                        | 50.00                         | 12.50                          | 12.50          | 17.3  |
| 4            | 6.40                        | 50.00                         | 12.50                          | 12.50          | 17.3  |
| 5            | 8.46                        | 52.50                         | 10.50                          | 10.50          | 21.0  |
| 5            | 10.53                       | 52.50                         | 10.50                          | 10.50          | 21.0  |
| 5            | 12.50                       | 50.00                         | 10.00                          | 10.00          | 22.2  |
| 6            | 14.37                       | 47.50                         | 7.92                           | 7.92           | 28.8  |
| 7            | 16.34                       | 50.00                         | 7.14                           | 7.14           | 32.3  |
| 9            | 18.31                       | 50.00                         | 5.56                           | 5.56           | 42.8  |
| 11           | 20.28                       | 50.00                         | 4.55                           | 4.55           | 53.6  |
| 12           | 22.15                       | 47.50                         | 3.96                           | 3.96           | 62.5  |
| 14           | 24.11                       | 50.00                         | 3.57                           | 3.57           | 70.2  |
| 14           | 26.08                       | 50.00                         | 3.57                           | 3.57           | 70.2  |
| 15           | 27.95                       | 47.50                         | 3.17                           | 3.17           | 80.3  |
| 16           | 29.82                       | 47.50                         | 2.97                           | 2.97           | 86.3  |
| 16           | 31.89                       | 52.50                         | 3.28                           | 3.28           | 77.2  |
| 16           | 33.86                       | 50.00                         | 3.13                           | 3.13           | 81.5  |
| 14           | 35.73                       | 47.50                         | 3.39                           | 3.39           | 74.3  |
| 12           | 37.80                       | 52.50                         | 4.38                           | 4.38           | 55.9  |
| 14           | 39.86                       | 52.50                         | 3.75                           | 3.75           | 66.4  |
| 14           | 41.83                       | 50.00                         | 3.57                           | 3.57           | 70.2  |
| 14           | 43.80                       | 50.00                         | 3.57                           | 3.57           | 70.2  |
| 15           | 45.87                       | 52.50                         | 3.50                           | 3.50           | 71.8  |
| 17           | 47.83                       | 50.00                         | 2.94                           | 2.94           | 87.2  |
| 18           | 49.80                       | 50.00                         | 2.78                           | 2.78           | 93.0  |
| 17           | 51.67                       | 47.50                         | 2.79                           | 2.79           | 92.4  |
| 18           | 53.64                       | 50.00                         | 2.78                           | 2.78           | 93.0  |
| 19           | 55.61                       | 50.00                         | 2.63                           | 2.63           | 98.8  |
| 21           | 57.58                       | 50.00                         | 2.38                           | 2.38           | 110.5 |
| 21           | 59.55                       | 50.00                         | 2.38                           | 2.38           | 110.5 |
| 24           | 61.42                       | 47.50                         | 1.98                           | 1.98           | 135.9 |

#### Graphical Penetration Rate Plot



Notes: Pavement thickness estimated using measurements from adjacent borings.



6350 Presidential Gateway  
Columbus, Ohio 43231  
Telephone: (614) 823-4949  
Fax Number: (614) 823-4990

### Automated Dynamic Cone Penetrometer Summary (ASTM D6951)

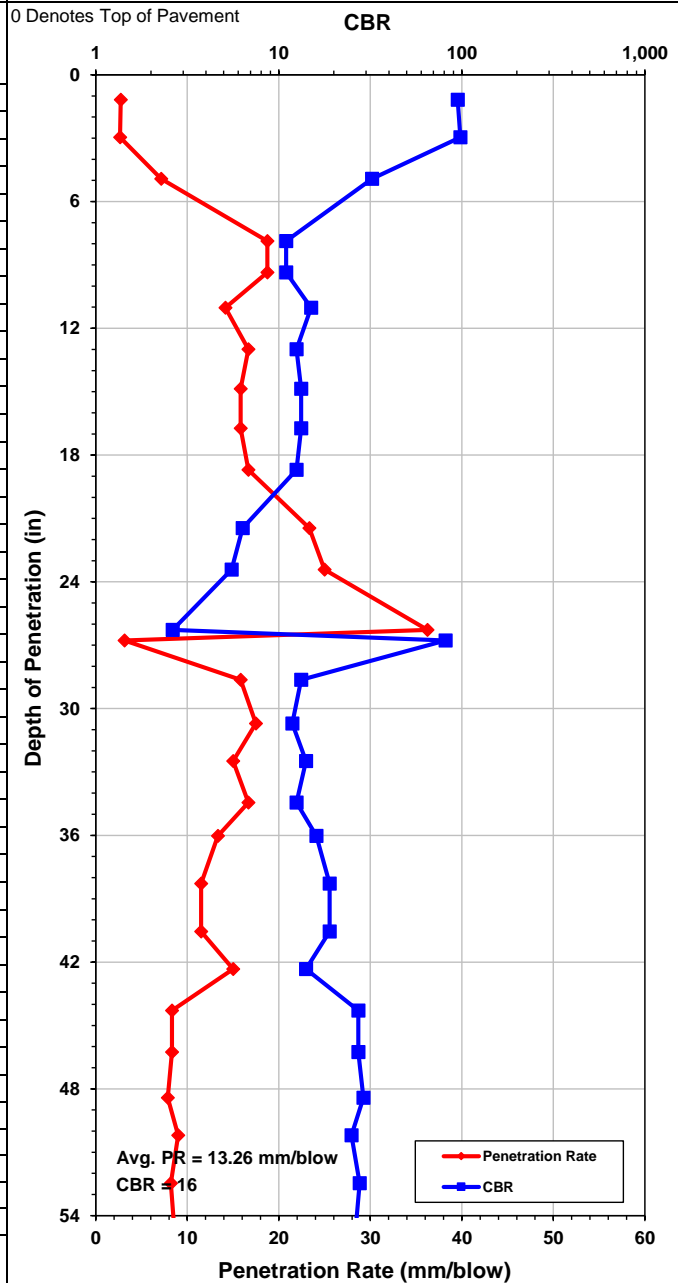
PROJECT: UNI-739-6.06 FDR  
LOCATION: SR 739  
RII JOB No.: W-20-160 ODOT PID No.: 112878  
ADCP No.: D-012-0-20  
DATE TEST PERFORMED: 3/8/2021

Test Location: N: 248219.32, E: 1701008.69  
Surface Elevation: 1049 ft msl  
Testing Personnel: Barry Scheiderer  
Surface Mat'l / Thick.: Asphalt, 11 in/Agg. Base, 7 in  
Test Elevation: 1047.5 ft msl  
Hammer Type: Kessler DCP  
Hammer Weight: 17.6 lb  
Drop Height: 22.6 in  
Output File Name: N/A  
Termination Depth: 60.63 in

#### ADCP Summary

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR  |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|------|
| 11           | 1.18                        | 30.00                         | 2.73                           | 2.73           | 94.9 |
| 17           | 2.95                        | 45.00                         | 2.65                           | 2.65           | 98.1 |
| 7            | 4.92                        | 50.00                         | 7.14                           | 7.14           | 32.3 |
| 4            | 7.87                        | 75.00                         | 18.75                          | 18.75          | 11.0 |
| 2            | 9.35                        | 37.50                         | 18.75                          | 18.75          | 11.0 |
| 3            | 11.02                       | 42.50                         | 14.17                          | 14.17          | 15.0 |
| 3            | 12.99                       | 50.00                         | 16.67                          | 16.67          | 12.5 |
| 3            | 14.86                       | 47.50                         | 15.83                          | 15.83          | 13.2 |
| 3            | 16.73                       | 47.50                         | 15.83                          | 15.83          | 13.2 |
| 3            | 18.70                       | 50.00                         | 16.67                          | 16.67          | 12.5 |
| 3            | 21.46                       | 70.00                         | 23.33                          | 23.33          | 6.3  |
| 2            | 23.43                       | 50.00                         | 25.00                          | 25.00          | 5.5  |
| 2            | 26.28                       | 72.50                         | 36.25                          | 36.25          | 2.6  |
| 4            | 26.77                       | 12.50                         | 3.13                           | 3.13           | 81.5 |
| 3            | 28.64                       | 47.50                         | 15.83                          | 15.83          | 13.2 |
| 3            | 30.71                       | 52.50                         | 17.50                          | 17.50          | 11.8 |
| 3            | 32.48                       | 45.00                         | 15.00                          | 15.00          | 14.1 |
| 3            | 34.45                       | 50.00                         | 16.67                          | 16.67          | 12.5 |
| 3            | 36.02                       | 40.00                         | 13.33                          | 13.33          | 16.0 |
| 5            | 38.29                       | 57.50                         | 11.50                          | 11.50          | 18.9 |
| 5            | 40.55                       | 57.50                         | 11.50                          | 11.50          | 18.9 |
| 3            | 42.32                       | 45.00                         | 15.00                          | 15.00          | 14.1 |
| 6            | 44.29                       | 50.00                         | 8.33                           | 8.33           | 27.2 |
| 6            | 46.26                       | 50.00                         | 8.33                           | 8.33           | 27.2 |
| 7            | 48.43                       | 55.00                         | 7.86                           | 7.86           | 29.0 |
| 5            | 50.20                       | 45.00                         | 9.00                           | 9.00           | 24.9 |
| 7            | 52.46                       | 57.50                         | 8.21                           | 8.21           | 27.6 |
| 5            | 54.13                       | 42.50                         | 8.50                           | 8.50           | 26.6 |
| 7            | 56.40                       | 57.50                         | 8.21                           | 8.21           | 27.6 |
| 5            | 58.27                       | 47.50                         | 9.50                           | 9.50           | 23.5 |
| 6            | 60.63                       | 60.00                         | 10.00                          | 10.00          | 22.2 |

#### Graphical Penetration Rate Plot



Notes: Pavement thickness estimated using measurements from adjacent borings.



6350 Presidential Gateway  
 Columbus, Ohio 43231  
 Telephone: (614) 823-4949  
 Fax Number: (614) 823-4990

### Automated Dynamic Cone Penetrometer Summary (ASTM D6951)

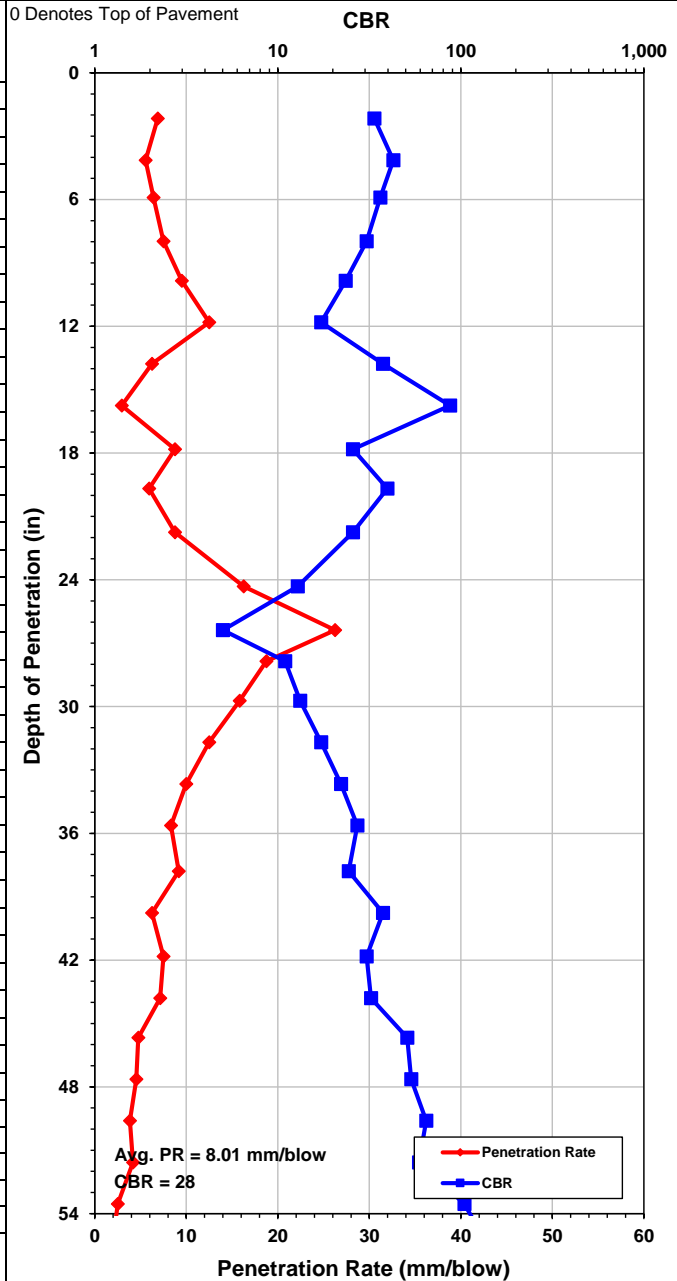
PROJECT: UNI-739-6.06 FDR  
 LOCATION: SR 739  
 RII JOB No.: W-20-160 ODOT PID No.: 112878  
 ADCP No.: D-015-0-20  
 DATE TEST PERFORMED: 3/8/2021

Test Location: N: 249364.99, E: 1701374.36  
 Surface Elevation: 1074 ft msl  
 Testing Personnel: Barry Scheiderer  
 Surface Mat'l / Thick.: Asphalt, 8 in/Agg. Base, 4 in  
 Test Elevation: 1073 ft msl  
 Hammer Type: Kessler DCP  
 Hammer Weight: 17.6 lb  
 Drop Height: 22.6 in  
 Output File Name: N/A  
 Termination Depth: 61.42 in

#### ADCP Summary

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR   |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|-------|
| 8            | 2.17                        | 55.00                         | 6.88                           | 6.88           | 33.7  |
| 9            | 4.13                        | 50.00                         | 5.56                           | 5.56           | 42.8  |
| 7            | 5.91                        | 45.00                         | 6.43                           | 6.43           | 36.3  |
| 7            | 7.97                        | 52.50                         | 7.50                           | 7.50           | 30.6  |
| 5            | 9.84                        | 47.50                         | 9.50                           | 9.50           | 23.5  |
| 4            | 11.81                       | 50.00                         | 12.50                          | 12.50          | 17.3  |
| 8            | 13.78                       | 50.00                         | 6.25                           | 6.25           | 37.5  |
| 17           | 15.75                       | 50.00                         | 2.94                           | 2.94           | 87.2  |
| 6            | 17.81                       | 52.50                         | 8.75                           | 8.75           | 25.7  |
| 8            | 19.69                       | 47.50                         | 5.94                           | 5.94           | 39.7  |
| 6            | 21.75                       | 52.50                         | 8.75                           | 8.75           | 25.7  |
| 4            | 24.31                       | 65.00                         | 16.25                          | 16.25          | 12.9  |
| 2            | 26.38                       | 52.50                         | 26.25                          | 26.25          | 5.0   |
| 2            | 27.85                       | 37.50                         | 18.75                          | 18.75          | 11.0  |
| 3            | 29.72                       | 47.50                         | 15.83                          | 15.83          | 13.2  |
| 4            | 31.69                       | 50.00                         | 12.50                          | 12.50          | 17.3  |
| 5            | 33.66                       | 50.00                         | 10.00                          | 10.00          | 22.2  |
| 6            | 35.63                       | 50.00                         | 8.33                           | 8.33           | 27.2  |
| 6            | 37.80                       | 55.00                         | 9.17                           | 9.17           | 24.4  |
| 8            | 39.76                       | 50.00                         | 6.25                           | 6.25           | 37.5  |
| 7            | 41.83                       | 52.50                         | 7.50                           | 7.50           | 30.6  |
| 7            | 43.80                       | 50.00                         | 7.14                           | 7.14           | 32.3  |
| 10           | 45.67                       | 47.50                         | 4.75                           | 4.75           | 51.0  |
| 11           | 47.64                       | 50.00                         | 4.55                           | 4.55           | 53.6  |
| 13           | 49.61                       | 50.00                         | 3.85                           | 3.85           | 64.6  |
| 12           | 51.57                       | 50.00                         | 4.17                           | 4.17           | 59.0  |
| 20           | 53.54                       | 50.00                         | 2.50                           | 2.50           | 104.6 |
| 26           | 55.51                       | 50.00                         | 1.92                           | 1.92           | 140.4 |
| 18           | 57.48                       | 50.00                         | 2.78                           | 2.78           | 93.0  |
| 19           | 59.45                       | 50.00                         | 2.63                           | 2.63           | 98.8  |
| 22           | 61.42                       | 50.00                         | 2.27                           | 2.27           | 116.4 |

#### Graphical Penetration Rate Plot



Notes: Pavement thickness estimated using measurements from adjacent borings.





6350 Presidential Gateway  
 Columbus, Ohio 43231  
 Telephone: (614) 823-4949  
 Fax Number: (614) 823-4990

### Automated Dynamic Cone Penetrometer Summary (ASTM D6951)

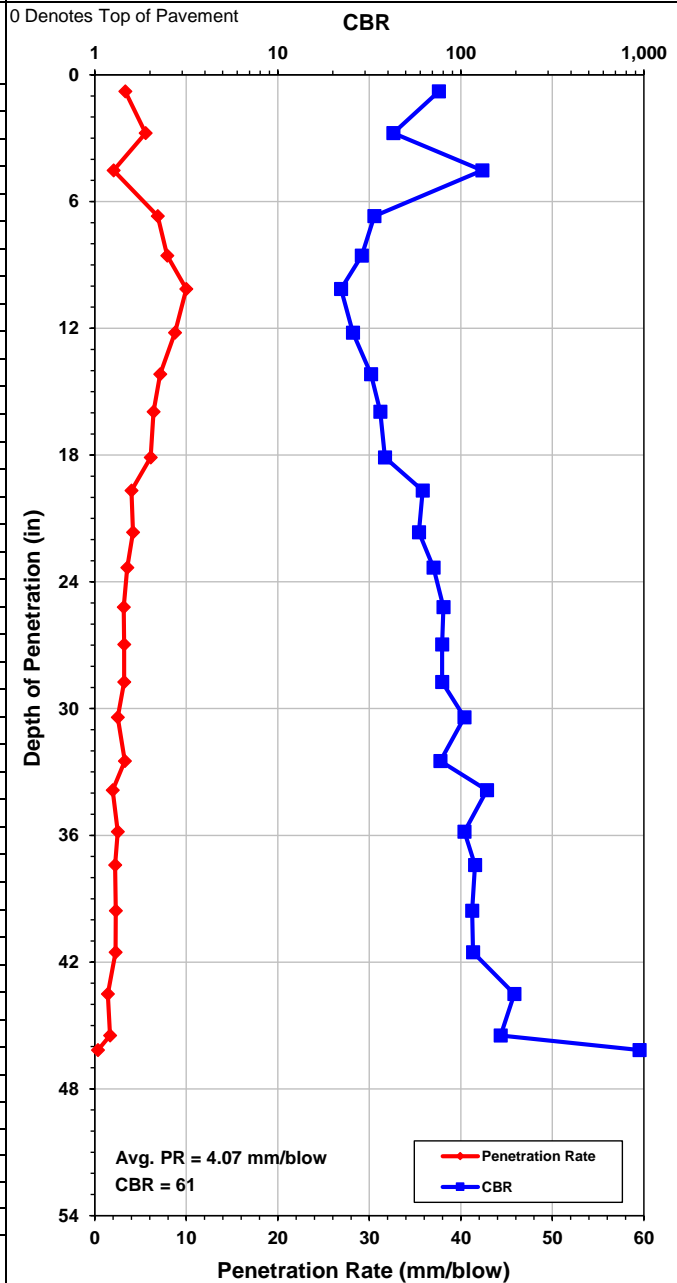
PROJECT: UNI-739-6.06 FDR  
 LOCATION: SR 739  
 RII JOB No.: W-20-160 ODOT PID No.: 112878  
 ADCP No.: D-016-0-20  
 DATE TEST PERFORMED: 3/8/2021

Test Location: N: 249744.21, E: 1701508.08  
 Surface Elevation: 1073 ft msl  
 Testing Personnel: Barry Scheiderer  
 Surface Mat'l / Thick.: Asphalt, 11.5 in/Agg. Base, 6.5 in  
 Test Elevation: 1071.5 ft msl  
 Hammer Type: Kessler DCP  
 Hammer Weight: 17.6 lb  
 Drop Height: 22.6 in  
 Output File Name: N/A  
 Termination Depth: 46.16 in

ADCP Summary

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR   |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|-------|
| 6            | 0.79                        | 20.00                         | 3.33                           | 3.33           | 75.8  |
| 9            | 2.76                        | 50.00                         | 5.56                           | 5.56           | 42.8  |
| 22           | 4.53                        | 45.00                         | 2.05                           | 2.05           | 131.0 |
| 8            | 6.69                        | 55.00                         | 6.88                           | 6.88           | 33.7  |
| 6            | 8.56                        | 47.50                         | 7.92                           | 7.92           | 28.8  |
| 4            | 10.14                       | 40.00                         | 10.00                          | 10.00          | 22.2  |
| 6            | 12.20                       | 52.50                         | 8.75                           | 8.75           | 25.7  |
| 7            | 14.17                       | 50.00                         | 7.14                           | 7.14           | 32.3  |
| 7            | 15.94                       | 45.00                         | 6.43                           | 6.43           | 36.3  |
| 9            | 18.11                       | 55.00                         | 6.11                           | 6.11           | 38.5  |
| 10           | 19.69                       | 40.00                         | 4.00                           | 4.00           | 61.8  |
| 12           | 21.65                       | 50.00                         | 4.17                           | 4.17           | 59.0  |
| 12           | 23.33                       | 42.50                         | 3.54                           | 3.54           | 70.8  |
| 15           | 25.20                       | 47.50                         | 3.17                           | 3.17           | 80.3  |
| 14           | 26.97                       | 45.00                         | 3.21                           | 3.21           | 79.0  |
| 14           | 28.74                       | 45.00                         | 3.21                           | 3.21           | 79.0  |
| 17           | 30.41                       | 42.50                         | 2.50                           | 2.50           | 104.6 |
| 16           | 32.48                       | 52.50                         | 3.28                           | 3.28           | 77.2  |
| 18           | 33.86                       | 35.00                         | 1.94                           | 1.94           | 138.7 |
| 20           | 35.83                       | 50.00                         | 2.50                           | 2.50           | 104.6 |
| 18           | 37.40                       | 40.00                         | 2.22                           | 2.22           | 119.4 |
| 24           | 39.57                       | 55.00                         | 2.29                           | 2.29           | 115.3 |
| 22           | 41.54                       | 50.00                         | 2.27                           | 2.27           | 116.4 |
| 35           | 43.50                       | 50.00                         | 1.43                           | 1.43           | 195.8 |
| 30           | 45.47                       | 50.00                         | 1.67                           | 1.67           | 164.8 |
| 50           | 46.16                       | 17.50                         | 0.35                           | 0.35           | 946.3 |

Graphical Penetration Rate Plot



Notes: Pavement thickness estimated using measurements from adjacent borings.



6350 Presidential Gateway  
 Columbus, Ohio 43231  
 Telephone: (614) 823-4949  
 Fax Number: (614) 823-4990

### Automated Dynamic Cone Penetrometer Summary (ASTM D6951)

|                     |                  |              |        |
|---------------------|------------------|--------------|--------|
| PROJECT             | UNI-739-6.06 FDR |              |        |
| LOCATION            | SR 739           |              |        |
| RII JOB No.         | W-20-160         | ODOT PID No. | 112878 |
| ADCP No.            | D-019-0-20       |              |        |
| DATE TEST PERFORMED | 3/8/2021         |              |        |

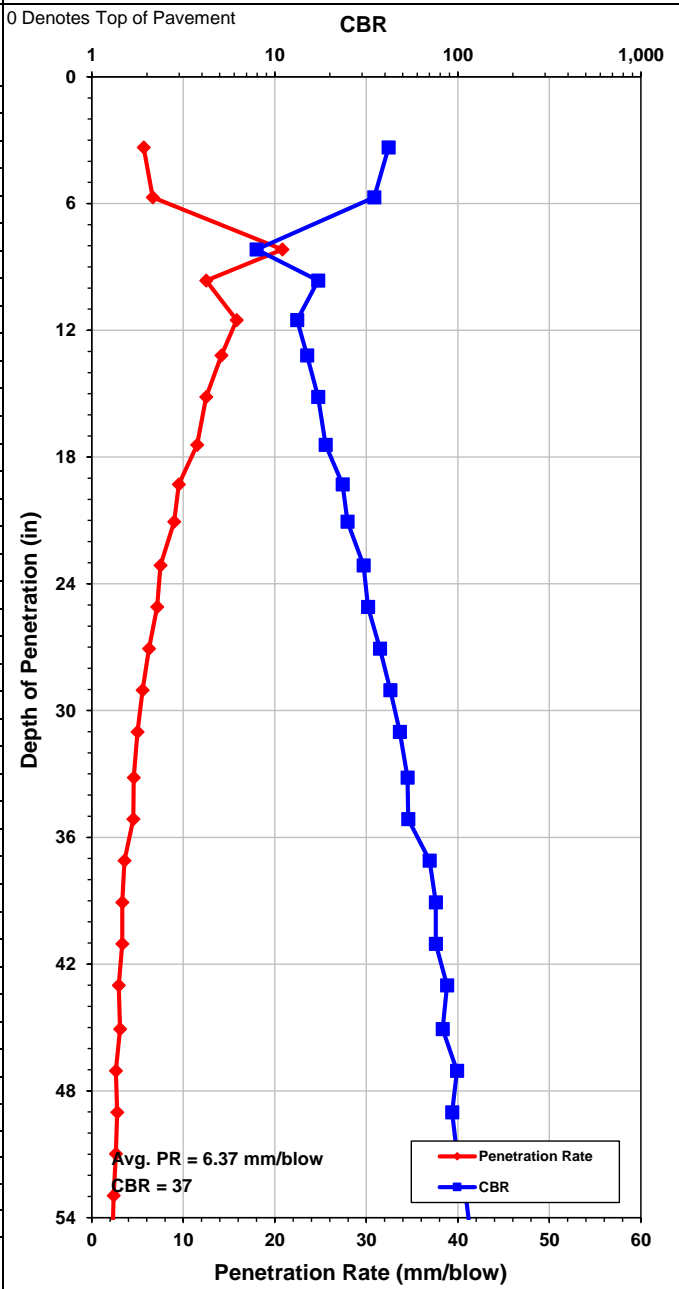
Test Location: N: 250867.58, E: 1701948.56  
 Surface Elevation: 1084 ft msl  
 Testing Personnel: Barry Scheiderer  
 Surface Mat'l / Thick.: Asphalt, 9.5 in/Agg. Base, 4 in  
 Test Elevation: 1082.88 ft msl

Hammer Type: Kessler DCP  
 Hammer Weight: 17.6 lb  
 Drop Height: 22.6 in  
 Output File Name: N/A  
 Termination Depth: 62.8 in

ADCP Summary

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR   |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|-------|
| 15           | 3.35                        | 85.00                         | 5.67                           | 5.67           | 41.8  |
| 9            | 5.71                        | 60.00                         | 6.67                           | 6.67           | 34.9  |
| 3            | 8.17                        | 62.50                         | 20.83                          | 20.83          | 8.0   |
| 3            | 9.65                        | 37.50                         | 12.50                          | 12.50          | 17.3  |
| 3            | 11.52                       | 47.50                         | 15.83                          | 15.83          | 13.2  |
| 3            | 13.19                       | 42.50                         | 14.17                          | 14.17          | 15.0  |
| 4            | 15.16                       | 50.00                         | 12.50                          | 12.50          | 17.3  |
| 5            | 17.42                       | 57.50                         | 11.50                          | 11.50          | 18.9  |
| 5            | 19.29                       | 47.50                         | 9.50                           | 9.50           | 23.5  |
| 5            | 21.06                       | 45.00                         | 9.00                           | 9.00           | 24.9  |
| 7            | 23.13                       | 52.50                         | 7.50                           | 7.50           | 30.6  |
| 7            | 25.10                       | 50.00                         | 7.14                           | 7.14           | 32.3  |
| 8            | 27.07                       | 50.00                         | 6.25                           | 6.25           | 37.5  |
| 9            | 29.04                       | 50.00                         | 5.56                           | 5.56           | 42.8  |
| 10           | 31.00                       | 50.00                         | 5.00                           | 5.00           | 48.1  |
| 12           | 33.17                       | 55.00                         | 4.58                           | 4.58           | 53.1  |
| 11           | 35.14                       | 50.00                         | 4.55                           | 4.55           | 53.6  |
| 14           | 37.11                       | 50.00                         | 3.57                           | 3.57           | 70.2  |
| 15           | 39.07                       | 50.00                         | 3.33                           | 3.33           | 75.8  |
| 15           | 41.04                       | 50.00                         | 3.33                           | 3.33           | 75.8  |
| 17           | 43.01                       | 50.00                         | 2.94                           | 2.94           | 87.2  |
| 17           | 45.08                       | 52.50                         | 3.09                           | 3.09           | 82.6  |
| 19           | 47.05                       | 50.00                         | 2.63                           | 2.63           | 98.8  |
| 18           | 49.02                       | 50.00                         | 2.78                           | 2.78           | 93.0  |
| 19           | 50.98                       | 50.00                         | 2.63                           | 2.63           | 98.8  |
| 21           | 52.95                       | 50.00                         | 2.38                           | 2.38           | 110.5 |
| 21           | 54.82                       | 47.50                         | 2.26                           | 2.26           | 117.1 |
| 21           | 56.89                       | 52.50                         | 2.50                           | 2.50           | 104.6 |
| 20           | 58.86                       | 50.00                         | 2.50                           | 2.50           | 104.6 |
| 20           | 60.83                       | 50.00                         | 2.50                           | 2.50           | 104.6 |
| 23           | 62.80                       | 50.00                         | 2.17                           | 2.17           | 122.4 |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
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|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |
|              |                             |                               |                                |                |       |

Graphical Penetration Rate Plot



Notes: Pavement thickness measured using pavement core obtained at this location.



6350 Presidential Gateway  
 Columbus, Ohio 43231  
 Telephone: (614) 823-4949  
 Fax Number: (614) 823-4990

**Automated Dynamic Cone Penetrometer Summary  
 (ASTM D6951)**

PROJECT: UNI-739-6.06 FDR  
 LOCATION: SR 739  
 RII JOB No.: W-20-160 ODOT PID No.: 112878  
 ADCP No.: D-020-0-20  
 DATE TEST PERFORMED: 3/8/2021

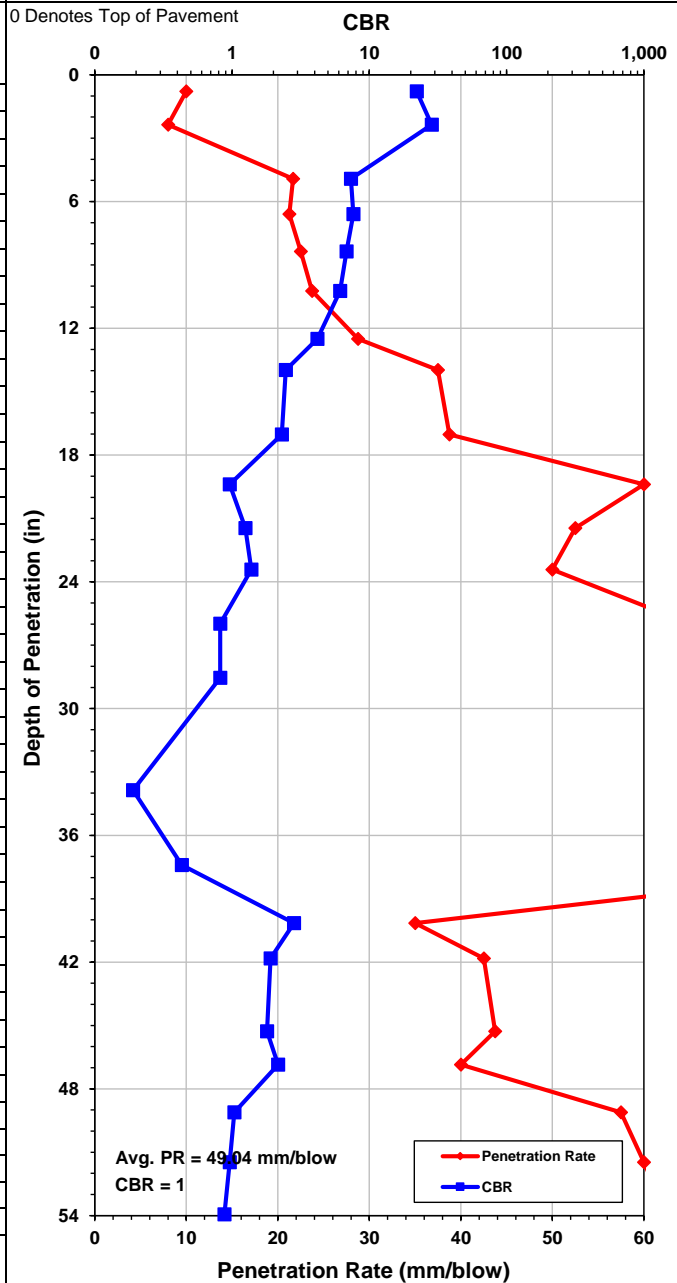
Test Location: N: 251247.07, E: 1702082.5  
 Surface Elevation: 1086 ft msl  
 Testing Personnel: Barry Scheiderer  
 Surface Mat'l / Thick.: Asphalt, 12 in/Agg. Base, 6 in  
 Test Elevation: 1084.5 ft msl

Hammer Type: Kessler DCP  
 Hammer Weight: 17.6 lb  
 Drop Height: 22.6 in  
 Output File Name: N/A  
 Termination Depth: 60.04 in

ADCP Summary

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR  |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|------|
| 2            | 0.79                        | 20.00                         | 10.00                          | 10.00          | 22.2 |
| 5            | 2.36                        | 40.00                         | 8.00                           | 8.00           | 28.4 |
| 3            | 4.92                        | 65.00                         | 21.67                          | 21.67          | 7.4  |
| 2            | 6.59                        | 42.50                         | 21.25                          | 21.25          | 7.7  |
| 2            | 8.37                        | 45.00                         | 22.50                          | 22.50          | 6.8  |
| 2            | 10.24                       | 47.50                         | 23.75                          | 23.75          | 6.1  |
| 2            | 12.50                       | 57.50                         | 28.75                          | 28.75          | 4.2  |
| 1            | 13.98                       | 37.50                         | 37.50                          | 37.50          | 2.5  |
| 2            | 17.03                       | 77.50                         | 38.75                          | 38.75          | 2.3  |
| 1            | 19.39                       | 60.00                         | 60.00                          | 60.00          | 1.0  |
| 1            | 21.46                       | 52.50                         | 52.50                          | 52.50          | 1.3  |
| 1            | 23.43                       | 50.00                         | 50.00                          | 50.00          | 1.4  |
| 1            | 25.98                       | 65.00                         | 65.00                          | 65.00          | 0.8  |
| 1            | 28.54                       | 65.00                         | 65.00                          | 65.00          | 0.8  |
| 1            | 33.86                       | 135.00                        | 135.00                         | 135.00         | 0.2  |
| 1            | 37.40                       | 90.00                         | 90.00                          | 90.00          | 0.4  |
| 2            | 40.16                       | 70.00                         | 35.00                          | 35.00          | 2.8  |
| 1            | 41.83                       | 42.50                         | 42.50                          | 42.50          | 1.9  |
| 2            | 45.28                       | 87.50                         | 43.75                          | 43.75          | 1.8  |
| 1            | 46.85                       | 40.00                         | 40.00                          | 40.00          | 2.2  |
| 1            | 49.11                       | 57.50                         | 57.50                          | 57.50          | 1.0  |
| 1            | 51.48                       | 60.00                         | 60.00                          | 60.00          | 1.0  |
| 1            | 53.94                       | 62.50                         | 62.50                          | 62.50          | 0.9  |
| 1            | 57.87                       | 100.00                        | 100.00                         | 100.00         | 0.4  |
| 1            | 60.04                       | 55.00                         | 55.00                          | 55.00          | 1.1  |

Graphical Penetration Rate Plot



Notes: Pavement thickness estimated using measurements from adjacent borings.



6350 Presidential Gateway  
Columbus, Ohio 43231  
Telephone: (614) 823-4949  
Fax Number: (614) 823-4990

**Automated Dynamic Cone Penetrometer Summary  
(ASTM D6951)**

PROJECT UNI-739-6.06 FDR  
LOCATION SR 739  
RII JOB No. W-20-160 ODOT PID No. 112878  
ADCP No. D-023-0-20  
DATE TEST PERFORMED 3/8/2021

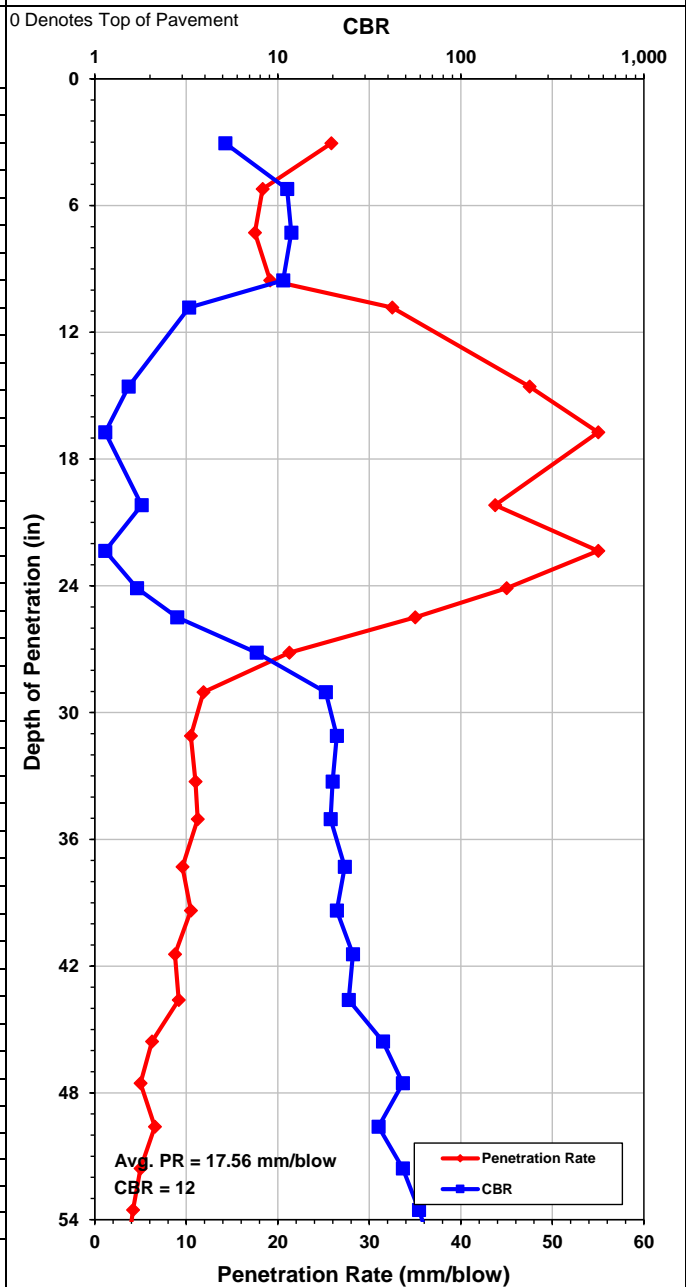
Test Location: N: 252401.58, E: 1702379.13  
Surface Elevation: 1079 ft msl  
Testing Personnel: Barry Scheiderer  
Surface Mat'l / Thick.: Asphalt, 8 in/Agg. Base, 4 in  
Test Elevation: 1078 ft msl

Hammer Type: Kessler DCP  
Hammer Weight: 17.6 lb  
Drop Height: 22.6 in  
Output File Name: N/A  
Termination Depth: 65.35 in

**ADCP Summary**

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR  |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|------|
| 3            | 3.05                        | 77.50                         | 25.83                          | 25.83          | 5.2  |
| 3            | 5.22                        | 55.00                         | 18.33                          | 18.33          | 11.2 |
| 3            | 7.28                        | 52.50                         | 17.50                          | 17.50          | 11.8 |
| 3            | 9.55                        | 57.50                         | 19.17                          | 19.17          | 10.7 |
| 1            | 10.83                       | 32.50                         | 32.50                          | 32.50          | 3.3  |
| 2            | 14.57                       | 95.00                         | 47.50                          | 47.50          | 1.5  |
| 1            | 16.73                       | 55.00                         | 55.00                          | 55.00          | 1.1  |
| 2            | 20.18                       | 87.50                         | 43.75                          | 43.75          | 1.8  |
| 1            | 22.34                       | 55.00                         | 55.00                          | 55.00          | 1.1  |
| 1            | 24.11                       | 45.00                         | 45.00                          | 45.00          | 1.7  |
| 1            | 25.49                       | 35.00                         | 35.00                          | 35.00          | 2.8  |
| 2            | 27.17                       | 42.50                         | 21.25                          | 21.25          | 7.7  |
| 4            | 29.04                       | 47.50                         | 11.88                          | 11.88          | 18.3 |
| 5            | 31.10                       | 52.50                         | 10.50                          | 10.50          | 21.0 |
| 5            | 33.27                       | 55.00                         | 11.00                          | 11.00          | 19.9 |
| 4            | 35.04                       | 45.00                         | 11.25                          | 11.25          | 19.4 |
| 6            | 37.30                       | 57.50                         | 9.58                           | 9.58           | 23.2 |
| 5            | 39.37                       | 52.50                         | 10.50                          | 10.50          | 21.0 |
| 6            | 41.44                       | 52.50                         | 8.75                           | 8.75           | 25.7 |
| 6            | 43.60                       | 55.00                         | 9.17                           | 9.17           | 24.4 |
| 8            | 45.57                       | 50.00                         | 6.25                           | 6.25           | 37.5 |
| 10           | 47.54                       | 50.00                         | 5.00                           | 5.00           | 48.1 |
| 8            | 49.61                       | 52.50                         | 6.56                           | 6.56           | 35.5 |
| 10           | 51.57                       | 50.00                         | 5.00                           | 5.00           | 48.1 |
| 12           | 53.54                       | 50.00                         | 4.17                           | 4.17           | 59.0 |
| 14           | 55.51                       | 50.00                         | 3.57                           | 3.57           | 70.2 |
| 14           | 57.48                       | 50.00                         | 3.57                           | 3.57           | 70.2 |
| 17           | 59.45                       | 50.00                         | 2.94                           | 2.94           | 87.2 |
| 16           | 61.42                       | 50.00                         | 3.13                           | 3.13           | 81.5 |
| 16           | 63.39                       | 50.00                         | 3.13                           | 3.13           | 81.5 |
| 19           | 65.35                       | 50.00                         | 2.63                           | 2.63           | 98.8 |

**Graphical Penetration Rate Plot**



Notes: Pavement thickness estimated using measurements from adjacent borings.





6350 Presidential Gateway  
Columbus, Ohio 43231  
Telephone: (614) 823-4949  
Fax Number: (614) 823-4990

### Automated Dynamic Cone Penetrometer Summary (ASTM D6951)

PROJECT: UNI-739-6.06 FDR  
LOCATION: SR 739  
RII JOB No.: W-20-160 ODOT PID No.: 112878

ADCP No.: D-027-0-20  
DATE TEST PERFORMED: 3/8/2021

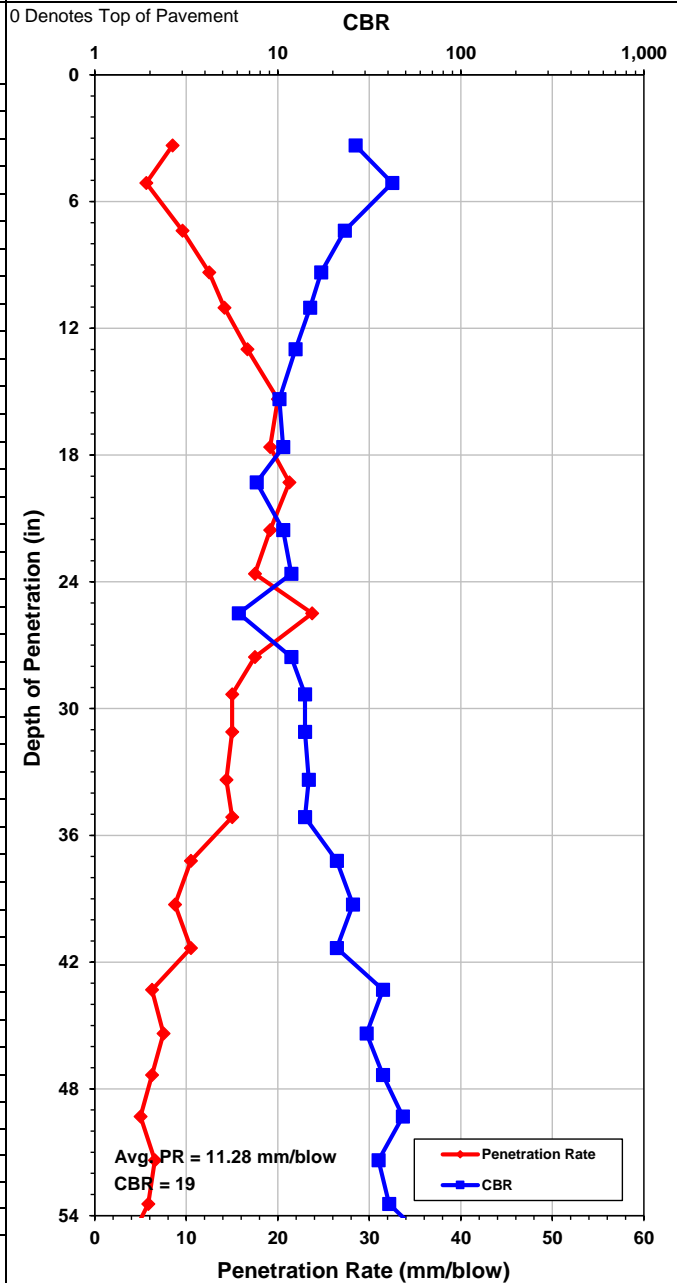
Test Location: N: 254007.1, E: 1702444.43  
Surface Elevation: 1063 ft msl  
Testing Personnel: Barry Scheiderer  
Surface Mat'l / Thick.: Asphalt, 8 in/Agg. Base, 4 in  
Test Elevation: 1062 ft msl

Hammer Type: Kessler DCP  
Hammer Weight: 17.6 lb  
Drop Height: 22.6 in  
Output File Name: N/A  
Termination Depth: 63.19 in

#### ADCP Summary

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR  |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|------|
| 10           | 3.35                        | 85.00                         | 8.50                           | 8.50           | 26.6 |
| 8            | 5.12                        | 45.00                         | 5.63                           | 5.63           | 42.2 |
| 6            | 7.38                        | 57.50                         | 9.58                           | 9.58           | 23.2 |
| 4            | 9.35                        | 50.00                         | 12.50                          | 12.50          | 17.3 |
| 3            | 11.02                       | 42.50                         | 14.17                          | 14.17          | 15.0 |
| 3            | 12.99                       | 50.00                         | 16.67                          | 16.67          | 12.5 |
| 3            | 15.35                       | 60.00                         | 20.00                          | 20.00          | 10.2 |
| 3            | 17.62                       | 57.50                         | 19.17                          | 19.17          | 10.7 |
| 2            | 19.29                       | 42.50                         | 21.25                          | 21.25          | 7.7  |
| 3            | 21.56                       | 57.50                         | 19.17                          | 19.17          | 10.7 |
| 3            | 23.62                       | 52.50                         | 17.50                          | 17.50          | 11.8 |
| 2            | 25.49                       | 47.50                         | 23.75                          | 23.75          | 6.1  |
| 3            | 27.56                       | 52.50                         | 17.50                          | 17.50          | 11.8 |
| 3            | 29.33                       | 45.00                         | 15.00                          | 15.00          | 14.1 |
| 3            | 31.10                       | 45.00                         | 15.00                          | 15.00          | 14.1 |
| 4            | 33.37                       | 57.50                         | 14.38                          | 14.38          | 14.8 |
| 3            | 35.14                       | 45.00                         | 15.00                          | 15.00          | 14.1 |
| 5            | 37.20                       | 52.50                         | 10.50                          | 10.50          | 21.0 |
| 6            | 39.27                       | 52.50                         | 8.75                           | 8.75           | 25.7 |
| 5            | 41.34                       | 52.50                         | 10.50                          | 10.50          | 21.0 |
| 8            | 43.31                       | 50.00                         | 6.25                           | 6.25           | 37.5 |
| 7            | 45.37                       | 52.52                         | 7.50                           | 7.50           | 30.6 |
| 8            | 47.34                       | 49.98                         | 6.25                           | 6.25           | 37.5 |
| 10           | 49.31                       | 50.00                         | 5.00                           | 5.00           | 48.1 |
| 8            | 51.38                       | 52.50                         | 6.56                           | 6.56           | 35.5 |
| 9            | 53.44                       | 52.50                         | 5.83                           | 5.83           | 40.5 |
| 14           | 55.41                       | 50.00                         | 3.57                           | 3.57           | 70.2 |
| 15           | 57.38                       | 50.00                         | 3.33                           | 3.33           | 75.8 |
| 12           | 59.35                       | 50.00                         | 4.17                           | 4.17           | 59.0 |
| 14           | 61.32                       | 50.00                         | 3.57                           | 3.57           | 70.2 |
| 15           | 63.19                       | 47.50                         | 3.17                           | 3.17           | 80.3 |

#### Graphical Penetration Rate Plot



Notes: Pavement thickness estimated using measurements from adjacent borings.



6350 Presidential Gateway  
 Columbus, Ohio 43231  
 Telephone: (614) 823-4949  
 Fax Number: (614) 823-4990

**Automated Dynamic Cone Penetrometer Summary  
 (ASTM D6951)**

PROJECT: UNI-739-6.06 FDR  
 LOCATION: SR 739  
 RII JOB No. W-20-160 ODOT PID No. 112878

ADCP No. D-028-0-20  
 DATE TEST PERFORMED 3/8/2021

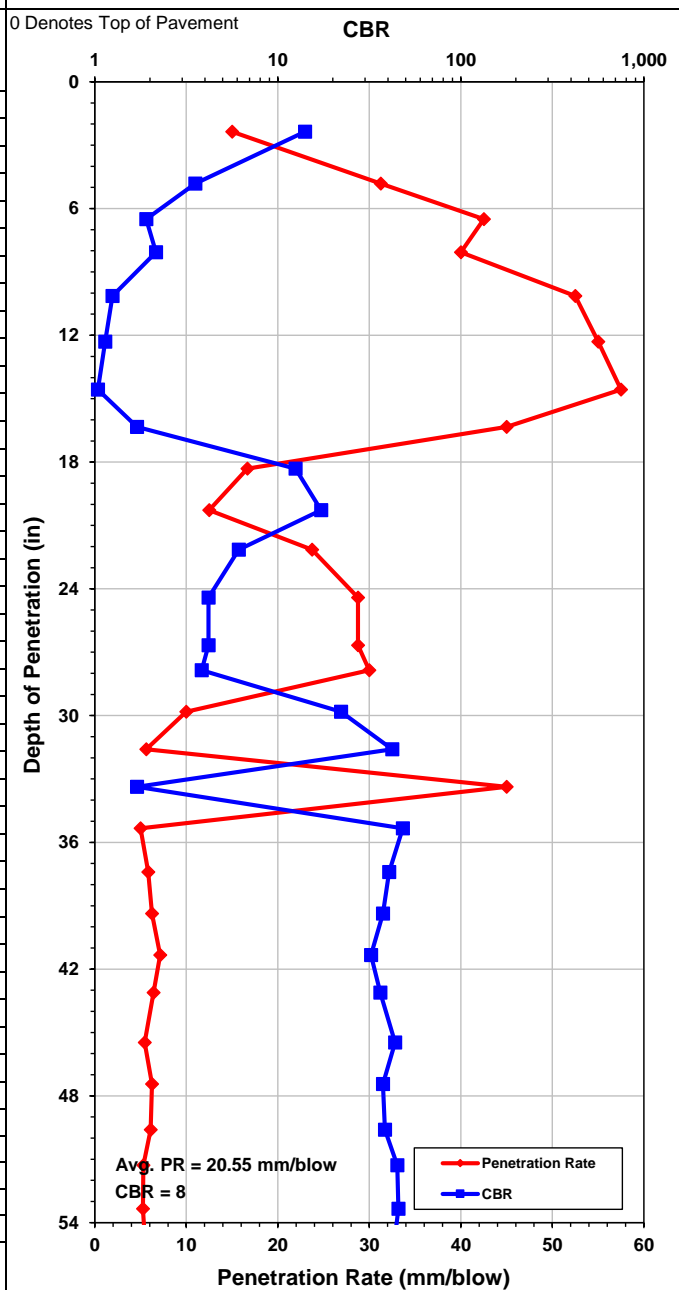
Test Location: N: 254410.72, E: 1702446.43  
 Surface Elevation: 1064 ft msl  
 Testing Personnel: Barry Scheiderer  
 Surface Mat'l / Thick.: Asphalt, 11.5 in/Agg. Base, 6.5 in  
 Test Elevation: 1062.5 ft msl

Hammer Type: Kessler DCP  
 Hammer Weight: 17.6 lb  
 Drop Height: 22.6 in  
 Output File Name: N/A  
 Termination Depth: 59.65 in

ADCP Summary

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR  |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|------|
| 4            | 2.36                        | 60.00                         | 15.00                          | 15.00          | 14.1 |
| 2            | 4.82                        | 62.50                         | 31.25                          | 31.25          | 3.5  |
| 1            | 6.50                        | 42.50                         | 42.50                          | 42.50          | 1.9  |
| 1            | 8.07                        | 40.00                         | 40.00                          | 40.00          | 2.2  |
| 1            | 10.14                       | 52.50                         | 52.50                          | 52.50          | 1.3  |
| 1            | 12.30                       | 55.00                         | 55.00                          | 55.00          | 1.1  |
| 1            | 14.57                       | 57.50                         | 57.50                          | 57.50          | 1.0  |
| 1            | 16.34                       | 45.00                         | 45.00                          | 45.00          | 1.7  |
| 3            | 18.31                       | 50.00                         | 16.67                          | 16.67          | 12.5 |
| 4            | 20.28                       | 50.00                         | 12.50                          | 12.50          | 17.3 |
| 2            | 22.15                       | 47.50                         | 23.75                          | 23.75          | 6.1  |
| 2            | 24.41                       | 57.50                         | 28.75                          | 28.75          | 4.2  |
| 2            | 26.67                       | 57.50                         | 28.75                          | 28.75          | 4.2  |
| 1            | 27.85                       | 30.00                         | 30.00                          | 30.00          | 3.8  |
| 5            | 29.82                       | 50.00                         | 10.00                          | 10.00          | 22.2 |
| 8            | 31.59                       | 45.00                         | 5.63                           | 5.63           | 42.2 |
| 1            | 33.37                       | 45.00                         | 45.00                          | 45.00          | 1.7  |
| 10           | 35.33                       | 50.00                         | 5.00                           | 5.00           | 48.1 |
| 9            | 37.40                       | 52.50                         | 5.83                           | 5.83           | 40.5 |
| 8            | 39.37                       | 50.00                         | 6.25                           | 6.25           | 37.5 |
| 7            | 41.34                       | 50.00                         | 7.14                           | 7.14           | 32.3 |
| 7            | 43.11                       | 45.00                         | 6.43                           | 6.43           | 36.3 |
| 11           | 45.47                       | 60.00                         | 5.45                           | 5.45           | 43.7 |
| 8            | 47.44                       | 50.00                         | 6.25                           | 6.25           | 37.5 |
| 9            | 49.61                       | 55.00                         | 6.11                           | 6.11           | 38.5 |
| 8            | 51.28                       | 42.50                         | 5.31                           | 5.31           | 45.0 |
| 10           | 53.35                       | 52.50                         | 5.25                           | 5.25           | 45.6 |
| 9            | 55.31                       | 50.00                         | 5.56                           | 5.56           | 42.8 |
| 9            | 57.28                       | 50.00                         | 5.56                           | 5.56           | 42.8 |
| 9            | 59.65                       | 60.00                         | 6.67                           | 6.67           | 34.9 |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
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|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |

Graphical Penetration Rate Plot



Notes: Pavement thickness estimated using measurements from adjacent borings.



6350 Presidential Gateway  
 Columbus, Ohio 43231  
 Telephone: (614) 823-4949  
 Fax Number: (614) 823-4990

### Automated Dynamic Cone Penetrometer Summary (ASTM D6951)

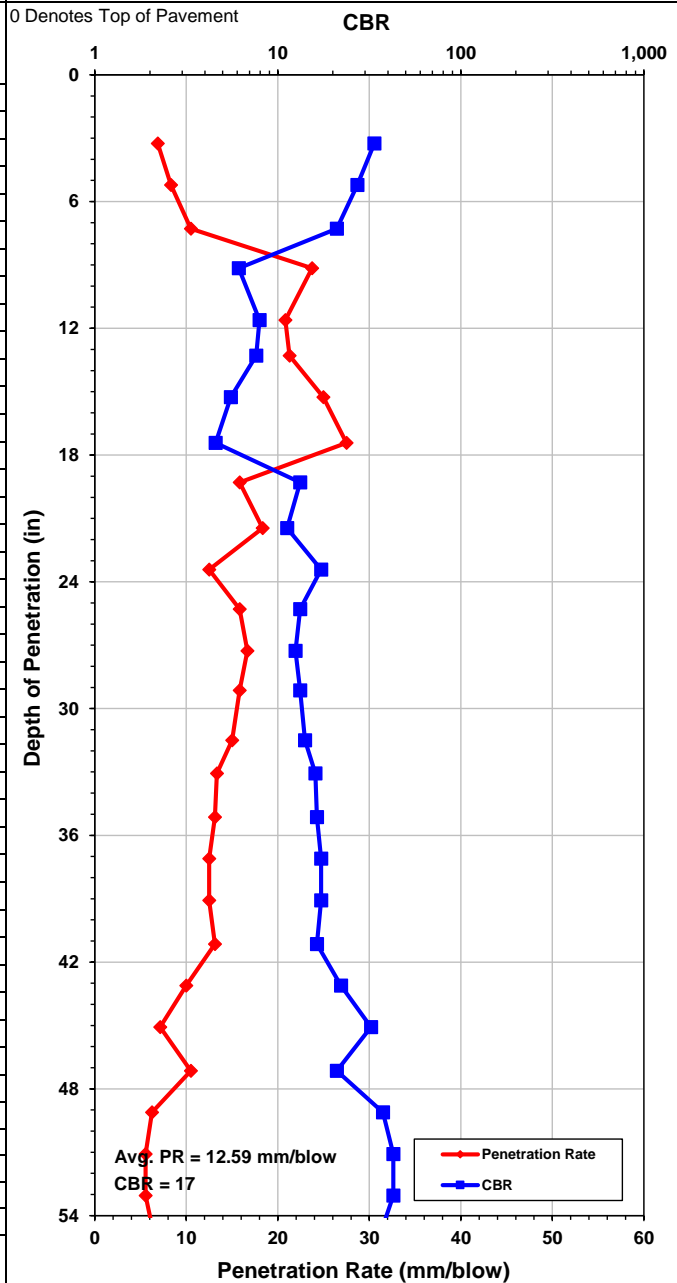
PROJECT: UNI-739-6.06 FDR  
 LOCATION: SR 739  
 RII JOB No.: W-20-160 ODOT PID No.: 112878  
 ADCP No.: D-031-0-20  
 DATE TEST PERFORMED: 3/8/2021

Test Location: N: 255568.5, E: 1702503.81  
 Surface Elevation: 1053 ft msl  
 Testing Personnel: Barry Scheiderer  
 Surface Mat'l / Thick.: Asphalt, 8 in/Agg. Base, 4 in  
 Test Elevation: 1052 ft msl  
 Hammer Type: Kessler DCP  
 Hammer Weight: 17.6 lb  
 Drop Height: 22.6 in  
 Output File Name: N/A  
 Termination Depth: 63.09 in

#### ADCP Summary

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR  |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|------|
| 12           | 3.25                        | 82.50                         | 6.88                           | 6.88           | 33.7 |
| 6            | 5.22                        | 50.00                         | 8.33                           | 8.33           | 27.2 |
| 5            | 7.28                        | 52.50                         | 10.50                          | 10.50          | 21.0 |
| 2            | 9.15                        | 47.50                         | 23.75                          | 23.75          | 6.1  |
| 3            | 11.61                       | 62.50                         | 20.83                          | 20.83          | 8.0  |
| 2            | 13.29                       | 42.58                         | 21.29                          | 21.29          | 7.6  |
| 2            | 15.26                       | 49.92                         | 24.96                          | 24.96          | 5.5  |
| 2            | 17.42                       | 55.00                         | 27.50                          | 27.50          | 4.6  |
| 3            | 19.29                       | 47.50                         | 15.83                          | 15.83          | 13.2 |
| 3            | 21.46                       | 55.00                         | 18.33                          | 18.33          | 11.2 |
| 4            | 23.43                       | 50.00                         | 12.50                          | 12.50          | 17.3 |
| 3            | 25.30                       | 47.50                         | 15.83                          | 15.83          | 13.2 |
| 3            | 27.26                       | 50.00                         | 16.67                          | 16.67          | 12.5 |
| 3            | 29.13                       | 47.50                         | 15.83                          | 15.83          | 13.2 |
| 4            | 31.50                       | 60.00                         | 15.00                          | 15.00          | 14.1 |
| 3            | 33.07                       | 40.00                         | 13.33                          | 13.33          | 16.0 |
| 4            | 35.14                       | 52.50                         | 13.13                          | 13.13          | 16.3 |
| 4            | 37.11                       | 50.00                         | 12.50                          | 12.50          | 17.3 |
| 4            | 39.07                       | 50.00                         | 12.50                          | 12.50          | 17.3 |
| 4            | 41.14                       | 52.50                         | 13.13                          | 13.13          | 16.3 |
| 5            | 43.11                       | 50.00                         | 10.00                          | 10.00          | 22.2 |
| 7            | 45.08                       | 50.00                         | 7.14                           | 7.14           | 32.3 |
| 5            | 47.15                       | 52.50                         | 10.50                          | 10.50          | 21.0 |
| 8            | 49.11                       | 50.00                         | 6.25                           | 6.25           | 37.5 |
| 9            | 51.08                       | 50.00                         | 5.56                           | 5.56           | 42.8 |
| 9            | 53.05                       | 50.00                         | 5.56                           | 5.56           | 42.8 |
| 8            | 55.12                       | 52.50                         | 6.56                           | 6.56           | 35.5 |
| 7            | 57.38                       | 57.50                         | 8.21                           | 8.21           | 27.6 |
| 11           | 59.15                       | 45.00                         | 4.09                           | 4.09           | 60.3 |
| 10           | 61.12                       | 50.00                         | 5.00                           | 5.00           | 48.1 |
| 17           | 63.09                       | 50.00                         | 2.94                           | 2.94           | 87.2 |

#### Graphical Penetration Rate Plot



Notes: Pavement thickness estimated using measurements from adjacent borings.





6350 Presidential Gateway  
Columbus, Ohio 43231  
Telephone: (614) 823-4949  
Fax Number: (614) 823-4990

### Automated Dynamic Cone Penetrometer Summary (ASTM D6951)

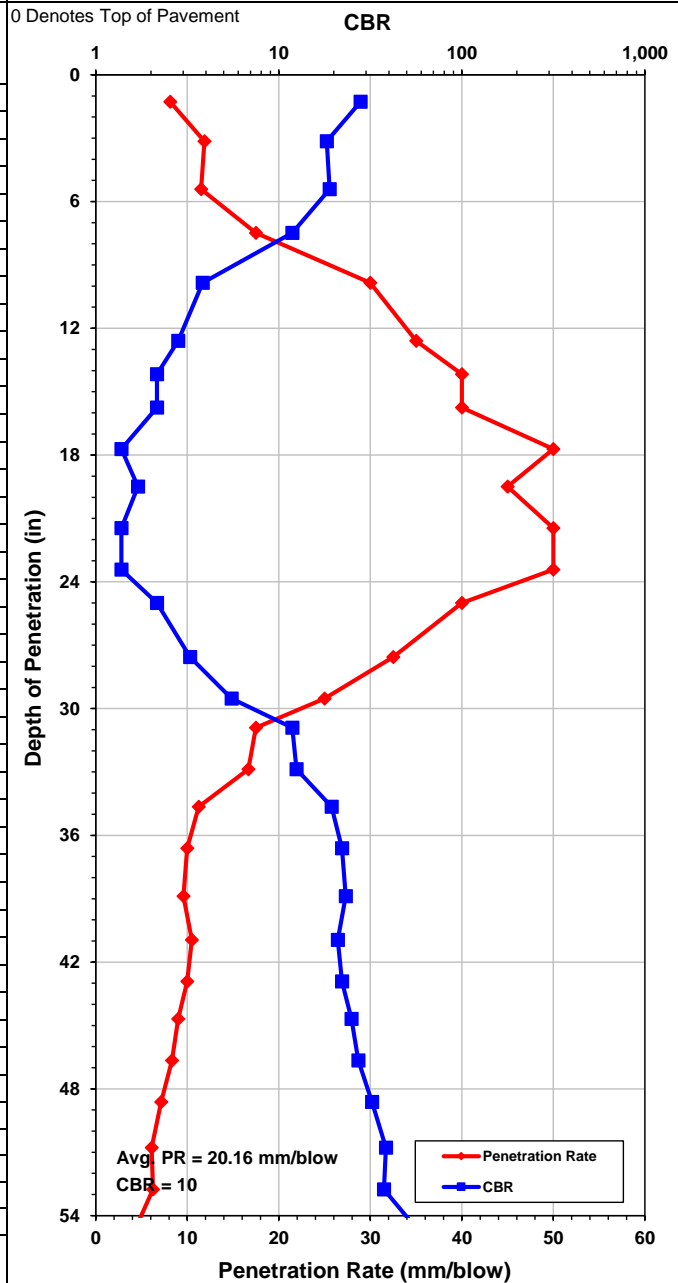
PROJECT: UNI-739-6.06 FDR  
LOCATION: SR 739  
RII JOB No.: W-20-160 ODOT PID No.: 112878  
ADCP No.: D-032-0-20  
DATE TEST PERFORMED: 3/8/2021

Test Location: N: 256014.51, E: 1702507.68  
Surface Elevation: 1051 ft msl  
Testing Personnel: Barry Scheiderer  
Surface Mat'l / Thick.: Asphalt, 11.5 in/Agg. Base, 6.5 in  
Test Elevation: 1049.5 ft msl  
Hammer Type: Kessler DCP  
Hammer Weight: 17.6 lb  
Drop Height: 22.6 in  
Output File Name: N/A  
Termination Depth: 61.02 in

#### ADCP Summary

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR  |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|------|
| 4            | 1.28                        | 32.50                         | 8.13                           | 8.13           | 27.9 |
| 4            | 3.15                        | 47.50                         | 11.88                          | 11.88          | 18.3 |
| 5            | 5.41                        | 57.50                         | 11.50                          | 11.50          | 18.9 |
| 3            | 7.48                        | 52.50                         | 17.50                          | 17.50          | 11.8 |
| 2            | 9.84                        | 60.00                         | 30.00                          | 30.00          | 3.8  |
| 2            | 12.60                       | 70.00                         | 35.00                          | 35.00          | 2.8  |
| 1            | 14.17                       | 40.00                         | 40.00                          | 40.00          | 2.2  |
| 1            | 15.75                       | 40.00                         | 40.00                          | 40.00          | 2.2  |
| 1            | 17.72                       | 50.00                         | 50.00                          | 50.00          | 1.4  |
| 1            | 19.49                       | 45.00                         | 45.00                          | 45.00          | 1.7  |
| 1            | 21.46                       | 50.00                         | 50.00                          | 50.00          | 1.4  |
| 1            | 23.43                       | 50.00                         | 50.00                          | 50.00          | 1.4  |
| 1            | 25.00                       | 40.00                         | 40.00                          | 40.00          | 2.2  |
| 2            | 27.56                       | 65.00                         | 32.50                          | 32.50          | 3.3  |
| 2            | 29.53                       | 50.00                         | 25.00                          | 25.00          | 5.5  |
| 2            | 30.91                       | 35.00                         | 17.50                          | 17.50          | 11.8 |
| 3            | 32.87                       | 50.00                         | 16.67                          | 16.67          | 12.5 |
| 4            | 34.65                       | 45.00                         | 11.25                          | 11.25          | 19.4 |
| 5            | 36.61                       | 50.00                         | 10.00                          | 10.00          | 22.2 |
| 6            | 38.88                       | 57.50                         | 9.58                           | 9.58           | 23.2 |
| 5            | 40.94                       | 52.50                         | 10.50                          | 10.50          | 21.0 |
| 5            | 42.91                       | 50.00                         | 10.00                          | 10.00          | 22.2 |
| 5            | 44.69                       | 45.00                         | 9.00                           | 9.00           | 24.9 |
| 6            | 46.65                       | 50.00                         | 8.33                           | 8.33           | 27.2 |
| 7            | 48.62                       | 50.00                         | 7.14                           | 7.14           | 32.3 |
| 9            | 50.79                       | 55.00                         | 6.11                           | 6.11           | 38.5 |
| 8            | 52.76                       | 50.00                         | 6.25                           | 6.25           | 37.5 |
| 11           | 54.63                       | 47.50                         | 4.32                           | 4.32           | 56.7 |
| 12           | 56.59                       | 50.00                         | 4.17                           | 4.17           | 59.0 |
| 15           | 58.66                       | 52.50                         | 3.50                           | 3.50           | 71.8 |
| 14           | 61.02                       | 60.00                         | 4.29                           | 4.29           | 57.2 |

#### Graphical Penetration Rate Plot



Notes: Pavement thickness estimated using measurements from adjacent borings.



6350 Presidential Gateway  
Columbus, Ohio 43231  
Telephone: (614) 823-4949  
Fax Number: (614) 823-4990

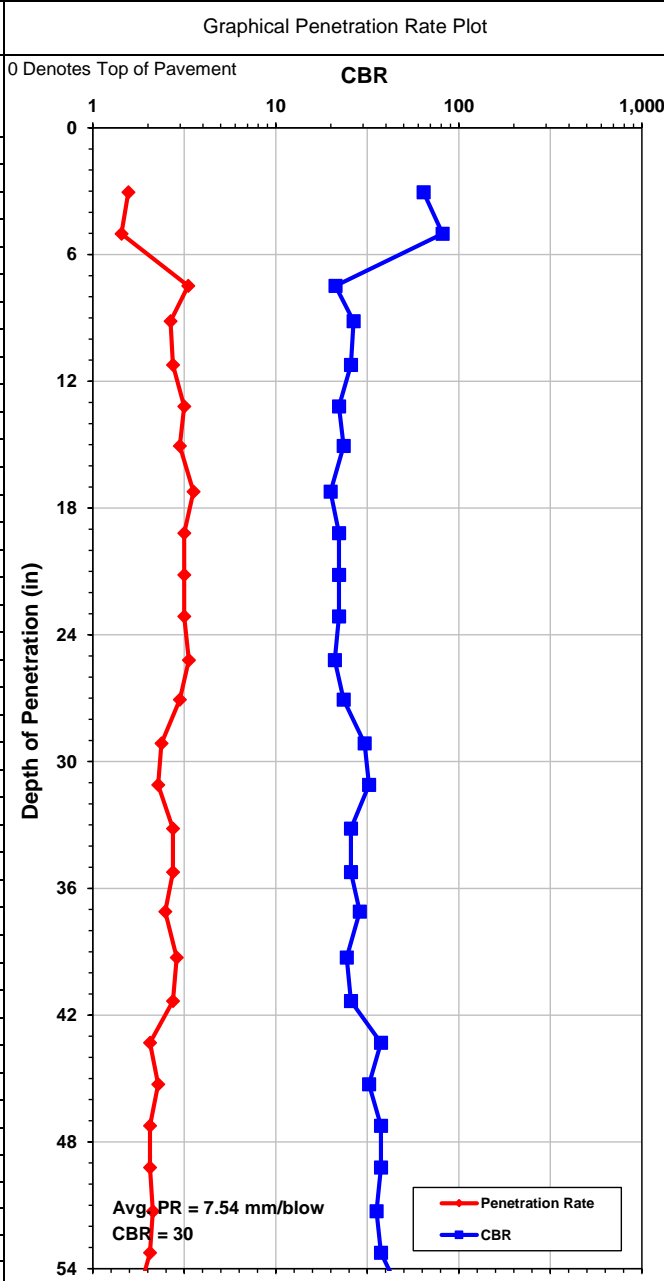
### Automated Dynamic Cone Penetrometer Summary (ASTM D6951)

PROJECT: UNI-739-6.06 FDR  
LOCATION: SR 739  
RII JOB No.: W-20-160 ODOT PID No.: 112878  
ADCP No.: D-035-0-20  
DATE TEST PERFORMED: 3/8/2021

Test Location: N: 257218.69, E: 1702564.09  
Surface Elevation: 1052 ft msl  
Testing Personnel: Barry Scheiderer  
Surface Mat'l / Thick.: Asphalt, 8 in/Agg. Base, 4 in  
Test Elevation: 1051 ft msl

Hammer Type: Kessler DCP  
Hammer Weight: 17.6 lb  
Drop Height: 22.6 in  
Output File Name: N/A  
Termination Depth: 63.09 in

| ADCP Summary |                             |                               |                                |                |      |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|------|
| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR  |
| 20           | 3.05                        | 77.50                         | 3.88                           | 3.88           | 64.0 |
| 16           | 5.02                        | 50.00                         | 3.13                           | 3.13           | 81.5 |
| 6            | 7.48                        | 62.50                         | 10.42                          | 10.42          | 21.2 |
| 5            | 9.15                        | 42.50                         | 8.50                           | 8.50           | 26.6 |
| 6            | 11.22                       | 52.50                         | 8.75                           | 8.75           | 25.7 |
| 5            | 13.19                       | 50.00                         | 10.00                          | 10.00          | 22.2 |
| 5            | 15.06                       | 47.50                         | 9.50                           | 9.50           | 23.5 |
| 5            | 17.22                       | 55.00                         | 11.00                          | 11.00          | 19.9 |
| 5            | 19.19                       | 50.00                         | 10.00                          | 10.00          | 22.2 |
| 5            | 21.16                       | 50.00                         | 10.00                          | 10.00          | 22.2 |
| 5            | 23.13                       | 50.00                         | 10.00                          | 10.00          | 22.2 |
| 5            | 25.20                       | 52.50                         | 10.50                          | 10.50          | 21.0 |
| 5            | 27.07                       | 47.50                         | 9.50                           | 9.50           | 23.5 |
| 7            | 29.13                       | 52.50                         | 7.50                           | 7.50           | 30.6 |
| 7            | 31.10                       | 50.00                         | 7.14                           | 7.14           | 32.3 |
| 6            | 33.17                       | 52.50                         | 8.75                           | 8.75           | 25.7 |
| 6            | 35.24                       | 52.50                         | 8.75                           | 8.75           | 25.7 |
| 6            | 37.11                       | 47.50                         | 7.92                           | 7.92           | 28.8 |
| 6            | 39.27                       | 55.00                         | 9.17                           | 9.17           | 24.4 |
| 6            | 41.34                       | 52.50                         | 8.75                           | 8.75           | 25.7 |
| 8            | 43.31                       | 50.00                         | 6.25                           | 6.25           | 37.5 |
| 7            | 45.28                       | 50.00                         | 7.14                           | 7.14           | 32.3 |
| 8            | 47.24                       | 50.00                         | 6.25                           | 6.25           | 37.5 |
| 8            | 49.21                       | 50.00                         | 6.25                           | 6.25           | 37.5 |
| 8            | 51.28                       | 52.50                         | 6.56                           | 6.56           | 35.5 |
| 8            | 53.25                       | 50.00                         | 6.25                           | 6.25           | 37.5 |
| 10           | 55.22                       | 50.00                         | 5.00                           | 5.00           | 48.1 |
| 10           | 57.19                       | 50.00                         | 5.00                           | 5.00           | 48.1 |
| 12           | 59.15                       | 50.00                         | 4.17                           | 4.17           | 59.0 |
| 12           | 61.12                       | 50.00                         | 4.17                           | 4.17           | 59.0 |
| 14           | 63.09                       | 50.00                         | 3.57                           | 3.57           | 70.2 |



Notes: Pavement thickness estimated using measurements from adjacent borings.



6350 Presidential Gateway  
 Columbus, Ohio 43231  
 Telephone: (614) 823-4949  
 Fax Number: (614) 823-4990

### Automated Dynamic Cone Penetrometer Summary (ASTM D6951)

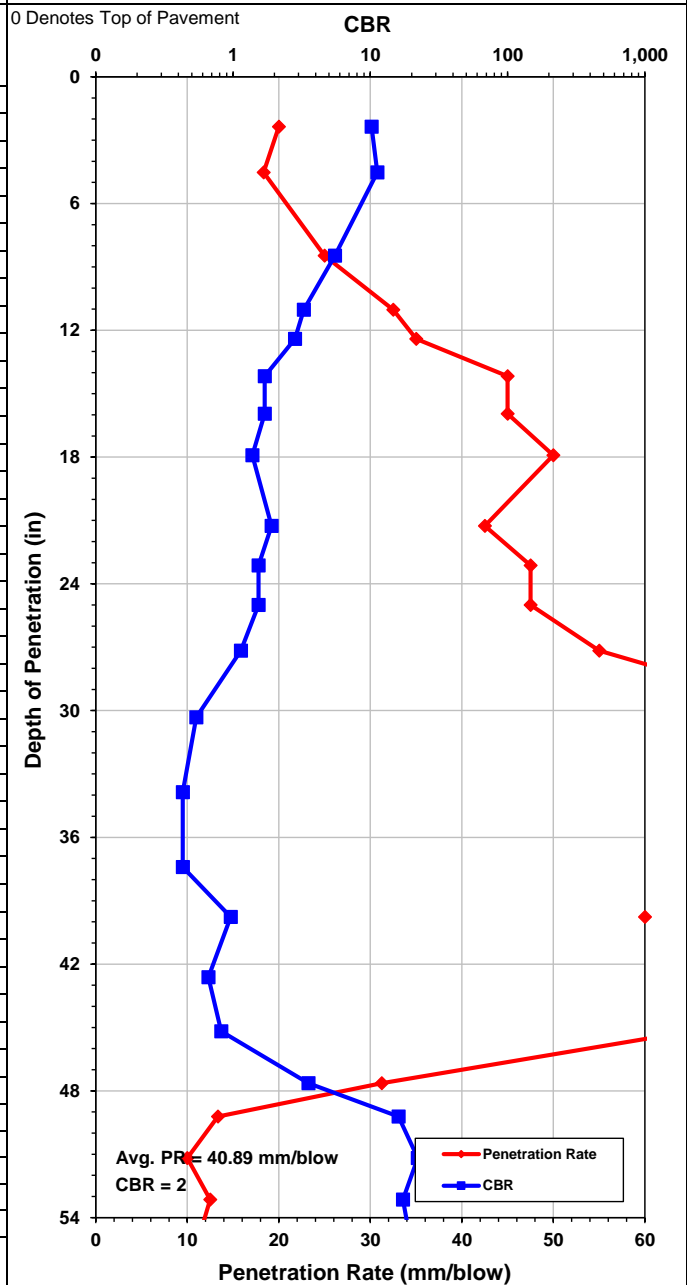
PROJECT: UNI-739-6.06 FDR  
 LOCATION: SR 739  
 RII JOB No.: W-20-160 ODOT PID No.: 112878  
 ADCP No.: D-036-0-20  
 DATE TEST PERFORMED: 3/8/2021

Test Location: N: 257619.6, E: 1702570.54 Hammer Type: Kessler DCP  
 Surface Elevation: 1049 ft msl Hammer Weight: 17.6 lb  
 Testing Personnel: Barry Scheiderer Drop Height: 22.6 in  
 Surface Mat'l / Thick.: Asphalt, 11.5 in/Agg. Base, 6.5 in Output File Name: N/A  
 Test Elevation: 1047.5 ft msl Termination Depth: 59.45 in

ADCP Summary

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR  |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|------|
| 3            | 2.36                        | 60.00                         | 20.00                          | 20.00          | 10.2 |
| 3            | 4.53                        | 55.00                         | 18.33                          | 18.33          | 11.2 |
| 4            | 8.46                        | 100.00                        | 25.00                          | 25.00          | 5.5  |
| 2            | 11.02                       | 65.00                         | 32.50                          | 32.50          | 3.3  |
| 1            | 12.40                       | 35.00                         | 35.00                          | 35.00          | 2.8  |
| 1            | 14.17                       | 45.00                         | 45.00                          | 45.00          | 1.7  |
| 1            | 15.94                       | 45.00                         | 45.00                          | 45.00          | 1.7  |
| 1            | 17.91                       | 50.00                         | 50.00                          | 50.00          | 1.4  |
| 2            | 21.26                       | 85.00                         | 42.50                          | 42.50          | 1.9  |
| 1            | 23.13                       | 47.50                         | 47.50                          | 47.50          | 1.5  |
| 1            | 25.00                       | 47.50                         | 47.50                          | 47.50          | 1.5  |
| 1            | 27.17                       | 55.00                         | 55.00                          | 55.00          | 1.1  |
| 1            | 30.31                       | 80.00                         | 80.00                          | 80.00          | 0.5  |
| 1            | 33.86                       | 90.00                         | 90.00                          | 90.00          | 0.4  |
| 1            | 37.40                       | 90.00                         | 90.00                          | 90.00          | 0.4  |
| 1            | 39.76                       | 60.00                         | 60.00                          | 60.00          | 1.0  |
| 1            | 42.62                       | 72.50                         | 72.50                          | 72.50          | 0.7  |
| 1            | 45.18                       | 65.00                         | 65.00                          | 65.00          | 0.8  |
| 2            | 47.64                       | 62.50                         | 31.25                          | 31.25          | 3.5  |
| 3            | 49.21                       | 40.00                         | 13.33                          | 13.33          | 16.0 |
| 5            | 51.18                       | 50.00                         | 10.00                          | 10.00          | 22.2 |
| 4            | 53.15                       | 50.00                         | 12.50                          | 12.50          | 17.3 |
| 5            | 55.31                       | 55.00                         | 11.00                          | 11.00          | 19.9 |
| 4            | 57.09                       | 45.00                         | 11.25                          | 11.25          | 19.4 |
| 5            | 59.45                       | 60.00                         | 12.00                          | 12.00          | 18.1 |

Graphical Penetration Rate Plot



Notes: Pavement thickness estimated using measurements from adjacent borings.



6350 Presidential Gateway  
 Columbus, Ohio 43231  
 Telephone: (614) 823-4949  
 Fax Number: (614) 823-4990

### Automated Dynamic Cone Penetrometer Summary (ASTM D6951)

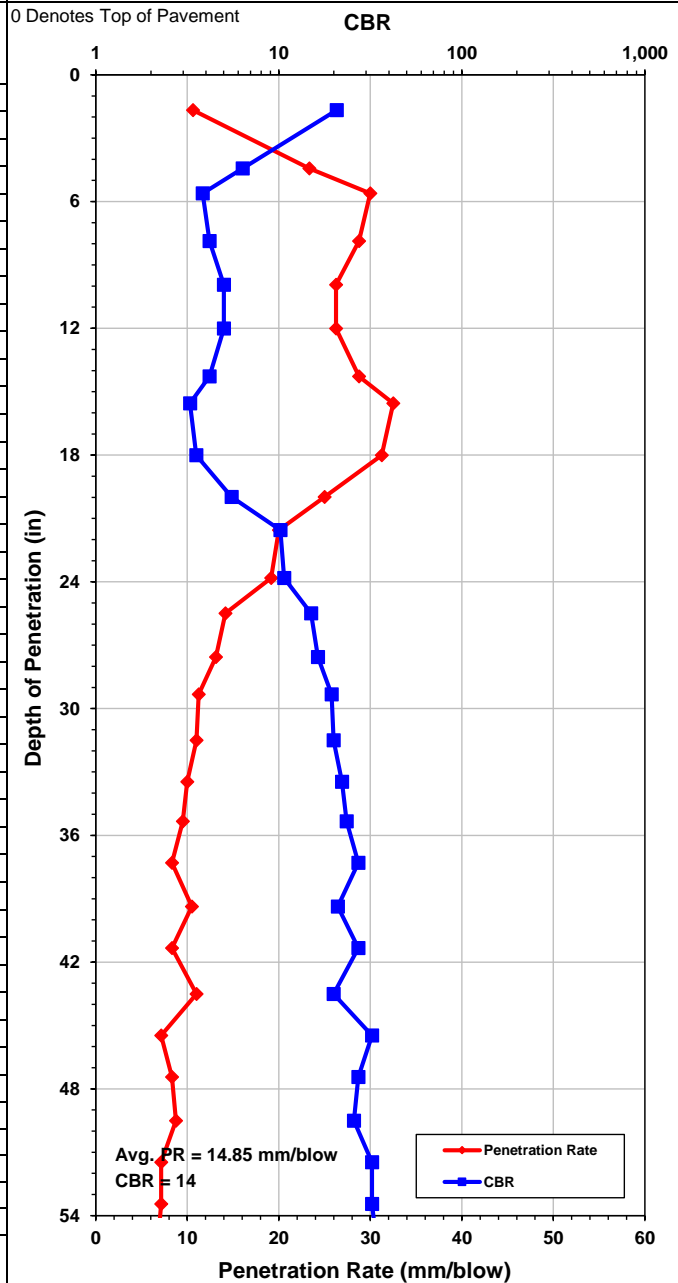
PROJECT: UNI-739-6.06 FDR  
 LOCATION: SR 739  
 RII JOB No.: W-20-160 ODOT PID No.: 112878  
 ADCP No.: D-039-0-20  
 DATE TEST PERFORMED: 3/8/2021

Test Location: N: 258823.96, E: 1702629.81  
 Surface Elevation: 1053 ft msl  
 Testing Personnel: Barry Scheiderer  
 Surface Mat'l / Thick.: Asphalt, 11.5 in/Agg. Base, 3.5 in  
 Test Elevation: 1051.75 ft msl  
 Hammer Type: Kessler DCP  
 Hammer Weight: 17.6 lb  
 Drop Height: 22.6 in  
 Output File Name: N/A  
 Termination Depth: 63.29 in

#### ADCP Summary

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR  |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|------|
| 4            | 1.67                        | 42.50                         | 10.63                          | 10.63          | 20.7 |
| 3            | 4.43                        | 70.00                         | 23.33                          | 23.33          | 6.3  |
| 1            | 5.61                        | 30.00                         | 30.00                          | 30.00          | 3.8  |
| 2            | 7.87                        | 57.50                         | 28.75                          | 28.75          | 4.2  |
| 2            | 9.94                        | 52.50                         | 26.25                          | 26.25          | 5.0  |
| 2            | 12.01                       | 52.50                         | 26.25                          | 26.25          | 5.0  |
| 2            | 14.27                       | 57.50                         | 28.75                          | 28.75          | 4.2  |
| 1            | 15.55                       | 32.50                         | 32.50                          | 32.50          | 3.3  |
| 2            | 18.01                       | 62.50                         | 31.25                          | 31.25          | 3.5  |
| 2            | 19.98                       | 50.00                         | 25.00                          | 25.00          | 5.5  |
| 2            | 21.56                       | 40.00                         | 20.00                          | 20.00          | 10.2 |
| 3            | 23.82                       | 57.50                         | 19.17                          | 19.17          | 10.7 |
| 3            | 25.49                       | 42.50                         | 14.17                          | 14.17          | 15.0 |
| 4            | 27.56                       | 52.50                         | 13.13                          | 13.13          | 16.3 |
| 4            | 29.33                       | 45.00                         | 11.25                          | 11.25          | 19.4 |
| 5            | 31.50                       | 55.00                         | 11.00                          | 11.00          | 19.9 |
| 5            | 33.46                       | 50.00                         | 10.00                          | 10.00          | 22.2 |
| 5            | 35.33                       | 47.50                         | 9.50                           | 9.50           | 23.5 |
| 6            | 37.30                       | 50.00                         | 8.33                           | 8.33           | 27.2 |
| 5            | 39.37                       | 52.50                         | 10.50                          | 10.50          | 21.0 |
| 6            | 41.34                       | 50.00                         | 8.33                           | 8.33           | 27.2 |
| 5            | 43.50                       | 55.00                         | 11.00                          | 11.00          | 19.9 |
| 7            | 45.47                       | 50.00                         | 7.14                           | 7.14           | 32.3 |
| 6            | 47.44                       | 50.00                         | 8.33                           | 8.33           | 27.2 |
| 6            | 49.51                       | 52.50                         | 8.75                           | 8.75           | 25.7 |
| 7            | 51.48                       | 50.00                         | 7.14                           | 7.14           | 32.3 |
| 7            | 53.44                       | 50.00                         | 7.14                           | 7.14           | 32.3 |
| 7            | 55.31                       | 47.50                         | 6.79                           | 6.79           | 34.2 |
| 9            | 57.28                       | 50.00                         | 5.56                           | 5.56           | 42.8 |
| 10           | 59.25                       | 50.00                         | 5.00                           | 5.00           | 48.1 |
| 9            | 61.32                       | 52.50                         | 5.83                           | 5.83           | 40.5 |
| 11           | 63.29                       | 50.00                         | 4.55                           | 4.55           | 53.6 |

#### Graphical Penetration Rate Plot



Notes: Pavement thickness measured using pavement core obtained at this location.



6350 Presidential Gateway  
Columbus, Ohio 43231  
Telephone: (614) 823-4949  
Fax Number: (614) 823-4990

### Automated Dynamic Cone Penetrometer Summary (ASTM D6951)

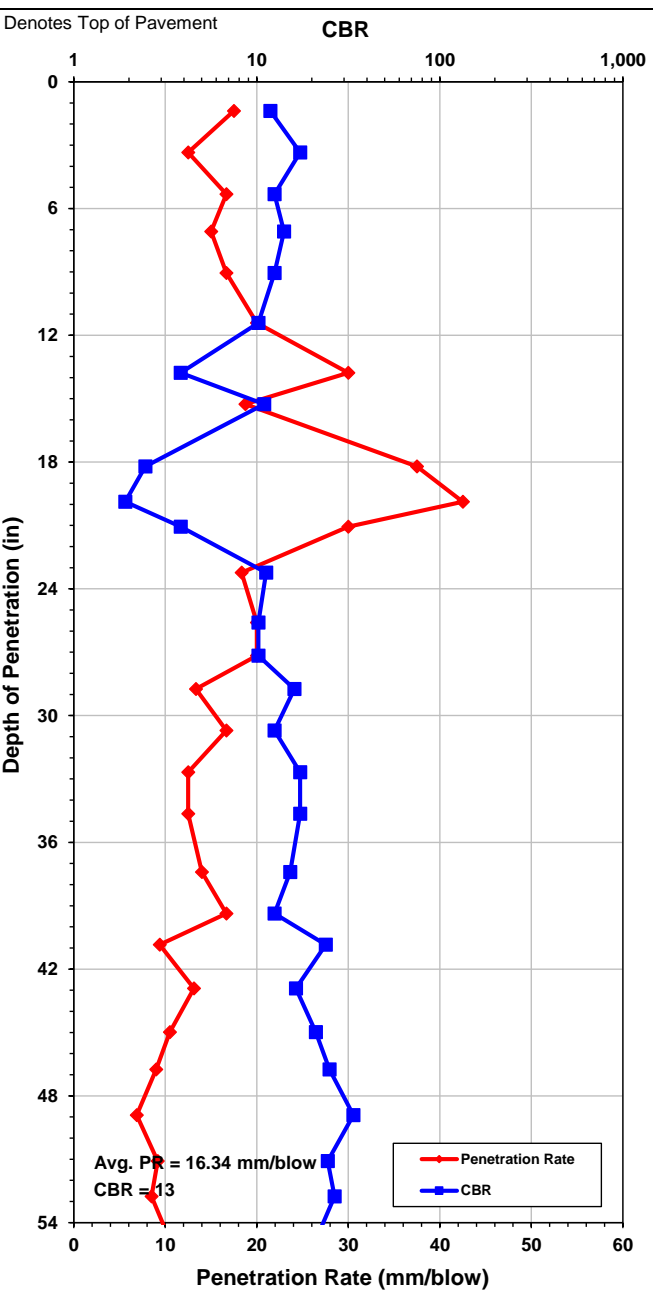
PROJECT: UNI-739-6.06 FDR  
LOCATION: SR 739  
RII JOB No.: W-20-160 ODOT PID No.: 112878  
ADCP No.: D-040-0-20  
DATE TEST PERFORMED: 3/8/2021

Test Location: N: 259226.84, E: 1702633.81  
Surface Elevation: 1055 ft msl  
Testing Personnel: Barry Scheiderer  
Surface Mat'l / Thick.: Asphalt, 9.5 in/Agg. Base, 5.5 in  
Test Elevation: 1053.75 ft msl  
Hammer Type: Kessler DCP  
Hammer Weight: 17.6 lb  
Drop Height: 22.6 in  
Output File Name: N/A  
Termination Depth: 61.12 in

#### ADCP Summary

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR  |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|------|
| 2            | 1.38                        | 35.00                         | 17.50                          | 17.50          | 11.8 |
| 4            | 3.35                        | 50.00                         | 12.50                          | 12.50          | 17.3 |
| 3            | 5.31                        | 50.00                         | 16.67                          | 16.67          | 12.5 |
| 3            | 7.09                        | 45.00                         | 15.00                          | 15.00          | 14.1 |
| 3            | 9.06                        | 50.00                         | 16.67                          | 16.67          | 12.5 |
| 3            | 11.42                       | 60.00                         | 20.00                          | 20.00          | 10.2 |
| 2            | 13.78                       | 60.00                         | 30.00                          | 30.00          | 3.8  |
| 2            | 15.26                       | 37.50                         | 18.75                          | 18.75          | 11.0 |
| 2            | 18.21                       | 75.00                         | 37.50                          | 37.50          | 2.5  |
| 1            | 19.88                       | 42.50                         | 42.50                          | 42.50          | 1.9  |
| 1            | 21.06                       | 30.00                         | 30.00                          | 30.00          | 3.8  |
| 3            | 23.23                       | 55.00                         | 18.33                          | 18.33          | 11.2 |
| 3            | 25.59                       | 60.00                         | 20.00                          | 20.00          | 10.2 |
| 2            | 27.17                       | 40.00                         | 20.00                          | 20.00          | 10.2 |
| 3            | 28.74                       | 40.00                         | 13.33                          | 13.33          | 16.0 |
| 3            | 30.71                       | 50.00                         | 16.67                          | 16.67          | 12.5 |
| 4            | 32.68                       | 50.00                         | 12.50                          | 12.50          | 17.3 |
| 4            | 34.65                       | 50.00                         | 12.50                          | 12.50          | 17.3 |
| 5            | 37.40                       | 70.00                         | 14.00                          | 14.00          | 15.2 |
| 3            | 39.37                       | 50.00                         | 16.67                          | 16.67          | 12.5 |
| 4            | 40.85                       | 37.50                         | 9.38                           | 9.38           | 23.8 |
| 4            | 42.91                       | 52.50                         | 13.13                          | 13.13          | 16.3 |
| 5            | 44.98                       | 52.50                         | 10.50                          | 10.50          | 21.0 |
| 5            | 46.75                       | 45.00                         | 9.00                           | 9.00           | 24.9 |
| 8            | 48.92                       | 55.00                         | 6.88                           | 6.88           | 33.7 |
| 6            | 51.08                       | 55.00                         | 9.17                           | 9.17           | 24.4 |
| 5            | 52.76                       | 42.50                         | 8.50                           | 8.50           | 26.6 |
| 5            | 54.82                       | 52.50                         | 10.50                          | 10.50          | 21.0 |
| 6            | 56.79                       | 50.00                         | 8.33                           | 8.33           | 27.2 |
| 5            | 58.96                       | 55.00                         | 11.00                          | 11.00          | 19.9 |
| 6            | 61.12                       | 55.00                         | 9.17                           | 9.17           | 24.4 |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |

#### Graphical Penetration Rate Plot



Notes: Pavement thickness estimated using measurements from adjacent borings.



6350 Presidential Gateway  
Columbus, Ohio 43231  
Telephone: (614) 823-4949  
Fax Number: (614) 823-4990

**Automated Dynamic Cone Penetrometer Summary  
(ASTM D6951)**

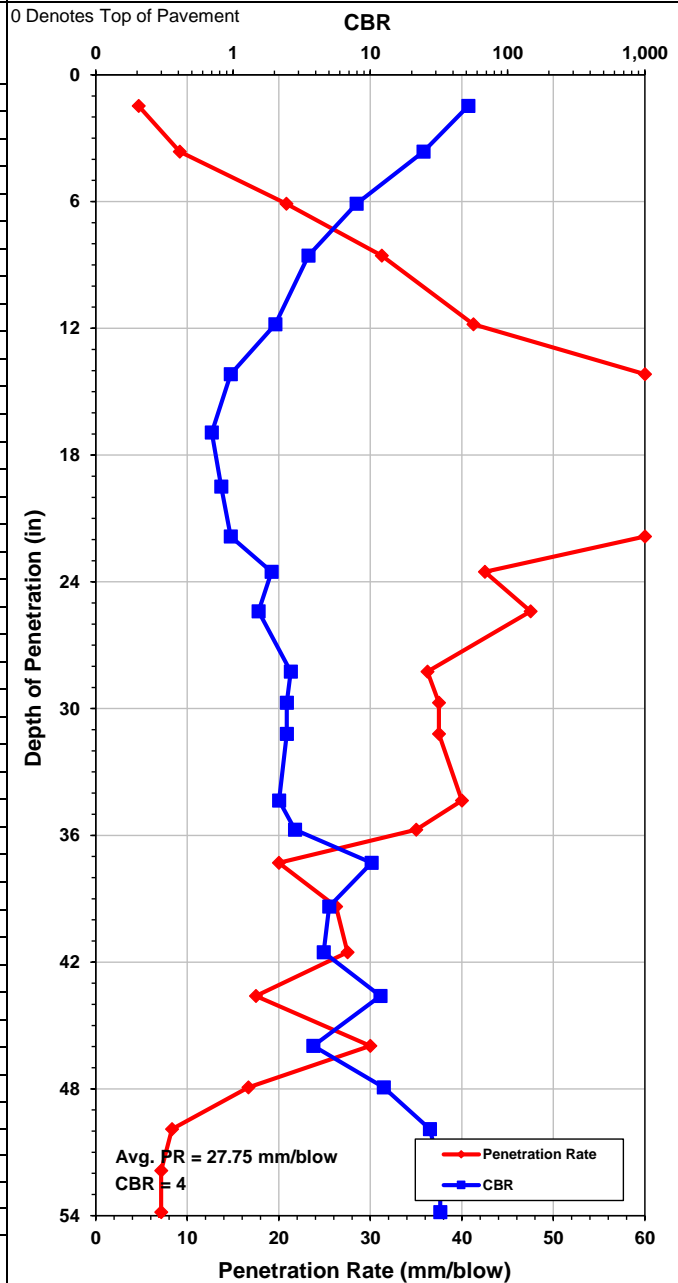
PROJECT: UNI-739-6.06 FDR  
LOCATION: SR 739  
RII JOB No.: W-20-160 ODOT PID No.: 112878  
ADCP No.: D-043-0-20  
DATE TEST PERFORMED: 3/8/2021

Test Location: N: 260427.52, E: 1702689.57  
Surface Elevation: 1049 ft msl  
Testing Personnel: Barry Scheiderer  
Surface Mat'l / Thick.: Asphalt, 8 in/Agg. Base, 4 in  
Test Elevation: 1048 ft msl  
Hammer Type: Kessler DCP  
Hammer Weight: 17.6 lb  
Drop Height: 22.6 in  
Output File Name: N/A  
Termination Depth: 63.39 in

ADCP Summary

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR  |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|------|
| 8            | 1.48                        | 37.50                         | 4.69                           | 4.69           | 51.8 |
| 6            | 3.64                        | 55.00                         | 9.17                           | 9.17           | 24.4 |
| 3            | 6.10                        | 62.50                         | 20.83                          | 20.83          | 8.0  |
| 2            | 8.56                        | 62.50                         | 31.25                          | 31.25          | 3.5  |
| 2            | 11.81                       | 82.50                         | 41.25                          | 41.25          | 2.0  |
| 1            | 14.17                       | 60.00                         | 60.00                          | 60.00          | 1.0  |
| 1            | 16.93                       | 70.00                         | 70.00                          | 70.00          | 0.7  |
| 1            | 19.49                       | 65.00                         | 65.00                          | 65.00          | 0.8  |
| 1            | 21.85                       | 60.00                         | 60.00                          | 60.00          | 1.0  |
| 1            | 23.52                       | 42.50                         | 42.50                          | 42.50          | 1.9  |
| 1            | 25.39                       | 47.50                         | 47.50                          | 47.50          | 1.5  |
| 2            | 28.25                       | 72.50                         | 36.25                          | 36.25          | 2.6  |
| 1            | 29.72                       | 37.50                         | 37.50                          | 37.50          | 2.5  |
| 1            | 31.20                       | 37.50                         | 37.50                          | 37.50          | 2.5  |
| 2            | 34.35                       | 80.00                         | 40.00                          | 40.00          | 2.2  |
| 1            | 35.73                       | 35.00                         | 35.00                          | 35.00          | 2.8  |
| 2            | 37.30                       | 40.00                         | 20.00                          | 20.00          | 10.2 |
| 2            | 39.37                       | 52.50                         | 26.25                          | 26.25          | 5.0  |
| 2            | 41.54                       | 55.00                         | 27.50                          | 27.50          | 4.6  |
| 3            | 43.60                       | 52.50                         | 17.50                          | 17.50          | 11.8 |
| 2            | 45.96                       | 60.00                         | 30.00                          | 30.00          | 3.8  |
| 3            | 47.93                       | 50.00                         | 16.67                          | 16.67          | 12.5 |
| 6            | 49.90                       | 50.00                         | 8.33                           | 8.33           | 27.2 |
| 7            | 51.87                       | 50.00                         | 7.14                           | 7.14           | 32.3 |
| 7            | 53.84                       | 50.00                         | 7.14                           | 7.14           | 32.3 |
| 8            | 55.81                       | 50.00                         | 6.25                           | 6.25           | 37.5 |
| 5            | 58.66                       | 72.50                         | 14.50                          | 14.50          | 14.6 |
| 7            | 59.94                       | 32.50                         | 4.64                           | 4.64           | 52.3 |
| 10           | 61.91                       | 50.00                         | 5.00                           | 5.00           | 48.1 |
| 12           | 63.39                       | 37.50                         | 3.13                           | 3.13           | 81.5 |

Graphical Penetration Rate Plot



Notes: Pavement thickness estimated using measurements from adjacent borings.



6350 Presidential Gateway  
Columbus, Ohio 43231  
Telephone: (614) 823-4949  
Fax Number: (614) 823-4990

**Automated Dynamic Cone Penetrometer Summary (ASTM D6951)**

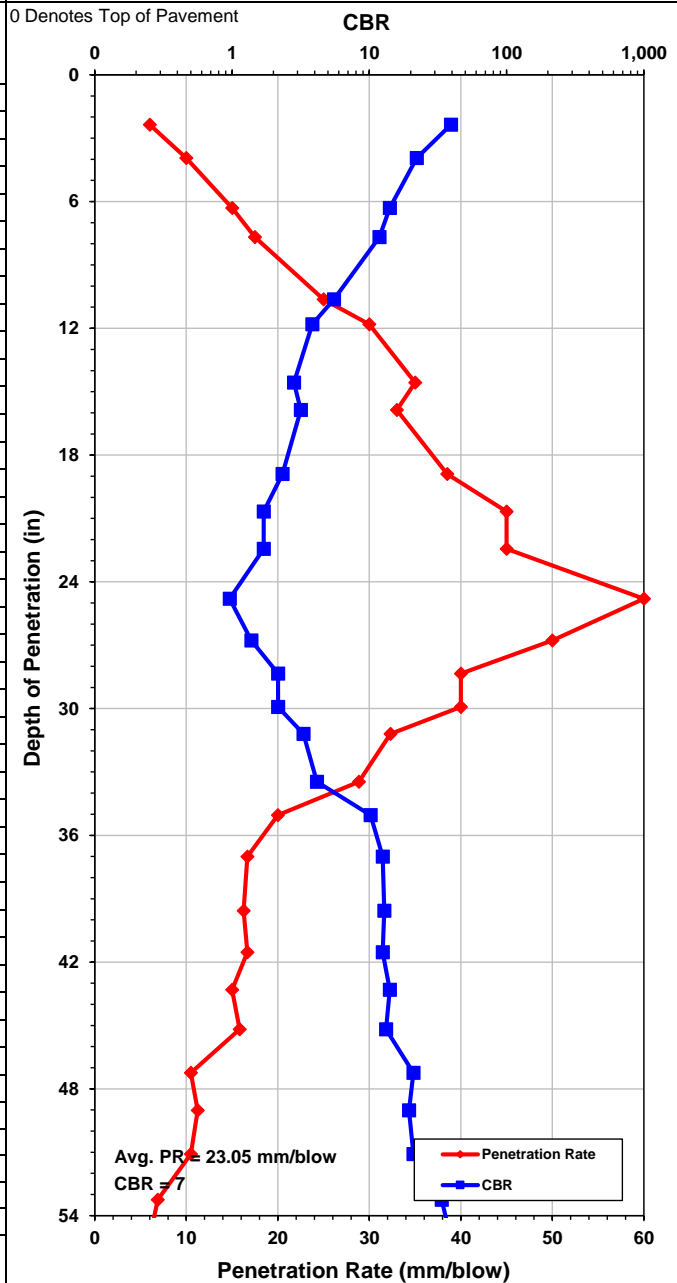
PROJECT: UNI-739-6.06 FDR  
LOCATION: SR 739  
RII JOB No.: W-20-160 ODOT PID No.: 112878  
ADCP No.: D-044-0-20  
DATE TEST PERFORMED: 3/11/2021

Test Location: N: 260830.32, E: 1702692.41  
Surface Elevation: 1050 ft msl  
Testing Personnel: Barry Scheiderer  
Surface Mat'l / Thick.: Asphalt, 11.5 in/Agg. Base, 2 in  
Test Elevation: 1048.88 ft msl  
Hammer Type: Kessler DCP  
Hammer Weight: 17.6 lb  
Drop Height: 22.6 in  
Output File Name: N/A  
Termination Depth: 61.42 in

ADC Summary

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR  |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|------|
| 10           | 2.36                        | 60.00                         | 6.00                           | 6.00           | 39.3 |
| 4            | 3.94                        | 40.00                         | 10.00                          | 10.00          | 22.2 |
| 4            | 6.30                        | 60.00                         | 15.00                          | 15.00          | 14.1 |
| 2            | 7.68                        | 35.00                         | 17.50                          | 17.50          | 11.8 |
| 3            | 10.63                       | 75.00                         | 25.00                          | 25.00          | 5.5  |
| 1            | 11.81                       | 30.00                         | 30.00                          | 30.00          | 3.8  |
| 2            | 14.57                       | 70.00                         | 35.00                          | 35.00          | 2.8  |
| 1            | 15.87                       | 33.00                         | 33.00                          | 33.00          | 3.2  |
| 2            | 18.90                       | 77.00                         | 38.50                          | 38.50          | 2.3  |
| 1            | 20.67                       | 45.00                         | 45.00                          | 45.00          | 1.7  |
| 1            | 22.44                       | 45.00                         | 45.00                          | 45.00          | 1.7  |
| 1            | 24.80                       | 60.00                         | 60.00                          | 60.00          | 1.0  |
| 1            | 26.77                       | 50.00                         | 50.00                          | 50.00          | 1.4  |
| 1            | 28.35                       | 40.00                         | 40.00                          | 40.00          | 2.2  |
| 1            | 29.92                       | 40.00                         | 40.00                          | 40.00          | 2.2  |
| 1            | 31.19                       | 32.30                         | 32.30                          | 32.30          | 3.3  |
| 2            | 33.46                       | 57.70                         | 28.85                          | 28.85          | 4.2  |
| 2            | 35.04                       | 40.00                         | 20.00                          | 20.00          | 10.2 |
| 3            | 37.01                       | 50.00                         | 16.67                          | 16.67          | 12.5 |
| 4            | 39.57                       | 65.00                         | 16.25                          | 16.25          | 12.9 |
| 3            | 41.54                       | 50.00                         | 16.67                          | 16.67          | 12.5 |
| 3            | 43.31                       | 45.00                         | 15.00                          | 15.00          | 14.1 |
| 3            | 45.18                       | 47.50                         | 15.83                          | 15.83          | 13.2 |
| 5            | 47.24                       | 52.50                         | 10.50                          | 10.50          | 21.0 |
| 4            | 49.02                       | 45.00                         | 11.25                          | 11.25          | 19.4 |
| 5            | 51.08                       | 52.50                         | 10.50                          | 10.50          | 21.0 |
| 8            | 53.25                       | 55.00                         | 6.88                           | 6.88           | 33.7 |
| 7            | 54.92                       | 42.50                         | 6.07                           | 6.07           | 38.7 |
| 8            | 57.09                       | 55.00                         | 6.88                           | 6.88           | 33.7 |
| 9            | 59.15                       | 52.50                         | 5.83                           | 5.83           | 40.5 |
| 11           | 61.42                       | 57.50                         | 5.23                           | 5.23           | 45.8 |

Graphical Penetration Rate Plot



Notes: Pavement thickness measured using pavement core obtained at this location.



6350 Presidential Gateway  
 Columbus, Ohio 43231  
 Telephone: (614) 823-4949  
 Fax Number: (614) 823-4990

### Automated Dynamic Cone Penetrometer Summary (ASTM D6951)

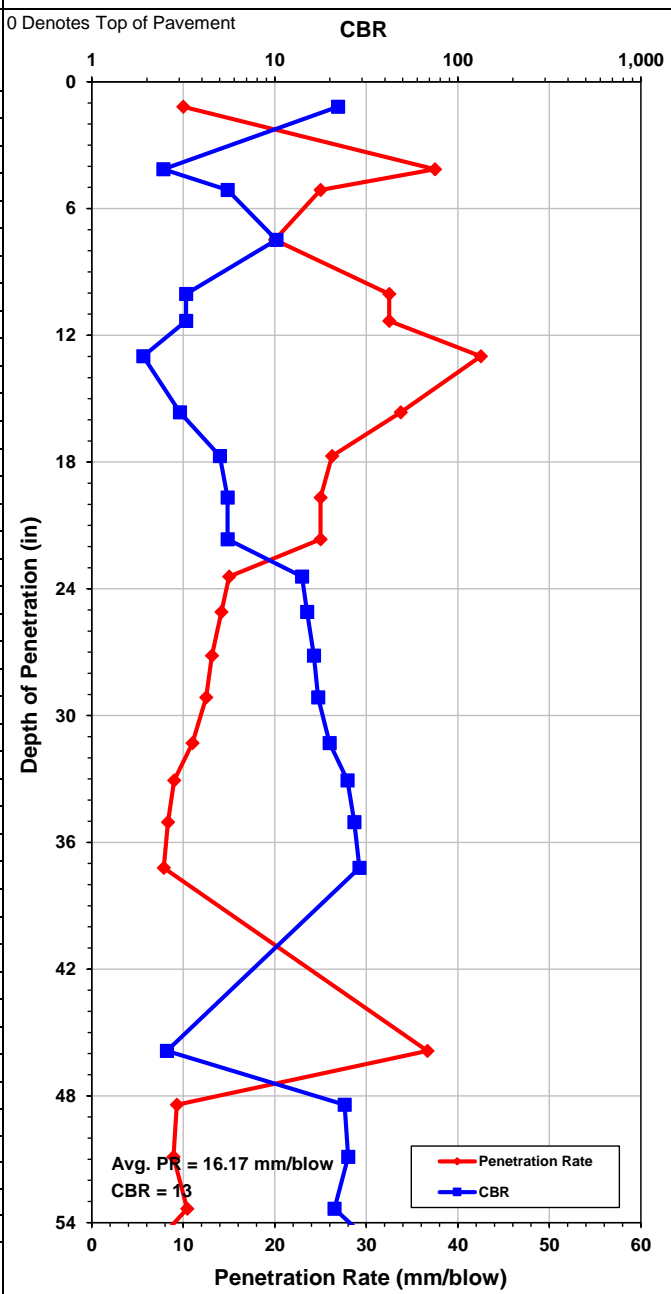
PROJECT: UNI-739-6.06 FDR  
 LOCATION: SR 739  
 RII JOB No.: W-20-160 ODOT PID No.: 112878  
 ADCP No.: D-047-0-20  
 DATE TEST PERFORMED: 3/8/2021

|                         |                               |                    |             |
|-------------------------|-------------------------------|--------------------|-------------|
| Test Location:          | N: 262032.52, E: 1702751.92   | Hammer Type:       | Kessler DCP |
| Surface Elevation:      | 1043 ft msl                   | Hammer Weight:     | 17.6 lb     |
| Testing Personnel:      | Barry Scheiderer              | Drop Height:       | 22.6 in     |
| Surface Mat'l / Thick.: | Asphalt, 8 in/Agg. Base, 4 in | Output File Name:  | N/A         |
| Test Elevation:         | 1042 ft msl                   | Termination Depth: | 74.61 in    |

#### ADCP Summary

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR  |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|------|
| 3            | 1.18                        | 30.00                         | 10.00                          | 10.00          | 22.2 |
| 2            | 4.13                        | 75.00                         | 37.50                          | 37.50          | 2.5  |
| 1            | 5.12                        | 25.00                         | 25.00                          | 25.00          | 5.5  |
| 3            | 7.48                        | 60.00                         | 20.00                          | 20.00          | 10.2 |
| 2            | 10.04                       | 65.00                         | 32.50                          | 32.50          | 3.3  |
| 1            | 11.32                       | 32.50                         | 32.50                          | 32.50          | 3.3  |
| 1            | 12.99                       | 42.50                         | 42.50                          | 42.50          | 1.9  |
| 2            | 15.65                       | 67.50                         | 33.75                          | 33.75          | 3.0  |
| 2            | 17.72                       | 52.50                         | 26.25                          | 26.25          | 5.0  |
| 2            | 19.69                       | 50.00                         | 25.00                          | 25.00          | 5.5  |
| 2            | 21.65                       | 50.00                         | 25.00                          | 25.00          | 5.5  |
| 3            | 23.43                       | 45.00                         | 15.00                          | 15.00          | 14.1 |
| 3            | 25.10                       | 42.50                         | 14.17                          | 14.17          | 15.0 |
| 4            | 27.17                       | 52.50                         | 13.13                          | 13.13          | 16.3 |
| 4            | 29.13                       | 50.00                         | 12.50                          | 12.50          | 17.3 |
| 5            | 31.30                       | 55.00                         | 11.00                          | 11.00          | 19.9 |
| 5            | 33.07                       | 45.00                         | 9.00                           | 9.00           | 24.9 |
| 6            | 35.04                       | 50.00                         | 8.33                           | 8.33           | 27.2 |
| 7            | 37.20                       | 55.00                         | 7.86                           | 7.86           | 29.0 |
| 6            | 45.87                       | 220.00                        | 36.67                          | 36.67          | 2.6  |
| 7            | 48.43                       | 65.00                         | 9.29                           | 9.29           | 24.1 |
| 7            | 50.89                       | 62.50                         | 8.93                           | 8.93           | 25.1 |
| 6            | 53.35                       | 62.50                         | 10.42                          | 10.42          | 21.2 |
| 8            | 55.31                       | 50.00                         | 6.25                           | 6.25           | 37.5 |
| 7            | 57.68                       | 60.00                         | 8.57                           | 8.57           | 26.3 |
| 8            | 60.24                       | 65.00                         | 8.13                           | 8.13           | 27.9 |
| 9            | 62.20                       | 50.00                         | 5.56                           | 5.56           | 42.8 |
| 7            | 64.37                       | 55.00                         | 7.86                           | 7.86           | 29.0 |
| 7            | 66.54                       | 55.00                         | 7.86                           | 7.86           | 29.0 |
| 8            | 68.70                       | 55.00                         | 6.88                           | 6.88           | 33.7 |
| 9            | 70.50                       | 45.75                         | 5.08                           | 5.08           | 47.3 |
| 10           | 72.24                       | 44.25                         | 4.43                           | 4.43           | 55.2 |
| 9            | 74.61                       | 60.00                         | 6.67                           | 6.67           | 34.9 |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |

#### Graphical Penetration Rate Plot



Notes: Pavement thickness estimated using measurements from adjacent borings.











6350 Presidential Gateway  
 Columbus, Ohio 43231  
 Telephone: (614) 823-4949  
 Fax Number: (614) 823-4990

### Automated Dynamic Cone Penetrometer Summary (ASTM D6951)

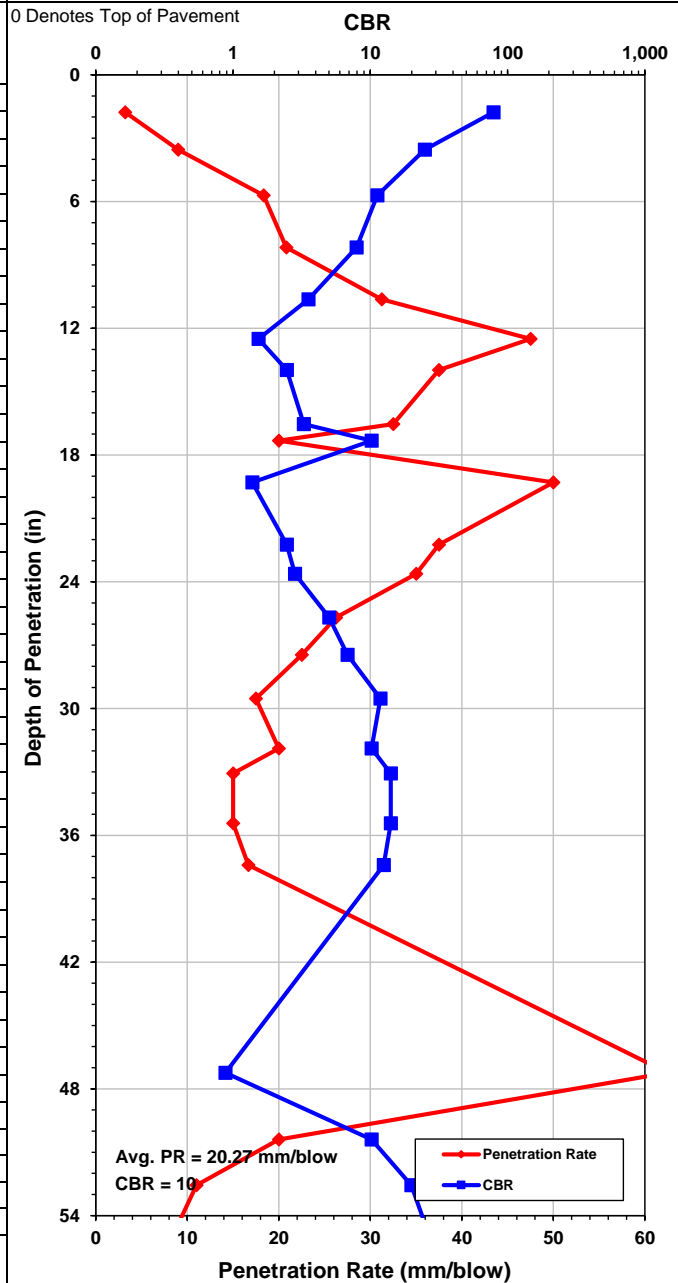
PROJECT: UNI-739-6.06 FDR  
 LOCATION: SR 739  
 RII JOB No.: W-20-160 ODOT PID No.: 112878  
 ADCP No.: D-055-0-20  
 DATE TEST PERFORMED: 3/9/2021

Test Location: N: 265178.17, E: 1702870.83  
 Surface Elevation: 1040 ft msl  
 Testing Personnel: Barry Scheiderer  
 Surface Mat'l / Thick.: Asphalt, 8 in/Agg. Base, 4 in  
 Test Elevation: 1039 ft msl  
 Hammer Type: Kessler DCP  
 Hammer Weight: 17.6 lb  
 Drop Height: 22.6 in  
 Output File Name: N/A  
 Termination Depth: 74.8 in

#### ADCP Summary

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR  |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|------|
| 14           | 1.77                        | 45.00                         | 3.21                           | 3.21           | 79.0 |
| 5            | 3.54                        | 45.00                         | 9.00                           | 9.00           | 24.9 |
| 3            | 5.71                        | 55.00                         | 18.33                          | 18.33          | 11.2 |
| 3            | 8.17                        | 62.50                         | 20.83                          | 20.83          | 8.0  |
| 2            | 10.63                       | 62.50                         | 31.25                          | 31.25          | 3.5  |
| 1            | 12.50                       | 47.50                         | 47.50                          | 47.50          | 1.5  |
| 1            | 13.98                       | 37.50                         | 37.50                          | 37.50          | 2.5  |
| 2            | 16.54                       | 65.00                         | 32.50                          | 32.50          | 3.3  |
| 1            | 17.32                       | 20.00                         | 20.00                          | 20.00          | 10.2 |
| 1            | 19.29                       | 50.00                         | 50.00                          | 50.00          | 1.4  |
| 2            | 22.24                       | 75.00                         | 37.50                          | 37.50          | 2.5  |
| 1            | 23.62                       | 35.00                         | 35.00                          | 35.00          | 2.8  |
| 2            | 25.69                       | 52.50                         | 26.25                          | 26.25          | 5.0  |
| 2            | 27.46                       | 45.00                         | 22.50                          | 22.50          | 6.8  |
| 3            | 29.53                       | 52.50                         | 17.50                          | 17.50          | 11.8 |
| 3            | 31.89                       | 60.00                         | 20.00                          | 20.00          | 10.2 |
| 2            | 33.07                       | 30.00                         | 15.00                          | 15.00          | 14.1 |
| 4            | 35.43                       | 60.00                         | 15.00                          | 15.00          | 14.1 |
| 3            | 37.40                       | 50.00                         | 16.67                          | 16.67          | 12.5 |
| 4            | 47.24                       | 250.00                        | 62.50                          | 62.50          | 0.9  |
| 4            | 50.39                       | 80.00                         | 20.00                          | 20.00          | 10.2 |
| 5            | 52.56                       | 55.00                         | 11.00                          | 11.00          | 19.9 |
| 6            | 54.63                       | 52.50                         | 8.75                           | 8.75           | 25.7 |
| 7            | 56.30                       | 42.50                         | 6.07                           | 6.07           | 38.7 |
| 7            | 59.06                       | 70.00                         | 10.00                          | 10.00          | 22.2 |
| 6            | 61.61                       | 65.00                         | 10.83                          | 10.83          | 20.3 |
| 8            | 64.47                       | 72.50                         | 9.06                           | 9.06           | 24.7 |
| 9            | 66.14                       | 42.50                         | 4.72                           | 4.72           | 51.3 |
| 8            | 68.70                       | 65.00                         | 8.13                           | 8.13           | 27.9 |
| 9            | 70.77                       | 52.50                         | 5.83                           | 5.83           | 40.5 |
| 7            | 72.44                       | 42.50                         | 6.07                           | 6.07           | 38.7 |
| 6            | 74.80                       | 60.00                         | 10.00                          | 10.00          | 22.2 |

#### Graphical Penetration Rate Plot



Notes: Pavement thickness estimated using measurements from adjacent borings.































6350 Presidential Gateway  
 Columbus, Ohio 43231  
 Telephone: (614) 823-4949  
 Fax Number: (614) 823-4990

**Automated Dynamic Cone Penetrometer Summary  
 (ASTM D6951)**

PROJECT: UNI-739-6.06 FDR  
 LOCATION: SR 739  
 RII JOB No.: W-20-160 ODOT PID No.: 112878  
 ADCP No.: D-080-0-20  
 DATE TEST PERFORMED: 3/11/2021

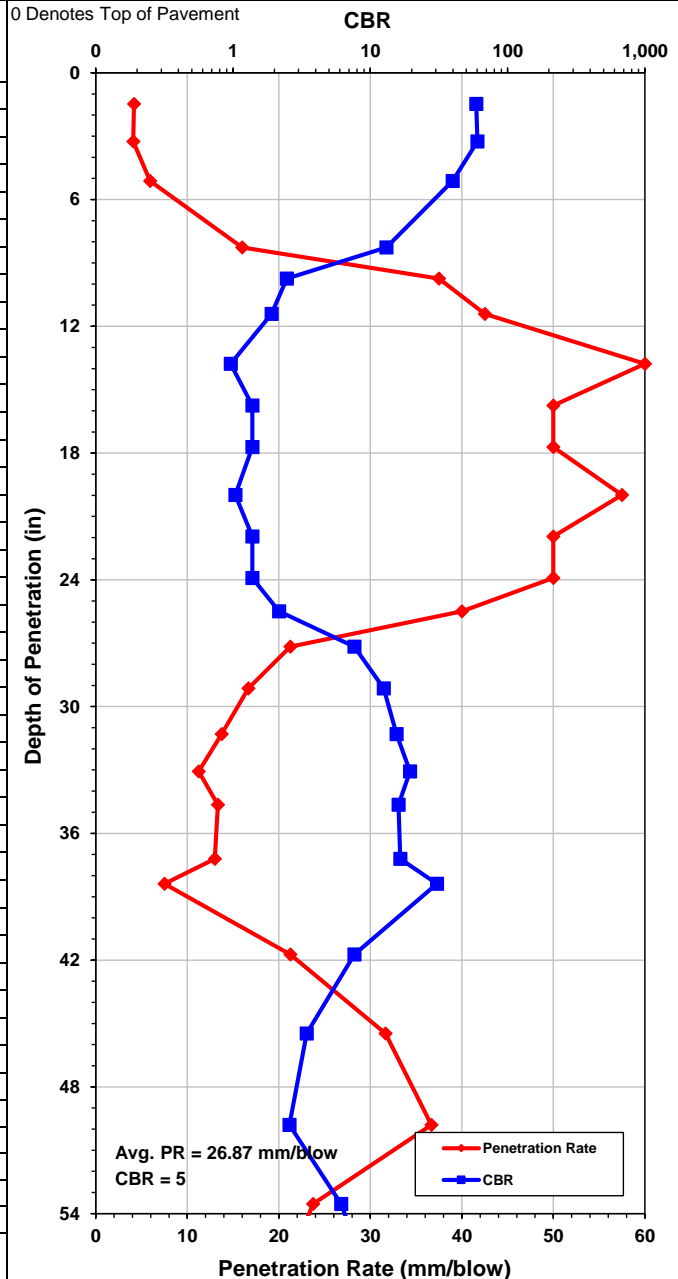
Test Location: N: 275134.53, E: 1703001.16  
 Surface Elevation: 1032 ft msl  
 Testing Personnel: Barry Scheiderer  
 Surface Mat'l / Thick.: Asphalt, 8.5 in/Agg. Base, 6.5 in  
 Test Elevation: 1030.75 ft msl

Hammer Type: Kessler DCP  
 Hammer Weight: 17.6 lb  
 Drop Height: 22.6 in  
 Output File Name: N/A  
 Termination Depth: 82.28 in

ADCP Summary

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR  |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|------|
| 9            | 1.48                        | 37.50                         | 4.17                           | 4.17           | 59.0 |
| 11           | 3.25                        | 45.00                         | 4.09                           | 4.09           | 60.3 |
| 8            | 5.12                        | 47.50                         | 5.94                           | 5.94           | 39.7 |
| 5            | 8.27                        | 80.00                         | 16.00                          | 16.00          | 13.1 |
| 1            | 9.74                        | 37.50                         | 37.50                          | 37.50          | 2.5  |
| 1            | 11.42                       | 42.50                         | 42.50                          | 42.50          | 1.9  |
| 1            | 13.78                       | 60.00                         | 60.00                          | 60.00          | 1.0  |
| 1            | 15.75                       | 50.00                         | 50.00                          | 50.00          | 1.4  |
| 1            | 17.72                       | 50.00                         | 50.00                          | 50.00          | 1.4  |
| 1            | 19.98                       | 57.50                         | 57.50                          | 57.50          | 1.0  |
| 1            | 21.95                       | 50.00                         | 50.00                          | 50.00          | 1.4  |
| 1            | 23.92                       | 50.00                         | 50.00                          | 50.00          | 1.4  |
| 1            | 25.49                       | 40.00                         | 40.00                          | 40.00          | 2.2  |
| 2            | 27.17                       | 42.50                         | 21.25                          | 21.25          | 7.7  |
| 3            | 29.13                       | 50.00                         | 16.67                          | 16.67          | 12.5 |
| 4            | 31.30                       | 55.00                         | 13.75                          | 13.75          | 15.5 |
| 4            | 33.07                       | 45.00                         | 11.25                          | 11.25          | 19.4 |
| 3            | 34.65                       | 40.00                         | 13.33                          | 13.33          | 16.0 |
| 5            | 37.20                       | 65.00                         | 13.00                          | 13.00          | 16.5 |
| 4            | 38.39                       | 30.00                         | 7.50                           | 7.50           | 30.6 |
| 4            | 41.73                       | 85.00                         | 21.25                          | 21.25          | 7.7  |
| 3            | 45.47                       | 95.00                         | 31.67                          | 31.67          | 3.4  |
| 3            | 49.80                       | 110.00                        | 36.67                          | 36.67          | 2.6  |
| 4            | 53.54                       | 95.00                         | 23.75                          | 23.75          | 6.1  |
| 5            | 57.48                       | 100.00                        | 20.00                          | 20.00          | 10.2 |
| 5            | 61.52                       | 102.50                        | 20.50                          | 20.50          | 8.2  |
| 6            | 66.14                       | 117.50                        | 19.58                          | 19.58          | 10.4 |
| 3            | 69.69                       | 90.00                         | 30.00                          | 30.00          | 3.8  |
| 4            | 73.72                       | 102.50                        | 25.63                          | 25.63          | 5.3  |
| 5            | 77.56                       | 97.50                         | 19.50                          | 19.50          | 10.5 |
| 6            | 82.28                       | 120.00                        | 20.00                          | 20.00          | 10.2 |

Graphical Penetration Rate Plot



Notes: Pavement thickness estimated using measurements from adjacent borings.



6350 Presidential Gateway  
Columbus, Ohio 43231  
Telephone: (614) 823-4949  
Fax Number: (614) 823-4990

### Automated Dynamic Cone Penetrometer Summary (ASTM D6951)

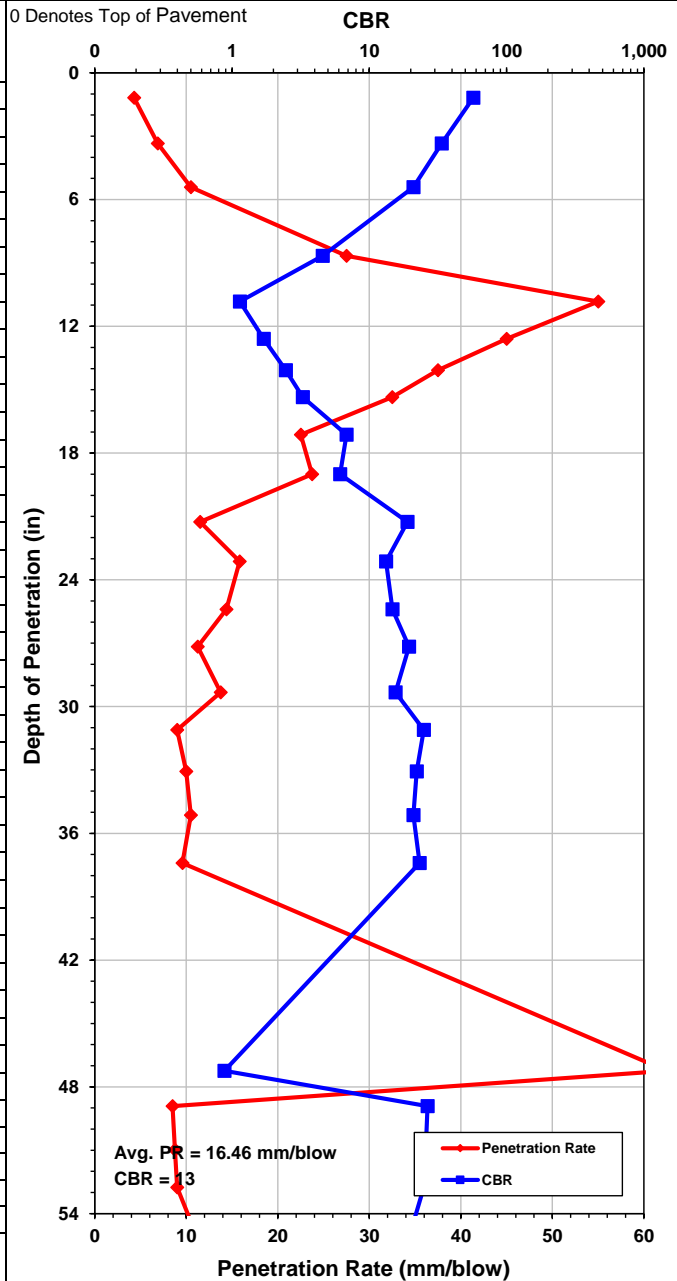
PROJECT: UNI-739-6.06 FDR  
LOCATION: SR 739  
RII JOB No.: W-20-160 ODOT PID No.: 112878  
ADCP No.: D-083-0-20  
DATE TEST PERFORMED: 3/11/2021

Test Location: N: 276299.24, E: 1702712.11  
Surface Elevation: 1035 ft msl  
Testing Personnel: Barry Scheiderer  
Surface Mat'l / Thick.: Asphalt, 9.5 in/Agg. Base, 5.5 in  
Test Elevation: 1033.75 ft msl  
Hammer Type: Kessler DCP  
Hammer Weight: 17.6 lb  
Drop Height: 22.6 in  
Output File Name: N/A  
Termination Depth: 74.8 in

ADCP Summary

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR  |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|------|
| 7            | 1.18                        | 30.00                         | 4.29                           | 4.29           | 57.2 |
| 8            | 3.35                        | 55.00                         | 6.88                           | 6.88           | 33.7 |
| 5            | 5.41                        | 52.50                         | 10.50                          | 10.50          | 21.0 |
| 3            | 8.66                        | 82.50                         | 27.50                          | 27.50          | 4.6  |
| 1            | 10.83                       | 55.00                         | 55.00                          | 55.00          | 1.1  |
| 1            | 12.60                       | 45.00                         | 45.00                          | 45.00          | 1.7  |
| 1            | 14.07                       | 37.50                         | 37.50                          | 37.50          | 2.5  |
| 1            | 15.35                       | 32.50                         | 32.50                          | 32.50          | 3.3  |
| 2            | 17.13                       | 45.00                         | 22.50                          | 22.50          | 6.8  |
| 2            | 19.00                       | 47.50                         | 23.75                          | 23.75          | 6.1  |
| 5            | 21.26                       | 57.50                         | 11.50                          | 11.50          | 18.9 |
| 3            | 23.13                       | 47.50                         | 15.83                          | 15.83          | 13.2 |
| 4            | 25.39                       | 57.50                         | 14.38                          | 14.38          | 14.8 |
| 4            | 27.17                       | 45.00                         | 11.25                          | 11.25          | 19.4 |
| 4            | 29.33                       | 55.00                         | 13.75                          | 13.75          | 15.5 |
| 5            | 31.10                       | 45.00                         | 9.00                           | 9.00           | 24.9 |
| 5            | 33.07                       | 50.00                         | 10.00                          | 10.00          | 22.2 |
| 5            | 35.14                       | 52.50                         | 10.50                          | 10.50          | 21.0 |
| 6            | 37.40                       | 57.50                         | 9.58                           | 9.58           | 23.2 |
| 4            | 47.24                       | 250.00                        | 62.50                          | 62.50          | 0.9  |
| 5            | 48.92                       | 42.50                         | 8.50                           | 8.50           | 26.6 |
| 6            | 50.98                       | 52.50                         | 8.75                           | 8.75           | 25.7 |
| 5            | 52.76                       | 45.00                         | 9.00                           | 9.00           | 24.9 |
| 5            | 54.92                       | 55.00                         | 11.00                          | 11.00          | 19.9 |
| 4            | 56.89                       | 50.00                         | 12.50                          | 12.50          | 17.3 |
| 6            | 58.66                       | 45.00                         | 7.50                           | 7.50           | 30.6 |
| 5            | 60.83                       | 55.00                         | 11.00                          | 11.00          | 19.9 |
| 6            | 62.89                       | 52.50                         | 8.75                           | 8.75           | 25.7 |
| 5            | 64.57                       | 42.50                         | 8.50                           | 8.50           | 26.6 |
| 7            | 66.63                       | 52.50                         | 7.50                           | 7.50           | 30.6 |
| 8            | 69.00                       | 60.00                         | 7.50                           | 7.50           | 30.6 |
| 7            | 71.06                       | 52.50                         | 7.50                           | 7.50           | 30.6 |
| 6            | 72.44                       | 35.00                         | 5.83                           | 5.83           | 40.5 |
| 5            | 74.80                       | 60.00                         | 12.00                          | 12.00          | 18.1 |

Graphical Penetration Rate Plot



Notes: Pavement thickness estimated using measurements from adjacent borings.



6350 Presidential Gateway  
 Columbus, Ohio 43231  
 Telephone: (614) 823-4949  
 Fax Number: (614) 823-4990

### Automated Dynamic Cone Penetrometer Summary (ASTM D6951)

|                     |                  |              |        |
|---------------------|------------------|--------------|--------|
| PROJECT             | UNI-739-6.06 FDR |              |        |
| LOCATION            | SR 739           |              |        |
| RII JOB No.         | W-20-160         | ODOT PID No. | 112878 |
| ADCP No.            | D-084-0-20       |              |        |
| DATE TEST PERFORMED | 3/11/2021        |              |        |

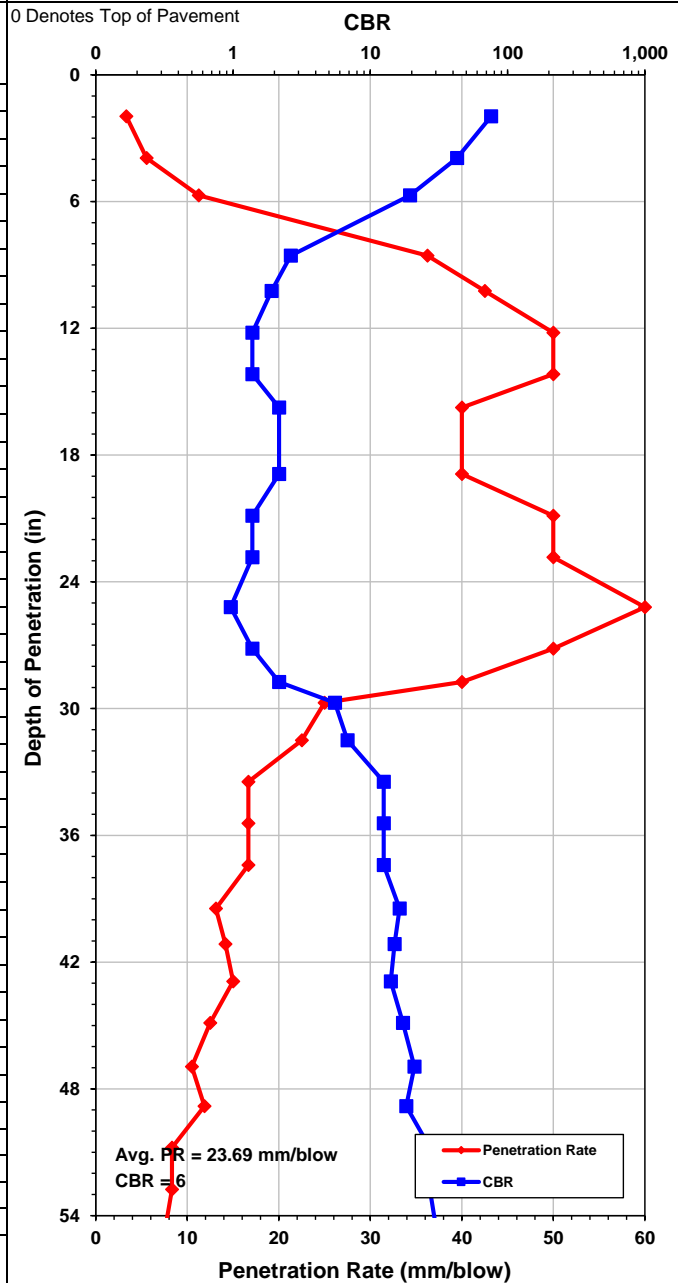
Test Location: N: 276669.2, E: 1702578.17  
 Surface Elevation: 1037 ft msl  
 Testing Personnel: Barry Scheiderer  
 Surface Mat'l / Thick.: Asphalt, 9 in/Agg. Base, 14 in  
 Test Elevation: 1035.08 ft msl

Hammer Type: Kessler DCP  
 Hammer Weight: 17.6 lb  
 Drop Height: 22.6 in  
 Output File Name: N/A  
 Termination Depth: 62.99 in

#### ADCP Summary

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR  |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|------|
| 15           | 1.97                        | 50.00                         | 3.33                           | 3.33           | 75.8 |
| 9            | 3.94                        | 50.00                         | 5.56                           | 5.56           | 42.8 |
| 4            | 5.71                        | 45.00                         | 11.25                          | 11.25          | 19.4 |
| 2            | 8.56                        | 72.50                         | 36.25                          | 36.25          | 2.6  |
| 1            | 10.24                       | 42.50                         | 42.50                          | 42.50          | 1.9  |
| 1            | 12.20                       | 50.00                         | 50.00                          | 50.00          | 1.4  |
| 1            | 14.17                       | 50.00                         | 50.00                          | 50.00          | 1.4  |
| 1            | 15.75                       | 40.00                         | 40.00                          | 40.00          | 2.2  |
| 2            | 18.90                       | 80.00                         | 40.00                          | 40.00          | 2.2  |
| 1            | 20.87                       | 50.00                         | 50.00                          | 50.00          | 1.4  |
| 1            | 22.83                       | 50.00                         | 50.00                          | 50.00          | 1.4  |
| 1            | 25.20                       | 60.00                         | 60.00                          | 60.00          | 1.0  |
| 1            | 27.17                       | 50.00                         | 50.00                          | 50.00          | 1.4  |
| 1            | 28.74                       | 40.00                         | 40.00                          | 40.00          | 2.2  |
| 1            | 29.72                       | 25.00                         | 25.00                          | 25.00          | 5.5  |
| 2            | 31.50                       | 45.00                         | 22.50                          | 22.50          | 6.8  |
| 3            | 33.46                       | 50.00                         | 16.67                          | 16.67          | 12.5 |
| 3            | 35.43                       | 50.00                         | 16.67                          | 16.67          | 12.5 |
| 3            | 37.40                       | 50.00                         | 16.67                          | 16.67          | 12.5 |
| 4            | 39.47                       | 52.50                         | 13.13                          | 13.13          | 16.3 |
| 3            | 41.14                       | 42.50                         | 14.17                          | 14.17          | 15.0 |
| 3            | 42.91                       | 45.00                         | 15.00                          | 15.00          | 14.1 |
| 4            | 44.88                       | 50.00                         | 12.50                          | 12.50          | 17.3 |
| 5            | 46.95                       | 52.50                         | 10.50                          | 10.50          | 21.0 |
| 4            | 48.82                       | 47.50                         | 11.88                          | 11.88          | 18.3 |
| 6            | 50.79                       | 50.00                         | 8.33                           | 8.33           | 27.2 |
| 6            | 52.76                       | 50.00                         | 8.33                           | 8.33           | 27.2 |
| 7            | 54.82                       | 52.50                         | 7.50                           | 7.50           | 30.6 |
| 6            | 56.69                       | 47.50                         | 7.92                           | 7.92           | 28.8 |
| 6            | 58.66                       | 50.00                         | 8.33                           | 8.33           | 27.2 |
| 7            | 60.93                       | 57.50                         | 8.21                           | 8.21           | 27.6 |
| 9            | 62.99                       | 52.50                         | 5.83                           | 5.83           | 40.5 |

#### Graphical Penetration Rate Plot



Notes: Pavement thickness measured using pavement core obtained at this location.



6350 Presidential Gateway  
 Columbus, Ohio 43231  
 Telephone: (614) 823-4949  
 Fax Number: (614) 823-4990

**Automated Dynamic Cone Penetrometer Summary  
 (ASTM D6951)**

|                     |                  |              |        |
|---------------------|------------------|--------------|--------|
| PROJECT             | UNI-739-6.06 FDR |              |        |
| LOCATION            | SR 739           |              |        |
| RII JOB No.         | W-20-160         | ODOT PID No. | 112878 |
| ADCP No.            | D-087-0-20       |              |        |
| DATE TEST PERFORMED | 3/11/2021        |              |        |

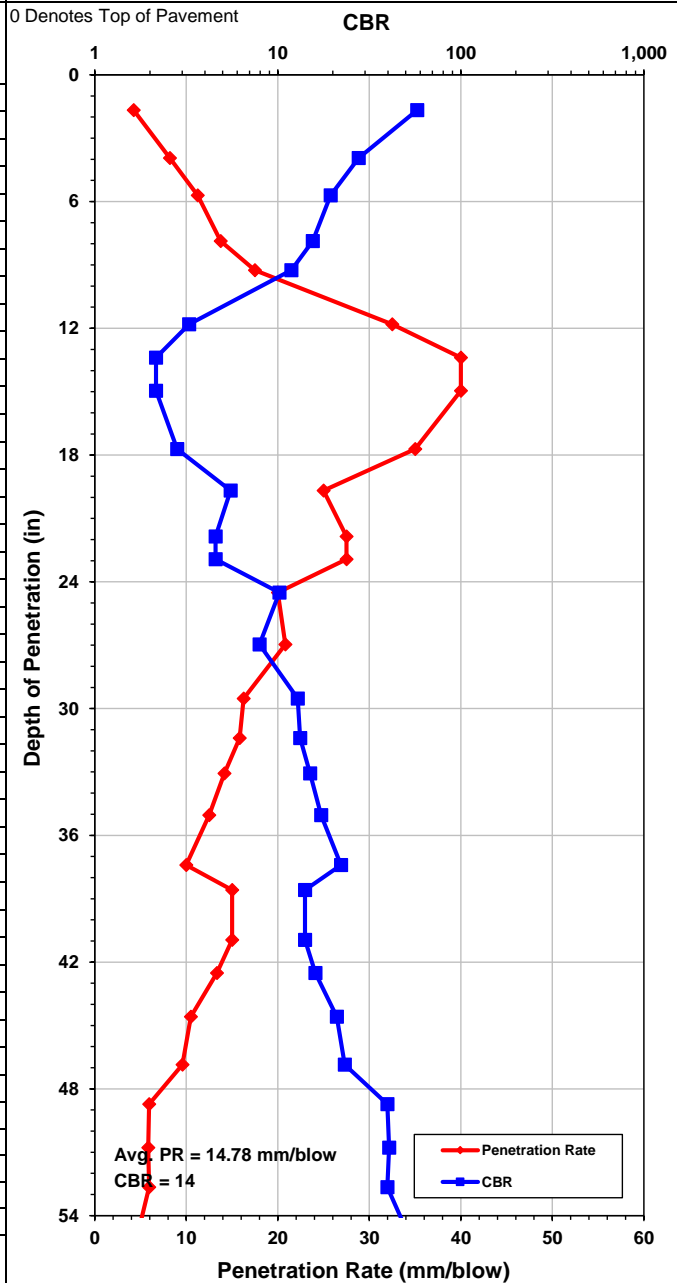
|                         |                                   |
|-------------------------|-----------------------------------|
| Test Location:          | N: 277727.2, E: 1702022.73        |
| Surface Elevation:      | 1047 ft msl                       |
| Testing Personnel:      | Barry Scheiderer                  |
| Surface Mat'l / Thick.: | Asphalt, 9.5 in/Agg. Base, 8.5 in |
| Test Elevation:         | 1045.5 ft msl                     |

|                    |             |
|--------------------|-------------|
| Hammer Type:       | Kessler DCP |
| Hammer Weight:     | 17.6 lb     |
| Drop Height:       | 22.6 in     |
| Output File Name:  | N/A         |
| Termination Depth: | 66.93 in    |

ADCP Summary

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR  |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|------|
| 10           | 1.67                        | 42.50                         | 4.25                           | 4.25           | 57.8 |
| 7            | 3.94                        | 57.50                         | 8.21                           | 8.21           | 27.6 |
| 4            | 5.71                        | 45.00                         | 11.25                          | 11.25          | 19.4 |
| 4            | 7.87                        | 55.00                         | 13.75                          | 13.75          | 15.5 |
| 2            | 9.25                        | 35.00                         | 17.50                          | 17.50          | 11.8 |
| 2            | 11.81                       | 65.00                         | 32.50                          | 32.50          | 3.3  |
| 1            | 13.39                       | 40.00                         | 40.00                          | 40.00          | 2.2  |
| 1            | 14.96                       | 40.00                         | 40.00                          | 40.00          | 2.2  |
| 2            | 17.72                       | 70.00                         | 35.00                          | 35.00          | 2.8  |
| 2            | 19.69                       | 50.00                         | 25.00                          | 25.00          | 5.5  |
| 2            | 21.85                       | 55.00                         | 27.50                          | 27.50          | 4.6  |
| 1            | 22.93                       | 27.50                         | 27.50                          | 27.50          | 4.6  |
| 2            | 24.51                       | 40.00                         | 20.00                          | 20.00          | 10.2 |
| 3            | 26.97                       | 62.50                         | 20.83                          | 20.83          | 8.0  |
| 4            | 29.53                       | 65.00                         | 16.25                          | 16.25          | 12.9 |
| 3            | 31.40                       | 47.50                         | 15.83                          | 15.83          | 13.2 |
| 3            | 33.07                       | 42.50                         | 14.17                          | 14.17          | 15.0 |
| 4            | 35.04                       | 50.00                         | 12.50                          | 12.50          | 17.3 |
| 6            | 37.40                       | 60.00                         | 10.00                          | 10.00          | 22.2 |
| 2            | 38.58                       | 30.00                         | 15.00                          | 15.00          | 14.1 |
| 4            | 40.94                       | 60.00                         | 15.00                          | 15.00          | 14.1 |
| 3            | 42.52                       | 40.00                         | 13.33                          | 13.33          | 16.0 |
| 5            | 44.59                       | 52.50                         | 10.50                          | 10.50          | 21.0 |
| 6            | 46.85                       | 57.50                         | 9.58                           | 9.58           | 23.2 |
| 8            | 48.72                       | 47.50                         | 5.94                           | 5.94           | 39.7 |
| 9            | 50.79                       | 52.50                         | 5.83                           | 5.83           | 40.5 |
| 8            | 52.66                       | 47.50                         | 5.94                           | 5.94           | 39.7 |
| 11           | 54.72                       | 52.50                         | 4.77                           | 4.77           | 50.7 |
| 14           | 56.69                       | 50.00                         | 3.57                           | 3.57           | 70.2 |
| 12           | 58.56                       | 47.50                         | 3.96                           | 3.96           | 62.5 |
| 14           | 60.63                       | 52.50                         | 3.75                           | 3.75           | 66.4 |
| 10           | 62.60                       | 50.00                         | 5.00                           | 5.00           | 48.1 |
| 12           | 64.57                       | 50.00                         | 4.17                           | 4.17           | 59.0 |
| 15           | 66.93                       | 60.00                         | 4.00                           | 4.00           | 61.8 |

Graphical Penetration Rate Plot



Notes: Pavement thickness estimated using measurements from adjacent borings.



6350 Presidential Gateway  
 Columbus, Ohio 43231  
 Telephone: (614) 823-4949  
 Fax Number: (614) 823-4990

### Automated Dynamic Cone Penetrometer Summary (ASTM D6951)

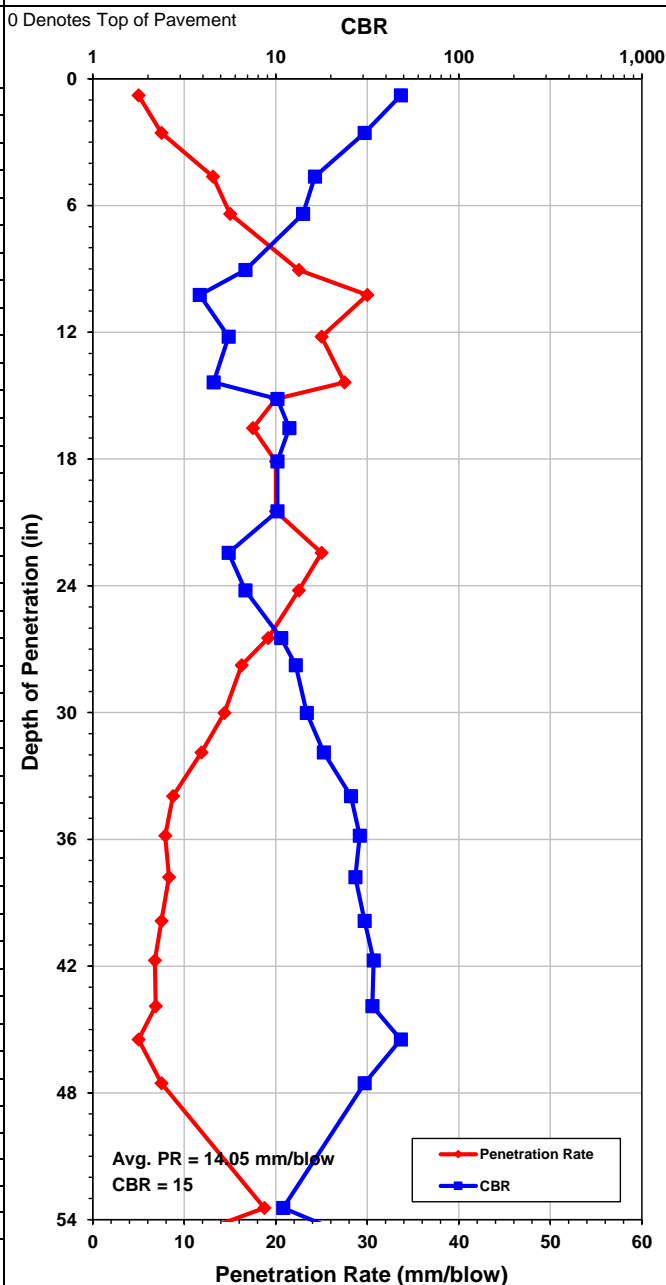
|                     |                  |              |        |
|---------------------|------------------|--------------|--------|
| PROJECT             | UNI-739-6.06 FDR |              |        |
| LOCATION            | SR 739           |              |        |
| RII JOB No.         | W-20-160         | ODOT PID No. | 112878 |
| ADCP No.            | D-088-0-20       |              |        |
| DATE TEST PERFORMED | 3/11/2021        |              |        |

|                         |                                     |                    |             |
|-------------------------|-------------------------------------|--------------------|-------------|
| Test Location:          | N: 278022.19, E: 1701972.52         | Hammer Type:       | Kessler DCP |
| Surface Elevation:      | 1046 ft msl                         | Hammer Weight:     | 17.6 lb     |
| Testing Personnel:      | Barry Scheiderer                    | Drop Height:       | 22.6 in     |
| Surface Mat'l / Thick.: | Asphalt, 8.75 in/Agg. Base, 3.75 in | Output File Name:  | N/A         |
| Test Elevation:         | 1044.96 ft msl                      | Termination Depth: | 61.81 in    |

#### ADCP Summary

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR  |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|------|
| 4            | 0.79                        | 20.00                         | 5.00                           | 5.00           | 48.1 |
| 6            | 2.56                        | 45.00                         | 7.50                           | 7.50           | 30.6 |
| 4            | 4.63                        | 52.50                         | 13.13                          | 13.13          | 16.3 |
| 3            | 6.40                        | 45.00                         | 15.00                          | 15.00          | 14.1 |
| 3            | 9.06                        | 67.50                         | 22.50                          | 22.50          | 6.8  |
| 1            | 10.24                       | 30.00                         | 30.00                          | 30.00          | 3.8  |
| 2            | 12.20                       | 50.00                         | 25.00                          | 25.00          | 5.5  |
| 2            | 14.37                       | 55.00                         | 27.50                          | 27.50          | 4.6  |
| 1            | 15.16                       | 20.00                         | 20.00                          | 20.00          | 10.2 |
| 2            | 16.54                       | 35.00                         | 17.50                          | 17.50          | 11.8 |
| 2            | 18.11                       | 40.00                         | 20.00                          | 20.00          | 10.2 |
| 3            | 20.47                       | 60.00                         | 20.00                          | 20.00          | 10.2 |
| 2            | 22.44                       | 50.00                         | 25.00                          | 25.00          | 5.5  |
| 2            | 24.21                       | 45.00                         | 22.50                          | 22.50          | 6.8  |
| 3            | 26.48                       | 57.50                         | 19.17                          | 19.17          | 10.7 |
| 2            | 27.76                       | 32.50                         | 16.25                          | 16.25          | 12.9 |
| 4            | 30.02                       | 57.50                         | 14.38                          | 14.38          | 14.8 |
| 4            | 31.89                       | 47.50                         | 11.88                          | 11.88          | 18.3 |
| 6            | 33.96                       | 52.50                         | 8.75                           | 8.75           | 25.7 |
| 6            | 35.83                       | 47.50                         | 7.92                           | 7.92           | 28.8 |
| 6            | 37.80                       | 50.00                         | 8.33                           | 8.33           | 27.2 |
| 7            | 39.86                       | 52.50                         | 7.50                           | 7.50           | 30.6 |
| 7            | 41.73                       | 47.50                         | 6.79                           | 6.79           | 34.2 |
| 8            | 43.90                       | 55.00                         | 6.88                           | 6.88           | 33.7 |
| 8            | 45.47                       | 40.00                         | 5.00                           | 5.00           | 48.1 |
| 7            | 47.54                       | 52.50                         | 7.50                           | 7.50           | 30.6 |
| 8            | 53.44                       | 150.00                        | 18.75                          | 18.75          | 11.0 |
| 9            | 55.51                       | 52.50                         | 5.83                           | 5.83           | 40.5 |
| 8            | 57.48                       | 50.00                         | 6.25                           | 6.25           | 37.5 |
| 7            | 59.55                       | 52.50                         | 7.50                           | 7.50           | 30.6 |
| 9            | 61.81                       | 57.50                         | 6.39                           | 6.39           | 36.6 |

#### Graphical Penetration Rate Plot



Notes: Pavement thickness estimated using measurements from adjacent borings.



6350 Presidential Gateway  
 Columbus, Ohio 43231  
 Telephone: (614) 823-4949  
 Fax Number: (614) 823-4990

### Automated Dynamic Cone Penetrometer Summary (ASTM D6951)

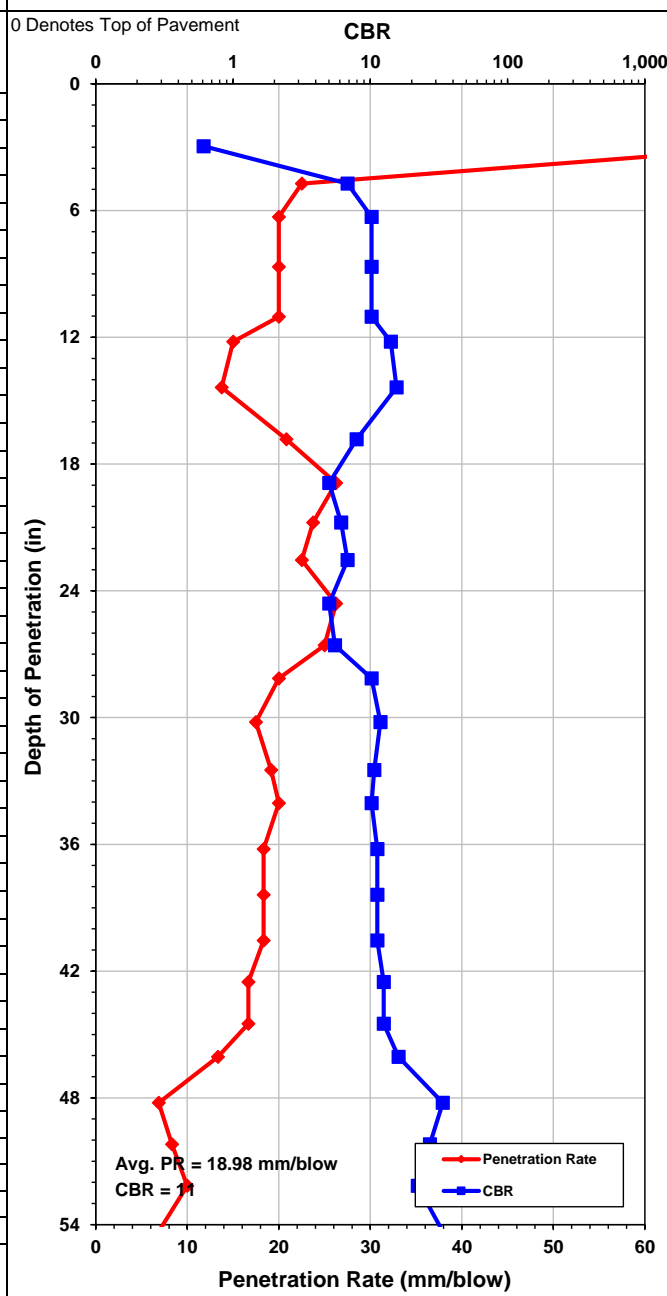
PROJECT: UNI-739-6.06 FDR  
 LOCATION: SR 739  
 RII JOB No.: W-20-160 ODOT PID No.: 112878  
 ADCP No.: D-091-0-20  
 DATE TEST PERFORMED: 3/11/2021

|                         |                                   |                    |             |
|-------------------------|-----------------------------------|--------------------|-------------|
| Test Location:          | N: 279142.26, E: 1702241.68       | Hammer Type:       | Kessler DCP |
| Surface Elevation:      | 1049 ft msl                       | Hammer Weight:     | 17.6 lb     |
| Testing Personnel:      | Barry Scheiderer                  | Drop Height:       | 22.6 in     |
| Surface Mat'l / Thick.: | Asphalt, 9.5 in/Agg. Base, 8.5 in | Output File Name:  | N/A         |
| Test Elevation:         | 1047.5 ft msl                     | Termination Depth: | 60.14 in    |

#### ADCP Summary

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR  |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|------|
| 1            | 2.95                        | 75.00                         | 75.00                          | 75.00          | 0.6  |
| 2            | 4.72                        | 45.00                         | 22.50                          | 22.50          | 6.8  |
| 2            | 6.30                        | 40.00                         | 20.00                          | 20.00          | 10.2 |
| 3            | 8.66                        | 60.00                         | 20.00                          | 20.00          | 10.2 |
| 3            | 11.02                       | 60.00                         | 20.00                          | 20.00          | 10.2 |
| 2            | 12.20                       | 30.00                         | 15.00                          | 15.00          | 14.1 |
| 4            | 14.37                       | 55.00                         | 13.75                          | 13.75          | 15.5 |
| 3            | 16.83                       | 62.50                         | 20.83                          | 20.83          | 8.0  |
| 2            | 18.90                       | 52.50                         | 26.25                          | 26.25          | 5.0  |
| 2            | 20.77                       | 47.50                         | 23.75                          | 23.75          | 6.1  |
| 2            | 22.54                       | 45.00                         | 22.50                          | 22.50          | 6.8  |
| 2            | 24.61                       | 52.50                         | 26.25                          | 26.25          | 5.0  |
| 2            | 26.57                       | 50.00                         | 25.00                          | 25.00          | 5.5  |
| 2            | 28.15                       | 40.00                         | 20.00                          | 20.00          | 10.2 |
| 3            | 30.22                       | 52.50                         | 17.50                          | 17.50          | 11.8 |
| 3            | 32.48                       | 57.50                         | 19.17                          | 19.17          | 10.7 |
| 2            | 34.06                       | 40.00                         | 20.00                          | 20.00          | 10.2 |
| 3            | 36.22                       | 55.00                         | 18.33                          | 18.33          | 11.2 |
| 3            | 38.39                       | 55.00                         | 18.33                          | 18.33          | 11.2 |
| 3            | 40.55                       | 55.00                         | 18.33                          | 18.33          | 11.2 |
| 3            | 42.52                       | 50.00                         | 16.67                          | 16.67          | 12.5 |
| 3            | 44.49                       | 50.00                         | 16.67                          | 16.67          | 12.5 |
| 3            | 46.06                       | 40.00                         | 13.33                          | 13.33          | 16.0 |
| 8            | 48.23                       | 55.00                         | 6.88                           | 6.88           | 33.7 |
| 6            | 50.20                       | 50.00                         | 8.33                           | 8.33           | 27.2 |
| 5            | 52.17                       | 50.00                         | 10.00                          | 10.00          | 22.2 |
| 8            | 54.33                       | 55.00                         | 6.88                           | 6.88           | 33.7 |
| 5            | 56.30                       | 50.00                         | 10.00                          | 10.00          | 22.2 |
| 6            | 58.07                       | 45.00                         | 7.50                           | 7.50           | 30.6 |
| 5            | 60.14                       | 52.50                         | 10.50                          | 10.50          | 21.0 |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |

#### Graphical Penetration Rate Plot



Notes: Pavement thickness estimated using measurements from adjacent borings.



6350 Presidential Gateway  
 Columbus, Ohio 43231  
 Telephone: (614) 823-4949  
 Fax Number: (614) 823-4990

### Automated Dynamic Cone Penetrometer Summary (ASTM D6951)

|                     |                  |              |        |
|---------------------|------------------|--------------|--------|
| PROJECT             | UNI-739-6.06 FDR |              |        |
| LOCATION            | SR 739           |              |        |
| RII JOB No.         | W-20-160         | ODOT PID No. | 112878 |
| ADCP No.            | D-092-0-20       |              |        |
| DATE TEST PERFORMED | 3/11/2021        |              |        |

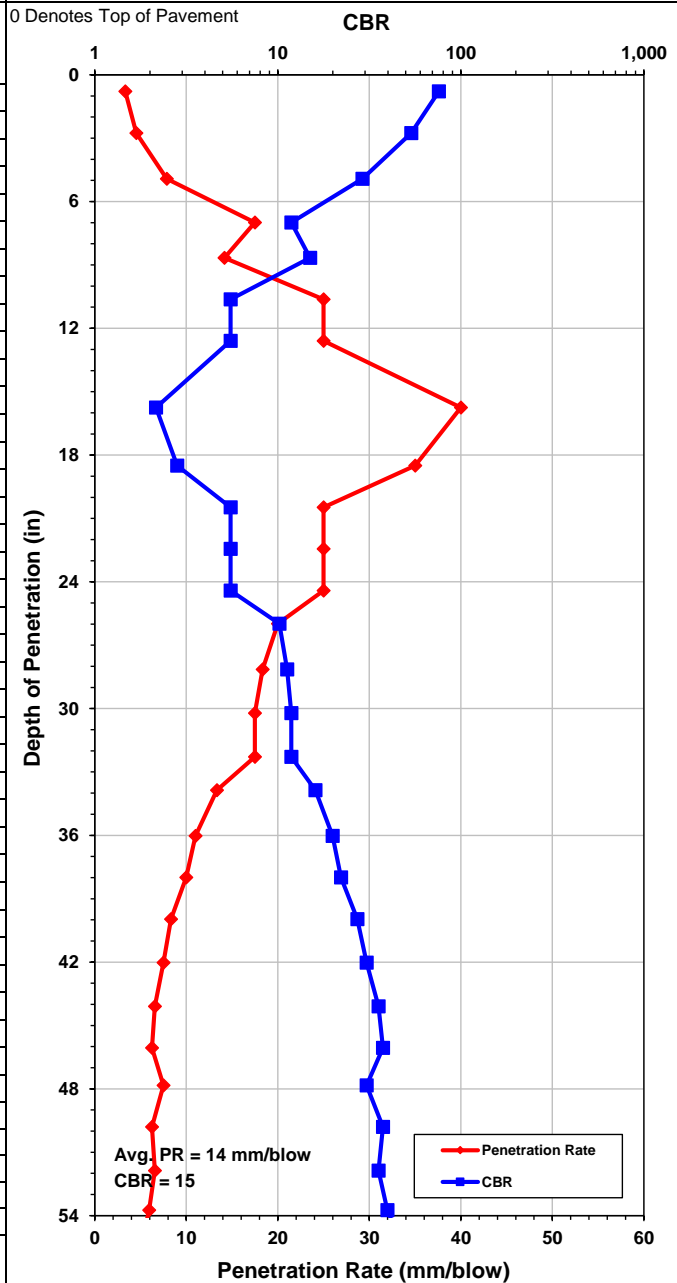
Test Location: N: 279534, E: 1702319.14  
 Surface Elevation: 1045 ft msl  
 Testing Personnel: Barry Scheiderer  
 Surface Mat'l / Thick.: Asphalt, 8 in/Agg. Base, 4 in  
 Test Elevation: 1044 ft msl

Hammer Type: Kessler DCP  
 Hammer Weight: 17.6 lb  
 Drop Height: 22.6 in  
 Output File Name: N/A  
 Termination Depth: 62.2 in

ADCP Summary

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR  |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|------|
| 6            | 0.79                        | 20.00                         | 3.33                           | 3.33           | 75.8 |
| 11           | 2.76                        | 50.00                         | 4.55                           | 4.55           | 53.6 |
| 7            | 4.92                        | 55.00                         | 7.86                           | 7.86           | 29.0 |
| 3            | 6.99                        | 52.50                         | 17.50                          | 17.50          | 11.8 |
| 3            | 8.66                        | 42.50                         | 14.17                          | 14.17          | 15.0 |
| 2            | 10.63                       | 50.00                         | 25.00                          | 25.00          | 5.5  |
| 2            | 12.60                       | 50.00                         | 25.00                          | 25.00          | 5.5  |
| 2            | 15.75                       | 80.00                         | 40.00                          | 40.00          | 2.2  |
| 2            | 18.50                       | 70.00                         | 35.00                          | 35.00          | 2.8  |
| 2            | 20.47                       | 50.00                         | 25.00                          | 25.00          | 5.5  |
| 2            | 22.44                       | 50.00                         | 25.00                          | 25.00          | 5.5  |
| 2            | 24.41                       | 50.00                         | 25.00                          | 25.00          | 5.5  |
| 2            | 25.98                       | 40.00                         | 20.00                          | 20.00          | 10.2 |
| 3            | 28.15                       | 55.00                         | 18.33                          | 18.33          | 11.2 |
| 3            | 30.22                       | 52.50                         | 17.50                          | 17.50          | 11.8 |
| 3            | 32.28                       | 52.50                         | 17.50                          | 17.50          | 11.8 |
| 3            | 33.86                       | 40.00                         | 13.33                          | 13.33          | 16.0 |
| 5            | 36.02                       | 55.00                         | 11.00                          | 11.00          | 19.9 |
| 5            | 37.99                       | 50.00                         | 10.00                          | 10.00          | 22.2 |
| 6            | 39.96                       | 50.00                         | 8.33                           | 8.33           | 27.2 |
| 7            | 42.03                       | 52.50                         | 7.50                           | 7.50           | 30.6 |
| 8            | 44.09                       | 52.50                         | 6.56                           | 6.56           | 35.5 |
| 8            | 46.06                       | 50.00                         | 6.25                           | 6.25           | 37.5 |
| 6            | 47.83                       | 45.00                         | 7.50                           | 7.50           | 30.6 |
| 8            | 49.80                       | 50.00                         | 6.25                           | 6.25           | 37.5 |
| 8            | 51.87                       | 52.50                         | 6.56                           | 6.56           | 35.5 |
| 8            | 53.74                       | 47.50                         | 5.94                           | 5.94           | 39.7 |
| 9            | 55.51                       | 45.00                         | 5.00                           | 5.00           | 48.1 |
| 8            | 57.97                       | 62.50                         | 7.81                           | 7.81           | 29.2 |
| 9            | 59.84                       | 47.50                         | 5.28                           | 5.28           | 45.3 |
| 10           | 62.20                       | 60.00                         | 6.00                           | 6.00           | 39.3 |

Graphical Penetration Rate Plot



Notes: Pavement thickness estimated using measurements from adjacent borings.



6350 Presidential Gateway  
 Columbus, Ohio 43231  
 Telephone: (614) 823-4949  
 Fax Number: (614) 823-4990

### Automated Dynamic Cone Penetrometer Summary (ASTM D6951)

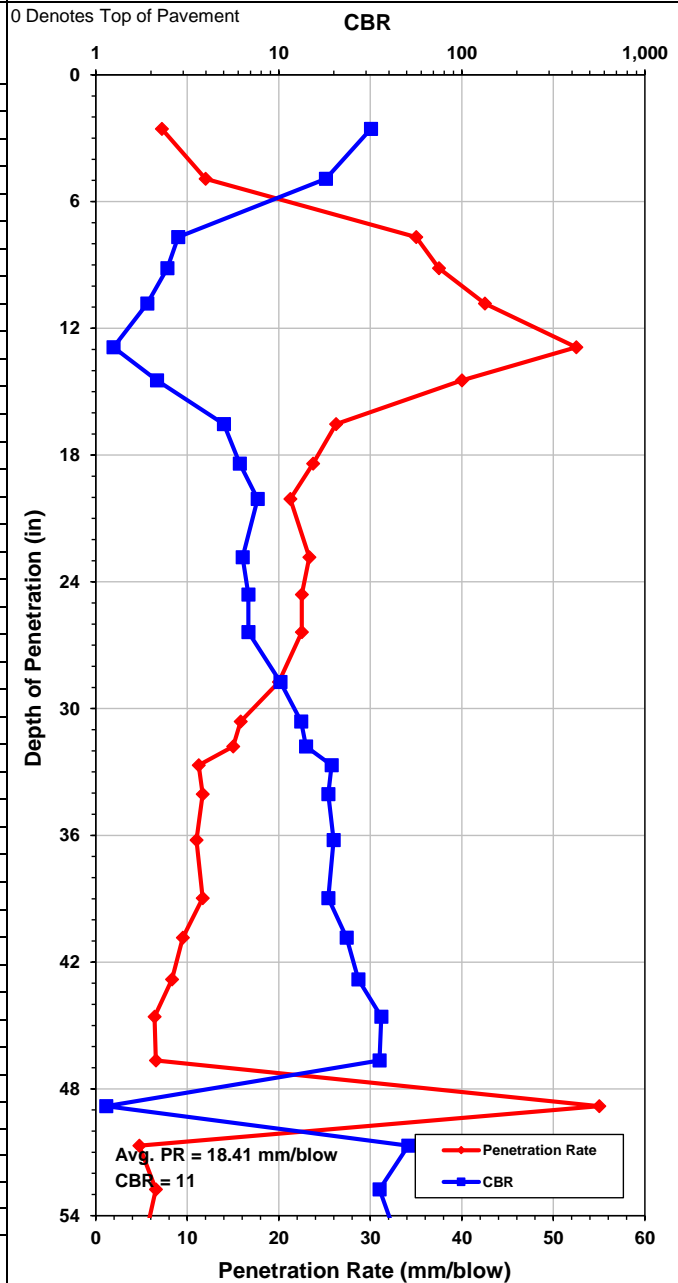
PROJECT: UNI-739-6.06 FDR  
 LOCATION: SR 739  
 RII JOB No.: W-20-160 ODOT PID No.: 112878  
 ADCP No.: D-095-0-20  
 DATE TEST PERFORMED: 3/11/2021

Test Location: N: 280700.23, E: 1702595.43  
 Surface Elevation: 1043 ft msl  
 Testing Personnel: Barry Scheiderer  
 Surface Mat'l / Thick.: Asphalt, 9.5 in/Agg. Base, 8.5 in  
 Test Elevation: 1041.5 ft msl  
 Hammer Type: Kessler DCP  
 Hammer Weight: 17.6 lb  
 Drop Height: 22.6 in  
 Output File Name: N/A  
 Termination Depth: 62.8 in

#### ADCP Summary

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR  |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|------|
| 9            | 2.56                        | 65.00                         | 7.22                           | 7.22           | 31.9 |
| 5            | 4.92                        | 60.00                         | 12.00                          | 12.00          | 18.1 |
| 2            | 7.68                        | 70.00                         | 35.00                          | 35.00          | 2.8  |
| 1            | 9.15                        | 37.50                         | 37.50                          | 37.50          | 2.5  |
| 1            | 10.83                       | 42.50                         | 42.50                          | 42.50          | 1.9  |
| 1            | 12.89                       | 52.50                         | 52.50                          | 52.50          | 1.3  |
| 1            | 14.47                       | 40.00                         | 40.00                          | 40.00          | 2.2  |
| 2            | 16.54                       | 52.50                         | 26.25                          | 26.25          | 5.0  |
| 2            | 18.41                       | 47.50                         | 23.75                          | 23.75          | 6.1  |
| 2            | 20.08                       | 42.50                         | 21.25                          | 21.25          | 7.7  |
| 3            | 22.83                       | 70.00                         | 23.33                          | 23.33          | 6.3  |
| 2            | 24.61                       | 45.00                         | 22.50                          | 22.50          | 6.8  |
| 2            | 26.38                       | 45.00                         | 22.50                          | 22.50          | 6.8  |
| 3            | 28.74                       | 60.00                         | 20.00                          | 20.00          | 10.2 |
| 3            | 30.61                       | 47.50                         | 15.83                          | 15.83          | 13.2 |
| 2            | 31.79                       | 30.00                         | 15.00                          | 15.00          | 14.1 |
| 2            | 32.68                       | 22.50                         | 11.25                          | 11.25          | 19.4 |
| 3            | 34.06                       | 35.00                         | 11.67                          | 11.67          | 18.6 |
| 5            | 36.22                       | 55.00                         | 11.00                          | 11.00          | 19.9 |
| 6            | 38.98                       | 70.00                         | 11.67                          | 11.67          | 18.6 |
| 5            | 40.85                       | 47.50                         | 9.50                           | 9.50           | 23.5 |
| 6            | 42.81                       | 50.00                         | 8.33                           | 8.33           | 27.2 |
| 7            | 44.59                       | 45.00                         | 6.43                           | 6.43           | 36.3 |
| 8            | 46.65                       | 52.50                         | 6.56                           | 6.56           | 35.5 |
| 1            | 48.82                       | 55.00                         | 55.00                          | 55.00          | 1.1  |
| 10           | 50.69                       | 47.50                         | 4.75                           | 4.75           | 51.0 |
| 8            | 52.76                       | 52.50                         | 6.56                           | 6.56           | 35.5 |
| 9            | 54.72                       | 50.00                         | 5.56                           | 5.56           | 42.8 |
| 7            | 56.69                       | 50.00                         | 7.14                           | 7.14           | 32.3 |
| 9            | 58.66                       | 50.00                         | 5.56                           | 5.56           | 42.8 |
| 9            | 60.83                       | 55.00                         | 6.11                           | 6.11           | 38.5 |
| 10           | 62.80                       | 50.00                         | 5.00                           | 5.00           | 48.1 |

#### Graphical Penetration Rate Plot



Notes: Pavement thickness estimated using measurements from adjacent borings.





6350 Presidential Gateway  
Columbus, Ohio 43231  
Telephone: (614) 823-4949  
Fax Number: (614) 823-4990

**Automated Dynamic Cone Penetrometer Summary  
(ASTM D6951)**

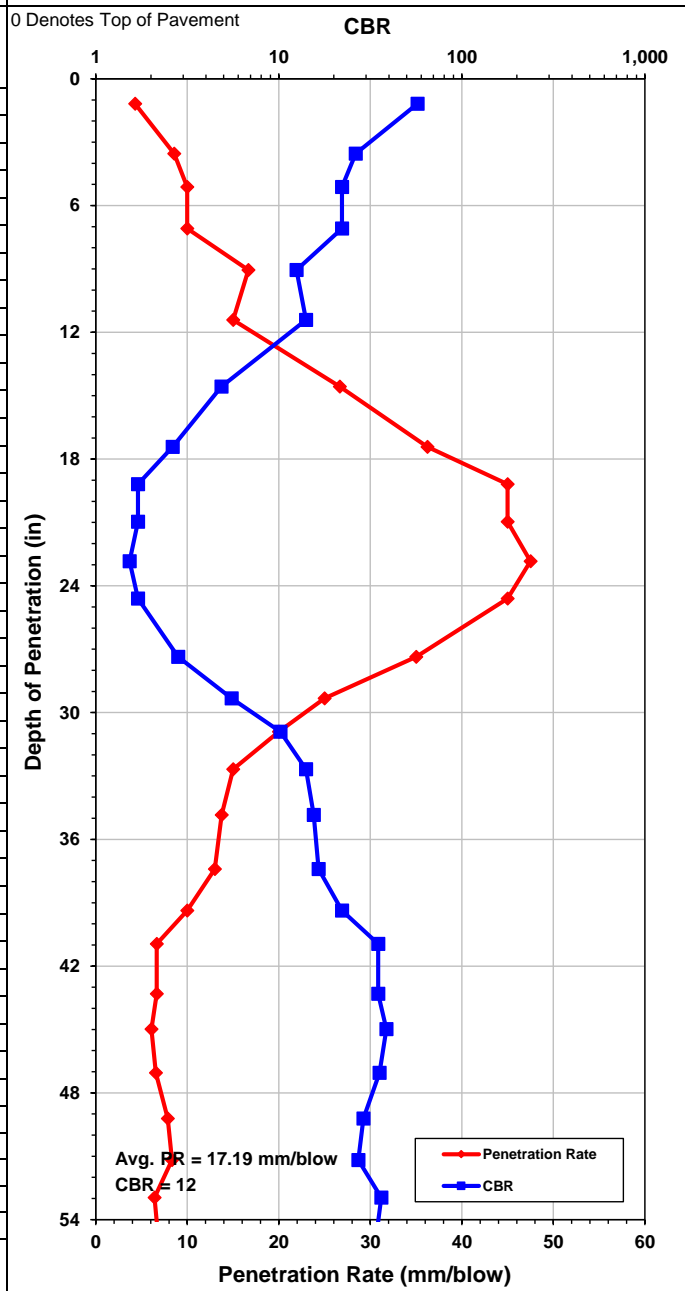
PROJECT UNI-739-6.06 FDR  
LOCATION SR 739  
RII JOB No. W-20-160 ODOT PID No. 112878  
ADCP No. D-096-0-20  
DATE TEST PERFORMED 3/11/2021

Test Location: N: 281100.05, E: 1702677.95 Hammer Type: Kessler DCP  
Surface Elevation: 1043 ft msl Hammer Weight: 17.6 lb  
Testing Personnel: Barry Scheiderer Drop Height: 22.6 in  
Surface Mat'l / Thick.: Asphalt, 8 in/Agg. Base, 4 in Output File Name: N/A  
Test Elevation: 1042 ft msl Termination Depth: 61.42 in

**ADCP Summary**

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR  |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|------|
| 7            | 1.18                        | 30.00                         | 4.29                           | 4.29           | 57.2 |
| 7            | 3.54                        | 60.00                         | 8.57                           | 8.57           | 26.3 |
| 4            | 5.12                        | 40.00                         | 10.00                          | 10.00          | 22.2 |
| 5            | 7.09                        | 50.00                         | 10.00                          | 10.00          | 22.2 |
| 3            | 9.06                        | 50.00                         | 16.67                          | 16.67          | 12.5 |
| 4            | 11.42                       | 60.00                         | 15.00                          | 15.00          | 14.1 |
| 3            | 14.57                       | 80.00                         | 26.67                          | 26.67          | 4.9  |
| 2            | 17.42                       | 72.50                         | 36.25                          | 36.25          | 2.6  |
| 1            | 19.19                       | 45.00                         | 45.00                          | 45.00          | 1.7  |
| 1            | 20.96                       | 45.00                         | 45.00                          | 45.00          | 1.7  |
| 1            | 22.83                       | 47.50                         | 47.50                          | 47.50          | 1.5  |
| 1            | 24.61                       | 45.00                         | 45.00                          | 45.00          | 1.7  |
| 2            | 27.36                       | 70.00                         | 35.00                          | 35.00          | 2.8  |
| 2            | 29.33                       | 50.00                         | 25.00                          | 25.00          | 5.5  |
| 2            | 30.91                       | 40.00                         | 20.00                          | 20.00          | 10.2 |
| 3            | 32.68                       | 45.00                         | 15.00                          | 15.00          | 14.1 |
| 4            | 34.84                       | 55.00                         | 13.75                          | 13.75          | 15.5 |
| 5            | 37.40                       | 65.00                         | 13.00                          | 13.00          | 16.5 |
| 5            | 39.37                       | 50.00                         | 10.00                          | 10.00          | 22.2 |
| 6            | 40.94                       | 40.00                         | 6.67                           | 6.67           | 34.9 |
| 9            | 43.31                       | 60.00                         | 6.67                           | 6.67           | 34.9 |
| 7            | 44.98                       | 42.50                         | 6.07                           | 6.07           | 38.7 |
| 8            | 47.05                       | 52.50                         | 6.56                           | 6.56           | 35.5 |
| 7            | 49.21                       | 55.00                         | 7.86                           | 7.86           | 29.0 |
| 6            | 51.18                       | 50.00                         | 8.33                           | 8.33           | 27.2 |
| 7            | 52.95                       | 45.00                         | 6.43                           | 6.43           | 36.3 |
| 8            | 55.12                       | 55.00                         | 6.88                           | 6.88           | 33.7 |
| 6            | 56.89                       | 45.00                         | 7.50                           | 7.50           | 30.6 |
| 10           | 59.06                       | 55.00                         | 5.50                           | 5.50           | 43.3 |
| 11           | 61.42                       | 60.00                         | 5.45                           | 5.45           | 43.7 |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
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|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |

**Graphical Penetration Rate Plot**



Notes: Pavement thickness estimated using measurements from adjacent borings.



6350 Presidential Gateway  
Columbus, Ohio 43231  
Telephone: (614) 823-4949  
Fax Number: (614) 823-4990

### Automated Dynamic Cone Penetrometer Summary (ASTM D6951)

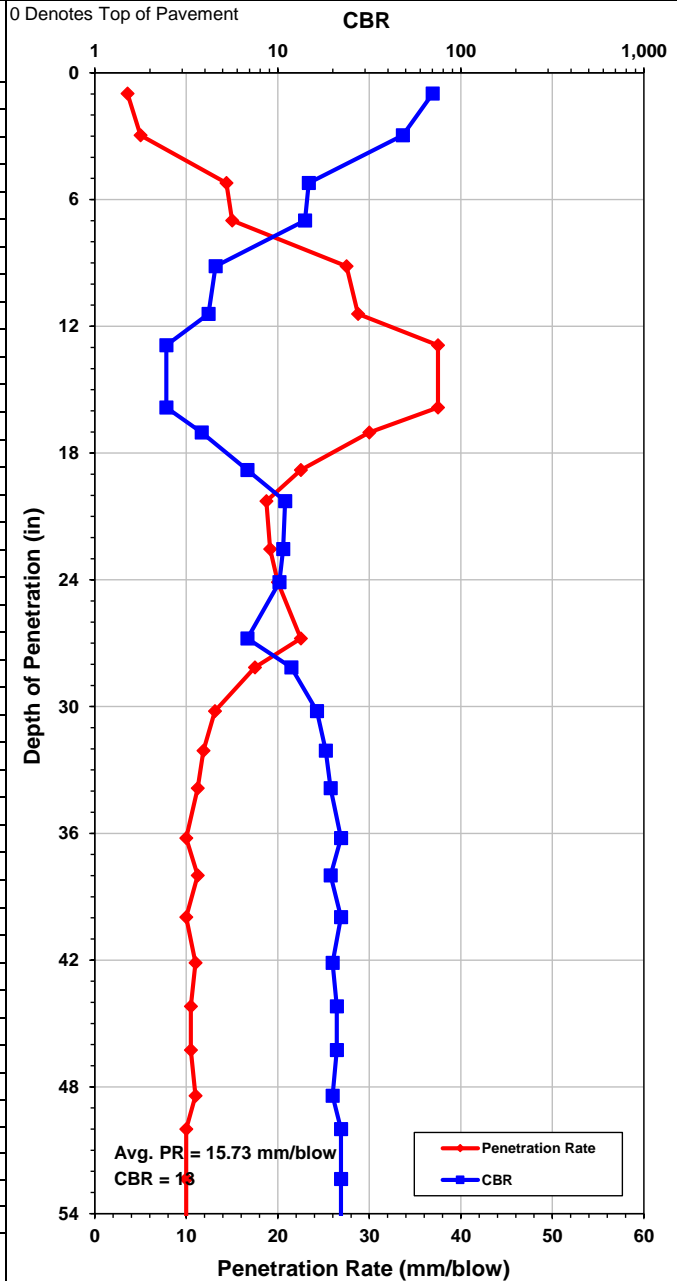
PROJECT: UNI-739-6.06 FDR  
LOCATION: SR 739  
RII JOB No.: W-20-160 ODOT PID No.: 112878  
ADCP No.: D-099-0-20  
DATE TEST PERFORMED: 3/11/2021

Test Location: N: 282310.85, E: 1702963.03  
Surface Elevation: 1039 ft msl  
Testing Personnel: Barry Scheiderer  
Surface Mat'l / Thick.: Asphalt, 9 in/Agg. Base, 14 in  
Test Elevation: 1037.08 ft msl  
Hammer Type: Kessler DCP  
Hammer Weight: 17.6 lb  
Drop Height: 22.6 in  
Output File Name: N/A  
Termination Depth: 62.4 in

ADCP Summary

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR  |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|------|
| 7            | 0.98                        | 25.00                         | 3.57                           | 3.57           | 70.2 |
| 10           | 2.95                        | 50.00                         | 5.00                           | 5.00           | 48.1 |
| 4            | 5.22                        | 57.50                         | 14.38                          | 14.38          | 14.8 |
| 3            | 6.99                        | 45.00                         | 15.00                          | 15.00          | 14.1 |
| 2            | 9.15                        | 55.00                         | 27.50                          | 27.50          | 4.6  |
| 2            | 11.42                       | 57.50                         | 28.75                          | 28.75          | 4.2  |
| 1            | 12.89                       | 37.50                         | 37.50                          | 37.50          | 2.5  |
| 2            | 15.85                       | 75.00                         | 37.50                          | 37.50          | 2.5  |
| 1            | 17.03                       | 30.00                         | 30.00                          | 30.00          | 3.8  |
| 2            | 18.80                       | 45.00                         | 22.50                          | 22.50          | 6.8  |
| 2            | 20.28                       | 37.50                         | 18.75                          | 18.75          | 11.0 |
| 3            | 22.54                       | 57.50                         | 19.17                          | 19.17          | 10.7 |
| 2            | 24.11                       | 40.00                         | 20.00                          | 20.00          | 10.2 |
| 3            | 26.77                       | 67.50                         | 22.50                          | 22.50          | 6.8  |
| 2            | 28.15                       | 35.00                         | 17.50                          | 17.50          | 11.8 |
| 4            | 30.22                       | 52.50                         | 13.13                          | 13.13          | 16.3 |
| 4            | 32.09                       | 47.50                         | 11.88                          | 11.88          | 18.3 |
| 4            | 33.86                       | 45.00                         | 11.25                          | 11.25          | 19.4 |
| 6            | 36.22                       | 60.00                         | 10.00                          | 10.00          | 22.2 |
| 4            | 37.99                       | 45.00                         | 11.25                          | 11.25          | 19.4 |
| 5            | 39.96                       | 50.00                         | 10.00                          | 10.00          | 22.2 |
| 5            | 42.13                       | 55.00                         | 11.00                          | 11.00          | 19.9 |
| 5            | 44.19                       | 52.50                         | 10.50                          | 10.50          | 21.0 |
| 5            | 46.26                       | 52.50                         | 10.50                          | 10.50          | 21.0 |
| 5            | 48.43                       | 55.00                         | 11.00                          | 11.00          | 19.9 |
| 4            | 50.00                       | 40.00                         | 10.00                          | 10.00          | 22.2 |
| 6            | 52.36                       | 60.00                         | 10.00                          | 10.00          | 22.2 |
| 5            | 54.33                       | 50.00                         | 10.00                          | 10.00          | 22.2 |
| 5            | 56.40                       | 52.50                         | 10.50                          | 10.50          | 21.0 |
| 4            | 58.07                       | 42.50                         | 10.63                          | 10.63          | 20.7 |
| 5            | 60.33                       | 57.50                         | 11.50                          | 11.50          | 18.9 |
| 5            | 62.40                       | 52.50                         | 10.50                          | 10.50          | 21.0 |

Graphical Penetration Rate Plot



Notes: Pavement thickness measured using pavement core obtained at this location.



6350 Presidential Gateway  
Columbus, Ohio 43231  
Telephone: (614) 823-4949  
Fax Number: (614) 823-4990

### Automated Dynamic Cone Penetrometer Summary (ASTM D6951)

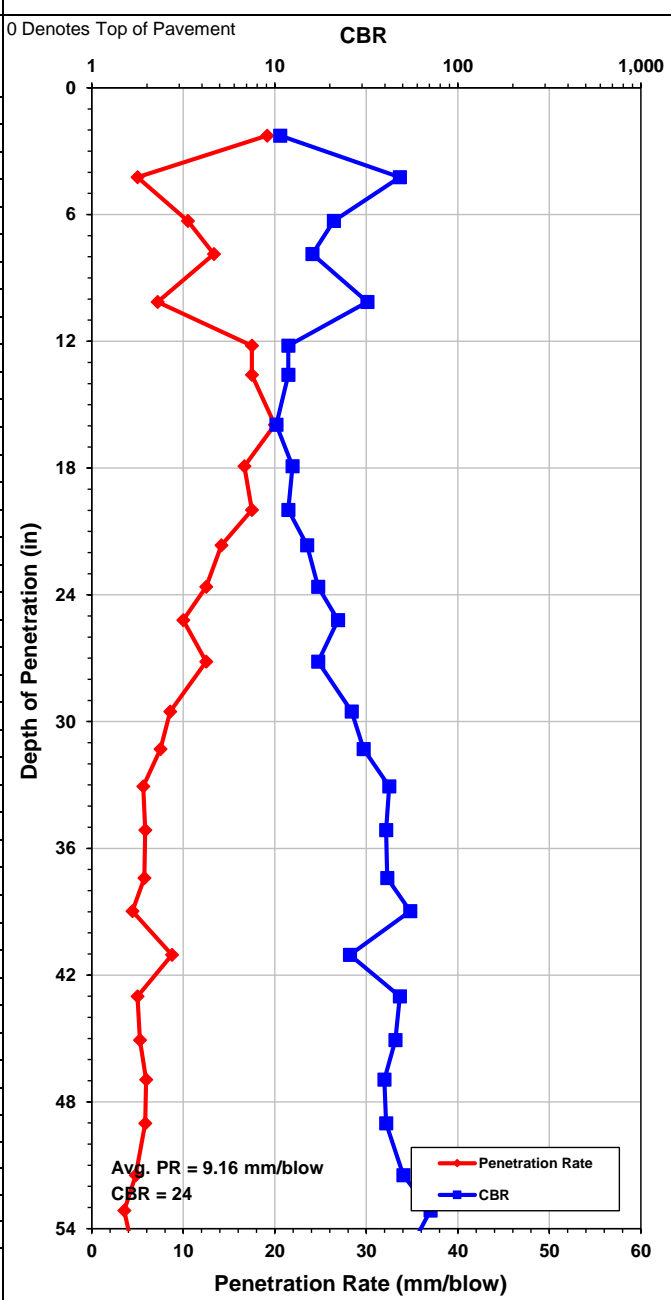
PROJECT: UNI-739-6.06 FDR  
LOCATION: SR 739  
RII JOB No.: W-20-160      ODOT PID No.: 112878  
ADCP No.: D-100-0-20  
DATE TEST PERFORMED: 3/11/2021

|                         |                               |                    |             |
|-------------------------|-------------------------------|--------------------|-------------|
| Test Location:          | N: 282696.21, E: 1703070.4    | Hammer Type:       | Kessler DCP |
| Surface Elevation:      | 1038 ft msl                   | Hammer Weight:     | 17.6 lb     |
| Testing Personnel:      | Barry Scheiderer              | Drop Height:       | 22.6 in     |
| Surface Mat'l / Thick.: | Asphalt, 8 in/Agg. Base, 4 in | Output File Name:  | N/A         |
| Test Elevation:         | 1037 ft msl                   | Termination Depth: | 63.39 in    |

#### ADCP Summary

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR  |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|------|
| 3            | 2.26                        | 57.50                         | 19.17                          | 19.17          | 10.7 |
| 10           | 4.23                        | 50.00                         | 5.00                           | 5.00           | 48.1 |
| 5            | 6.30                        | 52.50                         | 10.50                          | 10.50          | 21.0 |
| 3            | 7.87                        | 40.00                         | 13.33                          | 13.33          | 16.0 |
| 8            | 10.14                       | 57.50                         | 7.19                           | 7.19           | 32.1 |
| 3            | 12.20                       | 52.50                         | 17.50                          | 17.50          | 11.8 |
| 2            | 13.58                       | 35.00                         | 17.50                          | 17.50          | 11.8 |
| 3            | 15.94                       | 60.00                         | 20.00                          | 20.00          | 10.2 |
| 3            | 17.91                       | 50.00                         | 16.67                          | 16.67          | 12.5 |
| 3            | 19.98                       | 52.50                         | 17.50                          | 17.50          | 11.8 |
| 3            | 21.65                       | 42.50                         | 14.17                          | 14.17          | 15.0 |
| 4            | 23.62                       | 50.00                         | 12.50                          | 12.50          | 17.3 |
| 4            | 25.20                       | 40.00                         | 10.00                          | 10.00          | 22.2 |
| 4            | 27.17                       | 50.00                         | 12.50                          | 12.50          | 17.3 |
| 7            | 29.53                       | 60.00                         | 8.57                           | 8.57           | 26.3 |
| 6            | 31.30                       | 45.00                         | 7.50                           | 7.50           | 30.6 |
| 8            | 33.07                       | 45.00                         | 5.63                           | 5.63           | 42.2 |
| 9            | 35.14                       | 52.50                         | 5.83                           | 5.83           | 40.5 |
| 10           | 37.40                       | 57.50                         | 5.75                           | 5.75           | 41.2 |
| 9            | 38.98                       | 40.00                         | 4.44                           | 4.44           | 54.9 |
| 6            | 41.04                       | 52.50                         | 8.75                           | 8.75           | 25.7 |
| 10           | 43.01                       | 50.00                         | 5.00                           | 5.00           | 48.1 |
| 10           | 45.08                       | 52.50                         | 5.25                           | 5.25           | 45.6 |
| 8            | 46.95                       | 47.50                         | 5.94                           | 5.94           | 39.7 |
| 9            | 49.02                       | 52.50                         | 5.83                           | 5.83           | 40.5 |
| 13           | 51.48                       | 62.50                         | 4.81                           | 4.81           | 50.3 |
| 12           | 53.15                       | 42.50                         | 3.54                           | 3.54           | 70.8 |
| 11           | 55.12                       | 50.00                         | 4.55                           | 4.55           | 53.6 |
| 11           | 57.09                       | 50.00                         | 4.55                           | 4.55           | 53.6 |
| 12           | 59.06                       | 50.00                         | 4.17                           | 4.17           | 59.0 |
| 11           | 61.02                       | 50.00                         | 4.55                           | 4.55           | 53.6 |
| 12           | 63.39                       | 60.00                         | 5.00                           | 5.00           | 48.1 |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
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|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |

#### Graphical Penetration Rate Plot



Notes: Pavement thickness estimated using measurements from adjacent borings.



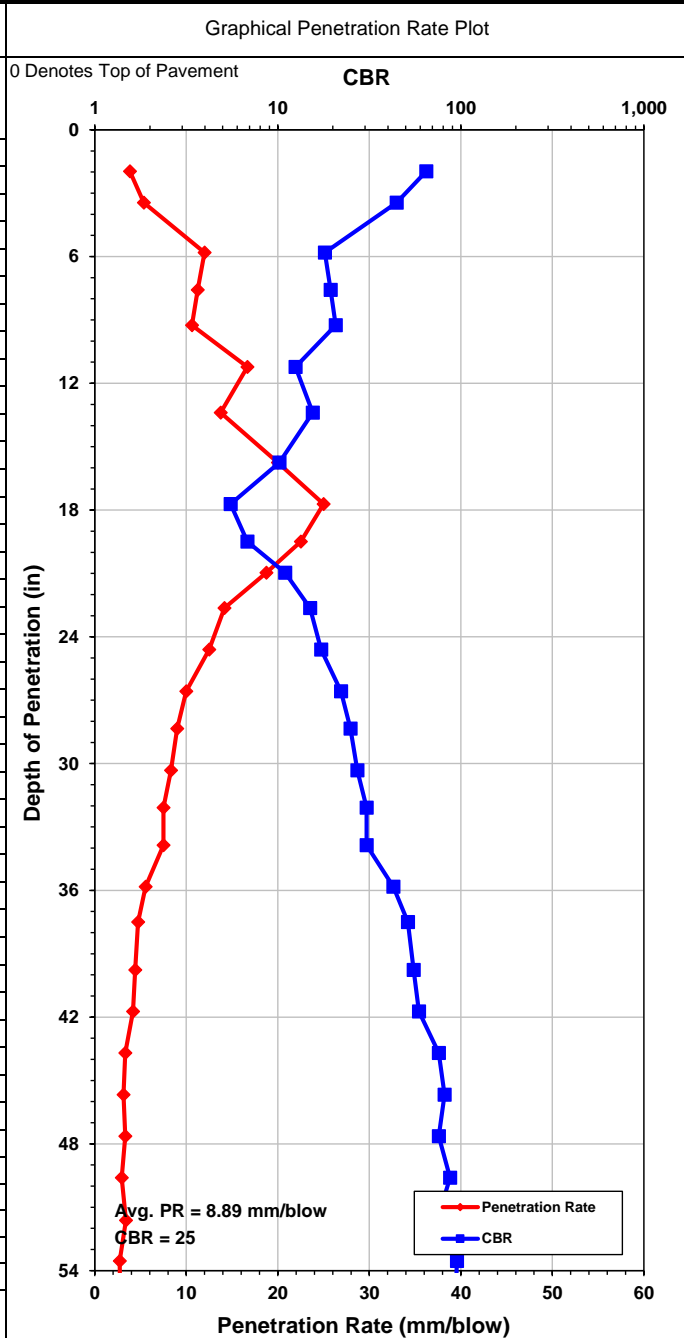
6350 Presidential Gateway  
Columbus, Ohio 43231  
Telephone: (614) 823-4949  
Fax Number: (614) 823-4990

### Automated Dynamic Cone Penetrometer Summary (ASTM D6951)

|                     |                  |              |        |
|---------------------|------------------|--------------|--------|
| PROJECT             | UNI-739-6.06 FDR |              |        |
| LOCATION            | SR 739           |              |        |
| RII JOB No.         | W-20-160         | ODOT PID No. | 112878 |
| ADCP No.            | D-103-0-20       |              |        |
| DATE TEST PERFORMED | 3/10/2021        |              |        |

|                         |                               |                    |             |
|-------------------------|-------------------------------|--------------------|-------------|
| Test Location:          | N: 283735.87, E: 1703676.59   | Hammer Type:       | Kessler DCP |
| Surface Elevation:      | 1032 ft msl                   | Hammer Weight:     | 17.6 lb     |
| Testing Personnel:      | Barry Scheiderer              | Drop Height:       | 22.6 in     |
| Surface Mat'l / Thick.: | Asphalt, 8 in/Agg. Base, 4 in | Output File Name:  | N/A         |
| Test Elevation:         | 1031 ft msl                   | Termination Depth: | 59.94 in    |

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR  |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|------|
| 13           | 1.97                        | 50.00                         | 3.85                           | 3.85           | 64.6 |
| 7            | 3.44                        | 37.50                         | 5.36                           | 5.36           | 44.6 |
| 5            | 5.81                        | 60.00                         | 12.00                          | 12.00          | 18.1 |
| 4            | 7.58                        | 45.00                         | 11.25                          | 11.25          | 19.4 |
| 4            | 9.25                        | 42.50                         | 10.63                          | 10.63          | 20.7 |
| 3            | 11.22                       | 50.00                         | 16.67                          | 16.67          | 12.5 |
| 4            | 13.39                       | 55.00                         | 13.75                          | 13.75          | 15.5 |
| 3            | 15.75                       | 60.00                         | 20.00                          | 20.00          | 10.2 |
| 2            | 17.72                       | 50.00                         | 25.00                          | 25.00          | 5.5  |
| 2            | 19.49                       | 45.00                         | 22.50                          | 22.50          | 6.8  |
| 2            | 20.96                       | 37.50                         | 18.75                          | 18.75          | 11.0 |
| 3            | 22.64                       | 42.50                         | 14.17                          | 14.17          | 15.0 |
| 4            | 24.61                       | 50.00                         | 12.50                          | 12.50          | 17.3 |
| 5            | 26.57                       | 50.00                         | 10.00                          | 10.00          | 22.2 |
| 5            | 28.35                       | 45.00                         | 9.00                           | 9.00           | 24.9 |
| 6            | 30.31                       | 50.00                         | 8.33                           | 8.33           | 27.2 |
| 6            | 32.09                       | 45.00                         | 7.50                           | 7.50           | 30.6 |
| 6            | 33.86                       | 45.00                         | 7.50                           | 7.50           | 30.6 |
| 9            | 35.83                       | 50.00                         | 5.56                           | 5.56           | 42.8 |
| 9            | 37.50                       | 42.50                         | 4.72                           | 4.72           | 51.3 |
| 13           | 39.76                       | 57.50                         | 4.42                           | 4.42           | 55.2 |
| 12           | 41.73                       | 50.00                         | 4.17                           | 4.17           | 59.0 |
| 15           | 43.70                       | 50.00                         | 3.33                           | 3.33           | 75.8 |
| 16           | 45.67                       | 50.00                         | 3.13                           | 3.13           | 81.5 |
| 15           | 47.64                       | 50.00                         | 3.33                           | 3.33           | 75.8 |
| 17           | 49.61                       | 50.00                         | 2.94                           | 2.94           | 87.2 |
| 15           | 51.61                       | 51.00                         | 3.40                           | 3.40           | 74.2 |
| 18           | 53.54                       | 49.00                         | 2.72                           | 2.72           | 95.1 |
| 19           | 55.61                       | 52.50                         | 2.76                           | 2.76           | 93.5 |
| 17           | 57.87                       | 57.50                         | 3.38                           | 3.38           | 74.6 |
| 18           | 59.94                       | 52.50                         | 2.92                           | 2.92           | 88.0 |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
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|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |
|              |                             |                               |                                |                |      |



Notes: Pavement thickness estimated using measurements from adjacent borings.



6350 Presidential Gateway  
 Columbus, Ohio 43231  
 Telephone: (614) 823-4949  
 Fax Number: (614) 823-4990

**Automated Dynamic Cone Penetrometer Summary  
 (ASTM D6951)**

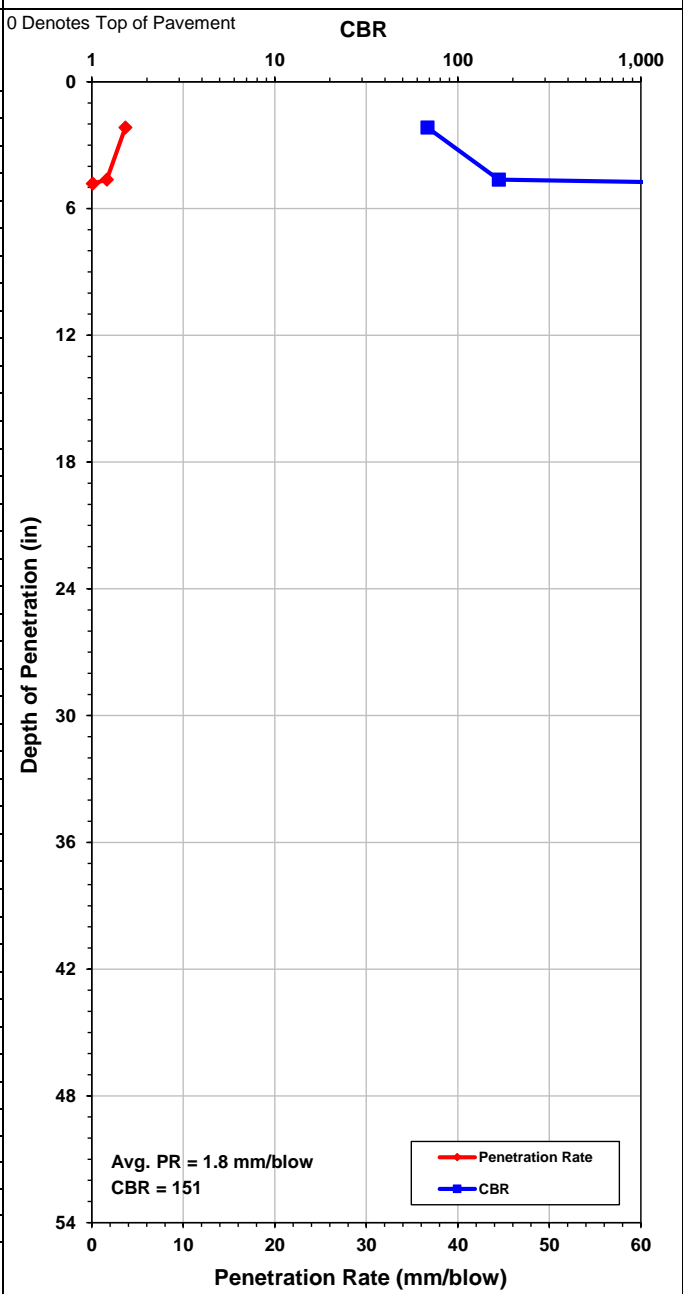
PROJECT: UNI-739-6.06 FDR  
 LOCATION: SR 739  
 RII JOB No.: W-20-160 ODOT PID No.: 112878  
 ADCP No.: D-104-0-20  
 DATE TEST PERFORMED: 3/11/2021

|                         |                                  |                    |             |
|-------------------------|----------------------------------|--------------------|-------------|
| Test Location:          | N: 284093.72, E: 1703862.04      | Hammer Type:       | Kessler DCP |
| Surface Elevation:      | 1025 ft msl                      | Hammer Weight:     | 17.6 lb     |
| Testing Personnel:      | Barry Scheiderer                 | Drop Height:       | 22.6 in     |
| Surface Mat'l / Thick.: | Asphalt, 9.5 in/Agg. Base, 12 in | Output File Name:  | N/A         |
| Test Elevation:         | 1023.21 ft msl                   | Termination Depth: | 4.82 in     |

ADCP Summary

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR    |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|--------|
| 15           | 2.17                        | 55.00                         | 3.67                           | 3.67           | 68.1   |
| 38           | 4.63                        | 62.50                         | 1.64                           | 1.64           | 167.2  |
| 50           | 4.82                        | 5.00                          | 0.10                           | 0.10           | 3849.3 |
|              |                             |                               |                                |                |        |
|              |                             |                               |                                |                |        |
|              |                             |                               |                                |                |        |
|              |                             |                               |                                |                |        |
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|              |                             |                               |                                |                |        |
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|              |                             |                               |                                |                |        |
|              |                             |                               |                                |                |        |
|              |                             |                               |                                |                |        |

Graphical Penetration Rate Plot



Notes: Pavement thickness measured using pavement core obtained at this location.



6350 Presidential Gateway  
 Columbus, Ohio 43231  
 Telephone: (614) 823-4949  
 Fax Number: (614) 823-4990

### Automated Dynamic Cone Penetrometer Summary (ASTM D6951)

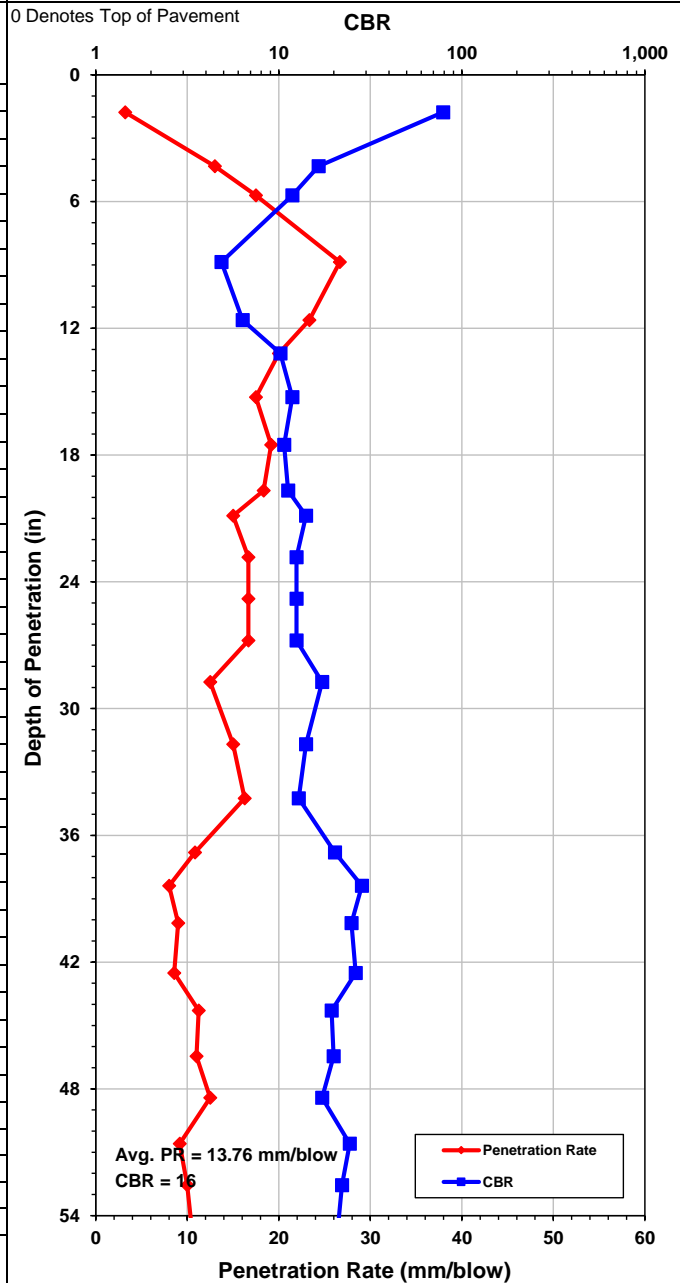
|                     |                  |              |        |
|---------------------|------------------|--------------|--------|
| PROJECT             | UNI-739-6.06 FDR |              |        |
| LOCATION            | SR 739           |              |        |
| RII JOB No.         | W-20-160         | ODOT PID No. | 112878 |
| ADCP No.            | D-107-0-20       |              |        |
| DATE TEST PERFORMED | 3/11/2021        |              |        |

|                         |                               |                    |             |
|-------------------------|-------------------------------|--------------------|-------------|
| Test Location:          | N: 285315.59, E: 1704291.89   | Hammer Type:       | Kessler DCP |
| Surface Elevation:      | 1026 ft msl                   | Hammer Weight:     | 17.6 lb     |
| Testing Personnel:      | Barry Scheiderer              | Drop Height:       | 22.6 in     |
| Surface Mat'l / Thick.: | Asphalt, 8 in/Agg. Base, 4 in | Output File Name:  | N/A         |
| Test Elevation:         | 1025 ft msl                   | Termination Depth: | 60.63 in    |

#### ADCP Summary

| No. of Blows | Cumulative Penetration (in) | Penetration per Blow Set (mm) | Penetration per Blow (mm/blow) | DCPI (mm/blow) | CBR  |
|--------------|-----------------------------|-------------------------------|--------------------------------|----------------|------|
| 14           | 1.77                        | 45.00                         | 3.21                           | 3.21           | 79.0 |
| 5            | 4.33                        | 65.00                         | 13.00                          | 13.00          | 16.5 |
| 2            | 5.71                        | 35.00                         | 17.50                          | 17.50          | 11.8 |
| 3            | 8.86                        | 80.00                         | 26.67                          | 26.67          | 4.9  |
| 3            | 11.61                       | 70.00                         | 23.33                          | 23.33          | 6.3  |
| 2            | 13.19                       | 40.00                         | 20.00                          | 20.00          | 10.2 |
| 3            | 15.26                       | 52.50                         | 17.50                          | 17.50          | 11.8 |
| 3            | 17.52                       | 57.50                         | 19.17                          | 19.17          | 10.7 |
| 3            | 19.69                       | 55.00                         | 18.33                          | 18.33          | 11.2 |
| 2            | 20.87                       | 30.00                         | 15.00                          | 15.00          | 14.1 |
| 3            | 22.83                       | 50.00                         | 16.67                          | 16.67          | 12.5 |
| 3            | 24.80                       | 50.00                         | 16.67                          | 16.67          | 12.5 |
| 3            | 26.77                       | 50.00                         | 16.67                          | 16.67          | 12.5 |
| 4            | 28.74                       | 50.00                         | 12.50                          | 12.50          | 17.3 |
| 5            | 31.69                       | 75.00                         | 15.00                          | 15.00          | 14.1 |
| 4            | 34.25                       | 65.00                         | 16.25                          | 16.25          | 12.9 |
| 6            | 36.81                       | 65.00                         | 10.83                          | 10.83          | 20.3 |
| 5            | 38.39                       | 40.00                         | 8.00                           | 8.00           | 28.4 |
| 5            | 40.16                       | 45.00                         | 9.00                           | 9.00           | 24.9 |
| 7            | 42.52                       | 60.00                         | 8.57                           | 8.57           | 26.3 |
| 4            | 44.29                       | 45.00                         | 11.25                          | 11.25          | 19.4 |
| 5            | 46.46                       | 55.00                         | 11.00                          | 11.00          | 19.9 |
| 4            | 48.43                       | 50.00                         | 12.50                          | 12.50          | 17.3 |
| 6            | 50.59                       | 55.00                         | 9.17                           | 9.17           | 24.4 |
| 5            | 52.56                       | 50.00                         | 10.00                          | 10.00          | 22.2 |
| 5            | 54.63                       | 52.50                         | 10.50                          | 10.50          | 21.0 |
| 4            | 56.30                       | 42.50                         | 10.63                          | 10.63          | 20.7 |
| 5            | 58.27                       | 50.00                         | 10.00                          | 10.00          | 22.2 |
| 6            | 60.63                       | 60.00                         | 10.00                          | 10.00          | 22.2 |

#### Graphical Penetration Rate Plot



Notes: Pavement thickness estimated using measurements from adjacent borings.

# **APPENDIX V**

**Lab Test Results**



Corporate Office  
 6350 Presidential Gateway  
 Columbus, Ohio 43231  
 Telephone: (614) 823-4949  
 Fax Number: (614) 823-4990

Cleveland Office  
 9885 Rockside Road  
 Cleveland, OH 44125  
 Telephone (216) 573-0955  
 Fax Number: (216) 573-0963

Cincinnati Office  
 4480 Lake Forest Drive  
 Cincinnati, Ohio 45242  
 Telephone (513) 769-6998  
 Fax Number: (513) 769-7055

|             |              |
|-------------|--------------|
| PROJECT     | UNI-739-6.06 |
| JOB NO.     | W-16-160     |
| DATE TESTED | 3/18/2021    |
| TESTED BY   | EM/KL        |

**DETERMINING SULFATE CONTENT IN SOILS  
 COLORIMETRIC METHOD  
 ODOT SUPPLEMENT 1122**

| Sample ID | Station | Offset | State Plane Coordinates |         | Elevation | Soaking Time (hr) | Dilution Ratio | Replicate Sample Readings |    |    | Average Reading | Sulfate Content (ppm) |
|-----------|---------|--------|-------------------------|---------|-----------|-------------------|----------------|---------------------------|----|----|-----------------|-----------------------|
|           |         |        | Northing                | Easting |           |                   |                | 1                         | 2  | 3  |                 |                       |
| B-1       |         |        |                         |         |           | 24                | 20             | 33                        | 33 | 33 | 33.00           | 660                   |
| B-2       |         |        |                         |         |           | 24                | 20             | 42                        | 42 | 41 | 41.67           | 833                   |
| B-5       |         |        |                         |         |           | 24                | 20             | 5                         | 5  | 5  | 5.00            | 100                   |
| B-6       |         |        |                         |         |           | 24                | 20             | 60                        | 61 | 61 | 60.67           | 1213                  |
| B-9       |         |        |                         |         |           | 24                | 20             | 18                        | 17 | 18 | 17.67           | 353                   |
| B-10      |         |        |                         |         |           | 24                | 20             | 11                        | 11 | 11 | 11.00           | 220                   |
| B-13      |         |        |                         |         |           | 24                | 20             | 8                         | 7  | 7  | 7.33            | 147                   |
| B-14      |         |        |                         |         |           | 24                | 20             | 1                         | 1  | 1  | 1.00            | 20                    |
| B-17      |         |        |                         |         |           | 24                | 20             | 12                        | 13 | 14 | 13.00           | 260                   |
| B-18      |         |        |                         |         |           | 24                | 20             | 1                         | 1  | 0  | 0.67            | 13                    |
| B-21      |         |        |                         |         |           | 24                | 20             | 12                        | 11 | 11 | 11.33           | 227                   |
| B-22      |         |        |                         |         |           | 24                | 20             | 28                        | 28 | 28 | 28.00           | 560                   |
| B-25      |         |        |                         |         |           | 24                | 20             | 21                        | 20 | 21 | 20.67           | 413                   |
| B-26      |         |        |                         |         |           | 24                | 20             | 8                         | 9  | 9  | 8.67            | 173                   |
| B-29      |         |        |                         |         |           | 24                | 20             | 2                         | 1  | 1  | 1.33            | 27                    |
| B-30      |         |        |                         |         |           | 24                | 20             | 4                         | 3  | 2  | 3.00            | 60                    |





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 4480 Lake Forest Drive  
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 Fax Number: (513) 769-7055

|             |              |
|-------------|--------------|
| PROJECT     | UNI-739-6.06 |
| JOB NO.     | W-16-160     |
| DATE TESTED | 3/18/2021    |
| TESTED BY   | EM/KL        |

**DETERMINING SULFATE CONTENT IN SOILS  
 COLORIMETRIC METHOD  
 ODOT SUPPLEMENT 1122**

| Sample ID | Station | Offset | State Plane Coordinates |         | Elevation | Soaking Time (hr) | Dilution Ratio | Replicate Sample Readings |    |    | Average Reading | Sulfate Content (ppm) |
|-----------|---------|--------|-------------------------|---------|-----------|-------------------|----------------|---------------------------|----|----|-----------------|-----------------------|
|           |         |        | Northing                | Easting |           |                   |                | 1                         | 2  | 3  |                 |                       |
| B-33      |         |        |                         |         |           | 24                | 20             | 6                         | 5  | 4  | 5.00            | 100                   |
| B-34      |         |        |                         |         |           | 24                | 20             | 3                         | 2  | 1  | 2.00            | 40                    |
| B-37      |         |        |                         |         |           | 24                | 20             | 8                         | 7  | 6  | 7.00            | 140                   |
| B-38      |         |        |                         |         |           | 24                | 20             | 1                         | 1  | 1  | 1.00            | 20                    |
| B-41      |         |        |                         |         |           | 24                | 20             | 1                         | 1  | 0  | 0.67            | 13                    |
| B-42      |         |        |                         |         |           | 24                | 20             | 6                         | 5  | 6  | 5.67            | 113                   |
| B-45      |         |        |                         |         |           | 24                | 20             | 5                         | 4  | 3  | 4.00            | 80                    |
| B-46      |         |        |                         |         |           | 24                | 20             | 3                         | 2  | 1  | 2.00            | 40                    |
| B-49      |         |        |                         |         |           | 24                | 20             | 5                         | 4  | 4  | 4.33            | 87                    |
| B-50      |         |        |                         |         |           | 24                | 20             | 4                         | 3  | 2  | 3.00            | 60                    |
| B-53      |         |        |                         |         |           | 24                | 20             | 11                        | 10 | 10 | 10.33           | 207                   |
| B-54      |         |        |                         |         |           | 24                | 20             | 6                         | 5  | 5  | 5.33            | 107                   |
| B-57      |         |        |                         |         |           | 24                | 20             | 5                         | 6  | 6  | 5.67            | 113                   |
| B-58      |         |        |                         |         |           | 24                | 20             | 15                        | 15 | 14 | 14.67           | 293                   |
| B-61      |         |        |                         |         |           | 24                | 20             | 7                         | 6  | 5  | 6.00            | 120                   |
| B-62      |         |        |                         |         |           | 24                | 20             | 10                        | 9  | 8  | 9.00            | 180                   |



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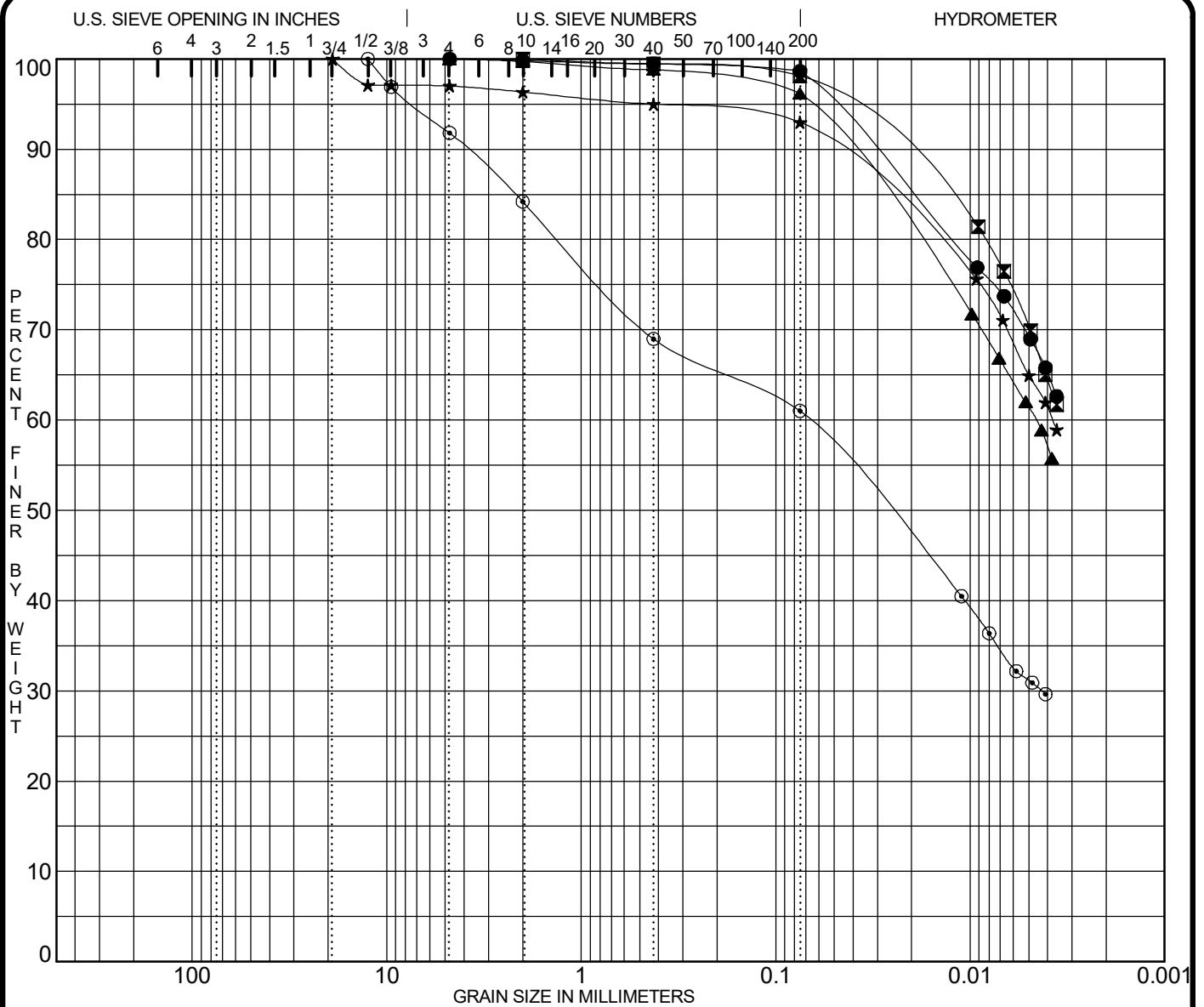
Cincinnati Office  
 4480 Lake Forest Drive  
 Cincinnati, Ohio 45242  
 Telephone (513) 769-6998  
 Fax Number: (513) 769-7055

|             |              |
|-------------|--------------|
| PROJECT     | UNI-739-6.06 |
| JOB NO.     | W-16-160     |
| DATE TESTED | 3/18/2021    |
| TESTED BY   | EM/KL        |

**DETERMINING SULFATE CONTENT IN SOILS  
 COLORIMETRIC METHOD  
 ODOT SUPPLEMENT 1122**

| Sample ID | Station | Offset | State Plane Coordinates |         | Elevation | Soaking Time (hr) | Dilution Ratio | Replicate Sample Readings |    |    | Average Reading | Sulfate Content (ppm) |
|-----------|---------|--------|-------------------------|---------|-----------|-------------------|----------------|---------------------------|----|----|-----------------|-----------------------|
|           |         |        | Northing                | Easting |           |                   |                | 1                         | 2  | 3  |                 |                       |
| B-65      |         |        |                         |         |           | 24                | 20             | 14                        | 14 | 14 | 14.00           | 280                   |
| B-66      |         |        |                         |         |           | 24                | 20             | 27                        | 26 | 26 | 26.33           | 527                   |
| B-69      |         |        |                         |         |           | 24                | 20             | 17                        | 17 | 16 | 16.67           | 333                   |
| B-70      |         |        |                         |         |           | 24                | 20             | 20                        | 19 | 18 | 19.00           | 380                   |
| B-73      |         |        |                         |         |           | 24                | 20             | 19                        | 19 | 20 | 19.33           | 387                   |
| B-74      |         |        |                         |         |           | 24                | 20             | 22                        | 22 | 22 | 22.00           | 440                   |
| B-77      |         |        |                         |         |           | 24                | 20             | 23                        | 23 | 22 | 22.67           | 453                   |
| B-78      |         |        |                         |         |           | 24                | 20             | 25                        | 26 | 27 | 26.00           | 520                   |
| B-81      |         |        |                         |         |           | 24                | 20             | 24                        | 25 | 26 | 25.00           | 500                   |
| B-82      |         |        |                         |         |           | 24                | 20             | 12                        | 13 | 12 | 12.33           | 247                   |
| B-85      |         |        |                         |         |           | 24                | 20             | 14                        | 13 | 12 | 13.00           | 260                   |
| B-86      |         |        |                         |         |           | 24                | 20             | 3                         | 3  | 2  | 2.67            | 53                    |
| B-89      |         |        |                         |         |           | 24                | 20             | 4                         | 3  | 2  | 3.00            | 60                    |
| B-90      |         |        |                         |         |           | 24                | 20             | 3                         | 2  | 2  | 2.33            | 47                    |
| B-93      |         |        |                         |         |           | 24                | 20             | 2                         | 2  | 2  | 2.00            | 40                    |
| B-94      |         |        |                         |         |           | 24                | 20             | 6                         | 5  | 5  | 5.33            | 107                   |





| COBBLES | GRAVEL |      | SAND   |      | SILT OR CLAY |
|---------|--------|------|--------|------|--------------|
|         | coarse | fine | coarse | fine |              |

| Specimen Identification | Depth | Classification |  |  |  | MC% | LL | PL | PI | Cz | Cu |
|-------------------------|-------|----------------|--|--|--|-----|----|----|----|----|----|
| ● B-001-0-20            | 1.0   | A-7-6          |  |  |  | 25  | 60 | 24 | 36 |    |    |
| ☒ B-001-0-20            | 2.5   | A-7-6          |  |  |  | 20  | 45 | 24 | 21 |    |    |
| ▲ B-002-0-20            | 1.5   | A-7-6          |  |  |  | 23  | 49 | 22 | 27 |    |    |
| ★ B-002-0-20            | 3.0   | A-7-6          |  |  |  | 19  | 45 | 22 | 23 |    |    |
| ⊙ B-005-0-20            | 1.0   | A-6a           |  |  |  | 12  | 31 | 18 | 13 |    |    |

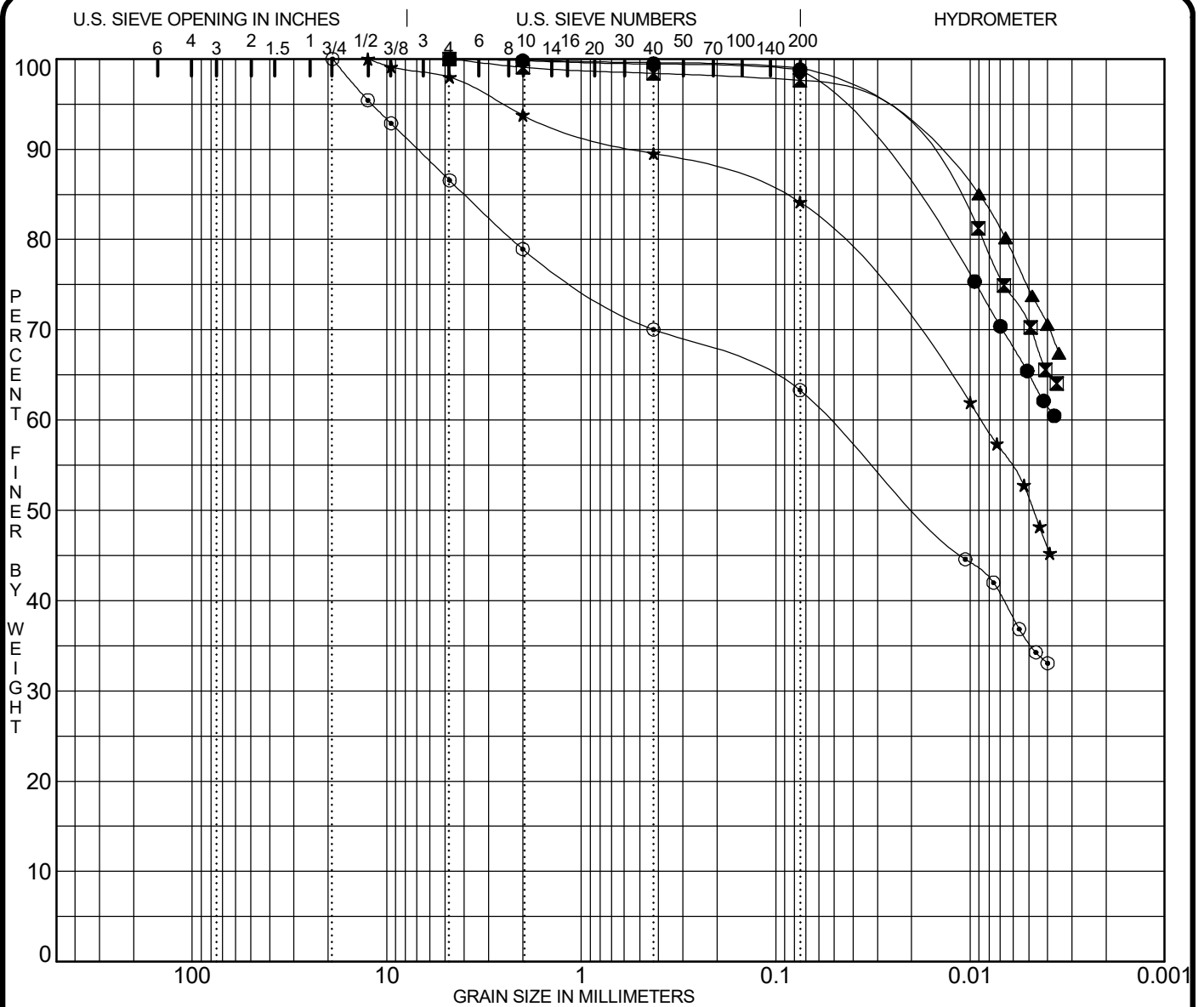
| Specimen Identification | D85   | D50   | D30   | D10 | %Gravel |      | %Sand  |      | %Silt | %Clay |
|-------------------------|-------|-------|-------|-----|---------|------|--------|------|-------|-------|
|                         |       |       |       |     | coarse  | fine | coarse | fine |       |       |
| ● B-001-0-20            | 0.020 |       |       |     | 0.0     | 0.2  | 0.3    | 0.8  | 29.4  | 69.3  |
| ☒ B-001-0-20            | 0.014 |       |       |     | 0.0     | 0.0  | 0.5    | 1.4  | 27.8  | 70.3  |
| ▲ B-002-0-20            | 0.030 |       |       |     | 0.0     | 0.3  | 0.9    | 2.6  | 34.8  | 61.4  |
| ★ B-002-0-20            | 0.029 |       |       |     | 0.0     | 3.7  | 1.3    | 2.0  | 28.0  | 64.9  |
| ⊙ B-005-0-20            | 2.190 | 0.027 | 0.004 |     | 0.0     | 15.8 | 15.2   | 8.0  | 29.8  | 31.2  |

PROJECT UNI-739-6.06

PROJECT NO. W-20-160

## GRADATION CURVES

Resource International



| COBBLES | GRAVEL |      | SAND   |      | SILT OR CLAY |
|---------|--------|------|--------|------|--------------|
|         | coarse | fine | coarse | fine |              |

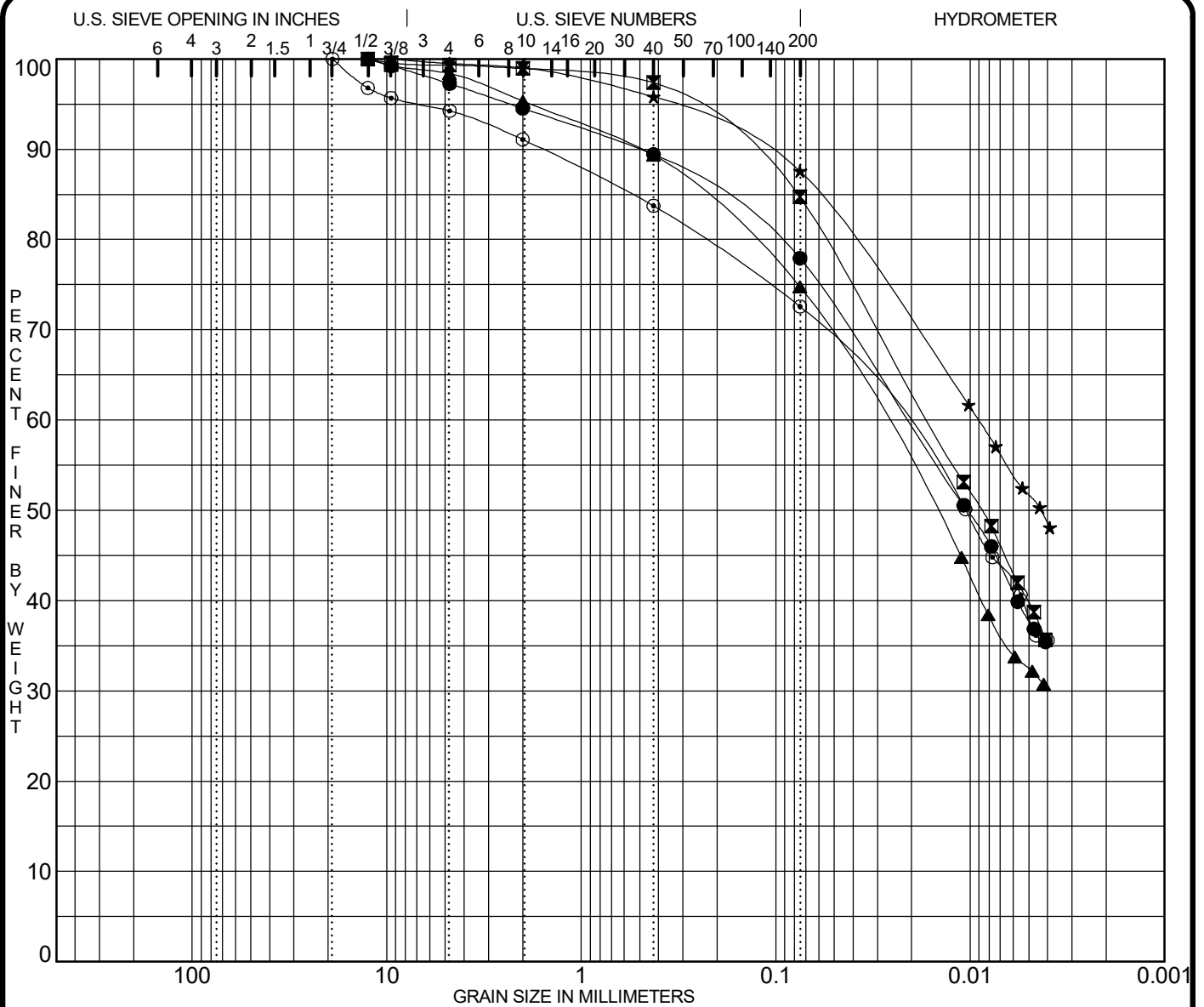
| Specimen Identification | Depth | Classification |     |     |                   | MC%             | LL              | PL            | PI    | Cz    | Cu |
|-------------------------|-------|----------------|-----|-----|-------------------|-----------------|-----------------|---------------|-------|-------|----|
| ● B-005-0-20            | 2.5   | A-7-6          |     |     |                   | 25              | 54              | 24            | 30    |       |    |
| ⊠ B-006-0-20            | 1.5   | A-7-6          |     |     |                   | 20              | 50              | 23            | 27    |       |    |
| ▲ B-006-0-20            | 3.0   | A-7-6          |     |     |                   | 21              | 49              | 24            | 25    |       |    |
| ★ B-009-0-20            | 1.0   | A-7-6          |     |     |                   | 20              | 41              | 20            | 21    |       |    |
| ⊙ B-009-0-20            | 2.5   | A-6b           |     |     |                   | 17              | 40              | 21            | 19    |       |    |
| Specimen Identification | D85   | D50            | D30 | D10 | %Gravel<br>coarse | %Gravel<br>fine | %Sand<br>coarse | %Sand<br>fine | %Silt | %Clay |    |
| ● B-005-0-20            | 0.022 |                |     |     | 0.0               | 0.2             | 0.3             | 0.7           | 33.7  | 65.1  |    |
| ⊠ B-006-0-20            | 0.015 |                |     |     | 0.0               | 0.9             | 0.7             | 0.8           | 27.1  | 70.6  |    |
| ▲ B-006-0-20            | 0.009 |                |     |     | 0.0               | 0.1             | 0.3             | 0.6           | 24.4  | 74.6  |    |
| ★ B-009-0-20            | 0.099 | 0.005          |     |     | 0.0               | 6.2             | 4.3             | 5.4           | 32.8  | 51.3  |    |
| ⊙ B-009-0-20            | 3.981 | 0.019          |     |     | 0.0               | 21.1            | 8.9             | 6.7           | 28.0  | 35.4  |    |

PROJECT UNI-739-6.06

PROJECT NO. W-20-160

## GRADATION CURVES

Resource International



| COBBLES | GRAVEL |      | SAND   |      | SILT OR CLAY |
|---------|--------|------|--------|------|--------------|
|         | coarse | fine | coarse | fine |              |

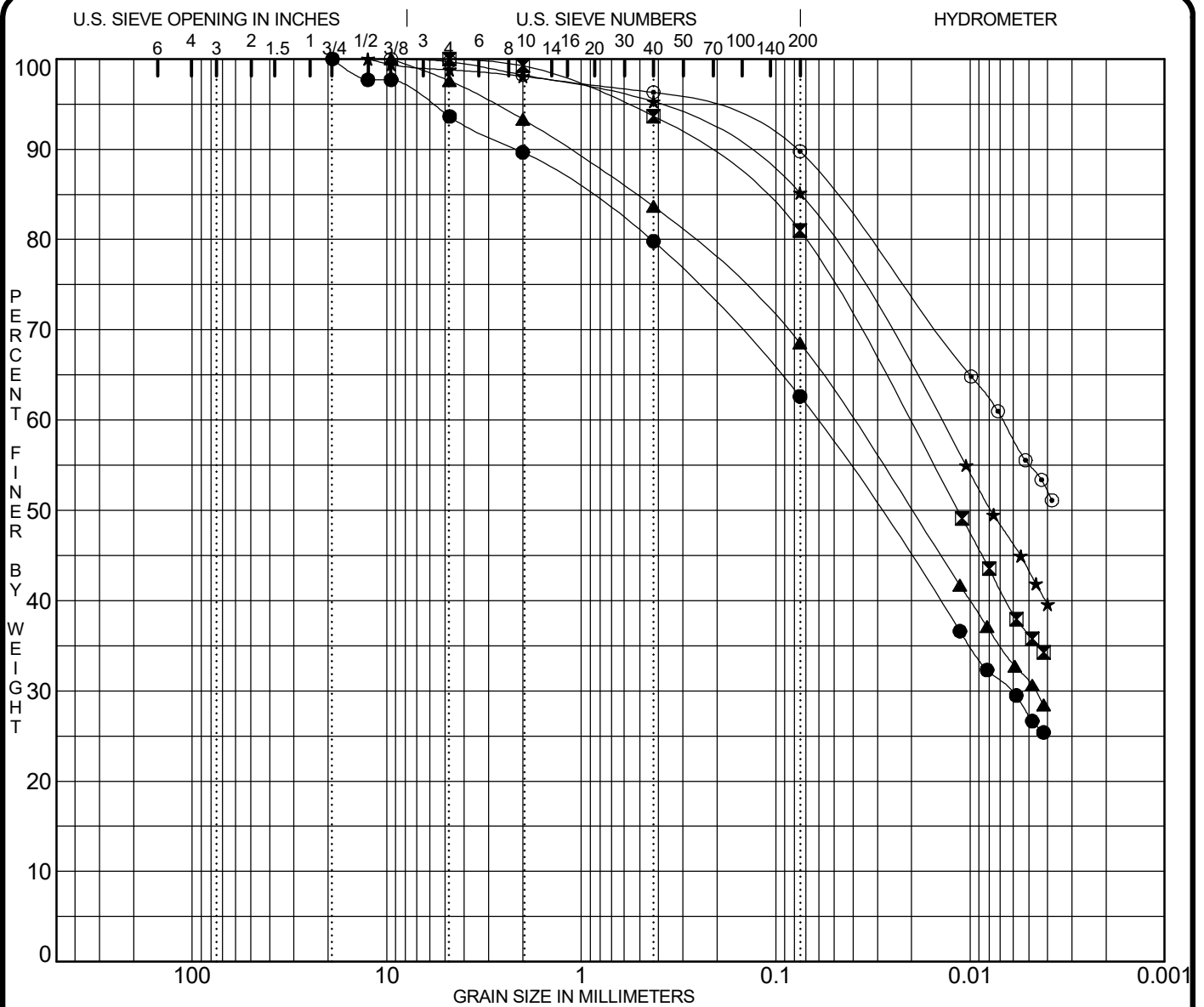
| Specimen Identification | Depth | Classification |     |     |         | MC% | LL    | PL   | PI    | Cz    | Cu |
|-------------------------|-------|----------------|-----|-----|---------|-----|-------|------|-------|-------|----|
| ● B-010-0-20            | 1.5   | A-6b           |     |     |         | 19  | 34    | 18   | 16    |       |    |
| ☒ B-010-0-20            | 3.0   | A-6b           |     |     |         | 21  | 37    | 20   | 17    |       |    |
| ▲ B-013-0-20            | 1.0   | A-6a           |     |     |         | 16  | 31    | 17   | 14    |       |    |
| ★ B-013-0-20            | 2.5   | A-7-6          |     |     |         | 27  | 50    | 21   | 29    |       |    |
| ⊙ B-014-0-20            | 1.5   | A-6a           |     |     |         | 16  | 32    | 18   | 14    |       |    |
| Specimen Identification | D85   | D50            | D30 | D10 | %Gravel |     | %Sand |      | %Silt | %Clay |    |
| ● B-010-0-20            | 0.218 | 0.010          |     |     | 0.0     | 5.5 | 5.1   | 11.5 | 40.1  | 37.8  |    |
| ☒ B-010-0-20            | 0.078 | 0.009          |     |     | 0.0     | 1.1 | 1.6   | 12.7 | 44.9  | 39.8  |    |
| ▲ B-013-0-20            | 0.253 | 0.015          |     |     | 0.0     | 4.7 | 6.0   | 14.6 | 42.3  | 32.5  |    |
| ★ B-013-0-20            | 0.061 | 0.004          |     |     | 0.0     | 1.0 | 3.2   | 8.2  | 35.9  | 51.7  |    |
| ⊙ B-014-0-20            | 0.555 | 0.011          |     |     | 0.0     | 8.9 | 7.3   | 11.1 | 34.3  | 38.2  |    |

PROJECT UNI-739-6.06

PROJECT NO. W-20-160

## GRADATION CURVES

Resource International



| COBBLES | GRAVEL |      | SAND   |      | SILT OR CLAY |
|---------|--------|------|--------|------|--------------|
|         | coarse | fine | coarse | fine |              |

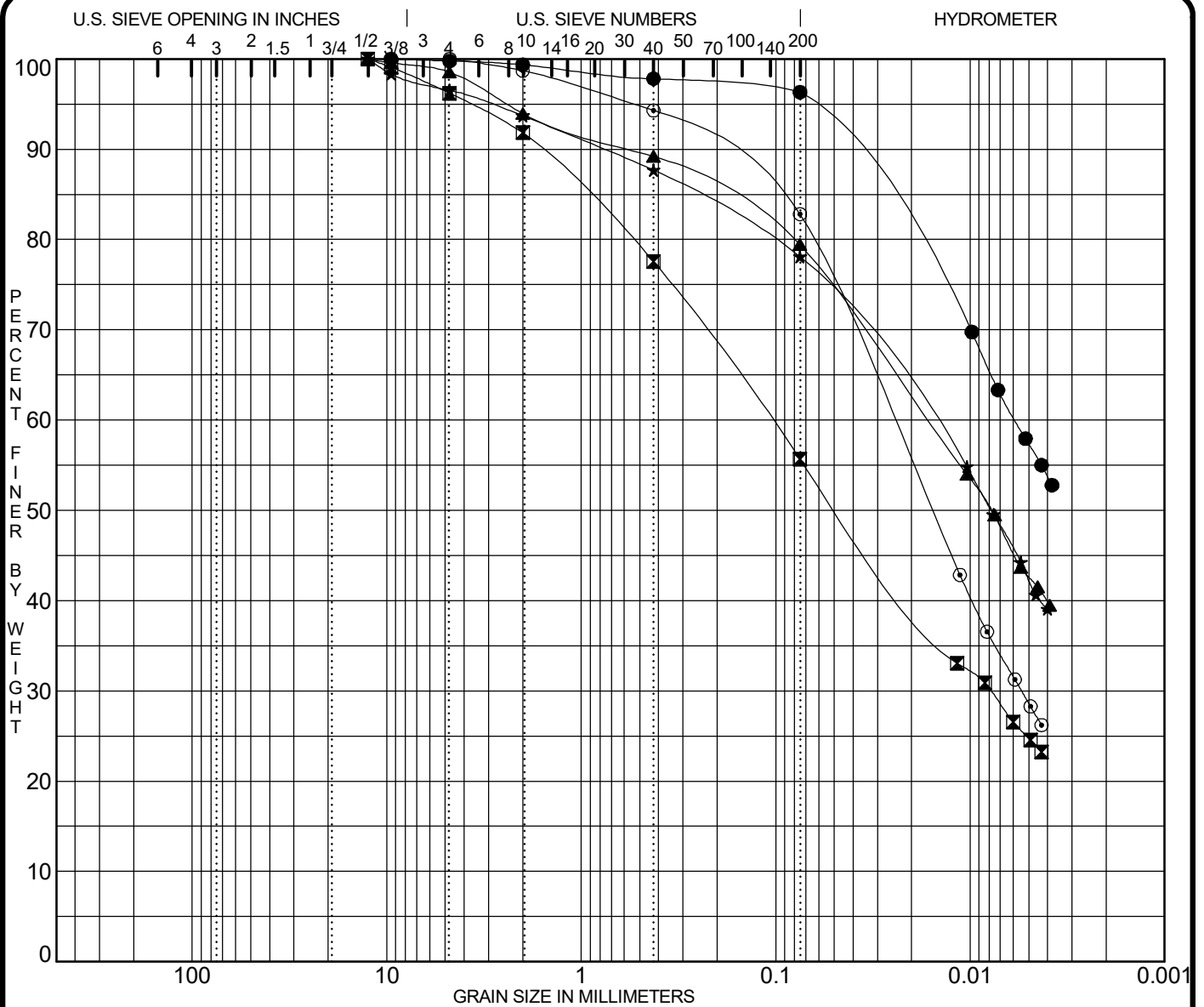
| Specimen Identification | Depth | Classification |       |     |         | MC%  | LL    | PL   | PI    | Cz    | Cu |
|-------------------------|-------|----------------|-------|-----|---------|------|-------|------|-------|-------|----|
| ● B-014-0-20            | 3.0   | A-4a           |       |     |         | 13   | 25    | 15   | 10    |       |    |
| ⊠ B-017-0-20            | 1.0   | A-6a           |       |     |         | 17   | 30    | 18   | 12    |       |    |
| ▲ B-017-0-20            | 2.5   | A-6a           |       |     |         | 14   | 28    | 17   | 11    |       |    |
| ★ B-018-0-20            | 1.5   | A-7-6          |       |     |         | 23   | 43    | 19   | 24    |       |    |
| ⊙ B-018-0-20            | 3.0   | A-7-6          |       |     |         | 26   | 56    | 20   | 36    |       |    |
| Specimen Identification | D85   | D50            | D30   | D10 | %Gravel |      | %Sand |      | %Silt | %Clay |    |
| ● B-014-0-20            | 0.962 | 0.030          | 0.006 |     | 0.0     | 10.3 | 9.9   | 17.2 | 35.4  | 27.3  |    |
| ⊠ B-017-0-20            | 0.130 | 0.012          |       |     | 0.0     | 0.8  | 5.6   | 12.7 | 44.8  | 36.2  |    |
| ▲ B-017-0-20            | 0.526 | 0.020          | 0.005 |     | 0.0     | 6.7  | 9.7   | 15.1 | 37.5  | 31.1  |    |
| ★ B-018-0-20            | 0.074 | 0.008          |       |     | 0.0     | 1.9  | 2.8   | 10.1 | 41.9  | 43.3  |    |
| ⊙ B-018-0-20            | 0.051 |                |       |     | 0.0     | 1.8  | 1.9   | 6.5  | 34.7  | 55.1  |    |

PROJECT UNI-739-6.06

PROJECT NO. W-20-160

## GRADATION CURVES

Resource International



| COBBLES | GRAVEL |      | SAND   |      | SILT OR CLAY |
|---------|--------|------|--------|------|--------------|
|         | coarse | fine | coarse | fine |              |

| Specimen Identification | Depth | Classification |  |  |  | MC% | LL | PL | PI | Cz | Cu |
|-------------------------|-------|----------------|--|--|--|-----|----|----|----|----|----|
| ● B-021-0-20            | 1.0   | A-7-6          |  |  |  | 22  | 49 | 22 | 27 |    |    |
| ⊠ B-021-0-20            | 2.5   | A-6a           |  |  |  | 17  | 28 | 15 | 13 |    |    |
| ▲ B-022-0-20            | 1.5   | A-6b           |  |  |  | 15  | 37 | 17 | 20 |    |    |
| ★ B-022-0-20            | 3.0   | A-6b           |  |  |  | 15  | 34 | 17 | 17 |    |    |
| ⊙ B-025-0-20            | 1.0   | A-6a           |  |  |  | 5   | 28 | 17 | 11 |    |    |

| Specimen Identification | D85   | D50   | D30   | D10 | %Gravel |      | %Sand  |      | %Silt | %Clay |
|-------------------------|-------|-------|-------|-----|---------|------|--------|------|-------|-------|
|                         |       |       |       |     | coarse  | fine | coarse | fine |       |       |
| ● B-021-0-20            | 0.032 |       |       |     | 0.0     | 0.6  | 1.5    | 1.5  | 39.0  | 57.3  |
| ⊠ B-021-0-20            | 0.952 | 0.047 | 0.008 |     | 0.0     | 8.2  | 14.2   | 21.9 | 30.9  | 24.7  |
| ▲ B-022-0-20            | 0.202 | 0.008 |       |     | 0.0     | 6.0  | 4.8    | 9.8  | 36.8  | 42.6  |
| ★ B-022-0-20            | 0.261 | 0.008 |       |     | 0.0     | 6.3  | 6.0    | 9.6  | 35.8  | 42.3  |
| ⊙ B-025-0-20            | 0.104 | 0.016 | 0.005 |     | 0.0     | 1.3  | 4.4    | 11.5 | 54.2  | 28.6  |

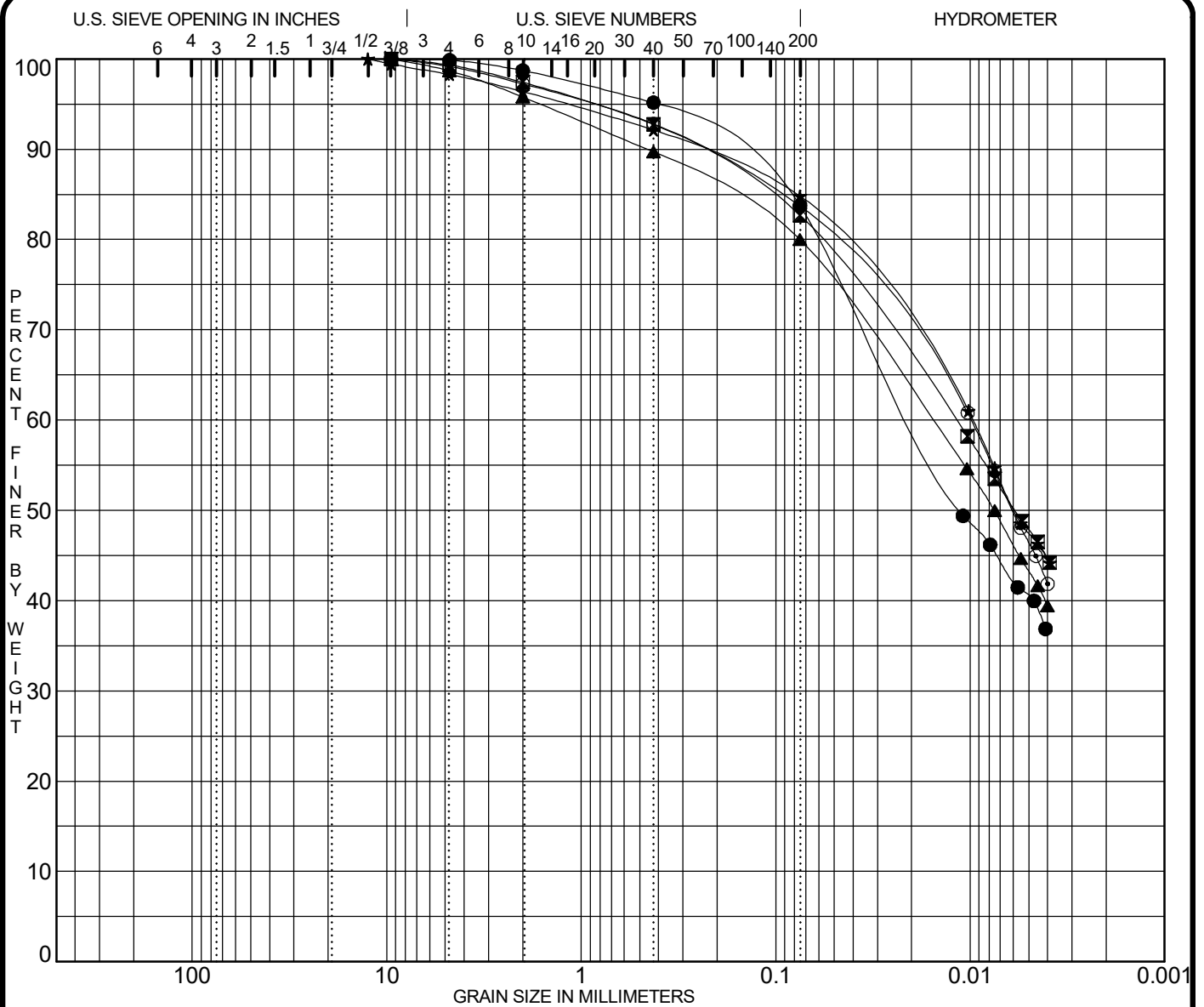
PROJECT UNI-739-6.06

PROJECT NO. W-20-160

## GRADATION CURVES

Resource International





| COBBLES | GRAVEL |      | SAND   |      | SILT OR CLAY |
|---------|--------|------|--------|------|--------------|
|         | coarse | fine | coarse | fine |              |

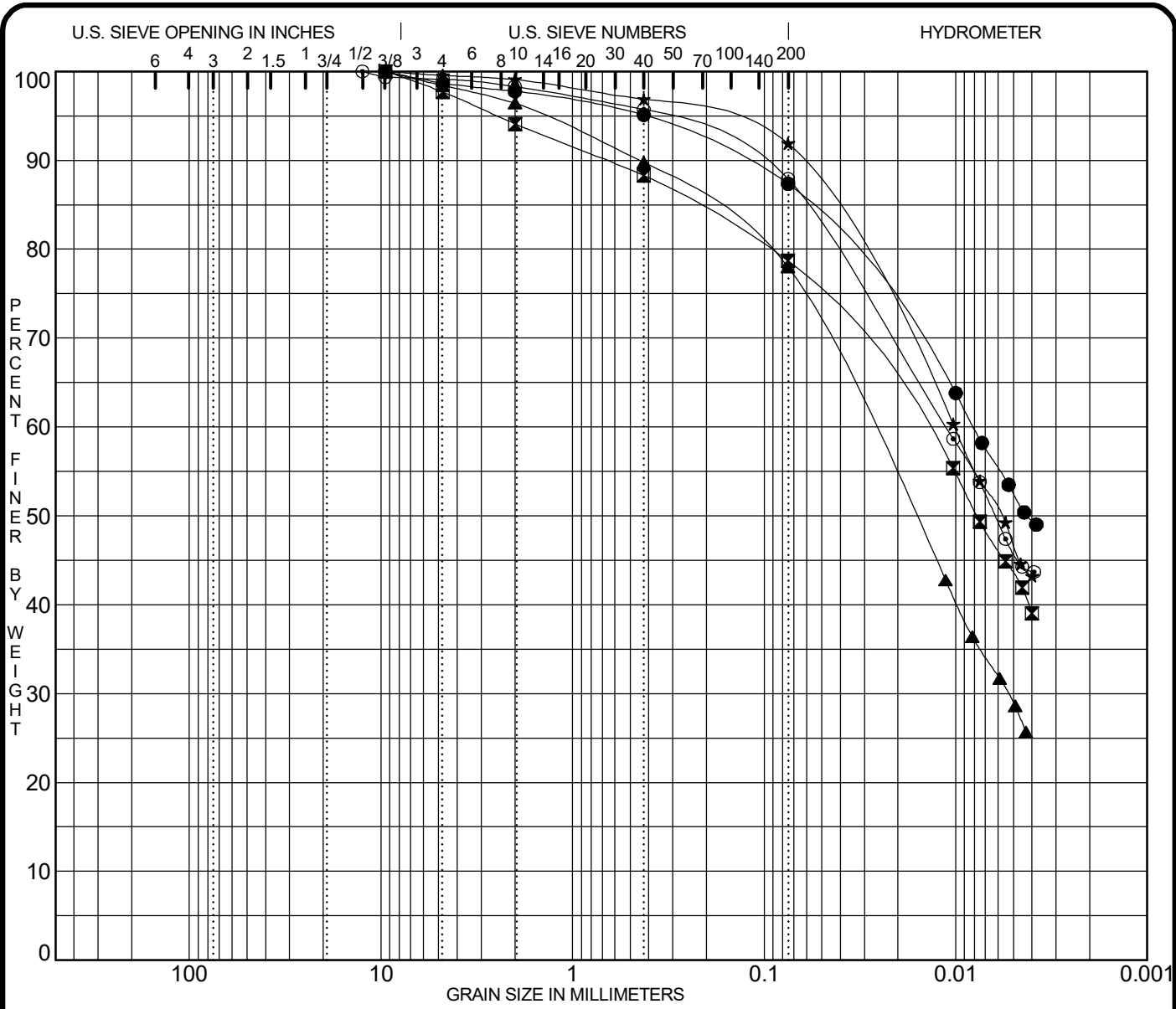
| Specimen Identification | Depth | Classification |     |     |         | MC% | LL    | PL   | PI    | Cz    | Cu |
|-------------------------|-------|----------------|-----|-----|---------|-----|-------|------|-------|-------|----|
| ● B-025-0-20            | 2.5   | A-6b           |     |     |         | 23  | 39    | 17   | 22    |       |    |
| ☒ B-026-0-20            | 1.5   | A-7-6          |     |     |         | 18  | 44    | 18   | 26    |       |    |
| ▲ B-026-0-20            | 3.0   | A-6b           |     |     |         | 16  | 37    | 18   | 19    |       |    |
| ★ B-029-0-20            | 1.0   | A-6b           |     |     |         | 21  | 38    | 18   | 20    |       |    |
| ⊙ B-029-0-20            | 2.5   | A-6b           |     |     |         | 19  | 36    | 18   | 18    |       |    |
| Specimen Identification | D85   | D50            | D30 | D10 | %Gravel |     | %Sand |      | %Silt | %Clay |    |
| ● B-025-0-20            | 0.091 | 0.011          |     |     | 0.0     | 1.3 | 3.5   | 11.4 | 43.3  | 40.4  |    |
| ☒ B-026-0-20            | 0.112 | 0.006          |     |     | 0.0     | 2.6 | 4.7   | 10.0 | 34.9  | 47.8  |    |
| ▲ B-026-0-20            | 0.183 | 0.008          |     |     | 0.0     | 4.2 | 6.1   | 9.7  | 36.8  | 43.2  |    |
| ★ B-029-0-20            | 0.079 | 0.006          |     |     | 0.0     | 3.6 | 4.3   | 7.3  | 37.3  | 47.5  |    |
| ⊙ B-029-0-20            | 0.096 | 0.006          |     |     | 0.0     | 2.7 | 4.4   | 9.1  | 37.3  | 46.4  |    |

PROJECT UNI-739-6.06

PROJECT NO. W-20-160

## GRADATION CURVES

Resource International



| COBBLES | GRAVEL |      | SAND   |      | SILT OR CLAY |
|---------|--------|------|--------|------|--------------|
|         | coarse | fine | coarse | fine |              |

| Specimen Identification | Depth | Classification |  |  |  | MC% | LL | PL | PI | Cz | Cu |
|-------------------------|-------|----------------|--|--|--|-----|----|----|----|----|----|
| ● B-030-0-20            | 1.5   | A-7-6          |  |  |  | 23  | 50 | 19 | 31 |    |    |
| ☒ B-030-0-20            | 3.0   | A-6b           |  |  |  | 16  | 37 | 18 | 19 |    |    |
| ▲ B-033-0-20            | 1.0   | A-4a           |  |  |  | 17  | 27 | 17 | 10 |    |    |
| ★ B-033-0-20            | 2.5   | A-7-6          |  |  |  | 24  | 52 | 20 | 32 |    |    |
| ◎ B-034-0-20            | 1.5   | A-7-6          |  |  |  | 22  | 41 | 18 | 23 |    |    |

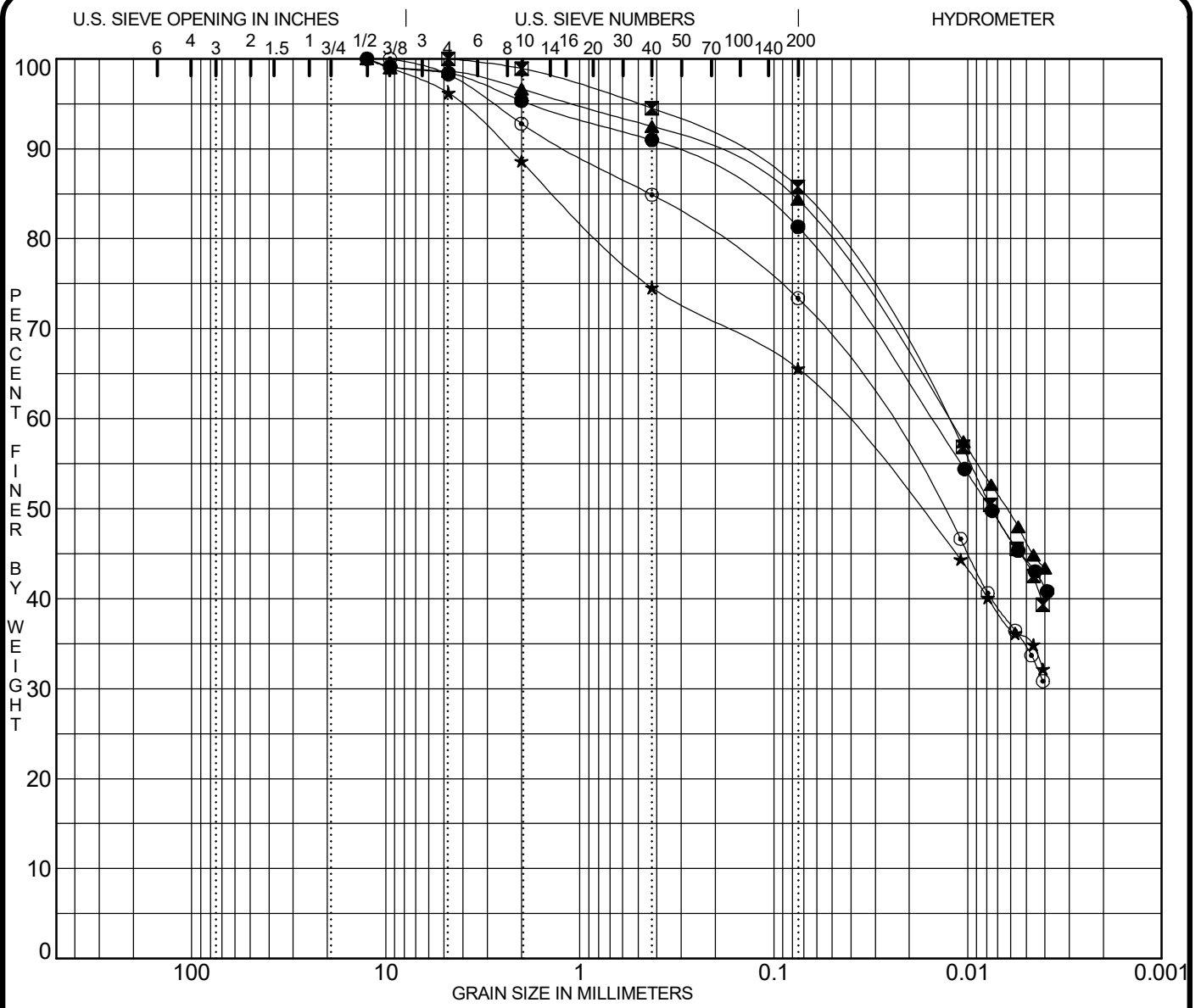
  

| Specimen Identification | D85   | D50   | D30   | D10 | %Gravel |      | %Sand  |      | %Silt | %Clay |
|-------------------------|-------|-------|-------|-----|---------|------|--------|------|-------|-------|
|                         |       |       |       |     | coarse  | fine | coarse | fine |       |       |
| ● B-030-0-20            | 0.061 | 0.004 |       |     | 0.0     | 2.2  | 2.6    | 7.8  | 34.8  | 52.5  |
| ☒ B-030-0-20            | 0.234 | 0.008 |       |     | 0.0     | 5.9  | 5.8    | 9.6  | 35.2  | 43.4  |
| ▲ B-033-0-20            | 0.211 | 0.017 | 0.005 |     | 0.0     | 3.6  | 6.7    | 11.8 | 49.0  | 29.0  |
| ★ B-033-0-20            | 0.049 | 0.006 |       |     | 0.0     | 0.9  | 2.2    | 5.0  | 45.1  | 46.8  |
| ◎ B-034-0-20            | 0.062 | 0.006 |       |     | 0.0     | 1.7  | 2.6    | 7.8  | 42.0  | 45.9  |

PROJECT UNI-739-6.06

PROJECT NO. W-20-160

**GRADATION CURVES**  
Resource International



| COBBLES | GRAVEL |      | SAND   |      | SILT OR CLAY |
|---------|--------|------|--------|------|--------------|
|         | coarse | fine | coarse | fine |              |

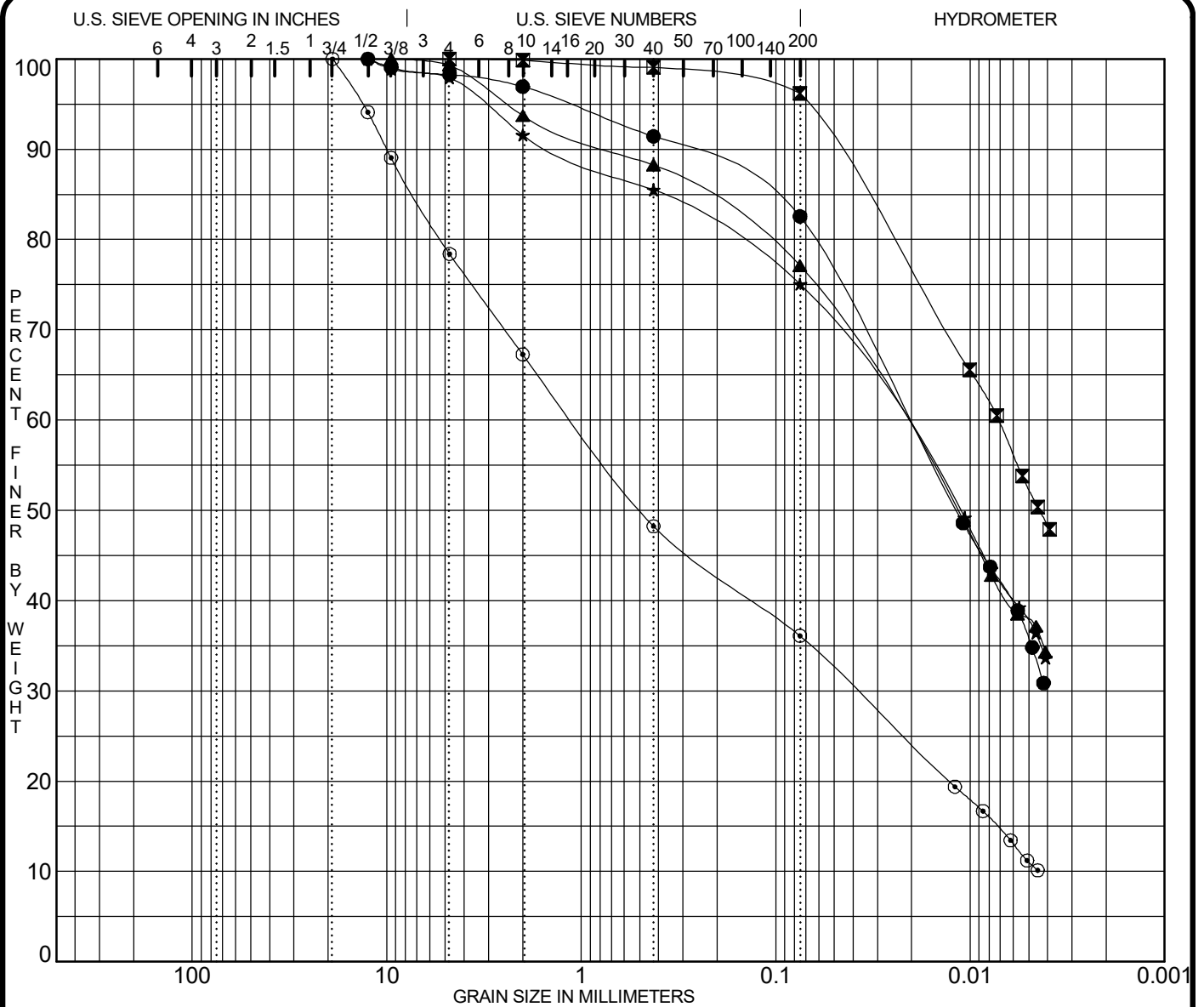
| Specimen Identification | Depth | Classification |     |     |         | MC%  | LL    | PL   | PI    | Cz    | Cu |
|-------------------------|-------|----------------|-----|-----|---------|------|-------|------|-------|-------|----|
| ● B-034-0-20            | 3.0   | A-7-6          |     |     |         | 20   | 46    | 19   | 27    |       |    |
| ⊠ B-037-0-20            | 1.0   | A-6b           |     |     |         | 23   | 40    | 18   | 22    |       |    |
| ▲ B-037-0-20            | 2.5   | A-7-6          |     |     |         | 23   | 50    | 19   | 31    |       |    |
| ★ B-038-0-20            | 1.5   | A-7-6          |     |     |         | 20   | 47    | 20   | 27    |       |    |
| ⊙ B-038-0-20            | 3.0   | A-6a           |     |     |         | 15   | 30    | 16   | 14    |       |    |
| Specimen Identification | D85   | D50            | D30 | D10 | %Gravel |      | %Sand |      | %Silt | %Clay |    |
| ● B-034-0-20            | 0.145 | 0.008          |     |     | 0.0     | 4.7  | 4.3   | 9.7  | 37.1  | 44.2  |    |
| ⊠ B-037-0-20            | 0.071 | 0.007          |     |     | 0.0     | 1.1  | 4.4   | 8.8  | 42.0  | 43.8  |    |
| ▲ B-037-0-20            | 0.086 | 0.006          |     |     | 0.0     | 3.3  | 4.2   | 8.1  | 38.1  | 46.3  |    |
| ★ B-038-0-20            | 1.342 | 0.018          |     |     | 0.0     | 11.4 | 14.1  | 9.0  | 30.2  | 35.4  |    |
| ⊙ B-038-0-20            | 0.434 | 0.014          |     |     | 0.0     | 7.2  | 7.9   | 11.5 | 38.8  | 34.6  |    |

PROJECT UNI-739-6.06

PROJECT NO. W-20-160

## GRADATION CURVES

Resource International



| COBBLES | GRAVEL |      | SAND   |      | SILT OR CLAY |
|---------|--------|------|--------|------|--------------|
|         | coarse | fine | coarse | fine |              |

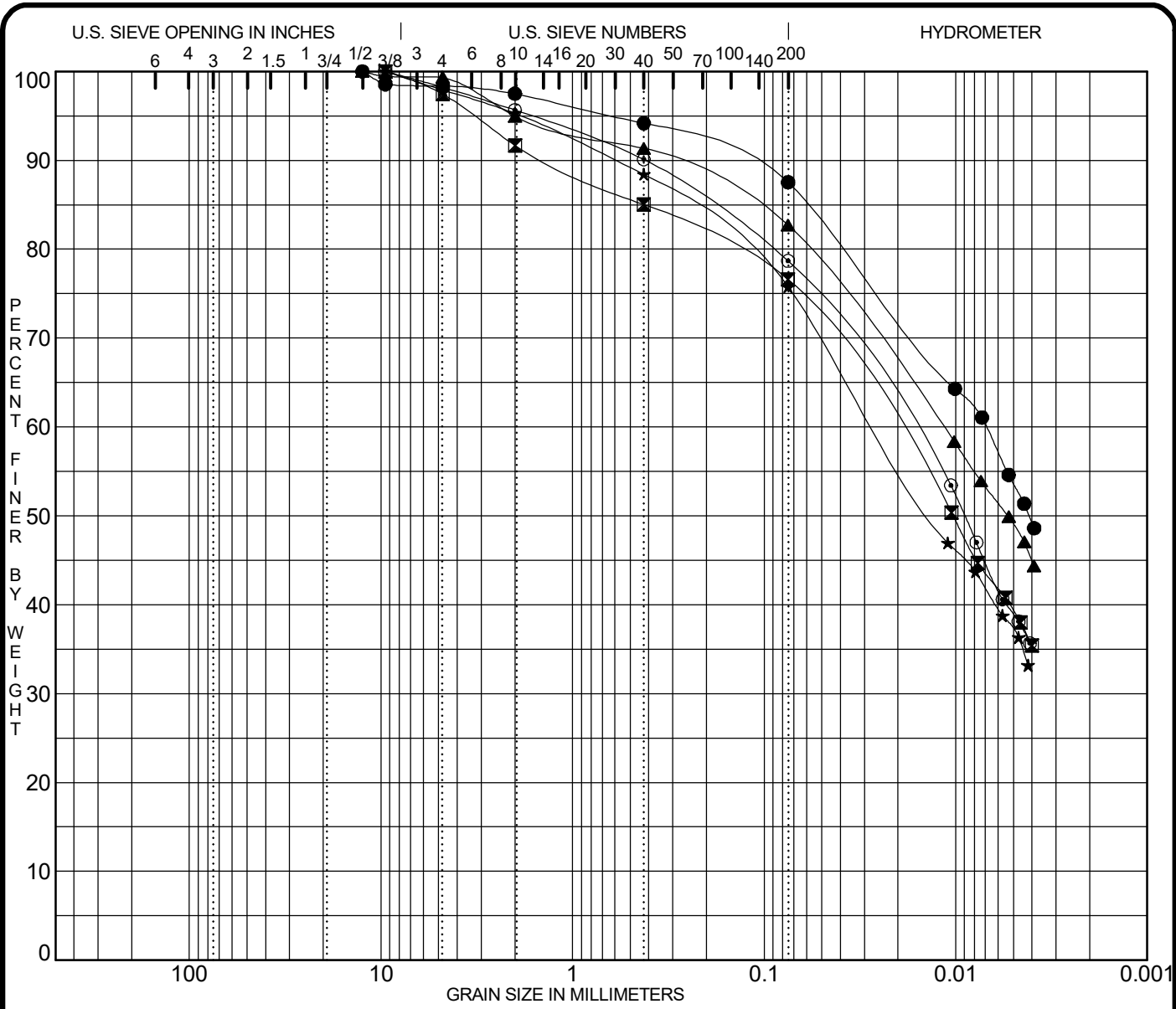
| Specimen Identification | Depth | Classification |       |     |         | MC%  | LL    | PL   | PI    | Cz    | Cu |
|-------------------------|-------|----------------|-------|-----|---------|------|-------|------|-------|-------|----|
| ● B-041-0-20            | 1.0   | A-6b           |       |     |         | 18   | 36    | 19   | 17    |       |    |
| ☒ B-041-0-20            | 2.5   | A-7-6          |       |     |         | 24   | 50    | 20   | 30    |       |    |
| ▲ B-042-0-20            | 1.5   | A-6b           |       |     |         | 20   | 37    | 17   | 20    |       |    |
| ★ B-042-0-20            | 3.0   | A-6b           |       |     |         | 16   | 36    | 18   | 18    |       |    |
| ⊙ B-045-0-20            | 1.0   | A-4a           |       |     |         | 10   | 26    | 18   | 8     |       |    |
| Specimen Identification | D85   | D50            | D30   | D10 | %Gravel |      | %Sand |      | %Silt | %Clay |    |
| ● B-041-0-20            | 0.121 | 0.012          |       |     | 0.0     | 3.1  | 5.5   | 8.9  | 46.8  | 35.8  |    |
| ☒ B-041-0-20            | 0.036 | 0.004          |       |     | 0.0     | 0.2  | 0.8   | 2.9  | 43.9  | 52.3  |    |
| ▲ B-042-0-20            | 0.256 | 0.012          |       |     | 0.0     | 6.3  | 5.5   | 11.1 | 39.5  | 37.7  |    |
| ★ B-042-0-20            | 0.390 | 0.011          |       |     | 0.0     | 8.4  | 6.1   | 10.4 | 37.4  | 37.6  |    |
| ⊙ B-045-0-20            | 7.299 | 0.491          | 0.038 |     | 0.0     | 32.7 | 19.0  | 12.1 | 25.1  | 11.0  |    |

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## GRADATION CURVES

Resource International



| COBBLES | GRAVEL |      | SAND   |      | SILT OR CLAY |
|---------|--------|------|--------|------|--------------|
|         | coarse | fine | coarse | fine |              |

| Specimen Identification | Depth | Classification |  |  |  | MC% | LL | PL | PI | Cz | Cu |
|-------------------------|-------|----------------|--|--|--|-----|----|----|----|----|----|
| ● B-045-0-20            | 2.5   | A-7-6          |  |  |  | 25  | 56 | 22 | 34 |    |    |
| ☒ B-046-0-20            | 1.5   | A-6b           |  |  |  | 26  | 38 | 18 | 20 |    |    |
| ▲ B-046-0-20            | 3.0   | A-7-6          |  |  |  | 25  | 54 | 19 | 35 |    |    |
| ★ B-049-0-20            | 1.0   | A-6b           |  |  |  | 15  | 35 | 17 | 18 |    |    |
| ⊙ B-049-0-20            | 2.5   | A-6b           |  |  |  | 14  | 34 | 17 | 17 |    |    |

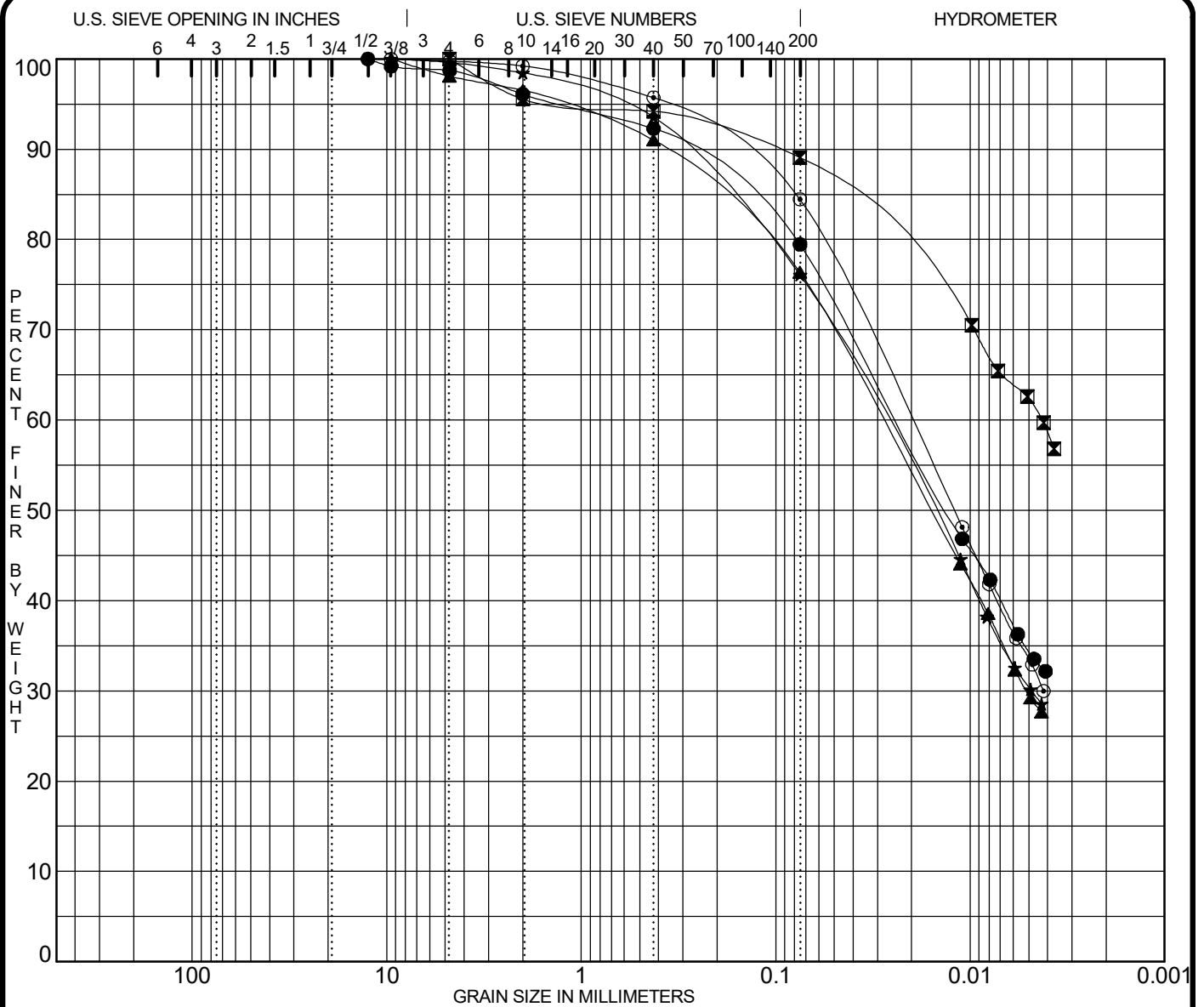
  

| Specimen Identification | D85   | D50   | D30 | D10 | %Gravel |      | %Sand  |      | %Silt | %Clay |
|-------------------------|-------|-------|-----|-----|---------|------|--------|------|-------|-------|
|                         |       |       |     |     | coarse  | fine | coarse | fine |       |       |
| ● B-045-0-20            | 0.060 | 0.004 |     |     | 0.0     | 2.5  | 3.3    | 6.7  | 33.9  | 53.6  |
| ☒ B-046-0-20            | 0.423 | 0.010 |     |     | 0.0     | 8.3  | 6.6    | 8.4  | 37.3  | 39.3  |
| ▲ B-046-0-20            | 0.119 | 0.005 |     |     | 0.0     | 5.0  | 3.6    | 8.6  | 33.7  | 49.0  |
| ★ B-049-0-20            | 0.265 | 0.013 |     |     | 0.0     | 4.7  | 6.9    | 12.6 | 38.7  | 37.1  |
| ⊙ B-049-0-20            | 0.196 | 0.009 |     |     | 0.0     | 4.3  | 5.5    | 11.4 | 39.8  | 38.9  |

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**GRADATION CURVES**  
Resource International



| COBBLES | GRAVEL |      | SAND   |      | SILT OR CLAY |
|---------|--------|------|--------|------|--------------|
|         | coarse | fine | coarse | fine |              |

| Specimen Identification | Depth | Classification |  |  |  | MC% | LL | PL | PI | Cz | Cu |
|-------------------------|-------|----------------|--|--|--|-----|----|----|----|----|----|
| ● B-050-0-20            | 1.5   | A-6b           |  |  |  | 18  | 40 | 19 | 21 |    |    |
| ☒ B-050-0-20            | 3.0   | A-7-6          |  |  |  | 30  | 67 | 22 | 45 |    |    |
| ▲ B-053-0-20            | 1.0   | A-6b           |  |  |  | 17  | 35 | 16 | 19 |    |    |
| ★ B-053-0-20            | 2.5   | A-6b           |  |  |  | 25  | 40 | 18 | 22 |    |    |
| ◎ B-054-0-20            | 1.5   | A-6b           |  |  |  | 21  | 40 | 20 | 20 |    |    |

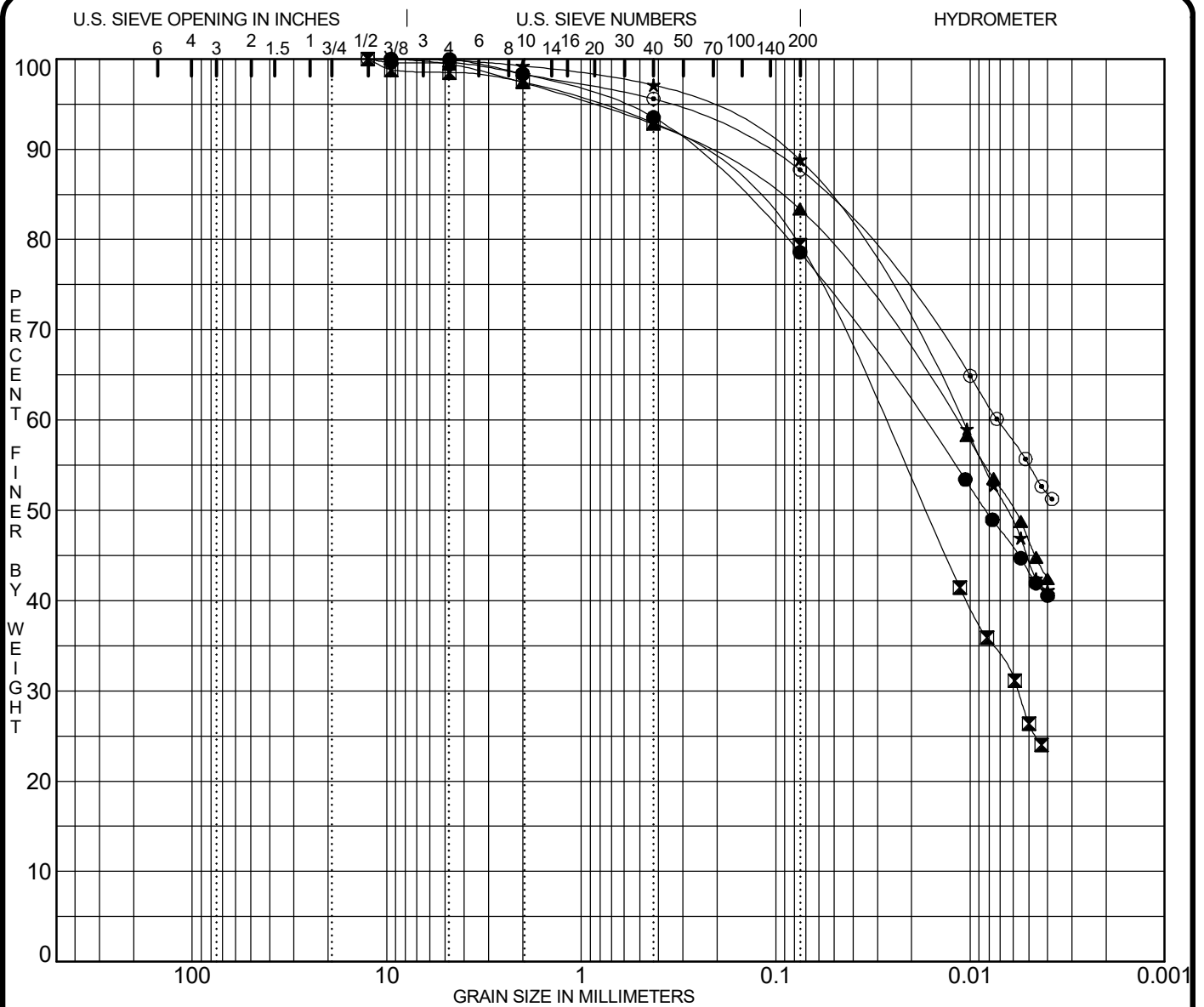
| Specimen Identification | D85   | D50   | D30   | D10 | %Gravel |      | %Sand  |      | %Silt | %Clay |
|-------------------------|-------|-------|-------|-----|---------|------|--------|------|-------|-------|
|                         |       |       |       |     | coarse  | fine | coarse | fine |       |       |
| ● B-050-0-20            | 0.159 | 0.013 |       |     | 0.0     | 3.9  | 3.8    | 12.8 | 45.0  | 34.4  |
| ☒ B-050-0-20            | 0.048 |       |       |     | 0.0     | 4.4  | 1.4    | 5.1  | 26.8  | 62.3  |
| ▲ B-053-0-20            | 0.208 | 0.016 | 0.005 |     | 0.0     | 3.5  | 5.5    | 14.7 | 46.8  | 29.5  |
| ★ B-053-0-20            | 0.181 | 0.016 | 0.005 |     | 0.0     | 1.5  | 4.9    | 17.5 | 45.7  | 30.4  |
| ◎ B-054-0-20            | 0.082 | 0.012 | 0.004 |     | 0.0     | 0.8  | 3.5    | 11.3 | 50.9  | 33.5  |

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## GRADATION CURVES

Resource International



| COBBLES | GRAVEL |      | SAND   |      | SILT OR CLAY |
|---------|--------|------|--------|------|--------------|
|         | coarse | fine | coarse | fine |              |

| Specimen Identification | Depth | Classification |  |  |  | MC% | LL | PL | PI | Cz | Cu |
|-------------------------|-------|----------------|--|--|--|-----|----|----|----|----|----|
| ● B-054-0-20            | 3.0   | A-7-6          |  |  |  | 22  | 47 | 18 | 29 |    |    |
| ☒ B-057-0-20            | 1.0   | A-6a           |  |  |  | 18  | 30 | 17 | 13 |    |    |
| ▲ B-057-0-20            | 2.5   | A-7-6          |  |  |  | 23  | 47 | 18 | 29 |    |    |
| ★ B-058-0-20            | 1.5   | A-7-6          |  |  |  | 23  | 45 | 23 | 22 |    |    |
| ⊙ B-058-0-20            | 3.0   | A-7-6          |  |  |  | 25  | 52 | 21 | 31 |    |    |

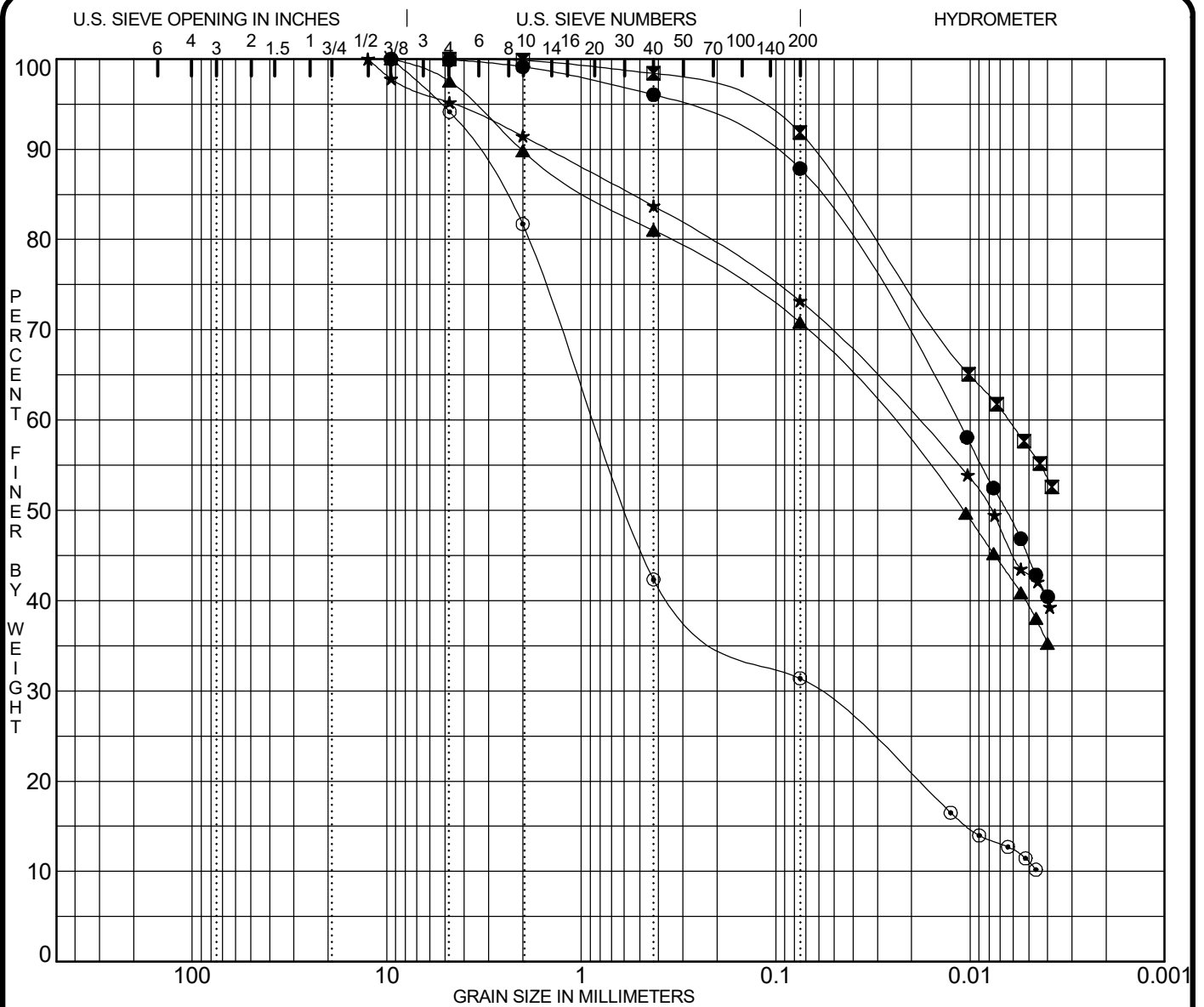
| Specimen Identification | D85   | D50   | D30   | D10 | %Gravel |      | %Sand  |      | %Silt | %Clay |
|-------------------------|-------|-------|-------|-----|---------|------|--------|------|-------|-------|
|                         |       |       |       |     | coarse  | fine | coarse | fine |       |       |
| ● B-054-0-20            | 0.158 | 0.008 |       |     | 0.0     | 1.6  | 4.8    | 15.0 | 35.3  | 43.2  |
| ☒ B-057-0-20            | 0.154 | 0.017 | 0.006 |     | 0.0     | 2.5  | 4.5    | 13.6 | 53.0  | 26.4  |
| ▲ B-057-0-20            | 0.101 | 0.006 |       |     | 0.0     | 2.6  | 4.6    | 9.4  | 36.7  | 46.6  |
| ★ B-058-0-20            | 0.058 | 0.007 |       |     | 0.0     | 0.8  | 2.1    | 8.3  | 44.3  | 44.5  |
| ⊙ B-058-0-20            | 0.059 |       |       |     | 0.0     | 1.7  | 2.7    | 7.9  | 32.7  | 55.1  |

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## GRADATION CURVES

Resource International



| COBBLES | GRAVEL |      | SAND   |      | SILT OR CLAY |
|---------|--------|------|--------|------|--------------|
|         | coarse | fine | coarse | fine |              |

| Specimen Identification | Depth | Classification |       |     |         | MC%  | LL    | PL   | PI    | Cz    | Cu |
|-------------------------|-------|----------------|-------|-----|---------|------|-------|------|-------|-------|----|
| ● B-061-0-20            | 1.0   | A-7-6          |       |     |         | 24   | 50    | 24   | 26    |       |    |
| ☒ B-061-0-20            | 2.5   | A-7-6          |       |     |         | 25   | 64    | 22   | 42    |       |    |
| ▲ B-062-0-20            | 3.0   | A-6b           |       |     |         | 21   | 38    | 18   | 20    |       |    |
| ★ B-062-0-20            | 4.5   | A-6a           |       |     |         | 15   | 32    | 18   | 14    |       |    |
| ◎ B-065-0-20            | 1.0   | A-3a           |       |     |         | 8    | NP    | NP   | NP    |       |    |
| Specimen Identification | D85   | D50            | D30   | D10 | %Gravel |      | %Sand |      | %Silt | %Clay |    |
| ● B-061-0-20            | 0.062 | 0.007          |       |     | 0.0     | 0.9  | 3.1   | 8.2  | 43.1  | 44.7  |    |
| ☒ B-061-0-20            | 0.045 |                |       |     | 0.0     | 0.1  | 1.5   | 6.6  | 35.0  | 56.9  |    |
| ▲ B-062-0-20            | 0.858 | 0.011          |       |     | 0.0     | 10.2 | 8.8   | 10.2 | 31.5  | 39.4  |    |
| ★ B-062-0-20            | 0.549 | 0.008          |       |     | 0.0     | 8.5  | 7.7   | 10.5 | 30.4  | 42.8  |    |
| ◎ B-065-0-20            | 2.514 | 0.575          | 0.063 |     | 0.0     | 18.3 | 39.4  | 10.9 | 20.4  | 11.0  |    |

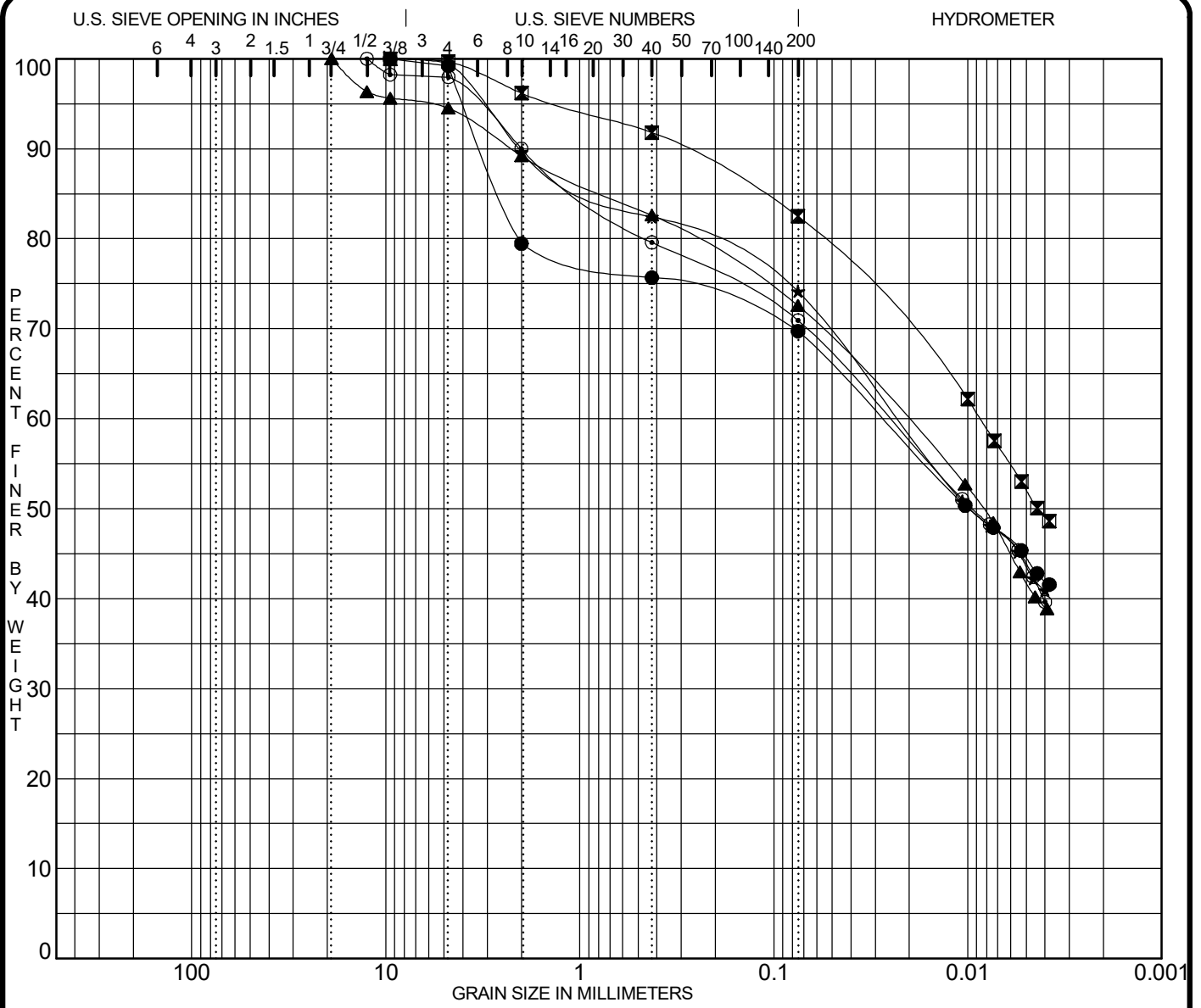
PROJECT UNI-739-6.06

PROJECT NO. W-20-160

## GRADATION CURVES

Resource International





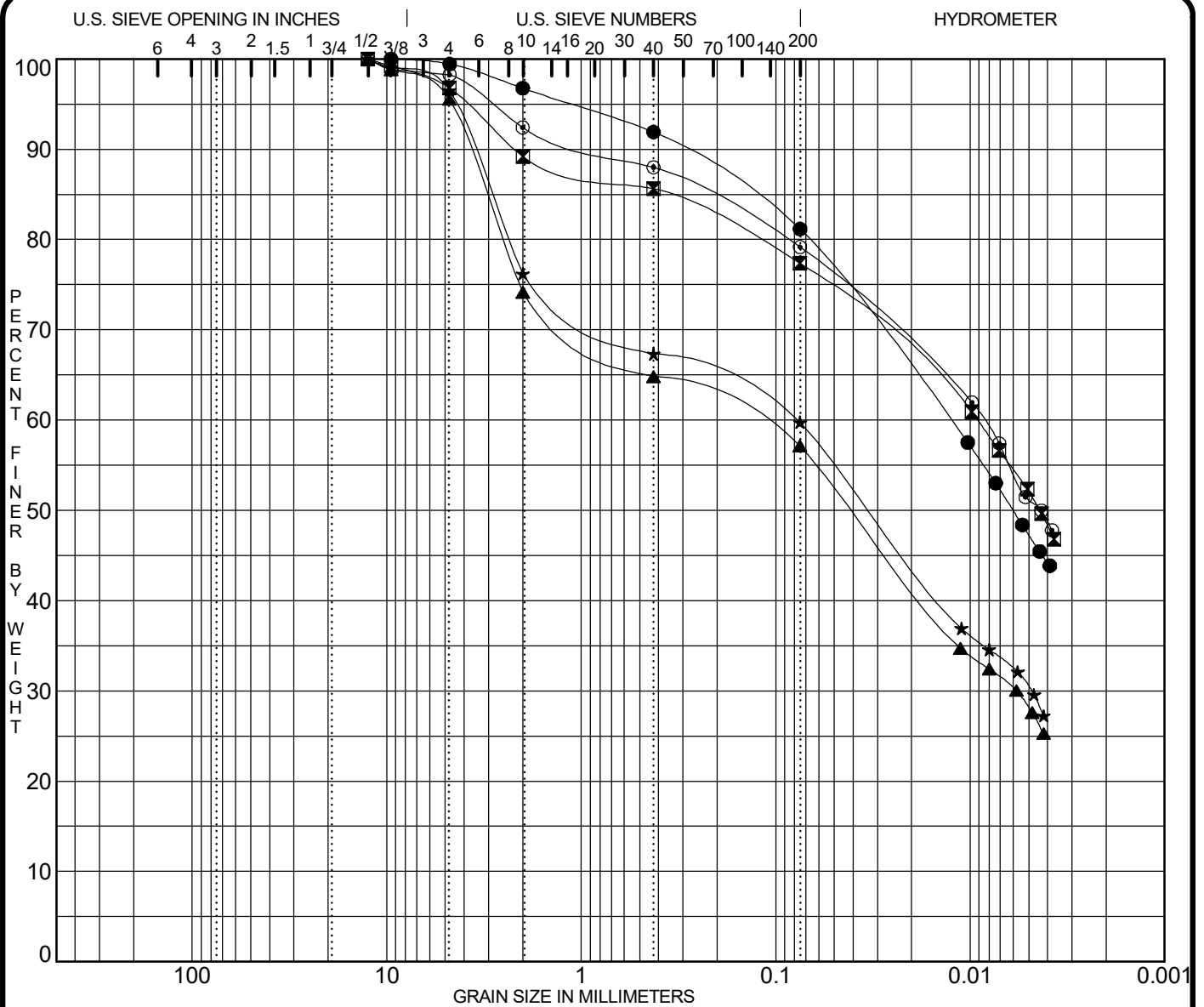
| COBBLES | GRAVEL |      | SAND   |      | SILT OR CLAY |
|---------|--------|------|--------|------|--------------|
|         | coarse | fine | coarse | fine |              |

| Specimen Identification | Depth | Classification |     |     |         | MC%  | LL    | PL   | PI    | Cz    | Cu |
|-------------------------|-------|----------------|-----|-----|---------|------|-------|------|-------|-------|----|
| ● B-065-0-20            | 4.0   | A-6a           |     |     |         | 25   | 39    | 26   | 13    |       |    |
| ☒ B-066-0-20            | 1.5   | A-6b           |     |     |         | 20   | 40    | 19   | 21    |       |    |
| ▲ B-066-0-20            | 3.0   | A-6b           |     |     |         | 15   | 34    | 18   | 16    |       |    |
| ★ B-069-0-20            | 1.0   | A-6a           |     |     |         | 17   | 34    | 19   | 15    |       |    |
| ◎ B-069-0-20            | 2.5   | A-6a           |     |     |         | 16   | 34    | 19   | 15    |       |    |
| Specimen Identification | D85   | D50            | D30 | D10 | %Gravel |      | %Sand |      | %Silt | %Clay |    |
| ● B-065-0-20            | 2.549 | 0.010          |     |     | 0.0     | 20.5 | 3.8   | 5.9  | 25.2  | 44.5  |    |
| ☒ B-066-0-20            | 0.120 | 0.004          |     |     | 0.0     | 3.8  | 4.4   | 9.3  | 30.4  | 52.1  |    |
| ▲ B-066-0-20            | 0.743 | 0.008          |     |     | 0.0     | 10.8 | 6.6   | 10.1 | 30.7  | 41.8  |    |
| ★ B-069-0-20            | 0.739 | 0.010          |     |     | 0.0     | 10.4 | 7.2   | 8.3  | 30.6  | 43.6  |    |
| ◎ B-069-0-20            | 0.950 | 0.009          |     |     | 0.0     | 10.0 | 10.4  | 8.7  | 27.1  | 43.8  |    |

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**GRADATION CURVES**  
Resource International



| COBBLES | GRAVEL |      | SAND   |      | SILT OR CLAY |
|---------|--------|------|--------|------|--------------|
|         | coarse | fine | coarse | fine |              |

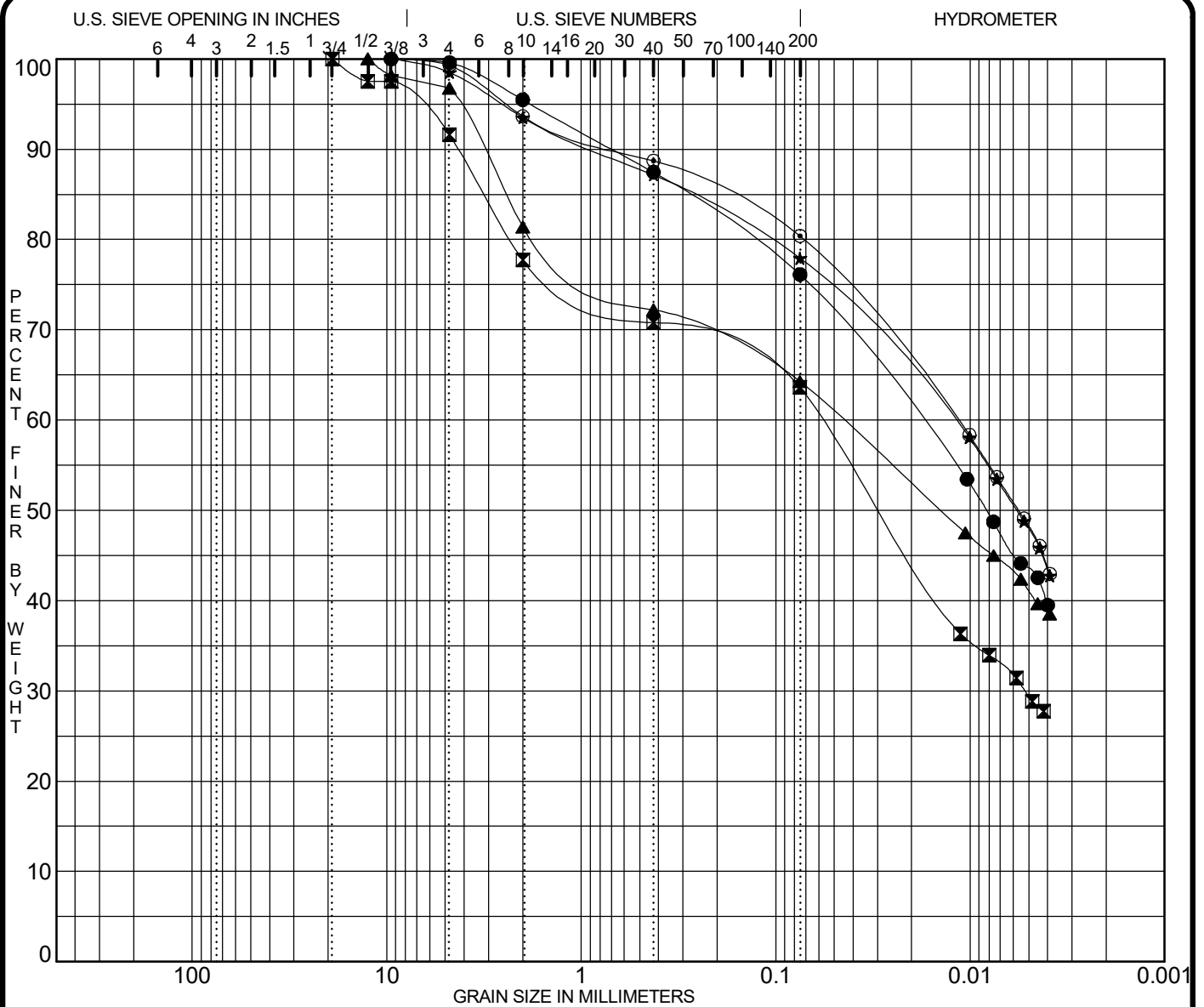
| Specimen Identification | Depth | Classification |       |     |         | MC%  | LL    | PL   | PI    | Cz    | Cu |
|-------------------------|-------|----------------|-------|-----|---------|------|-------|------|-------|-------|----|
| ● B-070-0-20            | 1.5   | A-6b           |       |     |         | 22   | 39    | 18   | 21    |       |    |
| ⊠ B-070-0-20            | 3.0   | A-7-6          |       |     |         | 22   | 44    | 19   | 25    |       |    |
| ▲ B-073-0-20            | 1.0   | A-6a           |       |     |         | 12   | 34    | 19   | 15    |       |    |
| ★ B-073-0-20            | 2.5   | A-6a           |       |     |         | 14   | 34    | 19   | 15    |       |    |
| ⊙ B-074-0-20            | 1.5   | A-7-6          |       |     |         | 22   | 45    | 21   | 24    |       |    |
| Specimen Identification | D85   | D50            | D30   | D10 | %Gravel |      | %Sand |      | %Silt | %Clay |    |
| ● B-070-0-20            | 0.139 | 0.006          |       |     | 0.0     | 3.2  | 4.9   | 10.7 | 33.9  | 47.3  |    |
| ⊠ B-070-0-20            | 0.372 | 0.004          |       |     | 0.0     | 10.8 | 3.6   | 8.3  | 25.3  | 52.0  |    |
| ▲ B-073-0-20            | 3.101 | 0.041          | 0.006 |     | 0.0     | 25.8 | 9.4   | 7.7  | 29.0  | 28.1  |    |
| ★ B-073-0-20            | 2.908 | 0.033          | 0.005 |     | 0.0     | 23.8 | 8.9   | 7.6  | 29.4  | 30.4  |    |
| ⊙ B-074-0-20            | 0.236 | 0.004          |       |     | 0.0     | 7.6  | 4.4   | 8.8  | 28.0  | 51.2  |    |

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### GRADATION CURVES

Resource International



| COBBLES | GRAVEL |      | SAND   |      | SILT OR CLAY |
|---------|--------|------|--------|------|--------------|
|         | coarse | fine | coarse | fine |              |

| Specimen Identification | Depth | Classification |  |  |  | MC% | LL | PL | PI | Cz | Cu |
|-------------------------|-------|----------------|--|--|--|-----|----|----|----|----|----|
| ● B-074-0-20            | 3.0   | A-6b           |  |  |  | 17  | 37 | 19 | 18 |    |    |
| ☒ B-077-0-20            | 1.5   | A-6a           |  |  |  | 16  | 34 | 21 | 13 |    |    |
| ▲ B-077-0-20            | 3.0   | A-6a           |  |  |  | 21  | 33 | 20 | 13 |    |    |
| ★ B-078-0-20            | 2.5   | A-7-6          |  |  |  | 19  | 41 | 19 | 22 |    |    |
| ⊙ B-078-0-20            | 4.0   | A-7-6          |  |  |  | 18  | 43 | 21 | 22 |    |    |

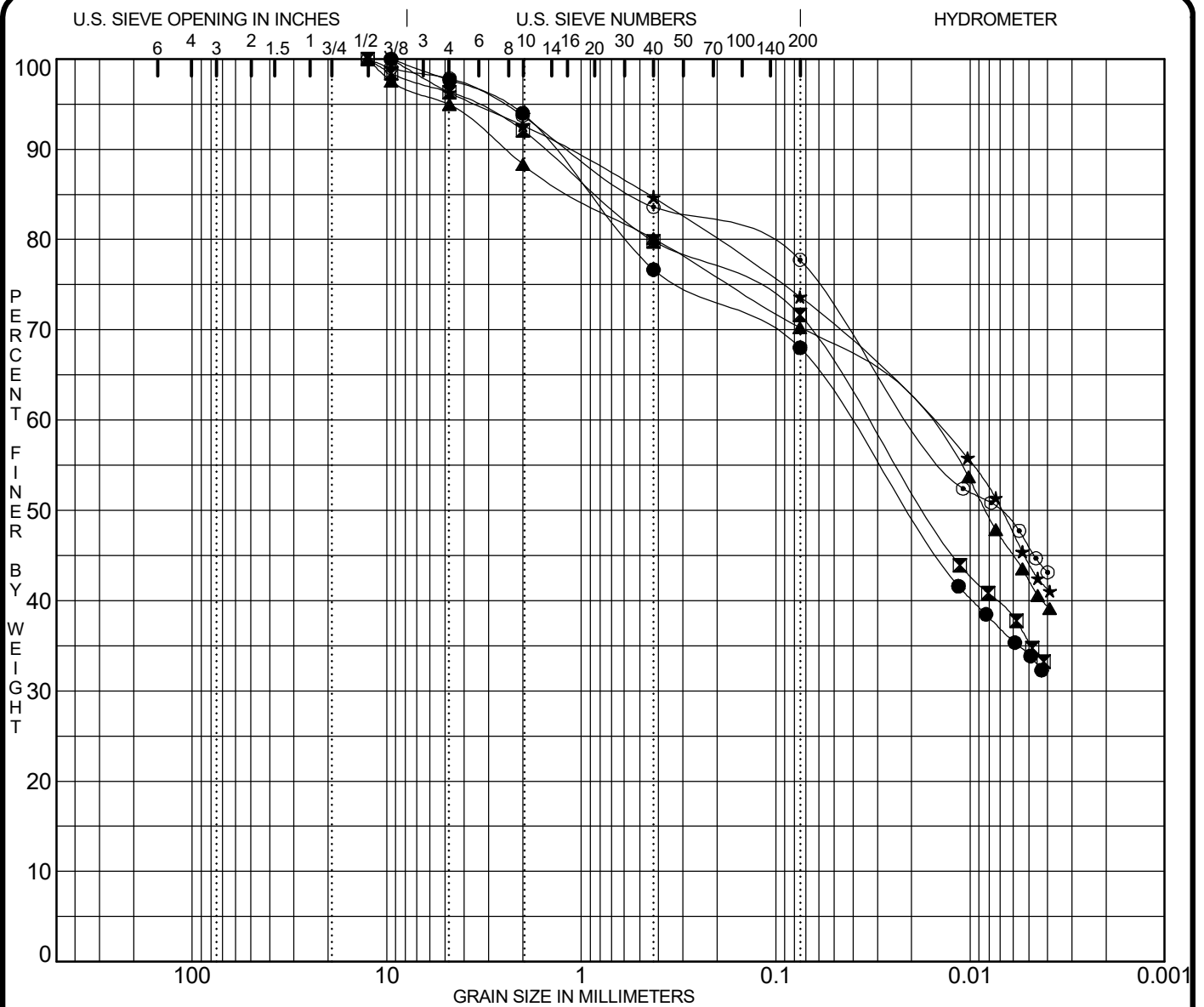
| Specimen Identification | D85   | D50   | D30   | D10 | %Gravel |      | %Sand  |      | %Silt | %Clay |
|-------------------------|-------|-------|-------|-----|---------|------|--------|------|-------|-------|
|                         |       |       |       |     | coarse  | fine | coarse | fine |       |       |
| ● B-074-0-20            | 0.292 | 0.008 |       |     | 0.0     | 4.5  | 8.0    | 11.3 | 32.8  | 43.4  |
| ☒ B-077-0-20            | 3.148 | 0.029 | 0.005 |     | 0.0     | 22.3 | 6.9    | 7.2  | 34.2  | 29.4  |
| ▲ B-077-0-20            | 2.450 | 0.014 |       |     | 0.0     | 18.6 | 9.2    | 7.9  | 23.2  | 41.1  |
| ★ B-078-0-20            | 0.283 | 0.006 |       |     | 0.0     | 6.5  | 6.3    | 9.2  | 30.1  | 47.9  |
| ⊙ B-078-0-20            | 0.196 | 0.006 |       |     | 0.0     | 6.4  | 4.9    | 8.3  | 32.3  | 48.1  |

PROJECT UNI-739-6.06

PROJECT NO. W-20-160

## GRADATION CURVES

Resource International



| COBBLES | GRAVEL |      | SAND   |      | SILT OR CLAY |
|---------|--------|------|--------|------|--------------|
|         | coarse | fine | coarse | fine |              |

| Specimen Identification | Depth | Classification |  |  |  | MC% | LL | PL | PI | Cz | Cu |
|-------------------------|-------|----------------|--|--|--|-----|----|----|----|----|----|
| ● B-081-0-20            | 3.0   | A-6a           |  |  |  | 14  | 32 | 19 | 13 |    |    |
| ⊠ B-081-0-20            | 4.5   | A-6a           |  |  |  | 14  | 32 | 19 | 13 |    |    |
| ▲ B-082-0-20            | 1.0   | A-6a           |  |  |  | 17  | 32 | 18 | 14 |    |    |
| ★ B-082-0-20            | 2.5   | A-6b           |  |  |  | 16  | 34 | 18 | 16 |    |    |
| ⊙ B-085-0-20            | 1.5   | A-6a           |  |  |  | 22  | 32 | 19 | 13 |    |    |

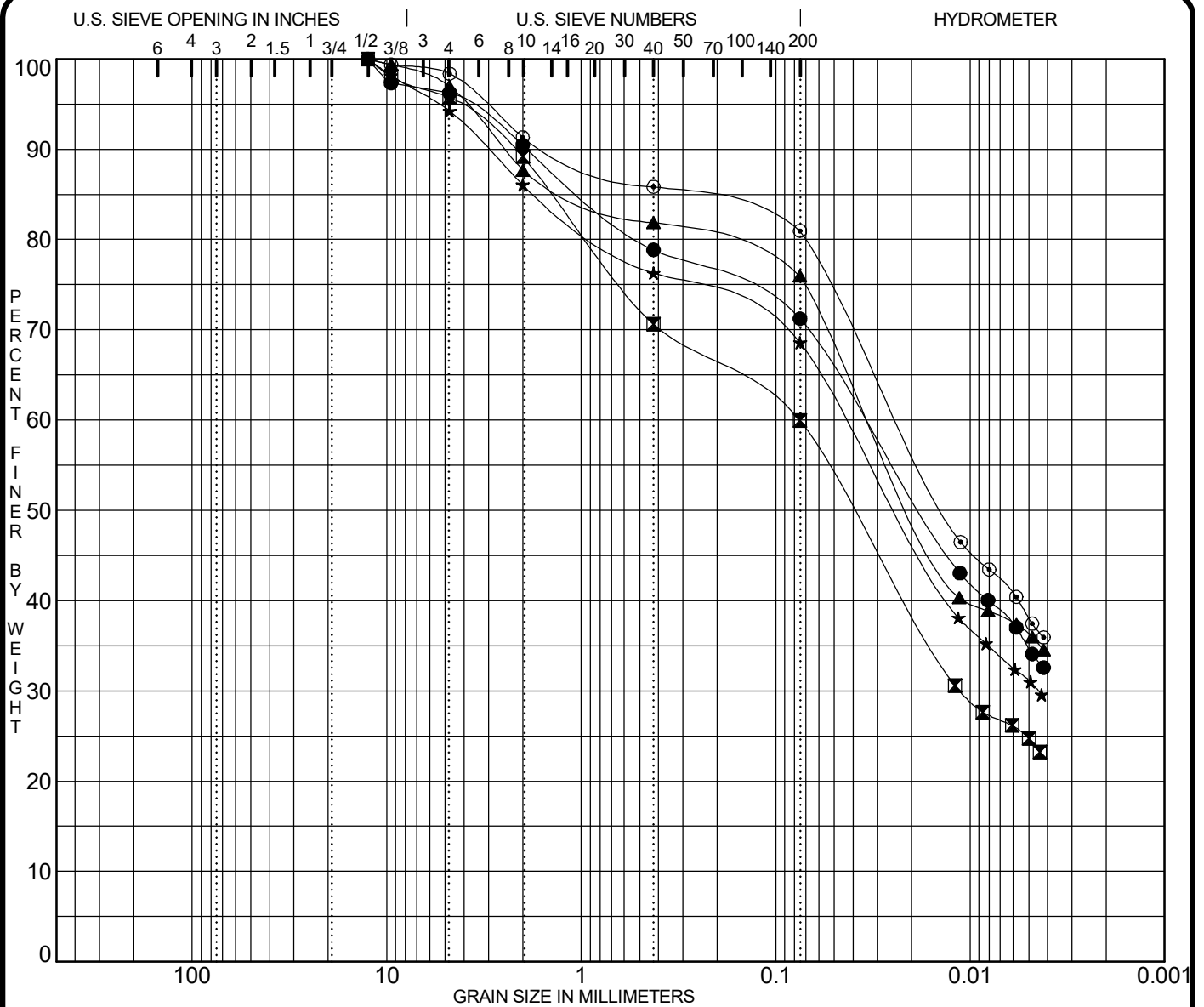
| Specimen Identification | D85   | D50   | D30 | D10 | %Gravel |      | %Sand  |      | %Silt | %Clay |
|-------------------------|-------|-------|-----|-----|---------|------|--------|------|-------|-------|
|                         |       |       |     |     | coarse  | fine | coarse | fine |       |       |
| ● B-081-0-20            | 0.896 | 0.021 |     |     | 0.0     | 6.0  | 17.3   | 8.7  | 34.0  | 34.0  |
| ⊠ B-081-0-20            | 0.816 | 0.017 |     |     | 0.0     | 7.9  | 12.3   | 8.2  | 36.2  | 35.4  |
| ▲ B-082-0-20            | 1.068 | 0.008 |     |     | 0.0     | 11.7 | 8.2    | 9.9  | 28.0  | 42.3  |
| ★ B-082-0-20            | 0.454 | 0.007 |     |     | 0.0     | 7.4  | 8.0    | 11.0 | 29.5  | 44.2  |
| ⊙ B-085-0-20            | 0.526 | 0.007 |     |     | 0.0     | 6.3  | 10.1   | 5.9  | 31.8  | 46.0  |

PROJECT UNI-739-6.06

PROJECT NO. W-20-160

## GRADATION CURVES

Resource International



| COBBLES | GRAVEL |      | SAND   |      | SILT OR CLAY |
|---------|--------|------|--------|------|--------------|
|         | coarse | fine | coarse | fine |              |

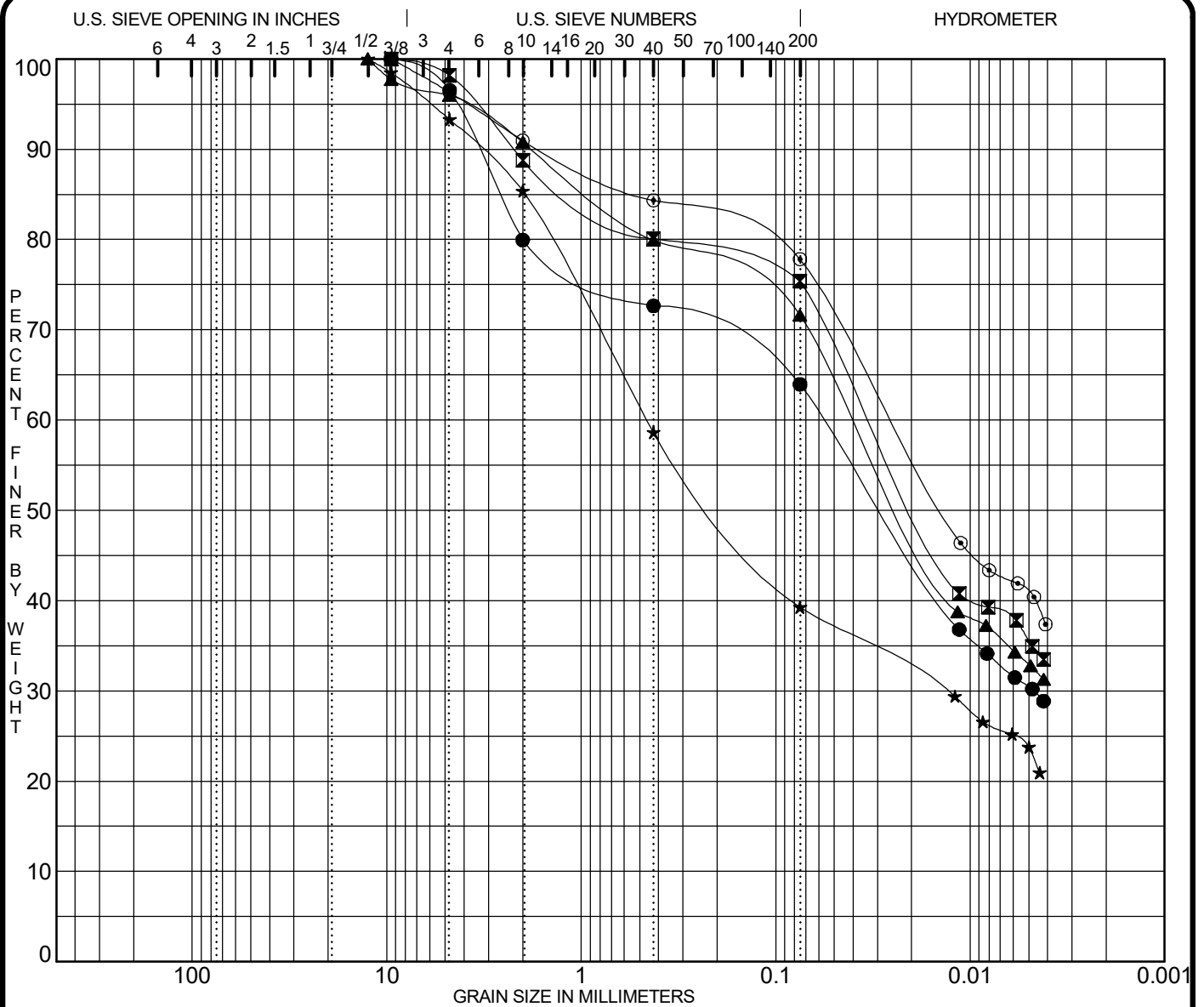
| Specimen Identification | Depth | Classification |       |     |         | MC%  | LL    | PL   | PI    | Cz    | Cu |
|-------------------------|-------|----------------|-------|-----|---------|------|-------|------|-------|-------|----|
| ● B-085-0-20            | 3.0   | A-6a           |       |     |         | 15   | 31    | 19   | 12    |       |    |
| ☒ B-085-0-20            | 4.5   | A-6a           |       |     |         | 13   | 31    | 19   | 12    |       |    |
| ▲ B-086-0-20            | 1.0   | A-6a           |       |     |         | 20   | 34    | 19   | 15    |       |    |
| ★ B-086-0-20            | 2.5   | A-6a           |       |     |         | 20   | 31    | 20   | 11    |       |    |
| ⊙ B-089-0-20            | 1.5   | A-6b           |       |     |         | 21   | 33    | 17   | 16    |       |    |
| Specimen Identification | D85   | D50            | D30   | D10 | %Gravel |      | %Sand |      | %Silt | %Clay |    |
| ● B-085-0-20            | 0.966 | 0.018          |       |     | 0.0     | 9.5  | 11.6  | 7.6  | 36.5  | 34.7  |    |
| ☒ B-085-0-20            | 1.407 | 0.040          | 0.011 |     | 0.0     | 10.8 | 18.6  | 10.7 | 35.2  | 24.7  |    |
| ▲ B-086-0-20            | 0.980 | 0.019          |       |     | 0.0     | 12.3 | 5.8   | 5.9  | 39.7  | 36.3  |    |
| ★ B-086-0-20            | 1.690 | 0.024          | 0.004 |     | 0.0     | 13.9 | 9.8   | 7.7  | 37.4  | 31.2  |    |
| ⊙ B-089-0-20            | 0.315 | 0.014          |       |     | 0.0     | 8.7  | 5.5   | 4.9  | 42.9  | 38.1  |    |

PROJECT UNI-739-6.06

PROJECT NO. W-20-160

## GRADATION CURVES

Resource International



| COBBLES | GRAVEL |      | SAND   |      | SILT OR CLAY |
|---------|--------|------|--------|------|--------------|
|         | coarse | fine | coarse | fine |              |

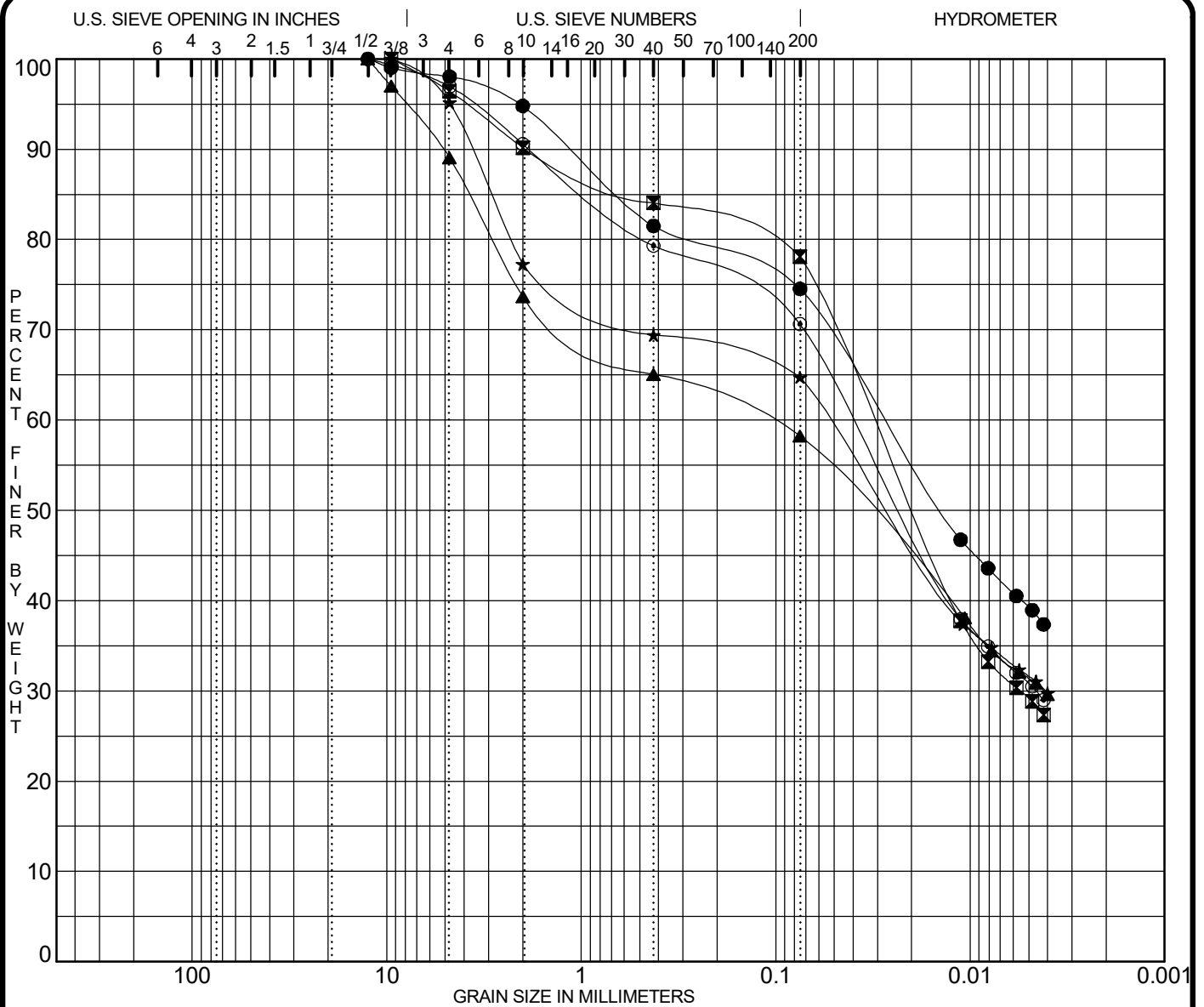
| Specimen Identification | Depth | Classification |       |     |         | MC%  | LL    | PL   | PI    | Cz    | Cu |
|-------------------------|-------|----------------|-------|-----|---------|------|-------|------|-------|-------|----|
| ● B-089-0-20            | 3.0   | A-6a           |       |     |         | 23   | 34    | 22   | 12    |       |    |
| ⊠ B-090-0-20            | 1.0   | A-6a           |       |     |         | 22   | 33    | 22   | 11    |       |    |
| ▲ B-090-0-20            | 2.5   | A-4a           |       |     |         | 16   | 27    | 18   | 9     |       |    |
| ★ B-090-0-20            | 5.5   | A-4a           |       |     |         | 12   | 27    | 18   | 9     |       |    |
| ⊙ B-093-0-20            | 1.5   | A-6a           |       |     |         | 21   | 34    | 19   | 15    |       |    |
| Specimen Identification | D85   | D50            | D30   | D10 | %Gravel |      | %Sand |      | %Silt | %Clay |    |
| ● B-089-0-20            | 2.603 | 0.028          | 0.005 |     | 0.0     | 20.1 | 7.3   | 8.7  | 33.5  | 30.4  |    |
| ⊠ B-090-0-20            | 1.020 | 0.019          |       |     | 0.0     | 11.2 | 8.7   | 4.7  | 39.8  | 35.5  |    |
| ▲ B-090-0-20            | 0.878 | 0.022          |       |     | 0.0     | 9.2  | 10.9  | 8.3  | 38.7  | 32.9  |    |
| ★ B-090-0-20            | 1.956 | 0.196          | 0.013 |     | 0.0     | 14.6 | 26.7  | 19.4 | 15.5  | 23.8  |    |
| ⊙ B-093-0-20            | 0.497 | 0.014          |       |     | 0.0     | 9.0  | 6.6   | 6.5  | 36.9  | 40.9  |    |

PROJECT UNI-739-6.06

PROJECT NO. W-20-160

## GRADATION CURVES

Resource International



| COBBLES | GRAVEL |      | SAND   |      | SILT OR CLAY |
|---------|--------|------|--------|------|--------------|
|         | coarse | fine | coarse | fine |              |

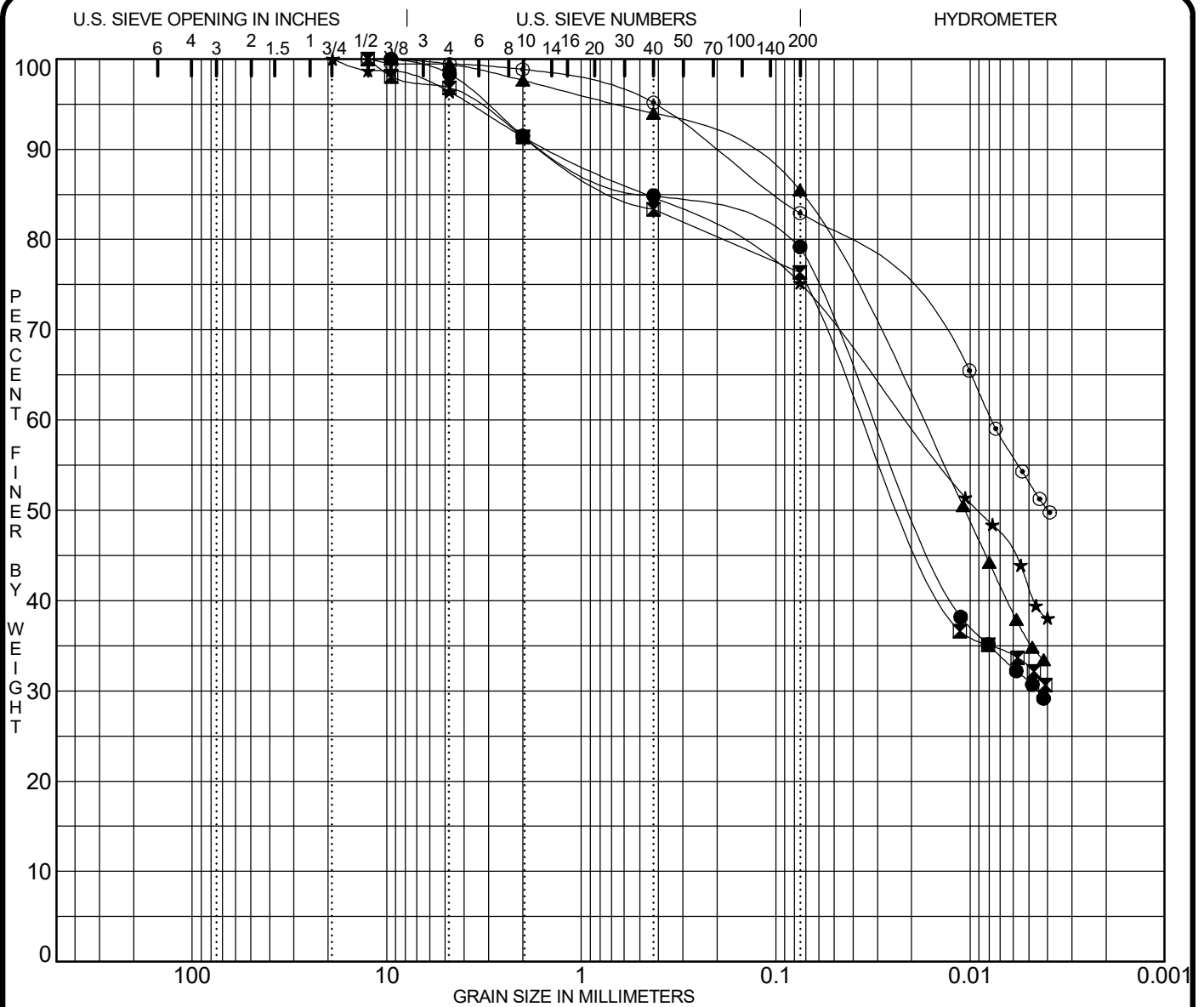
| Specimen Identification | Depth | Classification |       |     |                   | MC%             | LL              | PL            | PI    | Cz    | Cu |
|-------------------------|-------|----------------|-------|-----|-------------------|-----------------|-----------------|---------------|-------|-------|----|
| ● B-093-0-20            | 3.0   | A-6a           |       |     |                   | 15              | 33              | 20            | 13    |       |    |
| ⊠ B-094-0-20            | 1.0   | A-6a           |       |     |                   | 20              | 33              | 21            | 12    |       |    |
| ▲ B-094-0-20            | 2.5   | A-6a           |       |     |                   | 22              | 33              | 19            | 14    |       |    |
| ★ B-097-0-20            | 1.0   | A-6a           |       |     |                   | 20              | 33              | 20            | 13    |       |    |
| ⊙ B-097-0-20            | 2.5   | A-6a           |       |     |                   | 14              | 32              | 20            | 12    |       |    |
| Specimen Identification | D85   | D50            | D30   | D10 | %Gravel<br>coarse | %Gravel<br>fine | %Sand<br>coarse | %Sand<br>fine | %Silt | %Clay |    |
| ● B-093-0-20            | 0.639 | 0.014          |       |     | 0.0               | 5.2             | 13.3            | 7.0           | 35.3  | 39.3  |    |
| ⊠ B-094-0-20            | 0.541 | 0.020          | 0.006 |     | 0.0               | 9.8             | 6.1             | 6.0           | 48.9  | 29.2  |    |
| ▲ B-094-0-20            | 3.782 | 0.034          | 0.004 |     | 0.0               | 26.3            | 8.6             | 6.8           | 26.9  | 31.3  |    |
| ★ B-097-0-20            | 2.906 | 0.027          | 0.004 |     | 0.0               | 22.7            | 7.8             | 4.7           | 33.2  | 31.6  |    |
| ⊙ B-097-0-20            | 0.929 | 0.023          | 0.005 |     | 0.0               | 9.4             | 11.3            | 8.7           | 39.8  | 30.8  |    |

PROJECT UNI-739-6.06

PROJECT NO. W-20-160

## GRADATION CURVES

Resource International



| COBBLES | GRAVEL |      | SAND   |      | SILT OR CLAY |
|---------|--------|------|--------|------|--------------|
|         | coarse | fine | coarse | fine |              |

| Specimen Identification | Depth | Classification |       |     |         | MC% | LL    | PL   | PI    | Cz    | Cu |
|-------------------------|-------|----------------|-------|-----|---------|-----|-------|------|-------|-------|----|
| ● B-098-0-20            | 1.0   | A-6a           |       |     |         | 22  | 33    | 20   | 13    |       |    |
| ⊠ B-098-0-20            | 2.5   | A-6a           |       |     |         | 24  | 32    | 21   | 11    |       |    |
| ▲ B-101-0-20            | 1.0   | A-6a           |       |     |         | 20  | 32    | 18   | 14    |       |    |
| ★ B-101-0-20            | 2.5   | A-6b           |       |     |         | 15  | 37    | 18   | 19    |       |    |
| ⊙ B-102-0-20            | 1.0   | A-7-6          |       |     |         | 21  | 43    | 19   | 24    |       |    |
| Specimen Identification | D85   | D50            | D30   | D10 | %Gravel |     | %Sand |      | %Silt | %Clay |    |
| ● B-098-0-20            | 0.438 | 0.019          | 0.005 |     | 0.0     | 8.5 | 6.6   | 5.7  | 48.2  | 31.0  |    |
| ⊠ B-098-0-20            | 0.583 | 0.021          |       |     | 0.0     | 8.6 | 8.0   | 7.0  | 43.7  | 32.6  |    |
| ▲ B-101-0-20            | 0.073 | 0.011          |       |     | 0.0     | 2.4 | 3.6   | 8.5  | 50.0  | 35.5  |    |
| ★ B-101-0-20            | 0.460 | 0.009          |       |     | 0.0     | 8.6 | 6.7   | 9.5  | 33.6  | 41.5  |    |
| ⊙ B-102-0-20            | 0.101 | 0.004          |       |     | 0.0     | 1.2 | 3.7   | 12.2 | 29.8  | 53.2  |    |

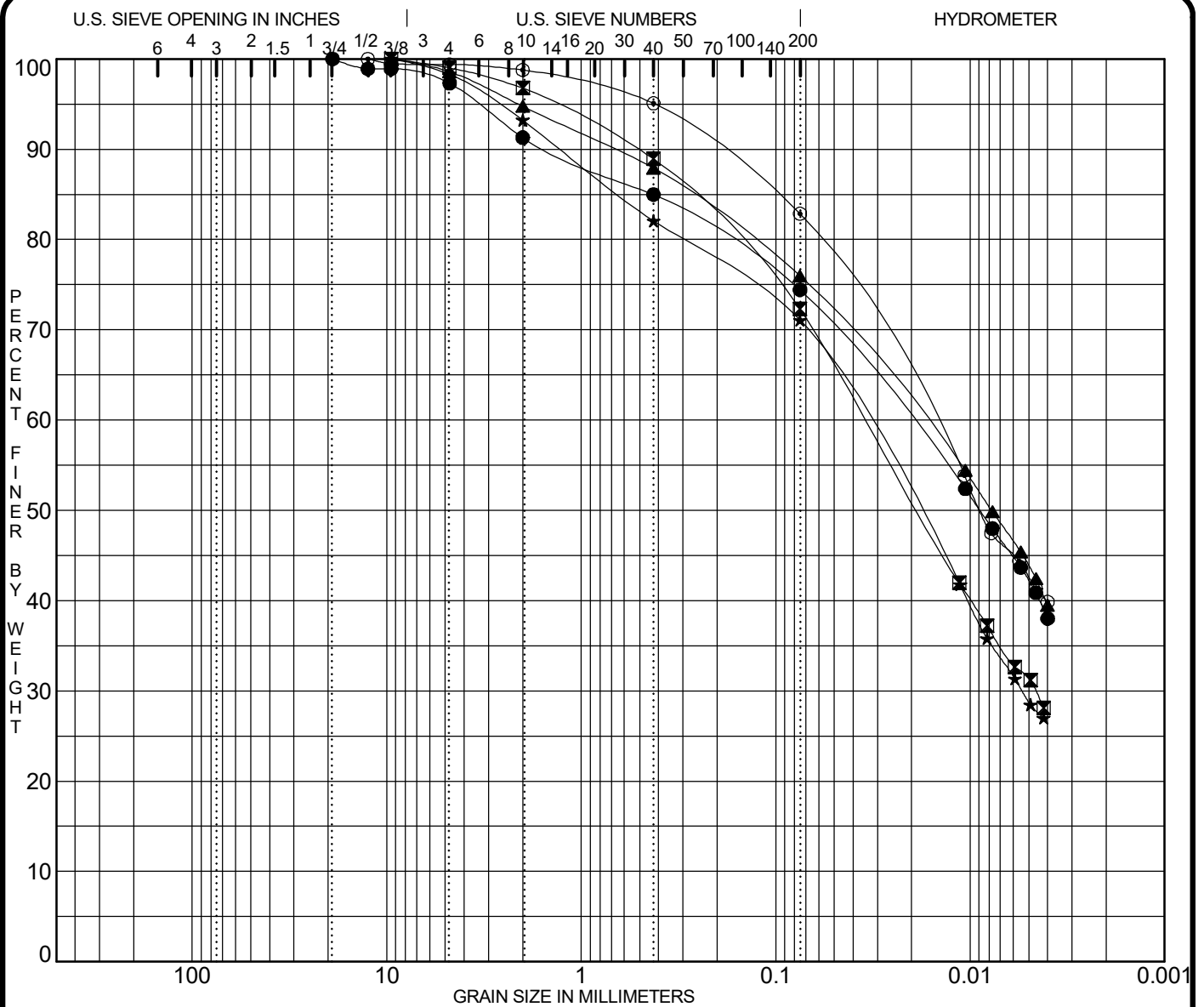
PROJECT UNI-739-6.06

PROJECT NO. W-20-160

## GRADATION CURVES

Resource International





| COBBLES | GRAVEL |      | SAND   |      | SILT OR CLAY |
|---------|--------|------|--------|------|--------------|
|         | coarse | fine | coarse | fine |              |

| Specimen Identification | Depth | Classification |       |     |         | MC% | LL    | PL   | PI    | Cz    | Cu |
|-------------------------|-------|----------------|-------|-----|---------|-----|-------|------|-------|-------|----|
| ● B-102-0-20            | 2.5   | A-6b           |       |     |         | 14  | 36    | 17   | 19    |       |    |
| ⊠ B-105-0-20            | 1.0   | A-6b           |       |     |         | 18  | 31    | 15   | 16    |       |    |
| ▲ B-105-0-20            | 2.5   | A-6b           |       |     |         | 18  | 40    | 18   | 22    |       |    |
| ★ B-106-0-20            | 1.0   | A-6a           |       |     |         | 18  | 29    | 18   | 11    |       |    |
| ⊙ B-106-0-20            | 2.5   | A-7-6          |       |     |         | 25  | 41    | 19   | 22    |       |    |
| Specimen Identification | D85   | D50            | D30   | D10 | %Gravel |     | %Sand |      | %Silt | %Clay |    |
| ● B-102-0-20            | 0.427 | 0.009          |       |     | 0.0     | 8.7 | 6.3   | 10.5 | 32.3  | 42.2  |    |
| ⊠ B-105-0-20            | 0.282 | 0.019          | 0.005 |     | 0.0     | 3.2 | 7.8   | 16.6 | 41.0  | 31.3  |    |
| ▲ B-105-0-20            | 0.278 | 0.008          |       |     | 0.0     | 5.2 | 6.8   | 11.9 | 32.1  | 43.8  |    |
| ★ B-106-0-20            | 0.638 | 0.019          | 0.005 |     | 0.0     | 6.8 | 11.2  | 11.0 | 42.3  | 28.8  |    |
| ⊙ B-106-0-20            | 0.102 | 0.009          |       |     | 0.0     | 1.2 | 3.7   | 12.2 | 40.2  | 42.6  |    |

PROJECT UNI-739-6.06

PROJECT NO. W-20-160

## GRADATION CURVES

Resource International

# **APPENDIX VI**

## **Pavement Core Data Sheet**



6350 Presidential Gateway  
 Columbus, Ohio 43231  
 Telephone: (614) 823-4949  
 Fax Number: (614) 823-4990

### Pavement Core Data Summary

|                    |                    |
|--------------------|--------------------|
| PROJECT            | Uni-739            |
| LOCATION           | Union County, Ohio |
| JOB No.            | W-20-160           |
| BORING/CORE No.    | D-004-0-20         |
| DATE CORE OBTAINED | 3/11/2021          |
| CORE OBTAINED BY   | E.T. & T.G.        |

| Core Composition |                      |         |              |      |          |                         | Comments/Remarks |  |  |  |  |   |  |
|------------------|----------------------|---------|--------------|------|----------|-------------------------|------------------|--|--|--|--|---|--|
| Core Number      | Lift Thickness (in.) | Asphalt |              |      | Concrete | Aggregate/Granular Base | Other            |  |  |  |  |   |  |
|                  |                      | Surface | Intermediate | Base |          |                         |                  |  |  |  |  |   |  |
| D-004-0-20       | 2.25                 | ✓       |              |      |          |                         |                  |  |  |  |  | <ul style="list-style-type: none"> <li>- The core surface shows high wear.</li> <li>- Lifts 2 and 3 have high voids.</li> <li>- Tack coat between lifts 1 and 2.</li> </ul> |  |
|                  | 2.00                 | ✓       |              |      |          |                         |                  |  |  |  |  |   |  |
|                  | 5.00                 |         |              | ✓    |          |                         |                  |  |  |  |  |   |  |
|                  | 3.25                 |         |              |      | ✓        |                         |                  |  |  |  |  |   |  |
|                  |                      |         |              |      |          |                         |                  |  |  |  |  |   |  |
|                  |                      |         |              |      |          |                         |                  |  |  |  |  |   |  |
|                  |                      |         |              |      |          |                         |                  |  |  |  |  |   |  |
|                  |                      |         |              |      |          |                         |                  |  |  |  |  |   |  |

Total Pavement Thickness = 9.25 in.      Total Asphalt Thickness = 9.25 in.      Total Concrete Thickness = 0.00 in.      Total Base Thickness = 3.25 in.





6350 Presidential Gateway  
 Columbus, Ohio 43231  
 Telephone: (614) 823-4949  
 Fax Number: (614) 823-4990

### Pavement Core Data Summary

PROJECT Uni-739  
 LOCATION Union County, Ohio  
 JOB No. W-20-160

BORING/CORE No. D-019-0-20  
 DATE CORE OBTAINED 3/8/2021  
 CORE OBTAINED BY K.S. & T.G.

#### Core Composition

#### Comments/Remarks

| Core Number | Lift Thickness (in.) | Asphalt |              |      | Concrete | Aggregate/Granular Base | Other |  |  |
|-------------|----------------------|---------|--------------|------|----------|-------------------------|-------|--|--|
|             |                      | Surface | Intermediate | Base |          |                         |       |  |  |
| D-019-0-20  | 2.50                 | ✓       |              |      |          |                         |       |  |  |
|             | 2.50                 | ✓       |              |      |          |                         |       |  |  |
|             | 4.50                 |         |              | ✓    |          |                         |       |  |  |
|             | 4.00                 |         |              |      | ✓        |                         |       |  |  |
|             |                      |         |              |      |          |                         |       |  |  |
|             |                      |         |              |      |          |                         |       |  |  |
|             |                      |         |              |      |          |                         |       |  |  |
|             |                      |         |              |      |          |                         |       |  |  |

- The entire core has voids.
- Tack coat between lifts 1 and 2.

Total Pavement Thickness = 9.50 in.      Total Asphalt Thickness = 9.50 in.      Total Concrete Thickness = 0.00 in.      Total Base Thickness = 4.00 in.





6350 Presidential Gateway  
 Columbus, Ohio 43231  
 Telephone: (614) 823-4949  
 Fax Number: (614) 823-4990

**Pavement Core Data Summary**

PROJECT Uni-739  
 LOCATION Union County, Ohio  
 JOB No. W-20-160

BORING/CORE No. D-024-0-20  
 DATE CORE OBTAINED 3/11/2021  
 CORE OBTAINED BY E.T. & T.G.

**Core Composition**

**Comments/Remarks**

| Core Number | Lift Thickness (in.) | Asphalt |              |      | Concrete | Aggregate/Granular Base | Other |  |  |
|-------------|----------------------|---------|--------------|------|----------|-------------------------|-------|--|--|
|             |                      | Surface | Intermediate | Base |          |                         |       |  |  |
| D-024-0-20  | 2.75                 | ✓       |              |      |          |                         |       |  |  |
|             | 1.25                 | ✓       |              |      |          |                         |       |  |  |
|             | 5.50                 |         |              | ✓    |          |                         |       |  |  |
|             | 2.00                 |         |              |      | ✓        |                         |       |  |  |
|             |                      |         |              |      |          |                         |       |  |  |
|             |                      |         |              |      |          |                         |       |  |  |
|             |                      |         |              |      |          |                         |       |  |  |
|             |                      |         |              |      |          |                         |       |  |  |

- The entire core has voids.
- Tack coat between lifts 1 and 2.

Total Pavement Thickness = 9.50 in.    Total Asphalt Thickness = 9.50 in.    Total Concrete Thickness = 0.00 in.    Total Base Thickness = 2.00 in.





6350 Presidential Gateway  
 Columbus, Ohio 43231  
 Telephone: (614) 823-4949  
 Fax Number: (614) 823-4990

### Pavement Core Data Summary

PROJECT Uni-739  
 LOCATION Union County, Ohio  
 JOB No. W-20-160

BORING/CORE No. D-039-0-20  
 DATE CORE OBTAINED 3/8/2021  
 CORE OBTAINED BY K.S. & T.G.

#### Core Composition

#### Comments/Remarks

| Core Number | Lift Thickness (in.) | Asphalt |              |      | Concrete | Aggregate/Granular Base | Other |  |  |
|-------------|----------------------|---------|--------------|------|----------|-------------------------|-------|--|--|
|             |                      | Surface | Intermediate | Base |          |                         |       |  |  |
| D-039-0-20  | 2.25                 | ✓       |              |      |          |                         |       |  |  |
|             | 2.75                 | ✓       |              |      |          |                         |       |  |  |
|             | 6.50                 |         |              | ✓    |          |                         |       |  |  |
|             | 3.50                 |         |              |      | ✓        |                         |       |  |  |
|             |                      |         |              |      |          |                         |       |  |  |
|             |                      |         |              |      |          |                         |       |  |  |
|             |                      |         |              |      |          |                         |       |  |  |
|             |                      |         |              |      |          |                         |       |  |  |

- The entire core has high voids.
- Tack coat between lifts 1 and 2.

Total Pavement Thickness = 11.50 in.      Total Asphalt Thickness = 11.50 in.      Total Concrete Thickness = 0.00 in.      Total Base Thickness = 3.50 in.





6350 Presidential Gateway  
 Columbus, Ohio 43231  
 Telephone: (614) 823-4949  
 Fax Number: (614) 823-4990

### Pavement Core Data Summary

PROJECT Uni-739  
 LOCATION Union County, Ohio  
 JOB No. W-20-160

BORING/CORE No. D-044-0-20  
 DATE CORE OBTAINED 3/11/2021  
 CORE OBTAINED BY E.T. & T.G.

#### Core Composition

#### Comments/Remarks

| Core Number | Lift Thickness (in.) | Asphalt |              |      | Concrete | Aggregate/Granular Base | Other |  |  |
|-------------|----------------------|---------|--------------|------|----------|-------------------------|-------|--|--|
|             |                      | Surface | Intermediate | Base |          |                         |       |  |  |
| D-044-0-20  | 2.00                 | ✓       |              |      |          |                         |       |  |  |
|             | 2.00                 | ✓       |              |      |          |                         |       |  |  |
|             | 1.50                 | ✓       |              |      |          |                         |       |  |  |
|             | 1.50                 |         | ✓            |      |          |                         |       |  |  |
|             | 4.50                 |         | ✓            |      |          |                         |       |  |  |
|             | 2.00                 |         |              |      |          | ✓                       |       |  |  |
|             |                      |         |              |      |          |                         |       |  |  |

- The core surface shows high wear and a vertical crack.
- Lifts 4 and 5 have high voids.
- Tack coat between lifts 3 and 4.

Total Pavement Thickness = 11.50 in.      Total Asphalt Thickness = 11.50 in.      Total Concrete Thickness = 0.00 in.      Total Base Thickness = 2.00 in.





6350 Presidential Gateway  
 Columbus, Ohio 43231  
 Telephone: (614) 823-4949  
 Fax Number: (614) 823-4990

**Pavement Core Data Summary**

PROJECT Uni-739  
 LOCATION Union County, Ohio  
 JOB No. W-20-160

BORING/CORE No. D-059-0-20  
 DATE CORE OBTAINED 3/9/2021  
 CORE OBTAINED BY J.P. & T.G.

**Core Composition**

**Comments/Remarks**

| Core Number | Lift Thickness (in.) | Asphalt |              |      |  | Concrete | Aggregate/Granular Base | Other |  |  |  |  |  |
|-------------|----------------------|---------|--------------|------|--|----------|-------------------------|-------|--|--|--|--|--|
|             |                      | Surface | Intermediate | Base |  |          |                         |       |  |  |  |  |  |
| D-059-0-20  | 2.00                 | ✓       |              |      |  |          |                         |       |  |  |  |  |  |
|             | 2.00                 | ✓       |              |      |  |          |                         |       |  |  |  |  |  |
|             | 2.00                 |         | ✓            |      |  |          |                         |       |  |  |  |  |  |
|             | 1.50                 |         | ✓            |      |  |          |                         |       |  |  |  |  |  |
|             | 11.50                |         |              |      |  | ✓        |                         |       |  |  |  |  |  |
|             |                      |         |              |      |  |          |                         |       |  |  |  |  |  |
|             |                      |         |              |      |  |          |                         |       |  |  |  |  |  |

- The core surface shows high wear.
- The entire core has high voids.

Total Pavement Thickness = 7.50 in.    Total Asphalt Thickness = 7.50 in.    Total Concrete Thickness = 0.00 in.    Total Base Thickness = 11.50 in.







6350 Presidential Gateway  
 Columbus, Ohio 43231  
 Telephone: (614) 823-4949  
 Fax Number: (614) 823-4990

**Pavement Core Data Summary**

PROJECT Uni-739  
 LOCATION Union County, Ohio  
 JOB No. W-20-160

BORING/CORE No. D-064-0-20  
 DATE CORE OBTAINED 3/9/2021  
 CORE OBTAINED BY J.P. & T.G.

**Core Composition**

**Comments/Remarks**

| Core Number | Lift Thickness (in.) | Asphalt |              |      | Concrete | Aggregate/Granular Base | Other |  |  |
|-------------|----------------------|---------|--------------|------|----------|-------------------------|-------|--|--|
|             |                      | Surface | Intermediate | Base |          |                         |       |  |  |
| D-064-0-20  | 1.25                 | ✓       |              |      |          |                         |       |  |  |
|             | 3.00                 | ✓       |              |      |          |                         |       |  |  |
|             | 6.75                 |         |              | ✓    |          |                         |       |  |  |
|             | 15.00                |         |              |      | ✓        |                         |       |  |  |
|             |                      |         |              |      |          |                         |       |  |  |
|             |                      |         |              |      |          |                         |       |  |  |
|             |                      |         |              |      |          |                         |       |  |  |
|             |                      |         |              |      |          |                         |       |  |  |

- Tack coat between lifts 1 and 2.
- Lifts 2 and 3 have high voids.

Total Pavement Thickness = 11.00 in.    Total Asphalt Thickness = 11.00 in.    Total Concrete Thickness = 0.00 in.    Total Base Thickness = 15.00 in.





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**Pavement Core Data Summary**

PROJECT Uni-739  
 LOCATION Union County, Ohio  
 JOB No. W-20-160

BORING/CORE No. D-079-0-20  
 DATE CORE OBTAINED 3/9/2021  
 CORE OBTAINED BY J.P. & T.G.

Core Composition

Comments/Remarks

| Core Number | Lift Thickness (in.) | Asphalt |              |      | Concrete | Aggregate/Granular Base | Other |  |  |
|-------------|----------------------|---------|--------------|------|----------|-------------------------|-------|--|--|
|             |                      | Surface | Intermediate | Base |          |                         |       |  |  |
| D-079-0-20  | 2.00                 | ✓       |              |      |          |                         |       |  |  |
|             | 2.00                 | ✓       |              |      |          |                         |       |  |  |
|             | 2.00                 | ✓       |              |      |          |                         |       |  |  |
|             | 3.00                 |         |              | ✓    |          |                         |       |  |  |
|             | 15.00                |         |              |      |          | ✓                       |       |  |  |
|             |                      |         |              |      |          |                         |       |  |  |

- Tack coat between lifts 3 and 4.
- Lifts 2 and 4 have high voids.

Total Pavement Thickness = 9.00 in.    Total Asphalt Thickness = 9.00 in.    Total Concrete Thickness = 0.00 in.    Total Base Thickness = 15.00 in.





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**Pavement Core Data Summary**

PROJECT Uni-739  
 LOCATION Union County, Ohio  
 JOB No. W-20-160

BORING/CORE No. D-084-0-20  
 DATE CORE OBTAINED 3/9/2021  
 CORE OBTAINED BY J.P. & T.G.

**Core Composition**

**Comments/Remarks**

| Core Number | Lift Thickness (in.) | Asphalt |              |      | Concrete | Aggregate/Granular Base | Other |  |  |
|-------------|----------------------|---------|--------------|------|----------|-------------------------|-------|--|--|
|             |                      | Surface | Intermediate | Base |          |                         |       |  |  |
| D-084-0-20  | 2.25                 | ✓       |              |      |          |                         |       |  |  |
|             | 2.00                 | ✓       |              |      |          |                         |       |  |  |
|             | 4.75                 |         |              | ✓    |          |                         |       |  |  |
|             | 14.00                |         |              |      | ✓        |                         |       |  |  |
|             |                      |         |              |      |          |                         |       |  |  |
|             |                      |         |              |      |          |                         |       |  |  |
|             |                      |         |              |      |          |                         |       |  |  |
|             |                      |         |              |      |          |                         |       |  |  |

- The entire core has voids.

Total Pavement Thickness = 9.00 in. Total Asphalt Thickness = 9.00 in. Total Concrete Thickness = 0.00 in. Total Base Thickness = 14.00 in.





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### Pavement Core Data Summary

PROJECT Uni-739  
 LOCATION Union County, Ohio  
 JOB No. W-20-160

BORING/CORE No. D-099-0-20  
 DATE CORE OBTAINED 3/9/2021  
 CORE OBTAINED BY J.P. & T.G.

#### Core Composition

#### Comments/Remarks

| Core Number | Lift Thickness (in.) | Asphalt |              |      |  | Concrete | Aggregate/Granular Base | Other |  |  |
|-------------|----------------------|---------|--------------|------|--|----------|-------------------------|-------|--|--|
|             |                      | Surface | Intermediate | Base |  |          |                         |       |  |  |
| D-099-0-20  | 1.25                 | ✓       |              |      |  |          |                         |       |  |  |
|             | 7.75                 |         | ✓            |      |  |          |                         |       |  |  |
|             | 14.00                |         |              |      |  | ✓        |                         |       |  |  |
|             |                      |         |              |      |  |          |                         |       |  |  |
|             |                      |         |              |      |  |          |                         |       |  |  |
|             |                      |         |              |      |  |          |                         |       |  |  |
|             |                      |         |              |      |  |          |                         |       |  |  |
|             |                      |         |              |      |  |          |                         |       |  |  |

- The core surface shows high wear.
- The entire core is highly deteriorated. Other than the surface lift, it is not possible to identify lift thickness, composition.

Total Pavement Thickness = 9.00 in.    Total Asphalt Thickness = 9.00 in.    Total Concrete Thickness = 0.00 in.    Total Base Thickness = 14.00 in.





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**Pavement Core Data Summary**

PROJECT Uni-739  
 LOCATION Union County, Ohio  
 JOB No. W-20-160

BORING/CORE No. D-104-0-20  
 DATE CORE OBTAINED 3/9/2021  
 CORE OBTAINED BY J.P. & T.G.

Core Composition

Comments/Remarks

| Core Number | Lift Thickness (in.) | Asphalt |              |      | Concrete | Aggregate/Granular Base | Other |  |  |
|-------------|----------------------|---------|--------------|------|----------|-------------------------|-------|--|--|
|             |                      | Surface | Intermediate | Base |          |                         |       |  |  |
| D-104-0-20  | 1.50                 | ✓       |              |      |          |                         |       |  |  |
|             | 2.50                 | ✓       |              |      |          |                         |       |  |  |
|             | 1.00                 | ✓       |              |      |          |                         |       |  |  |
|             | 2.75                 |         | ✓            |      |          |                         |       |  |  |
|             | 1.75                 |         | ✓            |      |          |                         |       |  |  |
|             | 12.00                |         |              |      |          | ✓                       |       |  |  |
|             |                      |         |              |      |          |                         |       |  |  |

- The core surface shows high wear.
- The core is broken horizontally @ 4.00".
- The entire core has voids.

Total Pavement Thickness = 9.50 in.      Total Asphalt Thickness = 9.50 in.      Total Concrete Thickness = 0.00 in.      Total Base Thickness = 12.00 in.





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### Pavement Core Data Summary

|                    |                    |
|--------------------|--------------------|
| PROJECT            | Uni-739            |
| LOCATION           | Union County, Ohio |
| JOB No.            | W-20-160           |
| BORING/CORE No.    | B-009-0-20         |
| DATE CORE OBTAINED | 3/1/2021           |
| CORE OBTAINED BY   | J.P. & T.G.        |

| Core Composition |                      |         |              |      |          |                         | Comments/Remarks |  |  |  |  |  |  |
|------------------|----------------------|---------|--------------|------|----------|-------------------------|------------------|--|--|--|--|--|--|
| Core Number      | Lift Thickness (in.) | Asphalt |              |      | Concrete | Aggregate/Granular Base | Other            |  |  |  |  |  |  |
|                  |                      | Surface | Intermediate | Base |          |                         |                  |  |  |  |  |  |  |
| B-009-0-20       | 1.50                 | ✓       |              |      |          |                         |                  |  |  |  |  | - The core surface shows high wear.<br><br>- Lift 4 has voids. |  |
|                  | 2.25                 | ✓       |              |      |          |                         |                  |  |  |  |  |  |  |
|                  | 2.00                 | ✓       |              |      |          |                         |                  |  |  |  |  |  |  |
|                  | 2.75                 |         | ✓            |      |          |                         |                  |  |  |  |  |  |  |
|                  | 3.00                 |         |              |      |          | ✓                       |                  |  |  |  |  |  |  |
|                  |                      |         |              |      |          |                         |                  |  |  |  |  |  |  |
|                  |                      |         |              |      |          |                         |                  |  |  |  |  |  |  |

Total Pavement Thickness = 8.50 in.      Total Asphalt Thickness = 8.50 in.      Total Concrete Thickness = 0.00 in.      Total Base Thickness = 3.00 in.





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**Pavement Core Data Summary**

PROJECT Uni-739  
 LOCATION Union County, Ohio  
 JOB No. W-20-160

BORING/CORE No. B-014-0-20  
 DATE CORE OBTAINED 3/5/2021  
 CORE OBTAINED BY J.P. & T.G.

Core Composition

Comments/Remarks

| Core Number | Lift Thickness (in.) | Asphalt |              |      | Concrete | Aggregate/Granular Base | Other |  |  |
|-------------|----------------------|---------|--------------|------|----------|-------------------------|-------|--|--|
|             |                      | Surface | Intermediate | Base |          |                         |       |  |  |
| B-014-0-20  | 1.25                 | ✓       |              |      |          |                         |       |  |  |
|             | 1.75                 | ✓       |              |      |          |                         |       |  |  |
|             | 3.50                 |         | ✓            |      |          |                         |       |  |  |
|             | 4.50                 |         |              | ✓    |          |                         |       |  |  |
|             | 7.00                 |         |              |      |          | ✓                       |       |  |  |
|             |                      |         |              |      |          |                         |       |  |  |

- The core is broken @ 0" to 3.00".
- The core is highly deteriorated @ 3.00" to 7.50".

Total Pavement Thickness = 11.00 in.      Total Asphalt Thickness = 11.00 in.      Total Concrete Thickness = 0.00 in.      Total Base Thickness = 7.00 in.





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### Pavement Core Data Summary

PROJECT Uni-739  
 LOCATION Union County, Ohio  
 JOB No. W-20-160

BORING/CORE No. B-029-0-20  
 DATE CORE OBTAINED 3/1/2021  
 CORE OBTAINED BY J.P. & T.G.

#### Core Composition

#### Comments/Remarks

| Core Number | Lift Thickness (in.) | Asphalt |              |      |  | Concrete | Aggregate/Granular Base | Other |  |  |  |  |  |  |
|-------------|----------------------|---------|--------------|------|--|----------|-------------------------|-------|--|--|--|--|--|--|
|             |                      | Surface | Intermediate | Base |  |          |                         |       |  |  |  |  |  |  |
| B-029-0-20  | 2.75                 | ✓       |              |      |  |          |                         |       |  |  |  |  |  |  |
|             | 0.75                 | ✓       |              |      |  |          |                         |       |  |  |  |  |  |  |
|             | 1.50                 | ✓       |              |      |  |          |                         |       |  |  |  |  |  |  |
|             | 1.75                 | ✓       |              |      |  |          |                         |       |  |  |  |  |  |  |
|             | 1.75                 |         | ✓            |      |  |          |                         |       |  |  |  |  |  |  |
|             | 3.00                 |         |              |      |  | ✓        |                         |       |  |  |  |  |  |  |
|             |                      |         |              |      |  |          |                         |       |  |  |  |  |  |  |
|             |                      |         |              |      |  |          |                         |       |  |  |  |  |  |  |

- The core surface shows high wear and is broken.
- Lift 4 is highly deteriorated.
- Lift 1 has high voids.

Total Pavement Thickness = 8.50 in.      Total Asphalt Thickness = 8.50 in.      Total Concrete Thickness = 0.00 in.      Total Base Thickness = 3.00 in.







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### Pavement Core Data Summary

PROJECT Uni-739  
 LOCATION Union County, Ohio  
 JOB No. W-20-160

BORING/CORE No. B-034-0-20  
 DATE CORE OBTAINED 3/5/2021  
 CORE OBTAINED BY J.P. & T.G.

#### Core Composition

#### Comments/Remarks

| Core Number | Lift Thickness (in.) | Asphalt |              |      | Concrete | Aggregate/Granular Base | Other |  |  |
|-------------|----------------------|---------|--------------|------|----------|-------------------------|-------|--|--|
|             |                      | Surface | Intermediate | Base |          |                         |       |  |  |
| B-034-0-20  | 3.00                 | ✓       |              |      |          |                         |       |  |  |
|             | 1.50                 | ✓       |              |      |          |                         |       |  |  |
|             | 3.00                 |         | ✓            |      |          |                         |       |  |  |
|             | 2.50                 |         | ✓            |      |          |                         |       |  |  |
|             | 2.00                 |         |              | ✓    |          |                         |       |  |  |
|             | 6.00                 |         |              |      |          | ✓                       |       |  |  |
|             |                      |         |              |      |          |                         |       |  |  |

- The core surface shows high wear and is broken.
- The lift 4 is deteriorating.
- All the lifts have voids.

Total Pavement Thickness = 12.00 in.      Total Asphalt Thickness = 12.00 in.      Total Concrete Thickness = 0.00 in.      Total Base Thickness = 6.00 in.





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**Pavement Core Data Summary**

PROJECT Uni-739  
 LOCATION Union County, Ohio  
 JOB No. W-20-160

BORING/CORE No. B-049-0-20  
 DATE CORE OBTAINED 3/2/2021  
 CORE OBTAINED BY J.P. & T.G.

**Core Composition**

**Comments/Remarks**

| Core Number | Lift Thickness (in.) | Asphalt |              |      | Concrete | Aggregate/Granular Base | Other |  |  |
|-------------|----------------------|---------|--------------|------|----------|-------------------------|-------|--|--|
|             |                      | Surface | Intermediate | Base |          |                         |       |  |  |
| B-049-0-20  | 2.00                 | ✓       |              |      |          |                         |       |  |  |
|             | 1.25                 | ✓       |              |      |          |                         |       |  |  |
|             | 1.75                 |         | ✓            |      |          |                         |       |  |  |
|             | 4.50                 |         |              | ✓    |          |                         |       |  |  |
|             | 4.00                 |         |              |      |          | ✓                       |       |  |  |
|             |                      |         |              |      |          |                         |       |  |  |

- The core surface shows high wear.
- The core is broken vertically @ 0" to 5.00".
- The core is broken horizontally @ 2.50" and 5.00".
- Lift 3 is deteriorated.

Total Pavement Thickness = 9.50 in.      Total Asphalt Thickness = 9.50 in.      Total Concrete Thickness = 0.00 in.      Total Base Thickness = 4.00 in.





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### Pavement Core Data Summary

PROJECT Uni-739  
 LOCATION Union County, Ohio  
 JOB No. W-20-160

BORING/CORE No. B-054-0-20  
 DATE CORE OBTAINED 3/4/2021  
 CORE OBTAINED BY J.P. & T.G.

#### Core Composition

#### Comments/Remarks

| Core Number | Lift Thickness (in.) | Asphalt |              |      | Concrete | Aggregate/Granular Base | Other |  |  |
|-------------|----------------------|---------|--------------|------|----------|-------------------------|-------|--|--|
|             |                      | Surface | Intermediate | Base |          |                         |       |  |  |
| B-054-0-20  | 1.50                 | ✓       |              |      |          |                         |       |  |  |
|             | 1.00                 | ✓       |              |      |          |                         |       |  |  |
|             | 1.50                 | ✓       |              |      |          |                         |       |  |  |
|             | 1.25                 | ✓       |              |      |          |                         |       |  |  |
|             | 2.00                 |         | ✓            |      |          |                         |       |  |  |
|             | 1.50                 |         | ✓            |      |          |                         |       |  |  |
|             | 2.25                 |         | ✓            |      |          |                         |       |  |  |
|             | 7.00                 |         |              |      |          | ✓                       |       |  |  |

- The core surface shows high wear and is broken.
- Lifts 4 - 7 have voids.
- Lift 1 is highly deteriorated.

Total Pavement Thickness = 11.00 in.      Total Asphalt Thickness = 11.00 in.      Total Concrete Thickness = 0.00 in.      Total Base Thickness = 7.00 in.





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**Pavement Core Data Summary**

PROJECT Uni-739  
 LOCATION Union County, Ohio  
 JOB No. W-20-160

BORING/CORE No. B-069-0-20  
 DATE CORE OBTAINED 3/2/2021  
 CORE OBTAINED BY J.P. & T.G.

**Core Composition**

**Comments/Remarks**

| Core Number | Lift Thickness (in.) | Asphalt |              |      | Concrete | Aggregate/Granular Base | Other |  |  |
|-------------|----------------------|---------|--------------|------|----------|-------------------------|-------|--|--|
|             |                      | Surface | Intermediate | Base |          |                         |       |  |  |
| B-069-0-20  | 2.25                 | ✓       |              |      |          |                         |       |  |  |
|             | 1.75                 | ✓       |              |      |          |                         |       |  |  |
|             | 2.75                 |         | ✓            |      |          |                         |       |  |  |
|             | 2.75                 |         | ✓            |      |          |                         |       |  |  |
|             | 2.50                 |         |              |      |          | ✓                       |       |  |  |
|             |                      |         |              |      |          |                         |       |  |  |

- The core surface shows high wear and has voids.

Total Pavement Thickness = 9.50 in.    Total Asphalt Thickness = 9.50 in.    Total Concrete Thickness = 0.00 in.    Total Base Thickness = 2.50 in.





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### Pavement Core Data Summary

PROJECT Uni-739  
 LOCATION Union County, Ohio  
 JOB No. W-20-160

BORING/CORE No. B-074-0-20  
 DATE CORE OBTAINED 3/4/2021  
 CORE OBTAINED BY J.P. & T.G.

#### Core Composition

#### Comments/Remarks

| Core Number | Lift Thickness (in.) | Asphalt |              |      | Concrete | Aggregate/Granular Base | Other |  |  |
|-------------|----------------------|---------|--------------|------|----------|-------------------------|-------|--|--|
|             |                      | Surface | Intermediate | Base |          |                         |       |  |  |
| B-074-0-20  | 2.00                 | ✓       |              |      |          |                         |       |  |  |
|             | 2.75                 |         | ✓            |      |          |                         |       |  |  |
|             | 5.25                 |         | ✓            |      |          |                         |       |  |  |
|             | 2.00                 |         |              | ✓    |          |                         |       |  |  |
|             | 6.00                 |         |              |      |          | ✓                       |       |  |  |
|             |                      |         |              |      |          |                         |       |  |  |

- The core surface shows high wear.
- The core is broken vertically @ 0" to 4.75".
- Lifts 2 and 4 have voids.

Total Pavement Thickness = 12.00 in.    Total Asphalt Thickness = 12.00 in.    Total Concrete Thickness = 0.00 in.    Total Base Thickness = 6.00 in.





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### Pavement Core Data Summary

PROJECT Uni-739  
 LOCATION Union County, Ohio  
 JOB No. W-20-160

BORING/CORE No. B-089-0-20  
 DATE CORE OBTAINED 3/2/2021  
 CORE OBTAINED BY J.P. & T.G.

#### Core Composition

#### Comments/Remarks

| Core Number | Lift Thickness (in.) | Asphalt |              |      | Concrete | Aggregate/Granular Base | Other |  |  |
|-------------|----------------------|---------|--------------|------|----------|-------------------------|-------|--|--|
|             |                      | Surface | Intermediate | Base |          |                         |       |  |  |
| B-089-0-20  | 2.25                 | ✓       |              |      |          |                         |       |  |  |
|             | 2.00                 | ✓       |              |      |          |                         |       |  |  |
|             | 2.00                 |         | ✓            |      |          |                         |       |  |  |
|             | 3.25                 |         |              | ✓    |          |                         |       |  |  |
|             | 8.50                 |         |              |      |          | ✓                       |       |  |  |
|             |                      |         |              |      |          |                         |       |  |  |

- The core surface shows high wear.
- The core is highly deteriorated @ 6.00" to 8.50".

Total Pavement Thickness = 9.50 in.      Total Asphalt Thickness = 9.50 in.      Total Concrete Thickness = 0.00 in.      Total Base Thickness = 8.50 in.





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### Pavement Core Data Summary

PROJECT Uni-739  
 LOCATION Union County, Ohio  
 JOB No. W-20-160

BORING/CORE No. B-094-0-20  
 DATE CORE OBTAINED 3/1/2021  
 CORE OBTAINED BY J.P. & T.G.

#### Core Composition

#### Comments/Remarks

| Core Number | Lift Thickness (in.) | Asphalt |              |      | Concrete | Aggregate/Granular Base | Other |  |  |
|-------------|----------------------|---------|--------------|------|----------|-------------------------|-------|--|--|
|             |                      | Surface | Intermediate | Base |          |                         |       |  |  |
| B-094-0-20  | 2.50                 | ✓       |              |      |          |                         |       |  |  |
|             | 1.75                 |         | ✓            |      |          |                         |       |  |  |
|             | 3.25                 |         | ✓            |      |          |                         |       |  |  |
|             | 4.50                 |         |              |      | ✓        |                         |       |  |  |
|             |                      |         |              |      |          |                         |       |  |  |
|             |                      |         |              |      |          |                         |       |  |  |
|             |                      |         |              |      |          |                         |       |  |  |
|             |                      |         |              |      |          |                         |       |  |  |

- The core surface shows high wear.
- Lift 1 has voids and is deteriorating.

Total Pavement Thickness = 7.50 in.      Total Asphalt Thickness = 7.50 in.      Total Concrete Thickness = 0.00 in.      Total Base Thickness = 4.50 in.



# **APPENDIX VII**

**GB1**



**OHIO DEPARTMENT OF TRANSPORTATION****OFFICE OF GEOTECHNICAL ENGINEERING****PLAN SUBGRADES  
Geotechnical Bulletin GB1****UNI-739-6.00****112878****Subgrade exploration along SR 739 from SLR 6.06 to SLM 14.14 in Union County,  
Ohio.****Resource International Inc.****Prepared By:** Peyman Majidi, PE  
**Date prepared:** Tuesday, April 6, 2021**Peyman Majidi, PE  
6350 Presidential Gateway  
Columbus, OH 43231****614-823-4949  
Peymanm@resourceinternational.com****NO. OF BORINGS:** **54**

| #  | Boring ID  | Alignment            | Station | Offset | Dir | Drill Rig | ER | Boring EL. | Proposed Subgrade EL | Cut Fill |
|----|------------|----------------------|---------|--------|-----|-----------|----|------------|----------------------|----------|
| 1  | B-001-0-20 | CENTERLINE OF SR-73  | 343+51  | 88     | Lt  | CME 55    | 84 | 1077.0     | 1076.0               | 1.0 C    |
| 2  | B-002-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1071.0     | 1069.5               | 1.5 C    |
| 3  | B-005-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1054.0     | 1053.0               | 1.0 C    |
| 4  | B-006-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1049.0     | 1047.5               | 1.5 C    |
| 5  | B-009-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1038.0     | 1037.0               | 1.0 C    |
| 6  | B-010-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1036.0     | 1034.5               | 1.5 C    |
| 7  | B-013-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1055.0     | 1054.0               | 1.0 C    |
| 8  | B-014-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1067.0     | 1065.5               | 1.5 C    |
| 9  | B-017-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1074.0     | 1073.0               | 1.0 C    |
| 10 | B-018-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1081.0     | 1079.5               | 1.5 C    |
| 11 | B-021-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1086.0     | 1085.0               | 1.0 C    |
| 12 | B-022-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1081.0     | 1079.5               | 1.5 C    |
| 13 | B-025-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1079.0     | 1078.0               | 1.0 C    |
| 14 | B-026-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1075.0     | 1073.5               | 1.5 C    |
| 15 | B-029-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1068.0     | 1067.0               | 1.0 C    |
| 16 | B-030-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1064.0     | 1062.5               | 1.5 C    |
| 17 | B-033-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1053.0     | 1052.0               | 1.0 C    |
| 18 | B-034-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1054.0     | 1052.5               | 1.5 C    |
| 19 | B-037-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1047.0     | 1046.0               | 1.0 C    |
| 20 | B-038-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1047.0     | 1045.5               | 1.5 C    |
| 21 | B-041-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1053.0     | 1052.0               | 1.0 C    |
| 22 | B-042-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1052.0     | 1051.0               | 1.0 C    |
| 23 | B-045-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1052.0     | 1051.0               | 1.0 C    |
| 24 | B-046-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1049.0     | 1047.5               | 1.5 C    |
| 25 | B-049-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1043.0     | 1042.0               | 1.0 C    |
| 26 | B-050-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1039.0     | 1037.5               | 1.5 C    |
| 27 | B-053-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1045.0     | 1044.0               | 1.0 C    |
| 28 | B-054-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1036.0     | 1034.5               | 1.5 C    |
| 29 | B-057-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1044.0     | 1043.0               | 1.0 C    |
| 30 | B-058-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1043.0     | 1041.5               | 1.5 C    |
| 31 | B-061-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1041.0     | 1040.0               | 1.0 C    |
| 32 | B-062-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1041.0     | 1039.5               | 1.5 C    |
| 33 | B-065-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1037.0     | 1036.0               | 1.0 C    |
| 34 | B-066-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1039.0     | 1037.5               | 1.5 C    |
| 35 | B-069-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1032.0     | 1031.0               | 1.0 C    |
| 36 | B-070-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1033.0     | 1031.5               | 1.5 C    |
| 37 | B-073-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1031.0     | 1030.0               | 1.0 C    |
| 38 | B-074-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1024.0     | 1022.5               | 1.5 C    |
| 39 | B-077-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1025.0     | 1024.0               | 1.0 C    |
| 40 | B-078-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1029.0     | 1028.0               | 1.0 C    |
| 41 | B-081-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1033.0     | 1032.0               | 1.0 C    |
| 42 | B-082-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1034.0     | 1032.5               | 1.5 C    |
| 43 | B-085-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1040.0     | 1038.5               | 1.5 C    |
| 44 | B-086-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1043.0     | 1042.0               | 1.0 C    |
| 45 | B-089-0-20 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1049.0     | 1047.5               | 1.5 C    |

| #  | Boring ID   | Alignment            | Station | Offset | Dir | Drill Rig | ER | Boring EL. | Proposed Subgrade EL | Cut Fill |
|----|-------------|----------------------|---------|--------|-----|-----------|----|------------|----------------------|----------|
| 46 | B-090-0-20  | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1046.0     | 1045.0               | 1.0 C    |
| 47 | B-093-0-020 | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1043.0     | 1041.5               | 1.5 C    |
| 48 | B-094-0-20  | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1045.0     | 1044.0               | 1.0 C    |
| 49 | B-097-0-20  | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1045.0     | 1043.5               | 1.5 C    |
| 50 | B-098-0-20  | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1041.0     | 1040.0               | 1.0 C    |
| 51 | B-101-0-20  | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1039.0     | 1038.0               | 1.0 C    |
| 52 | B-102-0-20  | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1036.0     | 1035.0               | 1.0 C    |
| 53 | B-105-0-20  | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1034.0     | 1033.0               | 1.0 C    |
| 54 | B-106-0-20  | CENTERLINE OF SR-739 |         |        |     | CME 55    | 84 | 1029.0     | 1028.0               | 1.0 C    |

| # | Boring           | Sample | Sample Depth |     | Subgrade Depth |     | Standard Penetration |                  | HP (tsf) | Physical Characteristics |    |    |        |        | Moisture |                | Ohio DOT         |       | Sulfate Content (ppm) | Problem |            | Excavate and Replace (Item 204) |            | Recommendation (Enter depth in inches) |          |
|---|------------------|--------|--------------|-----|----------------|-----|----------------------|------------------|----------|--------------------------|----|----|--------|--------|----------|----------------|------------------|-------|-----------------------|---------|------------|---------------------------------|------------|--|----------|
|   |                  |        | From         | To  | From           | To  | N <sub>60</sub>      | N <sub>60L</sub> |          | LL                       | PL | PI | % Silt | % Clay | P200     | M <sub>c</sub> | M <sub>OPT</sub> | Class |                       | GI      | Unsuitable | Unstable                        | Unsuitable |  | Unstable |
|   |                  |        |              |     |                |     |                      |                  |          |                          |    |    |        |        |          |                |                  |       |                       |         |            |                                 |            |  |          |
| 1 | B<br>001-0<br>20 | 1      | 1.0          | 2.5 | 0.0            | 1.5 | 14                   | 14               | 3.75     | 60                       | 24 | 36 | 30     | 69     | 99       | 25             | 21               | A-7-6 | 20                    | 660     |            | N <sub>60</sub> & Mc            |            | 12"                                    |          |
|   |                  | 2      | 2.5          | 4.0 | 1.5            | 3.0 | 34                   |                  | 4.5      | 45                       | 24 | 21 | 28     | 70     | 98       | 20             | 21               | A-7-6 | 13                    |         |            |                                 |            |  |          |
|   |                  | 3      | 4.0          | 5.5 | 3.0            | 4.5 | 42                   |                  | 4.5      |                          |    |    |        |        |          | 20             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |
|   |                  | 4      | 5.5          | 7.0 | 4.5            | 6.0 | 51                   |                  | 4.5      |                          |    |    |        |        |          | 19             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |
| 2 | B<br>002-0<br>20 | 1      | 1.5          | 3.0 | 0.0            | 1.5 | 11                   | 11               | 3.75     | 49                       | 22 | 27 | 35     | 61     | 96       | 23             | 19               | A-7-6 | 17                    | 830     |            | N <sub>60</sub> & Mc            |            | 12"                                    |          |
|   |                  | 2      | 3.0          | 4.5 | 1.5            | 3.0 | 31                   |                  | 4.5      | 45                       | 22 | 23 | 28     | 65     | 93       | 19             | 19               | A-7-6 | 14                    |         |            |                                 |            |  |          |
|   |                  | 3      | 4.5          | 6.0 | 3.0            | 4.5 | 38                   |                  | 4.5      |                          |    |    |        |        |          | 20             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |
|   |                  | 4      | 6.0          | 7.5 | 4.5            | 6.0 | 77                   |                  | 4.5      |                          |    |    |        |        |          | 19             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |
| 3 | B<br>005-0<br>20 | 1      | 1.0          | 2.5 | 0.0            | 1.5 | 17                   | 15               | 4        | 31                       | 18 | 13 | 30     | 31     | 61       | 12             | 14               | A-6a  | 6                     | 100     |            |                                 |            |  |          |
|   |                  | 2      | 2.5          | 4.0 | 1.5            | 3.0 | 15                   |                  | 3        | 54                       | 24 | 30 | 34     | 65     | 99       | 25             | 21               | A-7-6 | 19                    |         |            | Mc                              |            |  |          |
|   |                  | 3      | 4.0          | 5.5 | 3.0            | 4.5 | 34                   |                  | 3        |                          |    |    |        |        |          | 18             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |
|   |                  | 4      | 5.5          | 7.0 | 4.5            | 6.0 | 55                   |                  | 4.5      |                          |    |    |        |        |          | 20             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |
| 4 | B<br>006-0<br>20 | 1      | 1.5          | 3.0 | 0.0            | 1.5 | 18                   | 18               | 4.5      | 50                       | 23 | 27 | 27     | 71     | 98       | 20             | 20               | A-7-6 | 17                    | 1200    |            |                                 |            |  |          |
|   |                  | 2      | 3.0          | 4.5 | 1.5            | 3.0 | 38                   |                  | 4.5      | 49                       | 24 | 25 | 24     | 75     | 99       | 21             | 21               | A-7-6 | 16                    |         |            |                                 |            |  |          |
|   |                  | 3      | 4.5          | 6.0 | 3.0            | 4.5 | 49                   |                  | 4.5      |                          |    |    |        |        |          | 20             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |
|   |                  | 4      | 6.0          | 7.5 | 4.5            | 6.0 | 62                   |                  | 4.5      |                          |    |    |        |        |          | 19             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |
| 5 | B<br>009-0<br>20 | 1      | 1.0          | 2.5 | 0.0            | 1.5 | 7                    | 7                | 4.5      | 41                       | 20 | 21 | 33     | 51     | 84       | 20             | 18               | A-7-6 | 13                    | 350     |            | N <sub>60</sub>                 |            | 15"                                    |          |
|   |                  | 2      | 2.5          | 4.0 | 1.5            | 3.0 | 39                   |                  | 3        | 40                       | 21 | 19 | 28     | 35     | 63       | 17             | 16               | A-6b  | 9                     |         |            |                                 |            |  |          |
|   |                  | 3      | 4.0          | 5.5 | 3.0            | 4.5 | 22                   |                  | 4.5      |                          |    |    |        |        |          | 17             | 16               | A-6b  | 16                    |         |            |                                 |            |  |          |
|   |                  | 4      | 5.5          | 7.0 | 4.5            | 6.0 | 24                   |                  | 3.5      |                          |    |    |        |        |          | 16             | 16               | A-6b  | 16                    |         |            |                                 |            |  |          |
| 6 | B<br>010-0<br>20 | 1      | 1.5          | 3.0 | 0.0            | 1.5 | 11                   | 10               | 3        | 34                       | 18 | 16 | 40     | 38     | 78       | 19             | 16               | A-6b  | 10                    | 220     |            | N <sub>60</sub> & Mc            |            | 12"                                    |          |
|   |                  | 2      | 3.0          | 4.5 | 1.5            | 3.0 | 10                   |                  | 2.75     | 37                       | 20 | 17 | 45     | 40     | 85       | 21             | 16               | A-6b  | 11                    |         |            | N <sub>60</sub> & Mc            |            |  |          |
|   |                  | 3      | 4.5          | 6.0 | 3.0            | 4.5 | 10                   |                  | 1.5      |                          |    |    |        |        |          | 23             | 16               | A-6b  | 16                    |         |            |                                 |            |  |          |
|   |                  | 4      | 6.0          | 7.5 | 4.5            | 6.0 | 15                   |                  | 2.25     |                          |    |    |        |        |          | 32             | 16               | A-6b  | 16                    |         |            |                                 |            |  |          |
| 7 | B<br>013-0<br>20 | 1      | 1.0          | 2.5 | 0.0            | 1.5 | 14                   | 14               | 4        | 31                       | 17 | 14 | 43     | 32     | 75       | 16             | 14               | A-6a  | 10                    | 150     |            |                                 |            |  |          |
|   |                  | 2      | 2.5          | 4.0 | 1.5            | 3.0 | 14                   |                  | 4.5      | 50                       | 21 | 29 | 36     | 52     | 88       | 27             | 18               | A-7-6 | 18                    |         |            | N <sub>60</sub> & Mc            |            |  |          |
|   |                  | 3      | 4.0          | 5.5 | 3.0            | 4.5 | 34                   |                  | 4.5      |                          |    |    |        |        |          | 19             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |
|   |                  | 4      | 5.5          | 7.0 | 4.5            | 6.0 | 41                   |                  | 4.5      |                          |    |    |        |        |          | 20             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |
| 8 | B<br>014-0<br>20 | 1      | 1.5          | 3.0 | 0.0            | 1.5 | 18                   | 18               | 4.5      | 32                       | 18 | 14 | 35     | 38     | 73       | 16             | 14               | A-6a  | 9                     | 99      |            |                                 |            |  |          |
|   |                  | 2      | 3.0          | 4.5 | 1.5            | 3.0 | 34                   |                  | 4.5      | 25                       | 15 | 10 | 36     | 27     | 63       | 13             | 10               | A-4a  | 6                     |         |            | Mc                              |            |  |          |
|   |                  | 3      | 4.5          | 6.0 | 3.0            | 4.5 | 35                   |                  | 4.5      |                          |    |    |        |        |          | 13             | 10               | A-4a  | 8                     |         |            |                                 |            |  |          |
|   |                  | 4      | 6.0          | 7.5 | 4.5            | 6.0 | 42                   |                  | 4.5      |                          |    |    |        |        |          | 12             | 10               | A-4a  | 8                     |         |            |                                 |            |  |          |
| 9 | B<br>017-0<br>20 | 1      | 1.0          | 2.5 | 0.0            | 1.5 | 15                   | 15               | 3        | 30                       | 18 | 12 | 45     | 36     | 81       | 17             | 14               | A-6a  | 9                     | 260     |            | Mc                              |            |  |          |
|   |                  | 2      | 2.5          | 4.0 | 1.5            | 3.0 | 27                   |                  | 3.5      | 28                       | 17 | 11 | 38     | 31     | 69       | 14             | 14               | A-6a  | 7                     |         |            |                                 |            |  |          |
|   |                  | 3      | 4.0          | 5.5 | 3.0            | 4.5 | 32                   |                  | 4.5      |                          |    |    |        |        |          | 11             | 14               | A-6a  | 10                    |         |            |                                 |            |  |          |
|   |                  | 4      | 5.5          | 7.0 | 4.5            | 6.0 | 45                   |                  | 4.5      |                          |    |    |        |        |          | 16             | 14               | A-6a  | 10                    |         |            |                                 |            |  |          |

| #  | Boring           | Sample | Sample Depth |     | Subgrade Depth |     | Standard Penetration |                  | HP (tsf) | Physical Characteristics |    |    |        |        | Moisture |                | Ohio DOT         |       | Sulfate Content (ppm) | Problem |            | Excavate and Replace (Item 204) |            | Recommendation (Enter depth in inches) |          |  |
|----|------------------|--------|--------------|-----|----------------|-----|----------------------|------------------|----------|--------------------------|----|----|--------|--------|----------|----------------|------------------|-------|-----------------------|---------|------------|---------------------------------|------------|--|----------|--|
|    |                  |        | From         | To  | From           | To  | N <sub>60</sub>      | N <sub>60L</sub> |          | LL                       | PL | PI | % Silt | % Clay | P200     | M <sub>c</sub> | M <sub>OPT</sub> | Class |                       | GI      | Unsuitable | Unstable                        | Unsuitable |  | Unstable |  |
|    |                  |        |              |     |                |     |                      |                  |          |                          |    |    |        |        |          |                |                  |       |                       |         |            |                                 |            |  |          |  |
| 10 | B<br>018-0<br>20 | 1      | 1.5          | 3.0 | 0.0            | 1.5 | 15                   | 10               | 2        | 43                       | 19 | 24 | 42     | 43     | 85       | 23             | 18               | A-7-6 | 14                    | 99      |            | Mc                              |            |  |          |  |
|    |                  | 2      | 3.0          | 4.5 | 1.5            | 3.0 | 10                   |                  | 1.75     | 56                       | 20 | 36 | 36     | 55     | 91       | 26             | 18               | A-7-6 | 19                    |         |            | HP & Mc                         |            |  |          |  |
|    |                  | 3      | 4.5          | 6.0 | 3.0            | 4.5 | 13                   |                  | 3        |                          |    |    |        |        |          | 24             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |  |
|    |                  | 4      | 6.0          | 7.5 | 4.5            | 6.0 | 28                   |                  | 4.5      |                          |    |    |        |        |          | 18             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |  |
| 11 | B<br>021-0<br>20 | 1      | 1.0          | 2.5 | 0.0            | 1.5 | 11                   | 11               | 3.25     | 49                       | 22 | 27 | 39     | 57     | 96       | 22             | 19               | A-7-6 | 17                    | 230     |            | N <sub>60</sub> & Mc            |            | 12"                                    |          |  |
|    |                  | 2      | 2.5          | 4.0 | 1.5            | 3.0 | 14                   |                  | 2.5      | 28                       | 15 | 13 | 31     | 25     | 56       | 17             | 14               | A-6a  | 5                     |         |            | N <sub>60</sub> & Mc            |            |  |          |  |
|    |                  | 3      | 4.0          | 5.5 | 3.0            | 4.5 | 20                   |                  | 4.5      |                          |    |    |        |        |          | 15             | 14               | A-6a  | 10                    |         |            |                                 |            |  |          |  |
|    |                  | 4      | 5.5          | 7.0 | 4.5            | 6.0 | 39                   |                  | 4.5      |                          |    |    |        |        |          | 16             | 14               | A-6a  | 10                    |         |            |                                 |            |  |          |  |
| 12 | B<br>022-0<br>20 | 1      | 1.5          | 3.0 | 0.0            | 1.5 | 18                   | 18               | 4.5      | 37                       | 17 | 20 | 36     | 43     | 79       | 15             | 16               | A-6b  | 12                    | 560     |            |                                 |            |  |          |  |
|    |                  | 2      | 3.0          | 4.5 | 1.5            | 3.0 | 31                   |                  | 4.5      | 34                       | 17 | 17 | 36     | 42     | 78       | 15             | 16               | A-6b  | 11                    |         |            |                                 |            |  |          |  |
|    |                  | 3      | 4.5          | 6.0 | 3.0            | 4.5 | 38                   |                  | 4.5      |                          |    |    |        |        |          | 15             | 16               | A-6b  | 16                    |         |            |                                 |            |  |          |  |
|    |                  | 4      | 6.0          | 7.5 | 4.5            | 6.0 | 67                   |                  | 4.5      |                          |    |    |        |        |          | 15             | 16               | A-6b  | 16                    |         |            |                                 |            |  |          |  |
| 13 | B<br>025-0<br>20 | 1      | 1.0          | 2.5 | 0.0            | 1.5 | 15                   | 11               | 2        | 28                       | 17 | 11 | 54     | 29     | 83       | 5              | 14               | A-6a  | 8                     | 410     |            |                                 |            |  |          |  |
|    |                  | 2      | 2.5          | 4.0 | 1.5            | 3.0 | 13                   |                  | 2.25     | 39                       | 17 | 22 | 44     | 40     | 84       | 23             | 16               | A-6b  | 13                    |         |            | N <sub>60</sub> & Mc            |            |  |          |  |
|    |                  | 3      | 4.0          | 5.5 | 3.0            | 4.5 | 11                   |                  | 1.25     |                          |    |    |        |        |          | 23             | 10               | A-4a  | 8                     |         |            |                                 |            |  |          |  |
|    |                  | 4      | 5.5          | 7.0 | 4.5            | 6.0 | 28                   |                  | 4.5      |                          |    |    |        |        |          | 18             | 10               | A-4a  | 8                     |         |            |                                 |            |  |          |  |
| 14 | B<br>026-0<br>20 | 1      | 1.5          | 3.0 | 0.0            | 1.5 | 15                   | 15               | 4.5      | 44                       | 18 | 26 | 35     | 48     | 83       | 18             | 18               | A-7-6 | 15                    | 170     |            |                                 |            |  |          |  |
|    |                  | 2      | 3.0          | 4.5 | 1.5            | 3.0 | 20                   |                  | 4.5      | 37                       | 18 | 19 | 37     | 43     | 80       | 16             | 16               | A-6b  | 12                    |         |            |                                 |            |  |          |  |
|    |                  | 3      | 4.5          | 6.0 | 3.0            | 4.5 | 34                   |                  | 4.5      |                          |    |    |        |        |          | 16             | 16               | A-6b  | 16                    |         |            |                                 |            |  |          |  |
|    |                  | 4      | 6.0          | 7.5 | 4.5            | 6.0 | 48                   |                  | 4.5      |                          |    |    |        |        |          | 15             | 16               | A-6b  | 16                    |         |            |                                 |            |  |          |  |
| 15 | B<br>029-0<br>20 | 1      | 1.0          | 2.5 | 0.0            | 1.5 | 15                   | 11               | 2        | 38                       | 18 | 20 | 38     | 47     | 85       | 21             | 16               | A-6b  | 12                    | 99      |            | Mc                              |            |  |          |  |
|    |                  | 2      | 2.5          | 4.0 | 1.5            | 3.0 | 13                   |                  | 2.25     | 36                       | 18 | 18 | 38     | 46     | 84       | 19             | 16               | A-6b  | 11                    |         |            | N <sub>60</sub> & Mc            |            |  |          |  |
|    |                  | 3      | 4.0          | 5.5 | 3.0            | 4.5 | 11                   |                  | 1.25     |                          |    |    |        |        |          | 10             | 16               | A-6b  | 16                    |         |            |                                 |            |  |          |  |
|    |                  | 4      | 5.5          | 7.0 | 4.5            | 6.0 | 28                   |                  | 4.5      |                          |    |    |        |        |          | 18             | 16               | A-6b  | 16                    |         |            |                                 |            |  |          |  |
| 16 | B<br>030-0<br>20 | 1      | 1.5          | 3.0 | 0.0            | 1.5 | 15                   | 15               | 4        | 50                       | 19 | 31 | 34     | 53     | 87       | 23             | 18               | A-7-6 | 18                    | 99      |            | Mc                              |            |  |          |  |
|    |                  | 2      | 3.0          | 4.5 | 1.5            | 3.0 | 17                   |                  | 4.5      | 37                       | 18 | 19 | 36     | 43     | 79       | 16             | 16               | A-6b  | 12                    |         |            |                                 |            |  |          |  |
|    |                  | 3      | 4.5          | 6.0 | 3.0            | 4.5 | 41                   |                  | 4.5      |                          |    |    |        |        |          | 16             | 16               | A-6b  | 16                    |         |            |                                 |            |  |          |  |
|    |                  | 4      | 6.0          | 7.5 | 4.5            | 6.0 | 65                   |                  | 4.5      |                          |    |    |        |        |          | 16             | 16               | A-6b  | 16                    |         |            |                                 |            |  |          |  |
| 17 | B<br>033-0<br>20 | 1      | 1.0          | 2.5 | 0.0            | 1.5 | 14                   | 14               | 2.75     | 27                       | 17 | 10 | 49     | 29     | 78       | 17             | 12               | A-4a  | 8                     | 100     |            | N <sub>60</sub> & Mc            |            | 12"                                    |          |  |
|    |                  | 2      | 2.5          | 4.0 | 1.5            | 3.0 | 17                   |                  | 2        | 52                       | 20 | 32 | 45     | 47     | 92       | 24             | 18               | A-7-6 | 18                    |         |            | Mc                              |            |  |          |  |
|    |                  | 3      | 4.0          | 5.5 | 3.0            | 4.5 | 29                   |                  | 4.5      |                          |    |    |        |        |          | 23             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |  |
|    |                  | 4      | 5.5          | 7.0 | 4.5            | 6.0 | 35                   |                  | 2.75     |                          |    |    |        |        |          | 20             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |  |
| 18 | B<br>034-0<br>20 | 1      | 1.5          | 3.0 | 0.0            | 1.5 | 11                   | 11               | 3.75     | 41                       | 18 | 23 | 42     | 46     | 88       | 22             | 18               | A-7-6 | 13                    | 99      |            | N <sub>60</sub> & Mc            |            | 12"                                    |          |  |
|    |                  | 2      | 3.0          | 4.5 | 1.5            | 3.0 | 20                   |                  | 4.5      | 46                       | 19 | 27 | 37     | 44     | 81       | 20             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |  |
|    |                  | 3      | 4.5          | 6.0 | 3.0            | 4.5 | 32                   |                  | 4.5      |                          |    |    |        |        |          | 16             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |  |
|    |                  | 4      | 6.0          | 7.5 | 4.5            | 6.0 | 56                   |                  | 4.5      |                          |    |    |        |        |          | 15             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |  |

| #  | Boring           | Sample | Sample Depth |     | Subgrade Depth |     | Standard Penetration |                  | HP (tsf) | Physical Characteristics |    |    |        |        | Moisture |                | Ohio DOT         |       | Sulfate Content (ppm) | Problem |            | Excavate and Replace (Item 204) |            | Recommendation (Enter depth in inches) |          |
|----|------------------|--------|--------------|-----|----------------|-----|----------------------|------------------|----------|--------------------------|----|----|--------|--------|----------|----------------|------------------|-------|-----------------------|---------|------------|---------------------------------|------------|--|----------|
|    |                  |        | From         | To  | From           | To  | N <sub>60</sub>      | N <sub>60L</sub> |          | LL                       | PL | PI | % Silt | % Clay | P200     | M <sub>c</sub> | M <sub>OPT</sub> | Class |                       | GI      | Unsuitable | Unstable                        | Unsuitable |  | Unstable |
|    |                  |        |              |     |                |     |                      |                  |          |                          |    |    |        |        |          |                |                  |       |                       |         |            |                                 |            |  |          |
| 19 | B<br>037-0<br>20 | 1      | 1.0          | 2.5 | 0.0            | 1.5 | 10                   | 10               | 3.25     | 40                       | 18 | 22 | 42     | 44     | 86       | 23             | 16               | A-6b  | 13                    | 140     |            | N <sub>60</sub> & Mc            |            | 12"                                    |          |
|    |                  | 2      | 2.5          | 4.0 | 1.5            | 3.0 | 17                   |                  | 3.25     | 50                       | 19 | 31 | 38     | 46     | 84       | 23             | 18               | A-7-6 | 18                    |         |            | Mc                              |            |  |          |
|    |                  | 3      | 4.0          | 5.5 | 3.0            | 4.5 | 18                   |                  | 4        |                          |    |    |        |        |          | 15             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |
|    |                  | 4      | 5.5          | 7.0 | 4.5            | 6.0 | 35                   |                  | 4.5      |                          |    |    |        |        |          | 14             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |
| 20 | B<br>038-0<br>20 | 1      | 1.5          | 3.0 | 0.0            | 1.5 | 14                   | 14               | 4.5      | 47                       | 20 | 27 | 31     | 35     | 66       | 20             | 18               | A-7-6 | 14                    | 99      |            |                                 |            |  |          |
|    |                  | 2      | 3.0          | 4.5 | 1.5            | 3.0 | 29                   |                  | 4.5      | 30                       | 16 | 14 | 38     | 35     | 73       | 15             | 14               | A-6a  | 9                     |         |            |                                 |            |  |          |
|    |                  | 3      | 4.5          | 6.0 | 3.0            | 4.5 | 34                   |                  | 4.5      |                          |    |    |        |        |          | 15             | 14               | A-6a  | 10                    |         |            |                                 |            |  |          |
|    |                  | 4      | 6.0          | 7.5 | 4.5            | 6.0 | 49                   |                  | 4.5      |                          |    |    |        |        |          | 15             | 14               | A-6a  | 10                    |         |            |                                 |            |  |          |
| 21 | B<br>041-0<br>20 | 1      | 1.0          | 2.5 | 0.0            | 1.5 | 15                   | 13               | 4        | 36                       | 19 | 17 | 47     | 36     | 83       | 18             | 16               | A-6b  | 11                    | 99      |            |                                 |            |  |          |
|    |                  | 2      | 2.5          | 4.0 | 1.5            | 3.0 | 13                   |                  | 3        | 50                       | 20 | 30 | 44     | 52     | 96       | 24             | 18               | A-7-6 | 18                    |         |            | N <sub>60</sub> & Mc            |            |  |          |
|    |                  | 3      | 4.0          | 5.5 | 3.0            | 4.5 | 21                   |                  | 3.5      |                          |    |    |        |        |          | 15             | 10               | A-4a  | 8                     |         |            |                                 |            |  |          |
|    |                  | 4      | 5.5          | 7.0 | 4.5            | 6.0 | 35                   |                  | 4.5      |                          |    |    |        |        |          | 15             | 10               | A-4a  | 8                     |         |            |                                 |            |  |          |
| 22 | B<br>042-0<br>20 | 1      | 1.5          | 3.0 | 0.5            | 2.0 | 14                   | 14               | 4        | 37                       | 17 | 20 | 39     | 38     | 77       | 20             | 16               | A-6b  | 12                    | 110     |            | N <sub>60</sub> & Mc            |            | 12"                                    |          |
|    |                  | 2      | 3.0          | 4.5 | 2.0            | 3.5 | 22                   |                  | 4.5      | 36                       | 18 | 18 | 37     | 38     | 75       | 16             | 16               | A-6b  | 11                    |         |            |                                 |            |  |          |
|    |                  | 3      | 4.5          | 6.0 | 3.5            | 5.0 | 34                   |                  | 4.5      |                          |    |    |        |        |          | 15             | 16               | A-6b  | 16                    |         |            |                                 |            |  |          |
|    |                  | 4      | 6.0          | 7.5 | 5.0            | 6.5 | 59                   |                  | 4.5      |                          |    |    |        |        |          | 15             | 16               | A-6b  | 16                    |         |            |                                 |            |  |          |
| 23 | B<br>045-0<br>20 | 1      | 1.0          | 2.5 | 0.0            | 1.5 | 15                   | 15               | 4.5      | 26                       | 18 | 8  | 25     | 11     | 36       | 10             | 13               | A-4a  | 0                     | 99      |            |                                 |            |  |          |
|    |                  | 2      | 2.5          | 4.0 | 1.5            | 3.0 | 15                   |                  | 3.5      | 56                       | 22 | 34 | 34     | 54     | 88       | 25             | 19               | A-7-6 | 19                    |         |            | Mc                              |            |  |          |
|    |                  | 3      | 4.0          | 5.5 | 3.0            | 4.5 | 28                   |                  | 4.5      |                          |    |    |        |        |          | 15             | 10               | A-4a  | 8                     |         |            |                                 |            |  |          |
|    |                  | 4      | 5.5          | 7.0 | 4.5            | 6.0 | 36                   |                  | 4.5      |                          |    |    |        |        |          | 15             | 10               | A-4a  | 8                     |         |            |                                 |            |  |          |
| 24 | B<br>046-0<br>20 | 1      | 1.5          | 3.0 | 0.0            | 1.5 | 11                   | 11               | 2        | 38                       | 18 | 20 | 38     | 39     | 77       | 26             | 16               | A-6b  | 12                    | 99      |            | N <sub>60</sub> & Mc            |            | 12"                                    |          |
|    |                  | 2      | 3.0          | 4.5 | 1.5            | 3.0 | 14                   |                  | 2.25     | 54                       | 19 | 35 | 34     | 49     | 83       | 25             | 18               | A-7-6 | 19                    |         |            | N <sub>60</sub> & Mc            |            |  |          |
|    |                  | 3      | 4.5          | 6.0 | 3.0            | 4.5 | 21                   |                  | 4.5      |                          |    |    |        |        |          | 18             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |
|    |                  | 4      | 6.0          | 7.5 | 4.5            | 6.0 | 46                   |                  | 4.5      |                          |    |    |        |        |          | 15             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |
| 25 | B<br>049-0<br>20 | 1      | 1.0          | 2.5 | 0.0            | 1.5 | 15                   | 15               | 4.5      | 35                       | 17 | 18 | 39     | 37     | 76       | 15             | 16               | A-6b  | 11                    | 99      |            |                                 |            |  |          |
|    |                  | 2      | 2.5          | 4.0 | 1.5            | 3.0 | 31                   |                  | 4.5      | 34                       | 17 | 17 | 40     | 39     | 79       | 14             | 16               | A-6b  | 11                    |         |            |                                 |            |  |          |
|    |                  | 3      | 4.0          | 5.5 | 3.0            | 4.5 | 36                   |                  | 4.5      |                          |    |    |        |        |          | 15             | 16               | A-6b  | 16                    |         |            |                                 |            |  |          |
|    |                  | 4      | 5.5          | 7.0 | 4.5            | 6.0 | 72                   |                  | 4.5      |                          |    |    |        |        |          | 15             | 16               | A-6b  | 16                    |         |            |                                 |            |  |          |
| 26 | B<br>050-0<br>20 | 1      | 1.5          | 3.0 | 0.0            | 1.5 | 14                   | 8                | 3.25     | 40                       | 19 | 21 | 45     | 34     | 79       | 18             | 16               | A-6b  | 12                    | 99      |            |                                 |            |  |          |
|    |                  | 2      | 3.0          | 4.5 | 1.5            | 3.0 | 8                    |                  | 2.25     | 67                       | 22 | 45 | 5      | 27     | 32       | 30             | 19               | A-7-6 | 3                     |         | High LL    | N <sub>60</sub> & Mc            |            |  |          |
|    |                  | 3      | 4.5          | 6.0 | 3.0            | 4.5 | 11                   |                  | 2.5      |                          |    |    |        |        |          | 26             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |
|    |                  | 4      | 6.0          | 7.5 | 4.5            | 6.0 | 25                   |                  | 1.25     |                          |    |    |        |        |          | 35             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |
| 27 | B<br>053-0<br>20 | 1      | 1.0          | 2.5 | 0.0            | 1.5 | 10                   | 8                | 2.75     | 35                       | 16 | 19 | 46     | 30     | 76       | 17             | 16               | A-6b  | 12                    | 210     |            | N <sub>60</sub>                 |            | 12"                                    |          |
|    |                  | 2      | 2.5          | 4.0 | 1.5            | 3.0 | 8                    |                  | 1        | 40                       | 18 | 22 | 46     | 30     | 76       | 25             | 16               | A-6b  | 13                    |         |            | HP & Mc                         |            |  |          |
|    |                  | 3      | 4.0          | 5.5 | 3.0            | 4.5 | 25                   |                  | 4.5      |                          |    |    |        |        |          | 17             | 10               | A-4a  | 8                     |         |            |                                 |            |  |          |
|    |                  | 4      | 5.5          | 7.0 | 4.5            | 6.0 | 48                   |                  | 4.5      |                          |    |    |        |        |          | 16             | 10               | A-4a  | 8                     |         |            |                                 |            |  |          |

| #  | Boring           | Sample | Sample Depth |     | Subgrade Depth |     | Standard Penetration |                  | HP (tsf) | Physical Characteristics |    |    |        |        | Moisture |                | Ohio DOT         |       | Sulfate Content (ppm) | Problem |            | Excavate and Replace (Item 204) |            | Recommendation (Enter depth in inches) |          |
|----|------------------|--------|--------------|-----|----------------|-----|----------------------|------------------|----------|--------------------------|----|----|--------|--------|----------|----------------|------------------|-------|-----------------------|---------|------------|---------------------------------|------------|--|----------|
|    |                  |        | From         | To  | From           | To  | N <sub>60</sub>      | N <sub>60L</sub> |          | LL                       | PL | PI | % Silt | % Clay | P200     | M <sub>c</sub> | M <sub>OPT</sub> | Class |                       | GI      | Unsuitable | Unstable                        | Unsuitable |  | Unstable |
|    |                  |        |              |     |                |     |                      |                  |          |                          |    |    |        |        |          |                |                  |       |                       |         |            |                                 |            |  |          |
| 28 | B<br>054-0<br>20 | 1      | 1.5          | 3.0 | 0.0            | 1.5 | 14                   | 10               | 4        | 40                       | 20 | 20 | 50     | 34     | 84       | 21             | 16               | A-6b  | 12                    | 110     |            | N <sub>60</sub> & Mc            |            | 12"                                    |          |
|    |                  | 2      | 3.0          | 4.5 | 1.5            | 3.0 | 13                   |                  | 2.5      | 47                       | 18 | 29 | 36     | 43     | 79       | 22             | 18               | A-7-6 | 17                    |         |            | N <sub>60</sub> & Mc            |            |  |          |
|    |                  | 3      | 4.5          | 6.0 | 3.0            | 4.5 | 10                   |                  | 2        |                          |    |    |        |        |          | 28             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |
|    |                  | 4      | 6.0          | 7.5 | 4.5            | 6.0 | 13                   |                  | 1.5      |                          |    |    |        |        |          | 28             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |
| 29 | B<br>057-0<br>20 | 1      | 1.0          | 2.5 | 0.0            | 1.5 | 15                   | 14               | 2.75     | 30                       | 17 | 13 | 53     | 26     | 79       | 18             | 14               | A-6a  | 9                     | 110     |            | Mc                              |            |  |          |
|    |                  | 2      | 2.5          | 4.0 | 1.5            | 3.0 | 14                   |                  | 4.5      | 47                       | 18 | 29 | 36     | 47     | 83       | 23             | 18               | A-7-6 | 17                    |         |            | N <sub>60</sub> & Mc            |            |  |          |
|    |                  | 3      | 4.0          | 5.5 | 3.0            | 4.5 | 20                   |                  | 4.5      |                          |    |    |        |        |          | 23             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |
|    |                  | 4      | 5.5          | 7.0 | 4.5            | 6.0 | 41                   |                  | 4.5      |                          |    |    |        |        |          | 14             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |
| 30 | B<br>058-0<br>20 | 1      | 1.5          | 3.0 | 0.0            | 1.5 | 17                   | 13               | 3.5      | 45                       | 23 | 22 | 44     | 45     | 89       | 23             | 20               | A-7-6 | 14                    | 290     |            | Mc                              |            |  |          |
|    |                  | 2      | 3.0          | 4.5 | 1.5            | 3.0 | 13                   |                  | 2.75     | 52                       | 21 | 31 | 33     | 55     | 88       | 25             | 18               | A-7-6 | 18                    |         |            | N <sub>60</sub> & Mc            |            |  |          |
|    |                  | 3      | 4.5          | 6.0 | 3.0            | 4.5 | 14                   |                  | 1.75     |                          |    |    |        |        |          | 25             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |
|    |                  | 4      | 6.0          | 7.5 | 4.5            | 6.0 | 13                   |                  | 1.5      |                          |    |    |        |        |          | 29             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |
| 31 | B<br>061-0<br>20 | 1      | 1.0          | 2.5 | 0.0            | 1.5 | 13                   | 8                | 3.5      | 50                       | 24 | 26 | 43     | 45     | 88       | 24             | 21               | A-7-6 | 16                    | 120     |            | N <sub>60</sub> & Mc            |            | 12"                                    |          |
|    |                  | 2      | 2.5          | 4.0 | 1.5            | 3.0 | 10                   |                  | 2.5      | 64                       | 22 | 42 | 35     | 57     | 92       | 25             | 19               | A-7-6 | 20                    |         |            | N <sub>60</sub> & Mc            |            |  |          |
|    |                  | 3      | 4.0          | 5.5 | 3.0            | 4.5 | 8                    |                  | 2        |                          |    |    |        |        |          | 30             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |
|    |                  | 4      | 5.5          | 7.0 | 4.5            | 6.0 | 14                   |                  | 1.25     |                          |    |    |        |        |          | 29             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |
| 32 | B<br>062-0<br>20 | 1      | 1.5          | 3.0 | 0.0            | 1.5 | 8                    | 8                | 4        |                          |    |    |        |        |          | 25             | 16               | A-6b  | 16                    | 180     |            | N <sub>60</sub> & Mc            |            | 12"                                    |          |
|    |                  | 2      | 3.0          | 4.5 | 1.5            | 3.0 | 27                   |                  | 4.5      | 38                       | 18 | 20 | 32     | 39     | 71       | 21             | 16               | A-6b  | 11                    |         |            | Mc                              |            |  |          |
|    |                  | 3      | 4.5          | 6.0 | 3.0            | 4.5 | 45                   |                  | 4.5      | 32                       | 18 | 14 | 30     | 43     | 73       | 15             | 14               | A-6a  | 9                     |         |            |                                 |            |  |          |
|    |                  | 4      | 6.0          | 7.5 | 4.5            | 6.0 | 35                   |                  | 4.5      |                          |    |    |        |        |          | 16             | 14               | A-6a  | 10                    |         |            |                                 |            |  |          |
| 33 | B<br>065-0<br>20 | 1      | 1.0          | 2.5 | 0.0            | 1.5 | 17                   | 8                |          | np                       |    | NP | 20     | 11     | 31       | 8              | 8                | A-3a  | 0                     | 280     |            |                                 |            |  |          |
|    |                  | 2      | 2.5          | 4.0 | 1.5            | 3.0 | 15                   |                  | 2.25     |                          |    |    |        |        |          | 26             | 14               | A-6a  | 10                    |         |            | Mc                              |            |  |          |
|    |                  | 3      | 4.0          | 5.5 | 3.0            | 4.5 | 8                    |                  | 2.75     | 39                       | 26 | 13 | 25     | 45     | 70       | 25             | 21               | A-6a  | 8                     |         |            |                                 |            |  |          |
|    |                  | 4      | 5.5          | 7.0 | 4.5            | 6.0 | 18                   |                  | 2.75     |                          |    |    |        |        |          | 28             | 14               | A-6a  | 10                    |         |            |                                 |            |  |          |
| 34 | B<br>066-0<br>20 | 1      | 1.5          | 3.0 | 0.0            | 1.5 | 18                   | 18               | 4        | 40                       | 19 | 21 | 30     | 52     | 82       | 20             | 16               | A-6b  | 12                    | 530     |            | Mc                              |            |  |          |
|    |                  | 2      | 3.0          | 4.5 | 1.5            | 3.0 | 35                   |                  | 4.5      | 34                       | 18 | 16 | 31     | 42     | 73       | 15             | 16               | A-6b  | 10                    |         |            |                                 |            |  |          |
|    |                  | 3      | 4.5          | 6.0 | 3.0            | 4.5 | 45                   |                  | 4.5      |                          |    |    |        |        |          | 13             | 16               | A-6b  | 16                    |         |            |                                 |            |  |          |
|    |                  | 4      | 6.0          | 7.5 | 4.5            | 6.0 | 79                   |                  | 4.5      |                          |    |    |        |        |          | 15             | 16               | A-6b  | 16                    |         |            |                                 |            |  |          |
| 35 | B<br>069-0<br>20 | 1      | 1.0          | 2.5 | 0.0            | 1.5 | 13                   | 13               | 3.75     | 34                       | 19 | 15 | 30     | 44     | 74       | 17             | 14               | A-6a  | 10                    | 330     |            | N <sub>60</sub> & Mc            |            | 12"                                    |          |
|    |                  | 2      | 2.5          | 4.0 | 1.5            | 3.0 | 22                   |                  | 4.5      | 34                       | 19 | 15 | 27     | 44     | 71       | 16             | 14               | A-6a  | 9                     |         |            |                                 |            |  |          |
|    |                  | 3      | 4.0          | 5.5 | 3.0            | 4.5 | 29                   |                  | 4.5      |                          |    |    |        |        |          | 16             | 14               | A-6a  | 10                    |         |            |                                 |            |  |          |
|    |                  | 4      | 5.5          | 7.0 | 4.5            | 6.0 | 52                   |                  | 4.5      |                          |    |    |        |        |          | 15             | 14               | A-6a  | 10                    |         |            |                                 |            |  |          |
| 36 | B<br>070-0<br>20 | 1      | 1.5          | 3.0 | 0.0            | 1.5 | 11                   | 11               | 4        | 39                       | 18 | 21 | 34     | 47     | 81       | 22             | 16               | A-6b  | 12                    | 380     |            | N <sub>60</sub> & Mc            |            | 12"                                    |          |
|    |                  | 2      | 3.0          | 4.5 | 1.5            | 3.0 | 20                   |                  | 4.5      | 44                       | 19 | 25 | 25     | 52     | 77       | 22             | 18               | A-7-6 | 15                    |         |            | Mc                              |            |  |          |
|    |                  | 3      | 4.5          | 6.0 | 3.0            | 4.5 | 36                   |                  | 4.5      |                          |    |    |        |        |          | 15             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |
|    |                  | 4      | 6.0          | 7.5 | 4.5            | 6.0 | 60                   |                  | 4.5      |                          |    |    |        |        |          | 15             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |

| #  | Boring           | Sample | Sample Depth |     | Subgrade Depth |     | Standard Penetration |                  | HP (tsf) | Physical Characteristics |    |    |        |        | Moisture |                | Ohio DOT         |       | Sulfate Content (ppm) | Problem |            | Excavate and Replace (Item 204) |            | Recommendation (Enter depth in inches) |          |
|----|------------------|--------|--------------|-----|----------------|-----|----------------------|------------------|----------|--------------------------|----|----|--------|--------|----------|----------------|------------------|-------|-----------------------|---------|------------|---------------------------------|------------|--|----------|
|    |                  |        | From         | To  | From           | To  | N <sub>60</sub>      | N <sub>60L</sub> |          | LL                       | PL | PI | % Silt | % Clay | P200     | M <sub>c</sub> | M <sub>OPT</sub> | Class |                       | GI      | Unsuitable | Unstable                        | Unsuitable |  | Unstable |
|    |                  |        |              |     |                |     |                      |                  |          |                          |    |    |        |        |          |                |                  |       |                       |         |            |                                 |            |  |          |
| 37 | B<br>073-0<br>20 | 1      | 1.0          | 2.5 | 0.0            | 1.5 | 14                   | 14               | 4.5      | 34                       | 19 | 15 | 8      | 29     | 37       | 12             | 14               | A-6a  | 2                     | 390     |            |                                 |            |  |          |
|    |                  | 2      | 2.5          | 4.5 | 1.5            | 3.5 | 32                   |                  | 4.5      | 34                       | 19 | 15 | 8      | 30     | 38       | 14             | 14               | A-6a  | 2                     |         |            |                                 |            |  |          |
|    |                  | 3      | 4.5          | 6.5 | 3.5            | 5.5 | 39                   |                  | 4.5      |                          |    |    |        |        |          | 15             | 14               | A-6a  | 10                    |         |            |                                 |            |  |          |
|    |                  | 4      | 6.5          | 7.5 | 5.5            | 6.5 | 70                   |                  | 4.5      |                          |    |    |        |        |          | 15             | 14               | A-6a  |                       |         |            |                                 |            |  |          |
| 38 | B<br>074-0<br>20 | 1      | 1.5          | 3.0 | 0.0            | 1.5 | 18                   | 17               | 3.5      | 45                       | 21 | 24 | 28     | 51     | 79       | 22             | 18               | A-7-6 | 15                    | 440     |            | Mc                              |            |  |          |
|    |                  | 2      | 3.0          | 4.5 | 1.5            | 3.0 | 17                   |                  | 4        | 37                       | 19 | 18 | 33     | 43     | 76       | 17             | 16               | A-6b  | 11                    |         |            |                                 |            |  |          |
|    |                  | 3      | 4.5          | 6.0 | 3.0            | 4.5 | 31                   |                  | 4.5      |                          |    |    |        |        |          | 12             | 16               | A-6b  | 16                    |         |            |                                 |            |  |          |
|    |                  | 4      | 6.0          | 7.5 | 4.5            | 6.0 | 44                   |                  | 4        |                          |    |    |        |        |          | 12             | 16               | A-6b  | 16                    |         |            |                                 |            |  |          |
| 39 | B<br>077-0<br>20 | 1      | 1.5          | 3.0 | 0.5            | 2.0 | 13                   | 10               | 4.5      | 34                       | 21 | 13 | 35     | 29     | 64       | 16             | 16               | A-6a  | 7                     | 450     |            |                                 |            |  |          |
|    |                  | 2      | 3.0          | 4.5 | 2.0            | 3.5 | 11                   |                  | 2        | 33                       | 20 | 13 | 23     | 41     | 64       | 21             | 15               | A-6a  | 7                     |         |            | N <sub>60</sub> & Mc            |            |  |          |
|    |                  | 3      | 4.5          | 6.0 | 3.5            | 5.0 | 10                   |                  | 2        |                          |    |    |        |        |          | 24             | 14               | A-6a  | 10                    |         |            |                                 |            |  |          |
|    |                  | 4      | 6.0          | 7.5 | 5.0            | 6.5 | 13                   |                  | 2.75     |                          |    |    |        |        |          | 24             | 14               | A-6a  | 10                    |         |            |                                 |            |  |          |
| 40 | B<br>078-0<br>20 | 1      | 1.0          | 2.5 | 0.0            | 1.5 | 20                   | 15               | 4.5      |                          |    |    |        |        |          | 19             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |
|    |                  | 2      | 2.5          | 4.0 | 1.5            | 3.0 | 15                   |                  | 2.75     | 41                       | 19 | 22 | 30     | 48     | 78       | 19             | 18               | A-7-6 | 13                    |         |            |                                 |            |  |          |
|    |                  | 3      | 4.0          | 5.5 | 3.0            | 4.5 | 17                   |                  | 3.75     | 43                       | 21 | 22 | 32     | 48     | 80       | 18             | 18               | A-7-6 | 13                    |         |            |                                 |            |  |          |
|    |                  | 4      | 5.5          | 7.0 | 4.5            | 6.0 | 29                   |                  | 4.5      |                          |    |    |        |        |          | 17             | 18               | A-7-6 | 16                    |         |            |                                 |            |  |          |
| 41 | B<br>081-0<br>20 | 1      | 1.5          | 3.0 | 0.5            | 2.0 | 8                    | 8                | 3.75     |                          |    |    |        |        |          | 18             | 14               | A-6a  | 10                    | 500     |            | N <sub>60</sub> & Mc            |            | 12"                                    |          |
|    |                  | 2      | 3.0          | 4.5 | 2.0            | 3.5 | 28                   |                  | 4.5      | 32                       | 19 | 13 | 34     | 34     | 68       | 14             | 14               | A-6a  | 8                     |         |            |                                 |            |  |          |
|    |                  | 3      | 4.5          | 6.0 | 3.5            | 5.0 | 39                   |                  | 4.5      | 32                       | 19 | 13 | 37     | 35     | 72       | 14             | 14               | A-6a  | 9                     |         |            |                                 |            |  |          |
|    |                  | 4      | 6.0          | 7.5 | 5.0            | 6.5 | 60                   |                  | 4.5      |                          |    |    |        |        |          | 12             | 14               | A-6a  | 10                    |         |            |                                 |            |  |          |
| 42 | B<br>082-0<br>20 | 1      | 1.0          | 2.5 | -0.5           | 1.0 | 7                    | 7                | 3.75     | 32                       | 18 | 14 | 28     | 42     | 70       | 17             | 14               | A-6a  | 9                     | 250     |            | N <sub>60</sub> & Mc            |            | 15"                                    |          |
|    |                  | 2      | 2.5          | 4.0 | 1.0            | 2.5 | 18                   |                  | 4.5      | 34                       | 18 | 16 | 30     | 44     | 74       | 16             | 16               | A-6b  | 10                    |         |            |                                 |            |  |          |
|    |                  | 3      | 4.0          | 5.5 | 2.5            | 4.0 | 36                   |                  | 4.5      |                          |    |    |        |        |          | 14             | 16               | A-6b  | 16                    |         |            |                                 |            |  |          |
|    |                  | 4      | 5.5          | 7.0 | 4.0            | 5.5 | 44                   |                  | 4.5      |                          |    |    |        |        |          | 15             | 16               | A-6b  | 16                    |         |            |                                 |            |  |          |
| 43 | B<br>085-0<br>20 | 1      | 1.5          | 3.0 | 0.0            | 1.5 | 15                   | 15               | 4        | 32                       | 19 | 13 | 32     | 46     | 78       | 22             | 14               | A-6a  | 9                     | 260     |            | Mc                              |            |  |          |
|    |                  | 2      | 3.0          | 4.5 | 1.5            | 3.0 | 21                   |                  | 4        | 31                       | 19 | 12 | 36     | 35     | 71       | 15             | 14               | A-6a  | 8                     |         |            |                                 |            |  |          |
|    |                  | 3      | 4.5          | 6.0 | 3.0            | 4.5 | 34                   |                  | 4.5      | 31                       | 19 | 12 | 35     | 25     | 60       | 13             | 14               | A-6a  | 6                     |         |            |                                 |            |  |          |
|    |                  | 4      | 6.0          | 7.5 | 4.5            | 6.0 | 55                   |                  | 4.5      |                          |    |    |        |        |          | 15             | 14               | A-6a  | 10                    |         |            |                                 |            |  |          |
| 44 | B<br>086-0<br>20 | 1      | 1.0          | 2.5 | 0.0            | 1.5 | 15                   | 15               | 3.5      | 34                       | 19 | 15 | 40     | 36     | 76       | 20             | 14               | A-6a  | 10                    | 99      |            | Mc                              |            |  |          |
|    |                  | 2      | 2.5          | 4.0 | 1.5            | 3.0 | 15                   |                  | 2.75     | 31                       | 20 | 11 | 38     | 31     | 69       | 20             | 15               | A-6a  | 7                     |         |            | Mc                              |            |  |          |
|    |                  | 3      | 4.0          | 5.5 | 3.0            | 4.5 | 38                   |                  | 4.5      |                          |    |    |        |        |          | 15             | 10               | A-4a  | 8                     |         |            |                                 |            |  |          |
|    |                  | 4      | 5.5          | 7.0 | 4.5            | 6.0 | 32                   |                  | 4        |                          |    |    |        |        |          | 14             | 10               | A-4a  | 8                     |         |            |                                 |            |  |          |
| 45 | B<br>089-0<br>20 | 1      | 1.5          | 3.0 | 0.0            | 1.5 | 8                    | 8                | 2.75     | 33                       | 17 | 16 | 43     | 38     | 81       | 21             | 16               | A-6b  | 10                    | 99      |            | N <sub>60</sub> & Mc            |            | 12"                                    |          |
|    |                  | 2      | 3.0          | 4.5 | 1.5            | 3.0 | 11                   |                  | 2.25     | 34                       | 22 | 12 | 34     | 30     | 64       | 23             | 17               | A-6a  | 7                     |         |            | N <sub>60</sub> & Mc            |            |  |          |
|    |                  | 3      | 4.5          | 6.0 | 3.0            | 4.5 | 15                   |                  | 2.5      |                          |    |    |        |        |          | 21             | 14               | A-6a  | 10                    |         |            |                                 |            |  |          |
|    |                  | 4      | 6.0          | 7.5 | 4.5            | 6.0 | 27                   |                  | 4.5      |                          |    |    |        |        |          | 17             | 14               | A-6a  | 10                    |         |            |                                 |            |  |          |



| #  | Boring           | Sample | Sample Depth |     | Subgrade Depth |     | Standard Penetration |                  | HP (tsf) | Physical Characteristics |    |    |        |        | Moisture |                | Ohio DOT         |       | Sulfate Content (ppm) | Problem |            | Excavate and Replace (Item 204) |            | Recommendation (Enter depth in inches) |          |  |
|----|------------------|--------|--------------|-----|----------------|-----|----------------------|------------------|----------|--------------------------|----|----|--------|--------|----------|----------------|------------------|-------|-----------------------|---------|------------|---------------------------------|------------|--|----------|--|
|    |                  |        | From         | To  | From           | To  | N <sub>60</sub>      | N <sub>60L</sub> |          | LL                       | PL | PI | % Silt | % Clay | P200     | M <sub>c</sub> | M <sub>OPT</sub> | Class |                       | GI      | Unsuitable | Unstable                        | Unsuitable |  | Unstable |  |
|    |                  |        |              |     |                |     |                      |                  |          |                          |    |    |        |        |          |                |                  |       |                       |         |            |                                 |            |  |          |  |
| 46 | B<br>090-0<br>20 | 1      | 1.0          | 2.5 | 0.0            | 1.5 | 15                   | 14               | 3.5      | 33                       | 22 | 11 | 39     | 36     | 75       | 22             | 17               | A-6a  | 8                     | 99      |            | Mc                              |            |  |          |  |
|    |                  | 2      | 2.5          | 4.0 | 1.5            | 3.0 | 14                   |                  | 4.5      | 27                       | 18 | 9  | 39     | 33     | 72       | 16             | 13               | A-4a  | 7                     |         |            | N <sub>60</sub> & Mc            |            |  |          |  |
|    |                  | 3      | 4.0          | 5.5 | 3.0            | 4.5 | 31                   |                  | 4.5      |                          |    |    |        |        |          | 15             | 10               | A-4a  | 8                     |         |            |                                 |            |  |          |  |
|    |                  | 4      | 5.5          | 7.0 | 4.5            | 6.0 | 42                   |                  | 4.5      | 27                       | 18 | 9  | 15     | 24     | 39       | 12             | 13               | A-4a  | 1                     |         |            |                                 |            |  |          |  |
| 47 | B<br>093-0<br>02 | 1      | 1.5          | 3.0 | 0.0            | 1.5 | 13                   | 13               | 4.25     | 34                       | 19 | 15 | 37     | 41     | 78       | 21             | 14               | A-6a  | 10                    | 99      |            | N <sub>60</sub> & Mc            |            | 12"                                    |          |  |
|    |                  | 2      | 3.0          | 4.5 | 1.5            | 3.0 | 17                   |                  | 4.5      | 33                       | 20 | 13 | 36     | 39     | 75       | 15             | 15               | A-6a  | 9                     |         |            |                                 |            |  |          |  |
|    |                  | 3      | 4.5          | 6.0 | 3.0            | 4.5 | 32                   |                  | 4.5      |                          |    |    |        |        |          | 15             | 14               | A-6a  | 10                    |         |            |                                 |            |  |          |  |
|    |                  | 4      | 6.0          | 7.5 | 4.5            | 6.0 | 39                   |                  | 4.5      |                          |    |    |        |        |          | 16             | 14               | A-6a  | 10                    |         |            |                                 |            |  |          |  |
| 48 | B<br>094-0<br>20 | 1      | 1.0          | 2.5 | 0.0            | 1.5 | 15                   | 14               | 3        | 33                       | 21 | 12 | 49     | 29     | 78       | 20             | 16               | A-6a  | 9                     | 110     |            | Mc                              |            |  |          |  |
|    |                  | 2      | 2.5          | 4.0 | 1.5            | 3.0 | 14                   |                  | 3.5      | 33                       | 19 | 14 | 27     | 31     | 58       | 22             | 14               | A-6a  | 6                     |         |            | N <sub>60</sub> & Mc            |            |  |          |  |
|    |                  | 3      | 4.0          | 5.5 | 3.0            | 4.5 | 28                   |                  | 4.5      |                          |    |    |        |        |          | 13             | 14               | A-6a  | 10                    |         |            |                                 |            |  |          |  |
|    |                  | 4      | 5.5          | 7.0 | 4.5            | 6.0 | 62                   |                  | 4.5      |                          |    |    |        |        |          | 14             | 14               | A-6a  | 10                    |         |            |                                 |            |  |          |  |
| 49 | B<br>097-0<br>20 | 1      | 1.0          | 2.5 | -0.5           | 1.0 | 14                   | 14               | 3.5      | 33                       | 20 | 13 | 33     | 32     | 65       | 20             | 15               | A-6a  | 7                     | 520     |            | N <sub>60</sub> & Mc            |            | 12"                                    |          |  |
|    |                  | 2      | 2.5          | 4.0 | 1.0            | 2.5 | 22                   |                  | 4.5      | 32                       | 20 | 12 | 40     | 31     | 71       | 14             | 15               | A-6a  | 8                     |         |            |                                 |            |  |          |  |
|    |                  | 3      | 4.0          | 5.5 | 2.5            | 4.0 | 34                   |                  | 4.5      |                          |    |    |        |        |          | 14             | 14               | A-6a  | 10                    |         |            |                                 |            |  |          |  |
|    |                  | 4      | 5.5          | 7.0 | 4.0            | 5.5 | 53                   |                  | 4.5      |                          |    |    |        |        |          | 18             | 14               | A-6a  | 10                    |         |            |                                 |            |  |          |  |
| 50 | B<br>098-0<br>20 | 1      | 1.0          | 2.5 | 0.0            | 1.5 | 15                   | 10               | 3        | 33                       | 20 | 13 | 48     | 31     | 79       | 22             | 15               | A-6a  | 9                     | 420     |            | Mc                              |            |  |          |  |
|    |                  | 2      | 2.5          | 4.0 | 1.5            | 3.0 | 10                   |                  | 2        | 32                       | 21 | 11 | 43     | 33     | 76       | 24             | 16               | A-6a  | 8                     |         |            | N <sub>60</sub> & Mc            |            |  |          |  |
|    |                  | 3      | 4.0          | 5.5 | 3.0            | 4.5 | 11                   |                  | 2.25     |                          |    |    |        |        |          | 18             | 14               | A-6a  | 10                    |         |            |                                 |            |  |          |  |
|    |                  | 4      | 5.5          | 7.0 | 4.5            | 6.0 | 11                   |                  | 4        |                          |    |    |        |        |          | 15             | 14               | A-6a  | 10                    |         |            |                                 |            |  |          |  |
| 51 | B<br>101-0<br>20 | 1      | 1.0          | 2.5 | 0.0            | 1.5 | 10                   | 10               | 3        | 32                       | 18 | 14 | 50     | 35     | 85       | 20             | 14               | A-6a  | 10                    | 390     |            | N <sub>60</sub> & Mc            |            | 12"                                    |          |  |
|    |                  | 2      | 2.5          | 4.0 | 1.5            | 3.0 | 18                   |                  | 4.5      | 37                       | 18 | 19 | 33     | 42     | 75       | 15             | 16               | A-6b  | 12                    |         |            |                                 |            |  |          |  |
|    |                  | 3      | 4.0          | 5.5 | 3.0            | 4.5 | 31                   |                  | 4.5      |                          |    |    |        |        |          | 12             | 16               | A-6b  | 16                    |         |            |                                 |            |  |          |  |
|    |                  | 4      | 5.5          | 7.0 | 4.5            | 6.0 | 67                   |                  | 4.5      |                          |    |    |        |        |          | 10             | 16               | A-6b  | 16                    |         |            |                                 |            |  |          |  |
| 52 | B<br>102-0<br>20 | 1      | 1.0          | 2.5 | 0.0            | 1.5 | 14                   | 14               | 3.75     | 43                       | 19 | 24 | 30     | 53     | 83       | 21             | 18               | A-7-6 | 14                    | 350     |            | N <sub>60</sub> & Mc            |            | 12"                                    |          |  |
|    |                  | 2      | 2.5          | 4.0 | 1.5            | 3.0 | 15                   |                  | 4.5      | 36                       | 17 | 19 | 32     | 42     | 74       | 14             | 16               | A-6b  | 11                    |         |            |                                 |            |  |          |  |
|    |                  | 3      | 4.0          | 5.5 | 3.0            | 4.5 | 36                   |                  | 4.5      |                          |    |    |        |        |          | 15             | 16               | A-6b  | 16                    |         |            |                                 |            |  |          |  |
|    |                  | 4      | 5.5          | 7.0 | 4.5            | 6.0 | 48                   |                  | 4.5      |                          |    |    |        |        |          | 11             | 16               | A-6b  | 16                    |         |            |                                 |            |  |          |  |
| 53 | B<br>105-0<br>20 | 1      | 1.0          | 2.5 | 0.0            | 1.5 | 18                   | 15               | 3.75     | 31                       | 15 | 16 | 41     | 31     | 72       | 18             | 16               | A-6b  | 10                    | 99      |            |                                 |            |  |          |  |
|    |                  | 2      | 2.5          | 4.0 | 1.5            | 3.0 | 15                   |                  | 2.75     | 40                       | 18 | 22 | 32     | 44     | 76       | 18             | 16               | A-6b  | 13                    |         |            |                                 |            |  |          |  |
|    |                  | 3      | 4.0          | 5.5 | 3.0            | 4.5 | 17                   |                  | 4.5      |                          |    |    |        |        |          | 14             | 16               | A-6b  | 16                    |         |            |                                 |            |  |          |  |
|    |                  | 4      | 5.5          | 7.0 | 4.5            | 6.0 | 65                   |                  | 4.5      |                          |    |    |        |        |          | 14             | 16               | A-6b  | 16                    |         |            |                                 |            |  |          |  |
| 54 | B<br>106-0<br>20 | 1      | 1.0          | 2.5 | 0.0            | 1.5 | 11                   | 11               | 4.5      | 29                       | 18 | 11 | 42     | 29     | 71       | 18             | 14               | A-6a  | 8                     | 99      |            | N <sub>60</sub> & Mc            |            | 12"                                    |          |  |
|    |                  | 2      | 2.5          | 4.0 | 1.5            | 3.0 | 14                   |                  | 1        | 41                       | 19 | 22 | 40     | 43     | 83       | 25             | 18               | A-7-6 | 13                    |         |            | HP & Mc                         |            |  |          |  |
|    |                  | 3      | 4.0          | 5.5 | 3.0            | 4.5 | 11                   |                  | 2.25     |                          |    |    |        |        |          | 18             | 14               | A-6a  | 10                    |         |            |                                 |            |  |          |  |
|    |                  | 4      | 5.5          | 7.0 | 4.5            | 6.0 | 45                   |                  | 4.5      |                          |    |    |        |        |          | 18             | 14               | A-6a  | 10                    |         |            |                                 |            |  |          |  |

**PID:** 112878

**County-Route-Section:** UNI-739-6.00

**No. of Borings:** 54

**Geotechnical Consultant:** Resource International Inc.

**Prepared By:** Peyman Majidi, PE

**Date prepared:** 4/6/2021

| Chemical Stabilization Options |                      |        |
|--------------------------------|----------------------|--------|
| 320                            | Rubblize & Roll      | Option |
| 206                            | Cement Stabilization | Option |
|                                | Lime Stabilization   | Option |
| 206                            | Depth                | 12"    |

| Excavate and Replace Stabilization Options |     |
|--|-----|
| Global Geotextile Average(N60L):           | 12" |
| Average(HP):                               | 0"  |
| Global Geogrid Average(N60L):              | 0"  |
| Average(HP):                               | 0"  |

|                       |          |
|-----------------------|----------|
| <b>Design<br/>CBR</b> | <b>5</b> |
|-----------------------|----------|

| % Samples within 6 feet of subgrade |     |                   |     |
|-------------------------------------|-----|-------------------|-----|
| $N_{60} \leq 5$                     | 0%  | $HP \leq 0.5$     | 0%  |
| $N_{60} < 12$                       | 16% | $0.5 < HP \leq 1$ | 1%  |
| $12 \leq N_{60} < 15$               | 15% | $1 < HP \leq 2$   | 9%  |
| $N_{60} \geq 20$                    | 49% | $HP > 2$          | 89% |
| M+                                  | 30% |                   |     |
| Rock                                | 0%  |                   |     |
| Unsuitable                          | 0%  |                   |     |

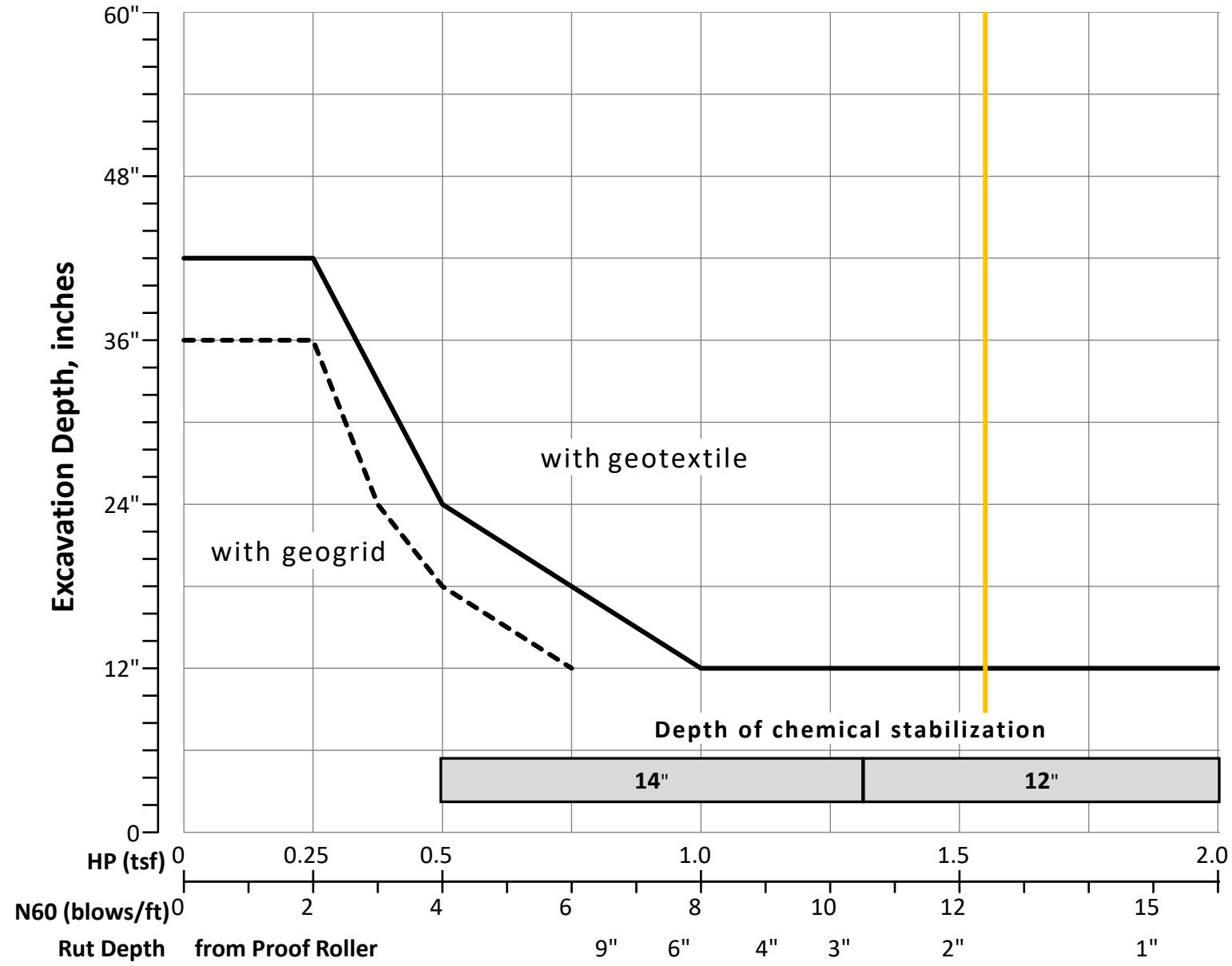
| Excavate and Replace at Surface |    |
|---------------------------------|----|
| Average                         | 0" |
| Maximum                         | 0" |
| Minimum                         | 0" |

| % Proposed Subgrade Surface |     |
|-----------------------------|-----|
| Unstable & Unsuitable       | 61% |
| Unstable                    | 60% |
| Unsuitable                  | 1%  |

|                | $N_{60}$ | $N_{60L}$ | HP   | LL | PL | PI | Silt | Clay | P 200 | $M_C$ | $M_{OPT}$ | GI |
|----------------|----------|-----------|------|----|----|----|------|------|-------|-------|-----------|----|
| <b>Average</b> | 26       | 12        | 3.76 | 39 | 19 | 19 | 35   | 41   | 76    | 18    | 16        | 12 |
| <b>Maximum</b> | 79       | 18        | 4.50 | 67 | 26 | 45 | 54   | 75   | 99    | 35    | 21        | 20 |
| <b>Minimum</b> | 7        | 7         | 1.00 | 25 | 15 | 8  | 5    | 11   | 31    | 5     | 8         | 0  |

| Classification Counts by Sample     |      |       |       |       |       |       |       |     |      |      |      |     |      |      |       |       |      |      |        |
|-------------------------------------|------|-------|-------|-------|-------|-------|-------|-----|------|------|------|-----|------|------|-------|-------|------|------|--------|
| ODOT Class                          | Rock | A-1-a | A-1-b | A-2-4 | A-2-5 | A-2-6 | A-2-7 | A-3 | A-3a | A-4a | A-4b | A-5 | A-6a | A-6b | A-7-5 | A-7-6 | A-8a | A-8b | Totals |
| <b>Count</b>                        | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0   | 1    | 18   | 0    | 0   | 67   | 61   | 0     | 69    | 0    | 0    | 216    |
| <b>Percent</b>                      | 0%   | 0%    | 0%    | 0%    | 0%    | 0%    | 0%    | 0%  | 0%   | 8%   | 0%   | 0%  | 31%  | 28%  | 0%    | 32%   | 0%   | 0%   | 100%   |
| <b>% Rock   Granular   Cohesive</b> | 0%   | 9%    |       |       |       |       |       |     |      |      |      | 91% |      |      |       |       |      |      | 100%   |
| <b>Surface Class Count</b>          | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0   | 1    | 4    | 0    | 0   | 36   | 34   | 0     | 35    | 0    | 0    | 110    |
| <b>Surface Class Percent</b>        | 0%   | 0%    | 0%    | 0%    | 0%    | 0%    | 0%    | 0%  | 1%   | 4%   | 0%   | 0%  | 33%  | 31%  | 0%    | 32%   | 0%   | 0%   | 100%   |

GB1 Figure B – Subgrade Stabilization



**OVERRIDE TABLE**

| Calculated Average | New Values | Check to Override             |
|--------------------|------------|-------------------------------|
| 3.76               | 3.50       | <input type="checkbox"/> HP   |
| 12.46              | 12.00      | <input type="checkbox"/> N60L |

Average HP —  
Average N<sub>60L</sub> —