



Subgrade Exploration Data Summary Report
LOR-90-10.76 (PID 107714)
Lorain County, Ohio
S&ME Project No. 217525

PREPARED FOR:

ODOT District 3
906 Clark Avenue
Ashland, OH 44805

PREPARED BY:

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November 20, 2023



November 20, 2023

ODOT District 3
906 Clark Avenue
Ashland, OH 44805

Attention: Mr. Nicholas Foster, PE

Reference: **Subgrade Exploration Data Summary Report (FINAL)**
LOR-90-10.76 Third Lane Widening
PID 107714 Lorain County, Ohio
S&ME Project No. 217525

Mr. Foster:

In accordance with our proposal dated August 5, 2022, which was authorized by ODOT on September 23, 2022, S&ME, Inc. (S&ME) is herewith submitting this Subgrade Exploration Data Summary report for the LOR-90-10.76 third lane widening project in Lorain County, Ohio. On October 19, 2023, ODOT District 3 notified S&ME that District 3 and the ODOT Office of Geotechnical Engineering had no comments on our draft report and concurred with the subgrade design outlined in this report.

This final report contains a description of the field and laboratory work, laboratory soil test results, an ODOT GB1 Subgrade Analysis spreadsheet, and recommendations for the design and construction of the reconstructed and widened interstate pavement. Geotechnical Profile sheets including borings performed for this Subgrade Exploration and the Structure Foundation (Noise Barrier Wall) Exploration, will be submitted under separate cover.

If you have any questions regarding this submission, please do not hesitate to contact our office.

Respectfully,

S&ME, Inc.

A blue ink signature of Brian K. Sears, consisting of stylized initials and a surname.

Brian K. Sears, P.E.
Senior Engineer | Project Manager

A blue ink signature of Richard S. Weigand, consisting of stylized initials and a surname.

Richard S. Weigand, P.E.
Principal Engineer | Senior Reviewer

Attachments: Appendices A through E

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1.0 Introduction

Based on the ODOT project scope documents and follow-up discussions with ODOT District 3 (D3), S&ME understands that this project will be completed using a design-build approach, and will include the following improvements:

- Full-depth pavement replacement for both directions of IR 90 beginning from just north of the Ohio Turnpike toll booth (near IR 90 SLM 10.76) to the merge of SR 2 and IR 90 (near IR 90 SLM 12.00), a length of approximately 1.24 miles. No additional lanes will be added to this section of IR 90.
- Full-depth pavement replacement for both directions of SR 2 from immediately west of Middle Ridge Road (SR 2 SLM 10.50) to the merge with IR 90 (SR 2 SLM 11.19), a length of approximately 0.69 miles.
- The addition of a third lane in each direction of IR-90 within the existing grass median beginning at the merge with SR 2 (IR 90 SLM 12.00) and ending immediately west of French Creek Bridge (IR 90 SLM 18.61) and slightly west of the SR 611 interchange. A short section of IR 90 from SLM 13.17 to SLM 13.57 was previously widened to three lanes and will only require resurfacing. The length of IR 90 to be widened is approximately 6.21 miles and will also undergo full-depth pavement replacement in the existing pavement, except where previously noted.
- Full-depth pavement replacement on all ramps at the SR 254 (Detroit Road) Interchange. The ramps at the SR 57 (Lorain Boulevard) and SR 611 (Colorado Avenue) interchange are not included in the scope of this exploration.
- The profile of IR 90 and the ramps at the SR 254 interchange are anticipated to remain essentially unchanged.

A Vicinity Map showing the approximate limits of this project is included as Plate 1 in Appendix A at the rear of this memo. The exploration program was being performed in accordance with the July 2022 ODOT *Specifications for Geotechnical Explorations (SGE)*.

2.0 Geology and Observations of the Project

2.1 Site Geology

This project site is in a portion of Ohio which was glaciated and within the Erie Lake Plain physiographic region. This portion of the state is characterized as an ice-age lake basin separated from modern Lake Erie by shoreline cliffs with major streams in deep gorges. Pleistocene-age lacustrine sand, silt, clay, and wave-planed glacial till over Devonian- and Mississippian-age shales and sandstones are typically present. The ODNR "Ohio Karst Areas" map indicates that this site is not in an area of known karst features. Additionally, this project is not located in an area of Ohio subject to severe slope failures, and no mapped abandoned underground mines are reported in this area.

2.2 Site Reconnaissance

Site reconnaissance visits were made by S&ME personnel on July 12, 2022, and again on October 18 through 20, 2022, to observe the project site with respect to drilling access and safety, and field mark the planned boring locations. The existing pavements appeared to be in fair to good condition, with isolated areas in poor condition.



Transverse, longitudinal, and “alligator” cracking were observed throughout the project alignment. Embankment side slopes were generally shallow (ranging from approximately 4H:1V to 6H:1V) with a section between French Creek Road and SR 611 having 2H:1V slopes on the embankment at either end of the bridge over the railroad tracks.

3.0 Exploration

3.1 Field Exploration

S&ME performed 113 subgrade borings within the limits of this roadway project between October 31, 2022, and April 7, 2023. These Type A subgrade borings were spaced approximately 400 feet apart along IR 90, SR 2 and the ramps at the SR 254 interchange. Beginning at the approximate proposed subgrade level, at least 6 feet of continuous soil SPT sampling was attempted by a drill rig using a 2-inch O.D. split-barrel sampler driven by blows from a 140-pound hammer freely falling 30 inches (Standard Penetration Test, SPT). Where auger refusal was encountered in bedrock prior to reaching the proposed boring depth, the borings were terminated, with no coring of bedrock being performed. The locations of the borings were varied between the existing inside travel lanes, the inside paved shoulders, and also in the areas of proposed widening in the existing interstate median.

Where borings were advanced through existing pavement, portable, generator driven coring machines equipped with diamond-impregnated drilling bits were used to advance most the borings through the existing pavement section. Following completion of the drilling, Bramhall Engineering and Surveying surveyed the locations of the completed borings. The approximate locations of these borings are shown on the Plan of Borings included as Plates 2A through 2K in Appendix A.

In the field, experienced personnel performed the following specific duties: preserved all recovered soil samples; prepared a log of each boring; made seepage and groundwater observations; obtained hand-penetrometer measurements in soil samples exhibiting cohesion; measured the recovered pavement cores; and coordinated with the S&ME Project Engineer so that the program of explorations could be modified, if necessary, because of unanticipated conditions. All recovered soil samples and pavement cores were transported to the laboratory of S&ME for further identification and testing.

3.2 Laboratory Testing Program

In the laboratory, a testing program was assigned and supervised by a registered Professional Engineer. In accordance with ODOT specifications, moisture content tests were performed on all recovered, representative samples and two (2) complete classification test series (Atterberg Limits and gradation) were performed on samples recovered at or just below the anticipated subgrade level in each boring. A sulfate content test was performed on a sample of soil recovered from within 3 feet of the anticipated subgrade level in each boring, and a few Loss-on-Ignition (LoI) and oven-dried/air-dried liquid limit ratio tests were performed on potentially organic soil samples. The results of these tests are reported numerically on the draft boring logs included in this submission.

The subsurface stratigraphy encountered in each boring is presented on the individual draft boring logs included as Plates 2 through 114 in Appendix B. Shown on these logs are: descriptions of the soil stratigraphy encountered; depths from which samples were preserved; sampling efforts (blow-counts) required to obtain the specimens in the borings; calculated N_{60} values for the borings; sampling depths; laboratory test results; seepage



and groundwater observations; and, values of hand-penetrometer measurements made in soil samples exhibiting cohesion. For your reference, hand-penetrometer values are roughly equivalent to the unconfined compressive strength of the cohesive fraction of the soil sample.

The soils have been classified in general accordance with Section 603 of the ODOT *SGE* and described in general accordance with Section 602. An explanation of the symbols and terms used on the boring logs, definitions of the special adjectives used to denote the minor soil components, and information pertaining to sampling and identification are presented on Plate 1 of Appendix B.

4.0 Findings

The thickness(es) and type(s) of materials measured from the recovered pavement cores are included on the log of each boring, and in the Pavement Core Summary Tables included on Plates 1 through 5 of Appendix C. Photos of recovered pavement cores are also included in Appendix C. Where encountered, the thickness of granular base material measured during drilling is also reported on the individual logs.

The borings drilled during this exploration encountered primarily cohesive soils (A-4a, A-6a, A-6b, and A-7-6) containing isolated and generally discontinuous zones of granular soil (A-1-a, A-1-b, A-3a, A-2-4, and A-2-6). A few cobbles were noted within the borings, and bedrock was encountered in six (6) borings (B-001-0-22, B-014-2-22, B-036-0-22, B-037-0-22, B-039-0-22, and B-041-0-22). Boring B-015-0-22 encountered unsuitable A-4b (silt) soil within 3 feet of the anticipated subgrade level, and Boring B-083-0-22 encountered moderately organic soil (LoI = 6%) at a depth of 5 feet. Several other borings recovered samples which were noted as being slightly organic.

The average N_{60} and N_{60L} values computed by the ODOT GB1 spreadsheet were 25 and 14 blows per foot, respectively. The average Plasticity Index was 13.

Please refer to the individual boring (Plates 2 through 114 in Appendix B) for more detailed information at each exploration location. Because of the wide spacing between explorations, inferences should not be made regarding the subsurface conditions in the areas between or away from the borings without performing additional borings or other field verification.

4.1 Groundwater Observations

During drilling, seepage or groundwater was noted in 22 borings (roughly 19% of the borings) at depths ranging from 0.3 to 6.6 feet below the existing ground surface. At the end of drilling (EOD) in seven (7) borings, water was measured at depths ranging from 1.5 to 8.0 feet, either inside the hollow-stem auger or in the bore hole after the augers had been pulled and the hole caved. No long-term groundwater measurements were obtained in any of these explorations.

4.2 Sulfate Test Results

The results of the sulfate content tests (ODOT Supplement 1122) performed on soil samples obtained near the anticipated subgrade level for this project ranged from 40 to 11,573 parts per million (ppm). Test results from twenty (20) borings measured sulfate concentrations exceeding 5,000 ppm with an additional four (4) borings



encountering concentrations exceeding 3,000 ppm. The results of these tests are provided on the boring logs and in spreadsheet format in Appendix E.

5.0 Subgrade Support and Remediation Summary

5.1 Pavement Subgrade Support Parameters

Plates 1 through 19 in Appendix D are the ODOT Subgrade Analysis spreadsheet (Ver. 14.6) created by the ODOT Office of Geotechnical Engineering (OGE). The purpose of this spreadsheet is to summarize the soil type (by ODOT/HRB classification), group indices, depth, blow-counts, Atterberg Limit and sulfate content values of the proposed subgrade soils encountered in the borings drilled for the complete pavement replacement portion of this project. This table also computes an average of the estimated California Bearing Ratio (CBR) values of the soils encountered at or below the anticipated subgrade level of the proposed roadway profile.

Based on the understanding that the surface elevation of the reconstructed pavement and widened lanes will remain relatively unchanged, the following average California Bearing Ratio (CBR) is computed by the ODOT Subgrade Analysis spreadsheet for the anticipated subgrade soils encountered during this investigation:

CBR: 6%

Based on this average value, and Section 203.1 of the ODOT *Pavement Design Manual*, the following value of Resilient Modulus (M_R) may be used during new pavement section design for this project.

M_R : 7,200 psi

Provided a global chemical subgrade stabilization program in accordance with ODOT *Construction and Materials Specifications (CMS)* Item 206 and ODOT Supplement 1120 is incorporated into this project beneath all new pavement, Section 203.4.1 of the current ODOT *Pavement Design and Rehabilitation Manual* permits the Resilient Modulus (M_{R-GCS}) value used during design of the flexible pavement to be increased by a factor of 1.36.

Based on the lab test results, S&ME recommends that a new flexible pavement, constructed on a subgrade which is globally chemically stabilized, be designed using the following improved subgrade modulus:

Resilient Modulus-Global Chemical Stabilization (M_{R-GCS}): 9,790 psi

To utilize the improved Resilient Modulus value for a globally stabilized soil subgrade (M_{R-GCS}) discussed in Section 7.2 of this report, S&ME recommends that the mixture design for the soil-cement subgrade be performed in accordance with ODOT *Construction and Material Specifications (CMS)* Item 206, including Item 206.06, "Mixture Design for Chemically Stabilized Soils." Section 600 of ODOT *Geotechnical Design Manual (GDM)* presents additional pay items for the chemical stabilization which should be included in the project plans.

These subgrade support values may be used during new pavement thickness design for this project provided that the entire proposed pavement subgrade is prepared in strict accordance with Item 204 of the ODOT *CMS*, and that all borrow soil placed within 3 feet of the final subgrade elevation of the new pavement provides average subgrade support parameters which meet or exceed the above values. Additionally, if a global chemical



stabilization program using cement as the modifier is planned, all soil placed as borrow or backfill within 2 feet of the proposed subgrade level must possess a Plasticity Index (PI) less than 20.

5.2 Subgrade Assessment

5.2.1 ODOT GB1 Analysis

Section 600 of the ODOT *GDM* provides a standard approach to performing explorations and assessing roadway subgrades. The associated spreadsheet (Ver. 14.6, updated 2/11/2022) created by the ODOT Office of Geotechnical Engineering (OGE) is used to estimate roadway subgrade support parameters and identify areas requiring remediation. The spreadsheet (see Appendix II) summarizes the soil type (by ODOT/HRB classification), group indices, depth, blow-counts, Atterberg Limit, and sulfate content values of the proposed subgrade soils encountered in the borings drilled for this project. Using this data, this spreadsheet computes an average of the estimated values of the California Bearing Ratio (CBR) for the soils encountered at or below the anticipated subgrade level of the proposed roadway profile.

The ODOT Subgrade Analysis spreadsheet also identifies subgrade soils which are “unsuitable” either by classification (A-4b, A-2-5, A-5, A-7-5, A-8a, A-8b) or if the Liquid Limit value is greater than 65%. The spreadsheet also determines if a subgrade soil may be potentially “unstable” and possibly require subgrade remediation by comparing the lab-measured moisture content to the estimated optimum moisture content of the subgrade soil, and/or by comparing the normalized blow-count (N_{60}) and the lowest N value (N_{60L}) from SPT sampling.

Based on these comparisons and correlations, the Subgrade Analysis spreadsheet provides alternative approaches to remediate and establish a stable soil subgrade using either “excavate and replace” (ODOT *Construction and Material Specifications (CMS)* Item 204) or chemical stabilization (*CMS* Item 206 and Supplement 1120). However, soils with a sulfate content above 5,000 ppm are generally prohibited from being chemically stabilized.

The subgrade remediation depths identified by the Subgrade Analysis spreadsheet presented in Appendix II are based on the conditions encountered in the borings during this subsurface investigation. However, because the required amount of remediation is dependent on the moisture content of the subgrade soil at the time of construction, Section 600 of the ODOT *GDM* states that the ultimate decision on required remediation depths and limits should be based on observations during either proofrolling or test-rolling operations.

5.2.2 Subgrade Remediation

In accordance with ODOT policy, subgrade soils for interstate-type roadways should be chemically modified. Based on the output from the ODOT Subgrade Analysis spreadsheet, S&ME recommends that a 12-inch-thick global chemical stabilization program, using cement as the admixture, be implemented to remediate the subgrade soils beneath all of the planned new pavement to be constructed as part of this project. However, soil borings within multiple portions of the alignment encountered problematic conditions that may require adjustments to a global chemical stabilization program. The following sections of this report present issues which should be considered by the design build team when planning a remediation program. The recommendations are summarized in Table 5-1 on page 7.



5.2.2.1 High Sulfate Soils

As shown in Appendix E, multiple borings encountered high sulfate content soils (above 5,000 ppm) at the approximate subgrade level. S&ME presents the following alternatives for consideration in areas with elevated sulfate contents:

- Remove the uppermost 18 inches of high-sulfate subgrade soil, and then replace it with ODOT *CMS* Item 703.16.A Natural Soil with an ODOT Classification of A-4a, A-6a, A-6b, or A-7-6 having a Plasticity Index less than 20. An ODOT Item 712.09 Type D geosynthetic fabric is not required at the bottom of the overexcavation. The bottom 6 inches of this backfill should be compacted in accordance ODOT *CMS* Item 203.07. The uppermost 12 inches of backfill should then be globally cement stabilized to a depth of 12 inches in accordance with ODOT Item 206. Performing supplemental sulfate testing near the midpoints between borings with high sulfate results may allow for reductions in the limits of this overexcavation.
- In select areas where high sulfate soils were encountered, the soils are also indicated by the Subgrade Analysis spreadsheet to be otherwise problematic (unsuitable or unstable) that would require some form of remediation. If the alternative above is not selected to allow for global chemical stabilization to occur after removing the high sulfate soils, the borings with problematic soil conditions may be remediated by excavating and replacing the existing subgrade soil to the depth indicated in the Subgrade Analysis spreadsheet in Appendix D, typically 12 inches. These excavate and replace areas should have an Item 204 Geotextile Fabric placed at the base of the excavation and backfilled with Item 204 Granular Material Type B or C, as directed in Section 608 of the ODOT *GDM*. Areas remediated by this method should not be chemically stabilized.

5.2.2.2 Unsuitable A-4b Silt

Unsuitable A-4b silt was encountered in Boring B-015-0-22 between the depths of 1.6 and 3.1 feet below the anticipated subgrade. In accordance with Section 610.1 of the ODOT *GDM*, if the global chemical stabilization is performed to a depth of 14 inches, the unsuitable silt material does not need to be removed. As such, S&ME recommends that the global cement stabilization should be increased to a depth of 14 inches where the unsuitable A-4b was encountered (see Table 5-1).

5.2.2.3 Unstable Subgrade Soil

Unstable subgrade soils (low blowcount and/or high moisture content) were encountered in B-053-0-22 requiring 24 inches of undercut and replace or chemical stabilization to a depth of 14 inches. Accordingly, S&ME recommends that the global cement stabilization should be increased to a depth of 14 inches where these unstable subgrade soils were encountered (see Table 5-1).

5.2.2.4 Shallow Bedrock Overexcavation

Bedrock was encountered within 18 inches of the proposed subgrade level in Borings B-037-0-22, B-039-0-22 and B-041-0-22, performed in the eastbound direction of IR 90. In accordance with Item 204.05 of the ODOT *CMS*, bedrock is to be overexcavated and replaced where present within 2 feet below the bottom of the new pavement section (concrete or asphalt), or within 18 inches of the bottom of a planned aggregate base layer for the pavement section, whichever is deeper. ODOT Item 712.09 Type D geosynthetic fabric is not required at the bottom of the overexcavation. This shallow bedrock overexcavation will only be necessary in the eastbound direction of IR 90.

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Following the completion of the overexcavation, the overexcavation should be backfilled with ODOT CMS Item 703.16.A Natural Soil with an ODOT Classification of A-4a, A-6a, A-6b, or A-7-6 and having a Plasticity Index less than 20. The bottom 6 inches of this backfill should be compacted in accordance ODOT CMS Item 203.07. The uppermost 12 inches of backfill should then be globally cement stabilized to a depth of 12 inches in accordance with ODOT Item 206. Also, in accordance with ODOT GDM, overexcavation of shallow bedrock needs to extend to 12 inches outside the edge of new pavement or pavement shoulders.

Table 5-1, which is being presented for ODOT’s consideration, summarizes the supplemental subgrade remediation effort required on this project prior to commencing global chemical stabilization with cement as the chemical additive.

Table 5-1 Subgrade Remediation Summary

	Estimated Station Range	Supplemental Remediation Effort	Width of Remediation	Boring(s) Included	
SR 2 WB	STA 624+35 to STA 626+35	14 inches of Cement Stabilization for Unsuitable Silt	At least 18 inches beyond the outside edge of the proposed widened pavement or paved shoulder, including beneath any curbs and gutters	B-015-0-22	
	STA 657+05 to STA 659+60	18" Overexcavation and Replacement of High Sulfate Soils		B-023-0-22	
IR 90 Mainline	STA 674+50 to STA 678+60	18" Overexcavation and Replacement of High Sulfate Soils		B-028-0-22	
	STA 733+50 EB to STA 753+55 EB	18" Shallow Bedrock Overexcavation in EB Direction		12" beyond edge of new pavement or pavement shoulders	B-037-0-22, B-039-0-22, B-041-0-22
	STA 753+55 to STA 766+55	18" Overexcavation and Replacement of High Sulfate Soils		At least 18 inches beyond the outside edge of the proposed widened pavement or paved shoulder, including beneath any curbs and gutters	B-042-0-22 through B-044-0-22
	STA 778+60 to STA 782+60	18" Overexcavation and Replacement of High Sulfate Soils			B-048-0-22
	STA 798+50 to STA 802+25	14" inches of Cement Stabilization for Unstable Soils			B-053-0-22
	STA 810+50 to STA 814+50	18" Overexcavation and Replacement of High Sulfate Soils			B-056-0-22

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	Estimated Station Range	Supplemental Remediation Effort	Width of Remediation	Boring(s) Included
IR 90 Mainline	STA 818+35 to STA 822+35	18" Overexcavation and Replacement of High Sulfate Soils	At least 18 inches beyond the outside edge of the proposed widened pavement or paved shoulder, including beneath any curbs and gutters	B-058-0-22
	STA 842+50 to STA 850+50	18" Overexcavation and Replacement of High Sulfate Soils		B-064-0-22, B-065-0-22
	STA 858+50 to STA 862+50	18" Overexcavation and Replacement of High Sulfate Soils		B-068-0-22
	STA 874+70 to STA 878+70	18" Overexcavation and Replacement of High Sulfate Soils		B-072-0-22
	STA 890+80 to STA 898+40	18" Overexcavation and Replacement of High Sulfate Soils		B-076-0-22, B-077-0-22
	STA 918+65 to End of Project	18" Overexcavation and Replacement of High Sulfate Soils		B-083-0-22 through B-098-0-22

S&ME recommends the pavement subgrade for all portions of this project not included in the above table be globally stabilized in accordance with ODOT CMS Item 206 to a depth of 12 inches below the anticipated subgrade level, and extending to at least 18 inches outside the outside edge of the proposed widened pavement or paved shoulder, including beneath any curbs and gutters. Additionally, any borrow soil placed within 14 inches of the proposed subgrade level should consist of ODOT CMS Item 703.16.A Natural Soil with an ODOT Classification of A-4a, A-6a, A-6b, or A-7-6, and having a Plasticity Index less than 20.

6.0 Final Considerations

The contents of this data report are also based on the subsurface conditions as they existed at the time of our field investigation, and further on the assumption that the exploratory borings are representative of actual subsurface conditions throughout the area investigated. It should be noted that actual subsurface conditions between and beyond the borings might differ from those encountered at the boring locations.

This report has been prepared in accordance with generally accepted geotechnical engineering practice for specific application to this project. The conclusions and recommendations contained in this report are based upon applicable standards of our practice in this geographic area at the time this report was prepared. No other representation or warranty either express or implied, is made.



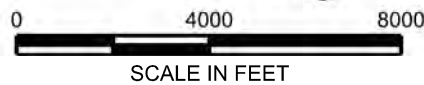
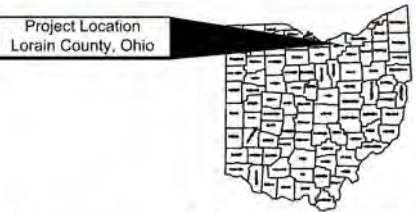
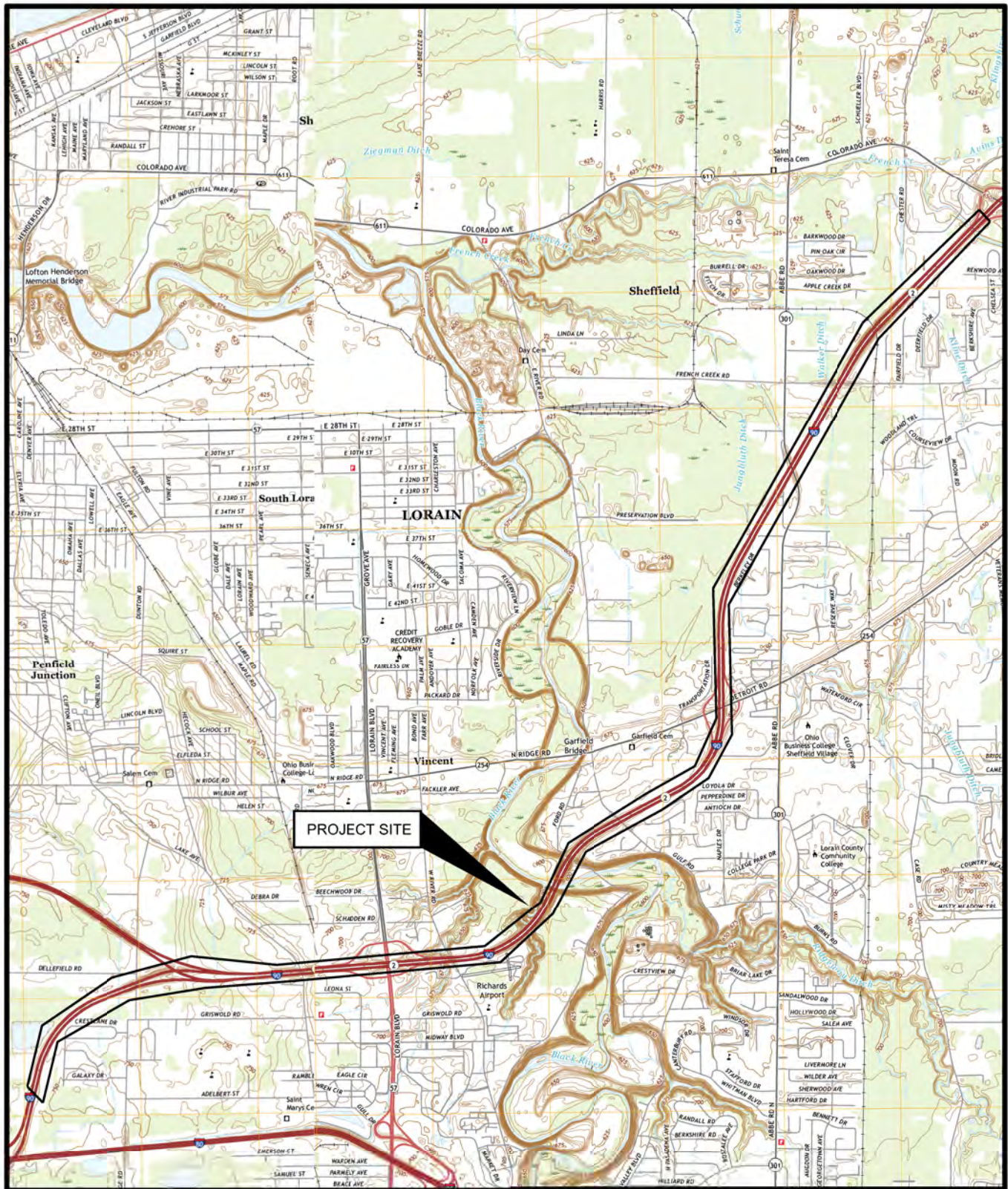
We relied on project information given to us to develop our conclusions and recommendations. If project information described in this report is not accurate, or if it changes during project development, we should be notified of the changes so that we can modify our recommendations based on this additional information if necessary.

Our conclusions and recommendations are based on limited data from a field exploration program. Subsurface conditions can vary widely between explored areas. Some variations may not become evident until construction. If conditions are encountered which appear different than those described in our report, we should be notified. This report should not be construed to represent subsurface conditions for the entire site.

Unless specifically noted otherwise, our field exploration program did not include an assessment of regulatory compliance, environmental conditions or pollutants or presence of any biological materials (mold, fungi, bacteria). If there is a concern about these items, other studies should be performed. S&ME can provide a proposal and perform these services if requested.



Appendix A



SCALE IN FEET

Vicinity Map

LOR-90-10.76 Subgrade Exploration
Lorain County, OH


Project: 217525
Drawing Date: 05-04-2023
Revision Date: 05-04-2023
Drawn By: MAK
Approved By: BKS
Scale: GRAPHIC

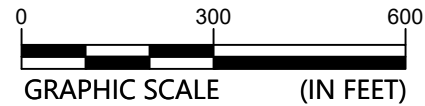
WWW.SMEINC.COM

Drawing path: T:\Columbus-1170\Projects\2021\217525_ODOT D3_LOR-90-10.76 Geotechnical_Sheffield OH\4 GEO\CAD\Construction\Plan of Borings.dwg



LEGEND

 B-001-0-22 BORING NUMBER AND LOCATION



PLAN OF BORINGS

LOR-90-10.76 THIRD LANE WIDENING
SUBGRADE EXPLORATION
LORAIN COUNTY, OHIO


SCALE:
SEE GRAPHIC
DATE:
05-04-2023
PROJECT NUMBER
217525
FIGURE NO.


2A


Drawing path: T:\Columbus-1170\Projects\2021\217525_ODOT D3_LOR-90-10.76 Geotechnical_Sheffield OH\4 GEO\CAD\Construction\Plan of Borings.dwg



LEGEND

 B-001-0-22 BORING NUMBER AND LOCATION

 N

 0 300 600
GRAPHIC SCALE (IN FEET)



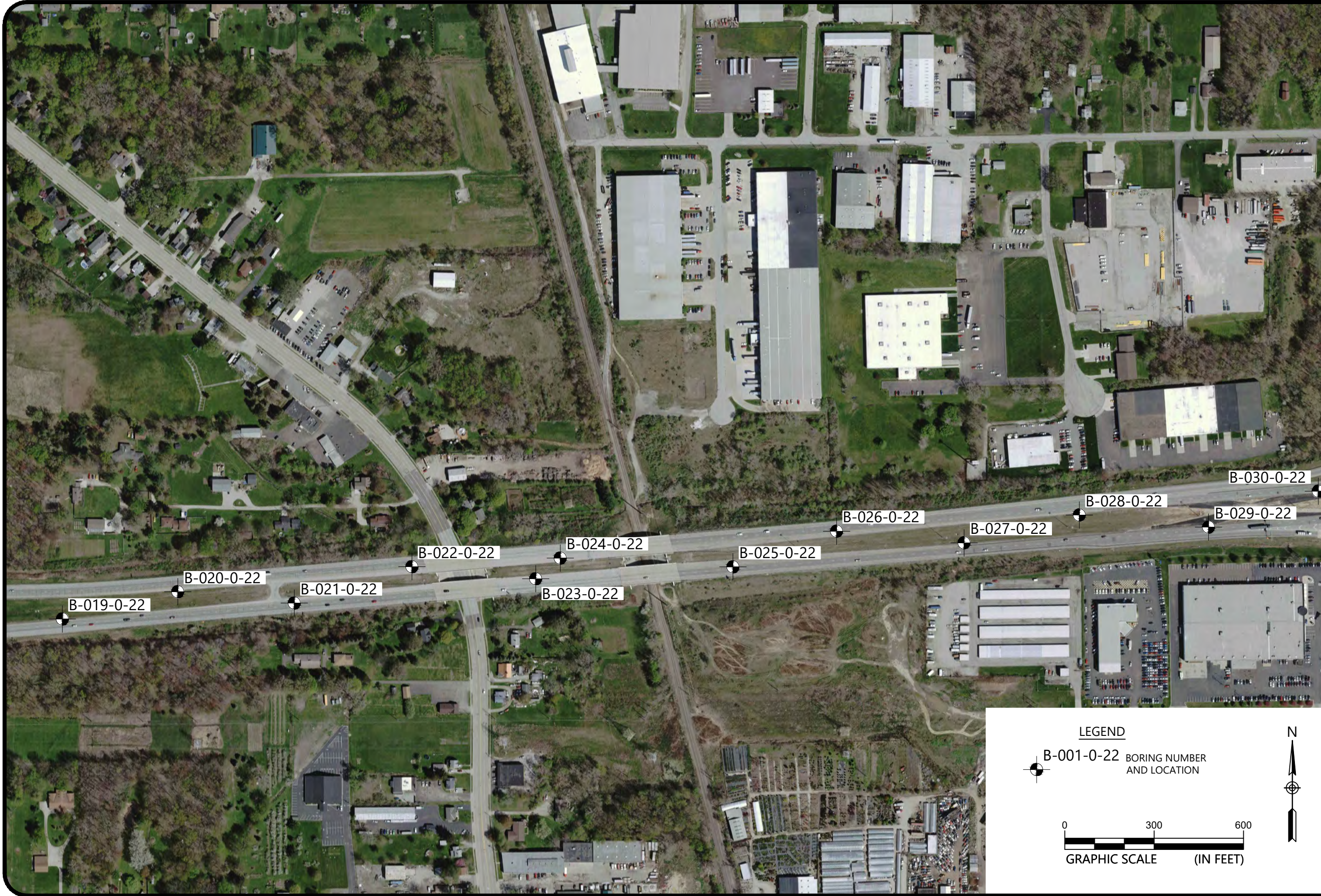
PLAN OF BORINGS

LOR-90-10.76 THIRD LANE WIDENING
SUBGRADE EXPLORATION
LORAIN COUNTY, OHIO

SCALE:	SEE GRAPHIC
DATE:	05-04-2023
PROJECT NUMBER	217525
FIGURE NO.	


2B

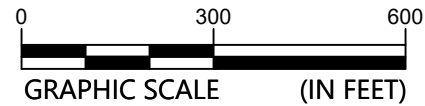
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PLAN OF BORINGS

LOR-90-10.76 THIRD LANE WIDENING
 SUBGRADE EXPLORATION
 LORAIN COUNTY, OHIO

LEGEND
 B-001-0-22 BORING NUMBER AND LOCATION



SCALE:	SEE GRAPHIC
DATE:	05-04-2023
PROJECT NUMBER	217525
FIGURE NO.	

2C

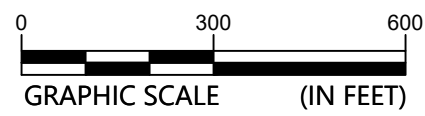
Drawing path: T:\Columbus-1170\Projects\2021\217525_ODOT D3_LOR-90-10.76 Geotechnical_Sheffield OH\4 GEO\CAD\Construction\Plan of Borings.dwg



PLAN OF BORINGS

LOR-90-10.76 THIRD LANE WIDENING
 SUBGRADE EXPLORATION
 LORAIN COUNTY, OHIO

LEGEND
 B-001-0-22 BORING NUMBER AND LOCATION



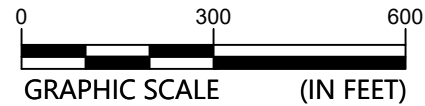
SCALE:	SEE GRAPHIC
DATE:	05-04-2023
PROJECT NUMBER	217525
FIGURE NO.	

2D

Drawing path: T:\Columbus-1170\Projects\2021\217525_ODOT D3_LOR-90-10.76 Geotechnical_Sheffield OH\4 GEO\CAD\Construction\Plan of Borings.dwg



LEGEND
 B-001-0-22 BORING NUMBER AND LOCATION



PLAN OF BORINGS

LOR-90-10.76 THIRD LANE WIDENING
 SUBGRADE EXPLORATION
 LORAIN COUNTY, OHIO

SCALE:	SEE GRAPHIC
DATE:	05-04-2023
PROJECT NUMBER	217525
FIGURE NO.	

2E

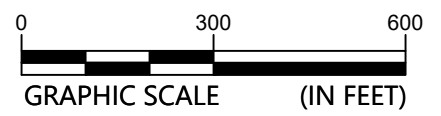
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PLAN OF BORINGS

LOR-90-10.76 THIRD LANE WIDENING
 SUBGRADE EXPLORATION
 LORAIN COUNTY, OHIO

LEGEND
 B-001-0-22 BORING NUMBER AND LOCATION



SCALE:	SEE GRAPHIC
DATE:	05-04-2023
PROJECT NUMBER	217525
FIGURE NO.	

2F

Drawing path: T:\Columbus-1170\Projects\2021\217525_ODOT D3_LOR-90-10.76 Geotechnical_Sheffield OH\4 GEO\CAD\Construction\Plan of Borings.dwg



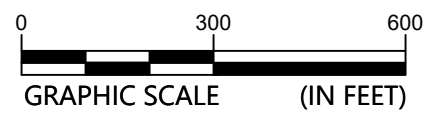
PLAN OF BORINGS

LOR-90-10.76 THIRD LANE WIDENING
 SUBGRADE EXPLORATION
 LORAIN COUNTY, OHIO

SCALE:	SEE GRAPHIC
DATE:	05-04-2023
PROJECT NUMBER	217525
FIGURE NO.	


2G

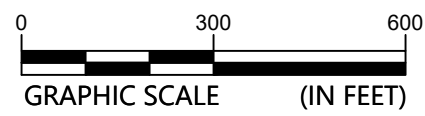
LEGEND
 B-001-0-22 BORING NUMBER AND LOCATION



Drawing path: T:\Columbus-1170\Projects\2021\217525_ODOT D3_LOR-90-10.76 Geotechnical_Sheffield OH\4 GEO\CAD\Construction\Plan of Borings.dwg



LEGEND
 B-001-0-22 BORING NUMBER AND LOCATION



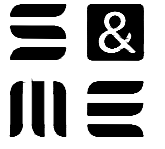
PLAN OF BORINGS

LOR-90-10.76 THIRD LANE WIDENING
 SUBGRADE EXPLORATION
 LORAIN COUNTY, OHIO

SCALE:	SEE GRAPHIC
DATE:	05-04-2023
PROJECT NUMBER	217525
FIGURE NO.	

2H

Drawing path: T:\Columbus-1170\Projects\2021\217525_ODOT D3_LOR-90-10.76 Geotechnical_Sheffield OH\4 GEO\CAD\Construction\Plan of Borings.dwg




PLAN OF BORINGS

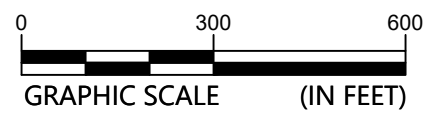
LOR-90-10.76 THIRD LANE WIDENING
 SUBGRADE EXPLORATION
 LORAIN COUNTY, OHIO

SCALE:	SEE GRAPHIC
DATE:	05-04-2023
PROJECT NUMBER	217525
FIGURE NO.	

21

LEGEND

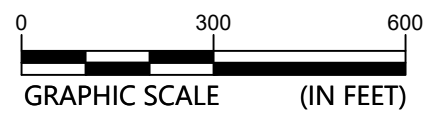
 B-001-0-22 BORING NUMBER AND LOCATION



Drawing path: T:\Columbus-1170\Projects\2021\217525_ODOT D3_LOR-90-10.76 Geotechnical_Sheffield OH\4 GEO\CAD\Construction\Plan of Borings.dwg



LEGEND
 B-001-0-22 BORING NUMBER AND LOCATION



PLAN OF BORINGS

LOR-90-10.76 THIRD LANE WIDENING
 SUBGRADE EXPLORATION
 LORAIN COUNTY, OHIO

SCALE:	SEE GRAPHIC
DATE:	05-04-2023
PROJECT NUMBER	217525
FIGURE NO.	

2J

Drawing path: T:\Columbus-1170\Projects\2021\217525_ODOT D3_LOR-90-10.76 Geotechnical_Sheffield OH\4 GEO\CAD\Construction\Plan of Borings.dwg




PLAN OF BORINGS

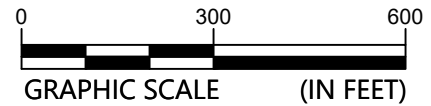
LOR-90-10.76 THIRD LANE WIDENING
 SUBGRADE EXPLORATION
 LORAIN COUNTY, OHIO

SCALE:	SEE GRAPHIC
DATE:	05-04-2023
PROJECT NUMBER	217525
FIGURE NO.	

2K

LEGEND

 B-001-0-22 BORING NUMBER AND LOCATION





Important Information About Your Geotechnical Engineering Report

Variations in subsurface conditions can be a principal cause of construction delays, cost overruns and claims. The following information is provided to assist you in understanding and managing the risk of these variations.

Geotechnical Findings Are Professional Opinions

Geotechnical engineers cannot specify material properties as other design engineers do. Geotechnical material properties have a far broader range on a given site than any manufactured construction material, and some geotechnical material properties may change over time because of exposure to air and water, or human activity.

Site exploration identifies subsurface conditions at the time of exploration and only at the points where subsurface tests are performed or samples obtained. Geotechnical engineers review field and laboratory data and then apply their judgment to render professional opinions about site subsurface conditions. Their recommendations rely upon these professional opinions. Variations in the vertical and lateral extent of subsurface materials may be encountered during construction that significantly impact construction schedules, methods and material volumes. While higher levels of subsurface exploration can mitigate the risk of encountering unanticipated subsurface conditions, no level of subsurface exploration can eliminate this risk.

Geotechnical Findings Are Professional Opinions

Professional geotechnical engineering judgment is required to develop a geotechnical exploration scope to obtain information necessary to support design and construction. A number of unique project factors are considered in developing the scope of geotechnical services, such as the exploration objective; the location, type, size and weight of the proposed structure; proposed site grades and improvements; the construction schedule and sequence; and the site geology.

Geotechnical engineers apply their experience with construction methods, subsurface conditions and exploration methods to develop the exploration scope. The scope of each exploration is unique based on available project and site information. Incomplete project information or constraints on the scope of exploration increases the risk of variations in subsurface conditions not being identified and addressed in the geotechnical report.

Services Are Performed for Specific Projects

Because the scope of each geotechnical exploration is unique, each geotechnical report is unique. Subsurface conditions are explored and recommendations are made for a specific project.

Subsurface information and recommendations may not be adequate for other uses. Changes in a proposed structure location, foundation loads, grades, schedule, etc. may require additional geotechnical exploration, analyses, and consultation. The geotechnical engineer should be consulted to determine if additional services are required in response to changes in proposed construction, location, loads, grades, schedule, etc.

Geo-Environmental Issues

The equipment, techniques, and personnel used to perform a geo-environmental study differ significantly from those used for a geotechnical exploration. Indications of environmental contamination may be encountered incidental to performance of a geotechnical exploration but go unrecognized. Determination of the presence, type or extent of environmental contamination is beyond the scope of a geotechnical exploration.

Geotechnical Recommendations Are Not Final

Recommendations are developed based on the geotechnical engineer's understanding of the proposed construction and professional opinion of site subsurface conditions. Observations and tests must be performed during construction to confirm subsurface conditions exposed by construction excavations are consistent with those assumed in development of recommendations. It is advisable to retain the geotechnical engineer that performed the exploration and developed the geotechnical recommendations to conduct tests and observations during construction. This may reduce the risk that variations in subsurface conditions will not be addressed as recommended in the geotechnical report.



Appendix B

EXPLANATION OF SYMBOLS AND TERMS USED ON BORING LOGS FOR SAMPLING AND DESCRIPTION OF SOIL

SAMPLING DATA

- █ - Indicates sample was attempted within this depth interval.
- 2 - The number of blows required for each 6-inch increment of penetration of a "Standard" 2-inch O.D. split-barrel sampler, driven a distance of 18 inches by a 140-pound hammer freely falling 30 inches (SPT). The raw "blowcount" or "N" is equal to the sum of the second and third 6-inch increments of penetration.
- 3
- 5
- N₆₀ - Corrected Blowcount = [(Drill Rod Energy Ratio) / (0.60 Standard)] X N
- SS - Split-barrel sampler, any size.
- ST - Shelby tube sampler, 3" O.D., hydraulically pushed.
- R - Refusal of sampler in very-hard or dense soil, or on a resistant surface.
- 50-4" - Number of blows (50) to drive a split-barrel sampler a certain distance (4 inches), other than the normal 6-inch increment.

DEPTH DATA

- W - Depth of water or seepage encountered during drilling.
- ▽ - Depth to water in boring at the end of drilling (EOD).
- ▼ 5 days - Depth to water in monitoring well or piezometer in boring a certain number of days (5) after termination of drilling.
- TR - Depth to top of rock.

SOIL DESCRIPTIONS

Soils have been classified in general accordance with Section 603 of the most recent ODOT SGE, and described in general accordance with Section 602, including the use of special adjectives to designate approximate percentages of minor components as follows:

<u>Adjective</u>	<u>Percent by Weight</u>
trace	1 to 10
little	10 to 20
some	20 to 35
"and"	35 to 50

The following terms are used to describe density and consistency of soils:

<u>Term (Granular Soils)</u>	<u>Blows per foot (N₆₀)</u>
Very-loose	Less than 5
Loose	5 to 10
Medium-dense	11 to 30
Dense	31 to 50
Very-dense	Over 50
<u>Term (Cohesive Soils)</u>	<u>Qu (tsf)</u>
Very-soft	Less than 0.25
Soft	0.25 to 0.5
Medium-stiff	0.5 to 1.0
Stiff	1.0 to 2.0
Very-stiff	2.0 to 4.0
Hard	Over 4.0

S&ME ODOT SULFATE (8.5X11) - SGE 01/10/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / P. TUTTLE	DRILL RIG: S&ME CME 550X (R50)	STATION / OFFSET: 574+85, 36' RT	EXPLORATION ID: B-001-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / M. TORRES	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE - WEST	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 3/4/21	ELEVATION: 751.8 (MSL) EOB: 5.8 ft.	PAGE: 1 OF 1
START: 10/31/22 END: 10/31/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 78.7	LAT / LONG: 41.396094 N, 82.158782 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI					
ASPHALT - 3 INCHES	751.5																			
CONCRETE - 11-1/4 INCHES	750.6	1																		
GRANULAR BASE - 9 INCHES	749.9	2																		
Hard brown to dark brown SILT AND CLAY , little fine to coarse sand, little fine to coarse gravel, damp.	748.3	3	4	8	26	100	SS-1	4.5+	11	4	16	42	27	28	16	12	13	A-6a (8)	1173	
Hard brown to gray SANDY SILT , little clay, little fine to coarse sand, "and" fine to coarse gravel, damp.	746.3	4	13	10	42	67	SS-2	4.5+	41	5	13	27	14	24	16	8	9	A-4a (1)	-	
SHALE , brown and gray, was severely weathered, weak, fragmented, dry.	746.0	5	20	10		100	SS-3A SS-3B	-	-	-	-	-	-	-	-	-	-	8	A-4a (V) Rock (V)	-

NOTES:

- No groundwater encountered during drilling.
- Recovered pavement core was placed in hole and covered with cold-patch asphalt.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

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S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 578+63, 45' LT	EXPLORATION ID B-002-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / T. FROST	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE - WEST	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 751.0 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1
START: 3/1/23 END: 3/1/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.397153 N, 82.158670 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI					
ASPHALT - 6-1/2 INCHES	750.5																			
CONCRETE - 9-1/4 INCHES	749.7	W 749.5																		
GRANULAR BASE - 6 INCHES	749.2																			
Very-stiff to hard brown SANDY SILT , some clay, little fine gravel, moist.			7			SS-1A	-	-	-	-	-	-	-	-	-	-	-	-	A-1-a (V)	
			8	17	100	SS-1B	3.5	17	10	13	38	22	23	15	8	14			A-4a (5)	593
			4			SS-2	3.0	12	12	14	35	27	25	16	9	14			A-4a (5)	-
			8	14	39															
			5			SS-3	4.5	-	-	-	-	-	-	-	-	-	13		A-4a (V)	-
		745.0	15	27	100															
Hard brown to gray SANDY SILT , "and" fine gravel, some clay, damp.			20			SS-4	4.5	-	-	-	-	-	-	-	-	-	7		A-4a (V)	-
		743.5	21	48	89															
		EOB																		

NOTES:

- Encountered seepage at 1.5'.
- Boring caved at 5.5' after removing augers and was dry.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

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S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / P. TUTTLE	DRILL RIG: S&ME CME 550X (R50)	STATION / OFFSET: 582+95, 45' RT	EXPLORATION ID B-003-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / M. TORRES	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE - WEST	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 3/4/21	ELEVATION: 749.5 (MSL) EOB: 8.0 ft.	PAGE 1 OF 1
START: 10/31/22 END: 10/31/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 78.7	LAT / LONG: 41.398131 N, 82.157720 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 6 INCHES	749.5																		
CONCRETE - 10-1/4 INCHES	748.1	1																	
GRANULAR BASE - 7 INCHES	747.5	2																	
Very-stiff to hard dark brown SANDY SILT , some clay, trace fine to coarse gravel, few shale fragments, damp.		3	2	13	100	SS-1	-	8	7	15	42	28	26	16	10	13	A-4a (7)	933	
		4	7	26	100	SS-2	-	-	-	-	-	-	-	-	-	13	A-4a (V)	-	
		5	9	20	-	100	SS-3	-	20	8	16	39	17	22	15	7	8	A-4a (4)	-
		6	35 50-2"																
Stiff brown CLAY , some silt, trace to little fine to coarse sand, trace fine gravel, damp.	743.0	7	2	9	100	SS-4	1.25	-	-	-	-	-	-	-	-	28	A-7-6 (V)	-	
	741.5	8	4	3															
		EOB																	

NOTES:

- No water was encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: <u>LOR-90-10.76</u>	DRILLING FIRM / OPERATOR: <u>S&ME / T. FROST</u>	DRILL RIG: <u>S&ME ATV D50 (R61)</u>	STATION / OFFSET: <u>586+79, 45' LT</u>	EXPLORATION ID B-004-0-22
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>S&ME / T. FROST</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>IR 90 MAINLINE - WEST</u>	
PID: <u>107714</u> BR ID: <u>N/A</u>	DRILLING METHOD: <u>4-1/2" CFA</u>	CALIBRATION DATE: <u>6/7/22</u>	ELEVATION: <u>749.0 (MSL)</u> EOB: <u>7.5 ft.</u>	PAGE 1 OF 1
START: <u>3/1/23</u> END: <u>3/1/23</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>69.8</u>	LAT / LONG: <u>41.399149 N, 82.157242 W</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI					
ASPHALT - 6-1/2 INCHES	748.5																			
CONCRETE - 9-1/4 INCHES	747.7	1																		
GRANULAR BASE - 6 INCHES	747.2																			
Stiff to very-stiff brown SANDY SILT , some clay, little fine gravel, damp.	746.0	2	4	10	44	SS-1A	-	-	-	-	-	-	-	-	-	A-1-a (V)	-			
Very-stiff brown SILT AND CLAY , some fine to coarse sand, little fine gravel, damp.		3	4	5		SS-1B	2.0	11	7	13	39	30	26	16	10	14	A-4a (7)	573		
		4	4	7	13	39	SS-2	2.0	17	7	14	37	25	28	16	12	14	A-6a (6)	-	
		5	6	7	20	100	SS-3	3.0	-	-	-	-	-	-	-	-	13	A-6a (V)	-	
		6	12	10																
		7	14	17	36	100	SS-4	3.0	-	-	-	-	-	-	-	-	8	A-6a (V)	-	
	741.5	EOB																		

NOTES:

- Boring caved at 5.4' after removing augers and was dry.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / P. TUTTLE	DRILL RIG: S&ME CME 550X (R50)	STATION / OFFSET: 590+98, 46' RT	EXPLORATION ID B-005-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / M. TORRES	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE - WEST	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 3/4/21	ELEVATION: 747.6 (MSL) EOB: 8.0 ft.	PAGE 1 OF 1
START: 10/31/22 END: 10/31/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 78.7	LAT / LONG: 41.399859 N, 82.155998 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 6-1/2 INCHES	747.1																		
CONCRETE - 9-1/2 INCHES	746.3	1																	
GRANULAR BASE - 8 INCHES	745.6	2																	
Hard brown to gray SANDY SILT , some clay, little fine to coarse gravel, damp.	744.1	3	9	17	34	100	SS-1	4.5+	20	6	15	35	24	24	15	9	10	A-4a (5)	340
Hard brown mottled with gray SILTY CLAY , little fine to coarse sand, trace fine gravel, damp.	742.6	4	6	6	17	100	SS-2	4.5+	1	3	16	44	36	38	20	18	19	A-6b (11)	-
Very-stiff to hard brown mottled with gray CLAY , some silt, little fine to coarse sand, trace fine gravel, damp.		5	7	7	22	100	SS-3	4.5+	-	-	-	-	-	-	-	-	23	A-7-6 (V)	-
	739.6	6	3	7	10														
		7	5	5	16	100	SS-4	2.5-4.5	-	-	-	-	-	-	-	-	26	A-7-6 (V)	-
		8	7	7															

NOTES:

- No groundwater was encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

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S&ME JOB: 217525



PROJECT: <u>LOR-90-10.76</u>	DRILLING FIRM / OPERATOR: <u>S&ME / T. FROST</u>	DRILL RIG: <u>S&ME ATV D50 (R61)</u>	STATION / OFFSET: <u>594+67, 45' LT</u>	EXPLORATION ID B-006-0-22
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>S&ME / T. FROST</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>IR 90 MAINLINE - WEST</u>	
PID: <u>107714</u> BR ID: <u>N/A</u>	DRILLING METHOD: <u>4-1/2" CFA</u>	CALIBRATION DATE: <u>6/7/22</u>	ELEVATION: <u>747.0 (MSL)</u> EOB: <u>7.5 ft.</u>	PAGE 1 OF 1
START: <u>3/1/23</u> END: <u>3/1/23</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>69.8</u>	LAT / LONG: <u>41.400715 N, 82.155208 W</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 6-1/2 INCHES	747.0																		
CONCRETE - 9-1/2 INCHES	746.5	1																	
GRANULAR BASE - 7-1/2 INCHES	745.2	2	4			SS-1A	-	-	-	-	-	-	-	-	-	-	-	A-1-a (V)	
Very-stiff brown SILT AND CLAY , little fine to coarse sand, some fine to coarse gravel damp.	741.0	3	6	18	28	72	SS-1B	3.0	31	8	12	29	20	28	17	11	15	A-6a (3)	633
		4	10	8	23	39	SS-2	-	35	5	11	34	15	25	14	11	11	A-6a (3)	-
		5	6	4	9	100	SS-3	2.5	-	-	-	-	-	-	-	-	-	12	A-6a (V)
Very-stiff brown SILTY CLAY , little fine to coarse sand, trace fine gravel damp.	739.5	6	5	4															
		7	8	11	22	100	SS-4	2.0-4.0	-	-	-	-	-	-	-	-	20	A-6b (V)	-

NOTES:

- No groundwater was encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

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S&ME JOB: 217525



PROJECT: <u>LOR-90-10.76</u>	DRILLING FIRM / OPERATOR: <u>S&ME / P. TUTTLE</u>	DRILL RIG: <u>S&ME CME 550X (R50)</u>	STATION / OFFSET: <u>598+86, 45' RT</u>	EXPLORATION ID B-007-0-22
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>S&ME / M. TORRES</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>IR 90 MAINLINE - WEST</u>	
PID: <u>107714</u> BR ID: <u>N/A</u>	DRILLING METHOD: <u>4-1/2" CFA</u>	CALIBRATION DATE: <u>3/4/21</u>	ELEVATION: <u>745.7 (MSL)</u> EOB: <u>8.0 ft.</u>	PAGE 1 OF 1
START: <u>10/31/22</u> END: <u>10/31/22</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>78.7</u>	LAT / LONG: <u>41.401144 N, 82.153756 W</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 6-1/4 INCHES	745.2																		
CONCRETE - 9 INCHES	744.4	1																	
GRANULAR BASE - 8 INCHES	743.7	2																	
Hard dark-brown SANDY SILT , some fine to coarse sand, trace fine to coarse gravel, damp. - few cobbles below 3.5', damp.		3	8	25	100	SS-1	4.5+	10	6	16	41	27	25	15	10	10	A-4a (7)	293	
		4	10	8	20	SS-2	4.5+	-	-	-	-	-	-	-	-	13	A-4a (V)	-	
	740.7	5	7	7	18	SS-3	2.0 - 3.25	1	2	15	42	40	46	17	29	24	A-7-6 (17)	-	
Very-stiff dark-brown mottled with gray CLAY , "and" silt, little fine to coarse sand, trace fine gravel, damp.	739.2	6	7	7	18	SS-3	2.0 - 3.25	1	2	15	42	40	46	17	29	24	A-7-6 (17)	-	
Very-dense gray GRAVEL WITH SAND, SILT AND CLAY , damp.	737.7	7	17	27	77	SS-4	-	-	-	-	-	-	-	-	-	12	A-2-6 (V)	-	
		8	27	32	77	SS-4	-	-	-	-	-	-	-	-	-	12	A-2-6 (V)	-	
		EOB																	

NOTES:

- No groundwater encountered during drilling.
- Recovered pavement core was placed in hole and covered with cold-patch asphalt.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 602+98, 44' LT	EXPLORATION ID: B-008-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / T. FROST	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE - WEST	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 744.8 (MSL) EOB: 7.5 ft.	PAGE: 1 OF 1
START: 3/1/23 END: 3/1/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.401848 N, 82.152542 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 6-3/4 INCHES	744.3																		
CONCRETE - 9-1/4 INCHES	743.5	1																	
GRANULAR BASE - 2 INCHES	743.3																		
Medium-dense brown GRAVEL WITH SAND, SILT AND CLAY , damp.	741.8	2	9	30	100	SS-1	-	52	7	8	18	15	28	16	12	12	A-2-6 (0)	647	
Very-dense brown SANDY SILT , little clay, some fine gravel, damp.	740.3	3	12	54	100	SS-2	-	34	10	19	26	11	NP	NP	NP	9	A-4a (0)	-	
Stiff to very-stiff dark-brown and black CLAY , some silt, trace fine to coarse sand, trace fine gravel, slight organic odor (LOI = 1.7%), moist.	740.3	4	23	17	100	SS-3	1.5-3.0	-	-	-	-	-	-	-	-	41	A-7-6 (V)	-	
	737.3	5	8	16	100	SS-4	1.0-3.0	-	-	-	-	-	-	-	-	23	A-7-6 (V)	-	
		6	7																
		7	7																

NOTES:

- No groundwater was encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

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S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / P. TUTTLE	DRILL RIG: S&ME ATV D50 (R80)	STATION / OFFSET: 606+89, 45' RT	EXPLORATION ID B-009-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / M. TORRES	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE - WEST	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/6/22	ELEVATION: 748.1 (MSL) EOB: 8.0 ft.	PAGE 1 OF 1
START: 10/31/22 END: 11/1/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 85.4	LAT / LONG: 41.402005 N, 82.151092 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI					
ASPHALT - 3 INCHES	747.8																			
CONCRETE - 9-1/2 INCHES	747.1	W 746.6																		
GRANULAR BASE - 8 INCHES	746.4																			
Very-stiff to hard brown and dark-brown SILT AND CLAY , little to some fine to coarse sand, trace to some fine to coarse gravel, damp. @ 5.5' possible cobble encountered			4																	
			8	13	67	SS-1	4.5+	25	3	6	49	17	27	15	12	10	A-6a (7)	320		
			5	7	20	44	SS-2	4.5+	6	6	16	40	32	28	15	13	13	A-6a (9)	-	
			4	7	7															
			4	7	21	44	SS-3	2.75 - 3.25	-	-	-	-	-	-	-	-	17	A-6a (V)	-	
			10	7	19	100	SS-4	2.75 - 4.0	-	-	-	-	-	-	-	-	15	A-6a (V)	-	
	740.1	EOB	6																	

NOTES:

- Encountered seepage at 1.5' during drilling
- Boring caved at 5.5' after removing augers and was dry.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

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S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 610+83, 45' LT	EXPLORATION ID B-010-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / T. FROST	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE - WEST	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 757.2 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1
START: 3/1/23 END: 3/1/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.402623 N, 82.149866 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 4-1/2 INCHES	756.8																		
CONCRETE - 9-1/4 INCHES	756.1	1																	
GRANULAR BASE - 5 INCHES	755.7	2	4																
Very-stiff brown SILT AND CLAY , trace to little fine to coarse sand, little fine gravel, damp.	754.2	3	4	15	100	SS-1	2.5	16	5	15	35	29	29	14	15	16	A-6a (8)	480	
Very-dense brown GRAVEL WITH SAND AND SILT , trace clay, damp.	752.7	4	8	20	60	SS-2	-	53	7	9	23	8	22	17	5	7	A-2-4 (0)	-	
Very-stiff brown SILT AND CLAY , little fine to coarse sand, trace to little fine gravel, damp.		5	19	8	17	SS-3	3.0	-	-	-	-	-	-	-	-	17	A-6a (V)	-	
		6	12	8	7														
	749.7	7	8	16	100	SS-4	3.0	-	-	-	-	-	-	-	-	12	A-6a (V)	-	
		EOB	6																

NOTES:

- No ground water was encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/10/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / P. TUTTLE	DRILL RIG: S&ME ATV D50 (R80)	STATION / OFFSET: 615+14, 20' LT	EXPLORATION ID B-011-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / M. TORRES	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 EASTBOUND	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/6/22	ELEVATION: 762.9 (MSL) EOB: 8.0 ft.	PAGE 1 OF 1
START: 10/31/22 END: 11/1/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 85.4	LAT / LONG: 41.402778 N, 82.148258 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO ₄ ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 4-1/4 INCHES	762.6																		
CONCRETE - 10-1/4 INCHES	761.7	1																	
GRANULAR BASE - 8 INCHES	761.0	2	4																
Hard dark brown SANDY SILT , little to some clay, little to some fine to coarse gravel, damp.		3	8 21	41	39	SS-1	4.5+	-	-	-	-	-	-	-	7	A-4a (V)	400		
		4	10 14	31	100	SS-2	4.5+	22	6	19	34	19	24	16	8	11	A-4a (4)	-	
		5	5																
		6	8 12	28	100	SS-3	4.5+	15	8	13	37	27	24	14	10	11	A-4a (6)	-	
	7	10 11	40	100	SS-4	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	-		
	754.9	EOB	17																

NOTES:

- No groundwater encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2657\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 618+95, 3' LT	EXPLORATION ID B-012-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / T. FROST	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 WESTBOUND	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 772.5 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1
START: 3/1/23 END: 3/1/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.403418 N, 82.147102 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 6-1/2 INCHES	772.0																		
CONCRETE - 9-1/2 INCHES	771.2	1																	
GRANULAR BASE - 8 INCHES	770.5	2	8			SS-1A	-	-	-	-	-	-	-	-	-	-	A-1-a (V)	-	
Medium-dense brown GRAVEL WITH SAND AND SILT , little clay, damp.	769.5	3	10	21	100	SS-1B	-	44	10	12	22	12	NP	NP	NP	12	A-2-4 (0)	593	
Very-stiff brown SANDY SILT , some fine to coarse gravel, little clay, damp.		4	18	36	100	SS-2	2.0	22	10	16	36	16	24	17	7	13	A-4a (3)	-	
		5	15	28	100	SS-3	3.0	-	-	-	-	-	-	-	-	-	11	A-4a (V)	-
		6	13	9															
		7	11	15	30	100	SS-4	4.0	-	-	-	-	-	-	-	-	11	A-4a (V)	-
	765.0	EOB																	

NOTES:

- No groundwater encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2657\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / P. TUTTLE	DRILL RIG: S&ME ATV D50 (R80)	STATION / OFFSET: 622+83, 21' LT	EXPLORATION ID B-013-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / M. TORRES	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 EASTBOUND	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/6/22	ELEVATION: 758.9 (MSL) EOB: 8.0 ft.	PAGE 1 OF 1
START: 11/1/22 END: 11/1/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 85.4	LAT / LONG: 41.403168 N, 82.145496 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 6-1/2 INCHES	758.4																		
CONCRETE - 9-1/2 INCHES	757.6	1																	
GRANULAR BASE - 8 INCHES	756.9	2																	
Hard brown to dark brown SILT AND CLAY , some fine to coarse sand, little fine to coarse gravel, trace to , damp.	753.9	3	1	6	20	67	SS-1	4.5+	14	4	20	37	25	29	15	14	15	A-6a (7)	40
		4	10	13	38	100	SS-2	4.5+	-	-	-	-	-	-	-	-	10	A-6a (V)	-
Hard reddish brown SILT AND CLAY , "and" fine to coarse gravel, little fine to coarse sand, damp. @ 5.4' possible cobble encountered	750.9	5	7	10	31	33	SS-3	-	42	7	10	24	17	27	16	11	8	A-6a (1)	-
		6	10	12	31	33	SS-3	-	42	7	10	24	17	27	16	11	8	A-6a (1)	-
	750.9	7	10	18	97	100	SS-4	4.5+	-	-	-	-	-	-	-	-	12	A-6a (V)	-
		8	10	50															

NOTES:

- No groundwater encountered during drilling.
- Recovered pavement core was placed in hole and covered with cold-patch asphalt.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / P. TUTTLE	DRILL RIG: S&ME ATV D50 (R80)	STATION / OFFSET: 610+72, 9' LT	EXPLORATION ID: B-013-1-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / M. TORRES	HAMMER: CME AUTOMATIC	ALIGNMENT: SR 2 EASTBOUND	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/6/22	ELEVATION: 752.2 (MSL) EOB: 7.9 ft.	PAGE: 1 OF 1
START: 11/1/22 END: 11/1/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 85.4	LAT / LONG: 41.405294 N, 82.147643 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 8-1/4 INCHES	751.5																		
CONCRETE - 9-1/2 INCHES	750.7	1																	
GRANULAR BASE - 6 INCHES	750.2	2																	
Medium-dense brown to reddish brown SANDY SILT , trace to some fine to coarse gravel, little clay, damp.		3	4	20	72	SS-1	4.5+	21	9	25	26	19	23	14	9	11	A-4a (2)	233	
	747.9	4	7	30	100	SS-2A	4.5+	2	11	49	24	14	16	13	3	7	A-4a (1)	-	
Hard reddish-brown mottled gray SILT AND CLAY , some fine to coarse sand, trace fine to coarse gravel, damp.		5	5			SS-2B	4.5+	4	6	20	38	32	27	15	12	13	A-6a (8)	-	
@ 6.2' possible cobble encountered		6	7	43	100	SS-3	4.5+	-	-	-	-	-	-	-	-	-	A-6a (V)	-	
@ 6.5' becoming similar to highly weathered shale		7	32																
	744.3	7	48	-	100	SS-4	4.5+	-	-	-	-	-	-	-	-	-	A-6a (V)	-	
			50-5"																

NOTES:

- No groundwater encountered during drilling.
- Recovered pavement core was placed in hole and covered with cold-patch asphalt.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / P. TUTTLE	DRILL RIG: S&ME ATV D50 (R80)	STATION / OFFSET: 618+35, 9' LT	EXPLORATION ID B-013-2-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / M. TORRES	HAMMER: CME AUTOMATIC	ALIGNMENT: SR 2 EASTBOUND	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/6/22	ELEVATION: 744.2 (MSL) EOB: 8.0 ft.	PAGE 1 OF 1
START: 11/1/22 END: 11/1/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 85.4	LAT / LONG: 41.404126 N, 82.145339 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 4 INCHES	743.9																		
CONCRETE - 9-3/4 INCHES	743.1	1																	
GRANULAR BASE - 7 INCHES	742.5	2																	
Hard reddish brown SANDY SILT , some clay, little fine to coarse gravel, damp.	740.7	3	4	28	100	SS-1	4.5+	12	2	22	41	23	24	15	9	15	A-4a (6)	40	
Medium-dense brown GRAVEL WITH SAND AND SILT , trace clay, damp.	739.2	4	14	16	100	SS-2	-	31	9	32	21	7	NP	NP	NP	10	A-2-4 (0)	-	
Medium-stiff to stiff dark brown SILTY CLAY , little fine to coarse sand, trace fine gravel, moist becoming wet.		5	9																
		6	3	10	33	SS-3	0.75	-	-	-	-	-	-	-	-	-	17	A-6b (V)	-
		7	2	5	19	SS-4	1.25	-	-	-	-	-	-	-	-	-	21	A-6b (V)	-
	736.2	8	5	8															
		EOB																	

NOTES:

- Groundwater encountered at 6.5' during drilling.
- Boring did not cave after removing augers and water was measured at 5.0'.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / P. TUTTLE	DRILL RIG: S&ME ATV D50 (R80)	STATION / OFFSET: 622+42, 11' LT	EXPLORATION ID: B-013-3-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / M. TORRES	HAMMER: CME AUTOMATIC	ALIGNMENT: SR 2 EASTBOUND	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/6/22	ELEVATION: 742.6 (MSL) EOB: 9.5 ft.	PAGE 1 OF 1
START: 11/1/22 END: 11/2/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 85.4	LAT / LONG: 41.403615 N, 82.144026 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 17 1/4 INCHES	742.6																		
GRANULAR BASE - 6 INCHES	741.2	1																	
Medium-dense to dense brown SANDY SILT, trace to little clay, little fine to coarse gravel, damp.	740.6	2	6																
		3	13	41	100	SS-1	-	17	13	31	29	10	NP	NP	NP	11	A-4a (1)	240	
Loose to medium-dense brown to dark-brown SANDY SILT, little to some clay, little fine gravel, wet.		4	10	7	23	67	SS-2	-	13	4	39	30	14	NP	NP	NP	16	A-4a (2)	-
	737.6	5	4	3	6	33	SS-3	-	-	-	-	-	-	-	-	-	13	A-4a (V)	-
		6	3	1	6	33	SS-3	-	-	-	-	-	-	-	-	-	13	A-4a (V)	-
		7	1	2	7	100	SS-4	-	-	-	-	-	-	-	-	-	22	A-4a (V)	-
		8	2	3	11	100	SS-5	-	-	-	-	-	-	-	-	-	17	A-4a (V)	-
	733.1	9	3	5															

NOTES:

- Groundwater encountered at 6.5' during drilling.
- Boring did not cave after removing augers and water was measured at 8.0'.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - 11/20/23 17:47 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2657\LEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 627+41, 2' LT	EXPLORATION ID B-014-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / T. FROST	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 WESTBOUND	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 759.7 (MSL) EOB: 8.0 ft.	PAGE 1 OF 1
START: 3/1/23 END: 3/1/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.403863 N, 82.144095 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 12 INCHES	759.7																		
GRANULAR BASE - 12 INCHES	758.7	1																	
Very-stiff brown SILT AND CLAY , little fine to coarse sand, many shale fragments, damp.	757.7	2	6																
		3	7	20	100	SS-1	3.0	-	-	-	-	-	-	-	10	A-6a (V)	560		
		4	7	9	24	100	SS-2	3.0	47	5	7	27	14	27	16	11	9	A-6a (1)	-
		5	6	6	12														
		6	7	7	16	100	SS-3	3.5	41	4	8	30	17	27	15	12	11	A-6a (3)	-
		7	8	5	16	100	SS-4	-	-	-	-	-	-	-	-	-	13	A-6a (V)	-
	751.7	EOB	8	9															

NOTES:

- Encountered heavy seepage at 3.5' and 6'.
- Encountered Water at 3.5'
- Boring caved at 5.5' after removing augers and water was measured at 3.0'.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2657\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 608+98, 32' LT	EXPLORATION ID B-014-1-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / S. SMITH	HAMMER: CME AUTOMATIC	ALIGNMENT: SR 2	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 758.8 (MSL) EOB: 8.0 ft.	PAGE 1 OF 1
START: 3/6/23 END: 3/6/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.405808 N, 82.148290 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 14-1/2 INCHES	758.8																		
GRANULAR BASE - 5 INCHES	757.6	1																	
Medium-dense dark-brown SANDY SILT , little clay, damp.	757.2	2	17																
		3	10	20	44	SS-1	-	0	8	36	37	19	21	15	6	13	A-4a (4)	140	
Medium-dense brown GRAVEL WITH SAND AND SILT , little clay, damp.	755.3	4	8	15	33	SS-2	-	25	9	33	19	14	19	13	6	12	A-2-4 (0)	-	
	753.8	5	4	8	5														
Stiff to very-stiff brown to reddish brown SILTY CLAY , some fine to coarse sand, damp.		6	8	24	61	SS-3	1.5-4.0	-	-	-	-	-	-	-	-	-	18	A-6b (V)	-
		7	14	9	13														
	750.8	8	14	23	89	SS-4	1.5-2.0	-	-	-	-	-	-	-	-	-	15	A-6b (V)	-
		EOB																	

NOTES:

- Encountered seepage at 6.6' during drilling.
- Boring caved at 5.5' after removing augers and was dry.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 614+92, 74' LT	EXPLORATION ID B-014-2-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / S. SMITH	HAMMER: CME AUTOMATIC	ALIGNMENT: SR 2	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 746.1 (MSL) EOB: 4.8 ft.	PAGE 1 OF 1
START: 3/6/23 END: 3/6/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.405069 N, 82.146426 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 7-3/4 INCHES	745.4																		
CONCRETE - 10 INCHES	744.6	1																	
GRANULAR BASE - 6 INCHES	744.1	2																	
Stiff to hard brown to light-brown SILT AND CLAY , little to some fine to coarse sand, trace to little fine to coarse gravel, damp. @ 2.6' to 3.1' coarse sandstone fragments	741.3	3	3	63	72	SS-1A	1.5- 3.5	2	5	13	43	37	28	15	13	13	A-6a (9)	180	
		4	24 42 50-3"	-	60	SS-1B	-	-	-	-	-	-	-	-	-	6	A-1-a (V)	-	
		4				SS-2	4.5	11	9	18	41	21	25	14	11	20	A-6a (6)	-	

ETR3

NOTES:

- Encountered auger refusal on sandstone at 4.8'.
- Boring caved at 3.4' after removing augers and was dry.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 621+53, 103' LT	EXPLORATION ID B-014-3-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / S. SMITH	HAMMER: CME AUTOMATIC	ALIGNMENT: SR 2	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 743.3 (MSL) EOB: 8.0 ft.	PAGE 1 OF 1
START: 3/6/23 END: 3/6/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.404410 N, 82.144231 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 8 INCHES	742.6																		
CONCRETE - 9-1/2 INCHES	741.9	1																	
GRANULAR BASE - 7 INCHES	741.3																		
Very-stiff to hard brown to dark-brown CLAY , some silt, some fine to coarse sand, little fine gravel, damp.	740.6	2	3			SS-1A	3.5	11	4	23	35	27	42	11	31	20	A-7-6 (14)	300	
		3	10	28	67	SS-1B	4.5	-	-	-	-	-	-	-	-	10	A-2-4 (V)	-	
Medium-dense brown to light-brown GRAVEL WITH SAND AND SILT , trace clay, damp.		4	20	49	100	SS-2	-	29	7	34	22	8	NP	NP	NP	8	A-2-4 (0)	-	
	738.3	5	14																
Very-stiff brown to light-brown SANDY SILT , some clay, trace fine gravel, damp.		6	17	40	56	SS-3	3.5	-	-	-	-	-	-	-	-	11	A-4a (V)	-	
		7	9																
	735.3	8	6	14	11	SS-4	-	-	-	-	-	-	-	-	-	13	A-4a (V)	-	
		EOB	6																

NOTES:

- No groundwater encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/10/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 625+86, 110' LT	EXPLORATION ID B-014-4-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / T. FROST	HAMMER: CME AUTOMATIC	ALIGNMENT: SR 2	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 741.4 (MSL) EOB: 8.0 ft.	PAGE 1 OF 1
START: 3/6/23 END: 3/6/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.404089 N, 82.142787 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO ₄ ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT 8 INCHES	741.4																		
CONCRETE - 8-1/2 INCHES	740.0	1																	
GRANULAR BASE - 6 INCHES	739.5	2																	
Hard brown SILT AND CLAY , trace to little fine to coarse sand, little fine gravel, damp.	737.9	3	4		23	100	SS-1	4.5	13	6	16	38	27	39	24	15	10	A-6a (8)	640
Medium-dense to very-dense brown SANDY SILT , little fine to coarse gravel, little clay, damp.		4	24 50-5"		-	100	SS-2	-	20	10	24	34	12	NP	NP	NP	8	A-4a (2)	-
		5	17																
	734.9	6	9		19	100	SS-3	-	-	-	-	-	-	-	-	-	7	A-4a (V)	-
Very-stiff brown SILT AND CLAY , some fine to coarse sand, trace fine gravel, moist.	733.4	7	9		16	100	SS-4	2.0-2.5	-	-	-	-	-	-	-	-	17	A-6a (V)	-
		8	7																

NOTES:

- No groundwater was encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: <u>LOR-90-10.76</u>	DRILLING FIRM / OPERATOR: <u>S&ME / P. TUTTLE</u>	DRILL RIG: <u>S&ME ATV D50 (R80)</u>	STATION / OFFSET: <u>626+25, 10' LT</u>	EXPLORATION ID B-015-0-22
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>S&ME / M. TORRES</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR 2 EASTBOUND</u>	
PID: <u>107714</u> BR ID: <u>N/A</u>	DRILLING METHOD: <u>4-1/2" CFA</u>	CALIBRATION DATE: <u>6/6/22</u>	ELEVATION: <u>741.2 (MSL)</u> EOB: <u>8.0 ft.</u>	PAGE 1 OF 1
START: <u>11/2/22</u> END: <u>11/2/22</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>85.4</u>	LAT / LONG: <u>41.403295 N, 82.142707 W</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 8 INCHES	741.2																		
CONCRETE - 9-3/4 INCHES	739.7	1																	
GRANULAR BASE - 6 INCHES	739.2	2																	
Medium-dense dark brown GRAVEL WITH SAND AND SILT , little clay, damp.	737.7	3	5	21	39	SS-1	-	34	14	28	13	11	NP	NP	NP	9	A-2-4 (0)	440	
Stiff dark brown SILT , little clay, trace fine to coarse sand, trace fine gravel, damp.	736.2	4	5	19	100	SS-2	1.75-2.0	1	7	9	64	19	22	14	8	14	A-4b (8)	-	
Stiff to very-stiff dark brown SILTY CLAY , little to some fine to coarse sand, trace fine gravel, damp.		5	3																
		6	4	11	100	SS-3	2.5-3.0	-	-	-	-	-	-	-	-	18	A-6b (V)	-	
		7	4	16	100	SS-4	1.5-2.0	-	-	-	-	-	-	-	-	24	A-6b (V)	-	
	733.2	8	5																
		EOB	6																

NOTES:

- No groundwater encountered during drilling.
- Recovered pavement core was placed in hole and covered with cold-patch asphalt.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/10/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - LAB\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 634+66, 57' LT	EXPLORATION ID B-016-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / T. FROST	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 WESTBOUND	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 739.7 (MSL) EOB: 8.0 ft.	PAGE 1 OF 1
START: 3/6/23 END: 3/6/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.403862 N, 82.141443 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 6-3/4 INCHES	739.1																		
CONCRETE - 9-1/2 INCHES	738.4	1																	
GRANULAR BASE - 8 INCHES	737.7	2																	
Very-stiff brown SILT AND CLAY , little to some fine to coarse sand, trace to some fine to coarse gravel, damp.		3	10 6	17	44	SS-1	2.0- 4.5	3	7	24	34	32	30	15	15	14	A-6a (8)	540	
		4	10 21 31	60	100	SS-2	2.5	24	6	14	37	19	25	14	11	9	A-6a (5)	-	
		5	22 14	33	72	SS-3	2.5	-	-	-	-	-	-	-	-	11	A-6a (V)	-	
		6	16 14	36	100	SS-4	4.0	-	-	-	-	-	-	-	-	18	A-6a (V)	-	
	731.7	7	16 14	36	100	SS-4	4.0	-	-	-	-	-	-	-	18	A-6a (V)	-		
		8	17																

NOTES:

- No groundwater encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / P. TUTTLE	DRILL RIG: S&ME ATV D50 (R80)	STATION / OFFSET: 634+46, 9' LT	EXPLORATION ID B-017-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / M. TORRES	HAMMER: CME AUTOMATIC	ALIGNMENT: SR 2 EASTBOUND	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/6/22	ELEVATION: 737.4 (MSL) EOB: 6.6 ft.	PAGE 1 OF 1
START: 11/2/22 END: 11/2/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 85.4	LAT / LONG: 41.403169 N, 82.139744 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 7-3/4 INCHES	737.4																		
CONCRETE - 9-1/2 INCHES	736.0	1																	
GRANULAR BASE - 6 INCHES	735.5	2																	
Very-stiff reddish brown to gray SANDY SILT , some clay, little fine to coarse gravel, damp.	733.9	3	4	7	20	100	SS-1	3.0-3.25	13	3	24	35	25	26	16	10	14	A-4a (5)	273
Hard gray CLAY , some silt, some fine to coarse sand, trace fine gravel, damp.	732.4	4	5	7	44	67	SS-2	4.5+	3	5	16	29	47	41	20	21	20	A-7-6 (13)	-
Very-dense brown and reddish-brown GRAVEL WITH SAND (severely weathered sandstone fragments), trace silt, trace clay, dry.	730.8	5	50-5"			100	SS-3		-	-	-	-	-	-	-	-	6	A-1-b (V)	-
		6																	
		EOB	60-1"			0	SS		-	-	-	-	-	-	-	-	-		

NOTES:

- No groundwater noted during drilling.
- Recovered pavement core was placed in hole and covered with cold-patch asphalt.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 643+24, 4' LT	EXPLORATION ID B-018-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / T. FROST	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 WESTBOUND	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 735.9 (MSL) EOB: 8.0 ft.	PAGE 1 OF 1
START: 3/1/23 END: 3/1/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.403603 N, 82.138338 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 7 INCHES	735.3																		
CONCRETE - 9-1/2 INCHES	734.5	1																	
GRANULAR BASE - 7 INCHES	733.9	2																	
Very-stiff brown SILT AND CLAY , some fine to coarse sand, trace fine gravel, damp.	732.4	3	4	14	100	SS-1	3.0-3.5	5	5	29	32	29	29	17	12	14	A-6a (6)	640	
		4	6	19	100	SS-2	3.0	9	4	19	35	33	28	11	17	16	A-6b (9)	-	
Very-stiff to hard brown and gray SILTY CLAY , some fine to coarse sand, trace fine to coarse gravel, damp.		5	8	30	100	SS-3	4.5	-	-	-	-	-	-	-	-	12	A-6b (V)	-	
		6	12	43	100	SS-4	4.5	-	-	-	-	-	-	-	-	11	A-6b (V)	-	
	727.9	7	15																
		8	17																
		EOB	20																

NOTES:

- No groundwater encountered during drilling.
- Boring caved at 5' after removing augers and was dry.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / P. TUTTLE	DRILL RIG: S&ME ATV D50 (R80)	STATION / OFFSET: 642+45, 23' LT	EXPLORATION ID: B-019-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / M. TORRES	HAMMER: CME AUTOMATIC	ALIGNMENT: SR 2 EASTBOUND	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/6/22	ELEVATION: 734.4 (MSL) EOB: 7.0 ft.	PAGE: 1 OF 1
START: 11/2/22 END: 11/2/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 85.4	LAT / LONG: 41.403375 N, 82.136849 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ROOTMAT - 2 INCHES	734.4																		
Hard brown and red SILT AND CLAY , some fine to coarse sand, little fine gravel, damp.	731.9	1	4																
Very-stiff brown SILTY CLAY , some fine to coarse sand, little fine gravel, damp.	730.4	2	5	14	100	SS-1	4.5+	12	10	18	31	29	29	16	13	13	A-6a (6)	333	
Dense reddish-brown to gray COARSE AND FINE SAND , little fine gravel, little silt, little clay, damp.	727.4	3	4	11	44	SS-2	2.5-3.5	13	8	16	30	33	35	17	18	16	A-6b (9)	-	
		4	5	40	39	SS-3	-	-	-	-	-	-	-	-	-	11	A-3a (V)	-	
		5	7	21															
		6	11	36	100	SS-4	-	-	-	-	-	-	-	-	-	12	A-3a (V)	-	
		7	12																
		EOB	13																

NOTES:

- No groundwater encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE

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S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: <u>LOR-90-10.76</u>	DRILLING FIRM / OPERATOR: <u>S&ME / T. FROST</u>	DRILL RIG: <u>S&ME ATV D50 (R61)</u>	STATION / OFFSET: <u>646+37, 26' LT</u>	EXPLORATION ID B-020-0-22
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>S&ME / T. FROST</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>IR 90 MAINLINE</u>	
PID: <u>107714</u> BR ID: <u>N/A</u>	DRILLING METHOD: <u>4-1/2" CFA</u>	CALIBRATION DATE: <u>6/7/22</u>	ELEVATION: <u>738.4 (MSL)</u> EOB: <u>6.3 ft.</u>	PAGE 1 OF 1
START: <u>3/1/23</u> END: <u>3/1/23</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>69.8</u>	LAT / LONG: <u>41.403627 N, 82.135436 W</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI					
GRANULAR FILL - 8 INCHES	738.4																			
Very-stiff to hard brown SILT AND CLAY , some fine to coarse sand, trace to some fine to coarse gravel, few shale fragments, damp.	737.7		3																	
		1	4	10	100	SS-1	3.5	28	11	15	20	26	34	19	15	15	A-6a (4)	1013	< >	
		2	4	5															< >	
		3	7	7	16	100	SS-2	4.5	8	15	14	25	38	34	19	15	12	A-6a (8)	-	< >
		4	8	7	17	100	SS-3	2.5-4.5	-	-	-	-	-	-	-	-	12	A-6a (V)	-	< >
		5	9	8																< >
	732.1	6	23	-	100	SS-4	2.0-2.3	-	-	-	-	-	-	-	-	11	A-6a (V)	-	< >	
		EOB																	< >	

NOTES:

- No groundwater encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE

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S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / P. TUTTLE	DRILL RIG: S&ME ATV D50 (R80)	STATION / OFFSET: 650+24, 44' RT	EXPLORATION ID B-021-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / M. TORRES	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/6/22	ELEVATION: 744.6 (MSL) EOB: 8.0 ft.	PAGE 1 OF 1
START: 11/2/22 END: 11/2/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 85.4	LAT / LONG: 41.403513 N, 82.134011 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 7-3/4 INCHES	744.6																		
CONCRETE - 9-3/4 INCHES	743.9	1																	
GRANULAR BASE - 6-1/2 INCHES	742.6	2																	
FILL: Medium-dense brown GRAVEL WITH SAND , little silt, little clay, damp.	741.1	3	10	26	100	SS-1	-	17	35	24	12	12	20	14	6	9	A-1-b (0)	293	
Very-stiff reddish brown SILT AND CLAY , some fine to coarse sand, trace to little fine gravel, damp.		4	8	26	100	SS-2	3.5 - 4.0	11	13	16	27	33	33	18	15	11	A-6a (7)	-	
		5	3	10															
		6	5	20	67	SS-3	3.0 - 4.0	-	-	-	-	-	-	-	-	17	A-6a (V)	-	
		7	8	38	100	SS-5	4.0	-	-	-	-	-	-	-	-	10	A-6a (V)	-	
	736.6	8	12	15															

NOTES:

- No groundwater encountered during drilling.
- Recovered pavement core was placed in hole and covered with cold-patch asphalt.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

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S&ME JOB: 217525



PROJECT: <u>LOR-90-10.76</u>	DRILLING FIRM / OPERATOR: <u>S&ME / T. FROST</u>	DRILL RIG: <u>S&ME ATV D50 (R61)</u>	STATION / OFFSET: <u>654+27, 45' LT</u>	EXPLORATION ID B-022-0-22
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>S&ME / T. FROST</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>IR 90 MAINLINE</u>	
PID: <u>107714</u> BR ID: <u>N/A</u>	DRILLING METHOD: <u>4-1/2" CFA</u>	CALIBRATION DATE: <u>6/7/22</u>	ELEVATION: <u>747.5 (MSL)</u> EOB: <u>7.5 ft.</u>	PAGE 1 OF 1
START: <u>2/28/23</u> END: <u>2/28/23</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>69.8</u>	LAT / LONG: <u>41.403843 N, 82.132570 W</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL		
								GR	CS	FS	SI	CL	LL	PL	PI						
ASPHALT - 5-3/4 INCHES	747.5																				
CONCRETE - 9-1/4 INCHES	746.2	1																			
GRANULAR BASE - 5 INCHES	745.8	2	2			SS-1A	2.0-	-	-	-	-	-	-	-	-	-	-	-	A-1-a (V)		
Medium-dense brown to reddish brown SANDY SILT , some clay, little fine to coarse sand, trace to little fine gravel, damp.	741.5	3	3	10	33	SS-1B	2.0- 3.0	9	16	15	37	23	27	18	9	11			A-4a (5)	573	
		4	8	8	19	100	SS-2	2.5- 3.5	16	10	17	32	25	25	15	10	11			A-4a (4)	-
		5	8	7	14	100	SS-3	3.0- 3.5	-	-	-	-	-	-	-	-	-	10			A-4a (V)
Hard brown SILTY CLAY , little fine to coarse sand, trace fine gravel, damp to moist.	740.0	6	9																		
		7	8	9	20	100	SS-4	4.5	-	-	-	-	-	-	-	-	19			A-6b (V)	-

NOTES:

- No groundwater encountered during drilling.
- Boring caved at 6.5' after auger removal and was dry.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

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S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 658+38, 30' RT	EXPLORATION ID B-023-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / T. FROST	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 746.7 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1
START: 3/2/23 END: 3/2/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.403727 N, 82.131056 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 16 INCHES	746.7																		
GRANULAR BASE - 8 INCHES	745.4	1																	
Medium-dense brown GRAVEL , some fine to coarse sand, little silt, trace clay, damp.	744.7	2	15	19	100	SS-1A	-	-	-	-	-	-	-	-	-	6	A-1-a (V)	-	
Very-stiff to hard brown SANDY SILT , some clay, little fine gravel, damp.	743.7	3	9	7		SS-1B	-	58	17	10	11	4	-	-	-	6	A-1-a (V)	6160	
		4	5	8	15	100	SS-2	2.5-3.5	18	11	12	32	27	27	17	10	11	A-4a (5)	-
		5	7			SS-3	3.5-4.5	-	-	-	-	-	-	-	-	13	A-4a (V)	-	
		6	9			SS-4	4.5+	-	-	-	-	-	-	-	-	13	A-4a (V)	-	
	739.2	7	11																
			13																

NOTES:

- No water encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: <u>LOR-90-10.76</u>	DRILLING FIRM / OPERATOR: <u>S&ME / T. FROST</u>	DRILL RIG: <u>S&ME ATV D50 (R61)</u>	STATION / OFFSET: <u>659+26, 32' LT</u>	EXPLORATION ID B-024-0-22
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>S&ME / T. FROST</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>IR 90 MAINLINE</u>	
PID: <u>107714</u> BR ID: <u>N/A</u>	DRILLING METHOD: <u>4-1/2" CFA</u>	CALIBRATION DATE: <u>6/7/22</u>	ELEVATION: <u>746.1 (MSL)</u> EOB: <u>7.5 ft.</u>	PAGE 1 OF 1
START: <u>2/28/23</u> END: <u>2/28/23</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>69.8</u>	LAT / LONG: <u>41.403917 N, 82.130753 W</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI					
ASPHALT - 15-1/2 INCHES	746.1																			
GRANULAR BASE - 7 INCHES	744.8	1																		
Very-stiff brown SILT AND CLAY , some fine to coarse sand, little fine gravel, damp. Stiff to very-stiff brown to gray SANDY SILT , little clay, trace fine gravel, damp.	744.2	2	16	19	100	SS-1A	-	-	-	-	-	-	-	-	-	A-1-a (V)	-			
	743.1	3	10	24	67	SS-1B	3.0	19	16	10	29	26	31	17	14	A-6a (6)	773			
		4	10	11	10	24	67	SS-2	1.0-2.0	4	31	19	26	20	22	15	7	A-4a (2)	-	
		5	8	7	7	16	100	SS-3	2.5	-	-	-	-	-	-	-	-	A-4a (V)	-	
		6	8	7	7	14	100	SS-4	2.0-2.5	-	-	-	-	-	-	-	-	A-4a (V)	-	
	738.6	7	5													13	A-4a (V)	-		

NOTES:

- No groundwater encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - LAB\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 665+01, 46' RT	EXPLORATION ID: B-025-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / T. FROST	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 737.9 (MSL) EOB: 7.5 ft.	PAGE: 1 OF 1
START: 3/2/23 END: 3/2/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.403829 N, 82.128642 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI					
ASPHALT - 8-3/4 INCHES	737.2																			
CONCRETE - 9-1/4 INCHES	736.4	1																		
GRANULAR BASE - 6 INCHES	735.9	2	15			SS-1A		-	-	-	-	-	-	-	-	-	-	A-1-a (V)		
Very-stiff to hard brown SILT AND CLAY , some fine to coarse sand, trace to little fine gravel, damp.		3	8	10	21	100	SS-1B	-	-	-	-	-	-	-	-	-	11	A-6a (V)	873	
		4	7				SS-2	2.0-3.5	17	22	12	25	24	33	21	12	9	A-6a (3)	-	
		5	7				SS-3	3.5	10	16	13	37	24	28	17	11	10	A-6a (6)	-	
		6	7				SS-4	4.5	-	-	-	-	-	-	-	-	-	12	A-6a (V)	-
		7	8	10																
	730.4	EOB																		

NOTES:

- No water encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 668+58, 45' LT	EXPLORATION ID B-026-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / T. FROST	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 728.9 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1
START: 2/28/23 END: 2/28/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.404154 N, 82.127371 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI					
ASPHALT - 7-3/4 INCHES	728.3																			
CONCRETE - 9-1/4 INCHES	727.5	1																		
GRANULAR BASE - 6 INCHES	727.0	2	16			SS-1A	-	-	-	-	-	-	-	-	-	A-1-a (V)	-			
Very-stiff to hard SILT AND CLAY , some fine to coarse sand, trace to little fine to coarse gravel, damp.		3	5	12	100	SS-1B	-	-	-	-	-	-	-	-	-	A-6a (V)	820			
		4	4	3	8	100	SS-2	2.0	16	16	11	32	25	29	17	12	13	A-6a (5)	-	
		5	9	8	20	100	SS-3	4.5	9	13	13	31	34	29	16	13	12	A-6a (7)	-	
		6	10	8	21	100	SS-4	4.5	-	-	-	-	-	-	-	-	-	12	A-6a (V)	-
		7	10	8	21	100	SS-4	4.5	-	-	-	-	-	-	-	-	-	12	A-6a (V)	-
	721.4	EOB																		

NOTES:

- No water encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 672+78, 26' RT	EXPLORATION ID B-027-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / T. FROST	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 716.6 (MSL) EOB: 6.5 ft.	PAGE 1 OF 1
START: 3/2/23 END: 3/2/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.404042 N, 82.125811 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ROOTMAT - 2 INCHES	716.6																		
Very-stiff brown SILTY CLAY , some fine gravel, little fine to coarse sand, damp.	714.6	1	5	12	67	SS-1	3.0	22	13	7	29	29	39	19	20	12	A-6b (9)	667	< \ / >
Very-stiff to hard brown SILT AND CLAY , little fine to coarse sand, trace fine gravel, damp.		2	7	27	67	SS-2	3.5	6	7	10	40	37	31	16	15	17	A-6a (10)	-	< \ / >
		3	10																
		4	8	35	100	SS-3	4.0	-	-	-	-	-	-	-	-	15	A-6a (V)	-	< \ / >
		5	15																
	710.1	6	14	19	100	SS-4	4.5	-	-	-	-	-	-	-	-	9	A-6a (V)	-	< \ / >
		EOB	9	7															< \ / >

NOTES:

- No water encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 676+18, 32' LT	EXPLORATION ID B-028-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / T. FROST	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 705.5 (MSL) EOB: 6.5 ft.	PAGE 1 OF 1
START: 2/28/23 END: 2/28/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.404294 N, 82.124399 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO ₄ ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ROOTMAT - 2 INCHES	705.3																		
Very-stiff to hard brown SILT AND CLAY , some fine to coarse sand, trace fine gravel, damp.		1	3																
		2	4	10	100	SS-1	2.0-3.5	9	9	14	40	28	28	16	12	13	A-6a (7)	9200	
		3	7	20	100	SS-2	3.0-4.5	8	10	15	35	32	28	13	15	14	A-6a (8)	-	
		4	11	27	100	SS-3	3.0-3.5	-	-	-	-	-	-	-	-	15	A-6a (V)	-	
		5	18	31	100	SS-4	2.0	-	-	-	-	-	-	-	-	15	A-6a (V)	-	
		6	15	12															
	699.0	EOB																	

NOTES:

- Boring caved at 5' after removing augers and was dry.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/20/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 681+04, 45' RT	EXPLORATION ID B-029-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / T. FROST	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 699.4 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1
START: 3/2/23 END: 3/2/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.404176 N, 82.122819 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 8 INCHES	698.7																		
CONCRETE - 9 INCHES	698.0	1																	
GRANULAR BASE - 4 INCHES	697.6																		
Very-stiff brown SILTY CLAY , some fine to coarse sand, little fine gravel, damp.	696.4	2	8	4	9	100	SS-1A 2.0-2.5	-	-	-	-	-	-	-	-	-	-	A-1-a (V)	-
Loose brown GRAVEL WITH SAND AND SILT , trace clay, damp.	694.9	3	4	4	9	100	SS-1B	17	17	10	34	22	30	13	17	9	A-6b (7)	820	
Very-stiff brown SILT AND CLAY , little to some fine to coarse sand, trace fine gravel, damp.	691.9	4	4	4	9	100	SS-2	44	22	16	11	7	31	21	10	10	A-2-4 (0)	-	
		5	6	7	15	44	SS-3	3.5-4.0	-	-	-	-	-	-	-	-	10	A-6a (V)	-
		6	7	7	15	39	SS-4	3.5-4.0	-	-	-	-	-	-	-	-	14	A-6a (V)	-
		7	6	6															

NOTES:

- No groundwater encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE



PROJECT: <u>LOR-90-10.76</u>	DRILLING FIRM / OPERATOR: <u>S&ME / T. FROST</u>	DRILL RIG: <u>S&ME ATV D50 (R61)</u>	STATION / OFFSET: <u>684+81, 44' LT</u>	EXPLORATION ID B-030-0-22
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>S&ME / T. FROST</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>IR 90 MAINLINE</u>	
PID: <u>107714</u> BR ID: <u>N/A</u>	DRILLING METHOD: <u>4-1/2" CFA</u>	CALIBRATION DATE: <u>6/7/22</u>	ELEVATION: <u>700.7 (MSL)</u> EOB: <u>7.5 ft.</u>	PAGE 1 OF 1
START: <u>2/28/23</u> END: <u>2/28/23</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>69.8</u>	LAT / LONG: <u>41.404503 N, 82.121474 W</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 7-3/4 INCHES	700.1																		
CONCRETE - 9-1/2 INCHES	699.3	1																	
GRANULAR BASE - 7 INCHES	698.7																		
Stiff brown SANDY SILT , some fine gravel, some clay, damp.	697.7	2	16	9	100	SS-1A	-	-	-	-	-	-	-	-	-	-	-	A-1-a (V)	-
Very-stiff brown SANDY SILT , some clay, trace fine gravel, damp.	696.2	3	5	3		SS-1B	1.0-1.5	22	17	14	26	21	-	-	-	-	14	A-4a (V)	480
		4	5	7	14	67	SS-2	2.5	4	6	47	19	24	21	13	8	15	A-4a (2)	-
Very-stiff to hard brown SILT AND CLAY , some fine to coarse sand, trace fine gravel, many shale fragments, damp.	693.2	5	11		28	SS-3	3.0-3.5	-	-	-	-	-	-	-	-	-	12	A-6a (V)	-
		6	12		29	100	SS-4	4.5	-	-	-	-	-	-	-	-	7	A-6a (V)	-
		7	19																
			12																
			13																

EOB

NOTES:

- Boring caved at 6' after removing augers and was dry.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 688+77, 28' RT	EXPLORATION ID B-031-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / T. FROST	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 705.0 (MSL) EOB: 6.5 ft.	PAGE 1 OF 1
START: 3/2/23 END: 3/2/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.404386 N, 82.120002 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ROOTMAT - 3 INCHES	704.7		3																
Very-stiff brown SILT AND CLAY , little fine to coarse sand, trace fine gravel, moist.	703.0	1	4	9	100	SS-1	3.0	5	8	11	36	40	26	15	11	16	A-6a (8)	433	
Very-stiff brown SANDY SILT , some clay, trace fine gravel, damp to moist.	701.5	2	3	14	100	SS-2	3.0-3.5	7	11	15	41	26	24	15	9	12	A-4a (6)	-	
Hard brown and gray SILTY CLAY , little to some fine to coarse sand, trace fine gravel, damp to moist.		3	5	26	100	SS-3	4.5+	-	-	-	-	-	-	-	-	17	A-6b (V)	-	
		4	10																
		5	12																
	698.5	6	11	30	100	SS-4	4.5+	-	-	-	-	-	-	-	-	17	A-6b (V)	-	
			13																

NOTES:

- No groundwater encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 692+59, 20' LT	EXPLORATION ID B-032-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / T. FROST	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 709.6 (MSL) EOB: 6.5 ft.	PAGE 1 OF 1
START: 2/28/23 END: 2/28/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.404610 N, 82.118638 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ROOTMAT - 3 INCHES	709.3		2																
Stiff to very-stiff brown SILTY CLAY , some fine to coarse sand, little fine gravel, moist.	707.6	1	3	7	100	SS-1	1.0-3.0	13	11	13	29	34	35	18	17	17	A-6b (8)	1093	
Very-stiff brown SILT AND CLAY , some fine to coarse sand, trace fine gravel, damp to moist.		2	3	15	100	SS-2	2.0-3.5	6	7	12	40	35	29	17	12	16	A-6a (9)	-	
		3	6	7															
		4	8	28	100	SS-3	3.5	-	-	-	-	-	-	-	-	13	A-6a (V)	-	
		5	11	13															
	703.1	6	10	31	72	SS-4	4.0	-	-	-	-	-	-	-	-	12	A-6a (V)	-	
		EOB	17																

NOTES:

- Boring caved at 5' after removing augers and was dry.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 719+65, 44' RT	EXPLORATION ID B-033-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / T. FROST	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 686.9 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1
START: 3/2/23 END: 3/2/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.405030 N, 82.108782 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI					
ASPHALT - 6 INCHES	686.4																			
CONCRETE - 10-1/2 INCHES	685.5	1																		
GRANULAR BASE - 5 INCHES	685.1	2	10			SS-1A	-	-	-	-	-	-	-	-	-	-	A-1-a (V)	-		
Very-stiff brown SILT AND CLAY , little fine to coarse sand, trace fine gravel, moist.		3	4	9	100	SS-1B	3.5	3	4	8	32	53	34	19	15	19	A-6a (10)	667		
		4	9	11	14	29	100	SS-2	3.5	5	9	11	31	44	31	18	13	17	A-6a (9)	-
		5	12	14	33	33	SS-3	3.5	-	-	-	-	-	-	-	-	16	A-6a (V)	-	
		6	13	16	44	100	SS-4	3.0	-	-	-	-	-	-	-	-	16	A-6a (V)	-	
		7	16	22																
	679.4	EOB																		

NOTES:

- No groundwater encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME ODOT SULFATE (8.5X11) - (1) - (1) SGE 10/1/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 723+27, 33' LT	EXPLORATION ID B-034-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / T. FROST	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 679.4 (MSL) EOB: 6.5 ft.	PAGE 1 OF 1
START: 2/28/23 END: 2/28/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.405443 N, 82.107472 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ROOTMAT - 3 INCHES	679.4																		
Very-stiff to hard brown to gray SILT AND CLAY , some fine to coarse sand, trace fine gravel, moist.		1	3																
		2	5	17	100	SS-1	4.5	6	10	12	28	44	33	19	14	15	A-6a (9)	3907	
		3	7	28	100	SS-2	4.5	7	9	13	31	40	35	20	15	17	A-6a (9)	-	
		4	16	44	100	SS-3	2.5-3.5	-	-	-	-	-	-	-	-	15	A-6a (V)	-	
		5	16	23															
		6	20	48	100	SS-4	3.5	-	-	-	-	-	-	-	-	15	A-6a (V)	-	
	672.9	EOB	21																

NOTES:

- Boring caved at 4.8' after removing augers and was dry.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: <u>LOR-90-10.76</u>	DRILLING FIRM / OPERATOR: <u>S&ME / T. FROST</u>	DRILL RIG: <u>S&ME ATV D50 (R61)</u>	STATION / OFFSET: <u>727+41, 32' RT</u>	EXPLORATION ID B-035-0-22
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>S&ME / T. FROST</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>IR 90 MAINLINE</u>	
PID: <u>107714</u> BR ID: <u>N/A</u>	DRILLING METHOD: <u>4-1/2" CFA</u>	CALIBRATION DATE: <u>6/7/22</u>	ELEVATION: <u>670.9 (MSL)</u> EOB: <u>6.5 ft.</u>	PAGE 1 OF 1
START: <u>3/2/23</u> END: <u>3/2/23</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>69.8</u>	LAT / LONG: <u>41.405625 N, 82.106034 W</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ROOTMAT - 3 INCHES	670.6																		
POSSIBLE FILL: Medium-dense brown GRAVEL WITH SAND AND SILT , trace clay, damp.	668.9	1	20 10	21	100	SS-1	-	37	25	11	17	10	-	-	-	9	A-2-4 (V)	873	\
Hard brown SILTY CLAY , little fine to coarse sand, trace fine gravel, damp.		2	12 14	36	100	SS-2	4.5	7	9	10	29	45	33	16	17	14	A-6b (11)	-	\
		3	11 14	42	100	SS-3	4.5	-	-	-	-	-	-	-	-	-	14	A-6b (V)	-
		4	43 22	88	100	SS-4	4.5	-	-	-	-	-	-	-	-	9	A-6b (V)	-	\
	664.4	6	43 33																\

NOTES:

- No groundwater encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 731+43, 45' LT	EXPLORATION ID: B-036-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / T. FROST	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 663.4 (MSL) EOB: 6.4 ft.	PAGE: 1 OF 1
START: 2/28/23 END: 2/28/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.406312 N, 82.104860 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI					
ASPHALT - 5-1/2 INCHES	662.9																			
CONCRETE - 10-1/2 INCHES	662.0	1																		
GRANULAR BASE - 4 INCHES	661.7																			
Very-stiff to hard light-brown to gray SILTY CLAY , little fine to coarse sand, little fine to coarse gravel (shale fragments), dry to damp.	659.5	TR	5			SS-1A	-	-	-	-	-	-	-	-	-	-	-	A-1-a (V)		
			4	13	100	SS-1B	-	17	10	9	31	33	34	15	19	13	-	A-6b (9)	853	
SHALE, gray and tan, severely weathered.	659.5	TR	33			SS-2	-	12	11	6	44	27	35	18	17	7	-	A-6b (10)	-	
			50-5"	-	100															
			45			SS-3	-	-	-	-	-	-	-	-	-	-	-	6	Rock (V)	-
			50-3"																	
	656.9	EOB	50-5"			SS-4	-	-	-	-	-	-	-	-	-	-	-	5	Rock (V)	-

NOTES:

- No water encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 735+54, 45' RT	EXPLORATION ID: B-037-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / T. FROST	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 655.3 (MSL) EOB: 6.1 ft.	PAGE: 1 OF 1
START: 3/2/23 END: 3/2/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.406760 N, 82.103448 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 5 INCHES	654.9																		
CONCRETE - 9-3/4 INCHES	654.2	1																	
GRANULAR BASE - 5 INCHES	653.8																		
Dense brown GRAVEL WITH SAND, SILT AND CLAY , damp.	652.3	TR	10 16 21	43	100	SS-1	-	-	-	-	-	-	-	-	-	-	A-2-6 (V)	673	
SHALE , gray, severely weathered, fragmented.			50-4"	-	100	SS-2	-	-	-	-	-	-	-	-	-	-	Rock (V)	-	
			60-3"	-	100	SS-3	-	-	-	-	-	-	-	-	-	-	Rock (V)	-	
	649.2	EOB	60-1"	-	0	SS	-	-	-	-	-	-	-	-	-	-			

NOTES:

- No water encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 739+65, 27' LT	EXPLORATION ID B-038-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / T. FROST	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 647.3 (MSL) EOB: 6.5 ft.	PAGE 1 OF 1
START: 2/28/23 END: 2/28/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.407625 N, 82.102600 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ROOTMAT - 1-1/2 INCHES	647.2		5																
GRANULAR FILL - 5-1/2 INCHES	646.7		11	23	100	SS-1	-	9	10	15	36	30	26	15	11	16	A-6a (7)	500	
Very-stiff brown to gray SILT AND CLAY , little to some fine to coarse sand, trace fine gravel, damp.		W 643.3	8	20	100	SS-2	3.0	5	9	11	38	37	31	18	13	15	A-6a (9)	-	
			8	20	100	SS-3	4.0	-	-	-	-	-	-	-	-	-	12	A-6a (V)	-
			8																
			5	13	100	SS-4	2.0-3.5	-	-	-	-	-	-	-	-	19	A-6a (V)	-	
	640.8	EOB	6																

NOTES:

- Encountered seepage at 4' during drilling.
- Boring did not cave after removing augers and water was measured at 5.5'.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - (1) - SGE 01/10/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 743+55, 21' RT	EXPLORATION ID: B-039-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / T. FROST	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 641.3 (MSL) EOB: 5.2 ft.	PAGE: 1 OF 1
START: 3/2/23 END: 3/2/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.408427 N, 82.101510 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ROOTMAT - 3 INCHES	641.0		8																
Very-stiff brown SILTY CLAY , some fine to coarse sand, some fine gravel, damp.	639.3		15 31	54	100	SS-1	3.0	27	15	10	21	27	39	21	18	7	A-6b (5)	533	
Very-dense brown to gray GRAVEL WITH SAND AND SILT , trace clay, dry.	638.3	TR	50-5"	-	100	SS-2	-	49	19	10	15	7	25	16	9	6	A-2-4 (0)	-	
SHALE , gray, severely weathered, weak, fragmented.			50-4"	-	100	SS-3	-	-	-	-	-	-	-	-	-	4	Rock (V)	-	
	636.1	EOB	60-2"	-	100	SS-4	-	-	-	-	-	-	-	-	-	3	Rock (V)	-	

NOTES:

- No water encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 747+45, 46' LT	EXPLORATION ID B-040-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / T. FROST	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 644.7 (MSL) EOB: 7.4 ft.	PAGE 1 OF 1
START: 2/28/23 END: 2/28/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.409439 N, 82.100997 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 8 INCHES	644.0																		
CONCRETE - 10-3/4 INCHES	643.2	1																	
GRANULAR BASE - 6 INCHES	642.7	2																	
Medium-dense gray GRAVEL WITH SAND, SILT AND CLAY , damp.	641.2	3	7	19	100	SS-1	-	45	16	7	17	15	34	19	15	12	A-2-6 (1)	853	
Very-dense gray GRAVEL WITH SAND (highly weathered shale fragments), little silt, trace clay, dry to damp.	640.2	4	17 50-4"	-	100	SS-2	-	52	21	9	13	5	27	22	5	9	A-1-b (0)	-	
		5	48 45 43	102	100	SS-3	-	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	-
	637.3	7	11 50-5"	-	100	SS-4	-	-	-	-	-	-	-	-	-	17	A-1-b (V)	-	

NOTES:

- Encountered seepage at 4.5' during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 750+97, 46' RT	EXPLORATION ID B-041-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / T. FROST	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 648.0 (MSL) EOB: 6.25 ft.	PAGE 1 OF 1
START: 3/2/23 END: 3/2/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.410196 N, 82.100133 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 9-1/2 INCHES	648.0																		
CONCRETE - 5-1/4 INCHES	647.2	1																	
GRANULAR BASE - 5 INCHES	646.8																		
Very-stiff gray SILT AND CLAY , some fine to coarse sand, some fine gravel, dry.	646.4																		
	645.0	2	15			SS-1	-	28	22	12	23	15	30	19	11	4	A-6a (1)	2920	
SHALE , gray, highly weathered, weak, fragmented.		3	18																
		TR	50-3"	-	100	SS-2	-	-	-	-	-	-	-	-	-	-	4	Rock (V)	-
		4																	
		5																	
		5	50-5"	-	100	SS-3	-	53	19	10	13	5	23	19	4	7	Rock (V)	-	
	641.8	6																	
		EOB	50-3"	-	100	SS-4	-	-	-	-	-	-	-	-	-	-	3	Rock (V)	-

NOTES:

- No groundwater encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2657\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: <u>LOR-90-10.76</u>	DRILLING FIRM / OPERATOR: <u>S&ME / T. FROST</u>	DRILL RIG: <u>S&ME ATV D50 (R61)</u>	STATION / OFFSET: <u>756+13, 31' LT</u>	EXPLORATION ID B-042-0-22
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>S&ME / T. FROST</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>IR 90 MAINLINE</u>	
PID: <u>107714</u> BR ID: <u>N/A</u>	DRILLING METHOD: <u>4-1/2" CFA</u>	CALIBRATION DATE: <u>6/7/22</u>	ELEVATION: <u>652.7 (MSL)</u> EOB: <u>7.5 ft.</u>	PAGE
START: <u>2/28/23</u> END: <u>2/28/23</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>69.8</u>	LAT / LONG: <u>41.411562 N, 82.099571 W</u>	1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 12-1/2 INCHES	652.7																		
GRANULAR BASE - 4-1/2 INCHES	651.7 651.3	1																	
Very-stiff to hard brown SILT AND CLAY , some fine to coarse sand, trace fine gravel, damp.		2	7 9	24	100	SS-1	3.5- 4.5	4	11	11	33	41	30	17	13	14	A-6a (9)	6960	
		3	6 9	21	100	SS-2	4.5	-	-	-	-	-	-	-	-	14	A-6a (V)	-	
	648.2	4	9 9	27	78	SS-3	2.0- 2.5	1	3	4	33	59	38	20	18	19	A-6b (11)	-	
Very-stiff to hard brown SILTY CLAY , trace fine to coarse sand, trace fine gravel, damp.		5	9 12	27	78	SS-3	2.0- 2.5	1	3	4	33	59	38	20	18	19	A-6b (11)	-	
		6	13 9	23	100	SS-4	3.0- 4.5	-	-	-	-	-	-	-	-	14	A-6b (V)	-	
	645.2	7	11 11																

EOB

NOTES:

- No groundwater encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 759+76, 33' RT	EXPLORATION ID B-043-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / S. SMITH	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 656.8 (MSL) EOB: 8.0 ft.	PAGE 1 OF 1
START: 3/7/23 END: 3/7/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.412371 N, 82.098767 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 13-1/4 INCHES	656.8																		
GRANULAR BASE - 5 INCHES	655.7 655.3	1																	
POSSIBLE FILL: Very-stiff to hard dark brown and gray SILTY CLAY , trace to little fine to coarse sand, trace to little fine gravel, damp.		2	7																
		3	9 13	26	61	SS-1	4.5+	11	8	11	29	41	35	17	18	14	A-6b (10)	900	
		4	7 12 13	29	39	SS-2	3.5- 4.5	1	1	2	35	61	39	18	21	13	A-6b (12)	-	
		5	8 10 13	27	56	SS-3	3.5- 4.5	-	-	-	-	-	-	-	-	-	13	A-6b (V)	-
Hard dark-brown and gray CLAY , some to "and" fine to coarse sand, trace fine gravel, slightly organic odor, damp.	649.9	6	16 18	42	44	SS-4A	3.5- 4.5	-	-	-	-	-	-	-	-	20	A-6b (V)	-	
	648.8	7	18 18			SS-4B	4.0- 4.5	-	-	-	-	-	-	-	-	18	A-7-6 (V)	-	
		8																	

NOTES:

- No groundwater encountered during drilling.
- Boring caved at 6' after removing augers and was dry.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: <u>LOR-90-10.76</u>	DRILLING FIRM / OPERATOR: <u>S&ME / T. FROST</u>	DRILL RIG: <u>S&ME ATV D50 (R61)</u>	STATION / OFFSET: <u>764+71, 14' LT</u>	EXPLORATION ID B-044-0-22
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>S&ME / T. FROST</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>IR 90 MAINLINE</u>	
PID: <u>107714</u> BR ID: <u>N/A</u>	DRILLING METHOD: <u>4-1/2" CFA</u>	CALIBRATION DATE: <u>6/7/22</u>	ELEVATION: <u>658.5 (MSL)</u> EOB: <u>6.5 ft.</u>	PAGE 1 OF 1
START: <u>2/27/23</u> END: <u>2/27/23</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>69.8</u>	LAT / LONG: <u>41.413545 N, 82.097870 W</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ROOTMAT MIXED WITH GRANULAR FILL - 6 INCHES	658.0																		
Very-stiff to hard brown SILT AND CLAY , some fine to coarse sand, trace fine gravel, damp.	658.0	1	3																
	655.9	2	4	13	61	SS-1	3.5-4.0	9	9	14	28	40	33	18	15	13	A-6a (9)	7200	
		3	7			SS-2A	4.0	5	12	10	32	41	31	18	13	13	A-6a (9)	-	
Very-stiff to hard gray SILTY CLAY , little fine to coarse sand, trace fine gravel, few shale fragments, dry to damp.		3	6	15	89	SS-2B	4.0	-	-	-	-	-	-	-	-	13	A-6b (V)	-	
		4	5																
		4	7	22	78	SS-3	3.5-4.0	-	-	-	-	-	-	-	-	14	A-6b (V)	-	
		5	10																
		5	10	26	56	SS-4	4.5+	-	-	-	-	-	-	-	-	11	A-6b (V)	-	
	652.0	6	10																
		6	12																

NOTES:

- Encountered seepage at 4.0' after drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2657\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: <u>LOR-90-10.76</u>	DRILLING FIRM / OPERATOR: <u>S&ME / T. FROST</u>	DRILL RIG: <u>S&ME ATV D50 (R61)</u>	STATION / OFFSET: <u>768+36, 21' RT</u>	EXPLORATION ID
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>S&ME / S. SMITH</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>IR 90 MAINLINE</u>	B-045-0-22
PID: <u>107714</u> BR ID: <u>N/A</u>	DRILLING METHOD: <u>4-1/2" CFA</u>	CALIBRATION DATE: <u>6/7/22</u>	ELEVATION: <u>663.9 (MSL)</u> EOB: <u>6.5 ft.</u>	PAGE
START: <u>3/7/22</u> END: <u>3/7/22</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>69.8</u>	LAT / LONG: <u>41.414165 N, 82.096814 W</u>	1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ROOTMAT - 5 INCHES	663.5	W 662.9	3																
FILL: Medium-dense brown and dark-brown GRAVEL WITH SAND , little silt, trace clay, damp.	661.9		16	23	67	SS-1	-	42	19	14	16	9	19	14	5	8	A-1-b (0)	520	
Hard dark-brown SILTY AND CLAY , little fine to coarse sand, trace fine gravel, damp.			5	21	72	SS-2	4.0- 4.5+	6	8	12	36	38	29	15	14	9	A-6a (9)	-	
			6	57	72	SS-3	4.5+	-	-	-	-	-	-	-	-	9	A-6a (V)	-	
			15	79	72	SS-4	4.5+	-	-	-	-	-	-	-	-	10	A-6a (V)	-	
	657.4	EOB	23																

NOTES:

- Encountered seepage at 1.0' during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE

PLATE 53

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 772+50, 42' LT	EXPLORATION ID B-046-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / T. FROST	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 667.9 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1
START: 2/27/23 END: 2/27/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.414949 N, 82.095698 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 5 INCHES	667.5																		
CONCRETE - 11 INCHES	666.6	1																	
GRANULAR BASE - 8 INCHES	665.9	2	14			SS-1A		-	-	-	-	-	-	-	-	-	-	A-1-a (V)	
Hard dark-brown SILT AND CLAY , little to some fine to coarse sand, trace to little fine to coarse gravel, damp.	664.4	3	7	15	72	SS-1B	4.5+	9	10	11	28	42	28	16	12	14		A-6a (8)	1980
		4	6																
		5	9	21	78	SS-2	1.5-3.5	12	9	11	25	43	29	15	14	15		A-6a (8)	-
		6	8																
		7	9	21	56	SS-3	4.5+	-	-	-	-	-	-	-	-	15		A-6a (V)	-
	660.4	EOB	11			SS-4	4.5+	-	-	-	-	-	-	-	-	-		A-6a (V)	-

NOTES:

- Boring caved at 5.3' after removing augers and water was measured at 2.0'.
- Groundwater at 2.0' after drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 776+54, 45' RT	EXPLORATION ID B-047-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / S. SMITH	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 671.6 (MSL) EOB: 8.0 ft.	PAGE 1 OF 1
START: 3/7/23 END: 3/7/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.415267 N, 82.094248 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 5 INCHES	671.2																		
CONCRETE - 9 INCHES	670.4	1																	
GRANULAR BASE - 4-1/2 INCHES	670.1	2																	
POSSIBLE FILL: Very-stiff to hard brown SILTY CLAY , little fine to coarse sand, trace fine gravel, damp.	668.1	3	6	9	28	61	SS-1	2.5-4.5+	4	6	9	31	50	31	15	16	14	A-6b (10)	713
		4	8	10	27	67	SS-2	4.5+	4	9	13	29	45	29	14	15	12	A-6a (10)	-
Very-stiff to hard brown SILT AND CLAY , some fine to coarse sand, trace fine gravel, damp.		5	6	13	38	61	SS-3	3.0-4.0	-	-	-	-	-	-	-	-	14	A-6a (V)	-
		6	25	20	54	100	SS-4	4.5+	-	-	-	-	-	-	-	-	8	A-6a (V)	-
	663.6	7	23	23															
		8	23	23															

NOTES:

- Boring caved at 7' after removing augers and was dry.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 780+66, 33' LT	EXPLORATION ID B-048-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / T. FROST	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 674.8 (MSL) EOB: 6.5 ft.	PAGE 1 OF 1
START: 2/27/23 END: 2/27/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.415990 N, 82.093055 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ROOTMAT - 3 INCHES	674.8																		
Hard brown SILT AND CLAY , little fine to coarse sand, trace fine gravel, damp to moist.	674.5	1	3																
		2	4	12	72	SS-1	4.5	-	-	-	-	-	-	-	18	A-6a (V)	9000		
		3	4	22	100	SS-2	4.5	2	5	11	32	50	30	16	14	9	A-6a (10)	-	
	671.3	4	10	30	67	SS-3	2.5	5	8	13	28	46	33	17	16	20	A-6b (10)	-	
Very-stiff to hard SILTY CLAY , some fine to coarse sand, trace fine gravel, damp to moist.		5	12																
		6	8	24	67	SS-4	2.5-4.5	-	-	-	-	-	-	-	15	A-6b (V)	-		
	668.3	6	10																

NOTES:

- No groundwater encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - LAB\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 784+45, 34' RT	EXPLORATION ID B-049-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / S. SMITH	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 677.8 (MSL) EOB: 6.5 ft.	PAGE 1 OF 1
START: 3/9/23 END: 3/9/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.416326 N, 82.091721 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ROOTMAT - 6 INCHES	677.3																		
POSSIBLE FILL: Very-stiff to hard brown and dark-brown SILTY CLAY , little fine to coarse sand, trace fine gravel, moist.	675.8	1	2	12	72	SS-1	3.0-4.5	3	5	8	30	54	32	16	16	22	A-6b (10)	1540	
		2	4	16	100	SS-2	3.0-4.25	0	1	1	33	65	41	22	19	22	A-7-6 (12)	-	
Very-stiff to hard brown and dark-brown CLAY , some silt, trace fine to coarse sand, moist.		3	6	30	100	SS-3	4.5+	-	-	-	-	-	-	-	-	22	A-7-6 (V)	-	
		4	9	35	78	SS-4	2.75-4.5	-	-	-	-	-	-	-	-	22	A-7-6 (V)	-	
	671.3	6	13																
			15																

NOTES:

- No water was encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 788+41, 44' LT	EXPLORATION ID B-050-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / T. FROST	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 682.4 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1
START: 2/27/23 END: 2/27/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.417016 N, 82.090585 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI					
ASPHALT - 5 INCHES	682.0																			
CONCRETE - 10 1/4 INCHES	681.1	1																		
GRANULAR BASE - 6 INCHES	680.6																			
Very-stiff brown SILT AND CLAY , some fine to coarse sand, trace fine gravel, moist.	679.4	2	4	10	67	SS-1A	-	-	-	-	-	-	-	-	-	-	-	A-1-a (V)	-	
		3	5			SS-1B	2.5-3.0	8	7	24	21	40	30	16	14	17		A-6a (7)	780	
Hard brown to gray SILTY CLAY , trace fine sand, moist.		4	9	26	100	SS-2	4.5	0	0	1	31	68	38	19	19	20		A-6b (12)	-	
		5	17	55	100	SS-3	4.5	-	-	-	-	-	-	-	-	19		A-6b (V)	-	
		6	21																	
		7	23	65	100	SS-4	4.5	-	-	-	-	-	-	-	-	18		A-6b (V)	-	
	674.9	EOB																		

NOTES:

- Boring caved at 3' after removing auger and was dry.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:47 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 792+58, 45' RT	EXPLORATION ID: B-051-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / S. SMITH	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 686.1 (MSL) EOB: 8.0 ft.	PAGE: 1 OF 1
START: 3/9/23 END: 3/9/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.417342 N, 82.089091 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 5 INCHES	685.7																		
CONCRETE - 9-1/2 INCHES	684.9	1																	
GRANULAR BASE - 5 INCHES	684.5																		
FILL: Hard brown and dark-brown SILTY CLAY , trace fine sand, damp.	683.4	2	4			SS-1A	4.5	0	0	1	34	65	34	18	16	18	A-6b (10)	280	
	682.6	3	8	23	78	SS-1B	-	9	25	37	14	15	22	16	6	17	A-3a (0)	-	
FILL: Medium-dense brown and black COARSE AND FINE SAND , little silt, little clay, trace fine gravel, damp.	681.1	4	4	17	61	SS-2A	4.5	-	-	-	-	-	-	-	-	16	A-6a (V)	-	
		5	7	8		SS-2B	3.5-4.0	-	-	-	-	-	-	-	-	16	A-6a (V)	-	
POSSIBLE FILL: Very-stiff to hard dark-brown and dark-gray SILT AND CLAY , some fine to coarse sand, trace fine gravel, damp.		6	9	22	72	SS-3	2.0-3.0	-	-	-	-	-	-	-	-	22	A-7-6 (V)	-	
Very-stiff to hard brown mottled with gray CLAY , some to "and" silt, little fine to coarse sand, trace fine gravel, moist.	678.1	7	8	16	72	SS-4	4.5	-	-	-	-	-	-	-	-	24	A-7-6 (V)	-	
		8	7	7															

NOTES:

- Encountered seepage at 5.2'.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE



PROJECT: <u>LOR-90-10.76</u>	DRILLING FIRM / OPERATOR: <u>S&ME / T. FROST</u>	DRILL RIG: <u>S&ME ATV D50 (R61)</u>	STATION / OFFSET: <u>796+57, 32' LT</u>	EXPLORATION ID B-052-0-22
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>S&ME / S. SMITH</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>IR 90 MAINLINE</u>	
PID: <u>107714</u> BR ID: <u>N/A</u>	DRILLING METHOD: <u>4-1/2" CFA</u>	CALIBRATION DATE: <u>6/7/22</u>	ELEVATION: <u>687.0 (MSL)</u> EOB: <u>6.5 ft.</u>	PAGE 1 OF 1
START: <u>2/27/23</u> END: <u>2/27/23</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>69.8</u>	LAT / LONG: <u>41.418046 N, 82.087938 W</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ROOTMAT - 6-1/2 INCHES	686.5																		
POSSIBLE FILL: Very-stiff to hard brown SANDY SILT , "and" clay, trace fine gravel, damp.	685.0	1	3	7	56	SS-1	2.5-4.5	6	6	19	27	42	20	16	4	15	A-4a (7)	533	>>>
Very-stiff to hard brown and gray SILTY CLAY , "and" fine to coarse sand, trace fine gravel, damp to moist.		2	5	17	89	SS-2	4.5	2	15	23	24	36	33	17	16	12	A-6b (7)	-	>>>
		3	6	17	100	SS-3	2.5	-	-	-	-	-	-	-	-	17	A-6b (V)	-	>>>
		4	8																>>>
		5	5																>>>
		6	5	13	100	SS-4	2.0-4.5	-	-	-	-	-	-	-	-	18	A-6b (V)	-	>>>
	680.5	EOB	6																>>>

NOTES:

- Encountered seepage at 3.5' during drilling.
- Encountered groundwater at 5.5'.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 800+43, 35' RT	EXPLORATION ID B-053-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / S. SMITH	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 685.0 (MSL) EOB: 6.5 ft.	PAGE 1 OF 1
START: 3/9/23 END: 3/9/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.418425 N, 82.086597 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO ₄ ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ROOTMAT - 7 INCHES	684.4																		
FILL: Very-stiff to hard brown and dark-brown SILT AND CLAY , "and" fine to coarse sand, trace fine gravel, damp.	683.0	W 682.6	3	13	78	SS-1	3.0-4.5	9	11	26	23	31	28	14	14	14	A-6a (5)	480	
POSSIBLE FILL: Medium-stiff to stiff dark-gray to black SILT AND CLAY , "and" fine to coarse sand, trace fine gravel, slightly organic (LOI = 2.3%), moist to wet.	680.9		3	7	61	SS-2	0.5-1.5	5	13	35	24	23	30	17	13	20	A-6a (3)	-	
SS-2: OD/AD LL = 0.90			5	14	72	SS-3A	1.0-2.0	-	-	-	-	-	-	-	-	32	A-6a (V)	-	
			7	7		SS-3B	0.5-1.5	-	-	-	-	-	-	-	-	26	A-6b (V)	-	
Soft to stiff brown and gray SILTY CLAY , little fine to coarse sand, trace fine gravel, damp.	678.5	EOB	5	14	67	SS-4	0.25-1.5	-	-	-	-	-	-	-	-	22	A-6b (V)	-	

NOTES:

- Encountered seepage at 2.4'.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:48 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: <u>LOR-90-10.76</u>	DRILLING FIRM / OPERATOR: <u>S&ME / T. FROST</u>	DRILL RIG: <u>S&ME ATV D50 (R61)</u>	STATION / OFFSET: <u>804+23, 45' LT</u>	EXPLORATION ID B-054-0-22
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>S&ME / S. SMITH</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>IR 90 MAINLINE</u>	
PID: <u>107714</u> BR ID: <u>N/A</u>	DRILLING METHOD: <u>4-1/2" CFA</u>	CALIBRATION DATE: <u>6/7/22</u>	ELEVATION: <u>681.2 (MSL)</u> EOB: <u>7.5 ft.</u>	PAGE 1 OF 1
START: <u>2/27/23</u> END: <u>2/27/23</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>69.8</u>	LAT / LONG: <u>41.419246 N, 82.085709 W</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI					
ASPHALT - 5-3/4 INCHES	680.7																			
CONCRETE - 10-3/4 INCHES	679.8	1																		
GRANULAR BASE - 5 INCHES	679.4																			
FILL: Stiff to hard brown and dark-brown SILT AND CLAY "and" clay, damp.	678.2	2	7	12	67	SS-1A	-	-	-	-	-	-	-	-	-	-	A-1-a (V)	-		
Very-stiff brown mottled with gray CLAY , some silt, trace fine to coarse sand, damp.		3	5	13	78	SS-1B	1.5-4.5	2	16	34	24	24	25	14	11	16	A-6a (3)	540		
		4	4	13	78	SS-2	2.5-3.5	0	2	4	32	62	48	20	28	21	A-7-6 (17)	-		
		5	8	13	30	72	SS-3	1.5-2.5	-	-	-	-	-	-	-	-	24	A-7-6 (V)	-	
		6	12	13																
		7	14	16	35	78	SS-4	3.5-4.5	-	-	-	-	-	-	-	-	21	A-7-6 (V)	-	
	673.7	EOB																		

NOTES:

- No groundwater noted.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:48 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 808+71, 46' RT	EXPLORATION ID B-055-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / S. SMITH	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 676.4 (MSL) EOB: 8.0 ft.	PAGE 1 OF 1
START: 3/9/23 END: 3/9/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.420012 N, 82.084391 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 5 INCHES	676.0																		
CONCRETE - 10 INCHES	675.1	1																	
GRANULAR BASE - 5 INCHES	674.7	2																	
Very-stiff to hard brown SILTY CLAY , trace fine to coarse sand, varved, damp.		3	3																
		4	5	14	89	SS-1	3.5-4.5	0	1	0	28	71	39	18	21	23	A-6b (12)	667	
		5	2																
Stiff to very-stiff brown SANDY SILT , some to "and" clay, damp to moist.	671.2	6	2	8	67	SS-2	1.0-4.0	0	1	0	31	68	38	17	21	25	A-6b (12)	-	
	669.7	7	6	15	78	SS-3	1.0-1.5	-	-	-	-	-	-	-	-	14	A-4a (V)	-	
Very-stiff brown and gray SILT AND CLAY , some fine to coarse sand, trace fine gravel, damp.		8	5			SS-4A	-	-	-	-	-	-	-	-	-	14	A-4a (V)	-	
	668.4	EOB	6	14	78	SS-4B	2.0-3.5	-	-	-	-	-	-	-	-	16	A-6a (V)	-	

NOTES:

- Encountered groundwater at 6.5' during drilling.
- Boring was caved and wet at 6.5' after auger removal.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:48 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 812+48, 31' LT	EXPLORATION ID B-056-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / S. SMITH	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 671.6 (MSL) EOB: 6.5 ft.	PAGE 1 OF 1
START: 2/27/23 END: 2/27/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.421013 N, 82.083939 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO ₄ ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ROOTMAT - 4 INCHES	671.3		3																
POSSIBLE FILL: Very-stiff to hard dark-brown SILTY CLAY , trace fine to coarse sand, trace fine gravel, few sand seams, damp.	669.8	1	4	10	72	SS-1	3.0-4.5	3	6	4	29	58	39	19	20	15	A-6b (12)	5013	
		2	5	19	78	SS-2	4.0-4.5	1	0	0	30	69	36	18	18	21	A-6b (11)	-	
Very-stiff to hard brown and dark-brown SILTY CLAY , trace fine to coarse sand, trace fine gravel, moist.		3	7	24	89	SS-3	1.5-2.0	-	-	-	-	-	-	-	-	25	A-6b (V)	-	
		4	12	20	100	SS-4	1.75-3.0	-	-	-	-	-	-	-	-	22	A-6b (V)	-	
	665.1	6	9																
		EOB	8																

NOTES:

- No seepage noted.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 816+45, 33' RT	EXPLORATION ID B-057-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / S. SMITH	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 665.7 (MSL) EOB: 6.5 ft.	PAGE 1 OF 1
START: 3/9/23 END: 3/9/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.421969 N, 82.083202 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO ₄ ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ROOTMAT - 5 INCHES	665.3		4																
FILL: Very-stiff to hard brown and dark-brown SILT AND CLAY , some fine to coarse sand, little fine gravel, damp.	663.7	1	5	14	61	SS-1	3.5-4.5	15	11	15	25	34	32	17	15	14	A-6a (7)	433	
Hard dark-brown SILTY CLAY , little to some fine to coarse sand, trace fine gravel, pocket of sand and gravel at 4.7', damp.	661.1	2	7	20	89	SS-2	4.5+	6	8	12	29	45	30	14	16	12	A-6b (10)	-	
		3	8	23	94	SS-3	2.5-3.0	-	-	-	-	-	-	-	-	-	15	A-6b (V)	-
	659.2	4	6	21	67	SS-4	2.5-3.5	-	-	-	-	-	-	-	-	15	A-6b (V)	-	
		5	10																
		6	9																
		EOB	9																

NOTES:

- Encountered seepage at 4.6' during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:48 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: OTB / C. SVITAK	DRILL RIG: OTB SIMCO 2800	STATION / OFFSET: 817+88, 238' LT	EXPLORATION ID B-057-1-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / S. SMITH	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 2-1/4" HSA	CALIBRATION DATE: 12/22/22	ELEVATION: 669.0 (MSL) EOB: 8.0 ft.	PAGE 1 OF 1
START: 3/16/23 END: 3/16/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 83.2	LAT / LONG: 41.422513 N, 82.084042 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI					
ASPHALT - 10-1/2 INCHES	669.0																			
GRANULAR BASE - 9 INCHES	668.1	1																		
	667.4																			
FILL: Medium-dense brown and dark-brown COARSE AND FINE SAND , trace silt, little clay, little fine gravel, moist. Very-stiff to hard gray SILT AND CLAY , little fine to coarse sand, trace fine gravel, few sandstone fragments, few silt seams, damp.	666.4	2	6	15	78	SS-1A	-	13	26	45	9	7	NP	NP	NP	14	A-3a (0)	800		
		3	4	7		SS-1B	4.0	-	-	-	-	-	-	-	-	14	A-6a (V)	-		
		4	3	4	14	72	SS-2	3.5-4.5	7	8	11	30	44	28	15	13	14	A-6a (9)	-	
		5	3	5	14	61	SS-3	4.0	-	-	-	-	-	-	-	-	15	A-6a (V)	-	
		6	2	5	14	61	SS-3	4.0	-	-	-	-	-	-	-	-	15	A-6a (V)	-	
	661.0	7	5	17	78	SS-4	-	-	-	-	-	-	-	-	-	15	A-6a (V)	-		
		8	5	7																

NOTES:

- No groundwater noted.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:48 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: <u>LOR-90-10.76</u>	DRILLING FIRM / OPERATOR: <u>OTB / C. SVITAK</u>	DRILL RIG: <u>OTB SIMCO 2800</u>	STATION / OFFSET: <u>95+62, 141' RT</u>	EXPLORATION ID B-057-2-22
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>S&ME / S. SMITH</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR 254 CL</u>	PAGE 1 OF 1
PID: <u>107714</u> BR ID: <u>N/A</u>	DRILLING METHOD: <u>2-1/4" HSA</u>	CALIBRATION DATE: <u>12/22/22</u>	ELEVATION: <u>676.2 (MSL)</u> EOB: <u>8.0 ft.</u>	
START: <u>3/16/23</u> END: <u>3/16/23</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>83.2</u>	LAT / LONG: <u>41.423493 N, 82.084565 W</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 10-1/2 INCHES	676.2																		
GRANULAR BASE - 9-1/2 INCHES	675.3	1																	
FILL: Medium-dense brown GRAVEL , trace silt, trace clay, some fine to coarse sand, damp. FILL: Loose brown GRAVEL WITH SAND , trace silt, trace clay, damp to moist.	674.5	2	4			SS-1A	-	64	15	13	5	3	NP	NP	NP	4	A-1-a (0)	-	
	673.7	3	6	15	67	SS-1B	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	180	
		4	3			SS-2	-	15	35	41	5	4	NP	NP	NP	10	A-1-b (0)	-	
		5	2																
		6	3			SS-3	-	-	-	-	-	-	-	-	-	15	A-1-b (V)	-	
		7	2			SS-4	-	-	-	-	-	-	-	-	-	21	A-1-b (V)	-	
	668.2	8	2																

NOTES:

- Encountered seepage at 5.4'.
- Water measured at 6.7' after auger removal.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 820+34, 46' LT	EXPLORATION ID B-058-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / S. SMITH	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 661.8 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1
START: 2/27/23 END: 2/27/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.423055 N, 82.083216 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI					
ASPHALT - 5 INCHES	661.4																			
CONCRETE - 10-1/4 INCHES	660.5	1																		
GRANULAR BASE - 6 INCHES	660.0	2	9			SS-1A		-	-	-	-	-	-	-	-	-	-	A-1-a (V)		
Very-stiff to hard dark-brown SILT AND CLAY , little fine to coarse sand, trace fine gravel, damp.	W 657.3	3	11 11	26	67	SS-1B	4.5+	10	8	11	29	42	28	14	14	12		A-6a (9)	5013	
		4	7 7	16	33	SS-2	4.5+	9	9	11	31	40	30	15	15	14		A-6a (9)	-	
		5	8 12	28	39	SS-3	2.5- 3.5	-	-	-	-	-	-	-	-	-	17		A-6a (V)	-
		6	14 15	36	100	SS-4	3.5- 4.5	-	-	-	-	-	-	-	-	-	16		A-6a (V)	-
		7	16																	
	654.3	EOB																		

NOTES:

- Encountered groundwater at 4.5' during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:48 - R:\SERVICE LINES\CS-2657\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: <u>LOR-90-10.76</u>	DRILLING FIRM / OPERATOR: <u>OTB / C. SVITAK</u>	DRILL RIG: <u>OTB SIMCO 2800</u>	STATION / OFFSET: <u>823+15, 340' RT</u>	EXPLORATION ID B-058-1-22
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>S&ME / S. SMITH</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>IR 90 MAINLINE</u>	
PID: <u>107714</u> BR ID: <u>N/A</u>	DRILLING METHOD: <u>2-1/4" HSA</u>	CALIBRATION DATE: <u>12/22/22</u>	ELEVATION: <u>667.6 (MSL)</u> EOB: <u>8.0 ft.</u>	PAGE
START: <u>3/16/23</u> END: <u>3/16/23</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>83.2</u>	LAT / LONG: <u>41.423803 N, 82.081754 W</u>	1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 10-1/4 INCHES	667.6																		
GRANULAR BASE - 11 INCHES	666.8	1																	
FILL: Dense dark-brown COARSE AND FINE SAND , little clay, little silt, trace fine gravel, dry.	665.9	2	8																
	664.1	3	14 10	33	100	SS-1	-	8	20	42	13	17	18	13	5	8	A-3a (0)	433	
Very-stiff to hard gray SANDY SILT , "and" clay, trace fine gravel, few sandstone fragments, damp.	664.1	4	6 7	21	67	SS-2	4.5+	6	9	11	30	44	23	17	6	13	A-4a (8)	-	
		5	4 5	17	78	SS-3	3.0-4.5	-	-	-	-	-	-	-	-	-	15	A-4a (V)	-
	659.6	6	4 7	17	78	SS-3	3.0-4.5	-	-	-	-	-	-	-	-	-	15	A-4a (V)	-
		7	4 7	21	83	SS-4	4.0-4.5	-	-	-	-	-	-	-	-	-	14	A-4a (V)	-
		8	8																

NOTES:

- No groundwater was encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:48 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: OTB / C. SVITAK	DRILL RIG: OTB SIMCO 2800	STATION / OFFSET: 105+76, 134' RT	EXPLORATION ID
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / S. SMITH	HAMMER: CME AUTOMATIC	ALIGNMENT: SR 254 CL	B-058-2-22
PID: 107714 BR ID: N/A	DRILLING METHOD: 2-1/4" HSA	CALIBRATION DATE: 12/22/22	ELEVATION: 672.8 (MSL) EOB: 7.5 ft.	PAGE
START: 3/16/23 END: 3/16/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 83.2	LAT / LONG: 41.424567 N, 82.081157 W	1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 9-1/2 INCHES	672.1																		
GRANULAR BASE - 8-1/2 INCHES	671.3	1																	
FILL: Medium-dense to dense brown COARSE AND FINE SAND , little fine gravel, trace silt, seams of very-soft silty clay from 6.7'-6.8', damp becoming wet. @ 6.0' loose	668.3	2	7	47	67	SS-1		11	26	43	12	8	NP	NP	NP	8	A-3a (0)	213	
		3	6	9	22	94	SS-2		6	28	52	8	6	NP	NP	NP	17	A-3a (0)	-
		4	3	5	17	56	SS-3		-	-	-	-	-	-	-	-	23	A-3a (V)	-
		5	4	3	10	67	SS-4A		-	-	-	-	-	-	-	-	20	A-3a (V)	-
		6	3	4			SS-4B		-	-	-	-	-	-	-	-	31	A-6b (V)	-
	665.3	7	4			SS-4C		-	-	-	-	-	-	-	23	A-3a (V)	-		
		EOB																	

NOTES:

- Encountered seepage at 3.8' during drilling.
- Groundwater encountered at 4.5'.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:48 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 824+33, 46' RT	EXPLORATION ID B-059-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / S. SMITH	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 657.3 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1
START: 3/9/23 END: 3/9/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.424134 N, 82.082828 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 3-1/4 INCHES	657.0																		
CONCRETE - 9-1/2 INCHES	656.3	1																	
GRANULAR BASE - 6 INCHES	655.8	2	4																
Hard dark-brown SILT AND CLAY , little fine to coarse sand, trace fine gravel, damp.		3	7	19	56	SS-1	4.5+	6	8	12	25	49	30	15	15	17	A-6a (10)	827	
		4	6	22	67	SS-2	4.5+	2	5	9	32	52	33	18	15	14	A-6a (10)	-	
		5	9	37	67	SS-3	4.5+	-	-	-	-	-	-	-	-	-	16	A-6a (V)	-
		6	15	37	100	SS-4A	4.5+	-	-	-	-	-	-	-	-	-	10	A-6a (V)	-
		7	13	37	100	SS-4B	-	-	-	-	-	-	-	-	-	-	8	A-3a (V)	-
Dense dark brown and black COARSE AND FINE SAND , little silt, little clay, trace fine gravel, damp.	650.3	EOB	15																
	649.8		17																

NOTES:

- No seepage noted.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:48 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: OTB / C. SVITAK	DRILL RIG: OTB SIMCO 2800	STATION / OFFSET: 96+79, 226' LT	EXPLORATION ID B-059-1-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / S. SMITH	HAMMER: CME AUTOMATIC	ALIGNMENT: SR 254 CL	
PID: 107714 BR ID: N/A	DRILLING METHOD: 2-1/4" HSA	CALIBRATION DATE: 12/22/22	ELEVATION: 671.7 (MSL) EOB: 8.0 ft.	PAGE 1 OF 1
START: 3/16/23 END: 3/16/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 83.2	LAT / LONG: 41.424548 N, 82.084680 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 2-3/4 INCHES	671.4																		
CONCRETE - 9-3/4 INCHES	670.7	1																	
GRANULAR BASE - 7 INCHES	670.1	2	6																
FILL: Medium-dense to very-dense brown and gray COARSE AND FINE SAND , little silt, trace to little clay, trace to little fine gravel, damp		3	7	26	78	SS-1	-	10	18	38	18	16	20	15	5	12	A-3a (0)	540	
		4	7	25	54	SS-2	-	19	30	27	15	9	NP	NP	NP	10	A-3a (0)	-	
	666.7	5	6	14															
POSSIBLE FILL: Very-stiff to hard dark-brown and gray SILT AND CLAY , some fine to coarse sand, little fine gravel, damp.		6	7	29	72	SS-3	3.0-4.5	-	-	-	-	-	-	-	-	12	A-6a (V)	-	
	664.3	7	6	14															
POSSIBLE FILL: Dense brown SANDY SILT , little clay, little fine gravel, few roots, damp.	663.8	8	11	35	94	SS-4A	4.5+	-	-	-	-	-	-	-	-	11	A-6a (V)	-	
		EOB	6	14		SS-4B		-	-	-	-	-	-	-	-	13	A-4a (V)	-	

NOTES:

- No ground water encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:48 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: OTB / C. SVITAK	DRILL RIG: OTB SIMCO 2800	STATION / OFFSET: 829+45, 193' LT	EXPLORATION ID B-059-2-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / S. SMITH	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 2-1/4" HSA	CALIBRATION DATE: 12/22/22	ELEVATION: 656.0 (MSL) EOB: 8.0 ft.	PAGE 1 OF 1
START: 3/16/23 END: 3/16/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 83.2	LAT / LONG: 41.425535 N, 82.083713 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 5 INCHES	655.6																		
CONCRETE - 9-1/4 INCHES	654.8	1																	
GRANULAR BASE - 6 INCHES	654.3																		
FILL: Medium-dense brown SANDY SILT , little clay, trace fine gravel, damp.	653.7	2	3			SS-1A	3.0	-	-	-	-	-	-	-	-	-	12	A-4a (V)	-
	652.5	3	6	25	78	SS-1B	3.5-4.5	4	6	11	26	53	35	18	17	15	A-6b (11)	400	
FILL: Very-stiff to hard brown SILTY CLAY , little fine to coarse sand, trace fine gravel, damp.	650.9	4	5			SS-2	3.0-4.5+	7	9	32	26	26	27	16	11	15	A-6a (4)	-	
POSSIBLE FILL: Very-stiff to hard dark-brown and gray SILT AND CLAY , "and" fine to coarse sand, trace fine gravel, slight organic odor, damp.	650.6	5	3																
	648.6	6	5	17	72	SS-3	-	-	-	-	-	-	-	-	-	21	A-2-6 (V)	-	
Medium-dense gray GRAVEL WITH SAND, SILT AND CLAY , wet.	648.0	7	2			SS-4A	-	-	-	-	-	-	-	-	-	21	A-2-6 (V)	-	
	648.0	8	3	15	78	SS-4B	4.5+	-	-	-	-	-	-	-	-	15	A-6a (V)	-	
Hard brown mottled with gray SILT AND CLAY , little fine to coarse sand, trace fine to coarse gravel (sandstone fragments), damp.		EOB	8																

NOTES:

- Encountered seepage at 5.4' during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE



PROJECT: <u>LOR-90-10.76</u>	DRILLING FIRM / OPERATOR: <u>S&ME / T. FROST</u>	DRILL RIG: <u>S&ME ATV D50 (R61)</u>	STATION / OFFSET: <u>828+62, 33' LT</u>	EXPLORATION ID B-060-0-22
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>S&ME / S. SMITH</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>IR 90 MAINLINE</u>	
PID: <u>107714</u> BR ID: <u>N/A</u>	DRILLING METHOD: <u>4-1/2" CFA</u>	CALIBRATION DATE: <u>6/7/22</u>	ELEVATION: <u>653.3 (MSL)</u> EOB: <u>6.5 ft.</u>	PAGE 1 OF 1
START: <u>2/27/23</u> END: <u>2/27/23</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>69.8</u>	LAT / LONG: <u>41.425284 N, 82.083129 W</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ROOTMAT - 6 INCHES	652.8																		
FILL: Medium-dense brown COARSE AND FINE SAND , little clay, little silt, trace gravel, damp.	651.9	1	4			SS-1A	-	6	21	45	15	13	19	15	4	13	A-3a (0)	413	
		2	5	13	100	SS-1B	2.5-4.5	27	7	10	27	29	31	17	14	16	A-6a (6)	-	
FILL: Very-stiff to hard brown, dark brown, and gray SILT AND CLAY , little to some fine to coarse sand, little to some fine gravel, damp.		3	6	15	44	SS-2	4.5	-	-	-	-	-	-	-	-	10	A-6a (V)	-	
		4	9	26	100	SS-3	4.5+	-	-	-	-	-	-	-	-	9	A-6a (V)	-	
		5	11																
		6	12	35	89	SS-4	4.5+	-	-	-	-	-	-	-	-	11	A-6a (V)	-	
	646.8	EOB	15																

NOTES:

- No groundwater noted.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE

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S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: OTB / C. SVITAK	DRILL RIG: OTB SIMCO 2800	STATION / OFFSET: 106+11, 155' LT	EXPLORATION ID B-060-1-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / S. SMITH	HAMMER: CME AUTOMATIC	ALIGNMENT: SR 254 CL	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 12/22/22	ELEVATION: 672.1 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1
START: 3/16/23 END: 3/16/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 83.2	LAT / LONG: 41.425337 N, 82.081436 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO ₄ ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 2-3/4 INCHES	671.8																		
CONCRETE - 9-1/4 INCHES	671.1	1																	
GRANULAR BASE - 6 INCHES	670.6	2	3																
FILL: Very-stiff to hard dark-brown and gray SILT AND CLAY , some fine to coarse sand, trace fine gravel, becoming black with slightly organic odor below 3', damp.	668.8	3	8 14	31	78	SS-1	3.5- 4.5+	10	10	14	26	40	28	17	11	11	A-6a (7)	913	
		4	5 13 16	40	94	SS-2A	4.5+	-	-	-	-	-	-	-	-	14	A-6a (V)	-	
Dense dark-brown COARSE AND FINE SAND , little silt, little clay, trace fine gravel, damp.		5	10 15 14	40	94	SS-2B	-	8	19	45	15	13	NP	NP	NP	9	A-3a (0)	-	
		6				SS-3	-	-	-	-	-	-	-	-	-	9	A-3a (V)	-	
		7	3 12 11	32	89	SS-4	-	-	-	-	-	-	-	-	-	9	A-3a (V)	-	
	664.6	EOB																	

NOTES:

- No groundwater encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:48 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: OTB / C. SVITAK	DRILL RIG: OTB SIMCO 2800	STATION / OFFSET: 831+68, 209' RT	EXPLORATION ID B-060-2-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / S. SMITH	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 12/22/22	ELEVATION: 659.5 (MSL) EOB: 8.1 ft.	PAGE 1 OF 1
START: 3/16/23 END: 3/16/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 83.2	LAT / LONG: 41.426154 N, 82.082256 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 5-1/2 INCHES	659.1																		
CONCRETE - 9-1/2 INCHES	658.2	1																	
GRANULAR BASE - 10 INCHES	657.4	2																	
FILL: Very-stiff to hard dark-brown to gray SILT AND CLAY , some fine to coarse sand, trace fine to coarse gravel, damp.		3	3	17	94	SS-1	3.5-4.5	5	9	14	33	39	27	15	12	12	A-6a (8)	853	
		4	2	4	11	72	SS-2	3.5-4.5	5	9	17	25	44	29	17	12	13	A-6a (8)	-
		5	4	4			SS-3A	3.0-4.5	-	-	-	-	-	-	-	-	13	A-6a (V)	-
FILL: Medium-dense brown COARSE AND FINE SAND , little clay, little silt, trace to little fine gravel, damp. @6.6' very-dense, few slag fragments.	653.7	6	4	6	25	89	SS-3B	-	-	-	-	-	-	-	-	10	A-3a (V)	-	
		7	12	6	12														
	651.4	8	12	29	75	100	SS-4	-	-	-	-	-	-	-	-	9	A-3a (V)	-	
		EOB	25																

NOTES:

- Boring caved at 5.7' after auger removal, boring hole was dry.
- No ground water encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:48 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 832+49, 34' RT	EXPLORATION ID B-061-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / S. SMITH	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 652.0 (MSL) EOB: 6.5 ft.	PAGE 1 OF 1
START: 3/9/23 END: 3/9/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.426374 N, 82.082891 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ROOTMAT - 5 INCHES	651.6		3																
Hard brown and dark-brown SILT AND CLAY , "and" fine to coarse sand, trace fine gravel, damp.	650.0	1	5	16	50	SS-1	4.5+	9	15	26	23	27	27	16	11	11	A-6a (3)	1760	
Very-stiff to hard brown and dark-brown SILTY CLAY , some fine to coarse sand, trace fine to coarse gravel, few seams and pockets of sand and gravel, damp.		2	6	15	67	SS-2	3.5-4.5	10	9	22	28	31	35	18	17	16	A-6b (8)	-	
		3	7	24	78	SS-3	3.5-4.0	-	-	-	-	-	-	-	-	20	A-6b (V)	-	
		4	10	34	67	SS-4	3.5-3.75	-	-	-	-	-	-	-	-	21	A-6b (V)	-	
		5	13																
	645.5	6	13	16															

NOTES:

- No groundwater encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:48 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 836+47, 45' LT	EXPLORATION ID B-062-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / S. SMITH	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 651.5 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1
START: 2/20/23 END: 2/20/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.427465 N, 82.083196 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 6 INCHES	651.0																		
CONCRETE - 9-1/4 INCHES	650.2	1																	
GRANULAR BASE - 6 INCHES	649.7																		
FILL: Medium-dense brown to dark brown COARSE AND FINE SAND , little silt, little clay, trace fine gravel, pockets of medium-stiff clay, damp. Very-stiff to hard brown mottled with dark-brown and gray SILTY CLAY , some fine to coarse sand, trace fine gravel, damp to moist.	648.5	2	3	21	72	SS-1A	-	-	-	-	-	-	-	-	14	A-1-a (V)	-		
		3	4	14	24	72	SS-1B	-	10	20	41	16	13	18	14	4	8	A-3a (0)	853
		4	10	11	24	72	SS-2	4.5+	4	10	14	36	36	36	19	17	18	A-6b (10)	-
		5	7	13	29	61	SS-3	3.5	-	-	-	-	-	-	-	-	25	A-6b (V)	-
		6	17	14	28	100	SS-4	3.5-4.0	-	-	-	-	-	-	-	-	18	A-6b (V)	-
	644.0	7	14	10															

EOB

NOTES:

- No groundwater encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 840+67, 47' RT	EXPLORATION ID: B-063-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / S. SMITH	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 650.6 (MSL) EOB: 7.5 ft.	PAGE: 1 OF 1
START: 3/9/23 END: 3/9/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.428620 N, 82.082874 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 5 INCHES	650.2																		
CONCRETE - 9-3/4 INCHES	649.4	1																	
GRANULAR BASE - 7 INCHES	648.8	2	3			SS-1A	-	-	-	-	-	-	-	-	16	A-1-a (V)	-		
POSSIBLE FILL: Medium-dense brown COARSE AND FINE SAND , little silt, little clay, little fine gravel, damp.	646.8	3	7	21	72	SS-1B	-	11	20	45	13	11	NP	NP	NP	8	A-3a (0)	1120	
			4	6	19	78	SS-2A	-	-	-	-	-	-	-	-	10	A-3a (V)	-	
Very-stiff to hard gray and black SILT AND CLAY , "and" fine to coarse sand, trace fine gravel, damp to moist.	646.1	4	6	10	19	78	SS-2B	2.5-4.5	7	13	28	26	26	29	16	13	15	A-6a (5)	-
			8	10	23	100	SS-3A	-	-	-	-	-	-	-	-	12	A-3a (V)	-	
Medium-dense dark-brown and black COARSE AND FINE SAND , little silt, trace clay, moist.	645.2	5	10	10	23	100	SS-3B	4.5	-	-	-	-	-	-	-	-	14	A-7-6 (V)	-
			7	10	27	61	SS-4	4.0-4.5	-	-	-	-	-	-	-	-	-	19	A-7-6 (V)
Very-stiff to hard dark-brown and gray CLAY , some silt, some fine to coarse sand, trace to little fine gravel, damp.	643.1	7	10	13															

NOTES:

- Encountered seepage at 4.5'.
- Boring caved at 5' after removing augers and was dry.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 844+41, 33' LT	EXPLORATION ID B-064-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / S. SMITH	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 649.2 (MSL) EOB: 6.5 ft.	PAGE 1 OF 1
START: 2/20/23 END: 2/20/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.429644 N, 82.083174 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ROOTMAT - 7 INCHES	648.6		2																
FILL: Stiff brown SILT AND CLAY , "and" fine to coarse sand, trace fine gravel, damp.	647.2	1	2	9	56	SS-1	1.0-1.5	9	14	29	21	27	27	15	12	14	A-6a (3)	7467	
FILL: Medium-dense brown COARSE AND FINE SAND , trace fine gravel, little clay, damp.	646.5	2	9	14	94	SS-2A	-	11	18	36	17	18	22	21	1	10	A-3a (0)	-	
Very-stiff brown and dark-brown CLAY , some to "and" silt, little fine to coarse sand, trace fine gravel, zone of stiff black silty clay from 3.5' to 5.0', damp to moist.		3	6			SS-2B	3.0-3.5	-	-	-	-	-	-	-	-	20	A-7-6 (V)	-	
		4	4	16	67	SS-3	1.0-2.0	-	-	-	-	-	-	-	-	27	A-7-6 (V)	-	
		5	9																
		6	11	28	100	SS-4	2.0-3.5	-	-	-	-	-	-	-	-	23	A-7-6 (V)	-	
	642.7	EOB	13																

NOTES:

- No groundwater encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:48 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 848+46, 33' RT	EXPLORATION ID
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / S. SMITH	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	B-065-0-22
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 648.3 (MSL) EOB: 6.5 ft.	PAGE
START: 3/9/23 END: 3/9/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.430754 N, 82.082932 W	1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ROOTMAT - 4 INCHES	648.0																		
FILL: Very-stiff to hard brown SILT AND CLAY , some fine to coarse sand, little fine gravel, damp to moist.	646.5	1	3	14	72	SS-1	3.5-4.5	17	12	19	22	30	30	15	15	13	A-6a (5)	5040	
FILL: Medium-dense brown COARSE AND FINE SAND , little silt, trace clay, trace fine gravel, damp.	644.9	2	10	15	78	SS-2	-	-	-	-	-	-	-	-	-	14	A-3a (V)	-	
FILL: Stiff to very-stiff dark-brown, gray, and black CLAY , some silt, little fine to coarse sand, trace fine gravel, slight organic, moist.	643.5	3	7	15	78	SS-3	1.5-3.5	3	6	12	36	43	44	18	26	23	A-7-6 (15)	-	
Medium-stiff to very-stiff dark-brown and black SANDY SILT , some clay, trace fine gravel, slight organic, moist.	641.8	4	5	15	78	SS-3	1.5-3.5	3	6	12	36	43	44	18	26	23	A-7-6 (15)	-	
		5	7	17	78	SS-4	0.5-2.5	-	-	-	-	-	-	-	-	20	A-4a (V)	-	
		6	7	17	78	SS-4	0.5-2.5	-	-	-	-	-	-	-	-	20	A-4a (V)	-	
		EOB	8																

NOTES:

- No groundwater encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:48 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 852+50, 46' LT	EXPLORATION ID B-066-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / S. SMITH	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 647.8 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1
START: 2/20/23 END: 2/20/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.431877 N, 82.083112 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 5-3/4 INCHES	647.3																		
CONCRETE - 10-1/4 INCHES	646.5	1																	
GRANULAR BASE - 4 INCHES	646.1																		
FILL: Loose to medium-dense brown and dark-brown GRAVEL WITH SAND AND SILT , little clay, damp.	644.0	2	4	7	17	SS-1A	-	-	-	-	-	-	-	-	-	-	-	A-1-a (V)	
		3	3			SS-1B	-	-	-	-	-	-	-	-	-	-	-	A-2-4 (V)	
		4	8	19	100	SS-2A	-	14	17	38	16	15	21	13	8	10	11	A-2-4 (0)	
FILL: Stiff brown and dark-brown SILTY CLAY , some fine to coarse sand, trace fine gravel, moist.	641.8	5	12	30	33	SS-2B	1.5-2.0	7	9	20	32	32	33	17	16	20	-	A-6b (8)	
		6	14			SS-3	4.5+	-	-	-	-	-	-	-	-	-	-	A-6b (V)	
		7	10			SS-4	1.0-2.0	-	-	-	-	-	-	-	-	-	-	A-7-6 (V)	
Hard dark-brown stained with black CLAY , some to "and" silt, trace to little fine to coarse sand, trace fine gravel, few stiff zones, damp to moist.	640.3	EOB	13	28	67														
			11																

NOTES:

- No groundwater encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

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S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 856+77, 45' RT	EXPLORATION ID B-067-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / S. SMITH	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 646.3 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1
START: 3/9/23 END: 3/9/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.432984 N, 82.082502 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 5-1/4 INCHES	645.9																		
CONCRETE - 10-1/2 INCHES	645.0	1																	
GRANULAR BASE - 4 INCHES	644.7																		
FILL: Stiff to very-stiff brown SILT AND CLAY , some fine to coarse sand, trace fine gravel, damp.	643.7	2	5	15	44	SS-1	1.5-3.5	5	10	22	27	36	29	17	12	14	A-6a (6)	520	
POSSIBLE FILL: Dense brown and dark-brown SANDY SILT , little clay, trace fine gravel, damp.		3	10																
		4	18	42	100	SS-2	-	10	17	37	17	19	21	14	7	9	A-4a (0)	-	
Very-stiff gray mottled with brown CLAY , some to "and" silt, little fine to coarse sand, trace fine gravel, few slightly organic pockets below 6', moist.	641.8	5	14	24	67	SS-3	2.75-3.75	-	-	-	-	-	-	-	-	22	A-7-6 (V)	-	
		6	10																
		7	14	38	78	SS-4	3.25-3.75	-	-	-	-	-	-	-	-	25	A-7-6 (V)	-	
	638.8		15																

EOB

NOTES:

- No groundwater encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:48 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: <u>LOR-90-10.76</u>	DRILLING FIRM / OPERATOR: <u>S&ME / T. FROST</u>	DRILL RIG: <u>S&ME ATV D50 (R61)</u>	STATION / OFFSET: <u>860+52, 32' LT</u>	EXPLORATION ID B-068-0-22
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>S&ME / S. SMITH</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>IR 90 MAINLINE</u>	
PID: <u>107714</u> BR ID: <u>N/A</u>	DRILLING METHOD: <u>4-1/2" CFA</u>	CALIBRATION DATE: <u>6/7/22</u>	ELEVATION: <u>644.8 (MSL)</u> EOB: <u>6.5 ft.</u>	PAGE 1 OF 1
START: <u>2/20/23</u> END: <u>2/20/23</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>69.8</u>	LAT / LONG: <u>41.434027 N, 82.082389 W</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ROOTMAT - 4 INCHES	644.5		2																
POSSIBLE FILL: Hard dark-brown SILT AND CLAY , some fine to coarse sand, little fine gravel, dry.	642.8	1	6	15	100	SS-1	4.5	9	12	21	26	32	28	14	14	6	A-6a (6)	6453	
Medium-dense to dense brown GRAVEL WITH SAND , trace silt, trace clay, damp.		2	13	41	67	SS-2	-	56	14	12	9	9	NP	NP	NP	12	A-1-b (0)	-	
	640.7	3	17																
		4	18																
Very-stiff to hard dark-brown CLAY , some silt, little to some fine to coarse sand, trace fine gravel, damp.	639.8	4	14	29	89	SS-3A	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	-	
		5	15			SS-3B	2.0-4.5	-	-	-	-	-	-	-	-	22	A-7-6 (V)	-	
Stiff brown and gray CLAY , "and" silt, trace to little fine to coarse sand, moist.	638.3	5	3																
		6	5	15	67	SS-4	1.5-2.0	-	-	-	-	-	-	-	-	30	A-7-6 (V)	-	
		EOB	8																

NOTES:

- Encountered groundwater at 3.9' during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 864+57, 32' RT	EXPLORATION ID B-069-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / S. SMITH	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 644.6 (MSL) EOB: 6.5 ft.	PAGE 1 OF 1
START: 3/9/23 END: 3/9/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.434990 N, 82.081606 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO ₄ ppm	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI					
ROOTMAT - 7 INCHES	644.0																			
POSSIBLE FILL: Very-stiff brown SILT AND CLAY , some fine to coarse sand, trace fine gravel, damp.	642.2	1	2	7	61	SS-1	2.7-4.0	10	12	20	24	34	30	17	13	13	A-6a (6)	360	>	
Medium-dense brown COARSE AND FINE SAND , little silt, little clay, little fine gravel, damp.	641.1	2	4	27	78	SS-2A	3.5-4.0	-	-	-	-	-	-	-	-	13	A-6a (V)	-	>	
Very-stiff to hard brown SILT AND CLAY , some fine to coarse sand, trace fine gravel, damp.	638.1	3	10	13		SS-2B	4.0	15	19	35	16	15	19	15	4	10	A-3a (0)	-	>	
		4	10	13	30	67	SS-3	2.5-4.5+	-	-	-	-	-	-	-	-	17	A-6a (V)	-	>
		5	13																	>
		6	15	13	33	78	SS-4	2.7	-	-	-	-	-	-	-	17	A-6a (V)	-		>

NOTES:

- No groundwater encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 868+36, 45' LT	EXPLORATION ID B-070-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / S. SMITH	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 644.0 (MSL) EOB: 8.0 ft.	PAGE 1 OF 1
START: 2/20/23 END: 2/20/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.436010 N, 82.081222 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI					
ASPHALT - 5 INCHES	643.6																			
CONCRETE - 10 INCHES	642.7	1																		
GRANULAR BASE - 4 INCHES	642.4	2																		
POSSIBLE FILL: Very-stiff to brown and gray SILT AND CLAY , little to some fine to coarse sand, trace fine gravel, damp.		3	1	4	10	67	SS-1	4.0	4	8	15	26	47	30	16	14	17	A-6a (9)	800	
		4	6	8	20	61	SS-2	3.5	4	6	13	33	44	28	14	14	16	A-6a (10)	-	
		5	4	4	9		SS-3A	2.0	-	-	-	-	-	-	-	-	-	24	A-6a (V)	-
Very-stiff brown CLAY , some to "and" silt, trace to little fine to coarse sand, trace fine gravel, moist.	638.8	6	4	4	10	67	SS-3B	2.0	-	-	-	-	-	-	-	-	-	26	A-7-6 (V)	-
	636.0	7	6	7	11	21	94	SS-4	4.0	-	-	-	-	-	-	-	-	25	A-7-6 (V)	-
		8																		

NOTES:

- No groundwater encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

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S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: OTB / C. SVITAK	DRILL RIG: OTB SIMCO 2800	STATION / OFFSET: 872+73, 45' RT	EXPLORATION ID B-071-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / M. KHAN	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 2-1/4" HSA	CALIBRATION DATE: 12/22/22	ELEVATION: 642.8 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1
START: 4/6/23 END: 4/6/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 83.2	LAT / LONG: 41.436929 N, 82.080146 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO ₄ ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 5-1/2 INCHES	642.3																		
CONCRETE - 9-1/2 INCHES	641.5	1																	
GRANULAR BASE - 3 INCHES	641.3																		
FILL: Very-stiff gray SILT AND CLAY , "and" fine to coarse sand, little fine gravel, moist.	639.8	2	2	17	78	SS-1	2.0	12	16	21	21	30	27	15	12	13	A-6a (4)	293	
FILL: Very-dense gray and brown GRAVEL WITH SAND AND SILT , little clay, damp.	638.3	3	4	13	53	SS-2	-	14	35	26	14	11	21	14	7	9	A-2-4 (0)	-	
Very-stiff to hard brown and gray CLAY , some silt, little fine to coarse sand, trace fine gravel, damp.		4	7	21	94	SS-3	4.5-4.5+	-	-	-	-	-	-	-	-	-	20	A-7-6 (V)	-
		5	10	4	24	94	SS-3	4.5-4.5+	-	-	-	-	-	-	-	-	20	A-7-6 (V)	-
	635.3	6	3	6	21	89	SS-4	2.5-4.0	-	-	-	-	-	-	-	-	25	A-7-6 (V)	-
		7	6	9															

NOTES:

- Boring hole caved at 4.4' after auger removal, boring was dry.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

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S&ME JOB: 217525



PROJECT: <u>LOR-90-10.76</u>	DRILLING FIRM / OPERATOR: <u>S&ME / T. FROST</u>	DRILL RIG: <u>S&ME ATV D50 (R61)</u>	STATION / OFFSET: <u>876+69, 32' LT</u>	EXPLORATION ID
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>S&ME / S. SMITH</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>IR 90 MAINLINE</u>	B-072-0-22
PID: <u>107714</u> BR ID: <u>N/A</u>	DRILLING METHOD: <u>4-1/2" CFA</u>	CALIBRATION DATE: <u>6/7/22</u>	ELEVATION: <u>641.3 (MSL)</u> EOB: <u>6.5 ft.</u>	PAGE
START: <u>2/20/23</u> END: <u>2/20/23</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>69.8</u>	LAT / LONG: <u>41.437976 N, 82.079675 W</u>	1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO ₄ ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ROOTMAT - 7 INCHES	641.3																		
POSSIBLE FILL: Hard brown SANDY SILT , some clay, trace fine gravel, damp.	640.7		4																
	639.3	1	4	10	78	SS-1	4.0-4.5+	7	12	28	21	32	27	17	10	16	A-4a (4)	5813	
Stiff to very-stiff brown and dark-brown SILTY CLAY , little fine to coarse sand, trace fine gravel, damp.		2	4																
		3	4	12	72	SS-2	3.0	5	5	12	28	50	34	18	16	20	A-6b (10)	-	
		4	6																
	636.3	5	6	16	89	SS-3	1.5	-	-	-	-	-	-	-	-	22	A-6b (V)	-	
Stiff to very-stiff brown CLAY , some to "and" silt, trace to little fine to coarse sand, trace fine gravel, damp to moist.	634.8	6	9	24	78	SS-4	1.0-3.0	-	-	-	-	-	-	-	-	28	A-7-6 (V)	-	
		EOB	12																

NOTES:

- No groundwater encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:48 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: <u>LOR-90-10.76</u>	DRILLING FIRM / OPERATOR: <u>OTB / C. SVITAK</u>	DRILL RIG: <u>OTB SIMCO 2800</u>	STATION / OFFSET: <u>880+62, 31' RT</u>	EXPLORATION ID B-073-0-22
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>S&ME / M. KHAN</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>IR 90 MAINLINE</u>	
PID: <u>107714</u> BR ID: <u>N/A</u>	DRILLING METHOD: <u>2-1/4" HSA</u>	CALIBRATION DATE: <u>12/22/22</u>	ELEVATION: <u>640.3 (MSL)</u> EOB: <u>7.0 ft.</u>	PAGE
START: <u>4/6/23</u> END: <u>4/6/23</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>83.2</u>	LAT / LONG: <u>41.438824 N, 82.078755 W</u>	1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ROOTMAT - 3 INCHES	640.3																		
FILL: Very-stiff to hard brown and dark-brown SILTY CLAY , some fine to coarse sand, little fine gravel, damp.	637.8	1	5																
		2	7	22	100	SS-1	-	17	15	18	22	28	34	17	17	13	A-6b (5)	180	
Very-stiff to hard brown mottled with gray SILTY CLAY , "and" fine to coarse sand, trace fine gravel, damp.		3	3																
		4	5	15	89	SS-2	4.0-4.25	2	19	19	26	34	35	17	18	22	A-6b (8)	-	
	634.8	5	3																
		6	5	15	78	SS-3	3.5-4.0	-	-	-	-	-	-	-	-	25	A-6b (V)	-	
Very-stiff brown mottled with gray SANDY SILT , some clay, trace fine gravel, damp.	633.3	7	3																
		EOB	4	15	100	SS-4	3.0-4.0	-	-	-	-	-	-	-	-	17	A-4a (V)	-	

NOTES:

- No groundwater encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:48 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 884+50, 45' LT	EXPLORATION ID B-074-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / S. SMITH	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 640.2 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1
START: 2/20/23 END: 2/20/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.439855 N, 82.078300 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 5-3/4 INCHES	640.2																		
CONCRETE - 10-1/4 INCHES	639.7	1																	
GRANULAR BASE - 4 INCHES	638.8																		
POSSIBLE FILL: Very-stiff brown and dark-brown SILTY CLAY , some fine to coarse sand, trace fine gravel, damp to moist.	638.4	2	2			SS-1A	-	-	-	-	-	-	-	-	-	-	-	-	
		3	3	8	28	SS-1B	2.5-3.0	-	-	-	-	-	-	-	-	-	17	A-6b (V)	647
Very-stiff to hard dark-brown SILT AND CLAY , some fine to coarse sand, trace fine gravel, moist.	635.7	4	4	12	39	SS-2	2.5-3.0	4	9	24	25	38	30	13	17	19	A-6b (8)	-	
	634.2	5	9	13	67	SS-3	3.0-4.5	7	8	17	30	38	32	17	15	20	A-6a (9)	-	
Very-stiff brown CLAY , some to "and" silt, little fine to coarse sand, trace fine gravel, damp.	632.7	6	8																
		7	8	12	78	SS-4	2.5-3.0	-	-	-	-	-	-	-	-	-	25	A-7-6 (V)	-

EOB

NOTES:

- No groundwater encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: OTB / C. SVITAK	DRILL RIG: OTB SIMCO 2800	STATION / OFFSET: 888+82, 45' RT	EXPLORATION ID B-075-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / M. KHAN	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 2-1/4" HSA	CALIBRATION DATE: 12/22/22	ELEVATION: 639.0 (MSL) EOB: 8.0 ft.	PAGE 1 OF 1
START: 4/6/23 END: 4/6/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 83.2	LAT / LONG: 41.440761 N, 82.077233 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 5-1/4 INCHES	638.6																		
CONCRETE - 10-1/2 INCHES	637.7	1																	
GRANULAR BASE - 7 INCHES	637.1	2																	
FILL: Very-stiff to hard gray mottled with brown SILT AND CLAY , some fine to coarse sand, trace fine gravel, damp.	634.0	3	2	14	72	SS-1	3.5-4.5	6	9	19	28	38	29	16	13	15	A-6a (7)	520	
		4	2	7	67	SS-2	2.0-2.5	8	13	20	27	32	29	15	14	15	A-6a (6)	-	
Very-stiff to hard dark-gray stained with black SILTY CLAY , little to some fine to coarse sand, trace fine gravel, slight organic odor (LOI = 1.1%), damp.	631.0	5	2	7	78	SS-3	2.0-2.7	-	-	-	-	-	-	-	-	21	A-6b (V)	-	
		6	2	7	78	SS-3	2.0-2.7	-	-	-	-	-	-	-	-	21	A-6b (V)	-	
		7	2	15	83	SS-4	3.0-4.5	-	-	-	-	-	-	-	-	21	A-6b (V)	-	
		8	5																
		EOB	6																

NOTES:

- Boring hole caved at 6.7' after auger removal, boring was dry.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 892+81, 34' LT	EXPLORATION ID: B-076-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / S. SMITH	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 637.6 (MSL) EOB: 6.5 ft.	PAGE: 1 OF 1
START: 2/20/23 END: 2/20/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.441817 N, 82.076757 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ROOTMAT - 4 INCHES	637.3																		
Medium-stiff brown SILTY CLAY , some fine to coarse sand, trace fine gravel, moist.	636.8	1	5	15	100	SS-1A	0.5-1.0	-	-	-	-	-	-	-	-	-	20	A-6b (V)	-
	635.6		6			SS-1B	3.5-4.5+	8	11	21	25	35	30	15	15	13		A-6a (7)	4427
Very-stiff to hard brown SILT AND CLAY , some fine to coarse sand, trace fine gravel, damp.	634.8	2	8	34	100	SS-2A	-	16	26	28	19	11	21	17	4	12		A-3a (0)	-
Dense brown COARSE AND FINE SAND , little silt, little clay, little fine gravel, damp.	633.8	3	16			SS-2B	4.5+	-	-	-	-	-	-	-	-	-	17	A-6a (V)	-
	632.6	4	23	47	100	SS-3A	1.5-2.5	-	-	-	-	-	-	-	-	-	17	A-6a (V)	-
Stiff to hard dark-brown SILT AND CLAY , some fine to coarse sand, trace fine gravel, damp to moist.	632.6	5	10			SS-3B	-	-	-	-	-	-	-	-	-	-	12	A-3a (V)	-
Dense dark-brown COARSE AND FINE SAND , little silt, little clay, trace to little fine gravel, moist.	631.1	6	10	26	67	SS-4	4.5	-	-	-	-	-	-	-	-	-	27	A-7-6 (V)	-
Hard dark-brown CLAY , some to "and" silt, little fine to coarse sand, trace fine gravel, moist.		EOB	12																

NOTES:

- Encountered seepage at 4.0' during drilling.
- Groundwater was at 5.0' after drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE

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S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: OTB / C. SVITAK	DRILL RIG: OTB SIMCO 2800	STATION / OFFSET: 896+12, 31' RT	EXPLORATION ID
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / M. KHAN	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	B-077-0-22
PID: 107714 BR ID: N/A	DRILLING METHOD: 2-1/4" HSA	CALIBRATION DATE: 12/22/22	ELEVATION: 637.7 (MSL) EOB: 7.0 ft.	PAGE
START: 4/6/23 END: 4/6/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 83.2	LAT / LONG: 41.442507 N, 82.075955 W	1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ROOTMAT - 3 INCHES	637.7																		
FILL: Very-stiff brown SANDY SILT , some clay, trace fine gravel, damp to moist.		1	4																
		2	8	21	83	SS-1	3.0-3.25	8	20	25	23	24	24	14	10	13	A-4a (2)	8587	
	634.3	3	3																
Medium-dense gray COARSE AND FINE SAND , little silt, little clay, trace fine gravel, damp to moist.	633.7	4	7	22	89	SS-2A	3.25-4.25	-	-	-	-	-	-	-	-	17	A-4a (V)	-	
		5	2			SS-2B	-	5	32	38	13	12	NP	NP	NP	16	A-3a (0)	-	
Very-stiff dark gray CLAY , some to "and" silt, little fine to coarse sand, trace fine gravel, few wood fragments, moist.		6	4	12	100	SS-3	3.5-4.0	-	-	-	-	-	-	-	-	28	A-7-6 (V)	-	
	630.7	7	2																
		EOB	4	14	89	SS-4	2.0-3.5	-	-	-	-	-	-	-	-	25	A-7-6 (V)	-	

NOTES:

- No groundwater was encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 900+65, 46' LT	EXPLORATION ID: B-078-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / S. SMITH	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 639.2 (MSL) EOB: 7.7 ft.	PAGE: 1 OF 1
START: 2/20/23 END: 2/20/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.443703 N, 82.075375 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 5-3/4 INCHES	638.7																		
CONCRETE - 10-1/4 INCHES	637.9	1																	
GRANULAR BASE - 4 INCHES	637.5	2	5																
FILL: Hard dark-brown SANDY SILT, some clay, trace to little fine gravel, damp.		3	10	23	78	SS-1	4.5+	15	13	20	23	29	25	15	10	9	A-4a (3)	867	
@ 4.5' stiff	634.0	4	19	36	78	SS-2	4.5+	4	9	30	28	29	24	15	9	8	A-4a (4)	-	
		5	12			SS-3A	1.0	-	-	-	-	-	-	-	-	-	A-4a (V)	-	
Hard becoming stiff dark-brown SILT AND CLAY, little to some fine to coarse sand, trace fine gravel, damp to moist.		6	11	27	78	SS-3B	4.5+	-	-	-	-	-	-	-	-	-	A-6a (V)	-	
	631.5	7	10	21	67	SS-4	1.0-1.5	-	-	-	-	-	-	-	-	-	A-6a (V)	-	
		EOB	8																

NOTES:

- No groundwater encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

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S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: OTB / C. SVITAK	DRILL RIG: OTB SIMCO 2800	STATION / OFFSET: 904+72, 46' RT	EXPLORATION ID B-079-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / M. KHAN	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 2-1/4" HSA	CALIBRATION DATE: 12/22/22	ELEVATION: 638.4 (MSL) EOB: 8.0 ft.	PAGE 1 OF 1
START: 4/6/23 END: 4/6/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 83.2	LAT / LONG: 41.444549 N, 82.074350 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 5 INCHES	638.0																		
CONCRETE - 10-1/4 INCHES	637.1	1																	
GRANULAR BASE - 7 INCHES	636.4	2	4																
FILL: Very-stiff to hard gray SILT AND CLAY , little to some fine to coarse sand, trace fine gravel, damp.		3	6	21	100	SS-1	4.5+	6	11	19	26	38	25	13	12	10	A-6a (7)	520	
		4	6	5	12	44	SS-2	4.5+	4	9	11	29	47	31	17	14	A-6a (10)	-	
		5	3	5	4														
	632.1	6	5	12	24	83	SS-3	3.0-4.5	-	-	-	-	-	-	-	-	A-6a (V)	-	
Medium-dense brown with gray SANDY SILT , some clay, trace fine gravel, damp to moist.	630.9	7	6	6	18	89	SS-4A	-	-	-	-	-	-	-	-	-	A-4a (V)	-	
Hard dark-gray SILTY CLAY , little fine to coarse sand, trace fine gravel, moist.	630.4	8	6	7		SS-4B	4.5+	-	-	-	-	-	-	-	-	-	A-6b (V)	-	

NOTES:

- No groundwater was encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE



PROJECT: <u>LOR-90-10.76</u>	DRILLING FIRM / OPERATOR: <u>S&ME / T. FROST</u>	DRILL RIG: <u>S&ME ATV D50 (R61)</u>	STATION / OFFSET: <u>908+58, 32' LT</u>	EXPLORATION ID B-080-0-22
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>S&ME / S. SMITH</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>IR 90 MAINLINE</u>	
PID: <u>107714</u> BR ID: <u>N/A</u>	DRILLING METHOD: <u>4-1/2" CFA</u>	CALIBRATION DATE: <u>6/7/22</u>	ELEVATION: <u>636.7 (MSL)</u> EOB: <u>6.5 ft.</u>	PAGE 1 OF 1
START: <u>2/20/23</u> END: <u>2/20/23</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>69.8</u>	LAT / LONG: <u>41.445573 N, 82.073900 W</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI					
ROOTMAT - 6 INCHES	636.2																			
FILL: Very-stiff brown SILT AND CLAY , some fine to coarse sand, little fine to coarse gravel, damp.	634.7	1	3	15	56	SS-1	3.5	12	9	20	26	33	30	17	13	13	A-6a (6)	2773	>>>	
FILL: Medium-dense dark-brown GRAVEL WITH SAND AND SILT , little clay, few cinders, dry.	633.2	2	19	28	17	SS-2	-	23	17	32	14	14	20	14	6	7	A-2-4 (0)	-	>>>	
Stiff to very-stiff dark-brown and dark-gray SILT AND CLAY , little fine to coarse sand, trace fine to coarse gravel, few medium-stiff zones, slightly organic seam from 5.5'-5.7', damp.	630.2	3	16	13	17	SS-3	3.0	-	-	-	-	-	-	-	-	13	A-6a (V)	-	>>>	
		4	5																	
		5	6																	>>>
		6	7	16	44	SS-4	0.5-1.5	-	-	-	-	-	-	-	-	19	A-6a (V)	-	>>>	

NOTES:

- No groundwater encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/10/2019 - OH DOT GDT - 11/20/23 17:48 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: OTB / C. SVITAK	DRILL RIG: OTB SIMCO 2800	STATION / OFFSET: 912+57, 32' RT	EXPLORATION ID B-081-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / M. KHAN	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 2-1/4" HSA	CALIBRATION DATE: 12/22/22	ELEVATION: 635.7 (MSL) EOB: 7.0 ft.	PAGE 1 OF 1
START: 4/6/23 END: 4/6/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 83.2	LAT / LONG: 41.446427 N, 82.072974 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ROOTMAT - 3 INCHES	635.4																		
POSSIBLE FILL: Stiff to very-stiff brown mottled with gray and dark-gray SILTY CLAY , some fine to coarse sand, little fine to coarse gravel, damp.	633.2	1	3																
Hard brown mottled with gray SANDY SILT , some clay, trace fine gravel, damp.	631.7	2	6	12	83	SS-1	1.7-3.7	11	7	20	23	39	38	16	22	16	A-6b (10)	300	
		3	5	18	94	SS-2	4.5+	6	9	13	39	33	27	17	10	13	A-4a (7)	-	
Stiff to very-stiff gray with brown SILTY CLAY , little to some fine to coarse sand, trace fine gravel, moist.		4	2	6	89	SS-3	1.0-2.5	-	-	-	-	-	-	-	-	19	A-6b (V)	-	
		5	2																
		6	3	18	83	SS-4	3.0-3.5	-	-	-	-	-	-	-	-	22	A-6b (V)	-	
	628.7	7	5	8															
		EOB																	

NOTES:

- Hole caved at 5.9' after auger removal, boring was dry.
- No ground water encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 916+61, 45' LT	EXPLORATION ID: B-082-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / S. SMITH	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 635.5 (MSL) EOB: 7.5 ft.	PAGE: 1 OF 1
START: 2/20/23 END: 2/20/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.447505 N, 82.072484 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 5 INCHES	635.1																		
CONCRETE - 9-1/4 INCHES	634.3	1																	
GRANULAR BASE - 3 INCHES	634.1	2	2																
POSSIBLE FILL: Very-stiff to hard brown SILT AND CLAY , some fine to coarse sand, trace fine gravel, damp.	631.0	3	5	10	67	SS-1	3.5-4.5	4	7	14	40	35	30	18	12	13	A-6a (9)	613	
		4	6	5	13	89	SS-2	3.5-4.5	5	9	13	40	33	29	16	13	13	A-6a (9)	-
Stiff to very-stiff dark-brown and dark-gray SILTY CLAY , little to some fine to coarse sand, trace fine gravel, damp to moist.	628.0	5	8	26	17	SS-3	3.5-4.0	-	-	-	-	-	-	-	-	19	A-6b (V)	-	
		6	10																
		7	11	29	78	SS-4	1.0-2.0	-	-	-	-	-	-	-	-	-	28	A-6b (V)	-
		EOB	14																

NOTES:

- No ground water encountered during drilling

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:48 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:48 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - LAB\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: OTB / C. SVITAK	DRILL RIG: OTB SIMCO 2800	STATION / OFFSET: 920+78, 45' RT	EXPLORATION ID B-083-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / M. KHAN	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 2-1/4" HSA	CALIBRATION DATE: 12/22/22	ELEVATION: 634.4 (MSL) EOB: 8.0 ft.	PAGE 1 OF 1
START: 4/6/23 END: 4/7/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 83.2	LAT / LONG: 41.448375 N, 82.071442 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO ₄ ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 5-3/4 INCHES	633.9																		
CONCRETE - 9-1/2 INCHES	633.1	1																	
GRANULAR BASE - 5 INCHES	632.7	2																	
FILL: Hard dark-gray mottled with brown SILT AND CLAY , little to some fine to coarse sand, trace fine gravel, damp.	629.8	3	2																
		4	4	12	94	SS-1	4.5+	4	10	13	42	31	26	14	12	12	A-6a (8)	3467	
Very-stiff to hard dark-gray mottled with brown CLAY , some to "and" silt, little fine to coarse sand, trace fine gravel, moderately organic (LOI = 6.0%), few wood fragments, moist.	626.4	5	3																
		6	5	15	100	SS-2A	4.0-4.5	7	8	11	34	40	31	18	13	17	A-6a (9)	-	
		7	3																
		8	4	17	72	SS-3	4.0-4.5	-	-	-	-	-	-	-	-	25	A-7-6 (V)	-	
		EOB	3	17	94	SS-4	3.0-4.5	-	-	-	-	-	-	-	-	21	A-7-6 (V)	-	

NOTES:

- No ground water encountered during drilling

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:48 - R:\SERVICE LINES\CS-2657\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / T. FROST	DRILL RIG: S&ME ATV D50 (R61)	STATION / OFFSET: 923+93, 29' LT	EXPLORATION ID B-084-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / S. SMITH	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 6/7/22	ELEVATION: 633.5 (MSL) EOB: 6.5 ft.	PAGE 1 OF 1
START: 2/20/23 END: 2/20/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 69.8	LAT / LONG: 41.449224 N, 82.071110 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ROOTMAT - 4 INCHES	633.5																		
FILL: Very-stiff dark-brown SILTY CLAY , some fine to coarse sand, some fine gravel, dry to damp.	631.5	1	8	19	39	SS-1	3.0	29	15	13	21	22	34	16	18	10	A-6b (4)	3733	>>>
Very-stiff to hard brown SILTY CLAY , little fine to coarse sand, trace fine gravel, damp.		2	7	27	56	SS-2	4.5+	6	5	11	36	42	35	17	18	14	A-6b (11)	-	>>>
		3	11																
Stiff dark-gray CLAY , some to "and" silt, little fine to coarse sand, trace fine gravel, damp to moist.	628.5	4	9	22	28	SS-3	3.5-4.0	-	-	-	-	-	-	-	-	14	A-6b (V)	-	>>>
		5	8																
	627.0	6	12	26	83	SS-4	1.0-4.0	-	-	-	-	-	-	-	-	25	A-7-6 (V)	-	>>>

NOTES:

- No ground water encountered during drilling

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:48 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: OTB / C. SVITAK	DRILL RIG: OTB SIMCO 2800	STATION / OFFSET: 928+37, 21' RT	EXPLORATION ID B-085-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / M. KHAN	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 2-1/4" HSA	CALIBRATION DATE: 12/22/22	ELEVATION: 639.4 (MSL) EOB: 7.0 ft.	PAGE 1 OF 1
START: 4/6/23 END: 4/7/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 83.2	LAT / LONG: 41.450205 N, 82.070150 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ROOTMAT - 4-1/2 INCHES	639.0																		
FILL: Very-stiff brown mottled with gray SILTY CLAY , little fine to coarse sand, trace fine gravel, few roots, damp.	636.9	1	3																
Stiff to very-stiff brown mottled with gray CLAY , some silt, little fine to coarse sand, trace fine gravel, damp to moist.	635.4	2	3	12	83	SS-1	3.5-4.0	8	5	10	31	46	37	20	17	19	A-6b (11)	1427	
Very-stiff to hard brown and gray SILTY CLAY , little fine to coarse sand, trace fine gravel, damp to moist.	632.4	3	4	12	72	SS-2	1.5-3.5	1	3	9	31	56	48	22	26	23	A-7-6 (16)	-	
		4	2																
		5	3	15	100	SS-3	2.0-4.5	-	-	-	-	-	-	-	-	15	A-6b (V)	-	
		6	4																
		7	7	22	100	SS-4	4.0-4.5	-	-	-	-	-	-	-	-	19	A-6b (V)	-	
		EOB																	

NOTES:

- No ground water encountered during drilling

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/10/2019 - OH DOT GDT - 11/20/23 17:48 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / P. TUTTLE	DRILL RIG: S&ME CME 550X (R50)	STATION / OFFSET: 932+31, 34' LT	EXPLORATION ID B-086-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / M. TORRES	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 3/4/21	ELEVATION: 648.2 (MSL) EOB: 8.0 ft.	PAGE 1 OF 1
START: 11/14/22 END: 11/14/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 78.7	LAT / LONG: 41.451229 N, 82.069602 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 13-1/4 INCHES	648.2																		
GRANULAR BASE - 8-1/2 INCHES	647.1	1																	
POSSIBLE FILL: Very-stiff to hard brown SILT AND CLAY , little fine to coarse sand, trace fine gravel, damp.	646.4	2	3																
	644.7	3	5	16	67	SS-1	3.75-4.5+	6	8	12	37	37	32	19	13	15	A-6a (9)	8000	
4		7	9	22	100	SS-2	2.0-3.0	7	11	14	35	33	29	17	12	15	A-6a (7)	-	
Very-stiff to hard brown and gray SILT AND CLAY , some fine to coarse sand, trace fine gravel, few silt zones, damp.	640.2	5	3																
		6	5	17	100	SS-3	1.75-3.25	-	-	-	-	-	-	-	-	17	A-6a (V)	-	
		7	8																
		8	10	26	100	SS-4	2.5-4.5+	-	-	-	-	-	-	-	-	17	A-6a (V)	-	
		EOB	10																

NOTES:

- No groundwater noted during drilling.
- After removal of augers, boring was dry.
- Patched with the recovered pavement core and cold-patch asphalt.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:48 - R:\SERVICE LINES\CS-2657\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: <u>LOR-90-10.76</u>	DRILLING FIRM / OPERATOR: <u>OTB / C. SVITAK</u>	DRILL RIG: <u>OTB SIMCO 2800</u>	STATION / OFFSET: <u>936+38, 25' RT</u>	EXPLORATION ID B-087-0-22
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>S&ME / M. KHAN</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>IR 90 MAINLINE</u>	
PID: <u>107714</u> BR ID: <u>N/A</u>	DRILLING METHOD: <u>2-1/4" HSA</u>	CALIBRATION DATE: <u>12/22/22</u>	ELEVATION: <u>656.1 (MSL)</u> EOB: <u>8.0 ft.</u>	PAGE
START: <u>4/6/23</u> END: <u>4/7/23</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>83.2</u>	LAT / LONG: <u>41.452089 N, 82.068629 W</u>	1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 13-1/2 INCHES	656.1																		
GRANULAR BASE - 8 INCHES	655.0	1																	
FILL: Hard dark-gray SILT AND CLAY , some fine to coarse sand, little fine gravel, few roots, damp.	654.4	2	3																
	652.6	3	5	17	83	SS-1	4.5+	14	12	19	27	28	28	16	12	13	A-6a (5)	8213	
Very-stiff to hard brown mottled with gray SILTY CLAY , little fine to coarse sand, trace fine gravel, damp.		4	4	15	83	SS-2	4.5+	5	7	10	36	42	35	18	17	16	A-6b (11)	-	
		5	3	4	7														
		6	5	6	15	100	SS-3	3.0-4.0	-	-	-	-	-	-	-	-	17	A-6b (V)	-
	648.1	7	4	6	14	100	SS-4	4.0-4.5	-	-	-	-	-	-	-	-	16	A-6b (V)	-
		8	4	6															

NOTES:

- No ground water encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

PLATE 103

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:48 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / P. TUTTLE	DRILL RIG: S&ME CME 550X (R50)	STATION / OFFSET: 940+49, 8' LT	EXPLORATION ID B-088-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / M. TORRES	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 3/4/21	ELEVATION: 658.2 (MSL) EOB: 7.0 ft.	PAGE 1 OF 1
START: 11/14/22 END: 11/14/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 78.7	LAT / LONG: 41.453045 N, 82.067834 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI					
ROOTMAT - 2 INCHES	658.0	657.9																		
FILL: Medium-dense dark brown GRAVEL WITH SAND, SILT, AND CLAY , damp.	655.7		5	3	12	39	SS-1	-	36	16	14	18	16	29	18	11	14	A-2-6 (0)	8000	
Hard brown and gray SILT AND CLAY , some fine to coarse sand, trace fine gravel, damp.			5	6	18	39	SS-2	4.0 - 4.25	3	11	13	37	36	31	18	13	17	A-6a (9)	-	
			4	8	26	100	SS-3	4.5+	-	-	-	-	-	-	-	-	12	A-6a (V)	-	
			11	12	31	33	SS-4	4.5+	-	-	-	-	-	-	-	-	11	A-6a (V)	-	
	651.2	EOB	12																	

NOTES:

- Groundwater encountered at 0.3' during drilling.
- After removal of augers the boring did not cave and groundwater was observed at 1.5'.

NOTES: SEE ABOVE
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE



PROJECT: <u>LOR-90-10.76</u>	DRILLING FIRM / OPERATOR: <u>OTB / C. SVITAK</u>	DRILL RIG: <u>OTB SIMCO 2800</u>	STATION / OFFSET: <u>944+28, 9' RT</u>	EXPLORATION ID B-089-0-22
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>S&ME / M. KHAN</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>IR 90 MAINLINE</u>	
PID: <u>107714</u> BR ID: <u>N/A</u>	DRILLING METHOD: <u>2-1/4" HSA</u>	CALIBRATION DATE: <u>12/22/22</u>	ELEVATION: <u>660.2 (MSL)</u> EOB: <u>7.0 ft.</u>	PAGE 1 OF 1
START: <u>4/6/23</u> END: <u>4/7/23</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>83.2</u>	LAT / LONG: <u>41.453799 N, 82.066900 W</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ROOTMAT - 4 INCHES	660.2																		
FILL: Very-stiff to hard dark-brown and brown SILT AND CLAY , some fine to coarse sand, little to some fine to coarse gravel, damp.	659.9	1	8																
		2	6	18	100	SS-1	4.0-4.5	36	12	12	21	19	31	17	14	11	A-6a (2)	8960	
		3	4	15	78	SS-2	3.5-4.0	14	10	13	32	31	31	18	13	14	A-6a (7)	-	
Very-stiff brown mottled with gray SILTY CLAY , little fine to coarse sand, trace fine gravel, damp to moist.	656.2	4	3	15	83	SS-3	2.0-2.5	-	-	-	-	-	-	-	-	21	A-6b (V)	-	
		5	5	15	83	SS-3	2.0-2.5	-	-	-	-	-	-	-	-	21	A-6b (V)	-	
		6	3	17	89	SS-4	2.5-2.75	-	-	-	-	-	-	-	-	23	A-6b (V)	-	
	653.2	7	5	17	89	SS-4	2.5-2.75	-	-	-	-	-	-	-	-	23	A-6b (V)	-	
		EOB																	

NOTES:

- No ground water encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE



PROJECT: <u>LOR-90-10.76</u>	DRILLING FIRM / OPERATOR: <u>S&ME / P. TUTTLE</u>	DRILL RIG: <u>S&ME CME 550X (R50)</u>	STATION / OFFSET: <u>948+05, 27' LT</u>	EXPLORATION ID: B-090-0-22
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>S&ME / M. TORRES</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>IR 90 MAINLINE</u>	
PID: <u>107714</u> BR ID: <u>N/A</u>	DRILLING METHOD: <u>4-1/2" CFA</u>	CALIBRATION DATE: <u>3/4/21</u>	ELEVATION: <u>657.6 (MSL)</u> EOB: <u>8.0 ft.</u>	PAGE: 1 OF 1
START: <u>11/14/22</u> END: <u>11/14/22</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>78.7</u>	LAT / LONG: <u>41.454626 N, 82.066040 W</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 13 INCHES	657.6																		
GRANULAR BASE - 8 1/2 INCHES	656.5	1																	
	655.8																		
Very-stiff brown to dark-brown SANDY SILT , some clay, little fine to coarse gravel, damp.	654.1	2	9	20	100	SS-1	2.5	18	14	17	28	23	25	17	8	12	A-4a (3)	8000	
		3	6																
Very-stiff to hard brown mottled with dark-brown SILTY CLAY , little fine to coarse sand, trace fine gravel, damp.		4	4	10	100	SS-2	2.5 - 2.75	4	7	12	32	45	39	18	21	19	A-6b (12)	-	
		5	4																
		6	6	20	100	SS-3	3.0 - 3.75	-	-	-	-	-	-	-	-	19	A-6b (V)	-	
		7	9																
	649.6	8	5	22	44	SS-4	3.75 - 4.5+	-	-	-	-	-	-	-	-	19	A-6b (V)	-	
			10																

NOTES:

- No groundwater noted during drilling.
- After removal of augers, boring was dry.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - 11/20/23 17:48 - OH DOT GDT - 11/20/23 17:48 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: <u>LOR-90-10.76</u>	DRILLING FIRM / OPERATOR: <u>OTB / C. SVITAK</u>	DRILL RIG: <u>OTB SIMCO 2800</u>	STATION / OFFSET: <u>952+41, 32' RT</u>	EXPLORATION ID B-091-0-22
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>S&ME / M. KHAN</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>IR 90 MAINLINE</u>	
PID: <u>107714</u> BR ID: <u>N/A</u>	DRILLING METHOD: <u>2-1/4" HSA</u>	CALIBRATION DATE: <u>12/22/22</u>	ELEVATION: <u>650.7 (MSL)</u> EOB: <u>8.0 ft.</u>	PAGE 1 OF 1
START: <u>4/6/23</u> END: <u>4/7/23</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>83.2</u>	LAT / LONG: <u>41.455367 N, 82.064774 W</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI					
ASPHALT - 13 INCHES	650.7																			
GRANULAR BASE - 7 INCHES	649.6	1																		
FILL: Very-stiff to hard dark-gray SANDY SILT , some clay, little fine gravel, few shale fragments, damp.	649.0	2	4																	
		3	7	19	100	SS-1	3.0-4.0	15	13	20	31	21	22	16	6	13	A-4a (3)	1800		
		4	5	6	15	83	SS-2	3.5-3.75	12	12	15	35	26	21	14	7	10	A-4a (5)	-	
		5	4	16	44	83	SS-3	4.5+	-	-	-	-	-	-	-	-	14	A-4a (V)	-	
	6	8	12	33	67	SS-4	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	-		
	642.7	EOB	12																	

NOTES:

- No ground water encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:48 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: <u>LOR-90-10.76</u>	DRILLING FIRM / OPERATOR: <u>S&ME / P. TUTTLE</u>	DRILL RIG: <u>S&ME CME 550X (R50)</u>	STATION / OFFSET: <u>956+35, 26' LT</u>	EXPLORATION ID
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>S&ME / M. TORRES</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>IR 90 MAINLINE</u>	B-092-0-22
PID: <u>107714</u> BR ID: <u>N/A</u>	DRILLING METHOD: <u>4-1/2" CFA</u>	CALIBRATION DATE: <u>3/4/21</u>	ELEVATION: <u>642.2 (MSL)</u> EOB: <u>7.0 ft.</u>	PAGE
START: <u>11/14/22</u> END: <u>11/14/22</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>78.7</u>	LAT / LONG: <u>41.456249 N, 82.063918 W</u>	1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL		
								GR	CS	FS	SI	CL	LL	PL	PI						
ROOTMAT - 1 INCH	642.2																				
Hard brown mottled with dark-brown SANDY SILT , some clay, little fine to coarse sand, trace fine gravel, damp.		1	6																		
		2	6	5	14	100	SS-1	4.5+	8	9	14	38	31	27	17	10	13	A-4a (7)	8000		
		3	4	8	8	21	39	SS-2	4.5+	17	12	11	31	29	28	18	10	12	A-4a (5)	-	
		4	6	8	11	25	100	SS-3	4.5+	-	-	-	-	-	-	-	-	23	A-4a (V)	-	
	6	11	11	28	76	100	SS-4	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	-		
	635.2	EOB	30																		

NOTES:

- No groundwater noted during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE

S&ME ODOT SULFATE (8.5X11) - SGE 01/2019 - OH DOT GDT - 11/20/23 17:48 - R:\SERVICE LINES\CS-2557\CLEVELAND\01 - LABORATORY\02 - GINT\PROJECTS\217525.GPJ

S&ME JOB: 217525



PROJECT: <u>LOR-90-10.76</u>	DRILLING FIRM / OPERATOR: <u>OTB / C. SVITAK</u>	DRILL RIG: <u>OTB SIMCO 2800</u>	STATION / OFFSET: <u>960+22, 26' RT</u>	EXPLORATION ID B-093-0-22
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>S&ME / M. KHAN</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>IR 90 MAINLINE</u>	
PID: <u>107714</u> BR ID: <u>N/A</u>	DRILLING METHOD: <u>2-1/4" HSA</u>	CALIBRATION DATE: <u>12/22/22</u>	ELEVATION: <u>635.2 (MSL)</u> EOB: <u>7.0 ft.</u>	PAGE 1 OF 1
START: <u>4/6/23</u> END: <u>4/7/23</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>83.2</u>	LAT / LONG: <u>41.456883 N, 82.062819 W</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ROOTMAT - 5 INCHES	634.8																		
FILL: Stiff gray SILT AND CLAY , some fine to coarse sand, some fine gravel, few roots, damp.	632.7	1	4																
		2	7	5	17	33	SS-1	1.5-2.0	23	15	14	26	22	27	15	12	13	A-6a (3)	11573
FILL: Stiff to very-stiff brown mottled with gray CLAY , some silt, little fine to coarse sand, trace fine gravel, damp to moist.		3	3																
		4	4	5	12	78	SS-2	2.5-3.0	4	5	10	31	50	42	18	24	20	A-7-6 (14)	-
		5	2																
		6	3	4	10	89	SS-3	1.5-1.75	-	-	-	-	-	-	-	-	15	A-7-6 (V)	-
		7	2																
	628.2	EOB	3	7	14	83	SS-4	2.5-3.25	-	-	-	-	-	-	-	-	26	A-7-6 (V)	-

NOTES:

- Groundwater was not encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE

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S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / P. TUTTLE	DRILL RIG: S&ME CME 550X (R50)	STATION / OFFSET: 964+08, 45' LT	EXPLORATION ID B-094-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / M. TORRES	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 3/4/21	ELEVATION: 632.0 (MSL) EOB: 8.0 ft.	PAGE 1 OF 1
START: 11/14/22 END: 11/14/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 78.7	LAT / LONG: 41.457801 N, 82.061992 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI					
ASPHALT - 5 INCHES	631.6																			
CONCRETE - 9-3/4 INCHES	630.8	1																		
GRANULAR BASE - 7 INCHES	630.2	2																		
FILL: Hard gray SANDY SILT , some clay, little fine to coarse gravel, damp.	628.5	3	5	13	100	SS-1	4.5+	15	12	12	33	28	25	16	9	11	A-4a (5)	2240		
Stiff to very-stiff brown mottled with gray CLAY , some silt, little fine to coarse sand, trace fine gravel, damp to moist.	624.0	4	3	5	13	61	SS-2	1.0 - 2.0	1	3	11	31	54	50	23	27	26	A-7-6 (17)	-	
		5	2	5																
		6	3	5	10	33	SS-3	3.0 - 3.75	-	-	-	-	-	-	-	-	-	18	A-7-6 (V)	-
		7	4	8	10	24	100	SS-4	2.25 - 3.0	-	-	-	-	-	-	-	-	22	A-7-6 (V)	-
		8	10																	

NOTES:
- No seepage noted.

NOTES: SEE ABOVE
ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE

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S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: OTB / C. SVITAK	DRILL RIG: OTB SIMCO 2800	STATION / OFFSET: 968+42, 46' RT	EXPLORATION ID B-095-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / M. KHAN	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 2-1/4" HSA	CALIBRATION DATE: 12/22/22	ELEVATION: 632.1 (MSL) EOB: 8.0 ft.	PAGE 1 OF 1
START: 4/6/23 END: 4/7/23	SAMPLING METHOD: SPT	ENERGY RATIO (%): 83.2	LAT / LONG: 41.458478 N, 82.060647 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 4-3/4 INCHES	631.6																		
CONCRETE - 10-1/2 INCHES	630.7	1																	
GRANULAR BASE - 5 INCHES	630.3																		
FILL: Loose dark-gray GRAVEL WITH SAND, SILT, AND CLAY , damp.	629.1	2	3	10	61	SS-1	-	38	19	11	17	15	30	17	13	20	A-2-6 (1)	1860	
Hard brown and gray SILT AND CLAY , little fine to coarse sand, trace fine gravel, damp to moist.	627.1	3	4	11	78	SS-2	4.5+	5	7	10	41	37	28	16	12	14	A-6a (9)	-	
Very-stiff brown mottled with gray CLAY , some silt, trace to little fine to coarse sand, trace fine gravel, damp to moist.		4	3	10	56	SS-3	2.0-2.5	-	-	-	-	-	-	-	-	-	27	A-7-6 (V)	-
		5	2																
	624.1	6	3	10	56	SS-3	2.0-2.5	-	-	-	-	-	-	-	-	-	27	A-7-6 (V)	-
		7	4	18	100	SS-4	3.0-3.5	-	-	-	-	-	-	-	-	-	20	A-7-6 (V)	-
		8	5																
		EOB	8																

NOTES:

- Groundwater was not encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE



PROJECT: <u>LOR-90-10.76</u>	DRILLING FIRM / OPERATOR: <u>S&ME / P. TUTTLE</u>	DRILL RIG: <u>S&ME CME 550X (R50)</u>	STATION / OFFSET: <u>972+43, 31' LT</u>	EXPLORATION ID: B-096-0-22
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>S&ME / M. TORRES</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>IR 90 MAINLINE</u>	
PID: <u>107714</u> BR ID: <u>N/A</u>	DRILLING METHOD: <u>4-1/2" CFA</u>	CALIBRATION DATE: <u>3/4/21</u>	ELEVATION: <u>632.3 (MSL)</u> EOB: <u>7.0 ft.</u>	PAGE: 1 OF 1
START: <u>11/14/22</u> END: <u>11/14/22</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>78.7</u>	LAT / LONG: <u>41.459407 N, 82.059828 W</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ROOTMAT - 4 INCHES	632.3																		
Hard gray SILT AND CLAY , some fine to coarse sand, trace fine gravel, damp.	632.0	1	7																
	629.8	2	7	18	44	SS-1	4.5+	10	10	12	35	33	30	17	13	11	A-6a (8)	8000	
Very-stiff to hard brown and dark-brown SANDY SILT , some clay, trace fine gravel, damp.	628.3	3	5																
	628.3	4	6	17	72	SS-2	4.5+	7	9	12	40	32	27	17	10	11	A-4a (7)	-	
Very-stiff to hard brown mottled with gray CLAY , some silt, trace to little fine to coarse sand, trace fine gravel, organic odor, moist.		5	4																
		6	5	13	100	SS-3	3.5-4.5+	-	-	-	-	-	-	-	-	20	A-7-6 (V)	-	
	625.3	7	5																
		EOB	7	24	100	SS-4	2.0-3.5	-	-	-	-	-	-	-	-	24	A-7-6 (V)	-	

NOTES:

- No seepage noted.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE

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S&ME JOB: 217525



PROJECT: <u>LOR-90-10.76</u>	DRILLING FIRM / OPERATOR: <u>OTB / C. SVITAK</u>	DRILL RIG: <u>OTB SIMCO 2800</u>	STATION / OFFSET: <u>976+39, 15' RT</u>	EXPLORATION ID B-097-0-22
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>S&ME / M. KHAN</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>IR 90 MAINLINE</u>	
PID: <u>107714</u> BR ID: <u>N/A</u>	DRILLING METHOD: <u>2-1/4" HSA</u>	CALIBRATION DATE: <u>12/22/22</u>	ELEVATION: <u>633.1 (MSL)</u> EOB: <u>7.0 ft.</u>	PAGE
START: <u>4/6/23</u> END: <u>4/7/23</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>83.2</u>	LAT / LONG: <u>41.460095 N, 82.058683 W</u>	1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ROOTMAT - 4 INCHES	632.8																		
FILL: Stiff gray SILTY CLAY , some fine to coarse sand, little fine gravel, damp.	630.6	W 631.1	3				1.25-2.0	20	10	11	23	36	40	22	18	20	A-6b (8)	1320	
Stiff to very-stiff gray mottled with brown CLAY , some silt, little fine to coarse sand, trace fine gravel, damp.			2				3.25-3.75	2	5	9	25	59	46	20	26	22	A-7-6 (16)	-	
			2				1.5-2.0	-	-	-	-	-	-	-	-	21	A-7-6 (V)	-	
			3				2.0-2.5	-	-	-	-	-	-	-	-	24	A-7-6 (V)	-	
	626.1	EOB	5	14	100	SS-4	2.0-2.5	-	-	-	-	-	-	-	-	24	A-7-6 (V)	-	

NOTES:

- Encountered seepage at 2.0'.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SOIL CUTTINGS MIXED WITH BENTONITE

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S&ME JOB: 217525



PROJECT: LOR-90-10.76	DRILLING FIRM / OPERATOR: S&ME / P. TUTTLE	DRILL RIG: S&ME CME 550X (R50)	STATION / OFFSET: 980+06, 45' LT	EXPLORATION ID B-098-0-22
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: S&ME / M. TORRES	HAMMER: CME AUTOMATIC	ALIGNMENT: IR 90 MAINLINE	
PID: 107714 BR ID: N/A	DRILLING METHOD: 4-1/2" CFA	CALIBRATION DATE: 3/4/21	ELEVATION: 634.8 (MSL) EOB: 8.0 ft.	PAGE 1 OF 1
START: 11/14/22 END: 11/14/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 78.7	LAT / LONG: 41.460933 N, 82.057912 W	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT - 4 INCHES	634.5																		
CONCRETE - 10 INCHES	633.6	1																	
GRANULAR BASE - 8 INCHES	632.9	2	5																
FILL: Very-stiff to hard dark-brown and brown SILT AND CLAY , some fine to coarse sand, trace fine gravel, damp.	631.3	3	4	13	100	SS-1	3.75-4.5	-	-	-	-	-	30	18	12	15	A-6a (V)	813	
	629.8	4	10	13	31	100	SS-2	4.5+	8	8	11	36	37	33	17	16	14	A-6b (10)	-
Hard dark-brown to brown SILTY CLAY , little fine to coarse sand, trace fine gravel, damp.	629.8	5	5	14	100	SS-3	3.25-4.25	-	-	-	-	-	-	-	-	-	19	A-7-6 (V)	-
	626.8	6	8	11	33	100	SS-4	3.75-4.5+	-	-	-	-	-	-	-	-	21	A-7-6 (V)	-
Very-stiff to hard dark-brown to brown CLAY , some silt, little fine to coarse sand, trace fine gravel, damp.	626.8	7	11	14															
		8																	

NOTES:

- Groundwater was not encountered during drilling.

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; SOIL CUTTINGS MIXED WITH BENTONITE



Appendix C

Pavement Core Summary



Date(s) Cored: 10/31/22, 11/1/22, 11/2/22, 11/14/22, 11/17/22, 3/6/23

S&ME Project No.: 217525

Identified By: Shawn Smith / Kevin Harper

Project Name: LOR-90-10.76

Date(s) Identified: 10/31/22, 11/1/22, 11/2/22, 11/14/22, 11/17/22, 3/8/23

Client: ODOT District 3

Project Area	Core	Coordinates		Approximate Station, Offset	Lane / Location	Asphalt (in.)	Concrete (in.)	Total Core Thickness (in.)	Notes:
IR 90 Mainline Turnpike to S.R. 2 Split	B-001-0-22	41.396094	-82.158782	574+85, 36' RT	Eastbound Inside (Left) Lane	3	11¼	14¼	Reinforcing steel observed 5" below the top of concrete.
	B-002-0-22	41.397153	-82.158670	578+63, 45' LT	Westbound Inside (Left) Lane	6½	9¼	15¾	Reinforcing steel observed 3½" below the top of concrete. A color change was observed in the concrete about 3" from the top of concrete
	B-003-0-22	41.398131	-82.157720	582+95, 45' RT	Eastbound Inside (Left) Lane	6	10¼	16¼	Reinforcing steel observed 4" below the top of concrete.
	B-004-0-22	41.399149	-82.157242	586+79, 45' LT	Westbound Inside (Left) Lane	6½	9¼	15¾	Reinforcing steel observed 3¾" below the top of concrete. A color change was observed in the concrete about 2½" from the top of concrete
	B-005-0-22	41.399859	-82.155998	590+98, 46' RT	Eastbound Inside (Left) Lane	6½	9½	16	Reinforcing steel observed 3½" below the top of concrete.
	B-006-0-22	41.400715	-82.155208	594+67, 45' LT	Westbound Inside (Left) Lane	6½	9½	16	Reinforcing steel observed 4" below the top of concrete. A color change was observed in the concrete about 2½" from the top of concrete
	B-007-0-22	41.401144	-82.153756	598+86, 45' RT	Eastbound Inside (Left) Lane	6¼	9	15¼	Reinforcing steel observed 4" below the top of concrete.
	B-008-0-22	41.401848	-82.152542	602+98, 44' LT	Westbound Inside (Left) Lane	6¾	9¼	16	Reinforcing steel observed 4" below the top of concrete. A color change was observed in the concrete about 3" from the top of concrete
	B-009-0-22	41.402005	-82.151092	606+89, 45' RT	Eastbound Inside (Left) Lane	3	9½	12½	Reinforcing steel observed 4" below the top of concrete.
	B-010-0-22	41.402623	-82.149866	610+83, 45' LT	Westbound Inside (Left) Lane	4½	9¼	13¾	Reinforcing steel observed 3¾" and 4" below the top of concrete. A color change was observed in the concrete about 3½" from the top of concrete
	B-011-0-22	41.402778	-82.148258	615+14, 20' LT	Eastbound Inside (Left) Lane	4¼	10¼	14½	
	B-012-0-22	41.403418	-82.147102	618+95, 3' LT	Westbound Inside (Left) Lane	6½	9½	16	Reinforcing steel observed 4½" below the top of concrete. A color change was observed in the concrete about 3" from the top of concrete
	B-013-0-22	41.403168	-82.145496	622+83, 21' LT	Eastbound Inside (Left) Lane	6½	9½	16	Reinforcing steel observed 4" below the top of concrete.
	B-014-0-22	41.403863	-82.144095	627+41, 2' LT	Westbound Inside (Left) Lane	12	Not Encountered	12	

Pavement Core Summary



Date(s) Cored: 10/31/22, 11/1/22, 11/2/22, 11/14/22, 11/17/22, 3/6/23

S&ME Project No.: 217525

Identified By: Shawn Smith / Kevin Harper

Project Name: LOR-90-10.76

Date(s) Identified: 10/31/22, 11/1/22, 11/2/22, 11/14/22, 11/17/22, 3/8/23

Client: ODOT District 3

Project Area	Core	Coordinates		Approximate Station, Offset	Lane / Location	Asphalt (in.)	Concrete (in.)	Total Core Thickness (in.)	Notes:
Eastbound S.R. 2 Ramp to Eastbound IR 90	B-013-1-22	41.405294	-82.147643	610+72, 9' LT	Eastbound Inside (Left) Lane	8¾	9½	17¾	Reinforcing steel observed 4" below the top of concrete.
	B-013-2-22	41.404126	-82.145339	618+35, 9' LT	Eastbound Inside (Left) Lane	4	9¾	13¾	Reinforcing steel observed 4¾" below the top of concrete.
	B-013-3-22	41.403615	-82.144026	622+42, 11' LT	Eastbound Inside (Left) Lane	17¼	Not Encountered	17¼	Core length ranged from 15¾" to 17¾".
	B-015-0-22	41.403295	-82.142707	626+25, 10' LT	Eastbound Inside (Left) Lane	8	9¾	17¾	Reinforcing steel observed 3½" below the top of concrete. A layer with higher bitumen content observed about 3" below top of asphalt.
Westbound Ir 90 Ramp to Westbound S.R. 2	B-014-1-22	41.405808	-82.148290	614+92, 74' LT	Westbound Inside (Left) Lane	14½	Not Encountered	14½	
	B-014-2-22	41.405069	-82.146426	621+53, 103' LT	Westbound Inside (Left) Lane	7¾	10	17¾	Reinforcing steel observed 4¾" below the top of concrete.
	B-014-3-22	41.404410	-82.144231	625+76, 109' LT	Westbound Inside (Left) Lane	8	9½	17½	Reinforcing steel observed 4½" below the top of concrete.
	B-014-4-22	41.404089	-82.142787	629+63, 107' LT	Westbound Inside (Left) Lane	8	8½	16½	Reinforcing steel observed 4¾" below the top of concrete.
	B-016-0-22	41.403862	-82.141443	634+66, 57' LT	Westbound Inside (Left) Lane	6¾	9½	16¼	Reinforcing steel observed 2½" below the top of concrete.
IR 90 Mainline S.R. 2 Split to S.R. 57	B-017-0-22	41.403169	-82.139744	634+46, 9' LT	Eastbound Inside (Left) Lane	7¾	9½	17¼	Reinforcing steel observed 3¾" below the top of concrete.
	B-018-0-22	41.403603	-82.138338	643+24, 4' LT	Westbound Inside (Left) Lane	7	9½	16½	Reinforcing steel observed 3½" below the top of concrete.
	B-021-0-22	41.403513	-82.134011	650+24, 44' RT	Eastbound Inside (Left) Lane	7¾	9¾	17½	Reinforcing steel observed 3¾" below the top of concrete. A color change was observed in the concrete about 3" from the top of concrete
	B-022-0-22	41.403843	-82.132570	654+27, 45' LT	Westbound Inside (Left) Lane	5¾	9¼	15	Reinforcing steel observed 3¾" below the top of concrete.
	B-023-0-22	41.403727	-82.131056	658+38, 30' RT	Eastbound Inside (Left) Lane	16	Not Encountered	16	
	B-025-0-22	41.403829	-82.128642	665+01, 46' RT	Westbound Inside (Left) Lane	8¾	9¼	18	A layer of higher bitumen content observed in the ½" from the bottom of the asphalt. Reinforcing steel observed 3¾", 4½", and 5" below the top of concrete. An indentation was observed about 4"-5" from the top of the concrete.
	B-026-0-22	41.404154	-82.127371	668+58, 45' LT	Eastbound Inside (Left) Lane	7¾	9¼	17	Reinforcing steel observed 3½" below the top of concrete.
	B-027-0-22	41.404042	-82.125811	672+78, 26' RT	Westbound Inside (Left) Lane	Not Encountered	Not Encountered		
	B-029-0-22	41.404176	-82.122819	681+04, 45' RT	Eastbound Inside (Left) Lane	8	9	17	Reinforcing steel observed 3½" below the top of concrete. A color change was observed in the concrete at bout 3" from the top of concrete. Yellow paint observed in the core about 5" from the top of asphalt.
	B-030-0-22	41.404503	-82.121474	684+81, 44' LT	Westbound Inside (Left) Lane	7¾	9½	17¼	

Pavement Core Summary



Date(s) Cored: 11/14/22, 11/17/22

S&ME Project No.: 217525

Identified By: Shawn Smith / Kevin Harper

Project Name: LOR-90-10.76

Date(s) Identified: 11/14/22, 11/17/22

Client: ODOT District 3

Project Area	Core	Coordinates		Approximate Station, Offset	Lane / Location	Asphalt (in.)	Concrete (in.)	Total Core Thickness (in.)	Notes:
IR 90 Mainline from S.R. 57 to S.R. 254	B-033-0-22	41.405030	-82.108782	719+65, 44' RT	Eastbound Inside (Left) Lane	6	10½	16½	
	B-036-0-22	41.406312	-82.104860	731+43, 45' LT	Westbound Inside (Left) Lane	5½	10½	16	Reinforcing steel was observed 3½" and 4" from the top of concrete.
	B-037-0-22	41.406760	-82.103448	735+54, 45' RT	Eastbound Inside (Left) Lane	5	9¾	14¾	
	B-040-0-22	41.409439	-82.100997	747+45, 46' LT	Westbound Inside (Left) Lane	8	10¾	18¾	Reinforcing steel was observed 4¾" from the top of concrete. Deterioration was observed in the lower ½" of the concrete.
	B-041-0-22	41.410196	-82.100133	750+97, 46' RT	Eastbound Inside (Left) Lane	9½	5¼	14¾	
	B-043-0-22	41.412371	-82.098767	759+76, 33' RT	Eastbound Inside (Left) Lane	13¼	Not Encountered	13¼	
	B-046-0-22	41.414949	-82.095698	772+50, 42' LT	Westbound Inside (Left) Lane	5	11	16	Reinforcing steel was observed 3¾" from the top of concrete. A portion of the lower 3" of the concrete split away during coring.
	B-047-0-22	41.415267	-82.094248	776+54, 45' RT	Eastbound Inside (Left) Lane	5	9	14	
	B-050-0-22	41.417016	-82.090585	788+41, 44' LT	Westbound Inside (Left) Lane	5	10¾	15¾	Reinforcing steel was observed 4½", 4¾, and 5" from the top of concrete.
	B-051-0-22	41.417342	-82.089091	792+58, 45' RT	Eastbound Inside (Left) Lane	5	9½	14½	Reinforcing steel was observed 4" and 4¾" from the top of concrete. Horizontal cracks were observed in the lower 1" - ½" of the concrete.
	B-054-0-22	41.419246	-82.085709	804+23, 45' LT	Westbound Inside (Left) Lane	5¾	10¾	16½	Reinforcing steel was observed 4¾" from the top of concrete. Deterioration was observed in the lower ½" of the concrete.
	B-055-0-22	41.420012	-82.084391	808+71, 46' RT	Eastbound Inside (Left) Lane	5	10	15	Reinforcing steel was observed 4½" from the top of concrete. Horizontal cracks were observed in the lower ½" of the concrete.
	B-058-0-22	41.423055	-82.083216	820+34, 46' LT	Westbound Inside (Left) Lane	5	10¾	15¾	An expansion joint, was observed in the upper 2½ of the concrete. A vertical crack, filled with a bituminous compound was observed in the upper 5¾" of the concrete. Horizontal cracks were observed in the lower 1" of the concrete.
B-059-0-22	41.424134	-82.082828	824+33, 46' RT	Eastbound Inside (Left) Lane	3¼	9½	12¾		

Pavement Core Summary



Date(s) Cored: 11/14/22, 11/17/22

S&ME Project No.: 217525

Identified By: Shawn Smith / Kevin Harper

Project Name: LOR-90-10.76

Date(s) Identified: 11/14/22, 11/17/22

Client: ODOT District 3

Project Area	Core	Coordinates		Approximate Station, Offset	Lane / Location	Asphalt (in.)	Concrete (in.)	Total Core Thickness (in.)	Notes:
S.R. 254 to WB IR 90	B-057-1-22	41.422513	-82.084042	817+88, 238' LT	Right Shoulder	10½	Not Encountered	10½	Cemented slag/base (4") based partially recovered below asphalt.
	B-057-2-22	41.423493	-82.084565	95+62, 141' RT	Right Shoulder	10½	Not Encountered	10½	
EB IR 90 to S.R. 254	B-058-1-22	41.423803	-82.081754	823+15, 340' RT	Right Shoulder	10¼	Not Encountered	10¼	
	B-058-2-22	41.424567	-82.081157	105+76, 134' RT	Right Shoulder	9½	Not Encountered	9½	
WB IR 90 to S.R. 254	B-059-1-22	41.424548	-82.084680	96+79, 226' LT	Right Shoulder	2¾	9¾	12½	
	B-059-2-22	41.425535	-82.083713	829+45, 193' LT	Right Shoulder	5	9¼	14¼	
S.R. 254 to EB IR 90	B-060-1-22	41.425337	-82.081436	106+11, 155' LT	Right Shoulder	2¾	9¼	12	Reinforcing steel was observed 4½" from the top of concrete.
	B-060-2-22	41.426154	-82.082256	831+68, 209' RT	Right Shoulder	5½	9½	15	Deterioration was observed in the lower 1" of the asphalt. Reinforcing steel was observed 4¾" and 5" from the top of concrete. Horizontal cracks were observed in the lower ½" of the concrete.

Pavement Core Summary



Date(s) Cored: 10/31/22, 11/1/22

S&ME Project No.: 217525

Identified By: Shawn Smith / Kevin Harper

Project Name: LOR-90-10.76

Date(s) Identified: 10/31/22, 11/1/22

Client: ODOT District 3

Project Area	Core	Coordinates		Approximate Station, Offset	Lane / Location	Asphalt (in.)	Concrete (in.)	Total Core Thickness (in.)	Notes:
S.R. 254 to the East Project Limit	B-062-0-22	41.427465	-82.083196	836+47, 45' LT	Westbound Inside (Left) Lane	6	9¼	15¼	Reinforcing steel observed 4¾" below the top of concrete.
	B-063-0-22	41.428620	-82.082874	840+67, 47' RT	Eastbound Inside (Left) Lane	5	9¾	14¾	
	B-066-0-22	41.431877	-82.083112	852+50, 46' LT	Westbound Inside (Left) Lane	5¾	10¼	16	Reinforcing steel observed 4½" below the top of concrete. Deterioration observed in the lower ½" of the concrete.
	B-067-0-22	41.432984	-82.082502	856+77, 45' RT	Eastbound Inside (Left) Lane	5¼	10½	15¾	
	B-070-0-22	41.436010	-82.081222	868+36, 45' LT	Westbound Inside (Left) Lane	5	10	15	Reinforcing steel observed 4¾" and 4½" below the top of concrete.
	B-071-0-22	41.436929	-82.080146	872+73, 45' RT	Eastbound Inside (Left) Lane	5½	9½	15	
	B-074-0-22	41.439855	-82.078300	884+50, 45' LT	Westbound Inside (Left) Lane	5¾	10¼	16	Reinforcing steel observed 4¾" below the top of concrete. Horizontal cracks observed in the lower ½" of the concrete.
	B-075-0-22	41.440761	-82.077233	888+82, 45' RT	Eastbound Inside (Left) Lane	5¼	10½	15¾	
	B-078-0-22	41.443703	-82.075375	900+65, 46' LT	Westbound Inside (Left) Lane	5¾	10¼	16	Reinforcing steel observed 4½" below the top of concrete. Deterioration observed in the asphalt and concrete layers at their interface.
	B-079-0-22	41.444549	-82.074350	904+72, 46' RT	Eastbound Inside (Left) Lane	5	10¼	15¼	
	B-082-0-22	41.447505	-82.072484	916+61, 45' LT	Westbound Inside (Left) Lane	5	9¾	14¾	Reinforcing steel observed 4" and 4¾" below the top of concrete.
	B-083-0-22	41.448375	-82.071442	920+78, 45' RT	Eastbound Inside (Left) Lane	5¾	9½	15¼	
	B-086-0-22	41.451229	-82.069602	932+31, 34' LT	Westbound Inside (Left) Lane	13¼	Not Encountered	13¼	
	B-087-0-22	41.452089	-82.068629	936+38, 25' RT	Eastbound Inside (Left) Lane	13½	Not Encountered	13½	
	B-090-0-22	41.454626	-82.066040	948+05, 27' LT	Westbound Inside (Left) Lane	13	Not Encountered	13	
B-091-0-22	41.455367	-82.064774	952+41, 32' RT	Eastbound Inside (Left) Lane	13	Not Encountered	13		
B-094-0-22	41.457801	-82.061992	964+08, 45' LT	Westbound Inside (Left) Lane	5	9¾	14¾	Reinforcing steel observed 4½" below the top of concrete.	

Pavement Core Summary



Date(s) Cored: 10/31/22, 11/1/22

S&ME Project No.: 217525

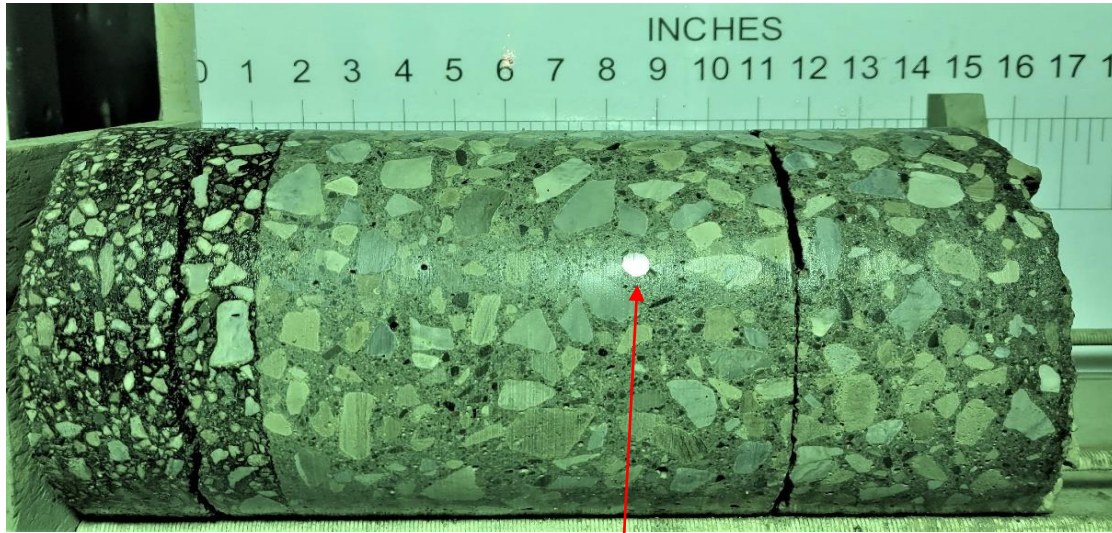
Identified By: Shawn Smith / Kevin Harper

Project Name: LOR-90-10.76

Date(s) Identified: 10/31/22, 11/1/22

Client: ODOT District 3

Project Area	Core	Coordinates		Approximate Station, Offset	Lane / Location	Asphalt (in.)	Concrete (in.)	Total Core Thickness (in.)	Notes:
	B-095-0-22	41.458478	-82.060647	968+42, 46' RT	Eastbound Inside (Left) Lane	4¾	10½	15¼	
	B-098-0-22	41.460933	-82.057912	980+06, 45' LT	Westbound Inside (Left) Lane	4	10	14	Reinforcing steel observed 4½" below the top of concrete. Horizontal cracks observed in the lower 2" of the concrete.

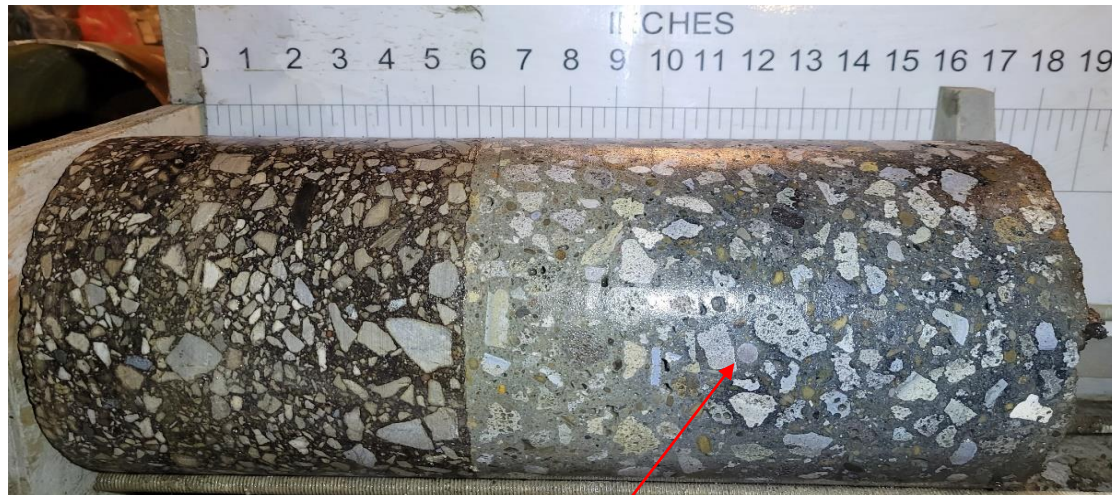


Reinforcing Steel

Date: 10/31/2022

Photographer: SHS

1	Core Number / Thickness	B-001-0-22 / Asphalt = 3" Concrete = 11¼"
	Remarks	Reinforcing steel observed 5" below the top of concrete.

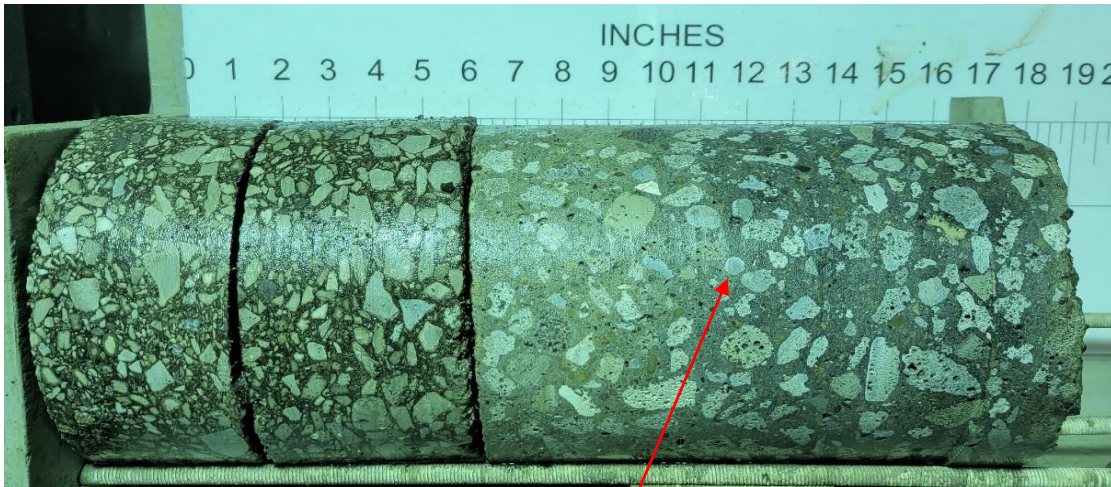


Reinforcing Steel

Date: 11/17/2022

Photographer: SHS

2	Core Number / Thickness	B-002-0-22 / Asphalt = 6½" Concrete = 9¼"
	Remarks	Reinforcing steel observed 3½" below the top of concrete. A color change was observed in the concrete about 3" from the top of concrete



Reinforcing Steel

Date: 10/31/2022

Photographer: SHS

3	Core Number / Thickness	B-003-0-22 / Asphalt = 6" Concrete = 10¼"
	Remarks	Reinforcing steel observed 4" below the top of concrete.

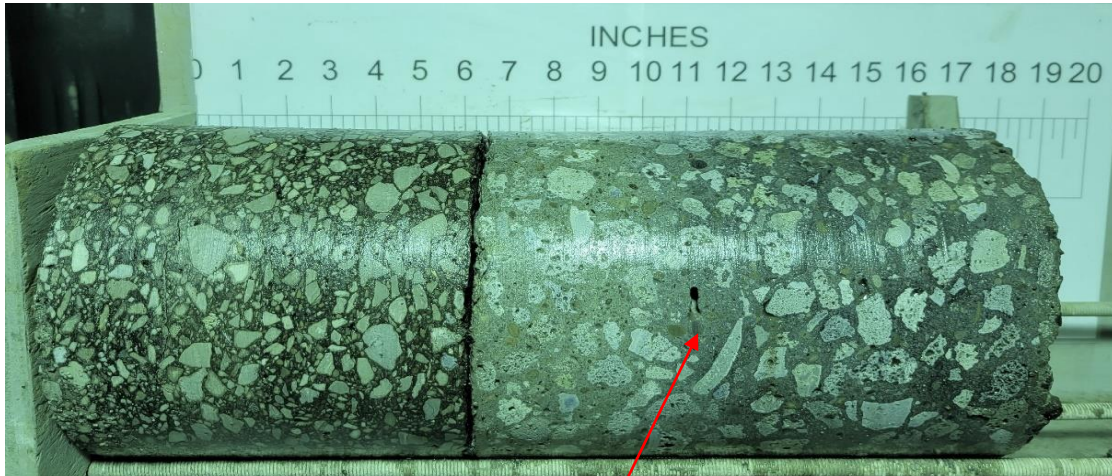


Reinforcing Steel

Date: 11/17/2022

Photographer: SHS

4	Core Number / Thickness	B-004-0-22 / Asphalt = 6½" Concrete = 9¼"
	Remarks	Reinforcing steel observed 3¾" below the top of concrete. A color change was observed in the concrete about 2½" from the top of concrete



Reinforcing Steel

Date: 10/31/2022

Photographer: SHS

5	Core Number / Thickness	B-005-0-22 / Asphalt = 6½" Concrete = 9½"
	Remarks	Reinforcing steel observed 3½" below the top of concrete.

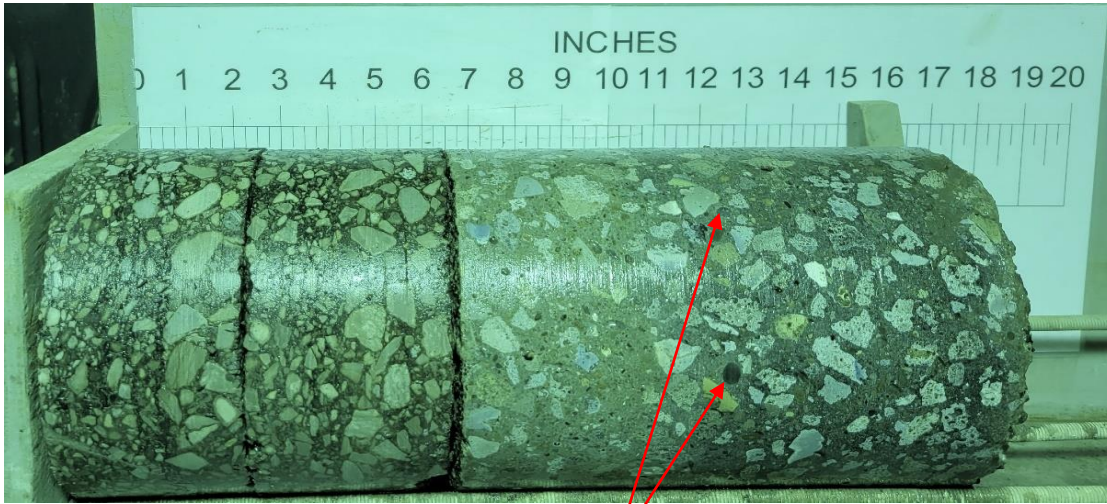


Reinforcing Steel

Date: 11/17/2022

Photographer: SHS

6	Core Number / Thickness	B-006-0-22 / Asphalt = 6½" Concrete = 9½"
	Remarks	Reinforcing steel observed 4" below the top of concrete. A color change was observed in the concrete about 2½" from the top of concrete

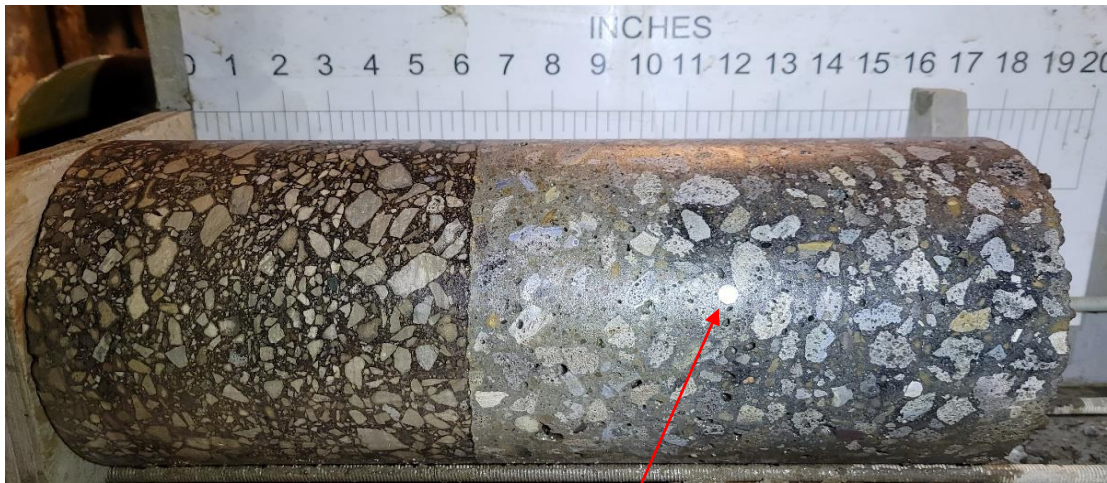


Reinforcing Steel

Date: 10/31/2022

Photographer: SHS

7	Core Number / Thickness	B-007-0-22 / Asphalt = 6¼" Concrete = 9"
	Remarks	Reinforcing steel observed 4" below the top of concrete.

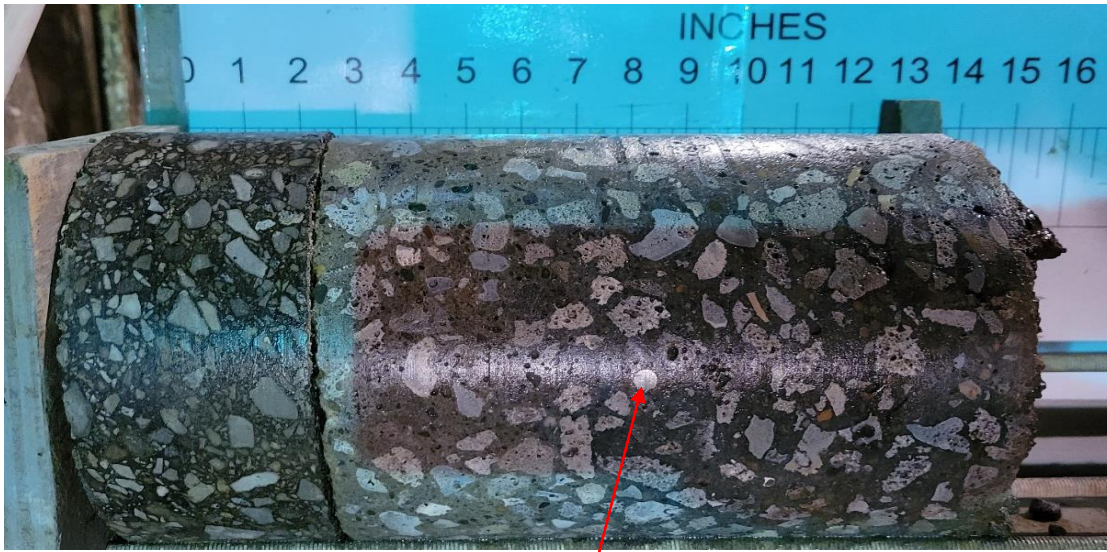


Reinforcing Steel

Date: 11/17/2022

Photographer: SHS

8	Core Number / Thickness	B-008-0-22 / Asphalt = 6¾" Concrete = 9¼"
	Remarks	Reinforcing steel observed 4" below the top of concrete. A color change was observed in the concrete about 3" from the top of concrete



Reinforcing Steel

Date:

Photographer: SHS

9	Core Number / Thickness	B-009-0-22 / Asphalt = 3" Concrete = 9½"
	Remarks	Reinforcing steel observed 4" below the top of concrete.



Reinforcing Steel

Date: 11/17/2022

Photographer: SHS

10	Core Number / Thickness	B-010-0-22 / Asphalt = 4½" Concrete = 9¼"
	Remarks	Reinforcing steel observed ¾" and 4" below the top of concrete. A color change was observed in the concrete about ½" from the top of concrete



Date: 10/31/2022

Photographer: SHS

11

Core Number / Thickness

B-011-0-22 / Asphalt = 4 1/4" Concrete = 10 1/4"

Remarks



Reinforcing Steel

Date: 11/17/2022

Photographer: SHS

12

Core Number / Thickness

B-012-0-22 / Asphalt = 6 1/2" Concrete = 9 1/2"

Remarks

Reinforcing steel observed 4 1/2" below the top of concrete. A color change was observed in the concrete about 3" from the top of concrete



Reinforcing Steel

Date: 11/1/2022

Photographer: SHS

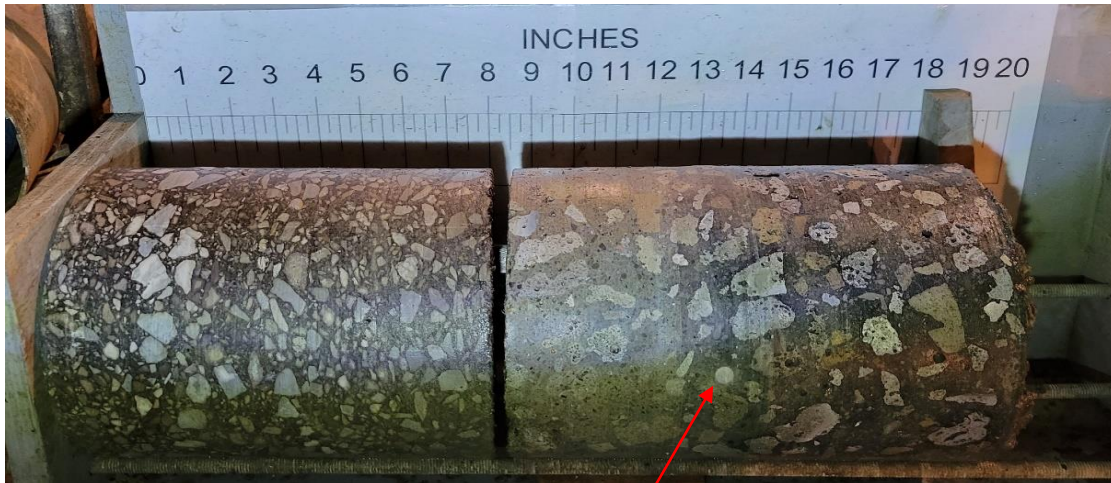
13

Core Number / Thickness

B-013-0-22 / Asphalt = 6½" Concrete = 9½"

Remarks

Reinforcing steel observed 4" below the top of concrete.



Reinforcing Steel

Date: 11/1/2022

Photographer: SHS

14

Core Number / Thickness

B-013-1-22 / Asphalt = 8¼" Concrete = 9½"

Remarks

Reinforcing steel observed 4" below the top of concrete.



Reinforcing Steel

Date: 11/1/2022

Photographer: SHS

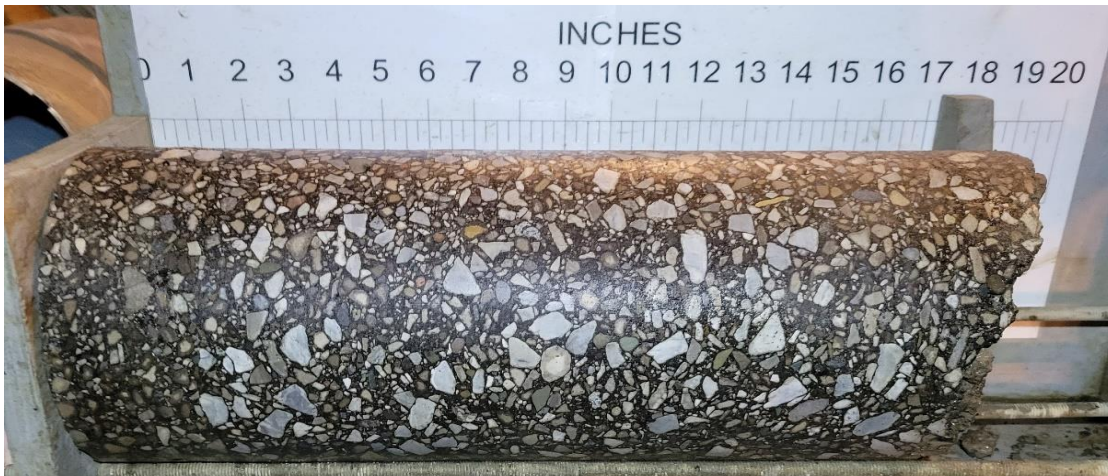
15

Core Number / Thickness

B-013-2-22 / Asphalt = 4 " Concrete = 9¾"

Remarks

Reinforcing steel observed 4¼" below the top of concrete.



Date: 11/1/2022

Photographer: SHS

16

Core Number / Thickness

B-013-3-22 / Asphalt = 17¼"

Remarks

Core length ranged from 15¾" to 17¼".



Date: 11/17/2022

Photographer: SHS

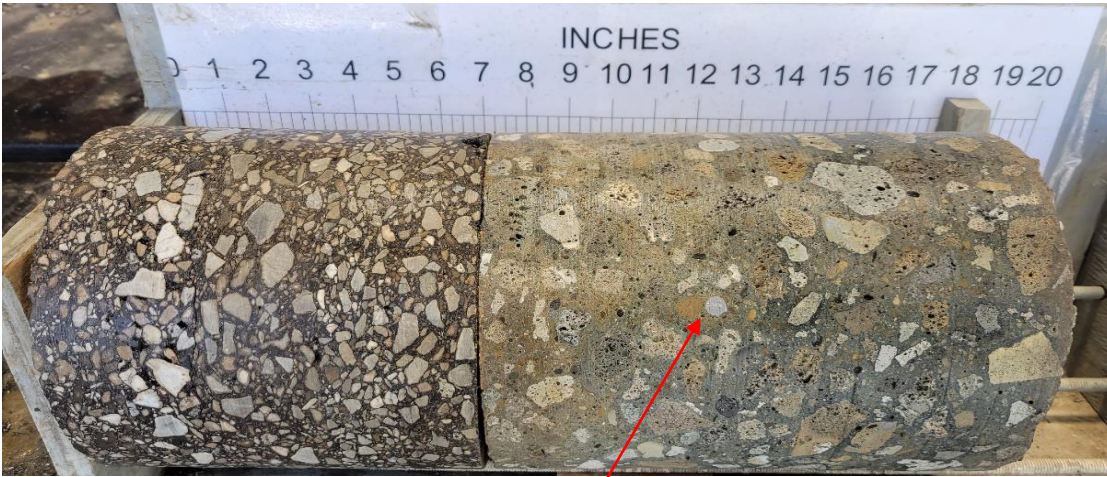
17	Core Number / Thickness	B-014-0-22 / Asphalt = 12 "
	Remarks	



Date: 3/8/2023

Photographer: SHS

18	Core Number / Thickness	B-014-1-22 / Asphalt = 14½"
	Remarks	



Reinforcing Steel

Date: 3/8/2023

Photographer: SHS

19

Core Number / Thickness

B-014-2-22 / Asphalt = 7¾" Concrete = 10 "

Remarks

Reinforcing steel observed 4¼" below the top of concrete.



Reinforcing Steel

Date: 3/8/2023

Photographer: SHS

20

Core Number / Thickness

B-014-3-22 / Asphalt = 8 " Concrete = 9½"

Remarks

Reinforcing steel observed 4½" below the top of concrete.



Reinforcing Steel

Date: 3/8/2023

Photographer: SHS

21	Core Number / Thickness	B-014-4-22 / Asphalt = 8 " Concrete = 8½"
	Remarks	Reinforcing steel observed 4¼" below the top of concrete.



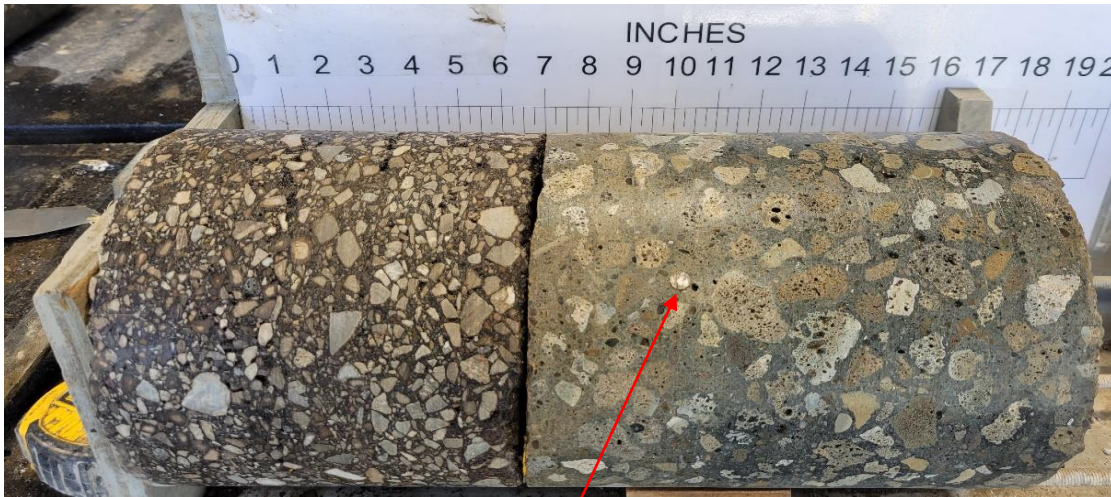
Layer with higher bitumen content

Reinforcing Steel

Date: 11/1/2022

Photographer: SHS

22	Core Number / Thickness	B-015-0-22 / Asphalt = 8 " Concrete = 9¾"
	Remarks	Reinforcing steel observed 3½" below the top of concrete. A layer with higher bitumen content observed about 3" below top of asphalt.

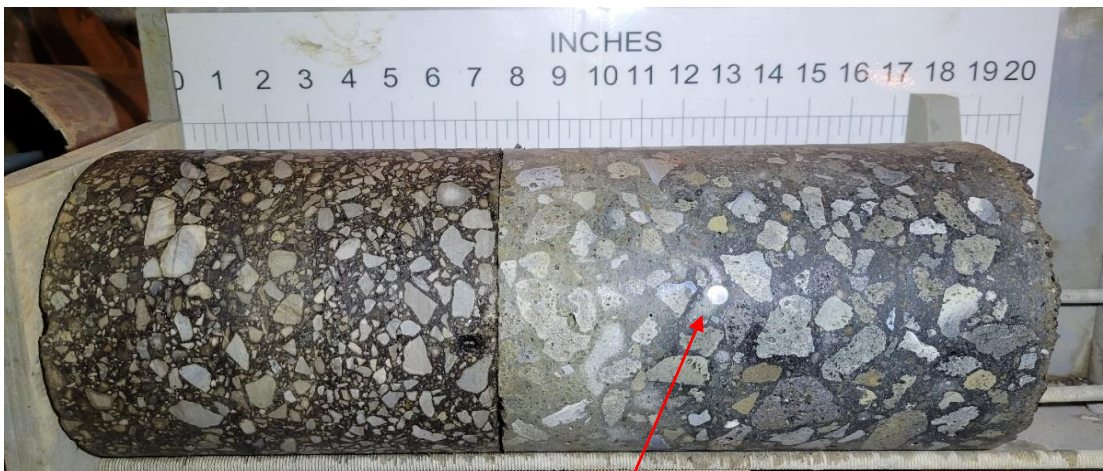


Reinforcing Steel

Date: 3/8/2023

Photographer: SHS

23	Core Number / Thickness	B-016-0-22 / Asphalt = 6¾" Concrete = 9½"
	Remarks	Reinforcing steel observed 2½" below the top of concrete.



Reinforcing Steel

Date: 11/2/2022

Photographer: SHS

24	Core Number / Thickness	B-017-0-22 / Asphalt = 7¾" Concrete = 9½"
	Remarks	Reinforcing steel observed 3¾" below the top of concrete.



Reinforcing Steel

Date: 11/17/2022

Photographer: SHS

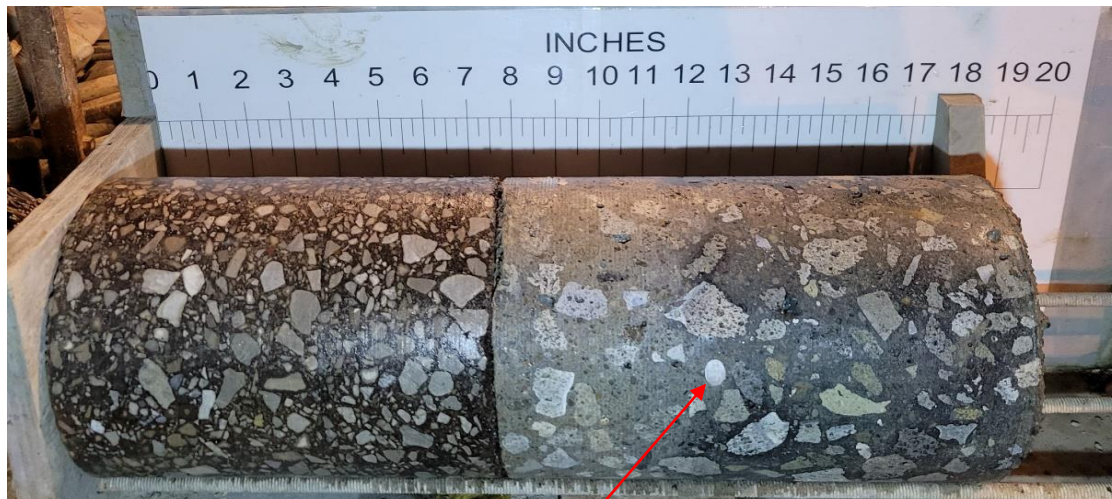
25

Core Number / Thickness

B-018-0-22 / Asphalt = 7 " Concrete = 9½"

Remarks

Reinforcing steel observed 3½" below the top of concrete.



Reinforcing Steel

Date: 11/2/2022

Photographer: SHS

26

Core Number / Thickness

B-021-0-22 / Asphalt = 7¾" Concrete = 9¾"

Remarks

Reinforcing steel observed 3¾" below the top of concrete. A color change was observed in the concrete about 3" from the top of concrete



Reinforcing Steel

Date: 11/17/2022

Photographer: SHS

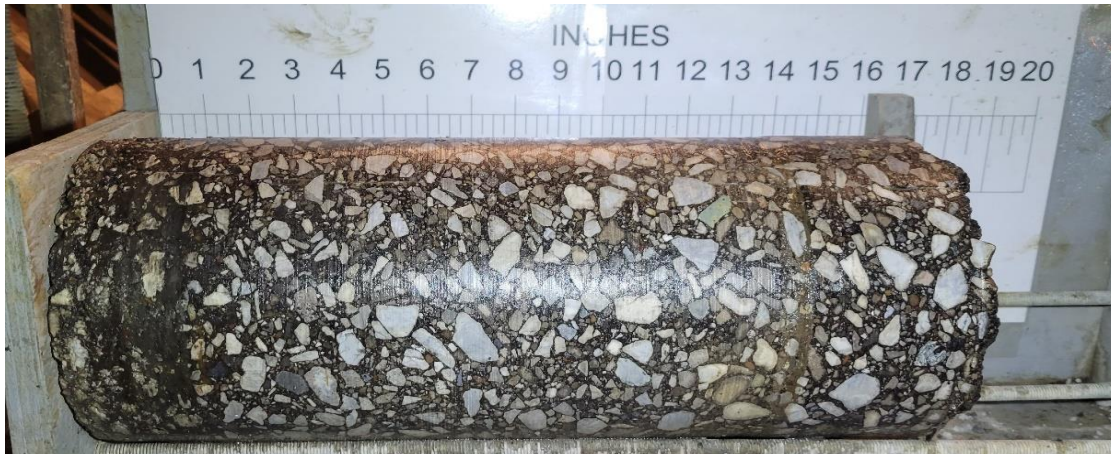
27

Core Number / Thickness

B-022-0-22 / Asphalt = 5¾" Concrete = 9¼"

Remarks

Reinforcing steel observed 3¼" below the top of concrete.



Date: 11/2/2022

Photographer: SHS

28

Core Number / Thickness

B-023-0-22 / Asphalt = 16 "

Remarks



Layer with higher bitumen content

Indentation

Reinforcing Steel

Date: 11/2/2022

Photographer: SHS

29	Core Number / Thickness	B-025-0-22 / Asphalt = 8¾" Concrete = 9¼"
	Remarks	A layer of higher bitumen content observed in the ½" from the bottom of the asphalt. Reinforcing steel observed 3¾", 4½", and 5" below the top of concrete. An indentation was observed about 4"-5" from the top of the concrete.



Reinforcing Steel

Date: 11/17/2022

Photographer: SHS

30	Core Number / Thickness	B-026-0-22 / Asphalt = 7¾" Concrete = 9¼"
	Remarks	Reinforcing steel observed 3½" below the top of concrete.



Date: 11/9/2022

Photographer: KAH

31	Core Number / Thickness	B-033-0-22 / Asphalt = 6" Concrete = 10½"
	Remarks	

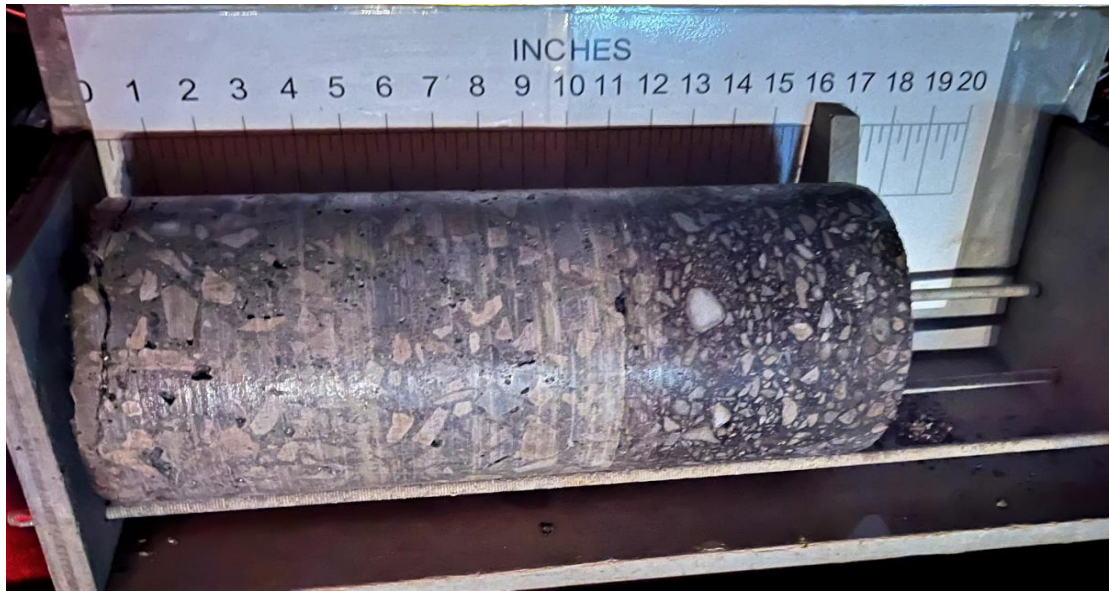


Reinforcing Steel

Date: 11/17/2022

Photographer: SHS

32	Core Number / Thickness	B-036-0-22 / Asphalt = 5½" Concrete = 10½"
	Remarks	Reinforcing steel was observed 3½" and 4" from the top of concrete.



Date: 11/9/2022

Photographer: KAH

33	Core Number / Thickness	B-037-0-22 / Asphalt = 5 " Concrete = 9¾"
	Remarks	



Reinforcing Steel

Date: 11/17/2022

Photographer: SHS

34	Core Number / Thickness	B-040-0-22 / Asphalt = 8 " Concrete = 10¾"
	Remarks	Reinforcing steel was observed 4¼" from the top of concrete. Deterioration was observed in the lower ½" of the concrete.



Date: 11/9/2022

Photographer: KAH

35	Core Number / Thickness	B-041-0-22 / Asphalt = 9½" Concrete = 5¼"
	Remarks	



Date: 11/9/2022

Photographer: KAH

36	Core Number / Thickness	B-043-0-22 / Asphalt = 13¼"
	Remarks	

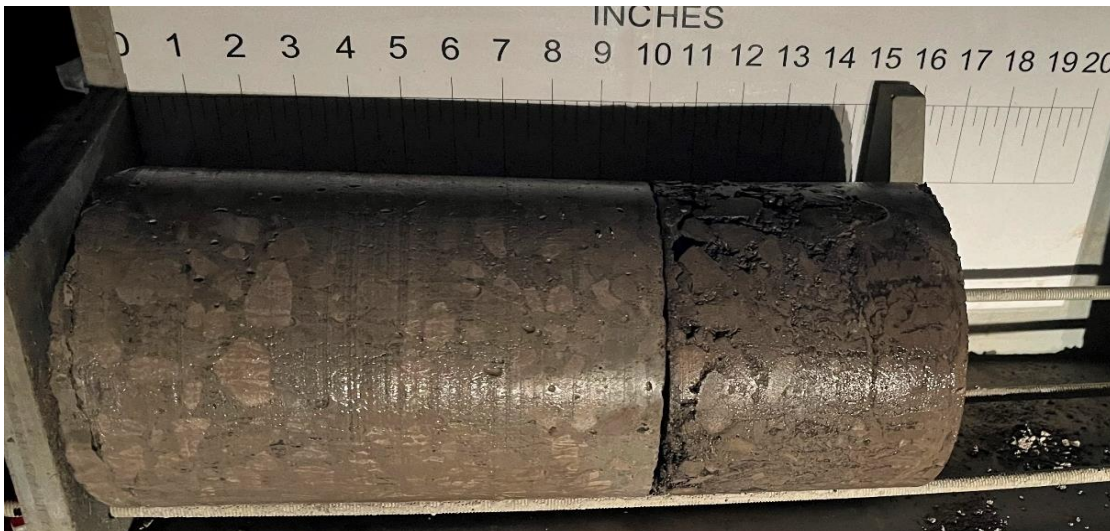


Reinforcing Steel

Date: 11/17/2022

Photographer: SHS

37	Core Number / Thickness	B-046-0-22 / Asphalt = 5 " Concrete = 11 "
	Remarks	Reinforcing steel was observed 3¾" from the top of concrete. A portion of the lower 3" of the concrete split away during coring.



Date: 11/9/2022

Photographer: KAH

38	Core Number / Thickness	B-047-0-22 / Asphalt = 5 " Concrete = 9 "
	Remarks	



Date: 11/17/2022

Photographer: SHS

Reinforcing Steel

39	Core Number / Thickness	B-050-0-22 / Asphalt = 5 " Concrete = 10¼"
	Remarks	Reinforcing steel was observed 4½", 4¾, and 5" from the top of concrete.



Date: 11/9/2022

Photographer: KAH

Reinforcing Steel

40	Core Number / Thickness	B-051-0-22 / Asphalt = 5 " Concrete = 9½"
	Remarks	Reinforcing steel was observed 4" and 4¼" from the top of concrete. Horizontal cracks were observed in the lower 1" - ½" of the concrete.



Reinforcing Steel

Date: 11/17/2022

Photographer: SHS

41	Core Number / Thickness	B-054-0-22 / Asphalt = 5¾" Concrete = 10¾"
	Remarks	Reinforcing steel was observed 4¼" from the top of concrete. Deterioration was observed in the lower ½" of the concrete.



Reinforcing Steel

Date: 11/9/2022

Photographer: KAH

42	Core Number / Thickness	B-055-0-22 / Asphalt = 5" Concrete = 10"
	Remarks	Reinforcing steel was observed 4½" from the top of concrete. Horizontal cracks were observed in the lower ½" of the concrete.



Date: 11/9/2022

Photographer: KAH

43

Core Number / Thickness

B-057-1-22 / Asphalt = 10½"

Remarks

Cemented slag/base (4") based partially recovered below asphalt.



Date: 11/9/2022

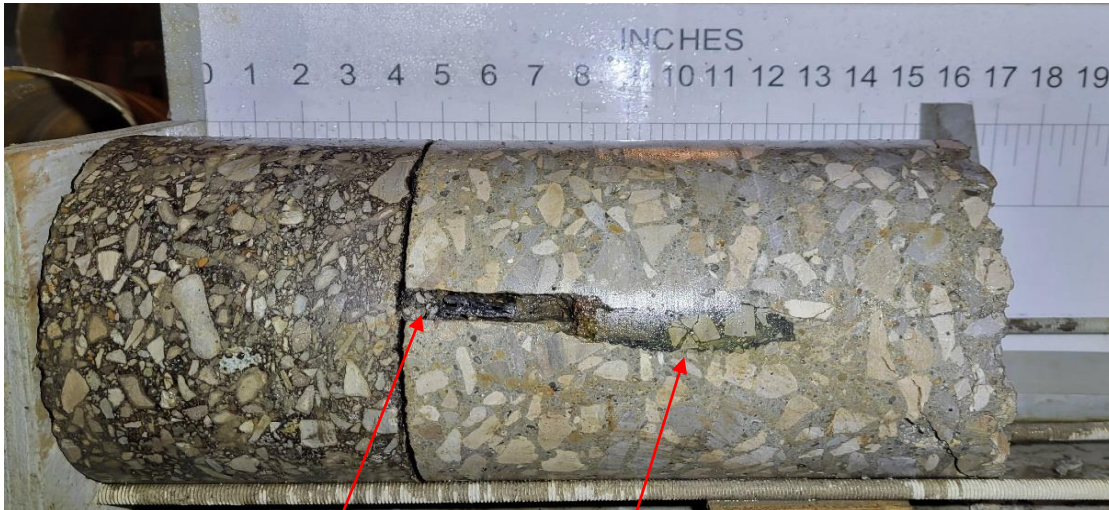
Photographer: KAH

44

Core Number / Thickness

B-057-2-22 / Asphalt = 10½"

Remarks



Expansion Joint

Vertical crack

Date: 11/17/2022

Photographer: SHS

45

Core Number / Thickness

B-058-0-22 / Asphalt = 5" Concrete = 10¼"

Remarks

An expansion joint, was observed in the upper 2½ of the concrete. A vertical crack, filled with a bituminous compound was observed in the upper 5¾" of the concrete. Horizontal cracks were observed in the lower 1" of the concrete.



Date: 11/14/2022

Photographer: SHS

46

Core Number / Thickness

B-058-1-22 / Asphalt = 10¼"

Remarks



Date: 11/14/2022

Photographer: SHS

47

Core Number / Thickness

B-058-2-22 / Asphalt = 9½"

Remarks



Date: 11/9/2022

Photographer: KAH

48

Core Number / Thickness

B-059-0-22 / Asphalt = ¾" Concrete = 9½"

Remarks



Date: 11/9/2022

Photographer: KAH

49

Core Number / Thickness

B-059-1-22 / Asphalt = 2¾" Concrete = 9¾"

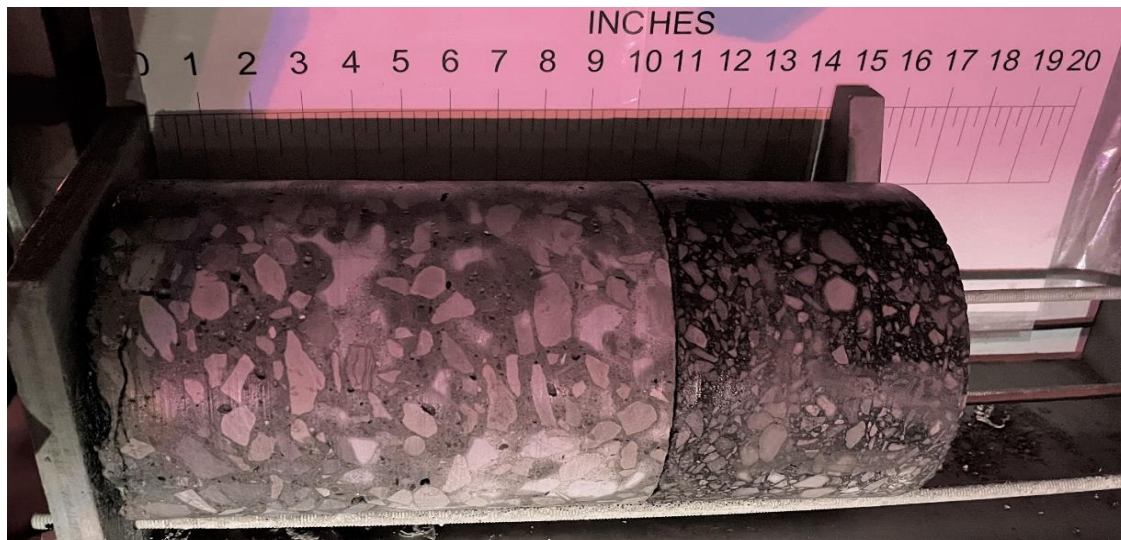
Remarks

50

Core Number / Thickness

B-059-2-22 / Asphalt = 5 " Concrete = 9¼"

Remarks



Date: 11/9/2022

Photographer: KAH



Reinforcing Steel

Date: 11/14/2022

Photographer: SHS

51	Core Number / Thickness	B-060-1-22 / Asphalt = 2¾" Concrete = 9¼"
	Remarks	Reinforcing steel was observed 4½" from the top of concrete.



Reinforcing Steel

Date: 11/14/2022

Photographer: SHS

52	Core Number / Thickness	B-060-2-22 / Asphalt = 5½" Concrete = 9½"
	Remarks	Deterioration was observed in the lower 1" of the asphalt. Reinforcing steel was observed 4¾" and 5" from the top of concrete. Horizontal cracks were observed in the lower ½" of the concrete.



Reinforcing Steel

Date: 11/16/2022

Photographer: SHS

53	Core Number / Thickness	B-062-0-22 / Asphalt = 6 " Concrete = 9¼"
	Remarks	Reinforcing steel observed 4¾" below the top of concrete.



Date: 11/11/2022

Photographer: SHS

54	Core Number / Thickness	B-063-0-22 / Asphalt = 5 " Concrete = 9¾"
	Remarks	

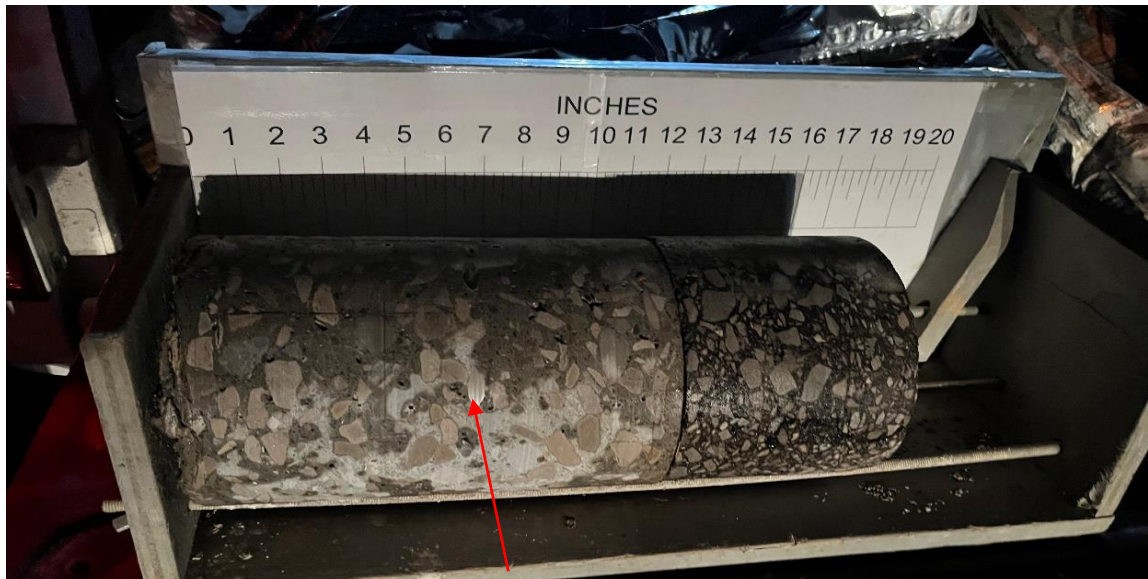


Date: 11/16/2022

Photographer: SHS

Reinforcing Steel

55	Core Number / Thickness	B-066-0-22 / Asphalt = 5¾" Concrete = 10¼"
	Remarks	Reinforcing steel observed 4½" below the top of concrete. Deterioration observed in the lower ½" of the concrete.



Date: 11/11/2022

Photographer: SHS

Reinforcing Steel

56	Core Number / Thickness	B-067-0-22 / Asphalt = 5¼" Concrete = 10½"
	Remarks	Reinforcing steel observed 4½" below the top of concrete.

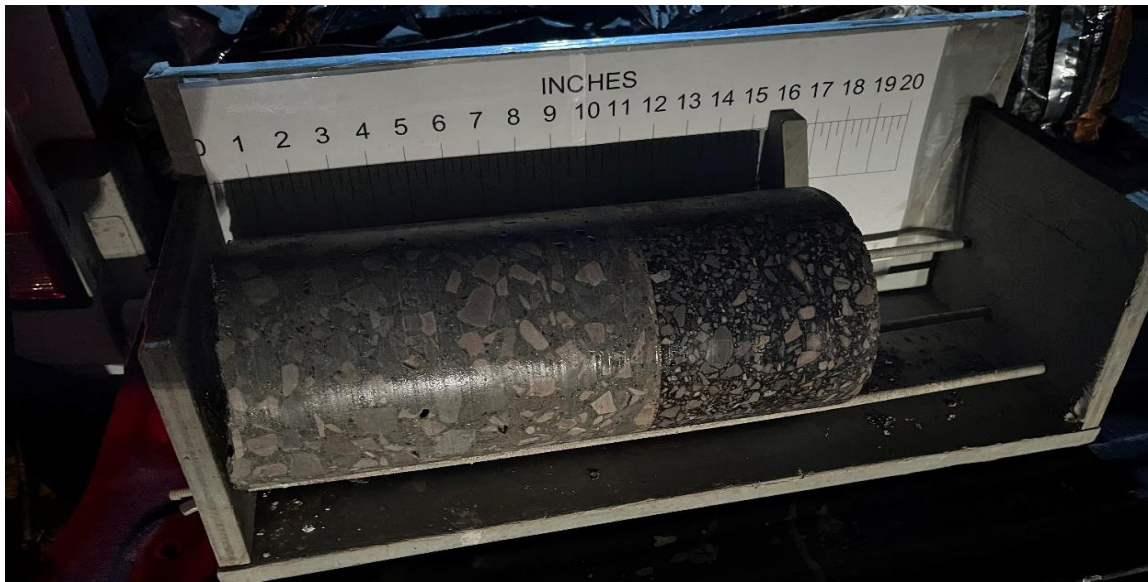


Reinforcing Steel

Date: 11/16/2022

Photographer: SHS

57	Core Number / Thickness	B-070-0-22 / Asphalt = 5 " Concrete = 10 "
	Remarks	Reinforcing steel observed 4¼" and 4½" below the top of concrete.



Date: 11/11/2022

Photographer: SHS

58	Core Number / Thickness	B-071-0-22 / Asphalt = 5½" Concrete = 9½"
	Remarks	



Date: 11/16/2022

Photographer: SHS

59	Core Number / Thickness	B-074-0-22 / Asphalt = 5¾" Concrete = 10¼"
	Remarks	Reinforcing steel observed 4¼" below the top of concrete. Horizontal cracks observed in the lower ½" of the concrete.



Date: 11/11/2022

Photographer: SHS

60	Core Number / Thickness	B-075-0-22 / Asphalt = 5¼" Concrete = 10½"
	Remarks	



Reinforcing Steel

Date: 11/16/2022

Photographer: SHS

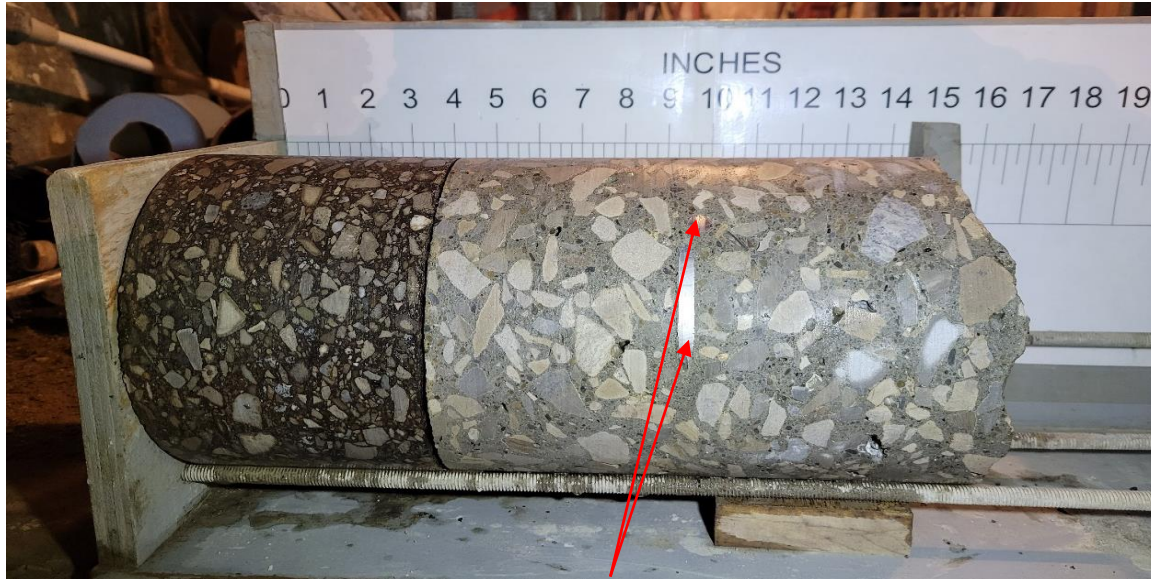
61	Core Number / Thickness	B-078-0-22 / Asphalt = 5¾" Concrete = 10¼"
	Remarks	Reinforcing steel observed 4½" below the top of concrete. Deterioration observed in the asphalt and concrete layers at their interface.



Date: 11/11/2022

Photographer: SHS

62	Core Number / Thickness	B-079-0-22 / Asphalt = 5 " Concrete = 10¼"
	Remarks	



Reinforcing Steel

Date: 11/16/2022

Photographer: SHS

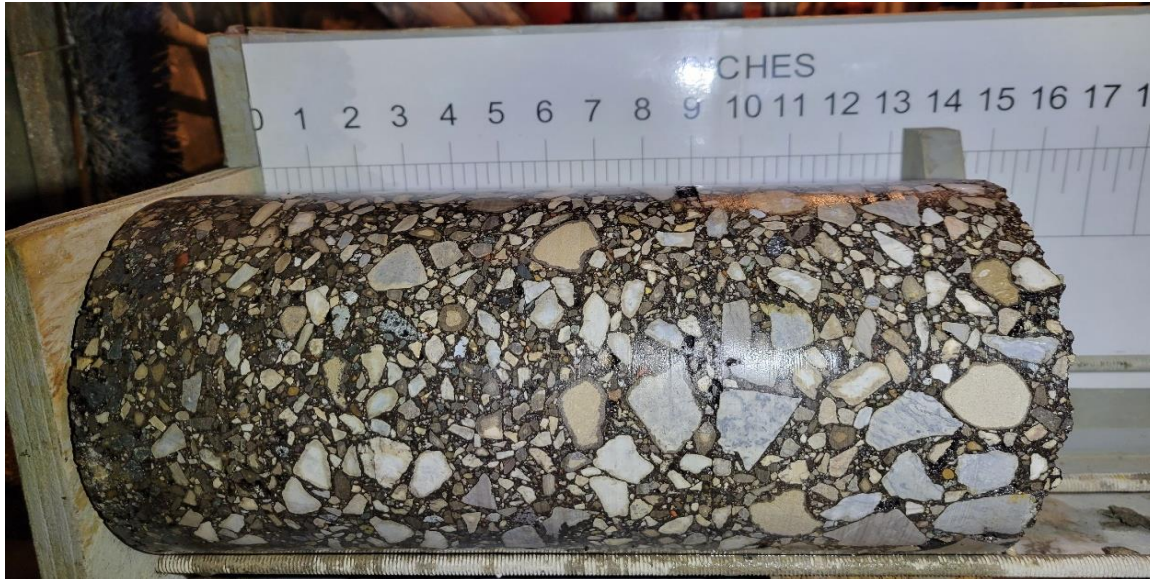
63	Core Number / Thickness	B-082-0-22 / Asphalt = 5" Concrete = 9¼"
	Remarks	Reinforcing steel observed 4" and 4¼" below the top of concrete.



Date: 11/11/2022

Photographer: SHS

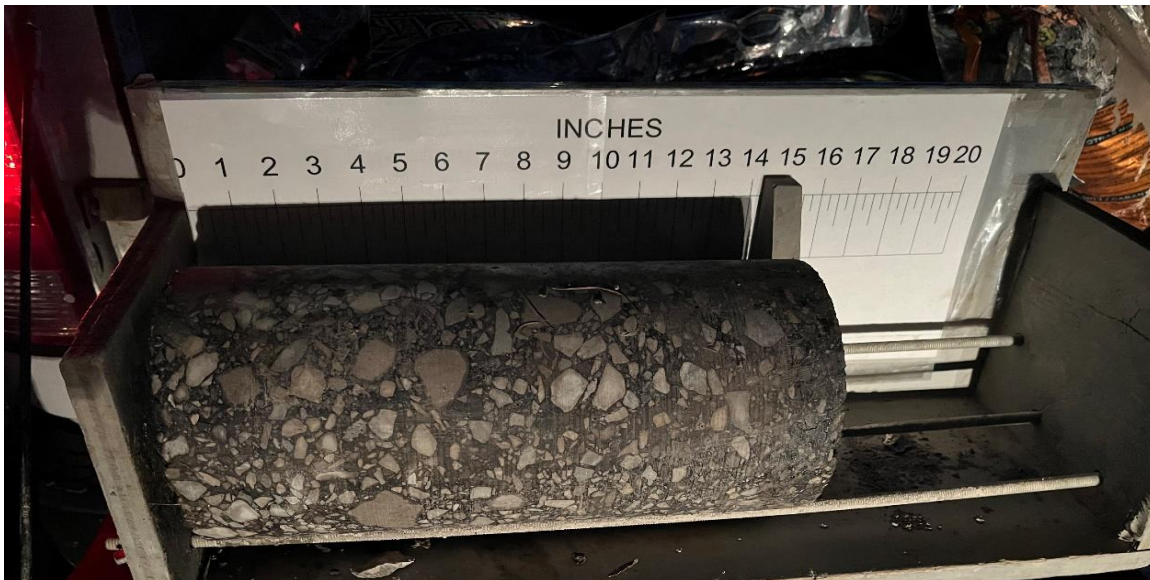
64	Core Number / Thickness	B-083-0-22 / Asphalt = 5¾" Concrete = 9½"
	Remarks	



Date: 11/16/2022

Photographer: SHS

65	Core Number / Thickness	B-086-0-22 / Asphalt = 13¼"
	Remarks	



Date: 11/11/2022

Photographer: SHS

66	Core Number / Thickness	B-087-0-22 / Asphalt = 13½"
	Remarks	



Date: 11/16/2022

Photographer: SHS

67	Core Number / Thickness	B-090-0-22 / Asphalt = 13 "
	Remarks	

NO PHOTO AVAILABLE		Date:
		Photographer:
68	Core Number / Thickness	B-091-0-22 / Asphalt = 13 "
	Remarks	



Reinforcing Steel

Date: 11/16/2022

Photographer: SHS

69

Core Number / Thickness

B-094-0-22 / Asphalt = 5 " Concrete = 9¾"

Remarks

Reinforcing steel observed 4½" below the top of concrete.



Date: 11/11/2022

Photographer: SHS

70

Core Number / Thickness

B-095-0-22 / Asphalt = 4¾" Concrete = 10½"

Remarks



Date: 11/16/2022

Photographer: SHS

71	Core Number / Thickness	B-098-0-22 / Asphalt = 4 " Concrete = 10 "
	Remarks	Reinforcing steel observed 4½" below the top of concrete. Horizontal cracks observed in the lower 2" of the concrete.

72	Core Number / Thickness	
	Remarks	

Date:

Photographer:



Appendix D

OHIO DEPARTMENT OF TRANSPORTATION**OFFICE OF GEOTECHNICAL ENGINEERING****PLAN SUBGRADES
Geotechnical Design Manual Section 600****LOR-90-10.76
PID 107714****Approximately 8 miles of pavement replacement and 3rd lane widening****S&ME, Inc.****Prepared By: Brian K. Sears, P.E.
Date prepared: Wednesday, May 3, 2023****Brian K. Sears, P.E.
6190 Enterprise Court
Dublin, OH 43016****614-793-2226
bsears@smeinc.com****NO. OF BORINGS: 113**

#	Boring ID	Alignment	Station	Offset	Dir	Drill Rig	ER	Boring EL.	Proposed Subgrade EL	Cut Fill
1	B-001-0-22	IR 90 MAINLINE - WEST	574+85	36	Right	CME 550X (R50)	79	751.8	749.9	1.9 C
2	B-002-0-22	IR 90 MAINLINE - WEST	578+63	45	Left	ATV D50 (R61)	70	751.0	749.1	1.9 C
3	B-003-0-22	IR 90 MAINLINE - WEST	582+95	45	Right	CME 550X (R50)	79	749.5	747.6	1.9 C
4	B-004-0-22	IR 90 MAINLINE - WEST	586+79	45	Left	ATV D50 (R61)	70	749.0	747.1	1.9 C
5	B-005-0-22	IR 90 MAINLINE - WEST	590+98	46	Right	CME 550X (R50)	79	747.6	745.7	1.9 C
6	B-006-0-22	IR 90 MAINLINE - WEST	594+67	45	Left	ATV D50 (R61)	70	747.0	745.1	1.9 C
7	B-007-0-22	IR 90 MAINLINE - WEST	598+86	45	Right	CME 550X (R50)	79	745.7	743.8	1.9 C
8	B-008-0-22	IR 90 MAINLINE - WEST	602+98	44	Left	ATV D50 (R61)	70	744.8	742.9	1.9 C
9	B-009-0-22	IR 90 MAINLINE - WEST	606+89	45	Right	ATV D50 (R80)	85	748.1	746.2	1.9 C
10	B-010-0-22	IR 90 MAINLINE - WEST	610+83	45	Left	ATV D50 (R61)	70	757.2	755.3	1.9 C
11	B-011-0-22	IR 90 EASTBOUND	615+14	20	Left	ATV D50 (R80)	85	762.9	761.0	1.9 C
12	B-012-0-22	IR 90 WESTBOUND	618+95	3	Left	ATV D50 (R61)	70	772.5	770.6	1.9 C
13	B-013-0-22	IR 90 EASTBOUND	622+83	21	Left	ATV D50 (R80)	85	758.9	757.0	1.9 C
14	B-013-1-22	SR 2 EASTBOUND	610+72	9	Left	ATV D50 (R80)	85	752.2	750.3	1.9 C
15	B-013-2-22	SR 2 EASTBOUND	618+35	9	Left	ATV D50 (R80)	85	744.2	742.3	1.9 C
16	B-013-3-22	SR 2 EASTBOUND	622+42	11	Left	ATV D50 (R80)	85	742.6	740.7	1.9 C
17	B-014-0-22	IR 90 WESTBOUND	627+41	2	Left	ATV D50 (R61)	70	759.7	757.8	1.9 C
18	B-014-1-22	SR 2 WESTBOUND	614+92	74	Left	ATV D50 (R61)	70	758.8	756.9	1.9 C
19	B-014-2-22	SR 2 WESTBOUND	621+53	103	Left	ATV D50 (R61)	70	746.1	744.2	1.9 C
20	B-014-3-22	SR 2 WESTBOUND	625+76	109	Left	ATV D50 (R61)	70	743.3	741.4	1.9 C
21	B-014-4-22	SR 2 WESTBOUND	629+63	107	Left	ATV D50 (R61)	70	741.4	739.5	1.9 C
22	B-015-0-22	SR 2 EASTBOUND	626+25	10	Left	ATV D50 (R80)	85	741.2	739.3	1.9 C
23	B-016-0-22	IR 90 WESTBOUND	634+66	57	Left	ATV D50 (R61)	70	739.7	737.8	1.9 C
24	B-017-0-22	SR 2 EASTBOUND	634+46	9	Left	ATV D50 (R80)	85	737.4	735.5	1.9 C
25	B-018-0-22	IR 90 WESTBOUND	643+24	4	Left	ATV D50 (R61)	70	735.9	734.0	1.9 C
26	B-019-0-22	SR 2 EASTBOUND	642+45	23	Left	ATV D50 (R80)	85	734.4	733.7	0.7 C
27	B-020-0-22	IR 90 MAINLINE	646+37	26	Left	ATV D50 (R61)	70	738.4	737.7	0.7 C
28	B-021-0-22	IR 90 MAINLINE	650+24	44	Right	ATV D50 (R80)	85	744.6	742.7	1.9 C
29	B-022-0-22	IR 90 MAINLINE	654+27	45	Left	ATV D50 (R61)	70	747.5	745.6	1.9 C
30	B-023-0-22	IR 90 MAINLINE	658+38	30	Right	ATV D50 (R61)	70	746.7	744.8	1.9 C
31	B-024-0-22	IR 90 MAINLINE	659+26	32	Left	ATV D50 (R61)	70	746.1	744.2	1.9 C
32	B-025-0-22	IR 90 MAINLINE	665+01	46	Right	ATV D50 (R61)	70	737.9	736.0	1.9 C
33	B-026-0-22	IR 90 MAINLINE	668+58	45	Left	ATV D50 (R61)	70	728.9	727.0	1.9 C
34	B-027-0-22	IR 90 MAINLINE	672+78	26	Right	ATV D50 (R61)	70	716.6	715.9	0.7 C
35	B-028-0-22	IR 90 MAINLINE	676+18	32	Left	ATV D50 (R61)	70	705.5	704.8	0.7 C
36	B-029-0-22	IR 90 MAINLINE	681+04	45	Right	ATV D50 (R61)	70	699.4	697.5	1.9 C
37	B-030-0-22	IR 90 MAINLINE	684+81	44	Left	ATV D50 (R61)	70	700.7	698.8	1.9 C
38	B-031-0-22	IR 90 MAINLINE	688+77	28	Right	ATV D50 (R61)	70	705.0	704.3	0.7 C
39	B-032-0-22	IR 90 MAINLINE	692+59	20	Left	ATV D50 (R61)	70	709.6	708.9	0.7 C
40	B-033-0-22	IR 90 MAINLINE	719+65	44	Right	ATV D50 (R61)	70	686.9	685.0	1.9 C
41	B-034-0-22	IR 90 MAINLINE	723+27	33	Left	ATV D50 (R61)	70	679.4	678.7	0.7 C

#	Boring ID	Alignment	Station	Offset	Dir	Drill Rig	ER	Boring EL.	Proposed Subgrade EL	Cut Fill
42	B-035-0-22	IR 90 MAINLINE	727+41	32	Right	ATV D50 (R61)	70	670.9	670.2	0.7 C
43	B-036-0-22	IR 90 MAINLINE	731+43	45	Left	ATV D50 (R61)	70	663.4	661.5	1.9 C
44	B-037-0-22	IR 90 MAINLINE	735+54	45	Right	ATV D50 (R61)	70	655.3	653.4	1.9 C
45	B-038-0-22	IR 90 MAINLINE	739+65	27	Left	ATV D50 (R61)	70	647.3	646.6	0.7 C
46	B-039-0-22	IR 90 MAINLINE	743+55	21	Right	ATV D50 (R61)	70	641.3	640.6	0.7 C
47	B-040-0-22	IR 90 MAINLINE	747+45	46	Left	ATV D50 (R61)	70	644.7	642.8	1.9 C
48	B-041-0-22	IR 90 MAINLINE	750+97	46	Right	ATV D50 (R61)	70	648.0	646.1	1.9 C
49	B-042-0-22	IR 90 MAINLINE	756+13	31	Left	ATV D50 (R61)	70	652.7	650.8	1.9 C
50	B-043-0-22	IR 90 MAINLINE	759+76	33	Right	ATV D50 (R61)	70	656.8	654.9	1.9 C
51	B-044-0-22	IR 90 MAINLINE	764+71	14	Left	ATV D50 (R61)	70	658.5	657.8	0.7 C
52	B-045-0-22	IR 90 MAINLINE	768+36	21	Right	ATV D50 (R61)	70	663.9	663.2	0.7 C
53	B-046-0-22	IR 90 MAINLINE	772+50	42	Left	ATV D50 (R61)	70	667.9	666.0	1.9 C
54	B-047-0-22	IR 90 MAINLINE	776+54	45	Right	ATV D50 (R61)	70	671.6	669.7	1.9 C
55	B-048-0-22	IR 90 MAINLINE	780+66	33	Left	ATV D50 (R61)	70	674.8	674.1	0.7 C
56	B-049-0-22	IR 90 MAINLINE	784+45	34	Right	ATV D50 (R61)	70	677.8	677.1	0.7 C
57	B-050-0-22	IR 90 MAINLINE	788+41	44	Left	ATV D50 (R61)	70	682.4	680.5	1.9 C
58	B-051-0-22	IR 90 MAINLINE	792+58	45	Right	ATV D50 (R61)	70	686.1	684.2	1.9 C
59	B-052-0-22	IR 90 MAINLINE	796+57	32	Left	ATV D50 (R61)	70	687.0	686.3	0.7 C
60	B-053-0-22	IR 90 MAINLINE	800+43	35	Right	ATV D50 (R61)	70	685.0	684.3	0.7 C
61	B-054-0-22	IR 90 MAINLINE	804+23	45	Left	ATV D50 (R61)	70	681.2	679.3	1.9 C
62	B-055-0-22	IR 90 MAINLINE	808+71	46	Right	ATV D50 (R61)	70	676.4	674.5	1.9 C
63	B-056-0-22	IR 90 MAINLINE	812+48	31	Left	ATV D50 (R61)	70	671.6	670.9	0.7 C
64	B-057-0-22	IR 90 MAINLINE	816+45	33	Right	ATV D50 (R61)	70	665.7	665.0	0.7 C
65	B-057-1-22	IR 90 MAINLINE	817+88	238	Left	Simco 2800	83	669.0	667.1	1.9 C
66	B-057-2-22	SR 254 CL	95+62	141	Right	Simco 2800	83	676.2	674.3	1.9 C
67	B-058-0-22	IR 90 MAINLINE	820+34	46	Left	ATV D50 (R61)	70	661.8	659.9	1.9 C
68	B-058-1-22	IR 90 MAINLINE	823+15	340	Right	Simco 2800	83	667.6	665.7	1.9 C
69	B-058-2-22	SR 254 CL	105+76	134	Right	Simco 2800	83	672.8	670.9	1.9 C
70	B-059-0-22	IR 90 MAINLINE	824+33	46	Right	ATV D50 (R61)	70	657.3	655.4	1.9 C
71	B-059-1-22	SR 254 CL	96+79	226	Left	Simco 2800	83	671.7	669.8	1.9 C
72	B-059-2-22	IR 90 MAINLINE	829+45	193	Left	Simco 2800	83	656.0	654.1	1.9 C
73	B-060-0-22	IR 90 MAINLINE	828+62	33	Left	ATV D50 (R61)	70	653.3	652.6	0.7 C
74	B-060-1-22	SR 254 CL	106+11	155	Left	Simco 2800	83	672.1	670.2	1.9 C
75	B-060-2-22	IR 90 MAINLINE	831+68	209	Right	Simco 2800	83	659.5	657.6	1.9 C
76	B-061-0-22	IR 90 MAINLINE	832+49	34	Right	ATV D50 (R61)	70	652.0	651.3	0.7 C
77	B-062-0-22	IR 90 MAINLINE	836+47	45	Left	ATV D50 (R61)	70	651.5	649.6	1.9 C
78	B-063-0-22	IR 90 MAINLINE	840+67	47	Right	ATV D50 (R61)	70	650.6	648.7	1.9 C
79	B-064-0-22	IR 90 MAINLINE	844+41	33	Left	ATV D50 (R61)	70	649.2	648.5	0.7 C
80	B-065-0-22	IR 90 MAINLINE	848+46	33	Right	ATV D50 (R61)	70	648.3	647.6	0.7 C
81	B-066-0-22	IR 90 MAINLINE	852+50	46	Left	ATV D50 (R61)	70	647.8	645.9	1.9 C
82	B-067-0-22	IR 90 MAINLINE	856+77	45	Right	ATV D50 (R61)	70	646.3	644.4	1.9 C

#	Boring ID	Alignment	Station	Offset	Dir	Drill Rig	ER	Boring EL.	Proposed Subgrade EL	Cut Fill
83	B-068-0-22	IR 90 MAINLINE	860+52	32	Left	ATV D50 (R61)	70	644.8	644.1	0.7 C
84	B-069-0-22	IR 90 MAINLINE	864+57	32	Right	ATV D50 (R61)	70	644.6	643.9	0.7 C
85	B-070-0-22	IR 90 MAINLINE	868+36	45	Left	ATV D50 (R61)	70	644.0	642.1	1.9 C
86	B-071-0-22	IR 90 MAINLINE	872+73	45	Right	Simco 2800	83	642.8	640.9	1.9 C
87	B-072-0-22	IR 90 MAINLINE	876+69	32	Left	ATV D50 (R61)	70	641.3	640.6	0.7 C
88	B-073-0-22	IR 90 MAINLINE	880+62	31	Right	Simco 2800	83	640.3	639.6	0.7 C
89	B-074-0-22	IR 90 MAINLINE	884+50	45	Left	ATV D50 (R61)	70	640.2	638.3	1.9 C
90	B-075-0-22	IR 90 MAINLINE	888+82	45	Right	Simco 2800	83	639.0	637.1	1.9 C
91	B-076-0-22	IR 90 MAINLINE	892+81	34	Left	ATV D50 (R61)	70	637.6	636.9	0.7 C
92	B-077-0-22	IR 90 MAINLINE	896+12	31	Right	Simco 2800	83	637.7	637.0	0.7 C
93	B-078-0-22	IR 90 MAINLINE	900+65	46	Left	ATV D50 (R61)	70	639.2	637.3	1.9 C
94	B-079-0-22	IR 90 MAINLINE	904+72	46	Right	Simco 2800	83	638.4	636.5	1.9 C
95	B-080-0-22	IR 90 MAINLINE	908+58	32	Left	ATV D50 (R61)	70	636.7	636.0	0.7 C
96	B-081-0-22	IR 90 MAINLINE	912+57	32	Right	Simco 2800	83	635.7	635.0	0.7 C
97	B-082-0-22	IR 90 MAINLINE	916+61	45	Left	ATV D50 (R61)	70	635.5	633.6	1.9 C
98	B-083-0-22	IR 90 MAINLINE	920+78	45	Right	Simco 2800	83	634.4	632.5	1.9 C
99	B-084-0-22	IR 90 MAINLINE	923+93	29	Left	ATV D50 (R61)	70	633.5	632.8	0.7 C
100	B-085-0-22	IR 90 MAINLINE	928+37	21	Right	Simco 2800	83	639.4	638.7	0.7 C
101	B-086-0-22	IR 90 MAINLINE	932+31	34	Left	CME 550X (R50)	79	648.2	646.3	1.9 C
102	B-087-0-22	IR 90 MAINLINE	936+38	25	Right	Simco 2800	83	656.1	654.2	1.9 C
103	B-088-0-22	IR 90 MAINLINE	940+49	8	Left	CME 550X (R50)	79	658.2	657.5	0.7 C
104	B-089-0-22	IR 90 MAINLINE	944+28	9	Right	Simco 2800	83	660.2	659.5	0.7 C
105	B-090-0-22	IR 90 MAINLINE	948+05	27	Left	CME 550X (R50)	79	657.6	655.7	1.9 C
106	B-091-0-22	IR 90 MAINLINE	952+41	32	Right	Simco 2800	83	650.7	648.8	1.9 C
107	B-092-0-22	IR 90 MAINLINE	956+35	26	Left	CME 550X (R50)	79	642.2	641.5	0.7 C
108	B-093-0-22	IR 90 MAINLINE	960+22	26	Right	Simco 2800	83	635.2	634.5	0.7 C
109	B-094-0-22	IR 90 MAINLINE	964+08	45	Left	CME 550X (R50)	79	632.0	630.1	1.9 C
110	B-095-0-22	IR 90 MAINLINE	968+42	46	Right	Simco 2800	83	632.1	630.2	1.9 C
111	B-096-0-22	IR 90 MAINLINE	972+43	31	Left	CME 550X (R50)	79	632.3	631.6	0.7 C
112	B-097-0-22	IR 90 MAINLINE	976+39	15	Right	Simco 2800	83	633.1	632.4	0.7 C
113	B-098-0-22	IR 90 MAINLINE	980+06	45	Left	CME 550X (R50)	79	634.8	632.9	1.9 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 ₆₀	N _{60L}		LL	PL	PI	% Silt	% Clay	P200	M _c	M _{OPT}	Class		GI	Unsuitable	Unstable	Unsuitable		Unstable
1	B 001-0 22	SS-1	2.0	3.5	0.1	1.6	30	30	4.5	28	16	12	42	27	69	13	14	A-6a	8	1173					Cement Stab - 12"
		SS-2	3.5	5.0	1.6	3.1	48		4.5	24	16	8	27	14	41	9	11	A-4a	1						
		SS-3A	5.0	5.5	3.1	3.6	50									8	10	A-4a	8						
		SS-3B	5.5	5.8	3.6	3.9	50									0	0	Rock	0						
2	B 002-0 22	SS-1A	1.8	3.0	-0.1	1.1	23	18	3.5	23	15	8	38	22	60	14	10	A-4a	5	593		Mc			Cement Stab - 12"
		SS-2	3.0	4.5	1.1	2.6	18		3	25	16	9	35	27	62	14	11	A-4a	5			Mc			
		SS-3	4.5	6.0	2.6	4.1	35		4.5							13	10	A-4a	8						
		SS-4	6.0	7.5	4.1	5.6	62		4.5							7	10	A-4a	8						
3	B 003-0 22	SS-1	2.0	3.5	0.1	1.6	15	11	2.5	26	16	10	42	28	70	13	11	A-4a	7	933					Cement Stab - 12"
		SS-2	3.5	5.0	1.6	3.1	30		4.5							13	10	A-4a	8			Mc			
		SS-3	5.0	6.2	3.1	4.3	50		4.5	22	15	7	39	17	56	8	10	A-4a	4						
		SS-4	6.5	8.0	4.6	6.1	11		1.2							28	18	A-7-6	16						
4	B 004-0 22	SS-1	1.8	3.0	-0.1	1.1	14	14	2	26	16	10	39	30	69	14	11	A-4a	7	573		N ₆₀ & Mc		12"	Cement Stab - 12"
		SS-2	3.0	4.5	1.1	2.6	17		2	28	16	12	37	25	62	14	14	A-6a	6						
		SS-3	4.5	6.0	2.6	4.1	26		3							13	14	A-6a	10						
		SS-4	6.0	7.5	4.1	5.6	47		3							8	14	A-6a	10						
5	B 005-0 22	SS-1	2.0	3.5	0.1	1.6	39	18	4.5	24	15	9	35	24	59	10	10	A-4a	5	340					Cement Stab - 12"
		SS-2	3.5	5.0	1.6	3.1	20		4.5	38	20	18	44	36	80	19	16	A-6b	11			Mc			
		SS-3	5.0	6.5	3.1	4.6	26		4.5							23	18	A-7-6	16						
		SS-4	6.5	8.0	4.6	6.1	18		2.5							26	18	A-7-6	16						
6	B 006-0 22	SS-1B	2.0	3.0	0.1	1.1	36	12	3	28	17	11	29	20	49	15	14	A-6a	3	633					Cement Stab - 12"
		SS-2	3.0	4.5	1.1	2.6	30			25	14	11	34	15	49	11	14	A-6a	3						
		SS-3	4.5	6.0	2.6	4.1	12		2.5							12	14	A-6a	10						
		SS-4	6.0	7.5	4.1	5.6	29		2							20	16	A-6b	16						
7	B 007-0 22	SS-1	2.0	3.5	0.1	1.6	25	18		25	15	10	41	27	68	10	10	A-4a	7	293					Cement Stab - 12"
		SS-2	3.5	5.0	1.6	3.1	20									13	10	A-4a	8			Mc			
		SS-3	5.0	6.5	3.1	4.6	18		2	46	17	29	42	40	82	24	18	A-7-6	17						
		SS-4	6.5	8.0	4.6	6.1	77									12	10	A-2-6	4						
8	B 008-0 22	SS-1	1.5	3.0	-0.4	1.1	30	16		28	13	15	18	15	33	12	10	A-2-6	1	647					Cement Stab - 12"
		SS-2	3.0	4.5	1.1	2.6	54			NP	NP	NP	26	11	37	9	11	A-4a	0						
		SS-3	4.5	6.0	2.6	4.1	17		1.5							41	18	A-7-6	16						
		SS-4	6.0	7.5	4.1	5.6	16		1							23	18	A-7-6	16						
9	B 009-0 22	SS-1	2.0	3.0	0.1	1.1	13	13	4.5	27	15	12	49	17	66	10	14	A-6a	7	320					Cement Stab - 12"
		SS-2	3.5	5.0	1.6	3.1	20		4.5	28	15	13	40	32	72	13	14	A-6a	9						
		SS-3	5.0	6.5	3.1	4.6	21		2.7							17	14	A-6a	10						
		SS-4	6.5	8.0	4.6	6.1	19		2.7							15	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 ₆₀	N _{60L}		LL	PL	PI	% Silt	% Clay	P200	M _c	M _{OPT}	Class		GI	Unsuitable	Unstable	Unsuitable		Unstable
10	B 010-0 22	SS-1	1.5	3.0	-0.4	1.1	15	15	2.5	29	14	15	35	29	64	16	14	A-6a	8	480					Cement Stab - 12"
		SS-2	3.0	4.5	1.1	2.6	60			22	17	5	23	8	31	7	10	A-2-4	0						
		SS-3	4.5	6.0	2.6	4.1	17			3						17	14	A-6a	10						
		SS-4	6.0	7.5	4.1	5.6	16			3						12	14	A-6a	10						
11	B 011-0 22	SS-1	2.0	3.5	0.1	1.6	41	28	4.5						7	10	A-4a	8	400					Cement Stab - 12"	
		SS-2	3.5	5.0	1.6	3.1	31			4.5	24	16	8	34	19	53	11	11	A-4a	4					
		SS-3	5.0	6.5	3.1	4.6	28			4.5	24	14	10	37	27	64	11	10	A-4a	6					
		SS-4	6.5	8.0	4.6	6.1	40			4.5						10	10	A-4a	8						
12	B 012-0 22	SS-1B	2.0	3.0	0.1	1.1	21	21		NP	NP	NP	22	12	34	12	10	A-2-4	0	593					Cement Stab - 12"
		SS-2	3.0	4.5	1.1	2.6	36			2	24	17	7	36	16	52	13	12	A-4a	3					
		SS-3	4.5	6.0	2.6	4.1	28			3						11	10	A-4a	8						
		SS-4	6.0	7.5	4.1	5.6	30			4						11	10	A-4a	8						
13	B 013-0 22	SS-1	2.0	3.0	0.1	1.1	20	20	4.5	29	15	14	37	25	62	15	14	A-6a	7	40					Cement Stab - 12"
		SS-2	3.5	5.0	1.6	3.1	38			4.5						10	14	A-6a	10						
		SS-3	5.0	6.5	3.1	4.6	31				27	16	11	24	17	41	8	14	A-6a	1					
		SS-4	6.5	8.0	4.6	6.1	97			4.5						12	14	A-6a	10						
14	B 013-1 22	SS-1/2A	2.0	4.3	0.1	2.4	20	20	4.5	23	14	9	26	19	45	11	10	A-4a	2	233					Cement Stab - 12"
		SS-2B	4.3	5.0	2.4	3.1	30			4.5	27	15	12	38	32	70	13	14	A-6a	8					
		SS-3	5.0	6.5	3.1	4.6	43			4.5						17	14	A-6a	10						
		SS-4	6.5	7.9	4.6	6.0	50			4.5						9	14	A-6a	10						
15	B 013-2 22	SS-1	2.0	3.5	0.1	1.6	28	10	4.5	24	15	9	41	23	64	15	10	A-4a	6	40		Mc			Cement Stab - 12"
		SS-2	3.5	5.0	1.6	3.1	16				NP	NP	NP	21	7	28	10	10	A-2-4	0					
		SS-3	5.0	6.5	3.1	4.6	10			0.75						17	16	A-6b	16						
		SS-4	6.5	8.0	4.6	6.1	19			1.25						21	16	A-6b	16						
16	B 013-3 22	SS-1	2.0	3.5	0.1	1.6	41	6		NP	NP	NP	29	10	39	11	11	A-4a	1	240					Cement Stab - 12"
		SS-2	3.5	5.0	1.6	3.1	23				NP	NP	NP	30	14	44	16	11	A-4a	2			Mc		
		SS-3	5.0	6.5	3.1	4.6	6									13	10	A-4a	8						
		SS-4	6.5	8.0	4.6	6.1	7									22	10	A-4a	8						
17	B 014-0 22	SS-1	2.0	3.5	0.1	1.6	20	16	3						10	14	A-6a	10	560					Cement Stab - 12"	
		SS-2	3.5	5.0	1.6	3.1	24			3	27	16	11	27	14	41	9	14	A-6a	1					
		SS-3	5.0	6.5	3.1	4.6	16			3.5	27	15	12	30	17	47	11	14	A-6a	3					
		SS-4	6.5	8.0	4.6	6.1	16									13									
18	B 014-1 22	SS-1	2.0	3.5	0.1	1.6	20	15	2.5	21	15	6	37	19	56	13	10	A-4a	4	140		Mc			Cement Stab - 12"
		SS-2	3.5	5.0	1.6	3.1	15				19	13	6	19	14	33	12	10	A-2-4	0					
		SS-3	5.0	6.5	3.1	4.6	24			1.5						18	16	A-6b	16						
		SS-4	6.5	8.0	4.6	6.1	23			1.5						15	16	A-6b	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 ₆₀	N _{60L}		LL	PL	PI	% Silt	% Clay	P200	M _c	M _{OPT}	Class		GI	Unsuitable	Unstable	Unsuitable		Unstable	
19	B 014-2 22	SS-1A	2.0	2.6	0.1	0.7	8	8	1.5	28	15	13	43	37	80	13	14	A-6a	9	180		HP		12"	Cement Stab - 12"	
		SS-1B	2.6	3.5	0.7	1.6	50										6	6	A-1-a	0						
		SS-2	3.5	4.8	1.6	2.9	50		4.5	25	14	11	41	21	62	20	14	A-6a	6			Mc				
20	B 014-3 22	SS-1A	2.0	2.7	0.1	0.8	9	9	3.5	42	11	31	35	27	62	20	18	A-7-6	14	300		N ₆₀		12"	Cement Stab - 12"	
		SS-1B/2	2.7	5.0	0.8	3.1	28			NP	NP	NP	22	8	30	8	10	A-2-4	0							
		SS-3	5.0	6.5	3.1	4.6	40		3.5							11	8	A-3a	0							
		SS-4	6.5	8.0	4.6	6.1	14									13										
21	B 014-4 22	SS-1	2.0	3.5	0.1	1.6	23	16	4.5	39	24	15	38	27	65	10	19	A-6a	8	640					Cement Stab - 12"	
		SS-2	3.5	4.5	1.6	2.6	50			NP	NP	NP	34	12	46	8	11	A-4a	2							
		SS-3	5.0	6.5	3.1	4.6	19									7	10	A-4a	8							
		SS-4	6.5	8.0	4.6	6.1	16		2							17	14	A-6a	10							
22	B 015-0 22	SS-1	2.0	3.5	0.1	1.6	21	11		NP	NP	NP	13	11	24	9	10	A-2-4	0	440					Cement Stab - 14"	
		SS-2	3.5	5.0	1.6	3.1	19		1.7	22	14	8	64	19	83	14	10	A-4b	8		A-4b	HP & Mc				
		SS-3	5.0	6.5	3.1	4.6	11		2.5							18	16	A-6b	16							
		SS-4	6.5	8.0	4.6	6.1	16		1.5							24	16	A-6b	16							
23	B 016-0 22	SS-1	2.0	3.5	0.1	1.6	17	17	2	30	15	15	34	32	66	14	14	A-6a	8	540					Cement Stab - 12"	
		SS-2	3.5	5.0	1.6	3.1	60		2.5	25	14	11	37	19	56	9	14	A-6a	5							
		SS-3	5.0	6.5	3.1	4.6	33		2.5							11	14	A-6a	10							
		SS-4	6.5	8.0	4.6	6.1	36		4							18	14	A-6a	10							
24	B 017-0 22	SS-1	2.0	3.5	0.1	1.6	20	20	3	26	16	10	35	25	60	14	11	A-4a	5	273		Mc			Cement Stab - 12"	
		SS-2	3.5	5.0	1.6	3.1	44		4.5	41	20	21	29	47	76	20	18	A-7-6	13							
		SS-3	5.0	5.4	3.1	3.5	50									6	6	A-1-b	0							
25	B 018-0 22	SS-1	2.0	3.5	0.1	1.6	14	14	3	29	17	12	32	29	61	14	14	A-6a	6	640					Cement Stab - 12"	
		SS-2	3.5	5.0	1.6	3.1	19		3	28	11	17	35	33	68	16	16	A-6b	9							
		SS-3	5.0	6.5	3.1	4.6	30		4.5							12	16	A-6b	16							
		SS-4	6.5	8.0	4.6	6.1	43		4.5							11	16	A-6b	16							
26	B 019-0 22	SS-1	1.0	2.5	-0.2	1.3	14	11	4.5	29	16	13	31	29	60	13	14	A-6a	6	333					Cement Stab - 12"	
		SS-2	2.5	4.0	1.3	2.8	11		2.5	35	17	18	30	33	63	16	16	A-6b	9			N ₆₀				
		SS-3	4.0	5.5	2.8	4.3	40									11	8	A-3a	0							
		SS-4	5.5	7.0	4.3	5.8	36									12	8	A-3a	0							
27	B 020-0 22	SS-1	0.5	2.0	-0.7	0.8	10	10	3.5	34	19	15	20	26	46	15	14	A-6a	4	1013		N ₆₀		12"	Cement Stab - 12"	
		SS-2	2.0	3.5	0.8	2.3	16		4.5	34	19	15	25	38	63	12	14	A-6a	8							
		SS-3	3.5	5.0	2.3	3.8	17		2.5							12	14	A-6a	10							
		SS-4	5.0	6.3	3.8	5.1	85		2							11	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 ₆₀	N _{60L}		LL	PL	PI	% Silt	% Clay	P200	M _c	M _{OPT}	Class		GI	Unsuitable	Unstable	Unsuitable		Unstable
28	B 021-0 22	SS-1	2.0	3.5	0.1	1.6	26	20	20	14	6	12	12	24	9	6	A-1-b	0	293					Cement Stab - 12"	
		SS-2	3.5	5.0	1.6	3.1	26		3.5	33	18	15	27	33	60	11	14	A-6a	7						
		SS-3	5.0	6.5	3.1	4.6	20		3							17	14	A-6a	10						
		SS-4	6.5	8.0	4.6	6.1	38		4							10	14	A-6a	10						
29	B 022-0 22	SS-1B	1.7	3.0	-0.2	1.1	10	10	2	27	18	9	37	23	60	11	13	A-4a	5	573		N ₆₀		12"	Cement Stab - 12"
		SS-2	3.0	4.5	1.1	2.6	19		2.5	25	15	10	32	25	57	11	10	A-4a	4						
		SS-3	4.5	6.0	2.6	4.1	14		3							10	10	A-4a	8						
		SS-4	6.0	7.5	4.1	5.6	20		4.5							19	16	A-6b	16						
30	B 023-0 22	SS-1B	2.0	3.0	0.1	1.1	19	15				11	4	15	6	6	A-1-a	0	6160					Exc. & Replace - 18" No Geotextile Compact Bottom 6" Cem. Stab. Top 12"	
		SS-2	3.0	4.5	1.1	2.6	15		2.5	27	17	10	32	27	59	11	12	A-4a	5						
		SS-3	4.5	6.0	2.6	4.1	23		3.5							13	10	A-4a	8						
		SS-4	6.0	7.5	4.1	5.6	28		4.5							13	10	A-4a	8						
31	B 024-0 22	SS-1B	1.9	3.0	0.0	1.1	19	14	3	31	17	14	29	26	55	11	14	A-6a	6	773				Cement Stab - 12"	
		SS-2	3.0	4.5	1.1	2.6	24		1	22	15	7	26	20	46	11	10	A-4a	2			HP			
		SS-3	4.5	6.0	2.6	4.1	16		2.5							12	10	A-4a	8						
		SS-4	6.0	7.5	4.1	5.6	14		2							13	10	A-4a	8						
32	B 025-0 22	SS-1B	2.0	3.0	0.1	1.1	21	19							11	14	A-6a	10	873				Cement Stab - 12"		
		SS-2	3.0	4.5	1.1	2.6	19		2	33	21	12	25	24	49	9	16	A-6a	3						
		SS-3	4.5	6.0	2.6	4.1	23		3.5	28	17	11	37	24	61	10	14	A-6a	6						
		SS-4	6.0	7.5	4.1	5.6	21		4.5							12	14	A-6a	10						
33	B 026-0 22	SS-1B	1.9	3.0	0.0	1.1	12	8							15	14	A-6a	10	820				Cement Stab - 12"		
		SS-2	3.0	4.5	1.1	2.6	8		2	29	17	12	32	25	57	13	14	A-6a	5			N ₆₀			
		SS-3	4.5	6.0	2.6	4.1	20		4.5	29	16	13	31	34	65	12	14	A-6a	7						
		SS-4	6.0	7.5	4.1	5.6	21		4.5							12	14	A-6a	10						
34	B 027-0 22	SS-1	0.5	2.0	-0.7	0.8	12	12	3	39	19	20	29	29	58	12	16	A-6b	9	667				Cement Stab - 12"	
		SS-2	2.0	3.5	0.8	2.3	27		3.5	31	16	15	40	37	77	17	14	A-6a	10			Mc			
		SS-3	3.5	5.0	2.3	3.8	35		4							15	14	A-6a	10						
		SS-4	5.0	6.5	3.8	5.3	19		4.5							9	14	A-6a	10						
35	B 028-0 22	SS-1	0.5	2.0	-0.7	0.8	10	10	2	28	16	12	40	28	68	13	14	A-6a	7	9200		N ₆₀		12"	Exc. & Replace - 18" No Geotextile Compact Bottom 6" Cem. Stab. Top 12"
		SS-2	2.0	3.5	0.8	2.3	20		3	28	13	15	35	32	67	14	14	A-6a	8						
		SS-3	3.5	5.0	2.3	3.8	27		3							15	14	A-6a	10						
		SS-4	5.0	6.5	3.8	5.3	31		2							15	14	A-6a	10						
36	B 029-0 22	SS-1B	1.8	3.0	-0.1	1.1	9	9	2	30	13	17	34	22	56	9	16	A-6b	7	820		N ₆₀		12"	Cement Stab - 12"
		SS-2	3.0	4.5	1.1	2.6	9			31	21	10	11	7	18	10	10	A-2-4	0			N ₆₀			
		SS-3	4.5	6.0	2.6	4.1	15		3.5							10	14	A-6a	10						
		SS-4	6.0	7.5	4.1	5.6	15		2.5							14	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 ₆₀	N _{60L}		LL	PL	PI	% Silt	% Clay	P200	M _c	M _{OPT}	Class		GI	Unsuitable	Unstable	Unsuitable		Unstable
37	B 030-0 22	SS-1B	2.0	3.0	0.1	1.1	9	9	1				26	21	47	14	10	A-4a	8	480		HP & Mc		12"	Cement Stab - 12"
		SS-2	3.0	4.5	1.1	2.6	14		2.5	21	13	8	19	24	43	15	10	A-4a	2			N ₆₀ & Mc			
		SS-3	4.5	6.0	2.6	4.1	28		3							12	14	A-6a	10						
		SS-4	6.0	7.5	4.1	5.6	29		4.5							7	14	A-6a	10						
38	B 031-0 22	SS-1	0.5	2.0	-0.7	0.8	9	9	3	26	15	11	36	40	76	16	14	A-6a	8	433		N ₆₀		12"	Cement Stab - 12"
		SS-2	2.0	3.5	0.8	2.3	14		3	24	15	9	41	26	67	12	10	A-4a	6						
		SS-3	3.5	5.0	2.3	3.8	26		4.5							17	16	A-6b	16						
		SS-4	5.0	6.5	3.8	5.3	30		4.5							17	16	A-6b	16						
39	B 032-0 22	SS-1	0.5	2.0	-0.7	0.8	7	7	1	35	18	17	29	34	63	17	16	A-6b	8	1093		HP		15"	Cement Stab - 12"
		SS-2	2.0	3.5	0.8	2.3	15		2	29	17	12	40	35	75	16	14	A-6a	9						
		SS-3	3.5	5.0	2.3	3.8	28		3.5							13	14	A-6a	10						
		SS-4	5.0	6.5	3.8	5.3	31		2.5							12	14	A-6a	10						
40	B 033-0 22	SS-1B	1.8	3.0	-0.1	1.1	9	9	3.5	34	19	15	32	53	85	19	14	A-6a	10	667		N ₆₀ & Mc		12"	Cement Stab - 12"
		SS-2	3.0	4.5	1.1	2.6	29		3.5	31	18	13	31	44	75	17	14	A-6a	9			Mc			
		SS-3	4.5	6.0	2.6	4.1	33		2.5							16	14	A-6a	10						
		SS-4	6.0	7.5	4.1	5.6	44		3							16	14	A-6a	10						
41	B 034-0 22	SS-1	0.5	2.0	-0.7	0.8	17	17	4.5	33	19	14	28	44	72	15	14	A-6a	9	3907					Cement Stab - 12"
		SS-2	2.0	3.5	0.8	2.3	28		4.5	35	20	15	31	40	71	17	15	A-6a	9						
		SS-3	3.5	5.0	2.3	3.8	44		2.5							15	14	A-6a	10						
		SS-4	5.0	6.5	3.8	5.3	48		3.5							15	14	A-6a	10						
42	B 035-0 22	SS-1	0.5	2.0	-0.7	0.8	21	21					17	10	27	9	10	A-2-4	0	873					Cement Stab - 12"
		SS-2	2.0	3.5	0.8	2.3	36		4.5	33	16	17	29	45	74	14	16	A-6b	11						
		SS-3	3.5	5.0	2.3	3.8	42		4.5							14	16	A-6b	16						
		SS-4	5.0	6.5	3.8	5.3	88		4.5							9	16	A-6b	16						
43	B 036-0 22	SS-1B	1.7	3.0	-0.2	1.1	13	13		34	15	19	31	33	64	13	16	A-6b	9	853					Cement Stab - 12"
		SS-2	3.0	3.9	1.1	2.0	50			35	18	17	44	27	71	7	16	A-6b	10						
		SS-3	4.5	5.2	2.6	3.3	50									6	0	Rock	0			Mc			
		SS-4	6.0	6.4	4.1	4.5	50									5	0	Rock	0						
44	B 037-0 22	SS-1	1.5	3.0	-0.4	1.1	43	30	3.5							10	A-2-6	4	673					Exc & Replace - 18" No Geotextile Compact Bottom 6" Cem. Stab. Top 12"	
		SS-2	3.0	3.3	1.1	1.4	50									0	Rock	0		Rock					
		SS-3	4.5	4.7	2.6	2.8	50									0	Rock	0							
		SS-4	6.0	6.0	4.1	4.1	50									0	Rock	0							
45	B 038-0 22	SS-1	0.6	2.0	-0.6	0.8	23	13		26	15	11	36	30	66	16	14	A-6a	7	500					Cement Stab - 12"
		SS-2	2.0	3.5	0.8	2.3	20		3	31	18	13	38	37	75	15	14	A-6a	9						
		SS-3	3.5	5.0	2.3	3.8	20		4							12	14	A-6a	10						
		SS-4	5.0	6.5	3.8	5.3	13		2							19	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 ₆₀	N _{60L}		LL	PL	PI	% Silt	% Clay	P200	M _c	M _{OPT}	Class		GI	Unsuitable	Unstable	Unsuitable		Unstable
46	B 039-0 22	SS-1	0.5	2.0	-0.7	0.8	54	30	3	39	21	18	21	27	48	7	16	A-6b	5	533					Exc & Replace - 18" No Geotextile Compact Bottom 6" Cem. Stab. Top 12"
		SS-2	2.0	2.4	0.8	1.2	50			25	16	9	15	7	22	6	10	A-2-4	0						
		SS-3	3.0	3.8	1.8	2.6	50									4	0	Rock	0		Rock	Mc	31"		
		SS-4	5.0	5.2	3.8	4.0	50									3	0	Rock	0						
47	B 040-0 22	SS-1	2.0	3.5	0.1	1.6	19	19		34	19	15	17	15	32	12	10	A-2-6	1	853					Cement Stab - 12"
		SS-2	3.5	4.3	1.6	2.4	50			27	22	5	13	5	18	9	6	A-1-b	0						
		SS-3	5.0	6.5	3.1	4.6	102									6	6	A-1-b	0						
		SS-4	6.5	7.4	4.6	5.5	50									17	6	A-1-b	0						
48	B 041-0 22	SS-1	1.5	3.0	-0.4	1.1	38	30		30	19	11	23	15	38	4	14	A-6a	1	2920					Exc & Replace - 18" No Geotextile Compact Bottom 6" Cem. Stab. Top 12"
		SS-2	3.0	3.3	1.1	1.4	50									4	0	Rock	0		Rock	Mc			
		SS-3	4.5	4.9	2.6	3.0	50			23	19	4	13	5	18	7	0	Rock	0			Mc			
		SS-4	6.0	6.3	4.1	4.4	50									3	0	Rock	0						
49	B 042-0 22	SS-1	1.5	3.0	-0.4	1.1	24	21	3.5	30	17	13	33	41	74	14	14	A-6a	9	6960					Exc. & Replace - 18" No Geotextile Compact Bottom 6" Cem. Stab. Top 12"
		SS-2	3.0	4.5	1.1	2.6	21		4.5							14	14	A-6a	10						
		SS-3	4.5	6.0	2.6	4.1	27		2	38	20	18	33	59	92	19	16	A-6b	11						
		SS-4	6.0	7.5	4.1	5.6	23		3							14	16	A-6b	16						
50	B 043-0 22	SS-1	2.0	3.3	0.1	1.4	26	26	4.5	35	17	18	29	41	70	14	16	A-6b	10	900					Exc. & Replace - 18" No Geotextile Compact Bottom 6" Cem. Stab. Top 12"
		SS-2	3.5	5.0	1.6	3.1	29		3.5	39	18	21	35	61	96	13	16	A-6b	12						
		SS-3/4A	5.0	6.9	3.1	5.0	27		3.5							20	16	A-6b	16						
		SS-4B	6.9	8.0	5.0	6.1	42		4							18	18	A-7-6	16						
51	B 044-0 22	SS-1	0.5	2.0	-0.7	0.8	13	13	3.5	33	18	15	28	40	68	13	14	A-6a	9	7200					Exc. & Replace - 18" No Geotextile Compact Bottom 6" Cem. Stab. Top 12"
		SS-2A	2.0	2.6	0.8	1.4	15		4	31	15	16	32	41	73	13	14	A-6a	10						
		SS-2B/3	2.6	5.0	1.4	3.8	22		3.5							13	14	A-6a	10						
		SS-4	5.0	6.5	3.8	5.3	26		4.5							14	14	A-6a	10						
52	B 045-0 22	SS-1	0.5	2.0	-0.7	0.8	23	21		19	14	5	16	9	25	8	6	A-1-b	0	520					Cement Stab - 12"
		SS-2	2.0	3.5	0.8	2.3	21		4	29	15	14	36	38	74	9	14	A-6a	9						
		SS-3	3.5	5.0	2.3	3.8	57		4.5							9	14	A-6a	10						
		SS-4	5.0	6.5	3.8	5.3	79		4.5							10	14	A-6a	10						
53	B 046-0 22	SS-1B	2.0	3.0	0.1	1.1	15	15	4.5	28	16	12	28	42	70	14	14	A-6a	8	1980					Cement Stab - 12"
		SS-2	3.0	4.5	1.1	2.6	21		1.5	29	15	14	25	43	68	15	14	A-6a	8			HP			
		SS-3	4.5	6.0	2.6	4.1	21		4.5							15	14	A-6a	10						
		SS-4	6.0	7.5	4.1	5.6	33		4.5							14	14	A-6a	10						
54	B 047-0 22	SS-1	2.0	3.5	0.1	1.6	28	27	2.5	31	15	16	31	50	81	14	16	A-6b	10	713					Cement Stab - 12"
		SS-2	3.5	5.0	1.6	3.1	27		4.5	29	14	15	29	45	74	12	14	A-6a	10						
		SS-3	5.0	6.5	3.1	4.6	38		3							14	14	A-6a	10						
		SS-4	6.5	8.0	4.6	6.1	54		4.5							8	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 ₆₀	N _{60L}		LL	PL	PI	% Silt	% Clay	P200	M _c	M _{OPT}	Class		GI	Unsuitable	Unstable	Unsuitable		Unstable
55	B 048-0 22	SS-1	0.5	2.0	-0.7	0.8	12	12	4.5						18	14	A-6a	10	9000		N ₆₀ & Mc		12"	Exc. & Replace - 18" No Geotextile Compact Bottom 6" Cem. Stab. Top 12"	
		SS-2	2.0	3.5	0.8	2.3	22		4.5	30	16	14	32	50	82	9	14	A-6a	10						
		SS-3	3.5	5.0	2.3	3.8	30		2.5	33	17	16	28	46	74	20	16	A-6b	10						
		SS-4	5.0	6.5	3.8	5.3	24		2.5							15	16	A-6b	16						
56	B 049-0 22	SS-1	0.5	2.0	-0.2	1.3	12	12	3	32	16	16	30	54	84	22	16	A-6b	10	1540		N ₆₀ & Mc		12"	Cement Stab - 12"
		SS-2	2.0	3.5	1.3	2.8	16		3	41	22	19	33	65	98	22	19	A-7-6	12			Mc			
		SS-3	3.5	5.0	2.8	4.3	30		4.5							22	18	A-7-6	16						
		SS-4	5.0	6.5	4.3	5.8	35		2.75							22	18	A-7-6	16						
57	B 050-0 22	SS-1	1.8	3.0	-0.1	1.1	10	10	2.5	30	16	14	21	40	61	17	14	A-6a	7	780		N ₆₀ & Mc		12"	Cement Stab - 12"
		SS-2	3.0	4.5	1.1	2.6	26		4.5	38	19	19	31	68	99	20	16	A-6b	12			Mc			
		SS-3	4.5	6.0	2.6	4.1	55		4.5							19	16	A-6b	16						
		SS-4	6.0	7.5	4.1	5.6	65		4.5							18	16	A-6b	16						
58	B 051-0 22	SS-1A	2.0	2.7	0.1	0.8	9	9	4.5	34	18	16	34	65	99	18	16	A-6b	10	280		N ₆₀		12"	Cement Stab - 12"
		SS-1B/2	2.7	3.9	0.8	2.0	23			22	16	6	14	15	29	17	8	A-3a	0						
		SS-2B	3.9	5.0	2.0	3.1	17		2							16	14	A-6a	10						
		SS-3/4	5.0	8.0	3.1	6.1	16		4.5							24	18	A-7-6	16						
59	B 052-0 22	SS-1	0.5	2.0	-0.7	0.8	9	9	2.5	20	16	4	27	42	69	15	11	A-4a	7	533		N ₆₀ & Mc		12"	Cement Stab - 12"
		SS-2	2.0	3.5	0.8	2.3	17		4.5	33	17	16	24	36	60	12	16	A-6b	7						
		SS-3	3.5	5.0	2.3	3.8	17		2.5							17	16	A-6b	16						
		SS-4	5.0	6.5	3.8	5.3	13		2							18	16	A-6b	16						
60	B 053-0 22	SS-1	0.5	2.0	-0.7	0.8	13	7	3	28	14	14	23	31	54	14	14	A-6a	5	480					Cement Stab - 14"
		SS-2/3A	2.0	4.1	0.8	2.9	7		0.5	30	17	13	24	23	47	32	14	A-6a	3			HP & Mc		24"	
		SS-3B	4.1	5.0	2.9	3.8	14		0.5							26	16	A-6b	16						
		SS-4	5.0	6.5	3.8	5.3	14		0.25							22	16	A-6b	16						
61	B 054-0 22	SS-1	1.8	3.0	-0.1	1.1	12	12	1.5	25	14	11	24	24	48	16	14	A-6a	3	540		HP		12"	Cement Stab - 12"
		SS-2	3.0	4.5	1.1	2.6	13		2.5	48	20	28	32	62	94	21	18	A-7-6	17			N ₆₀ & Mc			
		SS-3	4.5	6.0	2.6	4.1	30		1.5							24	18	A-7-6	16						
		SS-4	6.0	7.5	4.1	5.6	35		3.5							21	18	A-7-6	16						
62	B 055-0 22	SS-1	2.0	3.5	0.1	1.6	14	8	3.5	39	18	21	28	71	99	23	16	A-6b	12	667		N ₆₀ & Mc		12"	Cement Stab - 12"
		SS-2	3.5	5.0	1.6	3.1	8		1	38	17	21	31	68	99	25	16	A-6b	12			HP & Mc			
		SS-3/4A	5.0	6.7	3.1	4.8	15		1							14	10	A-4a	8						
		SS-4B	6.7	8.0	4.8	6.1	14		2							16	14	A-6a	10						
63	B 056-0 22	SS-1	0.5	2.0	-0.7	0.8	10	10	3	39	19	20	29	58	87	15	16	A-6b	12	5013		N ₆₀		12"	Exc. & Replace - 18" No Geotextile Compact Bottom 6" Cem. Stab. Top 12"
		SS-2	2.0	3.5	0.8	2.3	19		4	36	18	18	30	69	99	21	16	A-6b	11			Mc			
		SS-3	3.5	5.0	2.3	3.8	24		1.5							25	16	A-6b	16						
		SS-4	5.0	6.5	3.8	5.3	20		1.7							22	16	A-6b	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 ₆₀	N _{60L}		LL	PL	PI	% Silt	% Clay	P200	M _c	M _{OPT}	Class		GI	Unsuitable	Unstable	Unsuitable		Unstable	
64	B 057-0 22	SS-1	0.5	2.0	-0.7	0.8	14		3.5	32	17	15	25	34	59	14	14	A-6a	7	433					Cement Stab - 12"	
		SS-2	2.0	3.5	0.8	2.3	20		4.5	30	14	16	29	45	74	12	16	A-6b	10							
		SS-3	3.5	5.0	2.3	3.8	23		2.5							15	16	A-6b	16							
		SS-4	5.0	6.5	3.8	5.3	21	14	2.7							15	16	A-6b	16							
65	B 057-1 22	SS-1A	2.0	2.6	0.1	0.7	15			NP	NP	NP	9	7	16	14	8	A-3a	0						Cement Stab - 12"	
		SS-1B/2	2.6	5.0	0.7	3.1	14		3.5	28	15	13	30	44	74	14	14	A-6a	9	800						
		SS-3	5.0	6.5	3.1	4.6	14		4							15	14	A-6a	10							
		SS-4	6.5	8.0	4.6	6.1	17	14								15	14	A-6a	10							
66	B 057-2 22	SS-1A	2.0	2.5	0.1	0.6	15			NP	NP	NP	5	3	8	4	6	A-1-a	0						Cement Stab - 12"	
		SS-1B/2	2.5	5.0	0.6	3.1	7			NP	NP	NP	5	4	9	10	6	A-1-b	0	180						
		SS-3	5.0	6.5	3.1	4.6	8									15	6	A-1-b	0							
		SS-4	6.5	8.0	4.6	6.1	6	6								21	6	A-1-b	0							
67	B 058-0 22	SS-1B	1.8	3.0	-0.1	1.1	26		4.5	28	14	14	29	42	71	12	14	A-6a	9	5013					Exc. & Replace - 18" No Geotextile Compact Bottom 6" Cem. Stab. Top 12"	
		SS-2	3.0	4.5	1.1	2.6	16		4.5	30	15	15	31	40	71	14	14	A-6a	9							
		SS-3	4.5	6.0	2.6	4.1	28		2.5							17	14	A-6a	10							
		SS-4	6.0	7.5	4.1	5.6	36	16	3.5							16	14	A-6a	10							
68	B 058-1 22	SS-1	2.0	3.5	0.1	1.6	33			18	13	5	13	17	30	8	8	A-3a	0	433					Cement Stab - 12"	
		SS-2	3.5	5.0	1.6	3.1	21		4.5	23	17	6	30	44	74	13	12	A-4a	8							
		SS-3	5.0	6.5	3.1	4.6	17		3							15	10	A-4a	8							
		SS-4	6.0	8.0	4.1	6.1	21	17	4							14	10	A-4a	8							
69	B 058-2 22	SS-1	1.5	3.0	-0.4	1.1	47			NP	NP	NP	12	8	20	8	8	A-3a	0	213					Cement Stab - 12"	
		SS-2	3.0	4.5	1.1	2.6	22			NP	NP	NP	8	6	14	17	8	A-3a	0							
		SS-3	4.5	6.0	2.6	4.1	17									23	8	A-3a	0							
		SS-4A/C	6.0	7.5	4.1	5.6	10	10								20	8	A-3a	0							
70	B 059-0 22	SS-1	1.5	3.0	-0.4	1.1	19		4.5	30	15	15	25	49	74	17	14	A-6a	10	827		Mc			Cement Stab - 12"	
		SS-2	3.0	4.5	1.1	2.6	22		4.5	33	18	15	32	52	84	14	14	A-6a	10							
		SS-3/4A	4.5	7.0	2.6	5.1	37		4.5							16	14	A-6a	10							
		SS-4B	7.0	7.5	5.1	5.6	37	19								8	8	A-3a								
71	B 059-1 22	SS-1	2.0	3.5	0.1	1.6	26		3	20	15	5	18	16	34	12	8	A-3a	0	540					Cement Stab - 12"	
		SS-2	3.5	5.0	1.6	3.1	54			NP	NP	NP	15	9	24	10	8	A-3a	0							
		SS-3/4A	5.0	7.4	3.1	5.5	29		3							12	14	A-6a	10							
		SS-4B	7.4	8.0	5.5	6.1	35	26								13	10	A-4a								
72	B 059-2 22	SS-1B	2.3	3.5	0.4	1.6	25		3.5	35	18	17	26	53	79	15	16	A-6b	11	400					Cement Stab - 12"	
		SS-2	3.5	5.0	1.6	3.1	21		3	27	16	11	26	26	52	15	14	A-6a	4							
		SS-3/4A	5.0	7.4	3.1	5.5	17									21	10	A-2-6	4							
		SS-4B	7.4	8.0	5.5	6.1	15	15	4.5							15	14	A-6a								

#	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 ₆₀	N _{60L}		LL	PL	PI	% Silt	% Clay	P200	M _c	M _{OPT}	Class		GI	Unsuitable	Unstable	Unsuitable		Unstable
73	B 060-0 22	SS-1A	0.5	1.4	-0.7	0.2	13		2.5	19	15	4	15	13	28	13	8	A-3a	0	413					Cement Stab - 12"
		SS-1B	1.4	2.0	0.2	0.8	15		4.5	31	17	14	27	29	56	16	14	A-6a	6						
		SS-2	2.0	3.5	0.8	2.3	26		4.5							10	14	A-6a	10						
		SS-3/4	5.0	6.5	3.8	5.3	35	13	4.5							11	14	A-6a	10						
74	B 060-1 22	SS-1/2A	1.5	3.3	-0.4	1.4	31		3.5	28	17	11	26	40	66	14	14	A-6a	7	913					Cement Stab - 12"
		SS-2B	3.3	4.5	1.4	2.6	40			NP	NP	NP	15	13	28	9	8	A-3a	0						
		SS-3	4.5	6.0	2.6	4.1	40									9	8	A-3a	0						
		SS-4	6.0	7.5	4.1	5.6	32	30								9	8	A-3a	0						
75	B 060-2 22	SS-1	2.1	3.6	0.2	1.7	17		3.5	27	15	12	33	39	72	12	14	A-6a	8	853					Cement Stab - 12"
		SS-2/3A	3.6	5.8	1.7	3.9	11		3	29	17	12	25	44	69	13	14	A-6a	8						
		SS-3B	5.8	6.6	3.9	4.7	25									10	8	A-3a	0						
		SS-4	6.6	8.1	4.7	6.2	75	11								9	8	A-3a	0						
76	B 061-0 22	SS-1	0.5	2.0	-0.7	0.8	16		4.5	27	16	11	23	27	50	11	14	A-6a	3	1760					Cement Stab - 12"
		SS-2	2.0	3.5	0.8	2.3	15		3.5	35	18	17	28	31	59	16	16	A-6b	8						
		SS-3	3.5	5.0	2.3	3.8	24		3.5							20	18	A-7-6	16						
		SS-4	5.0	6.5	3.8	5.3	34	15	3.5							21	18	A-7-6	16						
77	B 062-0 22	SS-1B	2.1	3.0	0.2	1.1	21		1	18	14	4	16	13	29	8	8	A-3a	0	853					Cement Stab - 12"
		SS-2	3.0	4.5	1.1	2.6	24		4.5	36	19	17	36	36	72	18	16	A-6b	10						
		SS-3	4.5	6.0	2.6	4.1	29		3.5							25	16	A-6b	16						
		SS-4	6.0	7.5	4.1	5.6	28	21	3.5							18	16	A-6b	16						
78	B 063-0 22	SS-1B/2A	1.9	3.8	0.0	1.9	21			NP	NP	NP	13	11	24	10	8	A-3a	0	1120					Cement Stab - 12"
		SS-2B	3.8	4.5	1.9	2.6	19		2.5	29	16	13	26	26	52	15	14	A-6a	5						
		SS-3A	4.5	5.4	2.6	3.5	23									12	8	A-3a	0						
		SS-3B/4	5.4	7.5	3.5	5.6	27	19	4							19	18	A-7-6	16						
79	B 064-0 22	SS-1	0.5	2.0	-0.7	0.8	9		1	27	15	12	21	27	48	14	14	A-6a	3	7467		HP		12"	Exc. & Replace - 18" No Geotextile Compact Bottom 6" Cem. Stab. Top 12"
		SS-2A	2.0	2.7	0.8	1.5	14			22	21	1	18	17	35	10	8	A-3a	0						
		SS-2B	2.7	3.5	1.5	2.3	14		3							20	18	A-7-6	16						
		SS-3/4	3.5	6.5	2.3	5.3	16	9	1.5							27	18	A-7-6	16						
80	B 065-0 22	SS-1	0.5	2.0	-0.7	0.8	14		3.5	30	15	15	22	30	52	13	14	A-6a	5	5040					Exc. & Replace - 18" No Geotextile Compact Bottom 6" Cem. Stab. Top 12"
		SS-2	2.0	3.5	0.8	2.3	15									14	8	A-3a	0						
		SS-3	3.5	5.0	2.3	3.8	15		1.5	44	18	26	36	43	79	23	18	A-7-6	15						
		SS-4	5.0	6.5	3.8	5.3	17	14	0.5							20	18	A-7-6	16						
81	B 066-0 22	SS-1B/2A	1.7	3.8	-0.2	1.9	7		2.5	21	13	8	16	15	31	11	10	A-2-4	0	773		N ₆₀		15"	Cement Stab - 12"
		SS-2B	3.8	4.5	1.9	2.6	19		1.5	33	17	16	32	32	64	20	16	A-6b	8			HP & Mc			
		SS-3	4.5	6.0	2.6	4.1	30		4.5							16	16	A-6b	16						
		SS-4	6.0	7.5	4.1	5.6	28	7	1							24	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 ₆₀	N _{60L}		LL	PL	PI	% Silt	% Clay	P200	M _c	M _{OPT}	Class		GI	Unsuitable	Unstable	Unsuitable		Unstable
82	B 067-0 22	SS-1	1.5	3.0	-0.4	1.1	15	15	1.5	29	17	12	27	36	63	14	14	A-6a	6	520		HP		12"	Cement Stab - 12"
		SS-2	3.0	4.5	1.1	2.6	42		2.7	21	14	7	17	19	36	9	10	A-4a	0						
		SS-3	4.5	6.0	2.6	4.1	24		3.2							22	18	A-7-6	16						
		SS-4	6.0	7.5	4.1	5.6	38									25	18	A-7-6	16						
83	B 068-0 22	SS-1	0.5	2.0	-0.7	0.8	15	15	4.5	28	14	14	26	32	58	6	14	A-6a	6	6453					Exc. & Replace - 18" No Geotextile Compact Bottom 6" Cem. Stab. Top 12"
		SS-2/3A	2.0	4.1	0.8	2.9	41		2	NP	NP	NP	9	9	18	12	6	A-1-b	0						
		SS-3B	4.1	5.0	2.9	3.8	29		1.5							22	18	A-7-6	16						
		SS-4	5.0	6.5	3.8	5.3	15									30	18	A-7-6	16						
84	B 069-0 22	SS-1/2A	0.5	2.4	-0.7	1.2	7	7	2.7	30	17	13	24	34	58	13	14	A-6a	6	360		N ₆₀		15"	Cement Stab - 12"
		SS-2B	2.4	3.5	1.2	2.3	27		2.5	19	15	4	16	15	31	10	8	A-3a	0						
		SS-3	3.5	5.0	2.3	3.8	30		2.7							17	14	A-6a	10						
		SS-4	5.0	6.5	3.8	5.3	33									17	14	A-6a	10						
85	B 070-0 22	SS-1	2.0	3.5	0.1	1.6	10	10	4	30	16	14	26	47	73	17	14	A-6a	9	800		N ₆₀ & Mc		12"	Cement Stab - 12"
		SS-2/3A	3.5	5.2	1.6	3.3	20		3.5	28	14	14	33	44	77	16	14	A-6a	10						
		SS-3B	5.2	6.5	3.3	4.6	10		2							26	18	A-7-6	16						
		SS-4	6.5	8.0	4.6	6.1	21		4							25	18	A-7-6	16						
86	B 071-0 22	SS-1	1.5	3.0	-0.4	1.1	17	17	2	27	15	12	21	30	51	13	14	A-6a	4	293					Cement Stab - 12"
		SS-2	3.0	4.5	1.1	2.6	53		4.5	21	14	7	14	11	25	9	10	A-2-4	0						
		SS-3	4.5	6.0	2.6	4.1	24		2.5							20	18	A-7-6	16						
		SS-4	6.0	7.5	4.1	5.6	21									25	18	A-7-6	16						
87	B 072-0 22	SS-1	0.5	2.0	-0.7	0.8	10	10	4	27	17	10	21	32	53	16	12	A-4a	4	5813		N ₆₀ & Mc		12"	Exc. & Replace - 18" No Geotextile Compact Bottom 6" Cem. Stab. Top 12"
		SS-2	2.0	3.5	0.8	2.3	12		3	34	18	16	28	50	78	20	16	A-6b	10			N ₆₀ & Mc		12"	
		SS-3	3.5	5.0	2.3	3.8	16		1.5							22	16	A-6b	16						
		SS-4	5.0	6.5	3.8	5.3	24		1							28	18	A-7-6	16						
88	B 073-0 22	SS-1	1.0	2.5	-0.2	1.3	22	15		34	17	17	22	28	50	13	16	A-6b	5	180					Cement Stab - 12"
		SS-2	2.5	4.0	1.3	2.8	15		4	35	17	18	26	34	60	22	16	A-6b	8			Mc			
		SS-3	4.0	5.5	2.8	4.3	15		3.5							25	16	A-6b	16						
		SS-4	5.5	7.0	4.3	5.8	15		3							17	10	A-4a	8						
89	B 074-0 22	SS-1B	1.8	3.0	-0.1	1.1	8	8	2.5							17	16	A-6b	16	647		N ₆₀		12"	Cement Stab - 12"
		SS-2	3.0	4.5	1.1	2.6	12		2.5	30	13	17	25	38	63	19	16	A-6b	8			N ₆₀ & Mc			
		SS-3	4.5	6.0	2.6	4.1	13		3	32	17	15	30	38	68	20	14	A-6a	9						
		SS-4	6.0	7.5	4.1	5.6	12		2.5							25	18	A-7-6	16						
90	B 075-0 22	SS-1	2.0	3.5	0.1	1.6	14	7	3.5	29	16	13	28	38	66	15	14	A-6a	7	520					Cement Stab - 12"
		SS-2	3.5	5.0	1.6	3.1	7		2	29	15	14	27	32	59	15	14	A-6a	6			N ₆₀			
		SS-3	5.0	6.5	3.1	4.6	7		2							21	16	A-6b	16						
		SS-4	6.5	8.0	4.6	6.1	15		3							21	16	A-6b	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 ₆₀	N _{60L}		LL	PL	PI	% Silt	% Clay	P200	M _c	M _{OPT}	Class		GI	Unsuitable	Unstable	Unsuitable		Unstable	
91	B 076-0 22	SS-1B	0.8	2.0	-0.4	0.8	15	15	3.5	30	15	15	25	35	60	13	14	A-6a	7	4427					Exc. & Replace - 18" No Geotextile Compact Bottom 6" Cem. Stab. Top 12"	
		SS-2A	2.0	2.8	0.8	1.6	34			21	17	4	19	11	30	12	8	A-3a	0							
		SS-2B/3A	2.8	3.8	1.6	2.6	34			1.5							17	14	A-6a	10			HP & Mc			
		SS-3B	3.8	5.0	2.6	3.8	47									12	8	A-3a	0							
92	B 077-0 22	SS-1/2A	1.0	3.4	-0.2	2.2	21	12	3	24	14	10	23	24	47	13	10	A-4a	2	8587			Mc		Exc. & Replace - 18" No Geotextile Compact Bottom 6" Cem. Stab. Top 12"	
		SS-2B	3.4	4.0	2.2	2.8	22			NP	NP	NP	13	12	25	16	8	A-3a	0							
		SS-3	5.0	5.5	3.8	4.3	12			3.5						28	18	A-7-6	16							
		SS-4	5.5	7.0	4.3	5.8	14			2						25	18	A-7-6	16							
93	B 078-0 22	SS-1	1.7	3.2	-0.2	1.3	23	21	4.5	25	15	10	23	29	52	9	10	A-4a	3	867					Cement Stab - 12"	
		SS-2/3A	3.2	5.2	1.3	3.3	36			4.5	24	15	9	28	29	57	8	10	A-4a	4						
		SS-3B	5.2	6.2	3.3	4.3	27			4.5						18	14	A-6a	10							
		SS-4	6.2	7.7	4.3	5.8	21			1						12	14	A-6a	10							
94	B 079-0 22	SS-1	2.0	3.5	0.1	1.6	21	12	4.5	25	13	12	26	38	64	10	14	A-6a	7	520					Cement Stab - 12"	
		SS-2	3.5	5.0	1.6	3.1	12			4.5	31	17	14	29	47	76	14	14	A-6a	10						
		SS-3	5.0	6.5	3.1	4.6	24			3						16	14	A-6a	10							
		SS-4A	6.5	7.5	4.6	5.6	18									14	10	A-4a	8							
95	B 080-0 22	SS-1	0.5	2.0	-0.7	0.8	15	13	3.5	30	17	13	26	33	59	13	14	A-6a	6	2773					Cement Stab - 12"	
		SS-2	2.0	3.5	0.8	2.3	28				20	14	6	14	14	28	7	10	A-2-4	0						
		SS-3	3.5	5.0	2.3	3.8	13			3						13	14	A-6a	10							
		SS-4	5.0	6.5	3.8	5.3	16			0.5						19	14	A-6a	10							
96	B 081-0 22	SS-1	1.0	2.5	-0.2	1.3	12	6	4.5	38	16	22	23	39	62	16	16	A-6b	10	300					Cement Stab - 12"	
		SS-2	2.5	4.0	1.3	2.8	18			4.5	27	17	10	39	33	72	13	12	A-4a	7						
		SS-3	4.0	5.5	2.8	4.3	6			1						19	16	A-6b	16							
		SS-4	5.5	7.0	4.3	5.8	18			3						22	16	A-6b	16							
97	B 082-0 22	SS-1	1.5	3.0	-0.4	1.1	10	10	3.5	30	18	12	40	35	75	13	14	A-6a	9	613			N ₆₀	12"	Cement Stab - 12"	
		SS-2	3.0	4.5	1.1	2.6	13			3.5	29	16	13	40	33	73	13	14	A-6a	9						
		SS-3	4.5	6.0	2.6	4.1	26			3.5						19	16	A-6b	16							
		SS-4	6.0	7.5	4.1	5.6	29			1						28	16	A-6b	16							
98	B 083-0 22	SS-1	2.0	3.5	0.1	1.6	12	12	4.5	26	14	12	42	31	73	12	14	A-6a	8	3467					Exc. & Replace - 18" No Geotextile Compact Bottom 6" Cem. Stab. Top 12"	
		SS-2A	3.5	4.6	1.6	2.7	15			4	28	18	10	34	40	74	17	13	A-4a	8			Mc			
		SS-2B/3	4.6	6.5	2.7	4.6	17			4						28	18	A-7-6	16							
		SS-4	6.5	8.0	4.6	6.1	17			3						21	18	A-7-6	16							
99	B 084-0 22	SS-1	0.5	2.0	-0.7	0.8	19	19	3	34	16	18	21	22	43	10	16	A-6b	4	3733					Exc. & Replace - 18" No Geotextile Compact Bottom 6" Cem. Stab. Top 12"	
		SS-2	2.0	3.5	0.8	2.3	27			4.5	35	17	18	36	42	78	14	16	A-6b	11						
		SS-3	3.5	5.0	2.3	3.8	22			3.5						14	16	A-6b	16							
		SS-4	5.0	6.5	3.8	5.3	26			1						25	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 ₆₀	N _{60L}		LL	PL	PI	% Silt	% Clay	P200	M _c	M _{OPT}	Class		GI	Unsuitable	Unstable	Unsuitable		Unstable
100	B 085-0 22	SS-1	1.0	2.5	-0.2	1.3	12	12	3.5	37	20	17	31	49	80	19	16	A-6b	11	1427		N ₆₀ & Mc		12"	Exc. & Replace - 18" No Geotextile Compact Bottom 6" Cem. Stab. Top 12"
		SS-2	2.5	4.0	1.3	2.8	12		1.5	48	22	26	31	56	87	23	19	A-7-6	16			HP & Mc			
		SS-3	4.0	5.5	2.8	4.3	15		2							15	16	A-6b	16						
		SS-4	5.5	7.0	4.3	5.8	22		4							19	16	A-6b	16						
101	B 086-0 22	SS-1	2.0	3.5	0.1	1.6	16	16	3.7	32	19	13	37	37	74	15	14	A-6a	9	>8000					Exc. & Replace - 18" No Geotextile Compact Bottom 6" Cem. Stab. Top 12"
		SS-2	3.5	5.0	1.6	3.1	22		2	29	17	12	35	33	68	15	14	A-6a	7						
		SS-3	5.0	6.5	3.1	4.6	17		1.7							17	14	A-6a	10						
		SS-4	6.5	8.0	4.6	6.1	26		2.5							17	14	A-6a	10						
102	B 087-0 22	SS-1	2.0	3.5	0.1	1.6	17	14	4.5	28	16	12	27	28	55	13	14	A-6a	5	8213					Exc. & Replace - 18" No Geotextile Compact Bottom 6" Cem. Stab. Top 12"
		SS-2	3.5	5.0	1.6	3.1	15		4.5	35	18	17	36	42	78	16	16	A-6b	11						
		SS-3	5.0	6.5	3.1	4.6	15		3							17	16	A-6b	16						
		SS-4	6.5	8.0	4.6	6.1	14		4							17	16	A-6b	16						
103	B 088-0 22	SS-1	1.0	2.5	-0.2	1.3	12	12		29	18	11	18	16	34	14	10	A-2-6	0	>8000		N ₆₀ & Mc		12"	Exc. & Replace - 18" No Geotextile Compact Bottom 6" Cem. Stab. Top 12"
		SS-2	2.5	4.0	1.3	2.8	18		4	31	18	13	37	36	73	17	14	A-6a	9			Mc			
		SS-3	4.0	5.5	2.8	4.3	26		4.5							12	14	A-6a	10						
		SS-4	5.5	7.0	4.3	5.8	31		4.5							11	14	A-6a	10						
104	B 089-0 22	SS-1	1.0	2.5	-0.2	1.3	18	15	4	31	17	14	21	19	40	11	14	A-6a	2	8960					Exc. & Replace - 18" No Geotextile Compact Bottom 6" Cem. Stab. Top 12"
		SS-2	2.5	4.0	1.3	2.8	15		3.5	31	18	13	32	31	63	14	14	A-6a	7						
		SS-3	4.0	5.5	2.8	4.3	15		2							21	16	A-6b	16						
		SS-4	5.5	7.0	4.3	5.8	17		2.5							23	16	A-6b	16						
105	B 090-0 22	SS-1	2.0	3.5	0.1	1.6	20	10	2.5	25	17	8	28	23	51	12	12	A-4a	3	>8000					Exc. & Replace - 18" No Geotextile Compact Bottom 6" Cem. Stab. Top 12"
		SS-2	3.5	5.0	1.6	3.1	10		2.5	39	18	21	32	45	77	19	16	A-6b	12			N ₆₀ & Mc			
		SS-3	5.0	6.5	3.1	4.6	20		3							19	16	A-6b	16						
		SS-4	6.5	8.0	4.6	6.1	22		3.7							19	16	A-6b	16						
106	B 091-0 22	SS-1	2.0	3.5	0.1	1.6	19	15	3	22	16	6	31	21	52	13	11	A-4a	3	1800					Exc. & Replace - 18" No Geotextile Compact Bottom 6" Cem. Stab. Top 12"
		SS-2	3.5	5.0	1.6	3.1	15		3.5	21	14	7	35	26	61	10	10	A-4a	5						
		SS-3	5.0	6.5	3.1	4.6	44		4.5							14	10	A-4a	8						
		SS-4	6.5	8.0	4.6	6.1	33		4.5							10	10	A-4a	8						
107	B 092-0 22	SS-1	1.0	2.5	-0.2	1.3	14	14	4.5	27	17	10	38	31	69	13	12	A-4a	7	>8000					Exc. & Replace - 18" No Geotextile Compact Bottom 6" Cem. Stab. Top 12"
		SS-2	2.5	4.0	1.3	2.8	21		4.5	28	18	10	31	29	60	12	13	A-4a	5						
		SS-3	4.0	5.5	2.8	4.3	25		4.5							23	10	A-4a	8						
		SS-4	5.5	7.0	4.3	5.8	76		4.5							9	10	A-4a	8						
108	B 093-0 22	SS-1	1.0	2.5	-0.2	1.3	17	10	1.5	27	15	12	26	22	48	13	14	A-6a	3	11573		HP		12"	Exc. & Replace - 18" No Geotextile Compact Bottom 6" Cem. Stab. Top 12"
		SS-2	2.5	4.0	1.3	2.8	12		2.5	42	18	24	31	50	81	20	18	A-7-6	14						
		SS-3	4.0	5.5	2.8	4.3	10		1.5							15	18	A-7-6	16						
		SS-4	5.5	7.0	4.3	5.8	14		2.5							26	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 ₆₀	N _{60L}		LL	PL	PI	% Silt	% Clay	P200	M _c	M _{OPT}	Class		GI	Unsuitable	Unstable	Unsuitable		Unstable
109	B 094-0 22	SS-1	2.0	3.5	0.1	1.6	13	10	4.5	25	16	9	33	28	61	11	11	A-4a	5	2240					Exc. & Replace - 18" No Geotextile Compact Bottom 6" Cem. Stab. Top 12"
		SS-2	3.5	5.0	1.6	3.1	13		1	50	23	27	31	54	85	26	20	A-7-6	17			HP & Mc			
		SS-3	5.0	6.5	3.1	4.6	10		3							18	18	A-7-6	16						
		SS-4	6.5	8.0	4.6	6.1	24		2.2							22	18	A-7-6	16						
110	B 095-0 22	SS-1	2.0	3.5	0.1	1.6	10	10		30	17	13	17	15	32	20	10	A-2-6	1	1860			N ₆₀ & Mc	12"	Exc. & Replace - 18" No Geotextile Compact Bottom 6" Cem. Stab. Top 12"
		SS-2	3.5	5.0	1.6	3.1	11		4.5	28	16	12	41	37	78	14	14	A-6a	9			N ₆₀			
		SS-3	5.0	6.5	3.1	4.6	10		2							27	18	A-7-6	16						
		SS-4	6.5	8.0	4.6	6.1	18		3							20	18	A-7-6	16						
111	B 096-0 22	SS-1	1.0	2.5	-0.2	1.3	18	13	4.5	30	17	13	35	33	68	11	14	A-6a	8	>8000					Exc. & Replace - 18" No Geotextile Compact Bottom 6" Cem. Stab. Top 12"
		SS-2	2.5	4.0	1.3	2.8	17		4.5	27	17	10	40	32	72	11	12	A-4a	7						
		SS-3	4.0	5.5	2.8	4.3	13		3.5							20	18	A-7-6	16						
		SS-4	5.5	7.0	4.3	5.8	24		2							24	18	A-7-6	16						
112	B 097-0 22	SS-1	1.0	2.5	-0.2	1.3	10	10	1.2	40	22	18	23	36	59	20	17	A-6b	8	1320			HP & Mc	12"	Exc. & Replace - 18" No Geotextile Compact Bottom 6" Cem. Stab. Top 12"
		SS-2	2.5	4.0	1.3	2.8	12		3.2	46	20	26	25	59	84	22	18	A-7-6	16			N ₆₀ & Mc			
		SS-3	4.0	5.5	2.8	4.3	10		1.5							21	18	A-7-6	16						
		SS-4	5.5	7.0	4.3	5.8	14		2							24	18	A-7-6	16						
113	B 098-0 22	SS-1	2.0	3.5	0.1	1.6	13	13	3.7	30	18	12				15	14	A-6a	9	813					Exc. & Replace - 18" No Geotextile Compact Bottom 6" Cem. Stab. Top 12"
		SS-2	3.5	5.0	1.6	3.1	31		4.5	33	17	16	36	37	73	14	16	A-6b	10						
		SS-3	5.0	6.5	3.1	4.6	14		3.2							19	18	A-7-6	16						
		SS-4	6.5	8.0	4.6	6.1	33		3.7							21	18	A-7-6	16						

PID: PID 107714

County-Route-Section: LOR-90-10.76

No. of Borings: 113

Geotechnical Consultant: S&ME, Inc.

Prepared By: Brian K. Sears, P.E.

Date prepared: 5/3/2023

Chemical Stabilization Options		
320	Rubblize & Roll	Option
206	Cement Stabilization	Option
	Lime Stabilization	No
206	Depth	12"

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

Design CBR	6
-----------------------	----------

% Samples within 6 feet of subgrade			
N ₆₀ ≤ 5	0%	HP ≤ 0.5	1%
N ₆₀ < 12	11%	0.5 < HP ≤ 1	4%
12 ≤ N ₆₀ < 15	13%	1 < HP ≤ 2	13%
N ₆₀ ≥ 20	54%	HP > 2	62%
M+	11%		
Rock	2%		
Unsuitable	3%		

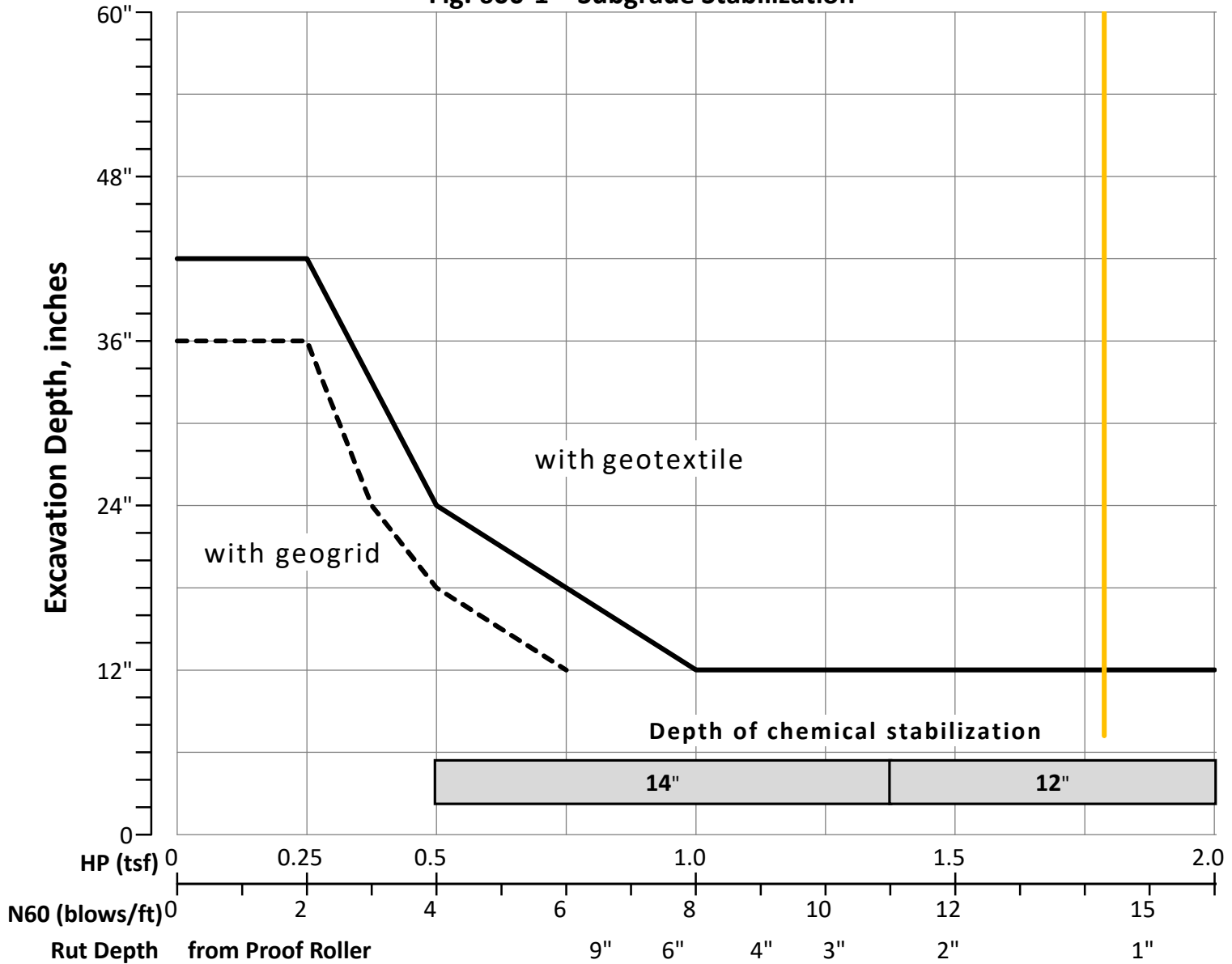
Excavate and Replace at Surface	
Average	
Maximum	0"
Minimum	0"

% Proposed Subgrade Surface	
Unstable & Unsuitable	30%
Unstable	29%
Unsuitable	1%

	N ₆₀	N _{60L}	HP	LL	PL	PI	Silt	Clay	P 200	M _C	M _{OPT}	GI
Average	25	14	3.18	30	16	13	28	30	58	15	13	9
Maximum	102	30	4.50	50	24	31	64	71	99	41	20	17
Minimum	6	6	0.25	18	11	1	5	3	8	3	0	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
Count	11	3	10	12	0	7	0	0	28	69	1	0	164	88	0	55	0	0	448
Percent	2%	1%	2%	3%	0%	2%	0%	0%	6%	15%	0%	0%	37%	20%	0%	12%	0%	0%	100%
% Rock Granular Cohesive	2%	29%										69%						100%	
Surface Class Count	5	3	5	12	0	5	0	0	19	48	1	0	109	44	0	14	0	0	265
Surface Class Percent	2%	1%	2%	5%	0%	2%	0%	0%	7%	18%	0%	0%	41%	17%	0%	5%	0%	0%	100%

Fig. 600-1 – Subgrade Stabilization



OVERRIDE TABLE

Calculated Average	New Values	Check to Override
3.18		<input type="checkbox"/> HP
14.40		<input type="checkbox"/> N60L

Average HP —

Average N_{60L} —



Appendix E



OHIO DEPARTMENT OF TRANSPORTATION

DETERMINING SULFATE CONTENT IN SOILS

SUPPLEMENT 1122

Project C-R-S: LOR-90-10.76

PID No: 107714

Report Date: 6/28/2023

Consultant: S&ME, Inc

Technician: B. K. Roberts, A. Harrod, E. Mesko

*Testing performed by S&ME. All other testing performed by Resource International.

Sample or Boring ID	Station	Offset	Latitude & Longitude or State Plane Coordinates		Elevation	Soaking Time (hr)	Replicate Sample Readings						Sulfate Content (ppm)
							1		2		3		
							Dilution	Reading	Dilution	Reading	Dilution	Reading	
B-001-0-22*	574+85	36' RT	41.396094	-82.158782	749.8	24	20	58	20	59	20	59	1173
B-002-0-22	578+63	45' LT	41.397153	-82.158670	749.5	24	20	30	20	29	20	30	593
B-003-0-22*	582+95	45' RT	41.398131	-82.157720	747.5	24	20	47	20	46	20	47	933
B-004-0-22	586+79	45' LT	41.399149	-82.157242	747.5	24	20	29	20	29	20	28	573
B-005-0-22*	590+98	46' RT	41.399859	-82.155998	745.6	24	20	17	20	17	20	17	340
B-006-0-22	594+67	45' LT	41.400715	-82.155208	745.5	24	20	31	20	32	20	32	633
B-007-0-22*	598+86	45' RT	41.401144	-82.153756	743.7	24	20	15	20	15	20	14	293
B-008-0-22	602+98	44' LT	41.401848	-82.152542	743.3	24	20	33	20	33	20	31	647
B-009-0-22*	606+89	45' RT	41.402005	-82.151092	746.1	24	20	16	20	16	20	16	320
B-010-0-22	610+83	45' LT	41.402623	-82.149866	755.7	24	20	24	20	24	20	24	480
B-011-0-22*	615+14	20' LT	41.402778	-82.148258	760.9	24	20	20	20	20	20	20	400
B-012-0-22	618+95	3' LT	41.403418	-82.147102	771	24	20	30	20	29	20	30	593
B-013-0-22*	622+83	21' LT	41.403168	-82.145496	756.9	24	20	<2	20	<2	20	<2	<40
B-013-1-22*	610+72	9' LT	41.405294	-82.147643	750.2	24	20	12	20	11	20	12	233
B-013-2-22*	618+35	9' LT	41.404126	-82.145339	742.2	24	20	<2	20	<2	20	<2	<40
B-013-3-22*	622+42	11' LT	41.403615	-82.144026	740.6	24	20	12	20	12	20	12	240
B-014-0-22	627+41	2' LT	41.403863	-82.144095	757.7	24	20	28	20	28	20	28	560



OHIO DEPARTMENT OF TRANSPORTATION
DETERMINING SULFATE CONTENT IN SOILS
SUPPLEMENT 1122

Project C-R-S: LOR-90-10.76

PID No: 107714

Report Date: 6/28/2023

Consultant: S&ME, Inc

Technician: B. K. Roberts, A. Harrod, E. Mesko

*Testing performed by S&ME. All other testing performed by Resource International.

Sample or Boring ID	Station	Offset	Latitude & Longitude or State Plane Coordinates		Elevation	Soaking Time (hr)	Replicate Sample Readings						Sulfate Content (ppm)
							1		2		3		
							Dilution	Reading	Dilution	Reading	Dilution	Reading	
B-014-1-22	614+92	74' LT	41.405808	-82.148290	756.4	24	20	6	20	7	20	8	140
B-014-2-22	621+53	103' LT	41.405069	-82.146426	744.1	24	20	8	20	9	20	10	180
B-014-3-22	625+76	109' LT	41.404410	-82.144231	741.3	24	20	14	20	15	20	16	300
B-014-4-22	629+63	107' LT	41.404089	-82.142787	739.4	24	20	31	20	32	20	33	640
B-015-0-22*	626+25	10' LT	41.403295	-82.142707	739.2	24	20	22	20	22	20	22	440
B-016-0-22	634+66	57' LT	41.403862	-82.141443	737.7	24	20	26	20	27	20	28	540
B-017-0-22*	634+46	9' LT	41.403169	-82.139744	735.4	24	20	14	20	14	20	13	273
B-018-0-22	643+24	4' LT	41.403603	-82.138338	733.9	24	20	32	20	32	20	32	640
B-019-0-22*	642+45	23' LT	41.403375	-82.136849	733.4	24	20	16	20	17	20	17	333
B-020-0-22	646+37	26' LT	41.403627	-82.135436	737.9	24	20	51	20	51	20	50	1013
B-021-0-22*	650+24	44' RT	41.403513	-82.134011	742.6	24	20	15	20	14	20	15	293
B-022-0-22	654+27	45' LT	41.403843	-82.132570	746	24	20	28	20	29	20	29	573
B-023-0-22	658+38	30' RT	41.403727	-82.131056	745.2	24	80	77	80	76	80	78	6160
B-024-0-22	659+26	32' LT	41.403917	-82.130753	744.6	24	20	39	20	38	20	39	773
B-025-0-22	665+01	46' RT	41.403829	-82.128642	736.4	24	20	44	20	44	20	43	873
B-026-0-22	668+58	45' LT	41.404154	-82.127371	727.4	24	20	42	20	41	20	40	820
B-027-0-22	672+78	26' RT	41.404042	-82.125811	716.1	24	20	33	20	34	20	33	667



OHIO DEPARTMENT OF TRANSPORTATION
DETERMINING SULFATE CONTENT IN SOILS
SUPPLEMENT 1122

Project C-R-S: LOR-90-10.76

PID No: 107714

Report Date: 6/28/2023

Consultant: S&ME, Inc

Technician: B. K. Roberts, A. Harrod, E. Mesko

*Testing performed by S&ME. All other testing performed by Resource International.

Sample or Boring ID	Station	Offset	Latitude & Longitude or State Plane Coordinates		Elevation	Soaking Time (hr)	Replicate Sample Readings						Sulfate Content (ppm)
							1		2		3		
							Dilution	Reading	Dilution	Reading	Dilution	Reading	
B-028-0-22	676+18	32' LT	41.404294	-82.124399	705	24	120	76	120	77	120	77	9200
B-029-0-22	681+04	45' RT	41.404176	-82.122819	697.9	24	20	41	20	42	20	40	820
B-030-0-22	684+81	44' LT	41.404503	-82.121474	699.2	24	20	23	20	24	20	25	480
B-031-0-22	688+77	28' RT	41.404386	-82.120002	704.5	24	20	22	20	22	20	21	433
B-032-0-22	692+59	20' LT	41.404610	-82.118638	709.1	24	20	55	20	53	20	56	1093
B-033-0-22	719+65	44' RT	41.405030	-82.108782	685.4	24	20	34	20	33	20	33	667
B-034-0-22	723+27	33' LT	41.405443	-82.107472	678.9	24	40	98	40	97	40	98	3907
B-035-0-22	727+41	32' RT	41.405625	-82.106034	670.4	24	20	43	20	44	20	44	873
B-036-0-22	731+43	45' LT	41.406312	-82.104860	661.9	24	20	43	20	42	20	43	853
B-037-0-22	735+54	45' RT	41.406760	-82.103448	653.8	24	20	33	20	34	20	34	673
B-038-0-22	739+65	27' LT	41.407625	-82.102600	646.8	24	20	26	20	25	20	24	500
B-039-0-22	743+55	21' RT	41.408427	-82.101510	640.8	24	20	26	20	27	20	27	533
B-040-0-22	747+45	46' LT	41.409439	-82.100997	642.2	24	20	42	20	43	20	43	853
B-041-0-22	750+97	46' RT	41.410196	-82.100133	646.5	24	40	74	40	73	40	72	2920
B-042-0-22	756+13	31' LT	41.411562	-82.099571	651.2	24	120	57	120	58	120	59	6960
B-043-0-22	759+76	33' RT	41.412371	-82.098767	654.8	24	20	46	20	45	20	44	900
B-044-0-22	764+71	14' LT	41.413545	-82.097870	658	24	120	59	120	60	120	61	7200



OHIO DEPARTMENT OF TRANSPORTATION
DETERMINING SULFATE CONTENT IN SOILS
SUPPLEMENT 1122

Project C-R-S: LOR-90-10.76

PID No: 107714

Report Date: 6/28/2023

Consultant: S&ME, Inc

Technician: B. K. Roberts, A. Harrod, E. Mesko

*Testing performed by S&ME. All other testing performed by Resource International.

Sample or Boring ID	Station	Offset	Latitude & Longitude or State Plane Coordinates		Elevation	Soaking Time (hr)	Replicate Sample Readings						Sulfate Content (ppm)
							1		2		3		
							Dilution	Reading	Dilution	Reading	Dilution	Reading	
B-045-0-22	768+36	21' RT	41.414165	-82.096814	663.4	24	20	25	20	26	20	27	520
B-046-0-22	772+50	42' LT	41.414949	-82.095698	665.9	24	20	98	20	99	20	100	1980
B-047-0-22	776+54	45' RT	41.415267	-82.094248	669.6	24	20	36	20	36	20	35	713
B-048-0-22	780+66	33' LT	41.415990	-82.093055	674.3	24	120	76	120	75	120	74	9000
B-049-0-22	784+45	34' RT	41.416326	-82.091721	677.3	24	20	77	20	76	20	78	1540
B-050-0-22	788+41	44' LT	41.417016	-82.090585	680.9	24	20	38	20	39	20	40	780
B-051-0-22	792+58	45' RT	41.417342	-82.089091	684.1	24	20	13	20	14	20	15	280
B-052-0-22	796+57	32' LT	41.418046	-82.087938	686.5	24	20	27	20	27	20	26	533
B-053-0-22	800+43	35' RT	41.418425	-82.086597	684.5	24	20	24	20	24	20	24	480
B-054-0-22	804+23	45' LT	41.419246	-82.085709	679.4	24	20	26	20	27	20	28	540
B-055-0-22	808+71	46' RT	41.420012	-82.084391	674.4	24	20	33	20	33	20	34	667
B-056-0-22	812+48	31' LT	41.421013	-82.083939	671.1	24	80	62	80	63	80	63	5013
B-057-0-22	816+45	33' RT	41.421969	-82.083202	665.2	24	20	22	20	22	20	21	433
B-057-1-22	817+88	238' LT	41.422513	-82.084042	667	24	20	39	20	40	20	41	800
B-057-2-22	956+62	141' RT	41.423493	-82.084565	674.2	24	20	9	20	9	20	9	180
B-058-0-22	820+34	46' LT	41.423055	-82.083216	660	24	80	62	80	62	80	64	5013
B-058-1-22	823+15	340' RT	41.423803	-82.081754	665.6	24	20	21	20	22	20	22	433



OHIO DEPARTMENT OF TRANSPORTATION

DETERMINING SULFATE CONTENT IN SOILS

SUPPLEMENT 1122

Project C-R-S: LOR-90-10.76

PID No: 107714

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Consultant: S&ME, Inc

Technician: B. K. Roberts, A. Harrod, E. Mesko

*Testing performed by S&ME. All other testing performed by Resource International.

Sample or Boring ID	Station	Offset	Latitude & Longitude or State Plane Coordinates	Elevation	Soaking Time (hr)	Replicate Sample Readings						Sulfate Content (ppm)
						1		2		3		
						Dilution	Reading	Dilution	Reading	Dilution	Reading	
B-058-2-22	105+76	134' RT	41.424567 -82.081157	671.3	24	20	10	20	11	20	11	213
B-059-0-22	824+33	46' RT	41.424134 -82.082828	655.8	24	20	41	20	41	20	42	827
B-059-1-22	967+79	226' LT	41.424548 -82.084680	669.7	24	20	27	20	27	20	27	540
B-059-2-22	829+45	193' LT	41.425535 -82.083713	654	24	20	19	20	20	20	21	400
B-060-0-22	828+62	33' LT	41.425284 -82.083129	652.8	24	20	20	20	21	20	21	413
B-060-1-22	106+11	155' LT	41.425337 -82.081436	670.6	24	20	45	20	46	20	46	913
B-060-2-22	831+68	209' RT	41.426154 -82.082256	657.4	24	20	42	20	43	20	43	853
B-061-0-22	832+49	34' RT	41.426374 -82.082891	651.5	24	20	87	20	88	20	89	1760
B-062-0-22*	836+47	45' LT	41.427465 -82.083196	650	24	20	43	20	43	20	42	853
B-063-0-22	840+67	47' RT	41.428620 -82.082874	649.1	24	20	55	20	56	20	57	1120
B-064-0-22*	844+41	33' LT	41.429644 -82.083174	648.7	24	160	47	160	46	160	47	7467
B-065-0-22	848+46	33' RT	41.430754 -82.082932	647.8	24	80	62	80	63	80	64	5040
B-066-0-22*	852+50	46' LT	41.431877 -82.083112	646.3	24	20	38	20	39	20	39	773
B-067-0-22	856+77	45' RT	41.432984 -82.082502	644.8	24	20	25	20	26	20	27	520
B-068-0-22*	860+52	32' LT	41.434027 -82.082389	644.3	24	160	41	160	40	160	40	6453
B-069-0-22	864+57	32' RT	41.434990 -82.081606	644.1	24	20	17	20	18	20	19	360
B-070-0-22*	868+36	45' LT	41.436010 -82.081222	642	24	20	40	20	40	20	40	800



OHIO DEPARTMENT OF TRANSPORTATION
DETERMINING SULFATE CONTENT IN SOILS
SUPPLEMENT 1122

Project C-R-S: LOR-90-10.76

PID No: 107714

Report Date: 6/28/2023

Consultant: S&ME, Inc

Technician: B. K. Roberts, A. Harrod, E. Mesko

*Testing performed by S&ME. All other testing performed by Resource International.

Sample or Boring ID	Station	Offset	Latitude & Longitude or State Plane Coordinates		Elevation	Soaking Time (hr)	Replicate Sample Readings						Sulfate Content (ppm)
							1		2		3		
							Dilution	Reading	Dilution	Reading	Dilution	Reading	
B-071-0-22	872+73	45' RT	41.436929	-82.080146	641.3	24	20	14	20	15	20	15	293
B-072-0-22*	876+69	32' LT	41.437976	-82.079675	640.8	24	160	37	160	36	160	36	5813
B-073-0-22	880+62	31' RT	41.438824	-82.078755	639.3	24	20	9	20	9	20	9	180
B-074-0-22*	884+50	45' LT	41.439855	-82.078300	638.7	24	20	33	20	32	20	32	647
B-075-0-22	888+82	45' RT	41.440761	-82.077233	637	24	20	26	20	27	20	25	520
B-076-0-22*	892+81	34' LT	41.441817	-82.076757	637.1	24	160	28	160	28	160	27	4427
B-077-0-22	896+12	31' RT	41.442507	-82.075955	636.7	24	160	54	160	55	160	52	8587
B-078-0-22*	900+65	46' LT	41.443703	-82.075375	637.5	24	20	43	20	44	20	43	867
B-079-0-22	904+72	46' RT	41.444549	-82.074350	636.4	24	20	27	20	26	20	25	520
B-080-0-22*	908+58	32' LT	41.445573	-82.073900	636.2	24	160	17	160	18	160	17	2773
B-081-0-22	912+57	32' RT	41.446427	-82.072974	634.7	24	20	15	20	15	20	15	300
B-082-0-22*	916+61	45' LT	41.447505	-82.072484	634	24	20	30	20	31	20	31	613
B-083-0-22	920+78	45' RT	41.448375	-82.071442	632.4	24	80	42	80	44	80	44	3467
B-084-0-22*	923+93	29' LT	41.449224	-82.071110	633	24	160	23	160	23	160	24	3733
B-085-0-22	928+37	21' RT	41.450205	-82.070150	638.4	24	20	72	20	70	20	72	1427
B-086-0-22*	932+31	34' LT	41.451229	-82.069602	646.2	24	160	57	160	58	160	57	>8000
B-087-0-22	936+38	25' RT	41.452089	-82.068629	654.1	24	160	52	160	52	160	50	8213



OHIO DEPARTMENT OF TRANSPORTATION
DETERMINING SULFATE CONTENT IN SOILS
SUPPLEMENT 1122

Project C-R-S: LOR-90-10.76

PID No: 107714

Report Date: 6/28/2023

Consultant: S&ME, Inc

Technician: B. K. Roberts, A. Harrod, E. Mesko

*Testing performed by S&ME. All other testing performed by Resource International.

Sample or Boring ID	Station	Offset	Latitude & Longitude or State Plane Coordinates		Elevation	Soaking Time (hr)	Replicate Sample Readings						Sulfate Content (ppm)
							1		2		3		
							Dilution	Reading	Dilution	Reading	Dilution	Reading	
B-088-0-22*	940+49	8' LT	41.453045	-82.067834	657.2	24	160	62	160	62	160	63	>8000
B-089-0-22	944+28	9' RT	41.453799	-82.066900	659.2	24	160	56	160	56	160	56	8960
B-090-0-22*	948+05	27' LT	41.454626	-82.066040	655.6	24	160	77	160	77	160	77	>8000
B-091-0-22	952+41	32' RT	41.455367	-82.064774	648.7	24	20	90	20	90	20	90	1800
B-092-0-22*	956+35	26' LT	41.456249	-82.063918	641.2	24	160	65	160	66	160	66	>8000
B-093-0-23	960+22	26' RT	41.456883	-82.062819	634.2	24	160	74	160	72	160	71	11573
B-094-0-22*	964+08	45' LT	41.457801	-82.061992	630	24	160	13	160	14	160	15	2240
B-095-0-22	968+42	46' RT	41.458478	-82.060647	630.1	24	20	93	20	93	20	93	1860
B-096-0-22*	972+43	31' LT	41.459407	-82.059828	631.3	24	160	77	160	77	160	77	>8000
B-097-0-22	976+39	15' RT	41.460095	-82.058683	632.1	24	20	66	20	65	20	67	1320
B-098-0-22*	980+06	45' LT	41.460933	-82.057912	632.8	24	20	40	20	41	20	41	813



Appendix F

I. Geotechnical Design Checklists	
Project: LOR-90-10.76 (Subgrade)	PDP Path:
PID: 107714	Review Stage: N/A

Checklist	Included in This Submission
II. Reconnaissance and Planning	✓
III. A. Centerline Cuts	
III. B. Embankments	
III. C. Subgrade	✓
IV. A. Foundations of Structures	
IV. B. Retaining Wall	
V. A. Landslide Remediation	
V. B. Rockfall Remediation	
V. C. Wetland or Peat Remediation	
V. D. Underground Mine Remediation	
V. E. Surface Mine Remediation	
V. F. Karst Remediation	
VI. A. Geotechnical Profile	
VI. D. Geotechnical Reports	✓

II. Reconnaissance and Planning Checklist

C-R-S: LOR-90-10.76 (Subgrade)		PID: 107714		Reviewer: BKS		Date: 11/20/2023	
Reconnaissance				(Y/N/X)	Notes:		
1	Based on Section 302.1 in the SGE, have the necessary plans been developed in the following areas prior to the commencement of the subsurface exploration reconnaissance:		N	This project is to be completed via design-build. Proposed project limits were provided by ODOT D3 to prepare exploration plan and reconnaissance.			
	Roadway plans						
	Structures plans						
	Geohazards plans						
2	Have the resources listed in Section 302.2.1 of the SGE been reviewed as part of the office reconnaissance?		Y				
3	Have all the features listed in Section 302.3 of the SGE been observed and evaluated during the field reconnaissance?		Y				
4	If notable features were discovered in the field reconnaissance, were the GPS coordinates of these features recorded?		X				
Planning - General				(Y/N/X)	Notes:		
5	In planning the geotechnical exploration program for the project, have the specific geologic conditions, the proposed work, and historic subsurface exploration work been considered?		Y				
6	Has the ODOT Transportation Information Mapping System (TIMS) been accessed to find all available historic boring information and inventoried geohazards?		Y	Historic borings were found within TIMS, however, the borings did not meet current SGE requirements for subgrade explorations.			
7	Have the borings been located to develop the maximum subsurface information while using a minimum number of borings, utilizing historic geotechnical explorations to the fullest extent possible?		Y				
8	Have the topography, geologic origin of materials, surface manifestation of soil conditions, and any other special design considerations been utilized in determining the spacing and depth of borings?		Y				
9	Have the borings been located so as to provide adequate overhead clearance for the equipment, clearance of underground utilities, minimize damage to private property, and minimize disruption of traffic, without compromising the quality of the exploration?		Y				

II. Reconnaissance and Planning Checklist

Planning - General		(Y/N/X)	Notes:
10	Have the scaled boring plans, showing all project and historic borings, and a schedule of borings in tabular format, been submitted to the District Geotechnical Engineer?	Y	
The schedule of borings should present the following information for each boring:			
a.	exploration identification number	Y	
b.	location by station and offset	Y	
c.	estimated amount of rock and soil, including the total for each for the entire program.	Y	
Planning – Exploration Number		(Y/N/X)	Notes:
11	Have the coordinates, stations and offsets of all explorations (borings, soundings, test pits, etc.) been identified?	Y	
12	Has each exploration been assigned a unique identification number, in the following format X-ZZZ-W-YY, as per Section 303.2 of the SGE?	Y	
13	When referring to historic explorations that did not use the identification scheme in 12 above, have the historic explorations been assigned identification numbers according to Section 303.2 of the SGE?	X	

II. Reconnaissance and Planning Checklist

Planning – Boring Types		(Y/N/X)	Notes:
14	Based on Sections 303.3 to 303.7.6 of the SGE, have the location, depth, and sampling requirements for the following boring types been determined for the project?	Y	
	Check all boring types utilized for this project:		
	Existing Subgrades (Type A)	✓	
	Roadway Borings (Type B)		
	Embankment Foundations (Type B1)		
	Cut Sections (Type B2)		
	Sidehill Cut Sections (Type B3)		
	Sidehill Cut-Fill Sections (Type B4)		
	Sidehill Fill Sections on Unstable Slopes (Type B5)		
	Geohazard Borings (Type C)		
	Lakes, Ponds, and Low-Lying Areas (Type C1)		
	Peat Deposits, Compressible Soils, and Low Strength Soils (Type C2)		
	Uncontrolled Fills, Waste Pits, and Reclaimed Surface Mines (Type C3)		
	Underground Mines (C4)		
	Landslides (Type C5)		
	Rock Slope (Type C6)		
	Karst (Type C7)		
	Proposed Underground Utilities (Type D)		
	Structure Borings (Type E)		
	Bridges (Type E1)		
	Culverts (Type E2 a,b,c)		
	Retaining Walls (Type E3 a and b)		
	Noise Barrier (Type E4)		
	CCTV & High Mast Lighting Towers (Type E5)		
	Buildings and Salt Domes (Type E6)		

III.C. Subgrade Checklist

C-R-S: LOR-90-10.76 (Subgrade)	PID: 107714	Reviewer: BKS	Date: 11/20/2023
<p><i>Use this Checklist in conjunction with the Subgrade design guidance in GDM Section 600</i></p> <p><i>If you do not have any subgrade work on the project, you do not have to fill out this checklist.</i></p>			
Subgrade	(Y/N/X)	Notes:	
1 Has the subsurface exploration adequately characterized the soil or rock according to GDM Section 600?	Y		
a. Has each sample been visually classified and inspected for the presence of gypsum? Has a moisture content been performed on each sample?	Y		
b. Has mechanical classification (Plastic Limit (PL), Liquid Limit (LL), and gradation testing) been done on at least two samples from each boring within six feet of the proposed subgrade?	Y		
c. Has the sulfate content of at least one sample from each boring within 3 feet of the proposed subgrade been determined, per Supplement 1122, Determining Sulfate Content in Soils?	Y		
d. Has the sulfate content of all samples that exhibit gypsum crystals been determined?	X		
e. Have A-2-5, A-4b, A-5, A-7-5, A-8a, or A-8b soils within the top 3 feet of the proposed subgrade been mechanically classified?	N		
2 If soils classified as A-2-5, A-4b, A-5, A-7-5, A-8a, or A-8b, or having a LL>65, are present at the proposed subgrade (geotechnical profile), do the plans specify that these materials need to be removed and replaced or chemically stabilized?	Y		
a. If these materials are to be removed and replaced, have the station limits, depth, and lateral limits for the planned removal been provided?	Y	Station limits have been identified. Plans to be prepared by DB team.	
3 If there is any rock, shale, or coal present at the proposed subgrade (C&MS 204.05), do the plans specify the removal of the material?	Y		
a. If removal of any rock, shale, or coal is required, have the station limits, depth, and lateral limits for the planned removal of the material at proposed subgrade been provided?	Y	Station limits have been identified. Plans to be prepared by DB team.	

III.C. Subgrade Checklist

Subgrade	(Y/N/X)	Notes:
4 In accordance with GDM Section 600, do the SPT (N_{60})/HP values and existing moisture contents for the proposed subgrade soils indicate the need for subgrade stabilization?	Y	
a. If removal and replacement is applicable, has the detail of subgrade removal been shown on the plans, including depth of removal, station limits, lateral extent, replacement material, and plan notes (Item 204 - Subgrade Compaction and Proof Rolling)?	Y	
b. If chemical stabilization is applicable, has the detail of this treatment been shown on the plans, including depth, percentage of chemical, station limits, lateral extent, and plan notes?	Y	
Indicate type of chemical stabilization specified:		
cement stabilization	✓	
lime stabilization		
5 If removal and replacement has been specified, do the plans include Plan Note G121 from L&D3?	X	Plans to be prepared by DB team.
6 If drainage or groundwater is an issue with the proposed subgrade, has an appropriate drainage system (e.g., pipe, underdrains) been provided?	X	
7 Has an appropriate quantity of Proof Rolling (C&MS 204.06) and has Plan Note G111 from L&D3 been included in the plans?	X	Plans to be prepared by DB team.
8 Has a design CBR value been provided?	Y	

VI.B. Geotechnical Reports

C-R-S:	PID:	Reviewer:	Date:
LOR-90-10.76 (Subgrade)	107714	BKS	11/20/2023
General			
	(Y/N/X)	Notes:	
1	Has an electronic copy of all geotechnical submissions been provided to the District Geotechnical Engineer (DGE)?	Y	
2	Has the first complete version of a geotechnical report being submitted been labeled as 'Draft'?	Y	
3	Subsequent to ODOT's review and approval, has the complete version of the revised geotechnical report being submitted been labeled 'Final'?	Y	
4	Has the boring data been submitted in a native format that is DIGGS (Data Interchange for Geotechnical and Geoenvironmental) compatible? gINT files meet this demand?	Y	
5	Does the report cover format follow ODOT's Brand and Identity Guidelines Report Standards found at http://www.dot.state.oh.us/brand/Pages/default.aspx ?	Y	
6	Have all geotechnical reports being submitted been titled correctly as prescribed in Section 706.1 of the SGE?	Y	
Report Body			
	(Y/N/X)	Notes:	
7	Do all geotechnical reports being submitted contain the following:	Y	
a.	an Executive Summary as described in Section 706.2 of the SGE?	Y	
b.	an Introduction as described in Section 706.3 of the SGE?	Y	
c.	a section titled "Geology and Observations of the Project," as described in Section 706.4 of the SGE?	Y	
d.	a section titled "Exploration," as described in Section 706.5 of the SGE?	Y	
e.	a section titled "Findings," as described in Section 706.6 of the SGE?	Y	
f.	a section titled "Analyses and Recommendations," as described in Section 706.7 of the SGE?	Y	Subgrade recommendations have been provided and approved by ODOT.
Appendices			
	(Y/N/X)	Notes:	
8	Do all geotechnical reports being submitted contain all applicable Appendices as described in Section 706.8 of the SGE?	Y	
9	Do the Appendices present a site Boring Plan showing all boring locations as described in Section 706.8.1 of the SGE?	Y	

VI.B. Geotechnical Reports

Appendices	(Y/N/X)	Notes:
10 Do the Appendices include boring logs and color pictures of rock, if applicable, as described in Section 706.8.2 of the SGE?	Y	
11 Do the Appendices include reports of undisturbed test data as described in Section 706.8.3 of the SGE?	Y	
12 Do the Appendices include calculations in a logical format to support recommendations as described in Section 706.8.4 of the SGE?	Y	