OTIC Reconstruction of Exit 34 Ramps

Fulton County, Ohio

Geotechnical Subsurface Investigation

LJB, Inc.
Independence, Ohio

August 4, 2022

TTL Project No. 2239301

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May 13, 2022

TTL Project No. 2239301

Mr. Matt Gardner, P.E.
LJB, Inc.
6480 Rockside Woods Suite #290
Independence, Ohio 44131

Geotechnical Subsurface Investigation
OTIC Reconstruction of Exit 34 Ramps
Fulton County, Ohio

Dear Mr. Gardner:

Following is the report of our geotechnical subsurface investigation at the site of the referenced project. This investigation was performed in general accordance with TTL Associates, Inc. (TTL) Proposal No. 2239301, dated April 6, 2022, and authorized via an LJB Subcontractor statement of work No 01193396A.05 issued on June 21, 2022.

This report contains the results of our study, our engineering interpretation of the results with respect to the project characteristics, design and construction recommendations for roadway reconstruction.

Pavement cores and soil samples collected during this investigation will be stored at our laboratory for 90 days from the date of this report. The samples will be discarded after this time unless you request that they be saved or delivered to you.

Should you have any questions regarding this report or require additional information, please contact our office.

Sincerely,

TTL Associates, Inc.

Imad El Hajjar, EI
Geotechnical Project Manager

Curtis E. Roupe, P.E.
Vice President

T:\Projects\2239301 - LJB …Reports And Other Deliverables\2239301 TTL Geotech Report - OTIC Reconstruction Of Exit 34 Ramp, Fulton County, OH .Docx

GEOTECHNICAL SUBSURFACE INVESTIGATION
OTIC RECONSTRUCTION OF EXIT 34 RAMPS
FULTON COUNTY, OHIO

FOR

LJB, INC.
6480 ROCKSIDE WOODS SUITE #290
INDEPENDENCE, OHIO 44131

SUBMITTED

AUGUST 4, 2022
TTL PROJECT NO. 2239301

TTL ASSOCIATES, INC.
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1.0 INTRODUCTION

This geotechnical subsurface investigation report has been prepared for proposed roadway reconstruction project at the OTIC exit 34 ramps in Fulton County, Ohio. The project consists of full depth replacement for all 4 OTIC ramps and the roadway section extending between the toll booths and SR 108. The general area of the project is shown on the attached Site Location Map (Plate 1.0).

This report describes the investigative and testing procedures, presents our findings and the results of the laboratory testing, provides our design and construction recommendations for roadway reconstruction, as well as provides our recommendations for installation and support of the proposed underground utilities.

This investigation was performed in general accordance with TTL Associates, Inc. (TTL) Proposal No. 2239301, dated April 6, 2022, and authorized via an LJB Subcontractor statement of work No 01193396A.05 issued on June 21, 2022.

The purpose of this investigation was to evaluate the roadway pavement, as well as subsurface conditions and laboratory data, relative to the roadway reconstruction at the referenced site. To accomplish this, twenty (20) test boring which included pavement cores at ten (10) locations, field and laboratory soil testing, and a geotechnical engineering evaluation of the test results were performed.

This report includes:

- A description of the surface, subsurface soil, and groundwater conditions encountered in the pavement cores and borings.
- Design recommendations related to the proposed roadway improvements.
- Recommendations concerning soil- and groundwater-related construction procedures such as site preparation, earthwork, pavement subgrade preparation, and related field testing.

This investigation did not include an environmental assessment of the subsurface materials at the site.

2.0 INVESTIGATIVE PROCEDURES

This investigation included twenty (20) test boring including pavement cores at ten (10) locations, performed by TTL during the period from June 13 through 15, 2022. The test borings and/or pavement cores were designated as Borings B-1 through B-20. The locations of the pavement cores and test borings performed for this investigation were identified in the field by TTL in accordance with a proposed boring location plan provided in the proposal. The pavement cores and test boring locations are presented on the attached Test Boring Location Plans (Plate 2.1 and Plate 2.2).

The pavement cores were obtained using a nominal 4-inch diameter single-wall, diamond-tipped core barrel. After pavement coring was completed, pavement thickness was measured along the sidewall of the core hole as well as along the removed core samples.

The test borings were performed in general accordance with geotechnical investigative procedures outlined in ASTM Standard D 1452. Borings B-1 through B-20 were extended to the planned termination depth of 7 to 7 ½ feet below existing grade. The borings were advanced utilizing a track-mounted GeoProbe 7822DT with drilling capabilities utilizing 3½-inch outside diameter solid-stem augers.

During auger advancement, soil samples were collected continuously to boring termination. Split-spoon (SS) samples were obtained by the Standard Penetration Test (SPT) Method (ASTM D 1586), which consists of driving a 2-inch outside diameter split-spoon sampler into the soil with a 140-pound weight falling freely through a distance of 30 inches. The sampler was driven in three successive 6-inch increments with the number of blows per increment being recorded. The sum of the number of blows required to advance the sampler the second and third 6-inch increments is termed the Standard Penetration Resistance, or N_m-value, and is typically reported in blows per foot (bpf). The Nm-values were corrected to an equivalent rod energy ratio of 60 percent, N_{60}. The hammer/rod energy ratio for the Geoprobe with drilling capabilities was 91 percent, and was last calibrated on March 16, 2022. In any case, energy ratio is limited to an upper bound of 90 percent for the purposes of analyses and reporting in accordance with the ODOT Specification for Geotechnical Explorations (SGE). The N60-values are presented on the attached Logs of Test Borings.

Soil conditions encountered in the test borings are presented in the Logs of Test Borings, along with information related to sample data, SPT results, water conditions observed in the borings and laboratory test data. It should be noted that these logs have been prepared on the basis of laboratory classification and testing as well as field logs of the encountered soils.

All of the recovered samples of the subsoils were visually or manually classified in accordance with the Ohio Department of Transpiration (ODOT) system of soil classification and tested in the laboratory for moisture content (ASTM D 2216). Atterberg limits tests (ASTM D 4318) particle size analyses (ASTM D 6913 and D 7928) were performed on representative samples from Borings B-3 (SS-2), B-6 (SS-1), B-8 (SS-1), B-13 (SS-2) and B-18 (SS-1) to determine soil classification properties. Sulfate content determinations (ODOT Supplement 1122) were performed on at 5 soil samples generally within 3 feet of the proposed subgrade.

The results of these tests are presented on the Logs of Test Borings and Grain Size Distribution sheet attached to this report.

Experience indicates that the actual surface and subsoil conditions at a site could vary from those generalized on the basis of pavement cores and test borings made at specific locations. Therefore, it is essential that a geotechnical engineer be retained to provide soil engineering services during the site preparation and excavation phases of the proposed project. This is to observe compliance with the design concepts, specifications, and recommendations, and to allow design changes in the event subsurface conditions differ from those anticipated prior to the start of construction.

3.0 PROPOSED CONSTRUCTION

We understand that the existing pavement at the OTIC exit 34 ramps is deteriorating and resurfacing may not be a suitable repair alternative. The project consists of full depth replacement for all 4 OTIC ramps and the roadway section extending between the toll booths and SR 108.

The new pavements may consist of flexible (asphalt) or rigid (concrete) sections. Final design grades are anticipated to approximate existing grades at the site.

4.0 GENERAL SITE AND SUBSURFACE CONDITIONS

4.1 General Site Conditions

The pavement materials encountered in the borings generally consisted of asphalt underlain by concrete underlain by crushed stone aggregates. The pavement materials encountered in most borings located within the shoulder areas consisted of asphalt underlain by crushed stone aggregates. An Approximately 6 inch layer of topsoil was encountered in Boring B-2 which was drilled within the grass area adjacent to the roadway. The encountered surface materials and underlying subgrade soils in the borings are summarized in the following table.

Table 4.1. Encountered Pavement Cross-Sections

Boring Number	Pavement Thickness (inches)		Aggregate Base	Subgrade	Notes
	Asphalt	Concrete			
B-1	5	13	9	A-3	
B-2A	5	5	3	A-3	
B-3	5	9		A-3	
B-4	3.25	10.25	-	A-3	Not Intact. Asphalt and concrete cracked at 4" from top of pavement.
B-5	12	-	4	A-3	Asphalt core was not intact. Delaminated at 9" from top of pavement.
B-6	7		9	A-3	
B-7	3	11	-	A-3	
B-8	5	-	6	A-3	
B-9	5.5	-	8.5	A-3	
B-10	3.75	-	7.25	A-3	Asphalt core was in good condition.
B-11	8.5	-	4.75	A-3	Asphalt core was not intact. Cracked at 6.5" from top of pavement.
B-12	3.75	-	4.25	A-3	Asphalt core was intact.
B-13	7.5	-	10.5	A-3	Asphalt core was in good condition.
B-14	3.75	-	11.25	A-3	Asphalt core was intact.
B-15	6	-	7	A-3	
B-16	9.5	-	4	A-3	Asphalt core was not intact. Delaminated at 1.75" from top of pavement.
B-17	9.5	-	4	A-3	Mostly intact. Slight cracks at bottom. (9" from top of pavement)
B-18	5	8		A-3	
B-19	5	-	9	A-3	
B-20	7.5	-	5.25	A-3	Delaminated at 4.5" from top of pavement.

Photographic logs of the pavement cores are attached to this report in Appendix D.

Based on a review of the core thickness determination report associated with our February 9, 2022 site visit, the existing pavement sections within the driving lanes generally consist of roughly 2 ½ to 4 inches of asphalt overlying roughly 10 inches of a concrete base. A 7½ inch-

thick layer of asphalt overlying a 6½ inch-thick layer of concrete was encountered in the core performed within the Northbound SR 108 Entrance Ramp. The pavement core thickness determination report is provided in Appendix E.

4.2 General Soil Conditions

Based on the results of the field and laboratory tests, the subsurface conditions encountered underlying the pavement materials in all the borings generally consisted of granular fill material or native granular soils.

Summaries of the encountered conditions are provided below and additional descriptions of the soil stratigraphy encountered in the boring are presented on the Logs of Test Boring attached to the report.

Existing Embankment Granular Fill materials were encountered in all the borings except Borings B-1 and B-4 underlying the surface materials and extended to 2½ to 7½ feet below existing grades. Borings B-4 through B-14, B-17, B-18 and B-19 were terminated within this layer. These granular soils consisted of coarse and fine sands (ODOT A-3a) as well as fine sand (ODOT A-3) and were mixed with varying portions of gravel, silt, crushed stone aggregates and shale fragments and organics. SPT N_{60}-values generally ranged from 12 to 75 blows per foot (bpf) indicating medium dense to very dense compactness. Moisture contents ranged from 7 to 24 percent. Localized seams exhibiting **loose** compactness were encountered within this layer as follows:

- In Boring B-2 underlying the surface materials to 2 feet.
- In Boring B-2A underlying the surface materials to 4 feet.
- In Boring B-20 underlying the surface materials to 3 feet.

Atterberg limit testing for four embankment granular fill materials obtained from Borings B-6 (SS-1), B-8 (SS-1), B-13 (SS-2) and B-18 (SS-1) confirmed that the samples were non plastic. These values, along with gradation results, are indicative of coarse and fine sand (A-3a) as well as fine sand (A-3) in accordance with the Ohio Department of Transportation (ODOT) Soil Classification System.

Native Granular soils were encountered underlying the surface materials in Borings B-1 and B-4 and the Embankment fill materials in Borings B-2, B-2A, B-15, B-16 and B-20. These borings were terminated within layer at the planned depths of 7 to 7½ feet. These granular soils consisted of coarse and fine sands (ODOT A-3a) as well as fine sand (ODOT A-3) and were mixed with varying portions of gravel and silt. Trace amounts of organics were noted for one

sample in Boring B-2. SPT N_{60}-values generally ranged from 14 to 41 blows per foot (bpf) indicating medium dense to dense compactness. A seam exhibiting very dense compactness was encountered in Boring B-15. A localized seam exhibiting loose compactness was encountered in Boring B-2 from 3 to 4½ feet. Moisture contents ranged from 8 to 23 percent.

Atterberg limit testing for one native granular soil sample obtained from Borings B-3 (SS-2) confirmed that the sample was non plastic. These values, along with gradation results, are indicative of coarse and fine sand (A-3a) in accordance with the Ohio Department of Transportation (ODOT) Soil Classification System.

Additional descriptions of the stratigraphy encountered in the borings and laboratory testing results are presented on the Logs of Test Borings.

4.3 Groundwater Conditions

Groundwater was encountered during drilling in 7 out of the 20 borings performed for this project at depth ranging from 3 to 5 ½ feet below existing grades. Ground water was not observed upon completion of drilling in the test borings. It should be noted that the boreholes were drilled and backfilled within the same day, and stabilized water levels are not likely to have occurred over this limited time period. Instrumentation was not installed to observe long-term groundwater levels.

Based on the soil characteristics and moisture conditions encountered in the borings, it is our opinion that "normal" groundwater levels can generally be expected to occur at depths greater than those explored for this investigation. However, it should be noted that groundwater elevations can fluctuate with seasonal and climatic influences. In particular, "perched" water may be encountered in the existing fill materials or crushed stone subbase. Therefore, the groundwater conditions may vary at different times of the year from those encountered during this investigation.

5.0 DESIGN AND CONSTRUCTION RECOMENDATIONS

The following recommendations are based on the data obtained during our field investigation as well as our understanding of the proposed construction and project design information furnished to date. If the project information as outlined herein is incorrect or should change significantly, a review of these recommendations should be made by TTL.

5.1 Subgrades

5.1.1 Existing Subgrade

The subgrades that would result upon the satisfactory completion of the site preparation as described in Section 5.4 of this report are considered moderately suitable for support of the proposed pavements. Based on field and laboratory data developed during this investigation, the subgrade soils consist of predominantly existing fill granular soils (i.e., Embankment Fill), although zones native granular soils may also be encountered.

Based on laboratory testing as well as visual descriptions of the encountered soil profile, the subgrade soils may be classified as Group A-3 or A-3a in accordance with the ODOT system of soil classification. The granular soils are considered good to fair as subgrade materials.

At the time of this investigation, moisture contents in the upper 3 feet of the granular subgrade soils ranged from approximately 4 to 19 percent. These moisture contents are estimated to be vary from below to significantly above the expected optimum moisture content for these soils. Therefore, remedial action should be anticipated to be required to adjust the moisture contents of the existing materials and achieve proper compaction of the subgrade. Remedial action should also be anticipated due to the **very loose to loose** compactness of the granular native soils encountered in Boring B-2 and B-20 and existing fill materials encountered.

5.5.2 Modified Subgrade

Where moisture contents are lower than optimum, water should be uniformly mixed into the subgrade. Where moisture contents are higher than optimum, modification may consist of scarification and aeration (discing and exposure to sun and wind). However, this method may not be feasible if construction occurs during wet seasonal conditions or if the construction schedule must be expedited. Very moist to wet soils will “pump” under the operation of heavy equipment, resulting in deep rutting and perhaps rendering the operation of grading and paving equipment difficult or impossible.

Therefore, other methods of subgrade modification may be required in areas of high moisture content. Modification may be achieved by undercutting and replacement with granular subbase

(possibly in combination with a geotextile separation layer or geogrid reinforcement), mixing stone into the subgrade. In addition, Sulfate content tests for tested subgrade samples ranged from less than 100 parts per million (ppm) to 120 ppm, which would not preclude the use of global chemical stabilization. Global stabilization can be achieved with cement to a depth of 14 inches. The method of subgrade modification should be determined at the time of construction (See Section 5.4, Site and Subgrade Preparation).

5.2 Flexible (Asphalt) Pavement

Based on the results of the gradation and plasticity analysis for the tested cohesive subgrade soil samples, as well as visual classification of the recovered soil samples, a subgrade CBR value of 12 percent may be utilized for design, considering the presence of Group A-3 and A-3a subgrade soils. This CBR value is based on subgrade compacted to at least 100 percent of the maximum dry density as determined by ASTM D 698 (Standard Proctor) or verified as stable through proof rolling.

All paving operations should conform to the Ohio Turnpike and Infrastructure Commision (OTIC)specifications. The pavement and subgrade preparation procedures outlined in this report should result in a reasonably workable and satisfactory pavement. It should be recognized, however, that all flexible pavements need repairs or overlays from time to time as a result of progressive yielding under repeated traffic loads for a prolonged period of time, as well as exposure to freeze-thaw conditions.

It is recommended that proof rolling, placement of aggregate base, and placement of asphalt be performed within as short a time period as possible. Exposure of the aggregate base to rain, snow, or freezing conditions may lead to deterioration of the subgrade and/or base materials due to excessive moisture conditions and to difficulties in achieving the required compaction.

5.3 Rigid (Concrete) Pavement

For properly prepared subgrade soils, a modulus of subgrade reaction (k) of 215 pounds per cubic inch (pci) may be used for rigid pavement design.

The pavement section should be supported on a subgrade compacted to not less than 100 percent of the maximum dry density as determined by ASTM D 698 (Standard Proctor) or verified as stable through proof rolling. All paving operations should conform to OTIC specifications.

5.4 Site and Subgrade Preparation

Site and subgrade preparation activities should conform to OTIC specifications. Site preparation activities should include the removal of pavements, vegetation, topsoil, root mats, and other deleterious non-soil materials from all roadway areas. The actual amount of required stripping should be determined in the field by a geotechnical engineer or qualified representative.

Upon completion of the clearing and pavement removal, all areas that are to receive fill, or that have been excavated to proposed final subgrade elevation, should be inspected by a geotechnical engineer. Pavement subgrades should be proof rolled in general accordance with ODOT CMS 204.06.

At the time of inspection, the engineer may require proof rolling/compaction the granular subgrade using a vibratory smooth-drum roller. The vehicle should make a sufficient number of passes, in two perpendicular directions, covering the proposed development area, to locate any soft, weak, or excessively wet soils that may be present at the time of construction. If cohesive subgrade soils are present at the proposed subgrade elevation, proof rolling should be performed, utilizing a 20- to 30-ton loaded truck or other pneumatic-tired vehicle of similar size and weight.

Any unsuitable materials observed during the inspection and proof-rolling operations should be undercut and replaced with compacted fill or stabilized in place utilizing conventional remedial measures such as discing, aeration, and recompaction. Once the site has been proof rolled, inspected, and stabilized, the proof-rolled or inspected subgrades should not be exposed to wet conditions.

The results of the inspection and proof-rolling operations will be partially dependent on construction operations, the moisture content of the soil, and the weather conditions prevalent at the time. If pumping or rutting is encountered and difficulty is experienced in the operation of construction equipment, TTL should be notified in order to determine which method of subgrade modification may be best suited for the conditions encountered. Should such conditions be experienced, we may recommend that a small test area be used to determine the necessary depth of undercutting and stone replacement or other remedial action necessary to achieve a stable subgrade condition.

5.5 Fill

Material for engineered fill or backfill required to achieve design grades may consist of any non-organic soilsshould consist of ODOT A-3 or better soils to maintain suitable subgrade support with respect to the design CBR value for this project. . fill materials. On-site soils predominantly consisted of ODOT A-3 soils and may be used as engineered fill materials provided that they are free of debris, organic matter, excessive moisture, contamination, and rock or stone fragments larger than 3 inches in diameter. Depending on seasonal conditions, the on-site soils may be wet of optimum and may require scarification and aeration to achieve satisfactory compaction. If the construction schedule does not allow for scarification and aeration activities, it may be more practical or economical to utilize imported granular fill. In any case, if fill must be imported for the project, we strongly recommend the use of granular materials meeting ODOT A-3 or better gradations to provide a more favorable roadway subbase.

Fill should be placed in uniform layers not more than 8 inches thick and adequately keyed into stripped and scarified soils. All fill should be compacted to not less than 100 percent of the maximum dry density as established by ASTM D 698 (Standard Proctor).

Scarified subgrade soils and all fill material should be within 3 percent of the optimum moisture content to facilitate compaction. Furthermore, fill material should not be frozen or placed on a frozen base. All site preparation, earthwork, and paving operations should conform to ODOT specifications. It is recommended that all earthwork, site preparation activities, and pavement installation be properly monitored in the field by a qualified geotechnical and materials testing firm.

5.6 Excavations and Slopes

The sides of temporary excavations for installation of drainage structures or other utility construction should be adequately sloped to provide stable sides and safe working conditions. Otherwise, the excavation must be properly braced against lateral movements. In any case, applicable OSHA safety standards must be followed.

Based on the results of the field and laboratory testing, the soils encountered during this investigation, within the anticipated depths of excavation, consist of OSHA Type C soils (existing fill materials and native granular soils).

For temporary excavations in Type C soils, slopes must be no steeper than 1½ horizontal to 1 vertical (1½H:1V).

For permanent excavations and slopes, we recommend that grades be no steeper than 3H:1V without a more extensive geotechnical evaluation of the proposed construction plans and site conditions.

5.7 Construction Groundwater Control

Groundwater conditions encountered during this investigation were summarized in Section 4.3. Based on the soil characteristics and the moisture conditions encountered during this investigation, it is our opinion that the "normal" groundwater table will generally be encountered at depths beyond the termination depth of the borings performed for this investigation. It should be noted that "perched" water may be encountered in existing fill materials or crushed stone subbase. It is our experience that adequate control of groundwater seepage, perched water, or surface water run-off into shallow excavations should be achievable by minor dewatering systems, such as pumping from prepared sumps. In the event excessive seepage is encountered during construction, TTL may be notified to evaluate whether other dewatering methods are required.

6.0 QUALIFICATION OF RECOMMENDATIONS

Our evaluation of geotechnical-related pavement subgrade conditions has been based on the data obtained during our field investigation and our understanding of the furnished site and project information. The general subsurface conditions were based on interpretation of subsurface data obtained at specific pavement core/boring locations. Regardless of the thoroughness of a subsurface investigation, there is the possibility that conditions between cores/borings will differ from those at the core/boring locations, that conditions are not as anticipated by the designers, or that the construction process has altered the soil conditions. Therefore, experienced geotechnical engineers should observe earthwork and foundation construction to confirm that the conditions anticipated in design are noted. Otherwise, TTL assumes no responsibility for construction compliance with the design concepts, specifications, or recommendations.

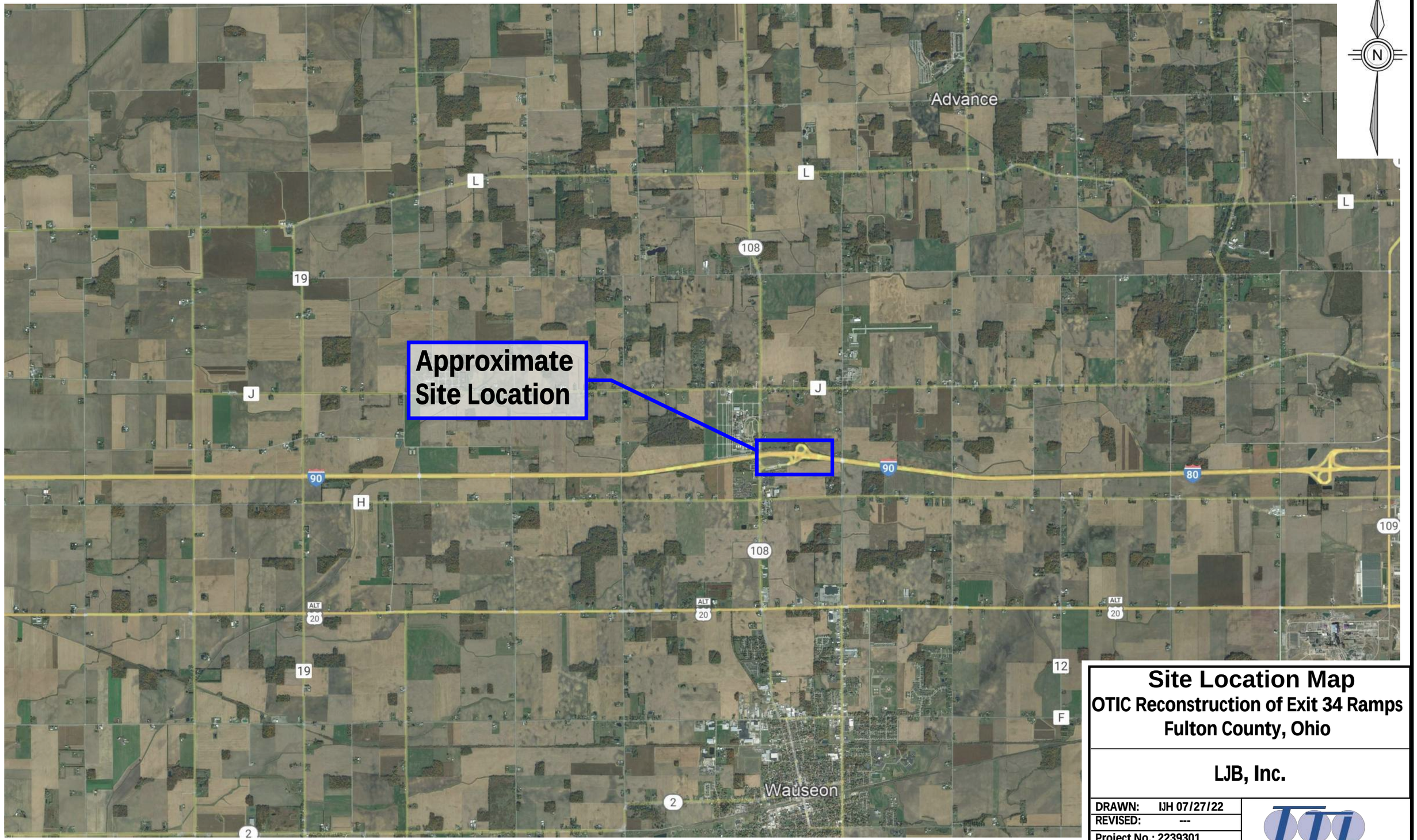
The design recommendations in this report have been developed on the basis of the previously described project characteristics and subsurface conditions. If project criteria or locations change, a qualified geotechnical engineer should be permitted to determine whether the recommendations must be modified. The findings of such a review will be presented in a supplemental report.

The nature and extent of variations between the borings may not become evident until the course of construction. If such variations are encountered, it will be necessary to reevaluate the recommendations of this report after on-site observations of the conditions.

Our professional services have been performed, our findings derived, and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices. This warranty is in lieu of all other warranties either expressed or implied. TTL is not responsible for the conclusions, opinions, or recommendations of others based on this data.

Plates

Plate 1.0 Site Location Map
Plate 2.1 Test Boring Location Plan (1 of 2)
Plate 2.2 Test Boring Location Plan (2 of 2)



Notes: Aerial Basemap obtained From Google Earth and dated 10/25/2015.

4500' 9000'

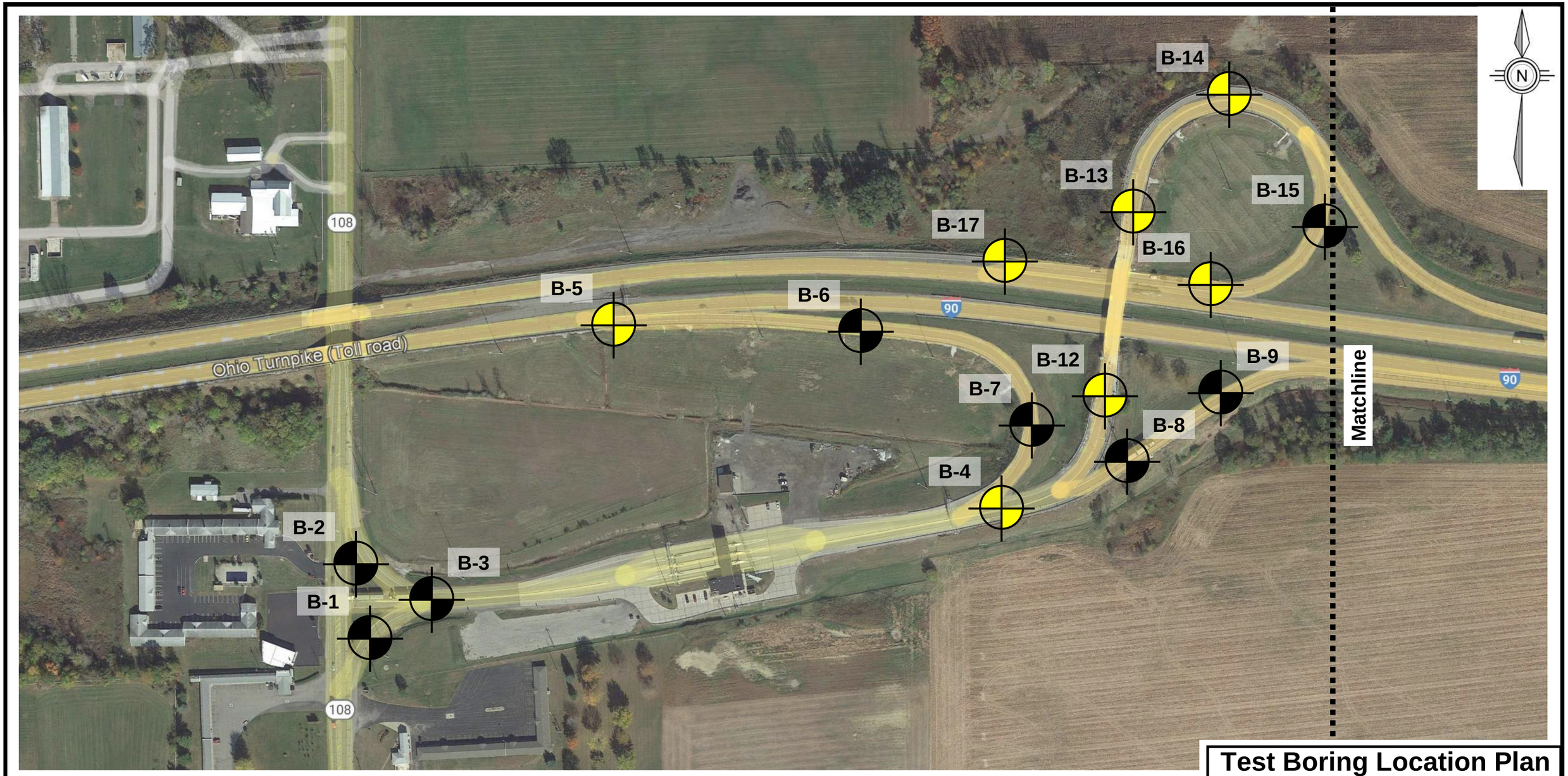
Site Location Map

OTIC Reconstruction of Exit 34 Ramps
Fulton County, Ohio

LJB, Inc.

DRAWN:	IJH 07/27/22
REVISED:	---
Project No.: 2239301	
Drawing No.:	Plate 1.0

TTL associates inc
Environmental, Geotechnical Engineering & Testing



Legend:

B-1 — Approximate Test Boring Location

B-4 — Approximate Test Boring / Pavement Core Location

0' 200' 400'

Notes: Aerial Basemap obtained From Google Earth and dated 10/25/2015.

Test Boring Location Plan

OTIC Reconstruction of Exit 34 Ramps
Fulton County, Ohio

LJB, Inc.

DRAWN:	IJH 07/27/22
REVISED:	---
Project No.:	2239301
Drawing No.:	Plate 2.1

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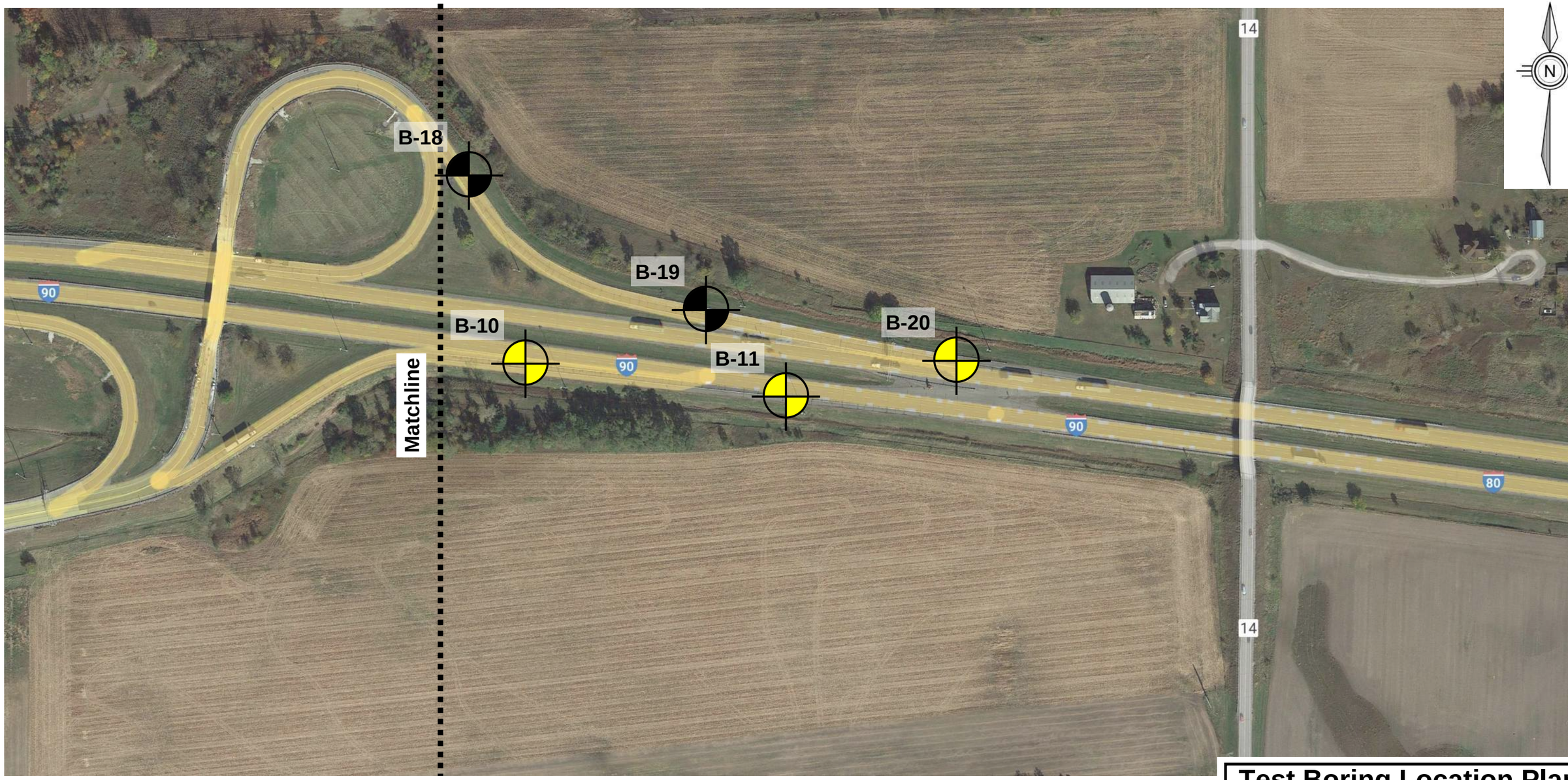
Environmental, Geotechnical Engineering & Testing



Legend:

B-18 — Approximate Test Boring Location

B-10 — Approximate Test Boring / Pavement Core Location

0' 200' 400'

Notes: Aerial Basemap obtained From Google Earth and dated 10/25/2015.

Test Boring Location Plan

OTIC Reconstruction of Exit 34 Ramps
Fulton County, Ohio

LJB, Inc.

DRAWN:	IJH 07/27/22
REVISED:	---
Project No.: 2239301	
Drawing No.:	Plate 2.2

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APPENDIX A

Logs of Test Borings

PROJECT: RECONST. OF EXIT 34 RAMPS	DRILLING FIRM / OPERATOR: TTL / CW	DRILL RIG: GEOPROBE 7822DT	STATION / OFFSET:
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: TTL / KKC	HAMMER: AUTOMATIC HAMMER	ALIGNMENT:
PID: SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 11/11/19	ELEVATION: 790.0 (NAVD88) EOB: 7.5 ft.
START: 6/13/22 END: 6/13/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 90*	COORD: Not Recorded

EXPLORATION ID B-1

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 790.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
ASPHALT - 5 INCHES	789.6																		
CONCRETE - 13 INCHES	788.5	1																	
AGGREGATE BASE - 9 INCHES	787.7	2	4 5 4	14	100	SS-1	-	-	-	-	-	-	-	-	-	17	A-3 (V)	-	
MEDIUM DENSE, BROWN, **FINE SAND**, TRACE SILT, MOIST @3': GRAY/BROWN		3	3 7 8	23	100	SS-2	-	-	-	-	-	-	-	-	-	15	A-3 (V)	-	
@4.5': BROWN		4 5	4 5 5	15	100	SS-3	-	-	-	-	-	-	-	-	-	15	A-3 (V)	-	
		6 7	4 7 8	23	100	SS-4	-	-	-	-	-	-	-	-	-	18	A-3 (V)	-	
	782.5	EOB																	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.25 BAG ASPHALT PATCH; AUGER CUTTINGS MIXED WITH 0.5 BAG BENTONITE CHIPS

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/3/22 15:59 - S:\PROJECTS\2239301.GPJ

PROJECT: RECONST. OF EXIT 34 RAMPS	DRILLING FIRM / OPERATOR: TTL / CW	DRILL RIG: GEOPROBE 7822DT	STATION / OFFSET:
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: TTL / KKC	HAMMER: AUTOMATIC HAMMER	ALIGNMENT:
PID: SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 11/11/19	ELEVATION: 790.0 (NAVD88) EOB: 7.5 ft.
START: 6/13/22 END: 6/13/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 90*	COORD: Not Recorded

EXPLORATION ID B-2

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 790.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
TOPSOIL - 6 INCHES	789.5																		
VERY LOOSE, BROWN, **FINE SAND**, TRACE CRUSHED STONE, TRACE SILT, TRACE ORGANICS, MOIST EMBANKMENT FILL	788.0	1	1 1 1	3	89	SS-1	-	-	-	-	-	-	-	-	-	8	A-3 (V)	-	
AGGREGATE BASE - 3 INCHES	787.7	2	4 5 5	15	100	SS-2	-	-	-	-	-	-	-	-	-	13	A-3 (V)	-	
MEDIUM DENSE, GRAY/BROWN, **FINE SAND**, LITTLE CRUSHED STONE, TRACE SILT, TRACE ORGANICS, MOIST EMBANKMENT FILL	787.0																		
LOOSE, BROWN, **FINE SAND**, TRACE SILT, MOIST		3	3 3 3	9	100	SS-3	-	-	-	-	-	-	-	-	-	18	A-3 (V)	-	
@4.5': MEIDUM DENSE, DARK BROWN/BROWN, TRACE ORGANICS		4																	
@5.5': BROWN		5 W 784.5	5 4 5	14	100	SS-4	-	-	-	-	-	-	-	-	-	16	A-3 (V)	-	
		6																	
	782.5	7 EOB	7 7 7	21	100	SS-5	-	-	-	-	-	-	-	-	-	20	A-3 (V)	-	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: AUGER CUTTINGS MIXED WITH 0.5 BAG BENTONITE CHIPS

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/3/22 15:59 - S:\PROJECTS\2239301.GPJ

PROJECT: RECONST. OF EXIT 34 RAMPS	DRILLING FIRM / OPERATOR: TTL / CW	DRILL RIG: GEOPROBE 7822DT	STATION / OFFSET:
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: TTL / KKC	HAMMER: AUTOMATIC HAMMER	ALIGNMENT:
PID: SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 11/11/19	ELEVATION: 790.0 (NAVD88) EOB: 7.5 ft.
START: 6/15/22 END: 6/15/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 90*	COORD: Not Recorded

EXPLORATION ID B-2A

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 790.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
ASPHALT - 5 INCHES	789.6																		
CONCRETE - 5 INCHES	789.2																		
LOOSE, RED/BROWN, **FINE SAND**, TRACE SILT, TRACE IRON OXIDE STAIN SEAM, MOIST EMBANKMENT FILL		1																	
		2	3 3 3	9	100	SS-1	-	-	-	-	-	-	-	-	-	16	A-3 (V)	-	
		3	5 7 7	21	100	SS-2	-	-	-	-	-	-	-	-	-	19	A-3 (V)	-	
	786.0	W 786.0 4																	
MEDIUM DENSE, BROWN, **FINE SAND**, TRACE SILT, MOIST @4.5': BROWN/GRAY		5	5 6 7	20	100	SS-3	-	-	-	-	-	-	-	-	-	23	A-3 (V)	-	
		6	4 6 8	21	100	SS-4	-	-	-	-	-	-	-	-	-	22	A-3 (V)	-	
		7																	
	782.5	EOB																	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.25 BAG ASPHALT PATCH; AUGER CUTTINGS MIXED WITH 0.5 BAG BENTONITE CHIPS

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/3/22 15:59 - S:\PROJECTS\2239301.GPJ

PROJECT: RECONST. OF EXIT 34 RAMPS	DRILLING FIRM / OPERATOR: TTL / CW	DRILL RIG: GEOPROBE 7822DT	STATION / OFFSET:
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: TTL / KKC	HAMMER: AUTOMATIC HAMMER	ALIGNMENT:
PID: SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 11/11/19	ELEVATION: 790.0 (NAVD88) EOB: 7.5 ft.
START: 6/13/22 END: 6/13/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 90*	COORD: Not Recorded

EXPLORATION ID B-3

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
ASPHALT - 5 INCHES	789.6																	
CONCRETE - 9 INCHES	788.8																	
MEDIUM DENSE, BROWN, **FINE SAND**, TRACE SILT, MOIST	787.0	5 6 8	21	89	SS-1	-	-	-	-	-	-	-	-	-	8	A-3 (V)	-	
MEDIUM DENSE, GRAY/BROWN, **COARSE AND FINE SAND**, SOME SILT, TRACE GRAVEL, TRACE CLAY, MOIST		6 7 8	23	100	SS-2	-	2	3	73	20	2	NP	NP	NP	14	A-3a (0)	<100	
@4.5': BROWN/GRAY		7 7 7	21	100	SS-3	-	-	-	-	-	-	-	-	-	15	A-3a (V)	-	
@6': GRAY/BROWN	782.5	7 9 9	27	100	SS-4	-	-	-	-	-	-	-	-	-	18	A-3a (V)	-	

EOB

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.25 BAG ASPHALT PATCH; AUGER CUTTINGS MIXED WITH 0.5 BAG BENTONITE CHIPS

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/3/22 15:59 - S:\PROJECTS\2239301.GPJ

PROJECT: RECONST. OF EXIT 34 RAMPS	DRILLING FIRM / OPERATOR: TTL / CW	DRILL RIG: GEOPROBE 7822DT	STATION / OFFSET:
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: TTL / KKC	HAMMER: AUTOMATIC HAMMER	ALIGNMENT:
PID: SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 11/11/19	ELEVATION: 800.0 (NAVD88) EOB: 7.0 ft.
START: 6/14/22 END: 6/14/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 90*	COORD: Not Recorded

EXPLORATION ID B-4

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 800.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
ASPHALT - 3.25 INCHES	799.7																		
CONCRETE - 10.25 INCHES	798.8																		
MEDIUM DENSE, BROWN, **FINE SAND**, TRACE GRAVEL, TRACE SILT, MOIST EMBANKMENT FILL		1 2	5 7 7	21	100	SS-1	-	-	-	-	-	-	-	-	-	12	A-3 (V)	-	
@2.5': VERY DENSE, TRACE SILT		3	11 17 17	51	100	SS-2	-	-	-	-	-	-	-	-	-	13	A-3 (V)	-	
@4': BROWN/GRAY		4 5	20 22 22	66	100	SS-3	-	-	-	-	-	-	-	-	-	10	A-3 (V)	-	
@5.5': GRAY	793.0	6 EOB 7	13 18 23	62	100	SS-4	-	-	-	-	-	-	-	-	-	14	A-3 (V)	-	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.25 BAG ASPHALT PATCH; AUGER CUTTINGS MIXED WITH 0.5 BAG BENTONITE CHIPS

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/3/22 15:59 - S:\PROJECTS\2239301.GPJ

PROJECT: RECONST. OF EXIT 34 RAMPS	DRILLING FIRM / OPERATOR: TTL / CW	DRILL RIG: GEOPROBE 7822DT	STATION / OFFSET:
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: TTL / KKC	HAMMER: AUTOMATIC HAMMER	ALIGNMENT:
PID: SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 11/11/19	ELEVATION: 798.0 (NAVD88) EOB: 7.0 ft.
START: 6/13/22 END: 6/13/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 90*	COORD: Not Recorded

EXPLORATION ID B-5

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 798.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
ASPHALT - 12 INCHES	797.0																		
AGGREGATE BASE - 4 INCHES	796.7																		
DENSE, BROWN, **FINE SAND**, TRACE GRAVEL, TRACE SILT, MOIST EMBANKMENT FILL		1	7 12 13	38	89	SS-1	-	-	-	-	-	-	-	-	-	8	A-3 (V)	-	
		2																	
		3	15 15 15	45	100	SS-2	-	-	-	-	-	-	-	-	-	11	A-3 (V)	-	
@4': MEDIUM DENSE, GRAY/BROWN, LITTLE GRAVEL		4	6 7 7	21	100	SS-3	-	-	-	-	-	-	-	-	-	10	A-3 (V)	-	
		5																	
		6	9 9 9	27	100	SS-4	-	-	-	-	-	-	-	-	-	8	A-3 (V)	-	
	791.0	EOB 7																	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.25 BAG ASPHALT PATCH; AUGER CUTTINGS MIXED WITH 0.5 BAG BENTONITE CHIPS

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/3/22 15:59 - S:\PROJECTS\2239301.GPJ

PROJECT: RECONST. OF EXIT 34 RAMPS	DRILLING FIRM / OPERATOR: TTL / CW	DRILL RIG: GEOPROBE 7822DT	STATION / OFFSET:
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: TTL / KKC	HAMMER: AUTOMATIC HAMMER	ALIGNMENT:
PID: SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 11/11/19	ELEVATION: 797.0 (NAVD88) EOB: 7.0 ft.
START: 6/13/22 END: 6/13/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 90*	COORD: Not Recorded

EXPLORATION ID B-6

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 797.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
ASPHALT - 7 INCHES	796.4																		
AGGREGATE BASE - 9 INCHES	795.7	1																	
MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, LITTLE SILT, TRACE CLAY, TRACE GRAVEL, MOIST EMBANKMENT FILL		2	6 9 10	29	78	SS-1	-	1	1	83	13	2	NP	NP	NP	13	A-3a (0)	120	
		3	8 9 9	27	100	SS-2	-	-	-	-	-	-	-	-	-	11	A-3a (V)	-	
@4':DENSE, SOME SILT		W 792.5 4	8 11 10	32	100	SS-3	-	-	-	-	-	-	-	-	-	19	A-3a (V)	-	
	791.2	5																	
MEDIUM DENSE, BROWN, **FINE SAND**, TRACE GRAVEL. TRACE SILT, MOIST EMBANKMENT FILL	790.0	6 EOB 7	9 9 9	27	100	SS-4	-	-	-	-	-	-	-	-	-	11	A-3 (V)	-	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.25 BAG ASPHALT PATCH; AUGER CUTTINGS MIXED WITH 0.5 BAG BENTONITE CHIPS

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/3/22 15:59 - S:\PROJECTS\2239301.GPJ

PROJECT: RECONST. OF EXIT 34 RAMPS	DRILLING FIRM / OPERATOR: TTL / CW	DRILL RIG: GEOPROBE 7822DT	STATION / OFFSET:
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: TTL / KKC	HAMMER: AUTOMATIC HAMMER	ALIGNMENT:
PID: SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 11/11/19	ELEVATION: 800.0 (NAVD88) EOB: 7.5 ft.
START: 6/14/22 END: 6/14/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 90*	COORD: Not Recorded

EXPLORATION ID B-7

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 800.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
ASPHALT - 3 INCHES	799.7																		
CONCRETE - 11 INCHES	798.8	1																	
DENSE, GRAY/BROWN, **FINE SAND**, SOME GRAVEL, TRACE SILT, MOIST EMBANKMENT FILL		2	10 12 12	36	89	SS-1	-	-	-	-	-	-	-	-	-	7	A-3 (V)	-	
@3': MEDIUM DENSE, BROWN		3	5 11 9	30	100	SS-2	-	-	-	-	-	-	-	-	-	10	A-3 (V)	-	
@4.5': VERY DENSE, BROWN, TRACE SILT		4																	
		5	15 17 19	54	100	SS-3	-	-	-	-	-	-	-	-	-	9	A-3 (V)	-	
		6																	
		7	20 22 24	69	100	SS-4	-	-	-	-	-	-	-	-	-	8	A-3 (V)	-	
	792.5	EOB																	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.25 BAG ASPHALT PATCH; AUGER CUTTINGS MIXED WITH 0.5 BAG BENTONITE CHIPS

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/3/22 15:59 - S:\PROJECTS\2239301.GPJ

PROJECT: RECONST. OF EXIT 34 RAMPS	DRILLING FIRM / OPERATOR: TTL / CW	DRILL RIG: GEOPROBE 7822DT	STATION / OFFSET:
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: TTL / KKC	HAMMER: AUTOMATIC HAMMER	ALIGNMENT:
PID: SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 11/11/19	ELEVATION: 807.0 (NAVD88) EOB: 7.0 ft.
START: 6/14/22 END: 6/14/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 90*	COORD: Not Recorded

EXPLORATION ID B-8

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 807.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
ASPHALT - 5 INCHES	806.6																		
AGGREGATE BASE - 6 INCHES	806.1																		
MEDIUM DENSE, GRAY/BROWN, **COARSE AND FINE SAND**, SOME SILT, TRACE CLAY, MOIST EMBANKMENT FILL		1	5 8 9	26	100	SS-1	-	0	2	76	20	2	NP	NP	NP	12	A-3a (0)	<100	
@2.5':DENSE, BROWN		2 3	5 10 15	38	100	SS-2	-	-	-	-	-	-	-	-	-	13	A-3a (V)	-	
VERY DENSE, GRAY, **FINE SAND**, TRACE SILT, MOIST EMBANKMENT FILL	803.0	4 5	15 19 21	60	100	SS-3	-	-	-	-	-	-	-	-	-	12	A-3 (V)	-	
	800.0	6 EOB 7	20 25 25	75	100	SS-4	-	-	-	-	-	-	-	-	-	12	A-3 (V)	-	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.25 BAG ASPHALT PATCH; AUGER CUTTINGS MIXED WITH 0.5 BAG BENTONITE CHIPS

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/3/22 15:59 - S:\PROJECTS\2239301.GPJ

PROJECT: RECONST. OF EXIT 34 RAMPS	DRILLING FIRM / OPERATOR: TTL / CW	DRILL RIG: GEOPROBE 7822DT	STATION / OFFSET:
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: TTL / KKC	HAMMER: AUTOMATIC HAMMER	ALIGNMENT:
PID: SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 11/11/19	ELEVATION: 799.0 (NAVD88) EOB: 7.0 ft.
START: 6/14/22 END: 6/14/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 90*	COORD: Not Recorded

EXPLORATION ID B-9

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 799.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
ASPHALT - 5.5 INCHES	798.5																		
AGGREGATE BASE - 8.5 INCHES	797.8																		
MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, SOME SILT, MOIST EMBANKMENT FILL	796.5	1, 2	6 8 7	23	100	SS-1	-	-	-	-	-	-	-	-	-	12	A-3a (V)	-	
MEDIUM DENSE, BROWN/DARK BROWN, **FINE SAND**, TRACE SILT, MOIST EMBANKMENT FILL		3	7 7 7	21	100	SS-2	-	-	-	-	-	-	-	-	-	13	A-3 (V)	-	
@4': DENSE, GRAY/BROWN		4, 5	6 9 13	33	100	SS-3	-	-	-	-	-	-	-	-	-	14	A-3 (V)	-	
@5.5': VERY DENSE, BROWN, TRACE SILT	792.0	6	16 20 25	68	100	SS-4	-	-	-	-	-	-	-	-	-	15	A-3 (V)	-	
		EOB 7																	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.25 BAG ASPHALT PATCH; AUGER CUTTINGS MIXED WITH 0.5 BAG BENTONITE CHIPS

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/3/22 15:59 - S:\PROJECTS\2239301.GPJ

PROJECT: RECONST. OF EXIT 34 RAMPS	DRILLING FIRM / OPERATOR: TTL / CW	DRILL RIG: GEOPROBE 7822DT	STATION / OFFSET:
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: TTL / KKC	HAMMER: AUTOMATIC HAMMER	ALIGNMENT:
PID: SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 11/11/19	ELEVATION: 789.0 (NAVD88) EOB: 7.0 ft.
START: 6/14/22 END: 6/14/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 90*	COORD: Not Recorded

EXPLORATION ID B-10

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 789.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
ASPHALT - 3.75 INCHES	788.7																		
AGGREGATE BASE - 7.25 INCHES	788.1																		
MEDIUM DENSE, BROWN, **FINE SAND**, TRACE SILT, MOIST EMBANKMENT FILL		1	5 5 8	20	100	SS-1	-	-	-	-	-	-	-	-	-	8	A-3 (V)	-	
		2																	
		3	7 8 8	24	450	SS-2	-	-	-	-	-	-	-	-	-	8	A-3 (V)	-	
		4																	
@5': LOOSE		W 784.0 5	5 5 5	15	100	SS-3	-	-	-	-	-	-	-	-	-	20	A-3 (V)	-	
@6.2': GRAY/BROWN		6	3 3 3	9	100	SS-4	-	-	-	-	-	-	-	-	-	24	A-3 (V)	-	
	782.0	EOB 7																	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.25 BAG ASPHALT PATCH; AUGER CUTTINGS MIXED WITH 0.5 BAG BENTONITE CHIPS

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/3/22 15:59 - S:\PROJECTS\2239301.GPJ

PROJECT: RECONST. OF EXIT 34 RAMPS	DRILLING FIRM / OPERATOR: TTL / CW	DRILL RIG: GEOPROBE 7822DT	STATION / OFFSET:
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: TTL / KKC	HAMMER: AUTOMATIC HAMMER	ALIGNMENT:
PID: SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 11/11/19	ELEVATION: 786.0 (NAVD88) EOB: 7.0 ft.
START: 6/14/22 END: 6/14/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 90*	COORD: Not Recorded

EXPLORATION ID B-11

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 786.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
ASPHALT - 8.5 INCHES	785.3																		
AGGREGATE BASE - 4.75 INCHES	784.9																		
MEDIUM DENSE, BROWN, **FINE SAND**, TRACE SILT, MOIST EMBANKMENT FILL		1	4 6 8	21	100	SS-1	-	-	-	-	-	-	-	-	-	10	A-3 (V)	-	
		2																	
		3	4 7 7	21	100	SS-2	-	-	-	-	-	-	-	-	-	12	A-3 (V)	-	
		4																	
		W 781.5	6 7 7	21	100	SS-3	-	-	-	-	-	-	-	-	-	18	A-3 (V)	-	
		5																	
		6	6 8 8	24	100	SS-4	-	-	-	-	-	-	-	-	-	23	A-3 (V)	-	
	779.0	EOB 7																	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.25 BAG ASPHALT PATCH; AUGER CUTTINGS MIXED WITH 0.5 BAG BENTONITE CHIPS

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/3/22 15:59 - S:\PROJECTS\2239301.GPJ

PROJECT: RECONST. OF EXIT 34 RAMPS	DRILLING FIRM / OPERATOR: TTL / CW	DRILL RIG: GEOPROBE 7822DT	STATION / OFFSET:
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: TTL / KKC	HAMMER: AUTOMATIC HAMMER	ALIGNMENT:
PID: SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 11/11/19	ELEVATION: 809.0 (NAVD88) EOB: 7.0 ft.
START: 6/14/22 END: 6/14/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 90*	COORD: Not Recorded

EXPLORATION ID B-12

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
	809.0																		
ASPHALT - 3.75 INCHES	808.7																		
AGGREGATE BASE - 4.25 INCHES	808.3																		
MEDIUM DENSE, DARK BROWN, **FINE SAND**, TRACE SILT, MOIST EMBANKMENT FILL	807.5	1	4 6 6	18	100	SS-1	-	-	-	-	-	-	-	-	-	12	A-3a (V)	-	
MEDIUM DENSE, DARK BROWN, **COARSE AND FINE SAND**, SOME SILT, TRACE GRAVEL, MOIST EMBANKMENT FILL	806.0	2	12 16 17	50	100	SS-2	-	-	-	-	-	-	-	-	-	11	A-3 (V)	-	
VERY DENSE, BROWN, **FINE SAND**, TRACE SILT, MOIST EMBANKMENT FILL		3	17 17 17	51	100	SS-3	-	-	-	-	-	-	-	-	-	9	A-3 (V)	-	
		4	16 19 18	56	100	SS-4	-	-	-	-	-	-	-	-	-	9	A-3 (V)	-	
	802.0	5																	
		6																	
		7 EOB																	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.25 BAG ASPHALT PATCH; AUGER CUTTINGS MIXED WITH 0.5 BAG BENTONITE CHIPS

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/3/22 15:59 - S:\PROJECTS\2239301.GPJ

PROJECT: RECONST. OF EXIT 34 RAMPS	DRILLING FIRM / OPERATOR: TTL / CW	DRILL RIG: GEOPROBE 7822DT	STATION / OFFSET:	EXPLORATION ID B-13
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: TTL / KKC	HAMMER: AUTOMATIC HAMMER	ALIGNMENT:	
PID: SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 11/11/19	ELEVATION: 809.0 (NAVD88) EOB: 7.5 ft.	PAGE 1 OF 1
START: 6/15/22 END: 6/15/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 90*	COORD: Not Recorded	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
	809.0																		
ASPHALT - 7.5 INCHES	808.4																		
AGGREGATE BASE - 10.5 INCHES	807.5	1																	
MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, LITTLE SILT, TRACE CLAY, MOIST EMBANKMENT FILL		2	8 10 9	29	100	SS-1	-	-	-	-	-	-	-	-	-	10	A-3a (V)	-	
@3': DENSE		3	7 11 15	39	100	SS-2	-	0	2	84	12	2	NP	NP	NP	7	A-3a (0)	<100	
	804.5	4																	
VERY DENSE, BROWN, **FINE SAND**, TRACE SILT, MOIST EMBANKMENT FILL		5	25 20 20	60	100	SS-3	-	-	-	-	-	-	-	-	-	10	A-3 (V)	-	
		6	25 20 21	62	100	SS-4	-	-	-	-	-	-	-	-	-	11	A-3 (V)	-	
	801.5	7 EOB																	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.25 BAG ASPHALT PATCH; AUGER CUTTINGS MIXED WITH 0.5 BAG BENTONITE CHIPS

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/3/22 15:59 - S:\PROJECTS\2239301.GPJ

PROJECT: RECONST. OF EXIT 34 RAMPS	DRILLING FIRM / OPERATOR: TTL / CW	DRILL RIG: GEOPROBE 7822DT	STATION / OFFSET:
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: TTL / KKC	HAMMER: AUTOMATIC HAMMER	ALIGNMENT:
PID: SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 11/11/19	ELEVATION: 799.0 (NAVD88) EOB: 7.0 ft.
START: 6/15/22 END: 6/15/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 90*	COORD: Not Recorded

EXPLORATION ID B-14

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
ASPHALT - 3.75 INCHES	799.0 / 798.7																		
AGGREGATE BASE - 11.25 INCHES	797.7	1																	
MEDIUM DENSE, BROWN, **FINE SAND**, LITTLE GRAVEL, TRACE SHALE FRAGMENTS, TRACE SILT, MOIST EMBANKMENT FILL		2	5 6 7	20	100	SS-1	-	-	-	-	-	-	-	-	-	7	A-3 (V)	-	
@2.5': DENSE		3	9 13 15	42	100	SS-2	-	-	-	-	-	-	-	-	-	9	A-3 (V)	-	
@4': BROWN/GRAY		4	13 12 14	39	100	SS-3	-	-	-	-	-	-	-	-	-	10	A-3 (V)	-	
@5.5': VERY DENSE, BROWN, TRACE SILT		5	19 20 21	62	100	SS-4	-	-	-	-	-	-	-	-	-	8	A-3 (V)	-	
	792.0	6																	
		EOB 7																	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.25 BAG ASPHALT PATCH; AUGER CUTTINGS MIXED WITH 0.5 BAG BENTONITE CHIPS

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/3/22 15:59 - S:\PROJECTS\2239301.GPJ

PROJECT: RECONST. OF EXIT 34 RAMPS	DRILLING FIRM / OPERATOR: TTL / CW	DRILL RIG: GEOPROBE 7822DT	STATION / OFFSET:
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: TTL / KKC	HAMMER: AUTOMATIC HAMMER	ALIGNMENT:
PID: SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 11/11/19	ELEVATION: 790.0 (NAVD88) EOB: 7.0 ft.
START: 6/15/22 END: 6/15/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 90*	COORD: Not Recorded

EXPLORATION ID B-15

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
ASPHALT - 6 INCHES	789.5																		
AGGREGATE BASE - 7 INCHES	788.9																		
MEDIUM DENSE, GRAY/BROWN, **FINE SAND**, SOME GRAVEL, TRACE SILT, MOIST EMBANKMENT FILL		1 2	5 7 7	21	100	SS-1	-	-	-	-	-	-	-	-	-	5	A-3 (V)	-	
@2.5': DENSE, BROWN		3	8 11 13	36	100	SS-2	-	-	-	-	-	-	-	-	-	14	A-3 (V)	-	
@4.0'; DENSE, BROWN, **FINE SAND**, TRACE SILT, MOIST		4 5	14 20 20	60	100	SS-3	-	-	-	-	-	-	-	-	-	14	A-3 (V)	-	
		6	17 21 21	63	100	SS-4	-	-	-	-	-	-	-	-	-	13	A-3 (V)	-	
	783.0	EOB 7																	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.25 BAG ASPHALT PATCH; AUGER CUTTINGS MIXED WITH 0.5 BAG BENTONITE CHIPS

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/3/22 15:59 - S:\PROJECTS\2239301.GPJ

PROJECT: RECONST. OF EXIT 34 RAMPS	DRILLING FIRM / OPERATOR: TTL / CW	DRILL RIG: GEOPROBE 7822DT	STATION / OFFSET:
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: TTL / KKC	HAMMER: AUTOMATIC HAMMER	ALIGNMENT:
PID: SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 11/11/19	ELEVATION: 791.0 (NAVD88) EOB: 7.0 ft.
START: 6/15/22 END: 6/15/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 90*	COORD: Not Recorded

EXPLORATION ID B-16

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 791.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
ASPHALT - 9.5 INCHES	790.2																		
AGGREGATE BASE - 4 INCHES	789.9																		
MEDIUM DENSE, BROWN/GRAY, **FINE SAND**, LITTLE GRAVEL, TRACE SILT, MOIST EMBANKMENT FILL	788.5	1, 2	4 4 4	12	100	SS-1	-	-	-	-	-	-	-	-	-	9	A-3 (V)	-	
MEDIUM DENSE, GRAY/BROWN, **FINE SAND**, TRACE SILT, MOIST		3	4 6 10	24	100	SS-2	-	-	-	-	-	-	-	-	-	15	A-3 (V)	-	
@4': DENSE, BROWN		4, 5	11 11 11	33	100	SS-3	-	-	-	-	-	-	-	-	-	14	A-3 (V)	-	
	784.0	6	15 14 13	41	100	SS-4	-	-	-	-	-	-	-	-	-	17	A-3 (V)	-	
		EOB 7																	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.25 BAG ASPHALT PATCH; AUGER CUTTINGS MIXED WITH 0.5 BAG BENTONITE CHIPS

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/3/22 15:59 - S:\PROJECTS\2239301.GPJ

PROJECT: RECONST. OF EXIT 34 RAMPS	DRILLING FIRM / OPERATOR: TTL / CW	DRILL RIG: GEOPROBE 7822DT	STATION / OFFSET:
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: TTL / KKC	HAMMER: AUTOMATIC HAMMER	ALIGNMENT:
PID: SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 11/11/19	ELEVATION: 795.0 (NAVD88) EOB: 7.0 ft.
START: 6/15/22 END: 6/15/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 90*	COORD: Not Recorded

EXPLORATION ID B-17

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 795.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
ASPHALT - 9.5 INCHES	794.2																		
AGGREGATE BASE - 4 INCHES	793.9																		
MEDIUM DENSE, BROWN, **FINE SAND**, SOME GRAVEL, TRACE SILT, MOIST EMBANKMENT FILL		1	5 7 8	23	100	SS-1	-	-	-	-	-	-	-	-	-	4	A-3 (V)	-	
		2																	
		3	9 9 10	29	100	SS-2	-	-	-	-	-	-	-	-	-	13	A-3 (V)	-	
@4': DENSE, GRAY/BROWN		4	10 14 13	41	100	SS-3	-	-	-	-	-	-	-	-	-	11	A-3 (V)	-	
@5.5': BROWN		5																	
		6	10 12 15	41	100	SS-4	-	-	-	-	-	-	-	-	-	9	A-3 (V)	-	
	788.0	EOB 7																	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.25 BAG ASPHALT PATCH; AUGER CUTTINGS MIXED WITH 0.5 BAG BENTONITE CHIPS

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/3/22 15:59 - S:\PROJECTS\2239301.GPJ

PROJECT: RECONST. OF EXIT 34 RAMPS	DRILLING FIRM / OPERATOR: TTL / CW	DRILL RIG: GEOPROBE 7822DT	STATION / OFFSET:
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: TTL / KKC	HAMMER: AUTOMATIC HAMMER	ALIGNMENT:
PID: SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 11/11/19	ELEVATION: 790.0 (NAVD88) EOB: 7.0 ft.
START: 6/15/22 END: 6/15/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 90*	COORD: Not Recorded

EXPLORATION ID B-18

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
ASPHALT - 5 INCHES	789.6																		
CONCRETE - 8 INCHES	788.9																		
MEDIUM DENSE, BROWN, **FINE SAND**, TRACE SILT, TRACE CLAY, TRACE GRAVEL, MOIST EMBANKMENT FILL		1	5 6 7	20	100	SS-1	-	1	2	90	5	2	NP	NP	NP	10	A-3 (0)	120	
@2.5': DENSE		2 3	7 11 11	33	100	SS-2	-	-	-	-	-	-	-	-	-	15	A-3 (V)	-	
		4 5	13 13 13	39	100	SS-3	-	-	-	-	-	-	-	-	-	15	A-3 (V)	-	
@5.5': VERY DENSE, BROWN, TRACE SILT		6	19 19 19	57	100	SS-4	-	-	-	-	-	-	-	-	-	14	A-3 (V)	-	
	783.0	EOB 7																	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.25 BAG ASPHALT PATCH; AUGER CUTTINGS MIXED WITH 0.5 BAG BENTONITE CHIPS

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/3/22 15:59 - S:\PROJECTS\2239301.GPJ

PROJECT: RECONST. OF EXIT 34 RAMPS	DRILLING FIRM / OPERATOR: TTL / CW	DRILL RIG: GEOPROBE 7822DT	STATION / OFFSET:
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: TTL / KKC	HAMMER: AUTOMATIC HAMMER	ALIGNMENT:
PID: SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 11/11/19	ELEVATION: 787.0 (NAVD88) EOB: 7.0 ft.
START: 6/14/22 END: 6/14/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 90*	COORD: Not Recorded

EXPLORATION ID B-19

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 787.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
ASPHALT - 5 INCHES	786.6																		
AGGREGATE BASE - 9 INCHES	785.8																		
MEDIUM DENSE, BROWN, **FINE SAND**, TRACE SILT, MOIST EMBANKMENT FILL		1	6 8 9	26	100	SS-1	-	-	-	-	-	-	-	-	-	6	A-3 (V)	-	
		2																	
		3	6 7 7	21	100	SS-2	-	-	-	-	-	-	-	-	-	8	A-3 (V)	-	
F.S.		4																	
		W 782.0 5	6 4 4	12	100	SS-3	-	-	-	-	-	-	-	-	-	19	A-3 (V)	-	
@5.5': WET, (FREE WATER NOTED IN JAR)		6	5 4 4	12	100	SS-4	-	-	-	-	-	-	-	-	-	23	A-3 (V)	-	
	780.0	EOB 7																	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.25 BAG ASPHALT PATCH; AUGER CUTTINGS MIXED WITH 0.5 BAG BENTONITE CHIPS

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/3/22 15:59 - S:\PROJECTS\2239301.GPJ

PROJECT: RECONST. OF EXIT 34 RAMPS	DRILLING FIRM / OPERATOR: TTL / CW	DRILL RIG: GEOPROBE 7822DT	STATION / OFFSET:
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: TTL / KKC	HAMMER: AUTOMATIC HAMMER	ALIGNMENT:
PID: SFN:	DRILLING METHOD: 3.5" SSA	CALIBRATION DATE: 11/11/19	ELEVATION: 784.0 (NAVD88) EOB: 7.0 ft.
START: 6/14/22 END: 6/14/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 90*	COORD: Not Recorded

EXPLORATION ID B-20

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
ASPHALT - 7.5 INCHES	783.4																		
AGGREGATE BASE - 5.25 INCHES	782.9																		
LOOSE, GRAY/BROWN, **FINE SAND**, TRACE GRAVEL, TRACE SILT, MOIST EMBANKMENT FILL (F.S.)	781.0	W 781.0	3 3 3	9	100	SS-1	-	-	-	-	-	-	-	-	-	17	A-3 (V)	-	
MEDIUM DENSE, BROWN, **FINE SAND**, TRACE SILT, MOIST (F.S.)	779.7		6 9 10	29	100	SS-2	-	-	-	-	-	-	-	-	-	19	A-3 (V)	-	
DENSE, GRAY, **COARSE AND FINE SAND**, SOME SILT, LITTLE GRAVEL, TRACE SHALE FRAGMENTS, MOIST			10 10 15	38	100	SS-3	-	-	-	-	-	-	-	-	-	12	A-3a (V)	-	
@5.5': MEDIUM DENSE, DARK GRAY, LITTLE SILT	777.0	EOB	7 5 7	18	100	SS-4	-	-	-	-	-	-	-	-	-	23	A-3 (V)	-	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.25 BAG ASPHALT PATCH; AUGER CUTTINGS MIXED WITH 0.5 BAG BENTONITE CHIPS

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 8/3/22 15:59 - S:\PROJECTS\2239301.GPJ

APPENDIX B

Legend Key

LEGEND KEY

Ohio Department of Transportation Soil Symbols

- A-1-a - Gravel and/or Stone Fragments
- A-1-b - Gravel and/or Stone Fragments with Sand
- A-2-4,A-2-5 - Gravel and/or Stone Fragments with Sand and Silt
- A-2-6,A-2-7 - Gravel and/or Stone Fragments with Sand, Silt and Clay
- A-3 - Fine Sand
- A-3a - Coarse and Fine Sand
- A-4a - Sandy Silt
- A-4b - Silt
- A-5 - Elastic Silt and Clay
- A-6a - Silt and Clay
- A-6b - Silty Clay
- A-7-5 - Elastic Clay
- A-7-6 - Clay
- A-8a - Organic Silt
- A-8b - Organic Clay
- Asphalt
- Sod and/or Topsoil
- Concrete
- Random Fill
- Peat
- Dolomite
- Weathered Dolomite
- Limestone
- Weathered Limestone
- Sandstone
- Weathered Sandstone
- Shale
- Weathered Shale

Sample Symbols

- SS - Split Spoon
- ST - Shelby Tube
- RC - Rock Core
- GS - Geoprobe Sleeve
- AU - Auger Cuttings
- GB - Grab

Notes:

1. Exploratory borings B-1 through B-20 were drilled during the period from June 13 through 15, 2022, using 3½-inch diameter solid-stem augers. Pavement cores were obtained using a 4-inch inside diameter thin-wall core bit

2. These logs are subject to the limitations, conclusions, and recommendations in the report and should not be interpreted separate from the report.

3. The borings were located in the field by TTL in accordance with the Proposed Boring Location Plan, attached to the proposal.

4. Ground Surface Elevations were depicted from Google Earth and reported to the nearest foot.

APPENDIX C

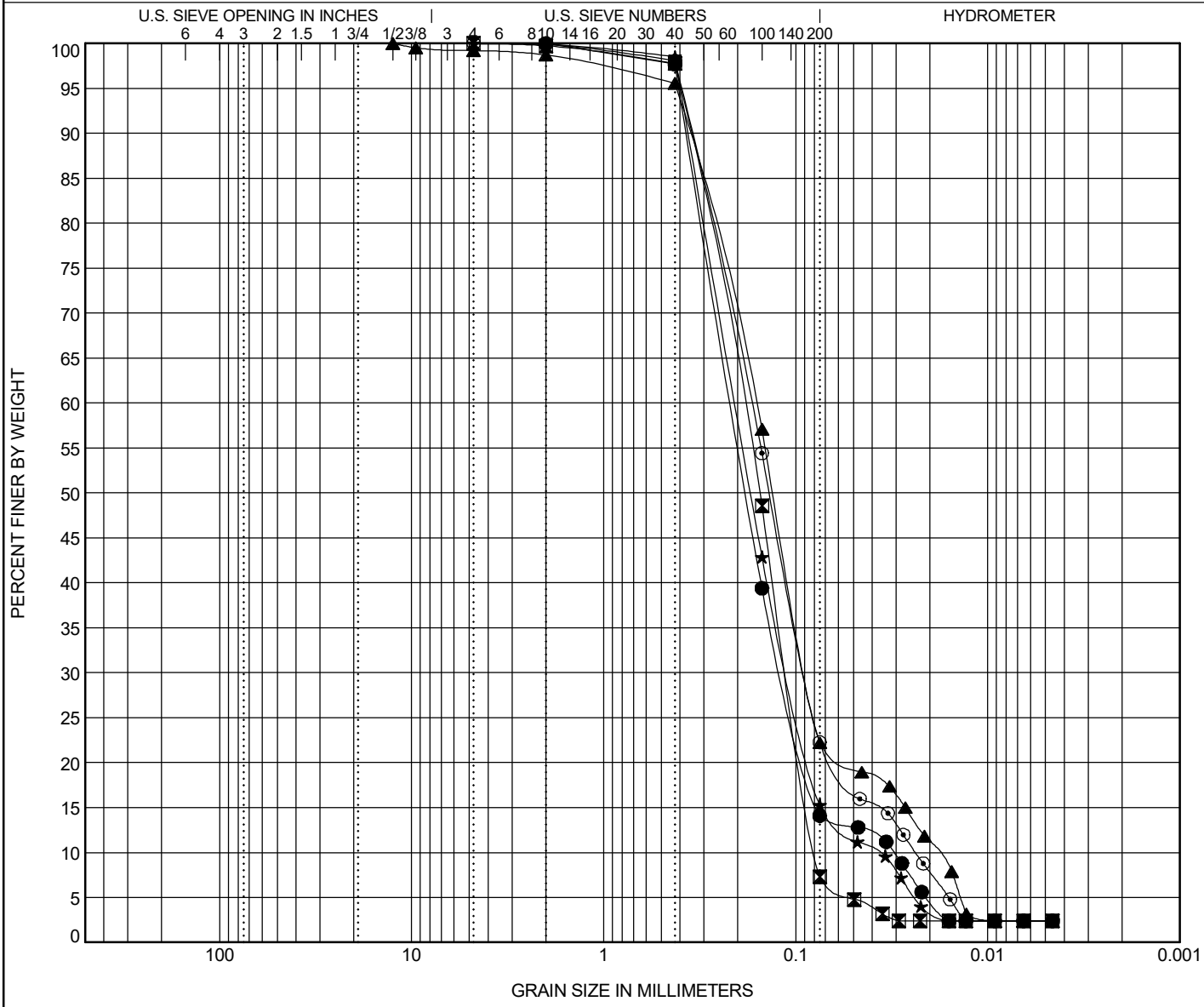
Grain Size Distribution Curves

TTL Associates
1915 N 12th St
43604
Telephone: 419-324-2222

GRAIN SIZE DISTRIBUTION

PROJECT OTIC RECONSTRUCTION OF EXIT 34 RAMPS **PID** _____

OGE NUMBER N/A **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

	Specimen Identification		ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	**B-13**	**3.0**	**A-3a ~ SILTY SAND(SM)**	**NP**	**NP**	**NP**
⊠	**B-18**	**1.0**	**A-3 ~ POORLY GRADED SAND with SILT(SP-SM)**	**NP**	**NP**	**NP**
▲	**B-3**	**3.0**	**A-3a ~ SILTY SAND(SM)**	**NP**	**NP**	**NP**
★	**B-6**	**1.0**	**A-3a ~ SILTY SAND(SM)**	**NP**	**NP**	**NP**
⊙	**B-8**	**1.0**	**A-3a ~ SILTY SAND(SM)**	**NP**	**NP**	**NP**

	Specimen Identification		D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	**B-13**	**3.0**	**0.37**	**0.181**	**0.116**	**0.031**	**0**	**2**	**84**	**12**	**2**	**2.02**	**7.04**
⊠	**B-18**	**1.0**	**0.361**	**0.155**	**0.11**	**0.079**	**1**	**2**	**90**	**5**	**2**	**0.80**	**2.43**
▲	**B-3**	**3.0**	**0.366**	**0.13**	**0.088**	**0.018**	**2**	**3**	**73**	**20**	**2**	**2.58**	**8.87**
★	**B-6**	**1.0**	**0.362**	**0.171**	**0.109**	**0.037**	**1**	**1**	**83**	**13**	**2**	**1.53**	**5.55**
⊙	**B-8**	**1.0**	**0.351**	**0.136**	**0.089**	**0.024**	**0**	**2**	**76**	**20**	**2**	**1.93**	**7.21**

APPENDIX D

Pavement Cores Photologs

CORE LOG for B-4

Project: Proposed OTIC Reconstruction of Exit 34 Ramps

Project Location: Fulton County, Ohio

TTL Project No. 2239301

Core Date: June 14, 2022

ASPHALT THICKNESS (in)	=	3.25
CONCRETE THICKNESS (in)	=	10.25
AGGREGATE BASE THICKNESS (in)	=	0.00

VISUAL DESCRIPTION:

Apparent delamination at approximately 4 inches below top of pavement.

CORE LOG for B-5

Project: Proposed OTIC Reconstruction of Exit 34 Ramps

Project Location: Fulton County, Ohio

TTL Project No. 2239301

Core Date: June 13, 2022

ASPHALT THICKNESS (in)	=	12.00
CONCRETE THICKNESS (in)	=	0.00
AGGREGATE BASE THICKNESS (in)	=	4.00

VISUAL DESCRIPTION:

Apparent delamination at approximately 9 inches below below top of pavement.

CORE LOG for B-10

Project: Proposed OTIC Reconstruction of Exit 34 Ramps

Project Location: Fulton County, Ohio

TTL Project No. 2239301

Core Date: June 14, 2022

ASPHALT THICKNESS (in)	=	3.75
CONCRETE THICKNESS (in)	=	0.00
AGGREGATE BASE THICKNESS (in)	=	7.25

VISUAL DESCRIPTION:

Asphalt core was in good condition.

CORE LOG for B-11

Project: Proposed OTIC Reconstruction of Exit 34 Ramps

Project Location: Fulton County, Ohio

TTL Project No. 2239301

Core Date: June 14, 2022

ASPHALT THICKNESS (in)	=	8.50
CONCRETE THICKNESS (in)	=	0.00
AGGREGATE BASE THICKNESS (in)	=	4.75

VISUAL DESCRIPTION:

Apparent delamination at approximately 6.5 inches below top of pavement.

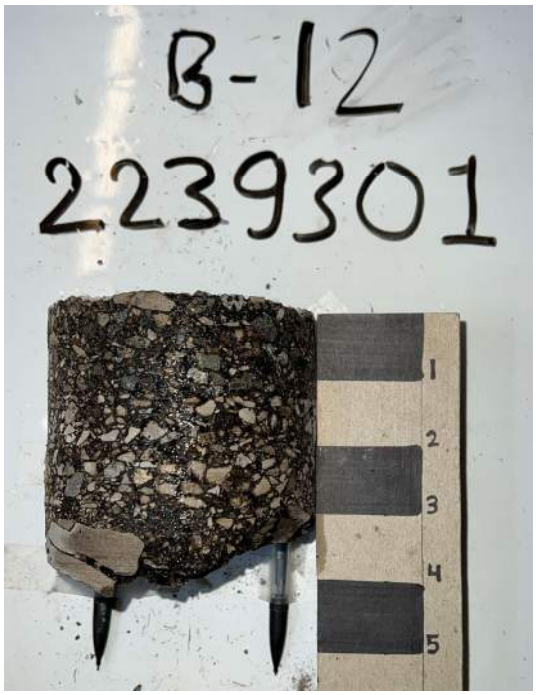
CORE LOG for B-12

Project: Proposed OTIC Reconstruction of Exit 34 Ramps

Project Location: Fulton County, Ohio

TTL Project No. 2239301

Core Date: June 14, 2022



ASPHALT THICKNESS (in)	=	3.75
CONCRETE THICKNESS (in)	=	
AGGREGATE BASE THICKNESS (in)	=	4.25

VISUAL DESCRIPTION:

Asphalt core was intact.

CORE LOG for B-13

Project: Proposed OTIC Reconstruction of Exit 34 Ramps

Project Location: Fulton County, Ohio

TTL Project No. 2239301

Core Date: June 15, 2022

ASPHALT THICKNESS (in)	=	7.50
CONCRETE THICKNESS (in)	=	
AGGREGATE BASE THICKNESS (in)	=	10.50

VISUAL DESCRIPTION:

Asphalt core was in good condition.

CORE LOG for B-14

Project: Proposed OTIC Reconstruction of Exit 34 Ramps

Project Location: Fulton County, Ohio

TTL Project No. 2239301

Core Date: June 15, 2022

ASPHALT THICKNESS (in)	=	3.75
CONCRETE THICKNESS (in)	=	
AGGREGATE BASE THICKNESS (in)	=	11.25

VISUAL DESCRIPTION:

Asphalt core was in good condition.

CORE LOG for B-16

Project: Proposed OTIC Reconstruction of Exit 34 Ramps

Project Location: Fulton County, Ohio

TTL Project No. 2239301

Core Date: June 15, 2022

ASPHALT THICKNESS (in)	=	9.50
CONCRETE THICKNESS (in)	=	
AGGREGATE BASE THICKNESS (in)	=	4.00

VISUAL DESCRIPTION:

Apparent delamination at approximately 1.75 inches below top of pavement.

CORE LOG for B-17

Project: Proposed OTIC Reconstruction of Exit 34 Ramps

Project Location: Fulton County, Ohio

TTL Project No. 2239301

Core Date: June 15, 2022

ASPHALT THICKNESS (in)	=	9.50
CONCRETE THICKNESS (in)	=	
AGGREGATE BASE THICKNESS (in)	=	4.00

VISUAL DESCRIPTION:

Slight Cracks at approximately 9 inches below top of pavement.

CORE LOG for B-20

Project: Proposed OTIC Reconstruction of Exit 34 Ramps

Project Location: Fulton County, Ohio

TTL Project No. 2239301

Core Date: June 14, 2022

ASPHALT THICKNESS (in)	=	7.50
CONCRETE THICKNESS (in)	=	
AGGREGATE BASE THICKNESS (in)	=	5.25

VISUAL DESCRIPTION:

Apparent delamination at approximately 4.5 inches below top of pavement.

APPENDIX E

Core Thickness Determination Report (2/9/2022)

Core Thickness Determination

Toledo
1915 North 12th Street
Toledo, OH 43604
Phone: 419-324-2222
Fax: 419-241-1808

Client:
Ohio Turnpike and Infrastructure Commission
682 Prospect St
Berea, OH 44017

Project:
2190401
OTIC 99-21-04 Task 11 Coring Ramp TP 34
Address Not Provided
Fulton County, OH

Technician: LaCourse, Richard

On Site Date: 02/09/2022

Core Material: Various

Core Diameter (in.): 4

Structure: Roadway

Pavement Coring for Core Thickness Determination

Core No.	Location	Asphalt Thickness (in.)	Concrete Thickness (in.)	Brick Thickness (in.)	Stone Thickness (in.)	Base Material
1	TP 34 Eastbound Entrance (West Core) 5' From Left Edge	2.5	10	-	-	Sand
2	TP 34 Eastbound Entrance (East Core) 6' From Left Edge	2.5	10	-	-	Sand
3	TP 34 Westbound Exit (East Core) 9' From Left Edge	2.5	10	-	-	Sand
4	TP 34 Westbound Exit (West Core) 6' From Left Edge	2.5	10	-	-	Sand
5	TP 34 Westbound Entrance 8' From Left Edge	4	10	-	-	Sand
6	TP 34 Eastbound Exit (West Core) 7' From Left Edge	3.5	10	-	-	Sand
7	TP 34 Eastbound Exit (East Core) 7' From Left Edge	3.5	10	-	-	Sand
8	TP 34 350' East of SR 108 Exit Lane, 8' Left of Centerline	4	10	-	-	Sand
9	TP 34 75' East of SR 108 Exit Lane, 5' Left of Center	4	10	-	-	Sand
10	TP 34 Exit Ramp to NB 108, 6' From Left Edge	4	10	-	-	Sand

Core Thickness Determination

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682 Prospect St
Berea, OH 44017

Project:
2190401
OTIC 99-21-04 Task 11 Coring Ramp TP 34
Address Not Provided
Fulton County, OH

Core No.	Location	Asphalt Thickness (in.)	Concrete Thickness (in.)	Brick Thickness (in.)	Stone Thickness (in.)	Base Material
11	TP 34 Northbound SR 108 Entrance Ramp, 7' From Left Edge	7.5	6.5	-	-	Sand

Notes:

Core #1 Concrete base pavement appears to be deteriorated, cored material was all aggregate. Measured total depth of 12.5".
Core #2 Concrete base pavement appears to be deteriorated, partial core was obtained. Measured total depth of 12.5".
Core #3 Measured total depth of 12.5".
Core #4 Concrete base pavement appears to have approximately 2" of deteriorated concrete. Measured total depth of 12.5".
Core #5 Measured total depth of 14".
Core #6 Measured total depth of 13.5".
Core #7 Concrete base pavement appears to have approximately 2" of deteriorated concrete. Measured total depth of 13.5".
Core #8 Total measured depth of 14".
Core #9 First attempt was 2' left of centerline, encountered material the drill could not get through at approximately 9". Second attempt was 5' left of centerline and 2' west of first core, core became lodged in the hole and could not retrieve. Third attempt was 5' left of centerline and adjacent to attempt 1, encountered material the drill could not get through at approximately 9". Forth attempt was 5' left of centerline and 6' west of the first attempt. Measured total depth of 14".
Core #10 Concrete base pavement appears to have approximately 2" of deteriorated concrete. Measured total depth of 14".
Core #11 Concrete base pavement appears to be deteriorated, partial core was obtained. Measured total depth of 14".

Core Thickness Determination

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Project:

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OTIC 99-21-04 Task 11 Coring Ramp TP 34
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Fulton County, OH

Core No.: 1

Core No.: 2

Core No.: 3

Core No.: 4

Core Thickness Determination

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OTIC 99-21-04 Task 11 Coring Ramp TP 34
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Core No.: 5

Core No.: 6

Core No.: 7

Core No.: 8

Core Thickness Determination

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Berea, OH 44017

Project:

2190401
OTIC 99-21-04 Task 11 Coring Ramp TP 34
Address Not Provided
Fulton County, OH

Core No.: 9

Core No.: 10

Core No.: 11

Core Thickness Determination

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682 Prospect St
Berea, OH 44017

Project:

2190401
OTIC 99-21-04 Task 11 Coring Ramp TP 34
Address Not Provided
Fulton County, OH

Picture of Map:

Frank Kinor, Jr.
Senior Project Manager, CMT
02/11/2022