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HAM-75-1.25 Trunk Line

Geotechnical Data Report

ODOT PID: 122902

Cincinnati, Hamilton County, Ohio

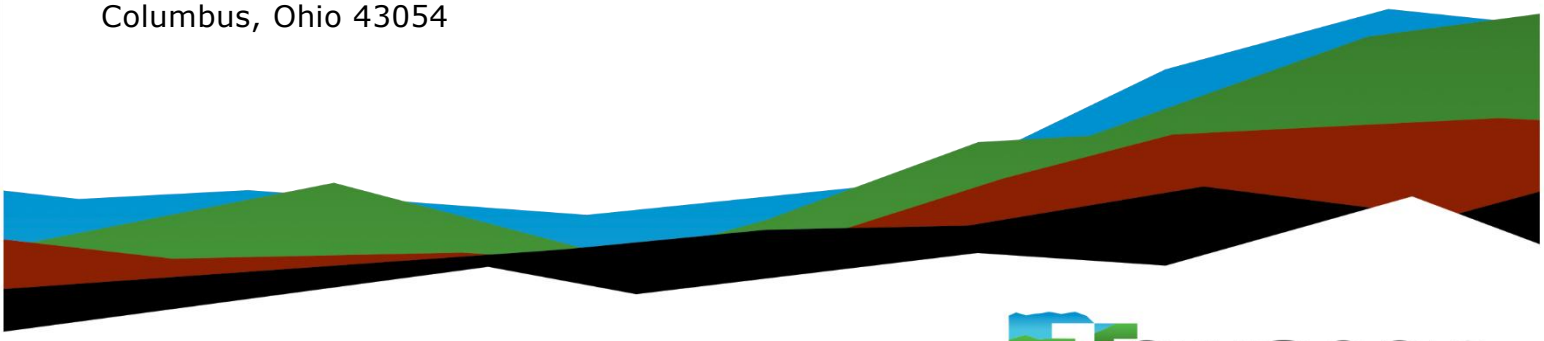
January 9, 2026 | Terracon Project No. N1245017

Prepared for:

Burgess & Niple, Inc.
525 Vine Street, Suite 1300
Cincinnati, Ohio 45202

and

EMH&T
5500 New Albany Road
Columbus, Ohio 43054



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January 9, 2026

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Attn: Mr. Mark Rahall, PE
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Re: Geotechnical Data Report
HAM-75-1.25 Trunk Line
Western Avenue
Cincinnati, Hamilton County, Ohio
ODOT PID: 122902
Terracon Project No. N1245017

Dear Messrs. Brunot and Rahall:

We have completed the scope of geotechnical exploration services for the above-referenced project in general accordance with Terracon Proposal No. PN1245017 dated April 15, 2024, and authorized via the Subcontract Agreement Amendments between Burgess & Niple, Inc. and Terracon dated August 14, 2024 and March 21, 2025. This geotechnical data report presents the findings of the subsurface exploration for the proposed project, which involves new borings and review of archival borings.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,
Terracon Consultants, Inc.

Joseph D. Hauber, PE
Principal | Senior Engineer

Ron S. Lech, PE
Vice President | Senior Principal

Copies submitted: Charles Rowe, PE with ODOT D-8

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Note: This report was originally delivered in a web-based format. **Blue Bold** text in the report indicates a referenced section heading. The PDF version also includes hyperlinks which direct the reader to that section and clicking on the Terracon logo will bring you back to this page. For more interactive features, please view your project online at **client.terracon.com**.

Refer to each individual Attachment for a listing of contents.

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Introduction

This report presents the results of our subsurface exploration services performed for the proposed trunk storm sewer located along Interstate 75 (I-75) in Cincinnati, Hamilton County, Ohio. This trunk sewer will be located within the HAM-75-1.05 and HAM-75-1.95 Projects, which involve roadway improvements to the I-75 corridor. It is noted that Burgess & Niple, Inc. (B&N) is working on the roadway design for HAM-75-1.05 while EMH&T is working on the roadway design for HAM-75-1.95.

The purpose of these services was to provide geotechnical subsurface information for the proposed project, including:

- Geotechnical Profile Plans in accordance with the current edition of the ODOT Specifications for Geotechnical Explorations (SGE), except that the plans will be prepared on 22-inch-by-34-inch sheets
- Boring logs with field and laboratory data
- Stratification based on visual soil classification
- Short-term groundwater levels observed during and after the completion of drilling in the borings that do not include observation wells, and longer-term groundwater levels and field slug test results from the observation wells
- Subsurface exploration procedures
- Description of subsurface conditions

The geotechnical Scope of Services for this project included the advancement of test borings, laboratory testing, review of previous boring and laboratory test data, and preparation of this report.

Drawings showing the site and boring locations are shown on the **Site Location Plan** and **Geotechnical Profile Plans**, respectively, which are included in **Plans**. The results of the laboratory testing performed on select soil samples obtained from the site during our field exploration are included on the boring logs and/or as separate graphs in the **Exploration Results** Section.

Project Description

Our initial understanding of the project was provided in our proposal and was discussed with B&N, EMH&T, and ODOT during project planning. A period of collaboration has transpired since the project was initiated, and our final understanding of the project conditions is as follows:

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Item	Description
Information Provided	For reference, the ODOT Project Identification Numbers (PIDs) are: ■ 122902 for the storm trunk line ■ 113361 for HAM-75-1.05 ■ 114161 for HAM-75-1.95 For HAM-75-1.05, the following plans were prepared and provided by B&N between January 18 and 26, 2024: ■ Preliminary plan and profile (P&P) drawings of the previously proposed open-cut mainline trunk sewer. ■ Alignment drawings illustrating the approximate alignment of the trunk line sewer in plan. ■ Conceptual plans of a proposed pump station within the proposed launching shaft of the trunk sewer near Gest Street. ■ Stage 1 Plans for the HAM-75-1.05 Project in the Brent Spence Bridge Corridor. On December 15, 2025, B&N provided conceptual plans for the pump station that is to be constructed within the Gest Street Launch Shaft and for the proposed 54-inch-diameter storm sewer that will extend out of this launch shaft at the location indicated on the **Geotechnical Profile Plans**. For HAM-75-1.95, the following plans were prepared and provided by EMH&T on April 24, 2024: ■ Preliminary plan and profile (P&P) drawings of the proposed storm trunk sewer. ■ An updated version of the preliminary profile drawing was received on May 31, 2024. For both HAM-75-1.05 and HAM-75-1.95, access has been provided via ProjectWise to the OpenRoads Designer files for each of these projects. On December 4, 2025, E.L. Robinson Engineering (ELRE) provided plan and profile information for the Brent Spence Bridge (BSB) Trunk Sewer. The BSB Trunk Sewer is labeled on the **Geotechnical Profile Plans**.
Project Description	As part of the HAM-75-1.05 and HAM-75-1.95 Projects, a stormwater trunk sewer is proposed adjacent to the reconfiguration of I-75. At the south end of the HAM-75-1.05 Project, there will be a launching shaft to the northeast of the intersection of Gest Street and Western Avenue in Cincinnati,

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Item	Description
Project Description (continued)	Ohio. This launching shaft is being designed by others and is referenced as the Gest Street Launch Shaft. Additionally, a microtunnel will extend to the southeast from this shaft, which is also being designed by others and is referred to as the BSB Trunk Sewer on the **Geotechnical Profile Plans**. The north end of the HAM-75-1.05 sewer will connect to the southern end of the sewer within the HAM-75-1.95 Project. Additional details on the sewers within these two projects are provided below. We also understand that B&N is considering the use of a microtunnel that will extend 250 to 300 feet to the northeast of the Gest Street Launch Shaft, which is denoted as the 54-inch-diameter NE (northeast) Storm Sewer on the **Geotechnical Profile Plans**. This potential microtunnel is not part of our current scope of service. Refer to the attached **Site Location Plan** in **Plans** for the approximate alignment of the trunk sewer.
HAM-75-1.05 Sewer	The proposed trunk sewer within the HAM-75-1.05 Project is planned to be constructed via microtunneling. This sewer is understood to have the following parameters: ■ Located along the east side of Western Avenue extending from the launching shaft near Gest Street (to be designed by others) to another launching/receiving shaft north of Findlay Street (i.e., the connection with the HAM-75-1.95 portion of the sewer) ■ Length: 3,785± feet (approximately 1,915-foot-long straight section extending north out of the Gest Street Launching Shaft, transitioning to an approximately 970-foot-long curved segment with a 1,600-foot-radius, transitioning to an approximately 900-foot-long straight section to the shaft north of Findlay Street) ■ Additional launching and/or receiving shafts may be provided between the Gest Street Launching Shaft and the shaft north of Findlay Street ■ Inside Diameter: 78 inches (minimum) ■ Invert El.: Varies from El. 458.2 at the Gest Street Launch Shaft to El. 462.0 feet at the shaft north of Findlay Street around Station 37+85

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Item	Description
HAM-75-1.95 Sewer	The proposed sewer within the HAM-75-1.95 Project is planned to be constructed with microtunneling and potentially transition to open-cut installation methods at its northern/upstream end. Jack-and-bore installation methods are also being considered for portions of this alignment. This sewer is understood to have the following parameters: ■ The sewer will be located along the east side of Western Avenue, Dalton Avenue, and Spring Grove Avenue (i.e., west of I-75) extending upstream from Findlay Street to just north of Harrison Avenue, where the sewer will turn to the east crossing underneath the fill embankment for I-75 and into the infield of the existing on-ramp from the Western Hills Viaduct to northbound I-75. Within this infield, the sewer will turn to the north paralleling I-75 on its east side and extend underneath the east approach to the viaduct and terminate within the infield of the existing I-75 northbound off-ramp to the viaduct. ■ Length: 3,785± feet ■ Inside Diameter: varies from 60 to 54 inches (minimum diameters provided by EMH&T are indicated on the **Geotechnical Profile Plans**) ■ Invert El.: Varies from El. 462.0 feet at its downstream end at the shaft north of Findlay Street to around El. 495 feet at its upstream end ■ Preliminarily, launching/receiving shafts are anticipated at each end of the alignment and on both sides of I-75 where the alignment crosses beneath the interstate on the north side of Harrison Avenue. ■ Near Station 54+00, a new storm line will be installed with trenchless methods beneath I-75 to connect to a new storm structure on the east side of the interstate. This storm line will be at least 30 inches in diameter with inverts varying from El. 485± to 487.5± feet
Gest Street Launching Shaft (By Others)	The proposed Gest Street Launching Shaft is understood to have the following parameters: ■ Located in the green space that is bounded by Western Avenue to the west, Gest Street to the south, the current off-ramp from southbound (SB) I-75 to the east, and the current on-ramp (Ramp W) from Western Avenue to SB

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Item	Description
Gest Street Launching Shaft (By Others) (continued)	I-75 to the north. Existing ground surface is around El. 500 to 508 feet. ▪ The Gest Street Launching Shaft will connect to four new storm sewers: ○ The 78-inch-diameter HAM-75-1.25 trunk line that is part of this project ○ A separate 108-inch-diameter tunnel that is being designed by Jacobs for the East Branch Ohio River Interceptor (EBORI) Extension Project for the Metropolitan Sewer District of Greater Cincinnati (MSDGC) ○ A separate 54-inch-diameter trunk sewer (referred to as the BSB Trunk Sewer) that is being designed by ELRE ○ A separate 54-inch diameter storm sewer (referred to as the 54-inch NE Storm Sewer) that is not currently part of our scope ▪ Inside Diameter: 80 feet ▪ Bottom of Shaft El.: 455.5± feet ▪ 78-inch Trunk Line Invert El.: 458.2± feet ▪ 108-inch EBORI Tunnel Invert El.: 457.5± feet (designed by others) ▪ 54-inch BSB Trunk Sewer Invert El.: 469.2± feet (designed by others) ▪ 54-inch NE Storm Sewer Invert El.: 459.4± feet ▪ Launching Shaft will need to contain a proposed pump station (to be designed by others). The top of the base slab for the pump station is understood to be around El. 457 feet. **The Launching Shaft has been designed by MSDGC's consultant.**
Grading/Slopes	As part of the HAM-75-1.05 and HAM-75-1.95 Projects, intermittent grading will be completed over the proposed tunnel alignments as well as the reconstruction of the Western Hills Viaduct, including its east abutment, which is adjacent to the proposed sewer. The grading will include cuts and fills, along with occasional retaining walls.

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Item	Description
Grading/Slopes (continued)	The Stage 1 Plans for HAM-75-1.05 indicate cuts and fills up to approximately 5 to 8 feet over the centerline of the proposed tunnel, as the interstate is being widened up to 20 to 30 feet to the west and 30 to 40 feet to the east.
Proposed Structures	As part of the HAM-75-1.05 and HAM-75-1.95 Projects, the abutments for several bridges within the project corridor will be widened and/or relocated. Refer to the Existing Above-Ground Structures/Conditions discussed in the **Reconnaissance and Site Conditions** Section for additional information.

Terracon should be notified if any of the above information is inconsistent with the planned construction, as modifications to this report may be necessary.

Geology

Based on the Physiographic Regions of Ohio Map published by the Ohio Department of Natural Resources (ODNR) Division of Geological Survey, the project site is located within the Illinoian Till Plain of the Till Plains Section of the Central Lowland Province of the Interior Plains Division. The distinguishing characteristics of the Illinoian Till Plain include: rolling ground moraines of older till generally lacking ice-constructional features such as moraines, kames, and eskers; many buried valleys; and modern valleys alternating between broad floodplains and bedrock gorges.

Specifically, the alignment of the trunk line is located within a buried valley referred to as the Mill Creek Valley. While Mill Creek is currently a southwardly flowing tributary to the Ohio River that is located in this valley, the ancestral river system that predates the current Ohio River alignment flowed northwardly prior to being dammed and rerouted to its current configuration by multiple glacial advances, including the Illinoian glaciation. A combination of the northwardly flowing ancestral river system and the meltwater from the glaciations carved the buried valley within the Mill Creek Valley. Additionally, the Illinoian and subsequent Wisconsinan glaciations created deposits that filled this channel.

According to the online Ohio Geology Interactive Map operated by ODNR[1], the surficial geology (excluding existing fill soils) consists of around 20 feet of Holocene-aged

[1] **https://gis.ohiodnr.gov/website/dgs/geologyviewer/#**

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alluvium underlain by more than 90 feet of predominantly Wisonsinan-aged sand and gravel, followed by Ordovician-aged bedrock, compromised of interbedded shale and limestone. The ODNR online map generally indicates that the depth to bedrock varies from 110 to 150 feet below existing grades; however, at the upstream end of the trunk line near the Western Hills Viaduct (WHV), the alignment approaches the east valley wall of the Mill Creek Valley. In this area, the ODNR online map indicates bedrock at depths as shallow as 50 feet.

The ODNR online map describes these overburden layers as follows:

- The Holocene-aged alluvium includes a wide variety of textures from silt to clay to boulders; commonly includes organic material; is generally, not compact; occurs in floodplains of modern streams and mapped only where areal extent and thickness are noteworthy; and also includes alluvial terraces, old floodplain remnants that are positioned tens of feet above modern floodplains.
- The sand and gravel stratum consists of intermixed and interbedded sand and gravel commonly containing thin, discontinuous layers or silt, clay, and till; contains grains that are well to moderately sorted, moderately to well rounded; is finely stratified to massive, may be cross bedded; locally, may contain organic material; encountered as widespread fluvial deposits in terraces and buried valleys.

Regarding the bedrock, the ODNR online map indicates that the underlying bedrock belongs to either the Kope Formation or the Point Pleasant Formation. The contact between these two formations is estimated to be around El. 450 to 475 feet.

Shrake et al. (2011)[2] describe the bedrock formations as follows:

- The Kope Formation consists of interbedded shale and limestone with shale comprising approximately 75 percent of the formation, and limestone comprising the balance. The bedrock is gray to bluish gray and weathers light gray to yellowish gray. The bedding is generally planar and varies from thin to thick.
- The Point Pleasant Formation consists of interbedded limestone and shale with limestone comprising approximately 60 percent of the formation, and shale

[2] Shrake, D.L., Swinford, E.M., Schumacher, G.A., Larsen, G.E., and Slucher, E.R. (2011). "Descriptions of Geologic Map Units: A Compendium to Accompany Division of Geological Survey Open-File Bedrock Geology Maps", Open-File Report 98-1, Ohio Department of Natural Resources, Division of Geological Survey.

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comprising the balance. The bedrock is gray to bluish gray and weathers light gray. The bedding is planar to lenticular and varies from thin to thick.

While not illustrated on the surficial and bedrock geologic maps from ODNR, the Mill Creek Valley has been subjected to urban development and consequently grading activities including cuts and fills for existing and previously razed buildings, roadways, and infrastructure, including I-75. Within the project extents, I-75 is generally elevated relative to the surrounding terrain and has been constructed upon fill embankments with bridges crossing of the original street alignments that have been maintained. However, at Ezzard Charles Drive, this roadway crosses over I-75 rather than I-75 crossing over it. Within the attached **Plans**, there are two additional versions of the Site Location Plans: one illustrates the proposed trunk line alignment over the 1912 City of Cincinnati Topographic Maps, and one illustrates the proposed trunk line alignment over the 1950s City of Cincinnati Topographic Maps. A comparison of these maps with the current aerial imagery shows the pre-existing buildings that fronted along the east side of Western Avenue and in other areas that have been razed by the construction of I-75 within the project corridor. As discussed later in **Exploration Findings**, the existing fill contained construction and demolition debris, which may have been related to the razing of these structures.

Reconnaissance and Site Conditions

The following description of site conditions is derived from our site visit in association with the field exploration and our review of publicly available geologic and topographic maps.

Item	Description
Project Site Information	■ ODOT PID No. 122902 ■ The project is located along I-75 in Cincinnati, Hamilton County, Ohio between Gest Street and the Western Hills Viaduct. ■ Project Length: 7,600± LF ■ Latitude/Longitude (approximate): 39.1165°N, 84.5340°W ■ See **Site Location Plan**

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Item	Description
Existing Above-Ground Structures/ Conditions	The project site is located in an urban area and generally parallels I-75 between its interchanges with Freeman Avenue and the Western Hills Viaduct. To the south of Harrison Avenue, the alignment is on the west side of I-75 and is bounded by Western Avenue, Dalton Avenue, and Spring Grove Avenue to the west and by Gest Street to the south. To the north of Harrison Avenue, the alignment is on the east side of I-75, and the project site consists of the infields for the on- and off-ramps for the Western Hills Viaduct. Multiple industrial and commercial buildings are located along the west side of Western Avenue, Dalton Avenue, and Spring Grove Avenue. There are also multiple bridges where I-75 crosses over or underneath local urban streets and where ramps cross I-75 or each other. The following is a list of the current bridges near the proposed sewer: ■ Freeman Avenue over the on-ramp (Ramp W) from Western Avenue to SB I-75 ■ The off-ramp (Ramp X) from SB I-75 over the on-ramp (Ramp W) from Western Avenue to SB I-75 ■ Separate eastbound (EB) and westbound (WB) bridges for Ezzard Charles Drive over I-75 ■ I-75 over West Liberty Street ■ I-75 over Findlay Street ■ I-75 over Bank Street ■ I-75 over Harrison Avenue ■ Western Hills Viaduct over I-75 We understand that these bridges have deep foundations consisting of vertical and batter driven pipe piles, and that the proposed improvements along I-75 in this area include widening and/or replacing these bridges. New foundations will generally involve driven pipe piles (vertical and batter piles); however, both driven pile and drilled shafts are being considered for the west abutment of the bridge at Ezzard Charles Drive. Along the north side of Harrison Avenue to the east of where I-75 crosses over it, there is an existing 300±-foot-long retaining wall. According to design plans from 1961 (ODOT Project HAM-25-1.63), this retaining wall is supported by steel H-piles (HP12x53) and 12-inch-diameter, cast-in-place reinforced concrete piles. Estimated pile tip elevations are reported to extend down between El. 463± and 473± feet.

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Item	Description
Existing Below-Grade Features	Numerous underground utilities are located in the corridor for the trunk sewer. Based on the referenced plans provided by B&N and EHM&T, the critical underground infrastructure includes: ■ 36-inch-diameter water main along Western Avenue ■ Around Stations 6+80 and 7+70, 42- and 36-inch-diameter storm sewers near Hopkins Street with inverts near El. 472.5± and 471± feet, respectively ■ Around Station 7+45, an 84-inch-diameter prestressed concrete combined sewer beneath Hopkins Street with an invert near El. 470± feet ■ Around Station 21+90, a 42-inch-diameter brick combined sewer with an invert near El. 481± feet ■ Around Station 25+90, a 36-inch-diameter water main and a 6-inch-diameter ductile iron water main ■ Around Station 26+50, a 120-inch-diameter brick combined sewer (reportedly with 3-foot-thick walls) beneath West Liberty Street with an invert near El. 479± feet ■ Around Station 32+70, a 30-inch-diameter reinforced concrete pipe combined sewer with an invert near El. 481± feet ■ Around Station 35+70, a 36-inch-diameter reinforced concrete pipe combined sewer with an invert near El. 481± feet ■ Around Stations 36+00 and 36+20, a 6-inch diameter water main and a 24-inch-diameter water main, respectively ■ Around Station 38+70, a 12-inch-diameter reinforced concrete pipe combined sewer with an invert near El. 483± feet ■ Around Station 42+60, a 30-inch-diameter reinforced concrete pipe combined sewer with an invert near El. 482± feet ■ Around Station 50+40, a 78-inch-diameter brick combined sewer (reportedly with 3-foot-thick walls) near Banks Street with an invert near El. 475± feet ■ Around Station 50+50, a 10-inch-diameter cast iron water main

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Item	Description
Existing Below-Grade Features (continued)	▪ Around Station 62+05, a 60-inch-diameter brick combined sewer near Harrison Avenue with an invert near El. 484± feet ▪ Around Stations 62+20 and 62+25, a 24-inch diameter water main and a 10-inch-diameter cast iron water main, respectively ▪ Near Station 65+00, a 30-inch-diameter storm sewer with an invert near El. 490± feet. The bedding conditions and the use of any subgrade support (e.g., possible driven timber piles) for these utilities are unknown. However, MSDGC has indicated that they have no records to suggest the use of timber piles.

Subsurface Exploration

Multiple subsurface explorations have been completed in the corridor for the proposed trunk line sewer over the years. These explorations include the following:

- In 2021-2022, borings were drilled by NEAS, Inc. (NEAS) and Terracon for the HAM-75-1.05 roadway project. The borings drilled by NEAS are identified as B-004-#-21 through B-063-#-21 while the borings drilled by Terracon are identified as B-064-#-21 and B-099-0-21. Thirty-seven (37) of these borings are included in the **Exploration Logs** in the **Exploration and Laboratory Results**.
- In 2022, borings were drilled by Terracon for the HAM-75-1.95 project. These borings are identified as B-100-#-21 through B-163-#-21. Thirty-six (36) of these borings are included in the **Exploration Logs** in the **Exploration and Laboratory Results**.
- In 2023, borings were drilled by S&ME for the Western Hills Viaduct replacement project (ODOT PID No. 105349) at the north end of the trunk line. These borings are identified as B-001-#-22 through B-029-#-22. Ten (10) of these borings are included in the **Exploration Logs** in the **Exploration and Laboratory Results**.
- In 2024, 12 borings were drilled by NEAS and field logged by Terracon for this HAM-75-1.25 trunk line project. These borings are identified as B-001-0-24 through B-012-0-24. Each of these 12 borings are included in the **Exploration Logs** in the **Exploration and Laboratory Results**.
- In 2025, four borings were drilled as part of the HAM-75-1.95 project for this HAM-75-1.25 trunk line project. These borings were designated as B-147-1-24, B-153-1-24, B-158-1-24, and B-159-1-24. Each of these 4 borings are included in the **Exploration Logs** in the **Exploration and Laboratory Results**.

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A tabulated summary of these 99 borings is included in the **Exploration Logs** in the **Exploration and Laboratory Results**. This tabulation, which is titled Summary of New and Archival Boring Logs, includes the following information for each boring: coordinates, ground surface elevation, depth and elevation of bottom of boring; depth and elevation to bottom of existing fill (where encountered); depth and elevation of groundwater during and at completion of drilling (where encountered); and depth and elevation to top of bedrock (where encountered).

As the 2024 and 2025 subsurface explorations were explicitly completed for the HAM-75-1.25 trunk line project, further information regarding the exploration procedures for these borings are provided below.

The 12 borings that were completed in 2024 were drilled by NEAS and logged in the field by a field engineer from Terracon between October 2, 2024 and October 24, 2024 while the 4 borings that were completed in 2025 were drilled and logged in the field by a Terracon drill crew between February 11 and 13, 2025. The ground surface elevations and coordinates for both sets of borings were measured by Terracon by using an Emlid GPS Unit with an approximate horizontal and vertical accuracy of ±2 feet and are provided on the attached boring logs included in the **Exploration Logs** in the **Exploration and Laboratory Results**.

The test borings were performed using a track- or buggy-mounted drill rig. The drill rigs utilized continuous-flight hollow-stem augers to permit split-barrel sampling in overburden soils. Occasionally, Shelby tubes were hydraulically pushed into the soil to obtain a relatively undisturbed sample for laboratory testing. In several of the borings the hollow-stem augers were charged with water after encountered groundwater in the boreholes to aide in keeping sands from heaving up into the augers. In Borings B-153-1-24 and B-158-1-24, bedrock was cored using an NQ2 rock core barrel. Drilling and sampling procedures were performed in general accordance with the ODOT SGE; however, continuous sampling was performed within the proximity of the proposed trunk line sewer alignment, including approximately one diameter above and below the anticipated sewer pipe to provide additional information for evaluating microtunnel construction techniques, in the twelve borings completed in 2024.

For the two drill rigs used for the 2024 borings, the drill rig energy ratio (ER) varied from 80 to 84 percent, while the drill rig ER for the 2025 borings was 97 percent. As recommended by ODOT for drill rigs with an energy ratio over 90 percent, a drill rig energy ratio of 90 percent was adopted to determine N_{60} values that are presented in the boring logs.

Groundwater levels were observed during drilling and immediately at the completion of the drilling activities at each test boring location and are provided on the test boring logs. No long-term (24-hour) water level readings were obtained at the test boring locations, except for the four borings discussed below where observation wells were

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installed. Upon completion of the drilling activity and following water level observations (except for Borings B-001-0-24, B-004-0-24, B-009-0-24, and B-012-0-24), the boreholes were backfilled with cement-bentonite grout and bentonite chips after the augers were pulled and the hole partially caved. In pavement areas, the boreholes were then capped with cold-patch asphalt to meet pavement grade.

In Borings B-001-0-24, B-004-0-24, B-009-0-24, and B-012-0-24, an observation well was installed in the borehole to obtain long-term groundwater level readings as well as to allow for field permeability testing. Refer to the **Field Permeability Testing** Section for additional information on the construction of these observations wells, the field permeability testing, and the results. Additionally, groundwater level measurements from these observations wells from October 2024 through April 2025 are included in the in the **Exploration Logs** in the **Exploration and Laboratory Results**.

Geophysical Survey

To supplement the borings in the area of the on- and off-ramps for the Western Hills Viaduct, a seismic survey using the 2-dimensional Multi-Channel Analysis of Surface Wave (MASW) method was completed along 5 lines. The approximate locations of these lines are illustrated on the Geotechnical Profile Plans and MASW Base Map in **Plans**. The primary goal of the survey was to provide additional information on the bedrock surface underlying the overburden soils. The MASW survey used a seismograph and a linear array of twenty-four 4.5-Hz geophones. The lengths of the five lines were approximately 230, 575, 230, 115, and 230 feet. The 575-foot-long line was completed using a series of overlapping lines with a geophone spacing of 10 feet to reach the full length. The other lines consisted of single 24-channel lines using spacings of 5 to 10 feet between geophones.

The surveys were performed by collecting surface waves created by a seismic source consisting of a sledgehammer striking an aluminum ground plate. The data was then processed using dispersion analysis software (SurfSeis, engineered by the Kansas Geological Survey) that extracts the fundamental-mode dispersion curves. The curves were inverted and modeled to yield a shear-wave velocity profile along the array to an approximate depth of 50 feet. These 2D profiles were then examined for changes in shear wave velocities to indicate top of bedrock and potential soft soil zones. Cross sections from the MASW data are illustrated on MASW Cross Sections in **Plans**.

Geophysical Limitations

It should be noted that geophysical methods rely on instrument signals to indicate physical conditions in the field. Signal information can be affected by on-site conditions beyond the control of the operator such as overburden material, rock type, ambient seismic noise, and groundwater depth. Interpretation of those signals is based on a

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combination of known factors combined with the experience of the operator and geophysical scientist evaluating the results. The geophysical results provide a level of confidence but should not be considered absolute.

Laboratory Review and Testing

Upon completion of the fieldwork, the samples recovered from the 2024 and 2025 borings were transported to our laboratory, where they were visually reviewed and classified by the Project Geotechnical Engineer. Selected soil and bedrock samples were assigned laboratory tests. The laboratory testing program included the following types of tests on soils:

- Water content
- Dry unit weight
- Atterberg limits
- Particle-size (gradation) analysis
- One-dimensional consolidation
- Unconfined compressive strength
- Unconsolidated-undrained triaxial compression
- Consolidated-undrained triaxial compression with pore-pressure measurements
- Flexible wall permeability
- Chemical analyses – pH, sulfates, chloride ion, oxidation-reduction potential, and electrical resistivity
- Slurry abrasivity tests

Additionally, the laboratory testing program included the following types of tests on bedrock:

- Water content
- Splitting tensile strength
- CERCHAR abrasiveness
- Punch penetration
- Slake durability

While not completed on the specimens from the 2024 and 2025 borings, uniaxial compressive strength test results were reported on some of the logs for the previous borings completed by S&ME for the Western Hills Viaduct.

The results of these tests are summarized in the Tabulation of Laboratory Tests in the **Laboratory Test Results** along with forms from the laboratory tests for the 2024 and 2025 borings. Additionally, the results of laboratory index tests are presented on the boring logs both the new and archival borings in **Exploration Logs**.

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The boring logs, which are included in **Exploration Logs**, were prepared by the Project Geotechnical Engineer on the basis of the field logs, the visual classification of the soil and bedrock samples in the laboratory, and the laboratory test results. The ODOT Quick Reference Guide for Visual Description of Soils, ODOT Classification of Soils Sheet, and ODOT Quick Reference Guide for Rock Description are also included in **Supporting Information** at the end of this report. These ODOT references describe the terms and symbols used on the boring logs. It should be noted that the transition between strata can be abrupt or gradual.

Exploration Findings

Subsurface Profile

Where the corridor for the alignment roughly parallels the west side of I-75 (i.e., roughly between Gest Street and just north of Harrison Avenue – Stations 0+00 to 63+20), the recent and previous borings indicate that the subsurface conditions generally consist of urban fill of variable thickness for the existing and previously demolished structures and infrastructure (including I-75) underlain by interlayered fine- and coarse-grained alluvial soils that generally became coarser with depth. The overburden soils were underlain by bedrock comprised of interbedded shale and limestone layers.

At the north end of the alignment on the east side of I-75 in the proximity of the on- and off-ramps for the Western Hills Viaduct, the subsurface conditions are similar, except the alluvium is intertongued with, or underlain by, clayey colluvial soils. This intertongued alluvium and colluvium is underlain by clayey residual soils followed by the interbedded shale and limestone bedrock. Additionally, the thickness of the alluvium pinches out to the east as the bedrock surface rises along the east valley wall of the Mill Creek Valley.

More specific descriptions of the subsurface strata are provided in the following sections. Additionally, conditions encountered at each boring location are indicated in the 99 individual boring logs shown in the in the **Exploration Logs** in the **Exploration and Laboratory Results** that are attached to this report. Stratification boundaries on the boring logs represent the approximate location of changes in existing fill/native soil types; in situ, the transition between materials may be gradual.

Existing Fill

Existing fill was reportedly encountered beneath the ground surface or pavement in 91 of the 99 borings. The fill in these borings varied from 3 to 47 feet thick and was approximately 20 feet thick on average. The fill varied from granular soils (ODOT Classifications A-1-a, A-1-b, A-2-4, A-2-6, A-2-7, A-3, A-3a, A-4a, and A-4b) to

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cohesive soils (ODOT Classifications A-6a, A-6b, and A-7-6); however, the majority of the fill encountered in the borings was classified as silt and clay (A-6a), silty clay (A-6b), and clay (A-7-6). Since the fill was an urban fill, areas of the fill contained various proportions of construction and demolition debris (e.g., brick, concrete, asphalt, stone fragments, coal fragments, cinders, wood and other organics, metal pieces, glass pieces, etc.) Occasionally, these materials were concentrated (e.g., brick fragments in Boring B-003-0-24).

The following tables summarize the corrected standard penetration test resistance values (N_{60} values), the hand penetrometer (HP) readings, and the laboratory tests results on the fill. Based on these results, the granular fill varied from very loose to very dense but was typically medium dense, and the cohesive fill varied from very soft to hard but was typically stiff.

N_{60}, HP, & Laboratory Test Result Summary of Fill[1]

		Samples Tested	Minimum	Maximum	Average
	N_{60} (bpf)	587	0	93	20
	HP (tsf)	344	0.25	4.5	2.7
	Moisture Content (%)	567	3	86	18
	Dry Unit Weight (pcf)	14	95.6	109.4	104.3
Atterberg Limits	**Liquid Limit (%)**	200[2]	20	56	31
	Plastic Limit (%)		9	30	18
	Plasticity Index (%)		3	32	14
Particle-Size Analysis	**Gravel-Sized (%)**	200	0	97	13
	Coarse-Sand-Sized (%)		0	48	12
	Fine-Sand Sized (%)		0	76	16
	Silt-Sized (%)		1	88	31
	Clay-Sized (%)		1	68	27
	Unconfined Compressive Strength (psf)	2	806	3,648	2,230
	Sulfates (ppm)	12	36	604	282
	ODOT Classifications	A-1-a, A-1-b, A-2-4, A-2-6, A-2-7, A-3, A-3a, A-4a, A-4b, A-6a, A-6b, A-7-6			

1. Refer to the following tables for consolidation and triaxial test information.
2. For the Atterberg limits, 20 of the samples were non-plastic (NP). The minimum, maximum, and average values do not consider the NP specimens.

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Summary of Consolidation Test Parameters of Fill Samples

Boring No.	Depth (ft.)	ODOT Classification	e_0	p_c (tsf)	C_c	C_r
B-079-0-21	11.0-13.0	A-6b	0.53	1.4	0.12	0.01
B-082-0-21	33.0-35.0	A-6a	0.57	1.4	0.12	0.015
B-088-0-21	41.0-43.0	A-7-6	0.62	1.0	0.15	0.02
B-095-0-21	33.5-35.5	A-4b	0.72	2.9	0.18	0.03
B-103-0-21	13.5-15.5	A-1-b	0.69	2.2	0.15	0.007
B-117-0-21	23.0-25.0	A-4a	0.55	3.9	0.09	0.005
B-129-0-21	11.0-13.0	A-6b	0.58	2.3	0.21	0.04
B-145-0-21	8.0-1.0	A-7-6	0.66	1.5	0.14	0.018

Definitions:

- e_0 = initial void ratio
- p_c = preconsolidation pressure
- C_c = compression index
- C_r = recompression index

Summary of Consolidated Undrained Triaxial Compression Test Parameters of Fill Samples

Boring No.	Depth (ft.)	ODOT Classification	γ_d (psf)	c (psf)	ϕ (°)	c′ (psf)	ϕ' (°)
B-008-0-24	9.0-11.0	A-6a	99.5-108.7	527	20.3	252	29.5
B-010-0-24	9.0-11.0	A-7-6	108.5	527	20.3	252	29.5
B-089-0-21	16.0-18.0	A-2-7	103.2	N/A	N/A	0	30
B-150-0-21	18.0-20.0	A-6b	103.1-106.5	1,150	14.5	163	30

Definitions:

- γ_d = Dry unit weight
- c = total stress cohesion
- ϕ = total stress friction angle
- c′ = effective stress cohesion
- ϕ' = effective stress friction angle

Alluvium

Alluvial soils (or alluvium) are sedimentary soils that are deposited by fluvial or flowing water systems (e.g., streams, rivers, etc.) Alluvium that is deposited by glacial meltwater is commonly referred to as outwash, and frequently coarser grained due to

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the higher flow velocities that are typically associated with meltwater from receding glaciers. However, for the purposes of this report, the alluvium is only subdivided into fine-grained alluvium (i.e., ODOT Classifications A-4b, A-6a, A-6b, and A-7-6) and coarse-grained alluvium (i.e., ODOT Classifications A-1-b, A-2-4, A-2-6, A-2-7, A-3, A-3a, A-4a).

Alluvium was encountered beneath the ground surface, pavement, or fill in 90 of the 99 borings. As previously stated, the alluvium consisted of interlayered fine- and coarse-grained soils and typically got coarser with depth. Additionally, the alluvium was intertongued with colluvium at the north end of the site in the proximity of the Western Hills Viaduct.

The following tables summarize the N_{60} values, the HP readings, and the laboratory tests results for the alluvium, subdividing on the basis of whether the alluvium is fine- or coarse-grained. Based on these results, the cohesive fine-grained alluvium varied from very soft to hard, but was stiff on average, while the silty cohesionless fine-grained alluvium was typically very loose to medium dense and infrequently dense to very dense. The coarse-grained alluvium was predominantly medium dense, occasionally loose or dense, and infrequently very loose or very dense.

N_{60}, HP, & Laboratory Test Result Summary of Fine-Grained Alluvium[1]

		Samples Tested	Minimum	Maximum	Average
	N_{60} (bpf)	501	0	67	13
	HP (tsf)	276	0.25	4.5	1.7
	Moisture Content (%)	465	5	37[2]	24
	Dry Unit Weight (pcf)	18	94.8	112.9	104.8
Atterberg Limits	**Liquid Limit (%)**	203[3]	19	50	31
	Plastic Limit (%)		13	27	19
	Plasticity Index (%)		1	32	11
Particle-Size Analysis	**Gravel-Sized (%)**	203	0	38	1
	Coarse-Sand-Sized (%)		0	39	3
	Fine-Sand Sized (%)		0	55	10
	Silt-Sized (%)		1	97	62
	Clay-Sized (%)		0	60	24
	Unconfined Compressive Strength (psf)	2	4,700	6,600	5,650

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Terracon

N_{60}, HP, & Laboratory Test Result Summary of Fine-Grained Alluvium[1]	Samples Tested	Minimum	Maximum	Average
Undrained Compressive Strength (psf)	2	2,180	5,550	3,865
Resistivity (ohm-cm)	2	1,930	3,940	2,935
Redox Potential (mV)	2	320	343	332
pH	2	8.6	9.0	8.8
Sulfides (ppm)	2		0.000	
Chlorides (ppm)	2	93	117	105
Sulfates (ppm)	2		< 100	
Miller Number	2	129.1	138.8	134.0
ODOT Classifications	A-4b, A-6a, A-6b, and A-7-6			

1. Refer to the following tables for consolidation and triaxial information.
2. Range ignores moisture content from Sample SS-9 at 23.5 feet in B-115-0-21, which has a reported moisture content of 246 percent.
3. For the Atterberg limits, 50 of the samples were non-plastic (NP). The minimum, maximum, and average values do not consider the NP specimens.

Summary of Consolidation Test Parameters of Fine-Grained Alluvium Samples						
Boring No.	**Depth (ft.)**	**ODOT Classification**	**e_0**	**p_c (tsf)**	**C_c**	**C_r**
B-007-0-24	42.5-44.0	A-4b	0.53	1.0	0.12	0.02
B-011-0-24	38.0-40.0	A-4b	0.64	2.3	0.13	0.02
B-067-0-21	11.0-13.0	A-6a	0.56	2.6	0.14	0.018
B-074-0-21	13.0-15.0	A-4b	0.70	4.2	0.15	0.03
B-075-0-21	38.5-40.5	A-7-6	0.73	1.8	0.19	0.02
B-083-0-21	41.0-43.0	A-6b	0.53	1.2	0.12	0.008
B-126-0-21	11.0-13.0	A-6a	0.83	1.9	0.15	0.02
B-131-0-21	16.0-18.0	A-6b	0.58	2.1	0.18	0.02

Definitions:

- e_0 = initial void ratio
- p_c = preconsolidation pressure
- C_c = compression index
- C_r = recompression index

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Summary of Consolidated Undrained Triaxial Compression Test Parameters of Fine- & Coarse-Grained Alluvium Samples

Boring No.	Depth (ft.)	ODOT Classification	γ_d (psf)	c (psf)	ϕ (°)	c′ (psf)	ϕ' (°)
B-005-0-24	37.0-39.0	A-4b	112.6	790	28.3	0	33.7
B-006-0-24	32.0-34.0	A-4b	104.3-105.4	790	28.3	0	33.7
B-007-0-24	24.0-26.0	A-4a	105.4	0	39.5	0	33.8
B-008-0-24	25.0-27.0	A-4b	104.5-106.0	0	39.5	0	33.8
B-010-0-24	25.0-27.0	A-4b	97.9-101.4	135	32.9	0	32.9
B-011-0-24	38.0-40.0	A-4b	112.9	135	32.9	0	32.9
B-132-0-21	20.0-22.0	A-6b	106.7-110.4	175	22.8	62	34.3
B-135-0-21	26.0-28.0	A-6b	107.4-111.5	1,010	8.7	0	34.0
B-147-1-24	8.0-10.0	A-7-6	109.2	N/A	N/A	190	33.3
B-158-1-24	11.0-13.0	A-7-6	111.6	N/A	N/A	469	34.9

Definitions:

- γ_d = Dry unit weight
- c = total stress cohesion
- ϕ = total stress friction angle
- c′ = effective stress cohesion
- ϕ' = effective stress friction angle

N_{60}, HP, & Laboratory Test Result Summary of Coarse-Grained Alluvium[1]

		Samples Tested	Minimum	Maximum	Average
	N_{60} (bpf)	475	0	117	21
	HP (tsf)	17	0.25	3.0	1.0
	Moisture Content (%)	378	2	36	19
	Dry Unit Weight (pcf)	2	105.4	107.4	106.4
Atterberg Limits	**Liquid Limit (%)**	126[2]	20	48	28
	Plastic Limit (%)		14	22	18
	Plasticity Index (%)		2	30	11
Particle-Size Analysis	**Gravel-Sized (%)**	126	0	49	5
	Coarse-Sand-Sized (%)		0	74	15
	Fine-Sand Sized (%)		1	95	54

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N_{60}, HP, & Laboratory Test Result Summary of Coarse-Grained Alluvium[1]					
		Samples Tested	Minimum	Maximum	Average
	Silt-Sized (%)		1	99	20
	Clay-Sized (%)		0	52	7
Undrained Compressive Strength (psf)		1	6,800		
Resistivity (ohm-cm)		2	2,720	5,810	4,265
Redox Potential (mV)		2	302	373	338
pH		2	8.7	8.9	8.8
Sulfides (ppm)		2	0.000	0.011	0.006
Chlorides (ppm)		2	91	147	119
Sulfates (ppm)		2	< 100		
Miller Number		2	142.9	145.0	144.0
ODOT Classifications		A-1-b, A-2-4, A-2-6, A-2-7, A-3, A-3a, A-4a			

1. Refer to the previous table for triaxial information on a coarse-grained alluvium sample and the following table for permeability information.
2. For the Atterberg limits, 105 of the samples were non-plastic (NP). The minimum, maximum, and average values do not consider the NP specimens.

Summary of Flexible Wall Permeability Test Parameters of Coarse-Grained Alluvium Samples					
Boring No.	Depth (ft.)	ODOT Classification	γ_d (psf)	k (cm/s)[1]	k (ft./day)[1]
B-004-0-24	37.5-39.5	A-1-b	107.4	4.2×10^{-6}	0.012
B-007-0-24	24.0-26.0	A-4a	105.4	1.7×10^{-6}	0.005

Definitions:

- γ_d = Dry unit weight
- k = average permeability

Notes:

1. Refer to the **Field Permeability Testing** Section of this report for additional information on soil permeability.

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Colluvium and Residuum

Colluvial soils (or colluvium) are soils that are formed by the downslope transport of soil and rock material under the influence of gravity. The movement that results in the transport of this material is frequently triggered by fluctuations in the groundwater table but is also triggered by surcharges placed at the top of or along the slope, by cuts or erosion at the toe of the slope, and/or earthquakes. The rate of movement of a colluvial slide mass can vary from imperceptibly slow (as in the case of soil creep) to more than several feet in a day. This rate of movement is a function of several factors; however, the rate is typically accelerated during wet seasons. Frequently, the colluvium in the Greater Cincinnati Area is comprised of clay intermixed with shale and limestone fragments from the bedrock, particularly where bedrock is relatively shallow on steeply sloping terrain. Colluvium was encountered beneath the fill or alluvium or intertongued with the alluvium in 15 of the borings. Each of these borings where colluvium was encountered were generally in the area of the east valley wall of the Mill Creek Valley near the Western Hills Viaduct on- and off-ramps to northbound I-75. In some of these borings, the descriptions of the overburden soils on the logs were not definitive, and these soils may have been either colluvium or residuum.

Residual soils (or residuum) are soils that have formed by the in-situ weathering of the underlying bedrock into a soil. Occasionally, layers of the bedrock (i.e., shale or limestone layers) may be encountered within the residual soils. Residuum was encountered beneath the fill, alluvium, or colluvium in 11 of the borings. As previously stated, some of the descriptions of the overburden soils on the previous logs were not definitive and may be either colluvium or residuum.

Colluvial and residual soils encountered in the borings classified as silt and clay (A-6a), silty clay (A-6b), or clay (A-7-6). Consistencies of these soils varied from stiff to hard and were very stiff on average. The following table summarizes the N_{60} values, the HP readings, and the laboratory tests results on the colluvial and residual soils.

N_{60}, HP, & Laboratory Test Result Summary of Colluvium and Residuum[1]

		Samples Tested	Minimum	Maximum	Average
	N_{60} (bpf)	42[2]	6	98	36
	HP (tsf)	36	1.0	4.5	3.3
	Moisture Content (%)	42	4	28	20
	Dry Unit Weight (pcf)	1	120.9		
Atterberg Limits	**Liquid Limit (%)**	17	29	57	39
	Plastic Limit (%)		15	26	19

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N_{60}, HP, & Laboratory Test Result Summary of Colluvium and Residuum[1]					
		Samples Tested	Minimum	Maximum	Average
	Plasticity Index (%)		12	31	20
Particle-Size Analysis	Gravel-Sized (%)	18	0	33	7
	Coarse-Sand-Sized (%)		0	17	5
	Fine-Sand Sized (%)		1	16	5
	Silt-Sized (%)		17	55	34
	Clay-Sized (%)		19	67	47
	ODOT Classifications	A-6a, A-6b, and A-7-6			

1. Refer to the following table for triaxial information.
2. Refusal SPT N-values were encountered on 4 samples of the colluvium/residuum.

Summary of Consolidated Undrained Triaxial Compression Test Parameters of Colluvium							
Boring No.	Depth (ft.)	ODOT Classification	γ_d (psf)	c (psf)	ϕ (°)	c′ (psf)	ϕ' (°)
B-159-1-24	13.5-15.5	A-6b	120.9	282	27.2	0	37.9

Definitions:

- γ_d = Dry unit weight
- c = total stress cohesion
- ϕ = total stress friction angle
- c′ = effective stress cohesion
- ϕ' = effective stress friction angle

Bedrock

As stated in the **Geology** Section, the overburden soils at the project site are underlain by Ordovician-aged bedrock from the Kope and Point Pleasant Formations, which consists of interbedded shale and limestone bedrock. Refer to the **Geology** Section for additional information on these formations. Bedrock was encountered at depths of 15.5 to 93.5 feet below the ground surface in 18 of the borings with the surface of the bedrock varying from El. 421.5 to 514.0 feet. In general, each of these borings, which encountered bedrock, were located near the east valley wall of the Mill Creek Valley around the on- and off-ramps for the Western Hills Viaduct at the north end of the site.

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Additionally, the bedrock surface slopes up rather steeply to the east from I-75 toward Central Parkway at the crest of the slope.

Additionally, the bedrock was cored in the majority of these borings. The rock quality designation (RQD)[3] along with the percentages of shale and limestone from the rock cores are summarized in the following table, which subdivides this information by bedrock formation. In the rock cores, the limestone component of the bedrock was generally very thin to thin bedded while the shale component varied from thin to thick bedded.

Summary of Rock Core RQD and Percentages of Shale versus Limestone

		Minimum	Maximum	Average
Kope Formation	**RQD (%)**	23	94	55
	Shale Component (%)	80	100	93
	Limestone Component (%)	0	20	7
Point Pleasant Formation	**RQD (%)**	0	100	55
	Shale Component (%)	45	65	55
	Limestone Component (%)	35	55	45

Samples of the shale and limestone components from the rock cores were subjected to various tests, which are summarized in the following table. According to ODOT's strength classification of bedrock, the tested specimens from the shale component of the bedrock varied from very weak to weak, while the tested specimens from the limestone component varied from weak to strong. In our experience, some layers of limestone may be very strong, and we have observed uniaxial compressive strengths as high as 30,000 psi.

Laboratory Test Result Summary of Bedrock

		Samples Tested	Minimum	Maximum	Average
Shale Specimens	**Moisture Content (%)**	18	7	27	14
	Uniaxial Compressive Strength (psi)	8[1]	255	973	638

[3] The rock quality designation (RQD) is defined as the percentage of rock core pieces recovered in lengths longer than 4 inches for the specified interval.

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Laboratory Test Result Summary of Bedrock					
		Samples Tested	Minimum	Maximum	Average
	Splitting Tensile Strength (psi)	22	6.6	262.2	81.4
	Slake Durability Index (%)	4	19.5	54.3	35.2
	CERCHAR Abrasiveness Index	2	0.24	0.27	0.26
	Punch Penetration Peak Slope Index (kips/in.)	1	7.7		
Limestone Specimens	Uniaxial Compressive Strength (psi)	3[1]	1,182	12,452	5,727
	CERCHAR Abrasiveness Index	2	0.82	1.03	0.93

1. All Uniaxial compressive strength specimens were from the S&ME borings.

Groundwater Conditions

As previously indicated, groundwater was observed during and at the completion of drilling in the 16 recent borings drilled for the trunkline. Additionally, long-term groundwater level readings were obtained in 4 of these borings where observation wells were installed. These groundwater measurements are summarized in the following table. Furthermore, the groundwater measurements for the archival borings are summarized in the Summary of New and Archival Boring Logs included with the **Exploration Logs** in the **Exploration and Laboratory Results**.

Boring No.	Approximate Groundwater Depth (ft.)[1,2]			Approximate Groundwater El. (ft.)[2]		
	During Drilling	At Completion	Long-term[3]	During Drilling	At Completion	Long-term[3]
B-001-0-24	32.0	N/A	25.1-32.0	468.1	N/A	468.1-475.0
B-002-0-24	34.0	27.0	N/A	464.1	471.1	N/A
B-003-0-24	25.0	21.2	N/A	469.3	473.1	N/A
B-004-0-24	27.0	N/A	17.7-28.0	468.9	N/A	467.9-478.2
B-005-0-24	40.5	16.2	N/A	466.0	490.3	N/A
B-006-0-24	34.0	28.5	N/A	472.3	477.8	N/A
B-007-0-24	27.5	26.3	N/A	473.4	474.6	N/A
B-008-0-24	27.0	17.0	N/A	467.8	477.8	N/A

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Boring No.	Approximate Groundwater Depth (ft.)[1,2]			Approximate Groundwater El. (ft.)[2]		
	During Drilling	At Completion	Long-term[3]	During Drilling	At Completion	Long-term[3]
B-009-0-24	30.0	20.6	17.4-30.0	467.3	476.7	467.3-479.9
B-010-0-24	28.5	39.1	N/A	467.0	456.4	N/A
B-011-0-24	38.0	22.0	N/A	455.8	471.8	N/A
B-012-0-24	29.5	23.5	23.3-31.9	463.9	469.9	461.5-470.1
B-147-1-24	13.0	NE	N/A	491.5	N/A	N/A
B-153-1-24	42.0	NE	N/A	468.5	N/A	N/A
B-158-1-24	13.0	NE	N/A	498.5	N/A	N/A
B-159-1-24	22.0	NE	N/A	489.0	N/A	N/A

1. Depths are measured from the existing ground surface.
2. NE = not encountered; N/A = not available
3. Long-term water level readings were recorded in the observation wells. Refer to the Groundwater Level Readings from Piezometers included with the **Exploration Logs** in the **Exploration and Laboratory Results** for the fluctuations in these readings.

In general, groundwater was encountered in the recent and previous borings within the granular or silt alluvial soils between El. 450 and 480 feet, except north of Bank Street where the alignment begins to approach the east valley wall of the Mill Creek Valley and in a couple of isolated borings. North of Bank Street, groundwater was encountered as high as El. 516.2 feet in Boring B-027-022 within the residuum a few feet above the bedrock surface. At the observation wells in Borings B-001-0-24, B-004-0-24, B-009-0-24, and B-012-0-24, groundwater varied between approximate El. 460 and 480 feet but was typically between El. 460 and 470 feet. During early April 2024, the nearby Ohio River flooded to around El. 489 feet in comparison to its normal pool, which is around El. 455 feet. While observation wells did not reach the same elevation as the river, the fluctuation in readings suggest that the groundwater level is influenced by the river and Mill Creek levels. Consequently, the groundwater table in the alluvial soils is expected to fluctuate with the river level, as it varies with time, location, season of the year, and amounts of precipitation, but will likely lag behind in rising and falling with the river level. Additionally, groundwater seepage may occur in saturated zones of fill or native soils that are within perched groundwater zones above the groundwater table.

Where the site transitions out of the Mill Creek Valley (e.g., near the ramps for the Western Hills Viaduct at the north end of the site), groundwater seepage is anticipated along the fill/natural soils interface, along the overburden soil/bedrock interface, along fractures and limestone layers within the bedrock, and in the saturated zones of fill or natural soils that are within the perched groundwater zones, or that are below the groundwater table. Locally concentrated flow may occur due to saturated layers of fill or natural soils (particularly the natural lacustrine or alluvial silts, sands, or gravels) or along fractures in the bedrock. Overall, groundwater conditions may change because of

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seasonal variations in rainfall, runoff, and other conditions not apparent at the time of drilling.

Field Permeability Testing

Background Information

The field activities for the field permeability testing, including the observation well installations, well development, aquifer testing, and data collection, were performed (or overseen) by staff from Terracon's Cincinnati office. The dates for completing the borings, constructing the observation wells, and performing the on-site slug testing are summarized in the following table along with some additional boring information (e.g., screen depth and sand pack interval, boring depths).

Boring ID	Date		Well Screen Depth Range (ft.)		Filter Sand Pack Depth (ft.)		Boring Depth (ft.)
	Drilled & Well Installed	Slug Testing	To	From	To	From	
B-001-0-24	10/24/24	11/8/24	24.5	54.5	17.5	54.5	70.0
B-004-0-24	10/23/24	11/11/24	19.5	49.5	17.5	49.5	65.0
B-009-0-24	10/21/24	11/11/24	19.5	49.5	17.5	49.5	65.0
B-012-0-24	10/18/24	11/8/24	11.0	41.0	9	41.0	60.0

The observation wells generally consisted of a 2-inch-diameter flush thread observation well constructed from Schedule 40 PVC pipe. The borings for these wells were drilled using 4.25-inch-inside-diameter hollow-stem augers (HSA) for installing 30 feet of 2-inch slim prepack screens (2.8-inch nominal outer diameter) with 0.010-inch slot size, which were connected to 2-inch PVC riser pipes that extended to within a few inches below existing grade. The table above indicates the approximate depths below grade where the prepack screens were installed, along with the depths of the filter sand pack. A minimum 4-foot-thick bentonite seal was used above the sand pack, and the remainder of the boreholes were backfilled with bentonite chips to within approximately 1 foot of grade where a flush-mount, bolt-down cover was constructed over each well.

Following completion of the drilling, the observation wells were developed using a combination of mechanical surging and pumping techniques to remove excessive drill cuttings entrained within the sand pack surrounding the screened interval. These methods include the use of a surge block that was moved up and down throughout the screened interval to remove accumulated fine materials entering the well through the sand pack.

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The locations of these 4 borings with monitoring wells are illustrated on the Geotechnical Profile Plans in the **Plans**, and the logs for these wells are included in the **Exploration Logs** with the **Exploration and Laboratory Results**.

Aquifer Testing and Analysis

The slug test method was used to evaluate the permeability (or hydraulic conductivity) of the aquifer. Slug testing was selected as the preferred aquifer testing method for this application due to the relatively low cost, generally unconfined nature of the shallow aquifer to be tested, minimal time investment required for performing the field tests, limited shallow excavation that may require dewatering, and benefit of little to no handling of potentially contaminated groundwater from the aquifer. This method involves either the rapid increase or decrease of the water level in a well, followed by the collection of a rapid series of water level measurements to assess the rate of water level recovery. The water level (head) measurements are then plotted against time to determine the aquifer's hydraulic conductivity (K) in feet per day (feet/day).

Upon completing the well installations and prior to performing any testing, an electronic data logger was deployed in each well to obtain background water level data necessary to assess static conditions and assess potential interference from antecedent water level trends (e.g., rising or falling water levels). A programmable electronic digital data logger (i.e., LevelLogger™) manufactured by Solinst™ was used for this purpose as well as to measure water level drawdown and recovery response in the wells. The water displacements were recorded at timed intervals resulting from the introduction (rising head) or withdrawal (falling head) of a "slug" or solid PVC cylinder to displace a known quantity of water in the well bore. A data logger was dedicated to each well throughout the completion of the slug tests. Water level data collected by the data logger was downloaded in the field to a portable laptop computer for subsequent analysis. For purposes of comparing and validating the calculated K values, the data collected from a series of rising and falling head tests performed in each well were analyzed with the aid of a specialized AQTESOLV™ Pro (Version 4.5) software computer program developed specifically for this type of application by HydroSOLVE, Inc.

Where the screened interval (SI) of each well was located entirely below the water table (soil-water interface) and remained fully saturated during testing, the results of both the falling and rising head tests can be used for the calculation of K. Where a portion of the SI extends above the water table, initial wetting of initially dry soils occurs during a falling head test rendering the results unreliable. In the case of Boring B-009, the SI was very nearly fully saturated with no initial wetting of initially dry soils occurring during the falling head test, and therefore, the falling head test data can be used to calculate K. Because portions of the SI's installed in Borings B-001, B-004, and B-012 were found to extend above the water table (the SI was not fully saturated), data generated from the

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falling head tests at these borings have been deemed unreliable, and the falling head test results were not used (analyzed) as part of the aquifer analysis.

It should be noted that K accounts for only unit width and unit saturation thickness of the aquifer. However, knowing the entire saturated thickness of the aquifer to be dewatered, it is possible to convert the average K to another more useful aquifer property known as T (or transmissivity) which considers the unit width and the entire saturated thickness of the aquifer to better describe an aquifer's capacity to transmit water. Transmissivity is defined as the rate at which water passes through a unit width of the aquifer under a unit hydraulic gradient through the entire saturated thickness of the aquifer. Assuming K remains constant along the saturation thickness, transmissivity is equal to the product of the aquifer thickness (b) and hydraulic conductivity (K) or:

$$T = K \times b$$

commonly expressed in units of gallons per day per foot of aquifer thickness (gpd/ft). Therefore, the potential of the aquifer to produce water is not controlled solely by its hydraulic conductivity, K, but is largely a function of the aquifer's saturated thickness. The saturated thickness values applied to each boring/well represents the standing water column in each well (total well depth minus static water level) measured subsequent to well development and *immediately before* slug testing. Using this methodology, the calculated saturated thickness (b) assigned to Boring B-001 was 23.05 feet and the saturated thickness used for Boring B-004 was 21.98 feet. The gross transmissivity can then be defined as the volume of water per unit of time, under a unit hydraulic gradient, passing through the whole cross-sectional area of the aquifer.

The lowest average values of K (2.157 ft/day) and T (49.719 gpd/ft) were calculated from the testing data obtained from B-001. The highest average values of K (15.020 ft/day) and T (201.118 gpd/ft) were calculated from the testing data obtained from B-012. It is important to note consistent with the results for B-012, that very little water was displaced during the rising head testing, and an almost instantaneous recovery of the water level displaced was observed.

The calculated K for each slug test, the average K, and average T values computed from the slug testing data collected from each well are presented on Table 1 – Aquifer Testing Results, which is included in **Field Permeability Test Results**. Additionally, graphs of the plotted slug testing data and rising/falling head water level data are provided in the **Field Permeability Test Results** for the 4 referenced borings.

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Attachments

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Plans

Contents:

Site Location Plan
Site Location Plan with 1912 City of Cincinnati Topography
Site Location Plan with 1950s City of Cincinnati Topography
Geotechnical Profile Plans (15 sheets)
MASW Base Map & Cross Sections (3 sheets)

Note: All attachments are one page unless noted above.

NOT FOR CONSTRUCTION INFORMATION ONLY

Site Location Plan

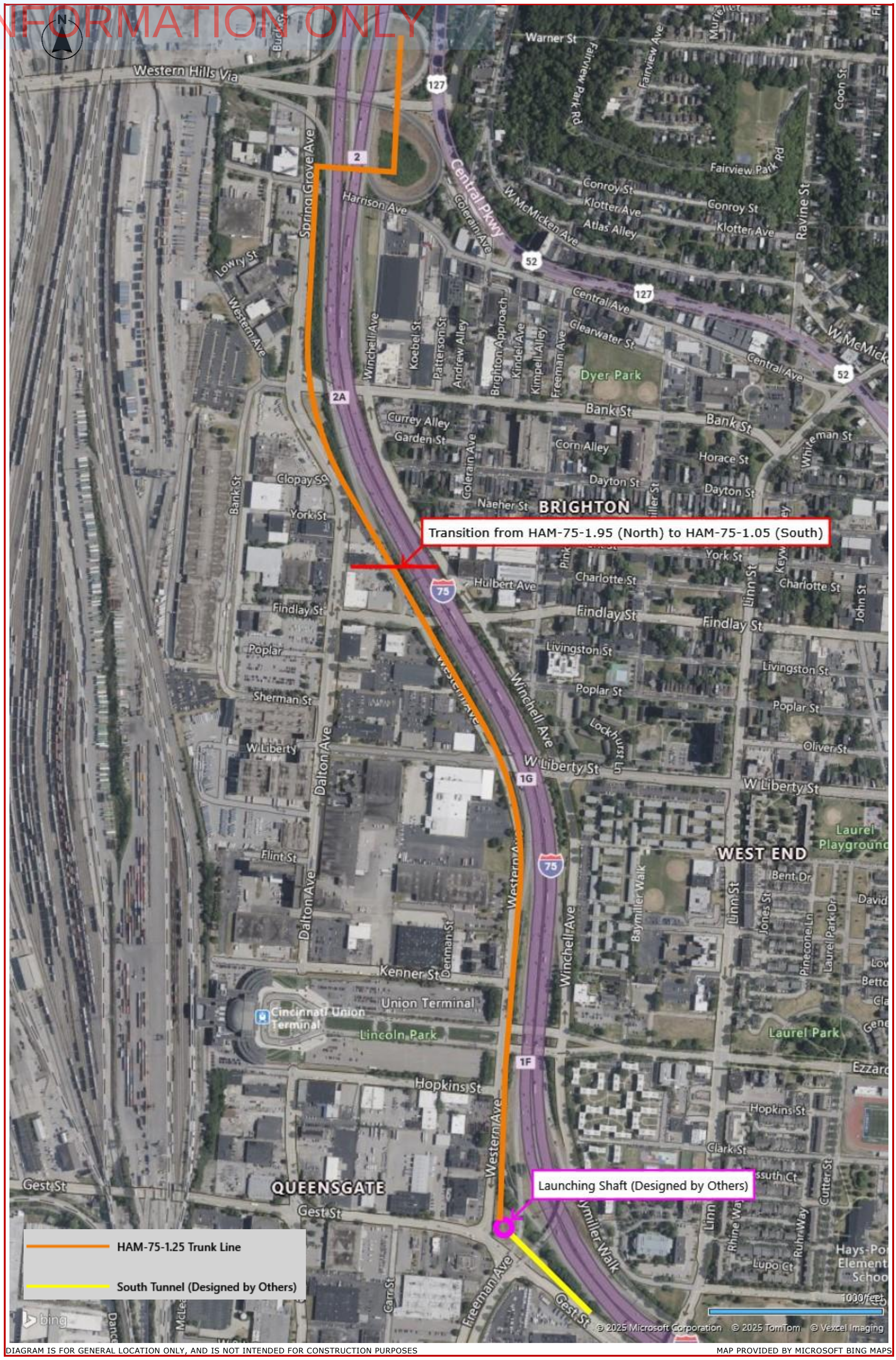


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

NOT FOR CONSTRUCTION INFORMATION ONLY

Site Location Plan with 1912 City of Cincinnati Topography

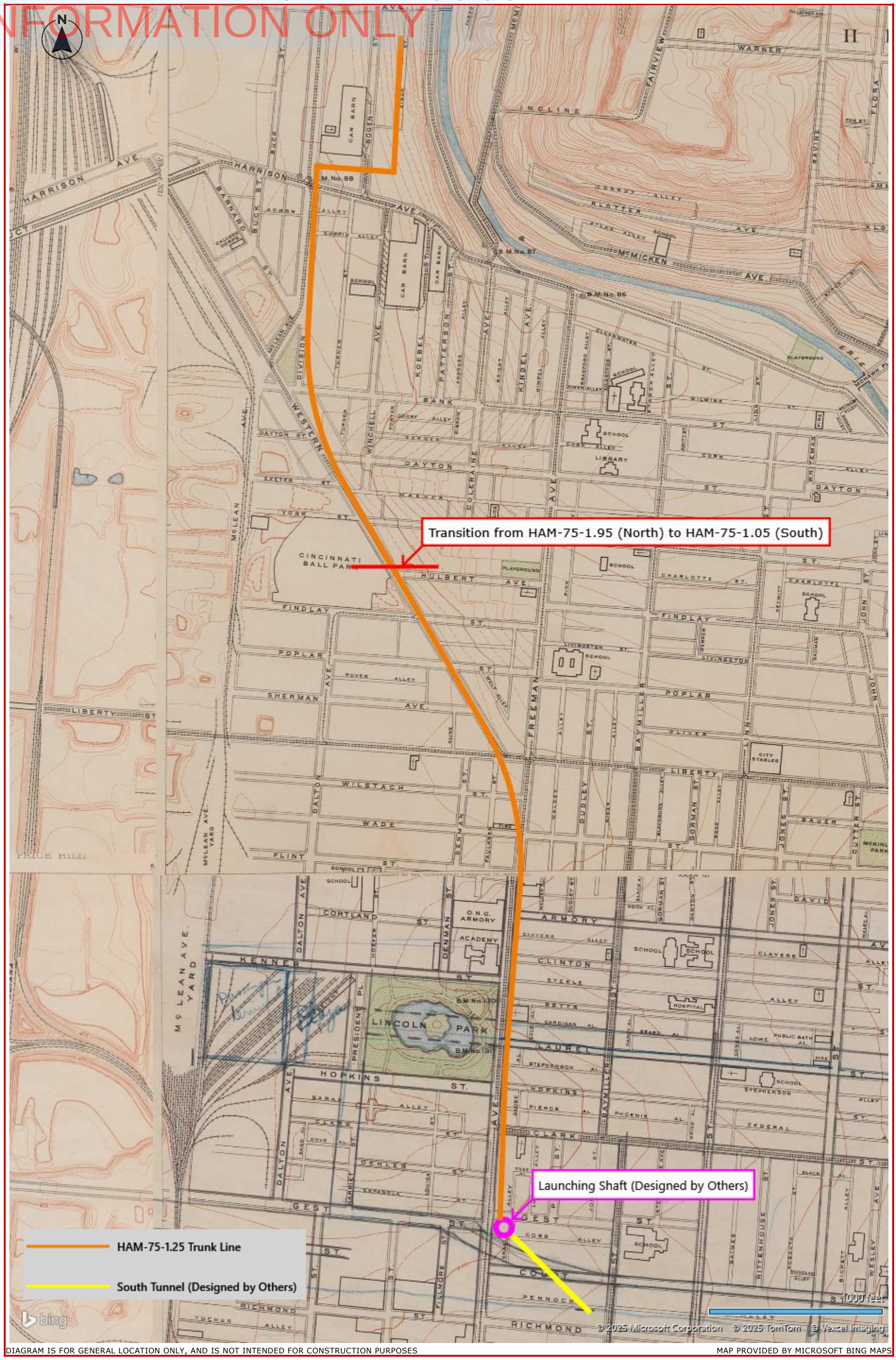


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

NOT FOR CONSTRUCTION INFORMATION ONLY

Site Location Plan with 1950s City of Cincinnati Topography



DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

NOT FOR CONSTRUCTION INFORMATION ONLY

Geotechnical Profile Plans

NOT FOR CONSTRUCTION INFORMATION ONLY

HORIZONTAL SCALE IN FEET
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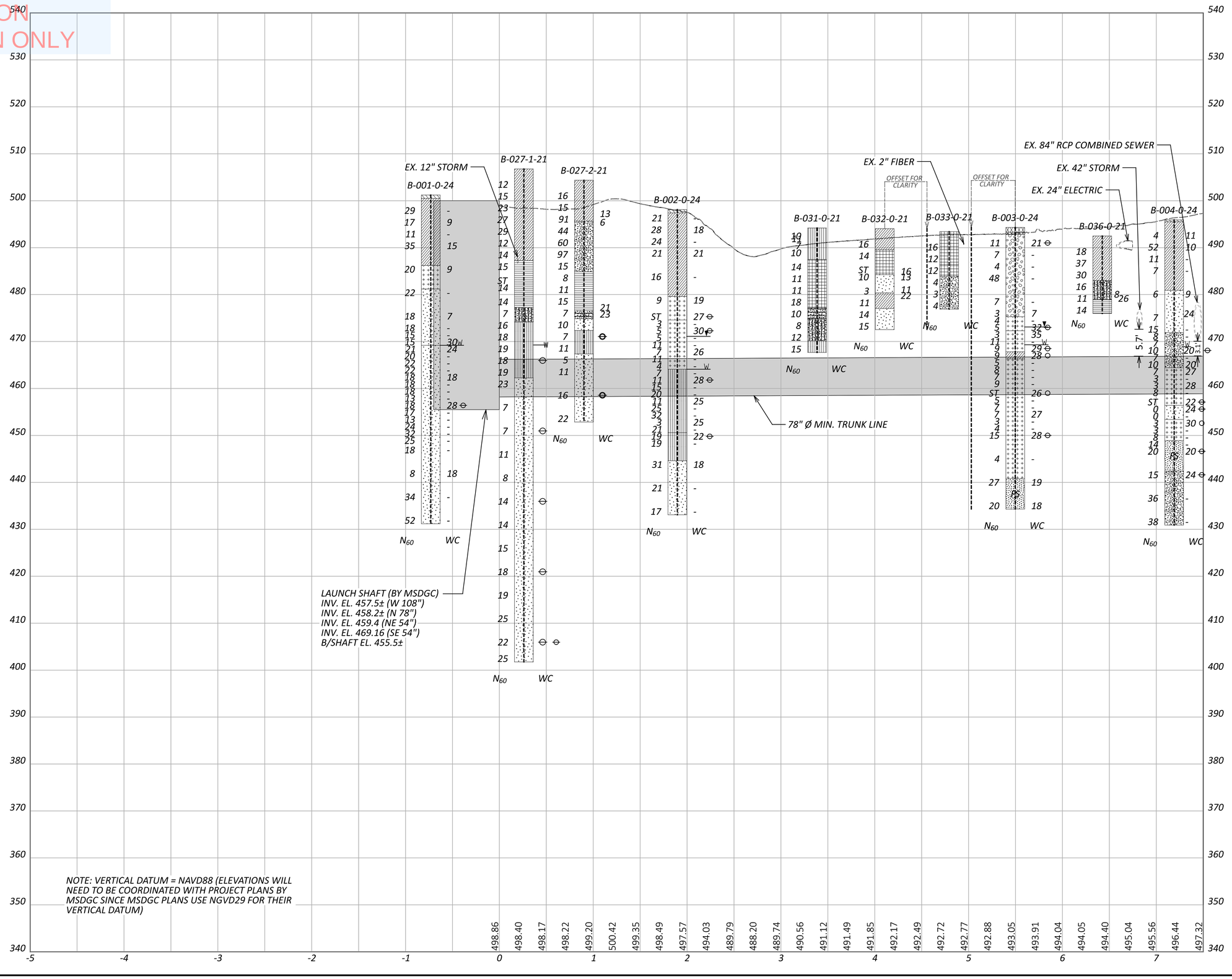
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STA. 0+00 TO STA. 7+50

HAM IR 75-1.25 TRUNK LINE

DESIGN AGENCY
Terracon

DESIGNER JDH
REVIEWER MJB 12-22-25
PROJECT ID 122902
SUBSET 1 TOTAL 15
SHEET P.0 TOTAL 0

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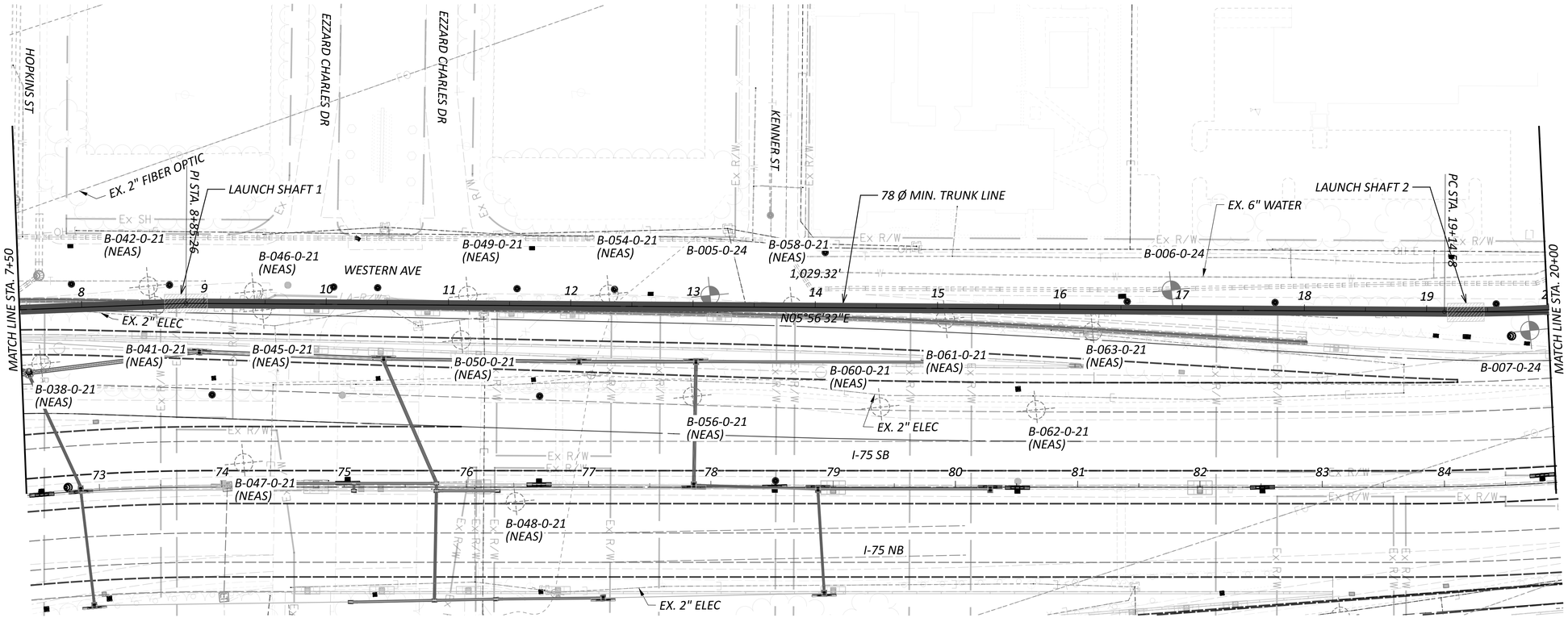
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DESIGN AGENCY
terracon

DESIGNER	JDH
REVIEWER	MJB 12-22-25
PROJECT ID	122902
SUBSET / TOTAL	2 / 15
SHEET / TOTAL	P.0 / 0

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HAM IR 75-1.25 TRUNK LINE

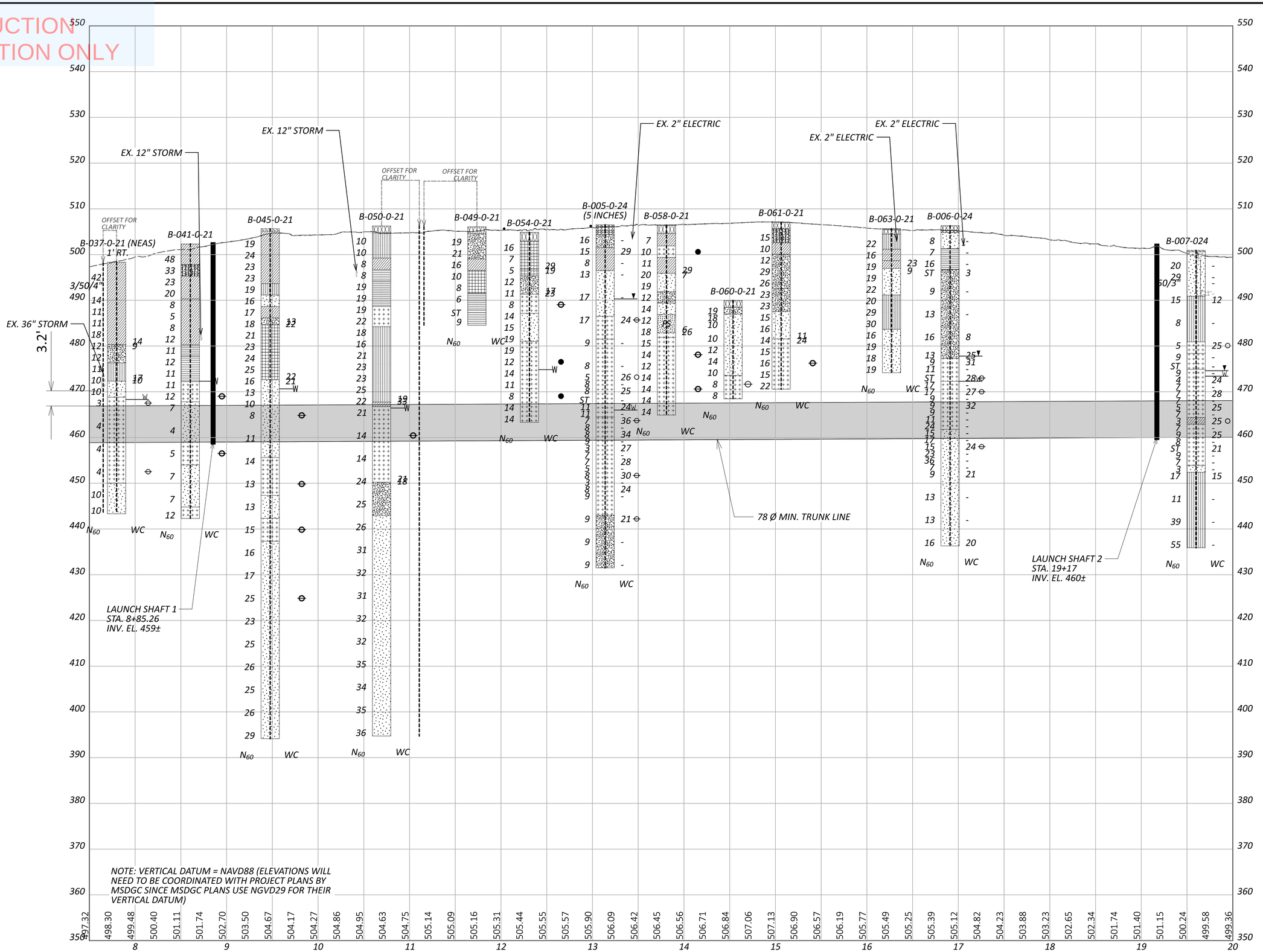
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terracon

DESIGNER JDH
REVIEWER MJB 12-22-25
PROJECT ID 122902
SUBSET 3 | TOTAL 15
SHEET P.0 | TOTAL 0

NOT FOR CONSTRUCTION INFORMATION ONLY

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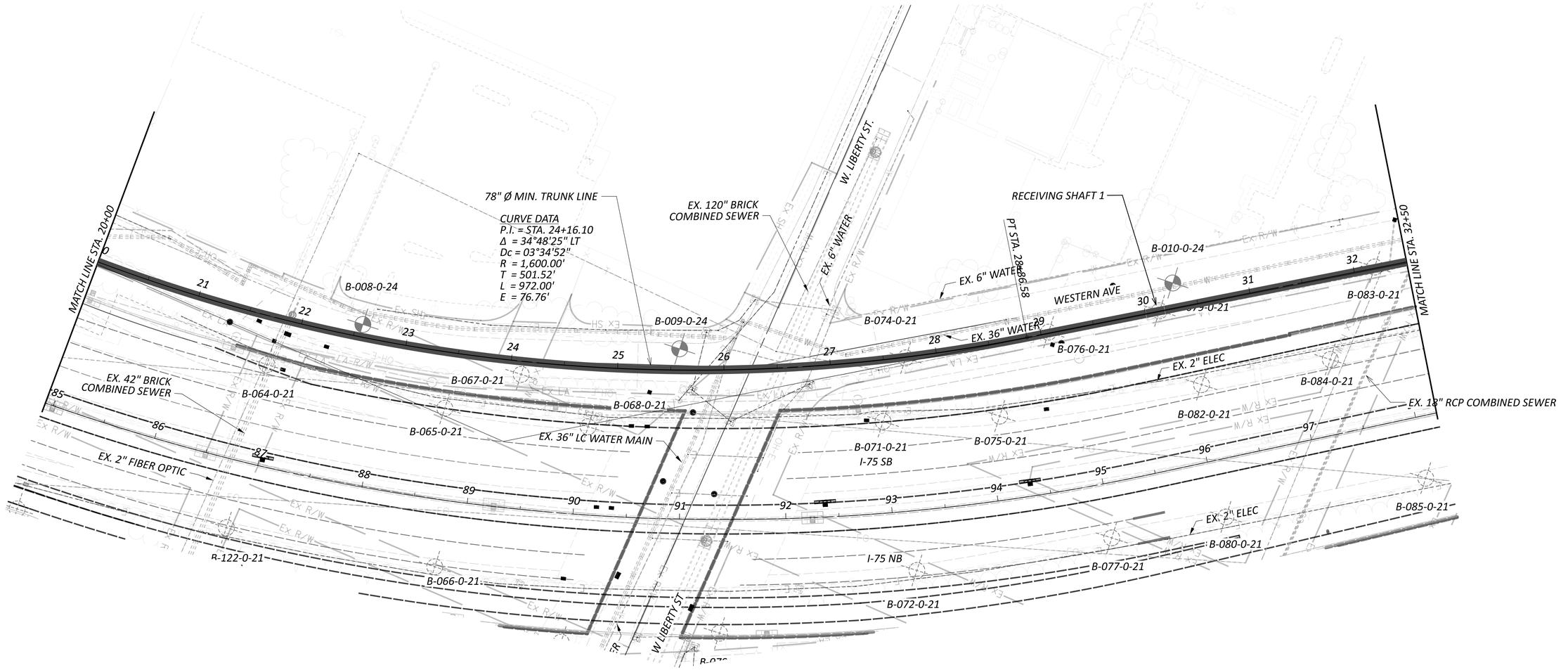
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0 50 100
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STA. 7+50 TO STA. 20+00

DESIGN AGENCY
Terracon

DESIGNER	JDH
REVIEWER	MJB 12-22-25
PROJECT ID	122902
SUBSET	4
TOTAL	15
SHEET	P.0
TOTAL	0

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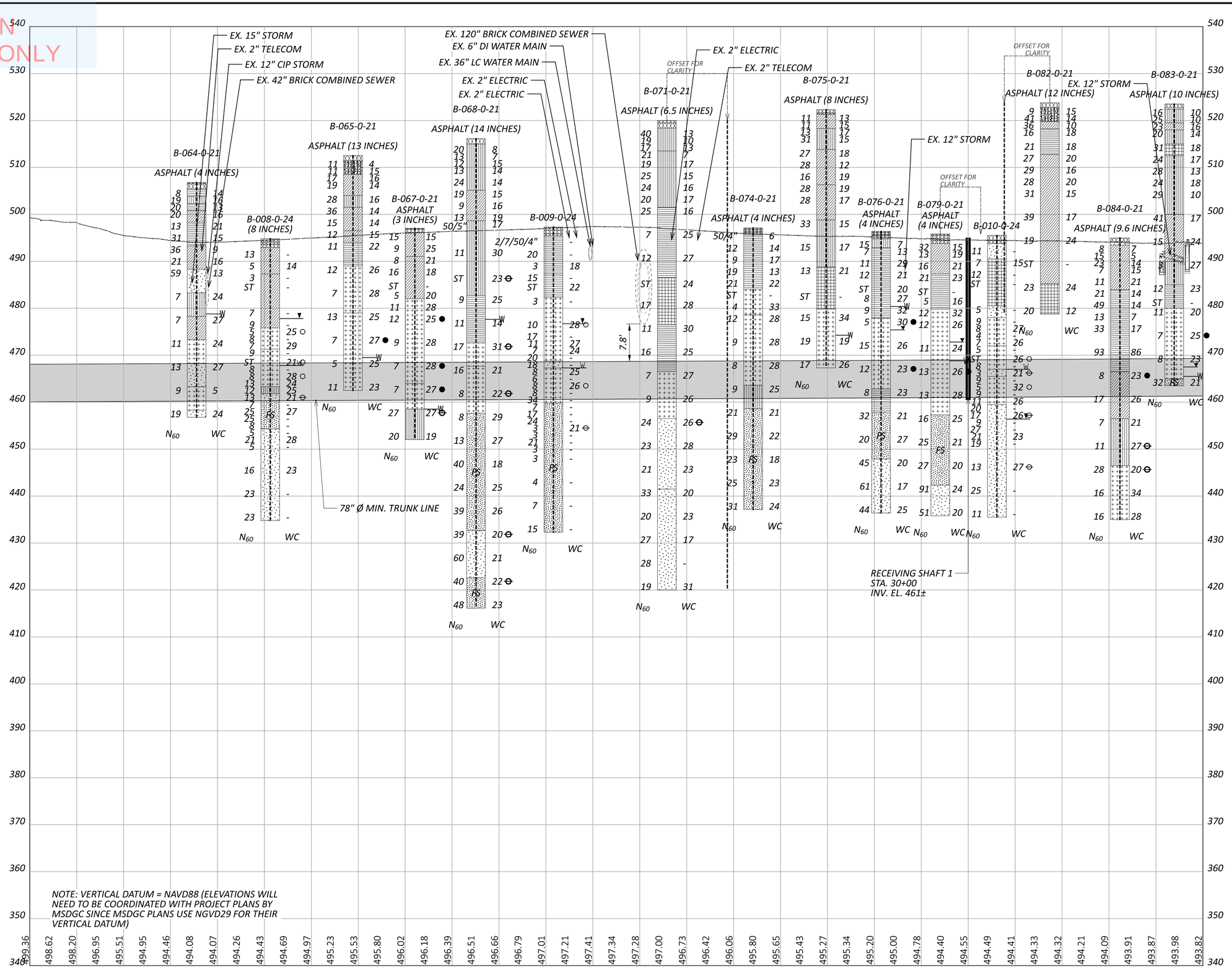
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STA. 20+00 TO STA. 32+50

HAM IR 75-1.25 TRUNK LINE

DESIGN AGENCY
terracon

DESIGNER JDH
REVIEWER MJB 12-22-25
PROJECT ID 122902
SUBSET 5 | TOTAL 15
SHEET P.0 | TOTAL 0

NOT FOR CONSTRUCTION INFORMATION ONLY



HORIZONTAL SCALE IN FEET
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STA. 20+00 TO STA. 32+50

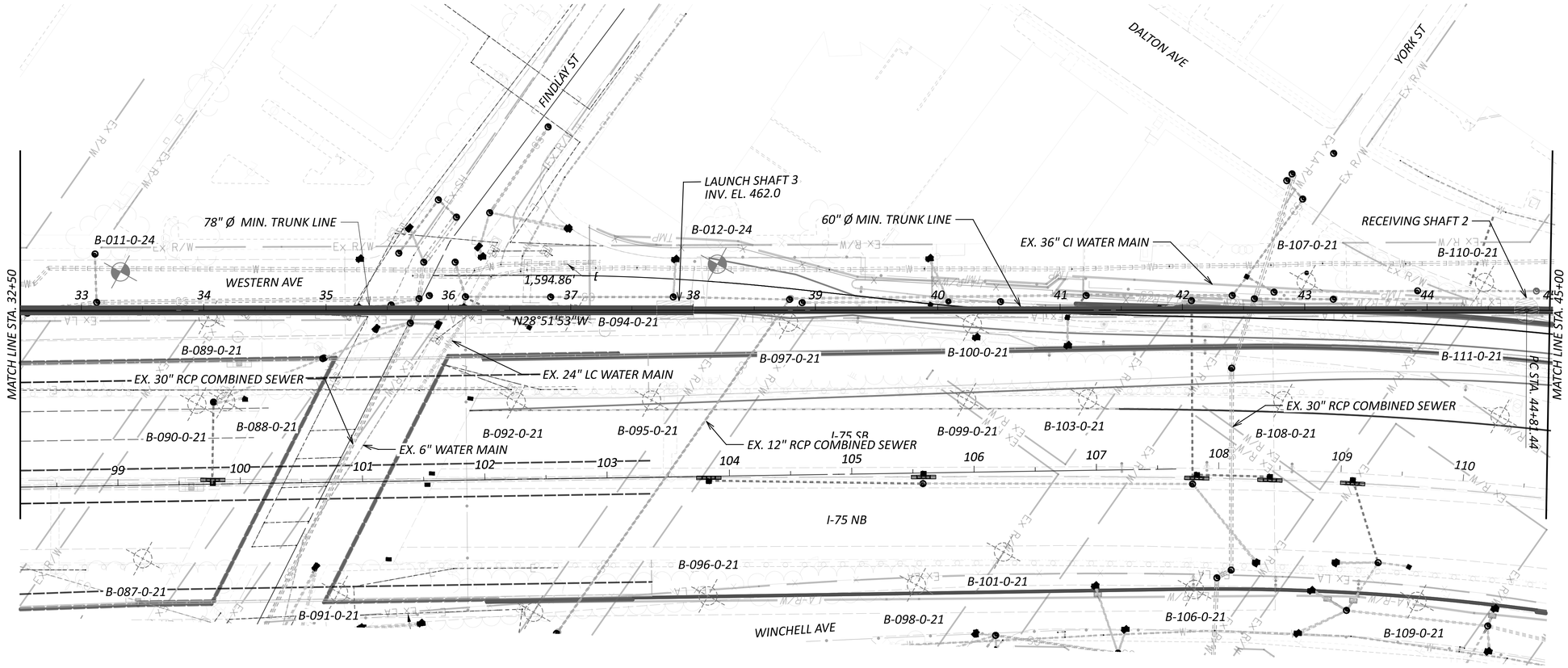
DESIGN AGENCY
terracon

DESIGNER	JDH
REVIEWER	MJB 12-22-25
PROJECT ID	122902
SUBSET	6
TOTAL	15
SHEET	P.0
TOTAL	0

HAM IR 75-1.25 TRUNK LINE

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NOT FOR CONSTRUCTION INFORMATION ONLY



HORIZONTAL SCALE IN FEET
0 25 50 100

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STA. 32+50 TO STA. 45+00

HAM IR 75-1.25 TRUNK LINE

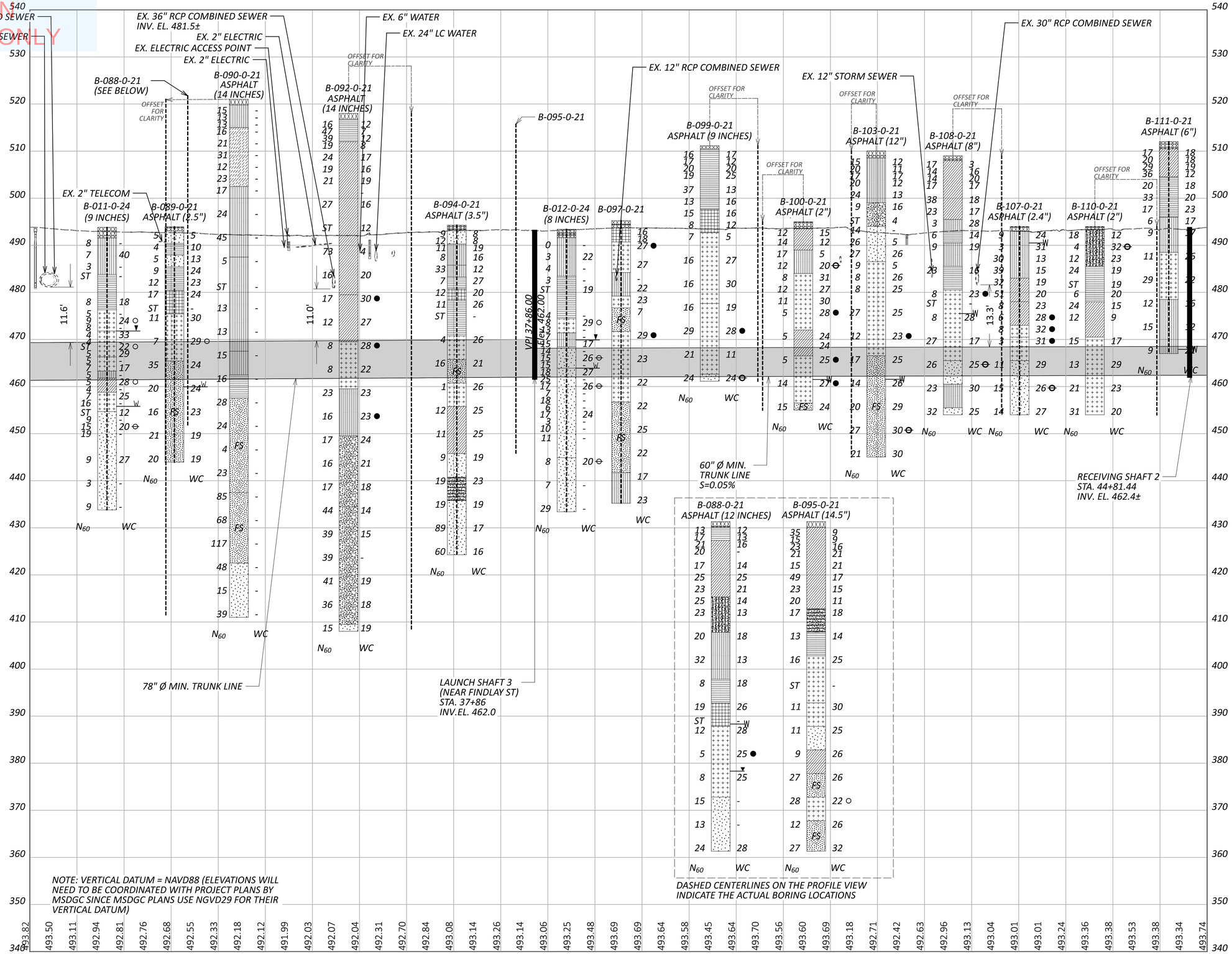
DESIGN AGENCY
Terracon

DESIGNER	JDH
REVIEWER	MJB 12-22-25
PROJECT ID	122902
SUBSET / TOTAL	7 / 15
SHEET / TOTAL	P.0 / 0

NOT FOR CONSTRUCTION
INFORMATION ONLY

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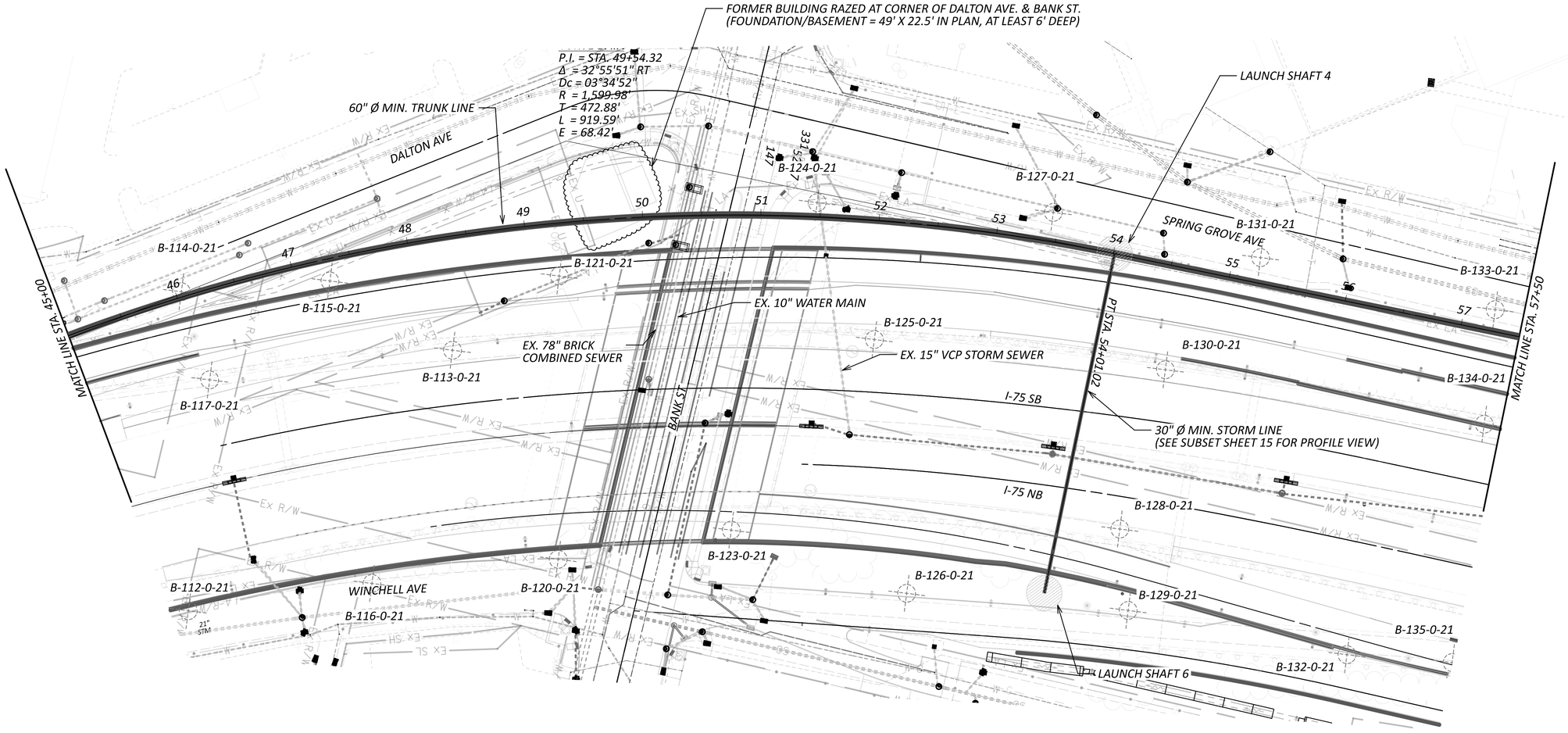
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0 25 50 100

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STA. 32+50 TO STA. 45+00

DESIGN AGENCY
Terracon

DESIGNER	JDH
REVIEWER	MJB 12-22-25
PROJECT ID	122902
SUBSET	8
TOTAL	15
SHEET	P.0
TOTAL	0

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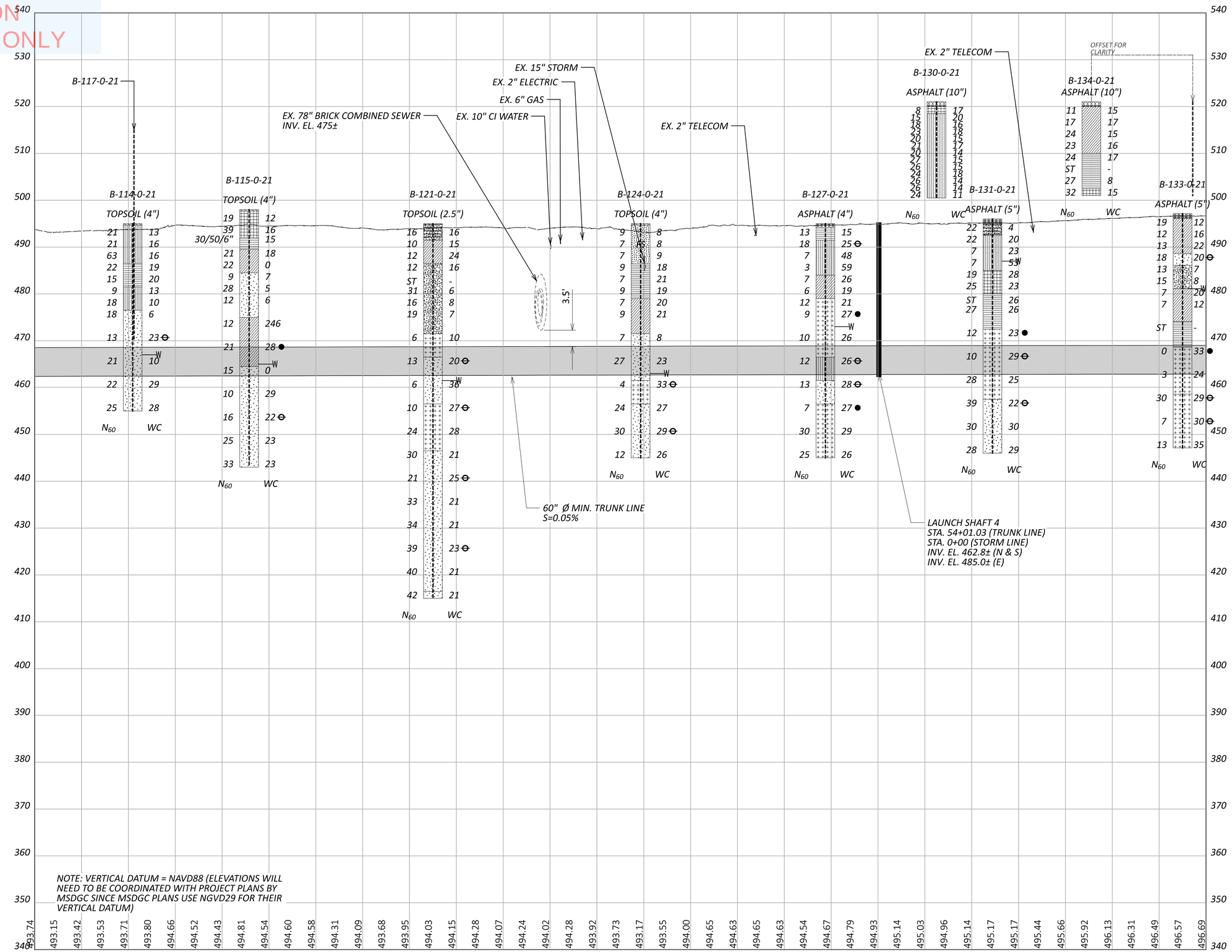
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STA. 45+00 TO STA. 57+50

DESIGN AGENCY
terracon

DESIGNER	JDH
REVIEWER	MJB 12-22-25
PROJECT ID	122902
SUBSET	9
TOTAL	15
SHEET	P.0
TOTAL	0

HAM IR 75-1.25 TRUNK LINE

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HORIZONTAL SCALE IN FEET
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HAM IR 75-1.25 TRUNK LINE
STA. 45+00 TO STA. 57+50

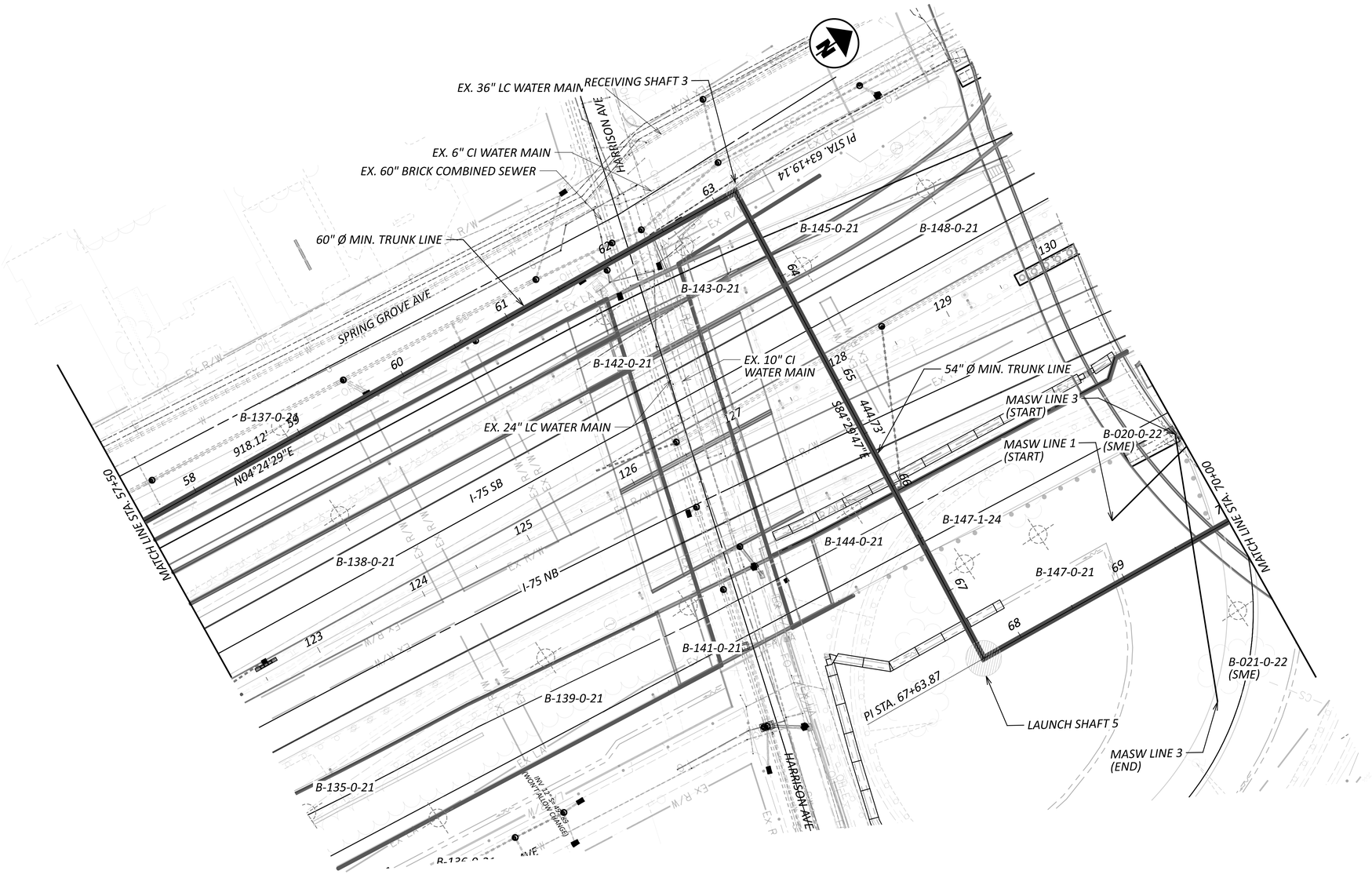
DESIGN AGENCY
Terracon

DESIGNER JDH
REVIEWER MJB 12-22-25
PROJECT ID 122902
SUBSET 10 TOTAL 15
SHEET P.0 TOTAL 0

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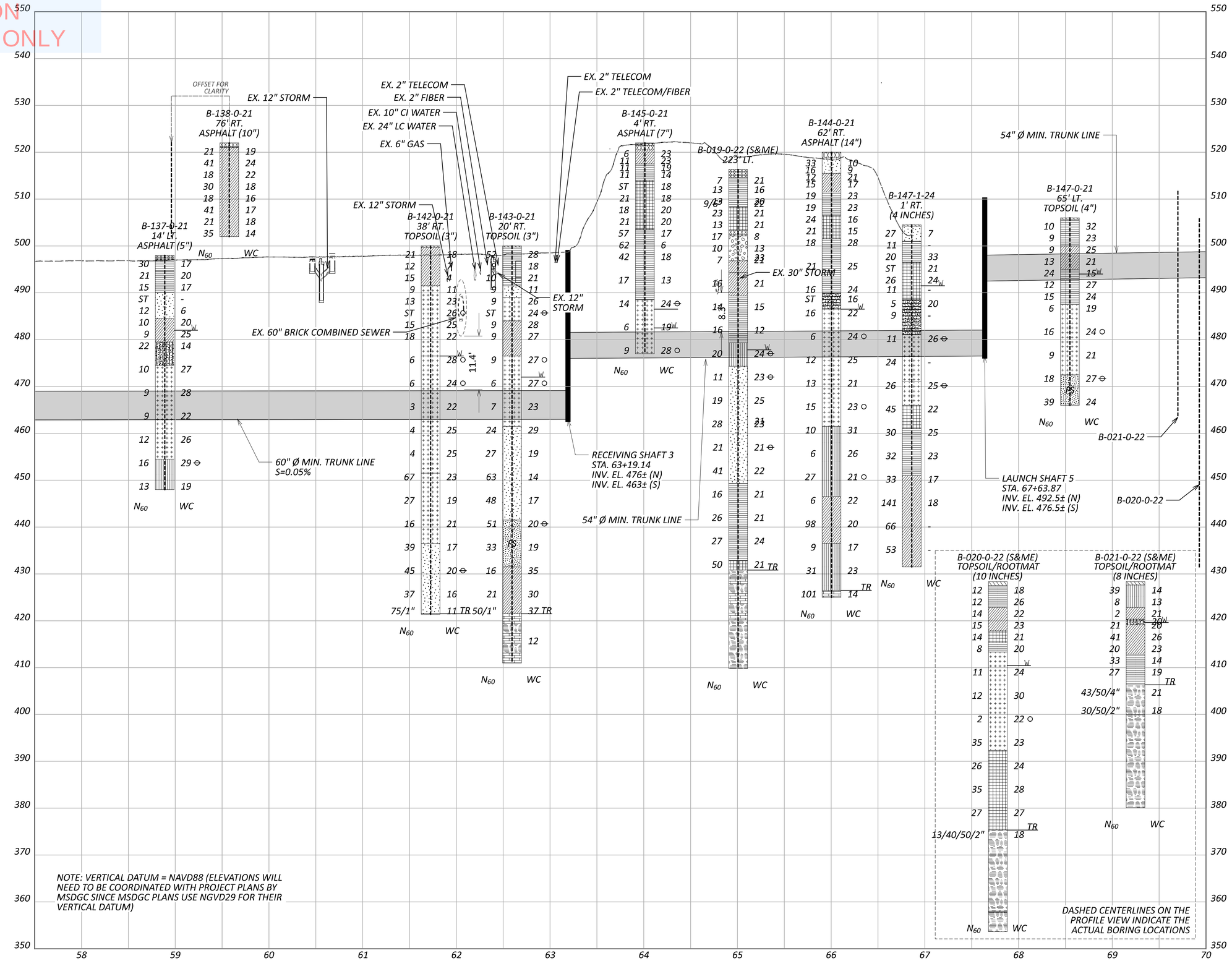
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STA. 57+50 TO STA. 70+00

HAM IR 75-1.25 TRUNK LINE

DESIGN AGENCY
terracon

DESIGNER	JDH
REVIEWER	MJB 12-22-25
PROJECT ID	122902
SUBSET / TOTAL	11 / 15
SHEET / TOTAL	P.0 / 0

NOT FOR CONSTRUCTION INFORMATION ONLY



HORIZONTAL SCALE IN FEET
0 25 50 100

HAM IR 75-1.25 TRUNK LINE
STA. 57+50 TO STA. 70+00

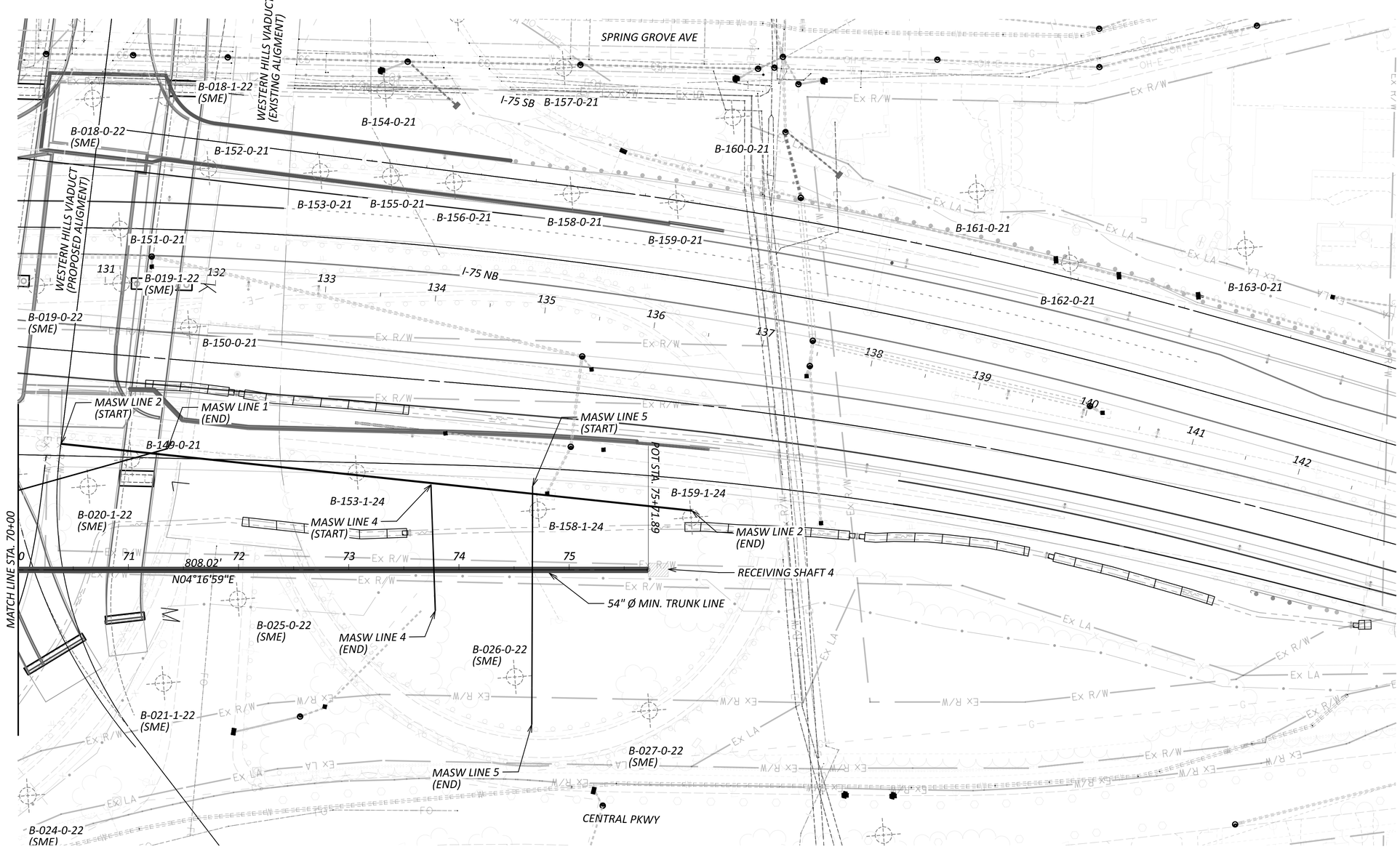
DESIGN AGENCY
terracon

DESIGNER	JDH
REVIEWER	MJB 12-22-25
PROJECT ID	122902
SUBSET / TOTAL	12 / 15
SHEET / TOTAL	P.0 / 0

HAM IR 75-1.25 TRUNK LINE

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HORIZONTAL SCALE IN FEET
0 25 50 100

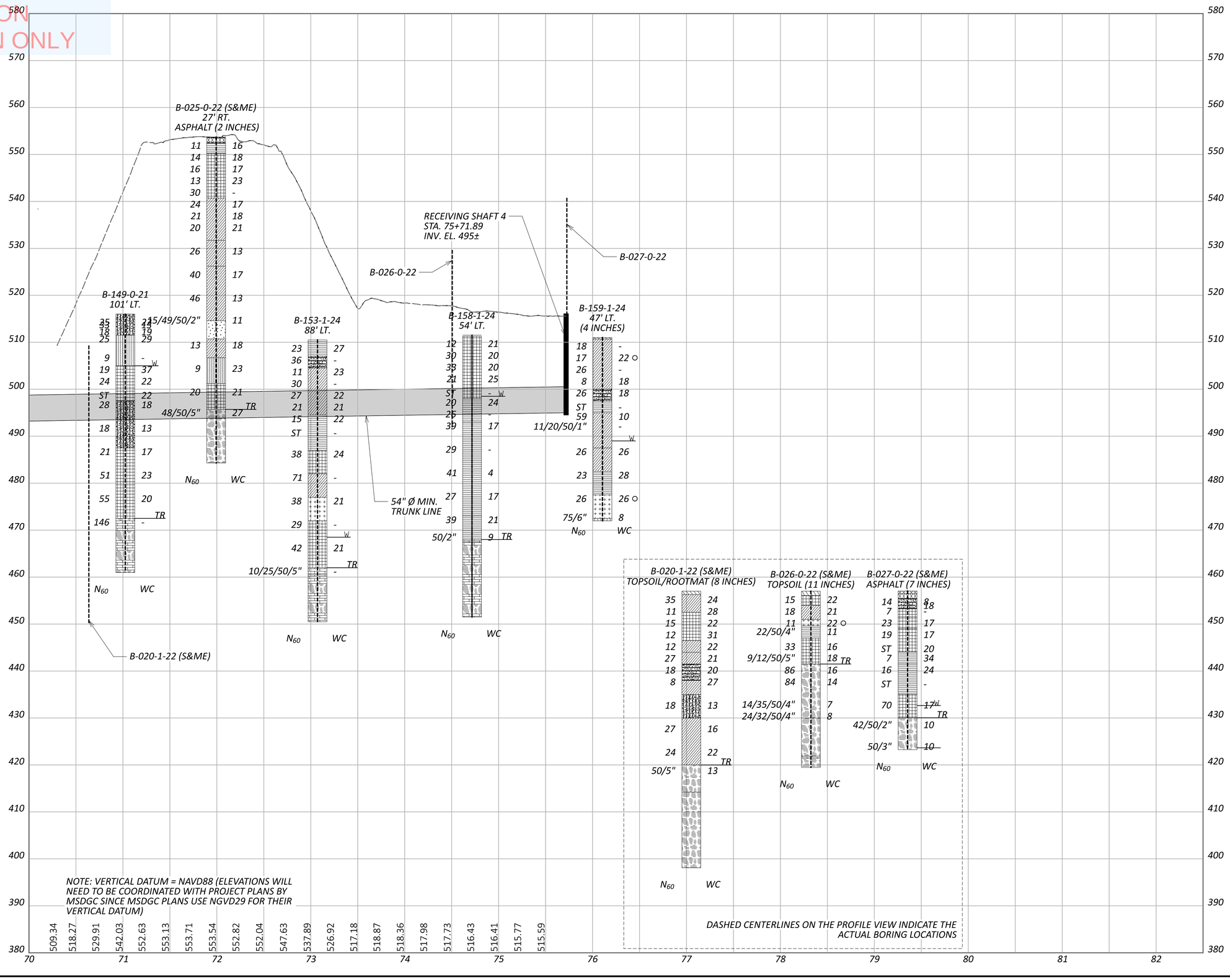
HAM IR 75-1.25 TRUNK LINE
STA. 70+00 TO STA. 82+50

HAM IR 75-1.25 TRUNK LINE

DESIGN AGENCY
Terracon

DESIGNER	JDH
REVIEWER	MJB 12-22-25
PROJECT ID	122902
SUBSET / TOTAL	13 / 15
SHEET / TOTAL	P.0 / 0

NOT FOR CONSTRUCTION INFORMATION ONLY



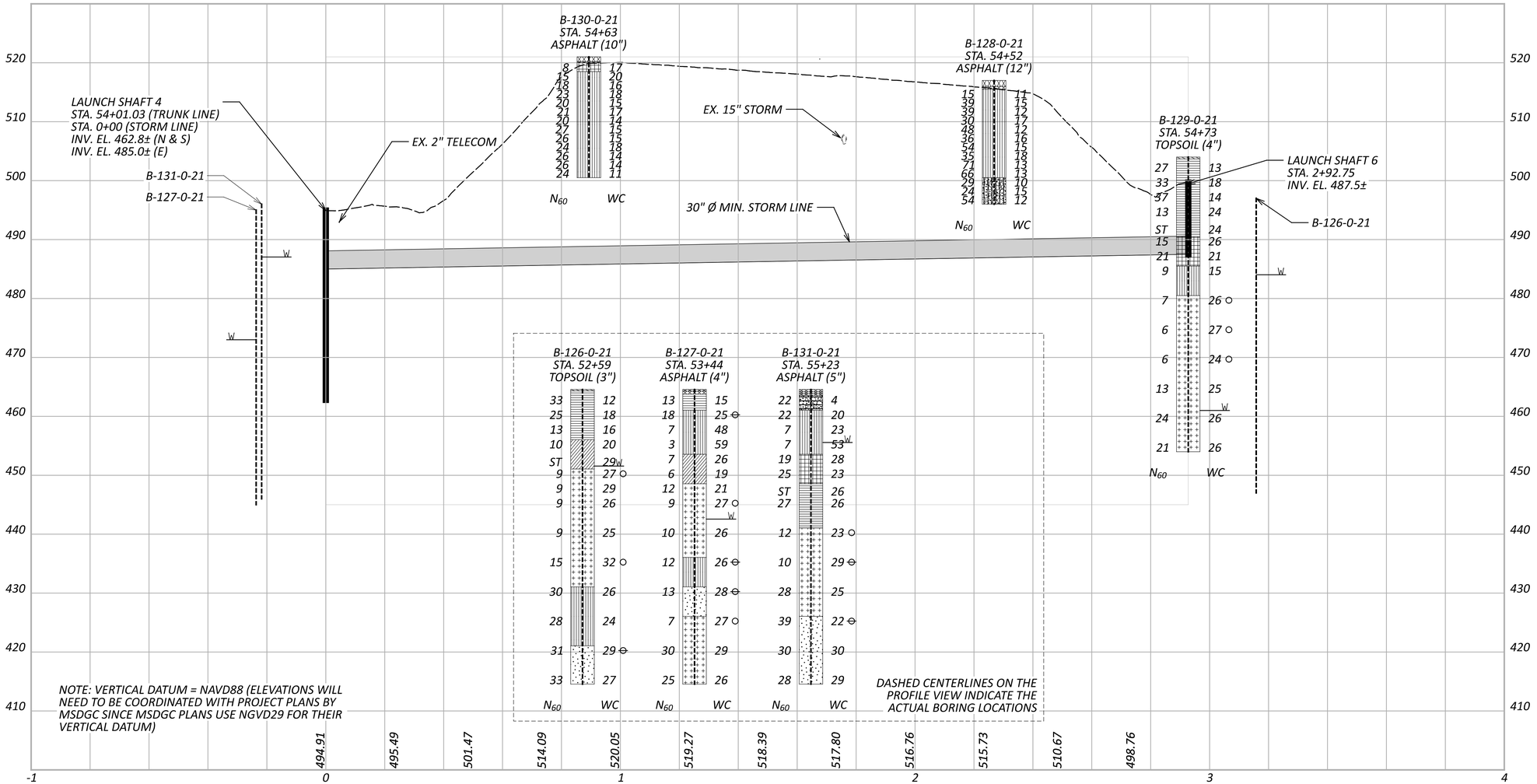
HORIZONTAL SCALE IN FEET
0 25 50 100

HAM IR 75-1.25 TRUNK LINE
STA. 70+00 TO STA. 82+50

DESIGN AGENCY	Terracon
DESIGNER	JDH
REVIEWER	MJB 12-22-25
PROJECT ID	122902
SUBSET	14
TOTAL	15
SHEET	P.0
TOTAL	0

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NOTE: VERTICAL DATUM = NAVD88 (ELEVATIONS WILL NEED TO BE COORDINATED WITH PROJECT PLANS BY MSDGC SINCE MSDGC PLANS USE NGVD29 FOR THEIR VERTICAL DATUM)

DASHED CENTERLINES ON THE PROFILE VIEW INDICATE THE ACTUAL BORING LOCATIONS

HORIZONTAL SCALE IN FEET
0 10 20 40

HAM IR 75-1.25 TRUNK LINE
STA. 0+00 TO STA. 4+00

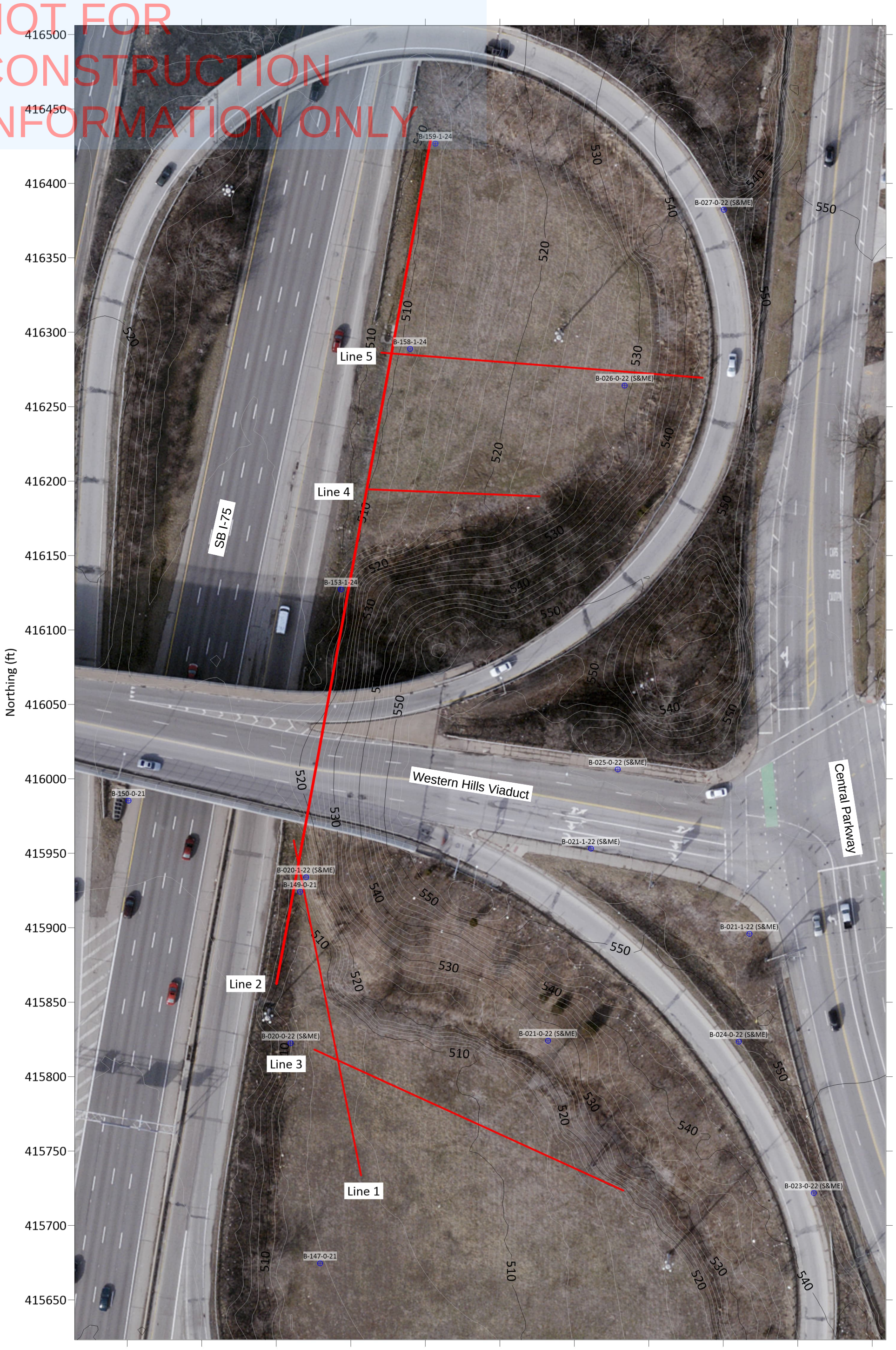
HAM IR 75-1.25 TRUNK LINE

DESIGN AGENCY
terracon

DESIGNER JDH
REVIEWER MJB 12-22-25
PROJECT ID 122902
SUBSET 15 TOTAL 15
SHEET P.0 TOTAL 0

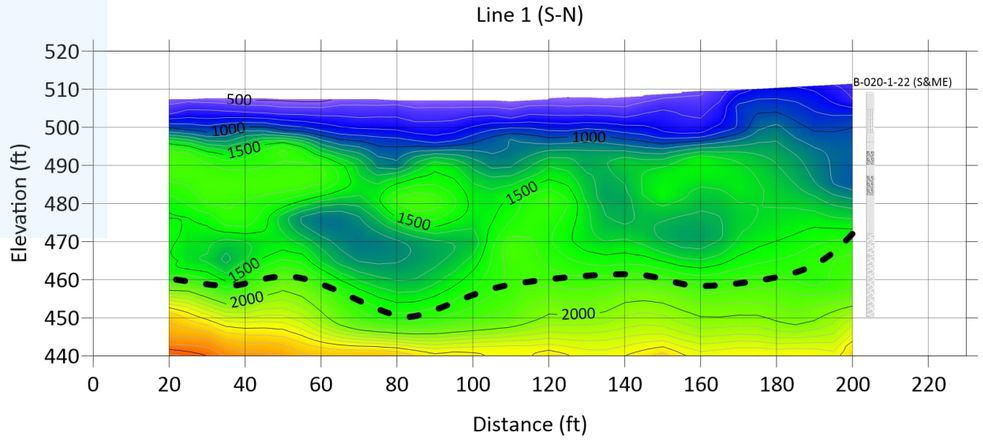
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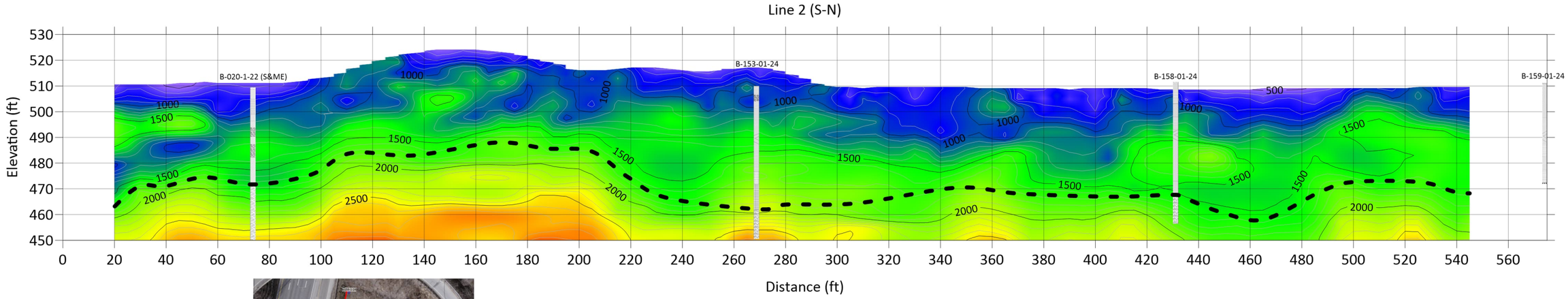
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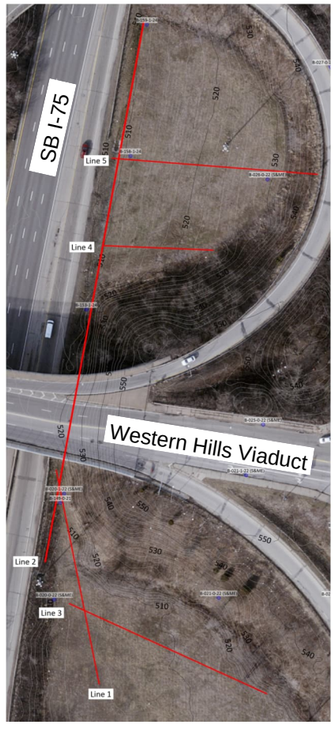


Project Manager: JH	Project No. N1215230	Terracon Explore with us 611 Lunken Park Drive Cincinnati, Ohio 45226	MASW Base Map HAM-75-1.95 I-75 Cincinnati, Ohio	EXHIBIT 1
Drawn by: CHB	Scale: As Shown			
Checked by: KJS	File Name: GPX			
Approved by: RSL	Date: 04/24/2025			

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Approximate Top of Bedrock

Vs (ft/s)

Soil — sands/gravels — Rock — Increasingly Competent Rock

600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600 2800 3000 3200 3400 3600 3800 4000

Project Manager:	JH
Drawn by:	CHB
Checked by:	KJS
Approved by:	RSL
Project No.	N1215230
Scale:	As Shown
File Name:	GPX
Date:	04/24/2025

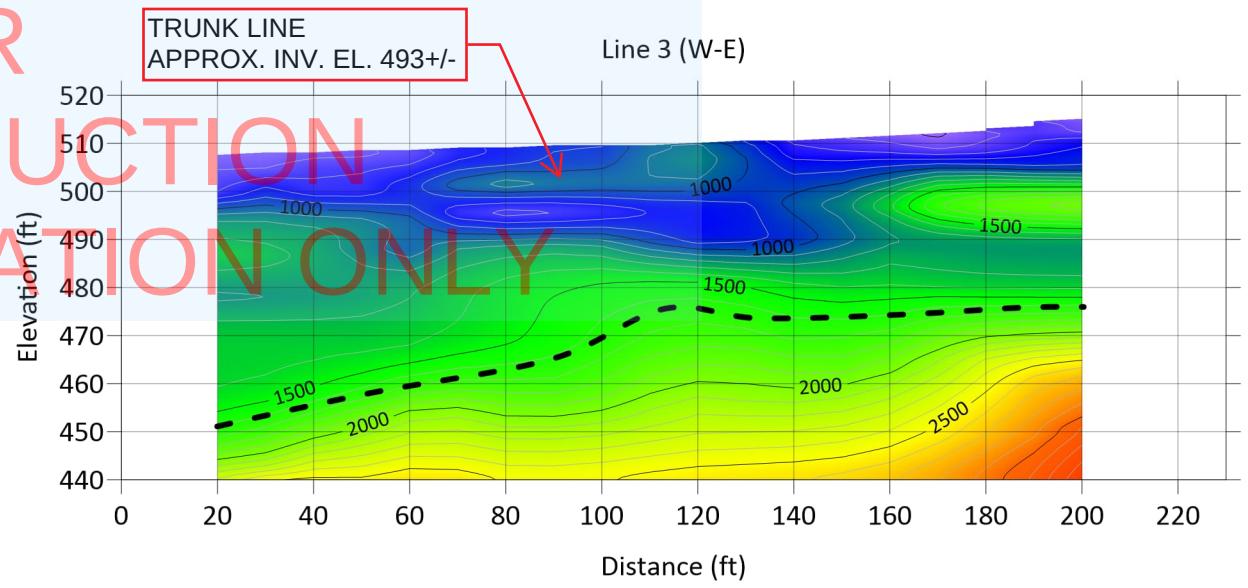
Terracon
Explore with us
611 Lunken Park Drive
Cincinnati, Ohio 45226

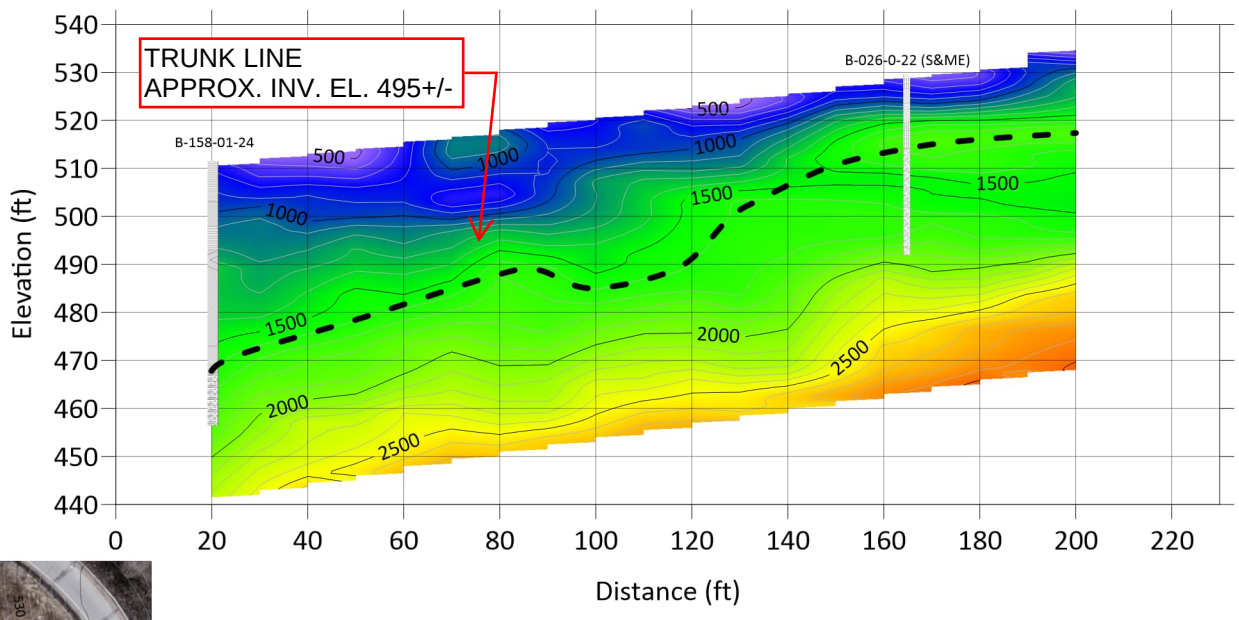
MASW Cross Sections - Lines 1 & 2

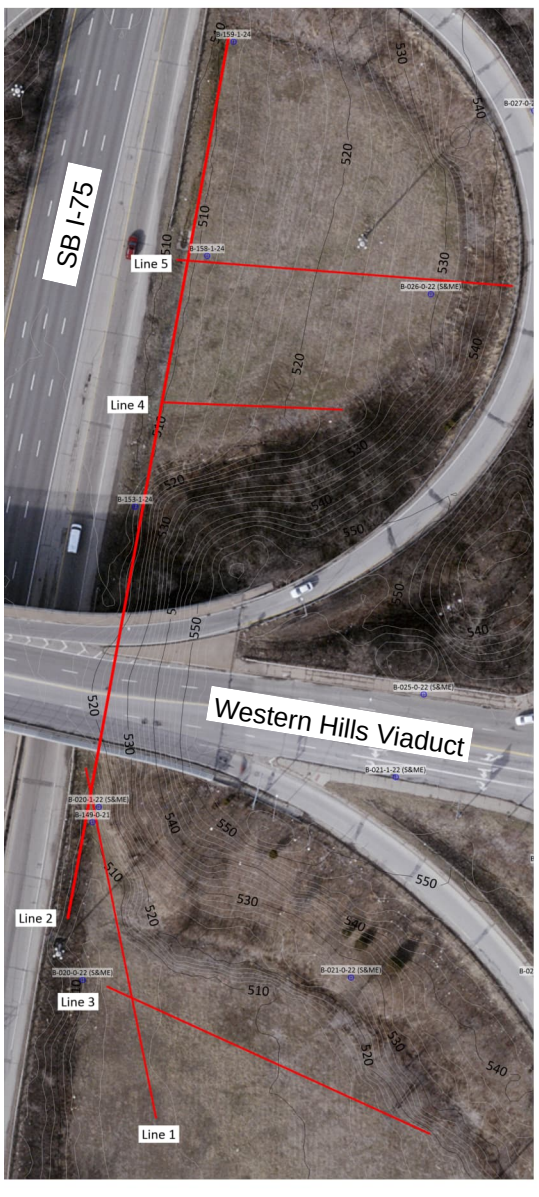
HAM-75-1.95
I-75
Cincinnati, Ohio

EXHIBIT 2

NOT FOR CONSTRUCTION INFORMATION ONLY







Approximate Top of Bedrock

Vs (ft/s)

Soil — sands/gravels — Rock — Increasingly Competent Rock

600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600 2800 3000 3200 3400 3600 3800 4000

Project Manager: JH Drawn by: CHB Checked by: KJS Approved by: RSL	Project No. N1215230 Scale: As Shown File Name: GPX Date: 04/24/2025	Terracon Explore with us 611 Lunken Park Drive Cincinnati, Ohio 45226	MASW Cross Sections - Lines 3 through 5 HAM-75-1.95 I-75 Cincinnati, Ohio	EXHIBIT 3

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Exploration and Laboratory Results

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Exploration Logs
Laboratory Test Results
Field Permeability Test Results

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Exploration Logs

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Select Boring Logs from ODOT PID 113361 for HAM-75-1.05
Select Boring Logs from ODOT PID 114161 for HAM-75-1.95
Select Boring Logs from ODOT PID 105349 for Western Hills Viaduct

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Summary of New and Archival Boring Logs

Boring ID	Latitude	Longitude	Ground Surface El. (ft.)	Boring Depth (ft.)	Bottom of Boring El. (ft.)	Depth to Bottom of Fill (ft.)	El. of Bottom of Fill (ft.)	Depth to GWT During Drilling (ft.)	Depth to GWT After Drilling (ft.)	GWT El. During Drilling (ft.)	GWT El. After Drilling (ft.)	Depth to Bedrock (ft.)	El. to Top of Bedrock (ft.)
B-001-0-24	39.1065315	-84.53235013	500.1	70.0	430.1	15.0	485.1	32.0	N/A	468.1	N/A	N/A	N/A
B-002-0-24	39.10725111	-84.53227345	498.1	65.0	433.1	18.5	479.6	34.0	27.0	464.1	471.1	N/A	N/A
B-003-0-24	39.10811145	-84.53226427	494.3	60.0	434.3	19.0	475.3	25.0	21.2	469.3	473.1	N/A	N/A
B-004-0-24	39.10869641	-84.53214708	495.9	65.0	430.9	15.0	480.9	27.0	N/A	468.9	N/A	N/A	N/A
B-005-0-24	39.11033338	-84.53204564	506.5	75.0	431.5	20.0	486.5	40.5	16.2	466.0	490.3	N/A	N/A
B-006-0-24	39.111367	-84.531962	506.3	70.0	436.3	29.0	477.3	34.0	28.5	472.3	477.8	N/A	N/A
B-007-0-24	39.112163	-84.531769	500.9	65.0	435.9	22.5	478.4	27.5	26.3	473.4	474.6	N/A	N/A
B-008-0-24	39.11290712	-84.53191334	494.8	60.0	434.8	19.0	475.8	27.0	17.0	467.8	477.8	N/A	N/A
B-009-0-24	39.11370016	-84.53217707	497.3	65.0	432.3	10.0	487.3	30.0	20.6	467.3	476.7	N/A	N/A
B-010-0-24	39.11484784	-84.5329123	495.5	60.0	435.5	17.5	478.0	28.5	39.1	467.0	456.4	N/A	N/A
B-011-0-24	39.11555173	-84.53346976	493.8	60.0	433.8	17.5	476.3	38.0	22.0	455.8	471.8	N/A	N/A
B-012-0-24	39.11670136	-84.53435247	493.4	60.0	433.4	19.0	474.4	29.5	23.5	463.9	469.9	N/A	N/A
B-027-1-21 (NEAS)	39.106791	-84.531889	506.8	105.0	401.8	19.5	487.3	37.5	N/A	469.3	N/A	N/A	N/A
B-027-2-21 (NEAS)	39.106973	-84.532105	504.4	51.5	452.9	8.7	495.7	N/A	N/A	N/A	N/A	N/A	N/A
B-031-0-21 (NEAS)	39.107651	-84.531943	494.2	26.5	467.7	6.7	487.5	N/A	N/A	N/A	N/A	N/A	N/A
B-032-0-21 (NEAS)	39.107977	-84.532097	494.1	21.5	472.6	4.5	489.6	N/A	N/A	N/A	N/A	N/A	N/A
B-033-0-21 (NEAS)	39.10804	-84.532026	493.4	16.5	476.9	7.0	486.4	N/A	N/A	N/A	N/A	N/A	N/A
B-036-0-21 (NEAS)	39.108489	-84.532053	492.5	16.5	476.0	13.5	479.0	N/A	N/A	N/A	N/A	N/A	N/A
B-037-0-21 (NEAS)	39.108755	-84.532152	497.6	55.0	442.6	18.0	479.6	30.0	N/A	467.6	N/A	N/A	N/A
B-038-0-21 (NEAS)	39.108824	-84.531993	490.9	31.5	459.4	N/A	N/A	20.0	N/A	470.9	N/A	N/A	N/A
B-041-0-21 (NEAS)	39.10909	-84.532135	502.3	60.0	442.3	24.5	477.8	30.0	N/A	472.3	N/A	N/A	N/A
B-045-0-21 (NEAS)	39.109328	-84.5321	505.6	111.5	394.1	N/A	N/A	35.0	N/A	470.6	N/A	N/A	N/A
B-049-0-21 (NEAS)	39.109791	-84.532097	506.1	21.5	484.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-050-0-21 (NEAS)	39.109769	-84.531971	506.2	111.5	394.7	12.0	494.2	39.8	N/A	466.4	N/A	N/A	N/A
B-054-0-21 (NEAS)	39.110107	-84.532071	504.9	41.5	463.4	N/A	N/A	30.0	N/A	474.9	N/A	N/A	N/A
B-058-0-21 (NEAS)	39.110515	-84.531998	506.4	41.5	464.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-060-0-21 (NEAS)	39.110696	-84.531688	490.0	21.5	468.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-061-0-21 (NEAS)	39.110856	-84.531927	507.1	36.5	470.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-063-0-21 (NEAS)	39.111184	-84.53186	505.7	31.5	474.2	7.0	498.7	N/A	N/A	N/A	N/A	N/A	N/A
B-064-0-21	39.112707	-84.531685	506.8	50.0	456.8	18.5	488.3	28.0	N/A	478.8	N/A	N/A	N/A
B-065-0-21	39.113177	-84.531739	512.5	50.0	462.5	23.5	489.0	43.0	N/A	469.5	N/A	N/A	N/A
B-067-0-21	39.113335	-84.531927	497.0	45.0	452.0	6.0	491.0	38.5	N/A	458.5	N/A	N/A	N/A
B-068-0-21	39.113542	-84.531835	516.1	100.0	416.1	33.5	482.6	38.5	N/A	477.6	N/A	N/A	N/A
B-071-0-21	39.114257	-84.532168	520.0	100.0	420.0	33.5	486.5	N/A	N/A	N/A	N/A	N/A	N/A
B-074-0-21	39.114259	-84.532391	497.1	60.0	437.1	13.0	484.1	N/A	N/A	N/A	N/A	N/A	N/A
B-075-0-21	39.114537	-84.53231	522.4	55.0	467.4	33.5	488.9	48.0	N/A	474.4	N/A	N/A	N/A
B-076-0-21	39.114586	-84.532625	496.4	60.0	436.4	18.5	477.9	16.0	21.0	480.4	475.4	N/A	N/A
B-079-0-21	39.114839	-84.532811	495.8	60.0	435.8	16.0	479.8	27.0	23.0	468.8	472.8	N/A	N/A
B-082-0-21	39.115003	-84.532625	523.8	45.0	478.8	38.5	485.3	N/A	N/A	N/A	N/A	N/A	N/A
B-083-0-21	39.115327	-84.533179	523.5	60.0	463.5	38.5	485.0	58.0	56.0	465.5	467.5	N/A	N/A
B-084-0-21	39.115296	-84.532842	495.0	60.0	435.0	38.5	456.5	N/A	N/A	N/A	N/A	N/A	N/A
B-088-0-21	39.115902	-84.533299	521.7	70.0	451.7	43.5	478.2	43.0	53.0	478.7	468.7	N/A	N/A
B-089-0-21	39.115773	-84.533483	493.9	50.0	443.9	18.5	475.4	34.0	N/A	459.9	N/A	N/A	N/A
B-090-0-21	39.115849	-84.533251	521.0	110.0	411.0	18.5	502.5	N/A	N/A	N/A	N/A	N/A	N/A
B-092-0-21	39.116466	-84.533719	518.0	110.0	408.0	38.5	479.5	N/A	N/A	N/A	N/A	N/A	N/A
B-094-0-21	39.116481	-84.534022	494.3	70.0	424.3	13.5	480.8	N/A	N/A	N/A	N/A	N/A	N/A
B-095-0-21	39.116727	-84.533919	515.7	70.0	445.7	38.5	477.2	N/A	N/A	N/A	N/A	N/A	N/A
B-097-0-21	39.116905	-84.534311	495.2	60.0	435.2	11.0	484.2	N/A	N/A	N/A	N/A	N/A	N/A

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Summary of New and Archival Boring Logs

Boring ID	Latitude	Longitude	Ground Surface El. (ft.)	Boring Depth (ft.)	Bottom of Boring El. (ft.)	Depth to Bottom of Fill (ft.)	El. of Bottom of Fill (ft.)	Depth to GWT During Drilling (ft.)	Depth to GWT After Drilling (ft.)	GWT El. During Drilling (ft.)	GWT El. After Drilling (ft.)	Depth to Bedrock (ft.)	El. to Top of Bedrock (ft.)
B-099-0-21	39.117338	-84.534376	511.1	50.0	461.1	18.5	492.6	N/A	N/A	N/A	N/A	N/A	N/A
B-100-0-21	39.117264	-84.534572	495.0	40.0	455.0	11.0	484.0	33.5	N/A	461.5	N/A	N/A	N/A
B-103-0-21	39.117572	-84.534553	510.0	65.0	445.0	23.5	486.5	48.5	N/A	461.5	N/A	N/A	N/A
B-107-0-21	39.117864	-84.535161	494.0	40.0	454.0	16.0	478.0	3.5	N/A	490.5	N/A	N/A	N/A
B-108-0-21	39.117953	-84.534831	509.0	55.0	454.0	28.5	480.5	33.5	N/A	475.5	N/A	N/A	N/A
B-110-0-21	39.118211	-84.535417	494.0	40.0	454.0	8.5	485.5	N/A	N/A	N/A	N/A	N/A	N/A
B-111-0-21	39.118392	-84.535106	512.0	45.0	467.0	23.5	488.5	44.1	N/A	467.9	N/A	N/A	N/A
B-114-0-21	39.118619	-84.535625	495.0	40.0	455.0	8.5	486.5	28.0	N/A	467.0	N/A	N/A	N/A
B-115-0-21	39.118956	-84.535722	498.0	55.0	443.0	8.5	489.5	33.0	N/A	465.0	N/A	N/A	N/A
B-117-0-21	39.118714	-84.535378	515.0	45.0	470.0	28.5	486.5	N/A	N/A	N/A	N/A	N/A	N/A
B-121-0-21	39.1194804	-84.5358372	495.0	80.0	415.0	8.5	486.5	33.5	N/A	461.5	N/A	N/A	N/A
B-123-0-21	39.119962	-84.535165	496.0	80.0	416.0	16.0	480.0	43.5	N/A	452.5	N/A	N/A	N/A
B-124-0-21	39.120047	-84.536167	495.0	50.0	445.0	16.0	479.0	32.0	N/A	463.0	N/A	N/A	N/A
B-125-0-21	39.120225	-84.535789	521.0	95.0	426.0	28.5	492.5	48.8	20.0	472.2	501.0	N/A	N/A
B-126-0-21	39.120386	-84.535056	497.0	50.0	447.0	8.5	488.5	13.0	N/A	484.0	N/A	N/A	N/A
B-127-0-21	39.120592	-84.536242	495.0	50.0	445.0	16.0	479.0	22.0	N/A	473.0	N/A	N/A	N/A
B-128-0-21	39.120853	-84.535339	517.0	21.0	496.0	>21	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-129-0-21	39.1209	-84.535103	504.0	50.0	454.0	18.5	485.5	43.0	N/A	461.0	N/A	N/A	N/A
B-130-0-21	39.120903	-84.535828	521.0	20.5	500.5	>20.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-131-0-21	39.121083	-84.5362	496.0	50.0	446.0	16.0	480.0	9.0	N/A	487.0	N/A	N/A	N/A
B-132-0-21	39.121417	-84.535069	511.0	40.0	471.0	18.5	492.5	N/A	N/A	N/A	N/A	N/A	N/A
B-133-0-21	39.121639	-84.53615	497.0	50.0	447.0	11.0	486.0	16.0	N/A	481.0	N/A	N/A	N/A
B-134-0-21	39.121653	-84.535808	521.0	20.0	501.0	>20.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-135-0-21	39.121661	-84.535092	515.0	55.0	460.0	23.5	491.5	48.5	N/A	466.5	N/A	N/A	N/A
B-136-0-21	39.121911	-84.534872	502.0	60.0	442.0	13.5	488.5	13.0	37.0	489.0	465.0	N/A	N/A
B-137-0-21	39.122086	-84.536103	498.0	50.0	448.0	13.5	484.5	16.0	N/A	482.0	N/A	N/A	N/A
B-138-0-21	39.122092	-84.535786	522.0	20.0	502.0	>20	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-139-0-21	39.122319	-84.535103	521.0	75.0	446.0	33.5	487.5	N/A	N/A	N/A	N/A	N/A	N/A
B-141-0-21	39.122661	-84.535007	503.0	92.0	411.0	23.5	479.5	11.0	N/A	492.0	N/A	78.5	424.5
B-142-0-21	39.122856	-84.535867	500.0	78.6	421.4	8.5	491.5	23.5	N/A	476.5	N/A	78.5	421.5
B-143-0-21	39.123097	-84.535914	500.0	89.0	411.0	11.0	489.0	28.0	N/A	472.0	N/A	78.5	421.5
B-144-0-21	39.123102	-84.534993	520.0	95.0	425.0	33.5	486.5	33.5	N/A	486.5	N/A	93.5	426.5
B-145-0-21	39.123303	-84.535678	522.0	45.0	477.0	18.5	503.5	39.5	35.5	482.5	486.5	N/A	N/A
B-147-0-21	39.123433	-84.534633	506.0	40.0	466.0	18.5	487.5	12.0	N/A	494.0	N/A	N/A	N/A
B-148-0-21	39.123639	-84.535678	523.0	30.0	493.0	23.5	499.5	11.0	N/A	512.0	N/A	N/A	N/A
B-149-0-21	39.124117	-84.5347	516.0	55.0	461.0	28.5	487.5	11.0	N/A	505.0	N/A	43.5	472.5
B-150-0-21	39.124278	-84.535111	516.0	83.8	432.2	23.5	492.5	33.5	N/A	482.5	N/A	83.5	432.5
B-019-0-22 (S&ME)	39.123903	-84.53527	516.3	106.5	409.8	22.0	494.3	38.5	N/A	477.8	N/A	85.5	430.8
B-019-1-22 (S&ME)	39.124115	-84.535264	515.5	104.0	411.5	20.5	495.0	38.5	N/A	477.0	N/A	83.0	432.5
B-020-0-22 (S&ME)	39.123814	-84.534669	505.8	74.7	431.1	10.5	495.3	17.9	N/A	487.9	N/A	53.0	452.8
B-020-1-22 (S&ME)	39.124007	-84.53462	509.2	58.9	450.3	13.0	496.2	N/A	N/A	N/A	N/A	37.0	472.2
B-021-0-22 (S&ME)	39.123729	-84.534126	511.6	48.2	463.4	9.2	502.4	8.7	N/A	502.9	N/A	22.0	489.6
B-021-1-22 (S&ME)	39.124168	-84.533979	553.6	65.0	488.6	38.0	515.6	N/A	N/A	N/A	N/A	45.0	508.6
B-024-0-22 (S&ME)	39.123816	-84.533642	546.2	44.0	502.2	22.0	524.2	32.0	N/A	514.2	N/A	32.5	513.7
B-025-0-22 (S&ME)	39.124364	-84.534234	553.7	69.4	484.3	47.0	506.7	N/A	N/A	N/A	N/A	58.0	495.7
B-026-0-22 (S&ME)	39.125043	-84.53394	529.5	37.5	492.0	3.0	526.5	N/A	N/A	N/A	N/A	15.5	514.0
B-027-0-22 (S&ME)	39.125373	-84.53381	540.6	33.8	506.8	15.5	525.1	24.4	33.4	516.2	507.2	27.0	513.6
B-147-1-24	39.123253	-84.53467608	504.5	73.0	431.5	7.0	497.5	13.0	N/A	491.5	N/A	N/A	N/A

NOT FOR CONSTRUCTION INFORMATION ONLY

Summary of New and Archival Boring Logs

Boring ID	Latitude	Longitude	Ground Surface El. (ft.)	Boring Depth (ft.)	Bottom of Boring El. (ft.)	Depth to Bottom of Fill (ft.)	El. of Bottom of Fill (ft.)	Depth to GWT During Drilling (ft.)	Depth to GWT After Drilling (ft.)	GWT El. During Drilling (ft.)	GWT El. After Drilling (ft.)	Depth to Bedrock (ft.)	El. to Top of Bedrock (ft.)
B-153-1-24	39.12467635	-84.53461968	510.5	60.0	450.5	6.0	504.5	42.0	N/A	468.5	N/A	48.5	462.0
B-158-1-24	39.12512247	-84.53446911	511.5	60.0	451.5	N/A	N/A	13.0	N/A	498.5	N/A	43.5	468.0
B-159-1-24	39.12550233	-84.53441985	511.0	39.0	472.0	13.5	497.5	22.0	N/A	489.0	N/A	N/A	N/A

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-1.25 TRUNK LINE
TYPE: UNDERGROUND UTILITY
PID: 122902 SFN:
START: 10/24/24 END: 10/24/24

DRILLING FIRM / OPERATOR: NEAS / J. HODGES
SAMPLING FIRM / LOGGER: TERRACON / WJA
DRILLING METHOD: 4.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 75
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 3/8/24
ENERGY RATIO (%): 84

STATION / OFFSET:
ALIGNMENT:
ELEVATION: 500.1 (MSL) EOB: 70.0 ft.
LAT / LONG: 39.106532, -84.532350

EXPLORATION ID B-001-0-24

MATERIAL DESCRIPTION AND NOTES	ELEV. 500.1	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	MON. WELL
TOPSOIL (8 INCHES)	499.4																	
VERY STIFF, BROWN, **SILT AND CLAY**, LITTLE SAND, TRACE GRAVEL, TRACE BRICK, TRACE LIMESTONE, TRACE COAL, TRACE ROOT HAIRS, DRY (FILL)			8 9 12	29	56	SS-1	4.50	-	-	-	-	-	-	-	-	-	A-6a (V)	
			4 6 6	17	56	SS-2	4.00	11	17	11	34	27	30	19	11	9	A-6a (6)	
@8.0'; SILT SEAMS			3 3 5	11	67	SS-3	2.50	-	-	-	-	-	-	-	-	-	A-6a (V)	
@11.0'; BRICK FROM 11.0'-13.5'			4 9 16	35	44	SS-4	2.75	-	-	-	-	-	-	-	-	15	A-6a (V)	
	485.1																	
MEDIUM DENSE, LIGHT BROWN, **SILT**, "AND" SAND, DRY			10 8 6	20	56	SS-5	-	1	1	43	53	2	NP	NP	NP	9	A-4b (4)	
	480.1																	
MEDIUM DENSE, LIGHT BROWN, **COARSE AND FINE SAND**, TRACE TO LITTLE SILT, TRACE GRAVEL, TRACE CLAY, DRY			4 7 9	22	67	SS-6	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			6 6 7	18	67	SS-7	-	3	44	40	9	4	NP	NP	NP	7	A-3a (0)	
@29.0'; SILT SEAMS, TO MOIST			4 6 7	18	72	SS-8	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			3 5 6	15	83	SS-9	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
	468.1	W 468.1	3 5 6	15	56	SS-10	-	-	-	-	-	-	-	-	-	30	A-3a (V)	
MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, TRACE TO LITTLE SILT, TRACE GRAVEL, WET			4 5 10	21	100	SS-11	-	-	-	-	-	-	-	-	-	24	A-3a (V)	
			4 7 7	20	83	SS-12	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			6 7 9	22	78	SS-13	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			4 7 9	22	100	SS-14	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			4 5 8	18	83	SS-15	-	0	12	72	15	1	NP	NP	NP	18	A-3a (0)	
			3 5 8	18	100	SS-16	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			3 5 8	18	89	SS-17	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
@43.0'; SILT SEAMS FROM 43.0'-45.5'			2 3 6	13	78	SS-18	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			5 6 7	18	78	SS-19	-	1	8	22	60	9	NP	NP	NP	28	A-4b (7)	
			4 5 7	17	50	SS-20	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			4 4 5	13	67	SS-21	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			4 6 11	24	56	SS-22	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			5 10 13	32	56	SS-23	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
@52.0'; VERY STIFF, BROWN, SILT SEAM (6-INCH THICK)			5 6 12	25	67	SS-24	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			6 6 7 8	18	58	SS-25	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			3 3 3	8	83	SS-26	-	2	35	29	33	1	NP	NP	NP	18	A-3a (0)	
			5 12 12	34	50	SS-27	-	-	-	-	-	-	-	-	-	-	A-3a (V)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 5/21/25 14:09 - \\PORDWOFDS01\00N1\DATA\PROJECTS\2024\N1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1245017-ODOT-HAM-75-1.05 MICROTUNNEL_REC.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PID: 122902	SFN:	PROJECT: HAM-75-1.25 TRUNK LINE	STATION / OFFSET:	START: 10/24/24	END: 10/24/24	PG 2 OF 2	B-001-0-24

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)	MON. WELL
MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, TRACE TO LITTLE SILT, TRACE GRAVEL, WET *(continued)*	435.1	66																
		67																
		68																
		69	3 10 27	52	89	SS-28	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
	430.1	EOB 70																

NOTES: WATER ADDED TO HOLE AT 37.5' TO CONTROL HEAVING SANDS.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 20 BAG #5 WELL SAND; 100 LB. BENTONITE CHIPS; 100 LB. BENTONITE-COATED PELLETS; 3 BAG CONCRETE

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 5/21/25 14:09 - \\PORDWOFDS01\00N1\DATA\PROJECTS\2024\N1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1245017-ODOT-HAM -75-1.05 MICROTUNNEL_REC.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-1.25 TRUNK LINE
TYPE: UNDERGROUND UTILITY
PID: 122902 SFN:
START: 10/2/24 END: 10/2/24

DRILLING FIRM / OPERATOR: NEAS / J. HODGES
SAMPLING FIRM / LOGGER: TERRACON / WJA
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 55
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 3/8/24
ENERGY RATIO (%): 80

STATION / OFFSET:
ALIGNMENT:
ELEVATION: 498.1 (MSL) EOB: 65.0 ft.
LAT / LONG: 39.107251, -84.532273

EXPLORATION ID B-002-0-24

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)	BACK FILL
TOPSOIL (8 INCHES)	498.1 / 497.4																	
STIFF TO VERY STIFF, BROWN, **SILT AND CLAY**, LITTLE SAND, TRACE GRAVEL, BRICK, COAL, ROOT HAIRS, DAMP (FILL)			4 9 7	21	78	SS-1	3.50	-	-	-	-	-	-	-	-	-	A-6a (V)	
			4 9 12	28	50	SS-2	3.50	28	10	13	32	17	31	19	12	18	A-6a (3)	
			4 7 11	24	28	SS-3	1.50	-	-	-	-	-	-	-	-	-	A-6a (V)	
			9 8 8	21	11	SS-4	1.25	-	-	-	-	-	-	-	-	21	A-6a (V)	
	479.6		4 6 6	16	17	SS-5	1.50	-	-	-	-	-	-	-	-	-	A-6a (V)	
STIFF, BROWN, **SILT**, LITTLE SAND, TRACE GRAVEL, TRACE LAMINATIONS, DAMP			3 3 4	9	72	SS-6	1.25	-	-	-	-	-	-	-	-	19	A-4b (V)	
	474.6				92	ST-7	1.50	0	1	10	80	9	NP	NP	NP	27	A-4b (8)	
SOFT TO MEDIUM STIFF, LIGHT BROWN TO BROWN, **SILT**, TRACE TO LITTLE SAND, TRACE GRAVEL, TRACE CLAY, PARTLY LAMINATED, WET			1 1 1	3	100	SS-8	0.50	-	-	-	-	-	-	-	-	-	A-4b (V)	
			1 2 2	5	100	SS-9	0.25	0	0	3	87	10	NP	NP	NP	30	A-4b (8)	
		▼	2 2 2	5	100	SS-10	0.75	-	-	-	-	-	-	-	-	-	A-4b (V)	
@28.0'; SILTY CLAY SEAMS/INTERLAYERS			3 3 5	11	83	SS-11	0.75	-	-	-	-	-	-	-	-	-	A-4b (V)	
			2 2 3	7	100	SS-12	0.50	-	-	-	-	-	-	-	-	26	A-4b (V)	
			0 4 4	11	78	SS-13	0.25	-	-	-	-	-	-	-	-	-	A-4b (V)	
	464.1	W 464.1	0 1 2	4	83	SS-14	0.50	-	-	-	-	-	-	-	-	-	A-4b (V)	
LOOSE TO MEDIUM DENSE, BROWN WITH GRAY, **SANDY SILT**, WITH SAND SEAM, WET			2 2 3	7	100	SS-15	0.25	-	-	-	-	-	-	-	-	-	A-4a (V)	
			0 3 5	11	78	SS-16	0.25	0	1	60	36	3	NP	NP	NP	28	A-4a (1)	
			3 4 7	15	67	SS-17	0.25	-	-	-	-	-	-	-	-	-	A-4a (V)	
			3 7 8	20	61	SS-18	0.25	-	-	-	-	-	-	-	-	-	A-4a (V)	
			4 3 5	11	78	SS-19	0.50	-	-	-	-	-	-	-	-	25	A-4a (V)	
			3 8 11	25	72	SS-20	0.50	-	-	-	-	-	-	-	-	-	A-4a (V)	
@44.5'; VERY LOOSE			12 13 11	32	100	SS-21	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
			1 1 1	3	56	SS-22	-	-	-	-	-	-	-	-	-	25	A-4a (V)	
	450.6		4 7 9	21	56	SS-23	0.50	-	-	-	-	-	-	-	-	-	A-4a (V)	
MEDIUM DENSE, BROWNISH GRAY, **SANDY SILT**, WET			3 5 9	19	78	SS-24	-	0	1	59	35	5	NP	NP	NP	22	A-4a (1)	
			5 6 8	19	83	SS-25	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
	444.6																	
MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, TRACE GRAVEL, TRACE SILT, MOIST			11 11 12	31	89	SS-26	-	1	10	77	12	0	NP	NP	NP	18	A-3a (0)	
@58.5'; WET			10 6 10	21	100	SS-27	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			4 5 8	17	100	SS-28	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
	433.1	EOB																

NOTES: DRY CAVE-IN OBSERVED AT A DEPTH OF 21.5 FEET. TUBE PUSHED AT 43' TO 45' WITH NO RECOVERY, SPT SAMPLE DRIVEN THROUGH UNRECOVERED SAMPLE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 50 LB. BENTONITE (QUIK-GROUT); 100 LB. BENTONITE CHIPS; 75 GAL. GROUT

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 5/21/25 14:10 - \\PORDWOFDS0100N1\DATA\PROJECTS\2024\N1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1245017-ODOT-HAM-75-1.05 MICROTUNNEL_REC.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-1.25 TRUNK LINE
TYPE: UNDERGROUND UTILITY
PID: 122902 SFN:
START: 10/4/24 END: 10/4/24

DRILLING FIRM / OPERATOR: NEAS / J. HODGES
SAMPLING FIRM / LOGGER: TERRACON / WJA
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 55
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 3/8/24
ENERGY RATIO (%): 80

STATION / OFFSET:
ALIGNMENT:
ELEVATION: 494.3 (MSL) EOB: 60.0 ft.
LAT / LONG: 39.108111, -84.532264

EXPLORATION ID B-003-0-24

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)	BACK FILL
ASPHALT (12 INCHES)	494.3																	
AGGREGATE BASE (6 INCHES)	493.3																	
VERY LOOSE TO LOOSE, BROWN WITH GRAY, **GRAVEL AND STONE FRAGMENTS**, DAMP (FILL)	492.8		9 5 3	11	67	SS-1	-	53	27	10	7	3	NP	NP	NP	21	A-1-a (0)	
			3 3 2	7	44	SS-2	-	-	-	-	-	-	-	-	-	-	A-1-a (V)	
			3 2 1	4	33	SS-3	-	-	-	-	-	-	-	-	-	-	A-1-a (V)	
@10.0'; SS-4 AND SS-5 BRICK FRAGMENTS			3 21 15	48	44	SS-4	-	-	-	-	-	-	-	-	-	-	A-1-a (V)	
			4 3 2	7	6	SS-5	-	-	-	-	-	-	-	-	-	-	A-1-a (V)	
	475.3		1 1 1	3	78	SS-6	-	-	-	-	-	-	-	-	-	7	A-1-a (V)	
MEDIUM STIFF, BROWN TO LIGHT BROWN, **SILT**, LITTLE TO SOME SAND, MOIST TO WET			2 1 2	4	100	SS-7	1.00	-	-	-	-	-	-	-	-	-	A-4b (V)	
	472.3		2 2 2	5	94	SS-8	0.50	0	0	13	78	9	NP	NP	NP	32	A-4b (8)	
SOFT TO MEDIUM STIFF, LIGHT BROWN, **SILT**, MOIST TO WET @22.0'; SHELBY TUBE PUSHED 24 INCHES WITH NO RECOVERY, SPT SAMPLE DRIVEN THROUGH UNRECOVERED SAMPLE			0 1 1	3	100	SS-9	-	-	-	-	-	-	-	-	-	35	A-4b (V)	
		W 469.3	1 3 5	11	100	SS-10	0.25	-	-	-	-	-	-	-	-	-	A-4b (V)	
	467.8		2 3 4	9	89	SS-11	-	0	0	26	67	7	NP	NP	NP	29	A-4b (8)	
STIFF, LIGHT BROWN, **SILT AND CLAY**, TRACE SAND, LAMINATED, MOIST	466.3		2 3 4	9	100	SS-12	1.50	0	0	4	58	38	29	18	11	28	A-6a (8)	
SOFT TO MEDIUM STIFF, GRAY AND BROWN, **SILT**, LITTLE TO SOME SAND, WET			1 2 2	5	100	SS-13	0.50	-	-	-	-	-	-	-	-	-	A-4b (V)	
			2 3 3	8	100	SS-14	0.25	-	-	-	-	-	-	-	-	-	A-4b (V)	
			2 2 3	7	100	SS-15	0.25	-	-	-	-	-	-	-	-	-	A-4b (V)	
			1 2 5	9	89	SS-16	0.50	-	-	-	-	-	-	-	-	-	A-4b (V)	
					100	ST-17	0.25	0	0	3	82	15	26	20	6	26	A-4b (8)	
			2 2 2	5	100	SS-18	0.25	-	-	-	-	-	-	-	-	-	A-4b (V)	
			0 2 3	7	100	SS-19	0.25	-	-	-	-	-	-	-	-	-	A-4b (V)	
			1 2 3	7	100	SS-20	0.25	-	-	-	-	-	-	-	-	27	A-4b (V)	
			0 0 2	3	100	SS-21	1.00	-	-	-	-	-	-	-	-	-	A-4b (V)	
			0 1 2	4	100	SS-22	0.25	-	-	-	-	-	-	-	-	-	A-4b (V)	
			3 4 7	15	100	SS-23	0.25	0	0	33	59	8	NP	NP	NP	28	A-4b (6)	
	440.8		2 1 2	4	100	SS-24	0.75	-	-	-	-	-	-	-	-	-	A-4a (V)	
MEDIUM DENSE, BROWN, **FINE SAND**, TRACE GRAVEL, TRACE TO LITTLE SILT, WET			12 10 10	27	100	SS-25	-	2	9	82	6	1	NP	NP	NP	19	A-3 (0)	
@58.5'; SILT SEAMS/INTERLAYERS	434.3	EOB	7 9 6	20	100	SS-26	-	-	-	-	-	-	-	-	-	18	A-3 (V)	

NOTES: DRY CAVE-IN OBSERVED AT A DEPTH OF 8 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 75 LB. BENTONITE CHIPS

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 5/21/25 14:10 - \\PORDWOFDS01\100N1\DATA\PROJECTS\2024\N1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1245017-ODOT-HAM -75-1.05 MICROTUNNEL_REC.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-1.25 TRUNK LINE
TYPE: UNDERGROUND UTILITY
PID: 122902 SFN:
START: 10/23/24 END: 10/23/24

DRILLING FIRM / OPERATOR: NEAS / J. HODGES
SAMPLING FIRM / LOGGER: TERRACON / WJA
DRILLING METHOD: 4.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 75
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 3/8/24
ENERGY RATIO (%): 84

STATION / OFFSET:
ALIGNMENT:
ELEVATION: 495.9 (MSL) EOB: 65.0 ft.
LAT / LONG: 39.108696, -84.532147

EXPLORATION ID B-004-0-24

MATERIAL DESCRIPTION AND NOTES	ELEV. 495.9 / DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	MON. WELL
TOPSOIL (5 INCHES)	495.5																
VERY STIFF, BROWN, **SILT AND CLAY**, LITTLE TO SOME SAND, TRACE GRAVEL, TRACE BRICK, TRACE ROOT HAIRS, TRACE LIMESTONE FRAGMENTS, DRY (FILL)		5 2 1	4	33	SS-1	4.50	-	-	-	-	-	-	-	-	11	A-6a (V)	
@5.0'; GRAVEL AND STONE FRAGMENTS WITH SAND, SILT, AND CLAY		26 22 15	52	44	SS-2	4.50	32	29	14	14	11	30	15	15	10	A-2-6 (1)	
@10.0'; WITH SAND		3 4 4	11	56	SS-3	3.50	-	-	-	-	-	-	-	-	-	A-6a (V)	
		4 3 2	7	22	SS-4	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
	480.9																
LOOSE, BROWN, **COARSE AND FINE SAND**, TRACE SILT AND CLAY SEAMS, TRACE GRAVEL, DAMP		3 2 2	6	67	SS-5	-	5	42	36	14	3	NP	NP	NP	9	A-3a (0)	
@22.5'; STIFF SILT AND CLAY SEAMS/ INTERLAYERS		3 3 2	7	67	SS-6	1.50	-	-	-	-	-	-	-	-	24	A-3a (V)	
	471.9	2 3 8	15	67	SS-7	1.75	-	-	-	-	-	-	-	-	-	A-6a (V)	
LOOSE, BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND**, WITH SILT AND CLAY SEAMS, MOIST TO WET		3 3 3	8	67	SS-8	-	-	-	-	-	-	-	-	-	-	A-1-b (V)	
W 468.9		3 3 2	7	56	SS-9	-	-	-	-	-	-	-	-	-	-	A-1-b (V)	
		3 3 4	10	44	SS-10	-	3	58	28	10	1	NP	NP	NP	20	A-1-b (0)	
		3 3 2	7	72	SS-11	-	-	-	-	-	-	-	-	-	-	A-1-b (V)	
	464.4	3 3 4	10	44	SS-12	-	-	-	-	-	-	-	-	-	20	A-1-b (V)	
SOFT TO MEDIUM STIFF, BROWN, **SILT**, WITH SAND SEAMS/ INTERLAYERS, TRACE GRAVEL, WET		2 2 3	7	100	SS-13	0.50	-	-	-	-	-	-	-	-	27	A-4b (V)	
		2 1 1	3	100	SS-14	0.50	-	-	-	-	-	-	-	-	-	A-4b (V)	
		1 1 1	3	78	SS-15	0.25	-	-	-	-	-	-	-	-	28	A-4b (V)	
		2 3 3	8	100	SS-16	0.50	-	-	-	-	-	-	-	-	-	A-4b (V)	
@37.5'; GRAVEL AND STONE FRAGMENTS WITH SAND				75	ST-17	1.00	2	67	21	8	2	NP	NP	NP	22	A-1-b (0)	
	456.4	0 0 0	0	56	SS-18	-	3	49	13	31	4	NP	NP	NP	24	A-3a (0)	
VERY LOOSE, BROWN, **COARSE AND FINE SAND**, TRACE GRAVEL, WET		0 0 0	0	50	SS-19	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
	453.4	1 1 1	3	89	SS-20	0.25	0	2	10	78	10	23	20	3	30	A-4b (8)	
SOFT, BROWN TO GRAY, **SILT**, LITTLE SAND, WET		2 1 1	3	100	SS-21	0.25	-	-	-	-	-	-	-	-	-	A-4b (V)	
		1 2 4	8	100	SS-22	0.75	-	-	-	-	-	-	-	-	-	A-4b (V)	
	448.9	2 4 6	14	67	SS-23	0.25	-	-	-	-	-	-	-	-	-	A-3 (V)	
MEDIUM DENSE, BROWN, **FINE SAND**, WET		2 5 9	20	44	SS-24	-	0	4	92	3	1	NP	NP	NP	20	A-3 (0)	
FS																	
	442.4																
MEDIUM DENSE TO DENSE, BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND**, TRACE GRAVEL, WET		4 4 7	15	100	SS-25	-	15	55	22	7	1	NP	NP	NP	24	A-1-b (0)	
		5 10 16	36	100	SS-26	-	-	-	-	-	-	-	-	-	-	A-1-b (V)	
	430.9	5 12 15	38	22	SS-27	-	-	-	-	-	-	-	-	-	-	A-1-b (V)	
EOB																	

NOTES: WATER ADDED TO HOLE AT 28.5' TO CONTROL HEAVING SANDS.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 9 BAG #5 WELL SAND; 250 LB. BENTONITE CHIPS; 200 LB. BENTONITE-COATED PELLETS; 4 BAG CONCRETE

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 5/21/25 14:10 - \\PORDWOFDS01\00N1\DATA\PROJECTS\2024\N1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1245017-ODOT-HAM-75-1.05 MICROTUNNEL_REC.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-1.25 TRUNK LINE
TYPE: UNDERGROUND UTILITY
PID: 122902 SFN:
START: 10/15/24 END: 10/15/24

DRILLING FIRM / OPERATOR: NEAS / J. HODGES
SAMPLING FIRM / LOGGER: TERRACON / WJA
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 55
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 3/8/24
ENERGY RATIO (%): 80

STATION / OFFSET:
ALIGNMENT:
ELEVATION: 506.5 (MSL) EOB: 75.0 ft.
LAT / LONG: 39.110333, -84.532046

EXPLORATION ID B-005-0-24

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)	BACK FILL
ASPHALT (5 INCHES)	506.5																	
CONCRETE (9 INCHES)	506.1																	
BRICK PAVERS (5 INCHES)	505.3																	
AGGREGATE BASE (6 INCHES)	504.9																	
MEDIUM DENSE, BROWN, **GRAVEL AND STONE FRAGMENTS**, WITH SAND, TRACE CONCRETE, TRACE BRICK, DRY (FILL)	504.4		3 4 8	16	11	SS-1	-	-	-	-	-	-	-	-	-	-	A-1-b (V)	
	501.5																	
STIFF, BROWN AND GRAY, **SILT AND CLAY**, SOME SAND, TRACE BRICK, DAMP (FILL)			4 5 6	15	78	SS-2	2.00	-	-	-	-	-	-	-	-	29	A-6a (V)	
			2 3 3	8	100	SS-3	1.50	-	-	-	-	-	-	-	-	-	A-6a (V)	
	496.5																	
MEDIUM DENSE, BROWN WITH GRAY, **COARSE AND FINE SAND**, LITTLE TO SOME CLAY, TRACE BRICK AND CONCRETE, DAMP (FILL)			3 4 6	13	67	SS-4	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
@15.0'; TRACE CONCRETE FRAGMENTS		▼	5 6 7	17	100	SS-5	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
	486.5																	
STIFF, BROWN, **SILT**, LAMINATED, DAMP			2 7 6	17	100	SS-6	1.50	0	0	4	84	12	NP	NP	NP	24	A-4b (8)	
	481.5																	
MEDIUM STIFF TO STIFF, BROWN, **SILT**, LAMINATED WITH SAND SEAMS, DAMP			5 2 5	9	72	SS-7	1.25	-	-	-	-	-	-	-	-	-	A-4b (V)	
@25.0'; SHELBY TUBE PUSHED 24 INCHES WITH NO RECOVERY, SPT SAMPLE DRIVEN THROUGH UNRECOVERED SAMPLE																		
@30.0'; GRAY TO BROWN, WET			1 3 3	8	78	SS-8	1.00	-	-	-	-	-	-	-	-	-	A-4b (V)	
			1 2 2	5	100	SS-9	0.50	0	0	0	78	22	23	21	2	26	A-4b (8)	
			2 3 3	8	100	SS-10	0.50	-	-	-	-	-	-	-	-	-	A-4b (V)	
@35.5'; MINERAL OXIDES			1 2 4	8	100	SS-11	0.75	-	-	-	-	-	-	-	-	25	A-4b (V)	
@38.0'; SILTY SAND SEAMS					92	ST-12	0.50	0	1	15	66	18	NP	NP	NP	-	A-4b (8)	
		W 466.0	5 4 4	11	100	SS-13	1.75	-	-	-	-	-	-	-	-	24	A-4b (V)	
			2 4 4	11	100	SS-14	0.50	-	-	-	-	-	-	-	-	-	A-4b (V)	
	464.5																	
VERY LOOSE TO LOOSE, GRAY AND BROWN, **SILT**, LITTLE TO SOME SAND, TRACE GRAVEL, WET			2 2 3	7	100	SS-15	0.25	0	1	1	89	9	NP	NP	NP	36	A-4b (8)	
			3 2 4	8	100	SS-16	0.25	-	-	-	-	-	-	-	-	-	A-4b (V)	
			2 3 3	8	100	SS-17	0.50	-	-	-	-	-	-	-	-	34	A-4b (V)	
			3 3 4	9	100	SS-18	0.75	-	-	-	-	-	-	-	-	-	A-4b (V)	
			0 1 1	3	100	SS-19	0.25	-	-	-	-	-	-	-	-	27	A-4b (V)	
			0 2 3	7	56	SS-20	0.25	-	-	-	-	-	-	-	-	-	A-4b (V)	
			3 3 2	7	100	SS-21	0.50	-	-	-	-	-	-	-	-	28	A-4b (V)	
			1 2 2	5	100	SS-22	0.25	-	-	-	-	-	-	-	-	-	A-4b (V)	
			0 3 3	8	100	SS-23	0.25	0	0	33	61	6	NP	NP	NP	30	A-4b (6)	
			1 1 1	3	100	SS-24	0.25	-	-	-	-	-	-	-	-	-	A-4b (V)	
			3 2 4	8	89	SS-25	0.50	-	-	-	-	-	-	-	-	24	A-4b (V)	
			2 3 4	9	83	SS-26	0.50	-	-	-	-	-	-	-	-	-	A-4b (V)	
	443.0																	
			2 3 4	9	100	SS-27	-	1	74	22	1	2	NP	NP	NP	21	A-1-b (0)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 5/21/25 14:10 - \\PORDWOFDS0100N1\DATA\PROJECTS\2024\N1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1245017-ODOT-HAM -75-1.05 MICROTUNNEL_REC.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PID: 122902	SFN:	PROJECT: HAM-75-1.25 TRUNK LINE	STATION / OFFSET:	START: 10/15/24	END: 10/15/24	PG 2 OF 2	B-005-0-24

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)	BACK FILL
LOOSE, GRAYISH BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND**, TRACE SILT, TRACE CLAY, MOIST *(continued)*	441.5	66																
		67																
		68																
		69	2 2 5	9	100	SS-28	-	-	-	-	-	-	-	-	-	-	A-1-b (V)	
		70																
		71																
		72																
		73																
		74	2 3 4	9	100	SS-29	-	-	-	-	-	-	-	-	-	-	A-1-b (V)	
	431.5	75 EOB																

NOTES: DRY CAVE-IN OBSERVED AT A DEPTH OF 20.8 FEET. WATER ADDED TO HOLE AT 65' TO CONTROL HEAVING SANDS.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 50 LB. BENTONITE (QUIK-GROUT); 100 LB. BENTONITE CHIPS; 50 GAL. GROUT

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 5/21/25 14:10 - \\PORDWOFDS01\00N1\DATA\PROJECTS\2024\N1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1245017-ODOT-HAM -75-1.05 MICROTUNNEL_REC.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-1.25 TRUNK LINE
TYPE: UNDERGROUND UTILITY
PID: 122902 SFN:
START: 10/3/24 END: 10/3/24

DRILLING FIRM / OPERATOR: NEAS / J. HODGES
SAMPLING FIRM / LOGGER: TERRACON / WJA
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 55
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 3/8/24
ENERGY RATIO (%): 80

STATION / OFFSET:
ALIGNMENT:
ELEVATION: 506.3 (MSL) EOB: 70.0 ft.
LAT / LONG: 39.111367, -84.531962

EXPLORATION ID B-006-0-24

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)	BACK FILL
ASPHALT (12 INCHES)	506.3																	
AGGREGATE BASE (6 INCHES)	505.3																	
LOOSE, BROWN, **COARSE AND FINE SAND**, TRACE GRAVEL, TRACE ASPHALT, DAMP (FILL)	504.8		3 3 3	8	28	SS-1	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
	501.3																	
SOFT TO MEDIUM STIFF, BROWN AND DARK GRAY, **SILTY CLAY**, SOME SAND, TRACE GRAVEL, TRACE ASPHALT, MOIST (FILL)			2 2 3	7	67	SS-2	0.75	-	-	-	-	-	-	-	-	-	A-6b (V)	
			2 5 7	16	72	SS-3	0.25	-	-	-	-	-	-	-	-	-	A-6b (V)	
@9.0'; STIFF	496.7				100	ST-4	-	10	48	37	4	1	NP	NP	NP	3	A-1-b (0)	
LOOSE TO MEDIUM DENSE, BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND**, TRACE CINDERS, DAMP (FILL)																		
			5 3 4	9	67	SS-5	-	-	-	-	-	-	-	-	-	-	A-1-b (V)	
			4 4 6	13	78	SS-6	-	-	-	-	-	-	-	-	-	-	A-1-b (V)	
			4 6 6	16	100	SS-7	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
@28.5'; SANDY SILT SEAMS/POCKETS, WET	477.3	▼	4 4 6	13	78	SS-8	-	-	-	-	-	-	-	-	-	25	A-4a (V)	
MEDIUM STIFF TO STIFF, BROWN WITH GRAY, **SILT**, LITTLE TO SOME SAND, WET			3 3 4	9	100	SS-9	0.50	-	-	-	-	-	-	-	-	31	A-4b (V)	
			2 4 4	11	100	SS-10	0.50	-	-	-	-	-	-	-	-	-	A-4b (V)	
	472.3	W 472.3			100	ST-11	1.00	0	0	3	86	11	NP	NP	NP	28	A-4b (8)	
LOOSE TO MEDIUM DENSE, LIGHT BROWN, **SILT**, PARTIALLY LAMINATED, WET			4 6 7	17	100	SS-12	0.25	-	-	-	-	-	-	-	-	-	A-4b (V)	
			3 6 7	17	100	SS-13	0.75	0	0	32	63	5	NP	NP	NP	27	A-4b (7)	
			3 3 4	9	78	SS-14	0.50	-	-	-	-	-	-	-	-	-	A-4b (V)	
			2 3 4	9	89	SS-15	0.25	-	-	-	-	-	-	-	-	32	A-4b (V)	
			2 3 4	9	100	SS-16	0.25	-	-	-	-	-	-	-	-	-	A-4b (V)	
	461.8		2 3 5	11	89	SS-17	0.25	-	-	-	-	-	-	-	-	-	A-4b (V)	
LOOSE TO MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, WET			2 5 13	24	100	SS-18	0.75	-	-	-	-	-	-	-	-	-	A-4b (V)	
			2 4 7	15	67	SS-19	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			3 6 7	17	89	SS-20	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			3 4 7	15	100	SS-21	-	0	6	83	8	3	NP	NP	NP	24	A-3a (0)	
			4 7 10	23	100	SS-22	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
@50.5'; SS-23 DENSE			8 13 14	36	100	SS-23	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			0 1 4	7	83	SS-24	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			2 2 5	9	67	SS-25	-	-	-	-	-	-	-	-	-	21	A-3a (V)	
			3 3 7	13	100	SS-26	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			3 4 6	13	100	SS-27	-	-	-	-	-	-	-	-	-	-	A-3a (V)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 5/21/25 14:10 - \\PORDWOFDS0100N1\DATA\PROJECTS\2024\N1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1245017-ODOT-HAM -75-1.05 MICROTUNNEL_REC.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PID: 122902	SFN:	PROJECT: HAM-75-1.25 TRUNK LINE	STATION / OFFSET:	START: 10/3/24	END: 10/3/24	PG 2 OF 2	B-006-0-24

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)	BACK FILL
LOOSE TO MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, WET *(continued)*	441.3	66																
		67																
		68																
		69	3 6 6	16	100	SS-28	-	-	-	-	-	-	-	-	-	20	A-3a (V)	
	436.3	EOB 70																

NOTES: DRY CAVE-IN OBSERVED AT A DEPTH OF 19.6 FEET. WATER ADDED TO HOLE AT 58.5' TO CONTROL HEAVING SANDS.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 50 LB. BENTONITE (QUIK-GROUT); 150 LB. BENTONITE CHIPS; 65 LB. GROUT

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 5/21/25 14:10 - \\PORDWOFDS01\00N1\DATA\PROJECTS\2024\N1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1245017-ODOT-HAM -75-1.05 MICROTUNNEL_REC.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-1.25 TRUNK LINE
TYPE: UNDERGROUND UTILITY
PID: 122902 SFN:
START: 10/16/24 END: 10/16/24

DRILLING FIRM / OPERATOR: NEAS / J. HODGES
SAMPLING FIRM / LOGGER: TERRACON / WJA
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 55
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 3/8/24
ENERGY RATIO (%): 80

STATION / OFFSET:
ALIGNMENT:
ELEVATION: 500.9 (MSL) EOB: 65.0 ft.
LAT / LONG: 39.112163, -84.531769

EXPLORATION ID B-007-0-24

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)	BACK FILL
TOPSOIL (3 INCHES)	500.9																	
MEDIUM DENSE, LIGHT BROWN, **COARSE AND FINE SAND**, TRACE GRAVEL, TRACE SILT, TRACE ROOT HAIRS, DRY (FILL)	500.6		10 8 7	20	50	SS-1	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			6 10 12	29	50	SS-2	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			50/3"	-	100	SS-3	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
	490.9																	
STIFF, BROWN, **SANDY SILT**, TRACE GRAVEL, TRACE CLAY, TRACE ROOT HAIRS, DRY (FILL)			4 5 6	15	100	SS-4	1.50	-	-	-	-	-	-	-	-	12	A-4a (V)	
	480.9																	
MEDIUM STIFF, BROWN, **SILT**, SOME SAND, TRACE CLAY, TRACE GRAVEL, TRACE BRICK, MOIST (FILL)	478.4		3 3 3	8	50	SS-5	2.00	-	-	-	-	-	-	-	-	-	A-4a (V)	
			4 2 2	5	72	SS-6	0.50	6	23	7	50	14	25	20	5	25	A-4b (6)	
STIFF, GRAYISH BROWN, **SILT**, LITTLE SAND/ SAND SEAMS, MOIST	474.9		2 3 4	9	100	SS-7	1.00	-	-	-	-	-	-	-	-	-	A-4b (V)	
					100	ST-8	1.00	7	13	8	47	25	23	18	5	-	A-4a (7)	
SOFT TO MEDIUM STIFF, GRAY WITH BROWN, **SILT**, LITTLE CLAY, TRACE TO LITTLE SAND, MOIST TO WET		W 473.4	2 4 3	9	78	SS-9	0.75	-	-	-	-	-	-	-	-	-	A-4b (V)	
			2 1 2	4	78	SS-10	0.75	-	-	-	-	-	-	-	-	24	A-4b (V)	
			3 2 3	7	100	ST-11	0.75	-	-	-	-	-	-	-	-	-	A-4b (V)	
			1 3 2	7	100	SS-12	0.25	-	-	-	-	-	-	-	-	28	A-4b (V)	
			2 2 3	7	100	SS-13	0.75	-	-	-	-	-	-	-	-	-	A-4b (V)	
			0 2 2	5	100	SS-14	0.25	-	-	-	-	-	-	-	-	25	A-4b (V)	
	464.4		2 3 2	7	89	SS-15	1.00	-	-	-	-	-	-	-	-	-	A-4b (V)	
VERY SOFT, GRAY, **SILT AND CLAY**, TRACE TO LITTLE SILT, TRACE ORGANICS, WET	462.9		0 0 2	3	78	SS-16	0.25	0	1	4	61	34	28	15	13	25	A-6a (9)	
MEDIUM STIFF TO STIFF, GRAY, **SILT**, PARTLY LAMINATED TRACE SAND, WET			0 2 3	7	67	SS-17	0.50	-	-	-	-	-	-	-	-	-	A-4b (V)	
			3 3 4	9	89	SS-18	1.50	-	-	-	-	-	-	-	-	25	A-4b (V)	
			4 4 2	8	100	SS-19	0.50	-	-	-	-	-	-	-	-	-	A-4b (V)	
@42.5'; SOFT					89	ST-20	0.50	0	0	1	75	24	26	20	6	21	A-4b (8)	
			2 2 5	9	100	SS-21	0.50	-	-	-	-	-	-	-	-	-	A-4b (V)	
	453.9		2 3 2	7	100	SS-22	0.75	-	-	-	-	-	-	-	-	-	A-4b (V)	
VERY LOOSE, GRAY, **COARSE AND FINE SAND**, LITTLE SILT, TRACE CLAY, WET	452.4		0 0 2	3	100	SS-23	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
MEDIUM DENSE TO DENSE, GRAY TO BROWN, **SANDY SILT**, TRACE TO LITTLE CLAY, WET			5 7 6	17	100	SS-24	-	0	12	52	33	3	NP	NP	NP	15	A-4a (0)	
			3 2 6	11	100	SS-25	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
			6 11 18	39	100	SS-26	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
@63.5'; VERY DENSE	435.9	EOB	8 11 30	55	100	SS-27	-	-	-	-	-	-	-	-	-	-	A-4a (V)	

NOTES: DRY CAVE-IN OBSERVED AT A DEPTH OF 32.4 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 50 LB. BENTONITE (QUIK-GROUT); 50 LB. BENTONITE CHIPS; 55 GAL. GROUT

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 5/21/25 14:10 - \\PORDWOFDS01\00N1\DATA\PROJECTS\2024\N1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1245017-ODOT-HAM -75-1.05 MICROTUNNEL_REC.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-1.25 TRUNK LINE
TYPE: UNDERGROUND UTILITY
PID: 122902 SFN:
START: 10/10/24 END: 10/10/24

DRILLING FIRM / OPERATOR: NEAS / J. HODGES
SAMPLING FIRM / LOGGER: TERRACON / WJA
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 55
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 3/8/24
ENERGY RATIO (%): 80

STATION / OFFSET:
ALIGNMENT:
ELEVATION: 494.8 (MSL) EOB: 60.0 ft.
LAT / LONG: 39.112907, -84.531913

EXPLORATION ID B-008-0-24

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)	BACK FILL
	494.8																	
ASPHALT (8 INCHES)	494.1																	
CONCRETE (6 INCHES)	493.6																	
AGGREGATE BASE (9 INCHES)	492.9																	
MEDIUM STIFF TO STIFF, BROWN, **SILT AND CLAY**, LITTLE TO SOME SAND, LITTLE GRAVEL, DAMP (FILL)			8 4 6	13	22	SS-1	2.00	-	-	-	-	-	-	-	-	-	A-6a (V)	
			2 2 2	5	11	SS-2	-	-	-	-	-	-	-	-	-	14	A-6a (V)	
	487.3																	
MEDIUM STIFF TO STIFF, BROWN AND GRAY, **SILT AND CLAY**, TRACE TO LITTLE SAND, TRACE GRAVEL, ROOT HAIRS, DAMP (FILL)			1 1 1	3	44	SS-3	0.50	-	-	-	-	-	-	-	-	-	A-6a (V)	
					96	ST-4	1.00	1	3	7	49	40	29	15	14	-	A-6a (10)	
	475.8																	
MEDIUM STIFF TO STIFF, GRAYISH BROWN, **SILT**, WITH SAND SEAMS, PARTLY LAMINATED, MOIST			1 2 3	7	89	SS-5	1.25	-	-	-	-	-	-	-	-	-	A-6a (V)	
			4 4 3	9	67	SS-6	0.50	-	-	-	-	-	-	-	-	-	A-6a (V)	
			2 2 2	5	100	SS-7	1.75	0	0	1	73	26	26	20	6	25	A-4b (8)	
			2 3 3	8	100	SS-8	1.50	-	-	-	-	-	-	-	-	-	A-4b (V)	
	471.3																	
SOFT TO MEDIUM STIFF, BROWN TO GRAY, **SILT**, WITH SAND AND CLAY SEAMS AND INTERLAYERS, MOIST			2 2 3	7	100	SS-9	1.00	-	-	-	-	-	-	-	-	29	A-4b (V)	
			1 3 4	9	100	SS-10	0.25	-	-	-	-	-	-	-	-	-	A-4b (V)	
					100	ST-11	1.00	0	0	10	74	16	21	19	2	21	A-4b (8)	
@27.0'; WET		W 467.8	2 3 3	8	78	SS-12	0.25	-	-	-	-	-	-	-	-	-	A-4b (V)	
			1 3 3	8	83	SS-13	1.00	0	0	0	78	22	24	21	3	28	A-4b (8)	
@30.0'; TRACE GRAVEL			3 4 6	13	100	SS-14	0.25	-	-	-	-	-	-	-	-	24	A-4b (V)	
	463.3																	
MEDIUM DENSE, GRAY AND REDDISH BROWN, **SANDY SILT**, WET			4 4 5	12	83	SS-15	-	-	-	-	-	-	-	-	-	25	A-4a (V)	
	461.8																	
LOOSE TO MEDIUM DENSE, BROWN TO GRAYISH BROWN, **COARSE AND FINE SAND**, LITTLE TO SOME SILT, WET			3 4 6	13	67	SS-16	-	0	29	58	11	2	NP	NP	NP	21	A-3a (0)	
	460.3																	
LOOSE TO MEDIUM DENSE, BROWN TO GRAYISH BROWN, **FINE SAND**, WET			1 1 4	7	67	SS-17	-	-	-	-	-	-	-	-	-	-	A-3 (V)	
			6 8 11	25	78	SS-18	-	-	-	-	-	-	-	-	-	27	A-3 (V)	
			2 5 14	25	67	SS-19	-	-	-	-	-	-	-	-	-	-	A-3 (V)	
	454.3																	
LOOSE TO MEDIUM DENSE, BROWN TO GRAYISH BROWN, **COARSE AND FINE SAND**, LITTLE TO SOME SILT, WET			2 2 4	8	56	SS-20	-	1	5	86	6	2	NP	NP	NP	-	A-3 (0)	
			2 1 3	5	78	SS-21	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			10 5 11	21	89	SS-22	-	-	-	-	-	-	-	-	-	28	A-3a (V)	
			3 2 2	5	100	SS-23	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			6 4 8	16	100	SS-24	-	-	-	-	-	-	-	-	-	23	A-3a (V)	
			3 7 10	23	100	SS-25	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
	434.8	EOB	4 8 9	23	100	SS-26	-	-	-	-	-	-	-	-	-	-	A-3a (V)	

NOTES: DRY CAVE-IN OBSERVED AT A DEPTH OF 21.3 FEET. WATER ADDED TO HOLE AT 50' TO CONTROL HEAVING SANDS.
ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 50 LB. BENTONITE (QUIK-GROUT); 50 LB. BENTONITE CHIPS; 50 GAL. GROUT

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 5/21/25 14:10 - \\PORDWOFDS01\100N1\DATA\PROJECTS\2024\N1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1245017-ODOT-HAM -75-1.05 MICROTUNNEL_REC.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-1.25 TRUNK LINE
TYPE: UNDERGROUND UTILITY
PID: 122902 SFN:
START: 10/21/24 END: 10/22/24

DRILLING FIRM / OPERATOR: NEAS / J. HODGES
SAMPLING FIRM / LOGGER: TERRACON / WJA
DRILLING METHOD: 4.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 75
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 3/8/24
ENERGY RATIO (%): 84

STATION / OFFSET:
ALIGNMENT:
ELEVATION: 497.3 (MSL) EOB: 65.0 ft.
LAT / LONG: 39.113700, -84.532177

EXPLORATION ID B-009-0-24

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)	MON. WELL
ASPHALT (8 INCHES)	497.3																	
CONCRETE (9 INCHES)	496.6																	
AGGREGATE BASE (6 INCHES)	495.9																	
STIFF TO VERY STIFF, GRAY WITH BROWN, **SILTY CLAY**, LITTLE SAND, TRACE GRAVEL, TRACE BRICK, TRACE CONCRETE, DRY (FILL)	495.4		2 7 50/4"	-	38	SS-1	4.00	-	-	-	-	-	-	-	-	-	A-6b (V)	
@5.0'; BRICK FRAGMENTS			5 7 7	20	50	SS-2	-	-	-	-	-	-	-	-	-	-	A-2-4 (V)	
	487.3		3 1 1	3	33	SS-3	1.50	14	7	5	42	32	34	18	16	18	A-6b (10)	
VERY STIFF, BROWN AND GRAY, **SILTY CLAY**, TRACE SAND, TRACE GRAVEL, TRACE CONCRETIONS, DAMP			3 4 7	15	89	SS-4	3.50	-	-	-	-	-	-	-	-	-	A-6b (V)	
@13.0'; SILTY SAND SEAMS	482.3				100	ST-5	4.25	1	5	22	32	40	36	14	22	22	A-6b (12)	
MEDIUM STIFF TO STIFF, BROWN TO GRAY, **SILT**, WITH SAND SEAMS/ INTERLAYERS, TRACE TO LITTLE CLAY, MOIST			1 1 1	3	100	SS-6	0.50	-	-	-	-	-	-	-	-	-	A-4b (V)	
@25.5'; WET			3 2 5	10	89	SS-7	0.50	0	1	2	50	47	28	21	7	28	A-4b (8)	
			1 5 7	17	67	SS-8	0.50	-	-	-	-	-	-	-	-	-	A-4b (V)	
			2 3 5	11	89	SS-9	1.25	-	-	-	-	-	-	-	-	27	A-4b (V)	
			2 3 2	7	100	SS-10	1.00	-	-	-	-	-	-	-	-	24	A-4b (V)	
	468.8		3 6 8	20	78	SS-11	0.50	-	-	-	-	-	-	-	-	-	A-4b (V)	
MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, WITH SILT SEAMS, MOIST	467.3	W 467.3	4 6 7	18	78	SS-12	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
MEDIUM STIFF, BROWN AND GRAY, **SILT**, LITTLE TO SOME SAND, TRACE TO LITTLE CLAY, WET			3 3 3	8	67	SS-13	0.75	-	-	-	-	-	-	-	-	25	A-4b (V)	
			0 2 2	6	100	SS-14	0.50	-	-	-	-	-	-	-	-	-	A-4b (V)	
			1 2 4	8	83	SS-15	0.75	0	1	1	69	29	25	21	4	26	A-4b (8)	
			2 3 3	8	100	SS-16	0.75	-	-	-	-	-	-	-	-	-	A-4b (V)	
	459.8		5 12 12	34	100	SS-17	1.00	-	-	-	-	-	-	-	-	-	A-4b (V)	
LOOSE TO MEDIUM DENSE, BROWN TO GRAYISH BROWN, **FINE SAND**, TRACE TO LITTLE SILT, WET			2 2 3	7	67	SS-18	-	-	-	-	-	-	-	-	-	-	A-3 (V)	
			3 4 8	17	100	SS-19	-	-	-	-	-	-	-	-	-	-	A-3 (V)	
			5 7 10	24	100	SS-20	-	-	-	-	-	-	-	-	-	-	A-3 (V)	
@42.0'; VERY LOOSE			1 1 1	3	100	SS-21	-	0	2	91	6	1	NP	NP	NP	21	A-3 (0)	
			1 1 1	3	100	SS-22	-	-	-	-	-	-	-	-	-	-	A-3 (V)	
			3 5 10	21	100	SS-23	-	-	-	-	-	-	-	-	-	-	A-3 (V)	
@46.5'; VERY LOOSE			1 1 1 2	3	50	SS-25	-	-	-	-	-	-	-	-	-	-	A-3 (V)	
			1 1 2	4	78	SS-26	-	-	-	-	-	-	-	-	-	-	A-3 (V)	
			2 2 3	7	100	SS-27	-	-	-	-	-	-	-	-	-	-	A-3 (V)	
	432.3	EOB	5 5 6	15	100	SS-28	-	-	-	-	-	-	-	-	-	-	A-3 (V)	

F-S

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 16 BAG #5 WELL SAND; 250 LB. BENTONITE CHIPS; 100 LB. BENTONITE-COATED PELLETS; 1 BAG CONCRETE

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 5/21/25 14:10 - \\PORDWOFDS01\00N1\DATA\PROJECTS\2024\N1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1245017-ODOT-HAM -75-1.05 MICROTUNNEL_REC.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-1.25 TRUNK LINE
TYPE: UNDERGROUND UTILITY
PID: 122902 SFN:
START: 10/9/24 END: 10/9/24

DRILLING FIRM / OPERATOR: NEAS / J. HODGES
SAMPLING FIRM / LOGGER: TERRACON / WJA
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 55
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 3/8/24
ENERGY RATIO (%): 80

STATION / OFFSET:
ALIGNMENT:
ELEVATION: 495.5 (MSL) EOB: 60.0 ft.
LAT / LONG: 39.114848, -84.532912

EXPLORATION ID B-010-0-24

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)	BACK FILL
ASPHALT (13 INCHES)	495.5																	
AGGREGATE BASE (7 INCHES)	494.4																	
LOOSE, GRAYISH BROWN, **COARSE AND FINE SAND**, LITTLE TO SOME GRAVEL, DRY (FILL)	493.8		7 4 4	11	33	SS-1	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
MEDIUM STIFF TO STIFF, DARK GRAY AND BROWN, **CLAY**, LITTLE TO SOME SAND, TRACE METAL PIECES, TRACE GRAVEL, DAMP (FILL)	490.5		3 2 3	7	50	SS-2	0.50	-	-	-	-	-	-	-	-	15	A-7-6 (V)	
@9.0'; VERY STIFF			3 4 5	12	78	SS-3	1.50	-	-	-	-	-	-	-	-	-	A-7-6 (V)	
					92	ST-4	3.00	1	7	17	36	39	41	16	25	-	A-7-6 (14)	
LOOSE, BROWN, **COARSE AND FINE SAND**, LITTLE SILTY CLAY, TRACE GRAVEL, DAMP (FILL)	480.5		3 2 2	5	89	SS-5	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
MEDIUM STIFF TO STIFF, BROWN, **SILT**, WITH SAND SEAMS, TRACE TO LITTLE CLAY, PARTALY LAMINATED, MOIST	478.0		2 3 4	9	78	SS-6	0.75	-	-	-	-	-	-	-	-	-	A-4b (V)	
@20.5'; WET			2 3 3	8	89	SS-7	1.50	0	0	2	71	27	32	22	10	27	A-4b (8)	
			1 1 2	4	100	SS-8	0.75	-	-	-	-	-	-	-	-	-	A-4b (V)	
	472.0		2 3 2	7	78	SS-9	1.25	-	-	-	-	-	-	-	-	26	A-4b (V)	
MEDIUM STIFF, BROWN, **SILT**, WITH SAND SEAMS, MOIST	467.0	W 467.0	2 2 2	5	100	SS-10	0.50	-	-	-	-	-	-	-	-	-	A-4b (V)	
					100	ST-11	0.75	0	0	7	67	26	25	20	5	26	A-4b (8)	
			1 3 3	8	89	SS-12	1.00	-	-	-	-	-	-	-	-	-	A-4b (V)	
VERY LOOSE, BROWN, **COARSE AND FINE SAND**, WET	465.5		1 1 1	3	78	SS-13	-	0	0	74	19	7	NP	NP	NP	21	A-3a (0)	
MEDIUM STIFF TO STIFF, BROWN, **SILT**, TRACE TO LITTLE SAND, PARTLY LAMINATED, MOIST TO WET			1 3 4	9	89	SS-14	0.50	-	-	-	-	-	-	-	-	-	A-4b (V)	
@31.5'; VERY SOFT, CLAY INTERLAYER			1 1 3	5	67	SS-15	0.25	0	0	9	67	24	25	20	5	32	A-4b (8)	
			2 3 4	9	100	SS-16	1.25	-	-	-	-	-	-	-	-	-	A-4b (V)	
	459.5		1 4 4	11	100	SS-17	0.50	-	-	-	-	-	-	-	-	26	A-4b (V)	
LOOSE TO MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, TRACE TO LITTLE SILT, TRACE CLAY, WET			4 6 9	20	67	SS-18	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			4 6 7	17	56	SS-19	-	0	7	81	8	4	NP	NP	NP	26	A-3a (0)	
			3 3 4	9	89	SS-20	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			4 6 14	27	67	SS-21	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			4 6 10	21	78	SS-22	-	-	-	-	-	-	-	-	-	23	A-3a (V)	
			3 5 9	19	100	SS-23	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
@48.5'; SANDY SILT INTERLAYERS			2 3 7	13	100	SS-24	-	6	43	10	36	5	NP	NP	NP	27	A-4a (1)	
			2 3 16	25	100	SS-25	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
	435.5	EOB	3 1 7	11	100	SS-26	-	-	-	-	-	-	-	-	-	-	A-3a (V)	

NOTES: DRY CAVE-IN OBSERVED AT A DEPTH OF 21.3 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 50 LB. BENTONITE (QUIK-GROUT); 150 LB. BENTONITE CHIPS; 40 GAL. GROUT

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 5/21/25 14:11 - \\PORDWOFDS01100N1\DATA\PROJECTS\2024\N1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1245017-ODOT-HAM -75-1.05 MICROTUNNEL_REC.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-1.25 TRUNK LINE
TYPE: UNDERGROUND UTILITY
PID: 122902 SFN:
START: 10/11/24 END: 10/11/24

DRILLING FIRM / OPERATOR: NEAS / J. HODGES
SAMPLING FIRM / LOGGER: TERRACON / WJA
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 55
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 3/8/24
ENERGY RATIO (%): 80

STATION / OFFSET:
ALIGNMENT:
ELEVATION: 493.8 (MSL) EOB: 60.0 ft.
LAT / LONG: 39.115552, -84.533470

EXPLORATION ID B-011-0-24

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)	BACK FILL
ASPHALT (9 INCHES)	493.8																	
CONCRETE (12 INCHES)	493.1																	
AGGREGATE BASE (6 INCHES)	492.1																	
LOOSE, BLACK, **SANDY SILT**, TRACE GRAVEL, ROOT HAIRS, COAL, ORGANICS, WITH APPARENT UNNATURAL ODOR, DAMP (FILL)	491.6	1	5 3 3	8	0	SS-1	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
		2																
		3	3 2 3	7	44	SS-2	-	-	-	-	-	-	-	-	-	40	A-6a (V)	
		4																
		5																
		6																
		7	2 1 1	3	50	SS-3	0.25	-	-	-	-	-	-	-	-	-	A-6a (V)	
		8																
		9																
	483.8	10			83	ST-4	2.50	0	8	11	44	37	40	22	18	-	A-6b (11)	
STIFF TO VERY STIFF, DARK BROWN TO GRAYISH BROWN, **SILTY CLAY**, TRACE TO LITTLE SAND, TRACE BRICK, ORGANICS, APPARENT UNNATURAL ODOR, DAMP (FILL)		11																
		12																
		13																
		14																
		15	2 3 3	8	67	SS-5	2.50	-	-	-	-	-	-	-	-	18	A-6b (V)	
	476.3	16																
STIFF, GRAYISH BROWN, **SILT**, WITH SAND SEAMS, TRACE GRAVEL, PARTLY LAMINATED, DAMP TO MOIST		17																
		18	2 2 2	5	72	SS-6	1.50	-	-	-	-	-	-	-	-	-	A-4b (V)	
		19																
		20	3 3 4	9	100	SS-7	1.50	0	0	2	67	31	26	20	6	24	A-4b (8)	
		21																
	471.8	22	2 3 3	8	89	SS-8	2.50	-	-	-	-	-	-	-	-	-	A-4b (V)	
SOFT TO MEDIUM STIFF, GRAY, **SILT**, WITH CLAY AND SAND SEAMS, MOIST TO WET		23	0 1 2	4	67	SS-9	0.25	-	-	-	-	-	-	-	-	33	A-4b (V)	
		24																
		25	2 1 2	4	100	SS-10	0.75	-	-	-	-	-	-	-	-	-	A-4b (V)	
		26			58	ST-11	0.50	0	1	1	64	34	25	18	7	22	A-4b (8)	
		27	1 2 2	5	89	SS-12	0.25	-	-	-	-	-	-	-	-	29	A-4b (V)	
	466.3	28																
MEDIUM STIFF, GRAY, **SILT**, TRACE TO LITTLE CLAY, TRACE SAND, PARTLY LAMINATED, MOIST TO WET		29	2 1 3	5	100	SS-13	0.75	-	-	-	-	-	-	-	-	-	A-4b (V)	
		30	1 2 3	7	100	SS-14	1.00	0	1	0	69	30	27	22	5	17	A-4b (8)	
	463.3	31																
LOOSE, GRAY, **SANDY SILT**, WET		32	1 2 2	5	100	SS-15	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
	461.8	33																
SOFT, GRAY, **SILT AND CLAY**, TRACE ORGANICS, MOIST		34	1 2 2	5	100	SS-16	0.25	0	1	0	60	39	29	18	11	28	A-6a (8)	
		35	0 1 2	4	100	SS-17	0.25	-	-	-	-	-	-	-	-	-	A-6a (V)	
	458.8	36																
SOFT TO MEDIUM STIFF, GRAY, **SILT**, WITH SAND SEAMS, PARTLY LAMINATED, MOIST		37	0 2 3	7	100	SS-18	0.75	-	-	-	-	-	-	-	-	25	A-4b (V)	
@36.5'; VERY STIFF		38	4 6 6	16	100	SS-19	2.50	-	-	-	-	-	-	-	-	-	A-4b (V)	
	W 455.8	39			83	ST-20	0.75	0	1	18	59	22	NP	NP	NP	12	A-4b (8)	
	454.7	40																
LOOSE TO MEDIUM DENSE, BROWN WITH GRAY, **COARSE AND FINE SAND**, LITTLE TO SOME SILT, TRACE TO LITTLE CLAY SEAMS, WET		41	3 3 4	9	100	SS-21	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
		42	2 5 6	15	100	SS-22	-	0	10	76	13	1	NP	NP	NP	20	A-3a (0)	
		43																
		44	2 5 9	19	100	SS-23	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
		45																
		46																
		47																
		48																
		49	2 3 4	9	100	SS-24	-	-	-	-	-	-	-	-	-	27	A-3a (V)	
		50																
		51																
		52																
		53																
@53.5'; VERY LOOSE		54	1 1 1	3	100	SS-25	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
		55																
		56																
		57																
		58																
	433.8	59	2 3 4	9	100	SS-26	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
	EOB	60																

NOTES: DRY CAVE-IN OBSERVED AT A DEPTH OF 26.3 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 50 LB. BENTONITE (QUIK-GROUT); 100 LB. BENTONITE CHIPS; 55 GAL. GROUT

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 5/21/25 14:11 - \\PORDWOFDS01\00N1\DATA\PROJECTS\2024\IN1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\IN1245017-ODOT-HAM -75-1.05 MICROTUNNEL_REC.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-1.25 TRUNK LINE
TYPE: UNDERGROUND UTILITY
PID: 122902 SFN:
START: 10/17/24 END: 10/18/24

DRILLING FIRM / OPERATOR: NEAS / J. HODGES
SAMPLING FIRM / LOGGER: TERRACON / WJA
DRILLING METHOD: 4.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 75
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 3/8/24
ENERGY RATIO (%): 84

STATION / OFFSET:
ALIGNMENT:
ELEVATION: 493.4 (MSL) EOB: 60.0 ft.
LAT / LONG: 39.116701, -84.534352

EXPLORATION ID B-012-0-24

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)	MON. WELL
ASPHALT (8 INCHES)	493.4																	
COARSE AND FINE SAND (4 INCHES)	492.7																	
CONCRETE (4 INCHES)	492.4																	
AGGREGATE BASE (6 INCHES)	492.1																	
MEDIUM STIFF, DARK GRAY, **SANDY SILT**, TRACE GRAVEL, DAMP TO MOIST (FILL)	491.6		0 0 0	0	56	SS-1	1.00	-	-	-	-	-	-	-	-	-	A-4a (V)	
			0 1 1	3	67	SS-2	0.75	2	18	15	33	32	27	17	10	22	A-4a (6)	
	483.4		1 1 2	4	100	SS-3	0.50	-	-	-	-	-	-	-	-	-	A-4a (V)	
MEDIUM STIFF TO STIFF, BROWNISH GRAY, **SILTY CLAY**, SOME SAND, TRACE GRAVEL, TRACE BRICK,TRACE COAL, DAMP (FILL)			2 1 1	3	56	SS-4	0.50	-	-	-	-	-	-	-	-	-	A-6b (V)	
@12.5'; VERY STIFF					100	ST-5	2.50	1	15	17	30	37	34	16	18	19	A-6b (10)	
	474.4		1 1 2	4	89	SS-6	1.50	-	-	-	-	-	-	-	-	-	A-6b (V)	
STIFF, BROWN TO GRAYISH BROWN, **SILT**, TRACE SAND, PARTLY LAMINATED, DAMP			2 2 4	8	100	SS-7	2.00	0	0	0	76	24	30	23	7	29	A-4b (8)	
	471.4		3 3 6	13	100	SS-8	2.00	-	-	-	-	-	-	-	-	-	A-4b (V)	
LOOSE TO MEDIUM DENSE, BROWN, **SANDY SILT**, DAMP			2 2 3	7	78	SS-9	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
	468.4		4 5 6	15	100	SS-10	-	0	0	62	35	3	NP	NP	NP	17	A-4a (1)	
MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, MOIST			5 5 5	14	100	SS-11	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			3 5 6	15	100	SS-12	-	0	36	40	20	4	NP	NP	NP	26	A-3a (0)	
	463.9	W 463.9	4 5 6	15	78	SS-13	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
LOOSE TO MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, LITTLE TO SOME SILT, WET			3 5 8	18	78	SS-14	-	-	-	-	-	-	-	-	-	27	A-3a (V)	
			6 8 10	25	100	SS-15	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			3 5 7	17	89	SS-16	-	0	42	46	9	3	NP	NP	NP	26	A-3a (0)	
			1 2 3	7	100	SS-17	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			2 6 7	18	100	SS-18	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			1 2 2	6	89	SS-19	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			2 4 8	17	89	SS-20	-	-	-	-	-	-	-	-	-	24	A-3a (V)	
@40.0'; VERY LOOSE			0 0 2	3	100	SS-21	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			2 3 4	10	100	SS-22	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
	444.9		1 3 5 7	11	58	SS-23	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
LOOSE, GRAY AND BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND**, TRACE SILT, MOIST TO WET			2 2 4	8	78	SS-24	-	4	49	44	3	0	NP	NP	NP	20	A-1-b (0)	
			2 2 3	7	100	SS-25	-	-	-	-	-	-	-	-	-	-	A-1-b (V)	
@58.5'; MEDIUM DENSE	433.4	EOB	4 8 13	29	100	SS-26	-	-	-	-	-	-	-	-	-	-	A-1-b (V)	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 24 BAG #5 WELL SAND; 125 LB. BENTONITE CHIPS; 75 LB. BENTONITE COATED CHIPS; 1 BAG CONCRETE

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 5/21/25 14:11 - \\PORDWOFDS01\100N1\DATA\PROJECTS\2024\IN1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\IN1245017-ODOT-HAM -75-1.05 MICROTUNNEL_REC.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT NO.: N1245017
CLIENT: Burgess & Niple, Inc.
PROJECT: HAM-75-1.05 & 1.95 Microtunnel
LOCATION: Cincinnati, Ohio

GROUNDWATER LEVEL READINGS FROM PIEZOMETER WITH WATER LEVEL INDICATOR

Boring No.: B-001-0-24

Ground Surface El. (ft.): 500.1

Date & Time	Groundwater Depth (ft.)	Groundwater El. (ft.)	Temperature (°F)	Comments
10/24/2024	32.0	468.1		Measured during drilling
11/8/2024	31.5	468.6		Measured prior to slug test
12/14/2024	28.1	472.0		
1/29/2025	31.2	468.9		
2/20/2025	31.1	469.0		
3/17/2025	30.7	469.4		
4/8/2025	25.1	475.0		Ohio River Flooded at El. 489
5/27/2025	28.8	471.3		

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT NO.: N1245017
CLIENT: Burgess & Niple, Inc.
PROJECT: HAM-75-1.05 & 1.95 Microtunnel
LOCATION: Cincinnati, Ohio

GROUNDWATER LEVEL READINGS FROM PIEZOMETER WITH DATALOGGER
Boring No.: B-001-0-24
Ground Surface El. (ft.): 500.1

Date & Time	Raw Water Level Reading (ft.)	Groundwater El. (ft.)	Groundwater Depth (ft.)	Temperature (°F)	Comments
11/11/2024 17:00	52.4	468.6	31.5	61.1	
11/12/2024 5:00	52.6	468.8	31.3	61.0	
11/12/2024 17:00	52.7	468.7	31.4	61.0	
11/13/2024 5:00	52.7	468.6	31.5	61.0	
11/13/2024 17:00	52.6	468.5	31.6	61.1	
11/14/2024 5:00	52.4	468.4	31.7	61.1	
11/14/2024 17:00	52.4	468.6	31.5	61.1	
11/15/2024 5:00	52.5	468.7	31.4	61.0	
11/15/2024 17:00	52.6	468.7	31.4	61.0	
11/16/2024 5:00	52.6	468.6	31.5	61.0	
11/16/2024 17:00	52.6	468.6	31.5	61.0	
11/17/2024 5:00	52.5	468.5	31.6	61.0	
11/17/2024 17:00	52.5	468.6	31.5	61.0	
11/18/2024 5:00	52.5	468.6	31.5	61.0	
11/18/2024 17:00	52.4	468.5	31.6	61.0	
11/19/2024 5:00	52.3	468.5	31.6	61.0	
11/19/2024 17:00	52.2	468.5	31.6	61.0	
11/20/2024 5:00	52.2	468.6	31.5	61.0	
11/20/2024 17:00	52.3	468.7	31.4	61.0	
11/21/2024 5:00	52.2	468.5	31.6	61.0	
11/21/2024 17:00	52.3	468.7	31.4	61.0	
11/22/2024 5:00	52.3	468.6	31.5	61.0	
11/22/2024 17:00	52.3	468.6	31.5	61.0	
11/23/2024 5:00	52.4	468.7	31.4	61.0	
11/23/2024 17:00	52.5	468.7	31.4	61.0	
11/24/2024 5:00	52.5	468.6	31.5	61.0	
11/24/2024 17:00	52.4	468.5	31.6	61.0	
11/25/2024 5:00	52.3	468.5	31.6	61.0	
11/25/2024 17:00	52.3	468.6	31.5	61.0	
11/26/2024 5:00	52.5	468.8	31.3	61.0	
11/26/2024 17:00	52.5	468.6	31.5	61.0	
11/27/2024 5:00	52.4	468.5	31.6	61.0	
11/27/2024 17:00	52.3	468.5	31.6	61.0	
11/28/2024 5:00	52.2	468.5	31.6	61.0	
11/28/2024 17:00	52.4	468.8	31.3	61.0	
11/29/2024 5:00	52.5	468.7	31.4	61.0	
11/29/2024 17:00	52.5	468.6	31.5	61.0	
11/30/2024 5:00	52.6	468.7	31.4	61.0	
11/30/2024 17:00	52.5	468.5	31.6	61.0	
12/1/2024 5:00	52.5	468.6	31.5	61.0	
12/1/2024 17:00	52.6	468.7	31.4	61.0	
12/2/2024 5:00	52.6	468.6	31.5	61.0	
12/2/2024 17:00	52.7	468.7	31.4	61.0	
12/3/2024 5:00	52.8	468.7	31.4	61.0	
12/3/2024 17:00	52.8	468.6	31.5	61.0	

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT NO.: N1245017
CLIENT: Burgess & Niple, Inc.
PROJECT: HAM-75-1.05 & 1.95 Microtunnel
LOCATION: Cincinnati, Ohio

GROUNDWATER LEVEL READINGS FROM PIEZOMETER WITH DATALOGGER
Boring No.: B-001-0-24
Ground Surface El. (ft.): 500.1

Date & Time	Raw Water Level Reading (ft.)	Groundwater El. (ft.)	Groundwater Depth (ft.)	Temperature (°F)	Comments
12/4/2024 5:00	52.6	468.4	31.7	61.0	
12/4/2024 17:00	52.2	468.2	31.9	61.0	
12/5/2024 5:00	52.4	468.8	31.3	61.0	
12/5/2024 17:00	52.6	468.8	31.3	61.0	
12/6/2024 5:00	52.7	468.7	31.4	61.0	
12/6/2024 17:00	52.6	468.5	31.6	61.0	
12/7/2024 5:00	52.6	468.6	31.5	61.0	
12/7/2024 17:00	52.4	468.4	31.7	61.0	
12/8/2024 5:00	52.3	468.5	31.6	61.0	
12/8/2024 17:00	52.3	468.6	31.5	61.0	
12/9/2024 5:00	52.1	468.4	31.7	61.0	
12/9/2024 17:00	52.2	468.7	31.4	61.0	
12/10/2024 5:00	52.2	468.6	31.5	61.0	
12/10/2024 17:00	52.2	468.6	31.5	61.0	
12/11/2024 5:00	52.2	468.6	31.5	61.0	
12/11/2024 17:00	52.3	468.7	31.4	61.0	
12/12/2024 5:00	52.5	468.8	31.3	61.0	
12/12/2024 17:00	52.6	468.7	31.4	61.0	
12/13/2024 5:00	52.7	468.7	31.4	61.0	
12/13/2024 17:00	52.8	468.7	31.4	61.0	
12/14/2024 5:00	52.8	468.6	31.5	61.0	
12/14/2024 17:00	52.7	468.5	31.6	61.0	
12/15/2024 5:00	52.6	468.7	31.4	61.0	
12/15/2024 17:00	52.5	468.7	31.4	61.0	
12/16/2024 5:00	52.5	468.7	31.4	61.0	
12/16/2024 17:00	52.3	468.7	31.4	61.0	
12/17/2024 5:00	52.5	469.0	31.1	61.0	
12/17/2024 17:00	52.5	468.8	31.3	61.0	
12/18/2024 5:00	52.4	468.7	31.4	61.0	
12/18/2024 17:00	52.5	468.8	31.3	61.0	
12/19/2024 5:00	52.6	468.9	31.2	61.0	
12/19/2024 17:00	52.5	468.7	31.4	61.0	
12/20/2024 5:00	52.3	468.6	31.5	61.0	
12/20/2024 17:00	52.4	468.9	31.2	61.0	
12/21/2024 5:00	52.6	469.0	31.1	61.0	
12/21/2024 17:00	52.7	468.9	31.2	61.0	
12/22/2024 5:00	52.7	468.8	31.3	61.0	
12/22/2024 17:00	52.7	468.8	31.3	61.0	
12/23/2024 5:00	52.7	468.8	31.3	61.0	
12/23/2024 17:00	52.5	468.7	31.4	61.0	
12/24/2024 5:00	52.6	468.8	31.3	61.0	
12/24/2024 17:00	52.6	468.8	31.3	61.0	
12/25/2024 5:00	52.6	468.8	31.3	61.0	
12/25/2024 17:00	52.6	468.8	31.3	61.0	
12/26/2024 5:00	52.6	468.8	31.3	61.0	

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT NO.: N1245017
CLIENT: Burgess & Niple, Inc.
PROJECT: HAM-75-1.05 & 1.95 Microtunnel
LOCATION: Cincinnati, Ohio

GROUNDWATER LEVEL READINGS FROM PIEZOMETER WITH DATALOGGER
Boring No.: B-001-0-24
Ground Surface El. (ft.): 500.1

Date & Time	Raw Water Level Reading (ft.)	Groundwater El. (ft.)	Groundwater Depth (ft.)	Temperature (°F)	Comments
12/26/2024 17:00	52.5	468.7	31.4	61.0	
12/27/2024 5:00	52.5	468.7	31.4	61.0	
12/27/2024 17:00	52.3	468.7	31.4	61.0	
12/28/2024 5:00	52.3	468.8	31.3	61.0	
12/28/2024 17:00	52.4	468.8	31.3	61.0	
12/29/2024 5:00	52.1	468.5	31.6	61.0	
12/29/2024 17:00	51.9	468.6	31.5	61.0	
12/30/2024 5:00	52.1	469.0	31.1	61.0	
12/30/2024 17:00	52.2	468.8	31.3	61.0	
12/31/2024 5:00	51.9	468.5	31.6	61.0	
12/31/2024 17:00	51.9	468.8	31.3	61.0	
1/1/2025 5:00	52.3	469.2	30.9	61.0	
1/1/2025 17:00	52.4	468.9	31.2	61.0	
1/2/2025 5:00	52.5	468.9	31.2	61.0	
1/2/2025 17:00	52.5	468.8	31.3	61.0	
1/3/2025 5:00	52.4	468.7	31.4	61.0	
1/3/2025 17:00	52.6	468.9	31.2	61.0	
1/4/2025 5:00	52.6	468.9	31.2	61.0	
1/4/2025 17:00	52.6	468.8	31.3	61.0	
1/5/2025 5:00	52.6	468.8	31.3	61.0	
1/5/2025 17:00	52.4	468.6	31.5	61.0	
1/6/2025 5:00	52.2	468.6	31.5	61.0	
1/6/2025 17:00	52.4	469.0	31.1	61.0	
1/7/2025 5:00	52.6	469.0	31.1	61.0	
1/7/2025 17:00	52.7	468.9	31.2	61.0	
1/8/2025 5:00	52.7	468.8	31.3	61.0	
1/8/2025 17:00	52.6	468.7	31.4	61.0	
1/9/2025 5:00	52.6	468.8	31.3	61.0	
1/9/2025 17:00	52.6	468.8	31.3	61.0	
1/10/2025 5:00	52.5	468.7	31.4	61.0	
1/10/2025 17:00	52.3	468.6	31.5	61.0	
1/11/2025 5:00	52.2	468.7	31.4	61.0	
1/11/2025 17:00	52.4	469.0	31.1	61.0	
1/12/2025 5:00	52.4	468.8	31.3	61.0	
1/12/2025 17:00	52.4	468.8	31.3	61.0	
1/13/2025 5:00	52.4	468.9	31.2	61.0	
1/13/2025 17:00	52.5	468.9	31.2	61.0	
1/14/2025 5:00	52.6	468.9	31.2	61.0	
1/14/2025 17:00	52.6	468.8	31.3	61.0	
1/15/2025 5:00	52.8	469.0	31.1	61.0	
1/15/2025 17:00	52.7	468.7	31.4	61.0	
1/16/2025 5:00	52.4	468.5	31.6	61.1	
1/16/2025 17:00	52.4	468.8	31.3	61.0	
1/17/2025 5:00	52.5	468.9	31.2	61.0	
1/17/2025 17:00	52.3	468.6	31.5	61.0	

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT NO.: N1245017
CLIENT: Burgess & Niple, Inc.
PROJECT: HAM-75-1.05 & 1.95 Microtunnel
LOCATION: Cincinnati, Ohio

GROUNDWATER LEVEL READINGS FROM PIEZOMETER WITH DATALOGGER

Boring No.: B-001-0-24

Ground Surface El. (ft.): 500.1

Date & Time	Raw Water Level Reading (ft.)	Groundwater El. (ft.)	Groundwater Depth (ft.)	Temperature (°F)	Comments
1/18/2025 5:00	52.2	468.7	31.4	61.0	
1/18/2025 17:00	52.3	468.9	31.2	61.0	
1/19/2025 5:00	52.3	468.9	31.2	61.0	
1/19/2025 17:00	52.5	468.9	31.2	61.0	
1/20/2025 5:00	52.7	469.0	31.1	61.0	
1/20/2025 17:00	52.8	468.9	31.2	61.0	
1/21/2025 5:00	52.8	468.8	31.3	61.0	
1/21/2025 17:00	52.8	468.8	31.3	61.0	
1/22/2025 5:00	52.8	468.8	31.3	61.0	
1/22/2025 17:00	52.7	468.6	31.5	61.0	
1/23/2025 5:00	52.5	468.7	31.4	61.0	
1/23/2025 17:00	52.6	468.8	31.3	61.0	
1/24/2025 5:00	52.6	468.9	31.2	61.0	
1/24/2025 17:00	52.6	468.8	31.3	61.0	
1/25/2025 5:00	52.6	468.8	31.3	61.0	
1/25/2025 17:00	52.6	468.7	31.4	61.0	
1/26/2025 5:00	52.6	468.9	31.2	61.0	
1/26/2025 17:00	52.6	468.8	31.3	61.0	
1/27/2025 5:00	52.5	468.7	31.4	61.0	
1/27/2025 17:00	52.4	468.6	31.5	61.0	
1/28/2025 5:00	52.3	468.7	31.4	61.0	
1/28/2025 17:00	52.2	468.7	31.4	61.0	
1/29/2025 5:00	52.2	468.8	31.3	61.0	
1/29/2025 17:00	52.4	469.0	31.1	61.0	
1/30/2025 5:00	52.4	468.9	31.2	61.0	
1/30/2025 17:00	52.3	468.7	31.4	61.0	
1/31/2025 5:00	52.2	468.6	31.5	61.1	
1/31/2025 17:00	52.1	468.8	31.3	61.0	
2/1/2025 5:00	52.4	469.1	31.0	61.0	
2/1/2025 17:00	52.6	468.9	31.2	61.0	
2/2/2025 5:00	52.5	468.7	31.4	61.0	
2/2/2025 17:00	52.3	468.7	31.4	61.1	
2/3/2025 5:00	52.4	468.8	31.3	61.1	
2/3/2025 17:00	52.2	468.7	31.4	61.1	
2/4/2025 5:00	52.4	469.0	31.1	61.0	
2/4/2025 17:00	52.6	469.0	31.1	61.0	
2/5/2025 5:00	52.6	468.8	31.3	61.1	
2/5/2025 17:00	52.5	468.7	31.4	61.1	
2/6/2025 5:00	52.2	468.6	31.5	61.1	
2/6/2025 17:00	52.4	469.0	31.1	61.1	
2/7/2025 5:00	52.6	469.0	31.1	61.0	
2/7/2025 17:00	52.6	468.9	31.2	61.1	
2/8/2025 5:00	52.6	468.7	31.4	61.1	
2/8/2025 17:00	52.3	468.5	31.6	61.1	
2/9/2025 5:00	52.7	469.2	30.9	61.1	

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT NO.: N1245017
CLIENT: Burgess & Niple, Inc.
PROJECT: HAM-75-1.05 & 1.95 Microtunnel
LOCATION: Cincinnati, Ohio

GROUNDWATER LEVEL READINGS FROM PIEZOMETER WITH DATALOGGER

Boring No.: B-001-0-24

Ground Surface El. (ft.): 500.1

Date & Time	Raw Water Level Reading (ft.)	Groundwater El. (ft.)	Groundwater Depth (ft.)	Temperature (°F)	Comments
2/9/2025 17:00	52.8	468.9	31.2	61.1	
2/10/2025 5:00	52.9	468.9	31.2	61.1	
2/10/2025 17:00	52.9	468.8	31.3	61.1	
2/11/2025 5:00	52.8	468.7	31.4	61.1	
2/11/2025 17:00	52.7	468.7	31.4	61.1	
2/12/2025 5:00	52.6	468.7	31.4	61.1	
2/12/2025 17:00	52.5	468.6	31.5	61.1	
2/13/2025 5:00	52.5	468.9	31.2	61.1	
2/13/2025 17:00	53.0	469.3	30.8	61.1	
2/14/2025 5:00	53.2	469.0	31.1	61.1	
2/14/2025 17:00	53.1	468.7	31.4	61.1	
2/15/2025 5:00	52.9	468.6	31.5	61.1	
2/15/2025 17:00	52.6	468.5	31.6	61.1	
2/16/2025 5:00	52.2	468.5	31.6	61.1	
2/16/2025 17:00	52.7	469.3	30.8	61.1	
2/17/2025 5:00	53.0	469.1	31.0	61.1	
2/17/2025 17:00	53.1	468.9	31.2	61.1	
2/18/2025 5:00	53.2	468.9	31.2	61.1	
2/18/2025 17:00	53.3	468.9	31.2	61.1	
2/19/2025 5:00	53.4	468.9	31.2	61.1	
2/19/2025 17:00	53.3	468.7	31.4	61.1	
2/20/2025 5:00	53.3	468.8	31.3	61.1	
2/20/2025 17:00	53.5	469.0	31.1	61.1	
2/21/2025 5:00	53.7	468.9	31.2	61.1	
2/21/2025 17:00	53.7	468.8	31.3	61.1	
2/22/2025 5:00	53.6	468.7	31.4	61.1	
2/22/2025 17:00	53.4	468.6	31.5	61.1	
2/23/2025 5:00	53.4	468.8	31.3	61.1	
2/23/2025 17:00	53.3	468.7	31.4	61.1	
2/24/2025 5:00	53.3	468.7	31.4	61.1	
2/24/2025 17:00	53.1	468.7	31.4	61.1	
2/25/2025 5:00	53.1	468.8	31.3	61.1	
2/25/2025 17:00	53.1	468.8	31.3	61.1	
2/26/2025 5:00	53.3	468.9	31.2	61.1	
2/26/2025 17:00	53.1	468.7	31.4	61.1	
2/27/2025 5:00	53.2	468.9	31.2	61.1	
2/27/2025 17:00	53.2	468.8	31.3	61.1	
2/28/2025 5:00	53.3	468.9	31.2	61.1	
2/28/2025 17:00	53.0	468.4	31.7	61.1	
3/1/2025 5:00	53.1	469.0	31.1	61.1	
3/1/2025 17:00	53.4	469.1	31.0	61.1	
3/2/2025 5:00	53.6	469.0	31.1	61.1	
3/2/2025 17:00	53.6	468.8	31.3	61.1	
3/3/2025 5:00	53.6	468.8	31.3	61.1	
3/3/2025 17:00	53.5	468.7	31.4	61.1	

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT NO.: N1245017
CLIENT: Burgess & Niple, Inc.
PROJECT: HAM-75-1.05 & 1.95 Microtunnel
LOCATION: Cincinnati, Ohio

GROUNDWATER LEVEL READINGS FROM PIEZOMETER WITH DATALOGGER

Boring No.: B-001-0-24

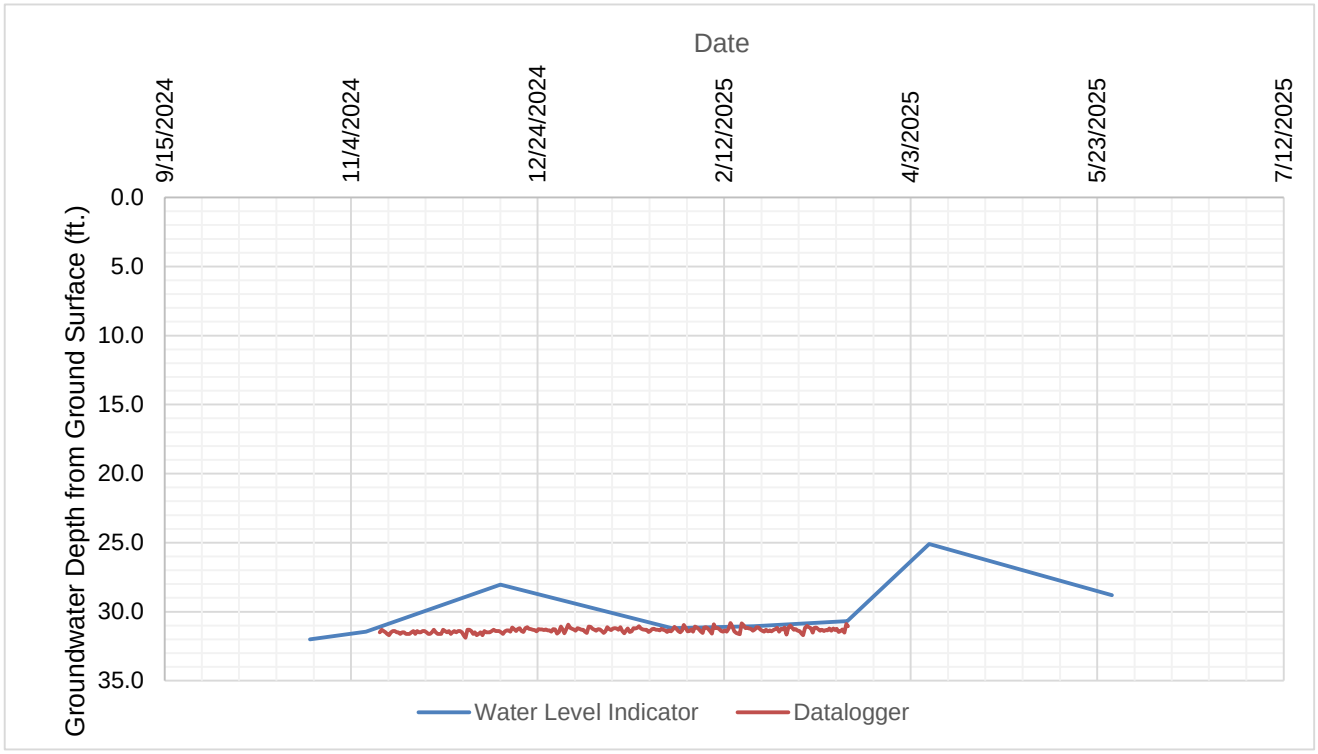
Ground Surface El. (ft.): 500.1

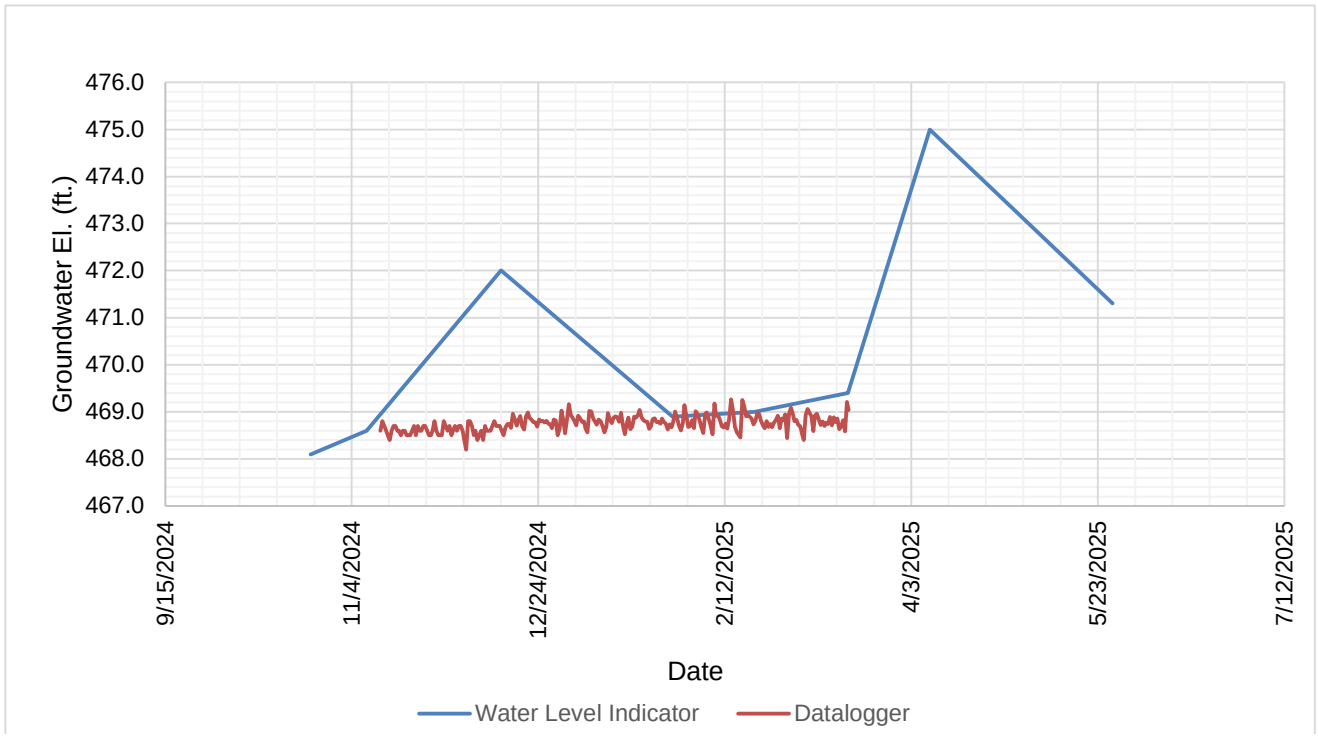
Date & Time	Raw Water Level Reading (ft.)	Groundwater El. (ft.)	Groundwater Depth (ft.)	Temperature (°F)	Comments
3/4/2025 5:00	53.4	468.7	31.4	61.1	
3/4/2025 17:00	53.1	468.5	31.6	61.1	
3/5/2025 5:00	52.7	468.4	31.7	61.1	
3/5/2025 17:00	52.9	468.9	31.2	61.1	
3/6/2025 5:00	53.1	469.1	31.0	61.1	
3/6/2025 17:00	53.3	469.0	31.1	61.1	
3/7/2025 5:00	53.4	468.9	31.2	61.1	
3/7/2025 17:00	53.2	468.6	31.5	61.1	
3/8/2025 5:00	53.3	468.9	31.2	61.1	
3/8/2025 17:00	53.5	469.0	31.1	61.1	
3/9/2025 5:00	53.5	468.8	31.3	61.1	
3/9/2025 17:00	53.4	468.7	31.4	61.1	
3/10/2025 5:00	53.4	468.8	31.3	61.1	
3/10/2025 17:00	53.3	468.7	31.4	61.1	
3/11/2025 5:00	53.3	468.8	31.3	61.1	
3/11/2025 17:00	53.2	468.7	31.4	61.1	
3/12/2025 5:00	53.3	468.9	31.2	61.1	
3/12/2025 17:00	53.3	468.7	31.4	61.1	
3/13/2025 5:00	53.3	468.9	31.2	61.1	
3/13/2025 17:00	53.3	468.8	31.3	61.1	
3/14/2025 5:00	53.4	468.9	31.2	61.1	
3/14/2025 17:00	53.2	468.6	31.5	61.1	
3/15/2025 5:00	53.1	468.7	31.4	61.1	
3/15/2025 17:00	53.1	468.8	31.3	61.1	
3/16/2025 5:00	52.9	468.6	31.5	61.1	
3/16/2025 17:00	53.3	469.2	30.9	61.1	
3/17/2025 5:00	53.6	469.0	31.1	61.1	

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT NO.: N1245017
CLIENT: Burgess & Niple, Inc.
PROJECT: HAM-75-1.05 & 1.95 Microtunnel
LOCATION: Cincinnati, Ohio

GROUNDWATER LEVEL READINGS FROM PIEZOMETER
Boring No.: B-001-0-24
Ground Surface El. (ft.): 500.1





NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT NO.: N1245017
CLIENT: Burgess & Niple, Inc.
PROJECT: HAM-75-1.05 & 1.95 Microtunnel
LOCATION: Cincinnati, Ohio

GROUNDWATER LEVEL READINGS FROM PIEZOMETER

Boring No.: B-004-0-24

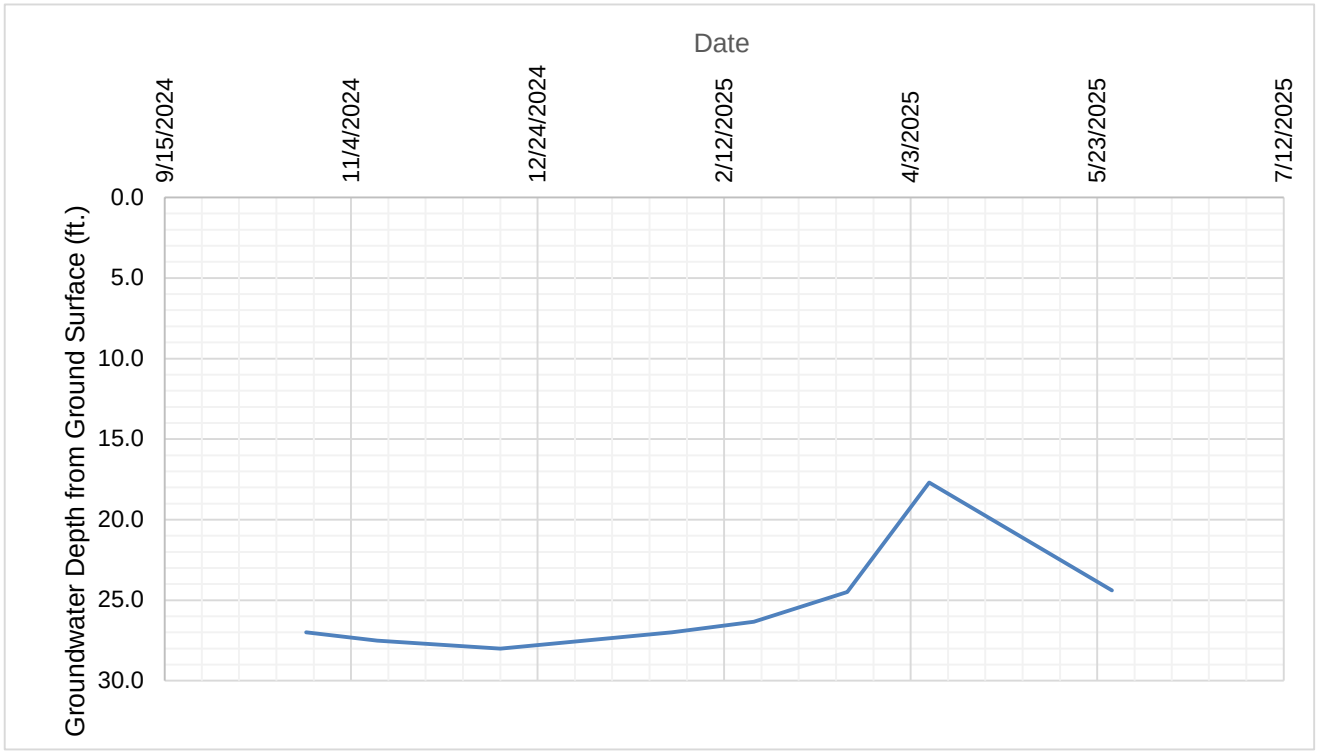
Ground Surface El. (ft.): 495.9

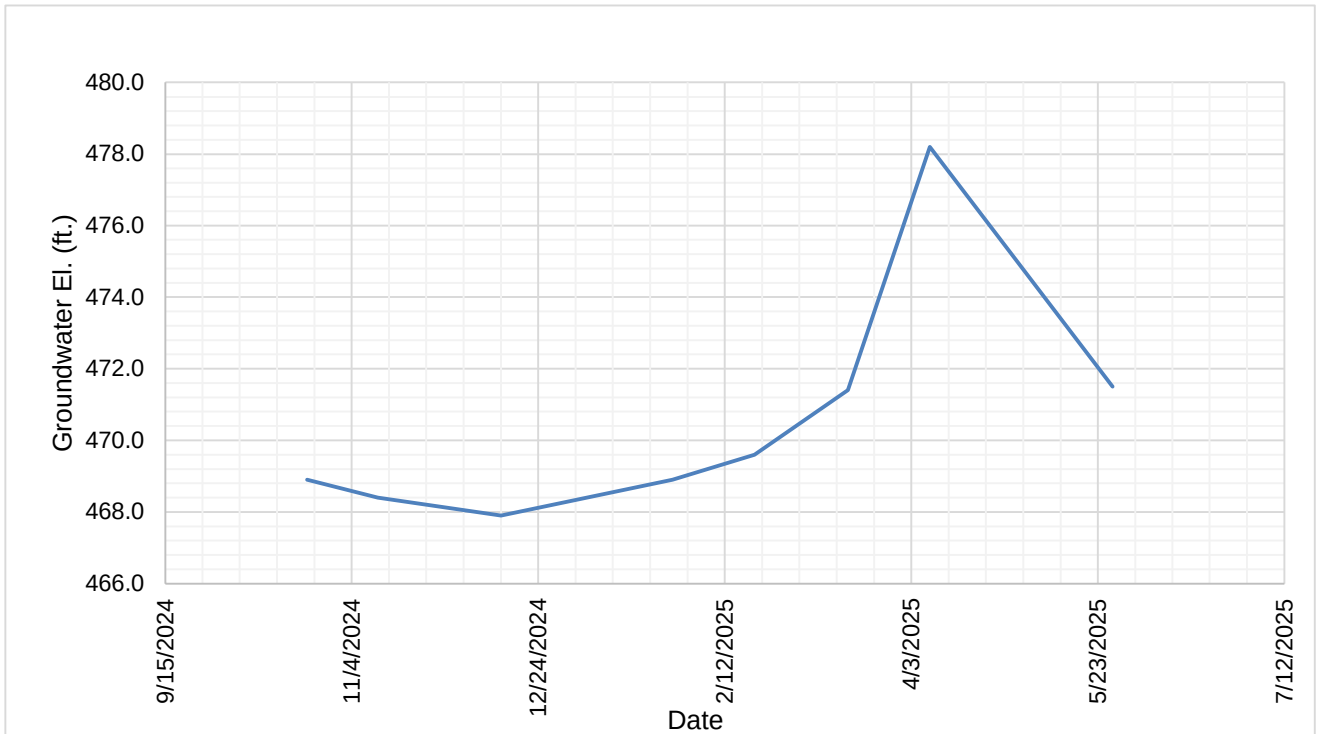
Date & Time	Groundwater Depth (ft.)	Groundwater El. (ft.)	Temperature (°F)	Comments
10/23/2024	27.0	468.9		Measured during drilling
11/11/2024	27.5	468.4		Measured prior to slug test
12/14/2024	28.0	467.9		
1/29/2025	27.0	468.9		
2/20/2025	26.3	469.6		
3/17/2025	24.5	471.4		
4/8/2025	17.7	478.2		Ohio River Flooded at El. 489
5/27/2025	24.4	471.5		

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT NO.: N1245017
CLIENT: Burgess & Niple, Inc.
PROJECT: HAM-75-1.05 & 1.95 Microtunnel
LOCATION: Cincinnati, Ohio

GROUNDWATER LEVEL READINGS FROM PIEZOMETER
Boring No.: B-004-0-24
Ground Surface El. (ft.): 495.9





NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT NO.: N1245017
CLIENT: Burgess & Niple, Inc.
PROJECT: HAM-75-1.05 & 1.95 Microtunnel
LOCATION: Cincinnati, Ohio

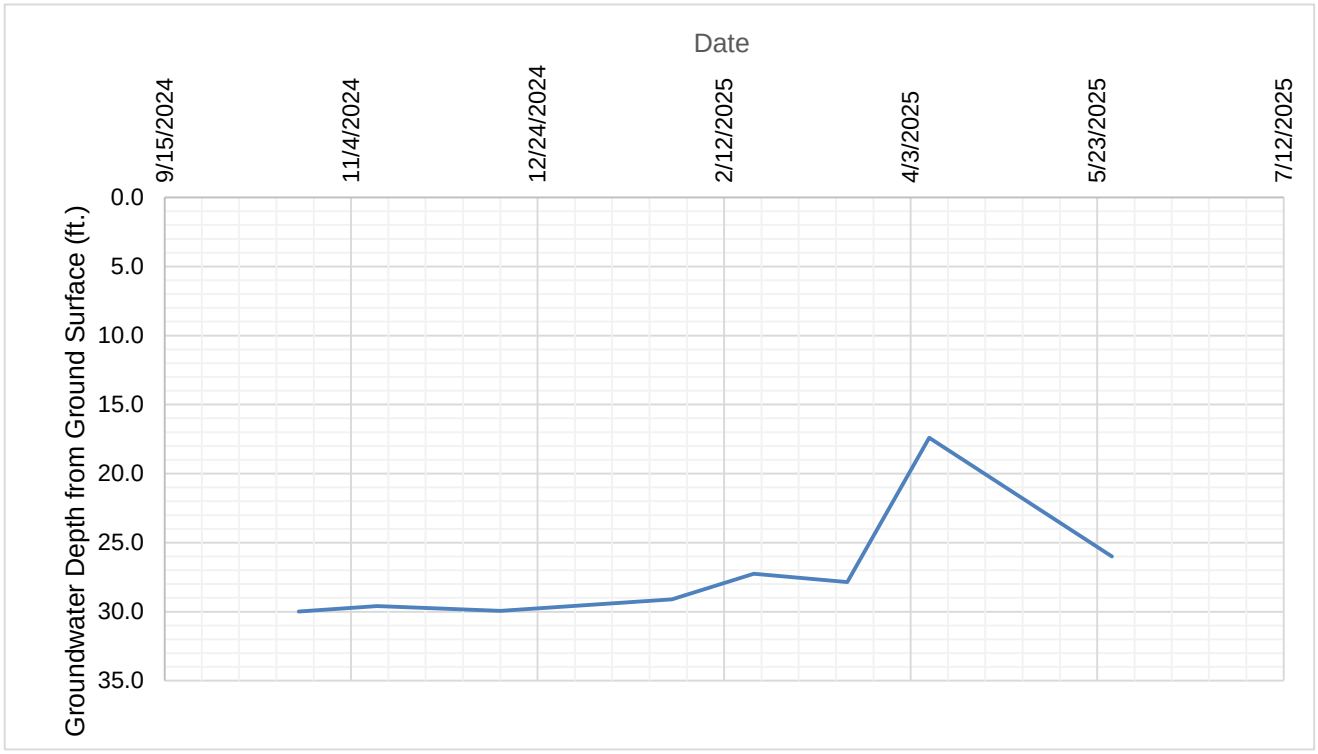
GROUNDWATER LEVEL READINGS FROM PIEZOMETER
Boring No.: B-009-0-24
Ground Surface El. (ft.): 497.3

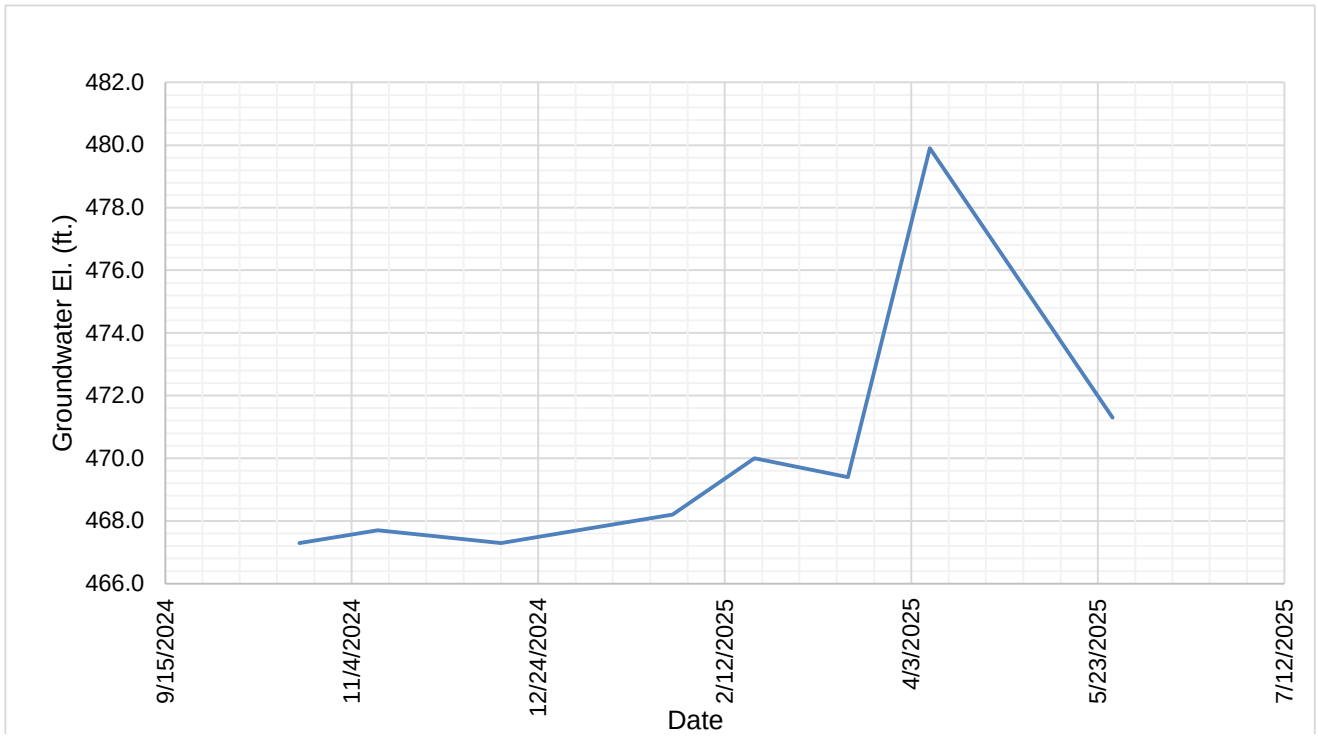
Date & Time	Groundwater Depth (ft.)	Groundwater El. (ft.)	Temperature (°F)	Comments
10/21/2024	30.0	467.3		Measured during drilling
11/11/2024	29.6	467.7		Measured prior to slug test
12/14/2024	30.0	467.3		
1/29/2025	29.1	468.2		
2/20/2025	27.3	470.0		
3/17/2025	27.9	469.4		
4/8/2025	17.4	479.9		Ohio River Flooded at El. 489
5/27/2025	26.0	471.3		

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT NO.: N1245017
CLIENT: Burgess & Niple, Inc.
PROJECT: HAM-75-1.05 & 1.95 Microtunnel
LOCATION: Cincinnati, Ohio

GROUNDWATER LEVEL READINGS FROM PIEZOMETER
Boring No.: B-009-0-24
Ground Surface El. (ft.): 497.3





NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT NO.: N1245017
CLIENT: Burgess & Niple, Inc.
PROJECT: HAM-75-1.05 & 1.95 Microtunnel
LOCATION: Cincinnati, Ohio

GROUNDWATER LEVEL READINGS FROM PIEZOMETER WITH WATER LEVEL INDICATOR

Boring No.: B-012-0-24

Ground Surface El. (ft.): 493.4

Date & Time	Groundwater Depth (ft.)	Groundwater El. (ft.)	Temperature (°F)	Comments
10/17/2024	29.5	463.9		Measured during drilling
11/8/2024	27.6	465.8		Measured prior to slug test
12/14/2024	31.9	461.5		
1/29/2025	27.0	466.4		
2/20/2025	24.1	469.3		
3/17/2025	25.6	467.8		
4/8/2025	23.3	470.1		Ohio River Flooded at El. 489
5/27/2025	23.9	469.5		

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT NO.: N1245017
CLIENT: Burgess & Niple, Inc.
PROJECT: HAM-75-1.05 & 1.95 Microtunnel
LOCATION: Cincinnati, Ohio

GROUNDWATER LEVEL READINGS FROM PIEZOMETER WITH DATALOGGER

Boring No.: B-012-0-24

Ground Surface El. (ft.): 493.4

Date & Time	Raw Water Level Reading (ft.)	Groundwater El. (ft.)	Groundwater Depth (ft.)	Temperature (°F)	Comments
11/11/2024 17:00	45.3	465.8	27.6	61.7	
11/12/2024 5:00	45.4	465.9	27.5	61.7	
11/12/2024 17:00	45.5	465.9	27.5	61.7	
11/13/2024 5:00	45.5	465.8	27.6	61.7	
11/13/2024 17:00	45.4	465.7	27.7	61.7	
11/14/2024 5:00	45.3	465.7	27.7	61.7	
11/14/2024 17:00	45.3	465.8	27.6	61.7	
11/15/2024 5:00	45.4	465.9	27.5	61.7	
11/15/2024 17:00	45.5	465.9	27.5	61.7	
11/16/2024 5:00	45.5	465.8	27.6	61.7	
11/16/2024 17:00	45.5	465.8	27.6	61.7	
11/17/2024 5:00	45.5	465.8	27.6	61.7	
11/17/2024 17:00	45.4	465.7	27.7	61.7	
11/18/2024 5:00	45.4	465.8	27.6	61.7	
11/18/2024 17:00	45.4	465.8	27.6	61.7	
11/19/2024 5:00	45.3	465.7	27.7	61.7	
11/19/2024 17:00	45.2	465.7	27.7	61.7	
11/20/2024 5:00	45.2	465.8	27.6	61.7	
11/20/2024 17:00	45.3	465.9	27.5	61.7	
11/21/2024 5:00	45.2	465.7	27.7	61.7	
11/21/2024 17:00	45.2	465.8	27.6	61.7	
11/22/2024 5:00	45.2	465.8	27.6	61.7	
11/22/2024 17:00	45.3	465.9	27.5	61.7	
11/23/2024 5:00	45.3	465.8	27.6	61.7	
11/23/2024 17:00	45.3	465.8	27.6	61.7	
11/24/2024 5:00	45.3	465.8	27.6	61.7	
11/24/2024 17:00	45.3	465.8	27.6	61.7	
11/25/2024 5:00	45.3	465.8	27.6	61.8	
11/25/2024 17:00	45.2	465.7	27.7	61.8	
11/26/2024 5:00	45.3	465.9	27.5	61.7	
11/26/2024 17:00	45.4	465.9	27.5	61.8	
11/27/2024 5:00	45.4	465.8	27.6	61.8	
11/27/2024 17:00	45.3	465.7	27.7	61.8	
11/28/2024 5:00	45.2	465.7	27.7	61.8	
11/28/2024 17:00	45.3	465.9	27.5	61.8	
11/29/2024 5:00	45.4	465.9	27.5	61.8	
11/29/2024 17:00	45.4	465.8	27.6	61.8	
11/30/2024 5:00	45.5	465.9	27.5	61.8	
11/30/2024 17:00	45.5	465.8	27.6	61.8	
12/1/2024 5:00	45.5	465.8	27.6	61.8	
12/1/2024 17:00	45.5	465.8	27.6	61.8	
12/2/2024 5:00	45.6	465.9	27.5	61.8	
12/2/2024 17:00	45.6	465.8	27.6	61.8	
12/3/2024 5:00	45.7	465.9	27.5	61.8	
12/3/2024 17:00	45.8	465.9	27.5	61.8	

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT NO.: N1245017
CLIENT: Burgess & Niple, Inc.
PROJECT: HAM-75-1.05 & 1.95 Microtunnel
LOCATION: Cincinnati, Ohio

GROUNDWATER LEVEL READINGS FROM PIEZOMETER WITH DATALOGGER

Boring No.: B-012-0-24

Ground Surface El. (ft.): 493.4

Date & Time	Raw Water Level Reading (ft.)	Groundwater El. (ft.)	Groundwater Depth (ft.)	Temperature (°F)	Comments
12/4/2024 5:00	45.6	465.6	27.8	61.8	
12/4/2024 17:00	45.4	465.6	27.8	61.8	
12/5/2024 5:00	45.4	465.8	27.6	61.8	
12/5/2024 17:00	45.6	466.0	27.4	61.8	
12/6/2024 5:00	45.7	465.9	27.5	61.8	
12/6/2024 17:00	45.6	465.7	27.7	61.8	
12/7/2024 5:00	45.6	465.8	27.6	61.8	
12/7/2024 17:00	45.5	465.7	27.7	61.8	
12/8/2024 5:00	45.4	465.7	27.7	61.8	
12/8/2024 17:00	45.4	465.8	27.6	61.8	
12/9/2024 5:00	45.3	465.7	27.7	61.8	
12/9/2024 17:00	45.3	465.8	27.6	61.8	
12/10/2024 5:00	45.3	465.8	27.6	61.8	
12/10/2024 17:00	45.3	465.8	27.6	61.8	
12/11/2024 5:00	45.3	465.8	27.6	61.8	
12/11/2024 17:00	45.3	465.8	27.6	61.8	
12/12/2024 5:00	45.4	465.9	27.5	61.8	
12/12/2024 17:00	45.6	466.0	27.4	61.8	
12/13/2024 5:00	45.7	465.9	27.5	61.8	
12/13/2024 17:00	45.8	465.9	27.5	61.8	
12/14/2024 5:00	45.8	465.8	27.6	61.8	
12/14/2024 17:00	45.8	465.8	27.6	61.8	
12/15/2024 5:00	45.7	465.8	27.6	61.8	
12/15/2024 17:00	45.7	465.9	27.5	61.8	
12/16/2024 5:00	45.6	465.9	27.5	61.8	
12/16/2024 17:00	45.5	465.8	27.6	61.8	
12/17/2024 5:00	45.6	466.0	27.4	61.8	
12/17/2024 17:00	45.7	466.0	27.4	61.8	
12/18/2024 5:00	45.7	465.9	27.5	61.8	
12/18/2024 17:00	45.7	465.9	27.5	61.8	
12/19/2024 5:00	45.8	466.0	27.4	61.8	
12/19/2024 17:00	45.8	465.9	27.5	61.8	
12/20/2024 5:00	45.7	465.8	27.6	61.8	
12/20/2024 17:00	45.8	466.0	27.4	61.8	
12/21/2024 5:00	46.0	466.1	27.3	61.8	
12/21/2024 17:00	46.1	466.0	27.4	61.9	
12/22/2024 5:00	46.1	466.0	27.4	61.9	
12/22/2024 17:00	46.2	465.9	27.5	61.9	
12/23/2024 5:00	46.2	465.9	27.5	61.9	
12/23/2024 17:00	46.1	465.8	27.6	61.9	
12/24/2024 5:00	46.1	465.9	27.5	61.9	
12/24/2024 17:00	46.1	465.9	27.5	61.9	
12/25/2024 5:00	46.1	465.9	27.5	61.9	
12/25/2024 17:00	46.1	465.9	27.5	61.9	
12/26/2024 5:00	46.1	465.9	27.5	61.9	

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT NO.: N1245017
CLIENT: Burgess & Niple, Inc.
PROJECT: HAM-75-1.05 & 1.95 Microtunnel
LOCATION: Cincinnati, Ohio

GROUNDWATER LEVEL READINGS FROM PIEZOMETER WITH DATALOGGER
Boring No.: B-012-0-24
Ground Surface El. (ft.): 493.4

Date & Time	Raw Water Level Reading (ft.)	Groundwater El. (ft.)	Groundwater Depth (ft.)	Temperature (°F)	Comments
12/26/2024 17:00	46.0	465.9	27.5	61.9	
12/27/2024 5:00	46.0	465.8	27.6	61.9	
12/27/2024 17:00	45.8	465.8	27.6	61.9	
12/28/2024 5:00	45.8	465.9	27.5	61.9	
12/28/2024 17:00	45.8	465.9	27.5	61.9	
12/29/2024 5:00	45.6	465.7	27.7	61.9	
12/29/2024 17:00	45.4	465.7	27.7	61.9	
12/30/2024 5:00	45.6	466.1	27.3	61.9	
12/30/2024 17:00	45.7	466.0	27.4	61.9	
12/31/2024 5:00	45.5	465.8	27.6	61.9	
12/31/2024 17:00	45.5	465.8	27.6	61.9	
1/1/2025 5:00	45.7	466.2	27.2	61.9	
1/1/2025 17:00	45.9	466.0	27.4	61.9	
1/2/2025 5:00	46.0	466.0	27.4	61.9	
1/2/2025 17:00	46.0	466.0	27.4	61.9	
1/3/2025 5:00	46.0	465.9	27.5	61.9	
1/3/2025 17:00	46.1	466.0	27.4	61.9	
1/4/2025 5:00	46.2	466.0	27.4	61.9	
1/4/2025 17:00	46.2	465.9	27.5	61.9	
1/5/2025 5:00	46.2	465.9	27.5	61.9	
1/5/2025 17:00	46.1	465.8	27.6	61.9	
1/6/2025 5:00	45.9	465.7	27.7	61.9	
1/6/2025 17:00	46.0	466.0	27.4	61.9	
1/7/2025 5:00	46.2	466.1	27.3	61.9	
1/7/2025 17:00	46.3	466.0	27.4	61.9	
1/8/2025 5:00	46.3	465.9	27.5	61.9	
1/8/2025 17:00	46.2	465.9	27.5	61.9	
1/9/2025 5:00	46.2	465.9	27.5	61.9	
1/9/2025 17:00	46.2	465.9	27.5	61.9	
1/10/2025 5:00	46.2	465.9	27.5	61.9	
1/10/2025 17:00	46.0	465.7	27.7	61.9	
1/11/2025 5:00	45.9	465.7	27.7	61.9	
1/11/2025 17:00	46.0	466.0	27.4	61.9	
1/12/2025 5:00	46.0	465.9	27.5	61.9	
1/12/2025 17:00	46.0	465.9	27.5	61.9	
1/13/2025 5:00	46.0	465.9	27.5	62.0	
1/13/2025 17:00	46.1	466.0	27.4	62.0	
1/14/2025 5:00	46.1	466.0	27.4	62.0	
1/14/2025 17:00	46.1	465.9	27.5	62.0	
1/15/2025 5:00	46.2	466.0	27.4	62.0	
1/15/2025 17:00	46.2	465.9	27.5	62.0	
1/16/2025 5:00	46.0	465.7	27.7	62.0	
1/16/2025 17:00	45.9	465.8	27.6	62.0	
1/17/2025 5:00	45.9	465.9	27.5	62.0	
1/17/2025 17:00	45.8	465.8	27.6	62.0	

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT NO.: N1245017
CLIENT: Burgess & Niple, Inc.
PROJECT: HAM-75-1.05 & 1.95 Microtunnel
LOCATION: Cincinnati, Ohio

GROUNDWATER LEVEL READINGS FROM PIEZOMETER WITH DATALOGGER
Boring No.: B-012-0-24
Ground Surface El. (ft.): 493.4

Date & Time	Raw Water Level Reading (ft.)	Groundwater El. (ft.)	Groundwater Depth (ft.)	Temperature (°F)	Comments
1/18/2025 5:00	45.7	465.8	27.6	62.0	
1/18/2025 17:00	45.7	465.9	27.5	62.0	
1/19/2025 5:00	45.8	466.0	27.4	62.0	
1/19/2025 17:00	45.9	466.0	27.4	62.0	
1/20/2025 5:00	46.1	466.1	27.3	62.0	
1/20/2025 17:00	46.2	466.0	27.4	62.0	
1/21/2025 5:00	46.2	465.9	27.5	62.0	
1/21/2025 17:00	46.2	465.9	27.5	62.0	
1/22/2025 5:00	46.2	465.9	27.5	62.0	
1/22/2025 17:00	46.1	465.8	27.6	62.0	
1/23/2025 5:00	46.0	465.8	27.6	62.0	
1/23/2025 17:00	46.0	465.9	27.5	62.0	
1/24/2025 5:00	46.1	465.9	27.5	62.0	
1/24/2025 17:00	46.1	465.9	27.5	62.0	
1/25/2025 5:00	46.1	465.9	27.5	62.0	
1/25/2025 17:00	46.0	465.9	27.5	62.0	
1/26/2025 5:00	46.0	465.9	27.5	62.0	
1/26/2025 17:00	46.0	465.9	27.5	62.0	
1/27/2025 5:00	46.0	465.9	27.5	62.0	
1/27/2025 17:00	45.9	465.8	27.6	62.0	
1/28/2025 5:00	45.8	465.8	27.6	62.0	
1/28/2025 17:00	45.7	465.8	27.6	62.0	
1/29/2025 5:00	45.7	465.8	27.6	62.0	
1/29/2025 17:00	45.8	466.0	27.4	62.0	
1/30/2025 5:00	45.8	466.0	27.4	62.1	
1/30/2025 17:00	45.8	465.9	27.5	62.0	
1/31/2025 5:00	45.7	465.8	27.6	62.0	
1/31/2025 17:00	45.6	465.8	27.6	62.0	
2/1/2025 5:00	45.8	466.1	27.3	62.1	
2/1/2025 17:00	46.0	466.1	27.3	62.1	
2/2/2025 5:00	46.0	465.9	27.5	62.0	
2/2/2025 17:00	46.0	465.9	27.5	62.0	
2/3/2025 5:00	46.0	466.0	27.4	62.0	
2/3/2025 17:00	46.0	465.9	27.5	62.0	
2/4/2025 5:00	46.2	466.1	27.3	62.0	
2/4/2025 17:00	46.5	466.2	27.2	62.0	
2/5/2025 5:00	46.6	466.0	27.4	62.0	
2/5/2025 17:00	46.5	465.8	27.6	62.0	
2/6/2025 5:00	46.3	465.7	27.7	62.0	
2/6/2025 17:00	46.4	466.0	27.4	62.0	
2/7/2025 5:00	46.6	466.1	27.3	62.0	
2/7/2025 17:00	46.7	466.1	27.3	62.0	
2/8/2025 5:00	46.8	465.9	27.5	62.0	
2/8/2025 17:00	46.6	465.8	27.6	62.0	
2/9/2025 5:00	47.0	466.2	27.2	62.0	

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT NO.: N1245017
CLIENT: Burgess & Niple, Inc.
PROJECT: HAM-75-1.05 & 1.95 Microtunnel
LOCATION: Cincinnati, Ohio

GROUNDWATER LEVEL READINGS FROM PIEZOMETER WITH DATALOGGER
Boring No.: B-012-0-24
Ground Surface El. (ft.): 493.4

Date & Time	Raw Water Level Reading (ft.)	Groundwater El. (ft.)	Groundwater Depth (ft.)	Temperature (°F)	Comments
2/9/2025 17:00	47.2	466.2	27.2	62.0	
2/10/2025 5:00	47.4	466.1	27.3	62.0	
2/10/2025 17:00	47.6	466.1	27.3	62.0	
2/11/2025 5:00	47.6	465.9	27.5	62.0	
2/11/2025 17:00	47.6	465.9	27.5	62.0	
2/12/2025 5:00	47.6	465.9	27.5	62.0	
2/12/2025 17:00	47.5	465.8	27.6	62.0	
2/13/2025 5:00	47.5	465.9	27.5	62.0	
2/13/2025 17:00	47.8	466.2	27.2	62.1	
2/14/2025 5:00	48.0	466.1	27.3	62.1	
2/14/2025 17:00	48.1	465.9	27.5	62.0	
2/15/2025 5:00	47.9	465.8	27.6	62.0	
2/15/2025 17:00	47.7	465.7	27.7	62.0	
2/16/2025 5:00	47.5	465.7	27.7	62.0	
2/16/2025 17:00	47.8	466.2	27.2	62.0	
2/17/2025 5:00	48.2	466.3	27.1	62.0	
2/17/2025 17:00	48.4	466.1	27.3	62.0	
2/18/2025 5:00	48.6	466.1	27.3	62.0	
2/18/2025 17:00	48.8	466.1	27.3	62.0	
2/19/2025 5:00	49.0	466.0	27.4	62.0	
2/19/2025 17:00	49.1	466.0	27.4	62.0	
2/20/2025 5:00	49.2	466.0	27.4	62.1	
2/20/2025 17:00	49.4	466.1	27.3	62.1	
2/21/2025 5:00	49.6	466.1	27.3	62.1	
2/21/2025 17:00	49.7	466.0	27.4	62.1	
2/22/2025 5:00	49.8	466.0	27.4	62.1	
2/22/2025 17:00	49.7	465.9	27.5	62.1	
2/23/2025 5:00	49.7	465.9	27.5	62.1	
2/23/2025 17:00	49.6	465.8	27.6	62.1	
2/24/2025 5:00	49.5	465.8	27.6	62.1	
2/24/2025 17:00	49.3	465.8	27.6	62.2	
2/25/2025 5:00	49.1	465.7	27.7	62.3	
2/25/2025 17:00	49.1	465.8	27.6	62.3	
2/26/2025 5:00	49.0	465.9	27.5	62.3	
2/26/2025 17:00	48.9	465.8	27.6	62.3	
2/27/2025 5:00	48.8	465.8	27.6	62.3	
2/27/2025 17:00	48.7	465.8	27.6	62.3	
2/28/2025 5:00	48.7	465.9	27.5	62.4	
2/28/2025 17:00	48.6	465.7	27.7	62.2	
3/1/2025 5:00	48.5	465.8	27.6	62.4	
3/1/2025 17:00	48.6	466.0	27.4	62.6	
3/2/2025 5:00	48.7	466.0	27.4	62.6	
3/2/2025 17:00	48.7	465.9	27.5	62.5	
3/3/2025 5:00	48.7	465.9	27.5	62.4	
3/3/2025 17:00	48.7	465.9	27.5	62.3	

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PROJECT NO.: N1245017
CLIENT: Burgess & Niple, Inc.
PROJECT: HAM-75-1.05 & 1.95 Microtunnel
LOCATION: Cincinnati, Ohio

GROUNDWATER LEVEL READINGS FROM PIEZOMETER WITH DATALOGGER

Boring No.: B-012-0-24

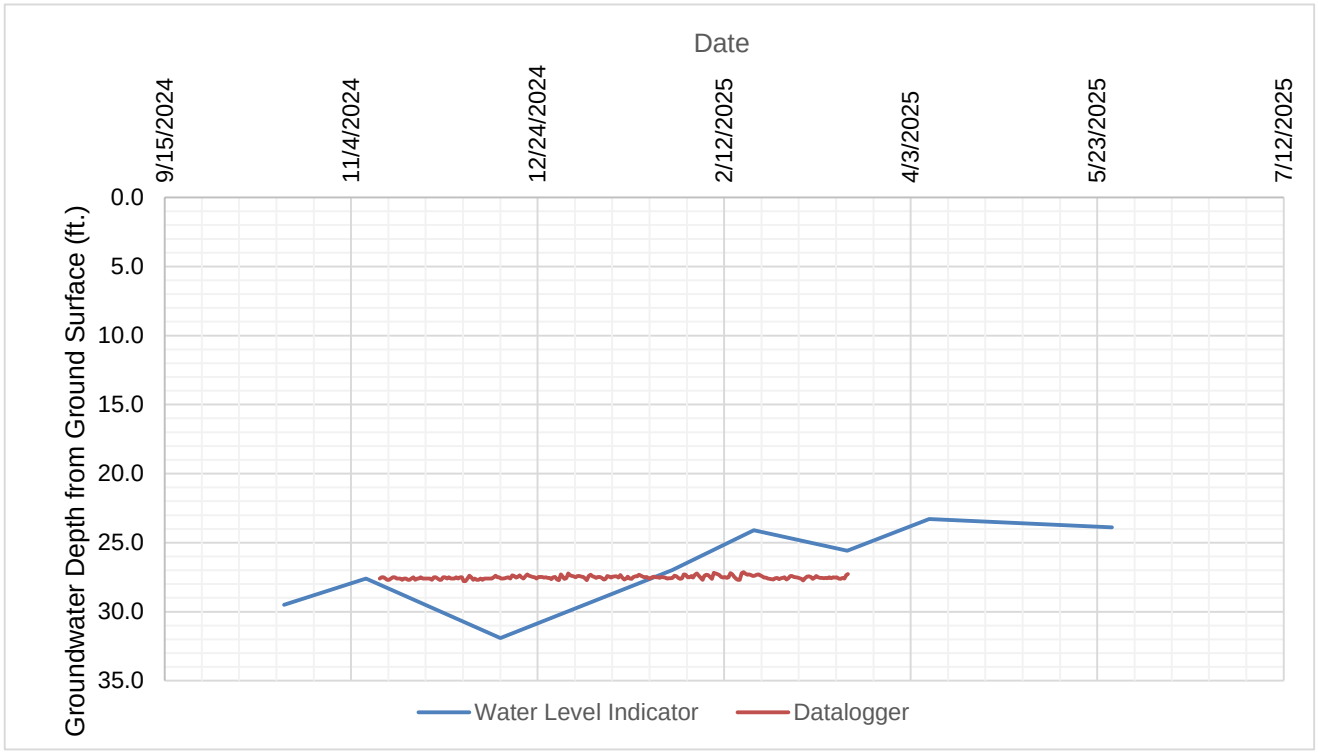
Ground Surface El. (ft.): 493.4

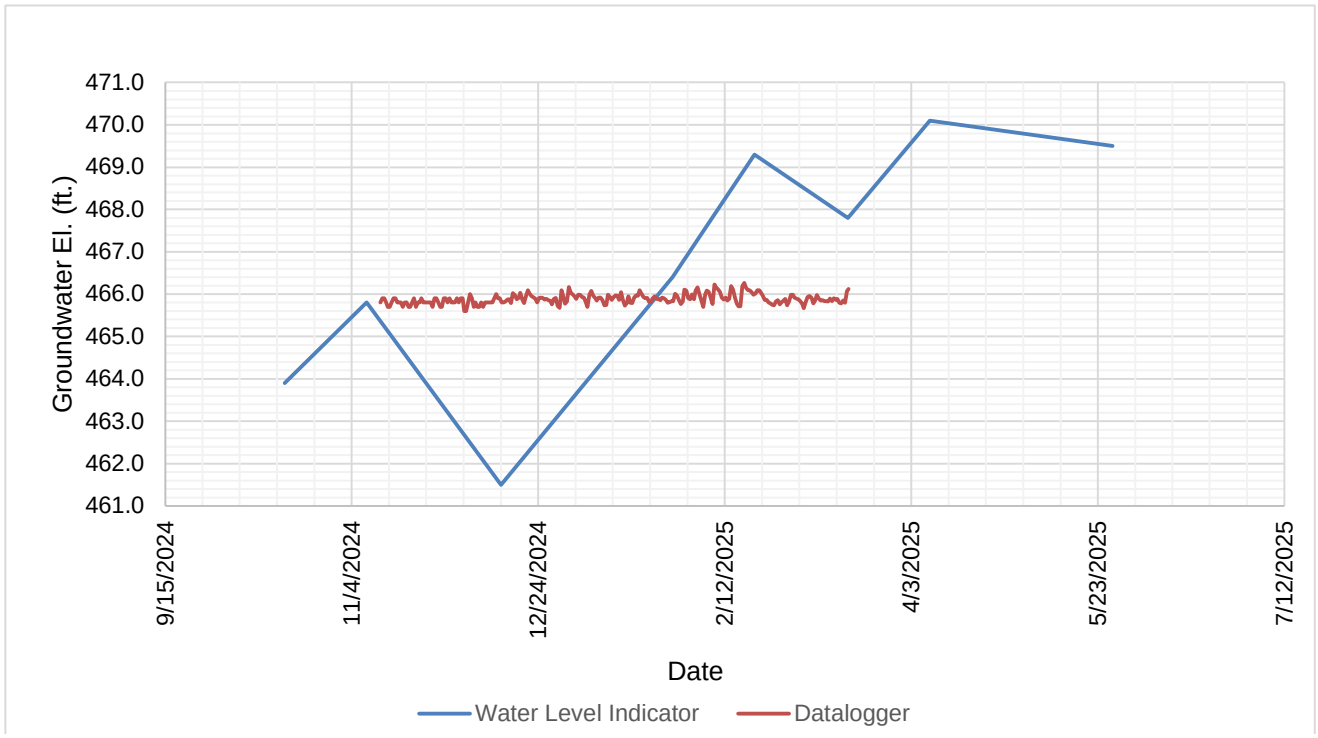
Date & Time	Raw Water Level Reading (ft.)	Groundwater El. (ft.)	Groundwater Depth (ft.)	Temperature (°F)	Comments
3/4/2025 5:00	48.6	465.8	27.6	62.3	
3/4/2025 17:00	48.5	465.8	27.6	62.2	
3/5/2025 5:00	48.2	465.7	27.7	62.2	
3/5/2025 17:00	48.1	465.8	27.6	62.5	
3/6/2025 5:00	48.2	465.9	27.5	62.6	
3/6/2025 17:00	48.2	466.0	27.4	62.6	
3/7/2025 5:00	48.2	465.9	27.5	62.7	
3/7/2025 17:00	48.1	465.8	27.6	62.4	
3/8/2025 5:00	48.1	465.8	27.6	62.5	
3/8/2025 17:00	48.1	466.0	27.4	62.8	
3/9/2025 5:00	48.1	465.9	27.5	62.7	
3/9/2025 17:00	48.1	465.9	27.5	62.5	
3/10/2025 5:00	48.0	465.9	27.5	62.4	
3/10/2025 17:00	48.0	465.8	27.6	62.3	
3/11/2025 5:00	47.9	465.8	27.6	62.4	
3/11/2025 17:00	47.8	465.8	27.6	62.4	
3/12/2025 5:00	47.8	465.9	27.5	62.5	
3/12/2025 17:00	47.8	465.8	27.6	62.4	
3/13/2025 5:00	47.8	465.9	27.5	62.6	
3/13/2025 17:00	47.7	465.9	27.5	62.5	
3/14/2025 5:00	47.7	465.9	27.5	62.6	
3/14/2025 17:00	47.6	465.8	27.6	62.4	
3/15/2025 5:00	47.5	465.8	27.6	62.4	
3/15/2025 17:00	47.4	465.9	27.5	62.5	
3/16/2025 5:00	47.3	465.8	27.6	62.3	
3/16/2025 17:00	47.5	466.1	27.3	62.6	
3/17/2025 5:00	47.7	466.1	27.3	62.8	

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PROJECT NO.: N1245017
CLIENT: Burgess & Niple, Inc.
PROJECT: HAM-75-1.05 & 1.95 Microtunnel
LOCATION: Cincinnati, Ohio

GROUNDWATER LEVEL READINGS FROM PIEZOMETER
Boring No.: B-012-0-24
Ground Surface El. (ft.): 493.4





NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-1.05
TYPE: BRIDGE
PID: 113361 SFN:
START: 2/17/22 END: 2/18/22

DRILLING FIRM / OPERATOR: NEAS / J. HODGES
SAMPLING FIRM / LOGGER: NEAS / J. HODGES
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT / ST

DRILL RIG: CME 55X
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 12/5/19
ENERGY RATIO (%): 81.9

STATION / OFFSET:
ALIGNMENT:
ELEVATION: 506.8 (MSL) EOB: 105.0 ft.
LAT / LONG: 39.106791, -84.531889

EXPLORATION ID B-027-1-21

MATERIAL DESCRIPTION AND NOTES	ELEV. 506.8	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
VERY STIFF TO HARD, BROWN AND GRAYISH BROWN, **SILT AND CLAY**, LITTLE TO SOME SAND, TRACE TO LITTLE GRAVEL, CONTAINS BRICK AND GLASS FRAGMENTS, DAMP **(FILL)**			4 4 5	12	100	SS-1	4.50	18	17	15	26	24	30	17	13	12	A-6a (4)	
			3 5 6	15	100	SS-2	4.25	-	-	-	-	-	-	-	-	16	A-6a (V)	
			6 7 10	23	100	SS-3	4.25	14	12	15	34	25	32	18	14	14	A-6a (6)	
@15.0'; BECOMES MOIST			7 8 12	27	100	SS-4	4.50	-	-	-	-	-	-	-	-	12	A-6a (V)	
			6 10 11	29	28	SS-5	4.00	-	-	-	-	-	-	-	-	14	A-6a (V)	
			4 4 5	12	100	SS-6	2.50	-	-	-	-	-	-	-	-	26	A-6a (V)	
			5 5 5	14	44	SS-7	2.50	6	6	7	48	33	34	19	15	23	A-6a (10)	
	487.3																	
STIFF TO VERY STIFF, BROWN, **SILTY CLAY**, TRACE TO LITTLE SAND, TRACE GRAVEL, CONTAINS IRON STAINING, DAMP TO MOIST			4 5 6	15	56	SS-8	3.00	-	-	-	-	-	-	-	-	20	A-6b (V)	
@23.3' TO 23.8'; Qu = 3302PSF @ 7.5%					67	ST-9	2.75	0	3	9	45	43	40	20	20	22	A-6b (12)	
			3 5 5	14	100	SS-10	2.25	-	-	-	-	-	-	-	-	23	A-6b (V)	
SS-11 SAMPLE JAR ARRIVED IN LAB WITH AN OPEN LID. WC RESULTS DO NOT REFLECT IN-SITU WC.			4 5 5	14	100	SS-11	2.00	-	-	-	-	-	-	-	-	5	A-6b (V)	
	477.3																	
LOOSE, BROWN, **GRAVEL WITH SAND AND SILT**, TRACE CLAY, DAMP			2 2 3	7	100	SS-12	-	29	26	10	26	9	24	19	5	13	A-2-4 (0)	
	474.2																	
MEDIUM DENSE, BROWN, **SANDY SILT**, TRACE CLAY, TRACE GRAVEL, DAMP			2 4 8	16	28	SS-13	-	-	-	-	-	-	-	-	-	9	A-4a (V)	
			3 5 8	18	100	SS-14	-	-	-	-	-	-	-	-	-	6	A-4a (V)	
@37.5'; BECOMES WET		W 469.3	3 6 8	19	44	SS-15	-	-	-	-	-	-	-	-	-	24	A-4a (V)	
			4 6 7	18	100	SS-16	-	0	0	48	49	3	NP	NP	NP	26	A-4a (3)	
			5 6 8	19	100	SS-17	-	-	-	-	-	-	-	-	-	26	A-4a (V)	
	462.3																	
LOOSE TO MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, TRACE CLAY, TRACE GRAVEL, WET			4 7 10	23	89	SS-18	-	-	-	-	-	-	-	-	-	23	A-3a (V)	
			2 2 3	7	100	SS-19	-	-	-	-	-	-	-	-	-	22	A-3a (V)	
			3 3 2	7	100	SS-20	-	0	0	80	17	3	NP	NP	NP	26	A-3a (0)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:41 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\20240122-NEAS GINT LOGS\HAM-75-1.05.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PID: 113361	SFN:	PROJECT: HAM-75-1.05	STATION / OFFSET:	START: 2/17/22	END: 2/18/22	PG 2 OF 2	B-027-1-21

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)	HOLE SEALED
LOOSE TO MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, TRACE CLAY, TRACE GRAVEL, WET *(continued)*	446.8	60	3 4 4	11	100	SS-21	-	-	-	-	-	-	-	-	-	27	A-3a (V)	
		65	4 3 3	8	100	SS-22	-	-	-	-	-	-	-	-	-	22	A-3a (V)	
		70	4 5 5	14	100	SS-23	-	1	0	87	11	1	NP	NP	NP	25	A-3a (0)	
		75	3 4 6	14	100	SS-24	-	-	-	-	-	-	-	-	-	26	A-3a (V)	
		80	4 4 7	15	100	SS-25	-	-	-	-	-	-	-	-	-	23	A-3a (V)	
@85.0'; BECOMES BROWNISH GRAY		85	4 5 8	18	100	SS-26	-	0	0	85	13	2	NP	NP	NP	24	A-3a (0)	
		90	5 6 8	19	100	SS-27	-	-	-	-	-	-	-	-	-	23	A-3a (V)	
		95	4 8 10	25	100	SS-28	-	-	-	-	-	-	-	-	-	22	A-3a (V)	
		100	5 6 10	22	100	SS-29	-	0	1	86	11	2	NP	NP	NP	22	A-3a (0)	
		105	4 7 11	25	100	SS-30	-	-	-	-	-	-	-	-	-	23	A-3a (V)	
	401.8	EOB																

NOTES: GROUNDWATER ENCOUNTERED AT 37.5' DURING DRILLING. HOLE DID NOT CAVE. DRILLED AS STAKED.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 100 GAL. BENTONITE GROUT; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:41 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\20240122-NEAS GINT LOGS\HAM-75-1.05.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-1.05	DRILLING FIRM / OPERATOR: NEAS / J. HODGES	DRILL RIG: CME 55X	STATION / OFFSET:	EXPLORATION ID B-027-2-21	
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: NEAS / J. HODGES	HAMMER: CME AUTOMATIC	ALIGNMENT:		
PID: 113361 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 12/5/19	ELEVATION: 504.4 (MSL) EOB: 51.5 ft.		PAGE 1 OF 1
START: 1/21/22 END: 1/21/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 81.9	LAT / LONG: 39.106973, -84.532105		

MATERIAL DESCRIPTION AND NOTES	ELEV. 504.4	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
HARD, BROWN, **SILT AND CLAY**, SOME SAND, TRACE GRAVEL, CONTAINS BRICK FRAGMENTS, DAMP **(FILL)**			4 5 7	16	100	SS-1	4.50	-	-	-	-	-	-	-	-	12	A-6a (V)	
			2 5 6	15	100	SS-2	4.50	7	18	15	33	27	31	18	13	15	A-6a (6)	
			6 20 47	91	100	SS-3A	4.50	-	-	-	-	-	-	-	-	13	A-6a (V)	
	495.7					SS-3B	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
MEDIUM DENSE TO VERY DENSE, GRAY, **STONE FRAGMENTS WITH SAND**, LITTLE SILT, TRACE CLAY, ENCOUNTERED COBBLES DURING DRILLING, DAMP			17 20 12	44	100	SS-4	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
			7 17 27	60	33	SS-5	-	39	21	18	17	5	NP	NP	NP	4	A-1-b (0)	
			37 26 45	97	44	SS-6	-	-	-	-	-	-	-	-	-	3	A-1-b (V)	
			13 7 4	15	11	SS-7	-	-	-	-	-	-	-	-	-	2	A-1-b (V)	
	484.9																	
MEDIUM STIFF TO VERY STIFF, GRAY BECOMING BROWN MOTTLED WITH GRAY, **SILTY CLAY**, LITTLE SAND, TRACE GRAVEL, SS-10 AND SS-11A CONTAIN IRON STAINING, MOIST TO DAMP			2 3 3	8	33	SS-8	0.75	-	-	-	-	-	-	-	-	32	A-6b (V)	
			2 3 5	11	100	SS-9	1.50	1	4	8	29	58	38	21	17	24	A-6b (11)	
			1 5 6	15	100	SS-10	3.75	-	-	-	-	-	-	-	-	22	A-6b (V)	
	476.6					SS-11A	3.00	-	-	-	-	-	-	-	-	21	A-6b (V)	
STIFF, BROWN, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND, SILT, AND CLAY**, NO INTACT SOIL FOR HP READINGS, WET	474.9		1 2 3	7	100	SS-11B	-	7	37	23	9	24	46	20	26	23	A-2-7 (3)	
LOOSE, BROWN, **COARSE AND FINE SAND**, LITTLE SILT, TRACE GRAVEL, TRACE CLAY, WET	472.4		1 3 4	10	100	SS-12	-	-	-	-	-	-	-	-	-	17	A-3a (V)	
LOOSE TO MEDIUM DENSE, BROWN AND GRAY, **SANDY SILT**, LITTLE CLAY, TRACE GRAVEL, WET			1 2 3	7	100	SS-13	-	0	1	52	32	15	NP	NP	NP	22	A-4a (2)	
	467.4		2 3 5	11	100	SS-14	-	-	-	-	-	-	-	-	-	20	A-4a (V)	
LOOSE TO MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, LITTLE SILT, TRACE CLAY, TRACE GRAVEL, WET			0 1 3	5	100	SS-15	-	-	-	-	-	-	-	-	-	29	A-3a (V)	
			1 3 5	11	100	SS-16	-	-	-	-	-	-	-	-	-	29	A-3a (V)	
			2 5 7	16	100	SS-17	-	0	5	74	17	4	NP	NP	NP	21	A-3a (0)	
			4 6 10	22	100	SS-18	-	-	-	-	-	-	-	-	-	21	A-3a (V)	
	452.9	EOB																

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE. DRILLED AS STAKED.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 1 BAG HOLE PLUG; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT GDT - 12/23/24 15:41 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\20240122-NEAS GINT LOGS\HAM-75-1.05.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-1.05	DRILLING FIRM / OPERATOR: NEAS / J. HODGES	DRILL RIG: CME 55X	STATION / OFFSET:	EXPLORATION ID B-031-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: NEAS / J. HODGES	HAMMER: CME AUTOMATIC	ALIGNMENT:	
PID: 113361 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 12/5/19	ELEVATION: 494.2 (MSL) EOB: 26.5 ft.	PAGE 1 OF 1
START: 3/9/22 END: 3/9/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 81.9	LAT / LONG: 39.107651, -84.531943	

MATERIAL DESCRIPTION AND NOTES	ELEV. 494.2	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
LOOSE TO MEDIUM DENSE, BROWN AND DARK GRAY, **SANDY SILT**, LITTLE CLAY, TRACE TO LITTLE GRAVEL, CONTAINS BRICK FRAGMENTS, WET TO MOIST **(FILL)**		1	2 4 3	10	39	SS-1	-	-	-	-	-	-	-	-	-	20	A-4a (V)	
		2	3 3 5	11	28	SS-2	-	9	22	26	27	16	NP	NP	NP	19	A-4a (2)	
		3	1 2 3	7	22	SS-3	-	-	-	-	-	-	-	-	-	16	A-4a (V)	
		4	2 3 4	10	22	SS-4	-	-	-	-	-	-	-	-	-	16	A-4a (V)	
	487.5	5																
VERY STIFF TO HARD, BROWN, **CLAY**, SOME SILT, LITTLE TO SOME SAND, TRACE GRAVEL, CONTAINS TRACE IRON STAINING, DAMP		6																
		7																
		8	3 4 6	14	33	SS-5	4.25	-	-	-	-	-	-	-	-	17	A-7-6 (V)	
		9																
		10	3 3 5	11	39	SS-6	3.50	2	6	12	34	46	42	20	22	20	A-7-6 (13)	
		11																
		12	4 3 5	11	39	SS-7	2.50	-	-	-	-	-	-	-	-	19	A-7-6 (V)	
		13																
		14	4 5 8	18	28	SS-8	2.50	-	-	-	-	-	-	-	-	20	A-7-6 (V)	
	477.2	15																
VERY STIFF, BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND, SILT, AND CLAY**, WET		16																
	474.7	17	2 3 4	10	44	SS-9	2.75	7	39	26	7	21	41	18	23	18	A-2-7 (2)	
LOOSE TO MEDIUM DENSE, BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, TRACE CLAY, MOIST TO DAMP		18																
		19	3 3 3	8	50	SS-10	-	-	-	-	-	-	-	-	-	16	A-2-4 (V)	
		20																
		21	4 4 5	12	39	SS-11	-	-	-	-	-	-	-	-	-	8	A-2-4 (V)	
	470.2	22																
MEDIUM DENSE, BROWN, **SANDY SILT**, SOME CLAY, TRACE GRAVEL, CONTAINS INTERBEDDED SILT SEAMS, DAMP		23	5 5 6	15	33	SS-12	-	2	6	25	43	24	23	17	6	16	A-4a (6)	
	467.7	24																
EOB		25																
		26																

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE. DRILLED AS STAKED.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:41 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\IN1235254 LOGS-HAM-75 NEAS\20240122-NEAS GINT LOGS\HAM-75-1.05.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-1.05	DRILLING FIRM / OPERATOR: NEAS / J. HODGES	DRILL RIG: CME 55X	STATION / OFFSET:	EXPLORATION ID B-032-0-21	
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: NEAS / J. HODGES	HAMMER: CME AUTOMATIC	ALIGNMENT:		
PID: 113361 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 12/5/19	ELEVATION: 494.1 (MSL) EOB: 21.5 ft.		PAGE 1 OF 1
START: 3/9/22 END: 3/9/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 81.9	LAT / LONG: 39.107977, -84.532097		

MATERIAL DESCRIPTION AND NOTES	ELEV. 494.1	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
HARD, BROWN AND GRAY, **SILT AND CLAY**, SOME SAND, SOME GRAVEL AND STONE FRAGMENTS, CONTAINS BRICK AND ASPHALT FRAGMENTS, DAMP **(FILL)**	489.6	1 2 3 4	2 5 7	16	100	SS-1	4.50	21	16	15	27	21	31	19	12	15	A-6a (3)	
VERY STIFF, BROWN, **CLAY**, "AND" SILT, LITTLE TO SOME SAND, TRACE GRAVEL, CONTAINS IRON STAINING, SS-4A CONTAINS NO INTACT SOIL FOR HP READINGS, DAMP TO MOIST		5 6 7 8	3 4 6	14	100	SS-2	3.75	-	-	-	-	-	-	-	-	20	A-7-6 (V)	
@8.5' - 9.0'; Qu = 4295 PSF @ 7.0%	484.3	9 10			83	ST-3	3.00	0	7	13	42	38	42	20	22	22	A-7-6 (13)	
VERY LOOSE TO LOOSE, BROWN, **COARSE AND FINE SAND**, TRACE SILT, TRACE CLAY, TRACE GRAVEL, MOIST	480.4	11 12 13	2 3 4	10	100	SS-4A SS-4B	- -	- 4	- 43	- 33	- 10	- 10	- NP	- NP	- NP	16 13	A-7-6 (V) A-3a (0)	
VERY STIFF TO HARD, BROWN, **SILT AND CLAY**, TRACE SAND, TRACE GRAVEL, MOIST	477.1	14 15 16	2 1 1	3	100	SS-5A SS-5B	- 3.25	- -	- -	- -	- -	- -	- -	- -	- -	11 22	A-3a (V) A-6a (V)	
MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, TRACE SILT, TRACE CLAY, TRACE GRAVEL, MOIST	472.6	17 18 19 20 21 EOB	2 3 5	11	100	SS-6	4.25	0	2	4	59	35	35	21	14	22	A-6a (10)	
			3 4 6	14	100	SS-7	-	-	-	-	-	-	-	-	-	18	A-3a (V)	
			4 5 6	15	100	SS-8	-	-	-	-	-	-	-	-	-	15	A-3a (V)	

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE. DRILLED AS STAKED.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:41 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\20240122-NEAS GINT LOGS\HAM-75-1.05.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-1.05
TYPE: RETAINING WALL
PID: 113361 SFN:
START: 3/9/22 END: 3/9/22

DRILLING FIRM / OPERATOR: NEAS / J. HODGES
SAMPLING FIRM / LOGGER: NEAS / J. HODGES
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 55X
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 12/5/19
ENERGY RATIO (%): 81.9

STATION / OFFSET:
ALIGNMENT:
ELEVATION: 493.4 (MSL) EOB: 16.5 ft.
LAT / LONG: 39.108040, -84.532026

EXPLORATION ID B-033-0-21

MATERIAL DESCRIPTION AND NOTES	ELEV. 493.4 / DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
VERY STIFF TO HARD, BROWN, **CLAY**, "AND" SILT, LITTLE SAND, TRACE GRAVEL, CONTAINS BRICK FRAGMENTS AND IRON STAINING, DAMP TO MOIST **(FILL)**		4 5 7	16	100	SS-1	4.50	-	-	-	-	-	-	-	-	19	A-7-6 (V)	
		3 3 6	12	100	SS-2	2.50	0	4	8	39	49	45	21	24	24	A-7-6 (15)	
	486.4																
VERY STIFF, BROWN, **CLAY**, "AND" SILT, SOME SAND, TRACE GRAVEL, DAMP		3 4 5	12	100	SS-3	2.25	-	-	-	-	-	-	-	-	18	A-7-6 (V)	
	483.9																
VERY LOOSE, BROWN, **GRAVEL WITH SAND**, LITTLE SILT, TRACE CLAY, SS-4 CONTAINS ROOTS, WET		2 2 1	4	100	SS-4	-	-	-	-	-	-	-	-	-	15	A-1-b (V)	
		1 1 1	3	100	SS-5	-	12	52	16	12	8	NP	NP	NP	14	A-1-b (0)	
		1 1 2	4	100	SS-6	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
	476.9 EOB																

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE. DRILLED AS STAKED.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:42 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\20240122-NEAS GINT LOGS\HAM-75-1.05.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-1.05
TYPE: RETAINING WALL
PID: 113361 SFN:
START: 3/9/22 END: 3/9/22

DRILLING FIRM / OPERATOR: NEAS / J. HODGES
SAMPLING FIRM / LOGGER: NEAS / J. HODGES
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 55X
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 12/5/19
ENERGY RATIO (%): 81.9

STATION / OFFSET:
ALIGNMENT:
ELEVATION: 492.5 (MSL) EOB: 16.5 ft.
LAT / LONG: 39.108489, -84.532053

EXPLORATION ID B-036-0-21

MATERIAL DESCRIPTION AND NOTES	ELEV. 492.5 / DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
HARD, BROWN, **SILT AND CLAY**, "AND" SAND, LITTLE TO SOME GRAVEL, CONTAINS BRICK FRAGMENTS, DAMP **(FILL)**		6 7 6	18	100	SS-1	4.50	-	-	-	-	-	-	-	-	14	A-6a (V)	
		11 12 15	37	28	SS-2	4.25	-	-	-	-	-	-	-	-	14	A-6a (V)	
		4 10 12	30	100	SS-3	4.50	25	21	16	22	16	28	16	12	9	A-6a (1)	
	483.0																
MEDIUM DENSE, BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, TRACE CLAY, CONTAINS BRICK FRAGMENTS, DAMP **(FILL)**		4 6 6	16	100	SS-4	-	-	-	-	-	-	-	-	-	8	A-2-4 (V)	
	479.0																
VERY STIFF, BROWN, **SILTY CLAY**, LITTLE SAND, TRACE GRAVEL, CONTAINS TRACE IRON STAINING, MOIST		3 5 3	11	100	SS-5A	-	-	-	-	-	-	-	-	-	8	A-2-4 (V)	
					SS-5B	2.25	-	-	-	-	-	-	-	-	26	A-6b (V)	
		3 4 6	14	100	SS-6	3.00	1	7	8	42	42	33	17	16	24	A-6b (10)	
	476.0 EOB																

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE. DRILLED AS STAKED.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:42 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\20240122-NEAS GINT LOGS\HAM-75-1.05.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-1.05
TYPE: RETAINING WALL
PID: 113361 SFN:
START: 3/8/22 END: 3/8/22

DRILLING FIRM / OPERATOR: NEAS / J. HODGES
SAMPLING FIRM / LOGGER: NEAS / J. HODGES
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 55X
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 12/5/19
ENERGY RATIO (%): 81.9

STATION / OFFSET:
ALIGNMENT:
ELEVATION: 497.6 (MSL) EOB: 55.0 ft.
LAT / LONG: 39.108755, -84.532152

EXPLORATION ID B-037-0-21

MATERIAL DESCRIPTION AND NOTES	ELEV. 497.6	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
VERY STIFF TO HARD, BROWN AND DARK BROWN, **SILT AND CLAY**, SOME TO "AND" SAND, LITTLE GRAVEL, CONTAINS ROOTS AND BRICK FRAGMENTS, DAMP **(FILL)**																		
			2 13 18	42	78	SS-1	4.50	19	14	20	26	21	29	17	12	11	A-6a (3)	
			3 50/4"	-	40	SS-2	4.50	-	-	-	-	-	-	-	-	13	A-6a (V)	
			6 5 5	14	56	SS-3	4.25	-	-	-	-	-	-	-	-	15	A-6a (V)	
			4 4 4	11	100	SS-4	3.50	-	-	-	-	-	-	-	-	13	A-6a (V)	
			3 3 5	11	89	SS-5	3.25	16	27	16	23	18	31	17	14	13	A-6a (2)	
			5 6 7	18	100	SS-6	3.50	-	-	-	-	-	-	-	-	14	A-6a (V)	
	479.6		5 4 5	12	33	SS-7A	3.25	-	-	-	-	-	-	-	-	14	A-6a (V)	
						SS-7B	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
MEDIUM DENSE, BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND**, TRACE SILT, TRACE CLAY, DAMP			4 4 5	12	100	SS-8	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
	475.6		6 4 4	11	56	SS-9	3.00	2	7	17	47	27	28	19	9	22	A-4a (8)	
STIFF TO VERY STIFF, BROWN AND ORANGISH BROWN, **SANDY SILT**, SOME CLAY, TRACE GRAVEL, CONTAINS IRON STAINING, MOIST TO DAMP			4 4 3	10	100	SS-10A	1.50	4	21	19	34	22	25	17	8	17	A-4a (4)	
	471.6					SS-10B	-	-	-	-	-	-	-	-	-	10	A-3a (V)	
LOOSE, BROWN, **COARSE AND FINE SAND**, SOME SILT, LITTLE CLAY, TRACE GRAVEL, DAMP			2 4 3	10	100	SS-11	-	-	-	-	-	-	-	-	-	11	A-3a (V)	
	468.1	W 467.6	2 1 1	3	100	SS-12	-	0	0	6	89	5	NP	NP	NP	34	A-4b (8)	
VERY LOOSE, BROWN AND GRAY, **SILT**, TRACE TO LITTLE SAND, TRACE CLAY, TRACE GRAVEL, WET			2 1 2	4	100	SS-13	-	-	-	-	-	-	-	-	-	31	A-4b (V)	
			2 2 1	4	100	SS-14	-	-	-	-	-	-	-	-	-	32	A-4b (V)	
			2 1 2	4	100	SS-15	-	0	0	11	80	9	NP	NP	NP	30	A-4b (8)	
	449.3		2 3 4	10	100	SS-16	-	-	-	-	-	-	-	-	-	19	A-3a (V)	
LOOSE, GRAY, **COARSE AND FINE SAND**, TRACE SILT, TRACE CLAY, TRACE GRAVEL, WET			3 3 4	10	100	SS-17	-	-	-	-	-	-	-	-	-	20	A-3a (V)	
	442.6	EOB 55																

NOTES: GROUNDWATER ENCOUNTERED AT 30.0' DURING DRILLING. HOLE DID NOT CAVE. DRILLED AS STAKED.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 100 GAL. BENTONITE GROUT; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:42 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\20240122-NEAS GINT LOGS\HAM-75-1.05.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-1.05	DRILLING FIRM / OPERATOR: NEAS / J. HODGES	DRILL RIG: CME 55X	STATION / OFFSET:	EXPLORATION ID B-038-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: NEAS / J. HODGES	HAMMER: CME AUTOMATIC	ALIGNMENT:	
PID: 113361 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 12/5/19	ELEVATION: 490.9 (MSL) EOB: 31.5 ft.	PAGE 1 OF 1
START: 3/9/22 END: 3/9/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 81.9	LAT / LONG: 39.108824, -84.531993	

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)	BACK FILL
VERY STIFF, BROWN, **SILTY CLAY**, "AND" SAND, LITTLE GRAVEL, DAMP TO MOIST	490.9																	
		1																
		2																
		3	4 4 7	15	100	SS-1	4.00	19	24	18	21	18	29	13	16	11	A-6b (2)	
		4																
		5	3 4 5	12	100	SS-2	3.25	-	-	-	-	-	-	-	-	17	A-6b (V)	
	483.9	6																
MEDIUM DENSE, BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, TRACE CLAY, DAMP		7																
	481.4	8	4 7 11	25	33	SS-3	-	-	-	-	-	-	-	-	-	5	A-2-4 (V)	
LOOSE, BROWN, **COARSE AND FINE SAND**, LITTLE GRAVEL, LITTLE SILT, TRACE CLAY, DAMP		9																
	478.9	10	3 3 4	10	100	SS-4	-	-	-	-	-	-	-	-	-	8	A-3a (V)	
MEDIUM DENSE, BROWN, **SANDY SILT**, SOME GRAVEL, TRACE CLAY, DAMP TO MOIST		11																
		12																
		13	3 4 4	11	17	SS-5	-	26	25	13	31	5	NP	NP	NP	7	A-4a (0)	
	474.9	14																
MEDIUM DENSE, BROWN, **SILT**, SOME SAND, LITTLE CLAY, TRACE GRAVEL, WET	473.9	15																
MEDIUM DENSE, BROWN, **GRAVEL WITH SAND**, TRACE SILT, TRACE CLAY, MOIST TO WET		16	3 3 8	15	100	SS-6A	-	-	-	-	-	-	-	-	-	11	A-4a (V)	
						SS-6B	-	-	-	-	-	-	-	-	-	23	A-4b (V)	
		17																
		18	8 5 3	11	100	SS-7	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
		19																
W 470.9		20																
		21	4 5 4	12	100	SS-8	-	-	-	-	-	-	-	-	-	16	A-1-b (V)	
	468.9	22																
LOOSE, BROWN, **SILT**, LITTLE CLAY, TRACE TO LITTLE SAND, TRACE GRAVEL, WET		23	2 2 3	7	100	SS-9	-	-	-	-	-	-	-	-	-	26	A-4b (V)	
		24																
		25																
		26	1 2 3	7	100	SS-10	-	0	0	3	86	11	NP	NP	NP	27	A-4b (8)	
		27																
		28	2 3 2	7	100	SS-11	-	-	-	-	-	-	-	-	-	35	A-4b (V)	
		29																
		30																
	459.4	31	2 2 2	5	100	SS-12	-	-	-	-	-	-	-	-	-	33	A-4b (V)	
		EOB																

NOTES: GROUNDWATER ENCOUNTERED AT 20.0' DURING DRILLING. HOLE DID NOT CAVE. DRILLED AS STAKED.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:42 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\20240122-NEAS GINT LOGS\HAM-75-1.05.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-1.05
TYPE: RETAINING WALL
PID: 113361 SFN:
START: 3/8/22 END: 3/8/22

DRILLING FIRM / OPERATOR: NEAS / J. HODGES
SAMPLING FIRM / LOGGER: NEAS / J. HODGES
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 55X
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 12/5/19
ENERGY RATIO (%): 81.9

STATION / OFFSET:
ALIGNMENT:
ELEVATION: 502.3 (MSL) EOB: 60.0 ft.
LAT / LONG: 39.109090, -84.532135

EXPLORATION ID B-041-0-21
PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 502.3	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
VERY STIFF, BROWNISH GRAY, **SILT AND CLAY**, SOME SAND, TRACE GRAVEL, CONTAINS BRICK FRAGMENTS, DAMP **(FILL)**		1–2																
		3–4	3 18 17	48	44	SS-1	3.75	6	8	16	35	35	32	18	14	17	A-6a (9)	
	497.8	5–6	9 12 12	33	100	SS-2	-	-	-	-	-	-	-	-	-	16	A-2-4 (V)	
DENSE, GRAY AND BROWN, **STONE FRAGMENTS WITH SAND AND SILT**, TRACE CLAY, CONTAINS BRICK FRAGMENTS, MOIST **(FILL)**	495.3	7–8	3 2 15	23	100	SS-3	2.00	31	17	14	22	16	30	17	13	13	A-6a (1)	
STIFF TO VERY STIFF, GRAY AND BROWN AND BLACK, **SILT AND CLAY**, SOME SAND, LITTLE TO SOME GRAVEL AND STONE FRAGMENTS, CONTAINS BRICK FRAGMENTS, SS-4 CONTAINS BLACK WOOD FRAGMENTS, DAMP TO MOIST **(FILL)**		9–10	5 10 5	20	100	SS-4	3.25	-	-	-	-	-	-	-	-	24	A-6a (V)	
	490.3	11–12	3 2 4	8	89	SS-5	2.75	-	-	-	-	-	-	-	-	28	A-6a (V)	
		13–14	2 2 2	5	83	SS-6	1.00	0	1	1	51	47	37	23	14	30	A-6a (10)	
		15–16	2 3 3	8	100	SS-7	2.25	-	-	-	-	-	-	-	-	23	A-6a (V)	
		17–18	4 4 5	12	100	SS-8	3.25	-	-	-	-	-	-	-	-	26	A-6a (V)	
	480.3	19–20	3 3 5	11	100	SS-9	2.00	-	-	-	-	-	-	-	-	27	A-6b (V)	
STIFF TO VERY STIFF, GRAY AND BROWN, **SILTY CLAY**, TRACE SAND, TRACE GRAVEL, CONTAINS BRICK FRAGMENTS, MOIST **(FILL)**	477.8	21–22	3 5 4	12	100	SS-10	3.50	14	29	21	14	22	39	19	20	18	A-6b (2)	
STIFF TO VERY STIFF, GRAY AND BROWN, **SILTY CLAY**, "AND" SAND, LITTLE GRAVEL, DAMP TO MOIST		23–24	2 4 4	11	100	SS-11	1.50	-	-	-	-	-	-	-	-	25	A-6b (V)	
	472.2	W 472.3 25–26	3 3 5	11	100	SS-12	-	-	-	-	-	-	-	-	-	24	A-4b (V)	
MEDIUM DENSE, LIGHT BROWN, **SILT**, "AND" SAND, TRACE CLAY, TRACE GRAVEL, WET		27–28	3 4 5	12	100	SS-13	-	0	4	41	51	4	NP	NP	NP	25	A-4b (4)	
	467.8	29–30	3 2 3	7	100	SS-14	-	-	-	-	-	-	-	-	-	22	A-3a (V)	
VERY LOOSE TO LOOSE, BROWN, **COARSE AND FINE SAND**, LITTLE TO SOME SILT, TRACE GRAVEL, TRACE CLAY, WET		31–32	3 2 1	4	100	SS-15	-	-	-	-	-	-	-	-	-	28	A-3a (V)	
	459.0	33–34	2 2 2	5	100	SS-16	-	0	0	5	90	5	NP	NP	NP	31	A-4b (8)	
LOOSE, BROWN AND GRAY, **SILT**, TRACE CLAY, TRACE SAND, TRACE GRAVEL, WET	454.0	35–36	2 3 2	7	100	SS-17	-	-	-	-	-	-	-	-	-	29	A-3a (V)	
LOOSE, BROWN, **COARSE AND FINE SAND**, SOME SILT, TRACE CLAY, TRACE GRAVEL, WET		37–38	1 2 3	7	100	SS-18	-	-	-	-	-	-	-	-	-	30	A-3a (V)	
	444.8	39–40	3 3 6	12	100	SS-19	-	-	-	-	-	-	-	-	-	30	A-4b (V)	
MEDIUM DENSE, BROWN, **SILT**, SOME SAND, TRACE CLAY, TRACE GRAVEL, WET	442.3	EOB																

NOTES: GROUNDWATER ENCOUNTERED AT 30.0' DURING DRILLING. HOLE DID NOT CAVE. DRILLED AS STAKED.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 100 GAL. BENTONITE GROUT; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:42 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\20240122-NEAS GINT LOGS\HAM-75-1.05.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-1.05
TYPE: BRIDGE
PID: 113361 SFN:
START: 12/14/21 END: 12/15/21

DRILLING FIRM / OPERATOR: NEAS / ASHBAUGH
SAMPLING FIRM / LOGGER: NEAS / ASHBAUGH
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 55T
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 12/5/19
ENERGY RATIO (%): 68.4

STATION / OFFSET:
ALIGNMENT:
ELEVATION: 505.6 (MSL) EOB: 111.5 ft.
LAT / LONG: 39.109328, -84.532100

EXPLORATION ID B-045-0-21

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)	HOLE SEALED
6.0" TOPSOIL (DRILLERS DESCRIPTION)	505.6																	
HARD, BROWN, **SILT AND CLAY**, SOME SAND, LITTLE GRAVEL, CONTAINS PLASTIC AND WOOD FRAGMENTS, CONTAINS ROOTS, DAMP	505.1																	
			6 7 10	19	50	SS-1	4.50	-	-	-	-	-	-	-	-	13	A-6a (V)	
			7 10 11	24	44	SS-2	4.50	-	-	-	-	-	-	-	-	15	A-6a (V)	
			7 10 10	23	50	SS-3	4.50	12	12	17	33	26	32	18	14	14	A-6a (6)	
			8 10 10	23	78	SS-4	4.50	-	-	-	-	-	-	-	-	9	A-6a (V)	
			7 9 8	19	89	SS-5	-	-	-	-	-	-	-	-	-	14	A-4a (V)	
			6 6 8	16	78	SS-6	-	-	-	-	-	-	-	-	-	15	A-3a (V)	
			8 6 9	17	78	SS-7	3.00	2	5	16	44	33	35	20	15	23	A-6a (10)	
			8 7 9	18	89	SS-8A	-	-	-	-	-	-	-	-	-	13	A-1-b (V)	
						SS-8B	3.50	-	-	-	-	-	-	-	-	22	A-7-6 (V)	
			8 8 10	21	78	SS-9	3.50	-	-	-	-	-	-	-	-	22	A-7-6 (V)	
			9 10 10	23	78	SS-10	3.25	1	10	19	29	41	49	20	29	21	A-7-6 (16)	
			10 10 11	24	83	SS-11	2.50	-	-	-	-	-	-	-	-	20	A-7-6 (V)	
			10 11 11	25	78	SS-12	2.25	4	27	32	10	27	46	18	28	19	A-7-6 (4)	
			9 8 6	16	44	SS-13A	1.25	-	-	-	-	-	-	-	-	22	A-7-6 (V)	
						SS-13B	-	-	-	-	-	-	-	-	-	21	A-3a (V)	
			5 6 5	13	56	SS-14	-	-	-	-	-	-	-	-	-	29	A-3a (V)	
			3 4 5	10	50	SS-15	-	-	-	-	-	-	-	-	-	28	A-3a (V)	
			3 3 4	8	83	SS-16	-	0	1	65	29	5	NP	NP	NP	22	A-3a (0)	
			4 4 6	11	89	SS-17	-	-	-	-	-	-	-	-	-	24	A-3a (V)	
			4 5 7	14	100	SS-18	-	-	-	-	-	-	-	-	-	29	A-4b (V)	
			4 5 6	13	100	SS-19	-	0	0	8	85	7	NP	NP	NP	29	A-4b (8)	

MEDIUM DENSE, BROWN, **SANDY SILT**, LITTLE CLAY, LITTLE GRAVEL, CONTAINS WOOD FRAGMENTS AND ROOTS, DAMP	493.6	
MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, LITTLE GRAVEL, LITTLE SILT, TRACE CLAY, MOIST	491.1	
VERY STIFF, BROWNISH GRAY, **SILT AND CLAY**, SOME SAND, TRACE GRAVEL, MOIST	488.6	
MEDIUM DENSE, BROWN AND BROWNISH GRAY, **GRAVEL WITH SAND**, LITTLE SILT, TRACE CLAY, MOIST	486.1	
VERY STIFF, BROWN AND ORANGISH BROWN, **CLAY**, SOME SILT, SOME SAND, TRACE GRAVEL, CONTAINS IRON STAINING, MOIST	484.6	
STIFF TO VERY STIFF, BROWN AND ORANGISH BROWN, **CLAY**, "AND" SAND, TRACE SILT, TRACE GRAVEL, CONTAINS IRON STAINING, MOIST	478.6	
LOOSE TO MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, LITTLE TO SOME SILT, TRACE CLAY, TRACE GRAVEL, WET	472.6	W 470.6
MEDIUM DENSE, BROWN AND GRAY, **SILT**, TRACE SAND, TRACE CLAY, TRACE GRAVEL, WET	455.6	
MEDIUM DENSE, J, **COARSE AND FINE SAND**, TRACE SILT, TRACE CLAY, TRACE GRAVEL, WET	447.3	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:42 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\20240122-NEAS GINT LOGS\HAM-75-1.05.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PID: 113361	SFN:	PROJECT: HAM-75-1.05	STATION / OFFSET:	START: 12/14/21	END: 12/15/21	PG 2 OF 2	B-045-0-21

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)	HOLE SEALED
MEDIUM DENSE, J, **COARSE AND FINE SAND**, TRACE SILT, TRACE CLAY, TRACE GRAVEL, WET *(continued)*	445.6	60	5 6 5	13	100	SS-20	-	-	-	-	-	-	-	-	-	20	A-3a (V)	
	442.3	61																
MEDIUM DENSE, BROWN AND GRAY, **SILT**, TRACE SAND, TRACE CLAY, TRACE GRAVEL, WET		62																
		63																
		64																
		65	6 6 7	15	56	SS-21	-	0	0	7	87	6	NP	NP	NP	28	A-4b (8)	
		66																
	437.3	67																
MEDIUM DENSE, BROWNISH GRAY AND BROWN, **COARSE AND FINE SAND**, LITTLE SILT, TRACE CLAY, TRACE GRAVEL, WET		68																
		69																
		70	7 6 8	16	72	SS-22	-	-	-	-	-	-	-	-	-	25	A-3a (V)	
		71																
		72																
		73																
		74																
		75	7 7 8	17	89	SS-23	-	-	-	-	-	-	-	-	-	22	A-3a (V)	
		76																
		77																
		78																
		79																
		80	10 11 11	25	78	SS-24	-	0	12	72	13	3	NP	NP	NP	20	A-3a (0)	
		81																
		82																
		83																
		84																
		85	10 10 10	23	67	SS-25	-	-	-	-	-	-	-	-	-	16	A-3a (V)	
		86																
		87																
		88																
		89																
		90	10 10 12	25	67	SS-26	-	-	-	-	-	-	-	-	-	18	A-3a (V)	
		91																
		92																
		93																
		94																
		95	10 11 12	26	61	SS-27	-	-	-	-	-	-	-	-	-	16	A-3a (V)	
		96																
		97																
		98																
		99																
		100	11 12 10	25	78	SS-28	-	0	12	69	17	2	NP	NP	NP	19	A-3a (0)	
		101																
		102																
		103																
		104																
		105	12 11 12	26	89	SS-29	-	-	-	-	-	-	-	-	-	17	A-3a (V)	
		106																
		107																
		108																
		109																
		110	12 12 13	29	100	SS-30	-	-	-	-	-	-	-	-	-	22	A-3a (V)	
	394.1	111	EOB															

NOTES: GROUNDWATER ENCOUNTERED AT 35.0' DURING DRILLING. HOLE DID NOT CAVE. DRILLED AS STAKED.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 200 GAL. BENTONITE GROUT

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:42 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\IN1235254 LOGS-HAM-75 NEAS\20240122-NEAS GINT LOGS\HAM-75-1.05.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-1.05	DRILLING FIRM / OPERATOR: NEAS / ASHBAUGH	DRILL RIG: CME 55T	STATION / OFFSET:	EXPLORATION ID B-049-0-21	
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: NEAS / ASHBAUGH	HAMMER: CME AUTOMATIC	ALIGNMENT:		
PID: 113361 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 12/5/19	ELEVATION: 506.1 (MSL) EOB: 21.5 ft.		PAGE 1 OF 1
START: 1/18/22 END: 1/18/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 68.4	LAT / LONG: 39.109791, -84.532097		

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)	BACK FILL
4.0" ASPHALT AND 8.0" CONCRETE AND 6.0" BASE (DRILLERS DESCRIPTION)	506.1 / 504.6																	
MEDIUM DENSE, BROWN, **GRAVEL WITH SAND**, TRACE SILT, TRACE CLAY, DAMP	499.1	1 2 3 4	5 8 9	19	28	SS-1	-	-	-	-	-	-	-	-	-	6	A-1b (V)	
		5 6 7 8	6 8 10	21	33	SS-2	-	-	-	-	-	-	-	-	-	6	A-1b (V)	
VERY STIFF, GRAY, **SILT AND CLAY**, TRACE SAND, TRACE GRAVEL, MOIST	496.6		6 7 7	16	44	SS-3	3.75	1	2	6	47	44	33	19	14	20	A-6a (10)	
STIFF TO VERY STIFF, BROWN, **CLAY**, SOME TO "AND" SILT, TRACE SAND, TRACE GRAVEL, MOIST	491.6	9 10 11 12	5 5 4	10	39	SS-4	3.25	2	2	2	34	60	42	23	19	25	A-7-6 (12)	
		13 14	3 4 3	8	78	SS-5	1.25	-	-	-	-	-	-	-	-	27	A-7-6 (V)	
VERY STIFF, BROWN AND ORANGISH BROWN, **SILTY CLAY**, TRACE SAND, TRACE GRAVEL, MOIST	487.9	15 16 17	3 2 3	6	72	SS-6	2.25	-	-	-	-	-	-	-	-	23	A-6b (V)	
LIGHT BROWN, **SILT**, LITTLE CLAY, TRACE SAND, TRACE GRAVEL, MOIST	487.4	18 19			60	ST-7	2.25	-	-	-	-	-	-	-	-	23	A-6b (V)	
VERY STIFF, BROWN AND ORANGISH BROWN, **SILTY CLAY**, TRACE SAND, TRACE GRAVEL, SS-8 CONTAINS IRON STAINING, MOIST	484.6 EOB	20 21	4 3 5	9	83	SS-8	2.50	0	1	8	51	40	40	21	19	24	A-6b (12)	

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE. DRILLED AS STAKED.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:42 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\20240122-NEAS GINT LOGS\HAM-75-1.05.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-1.05	DRILLING FIRM / OPERATOR: NEAS / ASHBAUGH	DRILL RIG: CME 55T	STATION / OFFSET:	EXPLORATION ID B-050-0-21	
TYPE: BRIDGE	SAMPLING FIRM / LOGGER: NEAS / JL	HAMMER: CME AUTOMATIC	ALIGNMENT:		
PID: 113361 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 12/5/19	ELEVATION: 506.2 (MSL) EOB: 111.5 ft.	PAGE 1 OF 2	
START: 1/13/22 END: 1/13/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 68.4	LAT / LONG: 39.109769, -84.531971		

MATERIAL DESCRIPTION AND NOTES	ELEV. 506.2	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
5.0" ASPHALT AND 5.0" CONCRETE AND 8.0" BASE (DRILLERS DESCRIPTION)	504.7																	
VERY STIFF, BROWN, **SANDY SILT**, LITTLE TO SOME CLAY, TRACE TO LITTLE GRAVEL, SS-1 CONTAINS NO INTACT SOIL FOR HP READINGS, DAMP **(FILL)**	499.2		5 5 4	10	78	SS-1	-	9	21	20	31	19	24	15	9	13	A-4a (3)	
			4 4 5	10	83	SS-2	3.00	14	9	17	35	25	25	16	9	15	A-4a (5)	
STIFF, BROWN, **SILT AND CLAY**, SOME SAND, TRACE GRAVEL, CONTAINS IRON STAINING, MOIST **(FILL)**	496.7		4 4 3	8	78	SS-3	1.50	5	12	18	37	28	33	18	15	20	A-6a (8)	
STIFF, GREENISH GRAY AND BROWN, **SILTY CLAY**, LITTLE SAND, TRACE GRAVEL, CONTAINS BRICK AND WOOD FRAGMENTS, CONTAINS IRON STAINING, MOIST **(FILL)**	494.2		3 4 3	8	78	SS-4	1.25	3	5	13	41	38	38	20	18	26	A-6b (11)	
VERY STIFF, BROWN, **SILTY CLAY**, LITTLE SAND, TRACE GRAVEL, MOIST	488.6		5 7 10	19	89	SS-5	3.75	1	5	13	42	39	40	18	22	20	A-6b (13)	
			5 8 9	19	72	SS-6	4.00	-	-	-	-	-	-	-	-	21	A-6b (V)	
MEDIUM DENSE, LIGHT BROWN, **SILT**, "AND" SAND, TRACE CLAY, TRACE GRAVEL, DAMP	484.2		6 8 9	19	72	SS-7	-	-	-	-	-	-	-	-	-	10	A-4b (V)	
			6 9 10	22	67	SS-8	-	0	1	40	57	2	NP	NP	NP	14	A-4b (5)	
MEDIUM DENSE, BROWN AND GRAYISH BROWN, **SANDY SILT**, TRACE CLAY, TRACE GRAVEL, DAMP TO MOIST	467.7		6 7 9	18	61	SS-9	-	-	-	-	-	-	-	-	-	7	A-4a (V)	
			5 6 8	16	67	SS-10	-	-	-	-	-	-	-	-	-	6	A-4a (V)	
			5 8 10	21	100	SS-11	-	1	20	27	42	10	NP	NP	NP	9	A-4a (3)	
			6 9 11	23	100	SS-12	-	-	-	-	-	-	-	-	-	6	A-4a (V)	
			7 9 11	23	100	SS-13	-	-	-	-	-	-	-	-	-	5	A-4a (V)	
			9 10 12	25	100	SS-14	-	-	-	-	-	-	-	-	-	7	A-4a (V)	
STIFF, BROWN, **SILT AND CLAY**, TRACE SAND, TRACE GRAVEL, WET	466.7		9 9 10	22	72	SS-15A	-	-	-	-	-	-	-	-	-	19	A-4a (V)	
						SS-15B	1.25	-	-	-	-	-	-	-	-	33	A-6a (V)	
MEDIUM DENSE, GRAY AND BROWN, **SILT**, LITTLE TO SOME SAND, TRACE TO LITTLE CLAY, TRACE GRAVEL, WET TO MOIST		W 466.4	8 9 9	21	78	SS-16	-	-	-	-	-	-	-	-	-	27	A-4b (V)	
			7 6 6	14	100	SS-17	-	0	1	20	70	9	NP	NP	NP	24	A-4b (8)	
			5 6 6	14	100	SS-18	-	-	-	-	-	-	-	-	-	19	A-4b (V)	
	450.2		5 9 12	24	100	SS-19A	-	-	-	-	-	-	-	-	-	21	A-4b (V)	
MEDIUM DENSE, GRAY, **GRAVEL WITH SAND**, TRACE SILT, TRACE CLAY, WET						SS-19B	-	-	-	-	-	-	-	-	-	18	A-1-b (V)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:42 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\20240122-NEAS GINT LOGS\HAM-75-1.05.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PID: 113361	SFN:	PROJECT: HAM-75-1.05	STATION / OFFSET:	START: 1/13/22	END: 1/13/22	PG 2 OF 2	B-050-0-21

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)	HOLE SEALED
MEDIUM DENSE, GRAY, **GRAVEL WITH SAND**, TRACE SILT, TRACE CLAY, WET *(continued)*	446.2	60	9 10 12	25	100	SS-20	-	6	44	43	7	0	NP	NP	NP	19	A-1-b (0)	
	442.9	61																
MEDIUM DENSE TO DENSE, GRAY, **COARSE AND FINE SAND**, LITTLE SILT, TRACE CLAY, TRACE GRAVEL, WET TO MOIST		62																
		63																
		64																
		65	11 12 11	26	83	SS-21	-	-	-	-	-	-	-	-	-	18	A-3a (V)	
		66																
		67																
		68																
		69																
		70	11 13 14	31	89	SS-22	-	-	-	-	-	-	-	-	-	13	A-3a (V)	
		71																
		72																
		73																
		74																
		75	11 13 15	32	83	SS-23	-	-	-	-	-	-	-	-	-	15	A-3a (V)	
		76																
		77																
		78																
		79																
		80	12 14 13	31	89	SS-24	-	-	-	-	-	-	-	-	-	14	A-3a (V)	
		81																
		82																
		83																
		84																
		85	12 12 16	32	67	SS-25	-	0	11	72	16	1	NP	NP	NP	16	A-3a (0)	
		86																
		87																
		88																
		89																
		90	13 13 15	32	78	SS-26	-	-	-	-	-	-	-	-	-	15	A-3a (V)	
		91																
		92																
		93																
		94																
		95	13 15 16	35	83	SS-27	-	-	-	-	-	-	-	-	-	14	A-3a (V)	
		96																
		97																
		98																
		99																
		100	14 14 16	34	83	SS-28	-	-	-	-	-	-	-	-	-	16	A-3a (V)	
		101																
		102																
		103																
		104																
		105	14 15 16	35	78	SS-29	-	-	-	-	-	-	-	-	-	17	A-3a (V)	
		106																
		107																
		108																
		109																
		110	14 16 16	36	72	SS-30	-	-	-	-	-	-	-	-	-	18	A-3a (V)	
	394.7	111 EOB																

NOTES: GROUNDWATER ENCOUNTERED AT 39.8' DURING DRILLING. HOLE DID NOT CAVE. BORING OFFSET 10.0' WEST DUE TO OVERHEAD OBSTRUCTION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; PUMPED 100 GAL. BENTONITE GROUT; POURED 2 BAGS HOLE PLUG; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:42 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\20240122-NEAS GINT LOGS\HAM-75-1.05.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-1.05
TYPE: RETAINING WALL
PID: 113361 SFN:
START: 7/20/22 END: 7/20/22

DRILLING FIRM / OPERATOR: NEAS / J. HODGES
SAMPLING FIRM / LOGGER: NEAS / J. HODGES
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 55X
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 12/5/19
ENERGY RATIO (%): 81.9

STATION / OFFSET:
ALIGNMENT:
ELEVATION: 504.9 (MSL) EOB: 41.5 ft.
LAT / LONG: 39.110107, -84.532071

EXPLORATION ID B-054-0-21

MATERIAL DESCRIPTION AND NOTES	ELEV. 504.9	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
6.0" ASPHALT AND 12.0" CONCRETE AND 5.0" BASE (DRILLERS DESCRIPTION)	503.0	1																
HARD, BROWN, **CLAY**, "AND" SILT, LITTLE TO SOME SAND, TRACE GRAVEL, DAMP TO MOIST		2																
		3	3 3 9	16	100	SS-1	4.25	-	-	-	-	-	-	-	-	18	A-7-6 (V)	
		4																
		5	2 2 3	7	100	SS-2	4.50	2	6	8	45	39	45	24	21	22	A-7-6 (13)	
		6																
	496.9	7																
MEDIUM STIFF, BROWN, **CLAY**, "AND" SAND, LITTLE SILT, TRACE GRAVEL, CONTAINS NO INTACT SOIL FOR HP READINGS, DAMP		8	2 1 3	5	100	SS-3A	4.50	-	-	-	-	-	-	-	-	29	A-7-6 (V)	
	495.4	9				SS-3B	-	7	39	17	12	25	46	22	24	19	A-7-6 (4)	
MEDIUM DENSE, BROWN, **GRAVEL WITH SAND**, TRACE SILT, TRACE CLAY, DAMP TO MOIST		10	3 4 5	12	100	SS-4	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
	491.4	11																
LOOSE TO MEDIUM DENSE, BROWN, **SILT**, LITTLE CLAY, TRACE SAND, TRACE GRAVEL, WET		12	2 4 4	11	44	SS-5A	-	-	-	-	-	-	-	-	-	17	A-1-b (V)	
						SS-5B	-	-	-	-	-	-	-	-	-	23	A-4b (V)	
		13																
	487.2	14																
MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, TRACE GRAVEL, TRACE SILT, TRACE CLAY, MOIST TO DAMP		15	2 3 3	8	100	SS-6	-	0	0	4	85	11	NP	NP	NP	25	A-4b (8)	
		16																
		17																
		18	4 5 5	14	100	SS-7	-	-	-	-	-	-	-	-	-	10	A-3a (V)	
		19																
		20																
		21	3 5 6	15	56	SS-8	-	-	-	-	-	-	-	-	-	16	A-3a (V)	
		22																
	481.1	23	6 7 7	19	100	SS-9	-	-	-	-	-	-	-	-	-	11	A-3a (V)	
MEDIUM STIFF TO VERY STIFF, BROWN, **SILT**, LITTLE TO SOME CLAY, TRACE SAND, TRACE GRAVEL, CONTAINS NO INTACT SOIL FOR HP READINGS, MOIST TO WET		24																
		25	5 7 7	19	100	SS-10	-	-	-	-	-	-	-	-	-	23	A-4b (V)	
		26																
		27																
		28	4 5 4	12	100	SS-11	-	0	0	4	75	21	28	19	9	28	A-4b (8)	
		29																
W 474.9		30																
		31	3 5 5	14	39	SS-12	-	-	-	-	-	-	-	-	-	35	A-4b (V)	
		32																
		33	4 4 4	11	100	SS-13	-	-	-	-	-	-	-	-	-	22	A-4b (V)	
		34																
		35																
		36	4 3 3	8	100	SS-14	-	0	0	6	71	23	26	21	5	25	A-4b (8)	
		37																
		38	3 5 5	14	44	SS-15	-	-	-	-	-	-	-	-	-	24	A-4b (V)	
		39																
		40																
	463.4	41	4 5 5	14	50	SS-16	-	-	-	-	-	-	-	-	-	32	A-4b (V)	
EOB																		

NOTES: GROUNDWATER ENCOUNTERED AT 30.0' DURING DRILLING. HOLE DID NOT CAVE. DRILLED AS STAKED.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; PUMPED 50 GAL. BENTONITE GROUT; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:42 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\20240122-NEAS GINT LOGS\HAM-75-1.05.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-1.05
TYPE: RETAINING WALL
PID: 113361 SFN:
START: 7/19/22 END: 7/19/22

DRILLING FIRM / OPERATOR: NEAS / J. HODGES
SAMPLING FIRM / LOGGER: NEAS / J. HODGES
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 55X
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 12/5/19
ENERGY RATIO (%): 81.9

STATION / OFFSET:
ALIGNMENT:
ELEVATION: 506.4 (MSL) EOB: 41.5 ft.
LAT / LONG: 39.110515, -84.531998

EXPLORATION ID B-058-0-21

MATERIAL DESCRIPTION AND NOTES	ELEV. 506.4	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
5.0" ASPHALT AND 11.0" CONCRETE AND 5.0" BASE (DRILLERS DESCRIPTION)	504.6	1																
VERY STIFF, BROWN, **SILT AND CLAY**, SOME SAND, TRACE GRAVEL, MOIST	501.9	2	2 2 3	7	100	SS-1	2.50	2	7	14	45	32	31	17	14	20	A-6a (10)	
VERY STIFF, GRAY, **SILT**, "AND" CLAY, TRACE SAND, TRACE GRAVEL, MOIST	499.4	3	3 3 4	10	100	SS-2	4.00	1	0	2	61	36	29	21	8	26	A-4b (8)	
VERY STIFF, GRAY AND BROWN, **SILT AND CLAY**, TRACE TO LITTLE SAND, TRACE GRAVEL, INTERBEDDED, SS-3 CONTAINS A 1.0" COARSE AND FINE SAND SEAM, MOIST	495.9	4	3 4 4	11	100	SS-3	3.00	0	1	3	49	47	35	22	13	29	A-6a (9)	
MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, TRACE SILT, TRACE CLAY, TRACE GRAVEL, DAMP	491.9	5	2 8 7	20	89	SS-4A	2.50	-	-	-	-	-	-	-	-	29	A-6a (V)	
						SS-4B	-	-	-	-	-	-	-	-	-	7	A-3a (V)	
MEDIUM DENSE, BROWN, **GRAVEL WITH SAND**, TRACE SILT, TRACE CLAY, DAMP	489.4	6	2 5 9	19	100	SS-5	-	-	-	-	-	-	-	-	-	5	A-3a (V)	
MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, TRACE SILT, TRACE CLAY, TRACE GRAVEL, DAMP	486.9	7	3 4 5	12	44	SS-6	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
MEDIUM DENSE, BROWN, **FINE SAND**, TRACE COARSE SAND, TRACE SILT, TRACE CLAY, TRACE GRAVEL, DAMP	482.9	8	3 4 6	14	44	SS-7	-	-	-	-	-	-	-	-	-	7	A-3a (V)	
VERY STIFF, BROWN, **SILT**, SOME CLAY, TRACE SAND, TRACE GRAVEL, WET	481.9	9	3 4 5	12	100	SS-8	-	-	-	-	-	-	-	-	-	8	A-3 (V)	
MEDIUM DENSE, BROWN AND BROWNISH GRAY, **SILT**, LITTLE CLAY, TRACE SAND, TRACE GRAVEL, WET	464.9 EOB	10	9 6 7	18	50	SS-9A	-	-	-	-	-	-	-	-	-	6	A-3 (V)	
						SS-9B	3.00	-	-	-	-	-	-	-	-	26	A-4b (V)	
		11	4 5 6	15	100	SS-10	-	-	-	-	-	-	-	-	-	26	A-4b (V)	
		12	2 3 7	14	100	SS-11	-	0	0	1	83	16	NP	NP	NP	24	A-4b (8)	
		13	3 4 5	12	100	SS-12	-	-	-	-	-	-	-	-	-	32	A-4b (V)	
		14	5 4 6	14	67	SS-13	-	-	-	-	-	-	-	-	-	27	A-4b (V)	
		15	2 4 6	14	100	SS-14	-	0	1	2	81	16	NP	NP	NP	25	A-4b (8)	
		16	2 5 5	14	39	SS-15	-	-	-	-	-	-	-	-	-	27	A-4b (V)	
		17	3 4 6	14	33	SS-16	-	-	-	-	-	-	-	-	-	30	A-4b (V)	

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE. DRILLED AS STAKED.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; PUMPED 50 GAL. BENTONITE GROUT; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:42 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\20240122-NEAS GINT LOGS\HAM-75-1.05.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-1.05	DRILLING FIRM / OPERATOR: NEAS / J. HODGES	DRILL RIG: CME 55X	STATION / OFFSET:	EXPLORATION ID B-060-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: NEAS / J. HODGES	HAMMER: CME AUTOMATIC	ALIGNMENT:	
PID: 113361 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 12/5/19	ELEVATION: 490.0 (MSL) EOB: 21.5 ft.	PAGE 1 OF 1
START: 3/15/22 END: 3/15/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 81.9	LAT / LONG: 39.110696, -84.531688	

MATERIAL DESCRIPTION AND NOTES	ELEV. 490.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
11.0" ASPHALT AND 7.0" BASE (DRILLERS DESCRIPTION)	488.5	1																
MEDIUM DENSE, BROWN, **GRAVEL WITH SAND**, TRACE SILT, TRACE CLAY, DAMP	487.0	2	5 7 7	19	28	SS-1	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
LOOSE TO MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, TRACE SILT, TRACE CLAY, TRACE GRAVEL, DAMP		3 4	4 6 7	18	72	SS-2	-	0	12	75	10	3	NP	NP	NP	5	A-3a (0)	
		5 6	3 3 4	10	100	SS-3	-	1	3	85	9	2	NP	NP	NP	6	A-3a (0)	
		7 8	5 3 4	10	100	SS-4	-	-	-	-	-	-	-	-	-	7	A-3a (V)	
		9 10	3 4 5	12	100	SS-5	-	-	-	-	-	-	-	-	-	6	A-3a (V)	
BECOMES WET	473.6	11 12	2 5 5	14	100	SS-6	-	-	-	-	-	-	-	-	-	10	A-3a (V)	
LOOSE, BROWN BECOMING BROWNISH GRAY, **SILT**, SOME CLAY, TRACE SAND, TRACE GRAVEL, WET		13 14	2 3 4	10	100	SS-7	-	-	-	-	-	-	-	-	-	22	A-3a (V)	
		15 16	3 2 4	8	100	SS-8	-	0	0	1	76	23	NP	NP	NP	28	A-4b (8)	
	468.5	17 18	2 3 3	8	100	SS-9	-	-	-	-	-	-	-	-	-	26	A-4b (V)	
		EOB 19 20																

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE. DRILLED AS STAKED.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:42 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\20240122-NEAS GINT LOGS\HAM-75-1.05.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-1.05	DRILLING FIRM / OPERATOR: NEAS / J. HODGES	DRILL RIG: CME 55X	STATION / OFFSET:	EXPLORATION ID B-061-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: NEAS / J. HODGES	HAMMER: CME AUTOMATIC	ALIGNMENT:	
PID: 113361 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 12/5/19	ELEVATION: 507.1 (MSL) EOB: 36.5 ft.	PAGE 1 OF 1
START: 7/19/22 END: 7/19/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 81.9	LAT / LONG: 39.110856, -84.531927	

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)	BACK FILL
5.0" ASPHALT AND 8.0" CONCRETE AND 4.0" BASE (DRILLERS DESCRIPTION)	507.1																	
MEDIUM DENSE, GRAY, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, TRACE CLAY, RESEMBLES GRANULAR BASE, DAMP	505.7		4 5 6	15	56	SS-1	-	31	27	15	20	7	NP	NP	NP	8	A-2-4 (0)	
MEDIUM STIFF TO STIFF, GRAY, **SILT AND CLAY**, TRACE SAND, TRACE GRAVEL, IRON STAINING, MOIST	502.6		2 2 5	10	100	SS-2	1.00	0	1	7	53	39	34	19	15	29	A-6a (10)	
MEDIUM DENSE, BROWN, **GRAVEL WITH SAND**, LITTLE SILT, TRACE CLAY, DAMP	500.1		2 3 6	12	22	SS-3	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
			4 8 13	29	50	SS-4	-	11	42	31	12	4	NP	NP	NP	5	A-1-b (0)	
			4 7 12	26	33	SS-5	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
MEDIUM DENSE, BROWN, **GRAVEL WITH SAND**, LITTLE SILT, TRACE CLAY, CONTAINS INTERBEDDED SILT SEAMS, DAMP	492.6		3 7 10	23	39	SS-6	-	14	42	21	15	8	NP	NP	NP	6	A-1-b (0)	
			3 9 8	23	39	SS-7	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, TRACE GRAVEL, TRACE SILT, TRACE CLAY, DAMP	487.6		3 4 7	15	44	SS-8	-	-	-	-	-	-	-	-	-	4	A-3a (V)	
			4 5 7	16	61	SS-9	-	-	-	-	-	-	-	-	-	4	A-3a (V)	
MEDIUM DENSE, BROWN, **SILT**, SOME CLAY, TRACE SAND, TRACE GRAVEL, WET	481.6		3 4 6	14	100	SS-10A	-	-	-	-	-	-	-	-	-	11	A-3a (V)	
						SS-10B	-	-	-	-	-	-	-	-	-	24	A-4b (V)	
	470.6	EOB	5 5 6	15	78	SS-11	-	-	-	-	-	-	-	-	-	22	A-4b (V)	
			3 4 8	16	56	SS-12	-	1	0	1	75	23	NP	NP	NP	26	A-4b (8)	
			3 5 6	15	39	SS-13	-	-	-	-	-	-	-	-	-	24	A-4b (V)	
			4 8 8	22	33	SS-14	-	-	-	-	-	-	-	-	-	34	A-4b (V)	

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE. DRILLED AS STAKED.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; PUMPED 50 GAL. BENTONITE GROUT; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:43 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\20240122-NEAS GINT LOGS\HAM-75-1.05.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-1.05	DRILLING FIRM / OPERATOR: NEAS / J. HODGES	DRILL RIG: CME 55X	STATION / OFFSET:	EXPLORATION ID B-063-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: NEAS / J. HODGES	HAMMER: CME AUTOMATIC	ALIGNMENT:	
PID: 113361 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 12/5/19	ELEVATION: 505.7 (MSL) EOB: 31.5 ft.	PAGE 1 OF 1
START: 7/19/22 END: 7/19/22	SAMPLING METHOD: SPT	ENERGY RATIO (%): 81.9	LAT / LONG: 39.111184, -84.531860	

MATERIAL DESCRIPTION AND NOTES	ELEV. 505.7	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
4.0" ASPHALT AND 6.0" CONCRETE AND 4.0" BASE (DRILLERS DESCRIPTION)	504.5																	
VERY STIFF, BROWNISH GRAY, **SANDY SILT**, SOME CLAY, LITTLE GRAVEL, CONTAINS BRICK FRAGMENTS, DAMP **(FILL)**	501.2		5 5 11	22	50	SS-1	4.00	14	14	14	36	22	28	18	10	15	A-4a (5)	
STIFF TO VERY STIFF, BROWNISH GRAY, **SILT AND CLAY**, SOME SAND, TRACE GRAVEL, CONTAINS BRICK FRAGMENTS, DAMP **(FILL)**	498.7		3 4 8	16	56	SS-2	2.00	-	-	-	-	-	-	-	-	18	A-6a (V)	
STIFF TO VERY STIFF, GRAY, **SILT AND CLAY**, TRACE SAND, TRACE GRAVEL, CONTAINS IRON STAINING, MOIST	497.0		5 7 7	19	100	SS-3A	2.00	3	2	7	65	23	31	19	12	23	A-6a (9)	
MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, TRACE GRAVEL, TRACE SILT, TRACE CLAY, DAMP	491.2					SS-3B	-	-	-	-	-	-	-	-	-	9	A-3a (V)	
			5 6 8	19	100	SS-4	-	-	-	-	-	-	-	-	-	4	A-3a (V)	
			4 6 10	22	39	SS-5	-	-	-	-	-	-	-	-	-	4	A-3a (V)	
MEDIUM DENSE, BROWNISH GRAY AND BROWN, **SANDY SILT**, TRACE CLAY, TRACE GRAVEL, DAMP	483.7		4 7 8	20	39	SS-6	-	-	-	-	-	-	-	-	-	12	A-4a (V)	
			4 8 13	29	100	SS-7	-	-	-	-	-	-	-	-	-	6	A-4a (V)	
			6 9 13	30	83	SS-8	-	3	8	46	36	7	NP	NP	NP	8	A-4a (2)	
MEDIUM DENSE, BROWNISH GRAY AND BROWN, **COARSE AND FINE SAND**, TRACE SILT, TRACE CLAY, TRACE GRAVEL, DAMP	474.2		2 5 7	16	100	SS-9	-	-	-	-	-	-	-	-	-	8	A-3a (V)	
	EOB		3 5 9	19	44	SS-10	-	-	-	-	-	-	-	-	-	7	A-3a (V)	
			4 5 8	18	50	SS-11	-	0	6	83	8	3	NP	NP	NP	6	A-3a (0)	
			3 6 8	19	28	SS-12	-	-	-	-	-	-	-	-	-	6	A-3a (V)	

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE. DRILLED AS STAKED.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; PUMPED 50 GAL. BENTONITE GROUT; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:43 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\20240122-NEAS GINT LOGS\HAM-75-1.05.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-01.05
TYPE: RETAINING WALL
PID: 113361 SFN:
START: 5/9/22 END: 5/9/22

DRILLING FIRM / OPERATOR: TERRACON / KH
SAMPLING FIRM / LOGGER: TERRACON / RS
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT / ST

DRILL RIG: DIEDRICH D90
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 5/7/20
ENERGY RATIO (%): 79.9

STATION / OFFSET: LT.
ALIGNMENT: I-75
ELEVATION: 506.8 (MSL) EOB: 50.0 ft.
LAT / LONG: 39.112707, -84.531685

EXPLORATION ID B-064-0-21
PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 506.8	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
ASPHALT (4 INCHES)	506.5																	
CONCRETE (13 INCHES)	505.4																	
MEDIUM STIFF, GRAYISH BROWN WITH GREENISH GRAY, **SILTY CLAY**, LITTLE SAND, TRACE GRAVEL, TRACE BRICK FRAGMENTS, DAMP (FILL)	503.8		4 3 3	8	89	SS-1	0.75	-	-	-	-	-	-	-	-	14	A-6b (V)	
STIFF, GRAYISH BROWN WITH GREENISH GRAY, **SANDY SILT**, SOME CLAY, LITTLE GRAVEL, TRACE CINDERS, TRACE BRICK FRAGMENTS, DAMP (FILL)	502.3		4 6 8	19	100	SS-2	1.75	17	14	20	28	21	26	16	10	16	A-4a (3)	
HARD, GRAYISH BROWN WITH GREENISH GRAY, **SILTY CLAY**, SOME SAND, LITTLE GRAVEL, TRACE CINDERS, TRACE BRICK FRAGMENTS, DAMP (FILL)	500.8		4 7 8	20	100	SS-3	4.50	19	14	16	23	28	31	15	16	13	A-6b (5)	
VERY STIFF, DARK GREENISH GRAY WITH BLUISH GRAY, **SILT AND CLAY**, SOME SAND, LITTLE GRAVEL, TRACE BRICK, TRACE CINDERS, DAMP (FILL)	498.3		5 6 9	20	89	SS-4	3.75	20	9	16	28	27	32	18	14	16	A-6a (6)	
VERY STIFF, DARK GREENISH GRAY WITH BLUISH GRAY, **SILTY CLAY**, LITTLE SAND, LITTLE GRAVEL, TRACE BRICK, TRACE CINDERS, MOIST (FILL)	493.3		5 4 6	13	100	SS-5	4.00	12	6	9	36	37	37	20	17	21	A-6b (10)	
VERY STIFF, LIGHT GRAY TO BLUISH GRAY, **SILT AND CLAY**, SOME GRAVEL, LITTLE SAND, TRACE ROCK FRAGMENTS, DAMP (FILL)	488.3		9 10 13	31	100	SS-6	-	-	-	-	-	-	-	-	-	15	A-6b (V)	
			23 13 14	36	33	SS-7	-	-	-	-	-	-	-	-	-	9	A-6a (V)	
			6 6 10	21	100	SS-8	3.00	32	7	6	26	29	38	23	15	16	A-6a (6)	
VERY DENSE, GRAYISH BROWN, **COARSE AND FINE SAND**, TRACE GRAVEL, TRACE ROCK FRAGMENTS, TRACE CLAY, DAMP	483.3		9 22 22	59	89	SS-9	-	-	-	-	-	-	-	-	-	13	A-3a (V)	
MEDIUM STIFF, BLUISH GRAY TO GREENISH GRAY, **SANDY SILT**, SOME CLAY, LITTLE GRAVEL, MOIST	478.3		1 2 3	7	100	SS-10	0.50	12	10	18	38	22	28	18	10	24	A-4a (5)	
VERY STIFF, BLUISH GRAY TO GREENISH GRAY, **SILT AND CLAY**, TRACE SAND, TRACE CINDERS, MOIST	473.3		2 2 3	7	100	SS-11	2.75	-	-	-	-	-	-	-	-	27	A-6a (V)	
MEDIUM DENSE, BLUISH GRAY TO GREENISH GRAY, **SILT**, "AND" CLAY, MOIST	468.3		2 4 4	11	100	SS-12	-	0	0	0	60	40	29	20	9	24	A-4b (8)	
MEDIUM DENSE, YELLOWISH BROWN TO GRAYISH BROWN, **COARSE AND FINE SAND**, SOME SILT, TRACE CLAY, WET	463.3		5 5 5	13	100	SS-13	-	-	-	-	-	-	-	-	-	27	A-3a (V)	
MEDIUM DENSE, YELLOWISH BROWN TO GRAYISH BROWN, **SILT**, LITTLE CLAY, TRACE SAND, DRY	458.3		3 3 4	9	100	SS-14	-	0	0	9	79	12	NP	NP	NP	5	A-4b (8)	
MEDIUM DENSE, YELLOWISH BROWN TO GRAYISH BROWN, **COARSE AND FINE SAND**, SOME SILT, TRACE CLAY, WET	456.8 EOB		6 6 8	19	100	SS-15	-	-	-	-	-	-	-	-	-	24	A-3a (V)	

W 478.8

NOTES: OFFSET 6' EAST DUE TO UTILITIES. CAVE-IN AT 34'.

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 14:14 - N:\PROJECTS\2024\IN1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\IN1215225 LOGS-HAM-75-1.05 TERRACONN\1215225 HAM-75-ODOT_10-28-2022.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-01.05	DRILLING FIRM / OPERATOR: TERRACON / KH	DRILL RIG: DIEDRICH D90	STATION / OFFSET: LT.	EXPLORATION ID B-065-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-75	
PID: 113361 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/7/20	ELEVATION: 512.5 (MSL) EOB: 50.0 ft.	PAGE 1 OF 1
START: 5/9/22 END: 5/9/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 79.9	LAT / LONG: 39.113177, -84.531739	

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)	HOLE SEALED
ASPHALT (13 INCHES)	512.5																	
	511.4																	
MEDIUM DENSE, GRAYISH BROWN, **GRAVEL WITH SAND AND SILT**, TRACE CLAY, DAMP TO MOIST (FILL)			6 4 4	11	50	SS-1	-	-	-	-	-	-	-	-	-	4	A-2-4 (V)	
	508.5		5 4 4	11	56	SS-2	-	60	12	8	11	9	25	15	10	15	A-2-4 (0)	
HARD, GRAYISH BROWN WITH YELLOWISH BROWN, **SILT AND CLAY**, SOME TO "AND" SAND, TRACE GRAVEL, TRACE BRICK FRAGMENTS, TRACE CINDERS, DAMP (FILL)			4 6 7	17	100	SS-3	4.50	2	11	15	35	37	31	17	14	16	A-6a (9)	
	504.0		6 7 7	19	100	SS-4	4.50	4	15	22	33	26	30	16	14	14	A-6a (6)	
VERY STIFF, GRAYISH BROWN WITH YELLOWISH BROWN, **SANDY SILT**, SOME CLAY, TRACE GRAVEL, TRACE BRICK FRAGMENTS, TRACE CINDERS, MOIST (FILL)			8 11 10	28	100	SS-5	3.50	4	12	24	35	25	25	15	10	16	A-4a (5)	
	501.5																	
HARD, GRAYISH BROWN WITH YELLOWISH BROWN, **SILT AND CLAY**, LITTLE SAND, TRACE GRAVEL, TRACE BRICK FRAGMENTS, TRACE CINDERS, DAMP (FILL)			8 8 19	36	100	SS-6	4.50	-	-	-	-	-	-	-	-	14	A-6a (V)	
	496.5		4 4 7	15	33	SS-7	-	-	-	-	-	-	-	-	-	14	A-6a (V)	
STIFF, BLUISH GRAY WITH OLIVE, **SILT AND CLAY**, TRACE SAND, LITTLE ROCK FRAGMENTS, TRACE CINDERS, TRACE BRICK FRAGMENTS, DAMP (FILL)			5 5 4	12	89	SS-8	2.00	14	8	7	42	29	34	21	13	15	A-6a (8)	
	494.0																	
STIFF, DARK GRAYISH BROWN TO DARK GREENISH GRAY, **SILTY CLAY**, TRACE SAND, TRACE ORGANICS, MOIST (FILL)			3 3 5	11	100	SS-9	2.00	2	8	13	43	34	34	18	16	22	A-6b (10)	
	489.0																	
MEDIUM DENSE, OLIVE WITH GRAYISH BROWN, **SILT**, TRACE ORGANICS, MOIST TO WET			4 4 5	12	100	SS-10	-	0	1	3	62	34	31	21	10	26	A-4b (8)	
	479.0																	
MEDIUM DENSE, GRAY WITH OLIVE TO GRAYISH BROWN, **SILT**, TRACE SAND, WET TO MOIST			7 5 5	13	67	SS-12	-	-	-	-	-	-	-	-	-	25	A-4b (V)	
	W 469.5																	
	462.5	EOB	2 2 3	7	100	SS-13	-	0	0	7	73	20	25	18	7	27	A-4b (8)	
			3 2 2	5	100	SS-14	-	0	0	1	72	27	29	20	9	25	A-4b (8)	
			2 3 5	11	100	SS-15	-	-	-	-	-	-	-	-	-	23	A-4b (V)	

NOTES: TERMINATED AT 50' TO AVIOD CONTAMINATION. CAVE-IN AT 32'

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 14:14 - N:\PROJECTS\2024\IN1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\IN1215225 LOGS-HAM-75-1.05 TERRACON\IN1215225 HAM-75-ODOT_10-28-2022.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-01.05
TYPE: RETAINING WALL
PID: 113361 SFN:
START: 4/4/22 END: 4/4/22

DRILLING FIRM / OPERATOR: TERRACON / KH
SAMPLING FIRM / LOGGER: TERRACON / RS
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT / ST

DRILL RIG: DIEDRICH D90
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 5/7/20
ENERGY RATIO (%): 79.9

STATION / OFFSET: LT.
ALIGNMENT: I-75
ELEVATION: 497.0 (MSL) EOB: 45.0 ft.
LAT / LONG: 39.113335, -84.531927

EXPLORATION ID B-067-0-21

MATERIAL DESCRIPTION AND NOTES	ELEV. 497.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
ASPHALT (3 INCHES)	496.8																	
CONCRETE (8 INCHES)	496.1																	
VERY STIFF TO HARD, YELLOWISH BROWN WITH GRAYISH BROWN, **SILT AND CLAY**, SOME SAND, LITTLE GRAVEL, TRACE BRICK FRAGMENTS, TRACE CINDERS, DAMP TO MOIST (FILL)		1	3 5 6	15	100	SS-1	4.50	-	-	-	-	-	-	-	-	15	A-6a (V)	
		2																
		3																
		4	5 4 3	9	100	SS-2	3.00	18	19	16	28	19	31	19	12	25	A-6a (3)	
	491.0	5																
MEDIUM STIFF, GRAYISH BROWN WITH LIGHT YELLOWISH BROWN, **SILT AND CLAY**, TRACE SAND, TRACE GRAVEL, TRACE ORGANICS, TRACE WOOD FRAGMENTS, MOIST		6																
		7	3 2 4	8	100	SS-3	0.50	-	-	-	-	-	-	-	-	21	A-6a (V)	
		8																
		9	5 5 7	16	100	SS-4	2.00	1	4	31	42	22	29	15	14	18	A-6a (7)	
		10																
		11			100	ST-1	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
		12																
		13	1 2 2	5	100	SS-5	1.00	-	-	-	-	-	-	-	-	20	A-6a (V)	
		14																
		15																
		16	3 3 5	11	100	SS-6	-	-	-	-	-	-	-	-	-	28	A-4b (V)	
		17																
		18																
		19	3 4 5	12	100	SS-7	-	2	0	15	70	13	24	18	6	25	A-4b (8)	
		20																
		21																
		22																
		23																
		24	2 3 4	9	100	SS-8	-	-	-	-	-	-	-	-	-	28	A-4b (V)	
		25																
		26																
		27																
		28																
		29	2 2 3	7	100	SS-9	-	0	1	22	58	19	23	18	5	28	A-4b (8)	
		30																
		31																
		32																
		33																
	464.0	34																
LOOSE TO MEDIUM DENSE, OLIVE WITH GRAYISH BROWN, **SILT**, LITTLE TO SOME SAND, LITTLE CLAY, TRACE GRAVEL, WET		35	2 2 3	7	100	SS-10	-	1	0	8	76	15	22	18	4	27	A-4b (8)	
		36																
		37																
		38																
	458.5	39																
LOOSE, GRAY WITH YELLOWISH BROWN, **SILT**, LITTLE CLAY, TRACE SAND, TRACE GRAVEL, WET	W 458.5	40	10 7 13	27	100	SS-11	-	0	1	61	31	7	NP	NP	NP	27	A-4a (1)	
		41																
		42																
		43																
		44	5 7 8	20	100	SS-12	-	-	-	-	-	-	-	-	-	19	A-4a (V)	
MEDIUM DENSE, GRAYISH BROWN WITH YELLOWISH BROWN, **SANDY SILT**, TRACE CLAY, WET	452.0	45 EOB																

NOTES: WATER ADDED TO AUGERS DURING DRILLING STARTING AT 43.5'

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 14:14 - N:\PROJECTS\2024\IN1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\IN1215225 LOGS-HAM-75-1.05 TERRACON\IN1215225 HAM-75-ODOT_10-28-2022.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-01.05	DRILLING FIRM / OPERATOR: TERRACON / AM	DRILL RIG: DIEDRICH D90	STATION / OFFSET: LT.	EXPLORATION ID B-068-0-21
TYPE: BRIDGE	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-75	
PID: 113361 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/7/20	ELEVATION: 516.1 (MSL) EOB: 100.0 ft.	PAGE 1 OF 2
START: 1/13/22 END: 1/3/21	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 79.9	LAT / LONG: 39.113542, -84.531835	

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)	HOLE SEALED
ASPHALT (14 INCHES)	516.1																	
	515.0																	
STIFF TO VERY STIFF, GRAYISH BROWN, **SANDY SILT**, SOME CLAY, TRACE GRAVEL, TRACE BRICK, DAMP (FILL)		1																
		2	9 9 6	20	67	SS-1	-	-	-	-	-	-	-	-	-	8	A-4a (V)	
		3	4 4 6	13	44	SS-2	-	-	-	-	-	-	-	-	-	7	A-4a (V)	
		4	3 3 6	12	78	SS-3	-	10	6	15	38	31	25	15	10	15	A-4a (7)	
		5	5 4 6	13	100	SS-4	-	-	-	-	-	-	-	-	-	14	A-4a (V)	
		6																
		7	10 11 7	24	100	SS-5	-	-	-	-	-	-	-	-	-	14	A-4a (V)	
	505.1	8																
STIFF TO VERY STIFF, GRAY AND BROWN, **SILT AND CLAY**, LITTLE GRAVEL, MOIST (FILL)		9	5 5 9	19	100	SS-6	1.50	-	-	-	-	-	-	-	-	15	A-6a (V)	
		10																
		11	4 3 4	9	100	SS-7	-	13	0	0	83	4	23	12	11	16	A-6a (8)	
		12																
		13																
		14																
		15																
	498.6	16																
MEDIUM DENSE, GRAY AND BROWN, **SANDY SILT**, "AND" CLAY, TRACE GRAVEL, MOIST TO WET (FILL) @18.5'; VERY DENSE, GRAVEL SEAM		17	4 5 5	13	100	SS-8	3.00	-	-	-	-	-	-	-	-	19	A-6a (V)	
		18																
		19	50/5"	-	100	SS-9	-	-	-	-	-	-	-	-	-	17	A-4a (V)	
		20																
		21																
		22																
		23																
		24	3 3 5	11	100	SS-10	-	-	-	-	-	-	-	-	-	30	A-4a (V)	
		25																
		26																
		27																
		28																
		29			98	ST-1	-	1	1	12	48	38	NP	NP	NP	23	A-4a (8)	
	482.6	30																
STIFF TO VERY STIFF, GRAY, **SILTY CLAY**, SOME SAND, MOIST TO DAMP		31																
		32																
		33																
		34	3 3 4	9	100	SS-11	1.00	-	-	-	-	-	-	-	-	25	A-6b (V)	
		35																
		36																
		37																
		38																
W 477.6		39	4 4 4	11	100	SS-12	2.50	-	-	-	-	-	-	-	-	14	A-6b (V)	
		40																
		41																
		42																
	472.6	43																
MEDIUM DENSE, GRAY AND BROWN, **SILT**, TRACE SAND, LITTLE CLAY, WET		44	4 5 8	17	100	SS-13	-	0	0	1	84	15	NP	NP	NP	31	A-4b (8)	
		45																
		46																
		47																
	467.6	48																
MEDIUM DENSE, YELLOWISH BROWN, **SILT**, SOME SAND, LITTLE CLAY, WET		49	4 6 6	16	100	SS-14	1.00	-	-	-	-	-	-	-	-	21	A-4b (V)	
		50																
		51																
		52																
		53																
		54	3 3 3	8	100	SS-15	-	0	0	20	64	16	NP	NP	NP	22	A-4b (8)	
		55																
		56																
		57																
	457.6	58																
LOOSE TO MEDIUM DENSE, GRAYISH BROWN, **FINE SAND**, TRACE GRAVEL, SOME COARSE SAND, TRACE SILT, WET		59	0 3 3	8	100	SS-16	-	-	-	-	-	-	-	-	-	29	A-3 (V)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 14:14 - N:\PROJECTS\2024\IN1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\IN1215225 LOGS-HAM-75-1.05 TERRACON\IN1215225 HAM-75-ODOT_10-28-2022.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PID: 113361	SFN:	PROJECT: HAM-75-01.05	STATION / OFFSET: LT.	START: 1/13/22	END: 1/3/21	PG 2 OF 2	B-068-0-21

MATERIAL DESCRIPTION AND NOTES	ELEV. 456.1	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
LOOSE TO MEDIUM DENSE, GRAYISH BROWN, **FINE SAND**, TRACE GRAVEL, SOME COARSE SAND, TRACE SILT, WET *(continued)*		61																
		62																
		63																
		64	2 6 4	13	67	SS-17	-	-	-	-	-	-	-	-	-	27	A-3 (V)	
		65																
		66																
		67																
		68																
@68.5'; DENSE		69	10 17 13	40	100	SS-18	-	8	34	50	8	0	NP	NP	NP	18	A-3 (0)	
		70																
		71																
		72																
		73																
		74	10 9 9	24	78	SS-19	-	-	-	-	-	-	-	-	-	25	A-3 (V)	
		75																
		76																
		77																
		78																
@78.5'; DENSE		79	11 15 14	39	56	SS-20	-	-	-	-	-	-	-	-	-	26	A-3 (V)	
		80																
		81																
		82																
		83																
	432.6	84	11 15 14	39	100	SS-21	-	0	10	79	6	5	NP	NP	NP	20	A-3a (0)	
DENSE TO VERY DENSE, GRAYISH BROWN, **COARSE AND FINE SAND**, TRACE SILT, TRACE CLAY, WET		85																
		86																
		87																
		88																
		89	17 24 21	60	56	SS-22	-	-	-	-	-	-	-	-	-	21	A-3a (V)	
		90																
		91																
		92																
		93																
	422.6	94	16 8 22	40	100	SS-23	-	0	1	91	7	1	NP	NP	NP	22	A-3 (0)	
DENSE, GRAYISH BROWN, **FINE SAND**, TRACE COARSE SAND, TRACE SILT, TRACE CLAY, WET		95																
		96																
		97																
		98																
		99	15 18 18	48	100	SS-24	-	-	-	-	-	-	-	-	-	23	A-3 (V)	
	416.1 EOB	100																

NOTES: WATER ADDED TO AUGERS DURING DRILLING STARTING AT 48.5'

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 14:14 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215225 LOGS-HAM-75-1.05 TERRACONN1215225 HAM-75-ODOT_10-28-2022.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-01.05	DRILLING FIRM / OPERATOR: TERRACON / AM	DRILL RIG: DIEDRICH D90	STATION / OFFSET: LT.	EXPLORATION ID B-071-0-21
TYPE: BRIDGE	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-75	
PID: 113361 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/7/20	ELEVATION: 520.0 (MSL) EOB: 100.0 ft.	PAGE 1 OF 2
START: 1/20/22 END: 1/20/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 79.9	LAT / LONG: 39.114257, -84.532168	

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)	HOLE SEALED
ASPHALT (6.5 INCHES)	520.0																	
CONCRETE (13 INCHES)	519.5																	
	518.4																	
VERY STIFF, YELLOWISH BROWN, **SANDY SILT**, TRACE GRAVEL, TRACE CLAY, MOIST (FILL)			5 18 12	40	83	SS-1	-	-	-	-	-	-	-	-	-	13	A-4a (V)	
			5 8 6	19	100	SS-2	-	-	-	-	-	-	-	-	-	10	A-4a (V)	
			5 4 9	17	44	SS-3	-	-	-	-	-	-	-	-	-	13	A-4a (V)	
	513.5		5 8 8	21	78	SS-4	1.50	-	-	-	-	-	-	-	-	7	A-4a (V)	
STIFF TO VERY STIFF, YELLOWISH BROWN, **SANDY SILT**, "AND" CLAY, TRACE GRAVEL, TRACE BRICK, MOIST (FILL)			6 6 8	19	100	SS-5	2.00	-	-	-	-	-	-	-	-	17	A-4a (V)	
			5 9 10	25	100	SS-6	2.00	-	-	-	-	-	-	-	-	15	A-4a (V)	
			4 8 10	24	100	SS-7	-	3	3	8	37	49	NP	NP	NP	16	A-4a (8)	
			4 6 9	20	100	SS-8	3.00	-	-	-	-	-	-	-	-	17	A-4a (V)	
	501.5																	
STIFF TO VERY STIFF, YELLOWISH BROWN, **SILTY CLAY**, LITTLE SAND, TRACE GRAVEL, TRACE BRICK, TRACE CINDERS, MOIST (FILL)			4 10 9	25	100	SS-9	-	9	7	12	37	35	31	15	16	16	A-6b (10)	
			3 3 2	7	100	SS-10	1.00	-	-	-	-	-	-	-	-	25	A-6a (V)	
			4 5 4	12	100	SS-11	1.50	-	-	-	-	-	-	-	-	27	A-6b (V)	
	486.5																	
STIFF, BROWN, **CLAY**, TRACE SAND, TRACE GRAVEL, MOIST					100	ST-1	1.00	1	4	13	42	40	42	16	26	24	A-7-6 (15)	
			4 5 8	17	100	SS-12	1.50	-	-	-	-	-	-	-	-	28	A-7-6 (V)	
	476.5																	
STIFF TO VERY STIFF, BROWN AND GRAY, **SILTY CLAY**, LITTLE SAND, TRACE GRAVEL, MOIST			5 3 5	11	100	SS-13	-	-	-	-	-	-	-	-	-	30	A-6b (V)	
			3 6 6	16	100	SS-14	-	1	0	12	67	20	-	-	-	25	A-6b (V)	
	466.5																	
LOOSE, GRAY, **SILT**, SOME SAND, TRACE CLAY, WET			2 2 3	7	100	SS-15	-	-	-	-	-	-	-	-	-	27	A-4b (V)	
			0 3 4	9	100	SS-16	-	-	-	-	-	-	-	-	-	26	A-4b (V)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 14:14 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215225 LOGS-HAM-75-1.05 TERRACONN1215225 HAM-75-ODOT_10-28-2022.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PID: 113361	SFN:	PROJECT: HAM-75-01.05	STATION / OFFSET: LT.	START: 1/20/22	END: 1/20/22	PG 2 OF 2	B-071-0-21

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)	HOLE SEALED
LOOSE, GRAY, **SILT**, SOME SAND, TRACE CLAY, WET *(continued)*	460.0	61–63																
MEDIUM DENSE, YELLOWISH BROWN, **COARSE AND FINE SAND**, SOME SILT, TRACE CLAY, WET	456.5	64–65	3 6 12	24	100	SS-17	-	0	1	65	26	8	NP	NP	NP	26	A-3a (0)	
		66–68																
		69–70	3 5 12	23	100	SS-18	-	-	-	-	-	-	-	-	-	28	A-3a (V)	
		71–73																
		74–75	5 7 9	21	100	SS-19	-	-	-	-	-	-	-	-	-	23	A-3a (V)	
		76–78																
MEDIUM DENSE TO DENSE, GRAYISH BROWN, **COARSE AND FINE SAND**, SOME SILT, TRACE CLAY, WET	441.5	79–80	7 9 16	33	100	SS-20	-	-	-	-	-	-	-	-	-	20	A-3a (V)	
		81–83																
		84–85	5 3 12	20	100	SS-21	-	-	-	-	-	-	-	-	-	23	A-3a (V)	
		86–88																
		89–90	7 8 12	27	100	SS-22	-	-	-	-	-	-	-	-	-	17	A-3a (V)	
		91–93																
@93.5'; NO RECOVERY		94–95	7 9 12	28	0	SS-23	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
		96–98																
	420.0	EOB 99–100	8 7 7	19	100	SS-24	-	-	-	-	-	-	-	-	-	31	A-3a (V)	

NOTES: WATER ADDED TO AUGERS DURING DRILLING STARTING AT 53.5'

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; MIXED WITH BENTONITE CHIPS

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 14:14 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215225 LOGS-HAM-75-1.05 TERRACONN1215225 HAM-75-ODOT_10-28-2022.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-01.05	DRILLING FIRM / OPERATOR: TERRACON / KH	DRILL RIG: DIEDRICH D90	STATION / OFFSET: LT.	EXPLORATION ID B-074-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-75	
PID: 113361 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/7/20	ELEVATION: 497.1 (MSL) EOB: 60.0 ft.	PAGE 1 OF 1
START: 2/25/22 END: 2/25/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 79.9	LAT / LONG: 39.114259, -84.532391	

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)	HOLE SEALED
ASPHALT (4 INCHES)	497.1																	
CONCRETE (4 INCHES)	496.8																	
AGGREGATE BASE (4 INCHES)	496.4																	
CONCRETE (6 INCHES)	496.1																	
STIFF TO VERY STIFF, DARK GREENISH GRAY TO DARK GRAYISH BROWN, **SILTY CLAY**, SOME SAND, TRACE GRAVEL, TRACE BRICK FRAGMENTS, DAMP TO MOIST (FILL)	495.6		50/4"	-	100	SS-1	-	-	-	-	-	-	-	-	-	6		
			4 4 5	12	100	SS-2	-	-	-	-	-	-	-	-	-	14	A-6b (V)	
			3 3 4	9	100	SS-3	-	3	8	23	27	39	36	17	19	17	A-6b (10)	
			7 6 8	19	6	SS-4	-	-	-	-	-	-	-	-	-	13	A-6b (V)	
			7 8 8	21	89	SS-5	-	-	-	-	-	-	-	-	-	22	A-6b (V)	
	484.1																	
VERY LOOSE, YELLOWISH BROWN, **SILT**, LITTLE TO SOME CLAY, TRACE SAND, WET					100	ST-1	-	0	1	4	81	14	31	22	9	-	A-4b (8)	
	478.6		2 1 2	4	100	SS-6	-	-	-	-	-	-	-	-	-	33	A-4b (V)	
LOOSE TO MEDIUM DENSE, GRAY WITH REDDISH BROWN, **SILT**, TRACE TO LITTLE CLAY, WET			3 4 5	12	100	SS-7	-	0	3	2	76	19	-	20	-	28	A-4b (V)	
			4 3 4	9	100	SS-8	-	-	-	-	-	-	-	-	-	28	A-4b (V)	
	463.6		3 3 3	8	100	SS-9	-	0	0	1	70	29	-	18	-	28	A-4b (V)	
LOOSE, GRAY TO DARK GRAY, **SANDY SILT**, WET			3 3 4	9	100	SS-10	-	-	-	-	-	-	-	-	-	25	A-4a (V)	
	458.6		4 7 9	21	100	SS-11	-	-	-	-	-	-	-	-	-	21	A-3 (V)	
MEDIUM DENSE TO DENSE, YELLOWISH BROWN, **FINE SAND**, TRACE TO LITTLE SILT, WET			7 10 12	29	100	SS-12	-	1	4	91	3	1	-	-	-	22	A-3 (V)	
		F S	7 7 10	23	89	SS-13	-	-	-	-	-	-	-	-	-	18	A-3 (V)	
			6 8 11	25	100	SS-14	-	0	3	87	10	0	-	-	-	23	A-3 (V)	
	437.1	EOB	6 8 15	31	89	SS-15	-	-	-	-	-	-	-	-	-	24	A-3 (V)	

NOTES: NONE

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 14:14 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215225 LOGS-HAM-75-1.05 TERRACONN1215225 HAM-75-ODOT_10-28-2022.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-01.05	DRILLING FIRM / OPERATOR: TERRACON / KH	DRILL RIG: DIEDRICH D90	STATION / OFFSET: LT.	EXPLORATION ID B-075-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-75	
PID: 113361 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/7/20	ELEVATION: 522.4 (MSL) EOB: 55.0 ft.	PAGE 1 OF 1
START: 5/2/22 END: 5/2/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 79.9	LAT / LONG: 39.114537, -84.532310	

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)	HOLE SEALED
ASPHALT (8 INCHES)	522.4																	
AGGREGATE BASE (4 INCHES)	521.7																	
VERY STIFF, GRAYISH BROWN, **SILT AND CLAY**, SOME SAND, LITTLE GRAVEL, TRACE CINDERS, TRACE BRICK FRAGMENTS, DAMP (FILL)	521.4		3 3 5	11	100	SS-1	3.25	-	-	-	-	-	-	-	-	13	A-6a (V)	
			4 4 4	11	83	SS-2	4.00	11	11	20	32	26	27	15	12	15	A-6a (5)	
VERY STIFF TO HARD, GRAYISH BROWN, **SANDY SILT**, SOME CLAY, TRACE GRAVEL, TRACE CINDERS, TRACE BRICK FRAGMENTS, DAMP TO MOIST (FILL)	518.4		3 5 5	13	17	SS-3	-	8	6	21	41	24	23	16	7	17	A-4a (6)	
			9 10 13	31	100	SS-4	4.50	5	8	17	40	30	26	16	10	15	A-4a (7)	
VERY STIFF TO HARD, GRAYISH BROWN, **SILT AND CLAY**, SOME SAND, LITTLE GRAVEL, TRACE CINDERS, TRACE BRICK FRAGMENTS, DAMP (FILL)	513.9		5 9 11	27	100	SS-5	4.50	-	-	-	-	-	-	-	-	18	A-6a (V)	
			12 9 12	28	11	SS-6	-	-	-	-	-	-	-	-	-	12	A-6a (V)	
			9 7 5	16	78	SS-7	4.25	12	6	15	37	30	29	16	13	19	A-6a (8)	
HARD, GRAY WITH BLUISH GRAY AND GRAYISH BROWN, **SILT AND CLAY**, LITTLE SAND, TRACE GRAVEL, TRACE BRICK FRAGMENTS, DAMP (FILL)	506.4		7 9 12	28	89	SS-8	4.50	-	-	-	-	-	-	-	-	19	A-6a (V)	
			5 8 13	28	100	SS-9	4.50	5	6	11	41	37	30	17	13	17	A-6a (9)	
STIFF, OLIVE GRAY WITH VERY DARK GRAY, **SANDY SILT**, SOME CLAY, TRACE GRAVEL, TRACE CINDERS, TRACE BRICK FRAGMENTS, DAMP (FILL)	498.9		7 12 13	33	100	SS-10	-	7	13	25	33	22	24	15	9	15	A-4a (4)	
			7 4 7	15	100	SS-11	1.50	-	-	-	-	-	-	-	-	17	A-4a (V)	
VERY STIFF TO HARD, GRAYISH BROWN WITH OLIVE, **CLAY**, TRACE TO LITTLE SILT, TRACE SAND, DAMP	488.9		2 4 6	13	100	SS-12	3.00	2	5	12	38	43	44	23	21	21	A-7-6 (13)	
					100	ST-1	-	-	-	-	-	-	-	-	-	-	A-7-6 (V)	
MEDIUM DENSE, GRAY, **SILT**, TRACE SAND, TRACE CLAY, DAMP	479.9		4 5 6	15	100	SS-13	1.00	-	-	-	-	-	-	-	-	34	A-4b (V)	
	W 474.4		4 7 7	19	100	SS-14	-	0	0	4	75	21	24	19	5	19	A-4b (8)	
	467.4	EOB	5 6 7	17	100	SS-15	-	-	-	-	-	-	-	-	-	26	A-4b (V)	

NOTES: CAVE-IN AT 31'

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 14:14 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215225 LOGS-HAM-75-1.05 TERRACONN1215225 HAM-75-ODOT_10-28-2022.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-01.05	DRILLING FIRM / OPERATOR: TERRACON / KH	DRILL RIG: DIEDRICH D90	STATION / OFFSET: LT.	EXPLORATION ID B-076-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-75	
PID: 113361 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/7/20	ELEVATION: 496.4 (MSL) EOB: 60.0 ft.	PAGE 1 OF 1
START: 2/24/22 END: 2/24/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 79.9	LAT / LONG: 39.114586, -84.532625	

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)	HOLE SEALED
ASPHALT (4 INCHES)	496.4																	
CONCRETE (4 INCHES)	496.1																	
AGGREGATE BASE (3 INCHES)	495.7																	
CONCRETE (8 INCHES)	495.5																	
STIFF, GRAYISH BROWN, **SANDY SILT**, TRACE GRAVEL, DAMP (FILL)	494.8		4 6 5	15	17	SS-1	-	-	-	-	-	-	-	-	-	7	A-4a (V)	
STIFF, GRAYISH BROWN WITH DARK GREENISH GRAY, **SILTY CLAY**, "AND" SAND, TRACE BRICK FRAGMENTS, MOIST (FILL)	492.9		3 3 2	7	100	SS-2	-	-	-	-	-	-	-	-	-	13	A-6b (V)	
			3 4 4	11	78	SS-3	-	3	14	26	16	41	40	18	22	29	A-6b (9)	
			6 5 4	12	100	SS-4	-	-	-	-	-	-	-	-	-	21	A-6b (V)	
					100	ST-1	-	0	9	34	29	28	36	16	20	20	A-6b (8)	
			4 3 3	8	67	SS-5	-	-	-	-	-	-	-	-	-	27	A-6b (V)	
		W 480.4	3 4 3	9	33	SS-6	-	-	-	-	-	-	-	-	-	32	A-6b (V)	
LOOSE TO MEDIUM DENSE, YELLOWISH BROWN WITH GRAYISH BROWN, **SILT**, TRACE SAND, TRACE TO LITTLE CLAY, WET	477.9		2 2 2	5	100	SS-7	-	0	0	0	97	3	24	19	5	30	A-4b (8)	
		▼ 475.4																
			2 4 7	15	100	SS-8	-	-	-	-	-	-	-	-	-	26	A-4b (V)	
			3 5 4	12	100	SS-9	-	0	0	6	71	23	26	18	8	23	A-4b (8)	
MEDIUM STIFF, GRAY, **SILTY CLAY**, MOIST	462.9		3 4 2	8	100	SS-10	-	-	-	-	-	-	-	-	-	23	A-6b (V)	
MEDIUM DENSE TO DENSE, YELLOWISH BROWN WITH GRAYISH BROWN, **FINE SAND**, LITTLE SILT, WET	457.9		10 14 10	32	100	SS-11	-	-	-	-	-	-	-	-	-	21	A-3 (V)	
			5 8 7	20	56	SS-12	-	-	-	-	-	-	-	-	-	27	A-3 (V)	
DENSE TO VERY DENSE, GRAYISH BROWN, **COARSE AND FINE SAND**, TRACE TO LITTLE SILT, TRACE GRAVEL, WET	447.9		6 14 20	45	100	SS-13	-	-	-	-	-	-	-	-	-	20	A-3a (V)	
			13 24 22	61	100	SS-14	-	-	-	-	-	-	-	-	-	17	A-3a (V)	
	436.4	EOB	9 12 21	44	100	SS-15	-	-	-	-	-	-	-	-	-	25	A-3a (V)	

NOTES: NONE

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 14:14 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215225 LOGS-HAM-75-1.05 TERRACONN1215225 HAM-75-ODOT_10-28-2022.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-01.05	DRILLING FIRM / OPERATOR: TERRACON / KH	DRILL RIG: DIEDRICH D90	STATION / OFFSET: LT.	EXPLORATION ID B-079-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-75	
PID: 113361 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/7/20	ELEVATION: 495.8 (MSL) EOB: 60.0 ft.	PAGE 1 OF 1
START: 2/23/22 END: 2/24/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 79.9	LAT / LONG: 39.114839, -84.532811	

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)	HOLE SEALED
ASPHALT (4 INCHES)	495.8																	
CONCRETE (7 INCHES)	495.5																	
AGGREGATE BASE (6 INCHES)	494.9																	
CONCRETE (7 INCHES)	494.4																	
STIFF TO VERY STIFF, BLACK WITH GRAYISH BROWN, **SILT AND CLAY**, "AND" SAND, TRACE GRAVEL, TRACE BRICK FRAGMENTS, TRACE CINDERS, MOIST (FILL)	493.8		6 13 11	32	33	SS-1	-	-	-	-	-	-	-	-	-	15	A-6a (V)	
			4 4 6	13	39	SS-2	-	-	-	-	-	-	-	-	-	19	A-6a (V)	
			3 5 7	16	89	SS-3	-	5	8	29	28	30	30	17	13	21	A-6a (6)	
	487.3																	
VERY STIFF, GRAYISH BROWN TO YELLOWISH BROWN, **SILTY CLAY**, "AND" SAND, MOIST (FILL)			4 7 9	21	100	SS-4	-	-	-	-	-	-	-	-	-	23	A-6b (V)	
					83	ST-1	-	0	12	50	14	24	32	14	18	-	A-6b (2)	
@13.5'; MEDIUM STIFF, TRACE BRICK FRAGMENTS			3 2 2	5	100	SS-5	-	-	-	-	-	-	-	-	-	16	A-6b (V)	
	479.8																	
MEDIUM DENSE, GRAYISH BROWN WITH YELLOWISH BROWN, **SILT**, LITTLE TO SOME CLAY, MOIST TO WET			3 4 5	12	100	SS-6	-	-	-	-	-	-	-	-	-	32	A-4b (V)	
			3 5 4	12	100	SS-7	-	0	0	1	-	99 -	30	21	9	26	A-4 (8)	
▼ 472.8			4 3 5	11	100	SS-8	-	-	-	-	-	-	-	-	-	24	A-4b (V)	
W 468.8			6 5 5	13	100	SS-9	-	1	0	25	54	20	25	17	8	26	A-4b (8)	
			4 5 5	13	67	SS-10	-	-	-	-	-	-	-	-	-	28	A-4b (V)	
	457.3																	
MEDIUM DENSE, GRAYISH BROWN TO YELLOWISH BROWN, **FINE SAND**, LITTLE TO SOME SILT, WET			5 6 6	16	67	SS-11	-	-	-	-	-	-	-	-	-	25	A-3 (V)	
			9 7 12	25	100	SS-12	-	-	-	-	-	-	-	-	-	21	A-3 (V)	
			8 8 12	27	100	SS-13	-	-	-	-	-	-	-	-	-	20	A-3 (V)	
	442.3																	
VERY DENSE, GRAYISH BROWN TO YELLOWISH BROWN, **COARSE AND FINE SAND**, LITTLE TO SOME SILT, WET			18 29 39	91	100	SS-14	-	-	-	-	-	-	-	-	-	24	A-3a (V)	
	435.8	EOB	25 18 20	51	89	SS-15	-	-	-	-	-	-	-	-	-	20	A-3a (V)	

NOTES: NONE

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 14:14 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215225 LOGS-HAM-75-1.05 TERRACONN1215225 HAM-75-ODOT_10-28-2022.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-01.05	DRILLING FIRM / OPERATOR: TERRACON / KH	DRILL RIG: DIEDRICH D90	STATION / OFFSET: LT.	EXPLORATION ID B-082-0-21	
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / AR	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-75		
PID: 113361 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/7/20	ELEVATION: 523.8 (MSL) EOB: 45.0 ft.	PAGE 1 OF 1	
START: 4/27/22 END: 4/27/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 79.9	LAT / LONG: 39.115003, -84.532625		

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)	HOLE SEALED
ASPHALT (12 INCHES)	523.8																	
	522.8																	
LOOSE, GRAYISH BROWN TO BROWN AND OLIVE, **GRAVEL WITH SAND AND SILT**, TRACE CLAY, TRACE ROCK FRAGMENTS, TRACE CINDERS, TRACE WOOD FRAGMENTS, DAMP (FILL) @2.5'; DENSE	519.8	1	4 2 5	9	100	SS-1	-	-	-	-	-	-	-	-	-	15	A-2-4 (V)	
		2																
		3	10 11 20	41	100	SS-2	-	17	48	12	13	10	20	13	7	14	A-2-4 (0)	
HARD, GRAY WITH YELLOWISH BROWN, **SILT AND CLAY**, SOME SAND, SOME GRAVEL, TRACE ROCK FRAGMENTS, TRACE BRICK FRAGMENTS, DAMP (FILL)	518.3	4	28 15 12	36	100	SS-3	-	22	14	11	22	31	29	15	14	10	A-6a (5)	
		5	3 5 7	16	89	SS-4	-	5	25	11	27	32	31	15	16	18	A-6b (7)	
VERY STIFF, GRAY WITH YELLOWISH BROWN, **SILTY CLAY**, "AND" SAND, TRACE GRAVEL, TRACE ROCK FRAGMENTS, TRACE BRICK FRAGMENTS, MOIST (FILL)	512.8	6																
		7																
		8	5 7 9	21	100	SS-5	-	-	-	-	-	-	-	-	-	18	A-6b (V)	
VERY STIFF TO HARD, BROWN TO GRAYISH BROWN, **SILT AND CLAY**, SOME SAND, TRACE GRAVEL, TRACE CINDERS, DAMP TO MOIST (FILL)		9																
		10	5 8 12	27	100	SS-6	4.50	-	-	-	-	-	-	-	-	20	A-6a (V)	
		11																
		12	5 7 15	29	100	SS-7	4.50	9	13	21	27	30	28	15	13	16	A-6a (6)	
		13																
		14																
		15	9 10 11	28	100	SS-8	4.50	-	-	-	-	-	-	-	-	20	A-6a (V)	
@18.5'; TRACE BRICK FRAGMENTS		16																
		17																
		18																
		19	4 11 12	31	100	SS-9	-	-	-	-	-	-	-	-	-	15	A-6a (V)	
		20																
		21																
		22																
		23																
		24	7 8 21	39	100	SS-10	3.50	8	9	17	39	27	28	16	12	17	A-6a (7)	
		25																
		26																
		27																
		28																
		29	8 7 7	19	100	SS-11	-	3	6	20	38	33	28	15	13	24	A-6a (8)	
		30																
		31																
		32																
		33																
		34			96	ST-1	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
		35																
		36																
		37																
		38																
	485.3	39	6 8 9	23	100	SS-12	1.50	-	-	-	-	-	-	-	-	24	A-7-6 (V)	
STIFF, DARK GRAY TO OLIVE, **CLAY**, TRACE SAND, TRACE GRAVEL, FAINT ORGANIC ODOR, TRACE MINERALIZATION, MOIST		40																
		41																
		42																
		43																
	478.8	44	4 8 7	20	100	SS-13	1.50	-	-	-	-	-	-	-	-	12	A-7-6 (V)	
	EOB	45																

NOTES: NONE

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 14:14 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215225 LOGS-HAM-75-1.05 TERRACONN1215225 HAM-75-ODOT_10-28-2022.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-01.05	DRILLING FIRM / OPERATOR: TERRACON / KH	DRILL RIG: DIEDRICH D90	STATION / OFFSET: LT.	EXPLORATION ID B-083-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / AR	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-75	
PID: 113361 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/7/20	ELEVATION: 523.5 (MSL) EOB: 60.0 ft.	PAGE 1 OF 1
START: 4/27/22 END: 4/27/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 79.9	LAT / LONG: 39.115327, -84.533179	

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)	HOLE SEALED
ASPHALT (10 INCHES)	523.5																	
COARSE AND FINE SAND (3 INCHES)	522.7																	
VERY STIFF TO HARD, GRAYISH BROWN WITH DARK YELLOWISH BROWN, **SANDY SILT**, LITTLE CLAY, TRACE GRAVEL, TRACE BRICK FRAGMENTS, DAMP (FILL)	522.4		4 8 4	16	50	SS-1	2.50	-	-	-	-	-	-	-	-	10	A-4a (V)	
			7 7 12	25	100	SS-2	4.50	8	17	30	26	19	21	13	8	10	A-4a (2)	
VERY STIFF, GRAYISH BROWN WITH DARK YELLOWISH BROWN, **SILT AND CLAY**, SOME SAND, TRACE GRAVEL, TRACE BRICK FRAGMENTS, MOIST (FILL)	519.5		9 8 9	23	100	SS-3	4.00	8	11	15	33	33	29	15	14	16	A-6a (8)	
HARD, GRAYISH BROWN WITH DARK YELLOWISH BROWN, **SANDY SILT**, LITTLE CLAY, LITTLE GRAVEL, TRACE BRICK FRAGMENTS, DAMP (FILL)	518.0		7 7 8	20	100	SS-4	4.50	12	17	17	35	19	23	14	9	14	A-4a (4)	
HARD, DARK GRAYISH BROWN, **CLAY**, TRACE SILT, TRACE SAND, TRACE GRAVEL, TRACE BRICK FRAGMENTS, DAMP (FILL)	515.0		3 11 12	31	100	SS-5	4.50	-	-	-	-	-	-	-	-	18	A-7-6 (V)	
VERY STIFF TO HARD, GRAYISH BROWN WITH YELLOWISH BROWN, **SANDY SILT**, TRACE SAND, TRACE BRICK FRAGMENTS, TRACE CINDERS, TRACE WOOD FRAGMENTS, DAMP (FILL)	512.5		10 9 9	24	22	SS-6	2.50	-	-	-	-	-	-	-	-	17	A-4a (V)	
			10 13 8	28	100	SS-7	4.50	15	25	18	28	14	23	17	6	13	A-4a (1)	
			7 9 9	24	100	SS-8	4.25	-	-	-	-	-	-	-	-	18	A-4a (V)	
			10 12 10	29	100	SS-9	-	-	-	-	-	-	-	-	-	10	A-4a (V)	
	500.0		17 17 14	41	100	SS-10	1.75	3	19	19	28	31	26	15	11	17	A-6a (5)	
STIFF, GRAYISH BROWN WITH YELLOWISH BROWN, **SILT AND CLAY**, "AND SAND", TRACE GRAVEL, TRACE CINDERS, TRACE WOOD FRAGMENTS, MOIST (FILL)	490.0		5 5 6	15	100	SS-11	-	-	-	-	-	-	-	-	-	24	A-6a (V)	
SOFT, DARK GRAYISH BROWN TO BLACK, **SANDY SILT**, LITTLE CLAY, TRACE GRAVEL, TRACE BRICK FRAGMENTS, TRACE ORGANICS, MOIST (FILL)	485.0		1 1 1	3	100	SS-12	0.50	9	13	31	27	20	31	21	10	27	A-4a (2)	
STIFF, DARK GREENISH GRAY WITH OLIVE, **SILTY CLAY**, TRACE SAND, TRACE ODOR, MOIST	480.0		3 3 6	12	6	SS-13	1.25	-	-	-	-	-	-	-	-	23	A-6b (V)	
					100	ST-1	-	-	-	-	-	-	-	-	-	-	A-6b (V)	
LOOSE TO MEDIUM DENSE, DARK YELLOWISH BROWN TO GRAYISH BROWN, **SILT**, SOME CLAY, TRACE SAND, MOIST TO WET			2 3 5	11	100	SS-14	-	-	-	-	-	-	-	-	-	20	A-4b (V)	
			2 3 2	7	100	SS-15	-	0	1	4	63	32	26	20	6	25	A-4b (8)	
			2 3 3	8	100	SS-16	-	-	-	-	-	-	-	-	-	23	A-4b (V)	
	467.5 ▼																	
	465.5 W																	
DENSE, YELLOWISH BROWN, **FINE SAND**, SOME SILT, WET	465.0 FS		8 10 14	32	100	SS-17	-	-	-	-	-	-	-	-	-	21	A-3 (V)	
	463.5 EOB																	

NOTES: TERMINATED AT 60' IN ORDER TO AVOID STRONG ODOR. CAVE-IN AT 57'

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 14:14 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215225 LOGS-HAM-75-1.05 TERRACONN1215225 HAM-75-ODOT_10-28-2022.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-01.05	DRILLING FIRM / OPERATOR: TERRACON / AM	DRILL RIG: DIEDRICH D90	STATION / OFFSET: RT.	EXPLORATION ID B-084-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-75	
PID: 113361 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/7/20	ELEVATION: 495.0 (MSL) EOB: 60.0 ft.	PAGE 1 OF 1
START: 12/21/21 END: 12/21/21	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 79.9	LAT / LONG: 39.115296, -84.532842	

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)	HOLE SEALED
ASPHALT (9.6 INCHES)	495.0																	
COARSE AND FINE SAND (8.4 INCHES)	494.2																	
VERY STIFF TO HARD, GRAYISH BROWN, **SILT AND CLAY**, LITTLE TO SOME GRAVEL, LITTLE TO "AND" SAND, TRACE CINDERS, TRACE BRICK FRAGMENTS, MOIST (FILL)	493.5		3 3 3	8	56	SS-1	2.00	27	9	8	56	-	-	-	-	7	A-6a (V)	
			3 4 7	15	78	SS-2	4.50	-	-	-	-	-	-	-	-	5	A-6a (V)	
			6 7 10	23	100	SS-3	3.25	-	-	-	-	-	-	-	-	14	A-6a (V)	
			2 2 3	7	100	SS-4	-	11	17	20	26	26	29	14	15	15	A-6a (5)	
	484.0		4 5 3	11	100	SS-5	3.50	-	-	-	-	-	-	-	-	21	A-6a (V)	
STIFF TO VERY STIFF, GRAYISH BROWN, **SILTY CLAY**, SOME GRAVEL, LITTLE SAND, TRACE BRICK FRAGMENTS, MOIST TO DAMP (FILL)			13 9 7	21	100	SS-6	1.50	-	-	-	-	-	-	-	-	14	A-6b (V)	
			10 26 11	49	22	SS-7	-	27	9	8	34	22	37	18	19	14	A-6b (8)	
			7 4 6	13	56	SS-8	-	-	-	-	-	-	-	-	-	7	A-6b (V)	
@23.5'; LARGE WOOD FRAGMENT			7 12 13	33	100	SS-9	2.00	-	-	-	-	-	-	-	-	17	A-6b (V)	
			38 41 29	93	33	SS-10	-	-	-	-	-	-	-	-	-	86	A-6b (V)	
	466.5																	
STIFF, YELLOWISH BROWN, **SILT AND CLAY**, SOME SAND, TRACE GRAVEL, TRACE CINDERS, TRACE BRICK FRAGMENTS, MOIST (FILL)			2 2 4	8	100	SS-11	-	7	3	24	39	27	25	13	12	23	A-6a (7)	
			5 7 6	17	100	SS-12	1.50	-	-	-	-	-	-	-	-	26	A-6a (V)	
	456.5		3 3 2	7	100	SS-13	-	-	-	-	-	-	NP	NP	NP	21	A-4a (V)	
LOOSE TO MEDIUM DENSE, YELLOWISH BROWN WITH REDDISH BROWN, **SANDY SILT**, TRACE CLAY, WET			3 4 4	11	100	SS-14	-	0	0	64	35	1	NP	NP	NP	27	A-4a (0)	
	446.5																	
MEDIUM DENSE, GRAYISH BROWN TO YELLOWISH BROWN, **SILT**, SOME SAND, LITTLE CLAY, WET			10 9 12	28	100	SS-15	-	1	0	28	60	11	NP	NP	NP	20	A-4b (7)	
			4 6 6	16	100	SS-16	-	-	-	-	-	-	-	-	-	34	A-4b (V)	
	435.0	EOB	6 6 6	16	100	SS-17	-	-	-	-	-	-	-	-	-	28	A-4b (V)	

NOTES: NONE

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 14:14 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215225 LOGS-HAM-75-1.05 TERRACONN1215225 HAM-75-ODOT_10-28-2022.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-01.05	DRILLING FIRM / OPERATOR: TERRACON / KH	DRILL RIG: DIEDRICH D90	STATION / OFFSET: LT.	EXPLORATION ID B-088-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / AR	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-75	
PID: 113361 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/7/20	ELEVATION: 521.7 (MSL) EOB: 70.0 ft.	PAGE 1 OF 2
START: 4/26/22 END: 4/26/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 79.9	LAT / LONG: 39.115902, -84.533299	

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)	HOLE SEALED
ASPHALT (12 INCHES)	521.7																	
AGGREGATE BASE (2 INCHES)	520.5																	
STIFF TO VERY STIFF, GRAYISH BROWN WITH BLACK AND YELLOWISH BROWN, **SILTY CLAY**, "AND" SAND, TRACE GRAVEL, TRACE CINDERS, TRACE BRICK FRAGMENTS, DAMP (FILL)	517.7	1	5 6 4	13	78	SS-1	-	-	-	-	-	-	-	-	-	12	A-6b (V)	
		2																
		3	5 5 8	17	17	SS-2	-	8	17	24	26	25	-	-	-	13	A-6b (V)	
		4																
		5	9 8 8	21	67	SS-3	-	33	12	13	21	21	29	17	12	16	A-6a (2)	
VERY STIFF, **SILT AND CLAY**, SOME SAND, SOME GRAVEL, TRACE CINDERS, TRACE BRICK FRAGMENTS, DAMP TO MOIST (FILL) @5.5'; NO RECOVERY		6	5 5 10	20	0	SS-4	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
		7																
		8																
		9	4 5 8	17	89	SS-5	-	-	-	-	-	-	-	-	-	14	A-6a (V)	
		10																
		11	6 7 12	25	100	SS-6	-	-	-	-	-	-	-	-	-	25	A-6a (V)	
		12																
		13																
@13.5'; TRACE WOOD FRAGMENTS		14	7 8 9	23	100	SS-7	-	-	-	-	-	-	-	-	-	21	A-6a (V)	
	505.7	15																
GRAVEL WITH SAND AND SILT, LITTLE CLAY, TRACE CINDERS, TRACE BRICK FRAGMENTS, DAMP (FILL)		16	8 8 11	25	100	SS-8	-	24	26	20	16	14	27	17	10	14	A-2-4 (0)	
		17																
		18																
		19	6 8 9	23	89	SS-9	-	-	-	-	-	-	-	-	-	13	A-2-4 (V)	
		20																
		21																
		22																
		23																
	498.2	24	6 7 8	20	100	SS-10	-	-	-	-	-	-	-	-	-	18	A-4a (V)	
VERY STIFF, DARK YELLOWISH BROWN WITH GRAY AND BROWN, **SANDY SILT**, SOME CLAY, TRACE GRAVEL, TRACE CINDERS, TRACE BRICK FRAGMENTS, DAMP (FILL)		25																
		26																
		27																
		28																
		29	7 8 16	32	100	SS-11	-	5	9	25	36	25	25	16	9	13	A-4a (5)	
		30																
		31																
		32																
		33																
	488.2	34	3 3 3	8	100	SS-12	-	-	-	-	-	-	-	-	-	18	A-6b (V)	
STIFF, DARK GRAY WITH GRAYISH AND YELLOWISH BROWN, **SILTY CLAY**, LITTLE SAND, TRACE BRICK FRAGMENTS, TRACE CINDERS, MOIST (FILL)		35																
		36																
		37																
		38																
	483.2	39	4 6 8	19	100	SS-13	2.25	1	8	15	31	45	45	26	19	26	A-7-6 (13)	
VERY STIFF, BLUISH GRAY AND OLIVE BROWN, **CLAY**, TRACE SAND, TRACE MINERALIZATION, MOIST (FILL)		40																
		41																
		42			100	ST-1	-	-	-	-	-	-	-	-	-	-	A-7-6 (V)	
W 478.7		43																
	478.2	44	4 4 5	12	100	SS-14	-	-	-	-	-	-	-	-	-	28	A-4b (V)	
LOOSE TO MEDIUM DENSE, GRAY TO YELLOWISH BROWN, **SILT**, TRACE TO LITTLE CLAY, TRACE SAND, WET		45																
		46																
		47																
		48																
		49	2 2 2	5	100	SS-15	-	0	1	0	73	26	28	19	9	25	A-4b (8)	
		50																
		51																
		52																
▼ 468.7		53																
		54	1 3 3	8	100	SS-16	-	1	0	0	82	17	-	-	-	25	A-4b (V)	
		55																
		56																
		57																
		58																
	463.2	59	4 5 6	15	100	SS-17	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
MEDIUM DENSE, OLIVE TO DARK GREENISH GRAY, **COARSE AND FINE SAND**, TRACE TO LITTLE CLAY, SOME SILT, TRACE ORGANICS, STRONG PETROLEUM ODOR, WET																		

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 14:15 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215225 LOGS-HAM-75-1.05 TERRACONN1215225 HAM-75-ODOT_10-28-2022.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PID: 113361	SFN:	PROJECT: HAM-75-01.05	STATION / OFFSET: LT.	START: 4/26/22	END: 4/26/22	PG 2 OF 2	B-088-0-21

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)	HOLE SEALED
MEDIUM DENSE, OLIVE TO DARK GREENISH GRAY, **COARSE AND FINE SAND**, TRACE TO LITTLE CLAY, SOME SILT, TRACE ORGANICS, STRONG PETROLEUM ODOR, WET *(continued)*	461.7	61																
		62																
		63																
		64	4 5 5	13	100	SS-18	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
		65																
		66																
		67																
		68																
		69	3 6 12	24	100	SS-19	-	-	-	-	-	-	-	-	-	28	A-3a (V)	
	451.7	EOB 70																

NOTES: CAVE-IN AT 59'

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 14:15 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215225 LOGS-HAM-75-1.05 TERRACON\N1215225 HAM-75-ODOT_10-28-2022.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-01.05	DRILLING FIRM / OPERATOR: TERRACON / AM	DRILL RIG: DIEDRICH D90	STATION / OFFSET: LT.	EXPLORATION ID B-089-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-75	
PID: 113361 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/7/20	ELEVATION: 493.9 (MSL) EOB: 50.0 ft.	PAGE 1 OF 1
START: 2/11/22 END: 2/11/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 79.9	LAT / LONG: 39.115773, -84.533483	

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)	HOLE SEALED
ASPHALT (2.5")	493.9																	
CONCRETE (8")	493.7																	
LOOSE, GRAYISH BROWN, **COARSE AND FINE SAND**, TRACE SILT, TRACE CLAY, DAMP (FILL)	493.0		3 2 2	5	78	SS-1	-	-	-	-	-	-	-	-	-	5	A-3a (V)	
	490.4																	
MEDIUM STIFF, GRAYISH BROWN, **SILTY CLAY**, TRACE SAND, TRACE COAL CINDERS, TRACE BRICK FRAGMENTS, MOIST (FILL)			0 1 2	4	89	SS-2	0.50	-	-	-	-	-	-	-	-	10	A-6b (V)	
	487.9																	
LOOSE, GRAYISH BROWN, **COARSE AND FINE SAND**, LITTLE TO SOME SILT, TRACE CLAY, TRACE BRICK FRAGMENTS, MOIST (FILL)			2 2 2	5	17	SS-3	-	-	-	-	-	-	-	-	-	13	A-3a (V)	
	485.4																	
STIFF, GRAYISH BROWN WITH YELLOWISH BROWN AND DARK BROWN, **SILTY CLAY**, SOME SAND, TRACE GRAVEL, TRACE BRICK FRAGMENTS, DAMP TO MOIST (FILL)			0 3 4	9	83	SS-4	1.25	-	-	-	-	-	-	-	-	24	A-6b (V)	
	480.4		5 4 5	12	100	SS-5	2.00	10	8	18	28	36	40	23	17	23	A-6b (9)	
VERY STIFF, GREENISH GRAY WITH DARK BLUISH GRAY, **CLAY**, TRACE GRAVEL, TRACE SAND, MOIST (FILL)			4 5 8	17	100	SS-6	2.25	-	-	-	-	-	-	-	-	24	A-7-6 (V)	
	475.4				67	ST-1	-	28	30	37	-17	22	56	24	32	-	A-2-7 (0)	
LOOSE TO MEDIUM DENSE, LIGHT OLIVE BROWN WITH GRAY, **SILT**, LITTLE CLAY, TRACE TO LITTLE SAND, WET			4 4 4	11	100	SS-7	-	-	-	-	-	-	-	-	-	30	A-4b (V)	
	465.4		2 2 3	7	89	SS-8	-	0	5	6	78	11	20	21	NP	29	A-4b (8)	
MEDIUM DENSE TO DENSE, YELLOWISH BROWN WITH GRAYISH BROWN, **FINE SAND**, TRACE TO LITTLE SILT, MOIST			9 13 13	35	89	SS-9	-	-	-	-	-	-	-	-	-	24	A-3 (V)	
		W 459.9	4 5 10	20	100	SS-10	-	0	2	92	6	0	-	-	-	24	A-3 (V)	
			3 6 6	16	100	SS-11	-	-	-	-	-	-	-	-	-	23	A-3 (V)	
			5 7 9	21	100	SS-12	-	-	-	-	-	-	-	-	-	19	A-3 (V)	
	443.9	EOB	4 6 9	20	100	SS-13	-	-	-	-	-	-	-	-	-	19	A-3 (V)	

NOTES: NONE

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 14:15 - N:\PROJECTS\2024\IN1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\IN1215225 LOGS-HAM-75-1.05 TERRACON\IN1215225 HAM-75-ODOT_10-28-2022.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-01.05	DRILLING FIRM / OPERATOR: TERRACON / AM	DRILL RIG: DIEDRICH D90	STATION / OFFSET: LT.	EXPLORATION ID B-090-0-21
TYPE: BRIDGE	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-75	
PID: 113361 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/7/20	ELEVATION: 521.0 (MSL) EOB: 110.0 ft.	PAGE 1 OF 2
START: 1/11/22 END: 1/11/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 79.9	LAT / LONG: 39.115849, -84.533251	

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)	HOLE SEALED
ASPHALT (14 INCHES)	521.0																	
	519.8																	
MEDIUM DENSE, GRAYISH BROWN, **SANDY SILT**, TRACE CLAY, TRACE GRAVEL, TRACE BRICK, DAMP TO MOIST (FILL)		1																
		2	6 6 5	15	-	SS-1	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
		3	5 6 4	13	-	SS-2	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
		4	4 4 6	13	-	SS-3	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
		5	4 4 8	16	-	SS-4	2.00	-	-	-	-	-	-	-	-	-	A-6a (V)	
		6																
		7	4 8 8	21	-	SS-5	-	12	9	24	25	30	28	14	14	-	A-6a (6)	
		8																
		9																
		10																
		11	7 11 12	31	-	SS-6	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
		12																
		13																
		14	3 4 5	12	-	SS-7	1.75	-	-	-	-	-	-	-	-	-	A-6a (V)	
		15																
		16																
		17	6 7 10	23	78	SS-8	3.00	-	-	-	-	-	-	-	-	-	A-6a (V)	
		18																
		19	4 5 8	17	78	SS-9	-	6	19	16	28	31	NP	NP	NP	-	A-4a (5)	
		20																
		21																
		22																
		23																
		24	7 8 10	24	100	SS-10	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
		25																
		26																
		27																
		28																
		29	30 23 11	45	67	SS-11	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
		30																
		31																
		32																
		33																
		34	1 2 2	5	100	SS-12	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
		35																
		36																
		37																
		38																
		39			79	ST-1	-	2	4	9	33	52	NP	NP	NP	-	A-4a (8)	
		40																
		41																
		42																
		43																
		44	1 4 6	13	100	SS-13	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
		45																
		46																
		47																
		48																
		49	4 4 6	13	100	SS-14	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
		50																
		51																
		52																
		53																
	467.5																	
MEDIUM DENSE, YELLOWISH BROWN, **SANDY SILT**, TRACE CLAY, WET		54	6 6 5	15	100	SS-15	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
		55																
		56																
		57																
		58																
	462.5																	
STIFF, GRAYISH AND YELLOWISH BROWN, **SILTY CLAY**, SOME SAND, WET		59	3 6 6	16	100	SS-16	1.50	-	-	-	-	-	-	-	-	-	A-6b (V)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 14:15 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215225 LOGS-HAM-75-1.05 TERRACONN1215225 HAM-75-ODOT_10-28-2022.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PID: 113361	SFN:	PROJECT: HAM-75-01.05	STATION / OFFSET: LT.	START: 1/11/22	END: 1/11/22	PG 2 OF 2	B-090-0-21

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)	HOLE SEALED
STIFF, GRAYISH AND YELLOWISH BROWN, **SILTY CLAY**, SOME SAND, WET *(continued)*	461.0	61																
		62																
		63																
	457.5	64	9 10 11	28	100	SS-17	-	0	2	90	7	1	NP	NP	NP	-	A-3 (0)	
MEDIUM DENSE, YELLOWISH BROWN, **FINE SAND**, TRACE SILT, TRACE CLAY, WET		65																
		66																
		67																
		68																
		69	7 8 10	24	100	SS-18	-	-	-	-	-	-	-	-	-	-	A-3 (V)	
		70																
		71																
		72																
		73																
@73.5'; VERY LOOSE		74	1 1 2	4	100	SS-19	-	-	-	-	-	-	-	-	-	-	A-3 (V)	
		75																
		76																
		77																
		78																
		79	6 7 10	23	100	SS-20	-	-	-	-	-	-	-	-	-	-	A-3 (V)	
		80																
		81																
		82																
		83																
	437.5	84	32 30 34	85	100	SS-21	-	1	10	79	9	1	NP	NP	NP	-	A-3 (0)	
VERY DENSE, YELLOWISH BROWN, **FINE SAND**, TRACE GRAVEL, TRACE SILT, TRACE CLAY, WET		85																
		86																
		87																
		88																
		89	11 25 26	68	100	SS-22	-	-	-	-	-	-	-	-	-	-	A-3 (V)	
		90																
		91																
		92																
		93																
		94	49 43 45	117	100	SS-23	-	-	-	-	-	-	-	-	-	-	A-3 (V)	
		95																
		96																
		97																
		98																
	422.5	99	7 11 25	48	100	SS-24	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
MEDIUM DENSE TO DENSE, YELLOWISH BROWN, **COARSE AND FINE SAND**, SOME SILT, TRACE CLAY, WET		100																
		101																
		102																
		103																
		104	4 7 4	15	78	SS-25	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
		105																
		106																
		107																
		108																
	411.0	109	7 13 16	39	56	SS-26	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
EOB		110																

NOTES: WATER ADDED TO AUGERS DURING DRILLING STARTING AT 33.5'

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 14:15 - N:\PROJECTS\2024\IN\1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\IN1215225 LOGS-HAM-75-1.05 TERRACONN\1215225 HAM-75-ODOT_10-28-2022.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-01.05	DRILLING FIRM / OPERATOR: TERRACON / AM	DRILL RIG: DIEDRICH D90	STATION / OFFSET: LT.	EXPLORATION ID B-092-0-21
TYPE: BRIDGE	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-75	
PID: 113361 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/7/20	ELEVATION: 518.0 (MSL) EOB: 110.0 ft.	PAGE 1 OF 2
START: 1/5/22 END: 1/5/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 79.9	LAT / LONG: 39.116466, -84.533719	

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)	HOLE SEALED
ASPHALT (14 INCHES)	518.0																	
	516.8																	
VERY STIFF TO HARD, YELLOWISH BROWN, **SILTY CLAY**, TRACE SAND, TRACE GRAVEL, TRACE BRICK FRAGMENTS, DAMP TO MOIST (FILL)			9 6 6	16	67	SS-1	2.50	-	-	-	-	-	-	-	-	12	A-6b (V)	
			9 16 19	47	67	SS-2	-	-	-	-	-	-	-	-	-	7	A-6b (V)	
			20 17 12	39	78	SS-3	-	-	-	-	-	-	NP	NP	NP	12	A-6b (V)	
	512.0																	
VERY STIFF TO HARD, YELLOWISH BROWN, **SILT AND CLAY**, "AND" SAND, TRACE TO SOME GRAVEL, TRACE BRICK FRAGMENTS, DAMP TO MOIST (FILL)			9 6 8	19	67	SS-4	4.00	-	-	-	-	-	-	-	-	8	A-6a (V)	
			6 8 10	24	100	SS-5	4.50	-	-	-	-	-	-	-	-	17	A-6a (V)	
			9 7 7	19	100	SS-6	2.25	-	-	-	-	-	-	-	-	16	A-6a (V)	
			5 7 9	21	100	SS-7	2.50	4	9	27	35	25	26	15	11	19	A-6a (5)	
					100	SS-8	2.50	-	-	-	-	-	-	-	-	-	A-6a (V)	
			7 9 11	27	100	SS-9	4.50	-	-	-	-	-	-	-	-	16	A-6a (V)	
					50	ST-1	-	19	16	18	34	13	30	16	14	12	A-6a (4)	
			29 27 28	73	56	SS-10	3.00	-	-	-	-	-	-	-	-	4	A-6a (V)	
			5 5 7	16	100	SS-11	1.50	-	-	-	-	-	-	-	-	20	A-6a (V)	
	479.5																	
STIFF, YELLOWISH BROWN, **SILT AND CLAY**, LITTLE SAND, MOIST			6 6 7	17	100	SS-12	1.50	-	-	-	-	-	29	23	6	30	A-6a (V)	
			4 4 5	12	89	SS-13	1.00	-	-	-	-	-	-	-	-	27	A-6a (V)	
	469.5																	
LOOSE, GRAYISH BROWN, **SILT**, SOME CLAY, WET			0 3 3	8	100	SS-14	-	0	0	0	68	32	30	21	9	28	A-4b (8)	
			0 3 3	8	100	SS-15	-	-	-	-	-	-	-	-	-	22	A-4b (V)	
	459.5																	
MEDIUM DENSE, GRAYISH BROWN, **SANDY SILT**, LITTLE GRAVEL, LITTLE CLAY, WET			7 11 6	23	100	SS-16	-	-	-	-	-	-	-	-	-	23	A-4a (V)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 14:15 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215225 LOGS-HAM-75-1.05 TERRACONN1215225 HAM-75-ODOT_10-28-2022.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PID: 113361	SFN:	PROJECT: HAM-75-01.05	STATION / OFFSET: LT.	START: 1/5/22	END: 1/5/22	PG 2 OF 2	B-092-0-21

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)	HOLE SEALED
MEDIUM DENSE, GRAYISH BROWN, **SANDY SILT**, LITTLE GRAVEL, LITTLE CLAY, WET *(continued)*	458.0																	
		61																
		62																
		63																
		64	7 6 6	16	100	SS-17	-	15	12	18	36	19	20	15	5	23	A-4a (4)	
		65																
		66																
		67																
		68																
	449.5																	
MEDIUM DENSE, GRAYISH BROWN, **GRAVEL WITH SAND**, TRACE SILT, WET		69	5 5 8	17	100	SS-18	-	-	-	-	-	-	-	-	-	24	A-1-b (V)	
		70																
		71																
		72																
		73																
		74	5 5 7	16	100	SS-19	-	-	-	-	-	-	-	-	-	21	A-1-b (V)	
		75																
		76																
		77																
		78																
		79	3 5 8	17	100	SS-20	-	1	55	41	3	0	NP	NP	NP	18	A-1-b (0)	
		80																
		81																
		82																
		83																
		84	15 15 18	44	100	SS-21	-	-	-	-	-	-	-	-	-	14	A-1-b (V)	
		85																
		86																
		87																
		88																
		89	19 15 14	39	100	SS-22	-	-	-	-	-	-	-	-	-	15	A-1-b (V)	
		90																
		91																
		92																
		93																
		94	15 15 14	39	100	SS-23	-	-	-	-	-	-	-	-	-	-	A-1-b (V)	
		95																
		96																
		97																
		98																
		99	15 14 17	41	100	SS-24	-	0	43	50	5	2	NP	NP	NP	19	A-1-b (0)	
		100																
		101																
		102																
		103																
		104	10 12 15	36	100	SS-25	-	-	-	-	-	-	-	-	-	18	A-1-b (V)	
		105																
		106																
		107																
		108																
	409.5																	
MEDIUM DENSE, YELLOWISH BROWN, **COARSE AND FINE SAND**, TRACE GRAVEL, LITTLE SILT, WET	408.0	109	6 7 4	15	100	SS-26	-	1	17	69	13	0	NP	NP	NP	19	A-3a (0)	
		EOB 110																
DENSE, YELLOWISH BROWN, **GRAVEL WITH SAND**, TRACE SILT, TRACE CLAY, WET	434.5																	

NOTES: WATER ADDED TO AUGERS DURING DRILLING STARTING AT 38.5'

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 14:15 - N:\PROJECTS\2024\IN1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\IN1215225 LOGS-HAM-75-1.05 TERRACONN1215225 HAM-75-ODOT_10-28-2022.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-01.05	DRILLING FIRM / OPERATOR: TERRACON / KH	DRILL RIG: DIEDRICH D90	STATION / OFFSET: LT.	EXPLORATION ID B-094-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-75	
PID: 113361 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/7/20	ELEVATION: 494.3 (MSL) EOB: 70.0 ft.	PAGE 1 OF 2
START: 2/18/22 END: 2/18/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 79.9	LAT / LONG: 39.116481, -84.534022	

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)	HOLE SEALED
ASPHALT (3.5")	494.3																	
CONCRETE (6")	494.0																	
AGGREGATE BASE (2.5")	493.5																	
LOOSE TO MEDIUM DENSE, DARK GRAYISH BROWN, **COARSE AND FINE SAND**, LITTLE SILT, TRACE CLAY, TRACE GRAVEL, TRACE COAL FRAGMENTS, MOIST (FILL)	493.3		11 3 4	9	50	SS-1	-	-	-	-	-	-	-	-	-	8	A-3a (V)	
	490.3		3 6 3	12	0	SS-2	-	-	-	-	-	-	-	-	-	8	A-3a (V)	
STIFF, GRAYISH BROWN, **SANDY SILT**, TRACE GRAVEL,LITTLE CLAY, TRACE COAL, TRACE METAL REMNANTS, MOIST (FILL)			3 4 4	11	89	SS-3	1.75	8	6	33	34	19	25	18	7	19	A-4a (4)	
	485.8		2 3 3	8	78	SS-4	1.75	-	-	-	-	-	-	-	-	16	A-4a (V)	
HARD, DARK GRAYISH BROWN TO VERY DARK GRAYISH BROWN, **SANDY SILT**, LITTLE CLAY, TRACE BRICK FRAGMENTS, TRACE GRAVEL, TRACE COAL, MOIST (FILL)	483.3		7 12 13	33	100	SS-5	4.50	-	-	-	-	-	-	-	-	12	A-4a (V)	
STIFF, GRAYISH BROWN, **SILTY CLAY**, TRACE SAND AND BRICK FRAGMENTS, MOIST (FILL)	480.8		3 2 3	7	100	SS-6	1.25	-	-	-	-	-	-	-	-	27	A-6b (V)	
VERY STIFF, GRAY AND OLIVE BROWN, **CLAY**, SOME SAND, MOIST	478.3		4 4 5	12	89	SS-7	2.25	22	26	44	-16	24	48	18	30	20	A-2-7 (0)	
STIFF, GRAY AND OLIVE BROWN, **SILTY CLAY**, TRACE ORGANICS, MOIST			3 3 5	11	100	SS-8	1.75	-	-	-	-	-	-	-	-	26	A-6b (V)	
	470.8				79	ST-1	-	0	0	4	58	38	-	18	-	-	A-6b (V)	
VERY LOOSE, DARK GRAY, **SILT**, SOME CLAY, TRACE SAND, WET	465.8		0 1 2	4	100	SS-9	-	0	0	2	74	24	-	-	-	26	A-4b (V)	
MEDIUM DENSE, BROWN, **FINE SAND**, TRACE TO LITTLE SILT, WET	460.8		2 6 6	16	100	SS-10	-	-	-	-	-	-	-	-	-	21	A-3 (V)	
VERY LOOSE, GRAYISH BROWN, **SILT**, TRACE SAND, TRACE CLAY, WET	455.8		1 0 1	1	100	SS-11	-	-	-	-	-	-	-	-	-	26	A-4b (V)	
STIFF, GRAYISH BROWN, **SILT AND CLAY**, MOIST	445.8		4 4 5	12	100	SS-12	-	0	0	3	66	31	30	18	12	25	A-6a (9)	
			3 3 5	11	100	SS-13	-	-	-	-	-	-	-	-	-	25	A-6a (V)	
LOOSE, GRAYISH BROWN, **COARSE AND FINE SAND**, TRACE TO LITTLE SILT, WET	440.8		3 3 4	9	89	SS-14	-	-	-	-	-	-	-	-	-	19	A-3a (V)	
MEDIUM DENSE, GRAYISH BROWN, **GRAVEL WITH SAND, SILT, AND CLAY**, WET	435.8		6 5 9	19	78	SS-15	-	-	-	-	-	-	30	17	13	23	A-2-6 (V)	
MEDIUM DENSE, GRAYISH BROWN, **COARSE AND FINE SAND**, LITTLE SILT, WET			4 6 8	19	89	SS-16	-	-	-	-	-	-	-	-	-	19	A-3a (V)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 14:15 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215225 LOGS-HAM-75-1.05 TERRACON\N1215225 HAM-75-ODOT_10-28-2022.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PID: 113361	SFN:	PROJECT: HAM-75-01.05	STATION / OFFSET: LT.	START: 2/18/22	END: 2/18/22	PG 2 OF 2	B-094-0-21

MATERIAL DESCRIPTION AND NOTES	ELEV. 434.3	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
MEDIUM DENSE, GRAYISH BROWN, **COARSE AND FINE SAND**, LITTLE SILT, WET *(continued)*		61 62 63																
@63.5'; VERY DENSE		64	20 33 34	89	100	SS-17	-	-	-	-	-	-	-	-	-	17	A-3a (V)	
		65 66 67 68																
	424.3	69 EOB 70	17 19 26	60	89	SS-18	-	-	-	-	-	-	-	-	-	16	A-3a (V)	

NOTES: NONE

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 14:15 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\IN1215225 LOGS-HAM-75-1.05 TERRACON\IN1215225 HAM-75-ODOT_10-28-2022.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-01.05	DRILLING FIRM / OPERATOR: TERRACON / AM	DRILL RIG: DIEDRICH D90	STATION / OFFSET: LT.	EXPLORATION ID B-095-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-75	
PID: 113361 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/7/20	ELEVATION: 515.7 (MSL) EOB: 70.0 ft.	PAGE 1 OF 2
START: 12/21/21 END: 12/21/21	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 79.9	LAT / LONG: 39.116727, -84.533919	

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)	HOLE SEALED
ASPHALT (14.5")	515.7																	
	514.5																	
STIFF TO VERY STIFF, DARK YELLOWISH BROWN WITH GRAYISH BROWN, **SILT AND CLAY**, SOME SAND, TRACE GRAVEL, TRACE BRICK FRAGMENTS, MOIST (FILL)		1																
		2	9 19 7	35	100	SS-1	3.00	-	-	-	-	-	-	-	-	9	A-6a (V)	
		3																
		4	4 5 6	15	100	SS-2	3.00	-	-	-	-	-	-	-	-	9	A-6a (V)	
		5	5 7 10	23	100	SS-3	3.00	-	-	-	-	-	-	-	-	16	A-6a (V)	
		6																
		7	5 7 9	21	100	SS-4	2.00	0	5	17	43	35	-	-	-	21	A-6a (V)	
		8																
		9	4 6 5	15	100	SS-5	1.50	-	-	-	-	-	-	-	-	21	A-6a (V)	
		10																
		11																
		12	5 17 20	49	100	SS-6	1.25	5	10	37	27	21	27	14	13	17	A-6a (4)	
		13																
		14	5 7 10	23	22	SS-7	-	-	-	-	-	-	-	-	-	15	A-6a (V)	
		15																
		16																
		17	7 8 7	20	100	SS-8	2.25	-	-	-	-	-	-	-	-	11	A-6a (V)	
		18																
	497.2	19																
MEDIUM DENSE, YELLOWISH BROWN WITH DARK GRAYISH BROWN, **GRAVEL WITH SAND, SILT, AND CLAY**, TRACE GRAVEL, TRACE CINDER, TRACE BRICK FRAGMENTS, MOIST (FILL)		20	5 6 7	17	100	SS-9	-	97	0	1	1	1	27	16	11	18	A-2-6 (0)	
		21																
		22																
		23																
	492.2	24	3 4 6	13	100	SS-10	1.25	-	-	-	-	-	-	-	-	14	A-6b (V)	
STIFF, DARK GRAYISH BROWN TO GRAYISH BROWN WITH BROWN, **SILTY CLAY**, TRACE SAND, TRACE BRICK FRAGMENTS, TRACE COAL, MOIST (FILL)		25																
		26																
		27																
		28																
	487.2	29	4 5 7	16	100	SS-11	-	-	-	-	-	-	-	-	-	25	A-4b (V)	
MEDIUM DENSE, OLIVE WITH YELLOWISH BROWN AND GRAY, **SILT**, LITTLE CLAY, TRACE BRICK FRAGMENTS, WET (FILL)		30																
		31																
		32																
		33																
		34			98	ST-1	-	0	0	0	84	16	28	23	5	-	A-4b (8)	
		35																
		36																
		37																
	477.2	38																
MEDIUM DENSE, YELLOWISH BROWN TO GRAY, **SILT**, TRACE TO LITTLE CLAY, WET		39	3 4 4	11	100	SS-12	-	-	-	-	-	-	-	-	-	30	A-4b (V)	
		40																
		41																
		42																
	472.2	43																
MEDIUM DENSE, GRAYISH BROWN, **COARSE AND FINE SAND**, LITTLE SILT, WET		44	3 3 5	11	100	SS-13	-	0	0	86	14	0	-	-	-	25	A-3a (V)	
		45																
		46																
		47																
	467.2	48																
STIFF, GRAYISH BROWN, **SILT AND CLAY**, MOIST		49	0 3 4	9	100	SS-14	-	-	-	-	-	-	-	-	-	26	A-6a (V)	
		50																
		51																
		52																
	462.2	53																
MEDIUM DENSE, DARK YELLOWISH BROWN, **FINE SAND**, LITTLE TO SOME SILT, WET		54	8 10 10	27	100	SS-15	-	-	-	-	-	-	-	-	-	26	A-3a (V)	
		55																
		56																
		57																
	457.2	58																
MEDIUM DENSE, DARK YELLOWISH BROWN, **SILT**, LITTLE CLAY, TRACE SAND, WET		59	7 10 11	28	100	SS-16	-	0	0	6	78	16	24	19	5	22	A-4b (8)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 14:15 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215225 LOGS-HAM-75-1.05 TERRACONN1215225 HAM-75-ODOT_10-28-2022.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PID: 113361	SFN:	PROJECT: HAM-75-01.05	STATION / OFFSET: LT.	START: 12/21/21	END: 12/21/21	PG 2 OF 2	B-095-0-21

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)	HOLE SEALED
MEDIUM DENSE, DARK YELLOWISH BROWN, **SILT**, LITTLE CLAY, TRACE SAND, WET *(continued)*	455.7	61 62 63																
	452.2																	
MEDIUM DENSE, GRAYISH BROWN, **FINE SAND**, SOME SILT AND GRAVEL, WET		64 65 66 67 68	0 4 5	12	100	SS-17	-	-	-	-	-	-	-	-	-	26	A-3a (V)	
	445.7	EOB 69 70	9 9 11	27	100	SS-18	-	-	-	-	-	-	-	-	-	32	A-3a (V)	

NOTES: NONE

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 14:15 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\IN1215225 LOGS-HAM-75-1.05 TERRACON\IN1215225 HAM-75-ODOT_10-28-2022.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-01.05	DRILLING FIRM / OPERATOR: TERRACON / KH	DRILL RIG: DIEDRICH D90	STATION / OFFSET: LT.	EXPLORATION ID B-097-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-75	
PID: 113361 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/7/20	ELEVATION: 495.2 (MSL) EOB: 60.0 ft.	PAGE 1 OF 1
START: 2/18/22 END: 2/18/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 79.9	LAT / LONG: 39.116905, -84.534311	

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)	HOLE SEALED
CONCRETE (9")	495.2																	
ASPHALT (1")	494.5																	
CONCRETE (8")	494.4																	
MEDIUM STIFF TO STIFF, GREEN GRAY WITH GRAYISH BROWN, **CLAY**, TRACE GRAVEL, TRACE SILT, LITTLE SAND, TRACE ORGANICS, MOIST (FILL)	493.7		3 3 3	8	78	SS-1	1.25	-	-	-	-	-	-	-	-	16	A-7-6 (V)	
			3 2 4	8	89	SS-2	0.75	-	-	-	-	-	-	-	-	18	A-7-6 (V)	
	490.7		2 3 3	8	100	SS-3	0.75	0	1	3	82	14	27	19	8	27	A-4b (8)	
LOOSE TO MEDIUM DENSE, GREENISH GRAY WITH BLACK, **SILT**, TRACE SAND, LITTLE CLAY, WET (FILL)																		
	484.2		3 4 5	12	89	SS-4	-	-	-	-	-	-	-	-	-	27	A-4b (V)	
MEDIUM DENSE, OLIVE WITH OLIVE BROWN, **SANDY SILT**, TRACE CLAY, MOIST																		
	479.2				100	ST-1	-	0	0	66	33	1	-	-	-	-	A-4a (V)	
LOOSE, OLIVE WITH OLIVE BROWN, **SILT**, TRACE CLAY, LITTLE SAND, MOIST			4 5 7	16	89	SS-5	-	-	-	-	-	-	-	-	-	22	A-4a (V)	
	476.7		6 4 3	9	44	SS-6	-	0	2	11	83	4	-	-	-	23	A-4b (V)	
MEDIUM DENSE, GRAYISH BROWN WITH OLIVE BROWN, **FINE SAND**, LITTLE TO SOME SILT, DAMP			5 5 6	15	89	SS-7	-	-	-	-	-	-	-	-	-	7	A-3 (V)	
	471.7		7 4 4	11	100	SS-8	0.50	0	2	2	70	26	27	19	8	29	A-4b (8)	
LOOSE TO MEDIUM DENSE, GRAYISH BROWN WITH OLIVE BROWN, **SILT**, SOME CLAY, TRACE SAND, WET TO MOIST																		
	456.7		3 3 3	8	100	SS-9	-	-	-	-	-	-	-	-	-	23	A-4b (V)	
			2 3 4	9	100	SS-10	-	-	-	-	-	-	-	-	-	22	A-4b (V)	
MEDIUM DENSE, YELLOWISH BROWN, **FINE SAND**, TRACE SILT, TRACE GRAVEL, WET			6 6 9	20	100	SS-11	-	1	5	89	5	0	-	-	-	22	A-3 (V)	
			5 7 9	21	89	SS-12	-	-	-	-	-	-	-	-	-	25	A-3 (V)	
	441.7		5 6 8	19	78	SS-13	-	-	-	-	-	-	-	-	-	22	A-3 (V)	
VERY DENSE, GRAYISH BROWN, **SANDY SILT**, TRACE CLAY, WET			13 21 24	60	44	SS-14	-	-	-	-	-	-	-	-	-	17	A-4a (V)	
@58.5'; MEDIUM DENSE	435.2	EOB	3 3 5	11	100	SS-15	-	-	-	-	-	-	-	-	-	23	A-4a (V)	

NOTES: NONE

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 14:15 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215225 LOGS-HAM-75-1.05 TERRACONN1215225 HAM-75-ODOT_10-28-2022.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: HAM-75-01.05
TYPE: RETAINING WALL
PID: 113361 SFN:
START: 1/3/22 END: 1/3/22

DRILLING FIRM / OPERATOR: TERRACON / AM
SAMPLING FIRM / LOGGER: TERRACON / RS
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT / ST

DRILL RIG: DIEDRICH D90
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 5/7/20
ENERGY RATIO (%): 79.9

STATION / OFFSET: LT.
ALIGNMENT: I-75
ELEVATION: 511.1 (MSL) EOB: 50.0 ft.
LAT / LONG: 39.117338, -84.534376

EXPLORATION ID B-099-0-21

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)	HOLE SEALED
ASPHALT (9 INCHES)	511.1																	
	510.4																	
STIFF, GRAYISH BROWN WITH BLACK GRAY AND YELLOWISH BROWN, **SILTY CLAY**, LITTLE TO SOME SAND, LITTLE TO SOME GRAVEL, TRACE CINDERS, TRACE BRICK FRAGMENTS, TRACE WOOD FRAGMENTS, DAMP TO MOIST (FILL)		1	3 5 7	16	67	SS-1	2.00	-	-	-	-	-	-	-	-	17	A-6b (V)	
		2																
		3	8 8 5	17	100	SS-2	1.50	-	-	-	-	-	-	-	-	12	A-6b (V)	
		4																
		5	9 7 8	20	100	SS-3	-	22	21	9	12	36	31	15	16	20	A-6b (5)	
		6	4 6 8	19	100	SS-4	2.00	-	-	-	-	-	-	-	-	25	A-6b (V)	
		7																
@8.5'; THIN LIMESTONE LAYER		8																
		9	44 21 7	37	56	SS-5	-	-	-	-	-	-	-	-	-	13	A-6b (V)	
		10																
		11	5 5 5	13	33	SS-6	-	-	-	-	-	-	-	-	-	16	A-6b (V)	
	497.6	12																
STIFF, YELLOWISH BROWN WITH BLACK AND BROWN, **CLAY**, SOME SAND, LITTLE GRAVEL, LITTLE SILT, DAMP (FILL)		13																
		14	4 5 6	15	56	SS-7	-	14	28	17	11	30	43	19	24	16	A-7-6 (5)	
		15																
		16	3 3 3	8	100	SS-8	2.25	-	-	-	-	-	-	-	-	12	A-7-6 (V)	
	492.6	17																
LOOSE TO MEDIUM DENSE, YELLOWISH BROWN WITH GRAYISH BROWN, **SILT**, TRACE GRAVEL, TRACE CLAY, DRY		18																
		19	3 3 2	7	100	SS-9	-	2	0	0	97	1	NP	NP	NP	5	A-4b (8)	
		20																
		21																
		22																
		23																
@23.5'; WET		24	3 5 7	16	100	SS-10	-	-	-	-	-	-	-	-	-	27	A-4b (V)	
		25																
		26																
		27																
		28																
		29	4 5 7	16	100	SS-11	-	-	-	-	-	-	-	-	-	30	A-4b (V)	
		30																
		31																
		32																
		33																
	477.6	34	4 5 7	16	100	SS-12	-	7	0	11	61	21	28	20	8	19	A-4b (8)	
MEDIUM DENSE, YELLOWISH BROWN WITH GRAYISH BROWN, **SILT**, LITTLE TO SOME CLAY, TRACE TO LITTLE SAND, TRACE GRAVEL, MOIST TO WET		35																
		36																
		37																
		38																
		39	7 11 11	29	100	SS-13	-	0	0	4	77	19	25	21	4	28	A-4b (8)	
		40																
		41																
		42																
		43																
		44	7 8 8	21	100	SS-14	-	-	-	-	-	-	-	-	-	11	A-4b (V)	
		45																
		46																
		47																
		48																
	462.6	49	7 9 9	24	100	SS-15	-	0	0	68	31	1	NP	NP	NP	24	A-3a (0)	
MEDIUM DENSE, YELLOWISH BROWN, **COARSE AND FINE SAND**, SOME SILT, TRACE CLAY, WET	461.1	50	EOB															

NOTES: NONE

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 14:15 - N:\PROJECTS\2024\IN1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\IN1215225 LOGS-HAM-75-1.05 TERRACONN1215225 HAM-75-ODOT_10-28-2022.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230
TYPE: RETAINING WALL
PID: 114161 SFN:
START: 7/21/22 END: 7/21/22

DRILLING FIRM / OPERATOR: TERRACON / CK
SAMPLING FIRM / LOGGER: TERRACON / RS
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT / ST

DRILL RIG: CME 55 X
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 11/30/22
ENERGY RATIO (%): 90*

STATION / OFFSET: 106+00, 121' LT.
ALIGNMENT: I-75
ELEVATION: 495.0 (MSL) EOB: 40.0 ft.
LAT / LONG: 39.117264, -84.534572

EXPLORATION ID B-100-0-21

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)	BACK FILL
ASPHALT (2")	495.0																	
CONCRETE (10")	494.8																	
AGGREGATE BASE (6")	494.0																	
HARD, GRAYISH BROWN WITH OLIVE BROWN AND GRAY, **SILT AND CLAY**, SOME SAND, LITTLE GRAVEL, TRACE BRICK, TRACE CINDERS, DAMP (FILL)	493.5		4 4 4	12	89	SS-1	4.50	14	13	13	33	27	30	16	14	15	A-6a (7)	
			4 5 4	14	39	SS-2	1.25	-	-	-	-	-	-	-	-	12	A-6a (V)	
MEDIUM DENSE, YELLOWISH BROWN, **SANDY SILT**, TRACE CLAY, TRACE SLAG, TRACE CERAMIC TILE FRAGMENTS, DAMP (FILL)	489.0		4 6 5	17	94	SS-3	-	-	-	-	-	-	-	-	-	5	A-4a (V)	
			4 4 4	12	100	SS-4	-	0	2	58	36	4	NP	NP	NP	20	A-4a (1)	
LOOSE TO MEDIUM DENSE, OLIVE WITH OLIVE BROWN AND GRAY, **SILT**, AND CLAY, TRACE SAND, MOIST TO WET	484.0		2 2 3	8	100	SS-5	-	-	-	-	-	-	-	-	-	31	A-4b (V)	
			2 3 5	12	100	SS-6	-	0	1	1	61	37	31	23	8	27	A-4b (8)	
			1 3 4	11	100	SS-7	-	-	-	-	-	-	-	-	-	30	A-4b (V)	
			1 1 2	5	100	SS-8	-	0	0	5	72	23	24	21	3	28	A-4b (8)	
	472.0																	
SOFT, GRAY, **SILT AND CLAY**, TRACE SAND, MOIST			1 1 2	5	100	SS-9	0.25	-	-	-	-	-	-	-	-	24	A-6a (V)	
	466.5				100	SS-10	-	-	-	-	-	-	-	-	-	24	A-6a (V)	
VERY LOOSE, GRAY, **SILT**, LITTLE CLAY, TRACE SAND, WET			1 1 2	5	100	SS-11	-	0	0	8	75	17	22	20	2	25	A-4b (8)	
		W 461.5	3 2 7	14	78	SS-12	-	0	3	16	63	18	20	17	3	27	A-4b (8)	
	456.5																	
MEDIUM DENSE, YELLOWISH BROWN AND GRAYISH BROWN, **FINE SAND**, TRACE SILT, WET	455.0	EOB	3 4 6	15	100	SS-13	-	-	-	-	-	-	-	-	-	24	A-3 (V)	

NOTES: NONE

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 1/8/25 15:20 - N:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230	DRILLING FIRM / OPERATOR: TERRACON / CK	DRILL RIG: CME 55 X	STATION / OFFSET: 106+94, 58' LT.	EXPLORATION ID B-103-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-75	
PID: 114161 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 11/30/22	ELEVATION: 510.0 (MSL) EOB: 65.0 ft.	PAGE 1 OF 2
START: 6/21/22 END: 6/21/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 90*	LAT / LONG: 39.117572, -84.534553	

MATERIAL DESCRIPTION AND NOTES	ELEV. 510.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
ASPHALT (12")	509.0	1																
AGGREGATE BASE (6")	508.5																	
STIFF TO VERY STIFF, GRAYISH BROWN WITH YELLOWISH BROWN, **SANDY SILT**, SOME CLAY, LITTLE GRAVEL, TRACE BRICK FRAGMENTS, MOIST (FILL)		2	3 5 5	15	6	SS-1	-	-	-	-	-	-	-	-	-	12	A-4a (V)	
		3	5 7 6	20	56	SS-2	1.50	-	-	-	-	-	-	-	-	11	A-4a (V)	
		4	4 5 6	17	100	SS-3	1.50	13	23	16	26	22	24	15	9	17	A-4a (3)	
		5	4 8 5	20	83	SS-4	2.00	-	-	-	-	-	-	-	-	12	A-4a (V)	
	499.0	6																
LOOSE, GRAYISH BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND**, LITTLE SILT, TRACE CLAY, WET (FILL)		7	5 4 12	24	100	SS-5	-	-	-	-	-	-	-	-	-	13	A-4a (V)	
		8																
		9	4 2 4	9	33	SS-6	-	40	31	15	10	4	NP	NP	NP	16	A-1-b (0)	
		10																
		11			100	ST-7	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
	494.0	12																
MEDIUM DENSE, GRAYISH BROWN WITH GRAY, **COARSE AND FINE SAND**, LITTLE GRAVEL, LITTLE SILT, TRACE CLAY, DAMP (FILL)		13	4 5 4	14	89	SS-8	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
		14																
		15																
		16																
		17																
		18																
		19	3 8 9	26	83	SS-9	-	13	25	48	11	3	NP	NP	NP	5	A-3a (0)	
		20																
		21	6 10 8	27	83	SS-10	-	-	-	-	-	-	-	-	-	26	A-3a (V)	
	486.5	22																
LOOSE TO MEDIUM DENSE, GRAYISH AND OLIVE BROWN WITH OILVE GRAY, **SILT**, SOME CLAY, TRACE TO LITTLE SAND, WET		23																
		24	2 3 3	9	100	SS-11	-	-	-	-	-	-	-	-	-	5	A-4b (V)	
		25																
		26	2 2 3	8	100	SS-12	-	-	-	-	-	-	-	-	-	26	A-4b (V)	
		27																
		28																
		29	1 2 3	8	100	SS-13	-	-	-	-	-	-	-	-	-	25	A-4b (V)	
		30																
		31																
		32																
		33																
		34	6 8 10	27	94	SS-14	-	-	-	-	-	-	-	-	-	25	A-4b (V)	
		35																
		36																
		37																
		38																
		39	4 4 4	12	100	SS-15	-	0	0	7	66	27	24	19	5	23	A-4b (8)	
	466.5	40																
MEDIUM DENSE, YELLOWISH BROWN, **FINE SAND**, TRACE CLAY, TRACE SILT, WET		41																
		42																
		43																
		44	3 5 6	17	67	SS-16	-	-	-	-	-	-	-	-	-	25	A-3 (V)	
		45																
		46																
		47																
		48																
W 461.5		49	2 3 6	14	100	SS-17	-	-	-	-	-	-	-	-	-	26	A-3 (V)	
		50																
		51																
		52																
		53																
		54	4 6 7	20	100	SS-18	-	-	-	-	-	-	-	-	-	29	A-3 (V)	
		55																
		56																
		57																
		58																
		59	3 8 10	27	100	SS-19	-	0	0	91	5	4	NP	NP	NP	30	A-3 (0)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:18 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215230 LOGS-HAM-75-1.95 TERRACONN1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PID: 114161	SFN:	PROJECT: N1215230	STATION / OFFSET: 106+94, 58' LT.	START: 6/21/22	END: 6/21/22	PG 2 OF 2	B-103-0-21

MATERIAL DESCRIPTION AND NOTES	ELEV. 450.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
MEDIUM DENSE, YELLOWISH BROWN, **FINE SAND**, TRACE CLAY, TRACE SILT, WET *(continued)*		61																
F.S.		62																
		63																
		64	3 6 8	21	100	SS-20	-	-	-	-	-	-	-	-	-	30	A-3 (V)	
	445.0	EOB 65																

NOTES: CAVE-IN AT 17'

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:18 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215230 LOGS-HAM-75-1.95 TERRACON\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230	DRILLING FIRM / OPERATOR: TERRACON / CK	DRILL RIG: CME 55 X	STATION / OFFSET: 108+66, 154' LT.	EXPLORATION ID B-107-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-75	
PID: 114161 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 11/30/22	ELEVATION: 494.0 (MSL) EOB: 40.0 ft.	PAGE 1 OF 1
START: 7/18/22 END: 7/18/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 90*	LAT / LONG: 39.117864, -84.535161	

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)	BACK FILL
	494.0																	
ASPHALT (2.4")	493.8																	
AGGREGATE BASE (9.6")	493.0																	
LOOSE TO MEDIUM DENSE, BLACK AND VERY DARK GRAY, **SANDY SILT**, TRACE TO LITTLE CLAY, TRACE BRICK, TRACE SLAG, TRACE CINDERS, WET TO MOIST (FILL)		W 490.5	3 3 3	9	100	SS-1	-	21	20	28	21	10	29	30	NP	24	A-4a (V)	
			1 1 1	3	100	SS-2	-	-	-	-	-	-	-	-	-	31	A-4a (V)	
			7 11 9	30	44	SS-3	-	13	16	35	24	12	21	18	3	13	A-4a (V)	
			7 11 15	39	56	SS-4	-	-	-	-	-	-	-	-	-	15	A-4a (V)	
	483.0																	
HARD, GRAY AND YELLOWISH BROWN, **SILT AND CLAY**, SOME SAND, TRACE GRAVEL, MOIST (FILL)			5 11 10	32	44	SS-5	-	1	1	20	42	36	30	17	13	19	A-6a (9)	
			18 23 11	51	28	SS-6	-	-	-	-	-	-	-	-	-	20	A-6a (V)	
	478.0																	
STIFF, YELLOWISH BROWN, **SILT AND CLAY**, AND SAND, MOIST TO WET			2 2 3	8	72	SS-7	1.75	-	-	-	-	-	-	-	-	23	A-6a (V)	
			2 2 2	6	100	SS-8	-	0	2	49	25	24	29	16	13	28	A-6a (4)	
	473.0																	
LOOSE, GRAY AND LIGHT BROWN TO REDDISH BROWN, **SILT**, SOME CLAY, TRACE SAND, DAMP TO MOIST			1 2 3	8	100	SS-9	-	0	0	8	60	32	30	22	8	32	A-4b (8)	
	470.5																	
VERY LOOSE, YELLOWISH BROWN, **SILT**, SOME CLAY, TRACE SAND, MOIST			1 1 1	3	100	SS-10	-	0	0	6	72	22	25	23	2	31	A-4b (8)	
	465.5																	
LOOSE TO MEDIUM DENSE, YELLOWISH BROWN, **COARSE AND FINE SAND**, LITTLE SILT, TRACE CLAY, WET			2 2 5	11	89	SS-11	-	-	-	-	-	-	-	-	-	29	A-3a (V)	
			3 4 6	15	100	SS-12	-	0	24	49	17	10	NP	NP	NP	26	A-3a (0)	
	454.0	EOB	3 4 5	14	100	SS-13	-	-	-	-	-	-	-	-	-	27	A-3a (V)	

NOTES: CAVE-IN AT 26.4'

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:18 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215230 LOGS-HAM-75-1.95 TERRACONN1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230	DRILLING FIRM / OPERATOR: TERRACON / CK	DRILL RIG: CME 55 X	STATION / OFFSET: 108+51, 56' LT.	EXPLORATION ID B-108-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-75	
PID: 114161 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 11/30/22	ELEVATION: 509.0 (MSL) EOB: 55.0 ft.	PAGE 1 OF 1
START: 6/20/22 END: 6/20/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 90*	LAT / LONG: 39.117953, -84.534831	

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)	BACK FILL
ASPHALT (8")	509.0																	
AGGREGATE BASE COURSE (4")	508.3																	
STIFF TO VERY STIFF, GRAYISH BROWN AND YELLOWISH BROWN, **SILT AND CLAY**, LITTLE TO SOME SAND, TRACE CINDERS, TRACE BRICKS, TRACE WOOD FRAGMENTS, DAMP TO MOIST (FILL)	508.0	1	4 5 6	17	44	SS-1	3.25	-	-	-	-	-	-	-	-	3	A-6a (V)	
		2																
		3	3 4 5	14	100	SS-2	-	-	-	-	-	-	-	-	-	16	A-6a (V)	
		4																
		5	3 4 5	14	78	SS-3	2.25	8	19	12	28	33	31	17	14	20	A-6a (7)	
		6	3 5 6	17	100	SS-4	3.50	-	-	-	-	-	-	-	-	17	A-6a (V)	
		7																
		8																
		9	10 10 15	38	100	SS-5	3.00	-	-	-	-	-	-	-	-	18	A-6a (V)	
	495.5	10																
VERY LOOSE, GRAYISH BROWN, **SANDY SILT**, LITTLE TO SOME CLAY, TRACE BRICK, TRACE SLAG, TRACE CINDERS, WET (FILL)		11																
		12	8 9 6	23	83	SS-6	-	8	0	0	88	4	31	19	12	17	A-6a (9)	
	493.0	13																
MEDIUM STIFF, DARK BROWN, **SILTY CLAY**, LITTLE TO SOME SAND, TRACE CINDERS, TRACE BRICK, MOIST (FILL)		14	1 1 1	3	78	SS-7	-	-	-	-	-	-	-	-	-	28	A-4a (V)	
		15																
	490.5	16																
STIFF, DARK BROWN, **SANDY SILT**, LITTLE CLAY, TRACE GRAVEL, TRACE BRICK, MOIST (FILL)		17	1 2 2	6	100	SS-8	0.50	-	-	-	-	-	-	-	-	14	A-6b (V)	
		18																
	485.5	19	3 3 3	9	100	SS-9	-	4	22	34	26	14	23	17	6	19	A-4a (1)	
VERY STIFF, DARK YELLOWISH BROWN, **SILTY CLAY**, TRACE TO LITTLE SAND, TRACE GRAVEL (FILL)		20																
		21																
		22																
		23																
	480.5	24	5 5 10	23	100	SS-10	1.75	-	-	-	-	-	-	-	-	16	A-6b (V)	
LOOSE TO MEDIUM DENSE, OLIVE AND GRAY, **SILT**, LITTLE CLAY, TRACE SAND, WET		25																
		26																
		27																
		28																
		29	1 2 3	8	78	SS-11	4.50	0	0	10	72	18	24	17	7	23	A-4b (8)	
		30																
		31			100	ST-12	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
		32																
W 475.5		33																
		34	2 2 3	8	100	SS-13	-	-	-	-	-	-	-	-	-	28	A-4b (V)	
		35																
		36																
		37																
		38																
	465.5	39	6 8 10	27	89	SS-14	-	-	-	-	-	-	-	-	-	17	A-4b (V)	
MEDIUM DENSE, DARK YELLOWISH BROWN, **COARSE AND FINE SAND**, SOME SILT, TRACE CLAY, WET		40																
		41																
		42																
		43																
	460.5	44	4 7 10	26	83	SS-15	-	0	0	69	25	6	NP	NP	NP	25	A-3a (0)	
MEDIUM DENSE, DARK YELLOWISH BROWN, **SANDY SILT**, TRACE CLAY, WET		45																
		46																
		47																
		48																
	455.5	49	4 6 9	23	100	SS-16	-	-	-	-	-	-	-	-	-	30	A-4a (V)	
MEDIUM DENSE, GRAY, **COARSE AND FINE SAND**, TRACE SILT, WET		50																
		51																
		52																
		53																
	454.0	54	5 8 13	32	100	SS-17	-	-	-	-	-	-	-	-	-	25	A-3a (V)	
EOB		55																

NOTES: CAVE-IN AT 39'

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:18 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215230 LOGS-HAM-75-1.95 TERRACON\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230	DRILLING FIRM / OPERATOR: TERRACON / KH	DRILL RIG: CME 55	STATION / OFFSET: 110+02, 163' LT.	EXPLORATION ID B-110-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: CME AUTOMATIC	ALIGNMENT: I-75	
PID: 114161 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/18/20	ELEVATION: 494.0 (MSL) EOB: 40.0 ft.	PAGE 1 OF 1
START: 4/4/22 END: 4/4/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 89.5	LAT / LONG: 39.118211, -84.535417	

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)	BACK FILL
ASPHALT (2")	494.0																	
CONCRETE (8")	493.8																	
MEDIUM DENSE, GRAYISH BROWN WITH BLACK, **GRAVEL WITH SAND AND SILT**, TRACE CLAY, TRACE CINDERS, TRACE BRICK FRAGMENTS, TRACE ORGANICS, MOIST TO WET (FILL)	493.3	1	13 8 4	18	78	SS-1	-	-	-	-	-	-	-	-	-	12	A-2-4 (V)	
		2																
		3																
		4	3 2 1	4	100	SS-2	-	27	20	24	22	7	NP	NP	NP	32	A-2-4 (0)	
		5																
		6	3 4 4	12	100	SS-3	-	-	-	-	-	-	-	-	-	23	A-2-4 (V)	
		7																
	485.5	8																
VERY STIFF, BROWN TO YELLOWISH BROWN, **SILTY CLAY**, TRACE SAND, TRACE GRAVEL, DAMP		9	6 7 9	24	100	SS-4	3.00	1	2	8	51	38	36	19	17	19	A-6b (11)	
		10																
		11			92	ST-5	2.50	2	12	23	25	38	40	19	21	19	A-6b (10)	
		12																
		13	3 2 2	6	100	SS-6	2.00	-	-	-	-	-	-	-	-	20	A-6b (V)	
	478.0	14																
STIFF TO VERY STIFF, YELLOWISH BROWN, **SILT AND CLAY**, AND SAND, TRACE GRAVEL, DAMP		15	5 8 8	24	100	SS-7	4.00	4	20	19	6	51	27	16	11	15	A-6a (5)	
		16																
		17																
		18	4 4 4	12	100	SS-8	3.00	-	-	-	-	-	-	-	-	9	A-6a (V)	
		19																
		20																
		21																
		22																
	470.5	23																
MEDIUM DENSE TO DENSE, YELLOWISH BROWN, **SILT**, AND SAND, TRACE CLAY, TRACE ORGANICS, MOIST TO WET		24	3 5 5	15	100	SS-9	-	0	0	44	53	3	NP	NP	NP	17	A-4b (4)	
		25																
		26																
		27																
		28																
		29	3 4 5	13	100	SS-10	-	-	-	-	-	-	-	-	-	29	A-4b (V)	
		30																
		31																
		32																
		33																
		34	5 7 7	21	100	SS-11	-	-	-	-	-	-	-	-	-	23	A-4b (V)	
		35																
		36																
		37																
		38																
		39	9 10 11	31	56	SS-12	-	-	-	-	-	-	-	-	-	20	A-4b (V)	
	454.0	40																
		EOB																

NOTES: STARTED RUNNING H2O AT 33.5'

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:18 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\IN1215230 LOGS-HAM-75-1.95 TERRACON\IN1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230	DRILLING FIRM / OPERATOR: TERRACON / CK	DRILL RIG: CME 55 X	STATION / OFFSET: 110+24, 55' LT.	EXPLORATION ID B-111-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-75	
PID: 114161 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 11/30/22	ELEVATION: 512.0 (MSL) EOB: 45.0 ft.	PAGE 1 OF 1
START: 6/20/22 END: 6/20/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 90*	LAT / LONG: 39.118392, -84.535106	

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)	BACK FILL
ASPHALT (6")	512.0																	
CONCRETE (8")	511.5																	
AGGREGATE BASE (4")	510.8																	
STIFF TO VERY STIFF, LIGHT BROWN TO BROWN, **SILT AND CLAY**, LITTLE SAND, TRACE GRAVEL, TRACE BRICK FRAGMENTS, MOIST (FILL)	510.5		3 5 6	17	89	SS-1	3.75	-	-	-	-	-	-	-	-	18	A-6a (V)	
			4 6 7	20	89	SS-2	3.50	-	-	-	-	-	-	-	-	18	A-6a (V)	
			4 6 13	29	100	SS-3	4.25	7	8	11	39	35	32	18	14	19	A-6a (9)	
			4 12 12	36	100	SS-4	1.50	-	-	-	-	-	-	-	-	12	A-6a (V)	
STIFF TO VERY STIFF, BROWNISH GRAY TO DARK BROWN, **SILTY CLAY**, SOME SAND, TRACE GRAVEL, TRACE BRICK FRAGMENTS, MOIST (FILL)	504.5		8 6 7	20	100	SS-5	2.50	-	-	-	-	-	-	-	-	18	A-6b (V)	
			8 13 9	33	67	SS-6	3.00	8	9	13	41	29	34	18	16	20	A-6b (9)	
			4 5 6	17	100	SS-7	1.25	-	-	-	-	-	-	-	-	23	A-6b (V)	
LOOSE, DARK BROWN, **SANDY SILT**, LITTLE TO SOME CLAY, LITTLE GRAVEL, MOIST (FILL)	496.0		2 2 2	6	100	SS-8	-	-	-	-	-	-	-	-	-	17	A-4a (V)	
			2 3 3	9	78	SS-9	-	11	6	27	36	20	25	16	9	17	A-4a (4)	
LOOSE TO MEDIUM DENSE, BROWNISH GRAY TO GRAY, **SILT**, LITTLE CLAY, TRACE SAND, MOIST	488.5		2 3 4	11	100	SS-10	-	-	-	-	-	-	-	-	-	26	A-7-6 (V)	
			6 9 10	29	100	SS-11	-	-	-	-	-	-	-	-	-	22	A-7-6 (V)	
LOOSE TO MEDIUM DENSE, BROWN AND GRAY, **SANDY SILT**, LITTLE CLAY, DAMP TO MOIST	478.5		3 3 5	12	100	SS-12	-	0	3	58	22	17	21	19	2	16	A-4a (1)	
			2 4 6	15	89	SS-13	-	-	-	-	-	-	-	-	-	12	A-4a (V)	
		W 467.9	2 3 3	9	83	SS-14	-	-	-	-	-	-	-	-	-	21	A-4a (V)	
	467.0	EOB																

NOTES: CAVE-IN AT 40'

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:18 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215230 LOGS-HAM-75-1.95 TERRACONN1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230	DRILLING FIRM / OPERATOR: TERRACON / KH	DRILL RIG: CME 55	STATION / OFFSET: 111+50, 161' LT.	EXPLORATION ID B-114-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: CME AUTOMATIC	ALIGNMENT: I-75	
PID: 114161 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/18/20	ELEVATION: 495.0 (MSL) EOB: 40.0 ft.	PAGE 1 OF 1
START: 4/8/22 END: 4/8/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 89.5	LAT / LONG: 39.118619, -84.535625	

MATERIAL DESCRIPTION AND NOTES	ELEV. 495.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
TOPSOIL (4")	494.7																	
VERY STIFF TO HARD, OLIVE WITH GRAYISH BROWN, **SANDY SILT**, SOME CLAY, TRACE GRAVEL, TRACE BRICK FRAGMENTS, TRACE CINDERS, DAMP (FILL)	486.5		4 6 8	21	89	SS-1	-	-	-	-	-	-	-	-	-	13	A-4a (V)	
			6 6 8	21	78	SS-2	3.50	4	11	20	40	25	23	16	7	16	A-4a (6)	
			6 30 12	63	67	SS-3	-	-	-	-	-	-	-	-	-	16	A-4a (V)	
STIFF TO VERY STIFF, BROWN WITH DARK YELLOWISH BROWN, **SILTY CLAY**, TRACE SAND, MOIST	481.5		5 6 9	22	100	SS-4	3.00	0	0	9	88	3	37	18	19	19	A-6b (12)	
			3 5 5	15	100	SS-5	1.50	-	-	-	-	-	-	-	-	20	A-6b (V)	
LOOSE TO MEDIUM DENSE, GRAYISH BROWN AND YELLOWISH BROWN, **SANDY SILT**, LITTLE GRAVEL, LITTLE CLAY, DAMP	476.5		3 3 3	9	89	SS-6	-	18	13	13	44	12	22	16	6	13	A-4a (4)	
			4 5 7	18	100	SS-7	-	-	-	-	-	-	-	-	-	10	A-4a (V)	
			5 6 6	18	67	SS-8	-	-	-	-	-	-	-	-	-	6	A-3a (V)	
MEDIUM DENSE, YELLOWISH BROWN TO GRAYISH BROWN, **COARSE AND FINE SAND**, LITTLE TO SOME SILT, TRACE CLAY, MOIST TO WET			4 4 5	13	78	SS-9	-	0	1	72	26	1	NP	NP	NP	23	A-3a (0)	
		W 467.0																
			3 6 8	21	89	SS-10	-	-	-	-	-	-	-	-	-	10	A-3a (V)	
			4 8 7	22	100	SS-11	-	-	-	-	-	-	-	-	-	29	A-3a (V)	
	455.0	EOB	5 8 9	25	100	SS-12	-	-	-	-	-	-	-	-	-	28	A-3a (V)	

NOTES: CAVE-IN AT 21'

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:19 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215230 LOGS-HAM-75-1.95 TERRACON\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230	DRILLING FIRM / OPERATOR: TERRACON / KH	DRILL RIG: CME 55	STATION / OFFSET: 112+67, 147' LT.	EXPLORATION ID B-115-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / AR	HAMMER: CME AUTOMATIC	ALIGNMENT: I-75	
PID: 114161 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/18/20	ELEVATION: 498.0 (MSL) EOB: 55.0 ft.	PAGE 1 OF 1
START: 3/24/22 END: 3/24/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 89.5	LAT / LONG: 39.118956, -84.535722	

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)	BACK FILL
TOPSOIL (4")	498.0																	
HARD, BROWN AND GRAYISH BROWN, **CLAY**, LITTLE SILT, TRACE SAND, TRACE GRAVEL, TRACE CINDERS, TRACE LIMESTONE FRAGMENTS, TRACE CONCRETE FRAGMENTS, DAMP (FILL)	497.7		5 6 7	19	78	SS-1	4.50	-	-	-	-	-	-	-	-	12	A-7-6 (V)	
			5 8 18	39	100	SS-2	4.50	-	-	-	-	-	-	-	-	16	A-7-6 (V)	
VERY STIFF, BROWN AND GRAYISH BROWN, **SILTY CLAY**, TRACE TO LITTLE BRICK FRAGMENTS, TRACE SAND, TRACE CONCRETE FRAGMENTS, DAMP (FILL)	492.0		30 50	-	100	SS-3	3.00	-	-	-	-	-	-	-	-	15	A-6b (V)	
VERY STIFF, DARK YELLOWISH BROWN TO GRAYISH BROWN, **SILT AND CLAY**, AND SAND, TRACE GRAVEL, TRACE ORGANICS, DAMP	489.5		4 6 8	21	100	SS-4	3.25	2	13	31	21	33	34	21	13	18	A-6a (5)	
			5 7 8	22	100	SS-5	2.75	-	-	-	-	-	-	-	-	0	A-6a (V)	
LOOSE TO MEDIUM DENSE, GRAYISH BROWN, **COARSE AND FINE SAND**, TRACE SILT, TRACE CLAY, TRACE GRAVEL, DAMP	484.5		3 3 3	9	100	SS-6	-	10	28	51	9	2	NP	NP	NP	7	A-3a (0)	
			8 9 10	28	100	SS-7	-	-	-	-	-	-	-	-	-	5	A-3a (V)	
			5 4 4	12	100	SS-8	-	49	26	6	16	3	NP	NP	NP	6	A-3a (V)	
STIFF TO VERY STIFF, OLIVE GRAY TO GRAYISH BROWN, **SILT AND CLAY**, TRACE SAND, WET	475.0		7 4 4	12	100	SS-9	-	-	-	-	-	-	-	-	-	246	A-6a (V)	
			5 6 8	21	100	SS-10	-	0	2	3	65	30	29	18	11	28	A-6a (8)	
MEDIUM DENSE TO DENSE, OLIVE GRAY WITH YELLOWISH BROWN, **COARSE AND FINE SAND**, SOME SILT, TRACE CLAY, WET	464.5	W 465.0	3 3 7	15	100	SS-11	-	-	-	-	-	-	-	-	-	0	A-3a (V)	
			0 2 5	10	100	SS-12	-	-	-	-	-	-	-	-	-	29	A-3a (V)	
			5 5 6	16	100	SS-13	-	0	1	74	24	1	NP	NP	NP	22	A-3a (0)	
			5 6 11	25	100	SS-14	-	-	-	-	-	-	-	-	-	23	A-3a (V)	
	443.0	EOB	8 11 11	33	100	SS-15	-	-	-	-	-	-	-	-	-	23	A-3a (V)	

NOTES: CAVE-IN AT 35.0'

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:19 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215230 LOGS-HAM-75-1.95 TERRACON\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230	DRILLING FIRM / OPERATOR: TERRACON / CK	DRILL RIG: CME 55 X	STATION / OFFSET: 111+58, 83' LT.	EXPLORATION ID B-117-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-75	
PID: 114161 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 11/30/22	ELEVATION: 515.0 (MSL) EOB: 45.0 ft.	PAGE 1 OF 1
START: 7/19/22 END: 7/20/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 90*	LAT / LONG: 39.118714, -84.535378	

MATERIAL DESCRIPTION AND NOTES	ELEV. 515.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
ASPHALT (12")	514.0																	
AGGREGATE BASE COURSE (6")	513.5																	
LOOSE TO MEDIUM DENSE, GRAYISH BROWN, **GRAVEL WITH SAND**, LITTLE SILT, TRACE CLAY, TRACE BRICK, WET (FILL)	510.5		4 3 4	11	28	SS-1	-	-	-	-	-	-	-	-	-	15	A-1-b (V)	
			5 6 4	15	28	SS-2	-	48	15	17	11	9	NP	NP	NP	14	A-1-b (0)	
MEDIUM DENSE TO DENSE, GRAY AND GRAYISH BROWN, **SANDY SILT**, LITTLE TO SOME CLAY, TRACE TO LITTLE GRAVEL, TRACE BRICK, TRACE CINDERS, DAMP TO MOIST (FILL)			5 5 9	21	100	SS-3	-	11	18	22	31	18	23	16	7	14	A-4a (3)	
			3 3 7	15	100	SS-4	-	3	10	19	40	28	23	17	6	13	A-4a (7)	
			5 5 6	17	89	SS-5	-	-	-	-	-	-	-	-	-	24	A-4a (V)	
			3 7 9	24	100	SS-6	-	7	8	16	36	33	28	19	9	21	A-4a (7)	
@13.5'; VERY DENSE, DARK GRAY TO BLACK, TRACE ROCK FRAGMENTS			7 10 50/5"	-	94	SS-7	-	22	20	20	21	17	24	16	8	11	A-4a (1)	
			7 10 18	42	67	SS-8	-	-	-	-	-	-	-	-	-	16	A-4a (V)	
@18.5'; CONCRETE	486.5		50/2"	-	100	SS-9	-	-	-	-	-	-	-	-	-	5	A-4a (V)	
			3 5 5	15	100	SS-10	-	-	-	-	-	-	-	-	-	17	A-4a (V)	
					100	ST-11	-	6	5	23	44	22	28	25	3	19	A-4a (6)	
VERY STIFF, OLIVE BROWN AND STRONG BROWN, **SILT AND CLAY**, LITTLE SAND, DAMP	481.5		4 5 8	20	100	SS-12	3.00	0	1	17	46	36	28	16	12	17	A-6a (9)	
VERY STIFF, STRONG BROWN WITH GRAYISH BROWN, **SILTY CLAY**, AND SAND, LITTLE GRAVEL, MOIST	471.5		3 5 6	17	100	SS-13	-	11	15	31	20	23	35	15	20	14	A-6b (4)	
			3 3 5	12	100	SS-14	-	-	-	-	-	-	-	-	-	28	A-6b (V)	
MEDIUM DENSE, YELLOWISH BROWN, **SILT**, TRACE SAND, DAMP	470.0	EOB	4 4 4	12	100	SS-15	-	-	-	-	-	-	-	-	-	18	A-4b (V)	

NOTES: CAVE-IN AT 37'

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:19 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215230 LOGS-HAM-75-1.95 TERRACON\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230	DRILLING FIRM / OPERATOR: TERRACON / KH	DRILL RIG: CME 55	STATION / OFFSET: 114+48, 130' LT.	EXPLORATION ID B-121-0-21
TYPE: BRIDGE	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: CME AUTOMATIC	ALIGNMENT: I-75	
PID: 114161 SFN: 3109364	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/18/20	ELEVATION: 495.0 (MSL) EOB: 80.0 ft.	PAGE 1 OF 2
START: 1/31/22 END: 1/31/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 89.5	LAT / LONG: 39.119480, -84.535837	

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)	BACK FILL
TOPSOIL (2.5")	495.0																	
MEDIUM DENSE, YELLOWISH AND GRAYISH BROWN, **GRAVEL WITH SAND, SILT, AND CLAY**, MOIST (FILL)	494.8		7 6 5	16	100	SS-1	-	-	-	-	-	-	-	-	-	16	A-2-6 (V)	
STIFF, YELLOWISH AND GRAYISH BROWN, **SILT AND CLAY**, AND SAND, TRACE GRAVEL, MOIST (FILL)	491.5		3 4 3	10	100	SS-2	1.50	11	18	27	21	23	25	13	12	15	A-6a (2)	
			4 4 4	12	100	SS-3	1.50	-	-	-	-	-	-	-	-	24	A-6a (V)	
MEDIUM DENSE TO DENSE, GRAYISH BROWN, **GRAVEL WITH SAND**, LITTLE SILT, TRACE CLAY, DAMP TO MOIST	486.5		4 3 5	12	100	SS-4	-	-	-	-	-	-	-	-	-	16	A-1-b (V)	
					0	ST-5	-	-	-	-	-	-	-	-	-	-	A-1-b (V)	
			9 11 10	31	78	SS-6	-	44	25	15	11	5	NP	NP	NP	6	A-1-b (0)	
	471.5		8 5 6	16	89	SS-7	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
			8 6 7	19	100	SS-8	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
LOOSE, YELLOWISH BROWN, **SILT**, LITTLE SAND, LITTLE CLAY, DAMP	466.5		3 2 2	6	89	SS-9	-	-	-	-	-	-	-	-	-	10	A-4b (V)	
LOOSE TO MEDIUM DENSE, YELLOWISH BROWN, **COARSE AND FINE SAND**, SOME SILT, TRACE CLAY, WET			4 4 5	13	100	SS-10	-	0	0	66	31	3	NP	NP	NP	20	A-3a (0)	
W 461.5			2 2 2	6	100	SS-11	-	-	-	-	-	-	-	-	-	36	A-3a (V)	
LOOSE TO MEDIUM DENSE, YELLOWISH BROWN, **SILT**, TRACE SAND, TRACE CLAY, WET	456.5		1 2 5	10	100	SS-12	-	0	4	5	86	5	NP	NP	NP	27	A-4b (8)	
			5 7 9	24	67	SS-13	-	-	-	-	-	-	-	-	-	28	A-4b (V)	
MEDIUM DENSE TO DENSE, YELLOWISH BROWN, **COARSE AND FINE SAND**, LITTLE SILT, TRACE GRAVEL, TRACE CLAY, WET	446.5		7 7 13	30	100	SS-14	-	-	-	-	-	-	-	-	-	21	A-3a (V)	
			7 6 8	21	78	SS-15	-	1	2	81	15	1	NP	NP	NP	25	A-3a (0)	
			9 11 11	33	100	SS-16	-	-	-	-	-	-	-	-	-	21	A-3a (V)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:19 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215230 LOGS-HAM-75-1.95 TERRACONN1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PID: 114161	SFN:	PROJECT: N1215230	STATION / OFFSET: 114+48, 130' LT.	START: 1/31/22	END: 1/31/22	PG 2 OF 2	B-121-0-21

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)	BACK FILL
MEDIUM DENSE TO DENSE, YELLOWISH BROWN, **COARSE AND FINE SAND**, LITTLE SILT, TRACE GRAVEL, TRACE CLAY, WET *(continued)*	435.0	61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80	4 11 12	34	100	SS-17	-	-	-	-	-	-	-	-	-	21	A-3a (V)	
			11 13 13	39	100	SS-18	-	0	1	73	23	3	NP	NP	NP	23	A-3a (0)	
			5 10 17	40	100	SS-19	-	-	-	-	-	-	-	-	-	21	A-3a (V)	
DENSE, GRAY, **COARSE AND FINE SAND**, LITTLE SILT, TRACE GRAVEL, TRACE CLAY, WET	416.5 415.0	EOB	7 9 19	42	100	SS-20	-	-	-	-	-	-	-	-	-	21	A-3a (V)	

NOTES: NONE

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:19 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215230 LOGS-HAM-75-1.95 TERRACON\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230	DRILLING FIRM / OPERATOR: TERRACON / KH	DRILL RIG: CME 55	STATION / OFFSET: 115+84, 89' RT.	EXPLORATION ID B-123-0-21
TYPE: BRIDGE	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: CME AUTOMATIC	ALIGNMENT: I-75	
PID: 114161 SFN: 3109364	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/18/20	ELEVATION: 496.0 (MSL) EOB: 80.0 ft.	PAGE 1 OF 2
START: 1/25/22 END: 1/25/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 89.5	LAT / LONG: 39.119962, -84.535165	

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)	BACK FILL
TOPSOIL (2.5")	496.0																	
DENSE, DARK BROWN, **GRAVEL WITH SAND, SILT, AND CLAY**, DAMP (FILL)	495.8		9 15 13	42	33	SS-1	-	-	-	-	-	-	-	-	-	10	A-2-6 (V)	
STIFF, GRAYISH BROWN, **SILTY CLAY**, SOME SAND, TRACE GRAVEL, TRACE BRICK FRAGMENTS, MOIST (FILL)	492.5		6 4 6	15	44	SS-2	-	-	-	-	-	-	-	-	-	18	A-6b (V)	
					100	ST-3	-	6	6	22	38	28	33	9	24	18	A-6b (12)	
STIFF, GRAYISH BROWN, **CLAY**, SOME SILT, LITTLE SAND, TRACE GRAVEL, MOIST (FILL)	487.5		3 5 6	16	100	SS-4	-	-	-	-	-	-	-	-	-	24	A-7-6 (V)	
			5 5 8	19	100	SS-5	-	1	11	13	33	42	45	20	25	23	A-7-6 (15)	
			2 2 2	6	89	SS-6	-	-	-	-	-	-	-	-	-	19	A-7-6 (V)	
LOOSE TO MEDIUM DENSE, YELLOWISH BROWN, **SILT**, LITTLE CLAY, TRACE SAND, WET	480.0		3 3 3	9	100	SS-7	-	-	-	-	-	-	-	-	-	29	A-4b (V)	
			3 3 4	10	100	SS-8	-	0	0	1	87	12	27	25	2	32	A-4b (8)	
			7 7 6	19	100	SS-9	-	-	-	-	-	-	-	-	-	23	A-4b (V)	
MEDIUM DENSE, YELLOWISH AND GRAYISH BROWN, **SILT**, SOME SAND, TRACE CLAY, WET	467.5		4 6 6	18	100	SS-10	-	-	-	-	-	-	-	-	-	9	A-4b (V)	
			5 5 6	16	100	SS-11	-	-	-	-	-	-	-	-	-	27	A-4b (V)	
			4 5 5	15	100	SS-12	-	0	0	35	55	10	20	20	NP	30	A-4b (6)	
	452.5	W 452.5																
MEDIUM DENSE, YELLOWISH BROWN, **COARSE AND FINE SAND**, LITTLE SILT, TRACE CLAY, WET			2 5 5	15	100	SS-13	-	-	-	-	-	-	-	-	-	21	A-3a (V)	
			11 5 6	16	89	SS-14	-	1	0	77	20	2	NP	NP	NP	22	A-3a (0)	
			5 10 10	30	67	SS-15	-	-	-	-	-	-	-	-	-	23	A-3a (V)	
			6 9 11	30	67	SS-16	-	0	1	82	14	3	NP	NP	NP	19	A-3a (0)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:19 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215230 LOGS-HAM-75-1.95 TERRACON\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PID: 114161	SFN:	PROJECT: N1215230	STATION / OFFSET: 115+84, 89' RT.	START: 1/25/22	END: 1/25/22	PG 2 OF 2	B-123-0-21

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)	BACK FILL
MEDIUM DENSE, YELLOWISH BROWN, **COARSE AND FINE SAND**, LITTLE SILT, TRACE CLAY, WET *(continued)*	436.0																	
	432.5																	
DENSE, GRAYISH BROWN, **COARSE AND FINE SAND**, LITTLE SILT, TRACE GRAVEL, TRACE CLAY, WET			12 12 13	37	78	SS-17	-	-	-	-	-	-	-	-	-	15	A-3a (V)	
	422.5		9 13 19	48	89	SS-18	-	1	0	75	20	4	NP	NP	NP	21	A-3a (0)	
MEDIUM DENSE, GRAY, **COARSE AND FINE SAND**, LITTLE SILT, TRACE GRAVEL, TRACE CLAY, WET			4 5 7	18	100	SS-19	-	-	-	-	-	-	-	-	-	28	A-3a (V)	
	416.0	EOB	5 6 7	19	100	SS-20	-	-	-	-	-	-	-	-	-	31	A-3a (V)	

NOTES: NONE

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:19 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215230 LOGS-HAM-75-1.95 TERRACON\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230	DRILLING FIRM / OPERATOR: TERRACON / KH	DRILL RIG: CME 55	STATION / OFFSET: 116+51, 188' LT.	EXPLORATION ID B-124-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: CME AUTOMATIC	ALIGNMENT: I-75	
PID: 114161 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/18/20	ELEVATION: 495.0 (MSL) EOB: 50.0 ft.	PAGE 1 OF 1
START: 3/4/22 END: 3/4/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 89.5	LAT / LONG: 39.120047, -84.536167	

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)	BACK FILL
TOPSOIL (4")	495.0																	
LOOSE, YELLOWISH BROWN, **FINE SAND**, TRACE CLAY, TRACE GRAVEL, TRACE SILT, DAMP (FILL)	494.7		3 3 3	9	100	SS-1	-	-	-	-	-	-	-	-	-	8	A-3 (V)	
			3 3 2	7	100	SS-2	-	2	14	76	7	1	NP	NP	NP	8	A-3 (0)	
			2 2 3	7	100	SS-3	-	-	-	-	-	-	-	-	-	9	A-3 (V)	
STIFF TO VERY STIFF, BROWN WITH GREENISH GRAY AND GRAYISH BROWN, **SILTY CLAY**, LITTLE TO SOME SAND, TRACE TO LITTLE GRAVEL, TRACE COAL FRAGMENTS, TRACE BRICK FRAGMENTS, TRACE ORGANICS, MOIST (FILL)	486.5		2 3 3	9	100	SS-4	2.00	-	-	-	-	-	-	-	-	18	A-6b (V)	
	479.0		1 2 3	7	100	SS-5	1.00	-	-	-	-	-	-	-	-	21	A-6b (V)	
			1 2 4	9	100	SS-6	2.00	13	12	15	46	14	-	-	-	19	A-6b (V)	
STIFF, GREENISH GRAY WITH GRAYISH BROWN, BROWN, AND BLACK, **SILT AND CLAY**, SOME SAND, SOME GRAVEL, MOIST	471.5		2 2 3	7	67	SS-7	1.75	-	-	-	-	-	-	-	-	20	A-6a (V)	
			2 3 3	9	100	SS-8	-	26	17	17	30	10	31	19	12	21	A-6a (2)	
LOOSE TO MEDIUM DENSE, GRAYISH BROWN, **COARSE AND FINE SAND**, LITTLE SILT, TRACE CLAY, DAMP	461.5		2 2 3	7	100	SS-9	-	0	0	83	16	1	NP	NP	NP	8	A-3a (0)	
			6 9 9	27	100	SS-10	-	-	-	-	-	-	-	-	-	23	A-3a (V)	
		W 463.0																
VERY LOOSE, BROWN TO OLIVE BROWN, **SILT**, TRACE TO LITTLE CLAY, TRACE SAND, WET	456.5		1 1 2	4	100	SS-11	-	0	0	3	-	97	-	NP	NP	NP	33	A-4 (8)
MEDIUM DENSE, BROWN WITH GRAY AND YELLOWISH BROWN, **COARSE AND FINE SAND**, LITTLE SILT, TRACE CLAY, WET	445.0		6 7 9	24	100	SS-12	-	-	-	-	-	-	-	-	-	27	A-3a (V)	
			9 9 11	30	100	SS-13	-	0	39	44	16	1	NP	NP	NP	29	A-3a (0)	
			1 1 7	12	100	SS-14	-	-	-	-	-	-	-	-	-	26	A-3a (V)	
		EOB																

NOTES: CAVE-IN AT 26.0'

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:19 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215230 LOGS-HAM-75-1.95 TERRACON\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230	DRILLING FIRM / OPERATOR: TERRACON / CK	DRILL RIG: CME 55 X	STATION / OFFSET: 117+01, 75' LT.	EXPLORATION ID B-125-0-21
TYPE: BRIDGE	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-75	
PID: 114161 SFN: 3109364	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 11/30/22	ELEVATION: 521.0 (MSL) EOB: 95.0 ft.	PAGE 1 OF 2
START: 6/23/22 END: 6/23/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 90*	LAT / LONG: 39.120225, -84.535789	

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)	BACK FILL
ASPHALT (12")	521.0																	
AGGREGATE BASE (6")	520.0																	
VERY STIFF TO HARD, GRAYISH BROWN, **SILT AND CLAY**, AND SAND, TRACE GRAVEL, TRACE BRICK FRAGMENTS, TRACE CINDERS, TRACE WOOD FRAGMENTS, DAMP TO MOIST (FILL)	519.5	1																
		2	13 7 5	18	22	SS-1	4.50	-	-	-	-	-	-	-	-	14	A-6a (V)	
		3	6 5 5	15	89	SS-2	4.00	-	-	-	-	-	-	-	-	14	A-6a (V)	
		4	3 4 4	12	67	SS-3	1.00	9	22	28	19	22	27	16	11	17	A-6a (1)	
		5	4 10 9	29	100	SS-4	4.00	-	-	-	-	-	-	-	-	17	A-6a (V)	
		6																
		7	3 5 8	20	100	SS-5	4.50	-	-	-	-	-	-	-	-	15	A-6a (V)	
		8																
		9	4 6 8	21	100	SS-6	4.50	2	6	14	43	35	33	19	14	16	A-6a (10)	
	507.5	10																
VERY STIFF, DARK GRAYISH BROWN, **CLAY**, SOME SAND, TRACE ROCK FRAGMENTS, TRACE SILT, TRACE BRICK FRAGMENTS, MOIST (FILL)	505.0	11	8 10 11	32	100	SS-7	3.50	-	-	-	-	-	-	-	-	18	A-7-6 (V)	
VERY STIFF TO HARD, GRAYISH BROWN, **SANDY SILT**, LITTLE CLAY, LITTLE GRAVEL, TRACE BRICK FRAGMENTS, DAMP TO MOIST (FILL)		12																
		13	6 8 17	38	100	SS-8	4.25	-	-	-	-	-	-	-	-	16	A-4a (V)	
		14																
		15	2 8 8	24	100	SS-9	3.25	-	-	-	-	-	-	-	-	18	A-4a (V)	
▼ 501.0		16																
		17	10 11 12	35	100	SS-10	-	19	19	21	23	18	23	17	6	12	A-4a (1)	
		18																
		19	13 17 12	44	100	SS-11	4.50	-	-	-	-	-	-	-	-	17	A-4a (V)	
		20																
		21																
		22																
		23																
		24																
		25																
		26																
		27																
		28																
	492.5	29	2 2 3	8	89	SS-12	1.25	-	-	-	-	-	-	-	-	22	A-6b (V)	
STIFF TO VERY STIFF, YELLOWISH BROWN, **SILTY CLAY**, LITTLE SAND, MOIST		30																
		31																
		32																
		33																
		34	3 3 6	14	100	SS-13	3.25	0	1	11	55	33	36	20	16	22	A-6b (10)	
	482.5	35																
STIFF TO VERY STIFF, YELLOWISH BROWN, **CLAY**, AND SILT, TRACE SAND, TRACE GRAVEL, MOIST		36																
		37																
		38																
		39	4 8 10	27	100	SS-14	3.25	-	-	-	-	-	-	-	-	20	A-7-6 (V)	
		40																
		41																
		42																
		43																
		44	3 6 8	21	100	SS-15	1.75	1	0	2	76	21	45	22	23	26	A-7-6 (14)	
		45																
		46																
		47																
		48																
	472.5	49	3 4 8	18	100	SS-16	-	-	-	-	-	-	-	-	-	8	A-3a (V)	
MEDIUM DENSE, OLIVE BROWN, **COARSE AND FINE SAND**, LITTLE SILT, TRACE CLAY, WET	W 472.2	50																
		51																
		52																
		53																
		54	4 8 9	26	78	SS-17	-	0	0	80	16	4	NP	NP	NP	26	A-3a (0)	
		55																
		56																
		57																
		58																
		59	2 3 8	17	100	SS-18	-	-	-	-	-	-	-	-	-	27	A-3a (V)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:19 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215230 LOGS-HAM-75-1.95 TERRACONN1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PID: 114161	SFN:	PROJECT: N1215230	STATION / OFFSET: 117+01, 75' LT.	START: 6/23/22	END: 6/23/22	PG 2 OF 2	B-125-0-21

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)	BACK FILL
MEDIUM DENSE, OLIVE BROWN, **COARSE AND FINE SAND**, LITTLE SILT, TRACE CLAY, WET *(continued)*	461.0																	
	457.5																	
LOOSE TO MEDIUM DENSE, OLIVE BROWN, **SILT**, LITTLE TO SOME SAND, TRACE CLAY, WET		61																
		62																
		63																
		64	3 4 5	14	100	SS-19	-	0	0	33	59	8	NP	NP	NP	29	A-4b (6)	
		65																
		66																
		67																
		68																
		69	4 7 10	26	100	SS-20	-	-	-	-	-	-	-	-	-	24	A-4b (V)	
		70																
		71																
		72																
		73																
		74	3 3 8	17	100	SS-21	-	-	-	-	-	-	-	-	-	28	A-4b (V)	
		75																
		76																
		77																
		78																
		79	3 2 2	6	100	SS-22	-	0	2	8	80	10	21	20	1	27	A-4b (8)	
		80																
		81																
		82																
		83																
		84	4 6 9	23	100	SS-23	-	-	-	-	-	-	-	-	-	22	A-4b (V)	
		85																
		86																
		87																
		88																
@88.5'; DENSE		89	3 8 21	44	100	SS-24	-	-	-	-	-	-	-	-	-	21	A-4b (V)	
		90																
		91																
		92																
		93																
		94	3 2 4	9	100	SS-25	-	-	-	-	-	-	-	-	-	25	A-4b (V)	
	426.0	95 EOB																

NOTES: CAVE-IN AT 50', STARTED RUNNING H20 AT 70'

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:19 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215230 LOGS-HAM-75-1.95 TERRACON\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230	DRILLING FIRM / OPERATOR: TERRACON / KH	DRILL RIG: CME 55	STATION / OFFSET: 117+43, 137' RT.	EXPLORATION ID B-126-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: CME AUTOMATIC	ALIGNMENT: I-75	
PID: 114161 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/18/20	ELEVATION: 497.0 (MSL) EOB: 50.0 ft.	PAGE 1 OF 1
START: 3/17/22 END: 3/17/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 89.5	LAT / LONG: 39.120386, -84.535056	

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)	BACK FILL
TOPSOIL (3")	497.0																	
VERY STIFF, LIGHT YELLOWISH BROWN TO DARK GRAYISH BROWN, **SILTY CLAY**, LITTLE TO SOME SAND, TRACE GRAVEL, TRACE BRICK FRAGMENTS, TRACE CINDERS, DAMP TO MOIST (FILL)	496.8		7 11 11	33	100	SS-1	-	-	-	-	-	-	-	-	-	12	A-6b (V)	
			8 9 8	25	100	SS-2	3.00	-	-	-	-	-	-	-	-	18	A-6b (V)	
			5 4 5	13	89	SS-3	2.50	-	-	-	-	-	-	-	-	16	A-6b (V)	
VERY STIFF, LIGHT GRAYISH BROWN WITH YELLOWISH BROWN, **SILT AND CLAY**, TRACE SAND, DAMP	488.5		3 3 4	10	100	SS-4	2.50	0	1	1	64	34	35	21	14	20	A-6a (10)	
		W 484.0			100	ST-5	-	-	-	-	-	-	-	-	-	29	A-6a (V)	
LOOSE TO MEDIUM DENSE, GRAY TO GRAYISH BROWN, **SILT**, LITTLE TO SOME CLAY, TRACE SAND, WET	483.5		2 2 4	9	100	SS-6	-	0	0	2	73	25	23	21	2	27	A-4b (8)	
			1 2 4	9	100	SS-7	-	-	-	-	-	-	-	-	-	29	A-4b (V)	
			2 3 3	9	100	SS-8	-	-	-	-	-	-	-	-	-	26	A-4b (V)	
			3 3 3	9	100	SS-9	-	-	-	-	-	-	-	-	-	25	A-4b (V)	
			3 4 6	15	89	SS-10	-	1	0	5	87	7	24	25	NP	32	A-4b (8)	
	463.5																	
MEDIUM DENSE, GRAY TO DARK YELLOWISH BROWN, **SANDY SILT**, TRACE CLAY, MOIST			4 8 12	30	100	SS-11	-	-	-	-	-	-	-	-	-	26	A-4a (V)	
			5 8 11	28	100	SS-12	-	-	-	-	-	-	-	-	-	24	A-4a (V)	
	453.5																	
DENSE, DARK YELLOWISH BROWN WITH GRAYISH BROWN, **COARSE AND FINE SAND**, SOME SILT, TRACE CLAY, MOIST			5 9 12	31	100	SS-13	-	0	15	57	26	2	NP	NP	NP	29	A-3a (0)	
	447.0	EOB	8 12 10	33	100	SS-14	-	-	-	-	-	-	-	-	-	27	A-3a (V)	

NOTES: CAVE-IN AT 31.0'

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:19 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215230 LOGS-HAM-75-1.95 TERRACON\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230	DRILLING FIRM / OPERATOR: TERRACON / KH	DRILL RIG: CME 55	STATION / OFFSET: 118+34, 195' LT.	EXPLORATION ID B-127-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: CME AUTOMATIC	ALIGNMENT: I-75	
PID: 114161 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/18/20	ELEVATION: 495.0 (MSL) EOB: 50.0 ft.	PAGE 1 OF 1
START: 3/4/22 END: 3/4/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 89.5	LAT / LONG: 39.120592, -84.536242	

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)	BACK FILL
ASPHALT (4")	495.0																	
CONCRETE (6")	494.7																	
STIFF, GREENISH GRAY WITH GRAYISH BROWN, **SILTY CLAY**, LITTLE TO SOME SAND, TRACE GRAVEL, MOIST (FILL)	494.2		1 4 5	13	33	SS-1	2.25	-	-	-	-	-	-	-	-	15	A-6b (V)	
	491.5																	
LOOSE TO MEDIUM DENSE, DARK GRAY TO BLACK, **SANDY SILT**, LITTLE GRAVEL, TRACE CLAY, TRACE ORGANICS, TRACE BRICK FRAGMENTS, TRACE SILTY COAL, TRACE SLAG, DAMP (FILL)			5 5 7	18	100	SS-2	-	17	19	23	31	10	NP	NP	NP	25	A-4a (1)	
			2 2 3	7	50	SS-3	-	-	-	-	-	-	-	-	-	48	A-4a (V)	
			0 1 1	3	33	SS-4	-	-	-	-	-	-	-	-	-	59	A-4a (V)	
	484.0																	
MEDIUM STIFF, GREENISH GRAY WITH YELLOWISH BROWN, **SILT AND CLAY**, LITTLE SAND, TRACE GRAVEL, TRACE BRICK FRAGMENTS, MOIST TO WET (FILL)			1 2 3	7	100	SS-5	0.50	3	1	18	55	23	31	18	13	26	A-6a (9)	
	479.0																	
LOOSE TO MEDIUM DENSE, GREENISH GRAY WITH YELLOWISH BROWN, **SILT**, LITTLE CLAY, TRACE SAND, DAMP			1 2 2	6	100	SS-6	0.50	-	-	-	-	-	-	-	-	19	A-6a (V)	
			3 4 4	12	100	SS-7	-	-	-	-	-	-	-	-	-	21	A-4b (V)	
			3 3 3	9	100	SS-8	-	0	1	2	81	16	26	22	4	27	A-4b (8)	
		W 473.0																
			2 3 4	10	100	SS-9	-	-	-	-	-	-	-	-	-	26	A-4b (V)	
	466.5																	
MEDIUM DENSE, DARK GREENISH GRAY TO GRAYISH BROWN, **SANDY SILT**, TRACE CLAY, WET			3 4 4	12	100	SS-10	-	0	0	52	45	3	NP	NP	NP	26	A-4a (3)	
	461.5																	
MEDIUM DENSE, GRAY AND GRAYISH BROWN, **COARSE AND FINE SAND**, SOME SILT, TRACE CLAY, WET			3 4 5	13	100	SS-11	-	0	37	41	21	1	NP	NP	NP	28	A-3a (0)	
	456.5																	
LOOSE TO MEDIUM DENSE, YELLOWISH BROWN TO GRAYISH BROWN, **SILT**, LITTLE SAND, TRACE CLAY, TRACE GRAVEL, WET			2 2 3	7	100	SS-12	-	1	0	12	79	8	28	18	10	27	A-4b (8)	
			8 9 11	30	100	SS-13	-	-	-	-	-	-	-	-	-	29	A-4b (V)	
			5 7 10	25	100	SS-14	-	-	-	-	-	-	-	-	-	26	A-4b (V)	
	445.0	EOB																

NOTES: CAVE-IN AT 8.0'

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 1/14/25 08:40 - C:\USERS\SBHATTARAI\ONEDRIVE - TERRACON CONSULTANTS INC\DESKTOP\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230 | DRILLING FIRM / OPERATOR: TERRACON / CK | DRILL RIG: CME 55 X | STATION / OFFSET: 119+24, 62' RT. | EXPLORATION ID B-128-0-21
TYPE: RETAINING WALL | SAMPLING FIRM / LOGGER: TERRACON / RS | HAMMER: AUTOMATIC HAMMER | ALIGNMENT: I-75
PID: 114161 SFN: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 11/30/22 | ELEVATION: 517.0 (MSL) EOB: 21.0 ft. | PAGE 1 OF 1
START: 6/28/22 END: 6/28/22 | SAMPLING METHOD: SPT / ST | ENERGY RATIO (%): 90* | LAT / LONG: 39.120853, -84.535339

MATERIAL DESCRIPTION AND NOTES	ELEV. 517.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
ASPHALT (12")	516.0	1																
AGGREGATE BASE (6")	515.5																	
MEDIUM DENSE TO DENSE, GRAYISH BROWN WITH OLIVE BROWN, **SANDY SILT**, LITTLE TO SOME CLAY, LITTLE GRAVEL, TRACE BRICK FRAGMENTS, TRACE ROCK FRAGMENTS, DAMP (FILL)		2	3 5 5	15	78	SS-1	-	-	-	-	-	-	-	-	-	11	A-4a (V)	
		3	9 12 14	39	56	SS-2	-	-	-	-	-	-	-	-	-	15	A-4a (V)	
@6.0'; PETROL ODOR NOTED		4 5	9 13 13	39	89	SS-3	-	13	11	20	30	26	28	20	8	12	A-4a (4)	
		6	5 7 13	30	100	SS-4	-	-	-	-	-	-	-	-	-	17	A-4a (V)	
		7 8	10 18 14	48	100	SS-5	-	-	-	-	-	-	-	-	-	12	A-4a (V)	
		9	12 12 12	36	78	SS-6	-	13	10	19	32	26	26	16	10	16	A-4a (5)	
		10 11	9 16 20	54	89	SS-7	-	-	-	-	-	-	-	-	-	15	A-4a (V)	
		12	7 12 11	35	100	SS-8	-	-	-	-	-	-	-	-	-	18	A-4a (V)	
		13	8 12 35	71	100	SS-9	-	12	17	33	21	17	20	15	5	13	A-4a (1)	
	500.5	14 15	17 16 28	66	44	SS-10	-	-	-	-	-	-	-	-	-	13	A-4a (V)	
MEDIUM DENSE, GRAYISH BROWN WITH OLIVE BROWN, **GRAVEL WITH SAND AND SILT**, LITTLE CLAY, TRACE ROCK FRAGMENT LAYERS, TRACE BRICK FRAGMENTS, TRACE CINDERS, DAMP (FILL)		16	16 8 11	29	100	SS-11	-	19	21	27	19	14	20	13	7	10	A-2-4 (0)	
@19.5'; VERY DENSE		17 18	7 7 9	24	100	SS-12	-	-	-	-	-	-	-	-	-	15	A-2-4 (V)	
	496.0	19 20 21	14 16 20	54	100	SS-13	-	-	-	-	-	-	-	-	-	12	A-2-4 (V)	
		EOB																

NOTES: CAVE-IN AT 18'

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 5/31/24 13:20 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230	DRILLING FIRM / OPERATOR: TERRACON / KH	DRILL RIG: CME 55	STATION / OFFSET: 119+44, 128' RT.	EXPLORATION ID B-129-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / AR	HAMMER: CME AUTOMATIC	ALIGNMENT: I-75	
PID: 114161 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/18/20	ELEVATION: 504.0 (MSL) EOB: 50.0 ft.	PAGE 1 OF 1
START: 3/11/22 END: 3/11/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 89.5	LAT / LONG: 39.120900, -84.535103	

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)	BACK FILL
TOPSOIL TOPSOIL (4")	504.0																	
STIFF TO HARD, YELLOWISH BROWN TO GRAYISH BROWN, **SILTY CLAY**, LITTLE TO SOME SAND, TRACE GRAVEL, TRACE BRICK FRAGMENTS, TRACE COAL, TRACE ROOTS, DAMP TO MOIST (FILL)	503.7		3 3 15	27	89	SS-1	4.50	-	-	-	-	-	-	-	-	13	A-6b (V)	
			8 9 13	33	100	SS-2	4.50	5	6	12	39	38	40	20	20	18	A-6b (12)	
			9 12 13	37	89	SS-3	4.50	-	-	-	-	-	-	-	-	14	A-6b (V)	
			6 4 5	13	89	SS-4	1.75	-	-	-	-	-	-	-	-	24	A-6b (V)	
					79	ST-5	-	1	8	18	41	32	38	19	19	24	A-6b (11)	
VERY STIFF, GRAY TO DARK GRAY WITH YELLOWISH BROWN, **CLAY**, TRACE TO LITTLE SILT, TRACE SAND, TRACE ORGANICS, MOIST (FILL)	490.5		4 4 6	15	100	SS-6	2.75	-	-	-	-	-	-	-	-	26	A-7-6 (V)	
	485.5		5 6 8	21	100	SS-7	2.75	-	-	-	-	-	-	-	-	21	A-7-6 (V)	
LOOSE, GRAY WITH OLIVE, **SANDY SILT**, LITTLE CLAY, LITTLE GRAVEL, MOIST	480.5		4 3 3	9	89	SS-8	-	6	3	26	48	17	22	22	NP	15	A-4a (6)	
LOOSE TO MEDIUM DENSE, GRAY TO DARK GRAY, **SILT**, AND CLAY, TRACE SAND, WET			2 2 3	7	100	SS-9	-	0	0	1	63	36	29	19	10	26	A-4b (8)	
			2 2 2	6	100	SS-10	0.75	-	-	-	-	-	29	19	10	27	A-4b (V)	
			2 2 2	6	100	SS-11	-	0	0	1	80	19	23	21	2	24	A-4b (8)	
			3 4 5	13	100	SS-12	-	-	-	-	-	-	-	-	-	25	A-4b (V)	
	W 461.0																	
			5 8 8	24	100	SS-13	-	-	-	-	-	-	-	-	-	26	A-4b (V)	
			6 6 8	21	100	SS-14	-	-	-	-	-	-	-	-	-	26	A-4b (V)	
	454.0	EOB																

NOTES: CAVE-IN AT 23'

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:19 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215230 LOGS-HAM-75-1.95 TERRACONN\1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230	DRILLING FIRM / OPERATOR: TERRACON / CK	DRILL RIG: CME 55 X	STATION / OFFSET: 119+40, 77' LT.	EXPLORATION ID B-130-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-75	
PID: 114161 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 11/30/22	ELEVATION: 521.0 (MSL) EOB: 20.5 ft.	PAGE 1 OF 1
START: 6/23/22 END: 6/23/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 90*	LAT / LONG: 39.120903, -84.535828	

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)	BACK FILL
ASPHALT (10")	521.0																	
AGGREGATE BASE (2")	520.2																	
HARD, GRAYISH BROWN WITH OLIVE BROWN, **CLAY**, SOME SILT, TRACE SAND, TRACE COAL, TRACE BRICK FRAGMENTS, DAMP (FILL)	520.0																	
VERY STIFF TO HARD, GRAYISH BROWN WITH YELLOWISH BROWN, **SANDY SILT**, LITTLE TO SOME CLAY, TRACE TO LITTLE GRAVEL, TRACE BRICK FRAGMENTS, TRACE COAL, TRACE CINDERS, TRACE WOOD FRAGMENTS, DAMP TO MOIST (FILL) @4.0'; AND CLAY	518.5	1	3 2 3	8	67	SS-1	4.50	-	-	-	-	-	-	-	-	17	A-7-6 (V)	
		2	6 5 5	15	100	SS-2	3.00	-	-	-	-	-	-	-	-	20	A-4a (V)	
		3	5 6 6	18	100	SS-3	-	4	6	14	37	39	27	17	10	16	A-4a (8)	
		4	3 5 10	23	100	SS-4	4.50	-	-	-	-	-	-	-	-	18	A-4a (V)	
		5	4 4 9	20	89	SS-5	3.00	-	-	-	-	-	-	-	-	15	A-4a (V)	
		6	4 8 6	21	100	SS-6	-	16	15	22	24	23	28	18	10	17	A-4a (2)	
		7	4 6 7	20	100	SS-7	3.50	-	-	-	-	-	-	-	-	14	A-4a (V)	
		8	7 6 12	27	100	SS-8	4.50	-	-	-	-	-	-	-	-	15	A-4a (V)	
		9	7 10 7	26	100	SS-9	3.50	11	27	25	21	16	20	14	6	15	A-4a (0)	
		10	4 6 10	24	100	SS-10	-	-	-	-	-	-	-	-	-	18	A-4a (V)	
		11	5 7 10	26	100	SS-11	3.75	-	-	-	-	-	-	-	-	14	A-4a (V)	
		12	9 9 8	26	100	SS-12	3.75	8	15	17	32	28	27	18	9	14	A-4a (5)	
		13	6 6 10	24	78	SS-13	4.50	-	-	-	-	-	-	-	-	11	A-4a (V)	
	500.5	14																
EOB		15																
		16																
		17																
		18																
		19																
		20																

NOTES: CAVE-IN AT 16'

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 1/14/25 08:40 - C:\USERS\SBHATTARAI\ONEDRIVE - TERRACON CONSULTANTS INC\DESKTOP\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230	DRILLING FIRM / OPERATOR: TERRACON / KH	DRILL RIG: CME 55	STATION / OFFSET: 119+98, 185' LT.	EXPLORATION ID B-131-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: CME AUTOMATIC	ALIGNMENT: I-75	
PID: 114161 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/18/20	ELEVATION: 496.0 (MSL) EOB: 50.0 ft.	PAGE 1 OF 1
START: 3/8/22 END: 3/8/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 89.5	LAT / LONG: 39.121083, -84.536200	

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)	BACK FILL
ASPHALT (5")	496.0																	
CONCRETE (4")	495.6																	
AGGREGATE BASE (3")	495.3																	
MEDIUM DENSE, GRAYISH BROWN, **GRAVEL WITH SAND, SILT, AND CLAY**, DAMP (FILL)	495.0		8 9 6	22	33	SS-1	-	-	-	-	-	-	-	-	-	4	A-2-6 (V)	
	492.5																	
STIFF, DARK GRAYISH BROWN WITH BLACK, **SANDY SILT**, LITTLE CLAY, LITTLE GRAVEL, TRACE BRICK FRAGMENTS, TRACE COAL CINDERS, TRACE SLAG, TRACE CERAMICS, MOIST TO WET (FILL)			5 6 9	22	33	SS-2	-	-	-	-	-	-	-	-	-	20	A-4a (V)	
			2 2 3	7	100	SS-3	2.00	14	13	18	38	17	29	21	8	23	A-4a (4)	
		W 487.0	2 3 2	7	89	SS-4	-	-	-	-	-	-	-	-	-	53	A-4a (V)	
	485.0																	
VERY STIFF, DARK GRAYISH BROWN, **CLAY**, AND SILT, LITTLE SAND, TRACE GRAVEL, MOIST (FILL)			3 5 8	19	89	SS-5	2.00	-	-	-	-	-	-	-	-	28	A-7-6 (V)	
			5 8 9	25	100	SS-6	3.00	3	10	10	38	39	42	19	23	23	A-7-6 (14)	
	480.0																	
VERY STIFF, DARK YELLOWISH BROWN AND DARK GREENISH GRAY, **SILTY CLAY**, AND SAND, TRACE GRAVEL, MOIST					63	ST-7	-	7	20	17	27	29	40	17	23	26	A-6b (9)	
			4 7 11	27	100	SS-8	3.50	-	-	-	-	-	-	-	-	26	A-6b (V)	
	472.5																	
MEDIUM DENSE, GREENISH GRAY WITH OLIVE AND YELLOWISH BROWN, **SILT**, LITTLE TO SOME CLAY, TRACE SAND, TRACE GRAVEL, WET			5 3 5	12	100	SS-9	-	3	9	9	56	23	26	18	8	23	A-4b (8)	
			4 4 3	10	100	SS-10	-	0	1	1	85	13	NP	NP	NP	29	A-4b (8)	
			5 7 12	28	100	SS-11	-	-	-	-	-	-	-	-	-	25	A-4b (V)	
	457.5																	
MEDIUM DENSE TO DENSE, YELLOWISH BROWN, **COARSE AND FINE SAND**, SOME SILT, TRACE CLAY, WET			8 13 13	39	100	SS-12	-	0	0	65	34	1	NP	NP	NP	22	A-3a (0)	
			7 9 11	30	100	SS-13	-	-	-	-	-	-	-	-	-	30	A-3a (V)	
			5 8 11	28	100	SS-14	-	-	-	-	-	-	-	-	-	29	A-3a (V)	
	446.0	EOB																

NOTES: CAVE-IN AT 29.0'

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 1/14/25 08:40 - C:\USERS\SBHATTARAI\ONEDRIVE - TERRACON CONSULTANTS INC\DESKTOP\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230
TYPE: RETAINING WALL
PID: 114161 SFN:
START: 4/5/22 END: 4/5/22

DRILLING FIRM / OPERATOR: TERRACON / KH
SAMPLING FIRM / LOGGER: TERRACON / RS
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT / ST

DRILL RIG: CME 55
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 5/18/20
ENERGY RATIO (%): 89.5

STATION / OFFSET: 121+38, 127' RT.
ALIGNMENT: I-75
ELEVATION: 511.0 (MSL) EOB: 40.0 ft.
LAT / LONG: 39.121417, -84.535069

EXPLORATION ID B-132-0-21

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)	BACK FILL
ASPHALT (12")	511.0																	
LOOSE TO MEDIUM DENSE, GRAYISH BROWN, **COARSE AND FINE SAND**, LITTLE TO SOME SILT, TRACE TO LITTLE GRAVEL, TRACE CLAY, (FILL), DAMP (FILL)	510.0	1	7 5 5	15	6	SS-1	-	-	-	-	-	-	-	-	-	6	A-3a (V)	
		2																
		3	4 3 3	9	33	SS-2	-	-	-	-	-	-	-	-	-	3	A-3a (V)	
		4																
		5	2 3 3	9	0	SS-3	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
	505.0	6																
STIFF TO VERY STIFF, GRAYISH BROWN WITH GRAY, **SILT AND CLAY**, LITTLE SHALE FRAGMENTS, LITTLE SAND, TRACE BRICK FRAGMENTS, TRACE WOOD FRAGMENTS, TRACE CONCRETE FRAGMENTS, DAMP (FILL)		7	2 1 3	6	56	SS-4	-	-	-	-	-	-	-	-	-	16	A-6a (V)	
		8																
		9	3 5 6	16	78	SS-5	1.50	15	8	12	34	31	33	20	13	15	A-6a (7)	
		10																
		11																
		12	4 6 8	21	100	SS-6	2.00	-	-	-	-	-	-	-	-	16	A-6a (V)	
	497.5	13																
LOOSE TO MEDIUM DENSE, GRAYISH BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND**, LITTLE SILT, TRACE CLAY, TRACE BRICK FRAGMENTS, MOIST (FILL)		14	4 4 1	7	22	SS-7	-	-	-	-	-	-	-	-	-	25	A-1-b (V)	
		15																
		16																
		17	3 5 6	16	22	SS-8	-	50	17	17	11	5	NP	NP	NP	20	A-1-b (0)	
	492.5	18																
STIFF, YELLOWISH BROWN, **SILTY CLAY**, LITTLE SAND, MOIST		19	3 4 6	15	100	SS-9	1.50	-	-	-	-	-	-	-	-	20	A-6b (V)	
		20																
		21			83	ST-10	-	-	-	-	-	-	-	-	-	-	A-6b (V)	
		22																
	487.5	23																
MEDIUM STIFF, GRAYISH BROWN WITH YELLOWISH BROWN, **SANDY SILT**, SOME CLAY, TRACE GRAVEL, WET		24	3 2 3	7	100	SS-11	-	1	2	22	43	32	27	17	10	25	A-4a (8)	
		25																
		26																
		27																
		28																
	482.5	29	2 2 3	7	78	SS-12	-	-	-	-	-	-	-	-	-	26	A-4b (V)	
VERY LOOSE TO LOOSE, GRAYISH BROWN WITH YELLOWISH BROWN, **SILT**, LITTLE CLAY, TRACE SAND, WET		30																
		31																
		32																
		33																
		34	2 1 1	3	100	SS-13	-	0	0	1	85	14	24	21	3	29	A-4b (8)	
		35																
		36																
		37																
		38																
		39	2 2 2	6	100	SS-14	-	-	-	-	-	-	-	-	-	26	A-4b (V)	
	471.0	40																
		EOB																

NOTES: NONE

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:19 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215230 LOGS-HAM-75-1.95 TERRACONN\1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230	DRILLING FIRM / OPERATOR: TERRACON / KH	DRILL RIG: CME 55	STATION / OFFSET: 121+97, 185' LT.	EXPLORATION ID B-133-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: CME AUTOMATIC	ALIGNMENT: I-75	
PID: 114161 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/18/20	ELEVATION: 497.0 (MSL) EOB: 50.0 ft.	PAGE 1 OF 1
START: 3/8/22 END: 3/8/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 89.5	LAT / LONG: 39.121639, -84.536150	

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)	BACK FILL
ASPHALT (5")	497.0																	
CONCRETE (5")	496.6																	
AGGREGATE BASE (2")	496.2																	
VERY STIFF, DARK GREENISH GRAY WITH GRAYISH BROWN, **SILT AND CLAY**, SOME SAND, TRACE GRAVEL, TRACE SLAG, DAMP TO MOIST (FILL)	496.0		7 6 7	19	100	SS-1	3.00	-	-	-	-	-	-	-	-	12	A-6a (V)	
			4 3 5	12	100	SS-2	3.25	7	16	10	39	28	31	16	15	16	A-6a (8)	
			4 4 5	13	100	SS-3	2.50	5	18	21	37	19	33	21	12	22	A-6a (5)	
MEDIUM DENSE, BROWN WITH REDDISH BROWN, **COARSE AND FINE SAND**, LITTLE CLAY, TRACE SILT, TRACE GRAVEL, WET (FILL)	488.5		5 5 7	18	100	SS-4	-	9	34	33	7	17	NP	NP	NP	20	A-3a (0)	
MEDIUM DENSE, GRAYISH BROWN, **GRAVEL WITH SAND**, SOME SILT, TRACE CLAY, DAMP	486.0		4 4 5	13	100	SS-5	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
			4 5 5	15	100	SS-6	-	45	25	9	12	9	23	17	6	8	A-1-b (0)	
MEDIUM STIFF, YELLOWISH BROWN TO GRAYISH BROWN, **SILT AND CLAY**, SOME GRAVEL, LITTLE SAND, DAMP TO MOIST	481.0	W 481.0	4 2 3	7	50	SS-7	-	-	-	-	-	-	-	-	-	20	A-6a (V)	
			3 2 3	7	100	SS-8	-	28	16	4	28	24	32	20	12	12	A-6a (4)	
	474.0				100	ST-9	-	1	0	0	57	42	32	16	16	-	A-6b (10)	
MEDIUM STIFF, GRAYISH BROWN, **SILTY CLAY**, TRACE GRAVEL, DAMP	468.5		0 0 0	0	100	SS-10	-	3	1	1	74	21	26	21	5	33	A-4b (8)	
VERY LOOSE, GRAYISH BROWN TO DARK GRAYISH BROWN, **SILT**, SOME CLAY, TRACE SAND, TRACE GRAVEL, TRACE ORGANICS, WET	458.5		0 0 2	3	100	SS-11	-	1	1	1	70	27	28	20	8	24	A-4b (8)	
LOOSE TO MEDIUM DENSE, DARK GRAY WITH GRAYISH BROWN, **SILT**, LITTLE TO TRACE CLAY, LITTLE TO TRACE SAND, WET	447.0	EOB	5 7 13	30	100	SS-12	-	1	0	2	93	4	NP	NP	NP	29	A-4b (8)	
			3 2 3	7	100	SS-13	-	0	2	10	77	11	NP	NP	NP	30	A-4b (8)	
			3 3 6	13	100	SS-14	-	-	-	-	-	-	-	-	-	35	A-4b (V)	

NOTES: NONE

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 1/14/25 08:40 - C:\USERS\SBHATTARA\ONEDRIVE - TERRACON CONSULTANTS INC\DESKTOP\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230	DRILLING FIRM / OPERATOR: TERRACON / CK	DRILL RIG: CME 55 X	STATION / OFFSET: 122+09, 89' LT.	EXPLORATION ID B-134-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-75	
PID: 114161 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 11/30/22	ELEVATION: 521.0 (MSL) EOB: 20.0 ft.	PAGE 1 OF 1
START: 6/22/22 END: 6/22/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 90*	LAT / LONG: 39.121653, -84.535808	

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)	BACK FILL
ASPHALT (10")	521.0																	
AGGREGATE BASE (2")	520.2																	
VERY STIFF, DARK GRAYISH BROWN TO REDDISH YELLOW, **SILT AND CLAY**, SOME SAND, TRACE CINDERS, TRACE BRICK FRAGMENTS, TRACE SHALE FRAGMENTS, DAMP TO MOIST (FILL)	520.0	1	3 4 3	11	78	SS-1	3.50	-	-	-	-	-	-	-	-	15	A-6a (V)	
		2																
		3																
		4	4 6 5	17	100	SS-2	2.00	6	10	19	35	30	28	16	12	17	A-6a (7)	
		5																
		6	6 8 8	24	83	SS-3	-	-	-	-	-	-	-	-	-	15	A-6a (V)	
		7																
		8																
		9	5 6 9	23	100	SS-4	3.25	3	9	14	40	34	29	18	11	16	A-6a (8)	
		10																
	510.0	11																
VERY STIFF, GRAYISH BROWN AND YELLOWISH BROWN, **SILTY CLAY**, TRACE TO LITTLE SAND, TRACE CINDERS, TRACE BRICK FRAGMENTS, TRACE SLAG LAYERS, DAMP TO MOIST (FILL)		12	5 6 10	24	89	SS-5	3.50	-	-	-	-	-	-	-	-	17	A-6b (V)	
		13																
		14			75	ST-6	3.00	-	-	-	-	-	-	-	-	-	A-6b (V)	
		15																
		16																
		17	6 9 9	27	100	SS-7	-	-	-	-	-	-	-	-	-	8	A-6b (V)	
		18																
	502.5	19																
VERY STIFF, GRAYISH BROWN TO DARK GREENISH GRAY, **CLAY**, LITTLE SILT, LITTLE SAND, TRACK BRICK FRAGMENTS, TRACE ROCK FRAGMENTS, MOIST (FILL)	501.0	20	7 8 13	32	83	SS-8	4.00	-	-	-	-	-	-	-	-	15	A-7-6 (V)	
EOB																		

NOTES: CAVE-IN AT 16'

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 1/14/25 08:41 - C:\USERS\SBHATTARAI\ONEDRIVE - TERRACON CONSULTANTS INC\DESKTOP\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230
TYPE: RETAINING WALL
PID: 114161 SFN:
START: 4/5/22 END: 4/5/22

DRILLING FIRM / OPERATOR: TERRACON / KH
SAMPLING FIRM / LOGGER: TERRACON / RS
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT / ST

DRILL RIG: CME 55
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 5/18/20
ENERGY RATIO (%): 89.5

STATION / OFFSET: 122+27, 114' RT.
ALIGNMENT: I-75
ELEVATION: 515.0 (MSL) EOB: 55.0 ft.
LAT / LONG: 39.121661, -84.535092

EXPLORATION ID B-135-0-21

MATERIAL DESCRIPTION AND NOTES	ELEV. 515.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
ASPHALT (12")	514.0																	
MEDIUM DENSE, GRAYISH BROWN, **COARSE AND FINE SAND**, LITTLE SILT, TRACE CLAY, TRACE GRAVEL, DAMP (FILL)	512.5	1	9 8 4	18	44	SS-1	-	-	-	-	-	-	-	-	-	7	A-3a (V)	
VERY STIFF TO HARD, GRAY WITH GRAYISH BROWN AND DARK GRAY, **SILT AND CLAY**, LITTLE SAND, TRACE GRAVEL, TRACE CINDERS, TRACE BRICK FRAGMENTS, DAMP TO MOIST (FILL) @4.0'; TRACE SHALE FRAGMENTS		2 3 4	4 4 5	13	78	SS-2	3.50	-	-	-	-	-	-	-	-	16	A-6a (V)	
		5	5 6 6	18	100	SS-3	4.50	2	3	10	61	24	32	18	14	14	A-6a (10)	
		6 7	3 3 3	9	56	SS-4	4.50	-	-	-	-	-	-	-	-	15	A-6a (V)	
	507.5	8																
HARD, GRAY WITH YELLOWISH BROWN, **SILTY CLAY**, TRACE TO LITTLE SAND, TRACE TO LITTLE GRAVEL, LITTLE HIGHLY WEATHERED SHALE FRAGMENTS, TRACE BRICK FRAGMENTS, MOIST (FILL)		9	4 4 5	13	100	SS-5	4.50	-	-	-	-	-	-	-	-	17	A-6b (V)	
		10 11 12	5 4 5	13	100	SS-6	4.50	11	4	4	39	42	40	22	18	20	A-6b (11)	
@13.5'; TRACE LIMESTONE FRAGMENTS		13 14	4 7 8	22	100	SS-7	4.50	-	-	-	-	-	-	-	-	12	A-6b (V)	
		15 16 17	8 7 8	22	100	SS-8	4.50	-	-	-	-	-	-	-	-	10	A-6b (V)	
		18 19 20	5 6 17	34	44	SS-9	-	-	-	-	-	-	-	-	-	24	A-6b (V)	
	491.5	21 22 23																
STIFF, OLIVE GRAY WITH YELLOWISH BROWN, **SILTY CLAY**, AND SAND, TRACE GRAVEL, MOIST		24	4 5 7	18	100	SS-10	1.75	1	25	28	20	26	36	19	17	20	A-6b (4)	
	486.5	25 26 27 28			92	ST-11	-	-	-	-	-	-	-	-	-	-	A-6b (V)	
LOOSE TO MEDIUM DENSE, GRAYISH BROWN AND GRAY WITH YELLOWISH BROWN, **SILT**, SOME CLAY, WET		29 30 31 32 33	3 3 5	12	100	SS-12	-	0	0	0	75	25	27	21	6	26	A-4b (8)	
		34 35 36 37 38	2 3 3	9	100	SS-13	-	-	-	-	-	-	-	-	-	27	A-4b (V)	
		39 40 41 42 43	1 3 3	9	100	SS-14	-	-	-	-	-	-	-	-	-	27	A-4b (V)	
		44 45 46 47 48	1 3 6	13	100	SS-15	-	-	-	-	-	-	-	-	-	21	A-4b (V)	
	466.5	49 50 51 52 53	7 11 15	39	100	SS-16	-	0	26	56	15	3	NP	NP	NP	28	A-3a (0)	
DENSE, DARK YELLOWISH BROWN TO GRAYISH BROWN, **COARSE AND FINE SAND**, LITTLE SILT, TRACE CLAY, WET		54 55	7 12 13	37	100	SS-17	-	-	-	-	-	-	-	-	-	25	A-3a (V)	
	460.0 EOB																	

W 466.5

NOTES: NONE

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:19 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215230 LOGS-HAM-75-1.95 TERRACON\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230	DRILLING FIRM / OPERATOR: TERRACON / KH	DRILL RIG: CME 55	STATION / OFFSET: 123+22, 169' RT.	EXPLORATION ID B-136-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: CME AUTOMATIC	ALIGNMENT: I-75	
PID: 114161 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/18/20	ELEVATION: 502.0 (MSL) EOB: 60.0 ft.	PAGE 1 OF 1
START: 2/28/22 END: 2/28/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 89.5	LAT / LONG: 39.121911, -84.534872	

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)	BACK FILL
TOPSOIL (3")	502.0																	
MEDIUM DENSE, GRAYISH BROWN WITH YELLOWISH BROWN, **SANDY SILT**, LITTLE GRAVEL, LITTLE CLAY, TRACE COAL, TRACE BRICK FRAGMENTS, TRACE CINDERS, TRACE ROOTS, MOIST (FILL)	501.8		3 4 6	15	89	SS-1	-	-	-	-	-	-	-	-	-	20	A-4a (V)	
			5 6 14	30	100	SS-2	-	-	-	-	-	-	-	-	-	22	A-4a (V)	
			8 4 9	19	100	SS-3	-	12	12	21	44	11	29	19	10	18	A-4a (4)	
	493.5																	
VERY STIFF, OLIVE WITH GRAY AND GRAYISH BROWN, **CLAY**, SOME SILT, SOME SAND, TRACE GRAVEL, TRACE COAL, TRACE BRICK FRAGMENTS, MOIST (FILL)			5 5 9	21	100	SS-4	2.00	-	-	-	-	-	-	-	-	21	A-7-6 (V)	
					67	ST-5	2.50	1	10	13	35	41	42	17	25	21	A-7-6 (14)	
	488.5	W 489.0																
SOFT TO MEDIUM STIFF, GRAYISH BROWN WITH GRAY, **SILT AND CLAY**, TRACE SAND, MOIST @13.5':STIFF			2 3 5	12	100	SS-6	1.50	-	-	-	-	-	-	-	-	26	A-6a (V)	
			2 2 3	7	100	SS-7	1.00	-	-	-	-	-	-	-	-	28	A-6a (V)	
			1 2 1	4	100	SS-8	1.00	0	0	1	53	46	32	18	14	24	A-6a (10)	
			0 0 2	3	100	SS-9	0.75	-	-	-	-	-	-	-	-	25	A-6a (V)	
	473.5																	
MEDIUM DENSE, GRAYISH BROWN, **SILT**, SOME SAND, LITTLE CLAY, WET			3 3 7	15	100	SS-10	-	0	0	35	- 65 -		-	-	-	37	A-4b (V)	
	468.5																	
VERY LOOSE, GRAYISH BROWN, **SILT**, AND SAND, TRACE TO LITTLE CLAY, WET			0 0 2	3	100	SS-11	-	-	-	-	-	-	-	-	-	25	A-4b (V)	
		▼ 465.0																
	463.5																	
MEDIUM DENSE TO DENSE, GRAYISH BROWN, **SILT**, AND SAND, TRACE CLAY, WET			3 3 7	15	100	SS-12	-	0	0	47	51	2	NP	NP	NP	25	A-4b (4)	
			6 9 12	31	89	SS-13	-	-	-	-	-	-	-	-	-	21	A-4b (V)	
			6 8 4	18	100	SS-14	-	0	0	3	83	14	NP	NP	NP	26	A-4b (8)	
	448.5																	
DENSE TO VERY DENSE, GRAYISH BROWN, **COARSE AND FINE SAND**, LITTLE TO SOME SILT, TRACE CLAY SEAMS, TRACE GRAVEL, WET			5 20 46	98	100	SS-15	-	-	-	-	-	-	-	-	-	20	A-3a (V)	
	442.0	EOB	18 11 20	46	67	SS-16	-	-	-	-	-	-	-	-	-	21	A-3a (V)	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED AUGER CUTTINGS; AUGER CUTTINGS MIXED WITH BENTONITE CHIPS

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:19 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215230 LOGS-HAM-75-1.95 TERRACONN\1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230	DRILLING FIRM / OPERATOR: TERRACON / KH	DRILL RIG: CME 55	STATION / OFFSET: 123+60, 184' LT.	EXPLORATION ID B-137-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: CME AUTOMATIC	ALIGNMENT: I-75	
PID: 114161 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/18/20	ELEVATION: 498.0 (MSL) EOB: 50.0 ft.	PAGE 1 OF 1
START: 3/9/22 END: 3/9/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 89.5	LAT / LONG: 39.122086, -84.536103	

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)	BACK FILL
ASPHALT (5")	498.0																	
CONCRETE (5")	497.6																	
AGGREGATE BASE (2")	497.2																	
HARD, DARK GRAYISH BROWN TO DARK YELLOWISH BROWN, **SILTY CLAY**, TRACE TO LITTLE SAND, TRACE CINDERS, TRACE BRICK FRAGMENTS, MOIST (FILL)	497.0		16 10 10	30	100	SS-1	4.25	-	-	-	-	-	-	-	-	17	A-6b (V)	
STIFF TO VERY STIFF, YELLOWISH BROWN, **SILTY CLAY**, TRACE TO LITTLE SAND, DAMP TO MOIST (FILL)	494.5		5 6 8	21	100	SS-2	3.25	-	-	-	-	-	-	-	-	20	A-6b (V)	
			5 5 5	15	89	SS-3	1.75	-	-	-	-	-	-	-	-	17	A-6b (V)	
MEDIUM DENSE, GRAYISH BROWN AND YELLOWISH BROWN, **COARSE AND FINE SAND**, LITTLE TO SOME SILT, TRACE GRAVEL, TRACE CLAY, DAMP (FILL)	490.0			0		ST-4	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			5 4 4	12	67	SS-5	-	-	-	-	-	-	-	-	-	6	A-3a (V)	
VERY STIFF, YELLOWISH BROWN TO DARK GREEN GRAY, **SILT AND CLAY**, TRACE TO LITTLE SAND, TRACE GRAVEL, MOIST	484.5		4 4 3	10	78	SS-6	3.00	-	-	-	-	-	-	-	-	20	A-6a (V)	
		W 482.0																
			2 3 3	9	100	SS-7	-	-	-	-	-	-	-	-	-	25	A-6a (V)	
MEDIUM DENSE, YELLOWISH BROWN, **GRAVEL WITH SAND AND SILT**, TRACE CLAY, MOIST	479.5		5 7 8	22	50	SS-8	-	-	-	-	-	-	-	-	-	14	A-2-4 (V)	
LOOSE TO MEDIUM DENSE, DARK GRAYISH BROWN TO YELLOWISH BROWN, **SILT**, LITTLE TO SOME SAND, TRACE TO LITTLE CLAY, WET	474.5		3 3 4	10	100	SS-9	-	-	-	-	-	-	-	-	-	27	A-4b (V)	
			3 3 3	9	100	SS-10	-	-	-	-	-	-	-	-	-	28	A-4b (V)	
			2 2 4	9	100	SS-11	-	-	-	-	-	-	-	-	-	22	A-4b (V)	
			4 4 4	12	100	SS-12	-	-	-	-	-	-	-	-	-	26	A-4b (V)	
	454.5																	
MEDIUM DENSE, GRAYISH BROWN TO YELLOWISH BROWN, **SANDY SILT**, TRACE CLAY, MOIST TO WET			3 5 6	16	89	SS-13	-	0	1	51	47	1	NP	NP	NP	29	A-4a (3)	
	448.0	EOB	3 4 5	13	100	SS-14	-	-	-	-	-	-	-	-	-	19	A-4a (V)	

NOTES: CAVE-IN AT 19.0'

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 1/14/25 08:41 - C:\USERS\SBHATTARA\ONEDRIVE - TERRACON CONSULTANTS INC\DESKTOP\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230	DRILLING FIRM / OPERATOR: TERRACON / CK	DRILL RIG: CME 55 X	STATION / OFFSET: 123+69, 94' LT.	EXPLORATION ID B-138-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-75	
PID: 114161 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 11/30/22	ELEVATION: 522.0 (MSL) EOB: 20.0 ft.	PAGE 1 OF 1
START: 6/22/22 END: 6/22/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 90*	LAT / LONG: 39.122092, -84.535786	

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)	BACK FILL
ASPHALT (10")	522.0																	
AGGREGATE BASE (2")	521.2																	
STIFF TO VERY STIFF, GRAYISH BROWN WITH GREENISH GRAY, **SILT AND CLAY**, LITTLE TO SOME SAND, TRACE TO LITTLE GRAVEL, TRACE COAL/SLAG FRAGMENTS, TRACE BRICK FRAGMENTS, TRACE WOOD FRAGMENTS, DAMP TO MOIST (FILL)	521.0	1	6 8 6	21	67	SS-1	3.50	-	-	-	-	-	-	-	-	19	A-6a (V)	
		2																
		3																
		4	4 4 23	41	100	SS-2	-	-	-	-	-	-	-	-	-	24	A-6a (V)	
		5																
		6																
		7	3 2 10	18	89	SS-3	1.50	9	17	22	29	23	26	15	11	22	A-6a (4)	
		8																
		9	6 12 8	30	100	SS-4	-	-	-	-	-	-	-	-	-	18	A-6a (V)	
		10																
		11																
		12	5 7 5	18	100	SS-5	-	9	10	24	28	29	29	16	13	16	A-6a (6)	
		13																
		14	16 13 14	41	94	SS-6	-	-	-	-	-	-	-	-	-	17	A-6a (V)	
		15																
		16																
		17	6 6 8	21	78	SS-7	-	11	8	14	34	33	31	18	13	18	A-6a (8)	
		18																
		19																
	502.0	20	9 12 11	35	100	SS-8	-	-	-	-	-	-	-	-	-	14	A-6a (V)	
	EOB																	

NOTES: CAVE-IN AT 16'

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 1/14/25 08:41 - C:\USERS\SBHATTARAI\ONEDRIVE - TERRACON CONSULTANTS INC\DESKTOP\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230	DRILLING FIRM / OPERATOR: TERRACON / KH	DRILL RIG: CME 55	STATION / OFFSET: 124+65, 93' RT.	EXPLORATION ID B-139-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: CME AUTOMATIC	ALIGNMENT: I-75	
PID: 114161 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/18/20	ELEVATION: 521.0 (MSL) EOB: 75.0 ft.	PAGE 1 OF 2
START: 4/5/22 END: 4/6/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 89.5	LAT / LONG: 39.122319, -84.535103	

MATERIAL DESCRIPTION AND NOTES	ELEV. 521.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
ASPHALT (12")	520.0																	
MEDIUM STIFF TO STIFF, GRAYISH BROWN, **SILT AND CLAY**, AND GRAVEL, LITTLE SAND, DRY (FILL)	515.0	1	7 7 5	18	22	SS-1	-	-	-	-	-	-	-	-	-	7	A-6a (V)	
		2																
		3	3 2 3	7	33	SS-2	-	-	-	-	-	-	-	-	-	5	A-6a (V)	
		4																
		5	3 2 2	6	67	SS-3	-	46	9	5	21	19	35	20	15	5	A-6a (2)	
STIFF TO VERY STIFF, GRAY, **CLAY**, TRACE SAND, TRACE BRICK FRAGMENTS, TRACE SHALE FRAGMENTS, DAMP (FILL)	510.0	6	3 5 5	15	89	SS-4	2.00	-	-	-	-	-	-	-	-	16	A-7-6 (V)	
		7																
		8																
		9	9 7 8	22	0	SS-5	-	-	-	-	-	-	-	-	-	14	A-7-6 (V)	
		10																
VERY STIFF, GRAYISH BROWN, **SANDY SILT**, SOME CLAY, LITTLE GRAVEL, TRACE CINDERS, TRACE BRICK FRAGMENTS, TRACE WOOD FRAGMENTS, DAMP (FILL)	505.0	11	7 7 14	31	100	SS-6	3.50	-	-	-	-	-	-	-	-	18	A-4a (V)	
		12																
		13																
		14	4 7 16	34	100	SS-7	-	19	13	19	28	21	28	19	9	19	A-4a (3)	
		15																
		16																
VERY STIFF, DARK GRAYISH BROWN WITH GRAY AND YELLOWISH BROWN, **CLAY**, SOME SILT, LITTLE SAND, TRACE CINDERS, TRACE BRICK FRAGMENTS, TRACE WOOD FRAGMENTS, TRACE SHALE FRAGMENTS, DAMP (FILL)	497.5	17	7 7 10	25	100	SS-8	-	-	-	-	-	-	-	-	-	17	A-7-6 (V)	
		18																
		19	3 5 9	21	100	SS-9	-	-	-	-	-	-	-	-	-	16	A-7-6 (V)	
		20																
		21																
		22																
		23																
STIFF, GRAYISH BROWN WITH GRAY AND YELLOWISH BROWN, **SILTY CLAY**, SOME GRAVEL, SOME SAND, TRACE TO LITTLE CINDERS, TRACE CONCRETE FRAGMENTS, DAMP TO MOIST (FILL)	487.5	24	5 4 11	22	100	SS-10	1.25	33	15	13	19	20	39	22	17	26	A-6b (2)	
		25																
		26																
		27																
		28																
		29	11 11 8	28	89	SS-11	-	-	-	-	-	-	-	-	-	13	A-6b (V)	
		30																
		31																
		32																
		33																
MEDIUM STIFF, GRAYISH BROWN WITH YELLOWISH BROWN, **SILT AND CLAY**, MOIST	482.5	34	2 3 3	9	100	SS-12	0.50	-	-	-	-	-	-	-	-	25	A-6a (V)	
		35																
		36																
		37			100	ST-13	-	0	0	0	59	41	28	17	11	24	A-6a (8)	
		38																
LOOSE, GRAY, **SILT**, SOME CLAY, TRACE SAND, TRACE GRAVEL, WET		39	3 2 2	6	100	SS-14	-	-	-	-	-	-	-	-	-	29	A-4b (V)	
		40																
		41																
		42																
		43																
		44	0 1 3	6	100	SS-15	-	-	-	-	-	-	-	-	-	25	A-4b (V)	
		45																
		46																
		47																
		48																
		49	0 1 3	6	100	SS-16	-	1	0	2	70	27	23	19	4	25	A-4b (8)	
		50																
		51																
		52																
		53																
		54	1 3 2	7	100	SS-17	0.50	-	-	-	-	-	-	-	-	23	A-4b (V)	
		55																
		56																
		57																
		58																
		59	1 3 4	10	100	SS-18	-	-	-	-	-	-	-	-	-	22	A-4b (V)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:20 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215230 LOGS-HAM-75-1.95 TERRACONN\1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PID: 114161	SFN:	PROJECT: N1215230	STATION / OFFSET: 124+65, 93' RT.	START: 4/5/22	END: 4/6/22	PG 2 OF 2	B-139-0-21

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)	BACK FILL
LOOSE, GRAY, **SILT**, SOME CLAY, TRACE SAND, TRACE GRAVEL, WET *(continued)*	461.0	61																
		62																
		63																
		64	3 3 3	9	100	SS-19	-	0	0	2	84	14	NP	NP	NP	23	A-4b (8)	
		65																
		66																
		67																
		68																
		69	2 3 3	9	100	SS-20	-	-	-	-	-	-	-	-	-	22	A-4b (V)	
		70																
		71																
		72																
		73																
	447.5	74																
DENSE, GRAY, **SANDY SILT**, LITTLE TO SOME GRAVEL, TRACE CLAY, MOIST			9 16 17	49	56	SS-21	-	-	-	-	-	-	-	-	-	19	A-4a (V)	
	446.0	EOB 75																

NOTES: NONE

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:20 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215230 LOGS-HAM-75-1.95 TERRACON\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230	DRILLING FIRM / OPERATOR: TERRACON / KH	DRILL RIG: CME 55	STATION / OFFSET: 125+92, 111' RT.	EXPLORATION ID B-141-0-21
TYPE: BRIDGE	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: CME AUTOMATIC	ALIGNMENT: I-75	
PID: 114161 SFN: 3109429/ 3109399	DRILLING METHOD: 3.25" HSA / NQ2	CALIBRATION DATE: 5/18/20	ELEVATION: 503.0 (MSL) EOB: 92.0 ft.	PAGE 1 OF 2
START: 2/7/22 END: 2/7/22	SAMPLING METHOD: SPT / ST / NQ2	ENERGY RATIO (%): 89.5	LAT / LONG: 39.122661, -84.535007	

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)	BACK FILL
TOPSOIL (3")	503.0																	
VERY STIFF TO HARD, GRAYISH BROWN WITH YELLOWISH BROWN, **SILT AND CLAY**, LITTLE GRAVEL, LITTLE SAND, TRACE ROOTS, TRACE COAL CINDERS, TRACE CONCRETE FRAGMENTS, TRACE BRICK FRAGMENTS, DAMP (FILL)	502.8		14 24 12	54	61	SS-1	-	-	-	-	-	-	-	-	-	38	A-6a (V)	
			15 8 9	25	78	SS-2	-	-	-	-	-	-	-	-	-	16	A-6a (V)	
			6 8 8	24	100	SS-3	2.75	12	11	9	32	36	30	19	11	18	A-6a (7)	
			15 11 37	72	72	SS-4	-	-	-	-	-	-	27	18	9	12	A-6a (V)	
MEDIUM DENSE, YELLOWISH BROWN WITH GRAYISH BROWN, **STONE FRAGMENTS WITH SAND**, LIITLE TO TRACE SILT, TRACE CLAY, DAMP TO WET (FILL)	492.0	W 492.0	12 9 4	19	33	SS-5	-	56	15	12	10	7	NP	NP	NP	7	A-1-b (0)	
			3 4 4	12	33	SS-6	-	14	42	23	16	5	NP	NP	NP	24	A-1-b (0)	
@16.0'; VERY DENSE			14 11 28	58	78	SS-7	-	-	-	-	-	-	-	-	-	19	A-1-b (V)	
			6 3 5	12	33	SS-8	-	-	-	-	-	-	-	-	-	34	A-1-b (V)	
VERY LOOSE TO LOOSE, GRAYISH BROWN, **SILT**, SOME TO AND CLAY, TRACE SAND, WET	479.5		3 2 2	6	100	SS-9	-	-	-	-	-	-	24	17	7	23	A-4b (V)	
					100	ST-10	-	0	0	0	67	33	26	20	6	27	A-4b (8)	
			0 2 2	6	100	SS-11	-	0	0	1	55	44	24	20	4	26	A-4b (8)	
			0 1 2	4	100	SS-12	-	-	-	-	-	-	24	19	5	24	A-4b (V)	
			0 0 3	4	100	SS-13	-	-	-	-	-	-	-	-	-	25	A-4b (V)	
LOOSE TO MEDIUM DENSE, GRAYISH BROWN, **SILT**, LITTLE TO SOME CLAY, TRACE SAND, TRACE GRAVEL @68.5', WET	454.5		0 2 3	7	100	SS-14	-	-	-	-	-	-	25	16	9	23	A-4b (V)	
			2 2 3	7	100	SS-15	-	0	0	4	74	22	23	19	4	24	A-4b (8)	
			4 5 4	13	100	SS-16	-	-	-	-	-	-	21	19	2	23	A-4b (V)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:20 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215230 LOGS-HAM-75-1.95 TERRACON\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PID: 114161	SFN:	PROJECT: N1215230	STATION / OFFSET: 125+92, 111' RT.	START: 2/7/22	END: 2/7/22	PG 2 OF 2	B-141-0-21

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)	BACK FILL
LOOSE TO MEDIUM DENSE, GRAYISH BROWN, **SILT**, LITTLE TO SOME CLAY, TRACE SAND, TRACE GRAVEL @68.5', WET *(continued)*	443.0	61																
		62																
		63																
		64	1 2 3	7	100	SS-17	-	-	-	-	-	-	-	-	-	29	A-4b (V)	
		65																
		66																
		67																
		68																
@68.5'; DENSE		69	8 9 13	33	100	SS-18	-	2	0	2	79	17	NP	NP	NP	20	A-4b (8)	
		70																
		71																
		72																
		73																
VERY LOOSE, DARK GRAY TO GREENISH GRAY, **SANDY SILT**, SOME CLAY, LITTLE GRAVEL, WET	429.5	74	0 1 2	4	100	SS-19	-	-	-	-	-	-	-	-	-	20	A-4a (V)	
		75																
		76																
		77																
		78																
INTERBEDDED LIMESTONE (50%) AND SHALE (50%); **LIMESTONE**, LIGHT GRAY TO DARK GRAY, UNWEATHERED TO SLIGHTLY WEATHERED, MODERATELY STRONG, VERY THIN TO THIN BEDDED, FOSSILIFEROUS; **SHALE**, GRAY, UNWEATHERED TO SLIGHTLY WEATHERED, VERY WEAK TO WEAK.	424.5	79	75	-	100	SS-20	-	-	-	-	-	-	-	-	-	9	Rock (V)	
		80																
		81																
		82	36		99	NQ2-21											CORE	
		83																
		84																
		85	55		100	NQ2-22											CORE	
		86																
		87																
		88																
		89																
		90																
		91	71		100	NQ2-23											CORE	
	411.0	92																

TR — EOB

NOTES: NONE

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:20 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215230 LOGS-HAM-75-1.95 TERRACON\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230	DRILLING FIRM / OPERATOR: TERRACON / KH	DRILL RIG: CME 55	STATION / OFFSET: 126+45, 137' LT.	EXPLORATION ID B-142-0-21
TYPE: BRIDGE	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: CME AUTOMATIC	ALIGNMENT: I-75	
PID: 114161 SFN: 3109429/ 3109399	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/18/20	ELEVATION: 500.0 (MSL) EOB: 78.6 ft.	PAGE 1 OF 2
START: 2/1/22 END: 2/1/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 89.5	LAT / LONG: 39.122856, -84.535867	

MATERIAL DESCRIPTION AND NOTES	ELEV. 500.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
TOPSOIL (3")	499.7																	
STIFF TO VERY STIFF, BROWN AND GRAY, **SILT AND CLAY**, LITTLE TO SOME GRAVEL, TRACE SAND, TRACE BRICK FRAGMENTS, DAMP TO MOIST (FILL)		1	5 5 9	21	89	SS-1	-	-	-	-	-	-	-	-	-	18	A-6a (V)	
		2																
		3																
		4	16 4 4	12	28	SS-2	1.50	-	-	-	-	-	-	-	-	7	A-6a (V)	
		5																
		6																
		7	8 5 5	15	33	SS-3	2.00	-	-	-	-	-	32	19	13	4	A-6a (V)	
	491.5	8																
STIFF TO VERY STIFF, BROWN TO GRAYISH BROWN, **SILT**, SOME CLAY, TRACE SAND, WET		9	3 2 4	9	100	SS-4	1.00	-	-	-	-	-	-	-	-	11	A-4b (V)	
		10																
		11																
		12	4 4 5	13	100	SS-5	1.50	-	-	-	-	-	-	-	-	23	A-4b (V)	
		13																
		14			100	ST-6	2.00	0	0	2	75	23	24	18	6	26	A-4b (8)	
		15																
		16	3 5 5	15	100	SS-7	1.50	-	-	-	-	-	-	-	-	25	A-4b (V)	
		17																
		18																
		19	4 5 7	18	100	SS-8	2.00	-	-	-	-	-	-	-	-	22	A-4b (V)	
		20																
		21																
		22																
		23																
	476.5 W 476.5	24	2 2 2	6	100	SS-9	-	0	0	0	79	21	25	20	5	28	A-4b (8)	
LOOSE, GRAY, **SILT**, SOME CLAY, TRACE SAND, WET		25																
		26																
		27																
		28																
		29	0 1 3	6	100	SS-10	-	0	0	2	66	32	23	18	5	24	A-4b (8)	
		30																
		31																
		32																
		33																
		34	0 0 2	3	100	SS-11	-	-	-	-	-	-	-	-	-	22	A-4b (V)	
		35																
		36																
		37																
		38																
		39	0 1 2	4	100	SS-12	-	-	-	-	-	-	-	-	-	25	A-4b (V)	
		40																
		41																
		42																
		43																
		44	0 0 3	4	100	SS-13	-	-	-	-	-	-	-	-	-	25	A-4b (V)	
		45																
		46																
		47																
		48																
	451.5	49	13 18 27	67	100	SS-14	-	-	-	-	-	-	-	-	-	23	A-4b (V)	
MEDIUM DENSE, BROWN AND GRAY, **SILT**, TRACE SAND, TRACE CLAY, WET		50																
		51																
@48.5':VERY DENSE		52																
		53																
		54	8 9 9	27	100	SS-15	-	0	0	5	92	3	NP	NP	NP	19	A-4b (8)	
		55																
		56																
		57																
		58																
		59	5 6 5	16	100	SS-16	-	-	-	-	-	-	-	-	-	21	A-4b (V)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 1/14/25 08:41 - C:\USERS\SBHATTARA\ONEDRIVE - TERRACON CONSULTANTS INC\DESKTOP\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PID: 114161	SFN:	PROJECT: N1215230	STATION / OFFSET: 126+45, 137' LT.	START: 2/1/22	END: 2/1/22	PG 2 OF 2	B-142-0-21

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)	BACK FILL
MEDIUM DENSE, BROWN AND GRAY, **SILT**, TRACE SAND, TRACE CLAY, WET *(continued)*	440.0	61 62 63																
	436.5	64	7 13 13	39	100	SS-17	-	-	-	-	-	-	NP	NP	NP	17	A-3a (V)	
DENSE, BROWN TO GRAY, **COARSE AND FINE SAND**, WET		65 66 67 68 69																
		70	10 17 13	45	100	SS-18	-	0	0	65	31	4	NP	NP	NP	20	A-3a (0)	
@73.5'; SOME LIMESTONE FRAGMENTS		71 72 73																
		74	17 10 15	37	100	SS-19	-	-	-	-	-	-	NP	NP	NP	16	A-3a (V)	
		75 76 77 78																
LIMESTONE, GRAY, TRACE SHALE FRAGMENTS.	421.5 421.4	EOB	75/1"	-	100	SS-20	-	-	-	-	-	-	-	-	-	11	Rock (V)	

NOTES: NONE

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 1/14/25 08:41 - C:\USERS\SBHATTARAI\ONEDRIVE - TERRACON CONSULTANTS INC\DESKTOP\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230 | DRILLING FIRM / OPERATOR: TERRACON / KH | DRILL RIG: CME 55 | STATION / OFFSET: 127+31, 157' LT. | EXPLORATION ID B-143-0-21

TYPE: BRIDGE | SAMPLING FIRM / LOGGER: TERRACON / RS | HAMMER: CME AUTOMATIC | ALIGNMENT: I-75

PID: 114161 SFN: 3109429/ 3109399 | DRILLING METHOD: 3.25" HSA / NQ2 | CALIBRATION DATE: 5/18/20 | ELEVATION: 500.0 (MSL) EOB: 89.0 ft. | PAGE 1 OF 2

START: 2/8/22 END: 2/8/22 | SAMPLING METHOD: SPT / ST / NQ2 | ENERGY RATIO (%): 89.5 | LAT / LONG: 39.123097, -84.535914

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)	BACK FILL
TOPSOIL (3")	500.0																	
STIFF TO VERY STIFF, LIGHT YELLOWISH BROWN AND GRAYISH BROWN, **SILTY CLAY**, TRACE SAND, TRACE GRAVEL, TRACE ROOTS, TRACE BRICK FRAGMENTS, MOIST (FILL)	499.8		4 14 21	52	72	SS-1	-	-	-	-	-	-	-	-	-	28	A-6b (V)	
			4 3 3	9	44	SS-2	1.50	-	-	-	-	-	-	-	-	18	A-6b (V)	
			5 3 4	10	61	SS-3	1.50	-	-	-	-	-	-	-	-	21	A-6b (V)	
	491.5																	
LOOSE, YELLOWISH BROWN TO DARK YELLOWISH BROWN, **COARSE AND FINE SAND**, LITTLE SILT, LITTLE CLAY, TRACE GRAVEL, TRACE CINDERS, MOIST (FILL)			5 4 2	9	89	SS-4	-	-	-	-	-	-	NP	NP	NP	11	A-3a (V)	
	489.0																	
LOOSE, LIGHT OLIVE BROWN AND GREENISH GRAY, **SILT**, SOME SAND, TRACE CLAY, WET			3 3 3	9	100	SS-5	-	-	-	-	-	-	-	-	-	26	A-4b (V)	
					100	ST-6	-	0	0	24	72	4	NP	NP	NP	24	A-4b (8)	
	484.0																	
STIFF, YELLOWISH BROWN AND GRAYISH BROWN, **SILT AND CLAY**, TRACE SAND, MOIST			4 3 3	9	100	SS-7	-	-	-	-	-	-	-	-	-	28	A-6a (V)	
			0 3 3	9	100	SS-8	-	0	1	1	52	46	31	19	12	27	A-6a (9)	
	476.5																	
MEDIUM STIFF, GRAY TO DARK GRAY, **SILT**, AND CLAY, TRACE SAND, TRACE GRAVEL, WET			4 3 3	9	100	SS-9	-	2	1	6	50	41	25	18	7	27	A-4b (8)	
		W 472.0																
			0 2 2	6	100	SS-10	-	-	-	-	-	-	26	16	10	27	A-4b (V)	
			0 2 3	7	100	SS-11	-	-	-	-	-	-	-	-	-	23	A-4b (V)	
	461.5																	
MEDIUM DENSE TO DENSE, GRAYISH BROWN WITH YELLOWISH BROWN, **COARSE AND FINE SAND**, LITTLE SILT, TRACE CLAY, WET			4 6 10	24	89	SS-12	-	-	-	-	-	-	-	-	-	29	A-3a (V)	
			7 8 10	27	100	SS-13	-	0	0	86	11	3	NP	NP	NP	19	A-3a (0)	
@48.5'; VERY DENSE			13 25 17	63	50	SS-14	-	-	-	-	-	-	-	-	-	14	A-3a (V)	
			10 14 18	48	89	SS-15	-	-	-	-	-	-	NP	NP	NP	17	A-3a (V)	
	441.5																	
DENSE TO VERY DENSE, GRAYISH BROWN WITH YELLOWISH BROWN, **FINE SAND**, TRACE SILT, TRACE CLAY, WET			14 16 18	51	78	SS-16	-	0	1	95	1	3	NP	NP	NP	20	A-3 (0)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 1/14/25 08:41 - C:\USERS\BHATTARA\ONEDRIVE - TERRACON CONSULTANTS INC\DESKTOP\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PID: 114161	SFN:	PROJECT: N1215230	STATION / OFFSET: 127+31, 157' LT.	START: 2/8/22	END: 2/8/22	PG 2 OF 2	B-143-0-21

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)	BACK FILL
DENSE TO VERY DENSE, GRAYISH BROWN WITH YELLOWISH BROWN, **FINE SAND**, TRACE SILT, TRACE CLAY, WET *(continued)*	440.0	61 62 63 64 65 66 67 68	7 10 12	33	100	SS-17	-	-	-	-	-	-	-	-	-	19	A-3 (V)	
VERY STIFF, DARK BLUISH GRAY TO GRAYISH BROWN, **SILT AND CLAY**, TRACE ORGANICS, MOIST	431.5	69 70 71 72 73 74 75 76 77 78	4 4 7	16	100	SS-18	2.50	-	-	-	-	-	39	21	18	35	A-6a (V)	
			5 6 8	21	89	SS-19	3.50	0	4	4	49	43	35	20	15	30	A-6a (10)	
INTERBEDDED LIMESTONE (50%) AND SHALE (50%); **LIMESTONE**, LIGHT GRAY TO DARK GRAY, UNWEATHERED TO SLIGHTLY WEATHERED, WEAK TO MODERATELY STRONG, VERY THIN TO THIN BEDDED, FOSSILIFEROUS; **SHALE**, GRAY, UNWEATHERED TO SLIGHTLY WEATHERED, VERY WEAK TO WEAK.	421.5 TR	79 80 81 82 83 84 85 86 87 88 89	50/1"	-	100	SS-20	-	-	-	-	-	-	-	-	-	37	Rock (V)	
			42		83	NQ2-21											CORE	
			0		100	NQ2-22										12	CORE	
			42		100	NQ2-23											CORE	
	411.0	EOB																

NOTES: NONE

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 1/14/25 08:41 - C:\USERS\SBHATTARA\ONEDRIVE - TERRACON CONSULTANTS INC\DESKTOP\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230
TYPE: BRIDGE
PID: 114161 SFN: 3109429/ 3109399
START: 4/6/22 END: 4/6/22

DRILLING FIRM / OPERATOR: TERRACON / KH
SAMPLING FIRM / LOGGER: TERRACON / RS
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT / ST

DRILL RIG: CME 55
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 5/18/20
ENERGY RATIO (%): 89.5

STATION / OFFSET: 127+52, 104' RT.
ALIGNMENT: I-75
ELEVATION: 520.0 (MSL) EOB: 95.0 ft.
LAT / LONG: 39.123102, -84.534993

EXPLORATION ID B-144-0-21

MATERIAL DESCRIPTION AND NOTES	ELEV. 520.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
ASPHALT (14")	518.8	1																
MEDIUM DENSE TO DENSE, GRAYISH BROWN, **COARSE AND FINE SAND**, TRACE CLAY, TRACE SILT, TRACE GRAVEL, DAMP (FILL)	515.5	2	7 11 11	33	44	SS-1	-	-	-	-	-	-	-	-	-	10	A-3a (V)	
		3 4	10 7 4	16	56	SS-2	-	-	-	-	-	-	-	-	-	9	A-3a (V)	
STIFF, YELLOWISH BROWN AND GRAY, **SILT AND CLAY**, SOME GRAVEL, LITTLE SAND, TRACE WOOD FRAGMENTS, TRACE ORGANICS, MOIST (FILL)	511.5	5	4 4 4	12	89	SS-3	-	21	8	12	31	28	31	16	15	21	A-6a (7)	
		6 7	3 4 6	15	100	SS-4	-	-	-	-	-	-	-	-	-	17	A-6a (V)	
VERY STIFF, YELLOWISH BROWN AND GRAY, **SILTY CLAY**, SOME GRAVEL, TRACE TO LITTLE SAND, TRACE WOOD FRAGMENTS, TRACE ORGANICS, MOIST (FILL)	506.5	8																
		9 10	11 6 7	19	100	SS-5	-	-	-	-	-	-	-	-	-	23	A-6b (V)	
		11 12	4 4 9	19	100	SS-6	-	21	6	7	33	33	36	18	18	23	A-6b (9)	
VERY STIFF, GRAYISH BROWN AND DARK GREENISH GRAY, **CLAY**, TRACE GRAVEL, TRACE SAND, TRACE BRICK FRAGMENTS, TRACE CINDERS, MOIST (FILL)	501.5	13																
		14 15	4 7 9	24	100	SS-7	-	-	-	-	-	-	-	-	-	16	A-7-6 (V)	
		16 17	7 5 9	21	89	SS-8	-	-	-	-	-	-	-	-	-	15	A-7-6 (V)	
		18 19	5 5 7	18	100	SS-9	-	15	10	10	32	33	37	19	18	28	A-6b (9)	
MEDIUM STIFF, GRAY WITH DARK GREENISH GRAY, **SILTY CLAY**, SOME TO AND SAND, LITTLE GRAVEL, MOIST (FILL)	490.0	20 21 22 23																
		24 25	4 5 9	21	100	SS-10	-	-	-	-	-	-	-	-	-	25	A-6b (V)	
		26 27 28																
		29 30	4 4 7	16	100	SS-11	-	-	-	-	-	-	-	-	-	24	A-6b (V)	
MEDIUM DENSE, **GRAVEL WITH SAND, SILT, AND CLAY**, MOIST (FILL)	486.5	31			100	ST-12	-	20	36	16	6	22	43	21	22	16	A-2-7 (2)	
	W 486.5	32 33																
LOOSE TO MEDIUM DENSE, YELLOWISH BROWN, **SILT**, LITTLE TO SOME CLAY, TRACE TO LITTLE SAND, WET		34	3 3 8	16	100	SS-13	-	-	-	-	-	-	-	-	-	22	A-4b (V)	
		35 36 37 38																
		39 40	2 2 2	6	100	SS-14	-	0	0	1	68	31	23	18	5	24	A-4b (8)	
		41 42 43																
		44 45	2 3 5	12	100	SS-15	-	-	-	-	-	-	-	-	-	25	A-4b (V)	
		46 47 48																
		49 50	5 4 5	13	100	SS-16	-	-	-	-	-	-	-	-	-	21	A-4b (V)	
		51 52 53																
		54 55	2 4 6	15	100	SS-17	-	0	0	21	66	13	19	17	2	23	A-4b (8)	
	461.5	56 57 58																
LOOSE TO MEDIUM DENSE, GRAY, **SANDY SILT**, LITTLE TO SOME GRAVEL, LITTLE CLAY, WET		59	3 3 4	10	100	SS-18	-	-	-	-	-	-	-	-	-	31	A-4a (V)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:20 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215230 LOGS-HAM-75-1.95 TERRACON\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PID: 114161	SFN:	PROJECT: N1215230	STATION / OFFSET: 127+52, 104' RT.	START: 4/6/22	END: 4/6/22	PG 2 OF 2	B-144-0-21

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)	BACK FILL
LOOSE TO MEDIUM DENSE, GRAY, **SANDY SILT**, LITTLE TO SOME GRAVEL, LITTLE CLAY, WET *(continued)*	460.0	61																
		62																
		63																
		64	3 2 2	6	100	SS-19	-	-	-	-	-	-	-	-	-	26	A-4a (V)	
		65																
		66																
		67																
		68																
		69	3 10 8	27	100	SS-20	-	38	6	9	34	13	22	17	5	21	A-4a (2)	
		70																
		71																
		72																
		73																
	446.5	74	2 2 2	6	100	SS-21	-	-	-	-	-	-	-	-	-	22	A-6a (V)	
MEDIUM STIFF, GRAY, **SILT AND CLAY**, TRACE TO LITTLE SAND, MOIST		75																
		76																
		77																
		78																
@78.5'; HARD, SOME SHALE AND LIMESTONE FRAGMENTS		79	41 38 28	98	100	SS-22	-	-	-	-	-	-	-	-	-	20	A-6a (V)	
		80																
		81																
		82																
	436.5	83																
LOOSE, DARK BLUISH GRAY, **SANDY SILT**, SOME CLAY, MOIST TO WET		84	0 1 5	9	100	SS-23	-	0	14	32	33	21	NP	NP	NP	17	A-4a (4)	
		85																
		86																
		87																
		88																
@88.5'; VERY DENSE		89	4 8 13	31	100	SS-24	-	-	-	-	-	-	-	-	-	23	A-4a (V)	
		90																
		91																
		92																
		93																
	426.5	TR																
LIMESTONE, GRAY, WITH SHALE FRAGMENTS.		94	35 42 26	101	100	SS-25	-	-	-	-	-	-	-	-	-	14	Rock (V)	
	425.0	EOB																

NOTES: STARTED RUNNING H2O AT 48.5

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:20 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215230 LOGS-HAM-75-1.95 TERRACON\N1215230 HAM-75-1.95 ODOT 11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230	DRILLING FIRM / OPERATOR: TERRACON / CK	DRILL RIG: CME 55 X	STATION / OFFSET: 128+11, 95' LT.	EXPLORATION ID B-145-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-75	
PID: 114161 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 11/30/22	ELEVATION: 522.0 (MSL) EOB: 45.0 ft.	PAGE 1 OF 1
START: 7/18/22 END: 7/19/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 90*	LAT / LONG: 39.123303, -84.535678	

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)	BACK FILL
ASPHALT (7")	522.0																	
AGGREGATE BASE (11")	521.4																	
VERY STIFF, BROWN, **SILT AND CLAY**, LITTLE SAND, TRACE GRAVEL, DAMP (FILL)	520.5		2 2 2	6	50	SS-1	4.00	-	-	-	-	-	-	-	-	23	A-6a (V)	
			2 2 5	11	17	SS-2	2.25	-	-	-	-	-	-	-	-	23	A-6a (V)	
MEDIUM STIFF, BROWN AND GRAY, **SILTY CLAY**, SOME SAND, SOME GRAVEL, DAMP (FILL)	517.5		5 2 5	11	39	SS-3	0.75	26	14	9	23	28	38	19	19	19	A-6b (6)	
			2 2 5	11	61	SS-4	0.50	21	5	9	30	35	37	19	18	14	A-6b (9)	
VERY STIFF, BROWN AND GRAY, **CLAY**, LITTLE SAND, SOME GRAVEL, TRACE SAND, DAMP TO MOIST (FILL)	514.0				63	ST-5	-	7	7	17	33	36	31	20	11	18	A-7-6 (V)	
			3 7 7	21	78	SS-6	3.25	-	-	-	-	-	-	-	-	18	A-7-6 (V)	
			4 5 7	18	94	SS-7	3.75	3	5	9	38	45	41	19	22	20	A-7-6 (13)	
			5 5 9	21	100	SS-8	3.50	-	-	-	-	-	-	-	-	20	A-7-6 (V)	
	503.5																	
VERY STIFF TO HARD, OLIVE AND GRAY, **SILTY CLAY**, LITTLE SAND, LITTLE GRAVEL, DAMP			5 19 19	57	56	SS-9	-	-	-	-	-	-	-	-	-	17	A-6b (V)	
			10 19 22	62	83	SS-10	4.50	14	8	9	31	38	39	19	20	6	A-6b (11)	
			29 19 9	42	44	SS-11	3.00	-	-	-	-	-	-	-	-	18	A-6b (V)	
			4 5 6	17	89	SS-12	4.50	-	-	-	-	-	-	-	-	13	A-6b (V)	
	488.5																	
LOOSE TO MEDIUM DENSE, BROWN, **SILT**, LITTLE TO AND CLAY, SOME SAND, TRACE GRAVEL, WET			4 4 5	14	83	SS-13	-	4	7	19	54	16	NP	NP	NP	24	A-4b (7)	
		▽ 486.5																
			2 2 2	6	100	SS-14	-	-	-	-	-	-	-	-	-	19	A-4b (V)	
		W 482.5																
	477.0	EOB	2 3 3	9	100	SS-15	-	0	1	1	59	39	29	20	9	28	A-4b (8)	

NOTES: CAVE-IN AT 36'

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 1/14/25 08:41 - C:\USERS\SBHATTARA\ONEDRIVE - TERRACON CONSULTANTS INC\DESKTOP\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230	DRILLING FIRM / OPERATOR: TERRACON / KH	DRILL RIG: CME 55	STATION / OFFSET: 128+80, 197' RT.	EXPLORATION ID B-147-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / RS	HAMMER: CME AUTOMATIC	ALIGNMENT: I-75	
PID: 114161 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/18/20	ELEVATION: 506.0 (MSL) EOB: 40.0 ft.	PAGE 1 OF 1
START: 4/28/22 END: 4/28/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 89.5	LAT / LONG: 39.123433, -84.534633	

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)	BACK FILL
TOPSOIL (4")	506.0																	
STIFF, BLACK, **SILTY CLAY**, SOME CINDERS, SOME SLAG, TRACE CLAY, TRACE BRICK FRAGMENTS, TRACE WOOD FRAGMENTS, TRACE ROOTS, MOIST (FILL)	505.7		3 3 4	10	67	SS-1	-	-	-	-	-	-	37	21	16	32	A-6b (V)	
			3 3 3	9	100	SS-2	2.50	2	5	8	39	46	37	21	16	23	A-6b (10)	
STIFF, GRAYISH BROWN AND OLIVE GRAY, **SILT AND CLAY**, LITTLE SAND, TRACE GRAVEL, TRACE BRICK FRAGMENTS, TRACE SLAG, TRACE ROOTS, DAMP TO MOIST (FILL)	500.0		3 3 3	9	78	SS-3	1.50	-	-	-	-	-	-	-	-	25	A-6a (V)	
			3 4 5	13	100	SS-4	2.00	0	3	7	48	42	32	21	11	21	A-6a (8)	
MEDIUM STIFF, GRAYISH BROWN WITH OLIVE, **SILTY CLAY**, SOME SAND, TRACE GRAVEL, DAMP TO MOIST (FILL)	495.0	W 494.0	4 7 9	24	100	SS-5	4.50	-	-	-	-	-	-	-	-	15	A-6b (V)	
@11': HARD			4 4 4	12	100	SS-6	0.75	0	3	18	46	33	35	16	19	27	A-6b (12)	
	487.5		4 4 6	15	89	SS-7	1.00	-	-	-	-	-	-	-	-	24	A-6b (V)	
LOOSE TO MEDIUM DENSE, OLIVE GRAY AND YELLOWISH BROWN, **SILT**, SOME CLAY, TRACE SAND, MOIST TO WET			2 2 2	6	100	SS-8	-	-	-	-	-	-	-	-	-	19	A-4b (V)	
			4 5 6	16	100	SS-9	-	0	0	4	72	24	26	19	7	24	A-4b (8)	
	472.5		2 3 3	9	100	SS-10	-	-	-	-	-	-	-	-	-	21	A-4b (V)	
MEDIUM DENSE TO DENSE, GRAYISH BROWN WITH YELLOWISH BROWN, **COARSE AND FINE SAND**, TRACE SILT, TRACE CLAY, WET			3 5 7	18	100	SS-11	-	0	0	89	8	3	NP	NP	NP	27	A-3a (0)	
	466.0	EOB	4 8 18	39	100	SS-12	-	-	-	-	-	-	-	-	-	24	A-3a (V)	

NOTES: CAVE-IN AT 31'

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:20 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215230 LOGS-HAM-75-1.95 TERRACONN1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230	DRILLING FIRM / OPERATOR: TERRACON / KH	DRILL RIG: CME 55	STATION / OFFSET: 129+27, 118' LT.	EXPLORATION ID B-148-0-21
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: TERRACON / MH	HAMMER: CME AUTOMATIC	ALIGNMENT: I-75	
PID: 114161 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/18/20	ELEVATION: 523.0 (MSL) EOB: 30.0 ft.	PAGE 1 OF 1
START: 5/11/22 END: 5/11/22	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 89.5	LAT / LONG: 39.123639, -84.535678	

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)	BACK FILL
ASPHALT (8")	523.0																	
	522.3																	
STIFF TO VERY STIFF, GRAY WITH BROWN, **CLAY**, AND SILT, LITTLE SAND, TRACE TO LITTLE GRAVEL, TRACE CINDERS, DAMP (FILL)			6 3 3	9	100	SS-1	1.75	-	-	-	-	-	-	-	-	19	A-7-6 (V)	
			4 3 4	10	100	SS-2	1.25	-	-	-	-	-	-	-	-	21	A-7-6 (V)	
			2 4 7	16	100	SS-3	2.50	10	6	9	38	37	41	22	19	20	A-7-6 (12)	
@5.5'; TRACE ORGANICS, TRACE CONCRETIONS			7 8 9	25	100	SS-4	1.25	-	-	-	-	-	-	-	-	23	A-7-6 (V)	
@8.5'; TRACE ROCK FRAGMENTS			3 2 3	7	100	SS-5	1.25	-	-	-	-	-	-	-	-	22	A-7-6 (V)	
	512.0	W 512.0																
HARD, GRAY WITH BROWN, **SILTY CLAY**, SOME GRAVEL, LITTLE SAND, TRACE LIMESTONE FRAGMENTS, MOIST (FILL)			3 6 15	31	89	SS-6	0.25	24	8	10	29	29	36	17	19	25	A-6b (8)	
	507.0																	
VERY STIFF TO HARD, GRAY WITH BROWN, **SILT AND CLAY**, SOME SAND, TRACE GRAVEL, DAMP (FILL)			8 18 20	57	100	SS-7	3.25	-	-	-	-	-	-	-	-	18	A-6b (V)	
			10 10 12	33	100	SS-8	4.50	-	-	-	-	-	-	-	-	12	A-6a (V)	
			6 10 9	28	100	SS-9	3.00	8	7	14	42	29	31	16	15	19	A-6a (9)	
	499.5																	
DENSE, BROWN AND GRAY, **STONE FRAGMENTS WITH SAND, SILT, AND CLAY**, TRACE CONCRETIONS, DAMP			14 7 7	21	33	SS-10	-	-	-	-	-	-	-	-	-	18	A-2-6 (V)	
	494.5																	
VERY STIFF, BROWN, **CLAY**, AND SILT, LITTLE SAND, DAMP			4 7 8	22	100	SS-11	2.00	0	13	6	40	41	46	22	24	22	A-7-6 (15)	
	493.0	EOB																

NOTES: CAVE-IN AT 20'

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 1/14/25 08:41 - C:\USERS\SBHATTARAI\ONEDRIVE - TERRACON CONSULTANTS INC\DESKTOP\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230
TYPE: BRIDGE
PID: 114161 SFN:
START: 4/28/22 END: 4/28/22

DRILLING FIRM / OPERATOR: TERRACON / KH
SAMPLING FIRM / LOGGER: TERRACON / RS
DRILLING METHOD: 3.25" HSA / NQ2
SAMPLING METHOD: SPT / ST / NQ2

DRILL RIG: CME 55
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 5/18/20
ENERGY RATIO (%): 89.5

STATION / OFFSET: 131+27, 160' RT.
ALIGNMENT: I-75
ELEVATION: 516.0 (MSL) EOB: 55.0 ft.
LAT / LONG: 39.124117, -84.534700

EXPLORATION ID B-149-0-21
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)	BACK FILL
MEDIUM DENSE TO DENSE, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, TRACE CLAY, WET (FILL)	516.0		6 7 10	25	17	SS-1	-	-	-	-	-	-	-	-	-	22	A-2-4 (V)	
			17 10 12	33	89	SS-2	-	-	-	-	-	-	-	-	-	13	A-2-4 (V)	
			5 7 5	18	44	SS-3	-	43	22	13	13	9	34	25	9	19	A-2-4 (0)	
LOOSE TO MEDIUM DENSE, **SANDY SILT**, LITTLE TO SOME CLAY, TRACE BRICK FRAGMENTS, TRACE LIMESTONE FRAGMENTS, TRACE COAL CINDERS, MOIST (FILL)	511.5		7 9 8	25	100	SS-4	-	-	-	-	-	-	-	-	-	29	A-4a (V)	
	505.0	W 505.0	2 2 4	9	6	SS-5	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
STIFF TO HARD, **CLAY**, AND SILT, TRACE SAND, TRACE GRAVEL, TRACE CINDERS, MOIST (FILL)			1 7 6	19	100	SS-6	1.00	3	2	3	51	41	44	28	16	37	A-7-6 (11)	
			6 7 9	24	100	SS-7	4.50	-	-	-	-	-	-	-	-	22	A-7-6 (V)	
	497.5				96	ST-8	3.50	-	-	-	-	-	-	-	-	22	A-7-6 (V)	
MEDIUM DENSE, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, TRACE CLAY, TRACE CINDERS, WET (FILL)			8 9 10	28	100	SS-9	-	40	27	5	22	6	27	19	8	18	A-2-4 (0)	
			4 5 7	18	100	SS-10	-	-	-	-	-	-	-	-	-	13	A-2-4 (V)	
	487.5																	
VERY STIFF TO HARD, **CLAY**, SOME SILT, TRACE SAND, TRACE GRAVEL, MOIST			3 7 7	21	100	SS-11	3.00	6	5	3	- 86 -		42	21	21	17	A-7-6 (13)	
			10 14 20	51	100	SS-12	4.50	-	-	-	-	-	-	-	-	23	A-7-6 (V)	
			10 15 22	55	100	SS-13	4.50	-	-	-	-	-	-	-	-	20	A-7-6 (V)	
	472.5	TR																
INTERBEDDED SHALE (60%) AND LIMESTONE (40%); **SHALE**, GRAY, SLIGHTLY TO MODERATELY WEATHERED, WEAK; **LIMESTONE**, GRAY, WEAK TO MODERATELY STRONG.			36 48 50	146	100	SS-14	-	-	-	-	-	-	-	-	-	-	Rock (V)	
			52		100	NQ-15											CORE	
			58		100	NQ-16											CORE	
	461.0	EOB																

NOTES: NONE

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:20 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215230 LOGS-HAM-75-1.95 TERRACONN\1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230
TYPE: BRIDGE
PID: 114161 SFN:
START: 7/20/22 END: 7/20/22

DRILLING FIRM / OPERATOR: TERRACON / CK
SAMPLING FIRM / LOGGER: TERRACON / RS
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT / ST

DRILL RIG: CME 55 X
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 11/30/22
ENERGY RATIO (%): 90*

STATION / OFFSET: 131+77, 39' RT.
ALIGNMENT: I-75
ELEVATION: 516.0 (MSL) EOB: 83.8 ft.
LAT / LONG: 39.124278, -84.535111

EXPLORATION ID B-150-0-21

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)	BACK FILL
ASPHALT (12 INCHES)	516.0																	
STIFF, GRAY WITH YELLOWISH BROWN, **SILT AND CLAY**, LITTLE SAND, TRACE GRAVEL AND ROCK FRAGMENTS, TRACE SLAG, DAMP TO MOIST (FILL)	515.0		1 3 4	11	89	SS-1	4.50	14	13	13	33	27	-	-	-	18	A-6a (V)	
			3 4 3	11	83	SS-2	1.50	-	-	-	-	-	-	-	-	13	A-6a (V)	
			2 2 3	8	78	SS-3	2.25	8	9	11	35	37	35	20	15	21	A-6a (9)	
HARD, GRAYISH BROWN, **SILTY CLAY**, AND GRAVEL AND ROCK FRAGMENTS, LITTLE SAND, MOIST (FILL)	510.0		3 21 9	45	28	SS-4	-	44	6	7	19	24	36	18	18	18	A-6b (4)	
MEDIUM DENSE, GREENISH GRAY, **SANDY SILT**, TRACE CLAY, TRACE BRICK FRAGMENTS, TRACE CINDER, MOIST (FILL)	507.5		5 6 7	20	100	SS-5	2.00	0	2	58	36	4	NP	NP	NP	25	A-4a (V)	
STIFF, GRAYISH BROWN, **CLAY**, LITTLE SAND, LITTLE SILT, TRACE SLAG, TRACE ROCK FRAGMENTS, DAMP (FILL)	506.0		25 5 5	15	33	SS-6	2.00	42	9	7	19	23	43	20	23	18	A-7-6 (5)	
LOOSE, GRAYISH BROWN TO BLACK, **SILT**, AND CLAY, TRACE CINDERS, MOIST (FILL)	502.5		2 2 2	6	100	SS-7	2.00	0	1	1	61	37	NP	NP	NP	11	A-4b (V)	
MEDIUM STIFF, DARK GREENISH GRAY, **SILTY CLAY**, LITTLE SAND, TRACE GRAVEL, TRACE SLAG, TRACE CINDERS, MOIST (FILL)	500.0		1 2 2	6	100	SS-8	1.00	-	-	-	-	-	-	-	-	31	A-6b (V)	
	492.5				100	ST-9	1.50	1	5	6	42	46	37	20	17	28	A-6b (11)	
MEDIUM DENSE, BROWNISH GRAY, **SILT**, LITTLE CLAY, TRACE TO LITTLE SAND, WET			3 5 7	18	100	SS-10	4.00	-	-	-	-	-	-	-	-	21	A-4b (V)	
			5 5 7	18	100	SS-11	2.50	0	4	4	75	17	NP	NP	NP	21	A-4b (V)	
		W 482.5	3 4 5	14	100	SS-12	-	0	3	16	63	18	NP	NP	NP	21	A-4b (8)	
VERY LOOSE, DARK GRAY, **SILT**, LITTLE CLAY, TRACE TO LITTLE SAND, TRACE ORGANICS, WET	477.5		1 1 1	3	100	SS-13	-	-	-	-	-	-	-	-	-	22	A-4b (V)	
	467.5		1 1 2	5	100	SS-14	-	-	-	-	-	-	-	-	-	25	A-4b (V)	
MEDIUM DENSE TO DENSE, GRAY, **COARSE AND FINE SAND**, TRACE LITTLE SILT, TRACE CLAY, WET			6 9 9	27	100	SS-15	-	0	0	86	11	3	NP	NP	NP	26	A-3a (0)	
			4 5 8	20	100	SS-16	-	-	-	-	-	-	-	-	-	23	A-3a (V)	
	457.5		3 3 9	18	100	SS-17	-	3	2	86	6	3	NP	NP	NP	25	A-3 (0)	
MEDIUM DENSE, GRAYISH BROWN TO YELLOWISH BROWN, **FINE SAND**, TRACE GRAVEL, TRACE SILT, TRACE CLAY, WET		F.S.																

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:20 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215230 LOGS-HAM-75-1.95 TERRACON\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PID: 114161	SFN:	PROJECT: N1215230	STATION / OFFSET: 131+77, 39' RT.	START: 7/20/22	END: 7/20/22	PG 2 OF 2	B-150-0-21

MATERIAL DESCRIPTION AND NOTES	ELEV. 456.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
MEDIUM DENSE, GRAYISH BROWN TO YELLOWISH BROWN, **FINE SAND**, TRACE GRAVEL, TRACE SILT, TRACE CLAY, WET *(continued)*		61 62 63 64 65 66 67 68	9 12 12	36	100	SS-18	-	-	-	-	-	-	-	-	-	15	A-3 (V)	
MEDIUM DENSE TO DENSE, GRAYISH BROWN AND GRAY, **SILT**, LITTLE CLAY, DAMP	447.5	69 70 71 72 73 74 75 76 77 78	10 11 16	41	100	SS-19	-	0	0	0	82	18	20	19	1	18	A-4b (8)	
			6 6 11	26	100	SS-20	-	-	-	-	-	-	-	-	-	19	A-4b (V)	
HARD, GREENISH GRAY, **CLAY**, AND SILT, LITTLE SAND, TRACE GRAVEL, DAMP	437.5	79 80 81 82 83	9 13 16	44	100	SS-21	-	5	5	3	37	50	43	25	18	24	A-7-6 (12)	
LIMESTONE, GRAY TO DARK GRAY, TRACE SHALE FRAGMENTS.	432.5 432.2	TR EOB	50/3"	-	100	SS-22	-	-	-	-	-	-	-	-	-	10	Rock (V)	

NOTES: CAVE- AT 42', STARTED RUNNING H2O AT 70'

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

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:20 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1215230 LOGS-HAM-75-1.95 TERRACON\N1215230 HAM-75-1.95 ODOT 11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230
TYPE: UNDERGROUND UTILITY
PID: 114161 SFN:
START: 2/12/25 END: 2/13/25

DRILLING FIRM / OPERATOR: TERRACON / KH
SAMPLING FIRM / LOGGER: TERRACON / JH
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT / ST

DRILL RIG: CME-55
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 2/21/23
ENERGY RATIO (%): 90*

STATION / OFFSET:
ALIGNMENT: I-75
ELEVATION: 504.5 (MSL) EOB: 73.0 ft.
LAT / LONG: 39.123253, -84.534676

EXPLORATION ID B-147-1-24

MATERIAL DESCRIPTION AND NOTES	ELEV. 504.5	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	HOLE SEALED
TOPSOIL (4 INCHES)	504.2																		
MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, LIMESTONE FRAGMENTS, DAMP (FILL)	501.0	1	23 11 7	27	22	SS-1	-	-	-	-	-	-	-	-	-	7	A-3a (V)	-	
STIFF, GRAY TO DARK GRAY, **SILTY CLAY**, LITTLE SAND AND GRAVEL, TRACE ROOT HAIRS, DAMP (FILL)	496.5	4	5 3 4	11	28	SS-2	1.00	-	-	-	-	-	-	-	-	-	A-6b (V)	-	
		6	4 6 7	20	94	SS-3	1.75	-	-	-	-	-	-	-	-	33	A-6b (V)	-	
MEDIUM STIFF TO STIFF, BROWN TO OLIVE BROWN, **CLAY**, LITTLE SAND TRACE GRAVEL, DAMP TO MOIST	488.5	9		73		ST-4	1.00	6	7	7	45	35	44	24	20	21	A-7-6 (13)	-	
		12	4 9 8	26	100	SS-5	1.50	1	10	17	39	33	43	17	26	24	A-7-6 (14)	-	
W 491.5		14	3 4 3	11	61	SS-6	-	-	-	-	-	-	-	-	-	-	A-7-6 (V)	-	
LOOSE, BROWN, **GRAVEL**, **SILT AND CLAY** WITH SAND, MOIST TO WET	481.0	17	2 1 2	5	56	SS-7	-	22	39	15	18	6	27	14	13	20	A-2-6 (0)	-	
		19	1 2 4	9	100	SS-8	-	-	-	-	-	-	-	-	-	-	A-2-6 (V)	-	
LOOSE TO MEDIUM DENSE, BROWN, **SILT**, MOIST TO WET	471.0	24	3 3 4	11	83	SS-9	-	0	0	7	82	11	NP	NP	NP	26	A-4b (8)	-	
		29	5 9 7	24	100	SS-10	-	-	-	-	-	-	-	-	-	-	A-4b (V)	-	
MEDIUM DENSE, GRAY, **SILT**, WITH SAND SEAMS, WET	466.0	34	5 8 9	26	100	SS-11	-	0	0	5	78	17	NP	NP	NP	25	A-4b (8)	-	
VERY STIFF, GREENISH GRAY, **CLAY**, TRACE GRAVEL, MOIST	461.0	39	8 13 17	45	67	SS-12	2.50	0	0	1	40	59	43	20	23	22	A-7-6 (14)	-	
STIFF TO VERY STIFF, BLUISH GRAY AND GRAY, **SILTY CLAY**, TRACE SAND, TRACE SHALE AND LIMESTONE FRAGMENTS (COLLUVIUM), MOIST	451.0	44	5 8 12	30	100	SS-13	2.25	0	0	2	52	46	40	19	21	25	A-6b (12)	-	
		49	4 9 12	32	78	SS-14	3.00	-	-	-	-	-	-	-	-	23	A-6b (V)	-	
STIFF TO VERY STIFF, BLUISH GRAY AND GRAY, **SILT AND CLAY**, TRACE SAND, TRACE SHALE AND LIMESTONE FRAGMENTS (COLLUVIUM), MOIST		54	5 10 12	33	61	SS-15	1.50	15	9	5	41	30	34	22	12	17	A-6a (8)	-	
		59	10 57 37	141	28	SS-16	4.00	-	-	-	-	-	-	-	-	18	A-6a (V)	-	

STANDARD ODOT LOG W/ SULFATES (11 X 17) - OH DOT.GDT - 4/9/25 09:19 - N:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PID: 114161	SFN:	PROJECT: N1215230	STATION / OFFSET:	START: 2/12/25	END: 2/13/25	PG 2 OF 2	B-147-1-24

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	HOLE SEALED
STIFF TO VERY STIFF, BLUISH GRAY AND GRAY, **SILT AND CLAY**, TRACE SAND, TRACE SHALE AND LIMESTONE FRAGMENTS (COLLUVIUM), MOIST *(continued)*	444.5	61																	
		62																	
		63																	
		64	8 20 24	66	100	SS-17	4.00	-	-	-	-	-	-	-	-	-	A-6a (V)	-	
		65																	
		66																	
		67																	
		68																	
		69	13 18 17	53	94	SS-18	2.50	-	-	-	-	-	-	-	-	-	A-6a (V)	-	
		70																	
		71																	
		72																	
	431.5	EOB 73																	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED CEMENT-BENTONITE GROUT

STANDARD ODOT LOG W/ SULFATES (11 X 17) - OH DOT.GDT - 4/9/25 09:19 - N:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT _11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230
TYPE: UNDERGROUND UTILITY
PID: 114161 SFN:
START: 2/11/25 END: 2/12/25

DRILLING FIRM / OPERATOR: TERRACON / KH
SAMPLING FIRM / LOGGER: TERRACON / JH
DRILLING METHOD: 3.25" HSA / NQ2
SAMPLING METHOD: SPT / ST / NQ2

DRILL RIG: CME-55
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 2/21/23
ENERGY RATIO (%): 90*

STATION / OFFSET:
ALIGNMENT: I-75
ELEVATION: 510.5 (MSL) EOB: 60.0 ft.
LAT / LONG: 39.124676, -84.534620

EXPLORATION ID B-153-1-24

MATERIAL DESCRIPTION AND NOTES	ELEV. 510.5	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	HOLE SEALED
STIFF, GRAY AND BROWN, **SILTY CLAY**, TRACE BRICK FRAGMENTS, PLASTICS, TRACE CINDERS, DAMP (FILL)		1–2	4 7 8	23	44	SS-1	1.50	-	-	-	-	-	-	-	-	27	A-6b (V)	-	
DENSE, GRAY TO DARK GRAY, **GRAVEL WITH SAND, SILT, AND CLAY**, LITTLE CINDERS, TRACE ROOT HAIRS, TRACE BRICK FRAGMENTS, DAMP (FILL)	507.0	4–5	7 17 7	36	89	SS-2	-	-	-	-	-	-	-	-	-	-	A-2-6 (V)	-	
STIFF TO VERY STIFF, BROWN, **SILT AND CLAY**, TRACE SAND, DAMP	504.5	6–7	3 3 4	11	56	SS-3	1.25	0	4	6	52	38	39	27	12	23	A-6a (9)	-	
		9–10	5 8 12	30	94	SS-4	3.50	-	-	-	-	-	-	-	-	-	A-6a (V)	-	
		11–12	6 8 10	27	100	SS-5	4.00	-	-	-	-	-	-	-	-	22	A-6a (V)	-	
		14–15	3 5 9	21	100	SS-6	2.50	-	-	-	-	-	-	-	-	21	A-6a (V)	-	
	494.5	16–17	5 4 6	15	100	SS-7	1.00	4	24	14	30	28	40	18	22	22	A-6b (9)	-	
STIFF, BROWN, **SILTY CLAY**, SOME SAND, TRACE GRAVEL, DAMP		19–20			0	ST-8	-	-	-	-	-	-	-	-	-	-	A-6b (V)	-	
	487.0	24–25	8 12 13	38	83	SS-9	1.00	0	0	3	62	35	42	20	22	24	A-7-6 (13)	-	
STIFF, BROWN, **CLAY**, TRACE SAND, LITTLE SILT SEAMS, DAMP	482.0	29–30	6 10 37	71	83	SS-10	4.50	-	-	-	-	-	-	-	-	-	A-7-6 (V)	-	
VERY STIFF TO HARD, GRAY, **SILT AND CLAY**, LIMESTONE FLOATERS, DAMP TO MOIST	477.0	34–35	6 9 16	38	89	SS-11	4.25	0	1	3	54	42	32	18	14	21	A-6a (10)	-	
VERY STIFF TO HARD, GRAY, **SILT**, LITTLE SAND, LAMINATED, MOIST	472.0	39–40	6 9 10	29	67	SS-12	3.25	-	-	-	-	-	-	-	-	-	A-6a (V)	-	
VERY STIFF, GREENISH GRAY TRACE BLUISH GRAY, **CLAY**, TRACE SAND, GRAVEL, (COLLUVIUM), MOIST		W 468.5																	
@43.5'; OLIVE AND BLUISH GRAY, TRACE GRAVEL	462.0	44–45	6 12 16	42	83	SS-13	3.00	2	3	4	43	48	47	21	26	21	A-7-6 (16)	-	
		TR																	
INTERBEDDED SHALE AND LIMESTONE. **SHALE**, GRAY, MODERATELY WEATHERED, VERY WEAK	460.5	49–50	10 25 50/5"	-	94	SS-14	4.50	-	-	-	-	-	-	-	-	-		-	
LIMESTONE, GRAY, MODERATELY WEATHERED, WEAK TO MODERATELY STRONG		50–55	88		100	NQ2-15											CORE		
INTERBEDDED SHALE (90%) AND LIMESTONE (10%); **SHALE**, GRAY, SLIGHTLY WEATHERED, VERY WEAK TO WEAK, THICK BEDDED; **LIMESTONE**, GRAY, SLIGHTLY TO MODERATELY WEATHERED, WEAK TO MODERATELY STRONG, THIN BEDDED.	450.5	55–59	71		100	NQ2-16											CORE		
		EOB																	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED CEMENT-BENTONITE GROUT

STANDARD ODOT LOG W/ SULFATES (11 X 17) - OH DOT.GDT - 4/9/25 09:19 - N:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230
TYPE: UNDERGROUND UTILITY
PID: 114161 SFN:
START: 2/13/25 END: 2/13/25

DRILLING FIRM / OPERATOR: TERRACON / KH
SAMPLING FIRM / LOGGER: TERRACON / JH
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT / ST

DRILL RIG: CME-55
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 2/21/23
ENERGY RATIO (%): 90*

STATION / OFFSET:
ALIGNMENT: I-75
ELEVATION: 511.5 (MSL) EOB: 60.0 ft.
LAT / LONG: 39.125122, -84.534469

EXPLORATION ID B-158-1-24

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	HOLE SEALED
TOPSOIL (3 INCHES)	511.5																		
STIFF TO HARD, BROWN TRACE GRAY, **CLAY**, TRACE SAND AND GRAVEL, DAMP	511.3		4 4 4	12	78	SS-1	2.50	-	-	-	-	-	-	-	-	21	A-7-6 (V)	-	
			5 8 12	30	100	SS-2	4.25	0	1	4	54	41	46	20	26	20	A-7-6 (16)	-	
@8.5'; MEDIUM STIFF			8 11 11	33	100	SS-3	2.25	-	-	-	-	-	-	-	-	20	A-7-6 (V)	-	
			6 6 8	21	100	SS-4	1.00	0	1	6	57	36	41	18	23	25	A-7-6 (13)	-	
					42	ST-5	0.50	-	-	-	-	-	-	-	-	-	A-7-6 (V)	-	
	498.0	W 498.5																	
VERY STIFF, YELLOWISH BROWN, **SILTY CLAY**, LITTLE SAND, TRACE GRAVEL, DAMP @14.0'; MEDIUM STIFF			5 8 5	20	83	SS-6	0.50	-	-	-	-	-	-	-	-	24	A-6b (V)	-	
			4 7 10	26	89	SS-7	4.00	-	-	-	-	-	-	-	-	-	A-6b (V)	-	
	493.0																		
VERY STIFF TO HARD, OLIVE BROWN, **SILTY CLAY**, TRACE TO LITTLE SAND, MOIST			6 12 14	39	39	SS-8	2.00	8	13	14	46	19	31	15	16	17	A-6b (8)	-	
@23.5'; WET			6 8 11	29	11	SS-9	-	-	-	-	-	-	-	-	-	-	A-6b (V)	-	
@28.5'; HARD, GRAY, LITTLE SAND AND GRAVEL, LIMESTONE FRAGMENTS, DAMP			9 17 10	41	44	SS-10	4.00	-	-	-	-	-	-	-	-	4	A-6b (V)	-	
@33.5'; LIMESTONE FRAGMENTS			10 7 11	27	11	SS-11	-	-	-	-	-	-	-	-	-	17	A-6b (V)	-	
	473.0																		
HARD, OLIVE TRACE BROWN, **SILTY CLAY**, TRACE SHALE AND LIMESTONE FRAGMENTS, (COLLUVIUM), DAMP			8 11 15	39	50	SS-12	4.25	1	2	3	55	39	-	-	-	21	A-6b (V)	-	
	468.0	TR																	
INTERBEDDED SHALE AND LIMESTONE. **SHALE**, GRAY, MODERATELY WEATHERED, VERY WEAK **LIMESTONE**, GRAY, MODERATELY WEATHERED, WEAK TO MODERATELY STRONG	467.5		50/2"	-	100	SS-13	-	-	-	-	-	-	-	-	-	9	Rock (V)	-	
			58		100	NQ2-14											CORE		
INTERBEDDED SHALE (98%) AND LIMESTONE (2%); **SHALE**, GRAY, MODERATELY WEATHERED, VERY WEAK TO WEAK, THIN TO MEDIUM BEDDED; **LIMESTONE**, GRAY, MODERATELY WEATHERED, WEAK TO MODERATELY STRONG, THIN BEDDED.			88		100	NQ2-15											CORE		
			77		100	NQ2-16											CORE		
			60		100	NQ2-17											CORE		
	451.5	EOB																	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: AUGER CUTTINGS; CEMENT-BENTONITE GROUT

STANDARD ODOT LOG W/ SULFATES (11 X 17) - OH DOT.GDT - 4/9/25 09:19 - N:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: N1215230
TYPE: UNDERGROUND UTILITY
PID: 114161 SFN:
START: 2/13/25 END: 2/13/25

DRILLING FIRM / OPERATOR: TERRACON / KH
SAMPLING FIRM / LOGGER: TERRACON / JH
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT / ST

DRILL RIG: CME-55
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 2/21/23
ENERGY RATIO (%): 90*

STATION / OFFSET:
ALIGNMENT: I-75
ELEVATION: 511.0 (MSL) EOB: 39.0 ft.
LAT / LONG: 39.125502, -84.534420

EXPLORATION ID B-159-1-24

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	HOLE SEALED
TOPSOIL (4 INCHES)	511.0																		
VERY STIFF TO HARD, BROWN, **SILT AND CLAY**, TRACE SAND, TRACE GRAVEL, (POSSIBLE FILL), DAMP	510.7		2 5 7	18	50	SS-1	4.00	-	-	-	-	-	-	-	-	-	A-6a (V)	-	
			4 4 7	17	72	SS-2	2.00	0	1	3	44	52	32	17	15	22	A-6a (10)	-	
			7 9 8	26	61	SS-3	2.75	-	-	-	-	-	-	-	-	-	A-6a (V)	-	
	500.0		2 2 3	8	44	SS-4	-	-	-	-	-	-	-	-	-	18	A-6a (V)	-	
MEDIUM DENSE, BROWN, **GRAVEL WITH SAND, SILT AND CLAY**, (POSSIBLE FILL), MOIST	497.5		2 12 5	26	72	SS-5	1.00	25	30	12	21	12	29	14	15	18	A-2-6 (1)	-	
STIFF TO VERY STIFF, BROWN TO GRAYISH BROWN, **SILTY CLAY**, LIMESTONE FRAGMENTS, DAMP	495.0				82	ST-6	2.50	14	17	10	31	28	34	16	18	-	A-6b (8)	-	
VERY STIFF, BROWN TO GRAYISH BROWN, **SILT AND CLAY**, LIMESTONE FRAGMENTS, DAMP			11 23 16	59	56	SS-7	3.75	24	11	11	34	20	30	16	14	10	A-6a (5)	-	
			11 20 50/1"	-	100	SS-8	4.50	-	-	-	-	-	-	-	-	-	A-6a (V)	-	
		W 489.0																	
	487.5		18 10 7	26	56	SS-9	1.75	38	15	3	36	8	30	18	12	26	A-6a (2)	-	
STIFF TO VERY STIFF, GRAY, **SILTY CLAY**, LITTLE SILT SEAMS, LAMINATED, MOIST TO WET	482.5		4 7 8	23	78	SS-10	2.00	-	-	-	-	-	-	-	-	28	A-6b (V)	-	
STIFF TO VERY STIFF, DARK GRAY, **SILT**, DAMP TO MOIST	477.5		5 9 8	26	100	SS-11	2.00	0	1	9	90	0	27	20	7	26	A-4b (8)	-	
VERY STIFF TO HARD, BLUISH GRAY, **CLAY**, LITTLE GRAVEL, LIMESTONE FRAGMENTS, TRACE FOSSILS (COLLUVIUM), DAMP	472.5		75	-	100	SS-12	2.50	-	-	-	-	-	-	-	-	8	A-7-6 (V)	-	
	472.0	EOB																	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: AUGER CUTTINGS; CEMENT-BENTONITE GROUT

STANDARD ODOT LOG W/ SULFATES (11 X 17) - OH DOT.GDT - 4/9/25 09:20 - N:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: --
TYPE:
PID: 105349 SFN:
START: 3/13/23 END: 3/15/23

DRILLING FIRM / OPERATOR: S&ME / P. TUTTLE
SAMPLING FIRM / LOGGER: S&ME / J. HAYDU
DRILLING METHOD: 3-1/4" HSA / NQ2
SAMPLING METHOD: SPT / NQ2

DRILL RIG: S&ME ATV D50 (R-80)
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 6/6/22
ENERGY RATIO (%): 85.4

STATION / OFFSET: 239+91, 84' RT.
ALIGNMENT:
ELEVATION: 516.3 (MSL) EOB: 106.5 ft.
LAT / LONG: 39.123903, -84.535270

EXPLORATION ID B-019-0-22

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)	ABAN-DONED
ASPHALT (6 INCHES)	516.3																	
CONCRETE (8 INCHES)	515.8																	
GRANULAR BASE (6 INCHES)	515.1																	
FILL: Stiff to very-stiff brown and gray **SILTY CLAY**, trace gravel, trace fine to coarse sand, contains limestone fragments, moist.	514.6		2 2 3	7	56	SS-1	1.50	-	-	-	-	-	-	-	-	21	A-6b (V)	
			2 4 5	13	67	SS-2	3.00	-	-	-	-	-	-	-	-	16	A-6b (V)	
			3 4 5	13	22	SS-3	3.00	-	-	-	-	-	-	-	-	20	A-6b (V)	
	508.3		9	-	83	SS-4	1.5-2.0	-	-	-	-	-	-	-	-	22	A-6b (V)	
FILL: Stiff to very-stiff brown and gray **CLAY**, little silt, trace gravel, trace fine to coarse sand, contains limestone fragments, moist.			5 6 10	23	100	SS-5	3.00	-	-	-	-	-	-	-	-	21	A-7-6 (V)	
			4 4 5	13	72	SS-6	2.00	-	-	-	-	-	-	-	-	21	A-7-6 (V)	
	503.3																	
CONCRETE (10 INCHES)	502.5																	
GRANULAR BASE (5 INCHES)	502.1																	
FILL: Loose to medium-dense brown, gray, and black **GRAVEL**, trace fine to coarse sand, trace silt, trace clay, moist to wet.			16 8 4	17	44	SS-7	-	-	-	-	-	-	-	-	-	8	A-1-a (V)	
			5 4 3	10	39	SS-8	-	-	-	-	-	-	-	-	-	13	A-1-a (V)	
	496.8		3 2 3	7	100	SS-9A	-	-	-	-	-	-	-	-	-	23	A-1-a (V)	
FILL: Stiff brown **SILT AND CLAY**, trace gravel, trace fine to coarse sand, moist.						SS-9B	1.50	-	-	-	-	-	-	-	-	21	A-6a (V)	
	494.3																	
Very-stiff gray **SILT AND CLAY**, trace gravel, trace fine to coarse sand, moist.			3 5 6	16	100	SS-10	3.50	-	-	-	-	-	-	-	-	21	A-6a (V)	
	489.3																	
Stiff to very-stiff brown **SILTY CLAY**, "and" fine to coarse sand, little gravel, damp.			3 4 6	14	100	SS-11	-	-	-	-	-	-	-	-	-	15	A-6b (V)	
	479.3																	
Medium-dense brown **SANDY SILT**, little clay, wet.		W 477.8	4 5 6	16	100	SS-12	-	-	-	-	-	-	-	-	-	12	A-6b (V)	
	474.3		4 7 7	20	100	SS-13	-	0	0	55	32	13	NP	NP	NP	24	A-4a (2)	
Medium-dense to dense brown **COARSE AND FINE SAND**, little clay, trace silt, trace gravel, wet.			1 3 5	11	100	SS-14	-	0	0	84	6	10	NP	NP	NP	23	A-3a (0)	
			6 6 7	19	100	SS-15	-	-	-	-	-	-	-	-	-	25	A-3a (V)	
- transitioning to gray at 54.4' - decayed wood at 54.5'			6 8 12	28	100	SS-16A	-	-	-	-	-	-	-	-	-	21	A-3a (V)	
						SS-16B	-	-	-	-	-	-	-	-	-	23	A-3a (V)	
			5 7 8	21	72	SS-17	-	1	3	82	2	12	NP	NP	NP	21	A-3a (0)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:47 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\S&ME-WHV\2024-12-16 WHV.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PID: 105349 | SFN: | PROJECT: -- | STATION / OFFSET: 239+91, 84' RT. | START: 3/13/23 | END: 3/15/23 | PG 2 OF 2 | B-019-0-22

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)	ABAN-DONED
Medium-dense to dense brown **COARSE AND FINE SAND**, little clay, trace silt, trace gravel, wet. *(continued)*	456.3	61–63																
		64–65	8 15 14	41	61	SS-18	-	-	-	-	-	-	-	-	-	22	A-3a (V)	
	449.3	66–68																
Stiff to very-stiff gray **SILTY CLAY**, little to some fine to coarse sand, trace gravel, moist.		69–70	4 5 6	16	100	SS-19	1.5-2.0	0	3	16	36	45	33	16	17	21	A-6b (11)	
		71–73																
		74–75	6 7 11	26	100	SS-20	2.50	-	-	-	-	-	-	-	-	21	A-6b (V)	
		76–78																
- contains limestone fragments at 80.0'		79–80	9 9 10	27	100	SS-21	1.0-1.5	7	8	12	22	51	36	16	20	24	A-6b (12)	
	432.8	81–83																
Very-stiff olive **CLAY**, trace gravel, trace fine to coarse sand, trace silt, contains limestone fragments, relict bedding, moist.		84	7 12 23	50	39	SS-22	4.00	-	-	-	-	-	-	-	-	21	A-7-6 (V)	
	430.8	85–86																
KOPE FORMATION: SHALE gray, highly weathered, very weak	429.3 TR	87–91	59		83	NQ2-23											CORE	
INTERBEDDED LIMESTONE (55%) AND SHALE (45%) LIMESTONE: gray and light gray, slightly to moderately weathered, strong, thin bedding, fossiliferous SHALE: dark gray and gray, highly weathered, weak, laminated, argillaceous, contains clay seams from 87.0' - 89.5'		92–96	67		100	NQ2-24											CORE	
	420.2	97–101	73		100	NQ2-25											CORE	
POINT PLEASANT FORMATION: INTERBEDDED SHALE (60%) AND LIMESTONE (40%) SHALE: dark gray, highly to moderately weathered, weak to moderately strong, very thin bedding, argillaceous LIMESTONE: gray and light gray, slightly weathered, strong, thin bedding - UCS = 3,547 psi at 97.1' - 97.5'		102–106	85		100	NQ2-26											CORE	
	409.8 EOB																	

NOTES:

- Groundwater encountered at 38.5'
- Cobbles encountered at 13.0'
- Water added at 45.0' due to heaving sands
- Possible old roadway from 13.0' - 14.2'
- Auger refusal at 87.0'

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; PLASTIC HOLE PLUG DEVICE; SOIL CUTTINGS MIXED WITH BENTONITE

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT GDT - 12/23/24 15:47 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\S&ME-WHV\2024-12-16 WHV.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: -- | DRILLING FIRM / OPERATOR: S&ME / P. TUTTLE | DRILL RIG: S&ME ATV D50 (R-80) | STATION / OFFSET: 239+75, 31' LT. | EXPLORATION ID B-019-1-22

TYPE: | SAMPLING FIRM / LOGGER: S&ME / J. HAYDU | HAMMER: CME AUTOMATIC | ALIGNMENT:

PID: 105349 SFN: | DRILLING METHOD: 3-1/4" HSA / NQ2 | CALIBRATION DATE: 6/6/22 | ELEVATION: 515.5 (MSL) EOB: 104.0 ft. | PAGE 1 OF 2

START: 3/15/23 END: 3/16/23 | SAMPLING METHOD: SPT / ST / NQ2 | ENERGY RATIO (%): 85.4 | LAT / LONG: 39.124115, -84.535264

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)	ABAN-DONED
ASPHALT (6 INCHES)	515.5																	
CONCRETE (8 INCHES)	515.0																	
GRANULAR BASE (6 INCHES)	514.3																	
FILL: Stiff to very-stiff brown and gray **SILTY CLAY**, trace gravel, trace fine to coarse sand, moist.	513.7	1	4			SS-1A	-	-	-	-	-	-	-	-	-	6	A-1-a (V)	
		2	2 3	7	72	SS-1B	1.50	-	-	-	-	-	-	-	-	22	A-6b (V)	
		3																
		4	2 3 4	10	67	SS-2	2.00	-	-	-	-	-	-	-	-	23	A-6b (V)	
		5																
		6	3 3 5	11	100	SS-3	3.00	-	-	-	-	-	-	-	-	22	A-6b (V)	
		7																
		8																
		9	5 5 6	16	89	SS-4	2.5 - 3.0	-	-	-	-	-	-	-	-	18	A-6b (V)	
	503.7	10																
CONCRETE (8 INCHES)	503.4	11																
FILL: Dense black **GRAVEL**, trace fine to coarse sand, trace silt, trace clay, contains slag fragments, moist.	503.0	12	4 16 12	40	100	SS-5A	2.50	-	-	-	-	-	-	-	-	20	A-6b (V)	
						SS-5B	-	-	-	-	-	-	-	-	-	4		
						SS-5C	-	-	-	-	-	-	-	-	-	10	A-1-a (V)	
Fill: **BRICK**, trace gravel, trace coarse to fine sand, trace silt, trace clay, dry.	501.2	13																
FILL: Stiff to hard brown **CLAY**, little fine to coarse sand, trace gravel, trace silt, contains limestone fragments, damp to moist.		14	10 16 7	33	56	SS-6	-	-	-	-	-	-	-	-	-	14	A-6b (V)	
		15																
		16																
		17	3 4 6	14	72	SS-7	1.50	-	-	-	-	-	-	-	-	25	A-6b (V)	
	497.5	18																
FILL: Stiff dark gray **SILTY CLAY**, trace gravel, trace fine to coarse sand, slightly organic, moist.	495.0	19	6 3 1	6	83	SS-8	1.50	-	-	-	-	-	-	-	-	23	A-6b (V)	
		20																
		21																
Very-stiff to hard dark brown **SILTY CLAY**, trace gravel, trace fine to coarse sand, moist.	492.0	22	ST		71	ST-9	3.75-4.25	-	-	-	-	-	-	-	-	-	A-6b (V)	
		23																
		24	4 6 7	19	100	SS-10	3.50	0	4	10	30	56	45	23	22	22	A-7-6 (14)	
		25																
		26																
		27																
		28																
	486.6	29	3			SS-11A	3.50	-	-	-	-	-	-	-	-	26	A-7-6 (V)	
Stiff brown and gray **SILT AND CLAY**, trace gravel, trace fine to coarse sand, moist.	483.5	30	3 5	11	67	SS-11B	-	-	-	-	-	-	-	-	-	24	A-6a (V)	
		31																
		32																
		33																
Stiff brown **SANDY SILT**, some clay, contains fine sand seams, wet becoming moist.	476.4	34	2 3 4	10	100	SS-12	-	0	0	64	10	26	23	17	6	24	A-4a (0)	
		35																
		36																
		37																
		38																
W 477.0		39	2 3 5	11	100	SS-13A	-	-	-	-	-	-	-	-	-	20	A-4a (V)	
						SS-13B	-	-	-	-	-	-	-	-	-	29	A-3a (V)	
Medium-dense to dense brown and gray **COARSE AND FINE SAND**, trace to little gravel, trace to little silt, trace to little clay, contains 2-inch clay seams, wet.		40																
		41																
		42																
		43																
		44	4 6 9	21	100	SS-14	-	0	1	80	7	12	NP	NP	NP	22	A-3a (0)	
		45																
		46																
		47																
		48																
		49	4 4 7	16	94	SS-15	-	-	-	-	-	-	-	-	-	21	A-3a (V)	
		50																
		51																
		52																
		53																
		54																
		55																
		56																
		57																
		58																
		59	9 4 16	28	78	SS-16	-	-	-	-	-	-	-	-	-	19	A-3a (V)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:47 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\S&ME-WHV\2024-12-16 WHV.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PID: 105349	SFN:	PROJECT: --	STATION / OFFSET: 239+75, 31' LT.	START: 3/15/23	END: 3/16/23	PG 2 OF 2	B-019-1-22

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)	ABAN-DONED
Medium-dense to dense brown and gray **COARSE AND FINE SAND**, trace to little gravel, trace to little silt, trace to little clay, contains 2-inch clay seams, wet. *(continued)*	455.5																	
		61																
		62																
		63																
	451.5	64	9 11 15	37	100	SS-17A	-	-	-	-	-	-	-	-	-	23	A-3a (V)	
						SS-17B	2.50	7	4	3	20	66	51	22	29	21	A-7-6 (18)	
Very-stiff brown and gray **CLAY**, some silt, trace gravel, trace fine to coarse sand, contains thin limestone layers, damp.		65																
		66																
	448.5	67																
Very-stiff bluish gray and olive **CLAY**, trace gravel, trace fine to coarse sand, trace silt, contains fossils, moist.		68																
		69	8 9 10	27	33	SS-18	3.00	-	-	-	-	-	-	-	-	26	A-7-6 (V)	
	443.5	70																
Very-stiff brown and gray **CLAY**, trace gravel, trace fine to coarse sand, trace silt, contains limestone fragments, damp to moist.		71																
		72																
		73																
		74	5 8 10	26	78	SS-19	2.50	-	-	-	-	-	-	-	-	19	A-7-6 (V)	
		75																
		76																
		77																
		78																
		79	11 13 16	41	100	SS-20	3.50	-	-	-	-	-	-	-	-	27	A-7-6 (V)	
		80																
		81																
		82																
	432.5	83																
KOPE FORMATION: SHALE, gray, highly weathered, very weak	431.5	TR	50/3"	-	100	SS-21	-	-	-	-	-	-	-	-	-	-	Rock (V)	
POINT PLEASANT FORMATION: INTERBEDDED LIMESTONE (50%) AND SHALE (50%) LIMESTONE: gray and light gray, slightly to moderately weathered, strong, very thin to thin bedding, fossiliferous. SHALE: dark gray and gray, highly weathered, weak, laminated, argillaceous, calcareous.		84																
		85	57		97	NQ2-22											CORE	
		86																
		87																
		88																
		89	43		90	NQ2-23											CORE	
		90																
		91																
	424.0	92																
POINT PLEASANT FORMATION: INTERBEDDED SHALE (65%) AND LIMESTONE (35%) SHALE: dark gray, highly to moderately weathered, weak to slightly strong, very thin bedding, argillaceous, calcareous. LIMESTONE: gray and light gray, slightly weathered, strong, thin bedding, vertical fracture from 98.5' - 98.8'. - UCS = 278 psi at 93.3' - 93.7'		93																
		94	38		100	NQ2-24											CORE	
		95																
		96																
		97																
		98																
		99	57		100	NQ2-25											CORE	
		100																
		101																
		102																
		103	100		100	NQ2-26											CORE	
	411.5	104																
		EOB																

NOTES:

- Groundwater encountered at 38.5'
- Water added at 40.0'
- Auger Refusal at 84.0'

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; PLASTIC HOLE PLUG DEVICE; SOIL CUTTINGS MIXED WITH BENTONITE

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:47 - N:\PROJECTS\2024\IN1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\S&ME-WHV\2024-12-16 WHV.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: --
TYPE:
PID: 105349 SFN:
START: 1/31/23 END: 2/1/23

DRILLING FIRM / OPERATOR: MSG / R. SCHIEPPERT
SAMPLING FIRM / LOGGER: S&ME / C. CAREY
DRILLING METHOD: 4-1/4" HSA / NQ2
SAMPLING METHOD: SPT / NQ2

DRILL RIG: MSG GEOPROBE DH103H
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 9/3/21
ENERGY RATIO (%): 90*

STATION / OFFSET: 241+57, 97' RT.
ALIGNMENT:
ELEVATION: 505.8 (MSL) EOB: 74.7 ft.
LAT / LONG: 39.123814, -84.534669

EXPLORATION ID B-020-0-22

MATERIAL DESCRIPTION AND NOTES	ELEV. 505.8	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	ABAN-DONED
TOPSOIL/ROOTMAT (10 INCHES)	505.0																	
FILL: Very-stiff brown and gray **SILTY CLAY**, trace gravel, trace fine to coarse sand, contains brick fragments, damp to moist.	500.3		2 3 5	12	44	SS-1	3.00	-	-	-	-	-	-	-	-	18	A-6b (V)	
			3 4 4	12	100	SS-2	4.00	-	-	-	-	-	-	-	-	26	A-6b (V)	
FILL: Very-stiff brownish gray and black **SILT AND CLAY**, trace fine to coarse sand, moist.	495.3		3 4 5	14	100	SS-3	3.00	0	1	2	37	60	32	18	14	22	A-6a (10)	
			3 5 5	15	100	SS-4	3.50	-	-	-	-	-	-	-	-	23	A-6a (V)	
Stiff brown and gray **CLAY**, "and" fine to coarse sand, little gravel, trace silt, contains wood fragments, moist	492.8		3 4 5	14	100	SS-5	1.75	14	31	14	3	38	50	18	32	21	A-7-6 (7)	
Medium-stiff gray **SILTY CLAY**, "and" fine to coarse sand, trace gravel, moist.	490.8		2 2 3	8	100	SS-6	0.50	3	25	34	1	37	31	14	17	20	A-6b (2)	
Medium-stiff to stiff gray **SILT**, "and" clay, trace fine sand, moist to wet.		W 487.9	1 3 4	11	100	SS-7	1.00	-	-	-	-	-	-	-	-	24	A-4b (V)	
			2 3 5	12	100	SS-8	0.50	-	-	-	-	-	-	-	-	30	A-4b (V)	
			1 WOH 1	2	100	SS-9	1.00	0	0	1	54	45	24	17	7	22	A-4b (8)	
			4 8 15	35	100	SS-10	0.50	-	-	-	-	-	-	-	-	23	A-4b (V)	
	469.8																	
Very-stiff bluish gray to greenish gray **CLAY**, "and" silt, trace fine sand, damp to moist.			4 7 10	26	100	SS-11	4.00	-	-	-	-	-	-	-	-	24	A-7-6 (V)	
			5 10 13	35	100	SS-12	3.00	0	0	1	42	57	57	26	31	28	A-7-6 (19)	
			3 7 11	27	100	SS-13	3.75	-	-	-	-	-	-	-	-	27	A-7-6 (V)	
	452.8	TR																
KOPE FORMATION: SHALE gray and dark-gray, highly weathered, weak, thinly laminated, calcareous.			13 40 50/2"	-	100	SS-14	-	-	-	-	-	-	-	-	-	18	Rock (V)	
- vertical fracture from 55.8' - 56.0'			37		72	NQ2-15											CORE	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:48 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\S&ME-WHV\2024-12-16 WHV.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PID: 105349	SFN:	PROJECT: --	STATION / OFFSET: 241+57, 97' RT.	START: 1/31/23	END: 2/1/23	PG 2 OF 2	B-020-0-22

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)	ABAN-DONED
KOPE FORMATION: SHALE gray and dark-gray, highly weathered, weak, thinly laminated, calcareous. *(continued)*	445.8	61																
		62	75		100	NQ2-16											CORE	
- UCS = 973 psi at 62.8' - 63.2'		63																
		64																
		65																
		66																
		67	30		100	NQ2-17											CORE	
		68																
		69																
	435.5	70																
KOPE FORMATION: LIMESTONE light-gray and gray, slightly weathered, strong, thin bedding.	435.2	71																
KOPE FORMATION: SHALE dark-gray and gray, moderately weathered, weak to slightly strong, laminated, calcareous.		72	63		100	NQ2-18											CORE	
- UCS = 818 psi at 70.2' - 70.6'		73																
		74																
	431.1	EOB																

NOTES:

- Groundwater encountered at 17.9'
- Cave-in depth at 46.0'

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:48 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\S&ME-WHV\2024-12-16 WHV.GPJ

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLASTIC HOLE PLUG DEVICE; SOIL CUTTINGS MIXED WITH BENTONITE

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: --
TYPE:
PID: 105349 SFN:
START: 2/1/23 END: 2/2/23

DRILLING FIRM / OPERATOR: MSG / R. SCHIEPPERT
SAMPLING FIRM / LOGGER: S&ME / C. CAREY
DRILLING METHOD: 4-1/4" HSA / NQ2
SAMPLING METHOD: SPT / NQ2

DRILL RIG: MSG GEOPROBE DH103H
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 9/3/21
ENERGY RATIO (%): 90*

STATION / OFFSET: 241+48, 15' LT.
ALIGNMENT:
ELEVATION: 509.2 (MSL) EOB: 58.9 ft.
LAT / LONG: 39.124007, -84.534620

EXPLORATION ID B-020-1-22

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)	ABAN-DONED
TOPSOIL/ROOTMAT (8 INCHES)	509.2																	
	508.5																	
FILL: Stiff to very-stiff brown and black **SILT AND CLAY**, little fine to coarse sand, trace gravel, contains brick fragments, moist.		1	3 6 17	35	83	SS-1	3.50	-	-	-	-	-	-	-	-	24	A-6a (V)	
	504.7	2																
FILL: Stiff to very-stiff bluish gray **CLAY**, "and" silt, trace fine to coarse sand, contains brick fragments, damp to moist.		3																
		4	4 4 3	11	83	SS-2	1.25	-	-	-	-	-	-	-	-	28	A-6a (V)	
		5																
		6	2 3 7	15	72	SS-3	2.00	-	-	-	-	-	-	-	-	22	A-7-6 (V)	
- transitions to gray at 9.0'	498.7	7																
FILL: Very-stiff brown and gray **SILT AND CLAY**, trace fine to coarse sand, moist.		8	2 3 5	12	78	SS-4	2.25	0	1	3	37	59	50	26	24	31	A-7-6 (16)	
	496.2	9																
Hard brown and reddish brown **SILT AND CLAY**, trace gravel, trace fine to coarse sand, moist.		10	1 3 5	12	83	SS-5	2.50	0	1	2	38	59	33	18	15	22	A-6a (10)	
	493.7	11																
Medium-dense brown **GRAVEL WITH SAND, SILT, AND CLAY**, wet.		12																
		13	3 7 11	27	100	SS-6	4.50	-	-	-	-	-	-	-	-	21	A-6a (V)	
		14																
		15																
		16	3 5 7	18	100	SS-7	-	9	34	24	2	31	36	18	18	20	A-2-6 (1)	
	490.2	17																
Very-stiff brown mottled with gray **SILT AND CLAY**, trace gravel, trace fine to coarse sand, moist.		18																
		19	2 2 3	8	100	SS-8	2.25	-	-	-	-	-	-	-	-	27	A-6a (V)	
	487.2	20																
Medium-dense brown **GRAVEL WITH SAND AND SILT**, little clay, damp.		21																
		22																
		23																
		24	4 6 6	18	89	SS-9	-	31	26	9	19	15	NP	NP	NP	13	A-2-4 (0)	
	482.2	25																
Very-stiff to hard gray **SILT AND CLAY**, trace gravel, trace fine to coarse sand, damp to moist.		26																
		27																
		28																
		29	4 8 10	27	83	SS-10	4.5+	-	-	-	-	-	-	-	-	16	A-6a (V)	
		30																
		31																
		32																
		33																
		34	3 5 11	24	100	SS-11	4.00	1	2	1	29	67	36	21	15	22	A-6a (10)	
	472.2	35																
KOPE FORMATION: SHALE, gray, highly to severely weathered, very weak to weak, thinly laminated, calcareous.		36																
		37																
		38																
		39	50/5"	-	100	SS-12	-	-	-	-	-	-	-	-	-	13	Rock (V)	
		40																
		41	40		100	NQ2-13											CORE	
		42																
	466.4	43																
KOPE FORMATION: SHALE, gray and dark gray, weak, highly weathered, thinly laminated to laminated, argillaceous, calcareous, contains 1"-2" limestone layers from 54.5'-55.0'.		44																
		45																
		46	68		100	NQ2-14											CORE	
- UCS = 813 psi at 45.9' - 46.6'		47																
		48																
		49																
		50																
		51	57		100	NQ2-15											CORE	
		52																
		53																
		54																
		55																
		56	33		100	NQ2-16											CORE	
		57																
		58																
	450.3																	
	EOB																	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:48 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\S&ME-WHV\2024-12-16 WHV.GPJ

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PID: 105349	SFN:	PROJECT: --	STATION / OFFSET: 241+48, 15' LT.	START: 2/1/23	END: 2/2/23	PG 2 OF 2	B-020-1-22

MATERIAL DESCRIPTION AND NOTES	ELEV. 449.2	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	ABAN-DONED

NOTES:
- Groundwater not encountered at before rock coring.
- Cave-in depth at 34.2'

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLASTIC HOLE PLUG DEVICE; SOIL CUTTINGS MIXED WITH BENTONITE

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:48 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\S&ME-WHV\2024-12-16 WHV.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: --
TYPE:
PID: 105349 SFN:
START: 1/26/23 END: 1/30/23

DRILLING FIRM / OPERATOR: MSG / R. SCHIEPPERT
SAMPLING FIRM / LOGGER: S&ME / C. CAREY
DRILLING METHOD: 4-1/4" HSA / NQ2
SAMPLING METHOD: SPT / NQ2

DRILL RIG: MSG GEOPROBE DH103H
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 9/3/21
ENERGY RATIO (%): 90*

STATION / OFFSET: 243+01, 121' RT.
ALIGNMENT:
ELEVATION: 511.6 (MSL) EOB: 48.2 ft.
LAT / LONG: 39.123729, -84.534126

EXPLORATION ID B-021-0-22
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)	ABAN-DONED
TOPSOIL/ROOTMAT (8 INCHES)	511.6																	
	510.9																	
FILL: Very-stiff brown **SANDY SILT**, some gravel, some clay, contains brick, limestone, and asphalt fragments, damp. - limestone floater from 1.2'-1.9'			26 19 7	39	72	SS-1	2.00	-	-	-	-	-	-	-	-	14	A-4a (V)	
	506.1		3 2 3	8	94	SS-2	2.25	20	19	14	20	27	25	16	9	13	A-4a (2)	
FILL: Soft brown **SILT AND CLAY**, trace gravel, trace fine to coarse sand, contains brick and limestone fragments, moist.	503.6		3 WOH 1	2	33	SS-3	0.50	-	-	-	-	-	-	-	-	21	A-6a (V)	
FILL: Medium-dense brown **GRAVEL WITH SAND, SILT, AND CLAY**, contains brick fragments, wet.	502.4	W 502.9	5 9 5	21	72	4A	2.00	41	13	13	10	23	31	19	12	20	A-2-6 (0)	
Stiff to very-stiff black to light gray **SILT AND CLAY**, trace to little gravel, trace fine to coarse sand, contains limestone fragments, moist.						4B	-	-	-	-	-	-	-	-	-	20	A-6a (V)	
			2 21 6	41	83	SS-5	1.75	-	-	-	-	-	-	-	-	26	A-6a (V)	
	496.1		3 3 10	20	100	SS-6	2.00	3	2	3	41	51	29	16	13	23	A-6a (9)	
Very-stiff to hard light gray **SILTY CLAY**, trace gravel, trace fine to coarse sand, damp.			5 11 11	33	83	SS-7	3.50	-	-	-	-	-	-	-	-	14	A-6b (V)	
			5 8 10	27	100	SS-8	4.25	5	4	3	22	66	37	19	18	19	A-6b (11)	
	489.6	TR																
KOPE FORMATION: SHALE, gray, highly to severely weathered, very weak to weak, thinly laminated, calcareous, contains limestone partings.			43 50/4"	-	90	SS-9	-	-	-	-	-	-	-	-	-	21	Rock (V)	
	483.2		30 50/2"	-	100	SS-10	-	-	-	-	-	-	-	-	-	18	Rock (V)	
KOPE FORMATION: INTERBEDDED SHALE (90%) AND LIMESTONE (10%): SHALE: gray and dark gray, highly weathered, weak, thinly laminated to laminated, argillaceous, calcareous. LIMESTONE: gray, slightly weathered, strong, very thin to thin bedding.			45		100	NQ2-11											CORE	
- vertical fracture from 32.6-32.8			25		100	NQ2-12											CORE	
- UCS = 612 psi at 37.4' - 37.8'			70		100	NQ2-13											CORE	
- UCS = 946 psi at 42.6' - 43.0'			25		100	NQ2-14											CORE	
	463.4	EOB																

NOTES:

- Groundwater encountered at 8.7'
- Cave-in depth at 21.0'

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLASTIC HOLE PLUG DEVICE; SOIL CUTTINGS MIXED WITH BENTONITE

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:48 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\S&ME-WHV\2024-12-16 WHV.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: --
TYPE:
PID: 105349 SFN:
START: 1/30/23 END: 3/7/23

DRILLING FIRM / OPERATOR: S&ME / P. TUTTLE
SAMPLING FIRM / LOGGER: S&ME / J. HAYDU
DRILLING METHOD: 3-1/4" HSA / NQ2
SAMPLING METHOD: SPT / NQ2

DRILL RIG: S&ME ATV D50 (R-80)
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 6/6/22
ENERGY RATIO (%): 85.4

STATION / OFFSET: 243+55, 41' LT.
ALIGNMENT:
ELEVATION: 553.6 (MSL) EOB: 65.0 ft.
LAT / LONG: 39.124168, -84.533979

EXPLORATION ID B-021-1-22

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)	ABAN-DONED
TOPSOIL (7 INCHES)	553.6																	
FILL: Stiff to very-stiff brown and gray **SILTY CLAY**, trace gravel, trace fine to coarse sand, contains shale and limestone fragments, damp to moist.	553.0		3 3 3	9	61	SS-1	1.50	-	-	-	-	-	-	-	-	13	A-6b (V)	
			3 6 6	17	83	SS-2	3.00	2	4	3	25	66	40	21	19	18	A-6b (12)	
			4 5 6	16	78	SS-3	2.00	-	-	-	-	-	-	-	-	21	A-6b (V)	
			10 4 12	23	44	SS-4	1.5-2.0	-	-	-	-	-	-	-	-	20	A-6b (V)	
			6 12 6	26	50	SS-5	2.50	-	-	-	-	-	-	-	-	21	A-6b (V)	
			50/5"	-	100	SS-6	-	-	-	-	-	-	-	-	-	21	A-6b (V)	
FILL: Medium-dense to dense brown and gray **GRAVEL WITH SAND, SILT, AND CLAY**, contains shale and limestone fragments, damp.	538.1		6 12 19	44	100	SS-7	4.00	43	17	6	11	23	38	23	15	13	A-2-6 (1)	
- decayed wood fragments 19'			6 7 8	21	100	SS-8	3.00	-	-	-	-	-	-	-	-	19	A-2-6 (V)	
- brick fragments from 19.8' to 20'																		
FILL: Stiff to very-stiff brownish gray and black **SILT AND CLAY**, some fine to coarse sand, trace gravel, contains shale and asphalt fragments, moist.	531.6		8 4 8	17	100	SS-9	1.5-2.0	5	7	15	32	41	25	13	12	17	A-6a (8)	
			4 5 8	19	83	SS-10	-	-	-	-	-	-	-	-	-	16	A-6a (V)	
FILL: Very-stiff reddish brown and dark gray **SANDY SILT**, some clay, little gravel, contains brick, asphalt, and shale fragments, damp.	521.6		9 15 16	44	100	SS-11	4.00	11	14	27	18	30	24	14	10	12	A-4a (3)	
Very-stiff to hard tan and brown **SILT AND CLAY**, little gravel, trace fine to coarse sand, contains limestone fragments, damp.	515.6		6 10 13	33	56	SS-12	3.75	-	-	-	-	-	-	-	-	-	A-6a (V)	
			10 38 50/1"	-	62	SS-13	4.5+	-	-	-	-	-	-	-	-	-	A-6a (V)	
	508.6	TR																
KOPE FORMATION: SHALE, dark gray, highly to severely weathered, very weak, thinly laminated, argillaceous, calcareous.	507.2		75		75	NQ2-14											CORE	
KOPE FORMATION: LIMESTONE, light gray and gray, slightyly to moderately weathered, moderately strong to strong, very thin bedding	506.7		68		100	NQ2-15											CORE	
KOPE FORMATION: SHALE, dark gray, highly weathered, weak, laminated, argillaceous, calcareous.																		
- UCS = 405 psi at 51.5' - 51.9'			38		100	NQ2-16											CORE	
	495.0		23		100	NQ2-17											CORE	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:48 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\S&ME-WHV\2024-12-16 WHV.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PID: 105349	SFN:	PROJECT: --	STATION / OFFSET: 243+55, 41' LT.	START: 1/30/23	END: 3/7/23	PG 2 OF 2	B-021-1-22

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)	ABAN-DONED
KOPE FORMATION: INTERBEDDED SHALE (85%) AND LIMESTONE (15%) SHALE: dark gray, highly weathered, weak, laminated, calcareous. LIMESTONE: light gray, slightly weathered, strong, thin bedding. *(continued)*	493.6	61																
		62																
		63	25		100	NQ2-18											CORE	
		64																
	488.6	EOB 65																

NOTES:

- Groundwater not encountered prior to rock coring
- Cave-in depth at 28.0'

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLASTIC HOLE PLUG DEVICE; SOIL CUTTINGS MIXED WITH BENTONITE

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:48 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\S&ME-WHV\2024-12-16 WHV.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: --	DRILLING FIRM / OPERATOR: S&ME / P. TUTTLE	DRILL RIG: S&ME ATV D50 (R-80)	STATION / OFFSET: 244+06, 110' RT.
TYPE:	SAMPLING FIRM / LOGGER: S&ME / J. HAYDU	HAMMER: CME AUTOMATIC	ALIGNMENT:
PID: 105349 SFN:	DRILLING METHOD: 3-1/4" HSA / NQ2	CALIBRATION DATE: 6/6/22	ELEVATION: 546.2 (MSL) EOB: 44.0 ft.
START: 2/1/23 END: 2/1/23	SAMPLING METHOD: SPT / NQ2	ENERGY RATIO (%): 85.4	LAT / LONG: 39.123816, -84.533642

EXPLORATION ID B-024-0-22

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)	ABAN-DONED
ASPHALT (6 INCHES)	546.2																	
GRANULAR BASE (7 INCHES)	545.7																	
FILL: Medium-dense brown **GRAVEL AND ROCK FRAGMENTS WITH SAND, SILT, AND CLAY**, damp.	545.1		10 6 6	17	72	SS-1	-	43	22	10	7	18	26	15	11	7	A-2-6 (0)	
FILL: Very-stiff brown **SILTY CLAY**, little fine to coarse sand, little gravel, contains rock fragments, damp.	543.7		5 7 8	21	67	SS-2	2.0-3.0	16	7	7	22	48	40	20	20	17	A-6b (11)	
			5 6 7	19	67	SS-3	3.50	-	-	-	-	-	-	-	-	16	A-6b (V)	
FILL: Very-stiff brown and gray **SILTY CLAY**, little gravel, little fine to coarse sand, contains shale and limestone fragments, damp.	540.7		5 7 12	27	78	SS-4	3.00	16	5	5	31	43	38	19	19	13	A-6b (11)	
			13 8 9	24	39	SS-5	3.50	-	-	-	-	-	-	-	-	18	A-6b (V)	
FILL: Very-stiff bluish gray to gray **SILTY CLAY**, contains concrete fragments, little fine to coarse sand, little gravel, damp.	535.2	W 535.2																
	533.2		19 15 8	33	100	SS-6	2.00	-	-	-	-	-	-	-	-	14	A-6b (V)	
FILL: Medium-stiff to stiff bluish gray to dark gray **CLAY**, "and" silt, little fine and coarse sand, trace gravel, contains shale fragments, damp.																		
			6 5 5	14	72	SS-7	2.00	-	-	-	-	-	-	-	-	22	A-7-6 (V)	
- UCS = 1,595 psf at 16' - 18'																		
			ST		46	ST-8	1.5-2.0	5	6	8	75	6	44	23	21	23	A-7-6 (13)	
	527.7																	
FILL: Stiff brown and gray **SILTY CLAY**, trace gravel, trace fine to coarse sand, moist.			3 4 5	13	100	SS-9	2.00	-	-	-	-	-	-	-	-	21	A-6b (V)	
	524.2																	
Very-stiff dark brown to gray **SILTY CLAY**, little fine to coarse sand, trace gravel, moist.			5 5 6	16	100	SS-10	3.50	-	-	-	-	-	-	-	-	22	A-6b (V)	
			ST		100	ST-11	3.50	-	-	-	-	-	-	-	-	-	A-6b (V)	
	519.2																	
Hard brown and gray **CLAY**, trace gravel, trace fine to coarse sand, trace silt, damp.			8 12 20	46	100	SS-12	4.5+	-	-	-	-	-	-	-	-	20	A-7-6 (V)	
	513.7	TR																
KOPE FORMATION: SHALE gray, highly to severely weathered, very weak, calcareous.	512.2		40 50/1"	-	86	SS-13	-	-	-	-	-	-	-	-	-	7	Rock (V)	
KOPE FORMATION: INTERBEDDED SHALE (80%) AND LIMESTONE (20%) SHALE: gray, moderately weathered, very weak, thinly laminated and laminated, calcaerous. LIMESTONE: light gray, slightly weathered, strong. - UCS = 1,182 psi at 34.2' - 34.6' - shale becoming slightly weathered and weak at 37.0'			47		83	NQ2-14											CORE	
			72		98	NQ2-15											CORE	
	502.2	EOB	80		120	NQ2-16											CORE	

NOTES:

- Groundwater not encountered prior to rock coring
- Seepage encountered at 11.0' and 32.0'
- Cobbles encountered at 8.0', 10.0, and 11.0'
- ST-11 encountered refusal at 26.0'

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BENTONITE CHIPS; PAVEMENT PATCH; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:48 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\S&ME-WHV\2024-12-16 WHV.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

PROJECT: --
TYPE:
PID: 105349 SFN:
START: 3/8/23 END: 3/8/23

DRILLING FIRM / OPERATOR: S&ME / P. TUTTLE
SAMPLING FIRM / LOGGER: S&ME / C. CAREY
DRILLING METHOD: 3-1/4" HSA / NQ2
SAMPLING METHOD: SPT / NQ2

DRILL RIG: S&ME ATV D50 (R-80)
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 6/6/22
ENERGY RATIO (%): 85.4

STATION / OFFSET: 243+40, 111' LT.
ALIGNMENT:
ELEVATION: 553.7 (MSL) EOB: 69.4 ft.
LAT / LONG: 39.124364, -84.534234

EXPLORATION ID B-025-0-22

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)	ABAN-DONED
ASPHALT (2 INCHES)	553.7																	
CONCRETE (11 INCHES)	553.5																	
GRAVEL BASE (2 INCHES)	552.6																	
FILL: Very-stiff brown and gray **SILTY CLAY**, little gravel, little fine to coarse sand, contains limestone fragments, damp.	552.4	1	3 4 4	11	56	SS-1	3.25	13	10	7	23	47	35	18	17	16	A-6b (10)	
	550.2	2																
FILL: Very-stiff brown and gray **CLAY**, some silt, trace gravel, trace fine to coarse sand, contains limestone fragments, damp to moist.		3																
		4	5 5 5	14	89	SS-2	3.50	7	5	4	27	57	44	19	25	18	A-7-6 (15)	
		5																
		6	5 6 5	16	78	SS-3	3.50	-	-	-	-	-	-	-	-	17	A-7-6 (V)	
		7																
		8																
		9	3 5 4	13	89	SS-4	3.00	-	-	-	-	-	-	-	-	23	A-7-6 (V)	
	540.7	10																
FILL: Very-stiff to hard dark brown and gray **SILT AND CLAY**, little gravel, trace fine to coarse sand, slightly organic, contains brick and limestone fragments, damp to moist.		11																
		12	23 11 10	30	0	SS-5	-	-	-	-	-	-	-	-	-	-	A-7-6 (V)	
		13																
		14	20 12 5	24	61	SS-6	2.50	-	-	-	-	-	-	-	-	17	A-6a (V)	
		15																
		16																
		17	9 8 7	21	67	SS-7	4.25	-	-	-	-	-	-	-	-	18	A-6a (V)	
		18																
		19	5 7 7	20	89	SS-8	4.50	-	-	-	-	-	-	-	-	21	A-6a (V)	
	531.7	20																
FILL: Hard gray **SILT AND CLAY**, little gravel, trace fine to coarse sand, damp.		21																
		22																
		23																
		24	2 7 11	26	89	SS-9	4.50	-	-	-	-	-	-	-	-	13	A-6a (V)	
	526.2	25																
FILL: Hard black and grayish brown **SILT AND CLAY**, little fine to coarse sand, trace gravel, contains brick fragments, damp to moist.		26																
		27																
		28																
		29	7 16 12	40	11	SS-10	4.5+	-	-	-	-	-	-	-	-	17	A-6a (V)	
		30																
		31																
		32																
		33																
		34	8 17 15	46	89	SS-11	4.5+	-	-	-	-	-	-	-	-	13	A-6a (V)	
	514.6	35																
FILL: Very-dense black **COARSE AND FINE SAND**, trace silt, trace clay, trace gravel, moist.		36																
		37																
		38																
		39	15 49 50/2"	-	100	SS-12	-	-	-	-	-	-	-	-	-	11	A-3a (V)	
	510.7	40																
FILL: Stiff brown **SILT AND CLAY**, little gravel, trace fine to coarse sand, contains limestone and brick fragments, moist.		41																
		42																
		43																
		44	8 4 5	13	78	SS-13	-	-	-	-	-	-	-	-	-	18	A-6a (V)	
	506.7	45																
Stiff reddish brown **SANDY SILT**, some clay, moist.		46																
		47																
		48																
		49	3 3 3	9	100	SS-14	1.25	0	0	55	12	33	35	17	18	23	A-6b (4)	
	501.2	50																
Hard brown to gray **CLAY**, some silt, trace fine to coarse sand, trace gravel, contains limestone fragments, damp.		51																
		52																
		53																
		54	5 5 9	20	100	SS-15	4.5+	3	3	2	25	67	51	23	28	21	A-7-6 (17)	
	495.7	55																
KOPE FORMATION: SHALE gray, highly to severely weathered, very weak, calcareous.		56																
		57																
		58	TR															
		59	48 50/5"	-	100	SS-16	-	-	-	-	-	-	-	-	-	27	Rock (V)	
	493.8																	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:48 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\S&ME-WHV\2024-12-16 WHV.GPJ

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PID: 105349	SFN:	PROJECT: --	STATION / OFFSET: 243+40, 111' LT.	START: 3/8/23	END: 3/8/23	PG 2 OF 2	B-025-0-22

MATERIAL DESCRIPTION AND NOTES	ELEV. 493.7	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	ABAN-DONED
KOPE FORMATION: INTERBEDDED SHALE (80%) AND LIMESTONE (20%) SHALE: dark gray, highly weathered, very weak to weak, thinly laminated and laminated, calcareous. LIMESTONE: light gray, slightly weathered, strong, very thin bedding. *(continued)* - UCS = 255 psi at 62.2' - 62.6'		61 62 63 64 65 66 67 68 69	94		100	NQ2-17												CORE
			45		100	NQ2-18												CORE
			29		86	NQ2-19												CORE
	484.3	EOB																

NOTES:

- Groundwater not encountered prior to rock coring
- Rough drilling at 10.5' and 30.5'
- No water return during rock coring

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; PLASTIC HOLE PLUG DEVICE; SOIL CUTTINGS MIXED WITH BENTONITE

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:48 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\S&ME-WHV\2024-12-16 WHV.GPJ

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PROJECT: --
TYPE:
PID: 105349 SFN:
START: 1/26/23 END: 1/26/23

DRILLING FIRM / OPERATOR: MSG / R. SCHIEPPERT
SAMPLING FIRM / LOGGER: S&ME / C. CAREY
DRILLING METHOD: 4-1/4" HSA / NQ2
SAMPLING METHOD: SPT / NQ2

DRILL RIG: MSG GEOPROBE DH103H
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 9/3/21
ENERGY RATIO (%): 90*

STATION / OFFSET:
ALIGNMENT:
ELEVATION: 529.5 (MSL) EOB: 37.5 ft.
LAT / LONG: 39.125043, -84.533940

EXPLORATION ID B-026-0-22
PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 529.5 / DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	ABAN-DONED
TOPSOIL (11 INCHES)	528.6																
FILL: Very-stiff tan **CLAY**, some silt, trace fine sand, slightly organic, moist.	526.5	2 4 6	15	100	SS-1	3.00	0	0	1	31	68	46	20	26	22	A-7-6 (16)	
Hard brown and light gray **SILT AND CLAY**, trace fine to coarse sand, trace gravel, moist.	523.5	3 4 8	18	100	SS-2	4.50	-	-	-	-	-	-	-	-	21	A-6a (V)	
Medium-stiff grayish brown **SILT**, some clay, little fine to coarse sand, trace gravel, moist.	522.1	2 2 5	11	100	SS-3	0.50	2	4	7	53	34	25	16	9	22	A-4b (8)	
Hard brown **SILTY CLAY**, some gravel, trace fine to coarse sand, damp. - limestone floater 9' - 9.5'	519.5	22 50/4"	-	50	SS-4	-	33	5	3	17	42	37	18	19	11	A-6b (8)	
Hard grayish brown **CLAY**, some silt, trace fine to coarse sand, trace gravel, contains limestone fragments, damp. - limestone floater 14.4' - 14.9'	514.0	6 8 14	33	100	SS-5	4.5+	3	3	2	27	65	45	24	21	16	A-7-6 (13)	
		9 12 50/5"	-	53	SS-6	4.5+	-	-	-	-	-	-	-	-	18	A-7-6 (V)	
KOPE FORMATION: SHALE: brownish gray, severely to highly weathered, very weak, thinly laminated.	TR	14 23 34	86	100	SS-7	-	-	-	-	-	-	-	-	-	16	Rock (V)	
		10 22 34	84	100	SS-8	-	-	-	-	-	-	-	-	-	14	Rock (V)	
		14 35 50/4"	-	94	SS-9	-	-	-	-	-	-	-	-	-	7	Rock (V)	
	502.5	24 32 50/4"	-	94	SS-10	-	-	-	-	-	-	-	-	-	8	Rock (V)	
KOPE FORMATION: SHALE gray, highly weathered, very weak to weak, thinly laminated to laminated, argillaceous, calcaerous.		62		97	NQ2-11											CORE	
	494.4	28		95	NQ2-12											CORE	
KOPE FORMATION: LIMESTONE gray, slightly weathered, strong, thin bedding	493.9																
KOPE FORMATION: SHALE gray and dark gray, highly weathered, weak, thinly laminated, calcareous. - UCS = 12,452 psi at 35.7' - 36.1'	492.0 EOB																

NOTES:

- Groundwater not encountered prior to rock coring

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLASTIC HOLE PLUG DEVICE; SOIL CUTTINGS MIXED WITH BENTONITE

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:48 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\S&ME-WHV\2024-12-16 WHV.GPJ

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PROJECT: -- | DRILLING FIRM / OPERATOR: S&ME / P. TUTTLE | DRILL RIG: S&ME ATV D50 (R-80) | STATION / OFFSET: | EXPLORATION ID B-027-0-22

TYPE: | SAMPLING FIRM / LOGGER: S&ME / J. HAYDU | HAMMER: CME AUTOMATIC | ALIGNMENT:

PID: 105349 SFN: | DRILLING METHOD: 3-1/4" HSA | CALIBRATION DATE: 6/6/22 | ELEVATION: 540.6 (MSL) EOB: 33.8 ft. | PAGE 1 OF 1

START: 3/15/23 END: 3/15/23 | SAMPLING METHOD: SPT / ST | ENERGY RATIO (%): 85.4 | LAT / LONG: 39.125373, -84.533810

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)	ABAN-DONED
ASPHALT (7 INCHES)	540.6																	
GRANULAR BASE (12 INCHES)	540.0																	
FILL: Medium-dense gray **GRAVEL WITH SAND, SILT AND CLAY**, damp.	539.0		4 4 6	14	72	SS-1	-	59	15	7	7	12	25	13	12	8	A-2-6 (0)	
FILL: Medium-stiff brown, reddish brown, and gray **CLAY**, trace gravel, trace fine to coarse sand, trace silt, contains brick fragments, damp.	536.8					SS-2A	-	-	-	-	-	-	-	-	-	18	A-2-6 (V)	
			1 2 3	7	39	SS-2B	-	-	-	-	-	-	-	-	-	-	A-7-6 (V)	
FILL: Very-stiff brown, greenish gray, and gray **CLAY**,little gravel, trace fine to coarse sand, trace silt, contains brick and limestone fragments, damp.	535.1		8 7 9	23	61	SS-3	2.50	-	-	-	-	-	-	-	-	17	A-7-6 (V)	
FILL: Stiff to very-stiff gray **CLAY**, "and" silt, trace gravel, trace fine to coarse sand, contains shale fragments, damp.	532.6		4 6 7	19	78	SS-4	2.00	-	-	-	-	-	-	-	-	17	A-7-6 (V)	
			ST		100	ST-5	1.25-2.75	0	1	2	54	43	44	21	23	20	A-7-6 (14)	
FILL: Soft gray **SILTY CLAY**, trace gravel, trace fine to coarse sand, contains decayed wood, moist to wet.	527.6		1 2 3	7	100	SS-6	0.25 - 0.5	-	-	-	-	-	-	-	-	34	A-6b (V)	
Very-stiff brown mottled with gray **SILTY CLAY**, trace fine to coarse sand, trace gravel, contains iron oxide stains, moist.	525.1		4 4 7	16	100	SS-7	3.00	-	-	-	-	-	-	-	-	24	A-6b (V)	
			ST		75	ST-8	-	-	-	-	-	-	-	-	-	-		
Hard brown and gray **CLAY**, trace gravel, trace fine to coarse sand, trace silt, relict bedding, contains limestone floaters and shale fragments, damp.	518.6		10 14 35	70	61	SS-9	4.5+	-	-	-	-	-	-	-	-	17	A-7-6 (V)	
	516.2 W																	
KOPE FORMATION: SHALE gray, highly weathered, very weak, occasional limestone layer.	513.6 TR		42 50/2"	-	100	SS-10	-	-	-	-	-	-	-	-	-	10	Rock (V)	
	507.2 ▽																	
	506.8 EOB		50/3"	-	100	SS-11	-	-	-	-	-	-	-	-	-	10	Rock (V)	

NOTES:

- Groundwater encountered at 24.4'
- Seepage encountered at 3.8'
- Groundwater at completion at 33.4'

NOTES: SEE ABOVE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; PLASTIC HOLE PLUG DEVICE; SOIL CUTTINGS MIXED WITH BENTONITE

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 12/23/24 15:48 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\S&ME-WHV\2024-12-16 WHV.GPJ

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Laboratory Test Results

Contents:

Summary of Laboratory Tests for Borings Completed for ODOT PID 122902 and Select Borings for ODOT PIDs 113361, 114161, and 105349
Atterberg Limit Results for ODOT PID 122902 (4 pages)
Atterberg Limit Results for ODOT PID 105349 (2 pages for 4 new borings)
Grain Size Distributions for ODOT PID 122902 (15 pages)
Grain Size Distributions for ODOT PID 113361 (43 pages)
Grain Size Distributions for ODOT PID 114161 (66 pages)
Grain Size Distributions for ODOT PID 105349 (9 pages)
Unconfined Compressive Strength for ODOT PID 122902 (2 pages)
Unconfined Compressive Strength for ODOT PID 114161
Unconsolidated Undrained Triaxial Compressive Strength for ODOT PID 122902 (4 pages)
Consolidated Undrained Triaxial Compressive Strength for ODOT PID 122902 (8 pages)
Consolidated Undrained Triaxial Compressive Strength for ODOT PID 113361 (2 pages)
Consolidated Undrained Triaxial Compressive Strength for ODOT PID 114161 (6 pages)
One-Dimensional Consolidation for ODOT PID 122902 (2 pages)
One-Dimensional Consolidation for ODOT PID 113361 (8 pages)
One-Dimensional Consolidation for ODOT PID 114161 (6 pages)
Flexible Wall Permeability for ODOT PID 122902 (2 pages)
Chemical Analyses for ODOT PID 122902 (6 pages)
Chemical Analyses for ODOT PID 113361
Chemical Analyses for ODOT PID 114161
Slurry Abrasivity (Miller Number) Test Report by WRES, Inc. (21 pages)
Splitting Tensile Strength of Intact Rock Core Specimens for ODOT PID 114161 (3 pages)
Slake Durability Index for ODOT PID 114161 (2 pages)
Abrasiveness of Rock Using the CERCHAR Method for ODOT PID 114161 (4 pages)
Punch Penetration Index Test for ODOT PID 114161

Note: All attachments are one page unless noted above.

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TABULATION OF LABORATORY TESTS

Exploration ID	Sample ID	Depth (ft.) From	Depth (ft.) To	N_{60} (bpf)	HP (tsf)	Moisture Content (%)	Dry Unit Weight (pcf)	Atterberg Limits (%) LL	PL	PI	Gradation Analysis (%) Gravel	Coarse Sand	Fine Sand	Silt	Clay	D_{90} (mm)	D_{50} (mm)	D_{30} (mm)	D_{10} (mm)	C_c	C_u	ODOT Classification	Unconfined Compressive Strength (psf)	Undrained Compressive Strength (psf)	Triaxial Test Type	Triaxial c' (psf)	Triaxial ϕ' (°)	Consolidation p_c (tsf)	Consolidation C_c	Consolidation C_r	Permeability (cm/sec.)	Resistivity (ohm-cm)	Redox Potential (mV)	pH	Sulfide (mg/kg of dry weight)	Chlorides (mg/kg of dry weight)	Sulfates (mg/kg of dry weight)	Miller Number	Splitting Tensile Strength (psi)	Slake Durability Index (%)	CERCHAR Abrasiveness Index	Punch Penetration Index (kips/in.)
B-001-0-24	SS-1	2.5	4.0	29	4.5																	A-6a (VISUAL)																					
B-001-0-24	SS-2	5.0	6.5	17	4	9		30	19	11	11	17	11	34	27	2.722	0.032	0.006				A-6a (6)																					
B-001-0-24	SS-3	7.5	9.0	11	2.5																	A-6a (VISUAL)																					
B-001-0-24	SS-4	10.0	11.5	35	2.75	15																A-6a (VISUAL)																					
B-001-0-24	SS-5	15.0	16.5	20		9		NP	NP	NP	1	1	43	53	2	0.179	0.058	0.021	0.008	0.71	10.68	A-4b (4)																					
B-001-0-24	SS-6	20.0	21.5	22																		A-3a (VISUAL)																					
B-001-0-24	SS-7	25.0	26.5	18		7		NP	NP	NP	3	44	40	9	4	0.765	0.405	0.298	0.030	6.34	15.98	A-3a (0)																					
B-001-0-24	SS-8	27.5	29.0	18																		A-3a (VISUAL)																					
B-001-0-24	SS-9	29.0	30.5	15																		A-3a (VISUAL)																					
B-001-0-24	SS-10	30.5	32.0	15		30																A-3a (VISUAL)																					
B-001-0-24	SS-11	32.0	33.5	21		24																A-3a (VISUAL)										5,810	373.3	8.70	0.011	91	<100	145				
B-001-0-24	SS-12	33.5	35.0	20																		A-3a (VISUAL)																					
B-001-0-24	SS-13	35.0	36.5	22																		A-3a (VISUAL)																					
B-001-0-24	SS-14	36.5	38.0	22																		A-3a (VISUAL)																					
B-001-0-24	SS-15	38.0	39.5	18		18		NP	NP	NP	0	12	72	15	1	0.469	0.182	0.113	0.025	2.21	9.25	A-3a (0)																					
B-001-0-24	SS-16	39.5	41.0	18																		A-3a (VISUAL)																					
B-001-0-24	SS-17	41.0	42.5	18																		A-3a (VISUAL)																					
B-001-0-24	SS-18	42.5	44.0	13																		A-3a (VISUAL)																					
B-001-0-24	SS-19	44.0	45.5	18		28		NP	NP	NP	1	8	22	60	9	0.341	0.031	0.013	0.005	0.64	9.62	A-4b (7)																					
B-001-0-24	SS-20	45.5	47.0	17																		A-3a (VISUAL)																					
B-001-0-24	SS-21	47.0	48.5	13																		A-3a (VISUAL)																					
B-001-0-24	SS-22	48.5	50.0	24																		A-3a (VISUAL)																					
B-001-0-24	SS-23	50.0	51.5	32																		A-3a (VISUAL)																					
B-001-0-24	SS-24	51.5	53.0	25																		A-3a (VISUAL)																					
B-001-0-24	SS-25	53.0	55.0	18																		A-3a (VISUAL)																					
B-001-0-24	SS-26	58.5	60.0	8		18		NP	NP	NP	2	35	29	33	1	1.102	0.140	0.052	0.010	0.8	32.41	A-3a (0)																					
B-001-0-24	SS-27	63.5	65.0	34																		A-3a (VISUAL)																					
B-001-0-24	SS-28	68.5	70.0	52																		A-3a (VISUAL)																					
B-002-0-24	SS-1	1.0	2.5	21	3.5																	A-6a (VISUAL)																					
B-002-0-24	SS-2	3.5	5.0	28	3.5	18		31	19	12	28	10	13	32	17	44.128	0.100	0.015				A-6a (3)																					
B-002-0-24	SS-3	6.0	7.5	24	1.5																	A-6a (VISUAL)																					
B-002-0-24	SS-4	8.5	10.0	21	1.25	21																A-6a (VISUAL)																					
B-002-0-24	SS-5	13.5	15.0	16	1.5																	A-6a (VISUAL)																					
B-002-0-24	SS-6	18.5	20.0	9	1.25	19																A-4b (VISUAL)																					
B-002-0-24	ST-7	21.5	23.5	ST	1.5	27	94.8	NP	NP	NP	0	1	10	80	9	0.076	0.020	0.010	0.005	0.71	5.42	A-4b (8)		5,550																				
B-002-0-24	SS-8	23.5	25.0	3	0.5																	A-4b (VISUAL)																					
B-002-0-24	SS-9	25.0	26.5	5	0.25	30		NP	NP	NP	0	0	3	87	10	0.061	0.017	0.009	0.005	0.73	4.77	A-4b (8)																					
B-002-0-24	SS-10	26.5	28.0	5	0.75																	A-4b (VISUAL)																					
B-002-0-24	SS-11	28.0	29.5	11	0.75																	A-4b (VISUAL)																					
B-002-0-24	SS-12	29.5	31.0	7	0.5	26																A-4b (VISUAL)																					
B-002-0-24	SS-13	31.0	32.5	11	0.25																	A-4b (VISUAL)																					
B-002-0-24	SS-14	32.5	34.0	4	0.5																	A-4b (VISUAL)																					
B-002-0-24	SS-15	34.0	35.5	7	0.25																	A-4a (VISUAL)																					
B-002-0-24	SS-16	35.5	37.0	11	0.25	28		NP	NP	NP	0	1	60	36	3	0.235	0.088	0.037	0.008	1.65	12.44	A-4a (1)																					
B-002-0-24	SS-17	37.0	38.5	15	0.25																	A-4a (VISUAL)																					
B-002-0-24	SS-18	38.5	40.0	20	0.25																	A-4a (VISUAL)																					
B-002-0-24	SS-19	40.0	41.5	11	0.5	25																A-4a (VISUAL)																					
B-002-0-24	SS-20	41.5	43.0	25	0.5																	A-4a (VISUAL)																					
B-002-0-24	SS-21	43.0	44.5	32																		A-4a (VISUAL)																					
B-002-0-24	SS-22	44.5	46.0	3		25																A-4a (VISUAL)																					
B-002-0-24	SS-23	46.0	47.5	21	0.5																	A-4a (VISUAL)																					
B-002-0-24	SS-24	47.5	49.0	19		22		NP	NP	NP	0	1	59	35	5	0.221	0.095	0.034	0.007	1.32	16.55	A-4a (1)																					
B-002-0-24	SS-25	49.0	50.5	19																		A-4a (VISUAL)																					
B-002-0-24	SS-26	53.5	55.0	31		18		NP	NP	NP	1	10	77	12	0	0.448	0.222	0.143	0.046	1.65	5.88	A-3a (0)																					
B-002-0-24	SS-27	58.5	60.0	21																		A-3a (VISUAL)																					
B-002-0-24	SS-28	63.5	65.0	17																		A-3a (VISUAL)																					
B-003-0-24	SS-1	2.5	4.0	11		21		NP	NP	NP	53	27	10	7	3	14.655	2.431	0.762	0.080	1.67	54.82	A-1-a (0)																					
B-003-0-24	SS-2	5.0	6.5	7																		A-1-a (VISUAL)																					
B-003-0-24	SS-3	7.5	9.0	4																		A-1-a (VISUAL)																					
B-003-0-24	SS-4	10.0	11.5	48																		A-1-a (VISUAL)																					
B-003-0-24	SS-5	15.0	16.5	7																		A-1-a (VISUAL)																					
B-003-0-24	SS-6	17.5	19.0	3		7																A-1-a (VISUAL)																					
B-003-0-24	SS-7	19.0	20.5	4	1																	A-4b (VISUAL)																					
B-003-0-24	SS-8	20.5	22.0	5	0.5	32		NP	NP	NP	0	0	13	78	9	0.083	0.021	0.010	0.005	0.71	5.73	A-4b (8)																					
B-003-0-24	SS-9	22.0	23.5	3		35																A-4b (VISUAL)																					
B-003-0-24	SS-10	23.5	25.0	11	0.25																	A-4b (VISUAL)																					
B-003-0-24	SS-11	25.0	26.5	9		29		NP	NP	NP	0	0	26	67	7	0.096	0.028	0.013	0.006	0.67	7.58	A-4b (8)																					
B-003-0-24	SS-12	26.5	28.0	9	1.5	28		29	18	11	0	0	4	58	38	0.056	0.009					A-6a (8)																					
B-003-0-24	SS-13	28.0	29.5	5	0.5																	A-4b (VISUAL)																					
B-003-0-24	SS-14	29.5	31.0	8	0.25																	A-4b (VISUAL)																					
B-003-0-24	SS-15	31.0	32.5	7	0.25																	A-4b (VISUAL)																					
B-003-0-24	SS-16	32.5	34.0	9	0.5																	A-4b (VISUAL)																					
B-003-0-24	ST-17	34.0	36.0	ST	0.25	26		26	20	6	0	0	3	82	15	0.060	0.016	0.008				A-4b (8)																					
B-003-0-24	SS-18	36.0	37.5	5	0.25																	A-4b (VISUAL)																					
B-003-0-24	SS-19	37.5	39.0	7	0.25																	A-4b (VISUAL)																					
B-003-0-24	SS-20	39.0	40.5	7	0.25	27																A-4b (VISUAL)																					
B-003-0-24	SS-21	40.5	42.0	3	1																	A-4b (VISUAL)																					
B-003-0-24	SS-22	42.0	43.5	4	0.25																	A-4b (VISUAL)																					
B-003-0-24	SS-23	43.5	45.0	15	0.25	28		NP	NP	NP	0	0	33	59	8	0.133	0.034	0.014	0.005	0.63	10.09	A-4b (6)																					
B-003-0-24	SS-24	48.5	50.0	4	0.75																	A-4a (VISUAL)																					
B-003-0-24	SS-25	53.5	55.0	27		19		NP	NP	NP	2	9	82	6	1	0.462	0.256	0.165	0.097	0.96	3.00	A-3 (0)																					
B-003-0-24	SS-26	58.5	60.0	20		18																A-3 (VISUAL)																					
B-004-0-24	SS-1	2.5	4.0	4	4.5	11																A-6a (VISUAL)																					
B-004-0-24	SS-2	5.0	6.5	52	4.5	10		30	15	15	32	29	14	14	11	24.409	0.626	0.263				A-2-6 (1)																					
B-004-0-24	SS-3	7.5	9.0	11	3.5																	A-6a (VISUAL)																					
B-004-0-24	SS-4	10.0	11.5	7																		A-6a (VISUAL)																					
B-004-0-24	SS-5	15.0	16.5	6		9		NP	NP	NP	5	42	36	14	3	0.964	0.367	0.170	0.018	3.25	26.10	A-3a (0)																					
B-004-0-24	SS-6	20.0	21.5	7	1.5	24																A-3a (VISUAL)																					
B-004-0-24	SS-7	22.5	24.0	15	1.75																	A-6a (VISUAL)																					
B-004-0-24	SS-8	24.0	25.5	8																		A-1-b (VISUAL)																					

NOT FOR CONSTRUCTION INFORMATION ONLY

TABULATION OF LABORATORY TESTS

Exploration ID	Sample ID	Depth (ft.) From	Depth (ft.) To	N_{60} (bpf)	HP (tsf)	Moisture Content (%)	Dry Unit Weight (pcf)	Atterberg Limits (%) LL	PL	PI	Gradation Analysis (%) Gravel	Coarse Sand	Fine Sand	Silt	Clay	D_{90} (mm)	D_{50} (mm)	D_{30} (mm)	D_{10} (mm)	C_c	C_u	ODOT Classification	Unconfined Compressive Strength (psf)	Undrained Compressive Strength (psf)	Triaxial Test Type	Triaxial c' (psf)	Triaxial ϕ' (°)	Consolidation p_c (tsf)	Consolidation C_c	Consolidation C_r	Permeability (cm/sec.)	Resistivity (ohm-cm)	Redox Potential (mV)	pH	Sulfide (mg/kg of dry weight)	Chlorides (mg/kg of dry weight)	Sulfates (mg/kg of dry weight)	Miller Number	Splitting Tensile Strength (psi)	Slake Durability Index (%)	CERCHAR Abrasiveness Index	Punch Penetration Index (kips/in.)
B-004-0-24	SS-9	25.5	27.0	7																		A-1-b (VISUAL)																					
B-004-0-24	SS-10	27.0	28.5	10		20		NP	NP	NP	3	58	28	10	1	1.321	0.504	0.339	0.053	3.64	11.16	A-1-b (0)																					
B-004-0-24	SS-11	28.5	30.0	7																		A-1-b (VISUAL)																					
B-004-0-24	SS-12	30.0	31.5	10		20																A-1-b (VISUAL)																					
B-004-0-24	SS-13	31.5	33.0	7	0.5	27																A-4b (VISUAL)										3,940	320.3	9.00	0.000	117	<100	129.1				
B-004-0-24	SS-14	33.0	34.5	3	0.5																	A-4b (VISUAL)																					
B-004-0-24	SS-15	34.5	36.0	3	0.25	28																A-4b (VISUAL)																					
B-004-0-24	SS-16	36.0	37.5	8	0.5																	A-4b (VISUAL)																					
B-004-0-24	ST-17	37.5	39.5	ST	1	22	107.4	NP	NP	NP	2	67	21	8	2	1.376	0.557	0.401	0.064	3.89	10.15	A-1-b (0)		6,800							4.2E-06											
B-004-0-24	SS-18	39.5	41.0	0		24		NP	NP	NP	3	49	13	31	4	1.164	0.444	0.049	0.008	0.54	64.83	A-3a (0)																					
B-004-0-24	SS-19	41.0	42.5	0																		A-3a (VISUAL)																					
B-004-0-24	SS-20	42.5	44.0	3	0.25	30		23	20	3	0	2	10	78	10	0.081	0.020	0.010	0.005	0.71	5.68	A-4b (8)																					
B-004-0-24	SS-21	44.0	45.5	3	0.25																	A-4b (VISUAL)																					
B-004-0-24	SS-22	45.5	47.0	8	0.75																	A-4b (VISUAL)																					
B-004-0-24	SS-23	47.0	48.5	14	0.25																	A-3 (VISUAL)																					
B-004-0-24	SS-24	48.5	50.0	20		20		NP	NP	NP	0	4	92	3	1	0.388	0.206	0.147	0.104	0.86	2.35	A-3 (0)																					
B-004-0-24	SS-25	53.5	55.0	15		24		NP	NP	NP	15	55	22	7	1	4.220	0.576	0.430	0.238	1.16	2.80	A-1-b (0)																					
B-004-0-24	SS-26	58.5	60.0	36																		A-1-b (VISUAL)																					
B-004-0-24	SS-27	63.5	65.0	38																		A-1-b (VISUAL)																					
B-005-0-24	SS-1	2.5	4.0	16																		A-1-b (VISUAL)																					
B-005-0-24	SS-2	5.0	6.5	15	2	29																A-6a (VISUAL)																					
B-005-0-24	SS-3	7.5	9.0	8	1.5																	A-6a (VISUAL)																					
B-005-0-24	SS-4	10.0	11.5	13																		A-3a (VISUAL)																					
B-005-0-24	SS-5	15.0	16.5	17																		A-3a (VISUAL)																					
B-005-0-24	SS-6	20.0	21.5	17	1.5	24		NP	NP	NP	0	0	4	84	12	0.063	0.017	0.009	0.005	0.72	5.02	A-4b (8)																					
B-005-0-24	SS-7	25.0	26.5	9	1.25																	A-4b (VISUAL)																					
B-005-0-24	SS-8	30.0	31.5	8	1																	A-4b (VISUAL)																					
B-005-0-24	SS-9	32.5	34.0	5	0.5	26		23	21	2	0	0	0	78	22	0.053	0.013	0.007				A-4b (8)																					
B-005-0-24	SS-10	34.0	35.5	8	0.5																	A-4b (VISUAL)																					
B-005-0-24	SS-11	35.5	37.0	8	0.75	25																A-4b (VISUAL)																					
B-005-0-24	ST-12	37.0	39.0	ST	0.5	21	112.6	NP	NP	NP	0	1	15	66	18	0.110	0.019	0.008				A-4b (8)			CU	0	33.7																
B-005-0-24	SS-13	39.0	40.5	11	1.75	24																A-4b (VISUAL)																					
B-005-0-24	SS-14	40.5	42.0	11	0.5																	A-4b (VISUAL)																					
B-005-0-24	SS-15	42.0	43.5	7	0.25	36		NP	NP	NP	0	1	1	89	9	0.059	0.017	0.010	0.005	0.74	4.57	A-4b (8)																					
B-005-0-24	SS-16	43.5	45.0	8	0.25																	A-4b (VISUAL)																					
B-005-0-24	SS-17	45.0	46.5	8	0.5	34																A-4b (VISUAL)																					
B-005-0-24	SS-18	46.5	48.0	9	0.75																	A-4b (VISUAL)																					
B-005-0-24	SS-19	48.0	49.5	3	0.25	27																A-4b (VISUAL)																					
B-005-0-24	SS-20	49.5	51.0	7	0.25																	A-4b (VISUAL)																					
B-005-0-24	SS-21	51.0	52.5	7	0.5	28																A-4b (VISUAL)																					
B-005-0-24	SS-22	52.5	54.0	5	0.25																	A-4b (VISUAL)																					
B-005-0-24	SS-23	54.0	55.5	8	0.25	30		NP	NP	NP	0	0	33	61	6	0.122	0.035	0.015	0.006	0.64	9.25	A-4b (6)																					
B-005-0-24	SS-24	55.5	57.0	3	0.25																	A-4b (VISUAL)																					
B-005-0-24	SS-25	57.0	58.5	8	0.5	24																A-4b (VISUAL)																					
B-005-0-24	SS-26	58.5	60.0	9	0.5																	A-4b (VISUAL)																					
B-005-0-24	SS-27	63.5	65.0	9		21		NP	NP	NP	1	74	22	1	2	1.671	0.720	0.473	0.130	1.94	6.86	A-1-b (0)																					
B-005-0-24	SS-28	68.5	70.0	9																		A-1-b (VISUAL)																					
B-005-0-24	SS-29	73.5	75.0	9																		A-1-b (VISUAL)																					
B-006-0-24	SS-1	2.5	4.0	8																		A-3a (VISUAL)																					
B-006-0-24	SS-2	5.0	6.5	7	0.75																	A-6b (VISUAL)																					
B-006-0-24	SS-3	7.5	9.0	16	0.25																	A-6b (VISUAL)																					
B-006-0-24	ST-4	9.0	11.0	ST		3		NP	NP	NP	10	48	37	4	1	1.964	0.494	0.339	0.176	1.08	3.44	A-1-b (0)																					
B-006-0-24	SS-5	13.5	15.0	9																		A-1-b (VISUAL)																					
B-006-0-24	SS-6	18.5	20.0	13																		A-1-b (VISUAL)																					
B-006-0-24	SS-7	23.5	25.0	16		8																A-1-b (VISUAL)																					
B-006-0-24	SS-8	27.5	29.0	13		25																A-4a (VISUAL)																					
B-006-0-24	SS-9	29.0	30.5	9	0.5	31																A-4b (VISUAL)																					
B-006-0-24	SS-10	30.5	32.0	11	0.5																	A-4b (VISUAL)																					
B-006-0-24	ST-11	32.0	34.0	ST	1	28	104.3	NP	NP	NP	0	0	3	86	11	0.061	0.017	0.009	0.005	0.73	4.87	A-4b (8)			CU	0	33.7																
B-006-0-24	SS-12	34.0	35.5	17	0.25																	A-4b (VISUAL)																					
B-006-0-24	SS-13	35.5	37.0	17	0.75	27		NP	NP	NP	0	0	32	63	5	0.120	0.035	0.015	0.006	0.65	8.64	A-4b (7)																					
B-006-0-24	SS-14	37.0	38.5	9	0.5																	A-4b (VISUAL)																					
B-006-0-24	SS-15	38.5	40.0	9	0.25	32																A-4b (VISUAL)																					
B-006-0-24	SS-16	40.0	41.5	9	0.25																	A-4b (VISUAL)																					
B-006-0-24	SS-17	41.5	43.0	11	0.25																	A-4b (VISUAL)																					
B-006-0-24	SS-18	43.0	44.5	24	0.75																	A-4b (VISUAL)																					
B-006-0-24	SS-19	44.5	46.0	15																		A-3a (VISUAL)																					
B-006-0-24	SS-20	46.0	47.5	17																		A-3a (VISUAL)																					
B-006-0-24	SS-21	47.5	49.0	15		24		NP	NP	NP	0	6	83	8	3	0.401	0.217	0.147	0.054	1.52	4.80	A-3a (0)																					
B-006-0-24	SS-22	49.0	50.5	23																		A-3a (VISUAL)																					
B-006-0-24	SS-23	50.5	52.0	36																		A-3a (VISUAL)																					
B-006-0-24	SS-24	52.0	53.5	7																		A-3a (VISUAL)																					
B-006-0-24	SS-25	53.5	55.0	9		21																A-3a (VISUAL)																					
B-006-0-24	SS-26	58.5	60.0	13																		A-3a (VISUAL)																					
B-006-0-24	SS-27	63.5	65.0	13																		A-3a (VISUAL)																					
B-006-0-24	SS-28	68.5	70.0	16		20																A-3a (VISUAL)																					
B-007-0-24	SS-1	2.5	4.0	20																		A-3a (VISUAL)																					
B-007-0-24	SS-2	5.0	6.5	29																		A-3a (VISUAL)																					
B-007-0-24	SS-3	7.5	7.8	50/3"																		A-3a (VISUAL)																					
B-007-0-24	SS-4	10.0	11.5	15	1.5	12																A-4a (VISUAL)																					
B-007-0-24	SS-5	15.0	16.5	8	2																	A-4a (VISUAL)																					
B-007-0-24	SS-6	20.0	21.5	5	0.5	25		25	20	5	6	23	7	50	14	1.469	0.035	0.012				A-4b (6)																					
B-007-0-24	SS-7	22.5	24.0	9	1																	A-4b (VISUAL)																					
B-007-0-24	ST-8	24.0	26.0	ST	1	18	105.4	23	18	5	7	13	8	47	25	1.266	0.021	0.007				A-4a (7)			CU	0	33.8				1.7E-06											
B-007-0-24	SS-9	26.0	27.5	9	0.75																	A-4b (VISUAL)																					
B-007-0-24	SS-10	27.5	29.0	4	0.75	24																A-4b (VISUAL)																					
B-007-0-24	ST-11	29.0	30.5	7	0.75																	A-4b (VISUAL)																					
B-007-0-24	SS-12	30.5	32.0	7	0.25	28																A-4b (VISUAL)																					
B-007-0-24	SS-13	32.0	33.5	7	0.75																	A-4b (VISUAL)																					
B-007-0-24	SS-14	33.5	35.0	5	0.25	25																A-4b (VISUAL)																					
B-007-0-24	SS-15	35.0	36.5	7	1																	A-4b (VISUAL)																					

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TABULATION OF LABORATORY TESTS

Exploration ID	Sample ID	Depth (ft.) From	Depth (ft.) To	N_{60} (bpf)	HP (tsf)	Moisture Content (%)	Dry Unit Weight (pcf)	Atterberg Limits (%) LL	PL	PI	Gradation Analysis (%) Gravel	Coarse Sand	Fine Sand	Silt	Clay	D_{90} (mm)	D_{50} (mm)	D_{30} (mm)	D_{10} (mm)	C_c	C_u	ODOT Classification	Unconfined Compressive Strength (psf)	Undrained Compressive Strength (psf)	Triaxial Test Type	Triaxial c' (psf)	Triaxial ϕ' (°)	Consolidation p_c (tsf)	Consolidation C_c	Consolidation C_r	Permeability (cm/sec.)	Resistivity (ohm-cm)	Redox Potential (mV)	pH	Sulfide (mg/kg of dry weight)	Chlorides (mg/kg of dry weight)	Sulfates (mg/kg of dry weight)	Miller Number	Splitting Tensile Strength (psi)	Slake Durability Index (%)	CERCHAR Abrasiveness Index	Punch Penetration Index (kips/in.)
B-007-0-24	SS-16	36.5	38.0	3	0.25	25		28	15	13	0	1	4	61	34	0.060	0.010					A-6a (9)																				
B-007-0-24	SS-17	38.0	39.5	7	0.5																	A-4b (VISUAL)																				
B-007-0-24	SS-18	39.5	41.0	9	1.5	25																A-4b (VISUAL)																				
B-007-0-24	SS-19	41.0	42.5	8	0.5																	A-4b (VISUAL)																				
B-007-0-24	ST-20	42.5	44.0	ST	0.5	21	111.6	26	20	6	0	0	1	75	24	0.055	0.013	0.006				A-4b (8)		2,180				1.0	0.12	0.02												
B-007-0-24	SS-21	44.0	45.5	9	0.5																	A-4b (VISUAL)																				
B-007-0-24	SS-22	45.5	47.0	7	0.75																	A-4b (VISUAL)																				
B-007-0-24	SS-23	47.0	48.5	3																		A-3a (VISUAL)																				
B-007-0-24	SS-24	48.5	50.0	17		15		NP	NP	NP	0	12	52	33	3	0.571	0.120	0.045	0.009	1.41	19.18	A-4a (0)																				
B-007-0-24	SS-25	53.5	55.0	11																		A-4a (VISUAL)																				
B-007-0-24	SS-26	58.5	60.0	39																		A-4a (VISUAL)																				
B-007-0-24	SS-27	63.5	65.0	55																		A-4a (VISUAL)																				
B-008-0-24	SS-1	2.5	4.0	13	2																	A-6a (VISUAL)																				
B-008-0-24	SS-2	5.0	6.5	5		14																A-6a (VISUAL)																				
B-008-0-24	SS-3	7.5	9.0	3	0.5																	A-6a (VISUAL)																				
B-008-0-24	ST-4	9.0	11.0	ST	1	20	108.7	29	15	14	1	3	7	49	40	0.098	0.009					A-6a (10)			CU	252	29.5																
B-008-0-24	SS-5	15.0	16.5	7	1.25																	A-6a (VISUAL)																				
B-008-0-24	SS-6	17.5	19.0	9	0.5																	A-6a (VISUAL)																				
B-008-0-24	SS-7	19.0	20.5	5	1.75	25		26	20	6	0	0	1	73	26	0.054	0.012	0.006				A-4b (8)																				
B-008-0-24	SS-8	20.5	22.0	8	1.5																	A-4b (VISUAL)																				
B-008-0-24	SS-9	22.0	23.5	7	1	29																A-4b (VISUAL)																				
B-008-0-24	SS-10	23.5	25.0	9	0.25																	A-4b (VISUAL)																				
B-008-0-24	ST-11	25.0	27.0	ST	1	21	104.5	21	19	2	0	0	10	74	16	0.075	0.017	0.008				A-4b (8)			CU	0	33.8																
B-008-0-24	SS-12	27.0	28.5	8	0.25																	A-4b (VISUAL)																				
B-008-0-24	SS-13	28.5	30.0	8	1	28		24	21	3	0	0	0	78	22	0.054	0.013	0.007				A-4b (8)																				
B-008-0-24	SS-14	30.0	31.5	13	0.25	24																A-4b (VISUAL)																				
B-008-0-24	SS-15	31.5	33.0	12		25																A-4a (VISUAL)																				
B-008-0-24	SS-16	33.0	34.5	13		21		NP	NP	NP	0	29	58	11	2	0.783	0.304	0.184	0.033	2.88	10.75	A-3a (0)																				
B-008-0-24	SS-17	34.5	36.0	7																		A-3 (VISUAL)																				
B-008-0-24	SS-18	36.0	37.5	25		27																A-3 (VISUAL)																				
B-008-0-24	SS-19	37.5	39.0	25																		A-3 (VISUAL)																				
B-008-0-24	SS-20	39.0	40.5	8				NP	NP	NP	1	5	86	6	2	0.404	0.255	0.161	0.086	1.05	3.33	A-3 (0)																				
B-008-0-24	SS-21	40.5	42.0	5																		A-3a (VISUAL)																				
B-008-0-24	SS-22	42.0	43.5	21		28																A-3a (VISUAL)																				
B-008-0-24	SS-23	43.5	45.0	5																		A-3a (VISUAL)																				
B-008-0-24	SS-24	48.5	50.0	16		23																A-3a (VISUAL)																				
B-008-0-24	SS-25	53.5	55.0	23																		A-3a (VISUAL)																				
B-008-0-24	SS-26	58.5	60.0	23																		A-3a (VISUAL)																				
B-009-0-24	SS-1	2.5	3.8	2/7/50/4"	4																	A-6b (VISUAL)																				
B-009-0-24	SS-2	5.0	6.5	20																		A-2-4 (VISUAL)																				
B-009-0-24	SS-3	7.5	9.0	3	1.5	18		34	18	16	14	7	5	42	32	8.791	0.016	0.004				A-6b (10)																				
B-009-0-24	SS-4	10.0	11.5	15	3.5																	A-6b (VISUAL)																				
B-009-0-24	ST-5	11.5	13.5	ST	4.25	22	100.0	36	14	22	1	5	22	32	40	0.325	0.012					A-6b (12)	4,703																			
B-009-0-24	SS-6	15.0	16.5	3	0.5																	A-4b (VISUAL)																				
B-009-0-24	SS-7	20.0	21.5	10	0.5	28		28	21	7	0	1	2	50	47	0.050	0.006					A-4b (8)																				
B-009-0-24	SS-8	22.5	24.0	17	0.5																	A-4b (VISUAL)																				
B-009-0-24	SS-9	24.0	25.5	11	1.25	27																A-4b (VISUAL)															1,930	343.0	8.60	0.000	93	<100	138.8	
B-009-0-24	SS-10	25.5	27.0	7	1	24																A-4b (VISUAL)																				
B-009-0-24	SS-11	27.0	28.5	20	0.5																	A-4b (VISUAL)																				
B-009-0-24	SS-12	28.5	30.0	18																		A-3a (VISUAL)																				
B-009-0-24	SS-13	30.0	31.5	8	0.75	25																A-4b (VISUAL)																				
B-009-0-24	SS-14	31.5	33.0	6	0.5																	A-4b (VISUAL)																				
B-009-0-24	SS-15	33.0	34.5	8	0.75	26		25	21	4	0	1	1	69	29	0.054	0.011	0.005				A-4b (8)																				
B-009-0-24	SS-16	34.5	36.0	8	0.75																	A-4b (VISUAL)																				
B-009-0-24	SS-17	36.0	37.5	34	1																	A-4b (VISUAL)																				
B-009-0-24	SS-18	37.5	39.0	7																		A-3 (VISUAL)																				
B-009-0-24	SS-19	39.0	40.5	17																		A-3 (VISUAL)																				
B-009-0-24	SS-20	40.5	42.0	24																		A-3 (VISUAL)																				
B-009-0-24	SS-21	42.0	43.5	3		21		NP	NP	NP	0	2	91	6	1	0.380	0.203	0.146	0.101	0.88	2.36	A-3 (0)																				
B-009-0-24	SS-22	43.5	45.0	3																		A-3 (VISUAL)																				
B-009-0-24	SS-23	45.0	46.5	21																		A-3 (VISUAL)																				
B-009-0-24	SS-24	46.5	48.0	3																		A-3 (VISUAL)																				
B-009-0-24	SS-25	48.0	50.0	3																		A-3 (VISUAL)																				
B-009-0-24	SS-26	53.5	55.0	4																		A-3 (VISUAL)																				
B-009-0-24	SS-27	58.5	60.0	7																		A-3 (VISUAL)																				
B-009-0-24	SS-28	63.5	65.0	15																		A-3 (VISUAL)																				
B-010-0-24	SS-1	2.5	4.0	11																		A-3a (VISUAL)																				
B-010-0-24	SS-2	5.0	6.5	7	0.5	15																A-7-6 (VISUAL)																				
B-010-0-24	SS-3	7.5	9.0	12	1.5																	A-7-6 (VISUAL)																				
B-010-0-24	ST-4	9.0	11.0	ST	3	19	108.5	41	16	25	1	7	17	36	39	0.374	0.011					A-7-6 (14)			CU	252	29.5																
B-010-0-24	SS-5	15.0	16.5	5																		A-3a (VISUAL)																				
B-010-0-24	SS-6	17.5	19.0	9	0.75																	A-4b (VISUAL)																				
B-010-0-24	SS-7	19.0	20.5	8	1.5	27		32	22	10	0	0	2	71	27	0.056	0.012	0.006				A-4b (8)																				
B-010-0-24	SS-8	20.5	22.0	4	0.75																	A-4b (VISUAL)																				
B-010-0-24	SS-9	22.0	23.5	7	1.25	26																A-4b (VISUAL)																				
B-010-0-24	SS-10	23.5	25.0	5	0.5																	A-4b (VISUAL)																				
B-010-0-24	ST-11	25.0	27.0	ST	0.75	26	97.9	25	20	5	0	0	7	67	26	0.068	0.013	0.006				A-4b (8)			CU	0	32.9																
B-010-0-24	SS-12	27.0	28.5	8	1																	A-4b (VISUAL)																				
B-010-0-24	SS-13	28.5	30.0	3		21		NP	NP	NP	0	0	74	19	7	0.361	0.170	0.110	0.008	7.47	27.31	A-3a (0)																				
B-010-0-24	SS-14	30.0	31.5	9	0.5																	A-4b (VISUAL)																				
B-010-0-24	SS-15	31.5	33.0	5	0.25	32		25	20	5	0	0	9	67	24	0.073	0.015	0.006				A-4b (8)																				
B-010-0-24	SS-16	33.0	34.5	9	1.25																	A-4b (VISUAL)																				
B-010-0-24	SS-17	34.5	36.0	11	0.5	26																A-4b (VISUAL)																				
B-010-0-24	SS-18	36.0	37.5	20																		A-3a (VISUAL)																				
B-010-0-24	SS-19	37.5	39.0	17		26		NP	NP	NP	0	7	81	8	4	0.407	0.226	0.145	0.033	2.37	8.11	A-3a (0)																				
B-010-0-24	SS-20	39.0	40.5	9																		A-3a (VISUAL)																				
B-010-0-24	SS-21	40.5	42.0	27																		A-3a (VISUAL)																				
B-010-0-24	SS-22	42.0	43.5	21		23																A-3a (VISUAL)																				
B-010-0-24	SS-23	43.5	45.0	19																		A-3a (VISUAL)																				
B-010-0-24	SS-24	48.5	50.0	13		27		NP	NP	NP	6	43	10	36	5	1.422	0.385	0.032	0.007	0.28	70.33	A-4a (1)																				
B-010-0-24	SS-25	53.5	55.0	25																		A-3a (VISUAL)																				

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TABULATION OF LABORATORY TESTS

Exploration ID	Sample ID	Depth (ft.) From	Depth (ft.) To	N_{60} (bpf)	HP (tsf)	Moisture Content (%)	Dry Unit Weight (pcf)	Atterberg Limits (%) LL	PL	PI	Gradation Analysis (%) Gravel	Coarse Sand	Fine Sand	Silt	Clay	D_{90} (mm)	D_{50} (mm)	D_{30} (mm)	D_{10} (mm)	C_c	C_u	ODOT Classification	Unconfined Compressive Strength (psf)	Undrained Compressive Strength (psf)	Triaxial Test Type	Triaxial c' (psf)	Triaxial ϕ' (°)	Consolidation p_c (tsf)	Consolidation C_c	Consolidation C_r	Permeability (cm/sec.)	Resistivity (ohm-cm)	Redox Potential (mV)	pH	Sulfide (mg/kg of dry weight)	Chlorides (mg/kg of dry weight)	Sulfates (mg/kg of dry weight)	Miller Number	Splitting Tensile Strength (psi)	Slake Durability Index (%)	CERCHAR Abrasiveness Index	Punch Penetration Index (kips/in.)
B-010-0-24	SS-26	58.5	60.0	11																		A-3a (VISUAL)																					
B-011-0-24	SS-1	2.5	4.0	8																		A-6a (VISUAL)																					
B-011-0-24	SS-2	5.0	6.5	7		40																A-6a (VISUAL)																					
B-011-0-24	SS-3	7.5	9.0	3	0.25																	A-6a (VISUAL)																					
B-011-0-24	ST-4	9.0	11.0	ST	2.5			40	22	18	0	8	11	44	37	0.341	0.011					A-6b (11)																					
B-011-0-24	SS-5	15.0	16.5	8	2.5	18																A-6b (VISUAL)																					
B-011-0-24	SS-6	17.5	19.0	5	1.5																	A-4b (VISUAL)																					
B-011-0-24	SS-7	19.0	20.5	9	1.5	24		26	20	6	0	0	2	67	31	0.054	0.011	0.005				A-4b (8)																					
B-011-0-24	SS-8	20.5	22.0	8	2.5																	A-4b (VISUAL)																					
B-011-0-24	SS-9	22.0	23.5	4	0.25	33																A-4b (VISUAL)																					
B-011-0-24	SS-10	23.5	25.0	4	0.75																	A-4b (VISUAL)																					
B-011-0-24	ST-11	25.0	26.0	ST	0.5	22		25	18	7	0	1	1	64	34	0.054	0.010					A-4b (8)																					
B-011-0-24	SS-12	26.0	27.5	5	0.25	29																A-4b (VISUAL)																					
B-011-0-24	SS-13	27.5	29.0	5	0.75																	A-4b (VISUAL)																					
B-011-0-24	SS-14	29.0	30.5	7	1	17		27	22	5	0	1	0	69	30	0.052	0.011	0.005				A-4b (8)																					
B-011-0-24	SS-15	30.5	32.0	5																		A-4a (VISUAL)																					
B-011-0-24	SS-16	32.0	33.5	5	0.25	28		29	18	11	0	1	0	60	39	0.049	0.008					A-6a (8)																					
B-011-0-24	SS-17	33.5	35.0	4	0.25																	A-6a (VISUAL)																					
B-011-0-24	SS-18	35.0	36.5	7	0.75	25																A-4b (VISUAL)																					
B-011-0-24	SS-19	36.5	38.0	16	2.5																	A-4b (VISUAL)																					
B-011-0-24	ST-20	38.0	40.0	ST	0.75	12	112.9	NP	NP	NP	0	1	18	59	22	0.178	0.018	0.007				A-4b (8)			CU	0	32.9	2.3	0.13	0.02														
B-011-0-24	SS-21	40.0	41.5	9																		A-3a (VISUAL)																					
B-011-0-24	SS-22	41.5	43.0	15		20		NP	NP	NP	0	10	76	13	1	0.423	0.171	0.108	0.034	1.6	6.26	A-3a (0)																					
B-011-0-24	SS-23	43.0	44.5	19																		A-3a (VISUAL)																					
B-011-0-24	SS-24	48.5	50.0	9		27																A-3a (VISUAL)																					
B-011-0-24	SS-25	53.5	55.0	3																		A-3a (VISUAL)																					
B-011-0-24	SS-26	58.5	60.0	9																		A-3a (VISUAL)																					
B-012-0-24	SS-1	2.5	4.0	0	1																	A-4a (VISUAL)																					
B-012-0-24	SS-2	5.0	6.5	3	0.75	22		27	17	10	2	18	15	33	32	1.104	0.022					A-4a (6)																					
B-012-0-24	SS-3	7.5	9.0	4	0.5																	A-4a (VISUAL)																					
B-012-0-24	SS-4	10.0	11.5	3	0.5																	A-6b (VISUAL)																					
B-012-0-24	ST-5	11.5	13.5	ST	2.5	19	107.8	34	16	18	1	15	17	30	37	0.848	0.017					A-6b (10)	806																				
B-012-0-24	SS-6	17.5	19.0	4	1.5																	A-6b (VISUAL)																					
B-012-0-24	SS-7	19.0	20.5	8	2	29		30	23	7	0	0	0	76	24	0.053	0.013	0.006				A-4b (8)																					
B-012-0-24	SS-8	20.5	22.0	13	2																	A-4b (VISUAL)																					
B-012-0-24	SS-9	22.0	23.5	7																		A-4a (VISUAL)																					
B-012-0-24	SS-10	23.5	25.0	15		17		NP	NP	NP	0	0	62	35	3	0.322	0.105	0.040	0.008	1.35	16.34	A-4a (1)																					
B-012-0-24	SS-11	25.0	26.5	14																		A-3a (VISUAL)																					
B-012-0-24	SS-12	26.5	28.0	15		26		NP	NP	NP	0	36	40	20	4	1.301	0.233	0.099	0.012	2.28	30.10	A-3a (0)																					
B-012-0-24	SS-13	28.0	29.5	15																		A-3a (VISUAL)																					
B-012-0-24	SS-14	29.5	31.0	18		27																A-3a (VISUAL)													2,720	301.7	8.90	0.000	147	<100	142.9		
B-012-0-24	SS-15	31.0	32.5	25																		A-3a (VISUAL)																					
B-012-0-24	SS-16	32.5	34.0	17		26		NP	NP	NP	0	42	46	9	3	1.375	0.307	0.145	0.038	1.23	11.66	A-3a (0)																					
B-012-0-24	SS-17	34.0	35.5	7																		A-3a (VISUAL)																					
B-012-0-24	SS-18	35.5	37.0	18																		A-3a (VISUAL)																					
B-012-0-24	SS-19	37.0	38.5	6																		A-3a (VISUAL)																					
B-012-0-24	SS-20	38.5	40.0	17		24																A-3a (VISUAL)																					
B-012-0-24	SS-21	40.0	41.5	3																		A-3a (VISUAL)																					
B-012-0-24	SS-22	41.5	43.0	10																		A-3a (VISUAL)																					
B-012-0-24	SS-23	43.0	45.0	11																		A-3a (VISUAL)																					
B-012-0-24	SS-24	48.5	50.0	8		20		NP	NP	NP	4	49	44	3	0	1.656	0.469	0.218	0.099	0.75	6.50	A-1-b (0)																					
B-012-0-24	SS-25	53.5	55.0	7																		A-1-b (VISUAL)																					
B-012-0-24	SS-26	58.5	60.0	29																		A-1-b (VISUAL)																					
B-027-1-21 (NEAS)	SS-1	2.5	4.0	12	4.5	12		30	17	13	18	17	15	26	24	7.100	0.074	0.009				A-6a (4)																					
B-027-1-21 (NEAS)	SS-2	5.0	6.5	15	4.25	16																A-6a (VISUAL)																					
B-027-1-21 (NEAS)	SS-3	7.5	9.0	23	4.25	14		32	18	14	14	12	15	34	25	5.591	0.034	0.007				A-6a (6)																					
B-027-1-21 (NEAS)	SS-4	10.0	11.5	27	4.5	12																A-6a (VISUAL)																					
B-027-1-21 (NEAS)	SS-5	12.5	14.0	29	4	14																A-6a (VISUAL)																					
B-027-1-21 (NEAS)	SS-6	15.0	16.5	12	2.5	26																A-6a (VISUAL)																					
B-027-1-21 (NEAS)	SS-7	17.5	19.0	14	2.5	23		34	19	15	6	6	7	48	33	0.769	0.011					A-6a (10)																					
B-027-1-21 (NEAS)	SS-8	20.0	21.5	15	3	20																A-6b (VISUAL)																					
B-027-1-21 (NEAS)	ST-9	22.5	24.5	ST	2.75	22		40	20	20	0	3	9	45	43	0.107	0.007					A-6b (12)																					
B-027-1-21 (NEAS)	SS-10	24.5	26.0	14	2.25	23																A-6b (VISUAL)																					
B-027-1-21 (NEAS)	SS-11	27.5	29.0	14	2	5																A-6b (VISUAL)																					
B-027-1-21 (NEAS)	SS-12	30.0	31.5	7		13		24	19	5	29	26	10	26	9	5.545	0.562	0.047	0.007	0.30	138.58	A-2-4 (0)																					
B-027-1-21 (NEAS)	SS-13	32.5	34.0	16		9																A-4a (VISUAL)																					
B-027-1-21 (NEAS)	SS-14	35.0	36.5	18		6																A-4a (VISUAL)																					
B-027-1-21 (NEAS)	SS-15	37.5	39.0	19		24																A-4a (VISUAL)																					
B-027-1-21 (NEAS)	SS-16	40.0	41.5	18		26		NP	NP	NP	0	0	48	49	3	0.296	0.071	0.047	0.017	1.34	5.90	A-4a (3)																					
B-027-1-21 (NEAS)	SS-17	42.5	44.0	19		26																A-4a (VISUAL)																					
B-027-1-21 (NEAS)	SS-18	45.0	46.5	23		23																A-3a (VISUAL)																					
B-027-1-21 (NEAS)	SS-19	50.0	51.5	7		22																A-3a (VISUAL)																					
B-027-1-21 (NEAS)	SS-20	55.0	56.5	7		26		NP	NP	NP	0	0	80	17	3	0.343	0.144	0.093	0.040	1.21	4.45	A-3a (0)																					
B-027-1-21 (NEAS)	SS-21	60.0	61.5	11		27																A-3a (VISUAL)																					
B-027-1-21 (NEAS)	SS-22	65.0	66.5	8		22																A-3a (VISUAL)																					
B-027-1-21 (NEAS)	SS-23	70.0	71.5	14		25		NP	NP	NP	1	0	87	11	1	0.351	0.159	0.107	0.057	1.03	3.38	A-3a (0)																					
B-027-1-21 (NEAS)	SS-24	75.0	76.5	14		26																A-3a (VISUAL)																					
B-027-1-21 (NEAS)	SS-25	80.0	81.5	15		23																A-3a (VISUAL)																					
B-027-1-21 (NEAS)	SS-26	85.0	86.5	18		24		NP	NP	NP	0	0	85	13	2	0.349	0.154	0.103	0.055	1.02	3.47	A-3a (0)																					
B-027-1-21 (NEAS)	SS-27	90.0	91.5	19		23																A-3a (VISUAL)																					
B-027-1-21 (NEAS)	SS-28	95.0	96.5	25		22																A-3a (VISUAL)																					
B-027-1-21 (NEAS)	SS-29	100.0	101.5	22		22		NP	NP	NP	0	1	86	11	2	0.355	0.158	0.106	0.057	1.01	3.39	A-3a (0)																					
B-027-1-21 (NEAS)	SS-30	103.5	105.0	25		23																A-3a (VISUAL)																					
B-027-2-21 (NEAS)	SS-1	2.5	4.0	16	4.5	12																A-6a (VISUAL)																					
B-027-2-21 (NEAS)	SS-2	5.0	6.5	15	4.5	15		31	18	13	7	18	15	33	27	1.533	0.023	0.006				A-6a (6)																					
B-027-2-21 (NEAS)	SS-3A	7.5	8.7	91	4.5	13																A-6a (VISUAL)																					
B-027-2-21 (NEAS)	SS-3B	8.7	9.0			6																A-1-b (VISUAL)																					
B-027-2-21 (NEAS)	SS-4	10.0	11.5	44		5																A-1-b (VISUAL)																					
B-027-2-21 (NEAS)	SS-5	12.5	14.0	60		4		NP	NP	NP	39	21	18	17	5	30.132	0.883	0.164	0.019	0.77	96.20	A-1-b (0)																					
B-027-2-21 (NEAS)	SS-6	15.0	16.5	97		3																A-1-b (VISUAL)																					

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TABULATION OF LABORATORY TESTS

Exploration ID	Sample ID	Depth (ft.) From	Depth (ft.) To	N_{60} (bpf)	HP (tsf)	Moisture Content (%)	Dry Unit Weight (pcf)	Atterberg Limits (%) LL	PL	PI	Gradation Analysis (%) Gravel	Coarse Sand	Fine Sand	Silt	Clay	D_{90} (mm)	D_{50} (mm)	D_{30} (mm)	D_{10} (mm)	C_c	C_u	ODOT Classification	Unconfined Compressive Strength (psf)	Undrained Compressive Strength (psf)	Triaxial Test Type	Triaxial c' (psf)	Triaxial ϕ' (°)	Consolidation p_c (tsf)	Consolidation C_c	Consolidation C_r	Permeability (cm/sec.)	Resistivity (ohm-cm)	Redox Potential (mV)	pH	Sulfide (mg/kg of dry weight)	Chlorides (mg/kg of dry weight)	Sulfates (mg/kg of dry weight)	Miller Number	Splitting Tensile Strength (psi)	Slake Durability Index (%)	CERCHAR Abrasiveness Index	Punch Penetration Index (kips/in.)
B-027-2-21 (NEAS)	SS-7	17.5	19.0	15		2																A-1-b (VISUAL)																					
B-027-2-21 (NEAS)	SS-8	20.0	21.5	8	0.75	32																A-6b (VISUAL)																					
B-027-2-21 (NEAS)	SS-9	22.5	24.0	11	1.5	24		38	21	17	1	4	8	29	58	0.129						A-6b (11)																					
B-027-2-21 (NEAS)	SS-10	25.0	26.5	15	3.75	22																A-6b (VISUAL)																					
B-027-2-21 (NEAS)	SS-11A	27.5	27.8	7	3	21																A-6b (VISUAL)																					
B-027-2-21 (NEAS)	SS-11B	27.8	29.0			23		46	20	26	7	37	23	9	24	1.783	0.268	0.025				A-2-7 (3)																					
B-027-2-21 (NEAS)	SS-12	30.0	31.5	10		17																A-3a (VISUAL)																					
B-027-2-21 (NEAS)	SS-13	32.5	34.0	7		22		NP	NP	NP	0	1	52	32	15	0.312	0.082	0.035				A-4a (2)																					
B-027-2-21 (NEAS)	SS-14	35.0	36.5	11		20																A-4a (VISUAL)																					
B-027-2-21 (NEAS)	SS-15	37.5	39.0	5		29																A-3a (VISUAL)																					
B-027-2-21 (NEAS)	SS-16	40.0	41.5	11		29																A-3a (VISUAL)																					
B-027-2-21 (NEAS)	SS-17	45.0	46.5	16		21		NP	NP	NP	0	5	74	17	4	0.376	0.147	0.092	0.021	2.18	8.95	A-3a (0)																					
B-027-2-21 (NEAS)	SS-18	50.0	51.5	22		21																A-3a (VISUAL)																					
B-031-0-21 (NEAS)	SS-1	0.0	1.5	10		20																A-4a (VISUAL)																					
B-031-0-21 (NEAS)	SS-2	1.5	3.0	11		19		NP	NP	NP	9	22	26	27	16	1.909	0.117	0.020				A-4a (2)																					
B-031-0-21 (NEAS)	SS-3	3.0	4.5	7		16																A-4a (VISUAL)																					
B-031-0-21 (NEAS)	SS-4	4.5	6.0	10		16																A-4a (VISUAL)																					
B-031-0-21 (NEAS)	SS-5	7.5	9.0	14	4.25	17																A-7-6 (VISUAL)																					
B-031-0-21 (NEAS)	SS-6	10.0	11.5	11	3.5	20		42	20	22	2	6	12	34	46	0.299	0.007					A-7-6 (13)																					
B-031-0-21 (NEAS)	SS-7	12.5	14.0	11	2.5	19																A-7-6 (VISUAL)																					
B-031-0-21 (NEAS)	SS-8	15.0	16.5	18	2.5	20																A-7-6 (VISUAL)																					
B-031-0-21 (NEAS)	SS-9	17.5	19.0	10	2.75	18		41	18	23	7	39	26	7	21	1.809	0.335	0.087				A-2-7 (2)																					
B-031-0-21 (NEAS)	SS-10	20.0	21.5	8		16																A-2-4 (VISUAL)																					
B-031-0-21 (NEAS)	SS-11	22.5	24.0	12		8																A-2-4 (VISUAL)																					
B-031-0-21 (NEAS)	SS-12	25.0	26.5	15		16		23	17	6	2	6	25	43	24	0.375	0.021	0.008				A-4a (6)																					
B-032-0-21 (NEAS)	SS-1	2.5	4.0	16	4.5	15		31	19	12	21	16	15	27	21	11.672	0.096	0.010				A-6a (3)																					
B-032-0-21 (NEAS)	SS-2	5.0	6.5	14	3.75	20																A-7-6 (VISUAL)																					
B-032-0-21 (NEAS)	ST-3	7.5	9.5	ST	3	22		42	20	22	0	7	13	42	38	0.279	0.010					A-7-6 (13)																					
B-032-0-21 (NEAS)	SS-4A	9.5	9.8	10		16																A-7-6 (VISUAL)																					
B-032-0-21 (NEAS)	SS-4B	9.8	11.0			13		NP	NP	NP	4	43	33	10	10	1.569	0.353	0.124	0.005	5.54	103.23	A-3a (0)																					
B-032-0-21 (NEAS)	SS-5A	12.5	13.7	3		11																A-3a (VISUAL)																					
B-032-0-21 (NEAS)	SS-5B	13.7	14.0		3.25	22																A-6a (VISUAL)																					
B-032-0-21 (NEAS)	SS-6	15.0	16.5	11	4.25	22		35	21	14	0	2	4	59	35	0.054	0.008	0.005				A-6a (10)																					
B-032-0-21 (NEAS)	SS-7	17.5	19.0	14		18																A-3a (VISUAL)																					
B-032-0-21 (NEAS)	SS-8	20.0	21.5	15		15																A-3a (VISUAL)																					
B-033-0-21 (NEAS)	SS-1	2.5	4.0	16	4.5	19																A-7-6 (VISUAL)																					
B-033-0-21 (NEAS)	SS-2	5.0	6.5	12	2.5	24		45	21	24	0	4	8	39	49	0.120	0.005					A-7-6 (15)																					
B-033-0-21 (NEAS)	SS-3	7.5	9.0	12	2.25	18																A-7-6 (VISUAL)																					
B-033-0-21 (NEAS)	SS-4	10.0	11.5	4		15																A-1-b (VISUAL)																					
B-033-0-21 (NEAS)	SS-5	12.5	14.0	3		14		NP	NP	NP	12	52	16	12	8	2.439	0.645	0.219	0.010	5.65	88.52	A-1-b (0)																					
B-033-0-21 (NEAS)	SS-6	15.0	16.5	4		12																A-1-b (VISUAL)																					
B-036-0-21 (NEAS)	SS-1	2.5	4.0	18	4.5	14																A-6a (VISUAL)																					
B-036-0-21 (NEAS)	SS-2	5.0	6.5	37	4.25	14																A-6a (VISUAL)																					
B-036-0-21 (NEAS)	SS-3	7.5	9.0	30	4.5	9		28	16	12	25	21	16	22	16	16.175	0.275	0.023				A-6a (1)																					
B-036-0-21 (NEAS)	SS-4	10.0	11.5	16		8																A-2-4 (VISUAL)																					
B-036-0-21 (NEAS)	SS-5A	12.5	13.5	11		8																A-2-4 (VISUAL)																					
B-036-0-21 (NEAS)	SS-5B	13.5	14.0		2.25	26																A-6b (VISUAL)																					
B-036-0-21 (NEAS)	SS-6	15.0	16.5	14	3	24		33	17	16	1	7	8	42	42	0.259	0.007					A-6b (10)																					
B-037-0-21 (NEAS)	SS-1	2.5	4.0	42	4.5	11		29	17	12	19	14	20	26	21	6.871	0.095	0.011				A-6a (3)																					
B-037-0-21 (NEAS)	SS-2	5.0	5.8	3/50/4"	4.5	13																A-6a (VISUAL)																					
B-037-0-21 (NEAS)	SS-3	7.5	9.0	14	4.25	15																A-6a (VISUAL)																					
B-037-0-21 (NEAS)	SS-4	10.0	11.5	11	3.5	13																A-6a (VISUAL)																					
B-037-0-21 (NEAS)	SS-5	12.5	14.0	11	3.25	13		31	17	14	16	27	16	23	18	5.649	0.212	0.021				A-6a (2)																					
B-037-0-21 (NEAS)	SS-6	15.0	16.5	18	3.5	14																A-6a (VISUAL)																					
B-037-0-21 (NEAS)	SS-7A	17.5	18.0	12	3.25	14																A-6a (VISUAL)																					
B-037-0-21 (NEAS)	SS-7B	18.0	19.0			9																A-1-b (VISUAL)																					
B-037-0-21 (NEAS)	SS-8	20.0	21.5	12		8																A-1-b (VISUAL)																					
B-037-0-21 (NEAS)	SS-9	22.5	24.0	11	3	22		28	19	9	2	7	17	47	27	0.407	0.014	0.006				A-4a (8)																					
B-037-0-21 (NEAS)	SS-10A	25.0	26.0	10	1.5	17		25	17	8	4	21	19	34	22	1.349	0.038	0.009				A-4a (4)																					
B-037-0-21 (NEAS)	SS-10B	26.0	26.5			10																A-3a (VISUAL)																					
B-037-0-21 (NEAS)	SS-11	27.5	29.0	10		11																A-3a (VISUAL)																					
B-037-0-21 (NEAS)	SS-12	30.0	31.5	3		34		NP	NP	NP	0	0	6	89	5	0.070	0.035	0.024	0.009	1.57	4.77	A-4b (8)																					
B-037-0-21 (NEAS)	SS-13	35.0	36.5	4		31																A-4b (VISUAL)																					
B-037-0-21 (NEAS)	SS-14	40.0	41.5	4		32																A-4b (VISUAL)																					
B-037-0-21 (NEAS)	SS-15	45.0	46.5	4		30		NP	NP	NP	0	0	11	80	9	0.085	0.037	0.022	0.006	1.92	7.53	A-4b (8)																					
B-037-0-21 (NEAS)	SS-16	50.0	51.5	10		19																A-3a (VISUAL)																					
B-037-0-21 (NEAS)	SS-17	53.5	55.0	10		20																A-3a (VISUAL)																					
B-038-0-21 (NEAS)	SS-1	2.5	4.0	15	4	11		29	13	16	19	24	18	21	18	8.797	0.208	0.018				A-6b (2)																					
B-038-0-21 (NEAS)	SS-2	5.0	6.5	12	3.25	17																A-6b (VISUAL)																					
B-038-0-21 (NEAS)	SS-3	7.5	9.0	25		5																A-2-4 (VISUAL)																					
B-038-0-21 (NEAS)	SS-4	10.0	11.5	10		8																A-3a (VISUAL)																					
B-038-0-21 (NEAS)	SS-5	12.5	14.0	11		7		NP	NP	NP	26	25	13	31	5	13.446	0.439	0.048	0.011	0.26	74.61	A-4a (0)																					
B-038-0-21 (NEAS)	SS-6A	15.0	16.0	15		11																A-4a (VISUAL)																					
B-038-0-21 (NEAS)	SS-6B	16.0	16.5			23																A-4b (VISUAL)																					
B-038-0-21 (NEAS)	SS-7	17.5	19.0	11		7																A-1-b (VISUAL)																					
B-038-0-21 (NEAS)	SS-8	20.0	21.5	12		16																A-1-b (VISUAL)																					
B-038-0-21 (NEAS)	SS-9	22.5	24.0	7		26																A-4b (VISUAL)																					
B-038-0-21 (NEAS)	SS-10	25.0	26.5	7		27		NP	NP	NP	0	0	3	86	11	0.063	0.025	0.015				A-4b (8)																					
B-038-0-21 (NEAS)	SS-11	27.5	29.0	7		35																A-4b (VISUAL)																					
B-038-0-21 (NEAS)	SS-12	30.0	31.5	5		33																A-4b (VISUAL)																					
B-041-0-21 (NEAS)	SS-1	2.5	4.0	48	3.75	17		32	18	14	6	8	16	35	35	1.074	0.014					A-6a (9)																					
B-041-0-21 (NEAS)	SS-2	5.0	6.5	33		16																A-2-4 (VISUAL)																					
B-041-0-21 (NEAS)	SS-3	7.5	9.0	23	2	13		30	17	13	31	17	14	22	16	16.920	0.333	0.026				A-6a (1)																					
B-041-0-21 (NEAS)	SS-4	10.0	11.5	20	3.25	24																A-6a (VISUAL)																					
B-041-0-21 (NEAS)	SS-5	12.5	14.0	8	2.75	28																A-6a (VISUAL)																					
B-041-0-21 (NEAS)	SS-6	15.0	16.5	5	1	30		37	23	14	0	1	1	51	47	0.023	0.006					A-6a (10)																					
B-041-0-21 (NEAS)	SS-7	17.5	19.0	8	2.25	23																A-6a (VISUAL)																					

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TABULATION OF LABORATORY TESTS

Exploration ID	Sample ID	Depth (ft.) From	Depth (ft.) To	N_{60} (bpf)	HP (tsf)	Moisture Content (%)	Dry Unit Weight (pcf)	Atterberg Limits (%) LL	PL	PI	Gradation Analysis (%) Gravel	Coarse Sand	Fine Sand	Silt	Clay	D_{90} (mm)	D_{50} (mm)	D_{30} (mm)	D_{10} (mm)	C_c	C_u	ODOT Classification	Unconfined Compressive Strength (psf)	Undrained Compressive Strength (psf)	Triaxial Test Type	Triaxial c' (psf)	Triaxial ϕ' (°)	Consolidation p_c (tsf)	Consolidation C_c	Consolidation C_r	Permeability (cm/sec.)	Resistivity (ohm-cm)	Redox Potential (mV)	pH	Sulfide (mg/kg of dry weight)	Chlorides (mg/kg of dry weight)	Sulfates (mg/kg of dry weight)	Miller Number	Splitting Tensile Strength (psi)	Slake Durability Index (%)	CERCHAR Abrasiveness Index	Punch Penetration Index (kips/in.)
B-041-0-21 (NEAS)	SS-8	20.0	21.5	12	3.25	26																A-6a (VISUAL)																					
B-041-0-21 (NEAS)	SS-9	22.5	24.0	11	2	27																A-6b (VISUAL)																					
B-041-0-21 (NEAS)	SS-10	25.0	26.5	12	3.5	18		39	19	20	14	29	21	14	22	3.406	0.243	0.024				A-6b (2)																					
B-041-0-21 (NEAS)	SS-11	27.5	29.0	11	1.5	25																A-6b (VISUAL)																					
B-041-0-21 (NEAS)	SS-12	30.0	31.5	11		24																A-4b (VISUAL)																					
B-041-0-21 (NEAS)	SS-13	32.5	34.0	12		25		NP	NP	NP	0	4	41	51	4	0.334	0.064	0.033	0.012	0.98	8.21	A-4b (4)																					
B-041-0-21 (NEAS)	SS-14	35.0	36.5	7		22																A-3a (VISUAL)																					
B-041-0-21 (NEAS)	SS-15	40.0	41.5	4		28																A-3a (VISUAL)																					
B-041-0-21 (NEAS)	SS-16	45.0	46.5	5		31		NP	NP	NP	0	0	5	90	5	0.069	0.034	0.021	0.010	1.13	4.15	A-4b (8)																					
B-041-0-21 (NEAS)	SS-17	50.0	51.5	7		29																A-3a (VISUAL)																					
B-041-0-21 (NEAS)	SS-18	55.0	56.5	7		30																A-3a (VISUAL)																					
B-041-0-21 (NEAS)	SS-19	58.5	60.0	12		30																A-4b (VISUAL)																					
B-045-0-21 (NEAS)	SS-1	2.5	4.0	19	4.5	13																A-6a (VISUAL)																					
B-045-0-21 (NEAS)	SS-2	5.0	6.5	24	4.5	15																A-6a (VISUAL)																					
B-045-0-21 (NEAS)	SS-3	7.5	9.0	23	4.5	14		32	18	14	12	12	17	33	26	2.463	0.033	0.007				A-6a (6)																					
B-045-0-21 (NEAS)	SS-4	10.0	11.5	23	4.5	9																A-6a (VISUAL)																					
B-045-0-21 (NEAS)	SS-5	12.5	14.0	19		14																A-4a (VISUAL)																					
B-045-0-21 (NEAS)	SS-6	15.0	16.5	16		15																A-3a (VISUAL)																					
B-045-0-21 (NEAS)	SS-7	17.5	19.0	17	3	23		35	20	15	2	5	16	44	33	0.320	0.011					A-6a (10)																					
B-045-0-21 (NEAS)	SS-8A	20.0	21.0	18		13																A-1-b (VISUAL)																					
B-045-0-21 (NEAS)	SS-8B	21.0	21.5		3.5	22																A-7-6 (VISUAL)																					
B-045-0-21 (NEAS)	SS-9	22.5	24.0	21	3.5	22																A-7-6 (VISUAL)																					
B-045-0-21 (NEAS)	SS-10	25.0	26.5	23	3.25	21		49	20	29	1	10	19	29	41	0.518	0.009					A-7-6 (16)																					
B-045-0-21 (NEAS)	SS-11	27.5	29.0	24	2.5	20																A-7-6 (VISUAL)																					
B-045-0-21 (NEAS)	SS-12	30.0	31.5	25	2.25	19		46	18	28	4	27	32	10	27	1.441	0.154	0.013				A-7-6 (4)																					
B-045-0-21 (NEAS)	SS-13A	32.5	33.0	16	1.25	22																A-7-6 (VISUAL)																					
B-045-0-21 (NEAS)	SS-13B	33.0	34.0			21																A-3a (VISUAL)																					
B-045-0-21 (NEAS)	SS-14	35.0	36.5	13		29																A-3a (VISUAL)																					
B-045-0-21 (NEAS)	SS-15	37.5	39.0	10		28																A-3a (VISUAL)																					
B-045-0-21 (NEAS)	SS-16	40.0	41.5	8		22		NP	NP	NP	0	1	65	29	5	0.338	0.116	0.065	0.018	1.56	8.48	A-3a (0)																					
B-045-0-21 (NEAS)	SS-17	45.0	46.5	11		24																A-3a (VISUAL)																					
B-045-0-21 (NEAS)	SS-18	50.0	51.5	14		29																A-4b (VISUAL)																					
B-045-0-21 (NEAS)	SS-19	55.0	56.5	13		29		NP	NP	NP	0	0	8	85	7	0.072	0.027	0.018	0.007	1.36	4.95	A-4b (8)																					
B-045-0-21 (NEAS)	SS-20	60.0	61.5	13		20																A-3a (VISUAL)																					
B-045-0-21 (NEAS)	SS-21	65.0	66.5	15		28		NP	NP	NP	0	0	7	87	6	0.070	0.026	0.017	0.007	1.26	4.45	A-4b (8)																					
B-045-0-21 (NEAS)	SS-22	70.0	71.5	16		25																A-3a (VISUAL)																					
B-045-0-21 (NEAS)	SS-23	75.0	76.5	17		22																A-3a (VISUAL)																					
B-045-0-21 (NEAS)	SS-24	80.0	81.5	25		20		NP	NP	NP	0	12	72	13	3	0.545	0.169	0.104	0.050	1.01	4.30	A-3a (0)																					
B-045-0-21 (NEAS)	SS-25	85.0	86.5	23		16																A-3a (VISUAL)																					
B-045-0-21 (NEAS)	SS-26	90.0	91.5	25		18																A-3a (VISUAL)																					
B-045-0-21 (NEAS)	SS-27	95.0	96.5	26		16																A-3a (VISUAL)																					
B-045-0-21 (NEAS)	SS-28	100.0	101.5	25		19		NP	NP	NP	0	12	69	17	2	0.534	0.162	0.098	0.047	0.98	4.44	A-3a (0)																					
B-045-0-21 (NEAS)	SS-29	105.0	106.5	26		17																A-3a (VISUAL)																					
B-045-0-21 (NEAS)	SS-30	110.0	111.5	29		22																A-3a (VISUAL)																					
B-049-0-21 (NEAS)	SS-1	2.5	4.0	19		6																A-1-b (VISUAL)																					
B-049-0-21 (NEAS)	SS-2	5.0	6.5	21		6																A-1-b (VISUAL)																					
B-049-0-21 (NEAS)	SS-3	7.5	9.0	16	3.75	20		33	19	14	1	2	6	47	44	0.072	0.007					A-6a (10)																					
B-049-0-21 (NEAS)	SS-4	10.0	11.5	10	3.25	25		42	23	19	2	2	2	34	60	0.044						A-7-6 (12)																					
B-049-0-21 (NEAS)	SS-5	12.5	14.0	8	1.25	27																A-7-6 (VISUAL)																					
B-049-0-21 (NEAS)	SS-6	15.0	16.5	6	2.25	23																A-6b (VISUAL)																					
B-049-0-21 (NEAS)	ST-7	17.5	19.5	ST	2.25	23																A-6b (VISUAL)																					
B-049-0-21 (NEAS)	SS-8	20.0	21.5	9	2.5	24		40	21	19	0	1	8	51	40	0.072	0.008					A-6b (12)																					
B-050-0-21 (NEAS)	SS-1	2.5	4.0	10		13		24	15	9	9	21	20	31	19	2.020	0.077	0.012				A-4a (3)																					
B-050-0-21 (NEAS)	SS-2	5.0	6.5	10	3	15		25	16	9	14	9	17	35	25	6.159	0.029	0.007				A-4a (5)																					
B-050-0-21 (NEAS)	SS-3	7.5	9.0	8	1.5	20		33	18	15	5	12	18	37	28	1.081	0.022	0.006				A-6a (8)																					
B-050-0-21 (NEAS)	SS-4	10.0	11.5	8	1.25	26		38	20	18	3	5	13	41	38	0.293	0.009					A-6b (11)																					
B-050-0-21 (NEAS)	SS-5	12.5	14.0	19	3.75	20		40	18	22	1	5	13	42	39	0.260	0.009					A-6b (13)																					
B-050-0-21 (NEAS)	SS-6	15.0	16.5	19	4	21																A-6b (VISUAL)																					
B-050-0-21 (NEAS)	SS-7	17.5	19.0	19		10																A-4b (VISUAL)																					
B-050-0-21 (NEAS)	SS-8	20.0	21.5	22		14		NP	NP	NP	0	1	40	57	2	0.286	0.065	0.047	0.024	1.16	3.21	A-4b (5)																					
B-050-0-21 (NEAS)	SS-9	22.5	24.0	18		7																A-4a (VISUAL)																					
B-050-0-21 (NEAS)	SS-10	25.0	26.5	16		6																A-4a (VISUAL)																					
B-050-0-21 (NEAS)	SS-11	27.5	29.0	21		9		NP	NP	NP	1	20	27	42	10	0.973	0.070	0.038	0.005	2.19	22.55	A-4a (3)																					
B-050-0-21 (NEAS)	SS-12	30.0	31.5	23		6																A-4a (VISUAL)																					
B-050-0-21 (NEAS)	SS-13	32.5	34.0	23		5																A-4a (VISUAL)																					
B-050-0-21 (NEAS)	SS-14	35.0	36.5	25		7																A-4a (VISUAL)																					
B-050-0-21 (NEAS)	SS-15A	37.5	38.5	22		19																A-4a (VISUAL)																					
B-050-0-21 (NEAS)	SS-15B	38.5	39.0		1.25	33																A-6a (VISUAL)																					
B-050-0-21 (NEAS)	SS-16	40.0	41.5	21		27																A-4b (VISUAL)																					
B-050-0-21 (NEAS)	SS-17	45.0	46.5	14		24		NP	NP	NP	0	1	20	70	9	0.193	0.041	0.025	0.006	2.10	8.66	A-4b (8)																					
B-050-0-21 (NEAS)	SS-18	50.0	51.5	14		19																A-4b (VISUAL)																					
B-050-0-21 (NEAS)	SS-19A	55.0	56.0	24		21																A-4b (VISUAL)																					
B-050-0-21 (NEAS)	SS-19B	56.0	56.5			18																A-1-b (VISUAL)																					
B-050-0-21 (NEAS)	SS-20	60.0	61.5	25		19		NP	NP	NP	6	44	43	7	0	1.741	0.426	0.189	0.084	0.70	7.24	A-1-b (0)																					
B-050-0-21 (NEAS)	SS-21	65.0	66.5	26		18																A-3a (VISUAL)																					
B-050-0-21 (NEAS)	SS-22	70.0	71.5	31		13																A-3a (VISUAL)																					
B-050-0-21 (NEAS)	SS-23	75.0	76.5	32		15																A-3a (VISUAL)																					
B-050-0-21 (NEAS)	SS-24	80.0	81.5	31		14																A-3a (VISUAL)																					
B-050-0-21 (NEAS)	SS-25	85.0	86.5	32		16		NP	NP	NP	0	11	72	16	1	0.529	0.168	0.104	0.052	0.97	4.15	A-3a (0)																					
B-050-0-21 (NEAS)	SS-26	90.0	91.5	32		15																A-3a (VISUAL)																					
B-050-0-21 (NEAS)	SS-27	95.0	96.5	35		14																A-3a (VISUAL)																					
B-050-0-21 (NEAS)	SS-28	100.0	101.5	34		16																A-3a (VISUAL)																					
B-050-0-21 (NEAS)	SS-29	105.0	106.5	35		17																A-3a (VISUAL)																					
B-050-0-21 (NEAS)	SS-30	110.0	111.5	36		18																A-3a (VISUAL)																					
B-054-0-21 (NEAS)	SS-1	2.5	4.0	16	4.25	18																A-7-6 (VISUAL)																					
B-054-0-21 (NEAS)	SS-2	5.0	6.5	7	4.5	22		45	24	21	2	6	8	45	39	0.283	0.009					A-7-6 (13)																					
B-054-0-21 (NEAS)	SS-3A	7.5	8.0	5	4.5	29																A-7-6 (VISUAL)																					
B-054-0-21 (NEAS)	SS-3B	8.0	9.0			19		46	22	24	7	39	17	12	25	1.796	0.288	0.010				A-7-6 (4)																					
B-054-0-21 (NEAS)	SS-4	10.0	11.5	12		7																A-1-b (VISUAL)																					
B-054-0-21 (NEAS)	SS-5A	12.5	13.5	11		17																A-1-b (VISUAL)																					

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TABULATION OF LABORATORY TESTS

Exploration ID	Sample ID	Depth (ft.) From	Depth (ft.) To	N_{60} (bpf)	HP (tsf)	Moisture Content (%)	Dry Unit Weight (pcf)	Atterberg Limits (%) LL	Atterberg Limits (%) PL	Atterberg Limits (%) PI	Gradation Analysis (%) Gravel	Coarse Sand	Fine Sand	Silt	Clay	D_{90} (mm)	D_{50} (mm)	D_{30} (mm)	D_{10} (mm)	C_c	C_u	ODOT Classification	Unconfined Compressive Strength (psf)	Undrained Compressive Strength (psf)	Triaxial Test Type	Triaxial c' (psf)	Triaxial ϕ' (°)	Consolidation p_c (tsf)	Consolidation C_c	Consolidation C_r	Permeability (cm/sec.)	Resistivity (ohm-cm)	Redox Potential (mV)	pH	Sulfide (mg/kg of dry weight)	Chlorides (mg/kg of dry weight)	Sulfates (mg/kg of dry weight)	Miller Number	Splitting Tensile Strength (psi)	Slake Durability Index (%)	CERCHAR Abrasiveness Index	Punch Penetration Index (kips/in.)
B-054-0-21 (NEAS)	SS-5B	13.5	14.0			23																A-4b (VISUAL)																				
B-054-0-21 (NEAS)	SS-6	15.0	16.5	8		25		NP	NP	NP	0	0	4	85	11	0.066	0.029	0.017				A-4b (8)																				
B-054-0-21 (NEAS)	SS-7	17.5	19.0	14		10																A-3a (VISUAL)																				
B-054-0-21 (NEAS)	SS-8	20.0	21.5	15		16																A-3a (VISUAL)																				
B-054-0-21 (NEAS)	SS-9	22.5	24.0	19		11																A-3a (VISUAL)																				
B-054-0-21 (NEAS)	SS-10	25.0	26.5	19		23																A-4b (VISUAL)																				
B-054-0-21 (NEAS)	SS-11	27.5	29.0	12		28		28	19	9	0	0	4	75	21	0.060	0.017	0.008				A-4b (8)																				
B-054-0-21 (NEAS)	SS-12	30.0	31.5	14		35																A-4b (VISUAL)																				
B-054-0-21 (NEAS)	SS-13	32.5	34.0	11		22																A-4b (VISUAL)																				
B-054-0-21 (NEAS)	SS-14	35.0	36.5	8		25		26	21	5	0	0	6	71	23	0.061	0.016	0.008				A-4b (8)																				
B-054-0-21 (NEAS)	SS-15	37.5	39.0	14		24																A-4b (VISUAL)																				
B-054-0-21 (NEAS)	SS-16	40.0	41.5	14		32																A-4b (VISUAL)																				
B-058-0-21 (NEAS)	SS-1	2.5	4.0	7	2.5	20		31	17	14	2	7	14	45	32	0.403	0.017	0.004				A-6a (10)																				
B-058-0-21 (NEAS)	SS-2	5.0	6.5	10	4	26		29	21	8	1	0	2	61	36	0.027	0.009					A-4b (8)																				
B-058-0-21 (NEAS)	SS-3	7.5	9.0	11	3	29		35	22	13	0	1	3	49	47	0.023	0.006					A-6a (9)																				
B-058-0-21 (NEAS)	SS-4A	10.0	10.5	20	2.5	29																A-6a (VISUAL)																				
B-058-0-21 (NEAS)	SS-4B	10.5	11.5			7																A-3a (VISUAL)																				
B-058-0-21 (NEAS)	SS-5	12.5	14.0	19		5																A-3a (VISUAL)																				
B-058-0-21 (NEAS)	SS-6	15.0	16.5	12		7																A-1-b (VISUAL)																				
B-058-0-21 (NEAS)	SS-7	17.5	19.0	14		7																A-3a (VISUAL)																				
B-058-0-21 (NEAS)	SS-8	20.0	21.5	12		8																A-3 (VISUAL)																				
B-058-0-21 (NEAS)	SS-9A	22.5	23.5	18		6																A-3 (VISUAL)																				
B-058-0-21 (NEAS)	SS-9B	23.5	24.0		3	26																A-4b (VISUAL)																				
B-058-0-21 (NEAS)	SS-10	25.0	26.5	15		26																A-4b (VISUAL)																				
B-058-0-21 (NEAS)	SS-11	27.5	29.0	14		24		NP	NP	NP	0	0	1	83	16	0.053	0.018	0.010				A-4b (8)																				
B-058-0-21 (NEAS)	SS-12	30.0	31.5	12		32																A-4b (VISUAL)																				
B-058-0-21 (NEAS)	SS-13	32.5	34.0	14		27																A-4b (VISUAL)																				
B-058-0-21 (NEAS)	SS-14	35.0	36.5	14		25		NP	NP	NP	0	1	2	81	16	0.060	0.019	0.011				A-4b (8)																				
B-058-0-21 (NEAS)	SS-15	37.5	39.0	14		27																A-4b (VISUAL)																				
B-058-0-21 (NEAS)	SS-16	40.0	41.5	14		30																A-4b (VISUAL)																				
B-060-0-21 (NEAS)	SS-1	1.5	3.0	19		8																A-1-b (VISUAL)																				
B-060-0-21 (NEAS)	SS-2	3.0	4.5	18		5		NP	NP	NP	0	12	75	10	3	0.550	0.177	0.112	0.051	1.11	4.40	A-3a (0)																				
B-060-0-21 (NEAS)	SS-3	4.5	6.0	10		6		NP	NP	NP	1	3	85	9	2	0.372	0.165	0.110	0.061	0.98	3.31	A-3a (0)																				
B-060-0-21 (NEAS)	SS-4	7.5	9.0	10		7																A-3a (VISUAL)																				
B-060-0-21 (NEAS)	SS-5	10.0	11.5	12		6																A-3a (VISUAL)																				
B-060-0-21 (NEAS)	SS-6	12.5	14.0	14		10																A-3a (VISUAL)																				
B-060-0-21 (NEAS)	SS-7	15.0	16.5	10		22																A-3a (VISUAL)																				
B-060-0-21 (NEAS)	SS-8	17.5	19.0	8		28		NP	NP	NP	0	0	1	76	23	0.051	0.014	0.007				A-4b (8)																				
B-060-0-21 (NEAS)	SS-9	20.0	21.5	8		26																A-4b (VISUAL)																				
B-061-0-21 (NEAS)	SS-1	2.5	4.0	15		8		NP	NP	NP	31	27	15	20	7	8.308	0.676	0.108	0.009	1.08	134.05	A-2-4 (0)																				
B-061-0-21 (NEAS)	SS-2	5.0	6.5	10	1	29		34	19	15	0	1	7	53	39	0.062	0.008					A-6a (10)																				
B-061-0-21 (NEAS)	SS-3	7.5	9.0	12		6																A-1-b (VISUAL)																				
B-061-0-21 (NEAS)	SS-4	10.0	11.5	29		5		NP	NP	NP	11	42	31	12	4	2.292	0.476	0.162	0.024	1.59	28.76	A-1-b (0)																				
B-061-0-21 (NEAS)	SS-5	12.5	14.0	26		6																A-1-b (VISUAL)																				
B-061-0-21 (NEAS)	SS-6	15.0	16.5	23		6		NP	NP	NP	14	42	21	15	8	3.299	0.544	0.139	0.007	3.35	107.76	A-1-b (0)																				
B-061-0-21 (NEAS)	SS-7	17.5	19.0	23		8																A-1-b (VISUAL)																				
B-061-0-21 (NEAS)	SS-8	20.0	21.5	15		4																A-3a (VISUAL)																				
B-061-0-21 (NEAS)	SS-9	22.5	24.0	16		4																A-3a (VISUAL)																				
B-061-0-21 (NEAS)	SS-10A	25.0	25.5	14		11																A-3a (VISUAL)																				
B-061-0-21 (NEAS)	SS-10B	25.5	26.5			24																A-4b (VISUAL)																				
B-061-0-21 (NEAS)	SS-11	27.5	29.0	15		22																A-4b (VISUAL)																				
B-061-0-21 (NEAS)	SS-12	30.0	31.5	16		26		NP	NP	NP	1	0	1	75	23	0.056	0.016	0.008				A-4b (8)																				
B-061-0-21 (NEAS)	SS-13	32.5	34.0	15		24																A-4b (VISUAL)																				
B-061-0-21 (NEAS)	SS-14	35.0	36.5	22		34																A-4b (VISUAL)																				
B-063-0-21 (NEAS)	SS-1	2.5	4.0	22	4	15		28	18	10	14	14	14	36	22	3.980	0.032	0.008				A-4a (5)																				
B-063-0-21 (NEAS)	SS-2	5.0	6.5	16	2	18																A-6a (VISUAL)																				
B-063-0-21 (NEAS)	SS-3A	7.5	8.7	19	2	23		31	19	12	3	2	7	65	23	0.114	0.034	0.009				A-6a (9)																				
B-063-0-21 (NEAS)	SS-3B	8.7	9.0			9																A-3a (VISUAL)																				
B-063-0-21 (NEAS)	SS-4	10.0	11.5	19		4																A-3a (VISUAL)																				
B-063-0-21 (NEAS)	SS-5	12.5	14.0	22		4																A-3a (VISUAL)																				
B-063-0-21 (NEAS)	SS-6	15.0	16.5	20		12																A-4a (VISUAL)																				
B-063-0-21 (NEAS)	SS-7	17.5	19.0	29		6																A-4a (VISUAL)																				
B-063-0-21 (NEAS)	SS-8	20.0	21.5	30		8		NP	NP	NP	3	8	46	36	7	0.538	0.099	0.051	0.010	1.75	13.89	A-4a (2)																				
B-063-0-21 (NEAS)	SS-9	22.5	24.0	16		8																A-3a (VISUAL)																				
B-063-0-21 (NEAS)	SS-10	25.0	26.5	19		7																A-3a (VISUAL)																				
B-063-0-21 (NEAS)	SS-11	27.5	29.0	18		6		NP	NP	NP	0	6	83	8	3	0.391	0.169	0.111	0.060	0.99	3.46	A-3a (0)																				
B-063-0-21 (NEAS)	SS-12	30.0	31.5	19		6																A-3a (VISUAL)																				
B-064-0-21	SS-1	1.5	3.0	8	1	14																A-6b (VISUAL)																			420	
B-064-0-21	SS-2	3.0	4.5	19	1.75	16		26	16	10	17	14	20	28	21	6.876	0.084	0.012				A-4a (3)																				
B-064-0-21	SS-3	4.5	6.0	20	4.5	13		31	15	16	19	14	16	23	28	7.965	0.069	0.006				A-6b (5)																				
B-064-0-21	SS-4	6.0	7.5	20	3.75	16		32	18	14	20	9	16	28	27	13.365	0.046	0.006				A-6a (6)																				
B-064-0-21	SS-5	8.5	10.0	13	4	21		37	20	17	12	6	9	36	37	2.405	0.013					A-6b (10)																				
B-064-0-21	SS-6	11.0	12.5	31		15																A-6b (VISUAL)																				
B-064-0-21	SS-7	13.5	15.0	36		9																A-6a (VISUAL)																				
B-064-0-21	SS-8	16.0	17.5	21	3	16		38	23	15	32	7	6	26	29	21.075	0.045	0.006				A-6a (6)																				
B-064-0-21	SS-9	18.5	20.0	59		13																A-3a (VISUAL)																				
B-064-0-21	SS-10	23.5	25.0	7	0.5	24		28	18	10	12	10	18	38	22	2.985	0.036	0.009				A-4a (5)																				
B-064-0-21	SS-11	28.5	30.0	7	2.75	27																A-6a (VISUAL)																				
B-064-0-21	SS-12	33.5	35.0	11		24		29	20	9	0	0	0	60	40	0.048	0.008					A-4b (8)																				
B-064-0-21	SS-13	38.5	40.0	13		27																A-3a (VISUAL)																				
B-064-0-21	SS-14	43.5	45.0	9		5		NP	NP	NP	0	0	9	79	12	0.073	0.019	0.009	0.005	0.71	5.53	A-4b (8)																				
B-064-0-21	SS-15	48.5	50.0	19		24																A-3a (VISUAL)																				
B-065-0-21	SS-1	1.0	2.5	11		4																A-2-4 (VISUAL)																			159	
B-065-0-21	SS-2	2.5	4.0	11		15		25	15	10	60	12	8	11	9	8.702	4.041	0.595	0.006	11.17	907.95	A-2-4 (0)																				
B-065-0-21	SS-3	4.0	5.5	17	4.5	16		31	17	14	2	11	15	35	37	0.718	0.014					A-6a (9)																				
B-065-0-21	SS-4	5.5	7.0	19	4.5	14		30	16	14	4	15	22	33	26	1.116	0.037	0.007				A-6a (6)																				
B-065-0-21	SS-5	8.5	10.0	28	3.5	16		25	15	10	4	12	24	35	25	1.045	0.035	0.007				A-4a (5)																				
B-065-0-21	SS-6	11.0	12.5	36	4.5	14																A-6a (VISUAL)																				

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TABULATION OF LABORATORY TESTS

Exploration ID	Sample ID	Depth (ft.) From	Depth (ft.) To	N_{60} (bpf)	HP (tsf)	Moisture Content (%)	Dry Unit Weight (pcf)	Atterberg Limits (%) LL	PL	PI	Gradation Analysis (%) Gravel	Coarse Sand	Fine Sand	Silt	Clay	D_{90} (mm)	D_{50} (mm)	D_{30} (mm)	D_{10} (mm)	C_c	C_u	ODOT Classification	Unconfined Compressive Strength (psf)	Undrained Compressive Strength (psf)	Triaxial Test Type	Triaxial c' (psf)	Triaxial ϕ' (°)	Consolidation p_c (tsf)	Consolidation C_c	Consolidation C_r	Permeability (cm/sec.)	Resistivity (ohm-cm)	Redox Potential (mV)	pH	Sulfide (mg/kg of dry weight)	Chlorides (mg/kg of dry weight)	Sulfates (mg/kg of dry weight)	Miller Number	Splitting Tensile Strength (psi)	Slake Durability Index (%)	CERCHAR Abrasiveness Index	Punch Penetration Index (kips/in.)
B-065-0-21	SS-7	13.5	15.0	15		14																A-6a (VISUAL)																					
B-065-0-21	SS-8	16.0	17.5	12	2	15		34	21	13	14	8	7	42	29	3.646	0.019	0.005				A-6a (8)																					
B-065-0-21	SS-9	18.5	20.0	11	2	22		34	18	16	2	8	13	43	34	0.393	0.013					A-6b (10)																					
B-065-0-21	SS-10	23.5	25.0	12		26		31	21	10	0	1	3	62	34	0.058	0.010					A-4b (8)																					
B-065-0-21	SS-11	28.5	30.0	7		28																A-6a (VISUAL)																					
B-065-0-21	SS-12	33.5	35.0	13		25																A-4b (VISUAL)																					
B-065-0-21	SS-13	38.5	40.0	7		27		25	18	7	0	0	7	73	20	0.068	0.015	0.007				A-4b (8)																					
B-065-0-21	SS-14	43.5	45.0	5		25		29	20	9	0	0	1	72	27	0.054	0.012	0.006				A-4b (8)																					
B-065-0-21	SS-15	48.5	50.0	11		23																A-4b (VISUAL)																					
B-067-0-21	SS-1	1.0	2.5	15	4.5	15																A-6a (VISUAL)																					
B-067-0-21	SS-2	3.5	5.0	9	3	25		31	19	12	18	19	16	28	19	5.093	0.108	0.015				A-6a (3)																					
B-067-0-21	SS-3	6.0	7.5	8	0.5	21																A-6a (VISUAL)																					
B-067-0-21	SS-4	8.5	10.0	16	2	18		29	15	14	1	4	31	42	22	0.312	0.030	0.008				A-6a (7)																					
B-067-0-21	ST-1	11.0	13.0	ST		23	104.5															A-6a (VISUAL)						2.6	0.14	0.018													
B-067-0-21	SS-5	13.5	15.0	5	1	20																A-6a (VISUAL)																					
B-067-0-21	SS-6	16.0	17.5	11		28																A-4b (VISUAL)																					
B-067-0-21	SS-7	18.5	20.0	12		25		24	18	6	2	0	15	70	13	0.156	0.021	0.010				A-4b (8)																					
B-067-0-21	SS-8	23.5	25.0	9		28																A-4b (VISUAL)																					
B-067-0-21	SS-9	28.5	30.0	7		28		23	18	5	0	1	22	58	19	0.207	0.021	0.008				A-4b (8)																					
B-067-0-21	SS-10	33.5	35.0	7		27		22	18	4	1	0	8	76	15	0.073	0.017	0.008				A-4b (8)																					
B-067-0-21	SS-11	38.5	40.0	27		27		NP	NP	NP	0	1	61	31	7	0.335	0.107	0.038	0.006	1.59	21.94	A-4a (1)																					
B-067-0-21	SS-12	43.5	45.0	20		19																A-4a (VISUAL)																					
B-068-0-21	SS-1	1.5	3.0	20		8																A-4a (VISUAL)																					
B-068-0-21	SS-2	3.0	4.5	13		7																A-4a (VISUAL)																					
B-068-0-21	SS-3	4.5	6.0	12		15		25	15	10	10	6	15	38	31	1.992	0.019	0.005				A-4a (7)																					
B-068-0-21	SS-4	6.0	7.5	13		14																A-4a (VISUAL)																					
B-068-0-21	SS-5	8.5	10.0	24		14																A-4a (VISUAL)																					
B-068-0-21	SS-6	11.0	12.5	19	1.5	15																A-6a (VISUAL)																					
B-068-0-21	SS-7	13.5	15.0	9		16		23	12	11	13	0	0	83	4	3.968	0.022	0.012	0.006	0.72	5.13	A-6a (8)																					
B-068-0-21	SS-8	16.0	17.5	13	3	19																A-6a (VISUAL)																					
B-068-0-21	SS-9	18.5	18.9	50/5"		17																A-4a (VISUAL)																					
B-068-0-21	SS-10	23.5	25.0	11		30																A-4a (VISUAL)																					
B-068-0-21	ST-1	28.5	30.5	ST		23		NP	NP	NP	1	1	12	48	38	0.128	0.010					A-4a (8)																					
B-068-0-21	SS-11	33.5	35.0	9	1	25																A-6b (VISUAL)																					
B-068-0-21	SS-12	38.5	40.0	11	2.5	14																A-6b (VISUAL)																					
B-068-0-21	SS-13	43.5	45.0	17		31		NP	NP	NP	0	0	1	84	15	0.056	0.015	0.008				A-4b (8)																					
B-068-0-21	SS-14	48.5	50.0	16	1	21																A-4b (VISUAL)																					
B-068-0-21	SS-15	53.5	55.0	8		22		NP	NP	NP	0	0	20	64	16	0.178	0.021	0.009				A-4b (8)																					
B-068-0-21	SS-16	58.5	60.0	8		29																A-3 (VISUAL)																					
B-068-0-21	SS-17	63.5	65.0	13		27																A-3 (VISUAL)																					
B-068-0-21	SS-18	68.5	70.0	40		18		NP	NP	NP	8	34	50	8	0	1.885	0.327	0.163	0.081	0.69	5.87	A-3 (0)																					
B-068-0-21	SS-19	73.5	75.0	24		25																A-3 (VISUAL)																					
B-068-0-21	SS-20	78.5	80.0	39		26																A-3 (VISUAL)																					
B-068-0-21	SS-21	83.5	85.0	39		20		NP	NP	NP	0	10	79	6	5	0.444	0.177	0.114	0.043	1.35	5.07	A-3a (0)																					
B-068-0-21	SS-22	88.5	90.0	60		21																A-3a (VISUAL)																					
B-068-0-21	SS-23	93.5	95.0	40		22		NP	NP	NP	0	1	91	7	1	0.356	0.166	0.114	0.078	0.83	2.58	A-3 (0)																					
B-068-0-21	SS-24	98.5	100.0	48		23																A-3 (VISUAL)																					
B-071-0-21	SS-1	2.0	3.5	40		13																A-4a (VISUAL)																					
B-071-0-21	SS-2	3.5	5.0	19		10																A-4a (VISUAL)																					
B-071-0-21	SS-3	5.0	6.5	17		13																A-4a (VISUAL)																					
B-071-0-21	SS-4	6.5	8.0	21	1.5	7																A-4a (VISUAL)																					
B-071-0-21	SS-5	8.5	10.0	19	2	17																A-4a (VISUAL)																					
B-071-0-21	SS-6	11.0	12.5	25	2	15																A-4a (VISUAL)																					
B-071-0-21	SS-7	13.5	15.0	24		16		NP	NP	NP	3	3	8	37	49	0.178	0.005					A-4a (8)																					
B-071-0-21	SS-8	16.0	17.5	20	3	17																A-4a (VISUAL)																					
B-071-0-21	SS-9	18.5	20.0	25		16		31	15	16	9	7	12	37	35	1.846	0.015					A-6b (10)																					
B-071-0-21	SS-10	23.5	25.0	7	1	25																A-6a (VISUAL)																					
B-071-0-21	SS-11	28.5	30.0	12	1.5	27																A-6b (VISUAL)																					
B-071-0-21	ST-1	33.5	35.5	ST	1	24		42	16	26	1	4	13	42	40	0.214	0.010					A-7-6 (15)																					
B-071-0-21	SS-12	38.5	40.0	17	1.5	28																A-7-6 (VISUAL)																					
B-071-0-21	SS-13	43.5	45.0	11		30																A-6b (VISUAL)																					
B-071-0-21	SS-14	48.5	50.0	16		25					1	0	12	67	20	0.114	0.017	0.008				A-6b (VISUAL)																					
B-071-0-21	SS-15	53.5	55.0	7		27																A-4b (VISUAL)																					
B-071-0-21	SS-16	58.5	60.0	9		26																A-4b (VISUAL)																					
B-071-0-21	SS-17	63.5	65.0	24		26		NP	NP	NP	0	1	65	26	8	0.333	0.115	0.050	0.006	2.65	23.42	A-3a (0)																					
B-071-0-21	SS-18	68.5	70.0	23		28																A-3a (VISUAL)																					
B-071-0-21	SS-19	73.5	75.0	21		23																A-3a (VISUAL)																					
B-071-0-21	SS-20	78.5	80.0	33		20																A-3a (VISUAL)																					
B-071-0-21	SS-21	83.5	85.0	20		23																A-3a (VISUAL)																					
B-071-0-21	SS-22	88.5	90.0	27		17																A-3a (VISUAL)																					
B-071-0-21	SS-23	93.5	95.0	28																		A-3a (VISUAL)																					
B-071-0-21	SS-24	98.5	100.0	19		31																A-3a (VISUAL)																					
B-074-0-21	SS-2	3.5	5.0	12		14																A-6b (VISUAL)																					
B-074-0-21	SS-3	6.0	7.5	9		17		36	17	19	3	8	23	27	39	0.480	0.015					A-6b (10)																					
B-074-0-21	SS-4	8.5	10.0	19		13																A-6b (VISUAL)																					
B-074-0-21	SS-5	11.0	12.5	21		22																A-6b (VISUAL)																					
B-074-0-21	ST-1	13.0	15.0	ST		26	98.8	31	22	9	0	1	4	81	14	0.062	0.016	0.008				A-4b (8)						4.2	0.15	0.03													
B-074-0-21	SS-6	16.0	17.5	4		33																A-4b (VISUAL)																					
B-074-0-21	SS-7	18.5	20.0	12		28			20		0	3	2	76	19	0.062	0.015	0.007				A-4b (VISUAL)																					
B-074-0-21	SS-8	23.5	25.0	9		28																A-4b (VISUAL)																					
B-074-0-21	SS-9	28.5	30.0	8		28			18		0	0	1	70	29	0.054	0.011	0.005				A-4b (VISUAL)																					
B-074-0-21	SS-10	33.5	35.0	9		25																A-4a (VISUAL)																					
B-074-0-21	SS-11	38.5	40.0	21		21																A-3 (VISUAL)																					
B-074-0-21	SS-12	43.5	45.0	29		22					1	4	91	3	1	0.381	0.178	0.122	0.083	0.83	2.58	A-3 (VISUAL)																					
B-074-0-21	SS-13	48.5	50.0	23		18																A-3 (VISUAL)																					
B-074-0-21	SS-14	53.5	55.0	25		23					0	3	87	10	0	0.371	0.166	0.111	0.070	0.87	2.91	A-3 (VISUAL)																					
B-074-0-21	SS-15	58.5	60.0	31		24																A-3 (VISUAL)																					
B-075-0-21	SS-1	1.0	2.5	11	3.25	13																A-6a (VISUAL)																					
B-075-0-21	SS-2	2.5	4.0	11	4	15		27	15	12	11	11	20	32	26	2.865	0.039	0.007				A-6a (5)																					

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TABULATION OF LABORATORY TESTS

Exploration ID	Sample ID	Depth (ft.) From	Depth (ft.) To	N_{60} (bpf)	HP (tsf)	Moisture Content (%)	Dry Unit Weight (pcf)	Atterberg Limits (%) LL	PL	PI	Gradation Analysis (%) Gravel	Coarse Sand	Fine Sand	Silt	Clay	D_{90} (mm)	D_{50} (mm)	D_{30} (mm)	D_{10} (mm)	C_c	C_u	ODOT Classification	Unconfined Compressive Strength (psf)	Undrained Compressive Strength (psf)	Triaxial Test Type	Triaxial c' (psf)	Triaxial ϕ' (°)	Consolidation p_c (tsf)	Consolidation C_c	Consolidation C_r	Permeability (cm/sec.)	Resistivity (ohm-cm)	Redox Potential (mV)	pH	Sulfide (mg/kg of dry weight)	Chlorides (mg/kg of dry weight)	Sulfates (mg/kg of dry weight)	Miller Number	Splitting Tensile Strength (psi)	Slake Durability Index (%)	CERCHAR Abrasiveness Index	Punch Penetration Index (kips/in.)
B-075-0-21	SS-3	4.0	5.5	13		17		23	16	7	8	6	21	41	24	1.203	0.028	0.007				A-4a (6)																					
B-075-0-21	SS-4	5.5	7.0	31	4.5	15		26	16	10	5	8	17	40	30	0.879	0.019	0.005				A-4a (7)																					
B-075-0-21	SS-5	8.5	10.0	27	4.5	18																A-6a (VISUAL)																					
B-075-0-21	SS-6	11.0	12.5	28		12																A-6a (VISUAL)																					
B-075-0-21	SS-7	13.5	15.0	16	4.25	19		29	16	13	12	6	15	37	30	10.410	0.022	0.005				A-6a (8)																					
B-075-0-21	SS-8	16.0	17.5	28	4.5	19																A-6a (VISUAL)																					
B-075-0-21	SS-9	18.5	20.0	28	4.5	17		30	17	13	5	6	11	41	37	0.525	0.012					A-6a (9)																					
B-075-0-21	SS-10	23.5	25.0	33		15		24	15	9	7	13	25	33	22	1.376	0.048	0.009				A-4a (4)																					
B-075-0-21	SS-11	28.5	30.0	15	1.5	17																A-4a (VISUAL)																					
B-075-0-21	SS-12	33.5	35.0	13	3	21		44	23	21	2	5	12	38	43	0.262	0.008					A-7-6 (13)																					
B-075-0-21	ST-1	38.5	40.5	ST		28	95.1															A-7-6 (VISUAL)						1.8	0.19	0.02													
B-075-0-21	SS-13	43.5	45.0	15	1	34																A-4b (VISUAL)																					
B-075-0-21	SS-14	48.5	50.0	19		19		24	19	5	0	0	4	75	21	0.061	0.014	0.007				A-4b (8)																					
B-075-0-21	SS-15	53.5	55.0	17		26																A-4b (VISUAL)																					
B-076-0-21	SS-1	2.0	3.5	15		7																A-4a (VISUAL)																					
B-076-0-21	SS-2	3.5	5.0	7		13																A-6b (VISUAL)																					
B-076-0-21	SS-3	6.0	7.5	11		29		40	18	22	3	14	26	16	41	0.891	0.023					A-6b (9)																					
B-076-0-21	SS-4	8.5	10.0	12		21																A-6b (VISUAL)																					
B-076-0-21	ST-1	11.0	13.0	ST		20		36	16	20	0	9	34	29	28	0.406	0.040	0.006				A-6b (8)																					
B-076-0-21	SS-5	13.5	15.0	8		27																A-6b (VISUAL)																					
B-076-0-21	SS-6	16.0	17.5	9		32																A-6b (VISUAL)																					
B-076-0-21	SS-7	18.5	20.0	5		30		24	19	5	0	0	0	97	3	0.057	0.019	0.011	0.006	0.76	4.07	A-4b (8)																					
B-076-0-21	SS-8	23.5	25.0	15		26																A-4b (VISUAL)																					
B-076-0-21	SS-9	28.5	30.0	12		23		26	18	8	0	0	6	71	23	0.066	0.014	0.006				A-4b (8)																					
B-076-0-21	SS-10	33.5	35.0	8		23																A-6b (VISUAL)																					
B-076-0-21	SS-11	38.5	40.0	32		21																A-3 (VISUAL)																					
B-076-0-21	SS-12	43.5	45.0	20		27																A-3 (VISUAL)																					
B-076-0-21	SS-13	48.5	50.0	45		20																A-3a (VISUAL)																					
B-076-0-21	SS-14	53.5	55.0	61		17																A-3a (VISUAL)																					
B-076-0-21	SS-15	58.5	60.0	44		25																A-3a (VISUAL)																					
B-079-0-21	SS-1	2.0	3.5	32		15																A-6a (VISUAL)																					
B-079-0-21	SS-2	3.5	5.0	13		19																A-6a (VISUAL)																					
B-079-0-21	SS-3	6.0	7.5	16		21		30	17	13	5	8	29	28	30	0.758	0.035	0.005				A-6a (6)																					
B-079-0-21	SS-4	8.5	10.0	21		23																A-6b (VISUAL)																					
B-079-0-21	ST-1	11.0	13.0	ST		13	109.4	32	14	18	0	12	50	14	24	0.567	0.114	0.016				A-6b (2)						1.4	0.12	0.01													
B-079-0-21	SS-5	13.5	15.0	5		16																A-6b (VISUAL)																					
B-079-0-21	SS-6	16.0	17.5	12		32																A-4b (VISUAL)																					
B-079-0-21	SS-7	18.5	20.0	12		26		30	21	9	0	0	1	99								A-4 (8)																					
B-079-0-21	SS-8	23.5	25.0	11		24																A-4b (VISUAL)																					
B-079-0-21	SS-9	28.5	30.0	13		26		25	17	8	1	0	25	54	20	0.219	0.022	0.008				A-4b (8)																					
B-079-0-21	SS-10	33.5	35.0	13		28																A-4b (VISUAL)																					
B-079-0-21	SS-11	38.5	40.0	16		25																A-3 (VISUAL)																					
B-079-0-21	SS-12	43.5	45.0	25		21																A-3 (VISUAL)																					
B-079-0-21	SS-13	48.5	50.0	27		20																A-3 (VISUAL)																					
B-079-0-21	SS-14	53.5	55.0	91		24																A-3a (VISUAL)																					
B-079-0-21	SS-15	58.5	60.0	51		20																A-3a (VISUAL)																					
B-082-0-21	SS-1	1.0	2.5	9		15																A-2-4 (VISUAL)																			477			
B-082-0-21	SS-2	2.5	4.0	41		14		20	13	7	17	48	12	13	10	5.010	0.698	0.217	0.006	8.80	175.40	A-2-4 (0)																					
B-082-0-21	SS-3	4.0	5.5	36		10		29	15	14	22	14	11	22	31	6.454	0.050					A-6a (5)																					
B-082-0-21	SS-4	5.5	7.0	16		18		31	15	16	5	25	11	27	32	1.536	0.031					A-6b (7)																					
B-082-0-21	SS-5	8.5	10.0	21		18																A-6b (VISUAL)																					
B-082-0-21	SS-6	11.0	12.5	27	4.5	20																A-6a (VISUAL)																					
B-082-0-21	SS-7	13.5	15.0	29	4.5	16		28	15	13	9	13	21	27	30	1.645	0.037	0.005				A-6a (6)																					
B-082-0-21	SS-8	16.0	17.5	28	4.5	20																A-6a (VISUAL)																					
B-082-0-21	SS-9	18.5	20.0	31		15																A-6a (VISUAL)																					
B-082-0-21	SS-10	23.5	25.0	39	3.5	17		28	16	12	8	9	17	39	27	1.493	0.025	0.006				A-6a (7)																					
B-082-0-21	SS-11	28.5	30.0	19		24		28	15	13	3	6	20	38	33	0.371	0.016					A-6a (8)																					
B-082-0-21	ST-1	33.0	35.0	ST		19	105.8															A-6a (VISUAL)						1.4	0.12	0.015													
B-082-0-21	SS-12	38.5	40.0	23	1.5	24																A-7-6 (VISUAL)																					
B-082-0-21	SS-13	43.5	45.0	20	1.5	12																A-7-6 (VISUAL)																					
B-083-0-21	SS-1	1.0	2.5	16	2.5	10																A-4a (VISUAL)																			397			
B-083-0-21	SS-2	2.5	4.0	25	4.5	10		21	13	8	8	17	30	26	19	1.786	0.102	0.016				A-4a (2)																					
B-083-0-21	SS-3	4.0	5.5	23	4	16		29	15	14	8	11	15	33	33	1.361	0.020					A-6a (8)																					
B-083-0-21	SS-4	5.5	7.0	20	4.5	14		23	14	9	12	17	17	35	19	2.732	0.056	0.012				A-4a (4)																					
B-083-0-21	SS-5	8.5	10.0	31	4.5	18																A-7-6 (VISUAL)																					
B-083-0-21	SS-6	11.0	12.5	24	2.5	17																A-4a (VISUAL)																					
B-083-0-21	SS-7	13.5	15.0	28	4.5	13		23	17	6	15	25	18	28	14	3.579	0.172	0.024				A-4a (1)																					
B-083-0-21	SS-8	16.0	17.5	24	4.25	18																A-4a (VISUAL)																					
B-083-0-21	SS-9	18.5	20.0	29		10																A-4a (VISUAL)																					
B-083-0-21	SS-10	23.5	25.0	41	1.75	17		26	15	11	3	19	19	28	31	1.140	0.031	0.004				A-6a (5)																					
B-083-0-21	SS-11	28.5	30.0	15		24																A-6a (VISUAL)																					
B-083-0-21	SS-12	33.5	35.0	3	0.5	27		31	21	10	9	13	31	27	20	1.702	0.087	0.013				A-4a (2)																					
B-083-0-21	SS-13	38.5	40.0	12	1.25	23																A-6b (VISUAL)																					
B-083-0-21	ST-1	41.0	43.0	ST		16	104.1															A-6b (VISUAL)						1.2	0.12	0.008													
B-083-0-21	SS-14	43.5	45.0	11		20																A-4b (VISUAL)																					
B-083-0-21	SS-15	48.5	50.0	7		25		26	20	6	0	1	4	63	32	0.060	0.011	0.005				A-4b (8)																					
B-083-0-21	SS-16	53.5	55.0	8		23																A-4b (VISUAL)																					
B-083-0-21	SS-17	58.5	60.0	32		21																A-3 (VISUAL)																					
B-084-0-21	SS-1	1.5	3.0	8	2	7					27	9	8			28.582						A-6a (VISUAL)																					
B-084-0-21	SS-2	3.0	4.5	15	4.5	5																A-6a (VISUAL)																					
B-084-0-21	SS-3	4.5	6.0	23	3.25	14																A-6a (VISUAL)																					
B-084-0-21	SS-4	6.0	7.5	7		15		29	14	15	11	17	20	26	26	2.790	0.058	0.007				A-6a (5)																					
B-084-0-21	SS-5	8.5	10.0	11	3.5	21																A-6a (VISUAL)																					
B-084-0-21	SS-6	11.0	12.5	21	1.5	14																A-6b (VISUAL)																					
B-084-0-21	SS-7	13.5	15.0	49		14		37	18	19	27	9	8	34	22	28.582	0.047	0.009				A-6b (8)																					
B-084-0-21	SS-8	16.0	17.5	13		7																A-6b (VISUAL)																					
B-084-0-21	SS-9	18.5	20.0	33	2	17																A-6b (VISUAL)																					
B-084-0-21	SS-10	23.5	25.0	93		86																A-6b (VISUAL)																					
B-084-0-21	SS-11	28.5	30.0	8		23		25	13	12	7	3	24	39	27	0.413	0.025	0.006				A-6a (7)																					

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TABULATION OF LABORATORY TESTS

Exploration ID	Sample ID	Depth (ft.) From	Depth (ft.) To	N_{60} (bpf)	HP (tsf)	Moisture Content (%)	Dry Unit Weight (pcf)	Atterberg Limits (%) LL	PL	PI	Gradation Analysis (%) Gravel	Coarse Sand	Fine Sand	Silt	Clay	D_{90} (mm)	D_{50} (mm)	D_{30} (mm)	D_{10} (mm)	C_c	C_u	ODOT Classification	Unconfined Compressive Strength (psf)	Undrained Compressive Strength (psf)	Triaxial Test Type	Triaxial c' (psf)	Triaxial ϕ' (°)	Consolidation p_c (tsf)	Consolidation C_c	Consolidation C_r	Permeability (cm/sec.)	Resistivity (ohm-cm)	Redox Potential (mV)	pH	Sulfide (mg/kg of dry weight)	Chlorides (mg/kg of dry weight)	Sulfates (mg/kg of dry weight)	Miller Number	Splitting Tensile Strength (psi)	Slake Durability Index (%)	CERCHAR Abrasiveness Index	Punch Penetration Index (kips/in.)
B-084-0-21	SS-12	33.5	35.0	17	1.5	26																A-6a (VISUAL)																					
B-084-0-21	SS-13	38.5	40.0	7		21		NP	NP	NP												A-4a (VISUAL)																					
B-084-0-21	SS-14	43.5	45.0	11		27		NP	NP	NP	0	0	64	35	1	0.328	0.110	0.047	0.010	1.56	14.80	A-4a (0)																					
B-084-0-21	SS-15	48.5	50.0	28		20		NP	NP	NP	1	0	28	60	11	0.248	0.029	0.012	0.005	0.64	9.54	A-4b (7)																					
B-084-0-21	SS-16	53.5	55.0	16		34																A-4b (VISUAL)																					
B-084-0-21	SS-17	58.5	60.0	16		28																A-4b (VISUAL)																					
B-088-0-21	SS-1	1.0	2.5	13		12																A-6b (VISUAL)																					
B-088-0-21	SS-2	2.5	4.0	17		13					8	17	24	26	25	1.707	0.067	0.008				A-6b (VISUAL)																					
B-088-0-21	SS-3	4.0	5.5	21		16		29	17	12	33	12	13	21	21	28.443	0.228	0.017				A-6a (2)																					
B-088-0-21	SS-4	5.5	7.0	20																		A-6a (VISUAL)																					
B-088-0-21	SS-5	8.5	10.0	17		14																A-6a (VISUAL)																					
B-088-0-21	SS-6	11.0	12.5	25		25																A-6a (VISUAL)																					
B-088-0-21	SS-7	13.5	15.0	23		21																A-6a (VISUAL)																					
B-088-0-21	SS-8	16.0	17.5	25		14		27	17	10	24	26	20	16	14	21.915	0.427	0.077				A-2-4 (0)																					
B-088-0-21	SS-9	18.5	20.0	23		13																A-2-4 (VISUAL)																					
B-088-0-21	SS-10	23.5	25.0	20		18																A-4a (VISUAL)																					
B-088-0-21	SS-11	28.5	30.0	32		13		25	16	9	5	9	25	36	25	0.759	0.032	0.007				A-4a (5)																					
B-088-0-21	SS-12	33.5	35.0	8		18																A-6b (VISUAL)																					
B-088-0-21	SS-13	38.5	40.0	19	2.25	26		45	26	19	1	8	15	31	45	0.381	0.008					A-7-6 (13)																					
B-088-0-21	ST-1	41.0	43.0	ST		23	100.6															A-7-6 (VISUAL)						1.0	0.15	0.02													
B-088-0-21	SS-14	43.5	45.0	12		28																A-4b (VISUAL)																					
B-088-0-21	SS-15	48.5	50.0	5		25		28	19	9	0	1	0	73	26	0.053	0.012	0.006				A-4b (8)																					
B-088-0-21	SS-16	53.5	55.0	8		25					1	0	0	82	17	0.055	0.015	0.008				A-4b (VISUAL)																					
B-088-0-21	SS-17	58.5	60.0	15																		A-3a (VISUAL)																					
B-088-0-21	SS-18	63.5	65.0	13																		A-3a (VISUAL)																					
B-088-0-21	SS-19	68.5	70.0	24		28																A-3a (VISUAL)																					
B-089-0-21	SS-1	1.0	2.5	5		5																A-3a (VISUAL)																					
B-089-0-21	SS-2	3.5	5.0	4	0.5	10																A-6b (VISUAL)																					
B-089-0-21	SS-3	6.0	7.5	5		13																A-3a (VISUAL)																					
B-089-0-21	SS-4	8.5	10.0	9	1.25	24																A-6b (VISUAL)																					
B-089-0-21	SS-5	11.0	12.5	12	2	23		40	23	17	10	8	18	28	36	2.180	0.020					A-6b (9)																					
B-089-0-21	SS-6	13.5	15.0	17	2.25	24																A-7-6 (VISUAL)																					
B-089-0-21	ST-1	16.0	18.0	ST		23	103.2	56	24	32	28	30	37	-17	22	5.276	0.650	0.023	0.035	0.01	30.83	A-2-7 (0)			CU	0	30																	
B-089-0-21	SS-7	18.5	20.0	11		30																A-4b (VISUAL)																					
B-089-0-21	SS-8	23.5	25.0	7		29		20	21	NP	0	5	6	78	11	0.095	0.019	0.010	0.005	0.71	5.70	A-4b (8)																					
B-089-0-21	SS-9	28.5	30.0	35		24																A-3 (VISUAL)																					
B-089-0-21	SS-10	33.5	35.0	20		24					0	2	92	6	0	0.364	0.172	0.118	0.081	0.83	2.56	A-3 (VISUAL)																					
B-089-0-21	SS-11	38.5	40.0	16		23																A-3 (VISUAL)																					
B-089-0-21	SS-12	43.5	45.0	21		19																A-3 (VISUAL)																					
B-089-0-21	SS-13	48.5	50.0	20		19																A-3 (VISUAL)																					
B-090-0-21	SS-1	1.5	3.0	15																		A-4a (VISUAL)																					
B-090-0-21	SS-2	3.0	4.5	13																		A-4a (VISUAL)																					
B-090-0-21	SS-3	4.5	6.0	13																		A-4a (VISUAL)																					
B-090-0-21	SS-4	6.0	7.5	16	2																	A-6a (VISUAL)																					
B-090-0-21	SS-5	8.5	10.0	21				28	14	14	12	9	24	25	30	3.690	0.046	0.005				A-6a (6)																					
B-090-0-21	SS-6	11.0	12.5	31																		A-6a (VISUAL)																					
B-090-0-21	SS-7	13.5	15.0	12	1.75																	A-6a (VISUAL)																					
B-090-0-21	SS-8	16.0	17.5	23	3																	A-6a (VISUAL)																					
B-090-0-21	SS-9	18.5	20.0	17				NP	NP	NP	6	19	16	28	31	1.559	0.031					A-4a (5)																					
B-090-0-21	SS-10	23.5	25.0	24																		A-4a (VISUAL)																					
B-090-0-21	SS-11	28.5	30.0	45																		A-4a (VISUAL)																					
B-090-0-21	SS-12	33.5	35.0	5																		A-4a (VISUAL)																					
B-090-0-21	ST-1	38.5	40.5	ST				NP	NP	NP	2	4	9	33	52	0.208	0.004					A-4a (8)																					
B-090-0-21	SS-13	43.5	45.0	13																		A-4a (VISUAL)																					
B-090-0-21	SS-14	48.5	50.0	13																		A-4a (VISUAL)																					
B-090-0-21	SS-15	53.5	55.0	15																		A-4a (VISUAL)																					
B-090-0-21	SS-16	58.5	60.0	16	1.5																	A-6b (VISUAL)																					
B-090-0-21	SS-17	63.5	65.0	28				NP	NP	NP	0	2	90	7	1	0.362	0.168	0.114	0.078	0.83	2.62	A-3 (0)																					
B-090-0-21	SS-18	68.5	70.0	24																		A-3 (VISUAL)																					
B-090-0-21	SS-19	73.5	75.0	4																		A-3 (VISUAL)																					
B-090-0-21	SS-20	78.5	80.0	23																		A-3 (VISUAL)																					
B-090-0-21	SS-21	83.5	85.0	85				NP	NP	NP	1	10	79	9	1	0.476	0.180	0.117	0.075	0.80	2.98	A-3 (0)																					
B-090-0-21	SS-22	88.5	90.0	68																		A-3 (VISUAL)																					
B-090-0-21	SS-23	93.5	95.0	117																		A-3 (VISUAL)																					
B-090-0-21	SS-24	98.5	100.0	48																		A-3a (VISUAL)																					
B-090-0-21	SS-25	103.5	105.0	15																		A-3a (VISUAL)																					
B-090-0-21	SS-26	108.5	110.0	39																		A-3a (VISUAL)																					
B-092-0-21	SS-1	1.5	3.0	16	2.5	12																A-6b (VISUAL)																					
B-092-0-21	SS-2	3.0	4.5	47		7																A-6b (VISUAL)																					
B-092-0-21	SS-3	4.5	6.0	39		12		NP	NP	NP												A-6b (VISUAL)																					
B-092-0-21	SS-4	6.0	7.5	19	4	8																A-6a (VISUAL)																					
B-092-0-21	SS-5	8.5	10.0	24	4.5	17																A-6a (VISUAL)																					
B-092-0-21	SS-6	11.0	12.5	19	2.25	16																A-6a (VISUAL)																					
B-092-0-21	SS-7	13.5	15.0	21	2.5	19		26	15	11	4	9	27	35	25	0.673	0.034	0.007				A-6a (5)																					
B-092-0-21	SS-8	16.0	17.5		2.5																	A-6a (VISUAL)																					
B-092-0-21	SS-9	18.5	20.0	27	4.5	16																A-6a (VISUAL)																					
B-092-0-21	ST-1	23.0	25.0	ST		12		30	16	14	19	16	18	34	13	9.335	0.100	0.019				A-6a (4)																					
B-092-0-21	SS-10	28.5	30.0	73	3	4																A-6a (VISUAL)																					
B-092-0-21	SS-11	33.5	35.0	16	1.5	20																A-6a (VISUAL)																					
B-092-0-21	SS-12	38.5	40.0	17	1.5	30		29	23	6												A-6a (VISUAL)																					
B-092-0-21	SS-13	43.5	45.0	12	1	27																A-6a (VISUAL)																					
B-092-0-21	SS-14	48.5	50.0	8		28		30	21	9	0	0	0	68	32	0.050	0.010	0.005				A-4b (8)																					
B-092-0-21	SS-15	53.5	55.0	8		22																A-4b (VISUAL)																					
B-092-0-21	SS-16	58.5	60.0	23		23																A-4a (VISUAL)																					
B-092-0-21	SS-17	63.5	65.0	16		23		20	15	5	15	12	18	36	19	3.521	0.053	0.012				A-4a (4)																					
B-092-0-21	SS-18	68.5	70.0	17		24																A-1-b (VISUAL)																					
B-092-0-21	SS-19	73.5	75.0	16		21																A-1-b (VISUAL)																					
B-092-0-21	SS-20	78.5	80.0	17		18		NP	NP	NP	1	55	41	3	0	1.586	0.512	0.240	0.102	0.83	6.64	A-1-b (0)																					
B-092-0-21	SS-21	83.5	85.0	44		14																A-1-b (VISUAL)																					
B-092-0-21	SS-22	88.5	90.0	39		15																A-1-b (VISUAL)																					

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TABULATION OF LABORATORY TESTS

Exploration ID	Sample ID	Depth (ft.) From	Depth (ft.) To	N_{60} (bpf)	HP (tsf)	Moisture Content (%)	Dry Unit Weight (pcf)	Atterberg Limits (%) LL	PL	PI	Gradation Analysis (%) Gravel	Coarse Sand	Fine Sand	Silt	Clay	D_{90} (mm)	D_{50} (mm)	D_{30} (mm)	D_{10} (mm)	C_c	C_u	ODOT Classification	Unconfined Compressive Strength (psf)	Undrained Compressive Strength (psf)	Triaxial Test Type	Triaxial c' (psf)	Triaxial ϕ' (°)	Consolidation p_c (tsf)	Consolidation C_c	Consolidation C_r	Permeability (cm/sec.)	Resistivity (ohm-cm)	Redox Potential (mV)	pH	Sulfide (mg/kg of dry weight)	Chlorides (mg/kg of dry weight)	Sulfates (mg/kg of dry weight)	Miller Number	Splitting Tensile Strength (psi)	Slake Durability Index (%)	CERCHAR Abrasiveness Index	Punch Penetration Index (kips/in.)
B-092-0-21	SS-23	93.5	95.0	39																		A-1-b (VISUAL)																					
B-092-0-21	SS-24	98.5	100.0	41		19		NP	NP	NP	0	43	50	5	2	1.407	0.335	0.168	0.084	0.70	5.62	A-1-b (0)																					
B-092-0-21	SS-25	103.5	105.0	36		18																A-1-b (VISUAL)																					
B-092-0-21	SS-26	108.5	110.0	15		19		NP	NP	NP	1	17	69	13	0	0.898	0.190	0.114	0.038	1.42	6.50	A-3a (0)																					
B-094-0-21	SS-1	1.0	2.5	9		8																A-3a (VISUAL)																					
B-094-0-21	SS-2	2.5	4.0	12		8																A-3a (VISUAL)																					
B-094-0-21	SS-3	4.0	5.5	11	1.75	19		25	18	7	8	6	33	34	19	1.119	0.059	0.012				A-4a (4)																					
B-094-0-21	SS-4	6.0	7.5	8	1.75	16																A-4a (VISUAL)																					
B-094-0-21	SS-5	8.5	10.0	33	4.5	12																A-4a (VISUAL)																					
B-094-0-21	SS-6	11.0	12.5	7	1.25	27																A-6b (VISUAL)																					
B-094-0-21	SS-7	13.5	15.0	12	2.25	20		48	18	30												A-2-7 (0)																					
B-094-0-21	SS-8	16.0	17.5	11	1.75	26																A-6b (VISUAL)																					
B-094-0-21	ST-1	18.0	20.0	ST					18		0	0	4	58	38	0.056	0.009					A-6b (VISUAL)																					
B-094-0-21	SS-9	23.5	25.0	4		26					0	0	2	74	24	0.057	0.013	0.006				A-4b (VISUAL)																					
B-094-0-21	SS-10	28.5	30.0	16		21																A-3 (VISUAL)																					
B-094-0-21	SS-11	33.5	35.0	1		26																A-4b (VISUAL)																					
B-094-0-21	SS-12	38.5	40.0	12		25		30	18	12	0	0	3	66	31	0.057	0.011	0.005				A-6a (9)																					
B-094-0-21	SS-13	43.5	45.0	11		25																A-6a (VISUAL)																					
B-094-0-21	SS-14	48.5	50.0	9		19																A-3a (VISUAL)																					
B-094-0-21	SS-15	53.5	55.0	19		23		30	17	13												A-2-6 (VISUAL)																					
B-094-0-21	SS-16	58.5	60.0	19		19																A-3a (VISUAL)																					
B-094-0-21	SS-17	63.5	65.0	89		17																A-3a (VISUAL)																					
B-094-0-21	SS-18	68.5	70.0	60		16																A-3a (VISUAL)																					
B-095-0-21	SS-1	1.5	3.0	35	3	9																A-6a (VISUAL)																					
B-095-0-21	SS-2	3.0	4.5	15	3	9																A-6a (VISUAL)																					
B-095-0-21	SS-3	4.5	6.0	23	3	16																A-6a (VISUAL)																					
B-095-0-21	SS-4	6.0	7.5	21	2	21					0	5	17	43	35	0.246	0.013					A-6a (VISUAL)																					
B-095-0-21	SS-5	8.5	10.0	15	1.5	21																A-6a (VISUAL)																					
B-095-0-21	SS-6	11.0	12.5	49	1.25	17		27	14	13	5	10	37	27	21	0.976	0.082	0.012				A-6a (4)																					
B-095-0-21	SS-7	13.5	15.0	23		15																A-6a (VISUAL)																					
B-095-0-21	SS-8	16.0	17.5	20	2.25	11																A-6a (VISUAL)																					
B-095-0-21	SS-9	18.5	20.0	17		18		27	16	11	97	0	1	1	1		9.958	5.346	2.572	0.96	4.48	A-2-6 (0)																					
B-095-0-21	SS-10	23.5	25.0	13	1.25	14																A-6b (VISUAL)																					
B-095-0-21	SS-11	28.5	30.0	16		25																A-4b (VISUAL)																					
B-095-0-21	ST-1	33.5	35.5	ST		27	95.6	28	23	5	0	0	0	84	16	0.055	0.015	0.008				A-4b (8)						2.9	0.18	0.03													
B-095-0-21	SS-12	38.5	40.0	11		30																A-4b (VISUAL)																					
B-095-0-21	SS-13	43.5	45.0	11		25					0	0	86	14	0	0.348	0.155	0.103	0.033	1.69	5.71	A-3a (VISUAL)																					
B-095-0-21	SS-14	48.5	50.0	9		26																A-6a (VISUAL)																					
B-095-0-21	SS-15	53.5	55.0	27		26																A-3a (VISUAL)																					
B-095-0-21	SS-16	58.5	60.0	28		22		24	19	5	0	0	6	78	16	0.066	0.016	0.008				A-4b (8)																					
B-095-0-21	SS-17	63.5	65.0	12		26																A-3a (VISUAL)																					
B-095-0-21	SS-18	68.5	70.0	27		32																A-3a (VISUAL)																					
B-097-0-21	SS-1	1.5	3.0	8	1.25	16																A-7-6 (VISUAL)																					
B-097-0-21	SS-2	3.0	4.5	8	0.75	18																A-7-6 (VISUAL)																					
B-097-0-21	SS-3	4.5	6.0	8	0.75	27		27	19	8	0	1	3	82	14	0.062	0.016	0.008				A-4b (8)																					
B-097-0-21	SS-4	8.5	10.0	12		27																A-4b (VISUAL)																					
B-097-0-21	ST-1	11.0	13.0	ST							0	0	66	33	1	0.332	0.115	0.055	0.010	1.91	14.35	A-4a (VISUAL)																					
B-097-0-21	SS-5	13.5	15.0	16		22																A-4a (VISUAL)																					
B-097-0-21	SS-6	16.0	17.5	9		23					0	2	11	83	4	0.127	0.023	0.012	0.006	0.72	5.14	A-4b (VISUAL)																					
B-097-0-21	SS-7	18.5	20.0	15		7																A-3 (VISUAL)																					
B-097-0-21	SS-8	23.5	25.0	11	0.5	29		27	19	8	0	2	2	70	26	0.059	0.013	0.006				A-4b (8)																					
B-097-0-21	SS-9	28.5	30.0	8		23																A-4b (VISUAL)																					
B-097-0-21	SS-10	33.5	35.0	9		22																A-4b (VISUAL)																					
B-097-0-21	SS-11	38.5	40.0	20		22					1	5	89	5	0	0.390	0.179	0.122	0.083	0.82	2.64	A-3 (VISUAL)																					
B-097-0-21	SS-12	43.5	45.0	21		25																A-3 (VISUAL)																					
B-097-0-21	SS-13	48.5	50.0	19		22																A-3 (VISUAL)																					
B-097-0-21	SS-14	53.5	55.0	60		17																A-4a (VISUAL)																					
B-097-0-21	SS-15	58.5	60.0	11		23																A-4a (VISUAL)																					
B-099-0-21	SS-1	1.0	2.5	16	2	17																A-6b (VISUAL)																					
B-099-0-21	SS-2	2.5	4.0	17	1.5	12																A-6b (VISUAL)																					
B-099-0-21	SS-3	4.0	5.5	20		20		31	15	16	22	21	9	12	36	5.900	0.111					A-6b (5)																					
B-099-0-21	SS-4	5.5	7.0	19	2	25																A-6b (VISUAL)																					
B-099-0-21	SS-5	8.5	10.0	37		13																A-6b (VISUAL)																					
B-099-0-21	SS-6	11.0	12.5	13		16																A-6b (VISUAL)																					
B-099-0-21	SS-7	13.5	15.0	15		16		43	19	24	14	28	17	11	30	3.468	0.184	0.005				A-7-6 (5)																					
B-099-0-21	SS-8	16.0	17.5	8	2.25	12																A-7-6 (VISUAL)																					
B-099-0-21	SS-9	18.5	20.0	7		5		NP	NP	NP	2	0	0	97	1	0.059	0.019	0.011	0.006	0.76	4.04	A-4b (8)																					
B-099-0-21	SS-10	23.5	25.0	16		27																A-4b (VISUAL)																					
B-099-0-21	SS-11	28.5	30.0	16		30																A-4b (VISUAL)																					
B-099-0-21	SS-12	33.5	35.0	16		19		28	20	8	7	0	11	61	21	0.247	0.018	0.008				A-4b (8)																					
B-099-0-21	SS-13	38.5	40.0	29		28		25	21	4	0	0	4	77	19	0.061	0.015	0.007				A-4b (8)																					
B-099-0-21	SS-14	43.5	45.0	21		11																A-4b (VISUAL)																					
B-099-0-21	SS-15	48.5	50.0	24		24		NP	NP	NP	0	0	68	31	1	0.330	0.119	0.064	0.011	2.45	14.09	A-3a (0)																					
B-100-0-21	SS-1	1.5	3.0	12	4.5	15		30	16	14	14	13	13	33	27	3.043	0.033	0.006				A-6a (7)																					
B-100-0-21	SS-2	3.5	5.0	14	1.25	12																A-6a (VISUAL)																					
B-100-0-21	SS-3	6.0	7.5	17		5																A-4a (VISUAL)																					
B-100-0-21	SS-4	8.5	10.0	12		20		NP	NP	NP	0	2	58	36	4	0.334	0.101	0.035	0.008	1.16	17.25	A-4a (1)																					
B-100-0-21	SS-5	11.0	12.5	8		31																A-4b (VISUAL)																					
B-100-0-21	SS-6	13.5	15.0	12		27		31	23	8	0	1	1	61	37	0.052	0.009					A-4b (8)																					
B-100-0-21	SS-7	16.0	17.5	11		30																A-4b (VISUAL)																					
B-100-0-21	SS-8	18.5	20.0	5		28		24	21	3	0	0	5	72	23	0.062	0.014	0.007				A-4b (8)																					
B-100-0-21	SS-9	23.5	25.0	5	0.25	24																A-6a (VISUAL)																					
B-100-0-21	SS-10	25.0	27.0			24																A-6a (VISUAL)																					
B-100-0-21	SS-11	28.5	30.0	5		25		22	20	2	0	0	8	75	17	0.069	0.016	0.008				A-4b (8)																					
B-100-0-21	SS-12	33.5	35.0	14		27		20	17	3	0	3	16	63	18	0.195	0.020	0.008				A-4b (8)																					
B-100-0-21	SS-13	38.5	40.0	15		24																A-3 (VISUAL)																					
B-103-0-21	SS-1	1.5	3.0	15		12																A-4a (VISUAL)																				204	
B-103-0-21	SS-2	3.0	4.5	20	1.5	11																A-4a (VISUAL)																					

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TABULATION OF LABORATORY TESTS

Exploration ID	Sample ID	Depth (ft.) From	Depth (ft.) To	N_{60} (bpf)	HP (tsf)	Moisture Content (%)	Dry Unit Weight (pcf)	Atterberg Limits (%) LL	PL	PI	Gradation Analysis (%) Gravel	Coarse Sand	Fine Sand	Silt	Clay	D_{90} (mm)	D_{50} (mm)	D_{30} (mm)	D_{10} (mm)	C_c	C_u	ODOT Classification	Unconfined Compressive Strength (psf)	Undrained Compressive Strength (psf)	Triaxial Test Type	Triaxial c' (psf)	Triaxial ϕ' (°)	Consolidation p_c (tsf)	Consolidation C_c	Consolidation C_r	Permeability (cm/sec.)	Resistivity (ohm-cm)	Redox Potential (mV)	pH	Sulfide (mg/kg of dry weight)	Chlorides (mg/kg of dry weight)	Sulfates (mg/kg of dry weight)	Miller Number	Splitting Tensile Strength (psi)	Slake Durability Index (%)	CERCHAR Abrasiveness Index	Punch Penetration Index (kips/in.)
B-103-0-21	SS-3	4.5	6.0	17	1.5	17		24	15	9	13	23	16	26	22	2.882	0.093	0.011				A-4a (3)																						
B-103-0-21	SS-4	6.0	7.5	20	2	12																A-4a (VISUAL)																						
B-103-0-21	SS-5	8.5	10.0	24		13																A-4a (VISUAL)																						
B-103-0-21	SS-6	11.0	12.5	9		16		NP	NP	NP	40	31	15	10	4	19.804	1.181	0.432	0.023	4.16	85.00	A-1-b (0)																						
B-103-0-21	ST-7	13.5	15.5	ST		4	97.9															A-1-b (VISUAL)						2.2	0.15	0.007														
B-103-0-21	SS-8	16.0	17.5	14																		A-3a (VISUAL)																						
B-103-0-21	SS-9	18.5	20.0	26		5		NP	NP	NP	13	25	48	11	3	4.356	0.278	0.134	0.029	1.57	13.85	A-3a (0)																						
B-103-0-21	SS-10	21.0	22.5	27		26																A-3a (VISUAL)																						
B-103-0-21	SS-11	23.5	25.0	9		5																A-4b (VISUAL)																						
B-103-0-21	SS-12	26.0	27.5	8		26																A-4b (VISUAL)																						
B-103-0-21	SS-13	28.5	30.0	8		25																A-4b (VISUAL)																						
B-103-0-21	SS-14	33.5	35.0	27		25																A-4b (VISUAL)																						
B-103-0-21	SS-15	38.5	40.0	12		23		24	19	5	0	0	7	66	27	0.067	0.013	0.006				A-4b (8)																						
B-103-0-21	SS-16	43.5	45.0	17		25																A-3 (VISUAL)																						
B-103-0-21	SS-17	48.5	50.0	14		26																A-3 (VISUAL)																						
B-103-0-21	SS-18	53.5	55.0	20		29																A-3 (VISUAL)																						
B-103-0-21	SS-19	58.5	60.0	27		30		NP	NP	NP	0	0	91	5	4	0.352	0.164	0.112	0.077	0.83	2.60	A-3 (0)																						
B-103-0-21	SS-20	63.5	65.0	21		30																A-3 (VISUAL)																						
B-107-0-21	SS-1	1.0	2.5	9		24		29	30	NP	21	20	28	21	10	6.115	0.236	0.063	0.005	1.75	85.16	A-4a (VISUAL)																						
B-107-0-21	SS-2	3.5	5.0	3		31																A-4a (VISUAL)																						
B-107-0-21	SS-3	6.0	7.5	30		13		21	18	3	13	16	35	24	12	3.365	0.148	0.038				A-4a (VISUAL)																						
B-107-0-21	SS-4	8.5	10.0	39		15																A-4a (VISUAL)																						
B-107-0-21	SS-5	11.0	12.5	32		19		30	17	13	1	1	20	42	36	0.208	0.012					A-6a (9)																						
B-107-0-21	SS-6	13.5	15.0	51		20																A-6a (VISUAL)																						
B-107-0-21	SS-7	16.0	17.5	8	1.75	23																A-6a (VISUAL)																						
B-107-0-21	SS-8	18.5	20.0	6		28		29	16	13	0	2	49	25	24	0.319	0.078	0.009				A-6a (4)																						
B-107-0-21	SS-9	21.0	22.5	8		32		30	22	8	0	0	8	60	32	0.069	0.011	0.004				A-4b (8)																						
B-107-0-21	SS-10	23.5	25.0	3		31		25	23	2	0	0	6	72	22	0.064	0.014	0.007				A-4b (8)																						
B-107-0-21	SS-11	28.5	30.0	11		29																A-3a (VISUAL)																						
B-107-0-21	SS-12	33.5	35.0	15		26		NP	NP	NP	0	24	49	17	10	1.030	0.099	0.078	0.005	8.34	27.48	A-3a (0)																						
B-107-0-21	SS-13	38.5	40.0	14		27																A-3a (VISUAL)																						
B-108-0-21	SS-1	1.0	2.5	17	3.25	3																A-6a (VISUAL)															111						
B-108-0-21	SS-2	2.5	4.0	14		16																A-6a (VISUAL)																						
B-108-0-21	SS-3	4.0	5.5	14	2.25	20		31	17	14	8	19	12	28	33	1.744	0.026					A-6a (7)																						
B-108-0-21	SS-4	5.5	7.0	17	3.5	17																A-6a (VISUAL)																						
B-108-0-21	SS-5	8.5	10.0	38	3	18																A-6a (VISUAL)																						
B-108-0-21	SS-6	11.0	12.5	23		17		31	19	12	8	0	0	88	4	0.071	0.021	0.011	0.006	0.73	4.68	A-6a (9)																						
B-108-0-21	SS-7	13.5	15.0	3		28																A-4a (VISUAL)																						
B-108-0-21	SS-8	16.0	17.5	6	0.5	14																A-6b (VISUAL)																						
B-108-0-21	SS-9	18.5	20.0	9		19		23	17	6	4	22	34	26	14	0.868	0.145	0.026				A-4a (1)																						
B-108-0-21	SS-10	23.5	25.0	23	1.75	16																A-6b (VISUAL)																						
B-108-0-21	SS-11	28.5	30.0	8	4.5	23		24	17	7	0	0	10	72	18	0.077	0.017	0.008				A-4b (8)																						
B-108-0-21	ST-12	30.0	32.0	ST																		A-4b (VISUAL)																						
B-108-0-21	SS-13	33.5	35.0	8		28																A-4b (VISUAL)																						
B-108-0-21	SS-14	38.5	40.0	27		17																A-4b (VISUAL)																						
B-108-0-21	SS-15	43.5	45.0	26		25		NP	NP	NP	0	0	69	25	6	0.332	0.120	0.066	0.008	3.48	19.49	A-3a (0)																						
B-108-0-21	SS-16	48.5	50.0	23		30																A-4a (VISUAL)																						
B-108-0-21	SS-17	53.5	55.0	32		25																A-3a (VISUAL)																						
B-110-0-21	SS-1	1.0	2.5	18		12																A-2-4 (VISUAL)																						
B-110-0-21	SS-2	3.5	5.0	4		32		NP	NP	NP	27	20	24	22	7	9.190	0.295	0.083	0.007	1.43	92.98	A-2-4 (0)																						
B-110-0-21	SS-3	6.0	7.5	12		23																A-2-4 (VISUAL)																						
B-110-0-21	SS-4	8.5	10.0	24	3	19		36	19	17	1	2	8	51	38	0.090	0.009					A-6b (11)																						
B-110-0-21	ST-5	11.0	13.0	ST	2.5	19		40	19	21	2	12	23	25	38	0.590	0.018					A-6b (10)																						
B-110-0-21	SS-6	13.5	15.0	6	2	20																A-6b (VISUAL)																						
B-110-0-21	SS-7	16.0	17.5	24	4	15		27	16	11	4	20	19	6	51	1.379						A-6a (5)																						
B-110-0-21	SS-8	18.5	20.0	12	3	9																A-6a (VISUAL)																						
B-110-0-21	SS-9	23.5	25.0	15		17		NP	NP	NP	0	0	44	53	3	0.287	0.055	0.020	0.007	0.63	12.50	A-4b (4)																						
B-110-0-21	SS-10	28.5	30.0	13		29																A-4b (VISUAL)																						
B-110-0-21	SS-11	33.5	35.0	21		23																A-4b (VISUAL)																						
B-110-0-21	SS-12	38.5	40.0	31		20																A-4b (VISUAL)																						
B-111-0-21	SS-1	1.5	3.0	17	3.75	18																A-6a (VISUAL)															157						
B-111-0-21	SS-2	3.0	4.5	20	3.5	18																A-6a (VISUAL)																						
B-111-0-21	SS-3	4.5	6.0	29	4.25	19		32	18	14	7	8	11	39	35	1.115	0.014					A-6a (9)																						
B-111-0-21	SS-4	6.0	7.5	36	1.5	12																A-6a (VISUAL)																						
B-111-0-21	SS-5	8.5	10.0	20	2.5	18																A-6b (VISUAL)																						
B-111-0-21	SS-6	11.0	12.5	33	3	20		34	18	16	8	9	13	41	29	1.539	0.020	0.005				A-6b (9)																						
B-111-0-21	SS-7	13.5	15.0	17	1.25	23																A-6b (VISUAL)																						
B-111-0-21	SS-8	16.0	17.5	6		17																A-4a (VISUAL)																						
B-111-0-21	SS-9	18.5	20.0	9		17		25	16	9	11	6	27	36	20	2.763	0.049	0.011				A-4a (4)																						
B-111-0-21	SS-10	23.5	25.0	11		26																A-7-6 (VISUAL)																						
B-111-0-21	SS-11	28.5	30.0	29		22																A-7-6 (VISUAL)																						
B-111-0-21	SS-12	33.5	35.0	12		16		21	19	2	0	3	58	22	17	0.342	0.104	0.024				A-4a (1)																						
B-111-0-21	SS-13	38.5	40.0	15		12																A-4a (VISUAL)																						
B-111-0-21	SS-14	43.5	45.0	9		21																A-4a (VISUAL)																						
B-114-0-21	SS-1	1.0	2.5	21		13																A-4a (VISUAL)																						
B-114-0-21	SS-2	3.5	5.0	21	3.5	16		23	16	7	4	11	20	40	25	0.648	0.027	0.007				A-4a (6)																						
B-114-0-21	SS-3	6.0	7.5	63		16																A-4a (VISUAL)																						
B-114-0-21	SS-4	8.5	10.0	22	3	19		37	18	19	0	0	9	88	3	0.073	0.021	0.012	0.006	0.74	4.64	A-6b (12)																						
B-114-0-21	SS-5	11.0	12.5	15	1.5	20																A-6b (VISUAL)																						
B-114-0-21	SS-6	13.5	15.0	9		13		22	16	6	18	13	13	44	12	4.314	0.052	0.015				A-4a (4)																						
B-114-0-21	SS-7	16.0	17.5	18		10																A-4a (VISUAL)																						
B-114-0-21	SS-8	18.5	20.0	18		6																A-3a (VISUAL)																						
B-114-0-21	SS-9	23.5	25.0	13		23		NP	NP	NP	0	1	72	26	1	0.337	0.129	0.080	0.013	3.00	12.67	A-3a (0)																						
B-114-0-21	SS-10	28.5	30.0	21		10																A-3a (VISUAL)																						
B-114-0-21	SS-11	33.5	35.0	22		29																A-3a (VISUAL)																						
B-114-0-21	SS-12	38.5	40.0	25		28																A-3a (VISUAL)																						
B-115-0-21	SS-1	1.0	2.5	19	4.5	12																A-7-6 (VISUAL)																						
B-115-0-21	SS-2	3.5	5.0	39	4.5	16																A-7-6 (VISUAL)																						

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TABULATION OF LABORATORY TESTS

Exploration ID	Sample ID	Depth (ft.) From	Depth (ft.) To	N_{60} (bpf)	HP (tsf)	Moisture Content (%)	Dry Unit Weight (pcf)	Atterberg Limits (%) LL	PL	PI	Gradation Analysis (%) Gravel	Coarse Sand	Fine Sand	Silt	Clay	D_{90} (mm)	D_{50} (mm)	D_{30} (mm)	D_{10} (mm)	C_c	C_u	ODOT Classification	Unconfined Compressive Strength (psf)	Undrained Compressive Strength (psf)	Triaxial Test Type	Triaxial c' (psf)	Triaxial ϕ' (°)	Consolidation p_c (tsf)	Consolidation C_c	Consolidation C_r	Permeability (cm/sec.)	Resistivity (ohm-cm)	Redox Potential (mV)	pH	Sulfide (mg/kg of dry weight)	Chlorides (mg/kg of dry weight)	Sulfates (mg/kg of dry weight)	Miller Number	Splitting Tensile Strength (psi)	Slake Durability Index (%)	CERCHAR Abrasiveness Index	Punch Penetration Index (kips/in.)
B-115-0-21	SS-3	6.0	7.0	30/50/6"	3	15																A-6b (VISUAL)																						
B-115-0-21	SS-4	8.5	10.0	21	3.25	18		34	21	13	2	13	31	21	33	0.621	0.043					A-6a (5)																						
B-115-0-21	SS-5	11.0	12.5	22	2.75																	A-6a (VISUAL)																						
B-115-0-21	SS-6	13.5	15.0	9		7		NP	NP	NP	10	28	51	9	2	1.792	0.360	0.276	0.054	3.41	7.55	A-3a (0)																						
B-115-0-21	SS-7	16.0	17.5	28		5																A-3a (VISUAL)																						
B-115-0-21	SS-8	18.5	20.0	12		6		NP	NP	NP	49	26	6	16	3	7.826	1.825	0.567	0.016	7.55	161.48	A-3a (VISUAL)																						
B-115-0-21	SS-9	23.5	25.0	12		246?																A-6a (VISUAL)																						
B-115-0-21	SS-10	28.5	30.0	21		28		29	18	11	0	2	3	65	30	0.062	0.012	0.005				A-6a (8)																						
B-115-0-21	SS-11	33.5	35.0	15																		A-3a (VISUAL)																						
B-115-0-21	SS-12	38.5	40.0	10		29																A-3a (VISUAL)																						
B-115-0-21	SS-13	43.5	45.0	16		22		NP	NP	NP	0	1	74	24	1	0.339	0.133	0.084	0.013	3.16	12.83	A-3a (0)																						
B-115-0-21	SS-14	48.5	50.0	25		23																A-3a (VISUAL)																						
B-115-0-21	SS-15	53.5	55.0	33		23																A-3a (VISUAL)																						
B-117-0-21	SS-1	1.5	3.0	11		15																A-1-b (VISUAL)														<100								
B-117-0-21	SS-2	3.0	4.5	15		14		NP	NP	NP	48	15	17	11	9	32.873	1.654	0.208	0.007	1.30	693.61	A-1-b (0)																						
B-117-0-21	SS-3	4.5	6.0	21		14		23	16	7	11	18	22	31	18	2.462	0.083	0.015				A-4a (3)																						
B-117-0-21	SS-4	6.0	7.5	15		13		23	17	6	3	10	19	40	28	0.612	0.023	0.006				A-4a (7)																						
B-117-0-21	SS-5	8.5	10.0	17		24																A-4a (VISUAL)																						
B-117-0-21	SS-6	11.0	12.5	24		21		28	19	9	7	8	16	36	33	0.800	0.018					A-4a (7)																						
B-117-0-21	SS-7	13.5	14.9	7/10/50/5"		11		24	16	8	22	20	20	21	17	16.004	0.302	0.027				A-4a (1)																						
B-117-0-21	SS-8	16.0	17.5	42		16																A-4a (VISUAL)																						
B-117-0-21	SS-9	18.5	18.7	50/2"		5																A-4a (VISUAL)																						
B-117-0-21	SS-10	21.0	22.5	15		17																A-4a (VISUAL)																						
B-117-0-21	ST-11	23.0	25.0	ST		19	106.4	28	25	3	6	5	23	44	22	0.622	0.028	0.008				A-4a (6)						3.9	0.09	0.005														
B-117-0-21	SS-12	28.5	30.0	20	3	17		28	16	12	0	1	17	46	36	0.177	0.012					A-6a (9)																						
B-117-0-21	SS-13	33.5	35.0	17		14		35	15	20	11	15	31	20	23	2.142	0.110	0.013				A-6b (4)																						
B-117-0-21	SS-14	38.5	40.0	12		28																A-6b (VISUAL)																						
B-117-0-21	SS-15	43.5	45.0	12		18																A-4b (VISUAL)																						
B-121-0-21	SS-1	1.0	2.5	16		16																A-2-6 (VISUAL)																						
B-121-0-21	SS-2	3.5	5.0	10	1.5	15		25	13	12	11	18	27	21	23	2.251	0.109	0.012				A-6a (2)																						
B-121-0-21	SS-3	6.0	7.5	12	1.5	24																A-6a (VISUAL)																						
B-121-0-21	SS-4	8.5	10.0	12		16																A-1-b (VISUAL)																						
B-121-0-21	ST-5	11.0	13.0	ST																		A-1-b (VISUAL)																						
B-121-0-21	SS-6	13.5	15.0	31		6		NP	NP	NP	44	25	15	11	5	12.157	1.368	0.373	0.018	3.21	137.13	A-1-b (0)																						
B-121-0-21	SS-7	16.0	17.5	16		8																A-1-b (VISUAL)																						
B-121-0-21	SS-8	18.5	20.0	19		7																A-1-b (VISUAL)																						
B-121-0-21	SS-9	23.5	25.0	6		10																A-4b (VISUAL)																						
B-121-0-21	SS-10	28.5	30.0	13		20		NP	NP	NP	0	0	66	31	3	0.328	0.115	0.054	0.009	2.17	16.36	A-3a (0)																						
B-121-0-21	SS-11	33.5	35.0	6		36																A-3a (VISUAL)																						
B-121-0-21	SS-12	38.5	40.0	10		27		NP	NP	NP	0	4	5	86	5	0.072	0.021	0.011	0.006	0.73	4.82	A-4b (8)																						
B-121-0-21	SS-13	43.5	45.0	24		28																A-4b (VISUAL)																						
B-121-0-21	SS-14	48.5	50.0	30		21																A-3a (VISUAL)																						
B-121-0-21	SS-15	53.5	55.0	21		25		NP	NP	NP	1	2	81	15	1	0.361	0.154	0.100	0.024	2.20	7.91	A-3a (0)																						
B-121-0-21	SS-16	58.5	60.0	33		21																A-3a (VISUAL)																						
B-121-0-21	SS-17	63.5	65.0	34		21																A-3a (VISUAL)																						
B-121-0-21	SS-18	68.5	70.0	39		23		NP	NP	NP	0	1	73	23	3	0.342	0.133	0.083	0.011	3.55	14.67	A-3a (0)																						
B-121-0-21	SS-19	73.5	75.0	40		21																A-3a (VISUAL)																						
B-121-0-21	SS-20	78.5	80.0	42		21																A-3a (VISUAL)																						
B-123-0-21	SS-1	1.0	2.5	42		10																A-2-6 (VISUAL)																						
B-123-0-21	SS-2	3.5	5.0	15		18																A-6b (VISUAL)																						
B-123-0-21	ST-3	6.0	8.0	ST		18	108.4	33	9	24	6	6	22	38	28	0.717	0.024	0.006				A-6b (12)	3,648																					
B-123-0-21	SS-4	8.5	10.0	16		24																A-7-6 (VISUAL)																						
B-123-0-21	SS-5	11.0	12.5	19		23		45	20	25	1	11	13	33	42	0.620	0.010					A-7-6 (15)																						
B-123-0-21	SS-6	13.5	15.0	6		19																A-7-6 (VISUAL)																						
B-123-0-21	SS-7	16.0	17.5	9		29																A-4b (VISUAL)																						
B-123-0-21	SS-8	18.5	20.0	10		32		27	25	2	0	0	1	87	12	0.057	0.016	0.009				A-4b (8)																						
B-123-0-21	SS-9	23.5	25.0	19		23																A-4b (VISUAL)																						
B-123-0-21	SS-10	28.5	30.0	18		9																A-4b (VISUAL)																						
B-123-0-21	SS-11	33.5	35.0	16		27																A-4b (VISUAL)																						
B-123-0-21	SS-12	38.5	40.0	15		30		20	20	NP	0	0	35	55	10	0.267	0.036	0.013	0.005	0.61	11.83	A-4b (6)																						
B-123-0-21	SS-13	43.5	45.0	15		21																A-3a (VISUAL)																						
B-123-0-21	SS-14	48.5	50.0	16		22		NP	NP	NP	1	0	77	20	2	0.343	0.140	0.089	0.015	3.07	11.78	A-3a (0)																						
B-123-0-21	SS-15	53.5	55.0	30		23																A-3a (VISUAL)																						
B-123-0-21	SS-16	58.5	60.0	30		19		NP	NP	NP	0	1	82	14	3	0.351	0.150	0.098	0.018	2.82	10.04	A-3a (0)																						
B-123-0-21	SS-17	63.5	65.0	37		15																A-3a (VISUAL)																						
B-123-0-21	SS-18	68.5	70.0	48		21		NP	NP	NP	1	0	75	20	4	0.342	0.136	0.086	0.011	4.00	15.92	A-3a (0)																						
B-123-0-21	SS-19	73.5	75.0	18		28																A-3a (VISUAL)																						
B-123-0-21	SS-20	78.5	80.0	19		31																A-3a (VISUAL)																						
B-124-0-21	SS-1	1.0	2.5	9		8																A-3 (VISUAL)																						
B-124-0-21	SS-2	3.5	5.0	7		8		NP	NP	NP	2	14	76	7	1	0.833	0.197	0.125	0.079	0.80	3.12	A-3 (0)																						
B-124-0-21	SS-3	6.0	7.5	7		9																A-3 (VISUAL)																						
B-124-0-21	SS-4	8.5	10.0	9	2	18																A-6b (VISUAL)																						
B-124-0-21	SS-5	11.0	12.5	7	1	21																A-6b (VISUAL)																						
B-124-0-21	SS-6	13.5	15.0	9	2	19					13	12	15	46	14	4.112	0.041	0.013				A-6b (VISUAL)																						
B-124-0-21	SS-7	16.0	17.5	7	1.75	20																A-6a (VISUAL)																						
B-124-0-21	SS-8	18.5	20.0	9		21		31	19	12	26	17	17	30	10	6.094	0.213	0.030	0.005	0.32	119.47	A-6a (2)																						
B-124-0-21	SS-9	23.5	25.0	7		8		NP	NP	NP	0	0	83	16	1	0.347	0.150	0.099	0.023	2.26	7.92	A-3a (0)																						
B-124-0-21	SS-10	28.5	30.0	27		23																A-3a (VISUAL)																						
B-124-0-21	SS-11	33.5	35.0	4		33		NP	NP	NP	0	0	3									A-4 (8)																						
B-124-0-21	SS-12	38.5	40.0	24		27																A-3a (VISUAL)																						
B-124-0-21	SS-13	43.5	45.0	30		29		NP	NP	NP	0	39	44	16	1	1.347	0.277	0.126	0.023	1.67	17.87	A-3a (0)																						
B-124-0-21	SS-14	48.5	50.0	12		26																A-3a (VISUAL)																						
B-125-0-21	SS-1	1.5	3.0	18	4.5	14																A-6a (VISUAL)														520								
B-125-0-21	SS-2	3.0	4.5	15	4	14																A-6a (VISUAL)																						
B-125-0-21	SS-3	4.5	6.0	12	1	17		27	16	11	9	22	28	19	22	1.850	0.128	0.016				A-6a (1)																						
B-125-0-21	SS-4	6.0	7.5	29	4	17																A-6a (VISUAL)																						
B-125-0-21	SS-5	8.5	10.0	20	4.5	15																A-6a (VISUAL)																						
B-125-0-21	SS-6	11.0	12.5	21	4.5	16		33	19	14	2	6	14	43	35	0.342	0.013					A-6a (10)																						
B-125-0-21	SS-7	13.5	15.0	32	3.5	18																A-7-6 (VISUAL)																						

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TABULATION OF LABORATORY TESTS

Exploration ID	Sample ID	Depth (ft.) From	Depth (ft.) To	N_{60} (bpf)	HP (tsf)	Moisture Content (%)	Dry Unit Weight (pcf)	Atterberg Limits (%) LL	PL	PI	Gradation Analysis (%) Gravel	Coarse Sand	Fine Sand	Silt	Clay	D_{90} (mm)	D_{50} (mm)	D_{30} (mm)	D_{10} (mm)	C_c	C_u	ODOT Classification	Unconfined Compressive Strength (psf)	Undrained Compressive Strength (psf)	Triaxial Test Type	Triaxial c' (psf)	Triaxial ϕ' (°)	Consolidation p_c (tsf)	Consolidation C_c	Consolidation C_r	Permeability (cm/sec.)	Resistivity (ohm-cm)	Redox Potential (mV)	pH	Sulfide (mg/kg of dry weight)	Chlorides (mg/kg of dry weight)	Sulfates (mg/kg of dry weight)	Miller Number	Splitting Tensile Strength (psi)	Slake Durability Index (%)	CERCHAR Abrasiveness Index	Punch Penetration Index (kips/in.)
B-125-0-21	SS-8	16.0	17.5	38	4.25	16																A-4a (VISUAL)																				
B-125-0-21	SS-9	18.5	20.0	24	3.25	18																A-4a (VISUAL)																				
B-125-0-21	SS-10	21.0	22.5	35		12		23	17	6	19	19	21	23	18	4.974	0.156	0.020				A-4a (1)																				
B-125-0-21	SS-11	23.5	25.0	44	4.5	17																A-4a (VISUAL)																				
B-125-0-21	SS-12	28.5	30.0	8	1.25	22																A-6b (VISUAL)																				
B-125-0-21	SS-13	33.5	35.0	14	3.25	22		36	20	16	0	1	11	55	33	0.106	0.011					A-6b (10)																				
B-125-0-21	SS-14	38.5	40.0	27	3.25	20																A-7-6 (VISUAL)																				
B-125-0-21	SS-15	43.5	45.0	21	1.75	26		45	22	23	1	0	2	76	21	0.058	0.014	0.007				A-7-6 (14)																				
B-125-0-21	SS-16	48.5	50.0	18		8																A-3a (VISUAL)																				
B-125-0-21	SS-17	53.5	55.0	26		26		NP	NP	NP	0	0	80	16	4	0.343	0.144	0.094	0.015	3.37	12.31	A-3a (0)																				
B-125-0-21	SS-18	58.5	60.0	17		27																A-3a (VISUAL)																				
B-125-0-21	SS-19	63.5	65.0	14		29		NP	NP	NP	0	0	33	59	8	0.250	0.034	0.013	0.005	0.63	10.00	A-4b (6)																				
B-125-0-21	SS-20	68.5	70.0	26		24																A-4b (VISUAL)																				
B-125-0-21	SS-21	73.5	75.0	17		28																A-4b (VISUAL)																				
B-125-0-21	SS-22	78.5	80.0	6		27		21	20	1	0	2	8	80	10	0.075	0.019	0.010	0.005	0.71	5.39	A-4b (8)																				
B-125-0-21	SS-23	83.5	85.0	23		22																A-4b (VISUAL)																				
B-125-0-21	SS-24	88.5	90.0	44		21																A-4b (VISUAL)																				
B-125-0-21	SS-25	93.5	95.0	9		25																A-4b (VISUAL)																				
B-126-0-21	SS-1	1.0	2.5	33		12																A-6b (VISUAL)																				
B-126-0-21	SS-2	3.5	5.0	25	3	18																A-6b (VISUAL)																				
B-126-0-21	SS-3	6.0	7.5	13	2.5	16																A-6b (VISUAL)																				
B-126-0-21	SS-4	8.5	10.0	10	2.5	20		35	21	14	0	1	1	64	34	0.053	0.010					A-6a (10)																				
B-126-0-21	ST-5	11.0	13.0	ST		29	98.0															A-6a (VISUAL)						1.9	0.15	0.02												
B-126-0-21	SS-6	13.5	15.0	9		27		23	21	2	0	0	2	73	25	0.055	0.013	0.006				A-4b (8)																				
B-126-0-21	SS-7	16.0	17.5	9		29																A-4b (VISUAL)																				
B-126-0-21	SS-8	18.5	20.0	9		26																A-4b (VISUAL)																				
B-126-0-21	SS-9	23.5	25.0	9		25																A-4b (VISUAL)																				
B-126-0-21	SS-10	28.5	30.0	15		32		24	25	NP	1	0	5	87	7	0.066	0.019	0.010	0.006	0.73	4.71	A-4b (8)																				
B-126-0-21	SS-11	33.5	35.0	30		26																A-4a (VISUAL)																				
B-126-0-21	SS-12	38.5	40.0	28		24																A-4a (VISUAL)																				
B-126-0-21	SS-13	43.5	45.0	31		29		NP	NP	NP	0	15	57	26	2	0.725	0.089	0.076	0.012	5.08	8.26	A-3a (0)																				
B-126-0-21	SS-14	48.5	50.0	33		27																A-3a (VISUAL)																				
B-127-0-21	SS-1	1.0	2.5	13	2.25	15																A-6b (VISUAL)																				
B-127-0-21	SS-2	3.5	5.0	18		25		NP	NP	NP	17	19	23	31	10	3.444	0.149	0.029	0.005	0.53	61.47	A-4a (1)																				
B-127-0-21	SS-3	6.0	7.5	7		48																A-4a (VISUAL)																				
B-127-0-21	SS-4	8.5	10.0	3		59																A-4a (VISUAL)																				
B-127-0-21	SS-5	11.0	12.5	7	0.5	26		31	18	13	3	1	18	55	23	0.234	0.019	0.007				A-6a (9)																				
B-127-0-21	SS-6	13.5	15.0	6	0.5	19																A-6a (VISUAL)																				
B-127-0-21	SS-7	16.0	17.5	12		21																A-4b (VISUAL)																				
B-127-0-21	SS-8	18.5	20.0	9		27		26	22	4	0	1	2	81	16	0.060	0.016	0.008				A-4b (8)																				
B-127-0-21	SS-9	23.5	25.0	10		26																A-4b (VISUAL)																				
B-127-0-21	SS-10	28.5	30.0	12		26		NP	NP	NP	0	0	52	45	3	0.307	0.080	0.025	0.008	0.75	14.7	A-4a (3)																				
B-127-0-21	SS-11	33.5	35.0	13		28		NP	NP	NP	0	37	41	21	1	1.311	0.242	0.104	0.016	1.87	23.56	A-3a (0)																				
B-127-0-21	SS-12	38.5	40.0	7		27		28	18	10	1	0	12	79	8	0.110	0.021	0.011	0.005	0.71	5.52	A-4b (8)																				
B-127-0-21	SS-13	43.5	45.0	30		29																A-4b (VISUAL)																				
B-127-0-21	SS-14	48.5	50.0	25		26																A-4b (VISUAL)																				
B-128-0-21	SS-1	1.5	3.0	15		11																A-4a (VISUAL)																				
B-128-0-21	SS-2	3.0	4.5	39		15																A-4a (VISUAL)																				
B-128-0-21	SS-3	4.5	6.0	39		12		28	20	8	13	11	20	30	26	3.190	0.043	0.007				A-4a (4)																				
B-128-0-21	SS-4	6.0	7.5	30		17																A-4a (VISUAL)																				
B-128-0-21	SS-5	7.5	9.0	48		12																A-4a (VISUAL)																				
B-128-0-21	SS-6	9.0	10.5	36		16		26	16	10	13	10	19	32	26	3.554	0.037	0.007				A-4a (5)																				
B-128-0-21	SS-7	10.5	12.0	54		15																A-4a (VISUAL)																				
B-128-0-21	SS-8	12.0	13.5	35		18																A-4a (VISUAL)																				
B-128-0-21	SS-9	13.5	15.0	71		13		20	15	5	12	17	33	21	17	3.188	0.143	0.027				A-4a (1)																				
B-128-0-21	SS-10	15.0	16.5	66		13																A-4a (VISUAL)																				
B-128-0-21	SS-11	16.5	18.0	29		10		20	13	7	19	21	27	19	14	7.844	0.220	0.047				A-2-4 (0)																				
B-128-0-21	SS-12	18.0	19.5	24		15																A-2-4 (V)																				
B-128-0-21	SS-13	19.5	21.0	54		12																A-2-4 (V)																				
B-129-0-21	SS-1	1.0	2.5	27	4.5	13																A-6b (VISUAL)																				
B-129-0-21	SS-2	3.5	5.0	33	4.5	18		40	20	20	5	6	12	39	38	0.470	0.012					A-6b (12)																				
B-129-0-21	SS-3	6.0	7.5	37	4.5	14																A-6b (VISUAL)																				
B-129-0-21	SS-4	8.5	10.0	13	1.75	24																A-6b (VISUAL)																				
B-129-0-21	ST-5	11.0	13.0	ST		24	98.6	38	19	19	1	8	18	41	32	0.400	0.016					A-6b (11)						2.3	0.21	0.04												
B-129-0-21	SS-6	13.5	15.0	15	2.75	26																A-7-6 (VISUAL)																				
B-129-0-21	SS-7	16.0	17.5	21	2.75	21																A-7-6 (VISUAL)																				
B-129-0-21	SS-8	18.5	20.0	9		15		22	22	NP	6	3	26	48	17	0.414	0.032	0.010				A-4a (6)																				
B-129-0-21	SS-9	23.5	25.0	7		26		29	19	10	0	0	1	63	36	0.051	0.009					A-4b (8)																				
B-129-0-21	SS-10	28.5	30.0	6	0.75	27		29	19	10												A-4b (VISUAL)																				
B-129-0-21	SS-11	33.5	35.0	6		24		23	21	2	0	0	1	80	19	0.055	0.014	0.007				A-4b (8)																				
B-129-0-21	SS-12	38.5	40.0	13		25																A-4b (VISUAL)																				
B-129-0-21	SS-13	43.5	45.0	24		26																A-4b (VISUAL)																				
B-129-0-21	SS-14	48.5	50.0	21		26																A-4b (VISUAL)																				
B-130-0-21	SS-1	1.0	2.5	8	4.5	17																A-7-6 (VISUAL)																				
B-130-0-21	SS-2	2.5	4.0	15	3	20																A-4a (VISUAL)																				
B-130-0-21	SS-3	4.0	5.5	18		16		27	17	10	4	6	14	37	39	0.418	0.011					A-4a (8)																				
B-130-0-21	SS-4	5.5	7.0	23	4.5	18																A-4a (VISUAL)																				
B-130-0-21	SS-5	7.0	8.5	20	3	15																A-4a (VISUAL)																				
B-130-0-21	SS-6	8.5	10.0	21		17		28	18	10	16	15	22	24	23	5.303	0.094	0.011				A-4a (2)																				
B-130-0-21	SS-7	10.0	11.5	20	3.5	14																A-4a (VISUAL)																				
B-130-0-21	SS-8	11.5	13.0	27	4.5	15																A-4a (VISUAL)																				
B-130-0-21	SS-9	13.0	14.5	26	3.5	15		20	14	6	11	27	25	21	16	2.672	0.193	0.032				A-4a (0)																				
B-130-0-21	SS-10	14.5	16.0	24		18																A-4a (VISUAL)																				
B-130-0-21	SS-11	16.0	17.5	26	3.75	14																A-4a (VISUAL)																				
B-130-0-21	SS-12	17.5	19.0	26	3.75	14		27	18	9	8	15	17	32	28	1.634	0.033	0.006				A-4a (5)																				
B-130-0-21	SS-13	19.0	20.5	24	4.5	11																A-4a (VISUAL)																				
B-131-0-21	SS-1	1.0	2.5	22		4																A-2-6 (VISUAL)																				
B-131-0-21	SS-2	3.5	5.0	22		20																A-4a (VISUAL)																				

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TABULATION OF LABORATORY TESTS

Exploration ID	Sample ID	Depth (ft.) From	Depth (ft.) To	N_{60} (bpf)	HP (tsf)	Moisture Content (%)	Dry Unit Weight (pcf)	Atterberg Limits (%) LL	PL	PI	Gradation Analysis (%) Gravel	Coarse Sand	Fine Sand	Silt	Clay	D_{90} (mm)	D_{50} (mm)	D_{30} (mm)	D_{10} (mm)	C_c	C_u	ODOT Classification	Unconfined Compressive Strength (psf)	Undrained Compressive Strength (psf)	Triaxial Test Type	Triaxial c' (psf)	Triaxial ϕ' (°)	Consolidation p_c (tsf)	Consolidation C_c	Consolidation C_r	Permeability (cm/sec.)	Resistivity (ohm-cm)	Redox Potential (mV)	pH	Sulfide (mg/kg of dry weight)	Chlorides (mg/kg of dry weight)	Sulfates (mg/kg of dry weight)	Miller Number	Splitting Tensile Strength (psi)	Slake Durability Index (%)	CERCHAR Abrasiveness Index	Punch Penetration Index (kips/in.)
B-131-0-21	SS-3	6.0	7.5	7	2	23		29	21	8	14	13	18	38	17	4.121	0.053	0.013				A-4a (4)																					
B-131-0-21	SS-4	8.5	10.0	7		53																A-4a (VISUAL)																					
B-131-0-21	SS-5	11.0	12.5	19	2	28																A-7-6 (VISUAL)																					
B-131-0-21	SS-6	13.5	15.0	25	3	23		42	19	23	3	10	10	38	39	0.676	0.011					A-7-6 (14)																					
B-131-0-21	ST-7	16.0	18.0	ST		26	106.5	40	17	23	7	20	17	27	29	1.519	0.040	0.005				A-6b (9)						2.1	0.18	0.02													
B-131-0-21	SS-8	18.5	20.0	27	3.5	26																A-6b (VISUAL)																					
B-131-0-21	SS-9	23.5	25.0	12		23		26	18	8	3	9	9	56	23	0.596	0.019	0.007				A-4b (8)																					
B-131-0-21	SS-10	28.5	30.0	10		29		NP	NP	NP	0	1	1	85	13	0.058	0.016	0.009				A-4b (8)																					
B-131-0-21	SS-11	33.5	35.0	28		25																A-4b (VISUAL)																					
B-131-0-21	SS-12	38.5	40.0	39		22		NP	NP	NP	0	0	65	34	1	0.326	0.112	0.049	0.010	1.69	14.62	A-3a (0)																					
B-131-0-21	SS-13	43.5	45.0	30		30																A-3a (VISUAL)																					
B-131-0-21	SS-14	48.5	50.0	28		29																A-3a (VISUAL)																					
B-132-0-21	SS-1	1.0	2.5	15		6																A-3a (VISUAL)																					
B-132-0-21	SS-2	2.5	4.0	9		3																A-3a (VISUAL)																					
B-132-0-21	SS-3	4.0	5.5	9																		A-3a (VISUAL)																					
B-132-0-21	SS-4	6.0	7.5	6		16																A-6a (VISUAL)																					
B-132-0-21	SS-5	8.5	10.0	16	1.5	15		33	20	13	15	8	12	34	31	3.879	0.023	0.005				A-6a (7)																					
B-132-0-21	SS-6	11.0	12.5	21	2	16																A-6a (VISUAL)																					
B-132-0-21	SS-7	13.5	15.0	7		25																A-1-b (VISUAL)																					
B-132-0-21	SS-8	16.0	17.5	16		20		NP	NP	NP	50	17	17	11	5	33.044	2.012	0.330	0.018	1.60	202.50	A-1-b (0)																					
B-132-0-21	SS-9	18.5	20.0	15	1.5	20																A-6b (VISUAL)																					
B-132-0-21	ST-10	20.0	22.0	ST		19	109.1															A-6b (VISUAL)			CU	61.9	34.3																	
B-132-0-21	SS-11	23.5	25.0	7		25		27	17	10	1	2	22	43	32	0.238	0.016	0.004				A-4a (8)																					
B-132-0-21	SS-12	28.5	30.0	7		26																A-4b (VISUAL)																					
B-132-0-21	SS-13	33.5	35.0	3		29		24	21	3	0	0	1	85	14	0.056	0.016	0.008				A-4b (8)																					
B-132-0-21	SS-14	38.5	40.0	6		26																A-4b (VISUAL)																					
B-133-0-21	SS-1	1.0	2.5	19	3	12																A-6a (VISUAL)																					
B-133-0-21	SS-2	3.5	5.0	12	3.25	16		31	16	15	7	16	10	39	28	1.407	0.023	0.006				A-6a (8)																					
B-133-0-21	SS-3	6.0	7.5	13	2.5	22		33	21	12	5	18	21	37	19	1.302	0.048	0.011				A-6a (5)																					
B-133-0-21	SS-4	8.5	10.0	18		20		NP	NP	NP	9	34	33	7	17	1.841	0.285	0.100				A-3a (0)																					
B-133-0-21	SS-5	11.0	12.5	13		7																A-1-b (VISUAL)																					
B-133-0-21	SS-6	13.5	15.0	15		8		23	17	6	45	25	9	12	9	9.354	1.439	0.411	0.007	10.3	362.6	A-1-b (0)																					
B-133-0-21	SS-7	16.0	17.5	7		20																A-6a (VISUAL)																					
B-133-0-21	SS-8	18.5	20.0	7		12		32	20	12	28	16	4	28	24	6.146	0.061	0.009				A-6a (4)																					
B-133-0-21	ST-9	23.0	25.0	ST				32	16	16	1	0	0	57	42	0.048	0.007					A-6b (10)																					
B-133-0-21	SS-10	28.5	30.0	0		33		26	21	5	3	1	1	74	21	0.062	0.014	0.007				A-4b (8)																					
B-133-0-21	SS-11	33.5	35.0	3		24		28	20	8	1	1	1	70	27	0.057	0.012	0.006				A-4b (8)																					
B-133-0-21	SS-12	38.5	40.0	30		29		NP	NP	NP	1	0	2	93	4	0.061	0.019	0.011	0.006	0.75	4.25	A-4b (8)																					
B-133-0-21	SS-13	43.5	45.0	7		30		NP	NP	NP	0	2	10	77	11	0.081	0.020	0.010	0.005	0.71	5.69	A-4b (8)																					
B-133-0-21	SS-14	48.5	50.0	13		35																A-4b (VISUAL)																					
B-134-0-21	SS-1	1.0	2.5	11	3.5	15																A-6a (VISUAL)																					
B-134-0-21	SS-2	3.5	5.0	17	2	17		28	16	12	6	10	19	35	30	0.773	0.023	0.005				A-6a (7)																					
B-134-0-21	SS-3	6.0	7.5	24		15																A-6a (VISUAL)																					
B-134-0-21	SS-4	8.5	10.0	23	3.25	16		29	18	11	3	9	14	40	34	0.669	0.015					A-6a (8)																					
B-134-0-21	SS-5	11.0	12.5	24	3.5	17																A-6b (VISUAL)																					
B-134-0-21	ST-6	13.0	15.0	ST	3																	A-6b (VISUAL)																					
B-134-0-21	SS-7	16.0	17.5	27		8																A-6b (VISUAL)																					
B-134-0-21	SS-8	18.5	20.0	32	4	15																A-7-6 (VISUAL)																					
B-135-0-21	SS-1	1.0	2.5	18		7																A-3a (VISUAL)																			73			
B-135-0-21	SS-2	2.5	4.0	13	3.5	16																A-6a (VISUAL)																					
B-135-0-21	SS-3	4.0	5.5	18	4.5	14		32	18	14	2	3	10	61	24	0.175	0.016	0.007				A-6a (10)																					
B-135-0-21	SS-4	6.0	7.5	9	4.5	15																A-6a (VISUAL)																					
B-135-0-21	SS-5	8.5	10.0	13	4.5	17																A-6b (VISUAL)																					
B-135-0-21	SS-6	11.0	12.5	13	4.5	20		40	22	18	11	4	4	39	42	2.976	0.009					A-6b (11)																					
B-135-0-21	SS-7	13.5	15.0	22	4.5	12																A-6b (VISUAL)																					
B-135-0-21	SS-8	16.0	17.5	22	4.5	10																A-6b (VISUAL)																					
B-135-0-21	SS-9	18.5	20.0	34		24																A-6b (VISUAL)																					
B-135-0-21	SS-10	23.5	25.0	18	1.75	20		36	19	17	1	25	28	20	26	1.164	0.095	0.008				A-6b (4)																					
B-135-0-21	ST-11	26.0	28.0	ST		18	111.5															A-6b (VISUAL)			CU	0	34																	
B-135-0-21	SS-12	28.5	30.0	12		26		27	21	6	0	0	0	75	25	0.053	0.012	0.006				A-4b (8)																					
B-135-0-21	SS-13	33.5	35.0	9		27																A-4b (VISUAL)																					
B-135-0-21	SS-14	38.5	40.0	9		27																A-4b (VISUAL)																					
B-135-0-21	SS-15	43.5	45.0	13		21																A-4b (VISUAL)																					
B-135-0-21	SS-16	48.5	50.0	39		28		NP	NP	NP	0	26	56	15	3	1.092	0.102	0.084	0.017	2.30	10.28	A-3a (0)																					
B-135-0-21	SS-17	53.5	55.0	37		25																A-3a (VISUAL)																					
B-136-0-21	SS-1	1.0	2.5	15		20																A-4a (VISUAL)																					
B-136-0-21	SS-2	3.5	5.0	30		22																A-4a (VISUAL)																					
B-136-0-21	SS-3	6.0	7.5	19		18		29	19	10	12	12	21	44	11	3.269	0.056	0.016				A-4a (4)																					
B-136-0-21	SS-4	8.5	10.0	21	2	21																A-7-6 (VISUAL)																					
B-136-0-21	ST-5	11.0	13.0	ST	2.5	21		42	17	25	1	10	13	35	41	0.489	0.010					A-7-6 (14)																					
B-136-0-21	SS-6	13.5	15.0	12	1.5	26																A-6a (VISUAL)																					
B-136-0-21	SS-7	16.0	17.5	7	1	28																A-6a (VISUAL)																					
B-136-0-21	SS-8	18.5	20.0	4	1	24		32	18	14	0	0	1	53	46	0.047	0.006					A-6a (10)																					
B-136-0-21	SS-9	23.5	25.0	3	0.75	25																A-6a (VISUAL)																					
B-136-0-21	SS-10	28.5	30.0	15		37					0	0	35			0.259						A-4b (VISUAL)																					
B-136-0-21	SS-11	33.5	35.0	3		25																A-4b (VISUAL)																					
B-136-0-21	SS-12	38.5	40.0	15		25		NP	NP	NP	0	0	47	51	2	0.295	0.064	0.022	0.008	0.66	12.50	A-4b (4)																					
B-136-0-21	SS-13	43.5	45.0	31		21																A-4b (VISUAL)																					
B-136-0-21	SS-14	48.5	50.0	18		26		NP	NP	NP	0	0	3	83	14	0.060	0.016	0.008				A-4b (8)																					
B-136-0-21	SS-15	53.5	55.0	98		20																A-3a (VISUAL)																					
B-136-0-21	SS-16	58.5	60.0	46		21																A-3a (VISUAL)																					
B-137-0-21	SS-1	1.0	2.5	30	4.25	17																A-6b (VISUAL)																					
B-137-0-21	SS-2	3.5	5.0	21	3.25	20																A-6b (VISUAL)																					
B-137-0-21	SS-3	6.0	7.5	15	1.75	17																A-6b (VISUAL)																					
B-137-0-21	ST-4	8.0	10.0	ST																		A-3a (VISUAL)																					
B-137-0-21	SS-5	11.0	12.5	12		6																A-3a (VISUAL)																					
B-137-0-21	SS-6	13.5	15.0	10	3	20																A-6a (VISUAL)																					
B-137-0-21	SS-7	16.0	17.5	9		25																A-6a (VISUAL)																					

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TABULATION OF LABORATORY TESTS

Exploration ID	Sample ID	Depth (ft.) From	Depth (ft.) To	N_{60} (bpf)	HP (tsf)	Moisture Content (%)	Dry Unit Weight (pcf)	Atterberg Limits (%) LL	PL	PI	Gradation Analysis (%) Gravel	Coarse Sand	Fine Sand	Silt	Clay	D_{90} (mm)	D_{50} (mm)	D_{30} (mm)	D_{10} (mm)	C_c	C_u	ODOT Classification	Unconfined Compressive Strength (psf)	Undrained Compressive Strength (psf)	Triaxial Test Type	Triaxial c' (psf)	Triaxial ϕ' (°)	Consolidation p_c (tsf)	Consolidation C_c	Consolidation C_r	Permeability (cm/sec.)	Resistivity (ohm-cm)	Redox Potential (mV)	pH	Sulfide (mg/kg of dry weight)	Chlorides (mg/kg of dry weight)	Sulfates (mg/kg of dry weight)	Miller Number	Splitting Tensile Strength (psi)	Slake Durability Index (%)	CERCHAR Abrasiveness Index	Punch Penetration Index (kips/in.)
B-137-0-21	SS-8	18.5	20.0	22		14																A-2-4 (VISUAL)																					
B-137-0-21	SS-9	23.5	25.0	10		27																A-4b (VISUAL)																					
B-137-0-21	SS-10	28.5	30.0	9		28																A-4b (VISUAL)																					
B-137-0-21	SS-11	33.5	35.0	9		22																A-4b (VISUAL)																					
B-137-0-21	SS-12	38.5	40.0	12		26																A-4b (VISUAL)																					
B-137-0-21	SS-13	43.5	45.0	16		29		NP	NP	NP	0	1	51	47	1	0.202	0.079	0.027	0.008	0.89	11.61	A-4a (3)																					
B-137-0-21	SS-14	48.5	50.0	13		19																A-4a (VISUAL)																					
B-138-0-21	SS-1	1.0	2.5	21	3.5	19																A-6a (VISUAL)																					
B-138-0-21	SS-2	3.5	5.0	41		24																A-6a (VISUAL)																					
B-138-0-21	SS-3	6.0	7.5	18	1.5	22		26	15	11	9	17	22	29	23	1.769	0.064	0.010				A-6a (4)																					
B-138-0-21	SS-4	8.5	10.0	30		18																A-6a (VISUAL)																					
B-138-0-21	SS-5	11.0	12.5	18		16		29	16	13	9	10	24	28	29	1.715	0.038	0.005				A-6a (6)																					
B-138-0-21	SS-6	13.5	15.0	41		17																A-6a (VISUAL)																					
B-138-0-21	SS-7	16.0	17.5	21		18		31	18	13	11	8	14	34	33	2.488	0.019					A-6a (8)																					
B-138-0-21	SS-8	18.5	20.0	35		14																A-6a (VISUAL)																					
B-139-0-21	SS-1	1.0	2.5	18		7																A-6a (VISUAL)															231						
B-139-0-21	SS-2	2.5	4.0	7		5																A-6a (VISUAL)																					
B-139-0-21	SS-3	4.0	5.5	6		5		35	20	15	46	9	5	21	19	7.576	1.065	0.020				A-6a (2)																					
B-139-0-21	SS-4	6.0	7.5	15	2	16																A-7-6 (VISUAL)																					
B-139-0-21	SS-5	8.5	10.0	22		14																A-7-6 (VISUAL)																					
B-139-0-21	SS-6	11.0	12.5	31	3.5	18																A-4a (VISUAL)																					
B-139-0-21	SS-7	13.5	15.0	34		19		28	19	9	19	13	19	28	21	9.150	0.082	0.012				A-4a (3)																					
B-139-0-21	SS-8	16.0	17.5	25		17																A-7-6 (VISUAL)																					
B-139-0-21	SS-9	18.5	20.0	21		16																A-7-6 (VISUAL)																					
B-139-0-21	SS-10	23.5	25.0	22	1.25	26		39	22	17	33	15	13	19	20	13.288	0.349	0.021				A-6b (2)																					
B-139-0-21	SS-11	28.5	30.0	28		13																A-6b (VISUAL)																					
B-139-0-21	SS-12	33.5	35.0	9	0.5	25																A-6a (VISUAL)																					
B-139-0-21	ST-13	36.0	38.0	ST		24		28	17	11	0	0	0	59	41	0.048	0.008					A-6a (8)																					
B-139-0-21	SS-14	38.5	40.0	6		29																A-4b (VISUAL)																					
B-139-0-21	SS-15	43.5	45.0	6		25																A-4b (VISUAL)																					
B-139-0-21	SS-16	48.5	50.0	6		25		23	19	4	1	0	2	70	27	0.057	0.012	0.006				A-4b (8)																					
B-139-0-21	SS-17	53.5	55.0	7	0.5	23																A-4b (VISUAL)																					
B-139-0-21	SS-18	58.5	60.0	10		22																A-4b (VISUAL)																					
B-139-0-21	SS-19	63.5	65.0	9		23		NP	NP	NP	0	0	2	84	14	0.058	0.016	0.008				A-4b (8)																					
B-139-0-21	SS-20	68.5	70.0	9		22																A-4b (VISUAL)																					
B-139-0-21	SS-21	73.5	75.0	49		19																A-4a (VISUAL)																					
B-141-0-21	SS-1	1.0	2.5	54		38																A-6a (VISUAL)																					
B-141-0-21	SS-2	3.5	5.0	25		16																A-6a (VISUAL)																					
B-141-0-21	SS-3	6.0	7.5	24	2.75	18		30	19	11	12	11	9	32	36	2.818	0.017					A-6a (7)																					
B-141-0-21	SS-4	8.5	10.0	72		12		27	18	9												A-6a (VISUAL)																					
B-141-0-21	SS-5	11.0	12.5	19		7		NP	NP	NP	56	15	12	10	7	29.815	3.149	0.463	0.011	2.67	613.48	A-1-b (0)																					
B-141-0-21	SS-6	13.5	15.0	12		24		NP	NP	NP	14	42	23	16	5	2.746	0.536	0.151	0.012	2.36	62.14	A-1-b (0)																					
B-141-0-21	SS-7	16.0	17.5	58		19																A-1-b (VISUAL)																					
B-141-0-21	SS-8	18.5	20.0	12		34																A-1-b (VISUAL)																					
B-141-0-21	SS-9	23.5	25.0	6		23		24	17	7												A-4b (VISUAL)																					
B-141-0-21	ST-10	28.0	30.0	ST		27		26	20	6	0	0	0	67	33	0.050	0.010	0.004				A-4b (8)																					
B-141-0-21	SS-11	33.5	35.0	6		26		24	20	4	0	0	1	55	44	0.048	0.007					A-4b (8)																					
B-141-0-21	SS-12	38.5	40.0	4		24		24	19	5												A-4b (VISUAL)																					
B-141-0-21	SS-13	43.5	45.0	4		25																A-4b (VISUAL)																					
B-141-0-21	SS-14	48.5	50.0	7		23		25	16	9												A-4b (VISUAL)																					
B-141-0-21	SS-15	53.5	55.0	7		24		23	19	4	0	0	4	74	22	0.060	0.014	0.007				A-4b (8)																					
B-141-0-21	SS-16	58.5	60.0	13		23		21	19	2												A-4b (VISUAL)																					
B-141-0-21	SS-17	63.5	65.0	7		29																A-4b (VISUAL)																					
B-141-0-21	SS-18	68.5	70.0	33		20		NP	NP	NP	2	0	2	79	17	0.061	0.016	0.008				A-4b (8)																					
B-141-0-21	SS-19	73.5	75.0	4		20																A-4a (VISUAL)																					
B-141-0-21	SS-20	78.5	79.0	75/6"		9																Rock (VISUAL)																					
B-142-0-21	SS-1	1.0	2.5	21		18																A-6a (VISUAL)																					
B-142-0-21	SS-2	3.5	5.0	12	1.5	7																A-6a (VISUAL)																					
B-142-0-21	SS-3	6.0	7.5	15	2	4		32	19	13												A-6a (VISUAL)																					
B-142-0-21	SS-4	8.5	10.0	9	1	11																A-4b (VISUAL)																					
B-142-0-21	SS-5	11.0	12.5	13	1.5	23																A-4b (VISUAL)																					
B-142-0-21	ST-6	13.0	15.0	ST	2	26		24	18	6	0	0	2	75	23	0.057	0.013	0.006				A-4b (8)																					
B-142-0-21	SS-7	16.0	17.5	15	1.5	25																A-4b (VISUAL)																					
B-142-0-21	SS-8	18.5	20.0	18	2	22																A-4b (VISUAL)																					
B-142-0-21	SS-9	23.5	25.0	6		28		25	20	5	0	0	0	79	21	0.054	0.014	0.007				A-4b (8)																					
B-142-0-21	SS-10	28.5	30.0	6		24		23	18	5	0	0	2	66	32	0.055	0.010	0.005				A-4b (8)																					
B-142-0-21	SS-11	33.5	35.0	3		22																A-4b (VISUAL)																					
B-142-0-21	SS-12	38.5	40.0	4		25																A-4b (VISUAL)																					
B-142-0-21	SS-13	43.5	45.0	4		25																A-4b (VISUAL)																					
B-142-0-21	SS-14	48.5	50.0	67		23																A-4b (VISUAL)																					
B-142-0-21	SS-15	53.5	55.0	27		19		NP	NP	NP	0	0	5	92	3	0.065	0.020	0.011	0.006	0.74	4.38	A-4b (8)																					
B-142-0-21	SS-16	58.5	60.0	16		21																A-4b (VISUAL)																					
B-142-0-21	SS-17	63.5	65.0	39		17		NP	NP	NP												A-3a (VISUAL)																					
B-142-0-21	SS-18	68.5	70.0	45		20		NP	NP	NP	0	0	65	31	4	0.205	0.094	0.050	0.009	2.60	12.99	A-3a (0)																					
B-142-0-21	SS-19	73.5	75.0	37		16		NP	NP	NP												A-3a (VISUAL)																					
B-142-0-21	SS-20	78.5	78.6	75/1"		11																Rock (VISUAL)																					
B-143-0-21	SS-1	1.0	2.5	52		28																A-6b (VISUAL)																					
B-143-0-21	SS-2	3.5	5.0	9	1.5	18																A-6b (VISUAL)																					
B-143-0-21	SS-3	6.0	7.5	10	1.5	21																A-6b (VISUAL)																					
B-143-0-21	SS-4	8.5	10.0	9		11		NP	NP	NP												A-3a (VISUAL)																					
B-143-0-21	SS-5	11.0	12.5	9		26																A-4b (VISUAL)																					
B-143-0-21	ST-6	13.0	15.0	ST		24		NP	NP	NP	0	0	24	72	4	0.210	0.028	0.013	0.006	0.69	6.56	A-4b (8)																					
B-143-0-21	SS-7	16.0	17.5	9		28																A-6a (VISUAL)																					
B-143-0-21	SS-8	18.5	20.0	9		27		31	19	12	0	1	1	52	46	0.049	0.006					A-6a (9)																					
B-143-0-21	SS-9	23.5	25.0	9		27		25	18	7	2	1	6	50	41	0.072	0.008					A-4b (8)																					
B-143-0-21	SS-10	28.5	30.0	6		27		26	16	10												A-4b (VISUAL)																					
B-143-0-21	SS-11	33.5	35.0	7		23																A-4b (VISUAL)																					
B-143-0-21	SS-12	38.5	40.0	24		29																A-3a (VISUAL)																					
B-143-0-21	SS-13	43.5	45.0	27		19		NP	NP	NP	0	0	86	11	3	0.349	0.156	0.104	0.028	1.99	6.68	A-3a (0)																					

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TABULATION OF LABORATORY TESTS

Exploration ID	Sample ID	Depth (ft.) From	Depth (ft.) To	N_{60} (bpf)	HP (tsf)	Moisture Content (%)	Dry Unit Weight (pcf)	Atterberg Limits (%) LL	PL	PI	Gradation Analysis (%) Gravel	Coarse Sand	Fine Sand	Silt	Clay	D_{90} (mm)	D_{50} (mm)	D_{30} (mm)	D_{10} (mm)	C_c	C_u	ODOT Classification	Unconfined Compressive Strength (psf)	Undrained Compressive Strength (psf)	Triaxial Test Type	Triaxial c' (psf)	Triaxial ϕ' (°)	Consolidation p_c (tsf)	Consolidation C_c	Consolidation C_r	Permeability (cm/sec.)	Resistivity (ohm-cm)	Redox Potential (mV)	pH	Sulfide (mg/kg of dry weight)	Chlorides (mg/kg of dry weight)	Sulfates (mg/kg of dry weight)	Miller Number	Splitting Tensile Strength (psi)	Slake Durability Index (%)	CERCHAR Abrasiveness Index	Punch Penetration Index (kips/in.)
B-143-0-21	SS-14	48.5	50.0	63		14																A-3a (VISUAL)																					
B-143-0-21	SS-15	53.5	55.0	48		17		NP	NP	NP												A-3a (VISUAL)																					
B-143-0-21	SS-16	58.5	60.0	51		20		NP	NP	NP	0	1	95	1	3	0.358	0.173	0.120	0.084	0.83	2.48	A-3 (0)																					
B-143-0-21	SS-17	63.5	65.0	33		19																A-3 (VISUAL)																					
B-143-0-21	SS-18	68.5	70.0	16	2.5	35		39	21	18												A-6a (VISUAL)																					
B-143-0-21	SS-19	73.5	75.0	21	3.5	30		35	20	15	0	4	4	49	43	0.068	0.007					A-6a (10)																					
B-143-0-21	SS-20	78.5	78.6	50/1"		37																Rock (VISUAL)																					
B-144-0-21	SS-1	1.5	3.0	33		10																A-3a (VISUAL)														36							
B-144-0-21	SS-2	3.0	4.5	16		9																A-3a (VISUAL)																					
B-144-0-21	SS-3	4.5	6.0	12		21		31	16	15	21	8	12	31	28	11.843	0.035	0.006				A-6a (7)																					
B-144-0-21	SS-4	6.0	7.5	15		17																A-6a (VISUAL)																					
B-144-0-21	SS-5	8.5	10.0	19		23																A-6b (VISUAL)																					
B-144-0-21	SS-6	11.0	12.5	19		23		36	18	18	21	6	7	33	33	11.942	0.020					A-6b (9)																					
B-144-0-21	SS-7	13.5	15.0	24		16																A-7-6 (VISUAL)																					
B-144-0-21	SS-8	16.0	17.5	21		15																A-7-6 (VISUAL)																					
B-144-0-21	SS-9	18.5	20.0	18		28		37	19	18	15	10	10	32	33	4.752	0.021					A-6b (9)																					
B-144-0-21	SS-10	23.5	25.0	21		25																A-6b (VISUAL)																					
B-144-0-21	SS-11	28.5	30.0	16		24																A-6b (VISUAL)																					
B-144-0-21	ST-12	30.0	32.0	ST		16		43	21	22	20	36	16	6	22	4.255	0.542	0.091				A-2-7 (2)																					
B-144-0-21	SS-13	33.5	35.0	16		22																A-4b (VISUAL)																					
B-144-0-21	SS-14	38.5	40.0	6		24		23	18	5	0	0	1	68	31	0.053	0.011	0.005				A-4b (8)																					
B-144-0-21	SS-15	43.5	45.0	12		25																A-4b (VISUAL)																					
B-144-0-21	SS-16	48.5	50.0	13		21																A-4b (VISUAL)																					
B-144-0-21	SS-17	53.5	55.0	15		23		19	17	2	0	0	21	66	13	0.189	0.023	0.010				A-4b (8)																					
B-144-0-21	SS-18	58.5	60.0	10		31																A-4a (VISUAL)																					
B-144-0-21	SS-19	63.5	65.0	6		26																A-4a (VISUAL)																					
B-144-0-21	SS-20	68.5	70.0	27		21		22	17	5	38	6	9	34	13	10.300	0.108	0.020				A-4a (2)																					
B-144-0-21	SS-21	73.5	75.0	6		22																A-6a (VISUAL)																					
B-144-0-21	SS-22	78.5	80.0	98		20																A-6a (VISUAL)																					
B-144-0-21	SS-23	83.5	85.0	9		17		NP	NP	NP	0	14	32	33	21	0.550	0.056	0.010				A-4a (4)																					
B-144-0-21	SS-24	88.5	90.0	31		23																A-4a (VISUAL)																					
B-144-0-21	SS-25	93.5	95.0	101		14																Rock (VISUAL)																					
B-145-0-21	SS-1	1.5	3.0	6	4	23																A-6a (VISUAL)														<100							
B-145-0-21	SS-2	3.0	4.5	11	2.25	23																A-6a (VISUAL)																					
B-145-0-21	SS-3	4.5	6.0	11	0.75	19		38	19	19	26	14	9	23	28	11.662	0.066	0.006				A-6b (6)																					
B-145-0-21	SS-4	6.0	7.5	11	0.5	14		37	19	18	21	5	9	30	35	28.819	0.020					A-6b (9)																					
B-145-0-21	ST-5	8.0	10.0	ST		18	106.5	31	20	11	7	7	17	33	36	1.174	0.016					A-7-6 (VISUAL)						1.5	0.14	0.018													
B-145-0-21	SS-6	11.0	12.5	21	3.25	18																A-7-6 (VISUAL)																					
B-145-0-21	SS-7	13.5	15.0	18	3.75	20		41	19	22	3	5	9	38	45	0.270	0.007					A-7-6 (13)																					
B-145-0-21	SS-8	16.0	17.5	21	3.5	20																A-7-6 (VISUAL)																					
B-145-0-21	SS-9	18.5	20.0	57		17																A-6b (VISUAL)																					
B-145-0-21	SS-10	21.0	22.5	62	4.5	6		39	19	20	14	8	9	31	38	3.418	0.014					A-6b (11)																					
B-145-0-21	SS-11	23.5	25.0	42	3	18																A-6b (VISUAL)																					
B-145-0-21	SS-12	28.5	30.0	17	4.5	13																A-6b (VISUAL)																					
B-145-0-21	SS-13	33.5	35.0	14		24		NP	NP	NP	4	7	19	54	16	0.633	0.028	0.010				A-4b (7)																					
B-145-0-21	SS-14	38.5	40.0	6		19																A-4b (VISUAL)																					
B-145-0-21	SS-15	43.5	45.0	9		28		29	20	9	0	1	1	59	39	0.051	0.008					A-4b (8)																					
B-147-0-21	SS-1	1.0	2.5	10		32		37	21	16												A-6b (VISUAL)																					
B-147-0-21	SS-2	3.5	5.0	9	2.5	23		37	21	16	2	5	8	39	46	0.186	0.007					A-6b (10)																					
B-147-0-21	SS-3	6.0	7.5	9	1.5	25																A-6a (VISUAL)																					
B-147-0-21	SS-4	8.5	10.0	13	2	21		32	21	11	0	3	7	48	42	0.077	0.008					A-6a (8)																					
B-147-0-21	SS-5	11.0	12.5	24	4.5	15																A-6b (VISUAL)																					
B-147-0-21	SS-6	13.5	15.0	12	0.75	27		35	16	19	0	3	18	46	33	0.214	0.014					A-6b (12)																					
B-147-0-21	SS-7	16.0	17.5	15	1	24																A-6b (VISUAL)																					
B-147-0-21	SS-8	18.5	20.0	6		19																A-4b (VISUAL)																					
B-147-0-21	SS-9	23.5	25.0	16		24		26	19	7	0	0	4	72	24	0.059	0.013	0.006				A-4b (8)																					
B-147-0-21	SS-10	28.5	30.0	9		21																A-4b (VISUAL)																					
B-147-0-21	SS-11	33.5	35.0	18		27		NP	NP	NP	0	0	89	8	3	0.351	0.161	0.109	0.059	1.04	3.34	A-3a (0)																					
B-147-0-21	SS-12	38.5	40.0	39		24																A-3a (VISUAL)																					
B-148-0-21	SS-1	1.0	2.5	9	1.75	19																A-7-6 (VISUAL)																					
B-148-0-21	SS-2	2.5	4.0	10	1.25	21																A-7-6 (VISUAL)																					
B-148-0-21	SS-3	4.0	5.5	16	2.5	20		41	22	19	10	6	9	38	37	1.757	0.012					A-7-6 (12)																					
B-148-0-21	SS-4	5.5	7.0	25	1.25	23																A-7-6 (VISUAL)																					
B-148-0-21	SS-5	8.5	10.0	7	1.25	22																A-7-6 (VISUAL)																					
B-148-0-21	SS-6	11.0	12.5	31	0.25	25		36	17	19	24	8	10	29	29	16.152	0.034	0.005				A-6b (8)																					
B-148-0-21	SS-7	13.5	15.0	57	3.25	18																A-6b (VISUAL)																					
B-148-0-21	SS-8	16.0	17.5	33	4.5	12																A-6a (VISUAL)																					
B-148-0-21	SS-9	18.5	20.0	28	3	19		31	16	15	8	7	14	42	29	1.279	0.020	0.005				A-6a (9)																					
B-148-0-21	SS-10	23.5	25.0	21		18																A-2-6 (VISUAL)																					
B-148-0-21	SS-11	28.5	30.0	22	2	22		46	22	24	0	13	6	40	41	0.631	0.009					A-7-6 (15)																					
B-149-0-21	SS-1	0.0	1.5	25		22																A-2-4 (VISUAL)																					
B-149-0-21	SS-2	1.5	3.0	33		13																A-2-4 (VISUAL)																					
B-149-0-21	SS-3	3.0	4.5	18		19		34	25	9	43	22	13	13	9	14.632	1.184	0.201	0.006	2.64	418.98	A-2-4 (0)																					
B-149-0-21	SS-4	4.5	6.0	25		29																A-4a (VISUAL)																					
B-149-0-21	SS-5	8.5	10.0	9																		A-4a (VISUAL)																					
B-149-0-21	SS-6	11.0	12.5	19	1	37		44	28	16	3	2	3	51	41	0.066	0.008					A-7-6 (11)																					
B-149-0-21	SS-7	13.5	15.0	24	4.5	22																A-7-6 (VISUAL)																					
B-149-0-21	ST-8	16.0	18.0	ST	3.5	22																A-7-6 (VISUAL)																					
B-149-0-21	SS-9	18.5	20.0	28		18		27	19	8	40	27	5	22	6	8.139	1.135	0.145	0.008	1.25	244.37	A-2-4 (0)																					
B-149-0-21	SS-10	23.5	25.0	18		13																A-2-4 (VISUAL)																					
B-149-0-21	SS-11	28.5	30.0	21	3	17		42	21	21	6	5	3			0.576						A-7-6 (13)																					
B-149-0-21	SS-12	33.5	35.0	51	4.5	23																A-7-6 (VISUAL)																					
B-149-0-21	SS-13	38.5	40.0	55	4.5	20																A-7-6 (VISUAL)																					
B-149-0-21	SS-14	43.5	45.0	146																		Rock (VISUAL)																					
B-150-0-21	SS-1	1.5	3.0	11	4.5	18					14	13	13	33	27	3.043	0.033	0.006				A-6a (VISUAL)														<100							
B-150-0-21	SS-2	3.0	4.5	11	1.5	13																A-6a (VISUAL)																					
B-150-0-21	SS-3	4.5	6.0	8	2.25	21		35	20	15	8	9	11	35	37	1.459	0.014					A-6a (9)																					
B-150-0-21	SS-4	6.0	7.5	45		18		36	18	18	44	6	7	19	24	23.239	0.360	0.012				A-6b (4)																					

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TABULATION OF LABORATORY TESTS

Exploration ID	Sample ID	Depth (ft.) From	Depth (ft.) To	N_{60} (bpf)	HP (tsf)	Moisture Content (%)	Dry Unit Weight (pcf)	Atterberg Limits (%) LL	PL	PI	Gradation Analysis (%) Gravel	Coarse Sand	Fine Sand	Silt	Clay	D_{90} (mm)	D_{50} (mm)	D_{30} (mm)	D_{10} (mm)	C_c	C_u	ODOT Classification	Unconfined Compressive Strength (psf)	Undrained Compressive Strength (psf)	Triaxial Test Type	Triaxial c' (psf)	Triaxial ϕ' (°)	Consolidation p_c (tsf)	Consolidation C_c	Consolidation C_r	Permeability (cm/sec.)	Resistivity (ohm-cm)	Redox Potential (mV)	pH	Sulfide (mg/kg of dry weight)	Chlorides (mg/kg of dry weight)	Sulfates (mg/kg of dry weight)	Miller Number	Splitting Tensile Strength (psi)	Slake Durability Index (%)	CERCHAR Abrasiveness Index	Punch Penetration Index (kips/in.)
B-150-0-21	SS-5	8.5	10.0	20	2	25		NP	NP	NP	0	2	58	36	4	0.334	0.101	0.035	0.008	1.16	17.25	A-4a (VISUAL)																					
B-150-0-21	SS-6	11.0	12.5	15	2	18		43	20	23	42	9	7	19	23	29.258	0.454	0.013				A-7-6 (5)																					
B-150-0-21	SS-7	13.5	15.0	6	2	11		NP	NP	NP	0	1	1	61	37	0.052	0.009					A-4b (VISUAL)																					
B-150-0-21	SS-8	16.0	17.5	6	1	31																A-6b (VISUAL)																					
B-150-0-21	ST-9	18.0	20.0	ST	1.5	28	103.1	37	20	17	1	5	6	42	46	0.134	0.007					A-6b (11)			CU	163	30															
B-150-0-21	SS-10	23.5	25.0	18	4	21																A-4b (VISUAL)																					
B-150-0-21	SS-11	28.5	30.0	18	2.5	21		NP	NP	NP	0	4	4	75	17	0.069	0.016	0.008				A-4b (VISUAL)																					
B-150-0-21	SS-12	33.5	35.0	14		21		NP	NP	NP	0	3	16	63	18	0.195	0.020	0.008				A-4b (8)																					
B-150-0-21	SS-13	38.5	40.0	3		22																A-4b (VISUAL)																					
B-150-0-21	SS-14	43.5	45.0	5		25																A-4b (VISUAL)																					
B-150-0-21	SS-15	48.5	50.0	27		26		NP	NP	NP	0	0	86	11	3	0.348	0.156	0.104	0.030	1.93	6.44	A-3a (0)																					
B-150-0-21	SS-16	53.5	55.0	20		23																A-3a (VISUAL)																					
B-150-0-21	SS-17	58.5	60.0	18		25		NP	NP	NP	3	2	86	6	3	0.379	0.169	0.113	0.076	0.82	2.73	A-3 (0)																					
B-150-0-21	SS-18	63.5	65.0	36		15																A-3 (VISUAL)																					
B-150-0-21	SS-19	68.5	70.0	41		18		20	19	1	0	0	0	82	18	0.054	0.014	0.007				A-4b (8)																					
B-150-0-21	SS-20	73.5	75.0	26		19																A-4b (VISUAL)																					
B-150-0-21	SS-21	78.5	80.0	44		24		43	25	18	5	5	3	37	50	0.441	0.005					A-7-6 (12)																					
B-150-0-21	SS-22	83.5	83.8	50/3"		10																Rock (VISUAL)																					
B-019-0-22 (S&ME)	SS-1	1.5	3.0	7	1.5	21																A-6b (VISUAL)																					
B-019-0-22 (S&ME)	SS-2	3.5	5.0	13	3	16																A-6b (VISUAL)																					
B-019-0-22 (S&ME)	SS-3	6.0	7.5	13	3	20																A-6b (VISUAL)																					
B-019-0-22 (S&ME)	SS-4	7.5	8.0	9/6"	1.5-2.0	22																A-6b (VISUAL)																					
B-019-0-22 (S&ME)	SS-5	8.5	10.0	23	3	21																A-7-6 (VISUAL)																					
B-019-0-22 (S&ME)	SS-6	11.0	12.5	13	2	21																A-7-6 (VISUAL)																					
B-019-0-22 (S&ME)	SS-7	13.5	15.0	17		8																A-1-a (VISUAL)																					
B-019-0-22 (S&ME)	SS-8	16.0	17.5	10		13																A-1-a (VISUAL)																					
B-019-0-22 (S&ME)	SS-9A	18.5	19.5	7		23																A-1-a (VISUAL)																					
B-019-0-22 (S&ME)	SS-9B	19.5	20.0		1.5	21																A-6a (VISUAL)																					
B-019-0-22 (S&ME)	SS-10	23.5	25.0	16	3.5	21																A-6a (VISUAL)																					
B-019-0-22 (S&ME)	SS-11	28.5	30.0	14		15																A-6b (VISUAL)																					
B-019-0-22 (S&ME)	SS-12	33.5	35.0	16		12																A-6b (VISUAL)																					
B-019-0-22 (S&ME)	SS-13	38.5	40.0	20		24		NP	NP	NP	0	0	55	32	13	0.197	0.084	0.024				A-4a (VISUAL)																					
B-019-0-22 (S&ME)	SS-14	43.5	45.0	11		23		NP	NP	NP	0	0	84	6	10	0.368	0.206	0.163	0.006	18.24	38.22	A-3a (VISUAL)																					
B-019-0-22 (S&ME)	SS-15	48.5	50.0	19		25																A-3a (VISUAL)																					
B-019-0-22 (S&ME)	SS-16A	53.5	54.4	28		21																A-3a (VISUAL)																					
B-019-0-22 (S&ME)	SS-16B	54.4	55.0			23																A-3a (VISUAL)																					
B-019-0-22 (S&ME)	SS-17	58.5	60.0	21		21		NP	NP	NP	1	3	82	2	12	0.381	0.194	0.160				A-3a (VISUAL)																					
B-019-0-22 (S&ME)	SS-18	63.5	65.0	41		22																A-3a (VISUAL)																					
B-019-0-22 (S&ME)	SS-19	68.5	70.0	16	1.5-2.0	21		33	16	17	0	3	16	36	45	0.182	0.007					A-6b (VISUAL)																					
B-019-0-22 (S&ME)	SS-20	73.5	75.0	26	2.5	21																A-6b (VISUAL)																					
B-019-0-22 (S&ME)	SS-21	78.5	80.0	27	1.0-1.5	24		36	16	20	7	8	12	22	51	1.200	0.005					A-6b (VISUAL)																					
B-019-0-22 (S&ME)	SS-22	83.5	85.0	50	4	21																A-7-6 (VISUAL)																					
B-019-1-22 (S&ME)	SS-1A	1.5	1.8	7		6																A-1-a (VISUAL)																					
B-019-1-22 (S&ME)	SS-1B	1.8	3.0		1.5	22																A-6b (VISUAL)																					
B-019-1-22 (S&ME)	SS-2	3.5	5.0	10	2	23																A-6b (VISUAL)																					
B-019-1-22 (S&ME)	SS-3	6.0	7.5	11	3	22																A-6b (VISUAL)																					
B-019-1-22 (S&ME)	SS-4	8.5	10.0	16	2.5 - 3.0	18																A-6b (VISUAL)																					
B-019-1-22 (S&ME)	SS-5A	11.0	11.8	40	2.5	20																A-6b (VISUAL)																					
B-019-1-22 (S&ME)	SS-5C	12.1	12.5			10																A-1-a (VISUAL)																					
B-019-1-22 (S&ME)	SS-6	13.5	15.0	33		14																A-6b (VISUAL)																					
B-019-1-22 (S&ME)	SS-7	16.0	17.5	14	1.5	25																A-6b (VISUAL)																					
B-019-1-22 (S&ME)	SS-8	18.5	20.0	6	1.5	23																A-6b (VISUAL)																					
B-019-1-22 (S&ME)	ST-9	21.0	23.0	STST	3.75-4.25																	A-6b (VISUAL)																					
B-019-1-22 (S&ME)	SS-10	23.5	25.0	19	3.5	22		45	23	22	0	4	10	30	56	0.164						A-7-6 (VISUAL)																					
B-019-1-22 (S&ME)	SS-11A	28.5	28.9	11	3.5	26																A-7-6 (VISUAL)																					
B-019-1-22 (S&ME)	SS-11B	28.9	30.0			24																A-6a (VISUAL)																					
B-019-1-22 (S&ME)	SS-12	33.5	35.0	10		24		23	17	6	0	0	64	10	26	0.196	0.114	0.016				A-4a (VISUAL)																					
B-019-1-22 (S&ME)	SS-13A	38.5	39.1	11		20																A-4a (VISUAL)																					
B-019-1-22 (S&ME)	SS-13B	39.1	40.0			29																A-3a (VISUAL)																					
B-019-1-22 (S&ME)	SS-14	43.5	45.0	21		22		NP	NP	NP	0	1	80	7	12	0.360	0.186	0.139				A-3a (VISUAL)																					
B-019-1-22 (S&ME)	SS-15	48.5	50.0	16		21																A-3a (VISUAL)																					
B-019-1-22 (S&ME)	SS-16	58.5	60.0	28		19																A-3a (VISUAL)																					
B-019-1-22 (S&ME)	SS-17A	63.5	64.0	37		23																A-3a (VISUAL)																					
B-019-1-22 (S&ME)	SS-17B	64.0	65.0		2.5	21		51	22	29	7	4	3	20	66	0.608						A-7-6 (VISUAL)																					
B-019-1-22 (S&ME)	SS-18	68.5	70.0	27	3	26																A-7-6 (VISUAL)																					
B-019-1-22 (S&ME)	SS-19	73.5	75.0	26	2.5	19																A-7-6 (VISUAL)																					
B-019-1-22 (S&ME)	SS-20	78.5	80.0	41	3.5	27																A-7-6 (VISUAL)																					
B-019-1-22 (S&ME)	SS-21	83.5	83.8	50/3"																		Rock (VISUAL)																					
B-020-0-22 (S&ME)	SS-1	1.0	2.5	12	3	18																A-6b (VISUAL)																					
B-020-0-22 (S&ME)	SS-2	3.5	5.0	12	4	26																A-6b (VISUAL)																					
B-020-0-22 (S&ME)	SS-3	6.0	7.5	14	3	22		32	18	14	0	1	2	37	60	0.044						A-6a (VISUAL)																					
B-020-0-22 (S&ME)	SS-4	8.5	10.0	15	3.5	23																A-6a (VISUAL)																					
B-020-0-22 (S&ME)	SS-5	11.0	12.5	14	1.75	21		50	18	32	14	31	14	3	38	3.310	0.297					A-7-6 (VISUAL)																					
B-020-0-22 (S&ME)	SS-6	13.5	15.0	8	0.5	20		31	14	17	3	25	34	1	37	0.770	0.241					A-6b (VISUAL)																					
B-020-0-22 (S&ME)	SS-7	18.5	20.0	11	1	24																A-4b (VISUAL)																					
B-020-0-22 (S&ME)	SS-8	23.5	25.0	12	0.5	30																A-4b (VISUAL)																					
B-020-0-22 (S&ME)	SS-9	28.5	30.0	2	1	22		24	17	7	0	0	1	54	45	0.048	0.007					A-4b (VISUAL)																					
B-020-0-22 (S&ME)	SS-10	33.5	35.0	35	0.5	23																A-4b (VISUAL)																					
B-020-0-22 (S&ME)	SS-11	38.5	40.0	26	4	24																A-7-6 (VISUAL)																					
B-020-0-22 (S&ME)	SS-12	43.5	45.0	35	3	28		57	26	31	0	0	1	42	57	0.042						A-7-6 (VISUAL)																					
B-020-0-22 (S&ME)	SS-13	48.5	50.0	27	3.75	27																A-7-6 (VISUAL)																					
B-020-0-22 (S&ME)	SS-14	53.5	54.7	13/40/50/2"		18																Rock (VISUAL)																					
B-020-1-22 (S&ME)	SS-1	1.0	2.5	35	3.5	24																A-6a (VISUAL)																					
B-020-1-22 (S&ME)	SS-2	3.5	5.0	11	1.25	28																A-6a (VISUAL)																					
B-020-1-22 (S&ME)	SS-3	6.0	7.5	15	2	22																A-7-6 (VISUAL)																					
B-020-1-22 (S&ME)	SS-4	8.5	10.0	12	2.25	31		50	26	24	0	1	3	37	59	0.048						A-7-6 (VISUAL)																					
B-020-1-22 (S&ME)	SS-5	11.0	12.5	12	2.5	22		33	18	15	0	1	2	38	59	0.045						A-6a (VISUAL)																					
B-020-1-22 (S&ME)	SS-6	13.5	15.0	27	4.5	21																A-6a (VISUAL)																					
B-020-1-22 (S&ME)	SS-7	16.0	17.5	18		20		36	18	18	9	34	24	2	31	1.758	0.333					A-2-6 (VISUAL)																					
B-020-1-22 (S&ME)	SS-8	18.5	20.0	8	2.25	27																A-6a (VISUAL)																					

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TABULATION OF LABORATORY TESTS

Exploration ID	Sample ID	Depth (ft.) From	Depth (ft.) To	N_{60} (bpf)	HP (tsf)	Moisture Content (%)	Dry Unit Weight (pcf)	Atterberg Limits (%) LL	PL	PI	Gradation Analysis (%) Gravel	Coarse Sand	Fine Sand	Silt	Clay	D_{90} (mm)	D_{50} (mm)	D_{30} (mm)	D_{10} (mm)	C_c	C_u	ODOT Classification	Unconfined Compressive Strength (psf)	Undrained Compressive Strength (psf)	Triaxial Test Type	Triaxial c' (psf)	Triaxial ϕ' (°)	Consolidation p_c (tsf)	Consolidation C_c	Consolidation C_r	Permeability (cm/sec.)	Resistivity (ohm-cm)	Redox Potential (mV)	pH	Sulfide (mg/kg of dry weight)	Chlorides (mg/kg of dry weight)	Sulfates (mg/kg of dry weight)	Miller Number	Splitting Tensile Strength (psi)	Slake Durability Index (%)	CERCHAR Abrasiveness Index	Punch Penetration Index (kips/in.)
B-020-1-22 (S&ME)	SS-9	23.5	25.0	18		13		NP	NP	NP	31	26	9	19	15	9.146	0.700	0.045				A-2-4 (VISUAL)																					
B-020-1-22 (S&ME)	SS-10	28.5	30.0	27	4.5+	16																A-6a (VISUAL)																					
B-020-1-22 (S&ME)	SS-11	33.5	35.0	24	4	22		36	21	15	1	2	1	29	67	0.042						A-6a (VISUAL)																					
B-020-1-22 (S&ME)	SS-12	38.5	38.9	50/5"		13																Rock (VISUAL)																					
B-021-0-22 (S&ME)	SS-1	1.0	2.5	39	2	14																A-4a (VISUAL)																					
B-021-0-22 (S&ME)	SS-2	3.5	5.0	8	2.25	13		25	16	9	20	19	14	20	27	5.802	0.134	0.007				A-4a (VISUAL)																					
B-021-0-22 (S&ME)	SS-3	6.0	7.5	2	0.5	21																A-6a (VISUAL)																					
B-021-0-22 (S&ME)	4A	8.5	9.2	21	2	20		31	19	12	41	13	13	10	23	19.0	0.632	0.034				A-2-6 (VISUAL)																					
B-021-0-22 (S&ME)	4B	9.2	10.0			20																A-6a (VISUAL)																					
B-021-0-22 (S&ME)	SS-5	11.0	12.5	41	1.75	26																A-6a (VISUAL)																					
B-021-0-22 (S&ME)	SS-6	13.5	15.0	20	2	23		29	16	13	3	2	3	41	51	0.068	0.005					A-6a (VISUAL)																					
B-021-0-22 (S&ME)	SS-7	16.0	17.5	33	3.5	14																A-6b (VISUAL)																					
B-021-0-22 (S&ME)	SS-8	18.5	20.0	27	4.25	19		37	19	18	5	4	3	22	66	0.196						A-6b (VISUAL)																					
B-021-0-22 (S&ME)	SS-9	23.5	24.3	43/50/4"		21																Rock (VISUAL)																					
B-021-0-22 (S&ME)	SS-10	27.5	28.2	30/50/2"		18																Rock (VISUAL)																					
B-021-1-22 (S&ME)	SS-1	1.0	2.5	9	1.5	13																A-6b (VISUAL)																					
B-021-1-22 (S&ME)	SS-2	3.5	5.0	17	3	18		40	21	19	2	4	3	25	66	0.068						A-6b (12)																					
B-021-1-22 (S&ME)	SS-3	6.0	7.5	16	2	21																A-6b (VISUAL)																					
B-021-1-22 (S&ME)	SS-4	8.5	10.0	23	1.5-2.0	20																A-6b (VISUAL)																					
B-021-1-22 (S&ME)	SS-5	11.0	12.5	26	2.5	21																A-6b (VISUAL)																					
B-021-1-22 (S&ME)	SS-6	13.5	13.9	50/5"		21																A-6b (VISUAL)																					
B-021-1-22 (S&ME)	SS-7	16.0	17.5	44	4	13		38	23	15	43	17	6	11	23	12.807	1.212	0.023				A-2-6 (1)																					
B-021-1-22 (S&ME)	SS-8	18.5	20.0	21	3	19																A-2-6 (VISUAL)																					
B-021-1-22 (S&ME)	SS-9	23.5	25.0	17	1.5-2.0	17		25	13	12	5	7	15	32	41	0.581	0.010					A-6a (8)																					
B-021-1-22 (S&ME)	SS-10	28.5	30.0	19		16																A-6a (VISUAL)																					
B-021-1-22 (S&ME)	SS-11	33.5	35.0	44	4	12		24	14	10	11	14	27	18	30	2.420	0.089	0.005				A-4a (3)																					
B-021-1-22 (S&ME)	SS-12	38.5	40.0	33	3.75																	A-6a (VISUAL)																					
B-021-1-22 (S&ME)	SS-13	43.5	44.6	10/38/50/1"	4.5+																	A-6a (VISUAL)																					
B-024-0-22 (S&ME)	SS-1	1.0	2.5	17		7		26	15	11	43	22	10	7	18	14.712	1.315	0.242				A-2-6 (VISUAL)																					
B-024-0-22 (S&ME)	SS-2	2.5	4.0	21	2.0-3.0	17		40	20	20	16	7	7	22	48	5.631	0.006					A-6b (VISUAL)																					
B-024-0-22 (S&ME)	SS-3	4.0	5.5	19	3.5	16																A-6b (VISUAL)																					
B-024-0-22 (S&ME)	SS-4	5.5	7.0	27	3	13		38	19	19	16	5	5	31	43	8.424	0.009					A-6b (VISUAL)																					
B-024-0-22 (S&ME)	SS-5	8.5	10.0	24	3.5	18																A-6b (VISUAL)																					
B-024-0-22 (S&ME)	SS-6	11.0	12.5	33	2	14																A-6b (VISUAL)																					
B-024-0-22 (S&ME)	SS-7	13.5	15.0	14	2	22																A-7-6 (VISUAL)																					
B-024-0-22 (S&ME)	ST-8	16.0	18.0	ST	1.5-2.0	23		44	23	21	5	6	8	75	6	0.489	0.026	0.013	0.007	0.71	5.55	A-7-6 (VISUAL)																					
B-024-0-22 (S&ME)	SS-9	18.5	20.0	13	2	21																A-6b (VISUAL)																					
B-024-0-22 (S&ME)	SS-10	23.5	25.0	16	3.5	22																A-6b (VISUAL)																					
B-024-0-22 (S&ME)	ST-11	25.0	26.0	ST	3.5																	A-6b (VISUAL)																					
B-024-0-22 (S&ME)	SS-12	28.5	30.0	46	4.5+	20																A-7-6 (VISUAL)																					
B-024-0-22 (S&ME)	SS-13	33.5	34.1	40/50/1"		7																Rock (VISUAL)																					
B-025-0-22 (S&ME)	SS-1	1.0	2.5	11	3.25	16		35	18	17	13	10	7	23	47	2.889	0.006					A-6b (VISUAL)																					
B-025-0-22 (S&ME)	SS-2	3.5	5.0	14	3.5	18		44	19	25	7	5	4	27	57	0.923						A-7-6 (VISUAL)																					
B-025-0-22 (S&ME)	SS-3	6.0	7.5	16	3.5	17																A-7-6 (VISUAL)																					
B-025-0-22 (S&ME)	SS-4	8.5	10.0	13	3	23																A-7-6 (VISUAL)																					
B-025-0-22 (S&ME)	SS-5	11.0	12.5	30																		A-7-6 (VISUAL)																					
B-025-0-22 (S&ME)	SS-6	13.5	15.0	24	2.5	17																A-6a (VISUAL)																					
B-025-0-22 (S&ME)	SS-7	16.0	17.5	21	4.25	18																A-6a (VISUAL)																					
B-025-0-22 (S&ME)	SS-8	18.5	20.0	20	4.5	21																A-6a (VISUAL)																					
B-025-0-22 (S&ME)	SS-9	23.5	25.0	26	4.5	13																A-6a (VISUAL)																					
B-025-0-22 (S&ME)	SS-10	28.5	30.0	40	4.5+	17																A-6a (VISUAL)																					
B-025-0-22 (S&ME)	SS-11	33.5	35.0	46	4.5+	13																A-6a (VISUAL)																					
B-025-0-22 (S&ME)	SS-12	38.5	39.7	15/49/50/2"		11																A-3a (VISUAL)																					
B-025-0-22 (S&ME)	SS-13	43.5	45.0	13		18																A-6a (VISUAL)																					
B-025-0-22 (S&ME)	SS-14	48.5	50.0	9	1.25	23		35	17	18	0	0	55	12	33	0.183	0.083					A-6b (VISUAL)																					
B-025-0-22 (S&ME)	SS-15	53.5	55.0	20	4.5+	21		51	23	28	3	3	2	25	67	0.061						A-7-6 (VISUAL)																					
B-025-0-22 (S&ME)	SS-16	58.5	59.4	48/50/5"		27																Rock (VISUAL)																					
B-026-0-22 (S&ME)	SS-1	1.0	2.5	15	3	22		46	20	26	0	0	1	31	68	0.034						A-7-6 (VISUAL)																					
B-026-0-22 (S&ME)	SS-2	3.5	5.0	18	4.5	21																A-6a (VISUAL)																					
B-026-0-22 (S&ME)	SS-3	6.0	7.5	11	0.5	22		25	16	9	2	4	7	53	34	0.150	0.012					A-4b (VISUAL)																					
B-026-0-22 (S&ME)	SS-4	8.5	9.3	22/50/4"		11		37	18	19	33	5	3	17	42	23.342	0.017					A-6b (VISUAL)																					
B-026-0-22 (S&ME)	SS-5	11.0	12.5	33	4.5+	16		45	24	21	3	3	2	27	65	0.060						A-7-6 (VISUAL)																					
B-026-0-22 (S&ME)	SS-6	13.5	14.9	9/12/50/5"	4.5+	18																A-7-6 (VISUAL)																					
B-026-0-22 (S&ME)	SS-7	16.0	17.5	86		16																Rock (VISUAL)																					
B-026-0-22 (S&ME)	SS-8	18.5	20.0	84		14																Rock (VISUAL)																					
B-026-0-22 (S&ME)	SS-9	23.5	24.8	14/35/50/4"		7																Rock (VISUAL)																					
B-026-0-22 (S&ME)	SS-10	26.0	27.3	24/32/50/4"		8																Rock (VISUAL)																					
B-027-0-22 (S&ME)	SS-1	1.5	3.0	14		8		25	13	12	59	15	7	7	12	10.252	2.928	0.646				A-2-6 (VISUAL)																					
B-027-0-22 (S&ME)	SS-2A	3.5	3.8	7		18																A-2-6 (VISUAL)																					
B-027-0-22 (S&ME)	SS-2B	3.8	5.0																			A-7-6 (VISUAL)																					
B-027-0-22 (S&ME)	SS-3	6.0	7.5	23	2.5	17																A-7-6 (VISUAL)																					
B-027-0-22 (S&ME)	SS-4	8.5	10.0	19	2	17																A-7-6 (VISUAL)																					
B-027-0-22 (S&ME)	ST-5	11.0	13.0	STST	1.25-2.75	20		44	21	23	0	1	2	54	43	0.053	0.008					A-7-6 (VISUAL)																					
B-027-0-22 (S&ME)	SS-6	13.5	15.0	7	0.25 - 0.5	34																A-6b (VISUAL)																					
B-027-0-22 (S&ME)	SS-7	16.0	17.5	16	3	24																A-6b (VISUAL)																					
B-027-0-22 (S&ME)	SS-9	23.5	25.0	70	4.5+	17																A-7-6 (VISUAL)																					
B-027-0-22 (S&ME)	SS-10	28.5	29.2	42/50/2"		10																Rock (VISUAL)																					
B-027-0-22 (S&ME)	SS-11	33.5	33.8	50/3"		10																Rock (VISUAL)																					
B-147-1-24	SS-1	1.0	2.5	27		7																A-3a (VISUAL)																					
B-147-1-24	SS-2	3.5	5.0	11	1																	A-6b (VISUAL)																					
B-147-1-24	SS-3	6.0	7.5	20	1.75	33																A-6b (VISUAL)																					
B-147-1-24	ST-4	8.0	10.0	ST	1	21	109.2	44	24	20	6	7	7	45	35	0.685	0.012					A-7-6 (13)	6,598		CU	190	33.3																	
B-147-1-24	SS-5	11.0	12.5	26	1.5	24		43	17	26	1	10	17	39	33	0.446	0.017					A-7-6 (14)																					
B-147-1-24	SS-6	13.0	14.5	11																		A-7-6 (VISUAL)																					
B-147-1-24	SS-7	16.0	17.5	5		20		27	14	13	22	39	15	18	6	5.989	0.574	0.260	0.009	9.68	81.05	A-2-6 (0)																					
B-147-1-24	SS-8	18.5	20.0	9																		A-2-6 (VISUAL)																					
B-147-1-24	SS-9	23.5	25.0	11		26		NP	NP	NP	0	0	7	82	11	0.068	0.018	0.009	0.005	0.72	5.17	A-4b (8)																					

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TABULATION OF LABORATORY TESTS

Exploration ID	Sample ID	Depth (ft.) From	Depth (ft.) To	N_{60} (bpf)	HP (tsf)	Moisture Content (%)	Dry Unit Weight (pcf)	Atterberg Limits (%) LL	Atterberg Limits (%) PL	Atterberg Limits (%) PI	Gradation Analysis (%) Gravel	Coarse Sand	Fine Sand	Silt	Clay	D_{90} (mm)	D_{50} (mm)	D_{30} (mm)	D_{10} (mm)	C_c	C_u	ODOT Classification	Unconfined Compressive Strength (psf)	Undrained Compressive Strength (psf)	Triaxial Test Type	Triaxial c' (psf)	Triaxial ϕ' (°)	Consolidation p_c (tsf)	Consolidation C_c	Consolidation C_r	Permeability (cm/sec.)	Resistivity (ohm-cm)	Redox Potential (mV)	pH	Sulfide (mg/kg of dry weight)	Chlorides (mg/kg of dry weight)	Sulfates (mg/kg of dry weight)	Miller Number	Splitting Tensile Strength (psi)	Slake Durability Index (%)	CERCHAR Abrasiveness Index	Punch Penetration Index (kips/in.)
B-147-1-24	SS-10	28.5	30.0	24																		A-4b (VISUAL)																				
B-147-1-24	SS-11	33.5	35.0	26		25		NP	NP	NP	0	0	5	78	17	0.064	0.016	0.008				A-4b (8)																				
B-147-1-24	SS-12	38.5	40.0	45	2.5	22		43	20	23	0	0	1	40	59	0.041						A-7-6 (14)																				
B-147-1-24	SS-13	43.5	45.0	30	2.25	25		40	19	21	0	0	2	52	46	0.049	0.006					A-6b (12)																				
B-147-1-24	SS-14	48.5	50.0	32	3	23																A-6b (VISUAL)																				
B-147-1-24	SS-15	53.5	55.0	33	1.5	17		34	22	12	15	9	5	41	30	6.328	0.019	0.005				A-6a (8)																				
B-147-1-24	SS-16	58.5	60.0	10/57/37	4	18																A-6a (VISUAL)																				
B-147-1-24	SS-17	63.5	65.0	66	4																	A-6a (VISUAL)																				
B-147-1-24	SS-18	68.5	70.0	53	2.5																	A-6a (VISUAL)																				
B-153-1-24	SS-1	1.0	2.5	23	1.5	27																A-6b (VISUAL)																				
B-153-1-24	SS-2	3.5	5.0	36																		A-2-6 (VISUAL)																				
B-153-1-24	SS-3	6.0	7.5	11	1.25	23		39	27	12	0	4	6	52	38	0.077	0.009					A-6a (9)																				
B-153-1-24	SS-4	8.5	10.0	30	3.5																	A-6a (VISUAL)																				
B-153-1-24	SS-5	11.0	12.5	27	4	22																A-6a (VISUAL)																				
B-153-1-24	SS-6	13.5	15.0	21	2.5	21																A-6a (VISUAL)																				
B-153-1-24	SS-7	16.0	17.5	15	1	22		40	18	22	4	24	14	30	28	1.128	0.037	0.006				A-6b (9)																				
B-153-1-24	ST-8	18.5	20.5	ST																		A-6b (VISUAL)																				
B-153-1-24	SS-9	23.5	25.0	38	1	24		42	20	22	0	0	3	62	35	0.056	0.010					A-7-6 (13)																				
B-153-1-24	SS-10	28.5	30.0	71	4.5																	A-7-6 (VISUAL)																				
B-153-1-24	SS-11	33.5	35.0	38	4.25	21		32	18	14	0	1	3	54	42	0.056	0.007					A-6a (10)																				
B-153-1-24	SS-12	38.5	40.0	29	3.25																	A-6a (VISUAL)																				
B-153-1-24	SS-13	43.5	45.0	42	3	21		47	21	26	2	3	4	43	48	0.071	0.006					A-7-6 (16)																				
B-153-1-24	SS-14	48.5	49.9	ST	4.5																	Rock (VISUAL)																				
B-153-1-24	NQ2-15	50.0	55.0																			Rock (VISUAL)																	8.6-262.2	19.5		
B-153-1-24	NQ2-16	55.0	60.0																			Rock (VISUAL)																		23.0	0.27 (Shale) 1.03 (Limestone)	
B-158-1-24	SS-1	1.0	2.5	12	2.5	21																A-7-6 (VISUAL)																				
B-158-1-24	SS-2	3.5	5.0	30	4.25	20		46	20	26	0	1	4	54	41	0.058	0.008					A-7-6 (16)																				
B-158-1-24	SS-3	6.0	7.5	33	2.25	20																A-7-6 (VISUAL)																				
B-158-1-24	SS-4	8.5	10.0	21	1	25		41	18	23	0	1	6	57	36	0.065	0.010					A-7-6 (13)																				
B-158-1-24	ST-5	11.0	13.0	ST	0.5		111.6															A-7-6 (VISUAL)			CU	469	34.9																
B-158-1-24	SS-6	13.5	15.0	20	0.5	24																A-6b (VISUAL)																				
B-158-1-24	SS-7	16.0	17.5	26	4																	A-6b (VISUAL)																				
B-158-1-24	SS-8	18.5	20.0	39	2	17		31	15	16	8	13	14	46	19	1.630	0.031	0.010				A-6b (8)																				
B-158-1-24	SS-9	23.5	25.0	29																		A-6b (VISUAL)																				
B-158-1-24	SS-10	28.5	30.0	41	4	4																A-6b (VISUAL)																				
B-158-1-24	SS-11	33.5	35.0	27		17																A-6b (VISUAL)																				
B-158-1-24	SS-12	38.5	40.0	39	4.25	21					1	2	3	55	39	0.062	0.008					A-6b (VISUAL)																				
B-158-1-24	SS-13	43.5	43.7			9																Rock (VISUAL)																				
B-158-1-24	NQ2-15	45.0	50.0																			Rock (VISUAL)																		44.0		7.7
B-158-1-24	NQ2-16	50.0	55.0																			Rock (VISUAL)																	7.9-227.0	54.3	0.24 (Shale)	
B-158-1-24	NQ2-17	55.0	60.0																			Rock (VISUAL)																	15.8-84.7		0.82 (Limestone)	
B-159-1-24	SS-1	1.0	2.5	18	4																	A-6a (VISUAL)																				
B-159-1-24	SS-2	3.5	5.0	17	2	22		32	17	15	0	1	3	44	52	0.052	0.005					A-6a (10)																				
B-159-1-24	SS-3	6.0	7.5	26	2.75																	A-6a (VISUAL)																				
B-159-1-24	SS-4	8.5	10.0	8		18																A-6a (VISUAL)																				
B-159-1-24	SS-5	11.0	12.5	26	1	18		29	14	15	25	30	12	21	12	22.065	0.494	0.051				A-2-6 (1)																				
B-159-1-24	ST-6	13.5	15.5	ST	2.5		120.9	34	16	18	14	17	10	31	28	4.404	0.034	0.006				A-6b (8)			CU	0	37.9																
B-159-1-24	SS-7	16.0	17.5	59	3.75	10		30	16	14	24	11	11	34	20	18.469	0.055	0.011				A-6a (5)																				
B-159-1-24	SS-8	18.5	19.6	11/20/50/1"	4.5																	A-6a (VISUAL)																				
B-159-1-24	SS-9	23.5	25.0	26	1.75	26		30	18	12	38	15	3	36	8	22.960	0.597	0.026	0.006	0.07	282.54	A-6a (2)																				
B-159-1-24	SS-10	28.5	30.0	23	2	28																A-6b (VISUAL)																				
B-159-1-24	SS-11	33.5	35.0	26	2	26		27	20	7	0	1	9	90	0	0.075	0.026	0.015				A-4b (8)																				
B-159-1-24	SS-12	38.5	39.0	75/6"	2.5	8																A-7-6 (VISUAL)																				
B-158-1-24	SS-10	28.5	30.0	41	4	4																A-6b (VISUAL)																				
B-158-1-24	SS-11	33.5	35.0	27		17																A-6b (VISUAL)																				
B-158-1-24	SS-12	38.5	40.0	39	4.25	21					1	2	3	55	39	0.062	0.008					A-6b (VISUAL)																				
B-158-1-24	SS-13	43.5	43.7			9																Rock (VISUAL)																				
B-158-1-24	NQ2-15	45.0	50.0																			Rock (VISUAL)																		44.0		7.7
B-158-1-24	NQ2-16	50.0	55.0																			Rock (VISUAL)																	7.9-227.0	54.3	0.24 (Shale)	
B-158-1-24	NQ2-17	55.0	60.0																			Rock (VISUAL)																	15.8-84.7		0.82 (Limestone)	
B-159-1-24	SS-1	1.0	2.5	18	4																	A-6a (VISUAL)																				
B-159-1-24	SS-2	3.5	5.0	17	2	22		32	17	15	0	1	3	44	52	0.052	0.005					A-6a (10)																				
B-159-1-24	SS-3	6.0	7.5	26	2.75																	A-6a (VISUAL)																				
B-159-1-24	SS-4	8.5	10.0	8		18																A-6a (VISUAL)																				
B-159-1-24	SS-5	11.0	12.5	26	1	18		29	14	15	25	30	12	21	12	22.065	0.494	0.051				A-2-6 (1)																				
B-159-1-24	ST-6	13.5	15.5	ST	2.5		120.9	34	16	18	14	17	10	31	28	4.404	0.034	0.006				A-6b (8)			CU	0	37.9																
B-159-1-24	SS-7	16.0	17.5	59	3.75	10		30	16	14	24	11	11	34	20	18.469	0.055	0.011				A-6a (5)																				
B-159-1-24	SS-8	18.5	19.6	11/20/50/1"	4.5																	A-6a (VISUAL)																				
B-159-1-24	SS-9	23.5	25.0	26	1.75	26		30	18	12	38	15	3	36	8	22.960	0.597	0.026	0.006	0.07	282.54	A-6a (2)																				
B-159-1-24	SS-10	28.5	30.0	23	2	28																A-6b (VISUAL)																				
B-159-1-24	SS-11	33.5	35.0	26	2	26		27	20	7	0	1	9	90	0	0.075	0.026	0.015				A-4b (8)																				
B-159-1-24	SS-12	38.5	39.0	75/6"	2.5	8																A-7-6 (VISUAL)																				

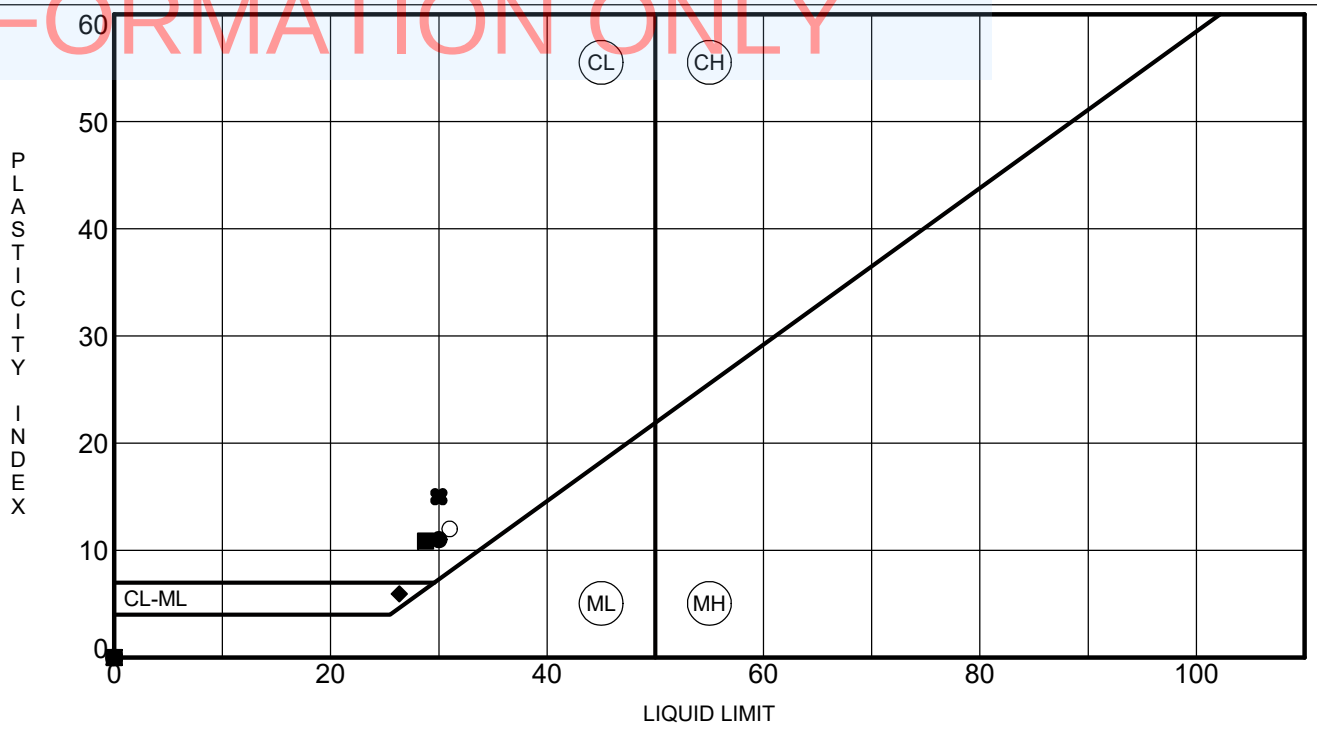
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ATTERBERG LIMITS' RESULTS

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT HAM-75-1.05 **PID** 122902

OGE NUMBER N1245017 **PROJECT TYPE** STRUCTURE FOUNDATION



	Specimen Identification		LL	PL	PI	Fines	Classification
●	B-001-0-24	5.0	30	19	11	61	SANDY LEAN CLAY(CL)
⊠	B-001-0-24	15.0	NP	NP	NP	55	SANDY SILT(ML)
▲	B-001-0-24	25.0	NP	NP	NP	13	SILTY SAND(SM)
★	B-001-0-24	38.0	NP	NP	NP	16	SILTY SAND(SM)
⊙	B-001-0-24	44.0	NP	NP	NP	69	SANDY SILT(ML)
✿	B-001-0-24	58.5	NP	NP	NP	34	SILTY SAND(SM)
○	B-002-0-24	3.5	31	19	12	49	CLAYEY SAND with GRAVEL(SC)
△	B-002-0-24	21.5	NP	NP	NP	89	SILT(ML)
⊗	B-002-0-24	25.0	NP	NP	NP	97	SILT(ML)
⊕	B-002-0-24	35.5	NP	NP	NP	39	SILTY SAND(SM)
□	B-002-0-24	47.5	NP	NP	NP	40	SILTY SAND(SM)
⊛	B-002-0-24	53.5	NP	NP	NP	12	SILTY SAND(SM)
◕	B-003-0-24	2.5	NP	NP	NP	10	WELL-GRADED SAND with SILT and GRAVEL(SW-SM)
☆	B-003-0-24	20.5	NP	NP	NP	87	SILT(ML)
⊠	B-003-0-24	25.0	NP	NP	NP	74	SILT with SAND(ML)
■	B-003-0-24	26.5	29	18	11	96	LEAN CLAY(CL)
◆	B-003-0-24	34.0	26	20	6	97	SILTY CLAY(CL-ML)
◇	B-003-0-24	43.5	NP	NP	NP	67	SANDY SILT(ML)
×	B-003-0-24	53.5	NP	NP	NP	7	POORLY GRADED SAND with SILT(SP-SM)
✖	B-004-0-24	5.0	30	15	15	25	CLAYEY SAND with GRAVEL(SC)

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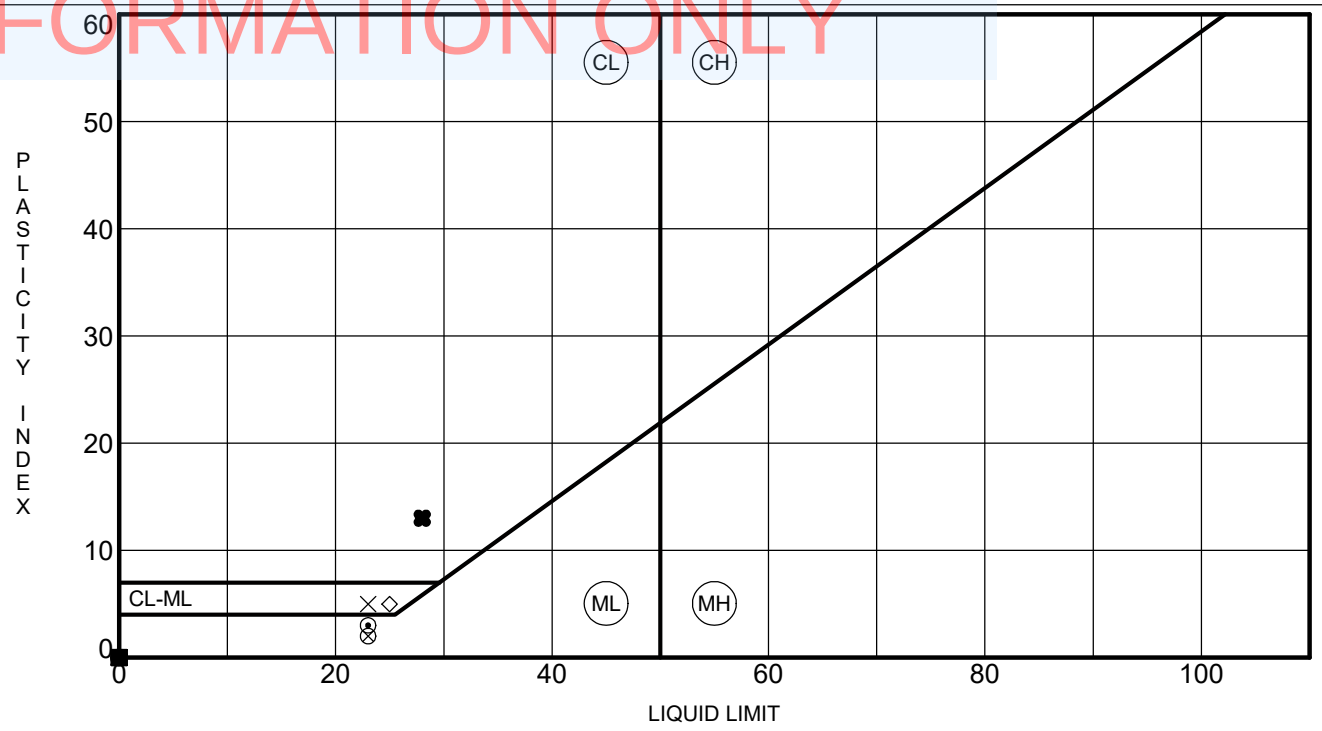
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ATTERBERG LIMITS' RESULTS

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT HAM-75-1.05 **PID** 122902

OGE NUMBER N1245017 **PROJECT TYPE** STRUCTURE FOUNDATION



	Specimen Identification		LL	PL	PI	Fines	Classification
●	B-004-0-24	15.0	NP	NP	NP	17	SILTY SAND(SM)
⊠	B-004-0-24	27.0	NP	NP	NP	11	POORLY GRADED SAND with SILT(SP-SM)
▲	B-004-0-24	37.5	NP	NP	NP	10	POORLY GRADED SAND with SILT(SP-SM)
★	B-004-0-24	39.5	NP	NP	NP	35	SILTY SAND(SM)
⊙	B-004-0-24	42.5	23	20	3	88	SILT(ML)
✿	B-004-0-24	48.5	NP	NP	NP	4	POORLY GRADED SAND(SP)
○	B-004-0-24	53.5	NP	NP	NP	8	POORLY GRADED SAND with SILT(SP-SM)
△	B-005-0-24	20.0	NP	NP	NP	96	SILT(ML)
⊗	B-005-0-24	32.5	23	21	2	100	SILT(ML)
⊕	B-005-0-24	37.0	NP	NP	NP	84	SILT with SAND(ML)
□	B-005-0-24	42.0	NP	NP	NP	98	SILT(ML)
⊛	B-005-0-24	54.0	NP	NP	NP	67	SANDY SILT(ML)
◕	B-005-0-24	63.5	NP	NP	NP	3	WELL-GRADED SAND(SW)
☆	B-006-0-24	9.0	NP	NP	NP	5	POORLY GRADED SAND with SILT(SP-SM)
⊠	B-006-0-24	32.0	NP	NP	NP	97	SILT(ML)
■	B-006-0-24	35.5	NP	NP	NP	68	SANDY SILT(ML)
◆	B-006-0-24	47.5	NP	NP	NP	11	POORLY GRADED SAND with SILT(SP-SM)
◇	B-007-0-24	20.0	25	20	5	64	SANDY SILTY CLAY(CL-ML)
×	B-007-0-24	24.0	23	18	5	72	SILTY CLAY with SAND(CL-ML)
✖	B-007-0-24	36.5	28	15	13	95	LEAN CLAY(CL)

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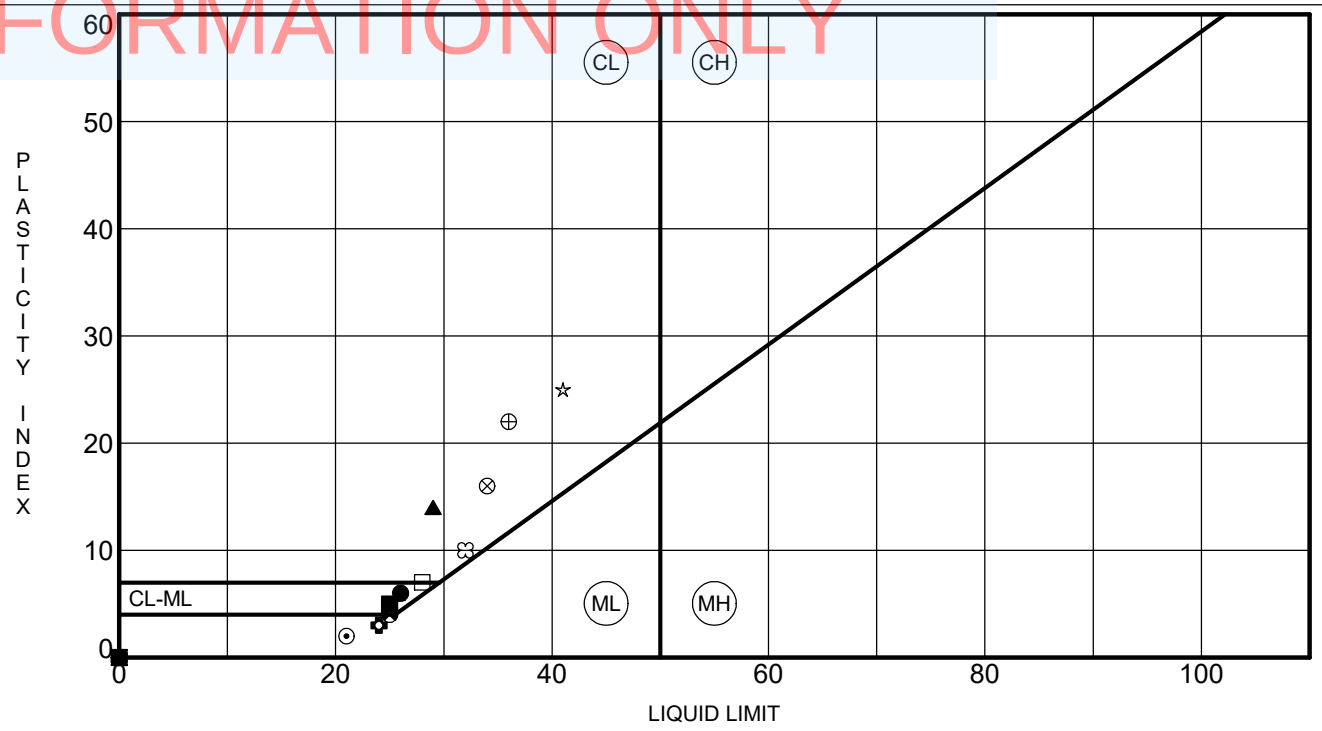
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ATTERBERG LIMITS' RESULTS

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT HAM-75-1.05 **PID** 122902

OGE NUMBER N1245017 **PROJECT TYPE** STRUCTURE FOUNDATION



	Specimen Identification		LL	PL	PI	Fines	Classification
●	B-007-0-24	42.5	26	20	6	99	SILTY CLAY(CL-ML)
⊠	B-007-0-24	48.5	NP	NP	NP	36	SILTY SAND(SM)
▲	B-008-0-24	9.0	29	15	14	89	LEAN CLAY(CL)
★	B-008-0-24	19.0	26	20	6	99	SILTY CLAY(CL-ML)
⊙	B-008-0-24	25.0	21	19	2	90	SILT(ML)
✿	B-008-0-24	28.5	24	21	3	100	SILT(ML)
○	B-008-0-24	33.0	NP	NP	NP	13	SILTY SAND(SM)
△	B-008-0-24	39.0	NP	NP	NP	8	POORLY GRADED SAND with SILT(SP-SM)
⊗	B-009-0-24	7.5	34	18	16	74	LEAN CLAY with SAND(CL)
⊕	B-009-0-24	11.5	36	14	22	72	LEAN CLAY with SAND(CL)
□	B-009-0-24	20.0	28	21	7	97	SILTY CLAY(CL-ML)
⊛	B-009-0-24	33.0	25	21	4	98	SILTY CLAY(CL-ML)
◕	B-009-0-24	42.0	NP	NP	NP	7	POORLY GRADED SAND with SILT(SP-SM)
☆	B-010-0-24	9.0	41	16	25	75	LEAN CLAY with SAND(CL)
⊠	B-010-0-24	19.0	32	22	10	98	LEAN CLAY(CL)
■	B-010-0-24	25.0	25	20	5	93	SILTY CLAY(CL-ML)
◆	B-010-0-24	28.5	NP	NP	NP	26	SILTY SAND(SM)
◇	B-010-0-24	31.5	25	20	5	91	SILTY CLAY(CL-ML)
×	B-010-0-24	37.5	NP	NP	NP	12	SILTY SAND(SM)
✖	B-010-0-24	48.5	NP	NP	NP	41	SILTY SAND(SM)

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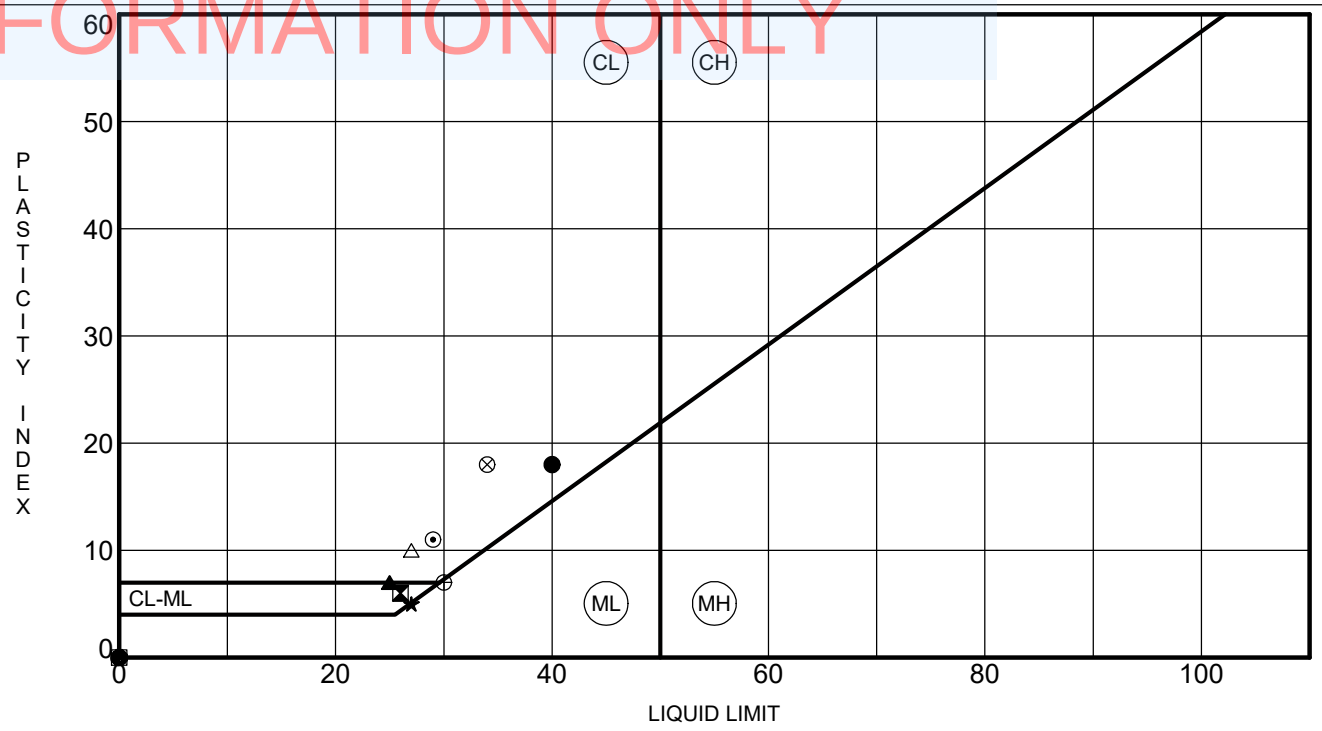
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ATTERBERG LIMITS' RESULTS

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT HAM-75-1.05 **PID** 122902

OGE NUMBER N1245017 **PROJECT TYPE** STRUCTURE FOUNDATION



	Specimen Identification		LL	PL	PI	Fines	Classification
●	B-011-0-24	9.0	40	22	18	81	LEAN CLAY with SAND(CL)
⊠	B-011-0-24	19.0	26	20	6	98	SILTY CLAY(CL-ML)
▲	B-011-0-24	25.0	25	18	7	98	SILTY CLAY(CL-ML)
★	B-011-0-24	29.0	27	22	5	99	SILT(ML)
⊙	B-011-0-24	32.0	29	18	11	99	LEAN CLAY(CL)
✿	B-011-0-24	38.0	NP	NP	NP	81	SILT with SAND(ML)
○	B-011-0-24	41.5	NP	NP	NP	14	SILTY SAND(SM)
△	B-012-0-24	5.0	27	17	10	65	SANDY LEAN CLAY(CL)
⊗	B-012-0-24	11.5	34	16	18	67	SANDY LEAN CLAY(CL)
⊕	B-012-0-24	19.0	30	23	7	100	SILT(ML)
□	B-012-0-24	23.5	NP	NP	NP	38	SILTY SAND(SM)
⊠	B-012-0-24	26.5	NP	NP	NP	24	SILTY SAND(SM)
◕	B-012-0-24	32.5	NP	NP	NP	12	SILTY SAND(SM)
☆	B-012-0-24	48.5	NP	NP	NP	3	POORLY GRADED SAND(SP)

ATTERBERG LIMITS - OH DOT.GDT - 1/28/25 14:57 - N:\PROJECTS\2024\N1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1245017-ODOT-HAM-75-1.05 MICROTUNNEL_REC.GPJ

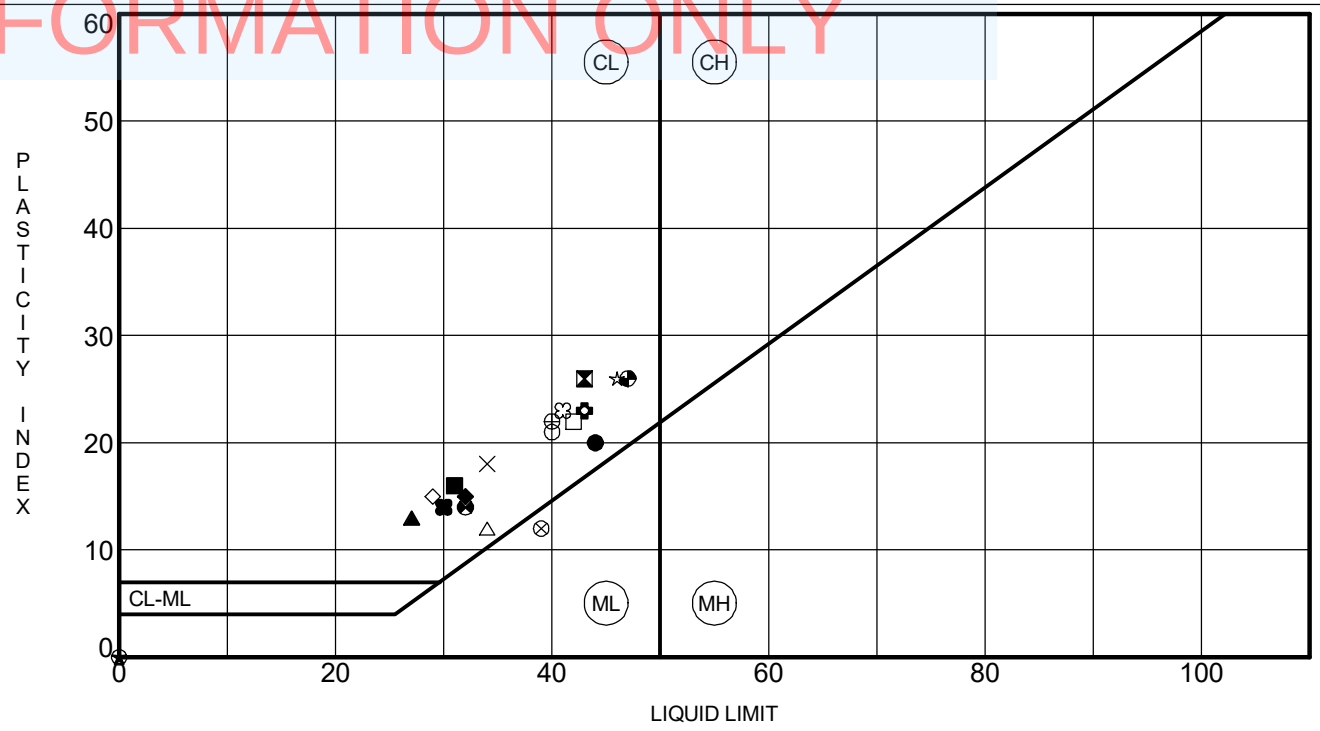
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ATTERBERG LIMITS' RESULTS

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



	Specimen Identification		LL	PL	PI	Fines	Classification
●	B-147-1-24	8.0	44	24	20	80	LEAN CLAY with SAND(CL)
⊠	B-147-1-24	11.0	43	17	26	72	LEAN CLAY with SAND(CL)
▲	B-147-1-24	16.0	27	14	13	24	CLAYEY SAND(SC)
★	B-147-1-24	23.5	NP	NP	NP	93	SILT(ML)
⊙	B-147-1-24	33.5	NP	NP	NP	95	SILT(ML)
✿	B-147-1-24	38.5	43	20	23	99	LEAN CLAY(CL)
○	B-147-1-24	43.5	40	19	21	98	LEAN CLAY(CL)
△	B-147-1-24	53.5	34	22	12	71	LEAN CLAY with SAND(CL)
⊗	B-153-1-24	6.0	39	27	12	90	SILT(ML)
⊕	B-153-1-24	16.0	40	18	22	58	SANDY LEAN CLAY(CL)
□	B-153-1-24	23.5	42	20	22	97	LEAN CLAY(CL)
⊛	B-153-1-24	33.5	32	18	14	96	LEAN CLAY(CL)
◕	B-153-1-24	43.5	47	21	26	91	LEAN CLAY(CL)
☆	B-158-1-24	3.5	46	20	26	95	LEAN CLAY(CL)
⊠	B-158-1-24	8.5	41	18	23	93	LEAN CLAY(CL)
■	B-158-1-24	18.5	31	15	16	65	SANDY LEAN CLAY(CL)
◆	B-159-1-24	3.5	32	17	15	96	LEAN CLAY(CL)
◇	B-159-1-24	11.0	29	14	15	33	CLAYEY SAND with GRAVEL(SC)
×	B-159-1-24	13.5	34	16	18	59	SANDY LEAN CLAY(CL)
✖	B-159-1-24	16.0	30	16	14	54	SANDY LEAN CLAY with GRAVEL(CL)

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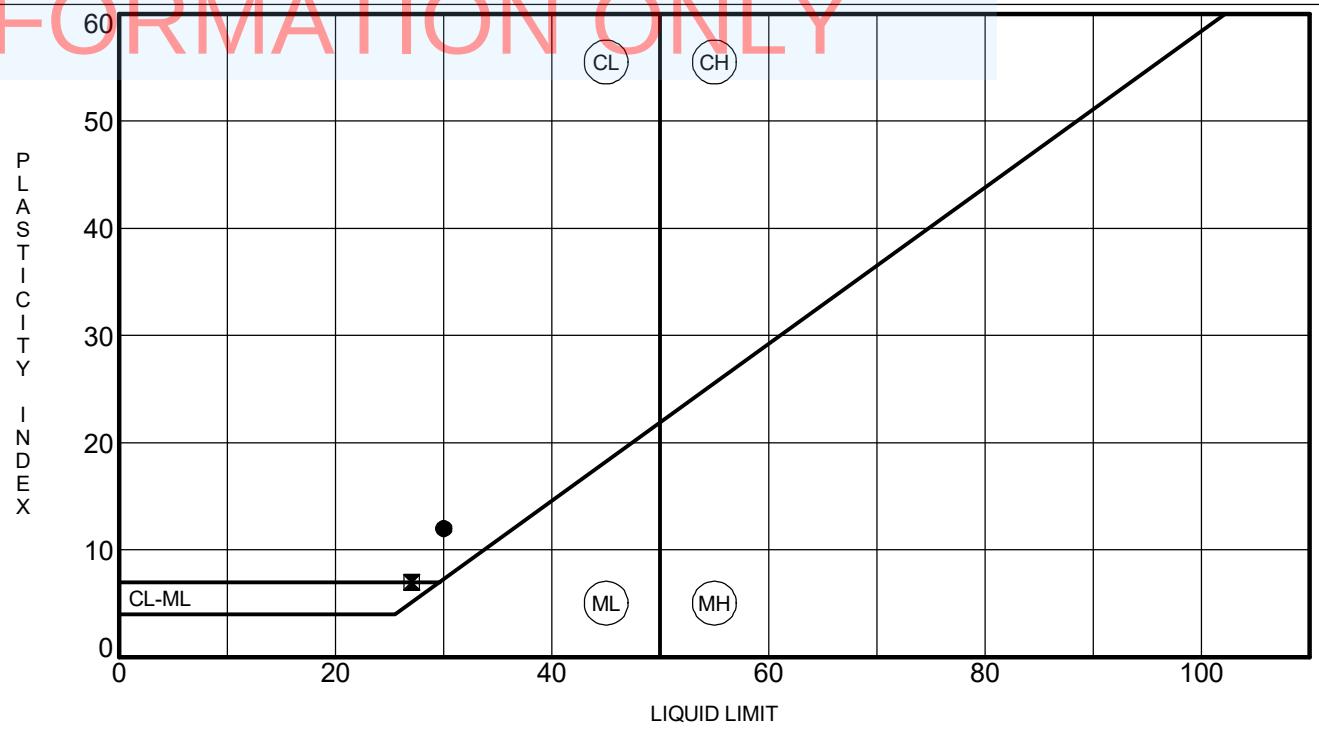
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ATTERBERG LIMITS' RESULTS

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



	Specimen Identification		LL	PL	PI	Fines	Classification
●	**B-159-1-24**	**23.5**	**30**	**18**	**12**	**44**	**CLAYEY GRAVEL with SAND(GC)**
⧓	**B-159-1-24**	**33.5**	**27**	**20**	**7**	**90**	**SILTY CLAY(CL-ML)**

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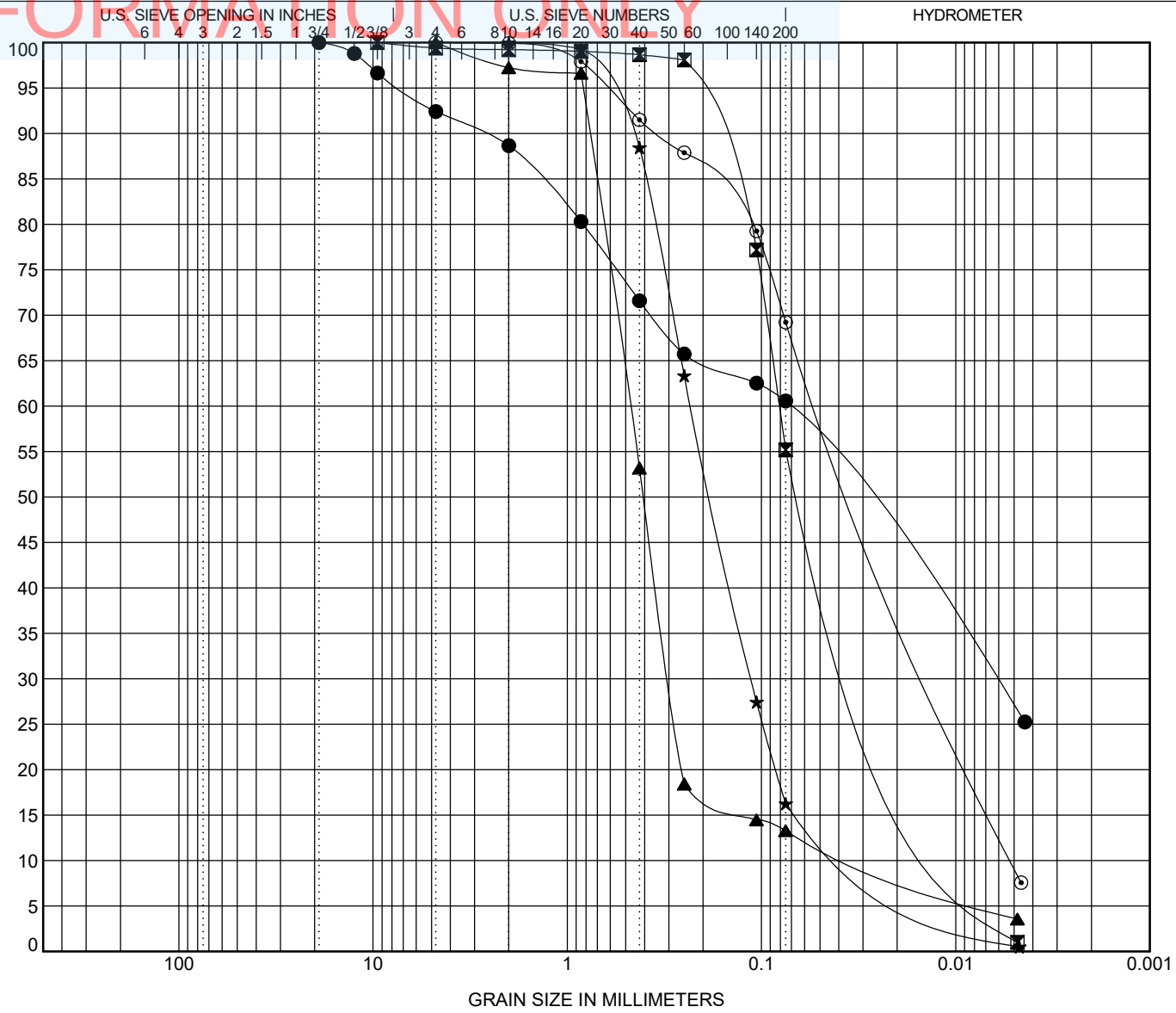
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT HAM-75-1.05 **PID** 122902

OGE NUMBER N1245017 **PROJECT TYPE** STRUCTURE FOUNDATION



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-001-0-24	5.0	A-6a ~ SANDY LEAN CLAY(CL)	30	19	11
⊠	B-001-0-24	15.0	A-4b ~ SANDY SILT(ML)	NP	NP	NP
▲	B-001-0-24	25.0	A-3a ~ SILTY SAND(SM)	NP	NP	NP
★	B-001-0-24	38.0	A-3a ~ SILTY SAND(SM)	NP	NP	NP
⊙	B-001-0-24	44.0	A-4b ~ SANDY SILT(ML)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-001-0-24	5.0	2.722	0.032	0.006		11	17	11	34	27		
⊠	B-001-0-24	15.0	0.179	0.058	0.021	0.008	1	1	43	53	2	0.71	10.68
▲	B-001-0-24	25.0	0.765	0.405	0.298	0.03	3	44	40	9	4	6.34	15.98
★	B-001-0-24	38.0	0.469	0.182	0.113	0.025	0	12	72	15	1	2.21	9.25
⊙	B-001-0-24	44.0	0.341	0.031	0.013	0.005	1	8	22	60	9	0.64	9.62

GRAIN SIZE - OH DOT.GDT - 1/28/25 15:08 - N:\PROJECTS\2024\N1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1245017-ODOT-HAM -75-1.05 MICROTUNNEL_REC.GPJ

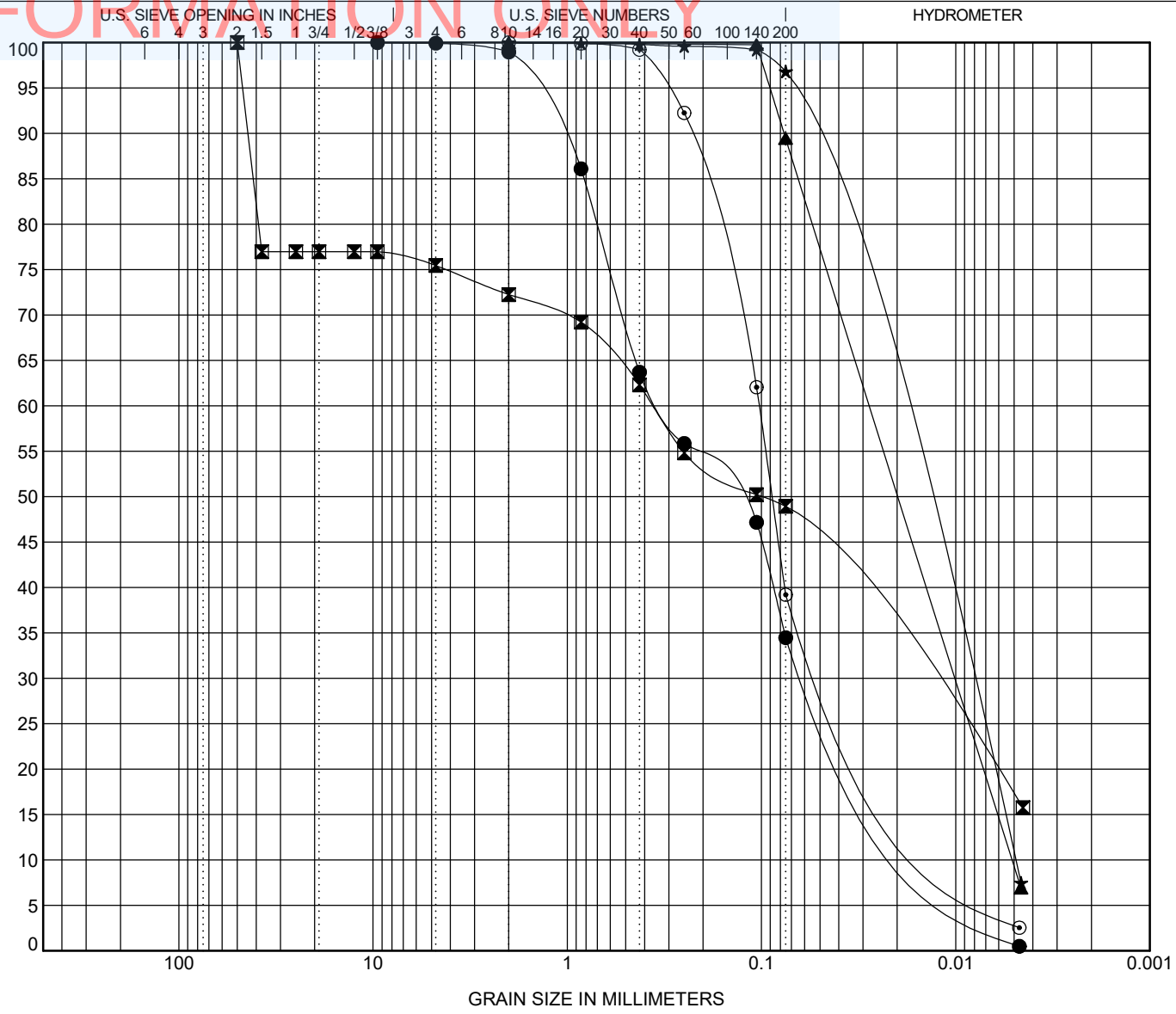
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT HAM-75-1.05 **PID** 122902

OGE NUMBER N1245017 **PROJECT TYPE** STRUCTURE FOUNDATION



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-001-0-24	58.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP
⊠	B-002-0-24	3.5	A-6a ~ CLAYEY SAND with GRAVEL(SC)	31	19	12
▲	B-002-0-24	21.5	A-4b ~ SILT(ML)	NP	NP	NP
★	B-002-0-24	25.0	A-4b ~ SILT(ML)	NP	NP	NP
⊙	B-002-0-24	35.5	A-4a ~ SILTY SAND(SM)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-001-0-24	58.5	1.102	0.14	0.052	0.01	2	35	29	33	1	0.80	32.41
⊠	B-002-0-24	3.5	44.128	0.1	0.015		28	10	13	32	17		
▲	B-002-0-24	21.5	0.076	0.02	0.01	0.005	0	1	10	80	9	0.71	5.42
★	B-002-0-24	25.0	0.061	0.017	0.009	0.005	0	0	3	87	10	0.73	4.77
⊙	B-002-0-24	35.5	0.235	0.088	0.037	0.008	0	1	60	36	3	1.65	12.44

GRAIN SIZE - OH DOT.GDT - 1/28/25 15:08 - N:\PROJECTS\2024\N1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1245017-ODOT-HAM -75-1.05 MICROTUNNEL_REC.GPJ

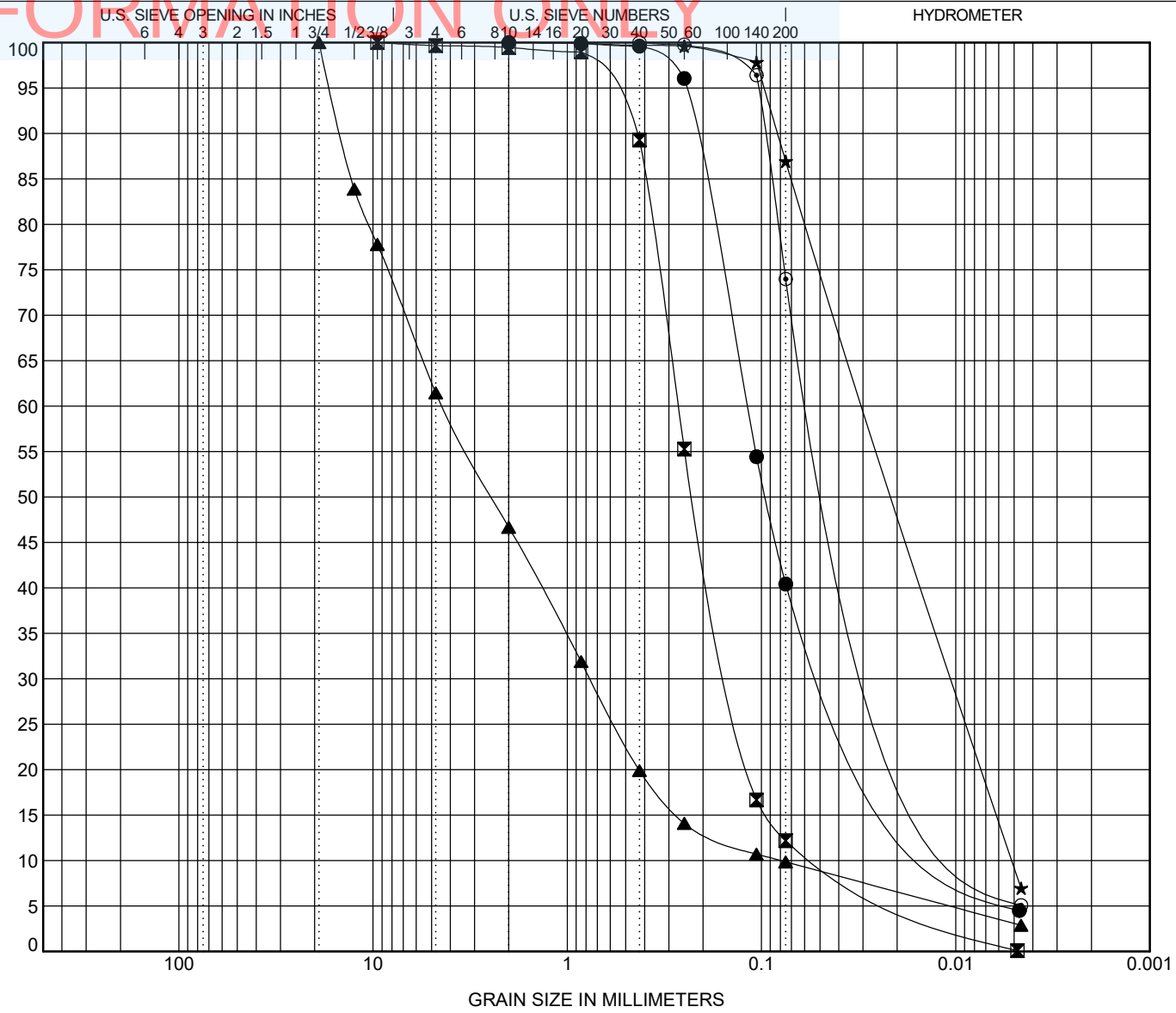
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GRAIN SIZE DISTRIBUTION

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OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT HAM-75-1.05 **PID** 122902

OGE NUMBER N1245017 **PROJECT TYPE** STRUCTURE FOUNDATION



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-002-0-24	47.5	A-4a ~ SILTY SAND(SM)	NP	NP	NP
⊠	B-002-0-24	53.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP
▲	B-003-0-24	2.5	A-1-a ~ WELL-GRADED SAND with SILT and GRAVEL(SW-SM)	NP	NP	NP
★	B-003-0-24	20.5	A-4b ~ SILT(ML)	NP	NP	NP
⊙	B-003-0-24	25.0	A-4b ~ SILT with SAND(ML)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-002-0-24	47.5	0.221	0.095	0.034	0.007	0	1	59	35	5	1.32	16.55
⊠	B-002-0-24	53.5	0.448	0.222	0.143	0.046	1	10	77	12	0	1.65	5.88
▲	B-003-0-24	2.5	14.655	2.431	0.762	0.08	53	27	10	7	3	1.67	54.82
★	B-003-0-24	20.5	0.083	0.021	0.01	0.005	0	0	13	78	9	0.71	5.73
⊙	B-003-0-24	25.0	0.096	0.028	0.013	0.006	0	0	26	67	7	0.67	7.58

GRAIN SIZE - OH DOT.GDT - 1/28/25 15:08 - N:\PROJECTS\2024\N1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1245017-ODOT-HAM -75-1.05 MICROTUNNEL_REC.GPJ

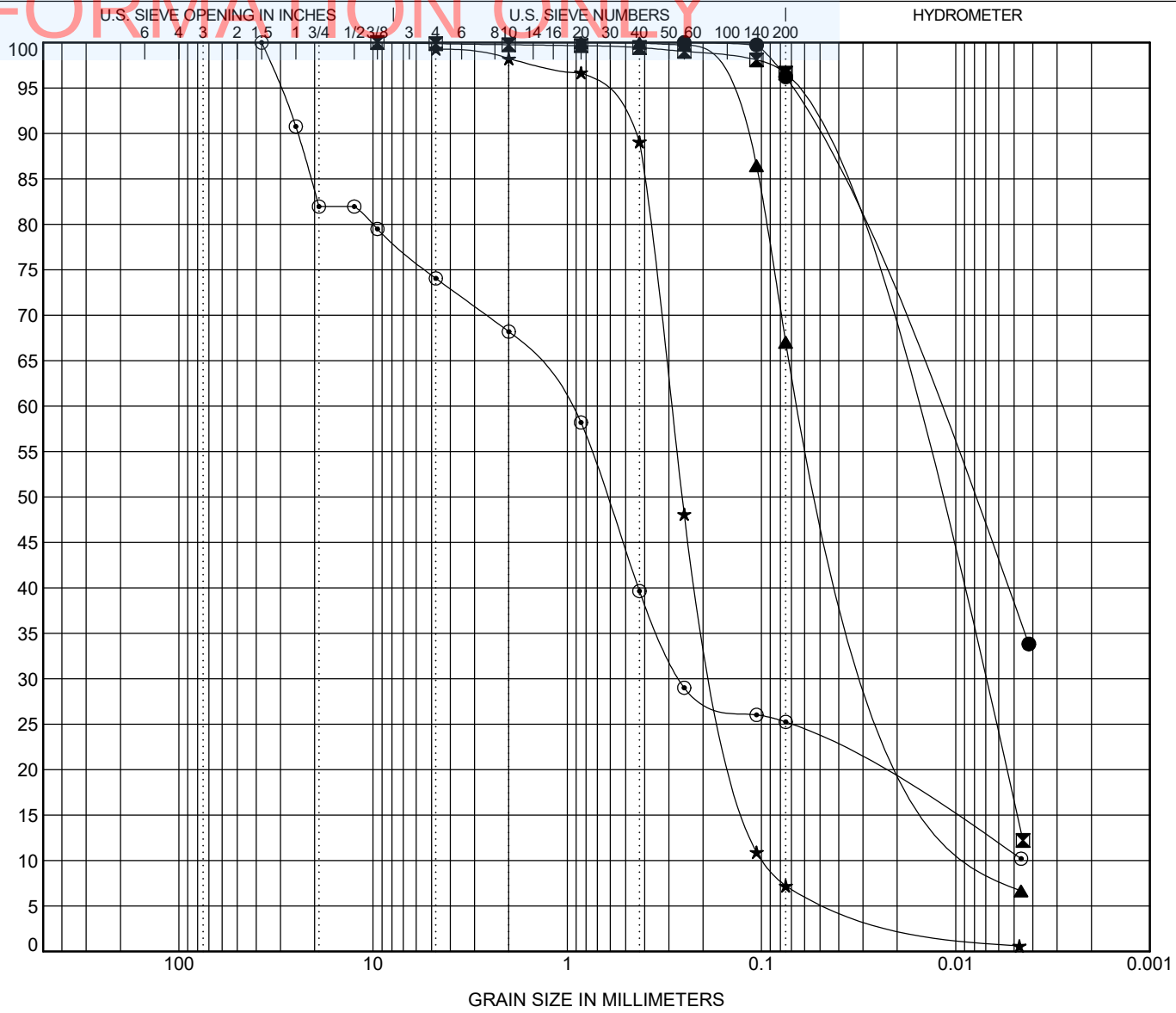
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PROJECT HAM-75-1.05 **PID** 122902

OGE NUMBER N1245017 **PROJECT TYPE** STRUCTURE FOUNDATION



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-003-0-24	26.5	A-6a ~ LEAN CLAY(CL)	29	18	11
⊠	B-003-0-24	34.0	A-4b ~ SILTY CLAY(CL-ML)	26	20	6
▲	B-003-0-24	43.5	A-4b ~ SANDY SILT(ML)	NP	NP	NP
★	B-003-0-24	53.5	A-3 ~ POORLY GRADED SAND with SILT(SP-SM)	NP	NP	NP
⊙	B-004-0-24	5.0	A-2-6 ~ CLAYEY SAND with GRAVEL(SC)	30	15	15

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-003-0-24	26.5	0.056	0.009			0	0	4	58	38		
⊠	B-003-0-24	34.0	0.06	0.016	0.008		0	0	3	82	15		
▲	B-003-0-24	43.5	0.133	0.034	0.014	0.005	0	0	33	59	8	0.63	10.09
★	B-003-0-24	53.5	0.462	0.256	0.165	0.097	2	9	82	6	1	0.96	3.00
⊙	B-004-0-24	5.0	24.409	0.626	0.263		32	29	14	14	11		

GRAIN SIZE - OH DOT.GDT - 1/28/25 15:08 - N:\PROJECTS\2024\N1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1245017-ODOT-HAM -75-1.05 MICROTUNNEL_REC.GPJ

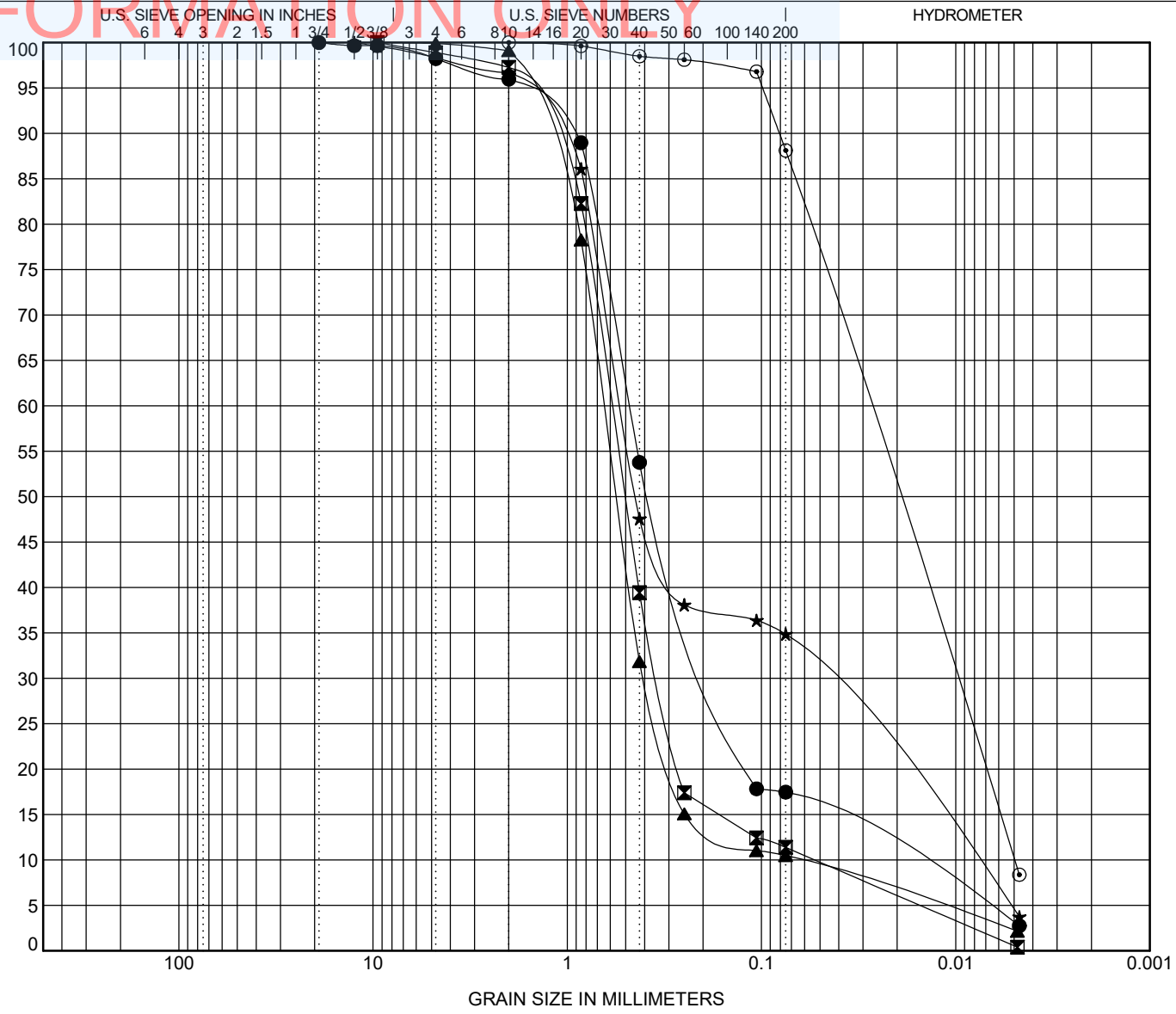
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PROJECT HAM-75-1.05 **PID** 122902

OGE NUMBER N1245017 **PROJECT TYPE** STRUCTURE FOUNDATION



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-004-0-24	15.0	A-3a ~ SILTY SAND(SM)	NP	NP	NP
⊠	B-004-0-24	27.0	A-1-b ~ POORLY GRADED SAND with SILT(SP-SM)	NP	NP	NP
▲	B-004-0-24	37.5	A-1-b ~ POORLY GRADED SAND with SILT(SP-SM)	NP	NP	NP
★	B-004-0-24	39.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP
⊙	B-004-0-24	42.5	A-4b ~ SILT(ML)	23	20	3

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-004-0-24	15.0	0.964	0.367	0.17	0.018	5	42	36	14	3	3.25	26.10
⊠	B-004-0-24	27.0	1.321	0.504	0.339	0.053	3	58	28	10	1	3.64	11.16
▲	B-004-0-24	37.5	1.376	0.557	0.401	0.064	2	67	21	8	2	3.89	10.15
★	B-004-0-24	39.5	1.164	0.444	0.049	0.008	3	49	13	31	4	0.54	64.83
⊙	B-004-0-24	42.5	0.081	0.02	0.01	0.005	0	2	10	78	10	0.71	5.68

GRAIN SIZE - OH DOT.GDT - 1/28/25 15:08 - N:\PROJECTS\2024\N1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1245017-ODOT-HAM -75-1.05 MICROTUNNEL_REC.GPJ

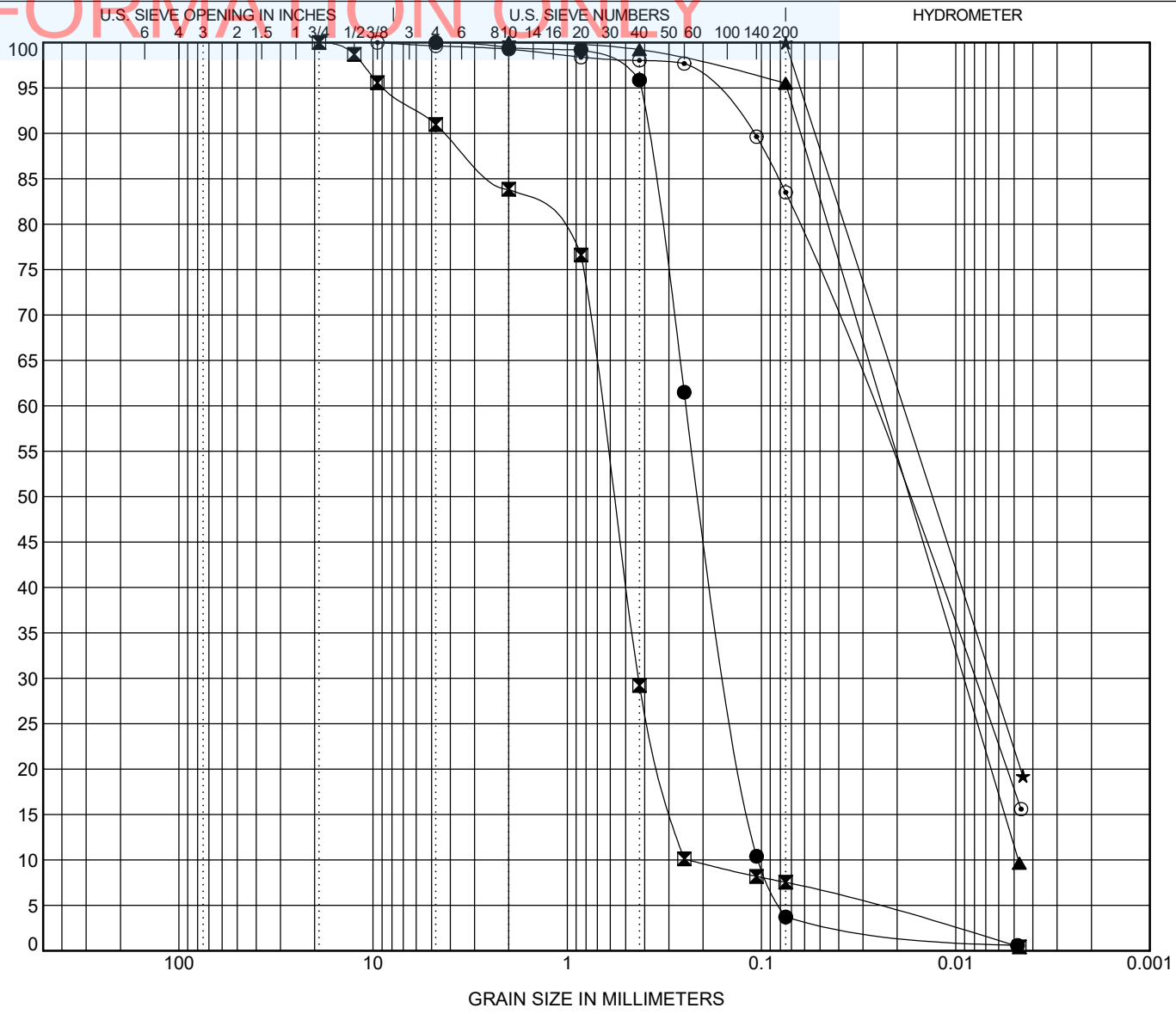
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PROJECT HAM-75-1.05 **PID** 122902

OGE NUMBER N1245017 **PROJECT TYPE** STRUCTURE FOUNDATION



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-004-0-24	48.5	A-3 ~ POORLY GRADED SAND(SP)	NP	NP	NP
⊠	B-004-0-24	53.5	A-1-b ~ POORLY GRADED SAND with SILT(SP-SM)	NP	NP	NP
▲	B-005-0-24	20.0	A-4b ~ SILT(ML)	NP	NP	NP
★	B-005-0-24	32.5	A-4b ~ SILT(ML)	23	21	2
⊙	B-005-0-24	37.0	A-4b ~ SILT with SAND(ML)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-004-0-24	48.5	0.388	0.206	0.147	0.104	0	4	92	3	1	0.86	2.35
⊠	B-004-0-24	53.5	4.22	0.576	0.43	0.238	15	55	22	7	1	1.16	2.80
▲	B-005-0-24	20.0	0.063	0.017	0.009	0.005	0	0	4	84	12	0.72	5.02
★	B-005-0-24	32.5	0.053	0.013	0.007		0	0	0	78	22		
⊙	B-005-0-24	37.0	0.11	0.019	0.008		0	1	15	66	18		

GRAIN SIZE - OH DOT.GDT - 1/28/25 15:08 - N:\PROJECTS\2024\N1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1245017-ODOT-HAM -75-1.05 MICROTUNNEL_REC.GPJ

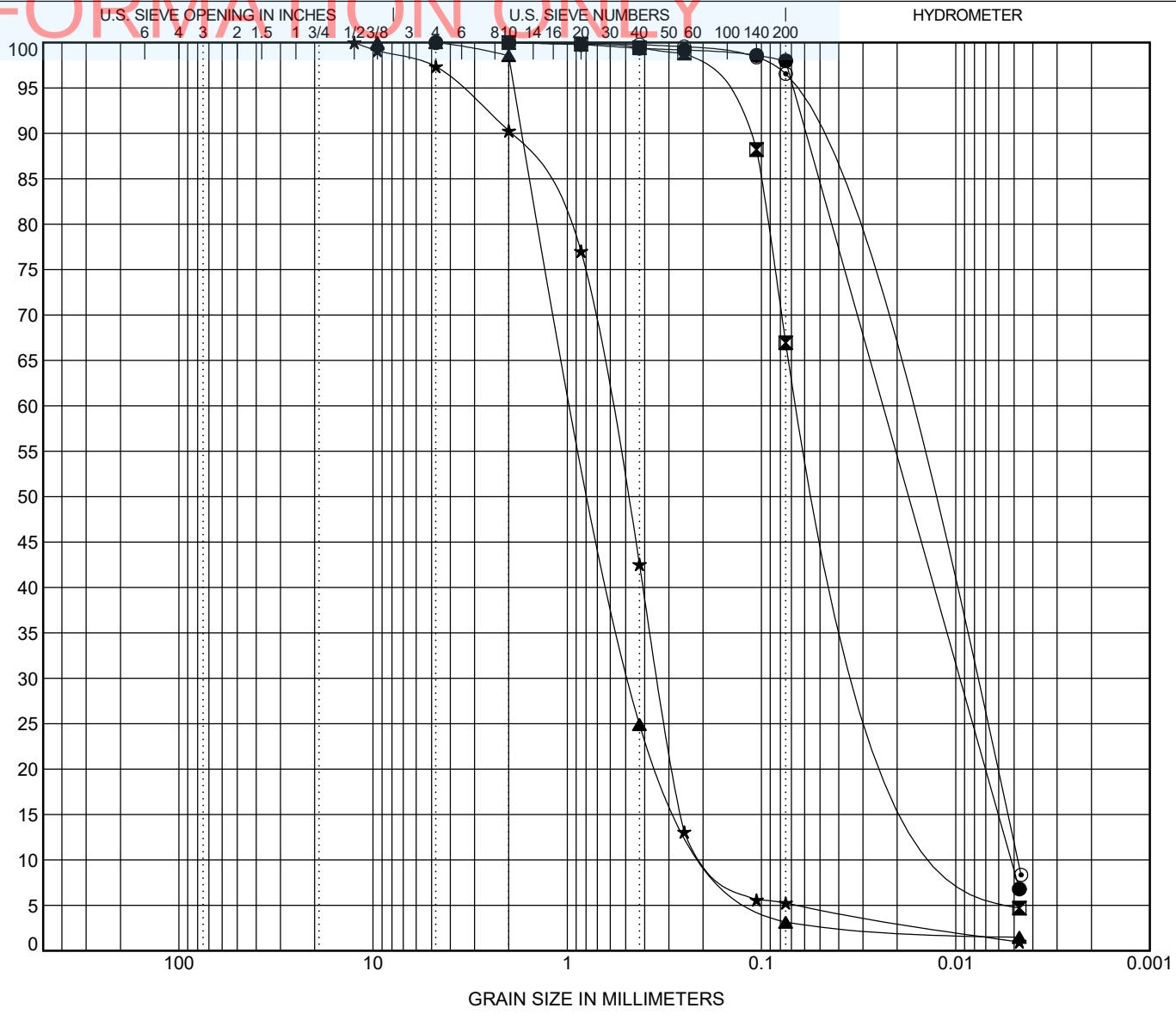
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PROJECT HAM-75-1.05 **PID** 122902

OGE NUMBER N1245017 **PROJECT TYPE** STRUCTURE FOUNDATION



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-005-0-24	42.0	A-4b ~ SILT(ML)	NP	NP	NP
⊠	B-005-0-24	54.0	A-4b ~ SANDY SILT(ML)	NP	NP	NP
▲	B-005-0-24	63.5	A-1-b ~ WELL-GRADED SAND(SW)	NP	NP	NP
★	B-006-0-24	9.0	A-1-b ~ POORLY GRADED SAND with SILT(SP-SM)	NP	NP	NP
⊙	B-006-0-24	32.0	A-4b ~ SILT(ML)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-005-0-24	42.0	0.059	0.017	0.01	0.005	0	1	1	89	9	0.74	4.57
⊠	B-005-0-24	54.0	0.122	0.035	0.015	0.006	0	0	33	61	6	0.64	9.25
▲	B-005-0-24	63.5	1.671	0.72	0.473	0.13	1	74	22	1	2	1.94	6.86
★	B-006-0-24	9.0	1.964	0.494	0.339	0.176	10	48	37	4	1	1.08	3.44
⊙	B-006-0-24	32.0	0.061	0.017	0.009	0.005	0	0	3	86	11	0.73	4.87

GRAIN SIZE - OH DOT.GDT - 1/28/25 15:09 - N:\PROJECTS\2024\N1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1245017-ODOT-HAM -75-1.05 MICROTUNNEL_REC.GPJ

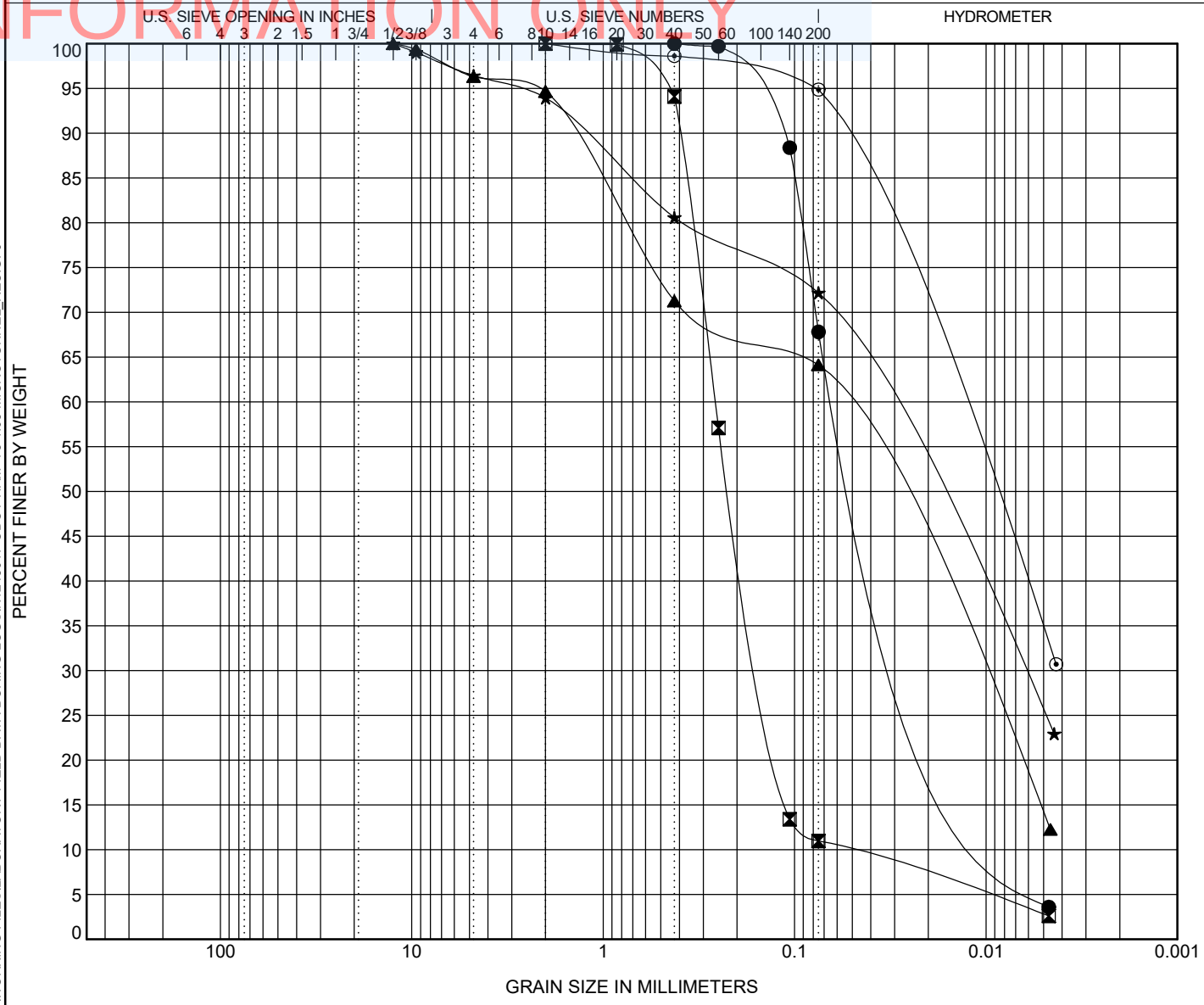
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PROJECT HAM-75-1.05 **PID** 122902

OGE NUMBER N1245017 **PROJECT TYPE** STRUCTURE FOUNDATION



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-006-0-24	35.5	A-4b ~ SANDY SILT(ML)	NP	NP	NP
⊠	B-006-0-24	47.5	A-3a ~ POORLY GRADED SAND with SILT(SP-SM)	NP	NP	NP
▲	B-007-0-24	20.0	A-4b ~ SANDY SILTY CLAY(CL-ML)	25	20	5
★	B-007-0-24	24.0	A-4a ~ SILTY CLAY with SAND(CL-ML)	23	18	5
⊙	B-007-0-24	36.5	A-6a ~ LEAN CLAY(CL)	28	15	13

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-006-0-24	35.5	0.12	0.035	0.015	0.006	0	0	32	63	5	0.65	8.64
⊠	B-006-0-24	47.5	0.401	0.217	0.147	0.054	0	6	83	8	3	1.52	4.80
▲	B-007-0-24	20.0	1.469	0.035	0.012		6	23	7	50	14		
★	B-007-0-24	24.0	1.266	0.021	0.007		7	13	8	47	25		
⊙	B-007-0-24	36.5	0.06	0.01			0	1	4	61	34		

GRAIN SIZE - OH DOT.GDT - 1/28/25 15:09 - N:\PROJECTS\2024\N1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1245017-ODOT-HAM -75-1.05 MICROTUNNEL_REC.GPJ

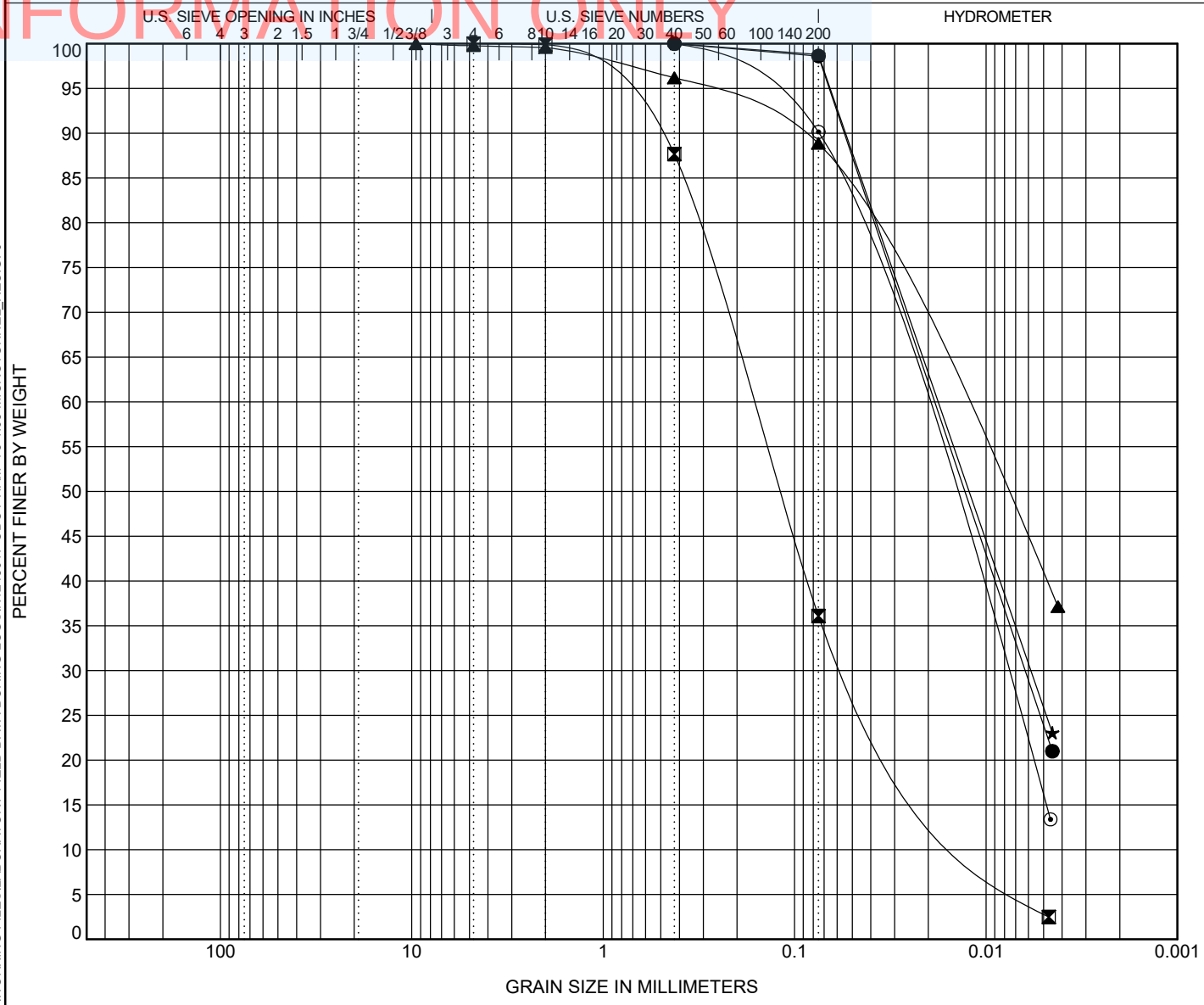
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PROJECT HAM-75-1.05 **PID** 122902

OGE NUMBER N1245017 **PROJECT TYPE** STRUCTURE FOUNDATION



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-007-0-24	42.5	A-4b ~ SILTY CLAY(CL-ML)	26	20	6
⊠	B-007-0-24	48.5	A-4a ~ SILTY SAND(SM)	NP	NP	NP
▲	B-008-0-24	9.0	A-6a ~ LEAN CLAY(CL)	29	15	14
★	B-008-0-24	19.0	A-4b ~ SILTY CLAY(CL-ML)	26	20	6
⊙	B-008-0-24	25.0	A-4b ~ SILT(ML)	21	19	2

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-007-0-24	42.5	0.055	0.013	0.006		0	0	1	75	24		
⊠	B-007-0-24	48.5	0.571	0.12	0.045	0.009	0	12	52	33	3	1.41	19.18
▲	B-008-0-24	9.0	0.098	0.009			1	3	7	49	40		
★	B-008-0-24	19.0	0.054	0.012	0.006		0	0	1	73	26		
⊙	B-008-0-24	25.0	0.075	0.017	0.008		0	0	10	74	16		

GRAIN SIZE - OH DOT.GDT - 1/28/25 15:09 - N:\PROJECTS\2024\N1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1245017-ODOT-HAM -75-1.05 MICROTUNNEL_REC.GPJ

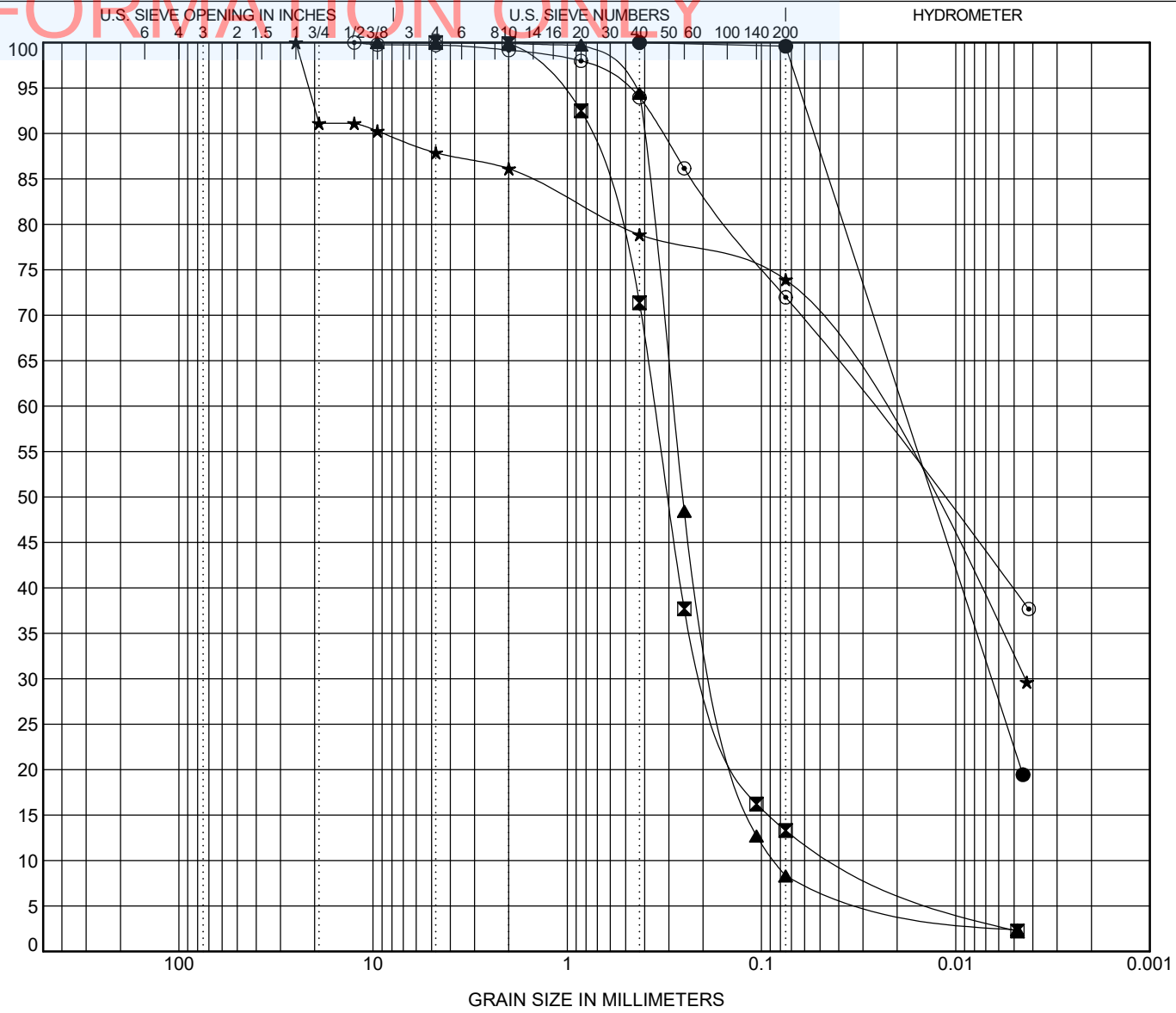
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PROJECT HAM-75-1.05 **PID** 122902

OGE NUMBER N1245017 **PROJECT TYPE** STRUCTURE FOUNDATION



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-008-0-24	28.5	A-4b ~ SILT(ML)	24	21	3
⊠	B-008-0-24	33.0	A-3a ~ SILTY SAND(SM)	NP	NP	NP
▲	B-008-0-24	39.0	A-3 ~ POORLY GRADED SAND with SILT(SP-SM)	NP	NP	NP
★	B-009-0-24	7.5	A-6b ~ LEAN CLAY with SAND(CL)	34	18	16
⊙	B-009-0-24	11.5	A-6b ~ LEAN CLAY with SAND(CL)	36	14	22

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-008-0-24	28.5	0.054	0.013	0.007		0	0	0	78	22		
⊠	B-008-0-24	33.0	0.783	0.304	0.184	0.033	0	29	58	11	2	2.88	10.75
▲	B-008-0-24	39.0	0.404	0.255	0.161	0.086	1	5	86	6	2	1.05	3.33
★	B-009-0-24	7.5	8.791	0.016	0.004		14	7	5	42	32		
⊙	B-009-0-24	11.5	0.325	0.012			1	5	22	32	40		

GRAIN SIZE - OH DOT.GDT - 1/28/25 15:10 - N:\PROJECTS\2024\N1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1245017-ODOT-HAM -75-1.05 MICROTUNNEL_REC.GPJ

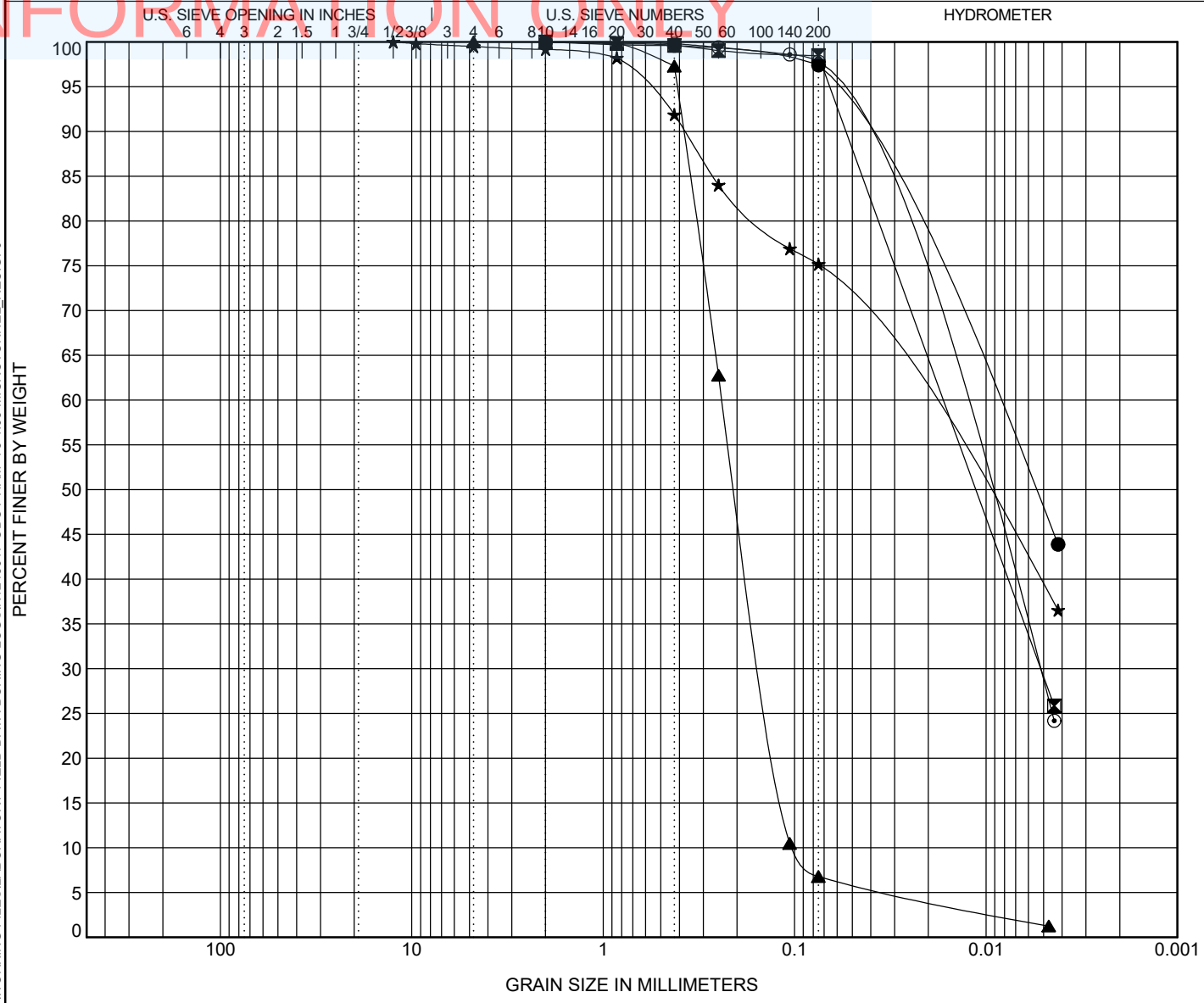
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OGE NUMBER N1245017 **PROJECT TYPE** STRUCTURE FOUNDATION



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-009-0-24	20.0	A-4b ~ SILTY CLAY(CL-ML)	28	21	7
⊠	B-009-0-24	33.0	A-4b ~ SILTY CLAY(CL-ML)	25	21	4
▲	B-009-0-24	42.0	A-3 ~ POORLY GRADED SAND with SILT(SP-SM)	NP	NP	NP
★	B-010-0-24	9.0	A-7-6 ~ LEAN CLAY with SAND(CL)	41	16	25
⊙	B-010-0-24	19.0	A-4b ~ LEAN CLAY(CL)	32	22	10

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-009-0-24	20.0	0.05	0.006			0	1	2	50	47		
⊠	B-009-0-24	33.0	0.054	0.011	0.005		0	1	1	69	29		
▲	B-009-0-24	42.0	0.38	0.203	0.146	0.101	0	2	91	6	1	0.88	2.36
★	B-010-0-24	9.0	0.374	0.011			1	7	17	36	39		
⊙	B-010-0-24	19.0	0.056	0.012	0.006		0	0	2	71	27		

GRAIN SIZE - OH DOT.GDT - 1/28/25 15:10 - N:\PROJECTS\2024\N1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1245017-ODOT-HAM -75-1.05 MICROTUNNEL_REC.GPJ

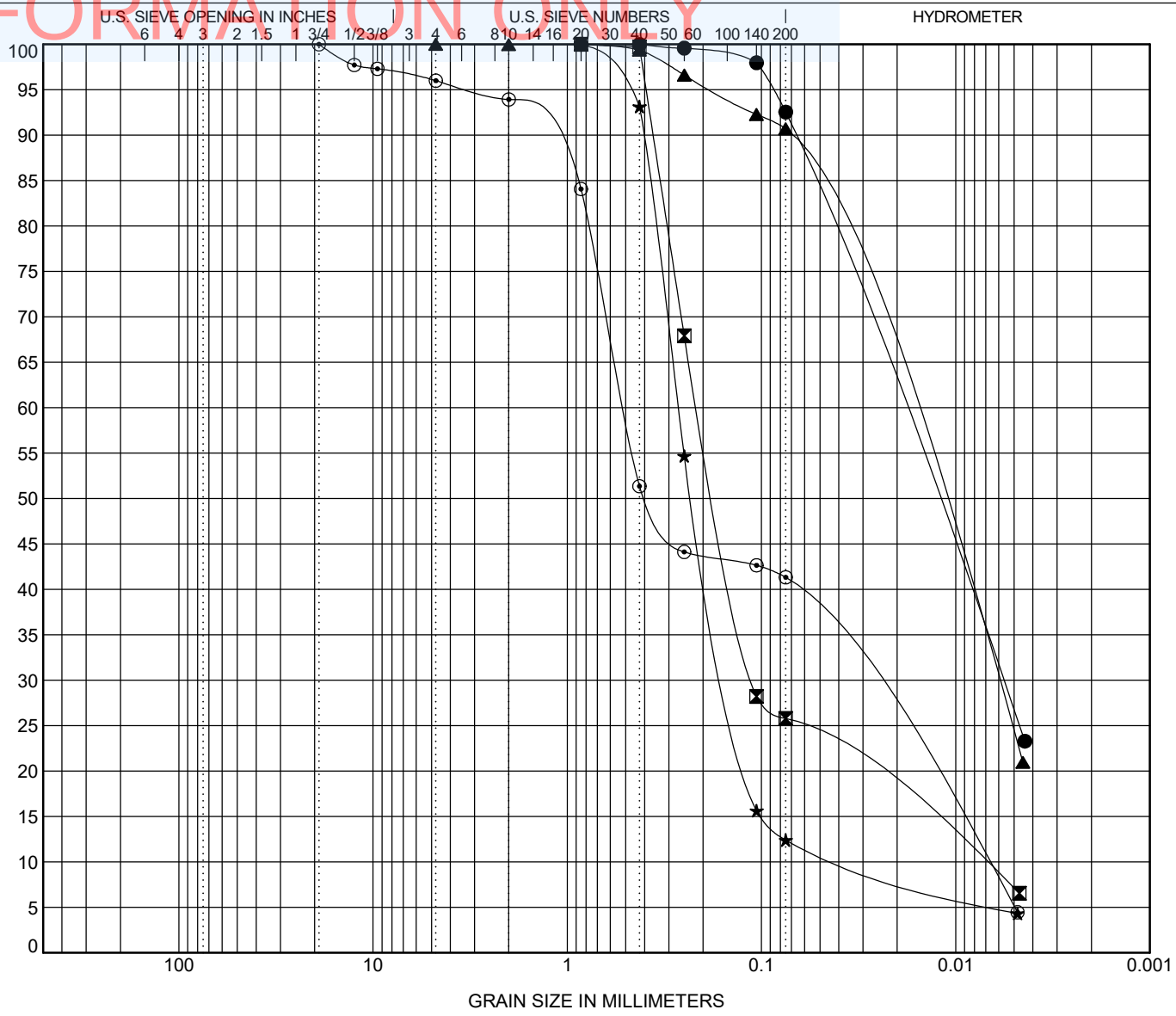
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OGE NUMBER N1245017 **PROJECT TYPE** STRUCTURE FOUNDATION



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-010-0-24	25.0	A-4b ~ SILTY CLAY(CL-ML)	25	20	5
⊠	B-010-0-24	28.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP
▲	B-010-0-24	31.5	A-4b ~ SILTY CLAY(CL-ML)	25	20	5
★	B-010-0-24	37.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP
⊙	B-010-0-24	48.5	A-4a ~ SILTY SAND(SM)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-010-0-24	25.0	0.068	0.013	0.006		0	0	7	67	26		
⊠	B-010-0-24	28.5	0.361	0.17	0.11	0.008	0	0	74	19	7	7.47	27.31
▲	B-010-0-24	31.5	0.073	0.015	0.006		0	0	9	67	24		
★	B-010-0-24	37.5	0.407	0.226	0.145	0.033	0	7	81	8	4	2.37	8.11
⊙	B-010-0-24	48.5	1.422	0.385	0.032	0.007	6	43	10	36	5	0.28	70.33

GRAIN SIZE - OH DOT.GDT - 1/28/25 15:11 - N:\PROJECTS\2024\N1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1245017-ODOT-HAM -75-1.05 MICROTUNNEL_REC.GPJ

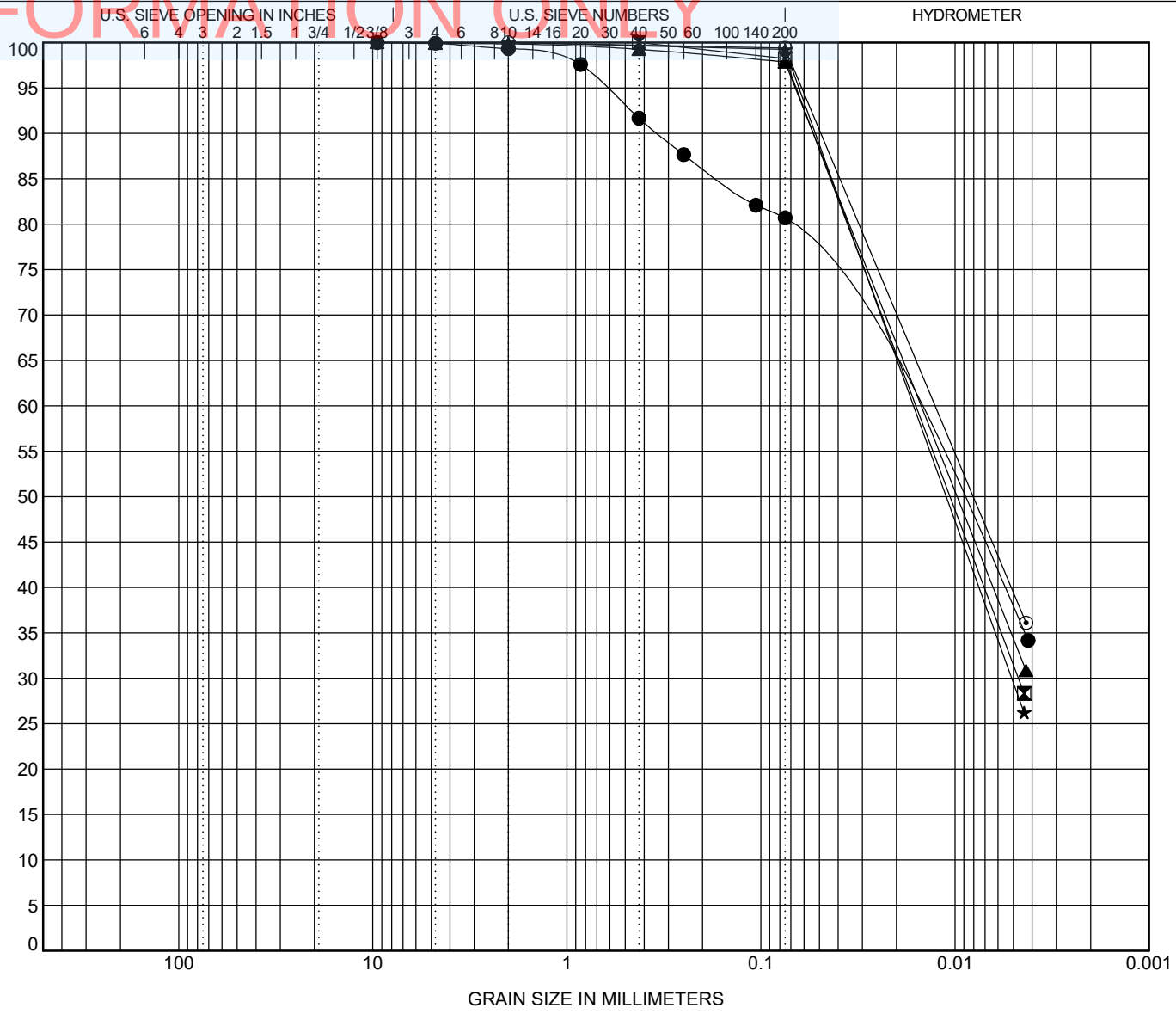
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT HAM-75-1.05 **PID** 122902

OGE NUMBER N1245017 **PROJECT TYPE** STRUCTURE FOUNDATION



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-011-0-24	9.0	**A-6b ~ LEAN CLAY with SAND(CL)**	40	22	18
⊠	B-011-0-24	19.0	**A-4b ~ SILTY CLAY(CL-ML)**	26	20	6
▲	B-011-0-24	25.0	**A-4b ~ SILTY CLAY(CL-ML)**	25	18	7
★	B-011-0-24	29.0	**A-4b ~ SILT(ML)**	27	22	5
⊙	B-011-0-24	32.0	**A-6a ~ LEAN CLAY(CL)**	29	18	11

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-011-0-24	9.0	0.341	0.011			0	8	11	44	37		
⊠	B-011-0-24	19.0	0.054	0.011	0.005		0	0	2	67	31		
▲	B-011-0-24	25.0	0.054	0.01			0	1	1	64	34		
★	B-011-0-24	29.0	0.052	0.011	0.005		0	1	0	69	30		
⊙	B-011-0-24	32.0	0.049	0.008			0	1	0	60	39		

GRAIN SIZE - OH DOT.GDT - 1/28/25 15:11 - N:\PROJECTS\2024\N1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1245017-ODOT-HAM -75-1.05 MICROTUNNEL_REC.GPJ

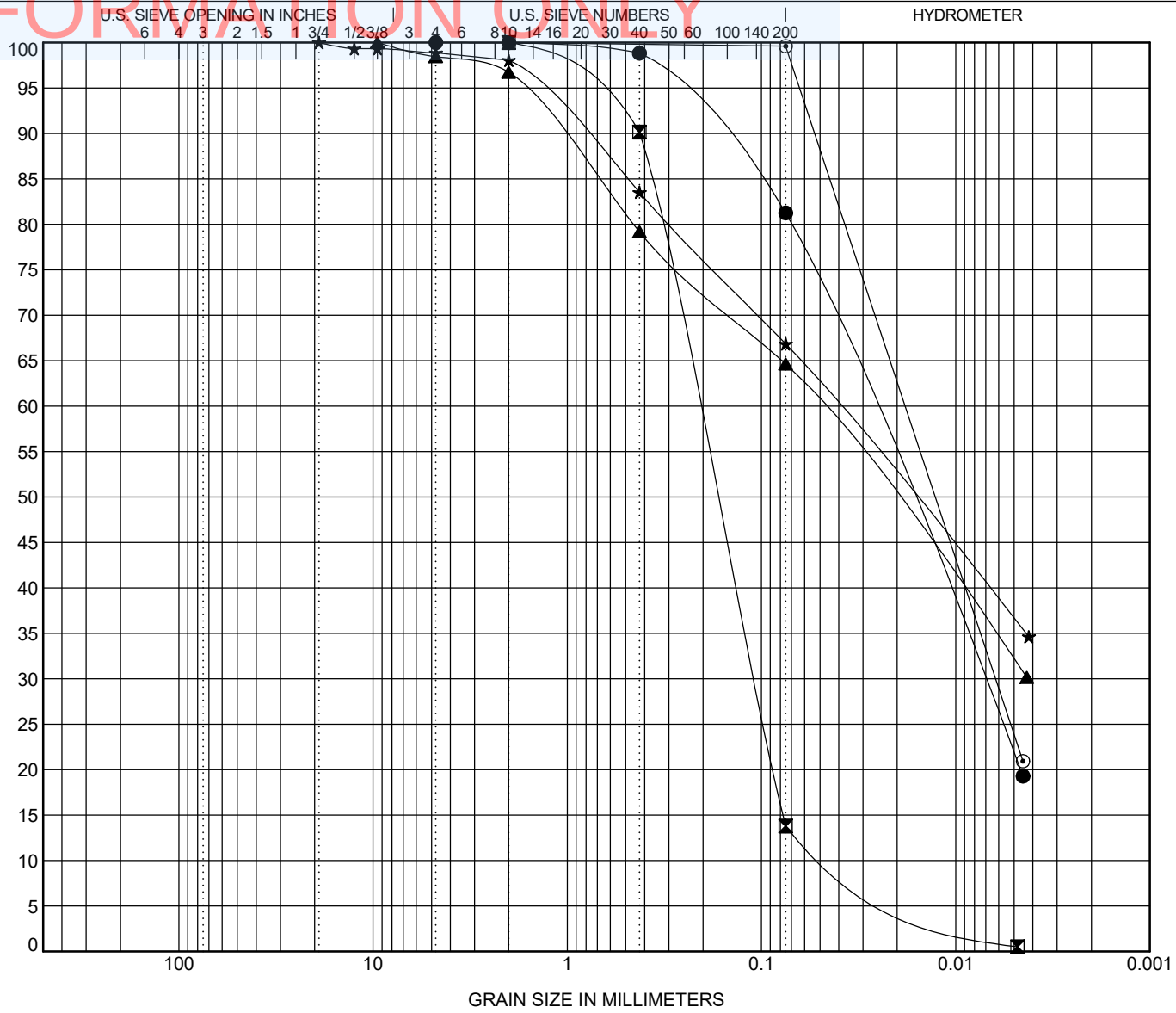
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GRAIN SIZE DISTRIBUTION

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PROJECT HAM-75-1.05 **PID** 122902

OGE NUMBER N1245017 **PROJECT TYPE** STRUCTURE FOUNDATION



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-011-0-24	38.0	A-4b ~ SILT with SAND(ML)	NP	NP	NP
⊠	B-011-0-24	41.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP
▲	B-012-0-24	5.0	A-4a ~ SANDY LEAN CLAY(CL)	27	17	10
★	B-012-0-24	11.5	A-6b ~ SANDY LEAN CLAY(CL)	34	16	18
⊙	B-012-0-24	19.0	A-4b ~ SILT(ML)	30	23	7

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-011-0-24	38.0	0.178	0.018	0.007		0	1	18	59	22		
⊠	B-011-0-24	41.5	0.423	0.171	0.108	0.034	0	10	76	13	1	1.60	6.26
▲	B-012-0-24	5.0	1.104	0.022			2	18	15	33	32		
★	B-012-0-24	11.5	0.848	0.017			1	15	17	30	37		
⊙	B-012-0-24	19.0	0.053	0.013	0.006		0	0	0	76	24		

GRAIN SIZE - OH DOT.GDT - 1/28/25 15:12 - N:\PROJECTS\2024\N1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1245017-ODOT-HAM -75-1.05 MICROTUNNEL_REC.GPJ

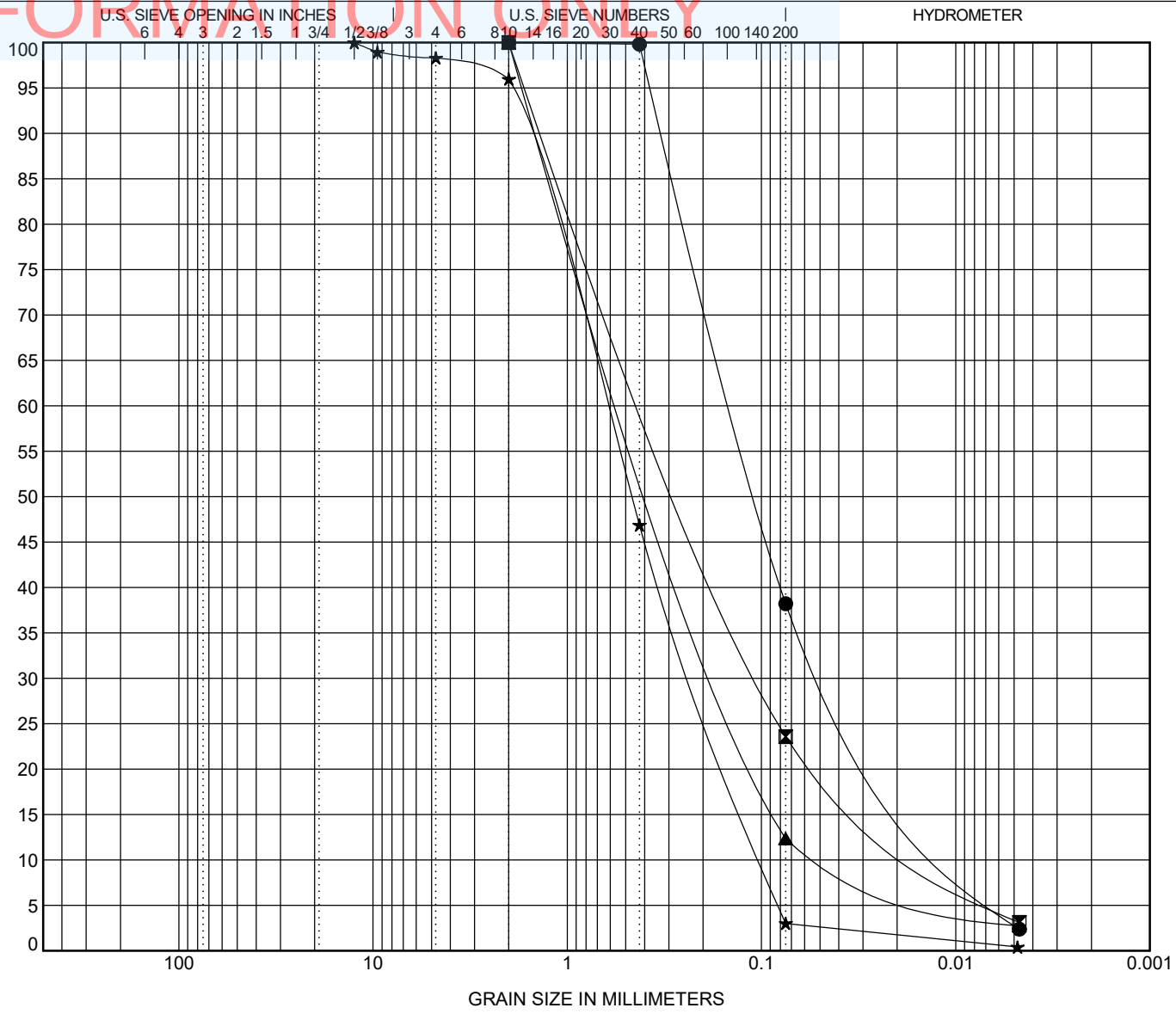
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GRAIN SIZE DISTRIBUTION

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PROJECT HAM-75-1.05 **PID** 122902

OGE NUMBER N1245017 **PROJECT TYPE** STRUCTURE FOUNDATION



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-012-0-24	23.5	A-4a ~ SILTY SAND(SM)	NP	NP	NP
⊠	B-012-0-24	26.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP
▲	B-012-0-24	32.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP
★	B-012-0-24	48.5	A-1-b ~ POORLY GRADED SAND(SP)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-012-0-24	23.5	0.322	0.105	0.04	0.008	0	0	62	35	3	1.35	16.34
⊠	B-012-0-24	26.5	1.301	0.233	0.099	0.012	0	36	40	20	4	2.28	30.10
▲	B-012-0-24	32.5	1.375	0.307	0.145	0.038	0	42	46	9	3	1.23	11.66
★	B-012-0-24	48.5	1.656	0.469	0.218	0.099	4	49	44	3	0	0.75	6.50

GRAIN SIZE - OH DOT.GDT - 1/28/25 15:12 - N:\PROJECTS\2024\N1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1245017-ODOT-HAM -75-1.05 MICROTUNNEL_REC.GPJ

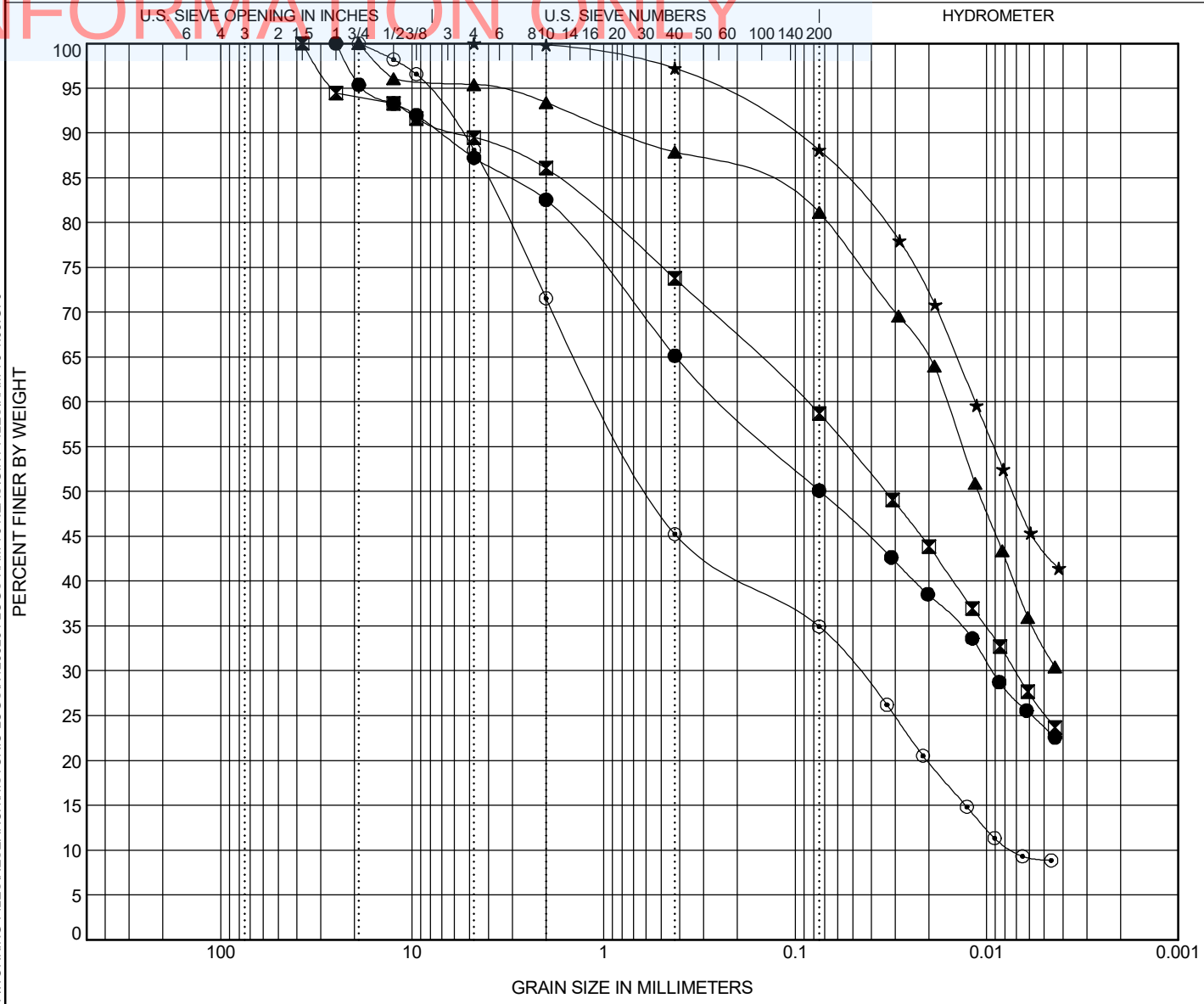
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GRAIN SIZE DISTRIBUTION

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PROJECT HAM-75-1.05 **PID** 113361

OGE NUMBER 0 **PROJECT TYPE**



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-027-1-21	2.5	A-6a ~ SANDY LEAN CLAY(CL)	30	17	13
⊠	B-027-1-21	7.5	A-6a ~ SANDY LEAN CLAY(CL)	32	18	14
▲	B-027-1-21	17.5	A-6a ~ LEAN CLAY with SAND(CL)	34	19	15
★	B-027-1-21	22.5	A-6b ~ LEAN CLAY(CL)	40	20	20
⊙	B-027-1-21	30.0	A-2-4 ~ SILTY, CLAYEY SAND(SC-SM)	24	19	5

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-027-1-21	2.5	7.1	0.074	0.009		18	17	15	26	24		
⊠	B-027-1-21	7.5	5.591	0.034	0.007		14	12	15	34	25		
▲	B-027-1-21	17.5	0.769	0.011			6	6	7	48	33		
★	B-027-1-21	22.5	0.107	0.007			0	3	9	45	43		
⊙	B-027-1-21	30.0	5.545	0.562	0.047	0.007	29	26	10	26	9	0.30	138.58

GRAIN SIZE - OH DOT.GDT - 12/13/24 15:46 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\GINT FILES\HAM-75-1.05.GPJ

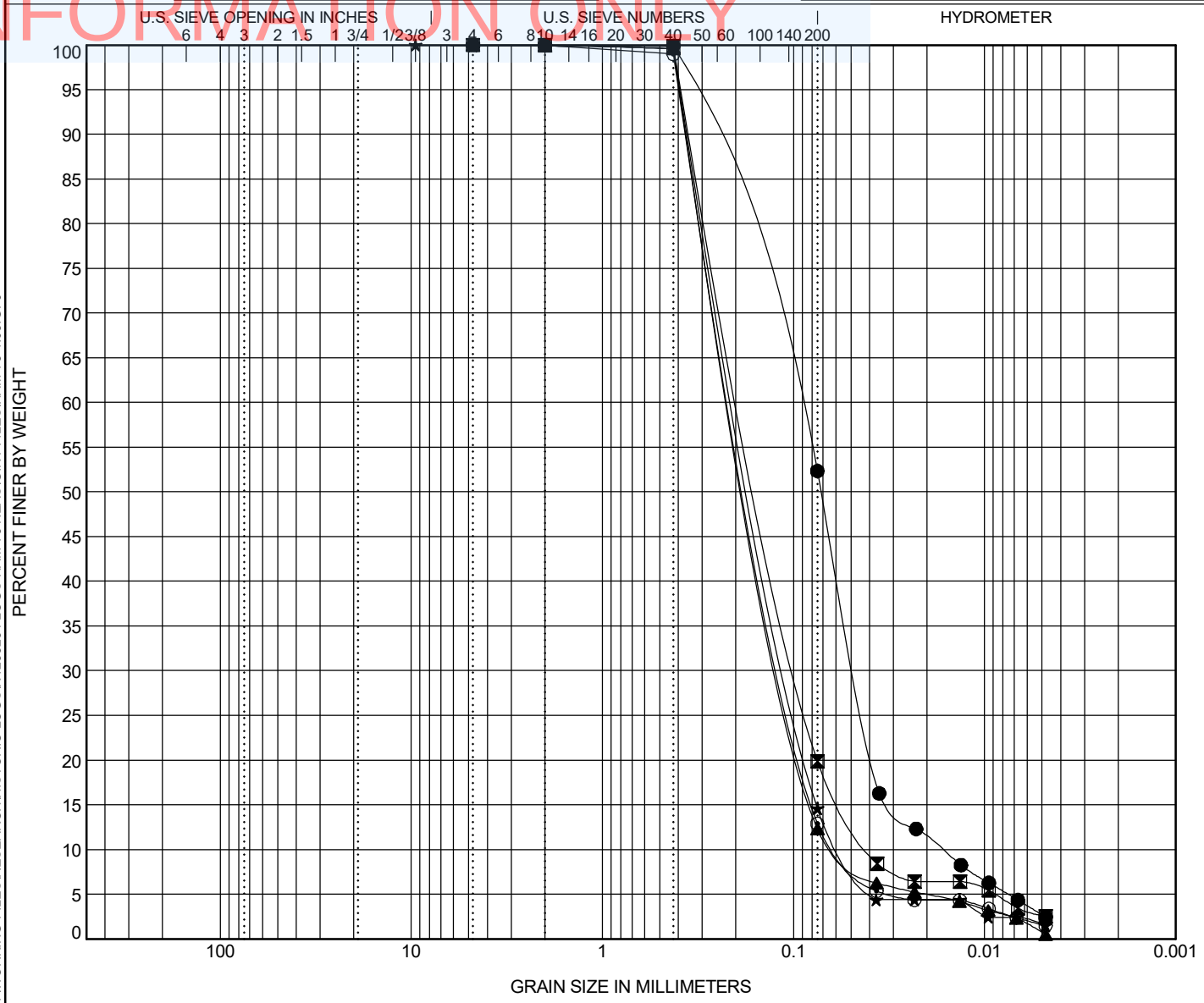
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GRAIN SIZE DISTRIBUTION

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PROJECT HAM-75-1.05 **PID** 113361

OGE NUMBER 0 **PROJECT TYPE**



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-027-1-21	40.0	A-4a ~ SANDY SILT(ML)	NP	NP	NP
⊠	B-027-1-21	55.0	A-3a ~ SILTY SAND(SM)	NP	NP	NP
▲	B-027-1-21	70.0	A-3a ~ SILTY SAND(SM)	NP	NP	NP
★	B-027-1-21	85.0	A-3a ~ SILTY SAND(SM)	NP	NP	NP
⊙	B-027-1-21	100.0	A-3a ~ SILTY SAND(SM)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-027-1-21	40.0	0.296	0.071	0.047	0.017	0	0	48	49	3	1.34	5.90
⊠	B-027-1-21	55.0	0.343	0.144	0.093	0.04	0	0	80	17	3	1.21	4.45
▲	B-027-1-21	70.0	0.351	0.159	0.107	0.057	1	0	87	11	1	1.03	3.38
★	B-027-1-21	85.0	0.349	0.154	0.103	0.055	0	0	85	13	2	1.02	3.47
⊙	B-027-1-21	100.0	0.355	0.158	0.106	0.057	0	1	86	11	2	1.01	3.39

GRAIN SIZE - OH DOT.GDT - 12/13/24 15:46 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\GINT FILES\HAM-75-1.05.GPJ

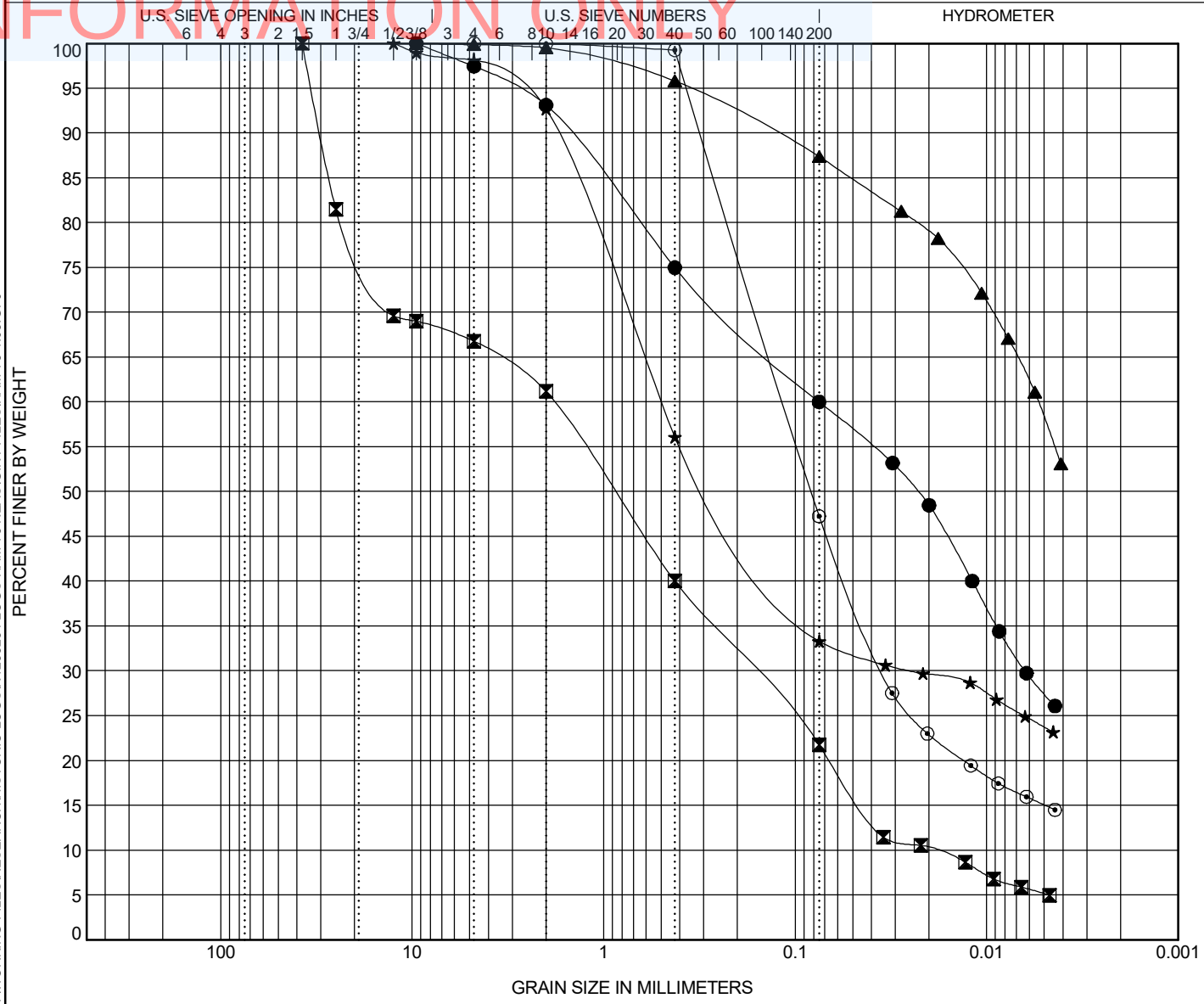
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GRAIN SIZE DISTRIBUTION

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PROJECT HAM-75-1.05 **PID** 113361

OGE NUMBER 0 **PROJECT TYPE**



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-027-2-21	5.0	A-6a ~ SANDY LEAN CLAY(CL)	31	18	13
⊠	B-027-2-21	12.5	A-1-b ~ SILTY SAND with GRAVEL(SM)	NP	NP	NP
▲	B-027-2-21	22.5	A-6b ~ LEAN CLAY(CL)	38	21	17
★	B-027-2-21	27.8	A-2-7 ~ CLAYEY SAND(SC)	46	20	26
⊙	B-027-2-21	32.5	A-4a ~ SILTY SAND(SM)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-027-2-21	5.0	1.533	0.023	0.006		7	18	15	33	27		
⊠	B-027-2-21	12.5	30.132	0.883	0.164	0.019	39	21	18	17	5	0.77	96.20
▲	B-027-2-21	22.5	0.129				1	4	8	29	58		
★	B-027-2-21	27.8	1.783	0.268	0.025		7	37	23	9	24		
⊙	B-027-2-21	32.5	0.312	0.082	0.035		0	1	52	32	15		

GRAIN SIZE - OH DOT.GDT - 12/13/24 15:46 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\GINT FILES\HAM-75-1.05.GPJ

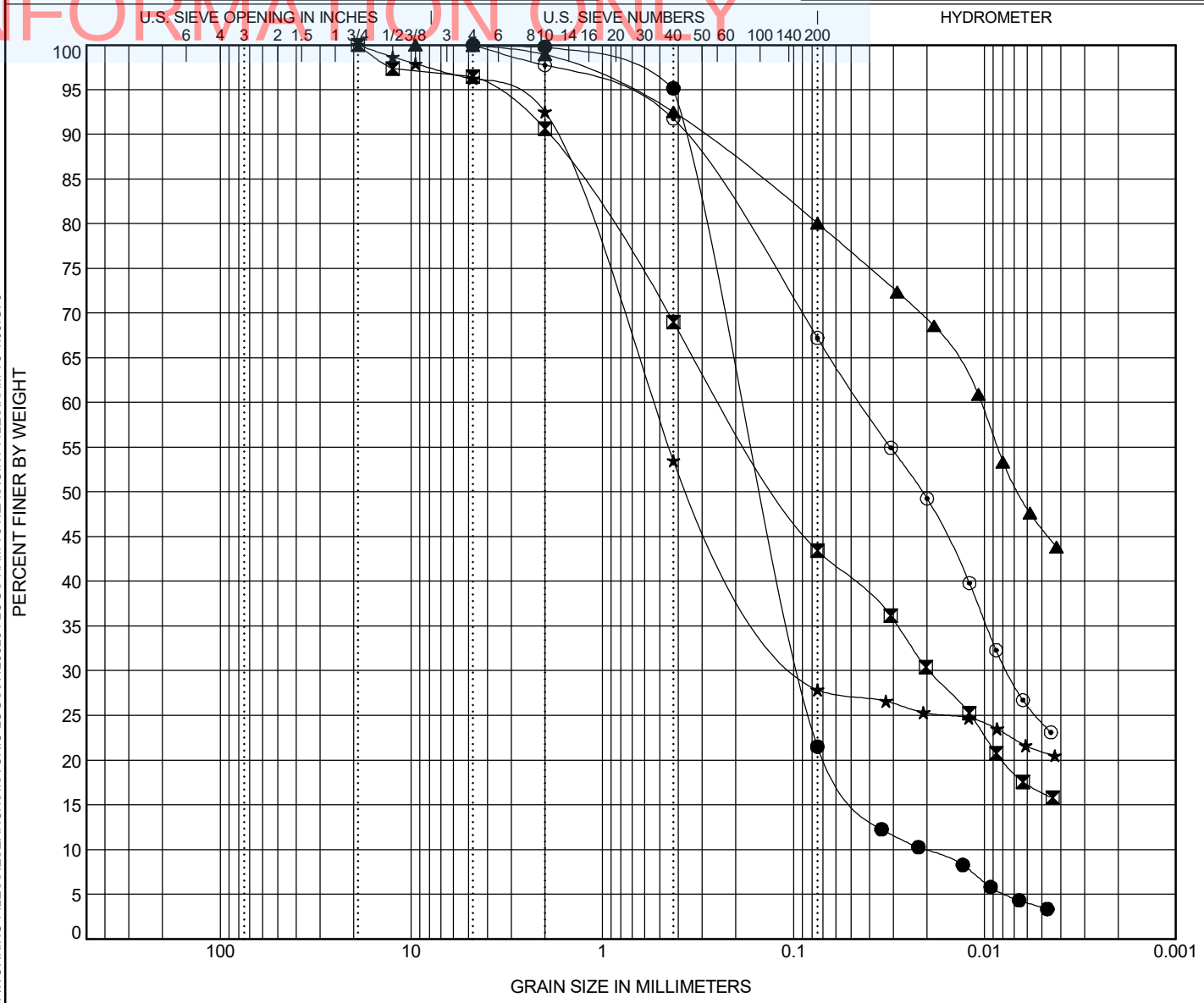
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GRAIN SIZE DISTRIBUTION

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PROJECT HAM-75-1.05 **PID** 113361

OGE NUMBER 0 **PROJECT TYPE**



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-027-2-21	45.0	A-3a ~ SILTY SAND(SM)	NP	NP	NP
⊠	B-031-0-21	1.5	A-4a ~ SILTY SAND(SM)	NP	NP	NP
▲	B-031-0-21	10.0	A-7-6 ~ LEAN CLAY with SAND(CL)	42	20	22
★	B-031-0-21	17.5	A-2-7 ~ CLAYEY SAND(SC)	41	18	23
⊙	B-031-0-21	25.0	A-4a ~ SANDY SILTY CLAY(CL-ML)	23	17	6

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-027-2-21	45.0	0.376	0.147	0.092	0.021	0	5	74	17	4	2.18	8.95
⊠	B-031-0-21	1.5	1.909	0.117	0.02		9	22	26	27	16		
▲	B-031-0-21	10.0	0.299	0.007			2	6	12	34	46		
★	B-031-0-21	17.5	1.809	0.335	0.087		7	39	26	7	21		
⊙	B-031-0-21	25.0	0.375	0.021	0.008		2	6	25	43	24		

GRAIN SIZE - OH DOT.GDT - 12/13/24 15:46 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\GINT FILES\HAM-75-1.05.GPJ

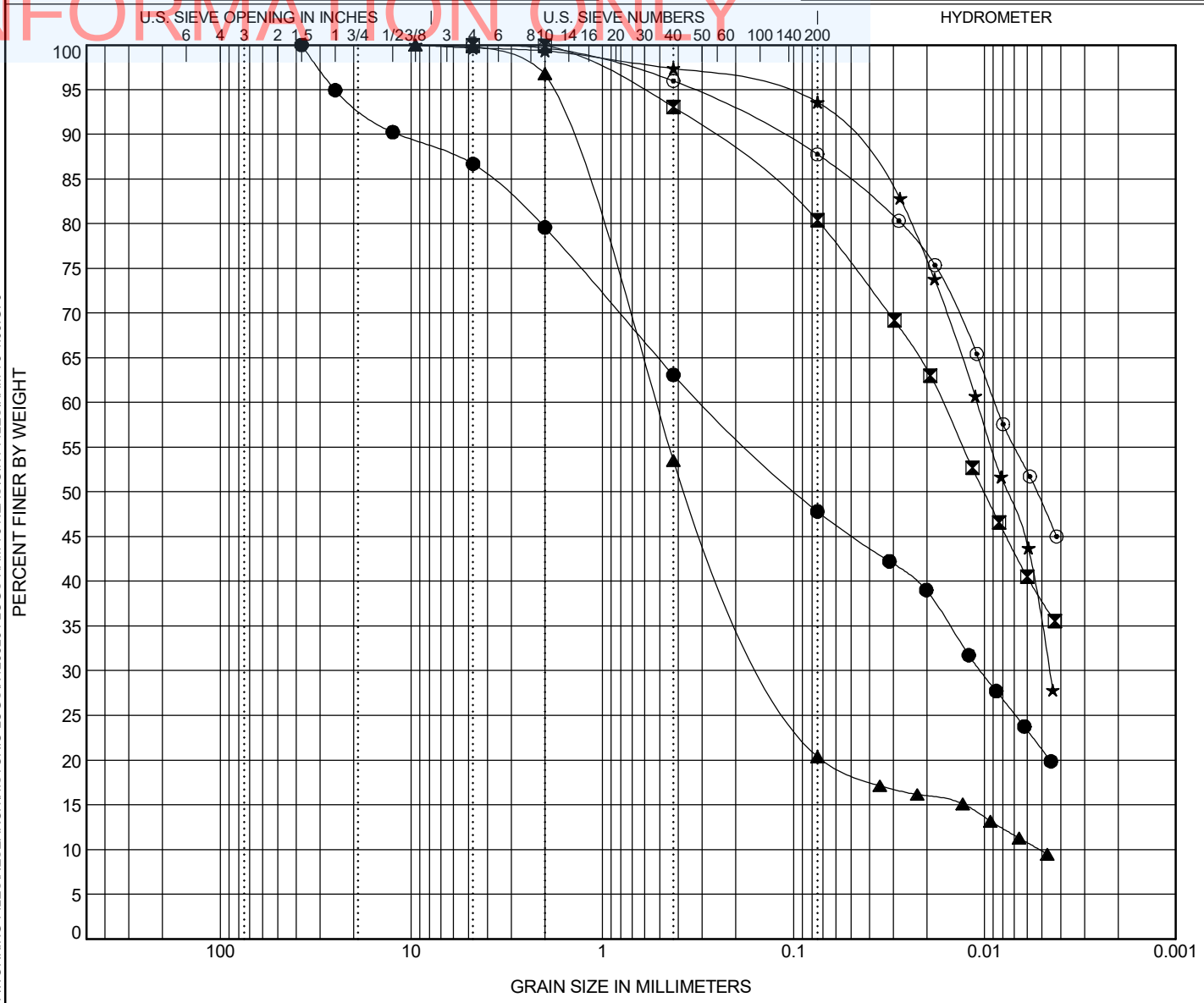
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PROJECT HAM-75-1.05 **PID** 113361

OGE NUMBER 0 **PROJECT TYPE**



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-032-0-21	2.5	A-6a ~ CLAYEY SAND(SC)	31	19	12
⊠	B-032-0-21	7.5	A-7-6 ~ LEAN CLAY with SAND(CL)	42	20	22
▲	B-032-0-21	9.8	A-3a ~ SILTY SAND(SM)	NP	NP	NP
★	B-032-0-21	15.0	A-6a ~ LEAN CLAY(CL)	35	21	14
⊙	B-033-0-21	5.0	A-7-6 ~ LEAN CLAY(CL)	45	21	24

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-032-0-21	2.5	11.672	0.096	0.01		21	16	15	27	21		
⊠	B-032-0-21	7.5	0.279	0.01			0	7	13	42	38		
▲	B-032-0-21	9.8	1.569	0.353	0.124	0.005	4	43	33	10	10	5.54	103.23
★	B-032-0-21	15.0	0.054	0.008	0.005		0	2	4	59	35		
⊙	B-033-0-21	5.0	0.12	0.005			0	4	8	39	49		

GRAIN SIZE - OH DOT.GDT - 12/13/24 15:46 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\GINT FILES\HAM-75-1.05.GPJ

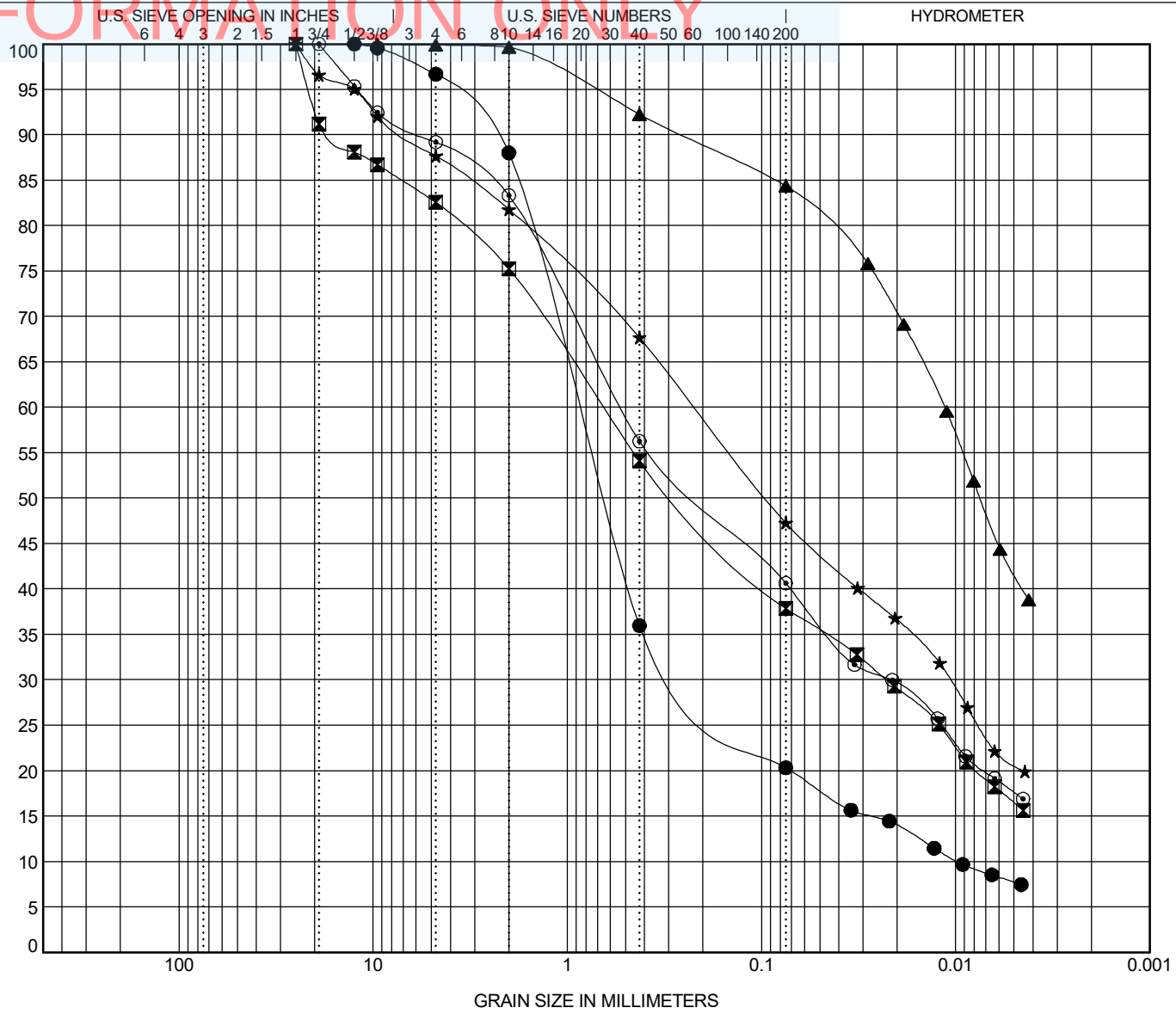
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PROJECT HAM-75-1.05 **PID** 113361

OGE NUMBER 0 **PROJECT TYPE**



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-033-0-21	12.5	A-1-b ~ SILTY SAND(SM)	NP	NP	NP
⊠	B-036-0-21	7.5	A-6a ~ CLAYEY SAND with GRAVEL(SC)	28	16	12
▲	B-036-0-21	15.0	A-6b ~ LEAN CLAY with SAND(CL)	33	17	16
★	B-037-0-21	2.5	A-6a ~ CLAYEY SAND(SC)	29	17	12
⊙	B-037-0-21	12.5	A-6a ~ CLAYEY SAND(SC)	31	17	14

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-033-0-21	12.5	2.439	0.645	0.219	0.01	12	52	16	12	8	5.65	88.52
⊠	B-036-0-21	7.5	16.175	0.275	0.023		25	21	16	22	16		
▲	B-036-0-21	15.0	0.259	0.007			1	7	8	42	42		
★	B-037-0-21	2.5	6.871	0.095	0.011		19	14	20	26	21		
⊙	B-037-0-21	12.5	5.649	0.212	0.021		16	27	16	23	18		

GRAIN SIZE - OH DOT.GDT - 12/13/24 15:47 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\GINT FILES\HAM-75-1.05.GPJ

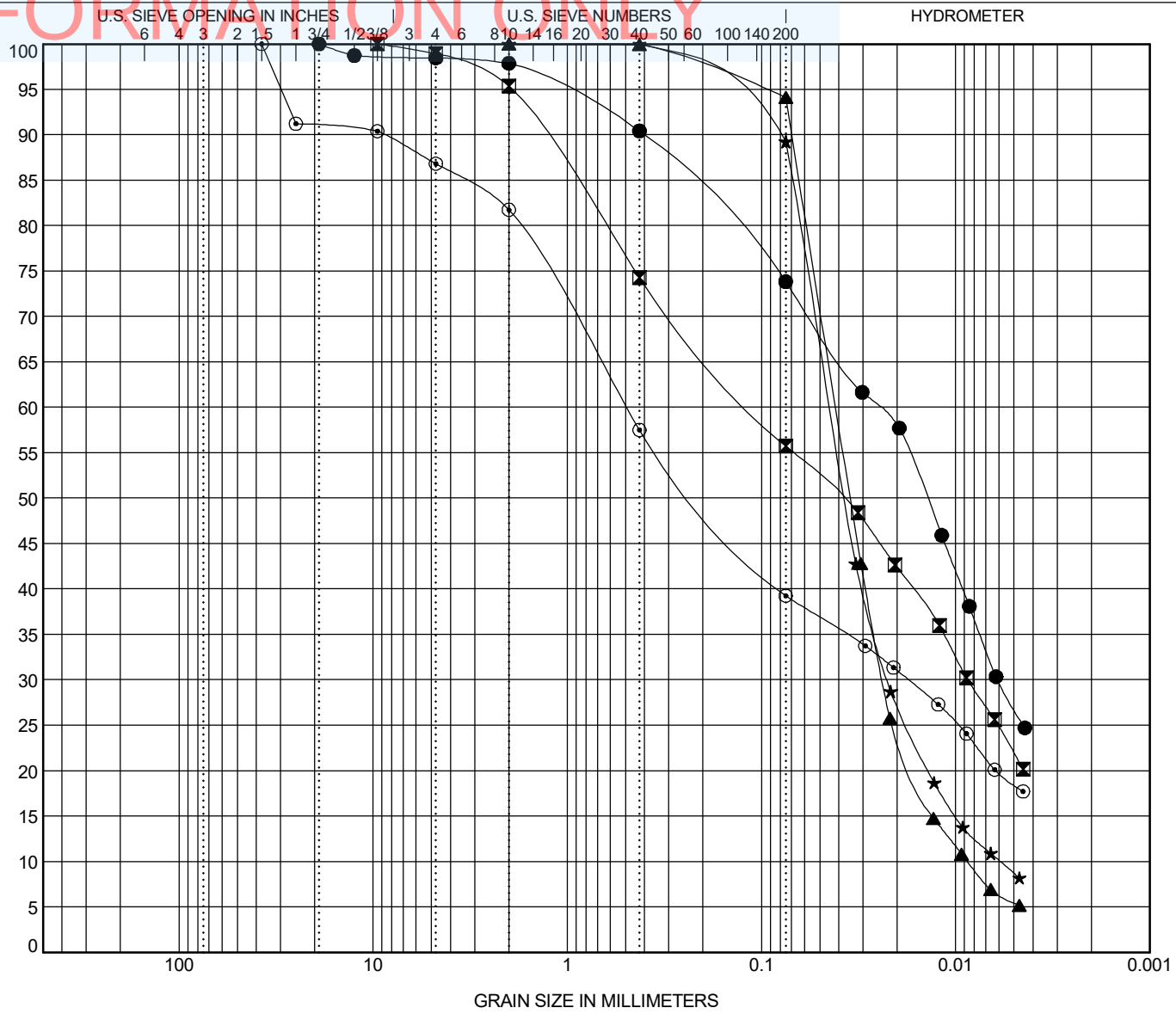
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GRAIN SIZE DISTRIBUTION

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PROJECT HAM-75-1.05 **PID** 113361

OGE NUMBER 0 **PROJECT TYPE**



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-037-0-21	22.5	**A-4a ~ LEAN CLAY with SAND(CL)**	28	19	9
⊠	B-037-0-21	25.0	**A-4a ~ SANDY LEAN CLAY(CL)**	25	17	8
▲	B-037-0-21	30.0	**A-4b ~ SILT(ML)**	NP	NP	NP
★	B-037-0-21	45.0	**A-4b ~ SILT(ML)**	NP	NP	NP
⊙	B-038-0-21	2.5	**A-6b ~ CLAYEY SAND(SC)**	29	13	16

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-037-0-21	22.5	0.407	0.014	0.006		2	7	17	47	27		
⊠	B-037-0-21	25.0	1.349	0.038	0.009		4	21	19	34	22		
▲	B-037-0-21	30.0	0.07	0.035	0.024	0.009	0	0	6	89	5	1.57	4.77
★	B-037-0-21	45.0	0.085	0.037	0.022	0.006	0	0	11	80	9	1.92	7.53
⊙	B-038-0-21	2.5	8.797	0.208	0.018		19	24	18	21	18		

GRAIN SIZE - OH DOT.GDT - 12/13/24 15:47 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\GINT FILES\HAM-75-1.05.GPJ

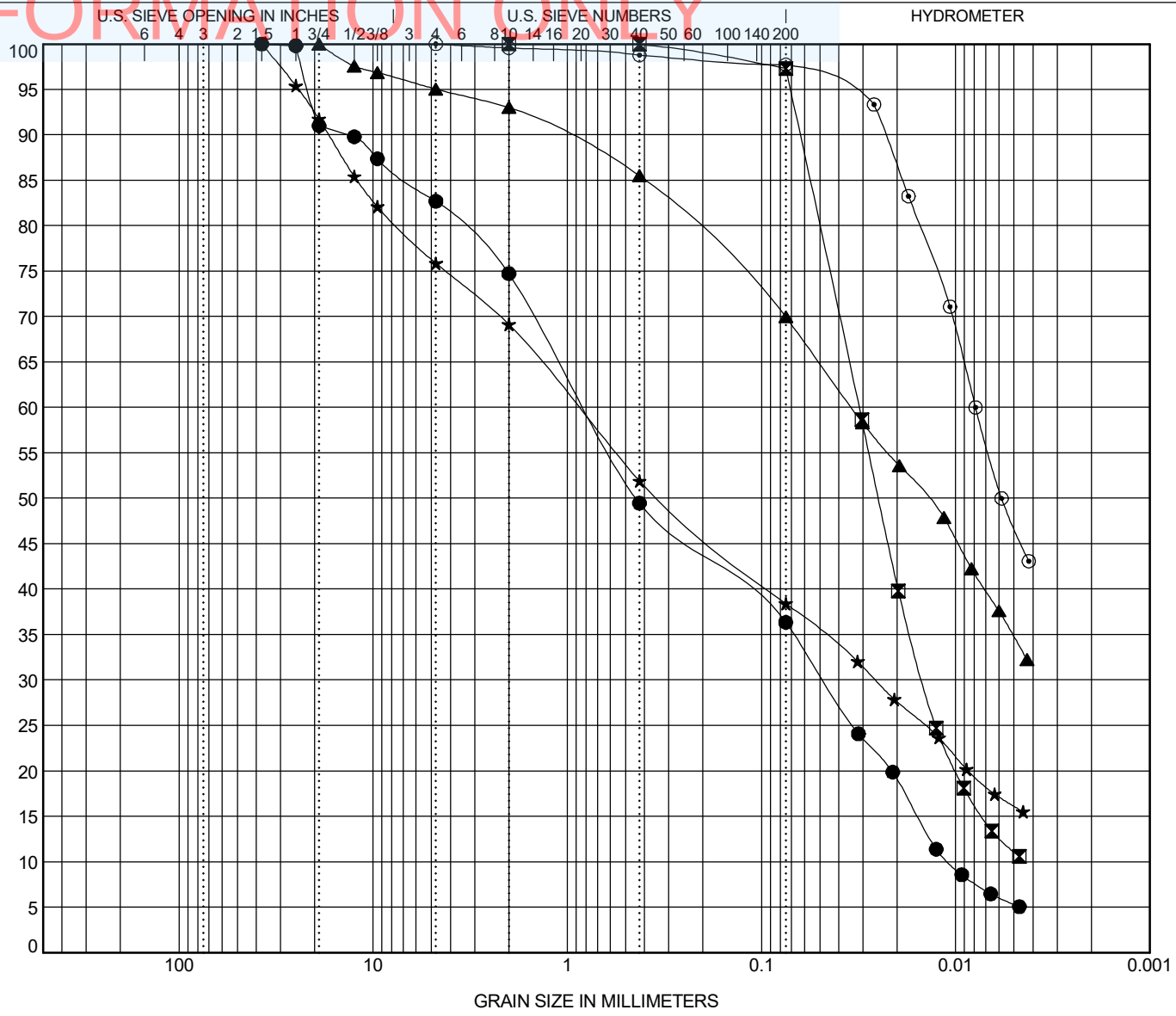
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT HAM-75-1.05 **PID** 113361

OGE NUMBER 0 **PROJECT TYPE**



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-038-0-21	12.5	A-4a ~ SILTY SAND with GRAVEL(SM)	NP	NP	NP
⊠	B-038-0-21	25.0	A-4b ~ SILT(ML)	NP	NP	NP
▲	B-041-0-21	2.5	A-6a ~ SANDY LEAN CLAY(CL)	32	18	14
★	B-041-0-21	7.5	A-6a ~ CLAYEY SAND with GRAVEL(SC)	30	17	13
⊙	B-041-0-21	15.0	A-6a ~ LEAN CLAY(CL)	37	23	14

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-038-0-21	12.5	13.446	0.439	0.048	0.011	26	25	13	31	5	0.26	74.61
⊠	B-038-0-21	25.0	0.063	0.025	0.015		0	0	3	86	11		
▲	B-041-0-21	2.5	1.074	0.014			6	8	16	35	35		
★	B-041-0-21	7.5	16.92	0.333	0.026		31	17	14	22	16		
⊙	B-041-0-21	15.0	0.023	0.006			0	1	1	51	47		

GRAIN SIZE - OH DOT.GDT - 12/13/24 15:47 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\GINT FILES\HAM-75-1.05.GPJ

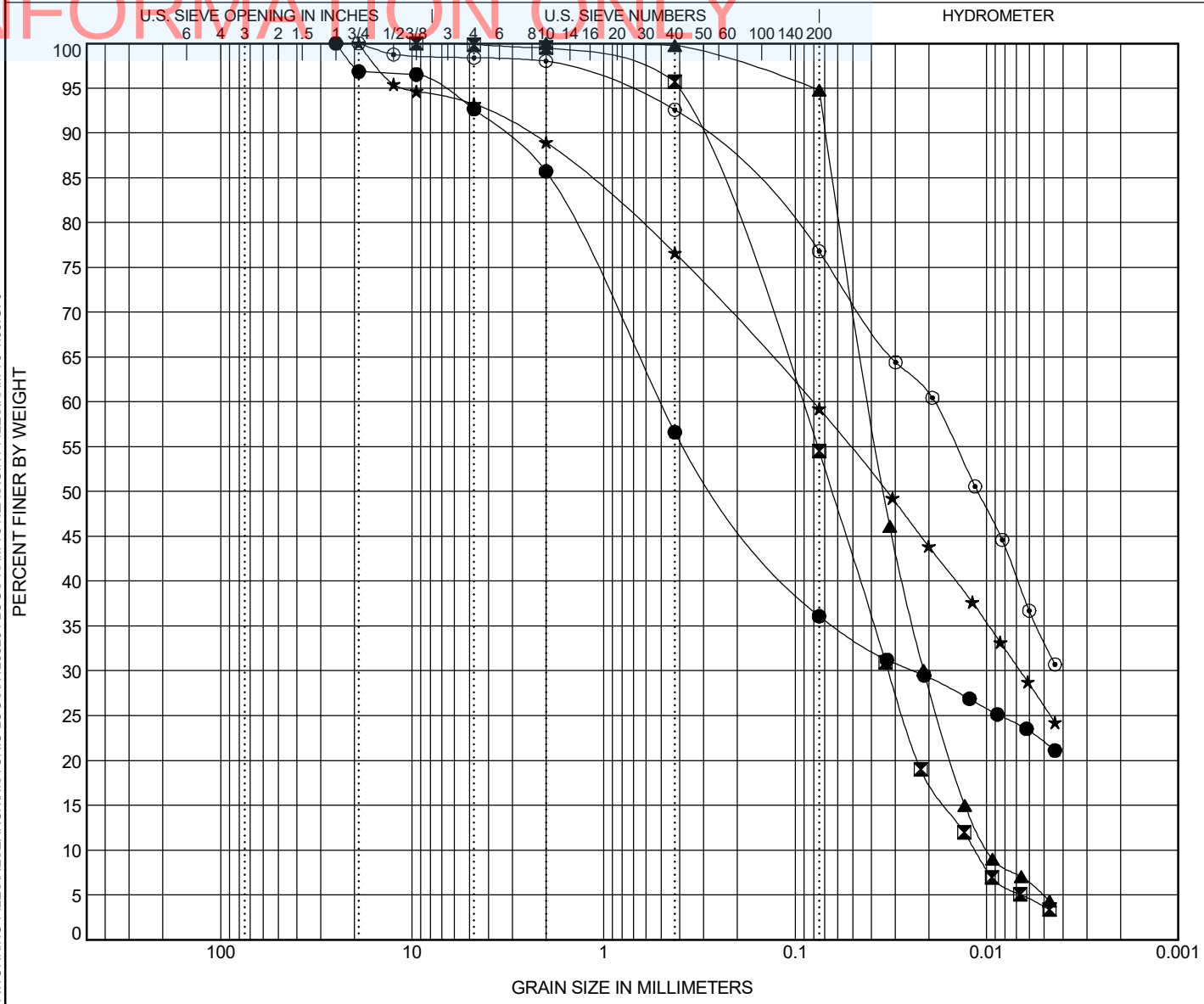
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT HAM-75-1.05 **PID** 113361

OGE NUMBER 0 **PROJECT TYPE**



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-041-0-21	25.0	A-6b ~ CLAYEY SAND(SC)	39	19	20
⊠	B-041-0-21	32.5	A-4b ~ SANDY SILT(ML)	NP	NP	NP
▲	B-041-0-21	45.0	A-4b ~ SILT(ML)	NP	NP	NP
★	B-045-0-21	7.5	A-6a ~ SANDY LEAN CLAY(CL)	32	18	14
⊙	B-045-0-21	17.5	A-6a ~ LEAN CLAY with SAND(CL)	35	20	15

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-041-0-21	25.0	3.406	0.243	0.024		14	29	21	14	22		
⊠	B-041-0-21	32.5	0.334	0.064	0.033	0.012	0	4	41	51	4	0.98	8.21
▲	B-041-0-21	45.0	0.069	0.034	0.021	0.01	0	0	5	90	5	1.13	4.15
★	B-045-0-21	7.5	2.463	0.033	0.007		12	12	17	33	26		
⊙	B-045-0-21	17.5	0.32	0.011			2	5	16	44	33		

GRAIN SIZE - OH DOT.GDT - 12/13/24 15:47 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\GINT FILES\HAM-75-1.05.GPJ

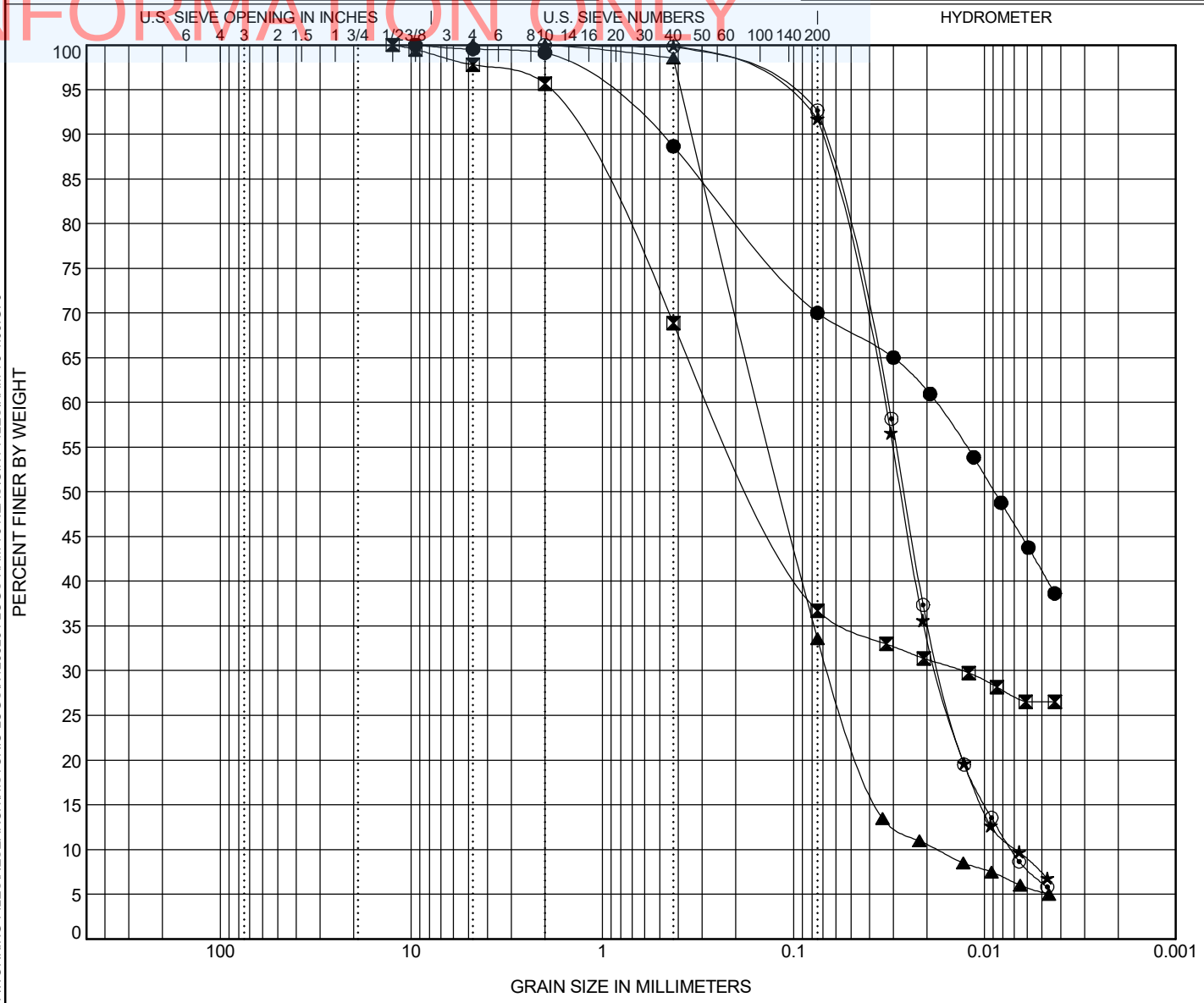
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GRAIN SIZE DISTRIBUTION

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PROJECT HAM-75-1.05 **PID** 113361

OGE NUMBER 0 **PROJECT TYPE**



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-045-0-21	25.0	A-7-6 ~ LEAN CLAY with SAND(CL)	49	20	29
⊠	B-045-0-21	30.0	A-7-6 ~ CLAYEY SAND(SC)	46	18	28
▲	B-045-0-21	40.0	A-3a ~ SILTY SAND(SM)	NP	NP	NP
★	B-045-0-21	55.0	A-4b ~ SILT(ML)	NP	NP	NP
⊙	B-045-0-21	65.0	A-4b ~ SILT(ML)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-045-0-21	25.0	0.518	0.009			1	10	19	29	41		
⊠	B-045-0-21	30.0	1.441	0.154	0.013		4	27	32	10	27		
▲	B-045-0-21	40.0	0.338	0.116	0.065	0.018	0	1	65	29	5	1.56	8.48
★	B-045-0-21	55.0	0.072	0.027	0.018	0.007	0	0	8	85	7	1.36	4.95
⊙	B-045-0-21	65.0	0.07	0.026	0.017	0.007	0	0	7	87	6	1.26	4.45

GRAIN SIZE - OH DOT.GDT - 12/13/24 15:48 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\GINT FILES\HAM-75-1.05.GPJ

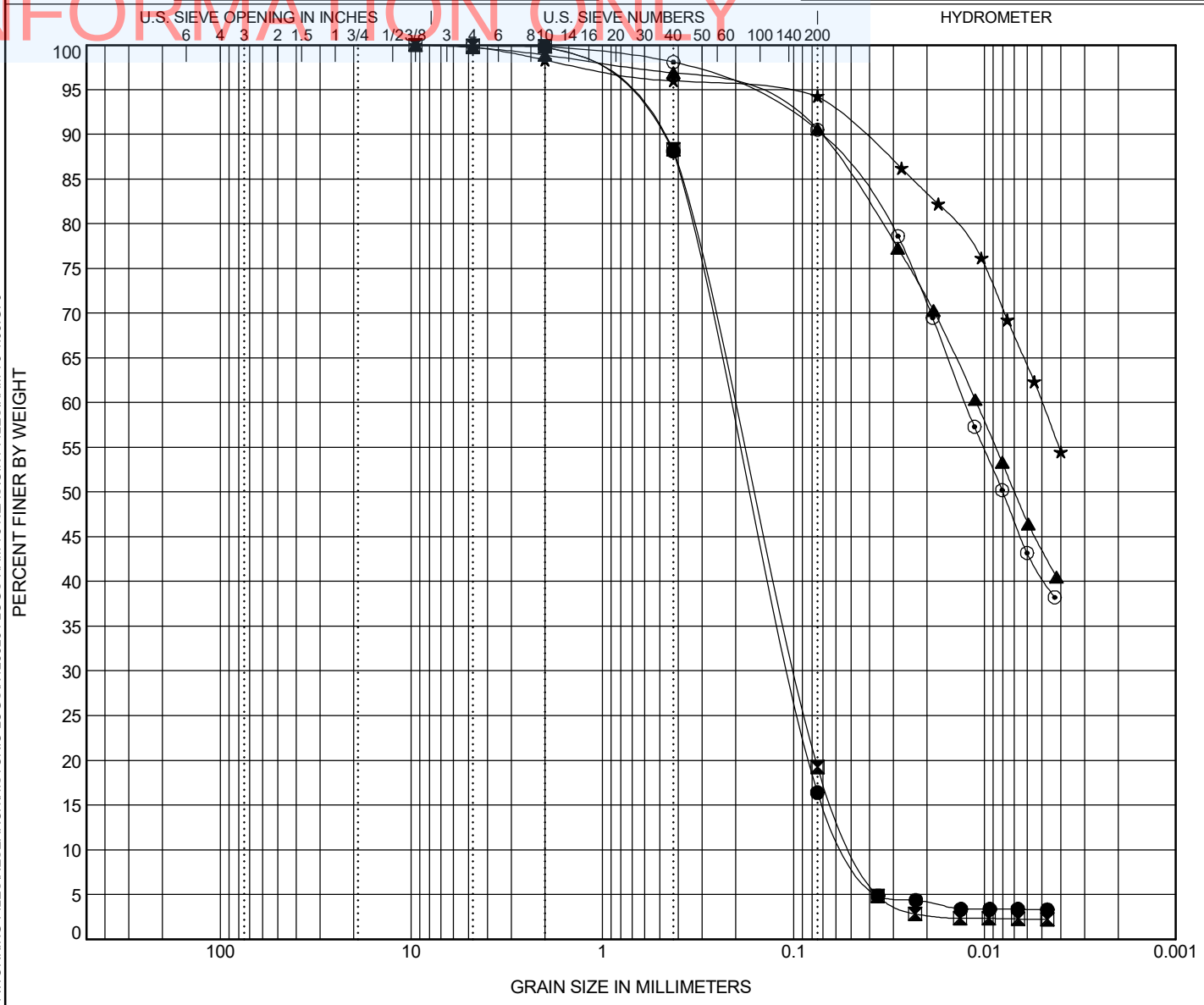
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GRAIN SIZE DISTRIBUTION

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PROJECT HAM-75-1.05 **PID** 113361

OGE NUMBER 0 **PROJECT TYPE**



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-045-0-21	80.0	A-3a ~ SILTY SAND(SM)	NP	NP	NP
⊠	B-045-0-21	100.0	A-3a ~ SILTY SAND(SM)	NP	NP	NP
▲	B-049-0-21	7.5	A-6a ~ LEAN CLAY(CL)	33	19	14
★	B-049-0-21	10.0	A-7-6 ~ LEAN CLAY(CL)	42	23	19
⊙	B-049-0-21	20.0	A-6b ~ LEAN CLAY(CL)	40	21	19

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-045-0-21	80.0	0.545	0.169	0.104	0.05	0	12	72	13	3	1.01	4.30
⊠	B-045-0-21	100.0	0.534	0.162	0.098	0.047	0	12	69	17	2	0.98	4.44
▲	B-049-0-21	7.5	0.072	0.007			1	2	6	47	44		
★	B-049-0-21	10.0	0.044				2	2	2	34	60		
⊙	B-049-0-21	20.0	0.072	0.008			0	1	8	51	40		

GRAIN SIZE - OH DOT.GDT - 12/13/24 15:48 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\GINT FILES\HAM-75-1.05.GPJ

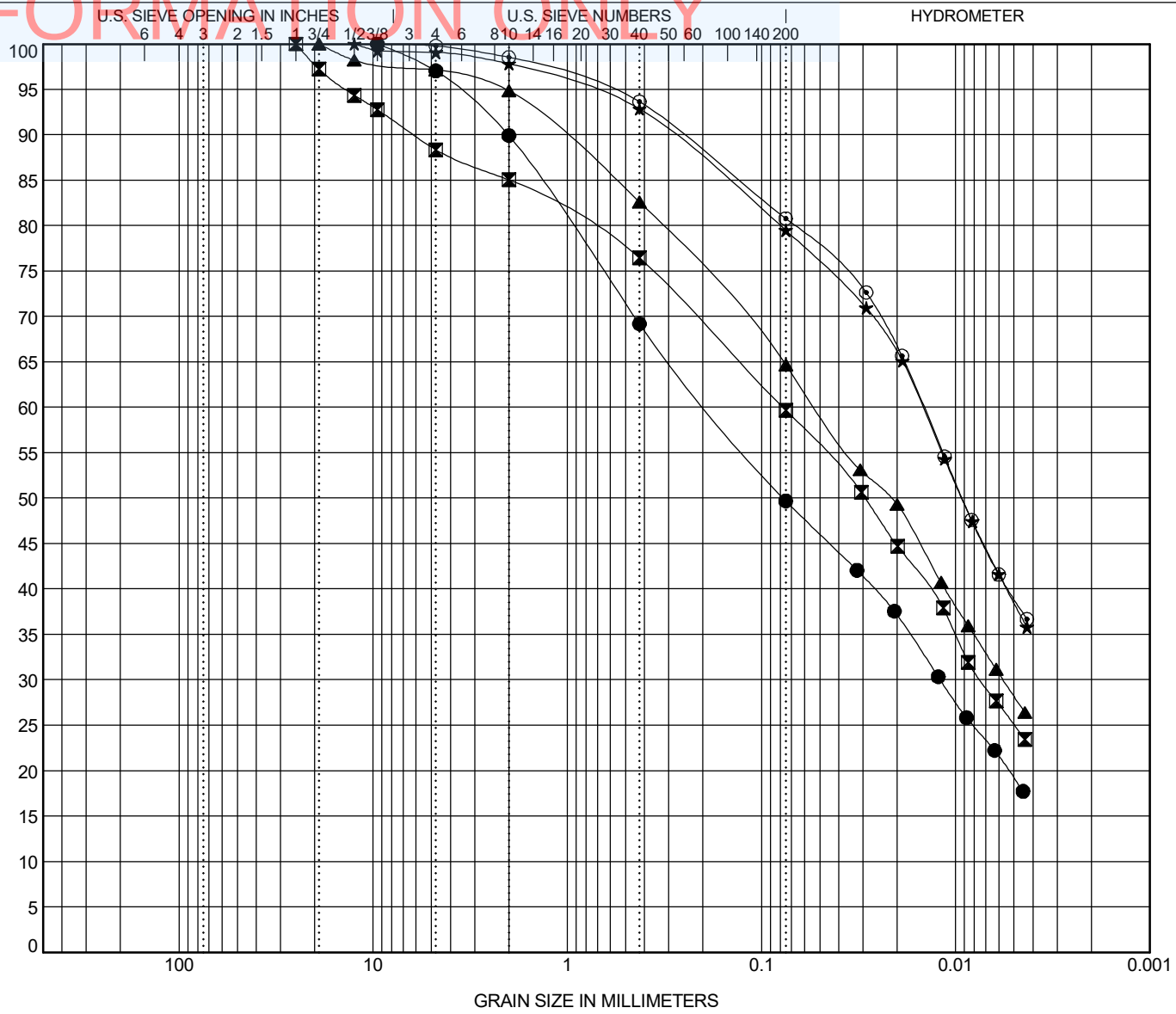
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GRAIN SIZE DISTRIBUTION

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OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT HAM-75-1.05 **PID** 113361

OGE NUMBER 0 **PROJECT TYPE**



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-050-0-21	2.5	**A-4a ~ CLAYEY SAND(SC)**	24	15	9
⊠	B-050-0-21	5.0	**A-4a ~ SANDY LEAN CLAY(CL)**	25	16	9
▲	B-050-0-21	7.5	**A-6a ~ SANDY LEAN CLAY(CL)**	33	18	15
★	B-050-0-21	10.0	**A-6b ~ LEAN CLAY with SAND(CL)**	38	20	18
⊙	B-050-0-21	12.5	**A-6b ~ LEAN CLAY with SAND(CL)**	40	18	22

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-050-0-21	2.5	2.02	0.077	0.012		9	21	20	31	19		
⊠	B-050-0-21	5.0	6.159	0.029	0.007		14	9	17	35	25		
▲	B-050-0-21	7.5	1.081	0.022	0.006		5	12	18	37	28		
★	B-050-0-21	10.0	0.293	0.009			3	5	13	41	38		
⊙	B-050-0-21	12.5	0.26	0.009			1	5	13	42	39		

GRAIN SIZE - OH DOT.GDT - 12/13/24 15:49 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\GINT FILES\HAM-75-1.05.GPJ

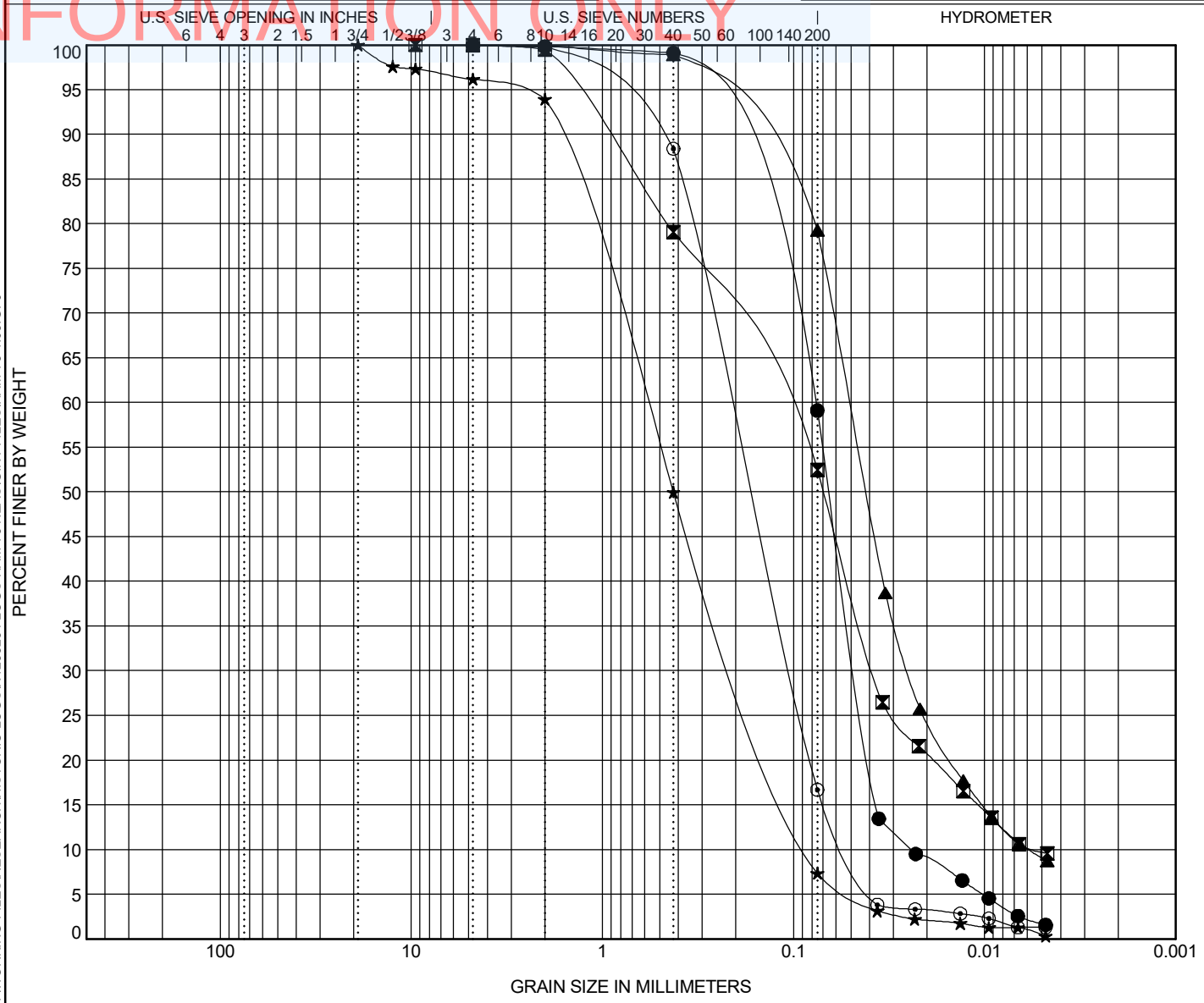
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GRAIN SIZE DISTRIBUTION

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PROJECT HAM-75-1.05 **PID** 113361

OGE NUMBER 0 **PROJECT TYPE**



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-050-0-21	20.0	A-4b ~ SANDY SILT(ML)	NP	NP	NP
⊠	B-050-0-21	27.5	A-4a ~ SANDY SILT(ML)	NP	NP	NP
▲	B-050-0-21	45.0	A-4b ~ SILT with SAND(ML)	NP	NP	NP
★	B-050-0-21	60.0	A-1-b ~ POORLY GRADED SAND with SILT(SP-SM)	NP	NP	NP
⊙	B-050-0-21	85.0	A-3a ~ SILTY SAND(SM)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-050-0-21	20.0	0.286	0.065	0.047	0.024	0	1	40	57	2	1.16	3.21
⊠	B-050-0-21	27.5	0.973	0.07	0.038	0.005	1	20	27	42	10	2.19	22.55
▲	B-050-0-21	45.0	0.193	0.041	0.025	0.006	0	1	20	70	9	2.10	8.66
★	B-050-0-21	60.0	1.741	0.426	0.189	0.084	6	44	43	7	0	0.70	7.24
⊙	B-050-0-21	85.0	0.529	0.168	0.104	0.052	0	11	72	16	1	0.97	4.15

GRAIN SIZE - OH DOT.GDT - 12/13/24 15:49 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\GINT FILES\HAM-75-1.05.GPJ

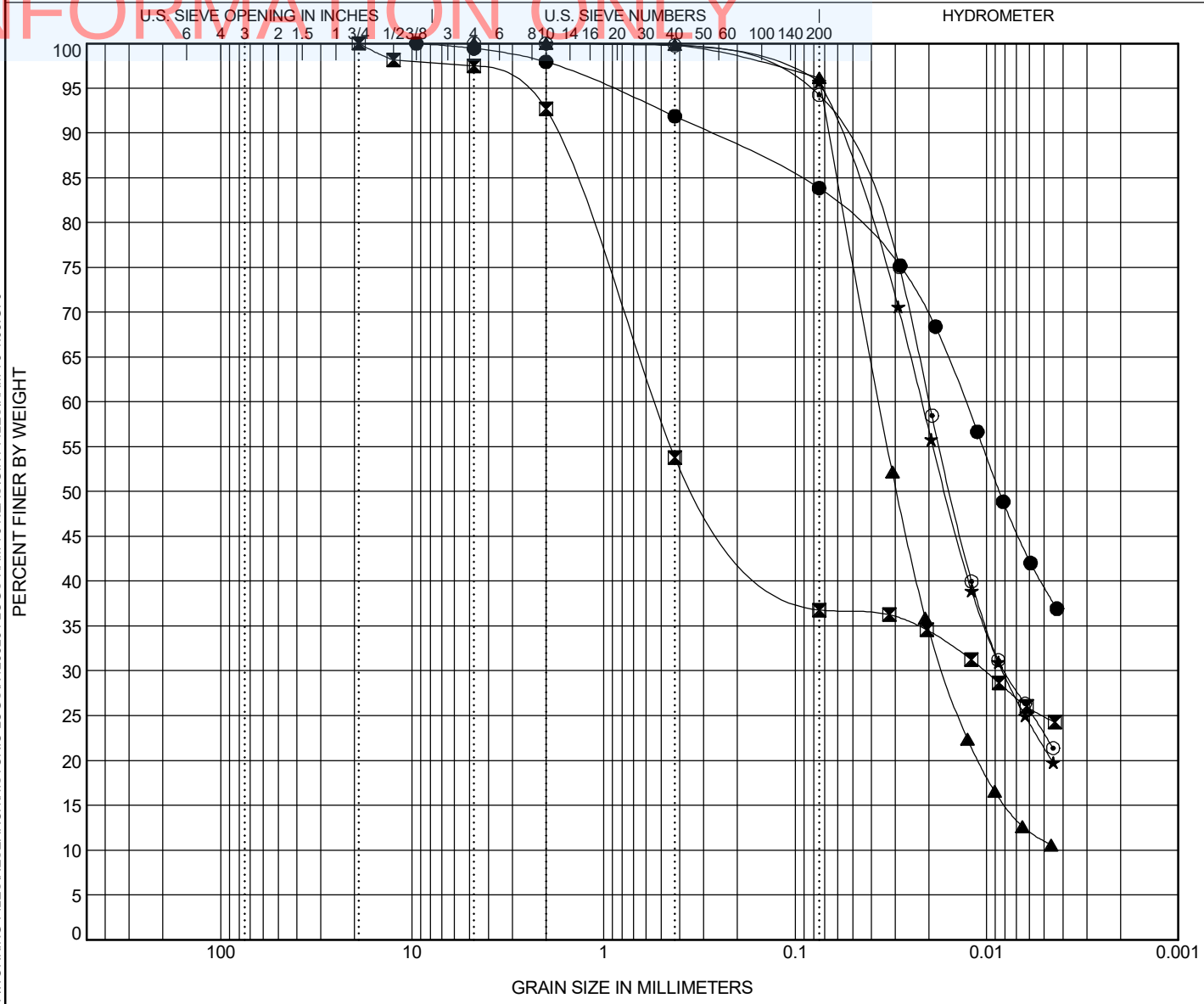
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GRAIN SIZE DISTRIBUTION

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PROJECT HAM-75-1.05 **PID** 113361

OGE NUMBER 0 **PROJECT TYPE**



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-054-0-21	5.0	A-7-6 ~ LEAN CLAY with SAND(CL)	45	24	21
⊠	B-054-0-21	8.0	A-7-6 ~ CLAYEY SAND(SC)	46	22	24
▲	B-054-0-21	15.0	A-4b ~ SILT(ML)	NP	NP	NP
★	B-054-0-21	27.5	A-4b ~ LEAN CLAY(CL)	28	19	9
⊙	B-054-0-21	35.0	A-4b ~ SILTY CLAY(CL-ML)	26	21	5

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-054-0-21	5.0	0.283	0.009			2	6	8	45	39		
⊠	B-054-0-21	8.0	1.796	0.288	0.01		7	39	17	12	25		
▲	B-054-0-21	15.0	0.066	0.029	0.017		0	0	4	85	11		
★	B-054-0-21	27.5	0.06	0.017	0.008		0	0	4	75	21		
⊙	B-054-0-21	35.0	0.061	0.016	0.008		0	0	6	71	23		

GRAIN SIZE - OH DOT.GDT - 12/13/24 15:50 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\GINT FILES\HAM-75-1.05.GPJ

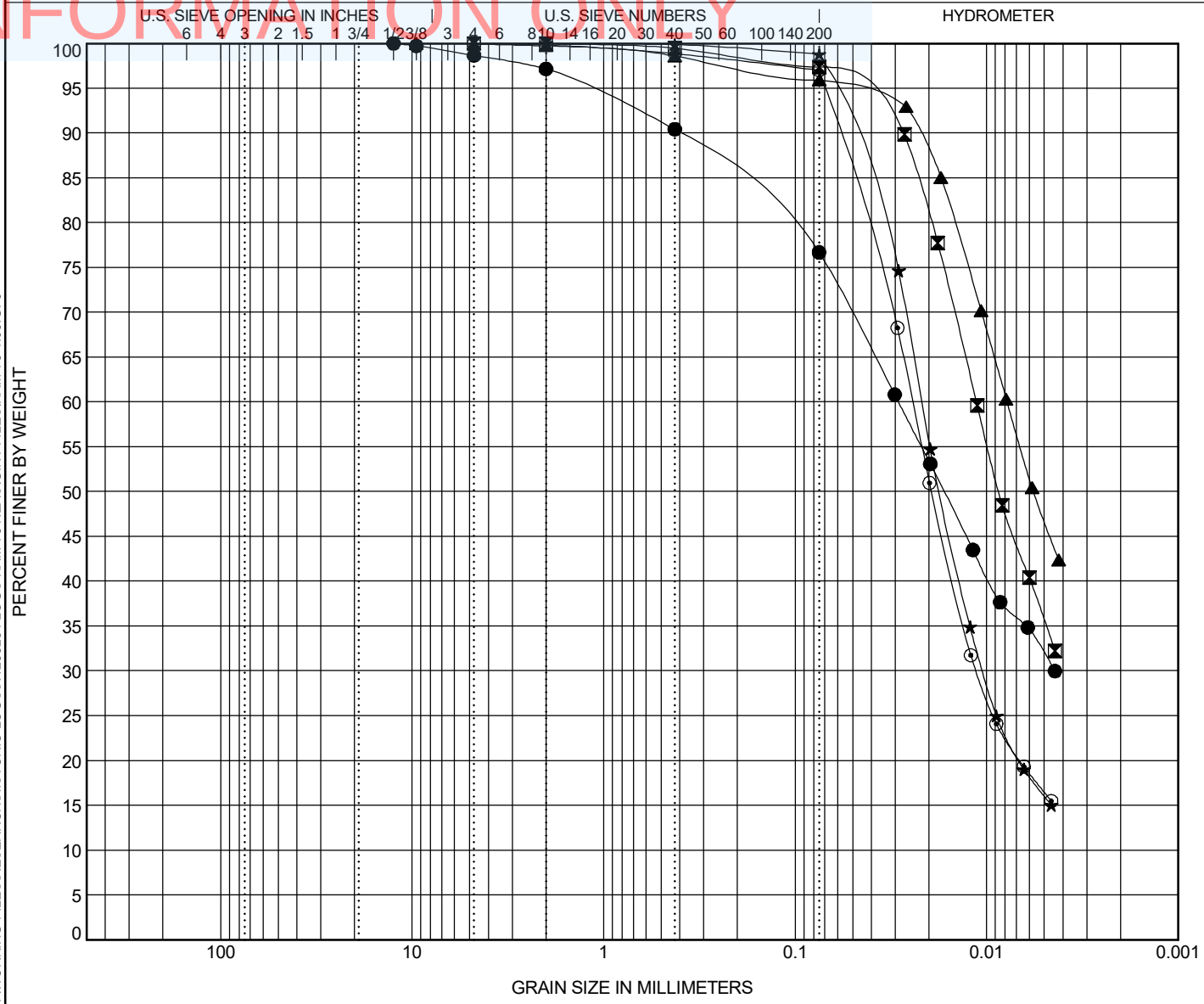
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GRAIN SIZE DISTRIBUTION

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PROJECT HAM-75-1.05 **PID** 113361

OGE NUMBER 0 **PROJECT TYPE**



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-058-0-21	2.5	A-6a ~ LEAN CLAY with SAND(CL)	31	17	14
⊠	B-058-0-21	5.0	A-4b ~ LEAN CLAY(CL)	29	21	8
▲	B-058-0-21	7.5	A-6a ~ LEAN CLAY(CL)	35	22	13
★	B-058-0-21	27.5	A-4b ~ SILT(ML)	NP	NP	NP
⊙	B-058-0-21	35.0	A-4b ~ SILT(ML)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-058-0-21	2.5	0.403	0.017	0.004		2	7	14	45	32		
⊠	B-058-0-21	5.0	0.027	0.009			1	0	2	61	36		
▲	B-058-0-21	7.5	0.023	0.006			0	1	3	49	47		
★	B-058-0-21	27.5	0.053	0.018	0.01		0	0	1	83	16		
⊙	B-058-0-21	35.0	0.06	0.019	0.011		0	1	2	81	16		

GRAIN SIZE - OH DOT.GDT - 12/13/24 15:50 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\GINT FILES\HAM-75-1.05.GPJ

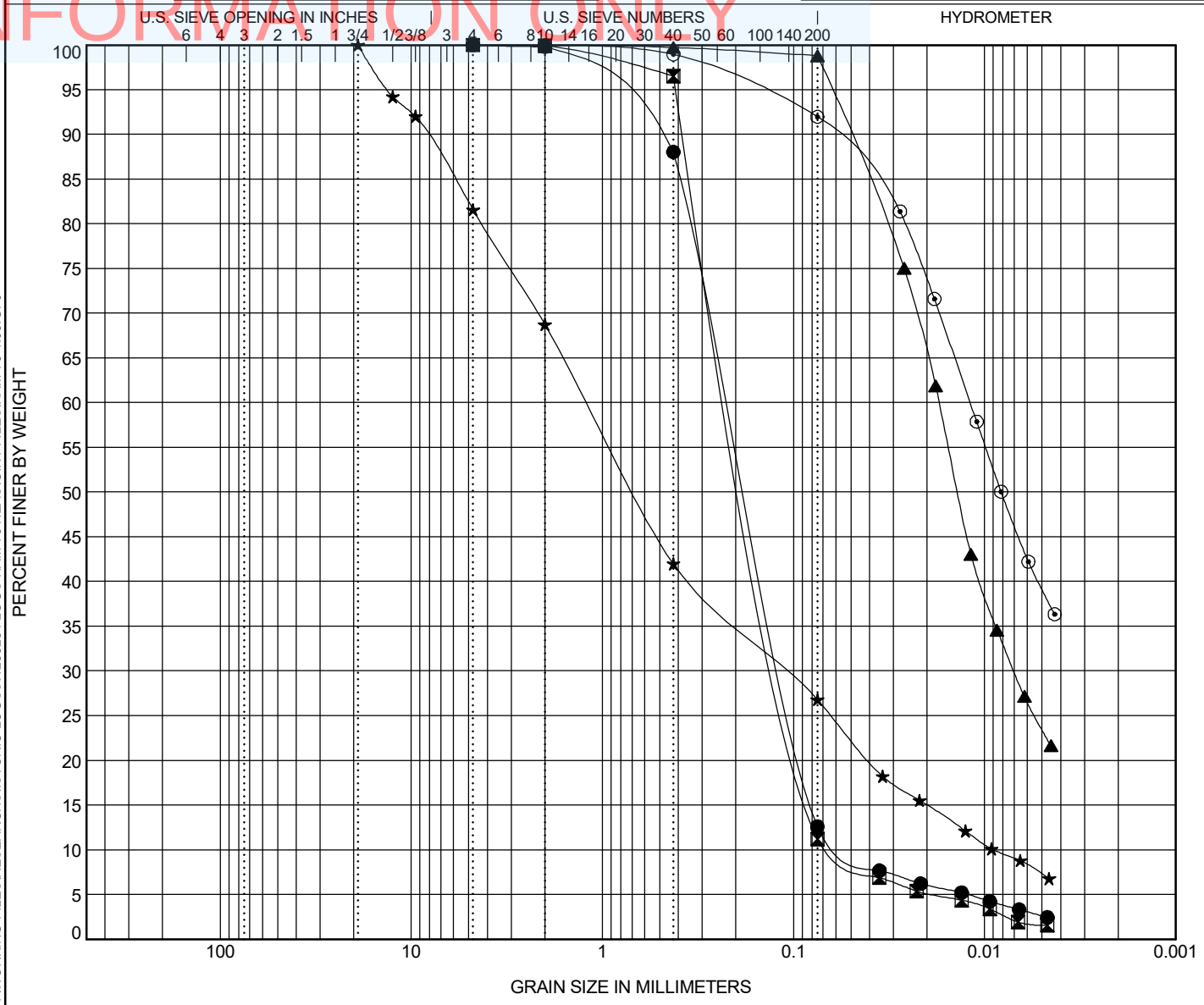
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PROJECT HAM-75-1.05 **PID** 113361

OGE NUMBER 0 **PROJECT TYPE**



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-060-0-21	3.0	A-3a ~ SILTY SAND(SM)	NP	NP	NP
⊠	B-060-0-21	4.5	A-3a ~ POORLY GRADED SAND with SILT(SP-SM)	NP	NP	NP
▲	B-060-0-21	17.5	A-4b ~ SILT(ML)	NP	NP	NP
★	B-061-0-21	2.5	A-2-4 ~ SILTY SAND with GRAVEL(SM)	NP	NP	NP
⊙	B-061-0-21	5.0	A-6a ~ LEAN CLAY(CL)	34	19	15

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-060-0-21	3.0	0.55	0.177	0.112	0.051	0	12	75	10	3	1.11	4.40
⊠	B-060-0-21	4.5	0.372	0.165	0.11	0.061	1	3	85	9	2	0.98	3.31
▲	B-060-0-21	17.5	0.051	0.014	0.007		0	0	1	76	23		
★	B-061-0-21	2.5	8.308	0.676	0.108	0.009	31	27	15	20	7	1.08	134.05
⊙	B-061-0-21	5.0	0.062	0.008			0	1	7	53	39		

GRAIN SIZE - OH DOT.GDT - 12/13/24 15:51 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\GINT FILES\HAM-75-1.05.GPJ

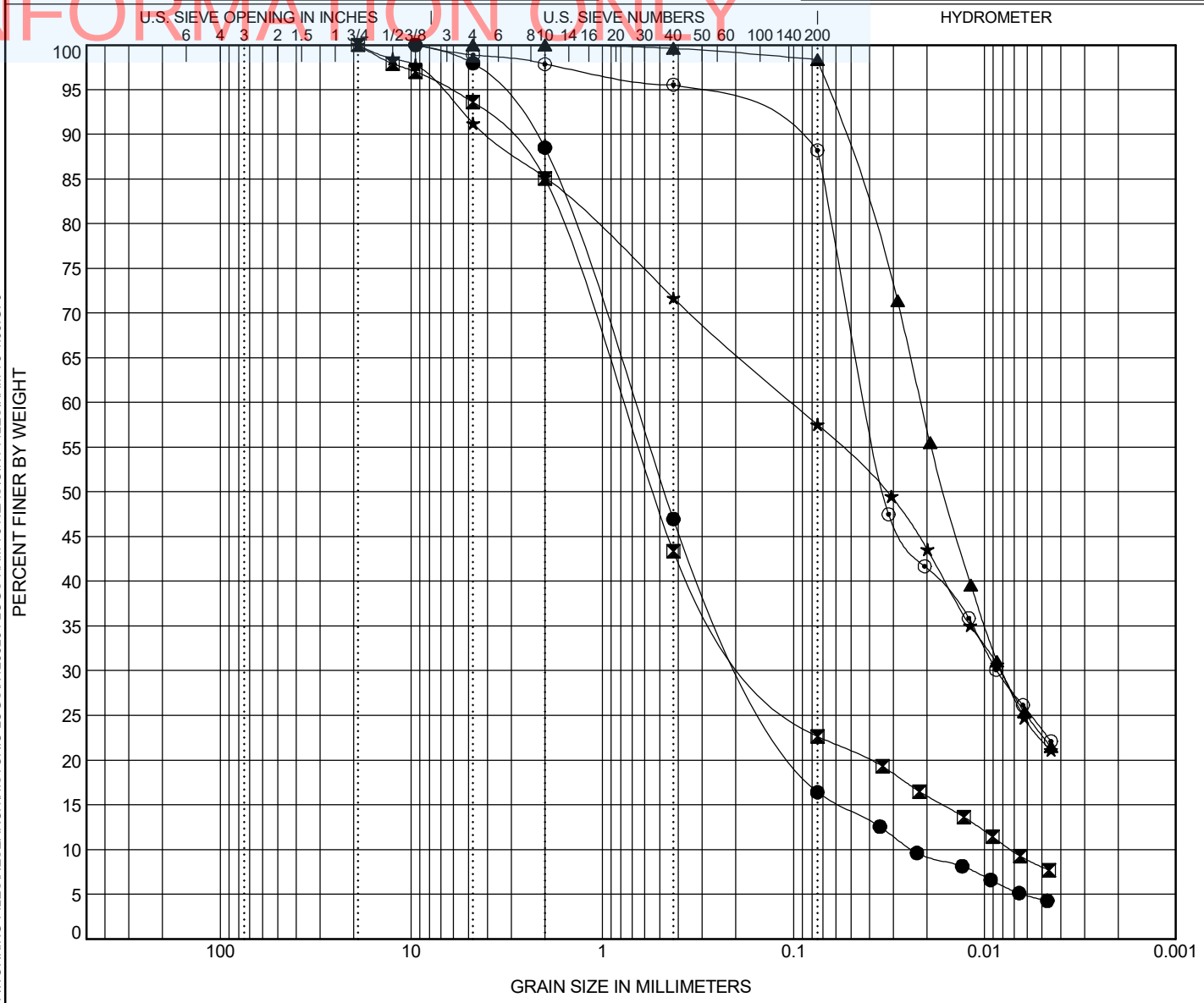
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PROJECT HAM-75-1.05 **PID** 113361

OGE NUMBER 0 **PROJECT TYPE**



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-061-0-21	10.0	A-1-b ~ SILTY SAND(SM)	NP	NP	NP
⊠	B-061-0-21	15.0	A-1-b ~ SILTY SAND(SM)	NP	NP	NP
▲	B-061-0-21	30.0	A-4b ~ SILT(ML)	NP	NP	NP
★	B-063-0-21	2.5	A-4a ~ SANDY LEAN CLAY(CL)	28	18	10
⊙	B-063-0-21	7.5	A-6a ~ LEAN CLAY(CL)	31	19	12

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-061-0-21	10.0	2.292	0.476	0.162	0.024	11	42	31	12	4	1.59	28.76
⊠	B-061-0-21	15.0	3.299	0.544	0.139	0.007	14	42	21	15	8	3.35	107.76
▲	B-061-0-21	30.0	0.056	0.016	0.008		1	0	1	75	23		
★	B-063-0-21	2.5	3.98	0.032	0.008		14	14	14	36	22		
⊙	B-063-0-21	7.5	0.114	0.034	0.009		3	2	7	65	23		

GRAIN SIZE - OH DOT.GDT - 12/13/24 15:52 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\GINT FILES\HAM-75-1.05.GPJ

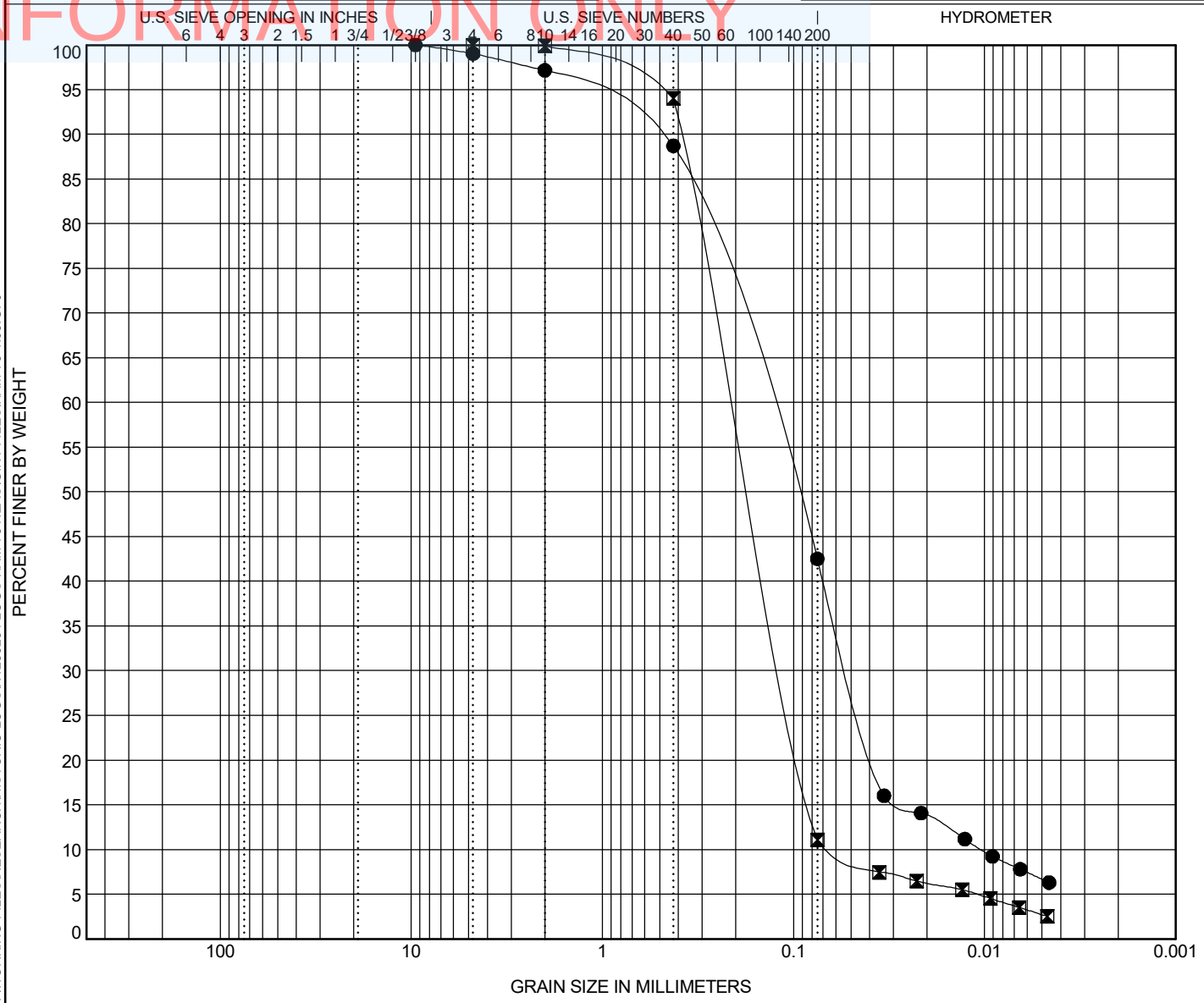
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PROJECT HAM-75-1.05 **PID** 113361

OGE NUMBER 0 **PROJECT TYPE**



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-063-0-21	20.0	**A-4a ~ SILTY SAND(SM)**	**NP**	**NP**	**NP**
⊠	B-063-0-21	27.5	**A-3a ~ POORLY GRADED SAND with SILT(SP-SM)**	**NP**	**NP**	**NP**

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-063-0-21	20.0	**0.538**	**0.099**	**0.051**	**0.01**	**3**	**8**	**46**	**36**	**7**	**1.75**	**13.89**
⊠	B-063-0-21	27.5	**0.391**	**0.169**	**0.111**	**0.06**	**0**	**6**	**83**	**8**	**3**	**0.99**	**3.46**

GRAIN SIZE - OH DOT.GDT - 12/13/24 15:52 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\N1235254 LOGS-HAM-75 NEAS\GINT FILES\HAM-75-1.05.GPJ

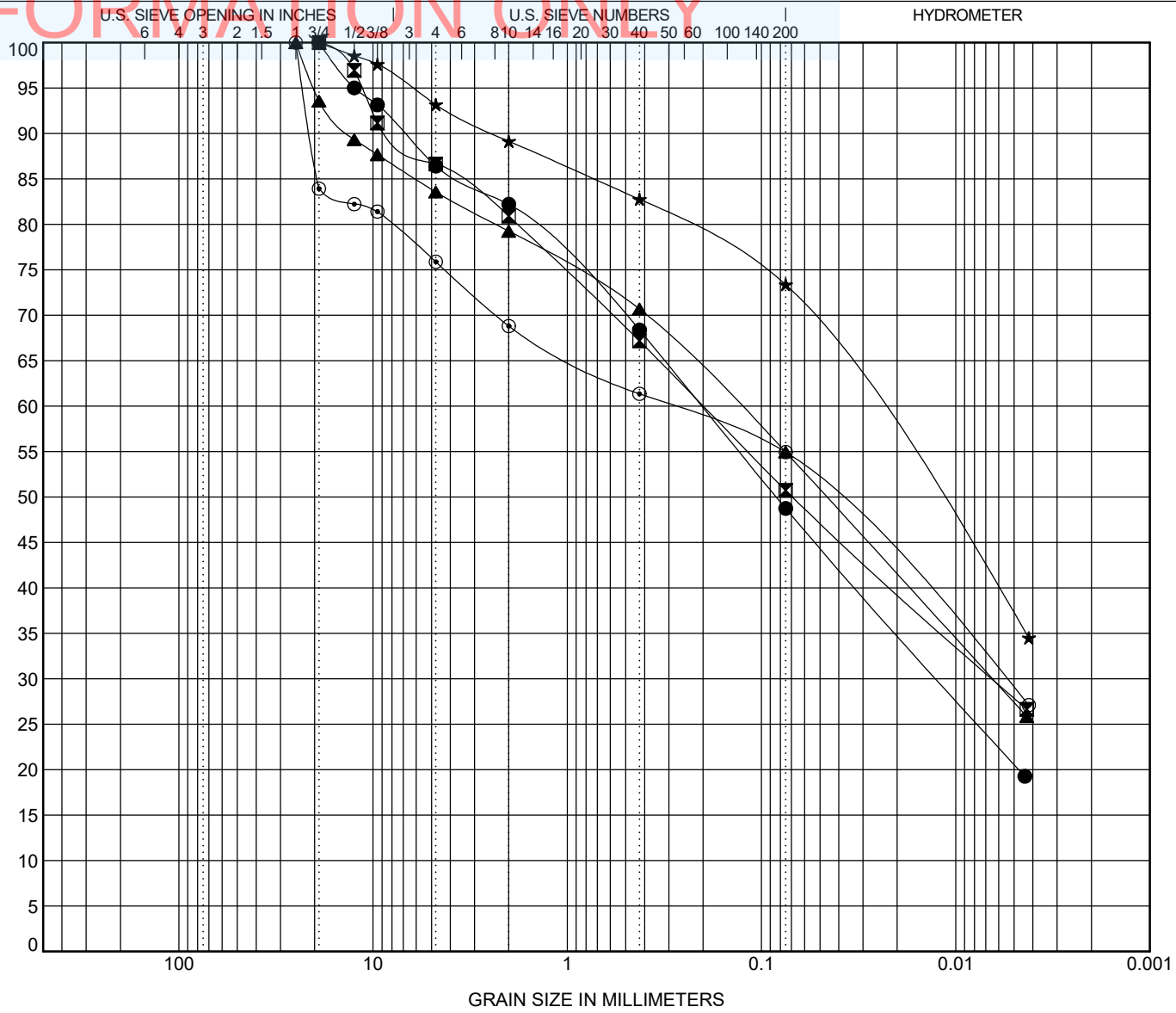
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT HAM-75-01.05 **PID** 113361

OGE NUMBER HAM-75-1.05 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-064-0-21	3.0	A-4a ~ CLAYEY SAND(SC)	26	16	10
⊠	B-064-0-21	4.5	A-6b ~ SANDY LEAN CLAY(CL)	31	15	16
▲	B-064-0-21	6.0	A-6a ~ SANDY LEAN CLAY with GRAVEL(CL)	32	18	14
★	B-064-0-21	8.5	A-6b ~ LEAN CLAY with SAND(CL)	37	20	17
⊙	B-064-0-21	16.0	A-6a ~ GRAVELLY LEAN CLAY with SAND(CL)	38	23	15

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-064-0-21	3.0	6.876	0.084	0.012		17	14	20	28	21		
⊠	B-064-0-21	4.5	7.965	0.069	0.006		19	14	16	23	28		
▲	B-064-0-21	6.0	13.365	0.046	0.006		20	9	16	28	27		
★	B-064-0-21	8.5	2.405	0.013			12	6	9	36	37		
⊙	B-064-0-21	16.0	21.075	0.045	0.006		32	7	6	26	29		

GRAIN SIZE - OH DOT.GDT - 5/21/25 14:45 - N:\PROJECTS\2021\N1215225\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215225 HAM-75-ODOT_10-28-2022.GPJ

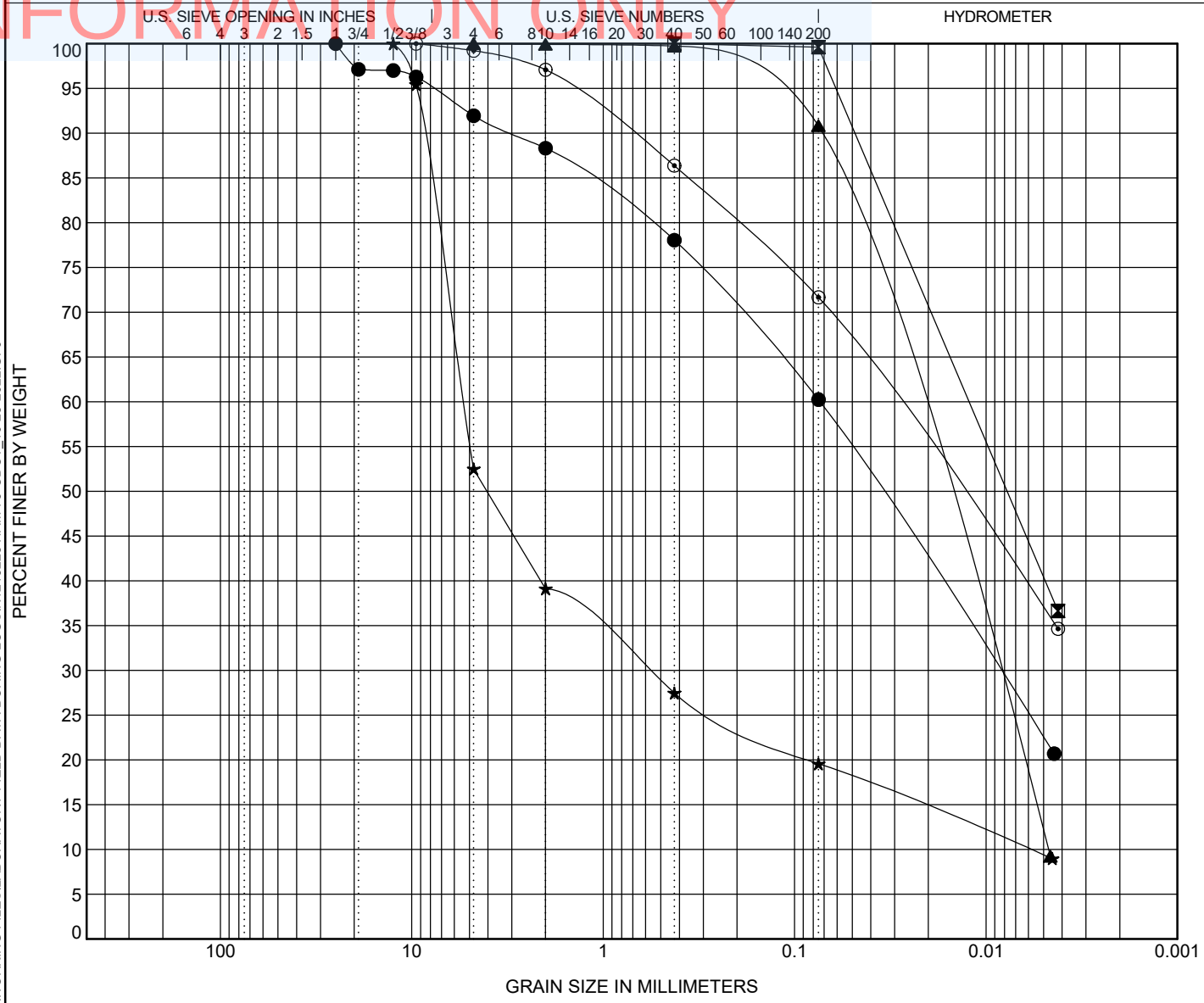
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
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PROJECT HAM-75-01.05 **PID** 113361

OGE NUMBER HAM-75-1.05 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-064-0-21	23.5	A-4a ~ SANDY LEAN CLAY(CL)	28	18	10
⊠	B-064-0-21	33.5	A-4b ~ LEAN CLAY(CL)	29	20	9
▲	B-064-0-21	43.5	A-4b ~ SILT(ML)	NP	NP	NP
★	B-065-0-21	2.5	A-2-4 ~ CLAYEY GRAVEL with SAND(GC)	25	15	10
⊙	B-065-0-21	4.0	A-6a ~ LEAN CLAY with SAND(CL)	31	17	14

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-064-0-21	23.5	2.985	0.036	0.009		12	10	18	38	22		
⊠	B-064-0-21	33.5	0.048	0.008			0	0	0	60	40		
▲	B-064-0-21	43.5	0.073	0.019	0.009	0.005	0	0	9	79	12	0.71	5.53
★	B-065-0-21	2.5	8.702	4.041	0.595	0.006	60	12	8	11	9	11.17	907.95
⊙	B-065-0-21	4.0	0.718	0.014			2	11	15	35	37		

GRAIN SIZE - OH DOT.GDT - 5/21/25 14:45 - N:\PROJECTS\2021\N1215225\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215225 HAM-75-ODOT_10-28-2022.GPJ

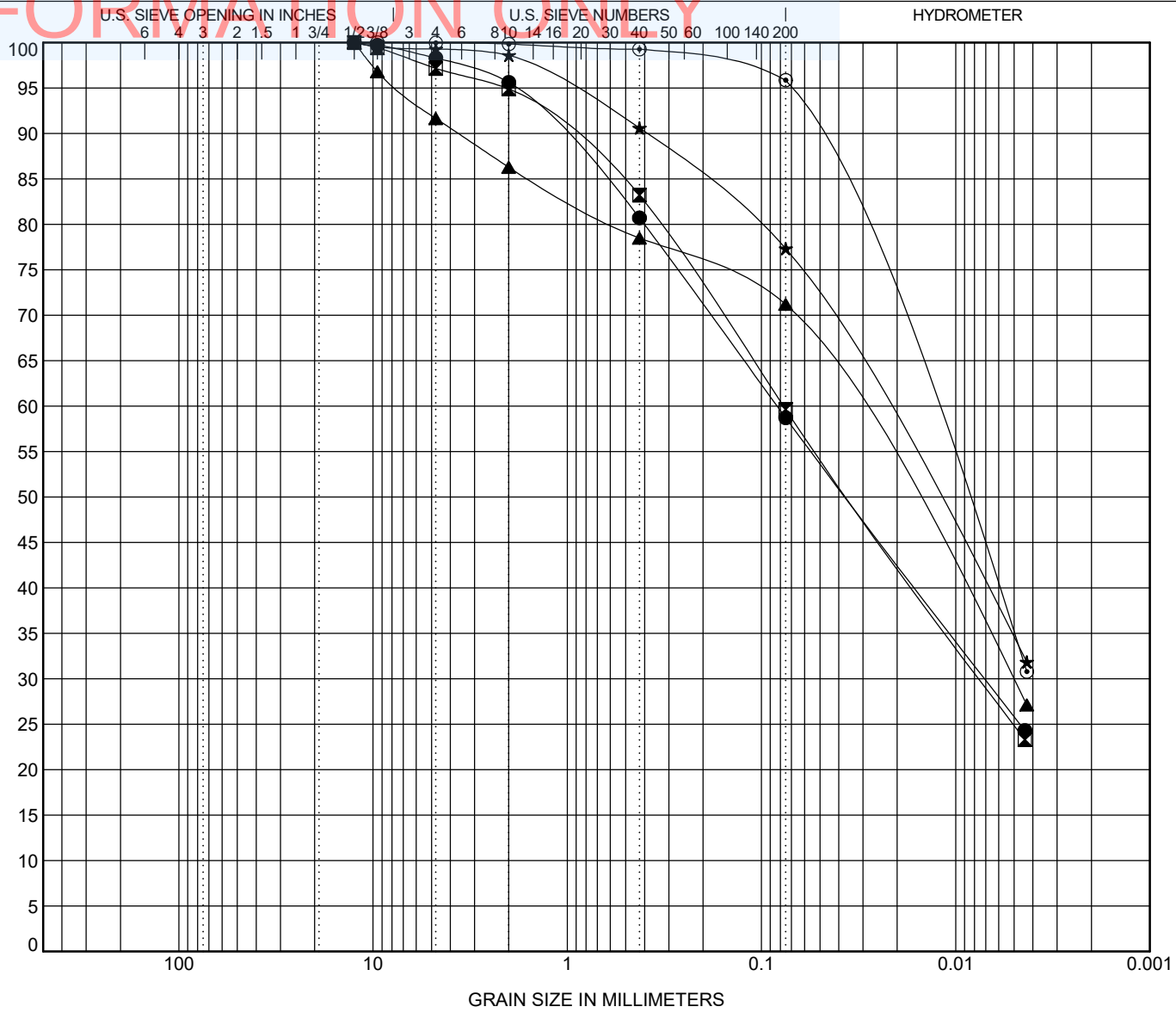
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
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PROJECT HAM-75-01.05 **PID** 113361

OGE NUMBER HAM-75-1.05 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-065-0-21	5.5	A-6a ~ SANDY LEAN CLAY(CL)	30	16	14
⊠	B-065-0-21	8.5	A-4a ~ SANDY LEAN CLAY(CL)	25	15	10
▲	B-065-0-21	16.0	A-6a ~ LEAN CLAY with SAND(CL)	34	21	13
★	B-065-0-21	18.5	A-6b ~ LEAN CLAY with SAND(CL)	34	18	16
⊙	B-065-0-21	23.5	A-4b ~ LEAN CLAY(CL)	31	21	10

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-065-0-21	5.5	1.116	0.037	0.007		4	15	22	33	26		
⊠	B-065-0-21	8.5	1.045	0.035	0.007		4	12	24	35	25		
▲	B-065-0-21	16.0	3.646	0.019	0.005		14	8	7	42	29		
★	B-065-0-21	18.5	0.393	0.013			2	8	13	43	34		
⊙	B-065-0-21	23.5	0.058	0.01			0	1	3	62	34		

GRAIN SIZE - OH DOT.GDT - 5/21/25 14:45 - N:\PROJECTS\2021\N1215225\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215225 HAM-75-ODOT_10-28-2022.GPJ

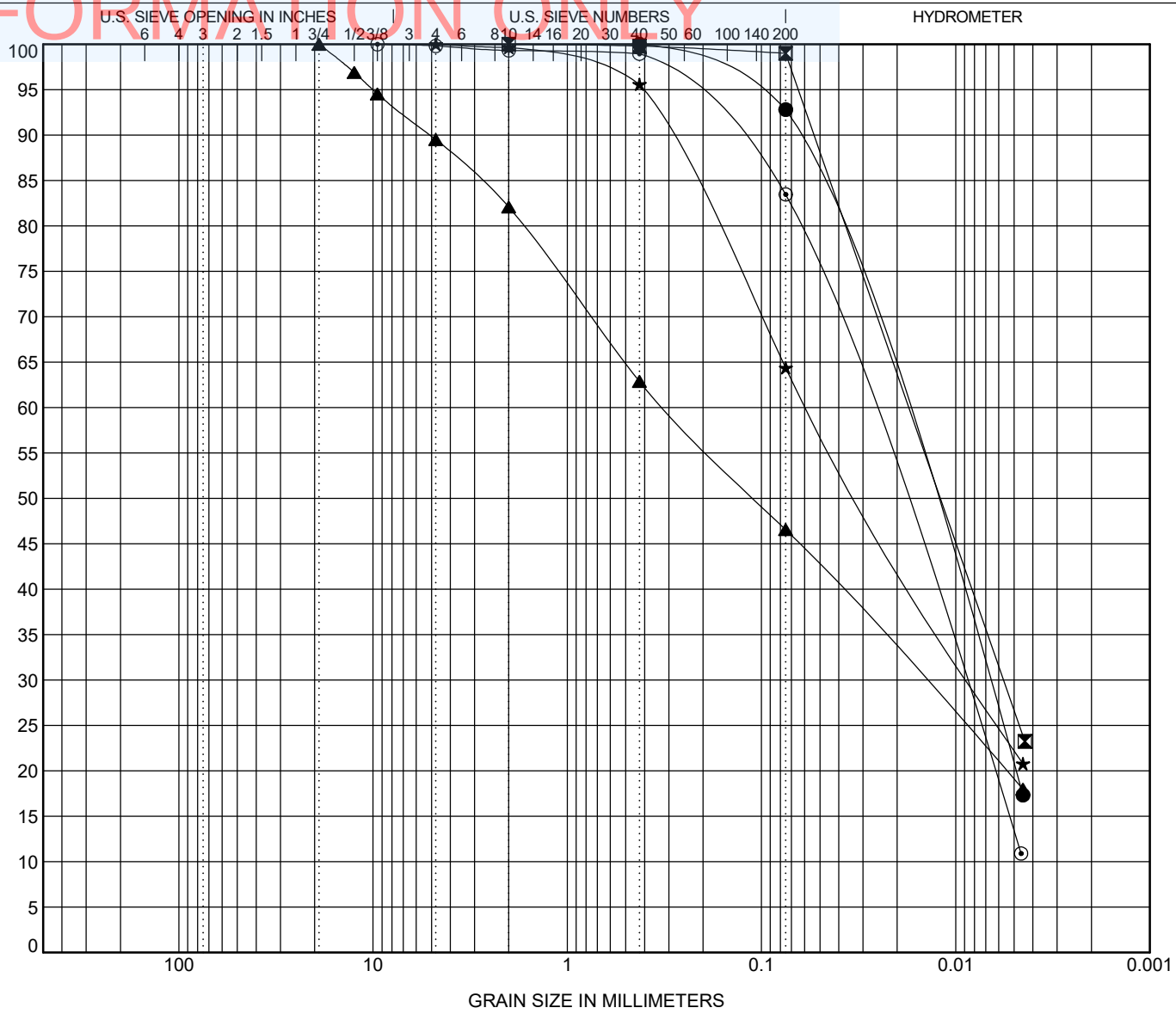
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
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PROJECT HAM-75-01.05 **PID** 113361

OGE NUMBER HAM-75-1.05 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-065-0-21	38.5	A-4b ~ SILTY CLAY(CL-ML)	25	18	7
⊠	B-065-0-21	43.5	A-4b ~ LEAN CLAY(CL)	29	20	9
▲	B-067-0-21	3.5	A-6a ~ CLAYEY SAND(SC)	31	19	12
★	B-067-0-21	8.5	A-6a ~ SANDY LEAN CLAY(CL)	29	15	14
⊙	B-067-0-21	18.5	A-4b ~ SILTY CLAY with SAND(CL-ML)	24	18	6

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-065-0-21	38.5	0.068	0.015	0.007		0	0	7	73	20		
⊠	B-065-0-21	43.5	0.054	0.012	0.006		0	0	1	72	27		
▲	B-067-0-21	3.5	5.093	0.108	0.015		18	19	16	28	19		
★	B-067-0-21	8.5	0.312	0.03	0.008		1	4	31	42	22		
⊙	B-067-0-21	18.5	0.156	0.021	0.01		2	0	15	70	13		

GRAIN SIZE - OH DOT.GDT - 5/21/25 14:45 - N:\PROJECTS\2021\N1215225\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215225 HAM-75-ODOT_10-28-2022.GPJ

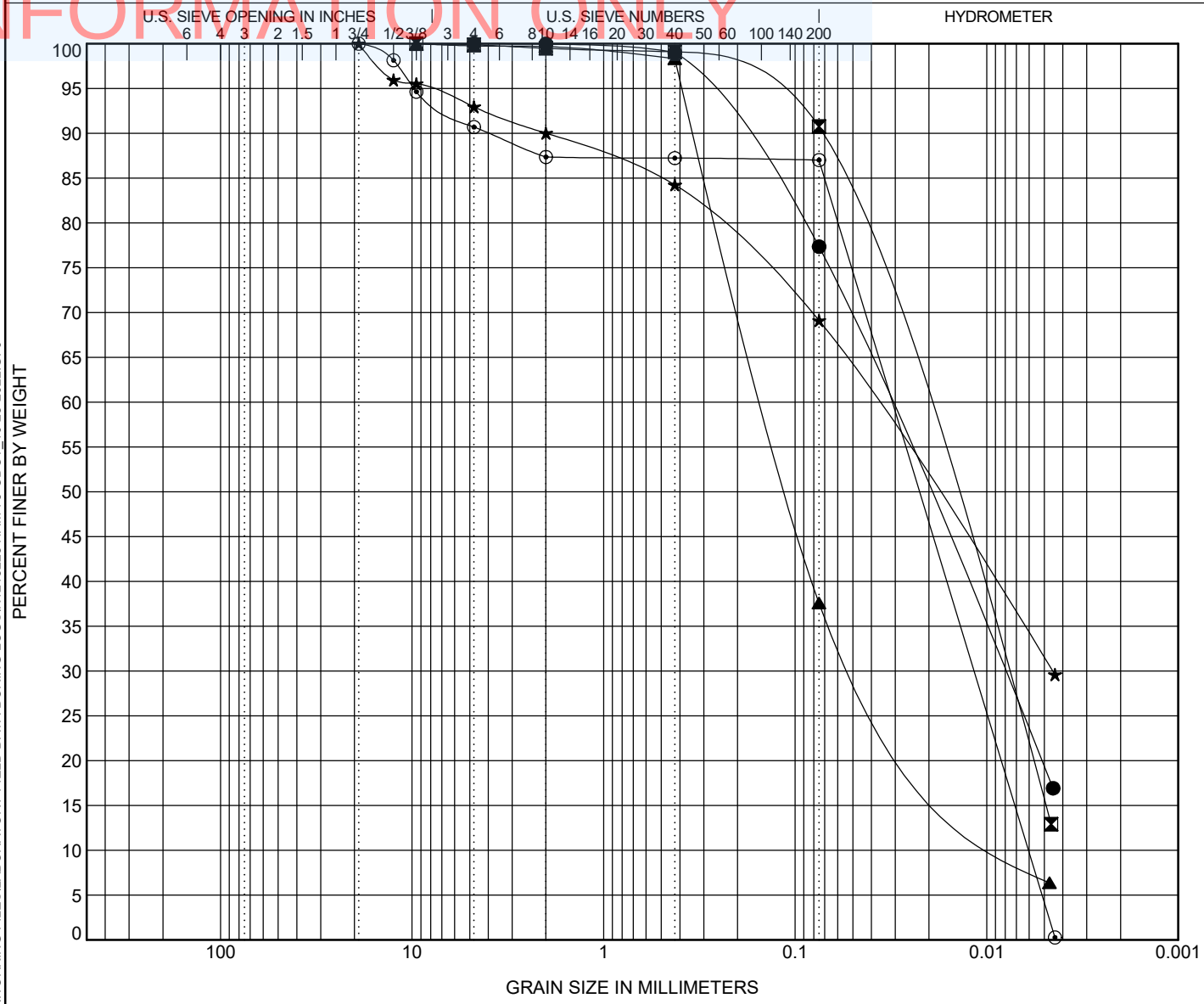
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT HAM-75-01.05 **PID** 113361

OGE NUMBER HAM-75-1.05 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-067-0-21	28.5	**A-4b ~ SILTY CLAY with SAND(CL-ML)**	23	18	5
⊠	B-067-0-21	33.5	**A-4b ~ SILTY CLAY(CL-ML)**	22	18	4
▲	B-067-0-21	38.5	**A-4a ~ SILTY SAND(SM)**	NP	NP	NP
★	B-068-0-21	4.5	**A-4a ~ SANDY LEAN CLAY(CL)**	25	15	10
⊙	B-068-0-21	13.5	**A-6a ~ LEAN CLAY(CL)**	23	12	11

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-067-0-21	28.5	0.207	0.021	0.008		0	1	22	58	19		
⊠	B-067-0-21	33.5	0.073	0.017	0.008		1	0	8	76	15		
▲	B-067-0-21	38.5	0.335	0.107	0.038	0.006	0	1	61	31	7	1.59	21.94
★	B-068-0-21	4.5	1.992	0.019	0.005		10	6	15	38	31		
⊙	B-068-0-21	13.5	3.968	0.022	0.012	0.006	13	0	0	83	4	0.72	5.13

GRAIN SIZE - OH DOT.GDT - 5/21/25 14:45 - N:\PROJECTS\2021\N1215225\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215225 HAM-75-ODOT_10-28-2022.GPJ

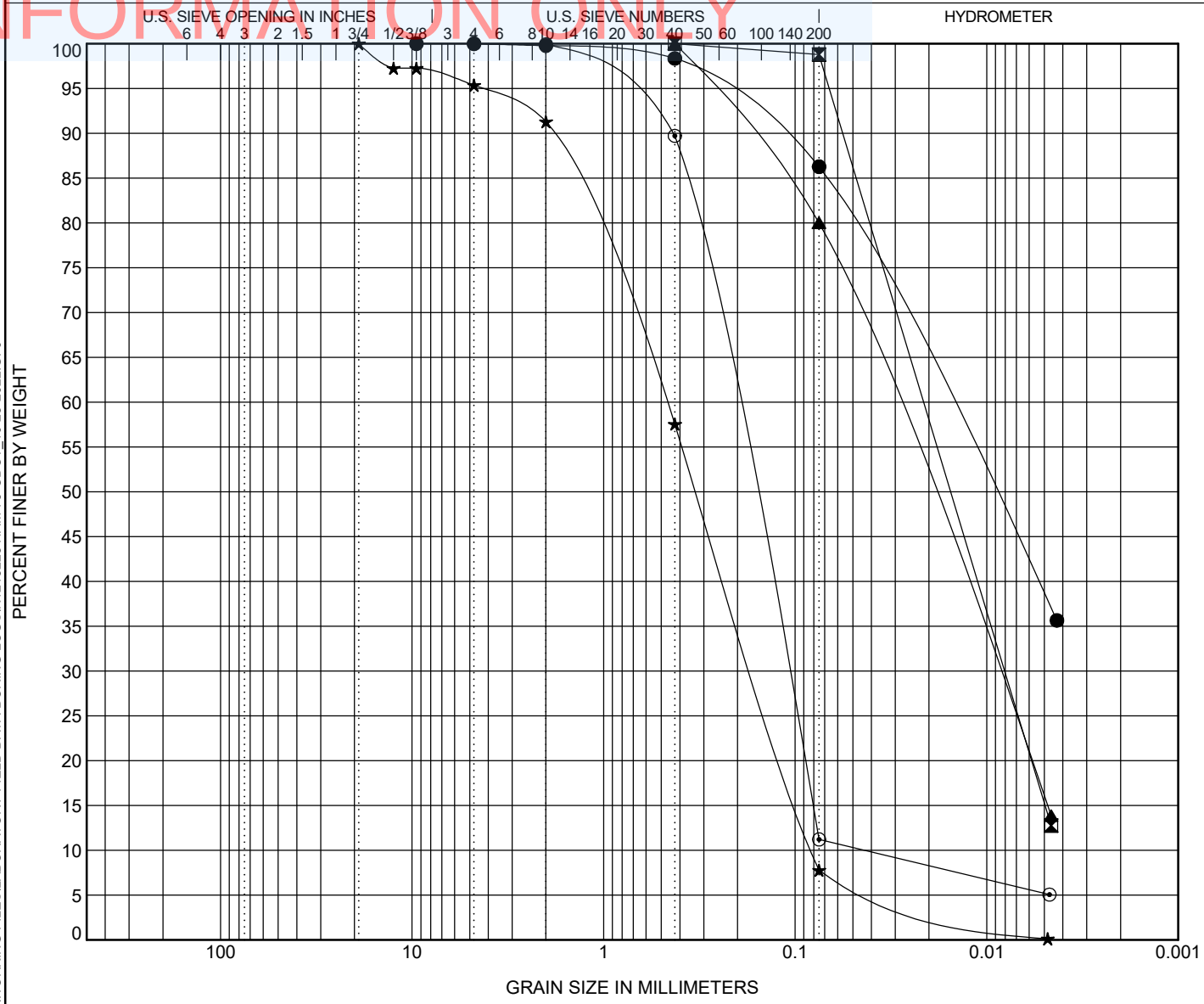
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT HAM-75-01.05 **PID** 113361

OGE NUMBER HAM-75-1.05 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-068-0-21	28.5	A-4a ~ SILT(ML)	NP	NP	NP
⊠	B-068-0-21	43.5	A-4b ~ SILT(ML)	NP	NP	NP
▲	B-068-0-21	53.5	A-4b ~ SILT with SAND(ML)	NP	NP	NP
★	B-068-0-21	68.5	A-3 ~ POORLY GRADED SAND with SILT(SP-SM)	NP	NP	NP
⊙	B-068-0-21	83.5	A-3a ~ POORLY GRADED SAND with SILT(SP-SM)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-068-0-21	28.5	0.128	0.01			1	1	12	48	38		
⊠	B-068-0-21	43.5	0.056	0.015	0.008		0	0	1	84	15		
▲	B-068-0-21	53.5	0.178	0.021	0.009		0	0	20	64	16		
★	B-068-0-21	68.5	1.885	0.327	0.163	0.081	8	34	50	8	0	0.69	5.87
⊙	B-068-0-21	83.5	0.444	0.177	0.114	0.043	0	10	79	6	5	1.35	5.07

GRAIN SIZE - OH DOT.GDT - 5/21/25 14:45 - N:\PROJECTS\2021\N1215225\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215225 HAM-75-ODOT_10-28-2022.GPJ

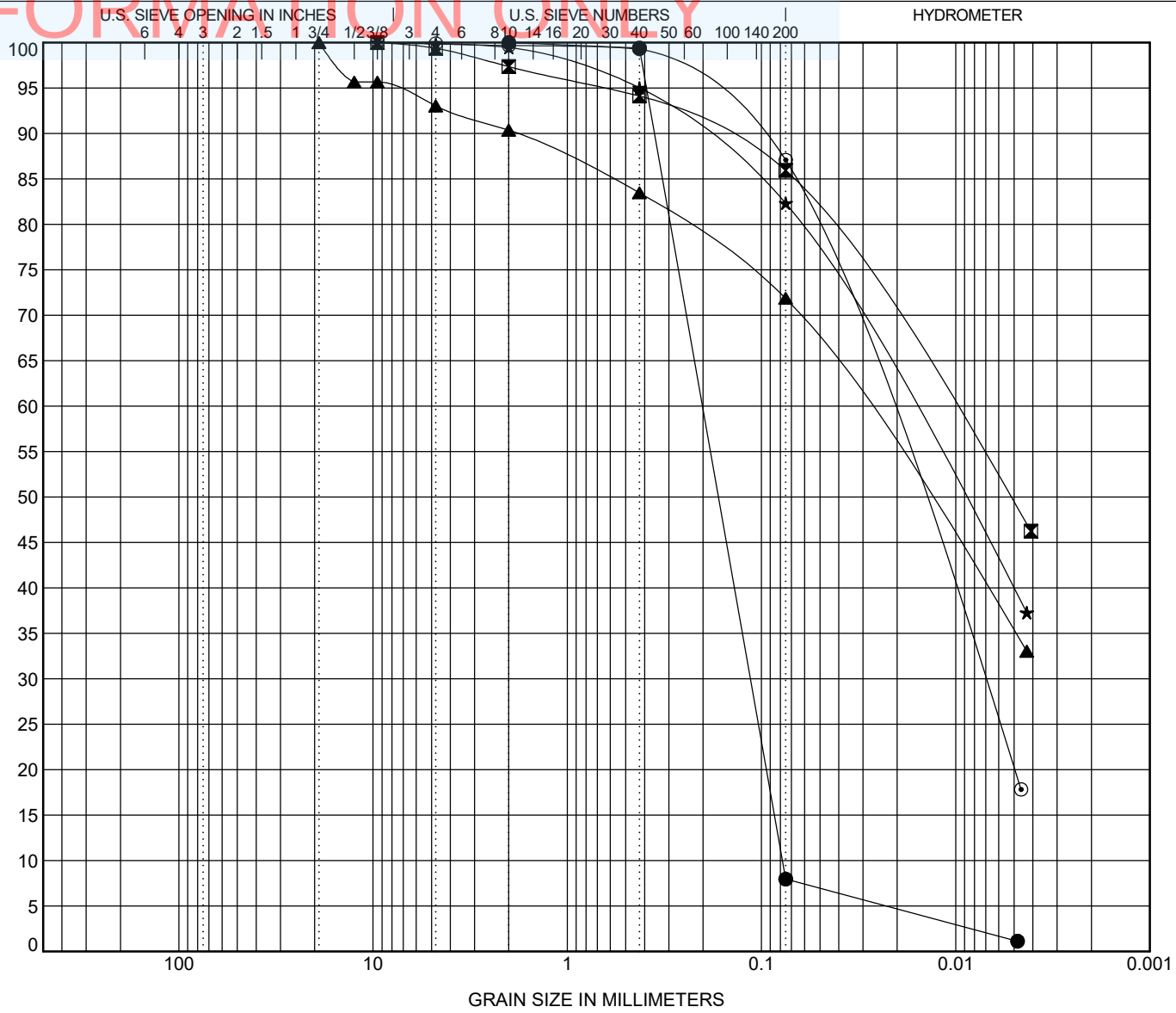
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT HAM-75-01.05 **PID** 113361

OGE NUMBER HAM-75-1.05 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-068-0-21	93.5	A-3 ~ POORLY GRADED SAND with SILT(SP-SM)	NP	NP	NP
⊠	B-071-0-21	13.5	A-4a ~ SILT(ML)	NP	NP	NP
▲	B-071-0-21	18.5	A-6b ~ LEAN CLAY with SAND(CL)	31	15	16
★	B-071-0-21	33.5	A-7-6 ~ LEAN CLAY with SAND(CL)	42	16	26
⊙	B-071-0-21	48.5	~			

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-068-0-21	93.5	0.356	0.166	0.114	0.078	0	1	91	7	1	0.83	2.58
⊠	B-071-0-21	13.5	0.178	0.005			3	3	8	37	49		
▲	B-071-0-21	18.5	1.846	0.015			9	7	12	37	35		
★	B-071-0-21	33.5	0.214	0.01			1	4	13	42	40		
⊙	B-071-0-21	48.5	0.114	0.017	0.008		1	0	12	67	20		

GRAIN SIZE - OH DOT.GDT - 5/21/25 14:45 - N:\PROJECTS\2021\N1215225\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215225 HAM-75-ODOT_10-28-2022.GPJ

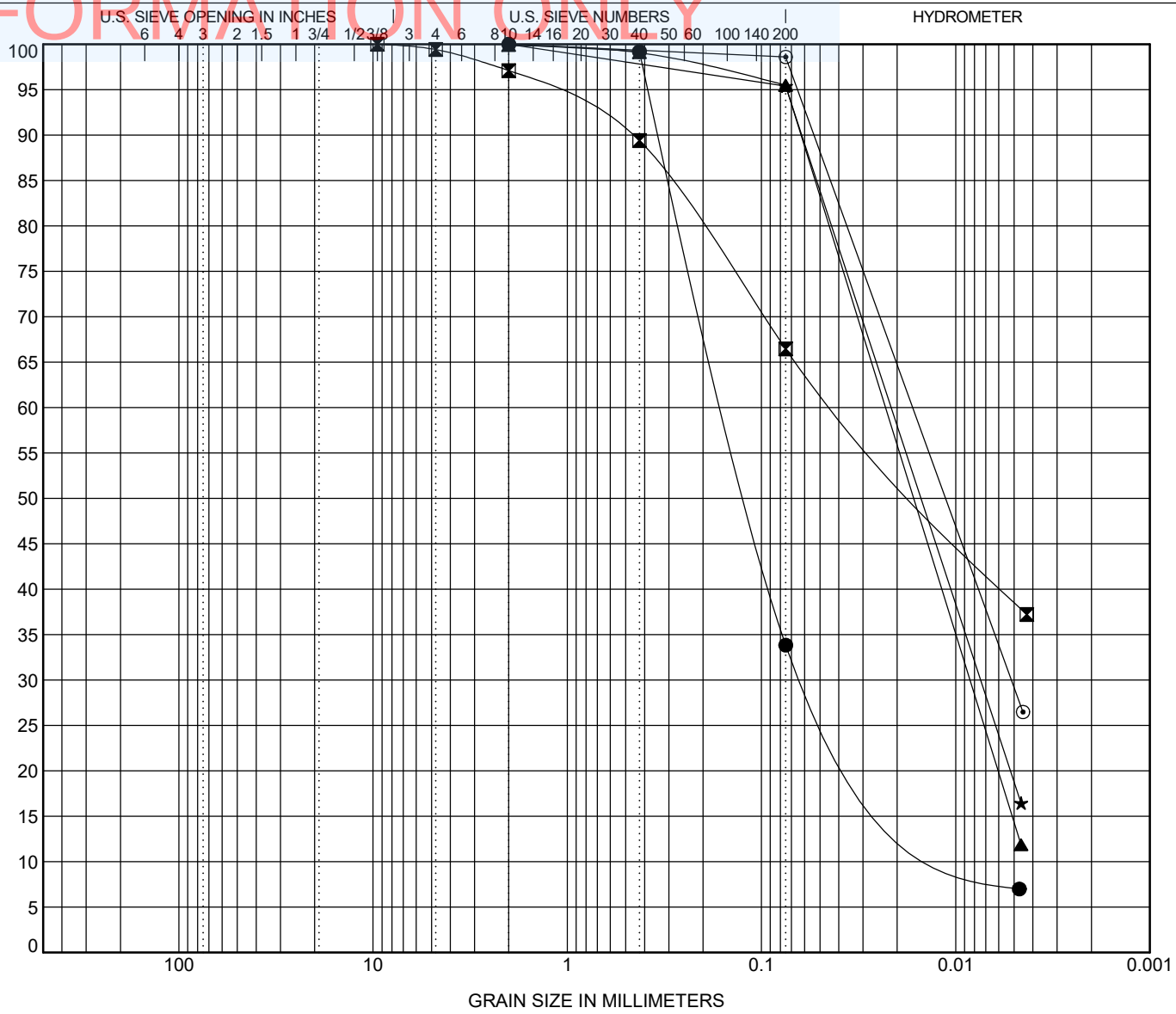
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GRAIN SIZE DISTRIBUTION

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PROJECT HAM-75-01.05 **PID** 113361

OGE NUMBER HAM-75-1.05 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-071-0-21	63.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP
⊠	B-074-0-21	6.0	A-6b ~ SANDY LEAN CLAY(CL)	36	17	19
▲	B-074-0-21	13.0	A-4b ~ LEAN CLAY(CL)	31	22	9
★	B-074-0-21	18.5	~		20	
⊙	B-074-0-21	28.5	~		18	

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-071-0-21	63.5	0.333	0.115	0.05	0.006	0	1	65	26	8	2.65	23.42
⊠	B-074-0-21	6.0	0.48	0.015			3	8	23	27	39		
▲	B-074-0-21	13.0	0.062	0.016	0.008		0	1	4	81	14		
★	B-074-0-21	18.5	0.062	0.015	0.007		0	3	2	76	19		
⊙	B-074-0-21	28.5	0.054	0.011	0.005		0	0	1	70	29		

GRAIN SIZE - OH DOT.GDT - 5/21/25 14:46 - N:\PROJECTS\2021\N1215225\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215225 HAM-75-ODOT_10-28-2022.GPJ

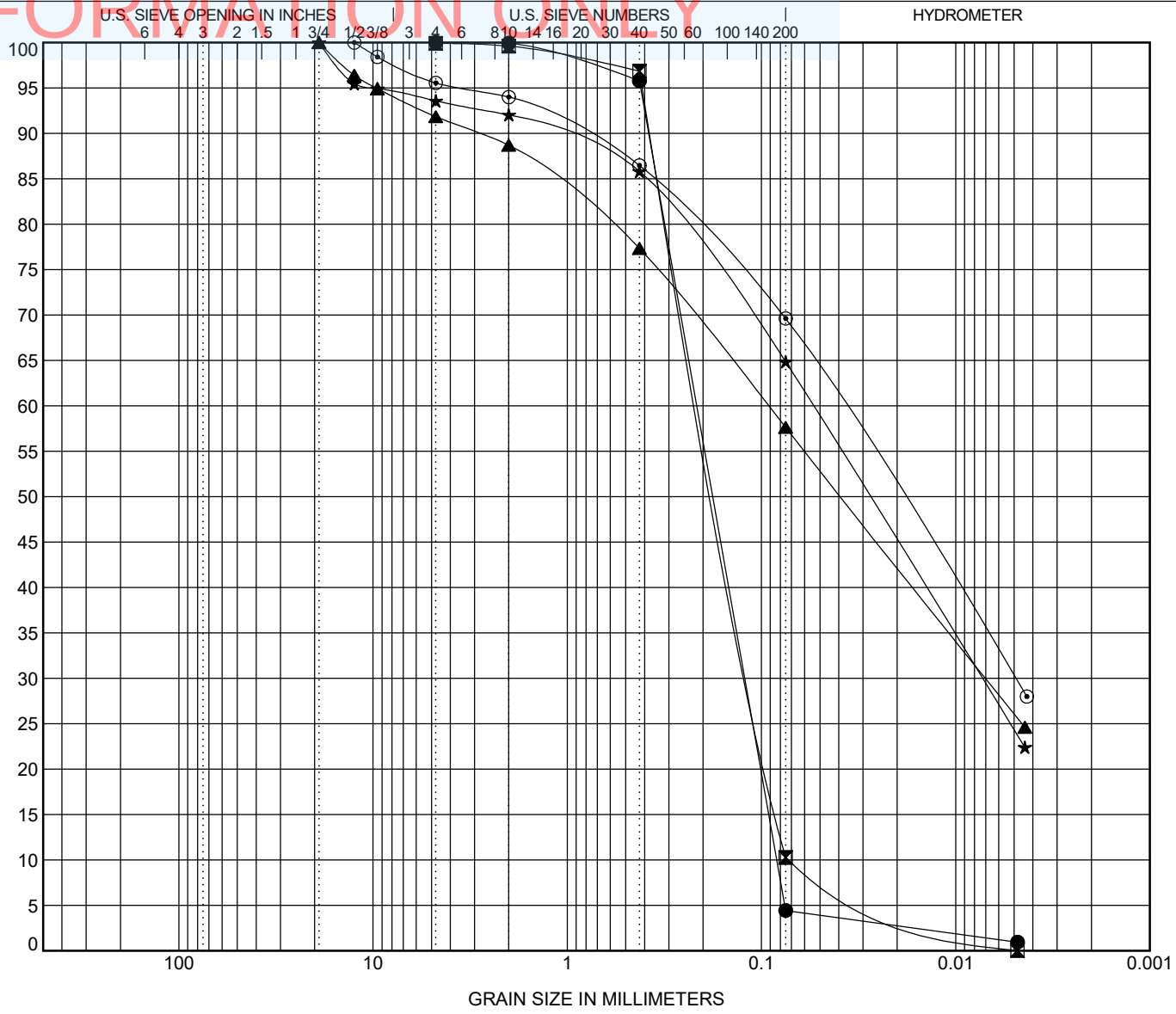
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GRAIN SIZE DISTRIBUTION

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PROJECT HAM-75-01.05 **PID** 113361

OGE NUMBER HAM-75-1.05 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-074-0-21	43.5	~ POORLY GRADED SAND(SP)			
⊠	B-074-0-21	53.5	~			
▲	B-075-0-21	2.5	A-6a ~ SANDY LEAN CLAY(CL)	27	15	12
★	B-075-0-21	4.0	A-4a ~ SANDY SILTY CLAY(CL-ML)	23	16	7
⊙	B-075-0-21	5.5	A-4a ~ SANDY LEAN CLAY(CL)	26	16	10

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-074-0-21	43.5	0.381	0.178	0.122	0.083	1	4	91	3	1	0.83	2.58
⊠	B-074-0-21	53.5	0.371	0.166	0.111	0.07	0	3	87	10	0	0.87	2.91
▲	B-075-0-21	2.5	2.865	0.039	0.007		11	11	20	32	26		
★	B-075-0-21	4.0	1.203	0.028	0.007		8	6	21	41	24		
⊙	B-075-0-21	5.5	0.879	0.019	0.005		5	8	17	40	30		

GRAIN SIZE - OH DOT.GDT - 5/21/25 14:46 - N:\PROJECTS\2021\N1215225\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215225 HAM-75-ODOT_10-28-2022.GPJ

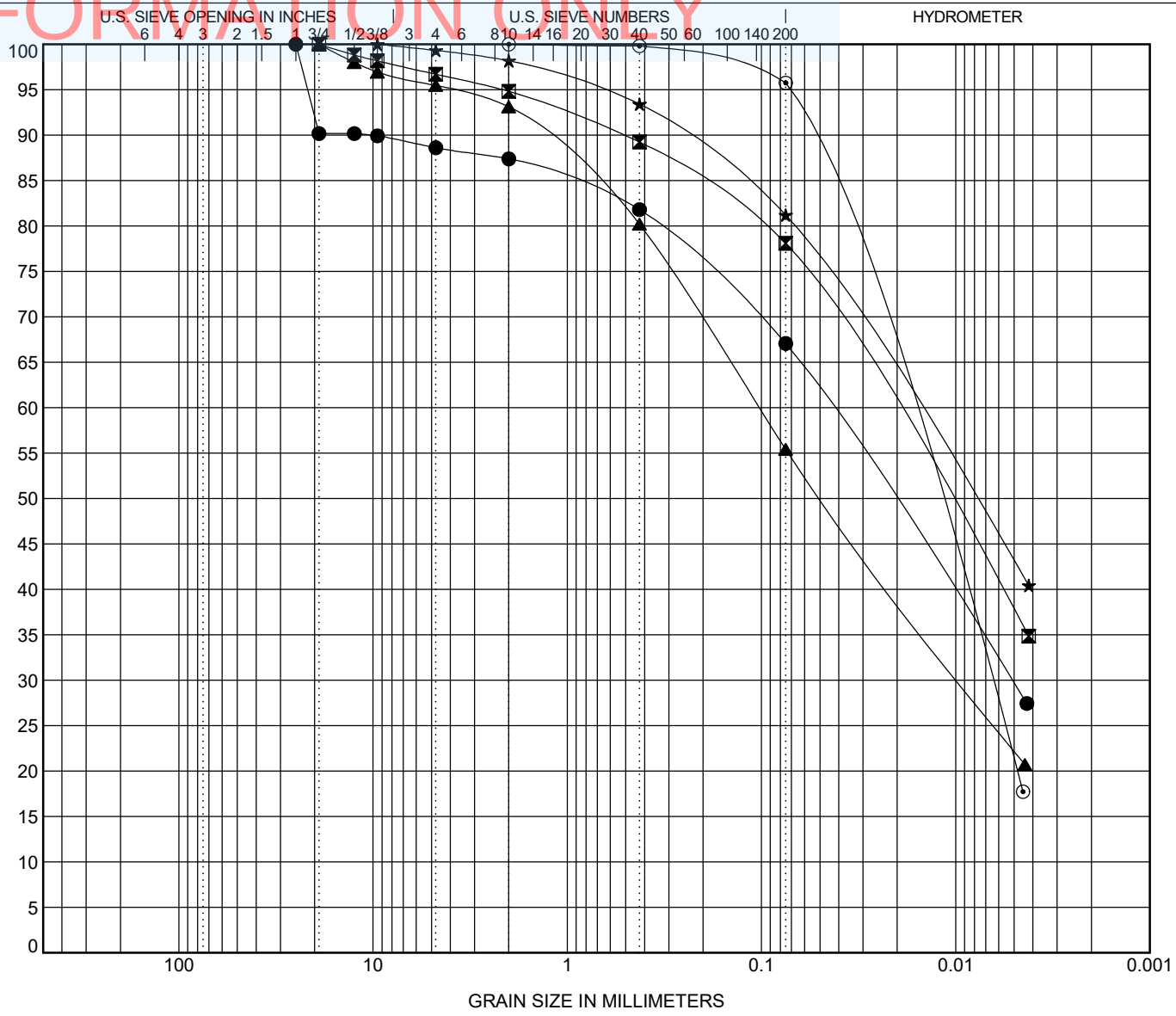
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GRAIN SIZE DISTRIBUTION

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OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT HAM-75-01.05 **PID** 113361

OGE NUMBER HAM-75-1.05 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-075-0-21	13.5	A-6a ~ SANDY LEAN CLAY(CL)	29	16	13
⊠	B-075-0-21	18.5	A-6a ~ LEAN CLAY with SAND(CL)	30	17	13
▲	B-075-0-21	23.5	A-4a ~ SANDY LEAN CLAY(CL)	24	15	9
★	B-075-0-21	33.5	A-7-6 ~ LEAN CLAY with SAND(CL)	44	23	21
⊙	B-075-0-21	48.5	A-4b ~ SILTY CLAY(CL-ML)	24	19	5

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-075-0-21	13.5	10.41	0.022	0.005		12	6	15	37	30		
⊠	B-075-0-21	18.5	0.525	0.012			5	6	11	41	37		
▲	B-075-0-21	23.5	1.376	0.048	0.009		7	13	25	33	22		
★	B-075-0-21	33.5	0.262	0.008			2	5	12	38	43		
⊙	B-075-0-21	48.5	0.061	0.014	0.007		0	0	4	75	21		

GRAIN SIZE - OH DOT.GDT - 5/21/25 14:46 - N:\PROJECTS\2021\N1215225\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215225 HAM-75-ODOT_10-28-2022.GPJ

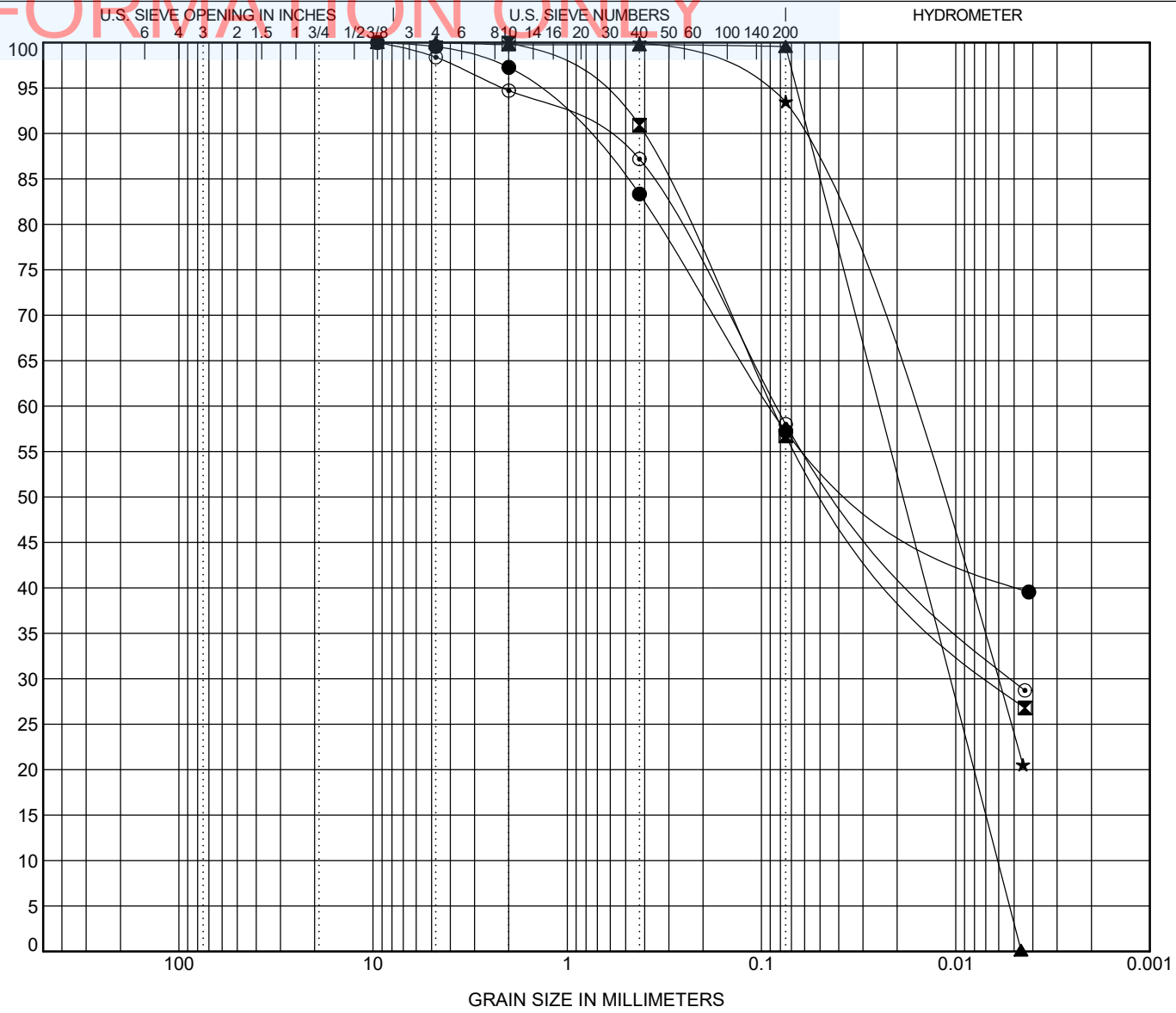
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT HAM-75-01.05 **PID** 113361

OGE NUMBER HAM-75-1.05 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-076-0-21	6.0	A-6b ~ SANDY LEAN CLAY(CL)	40	18	22
⊠	B-076-0-21	11.0	A-6b ~ SANDY LEAN CLAY(CL)	36	16	20
▲	B-076-0-21	18.5	A-4b ~ SILTY CLAY(CL-ML)	24	19	5
★	B-076-0-21	28.5	A-4b ~ LEAN CLAY(CL)	26	18	8
⊙	B-079-0-21	6.0	A-6a ~ SANDY LEAN CLAY(CL)	30	17	13

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-076-0-21	6.0	0.891	0.023			3	14	26	16	41		
⊠	B-076-0-21	11.0	0.406	0.04	0.006		0	9	34	29	28		
▲	B-076-0-21	18.5	0.057	0.019	0.011	0.006	0	0	0	97	3	0.76	4.07
★	B-076-0-21	28.5	0.066	0.014	0.006		0	0	6	71	23		
⊙	B-079-0-21	6.0	0.758	0.035	0.005		5	8	29	28	30		

GRAIN SIZE - OH DOT.GDT - 5/21/25 14:47 - N:\PROJECTS\2021\N1215225\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215225 HAM-75-ODOT_10-28-2022.GPJ

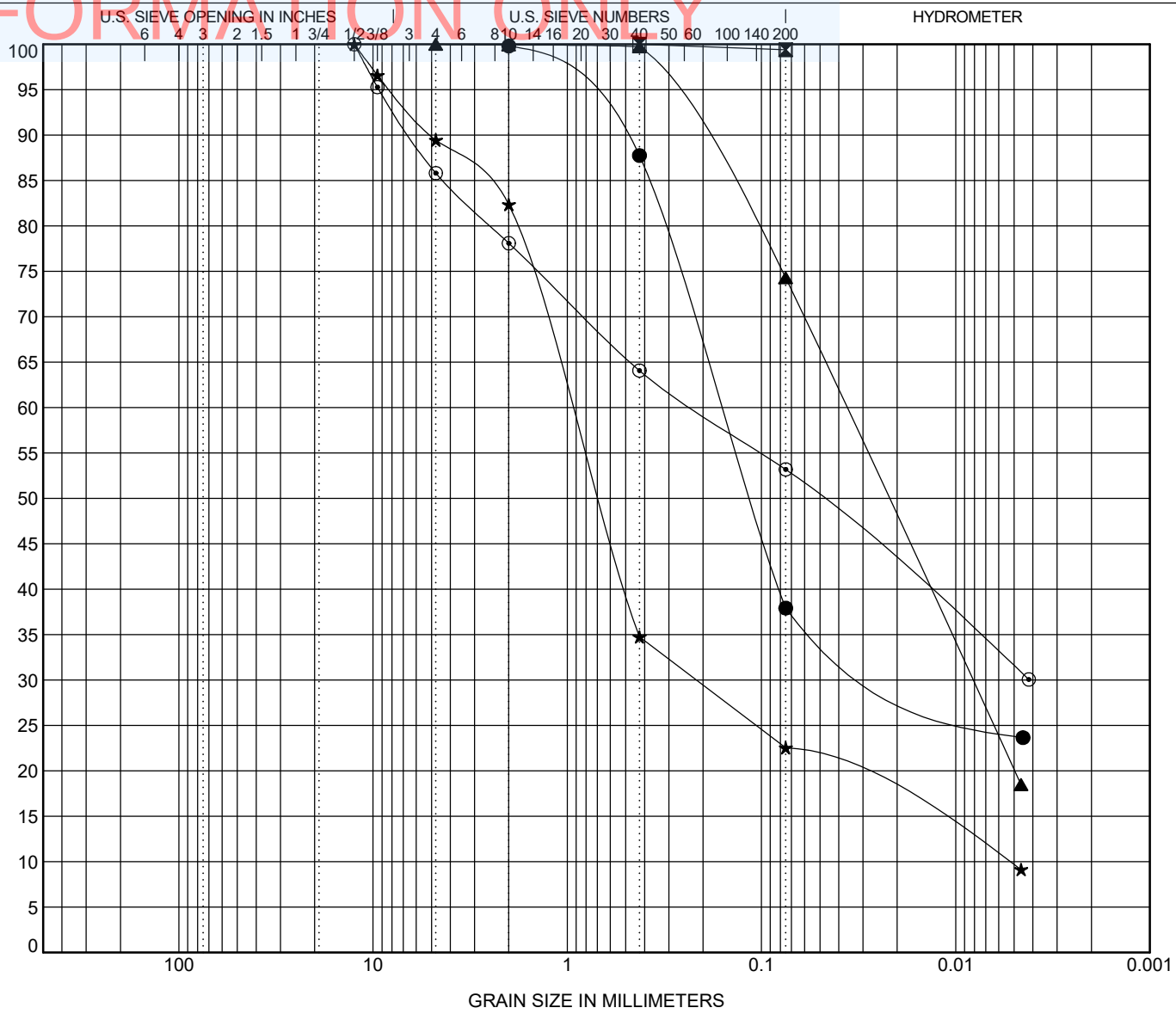
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT HAM-75-01.05 **PID** 113361

OGE NUMBER HAM-75-1.05 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-079-0-21	11.0	**A-6b ~ CLAYEY SAND(SC)**	32	14	18
⊠	B-079-0-21	18.5	**A-4 ~ LEAN CLAY(CL)**	30	21	9
▲	B-079-0-21	28.5	**A-4b ~ LEAN CLAY with SAND(CL)**	25	17	8
★	B-082-0-21	2.5	**A-2-4 ~ SILTY, CLAYEY SAND(SC-SM)**	20	13	7
⊙	B-082-0-21	4.0	**A-6a ~ SANDY LEAN CLAY(CL)**	29	15	14

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-079-0-21	11.0	0.567	0.114	0.016		0	12	50	14	24		
⊠	B-079-0-21	18.5					0	0	1	99			
▲	B-079-0-21	28.5	0.219	0.022	0.008		1	0	25	54	20		
★	B-082-0-21	2.5	5.01	0.698	0.217	0.006	17	48	12	13	10	8.80	175.40
⊙	B-082-0-21	4.0	6.454	0.05			22	14	11	22	31		

GRAIN SIZE - OH DOT.GDT - 5/21/25 14:47 - N:\PROJECTS\2021\N1215225\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215225 HAM-75-ODOT_10-28-2022.GPJ

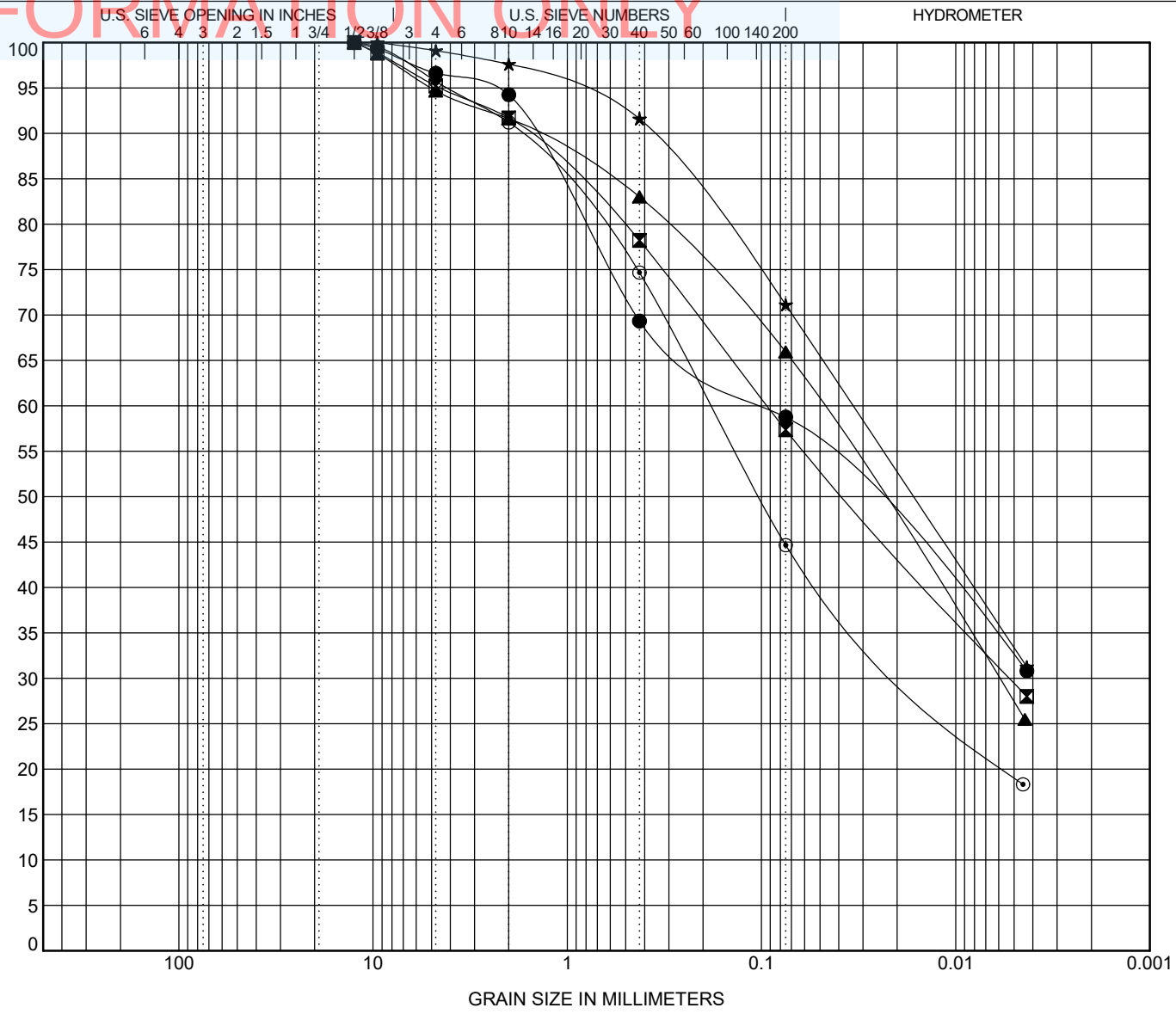
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT HAM-75-01.05 **PID** 113361

OGE NUMBER HAM-75-1.05 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-082-0-21	5.5	A-6b ~ SANDY LEAN CLAY(CL)	31	15	16
⊠	B-082-0-21	13.5	A-6a ~ SANDY LEAN CLAY(CL)	28	15	13
▲	B-082-0-21	23.5	A-6a ~ SANDY LEAN CLAY(CL)	28	16	12
★	B-082-0-21	28.5	A-6a ~ LEAN CLAY with SAND(CL)	28	15	13
⊙	B-083-0-21	2.5	A-4a ~ CLAYEY SAND(SC)	21	13	8

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-082-0-21	5.5	1.536	0.031			5	25	11	27	32		
⊠	B-082-0-21	13.5	1.645	0.037	0.005		9	13	21	27	30		
▲	B-082-0-21	23.5	1.493	0.025	0.006		8	9	17	39	27		
★	B-082-0-21	28.5	0.371	0.016			3	6	20	38	33		
⊙	B-083-0-21	2.5	1.786	0.102	0.016		8	17	30	26	19		

GRAIN SIZE - OH DOT.GDT - 5/21/25 14:48 - N:\PROJECTS\2021\N1215225\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215225 HAM-75-ODOT_10-28-2022.GPJ

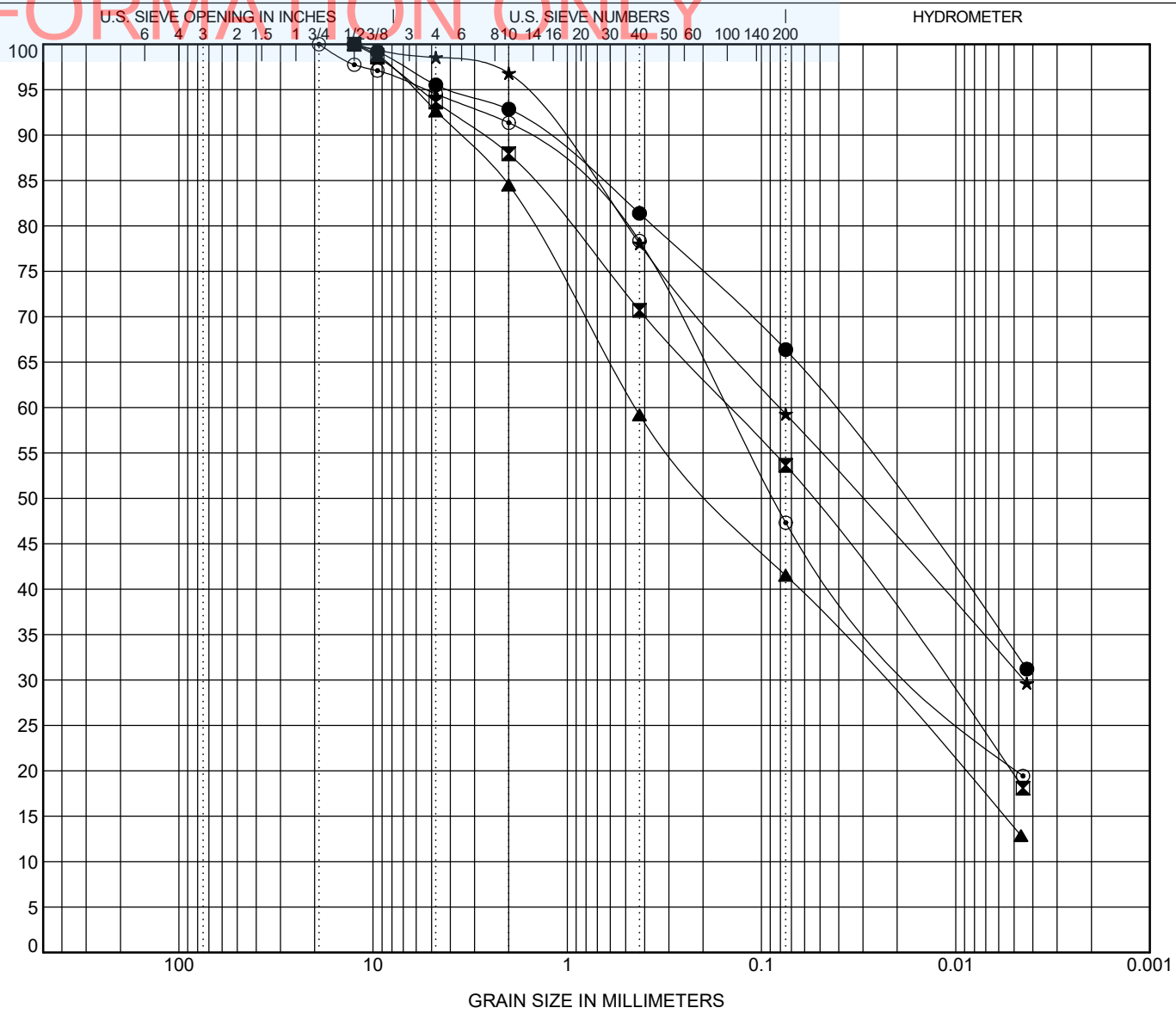
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT HAM-75-01.05 **PID** 113361

OGE NUMBER HAM-75-1.05 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-083-0-21	4.0	A-6a ~ SANDY LEAN CLAY(CL)	29	15	14
⊠	B-083-0-21	5.5	A-4a ~ SANDY LEAN CLAY(CL)	23	14	9
▲	B-083-0-21	13.5	A-4a ~ SILTY, CLAYEY SAND(SC-SM)	23	17	6
★	B-083-0-21	23.5	A-6a ~ SANDY LEAN CLAY(CL)	26	15	11
⊙	B-083-0-21	33.5	A-4a ~ CLAYEY SAND(SC)	31	21	10

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-083-0-21	4.0	1.361	0.02			8	11	15	33	33		
⊠	B-083-0-21	5.5	2.732	0.056	0.012		12	17	17	35	19		
▲	B-083-0-21	13.5	3.579	0.172	0.024		15	25	18	28	14		
★	B-083-0-21	23.5	1.14	0.031	0.004		3	19	19	28	31		
⊙	B-083-0-21	33.5	1.702	0.087	0.013		9	13	31	27	20		

GRAIN SIZE - OH DOT.GDT - 5/21/25 14:48 - N:\PROJECTS\2021\N1215225\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215225 HAM-75-ODOT_10-28-2022.GPJ

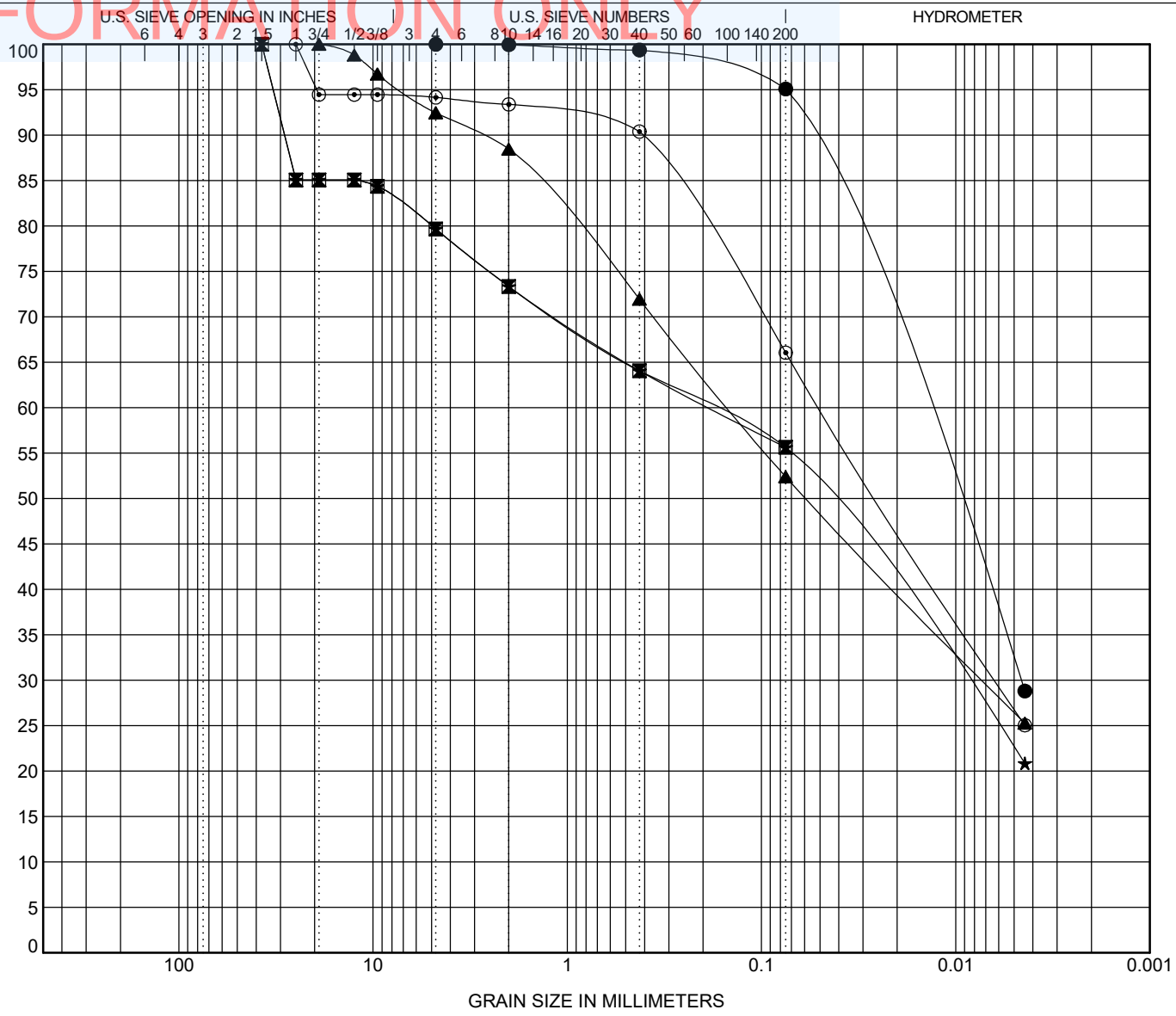
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT HAM-75-01.05 **PID** 113361

OGE NUMBER HAM-75-1.05 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-083-0-21	48.5	**A-4b ~ SILTY CLAY(CL-ML)**	**26**	**20**	**6**
⊠	B-084-0-21	1.5	**~**			
▲	B-084-0-21	6.0	**A-6a ~ SANDY LEAN CLAY(CL)**	**29**	**14**	**15**
★	B-084-0-21	13.5	**A-6b ~ SANDY LEAN CLAY with GRAVEL(CL)**	**37**	**18**	**19**
⊙	B-084-0-21	28.5	**A-6a ~ SANDY LEAN CLAY(CL)**	**25**	**13**	**12**

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-083-0-21	48.5	**0.06**	**0.011**	**0.005**		**0**	**1**	**4**	**63**	**32**		
⊠	B-084-0-21	1.5	**28.582**				**27**	**9**	**8**	**56**			
▲	B-084-0-21	6.0	**2.79**	**0.058**	**0.007**		**11**	**17**	**20**	**26**	**26**		
★	B-084-0-21	13.5	**28.582**	**0.047**	**0.009**		**27**	**9**	**8**	**34**	**22**		
⊙	B-084-0-21	28.5	**0.413**	**0.025**	**0.006**		**7**	**3**	**24**	**39**	**27**		

GRAIN SIZE - OH DOT.GDT - 5/21/25 14:49 - N:\PROJECTS\2021\N1215225\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215225 HAM-75-ODOT_10-28-2022.GPJ

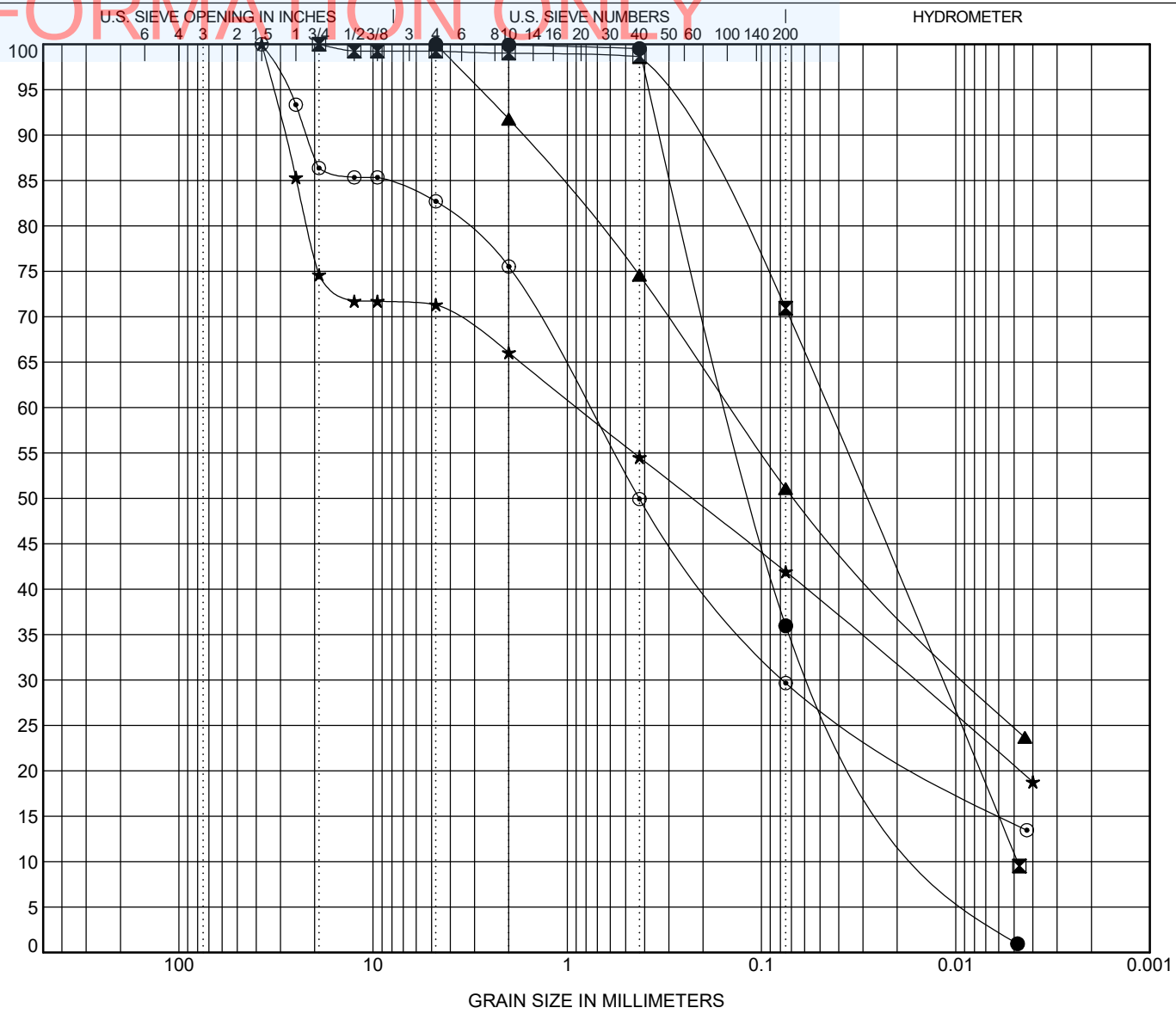
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT HAM-75-01.05 **PID** 113361

OGE NUMBER HAM-75-1.05 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-084-0-21	43.5	**A-4a ~ SILTY SAND(SM)**	**NP**	**NP**	**NP**
⊠	B-084-0-21	48.5	**A-4b ~ SILT with SAND(ML)**	**NP**	**NP**	**NP**
▲	B-088-0-21	2.5	**~**			
★	B-088-0-21	4.0	**A-6a ~ CLAYEY SAND with GRAVEL(SC)**	**29**	**17**	**12**
⊙	B-088-0-21	16.0	**A-2-4 ~ CLAYEY SAND with GRAVEL(SC)**	**27**	**17**	**10**

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-084-0-21	43.5	**0.328**	**0.11**	**0.047**	**0.01**	**0**	**0**	**64**	**35**	**1**	**1.56**	**14.80**
⊠	B-084-0-21	48.5	**0.248**	**0.029**	**0.012**	**0.005**	**1**	**0**	**28**	**60**	**11**	**0.64**	**9.54**
▲	B-088-0-21	2.5	**1.707**	**0.067**	**0.008**		**8**	**17**	**24**	**26**	**25**		
★	B-088-0-21	4.0	**28.443**	**0.228**	**0.017**		**33**	**12**	**13**	**21**	**21**		
⊙	B-088-0-21	16.0	**21.915**	**0.427**	**0.077**		**24**	**26**	**20**	**16**	**14**		

GRAIN SIZE - OH DOT.GDT - 5/21/25 14:50 - N:\PROJECTS\2021\N1215225\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215225 HAM-75-ODOT_10-28-2022.GPJ

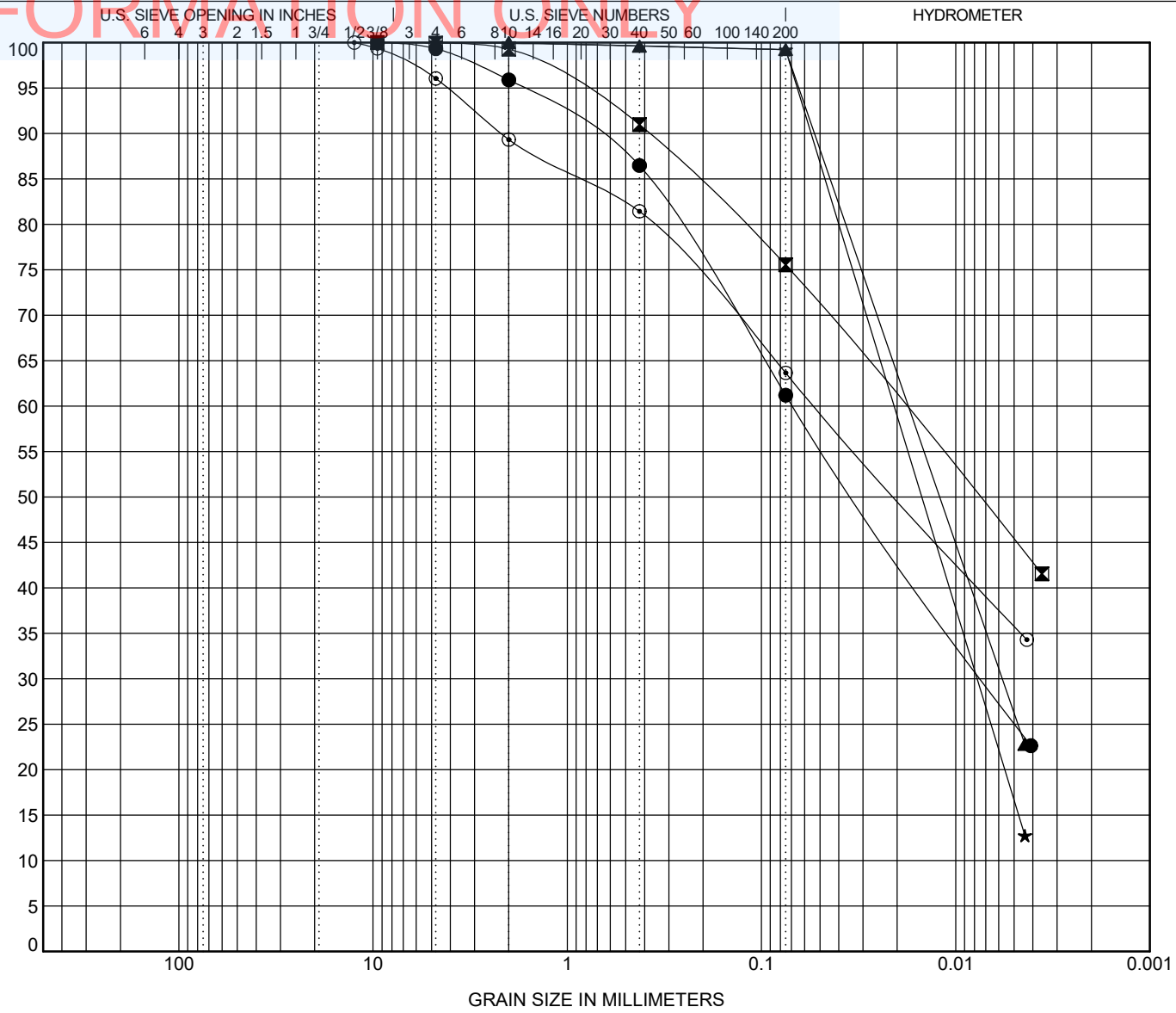
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT HAM-75-01.05 **PID** 113361

OGE NUMBER HAM-75-1.05 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-088-0-21	28.5	A-4a ~ SANDY LEAN CLAY(CL)	25	16	9
⊠	B-088-0-21	38.5	A-7-6 ~ LEAN CLAY with SAND(CL)	45	26	19
▲	B-088-0-21	48.5	A-4b ~ LEAN CLAY(CL)	28	19	9
★	B-088-0-21	53.5	~			
⊙	B-089-0-21	11.0	A-6b ~ SANDY LEAN CLAY(CL)	40	23	17

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-088-0-21	28.5	0.759	0.032	0.007		5	9	25	36	25		
⊠	B-088-0-21	38.5	0.381	0.008			1	8	15	31	45		
▲	B-088-0-21	48.5	0.053	0.012	0.006		0	1	0	73	26		
★	B-088-0-21	53.5	0.055	0.015	0.008		1	0	0	82	17		
⊙	B-089-0-21	11.0	2.18	0.02			10	8	18	28	36		

GRAIN SIZE - OH DOT.GDT - 5/21/25 14:51 - N:\PROJECTS\2021\N1215225\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215225 HAM-75-ODOT_10-28-2022.GPJ

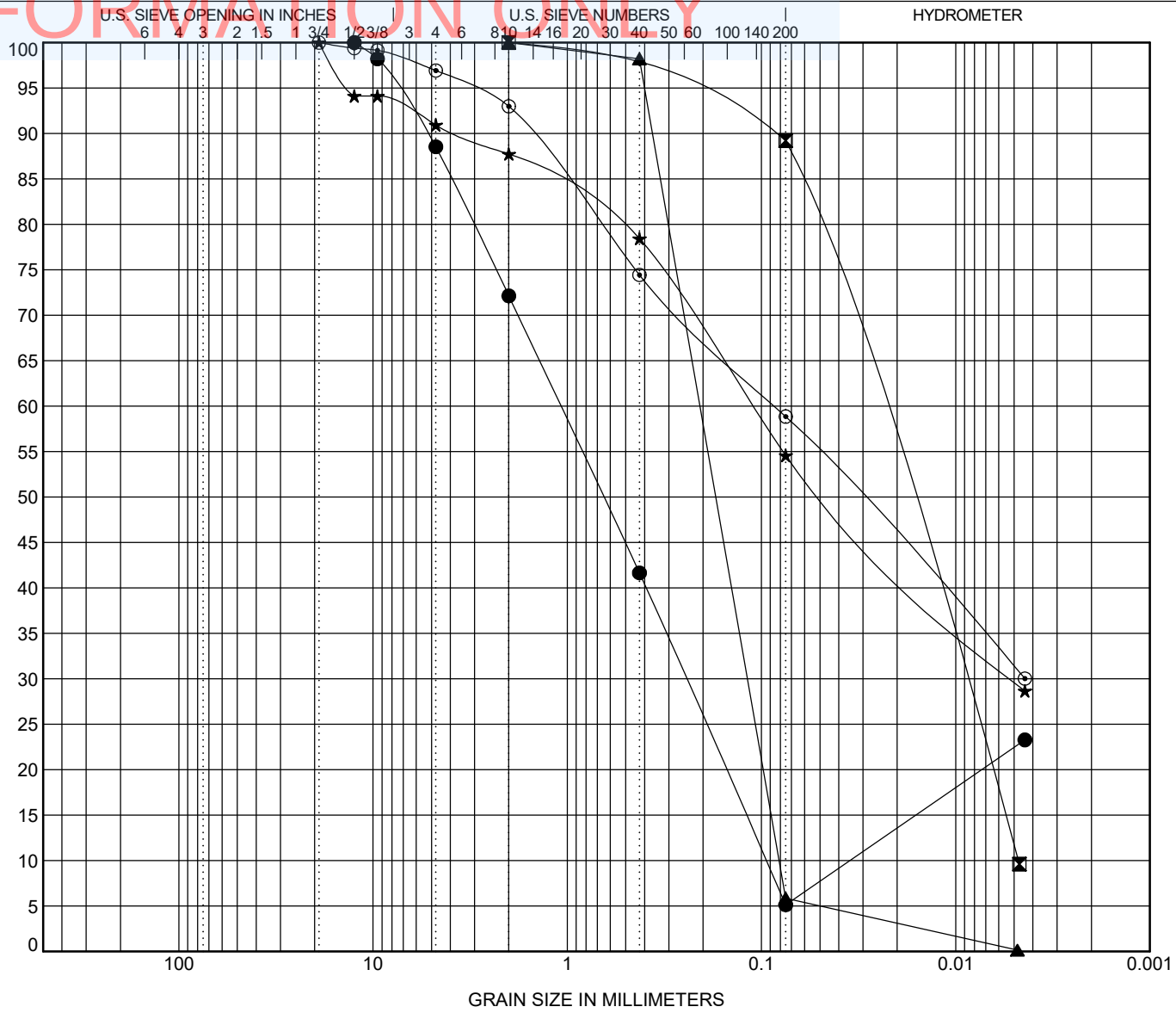
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT HAM-75-01.05 **PID** 113361

OGE NUMBER HAM-75-1.05 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-089-0-21	16.0	A-2-7 ~ POORLY GRADED SAND with CLAY(SP-SC)	56	24	32
⊠	B-089-0-21	23.5	A-4b ~ SILT(ML)	20	21	NP
▲	B-089-0-21	33.5	~			
★	B-090-0-21	8.5	A-6a ~ SANDY LEAN CLAY(CL)	28	14	14
⊙	B-090-0-21	18.5	A-4a ~ SANDY SILT(ML)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-089-0-21	16.0	5.276	0.65	0.023	0.035	28	30	37	-17	22	0.01	30.83
⊠	B-089-0-21	23.5	0.095	0.019	0.01	0.005	0	5	6	78	11	0.71	5.70
▲	B-089-0-21	33.5	0.364	0.172	0.118	0.081	0	2	92	6	0	0.83	2.56
★	B-090-0-21	8.5	3.69	0.046	0.005		12	9	24	25	30		
⊙	B-090-0-21	18.5	1.559	0.031			6	19	16	28	31		

GRAIN SIZE - OH DOT.GDT - 5/21/25 14:52 - N:\PROJECTS\2021\N1215225\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215225 HAM-75-ODOT_10-28-2022.GPJ

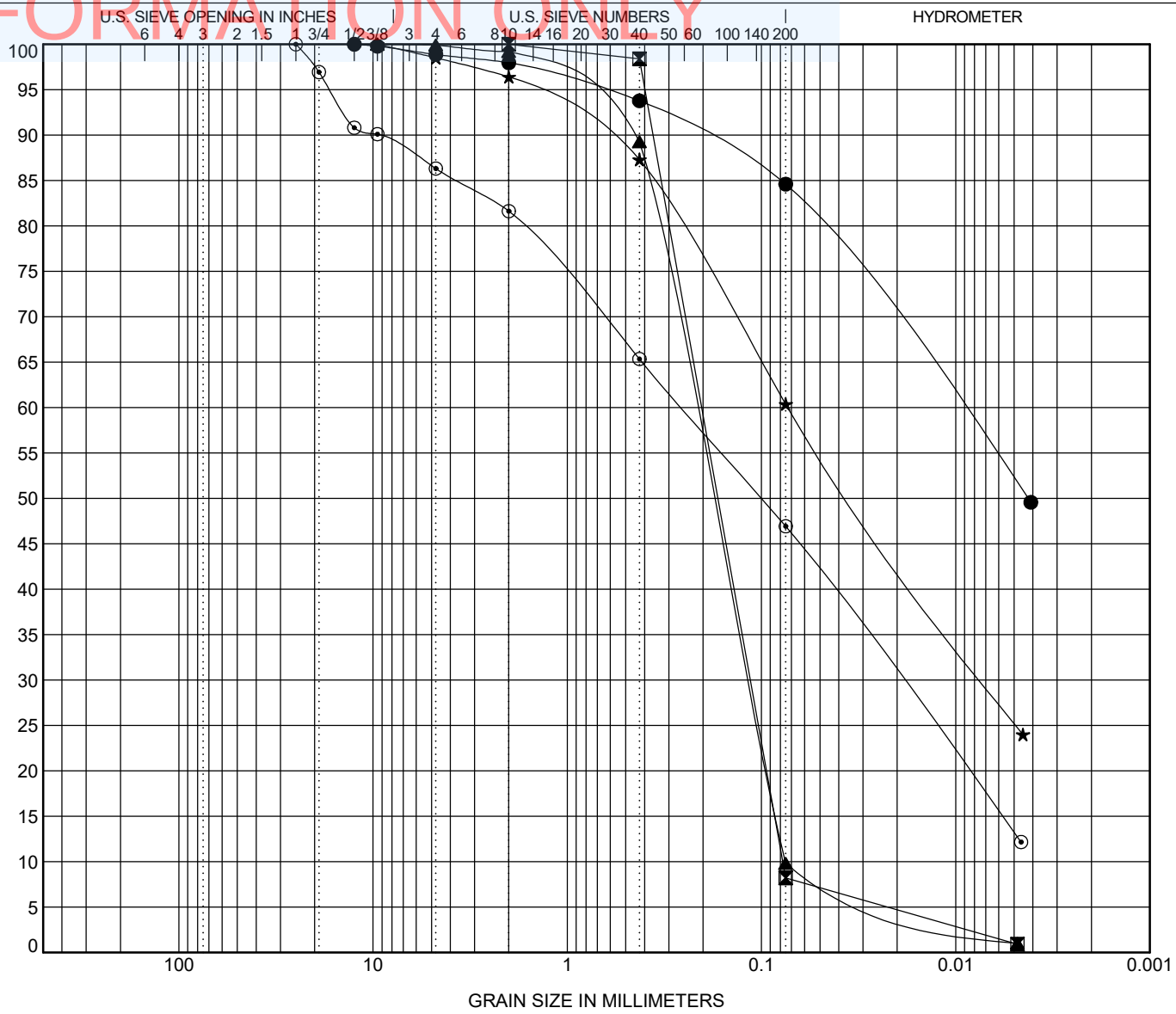
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GRAIN SIZE DISTRIBUTION

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PROJECT HAM-75-01.05 **PID** 113361

OGE NUMBER HAM-75-1.05 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-090-0-21	38.5	A-4a ~ SILT with SAND(ML)	NP	NP	NP
⊠	B-090-0-21	63.5	A-3 ~ POORLY GRADED SAND with SILT(SP-SM)	NP	NP	NP
▲	B-090-0-21	83.5	A-3 ~ POORLY GRADED SAND with SILT(SP-SM)	NP	NP	NP
★	B-092-0-21	13.5	A-6a ~ SANDY LEAN CLAY(CL)	26	15	11
⊙	B-092-0-21	23.0	A-6a ~ CLAYEY SAND(SC)	30	16	14

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-090-0-21	38.5	0.208	0.004			2	4	9	33	52		
⊠	B-090-0-21	63.5	0.362	0.168	0.114	0.078	0	2	90	7	1	0.83	2.62
▲	B-090-0-21	83.5	0.476	0.18	0.117	0.075	1	10	79	9	1	0.80	2.98
★	B-092-0-21	13.5	0.673	0.034	0.007		4	9	27	35	25		
⊙	B-092-0-21	23.0	9.335	0.1	0.019		19	16	18	34	13		

GRAIN SIZE - OH DOT.GDT - 5/21/25 14:53 - N:\PROJECTS\2021\N1215225\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215225 HAM-75-ODOT_10-28-2022.GPJ

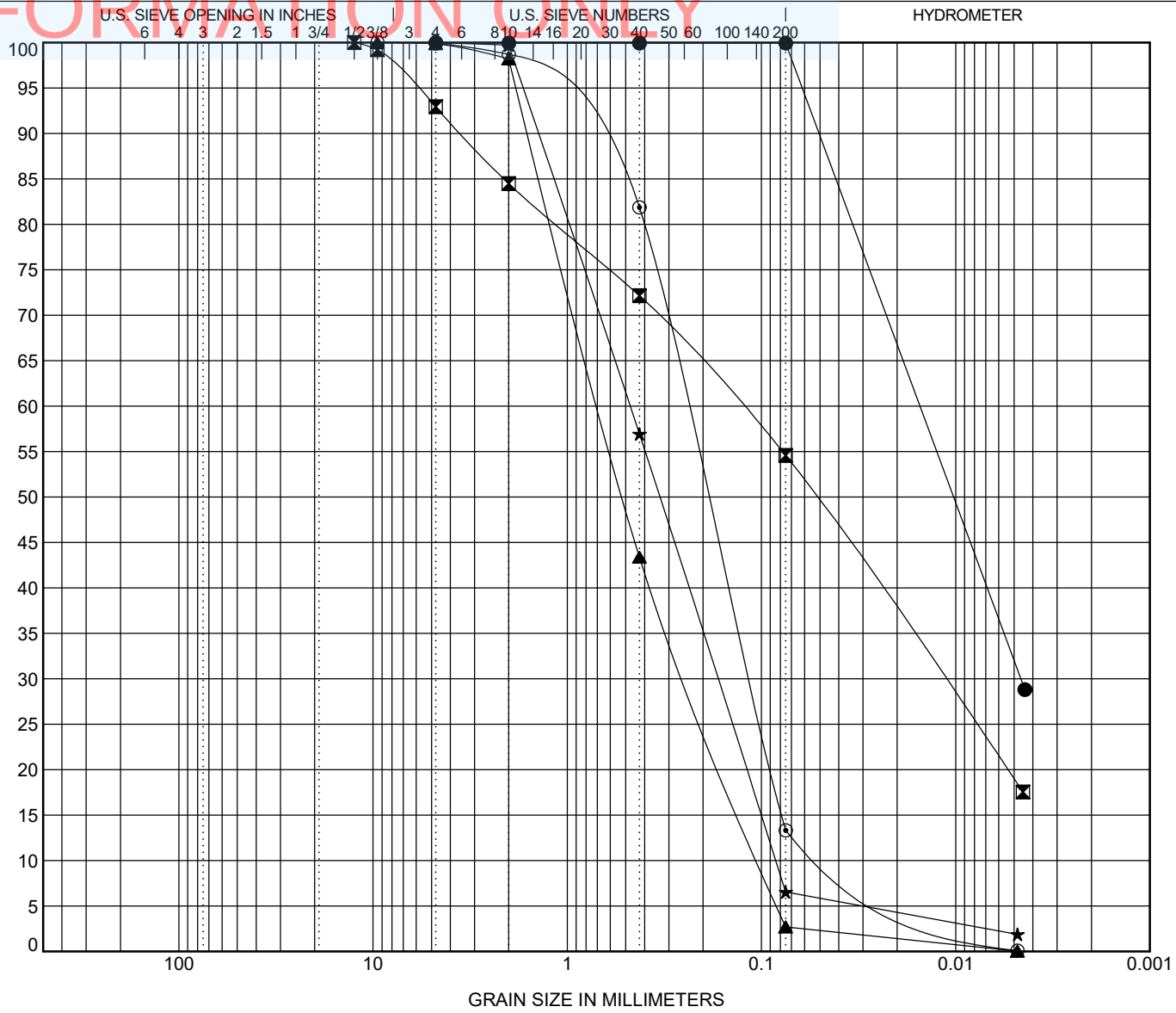
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT HAM-75-01.05 **PID** 113361

OGE NUMBER HAM-75-1.05 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-092-0-21	48.5	A-4b ~ LEAN CLAY(CL)	30	21	9
⊠	B-092-0-21	63.5	A-4a ~ SANDY SILTY CLAY(CL-ML)	20	15	5
▲	B-092-0-21	78.5	A-1-b ~ POORLY GRADED SAND(SP)	NP	NP	NP
★	B-092-0-21	98.5	A-3 ~ POORLY GRADED SAND with SILT(SP-SM)	NP	NP	NP
⊙	B-092-0-21	108.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-092-0-21	48.5	0.05	0.01	0.005		0	0	0	68	32		
⊠	B-092-0-21	63.5	3.521	0.053	0.012		15	12	18	36	19		
▲	B-092-0-21	78.5	1.586	0.512	0.24	0.102	1	55	41	3	0	0.83	6.64
★	B-092-0-21	98.5	1.407	0.335	0.168	0.084	0	43	50	5	2	0.70	5.62
⊙	B-092-0-21	108.5	0.898	0.19	0.114	0.038	1	17	69	13	0	1.42	6.50

GRAIN SIZE - OH DOT.GDT - 5/21/25 14:54 - N:\PROJECTS\2021\N1215225\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215225 HAM-75-ODOT_10-28-2022.GPJ

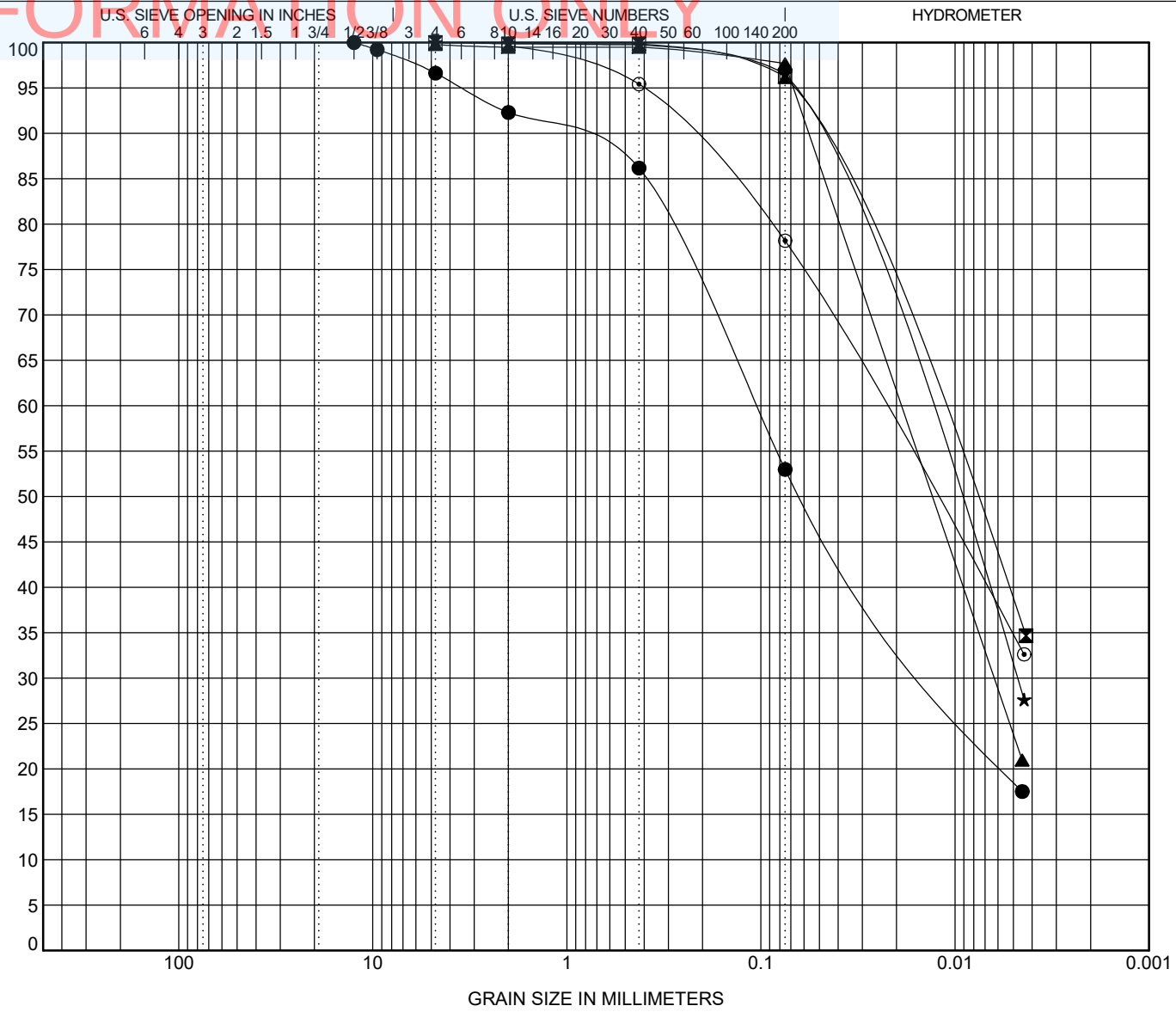
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT HAM-75-01.05 **PID** 113361

OGE NUMBER HAM-75-1.05 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-094-0-21	4.0	**A-4a ~ SANDY SILTY CLAY(CL-ML)**	**25**	**18**	**7**
⊠	B-094-0-21	18.0	~		**18**	
▲	B-094-0-21	23.5	~			
★	B-094-0-21	38.5	**A-6a ~ LEAN CLAY(CL)**	**30**	**18**	**12**
⊙	B-095-0-21	6.0	~			

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-094-0-21	4.0	**1.119**	**0.059**	**0.012**		**8**	**6**	**33**	**34**	**19**		
⊠	B-094-0-21	18.0	**0.056**	**0.009**			**0**	**0**	**4**	**58**	**38**		
▲	B-094-0-21	23.5	**0.057**	**0.013**	**0.006**		**0**	**0**	**2**	**74**	**24**		
★	B-094-0-21	38.5	**0.057**	**0.011**	**0.005**		**0**	**0**	**3**	**66**	**31**		
⊙	B-095-0-21	6.0	**0.246**	**0.013**			**0**	**5**	**17**	**43**	**35**		

GRAIN SIZE - OH DOT.GDT - 5/21/25 14:55 - N:\PROJECTS\2021\N1215225\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215225 HAM-75-ODOT_10-28-2022.GPJ

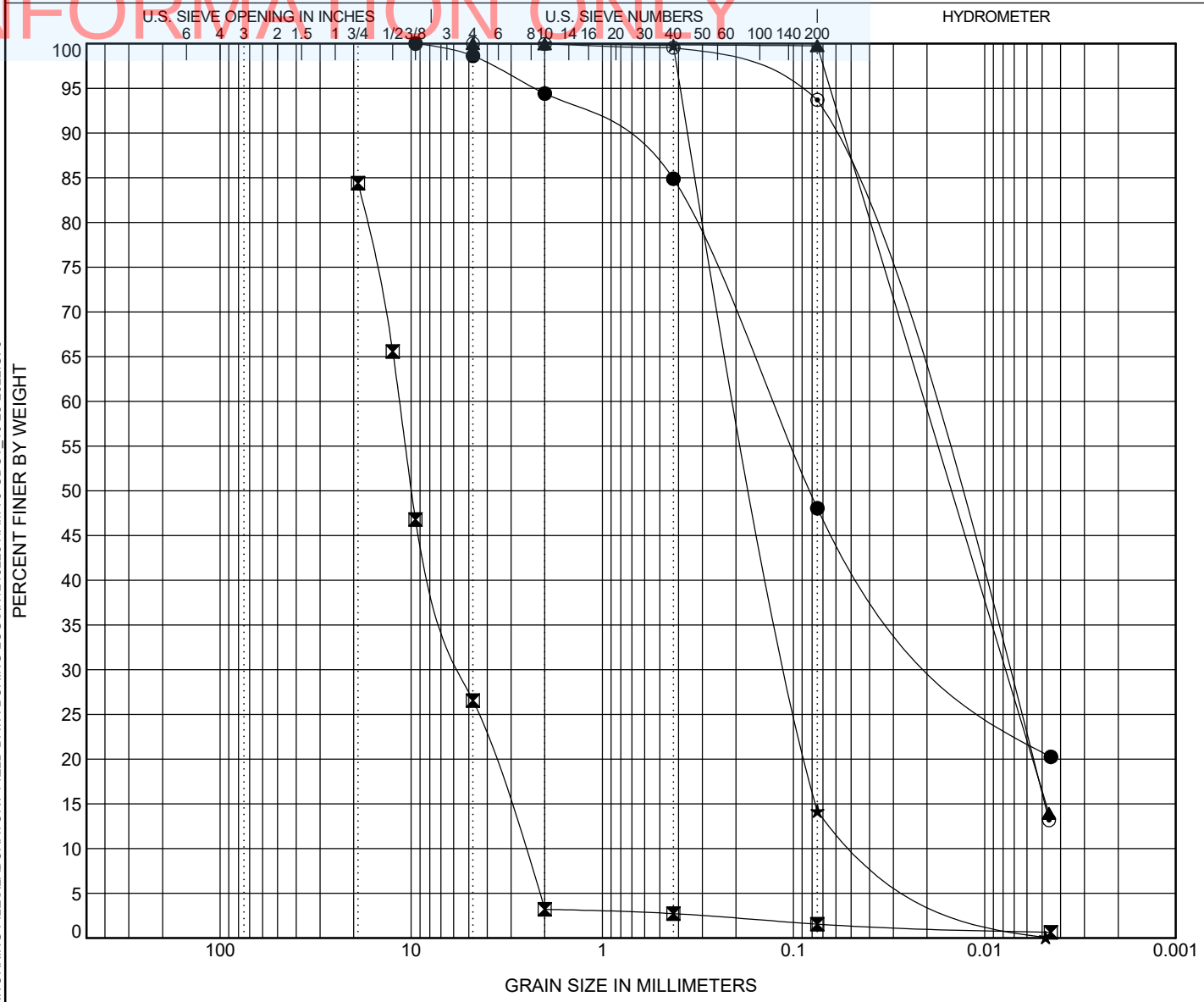
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT HAM-75-01.05 **PID** 113361

OGE NUMBER HAM-75-1.05 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-095-0-21	11.0	A-6a ~ CLAYEY SAND(SC)	27	14	13
⊠	B-095-0-21	18.5	A-2-6 ~ POORLY GRADED GRAVEL with SAND(GP)	27	16	11
▲	B-095-0-21	33.5	A-4b ~ SILT(ML)	28	23	5
★	B-095-0-21	43.5	~			
⊙	B-095-0-21	58.5	A-4b ~ SILTY CLAY(CL-ML)	24	19	5

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-095-0-21	11.0	0.976	0.082	0.012		5	10	37	27	21		
⊠	B-095-0-21	18.5		9.958	5.346	2.572	97	0	1	1	1	0.96	4.48
▲	B-095-0-21	33.5	0.055	0.015	0.008		0	0	0	84	16		
★	B-095-0-21	43.5	0.348	0.155	0.103	0.033	0	0	86	14	0	1.69	5.71
⊙	B-095-0-21	58.5	0.066	0.016	0.008		0	0	6	78	16		

GRAIN SIZE - OH DOT.GDT - 5/21/25 14:56 - N:\PROJECTS\2021\N1215225\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215225 HAM-75-ODOT_10-28-2022.GPJ

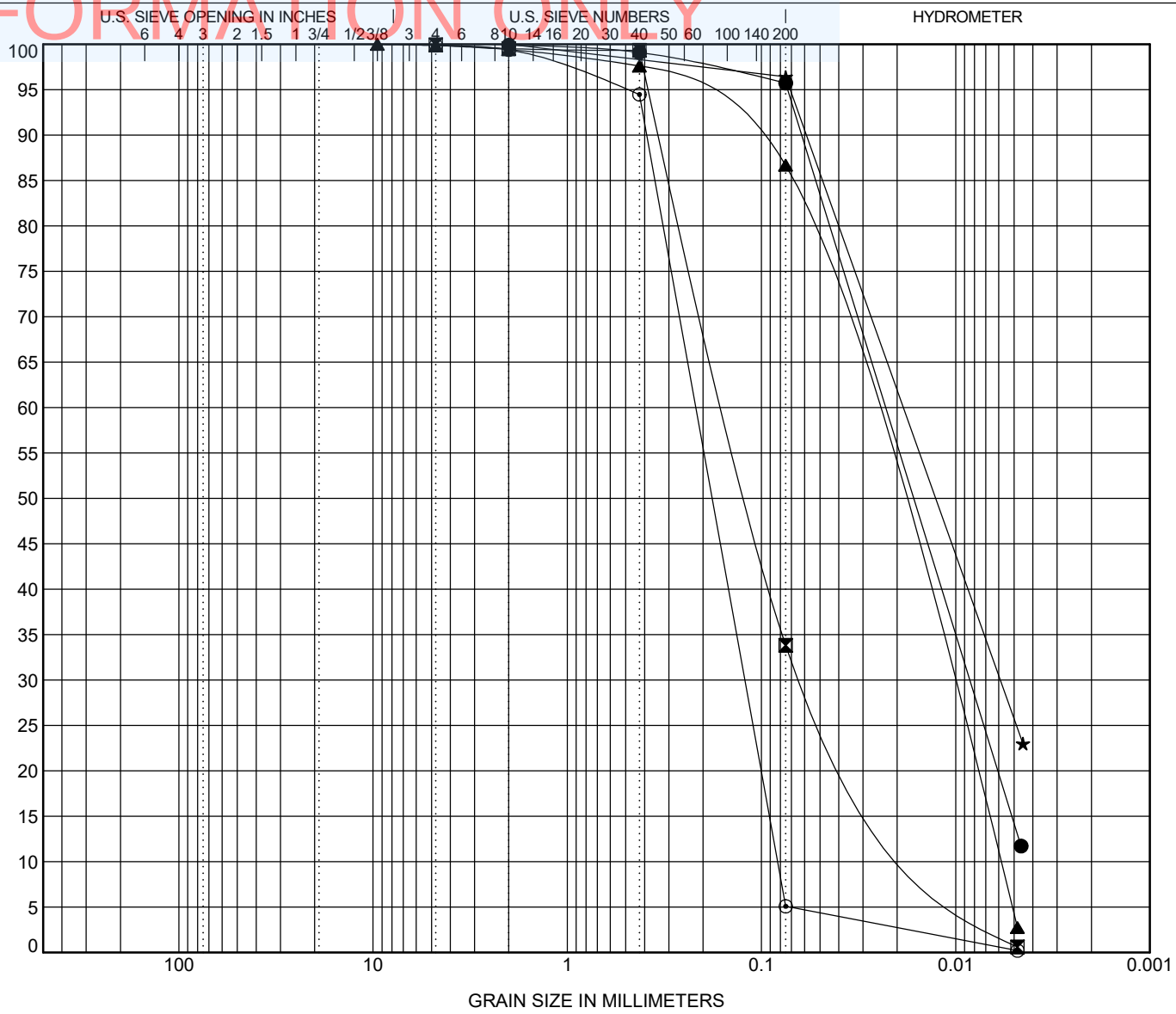
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT HAM-75-01.05 **PID** 113361

OGE NUMBER HAM-75-1.05 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-097-0-21	4.5	**A-4b ~ LEAN CLAY(CL)**	27	19	8
⊠	B-097-0-21	11.0	~			
▲	B-097-0-21	16.0	~			
★	B-097-0-21	23.5	**A-4b ~ LEAN CLAY(CL)**	27	19	8
⊙	B-097-0-21	38.5	~			

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-097-0-21	4.5	0.062	0.016	0.008		0	1	3	82	14		
⊠	B-097-0-21	11.0	0.332	0.115	0.055	0.01	0	0	66	33	1	1.91	14.35
▲	B-097-0-21	16.0	0.127	0.023	0.012	0.006	0	2	11	83	4	0.72	5.14
★	B-097-0-21	23.5	0.059	0.013	0.006		0	2	2	70	26		
⊙	B-097-0-21	38.5	0.39	0.179	0.122	0.083	1	5	89	5	0	0.82	2.64

GRAIN SIZE - OH DOT.GDT - 5/21/25 14:58 - N:\PROJECTS\2021\N1215225\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215225 HAM-75-ODOT_10-28-2022.GPJ

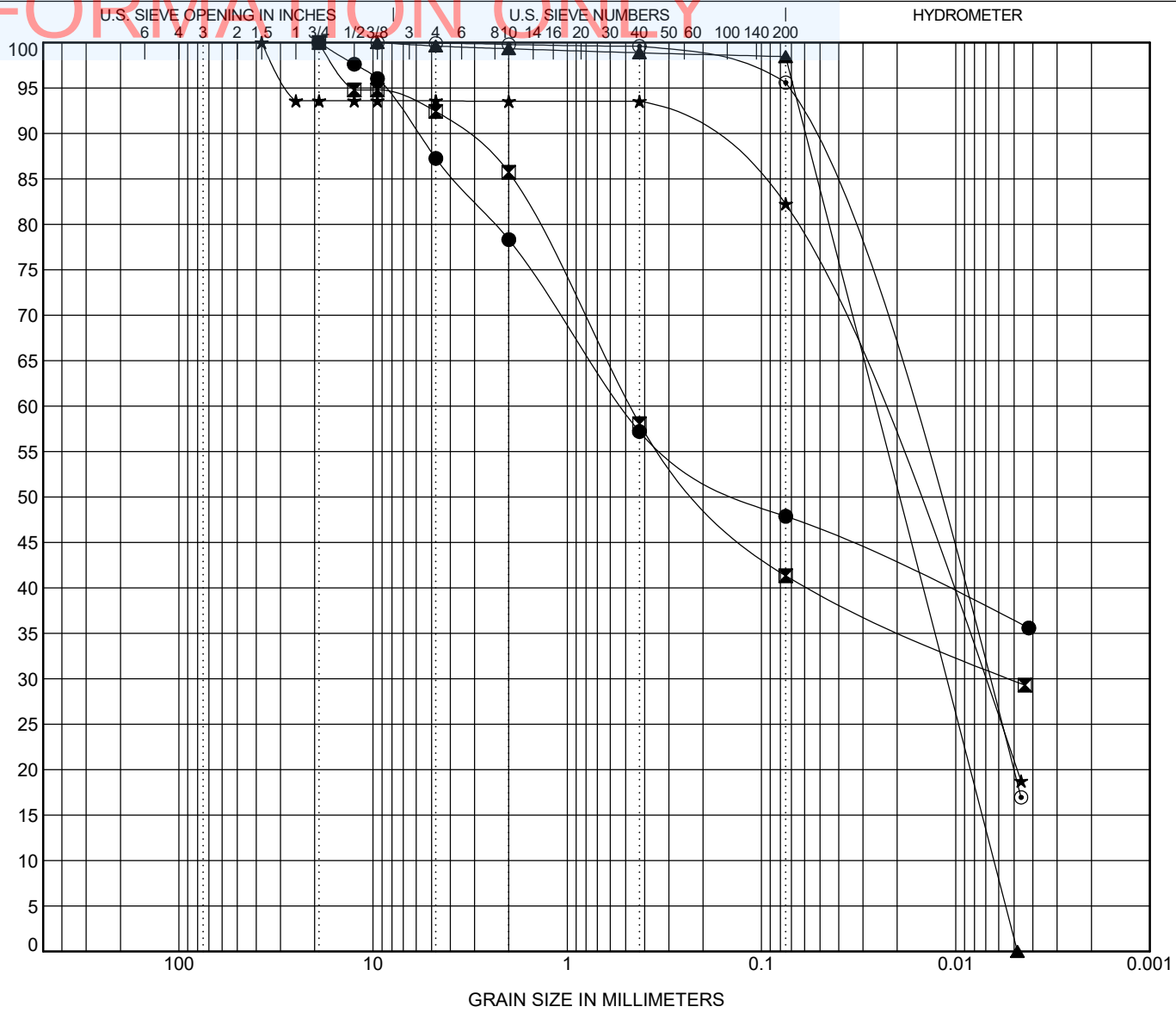
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT HAM-75-01.05 **PID** 113361

OGE NUMBER HAM-75-1.05 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-099-0-21	4.0	A-6b ~ CLAYEY SAND(SC)	31	15	16
⊠	B-099-0-21	13.5	A-7-6 ~ CLAYEY SAND(SC)	43	19	24
▲	B-099-0-21	18.5	A-4b ~ SILT(ML)	NP	NP	NP
★	B-099-0-21	33.5	A-4b ~ LEAN CLAY with SAND(CL)	28	20	8
⊙	B-099-0-21	38.5	A-4b ~ SILTY CLAY(CL-ML)	25	21	4

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-099-0-21	4.0	5.9	0.111			22	21	9	12	36		
⊠	B-099-0-21	13.5	3.468	0.184	0.005		14	28	17	11	30		
▲	B-099-0-21	18.5	0.059	0.019	0.011	0.006	2	0	0	97	1	0.76	4.04
★	B-099-0-21	33.5	0.247	0.018	0.008		7	0	11	61	21		
⊙	B-099-0-21	38.5	0.061	0.015	0.007		0	0	4	77	19		

GRAIN SIZE - OH DOT.GDT - 5/21/25 14:59 - N:\PROJECTS\2021\N1215225\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215225 HAM-75-ODOT_10-28-2022.GPJ

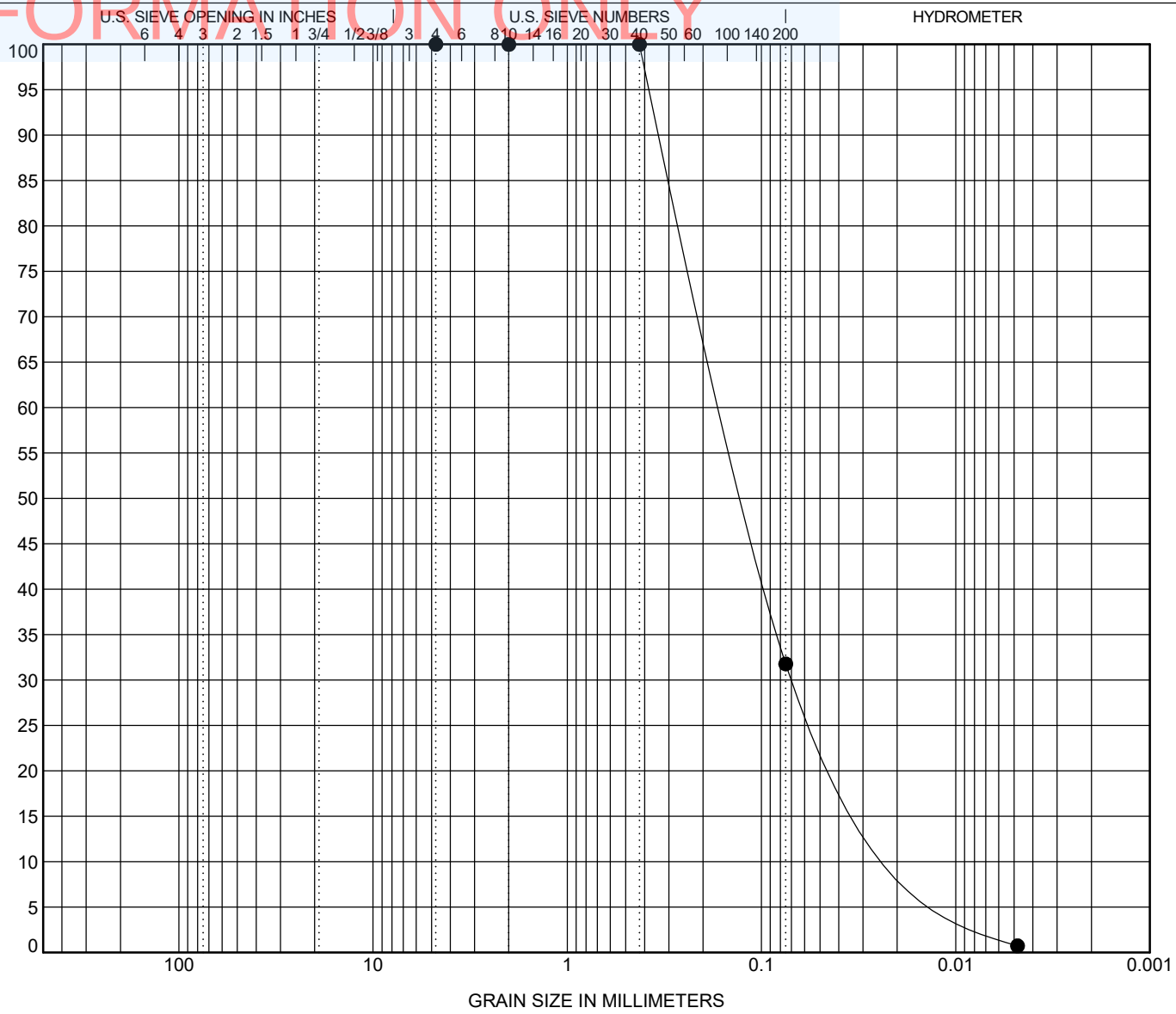
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT HAM-75-01.05 **PID** 113361

OGE NUMBER HAM-75-1.05 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification		ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
● **B-099-0-21**	**48.5**	**A-3a ~ SILTY SAND(SM)**	**NP**	**NP**	**NP**

Specimen Identification		D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
● **B-099-0-21**	**48.5**	**0.33**	**0.119**	**0.064**	**0.011**	**0**	**0**	**68**	**31**	**1**	**2.45**	**14.09**

GRAIN SIZE - OH DOT.GDT - 5/21/25 15:00 - N:\PROJECTS\2021\N1215225\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215225 HAM-75-ODOT_10-28-2022.GPJ

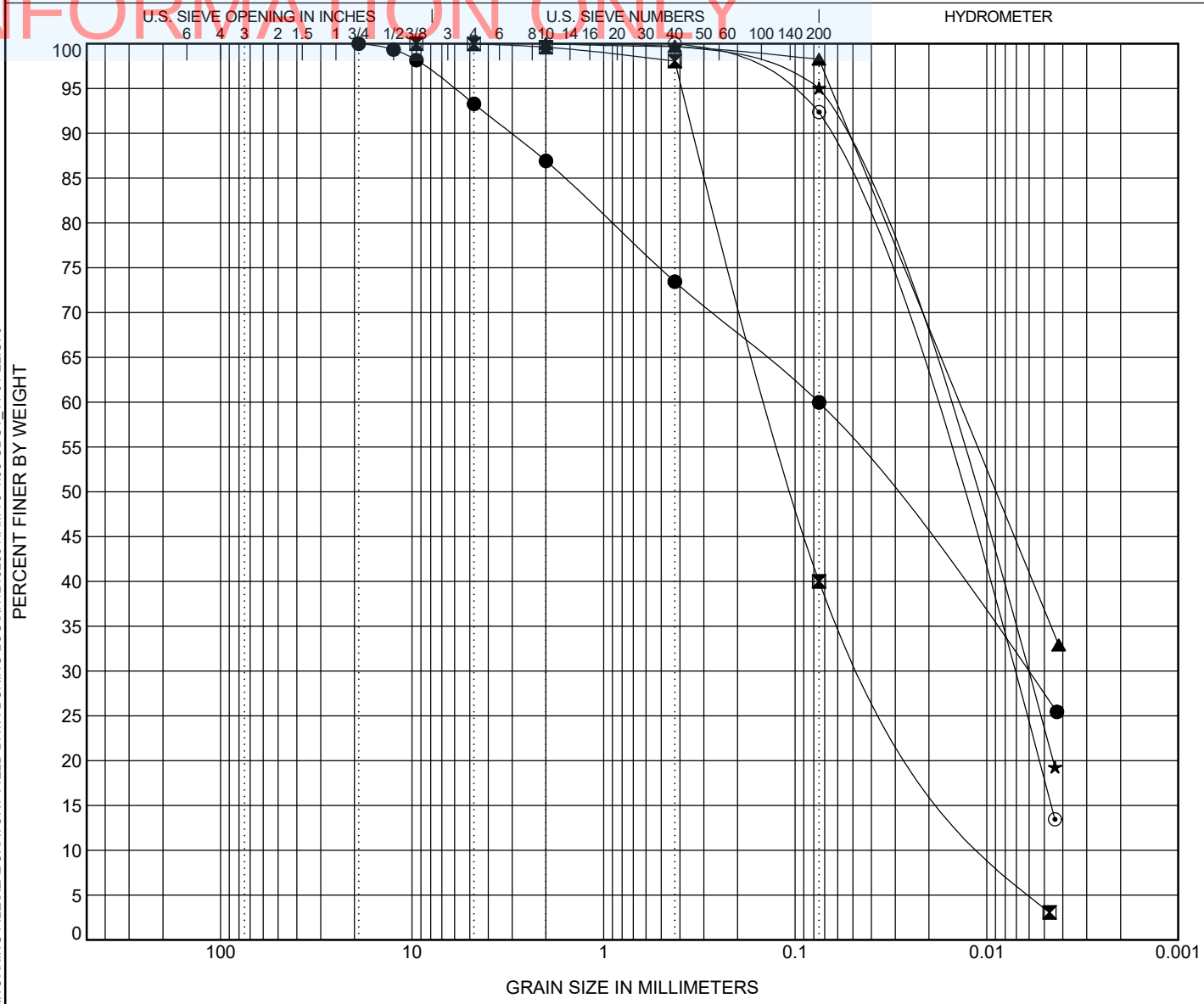
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-100-0-21	1.5	A-6a ~ SANDY LEAN CLAY(CL)	30	16	14
⊠	B-100-0-21	8.5	A-4a ~ SILTY SAND(SM)	NP	NP	NP
▲	B-100-0-21	13.5	A-4b ~ SILT(ML)	31	23	8
★	B-100-0-21	18.5	A-4b ~ SILT(ML)	24	21	3
⊙	B-100-0-21	28.5	A-4b ~ SILT(ML)	22	20	2

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-100-0-21	1.5	3.043	0.033	0.006		14	13	13	33	27		
⊠	B-100-0-21	8.5	0.334	0.101	0.035	0.008	0	2	58	36	4	1.16	17.25
▲	B-100-0-21	13.5	0.052	0.009			0	1	1	61	37		
★	B-100-0-21	18.5	0.062	0.014	0.007		0	0	5	72	23		
⊙	B-100-0-21	28.5	0.069	0.016	0.008		0	0	8	75	17		

GRAIN SIZE - OH DOT.GDT - 5/30/24 15:49 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

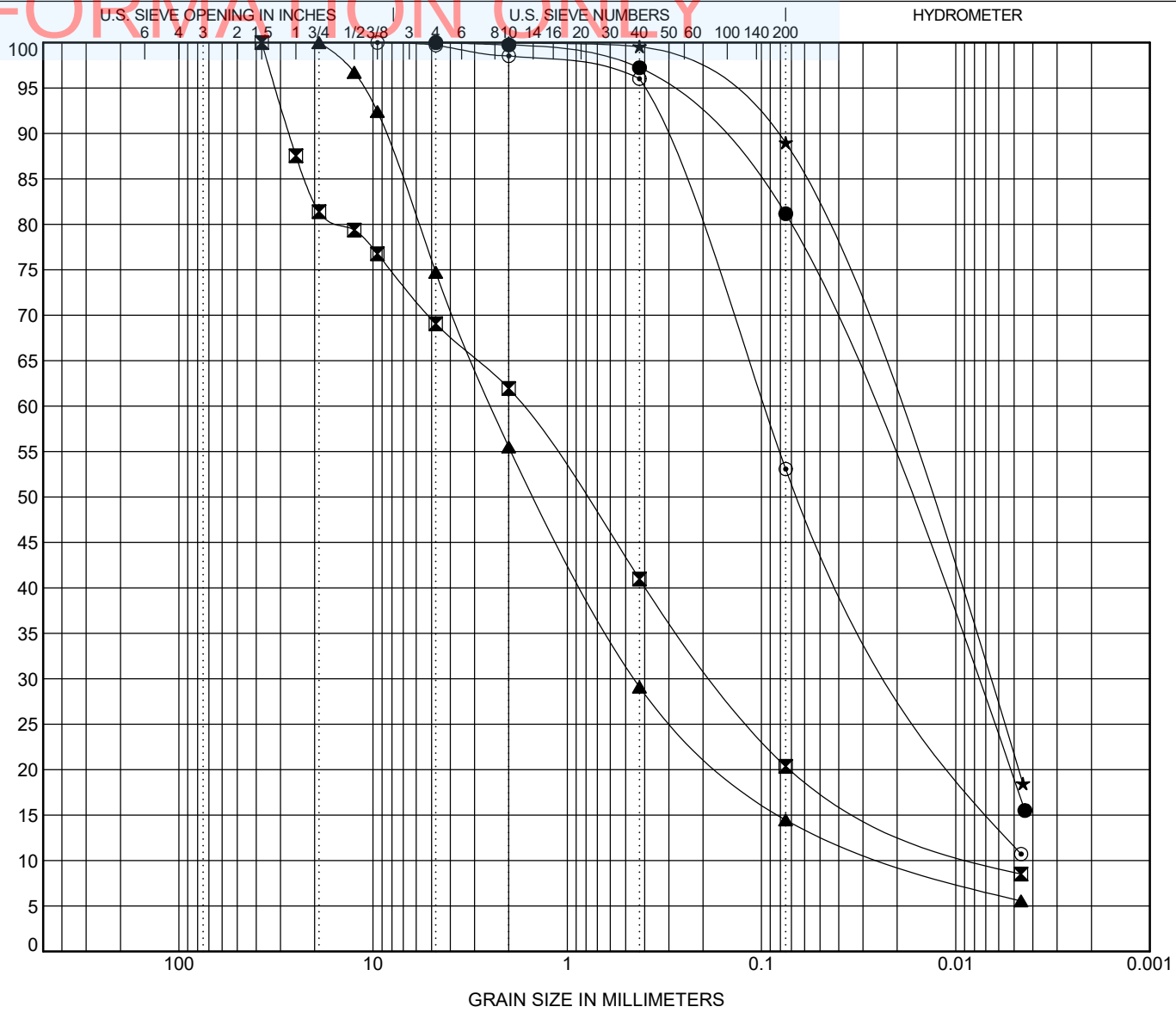
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-100-0-21	33.5	A-4b ~ SILT with SAND(ML)	20	17	3
⊠	B-101-0-21	6.0	A-1-b ~ SILTY SAND with GRAVEL(SM)	NP	NP	NP
▲	B-101-0-21	16.0	A-1-b ~ SILTY SAND with GRAVEL(SM)	NP	NP	NP
★	B-101-0-21	28.5	A-4b ~ SILT(ML)	22	19	3
⊙	B-101-0-21	43.5	A-4a ~ SANDY SILT(ML)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-100-0-21	33.5	0.195	0.02	0.008		0	3	16	63	18		
⊠	B-101-0-21	6.0	27.071	0.828	0.169	0.007	38	21	21	11	9	2.51	264.78
▲	B-101-0-21	16.0	8.643	1.448	0.448	0.019	45	26	15	8	6	4.43	132.29
★	B-101-0-21	28.5	0.089	0.016	0.007		0	0	11	68	21		
⊙	B-101-0-21	43.5	0.333	0.061	0.016		1	3	43	41	12		

GRAIN SIZE - OH DOT.GDT - 5/30/24 15:49 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

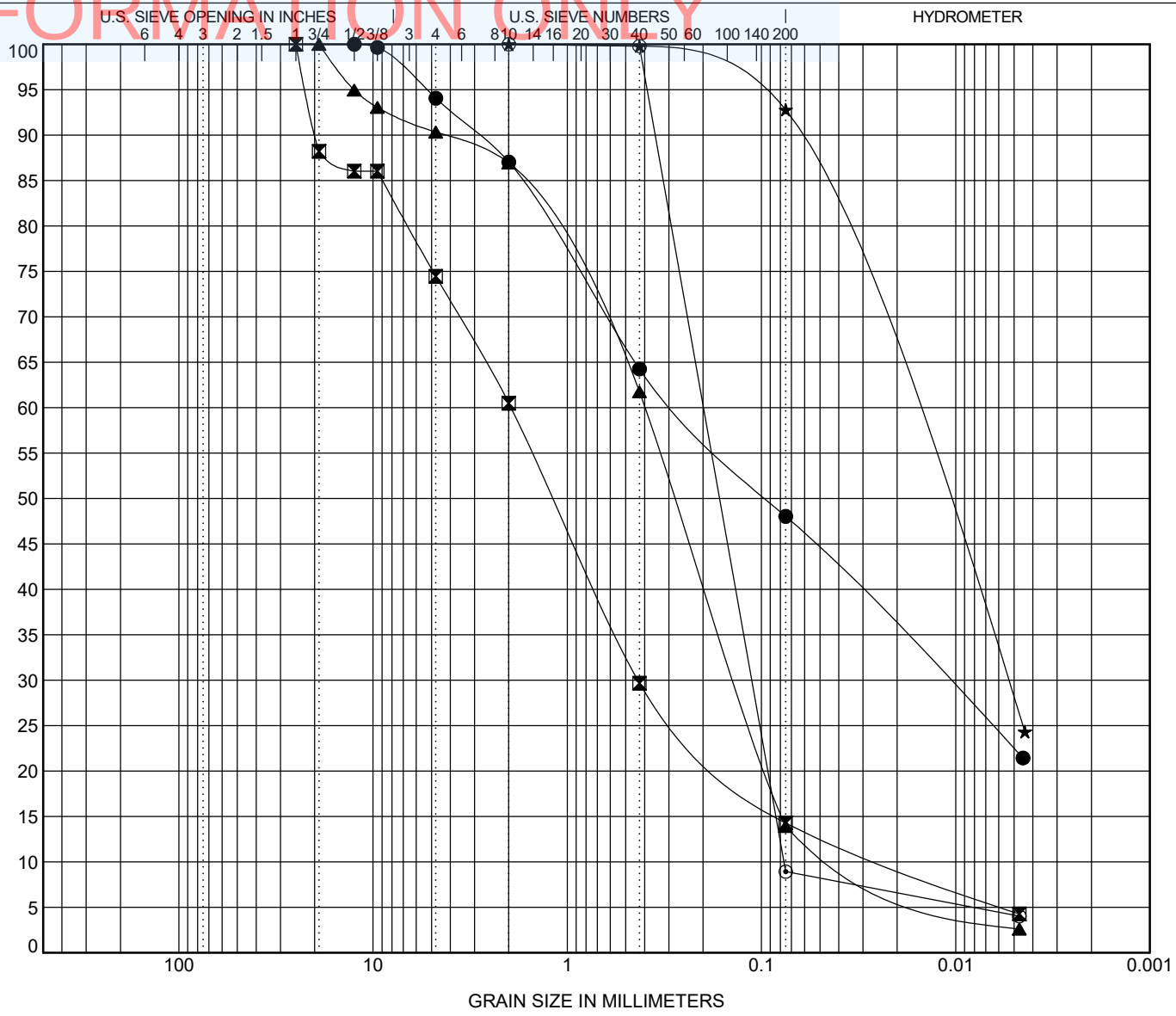
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-103-0-21	4.5	A-4a ~ CLAYEY SAND(SC)	24	15	9
⊠	B-103-0-21	11.0	A-1-b ~ SILTY SAND with GRAVEL(SM)	NP	NP	NP
▲	B-103-0-21	18.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP
★	B-103-0-21	38.5	A-4b ~ SILTY CLAY(CL-ML)	24	19	5
⊙	B-103-0-21	58.5	A-3 ~ POORLY GRADED SAND with SILT(SP-SM)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-103-0-21	4.5	2.882	0.093	0.011		13	23	16	26	22		
⊠	B-103-0-21	11.0	19.804	1.181	0.432	0.023	40	31	15	10	4	4.16	85.00
▲	B-103-0-21	18.5	4.356	0.278	0.134	0.029	13	25	48	11	3	1.57	13.85
★	B-103-0-21	38.5	0.067	0.013	0.006		0	0	7	66	27		
⊙	B-103-0-21	58.5	0.352	0.164	0.112	0.077	0	0	91	5	4	0.83	2.60

GRAIN SIZE - OH DOT.GDT - 5/30/24 15:50 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

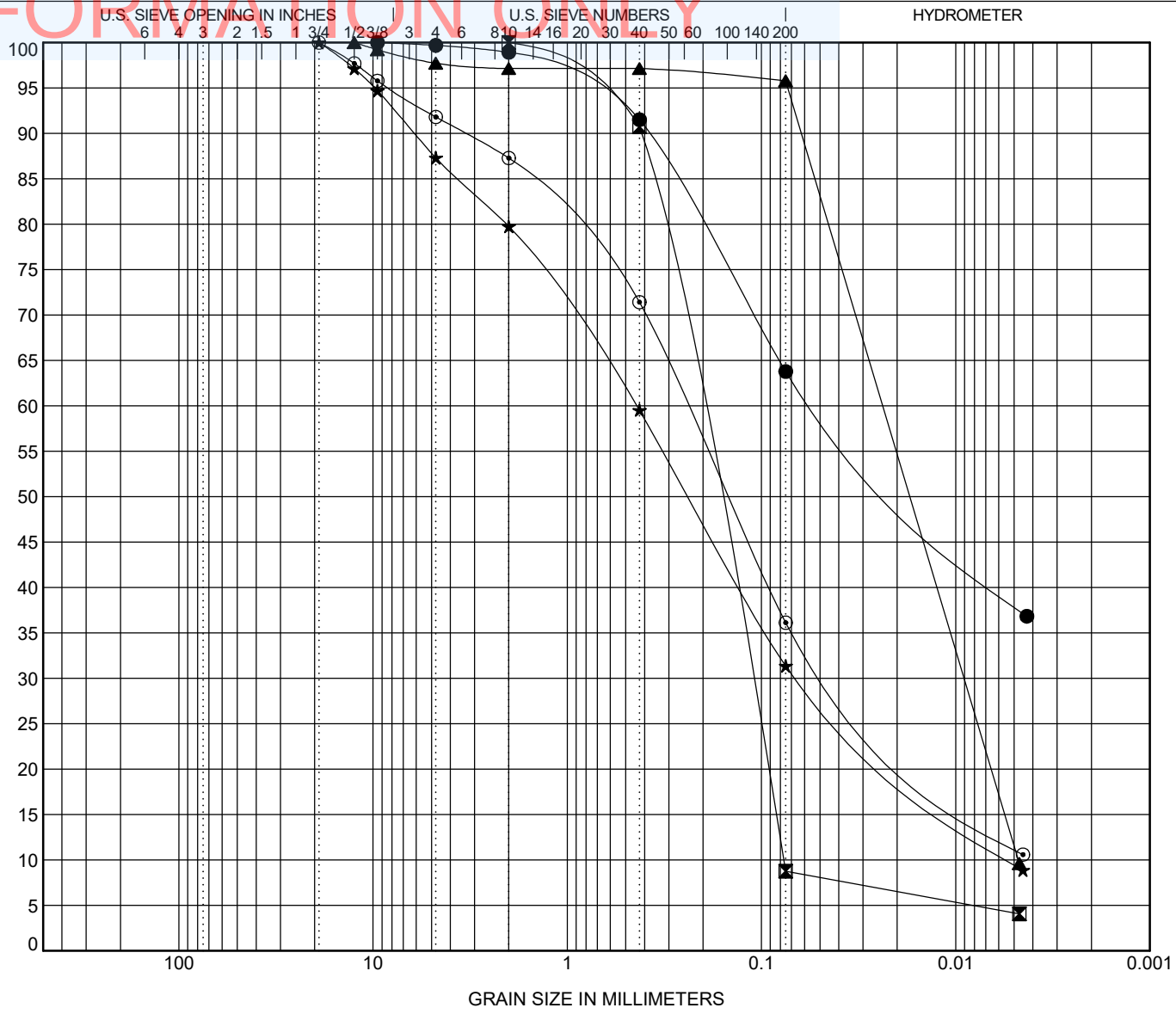
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
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PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-106-0-21	3.5	A-6b ~ SANDY LEAN CLAY(CL)	32	15	17
⊠	B-106-0-21	11.0	A-3 ~ POORLY GRADED SAND with SILT(SP-SM)	NP	NP	NP
▲	B-106-0-21	23.0	A-4b ~ SILT(ML)	23	21	2
★	B-107-0-21	1.0	A-2-4 ~ SILTY SAND(SM)	29	30	NP
⊙	B-107-0-21	6.0	A-4a ~ SILTY SAND(SM)	21	18	3

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-106-0-21	3.5	0.387	0.017			1	7	28	26	38		
⊠	B-106-0-21	11.0	0.419	0.18	0.118	0.077	0	9	82	5	4	0.81	2.88
▲	B-106-0-21	23.0	0.062	0.017	0.009	0.005	3	0	1	84	12	0.73	4.99
★	B-107-0-21	1.0	6.115	0.236	0.063	0.005	21	20	28	21	10	1.75	85.16
⊙	B-107-0-21	6.0	3.365	0.148	0.038		13	16	35	24	12		

GRAIN SIZE - OH DOT.GDT - 5/30/24 15:50 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

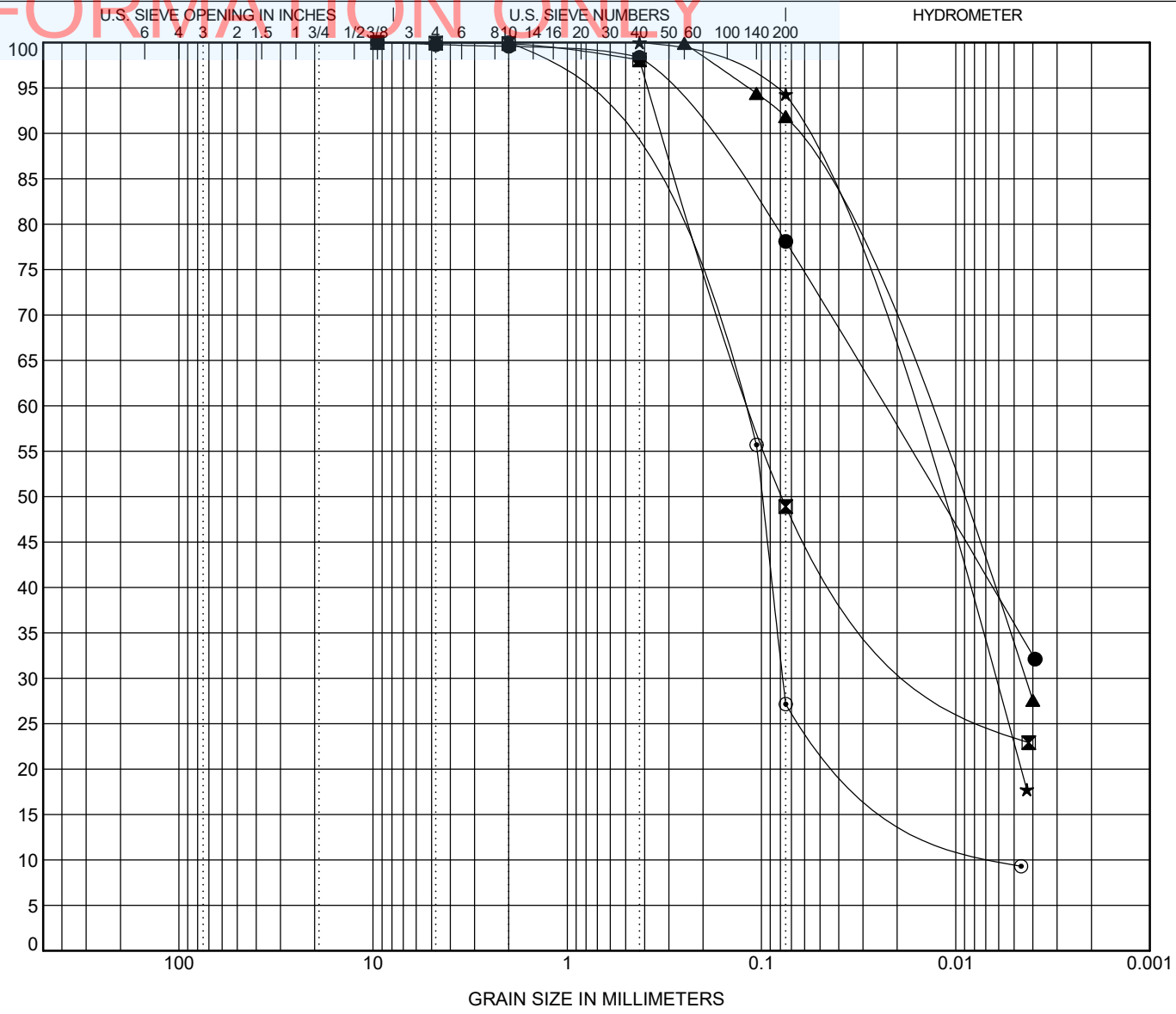
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-107-0-21	11.0	**A-6a ~ LEAN CLAY with SAND(CL)**	30	17	13
⊠	B-107-0-21	18.5	**A-6a ~ CLAYEY SAND(SC)**	29	16	13
▲	B-107-0-21	21.0	**A-4b ~ LEAN CLAY(CL)**	30	22	8
★	B-107-0-21	23.5	**A-4b ~ SILT(ML)**	25	23	2
⊙	B-107-0-21	33.5	**A-3a ~ SILTY SAND(SM)**	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-107-0-21	11.0	0.208	0.012			1	1	20	42	36		
⊠	B-107-0-21	18.5	0.319	0.078	0.009		0	2	49	25	24		
▲	B-107-0-21	21.0	0.069	0.011	0.004		0	0	8	60	32		
★	B-107-0-21	23.5	0.064	0.014	0.007		0	0	6	72	22		
⊙	B-107-0-21	33.5	1.03	0.099	0.078	0.005	0	24	49	17	10	8.34	27.48

GRAIN SIZE - OH DOT.GDT - 5/30/24 15:50 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

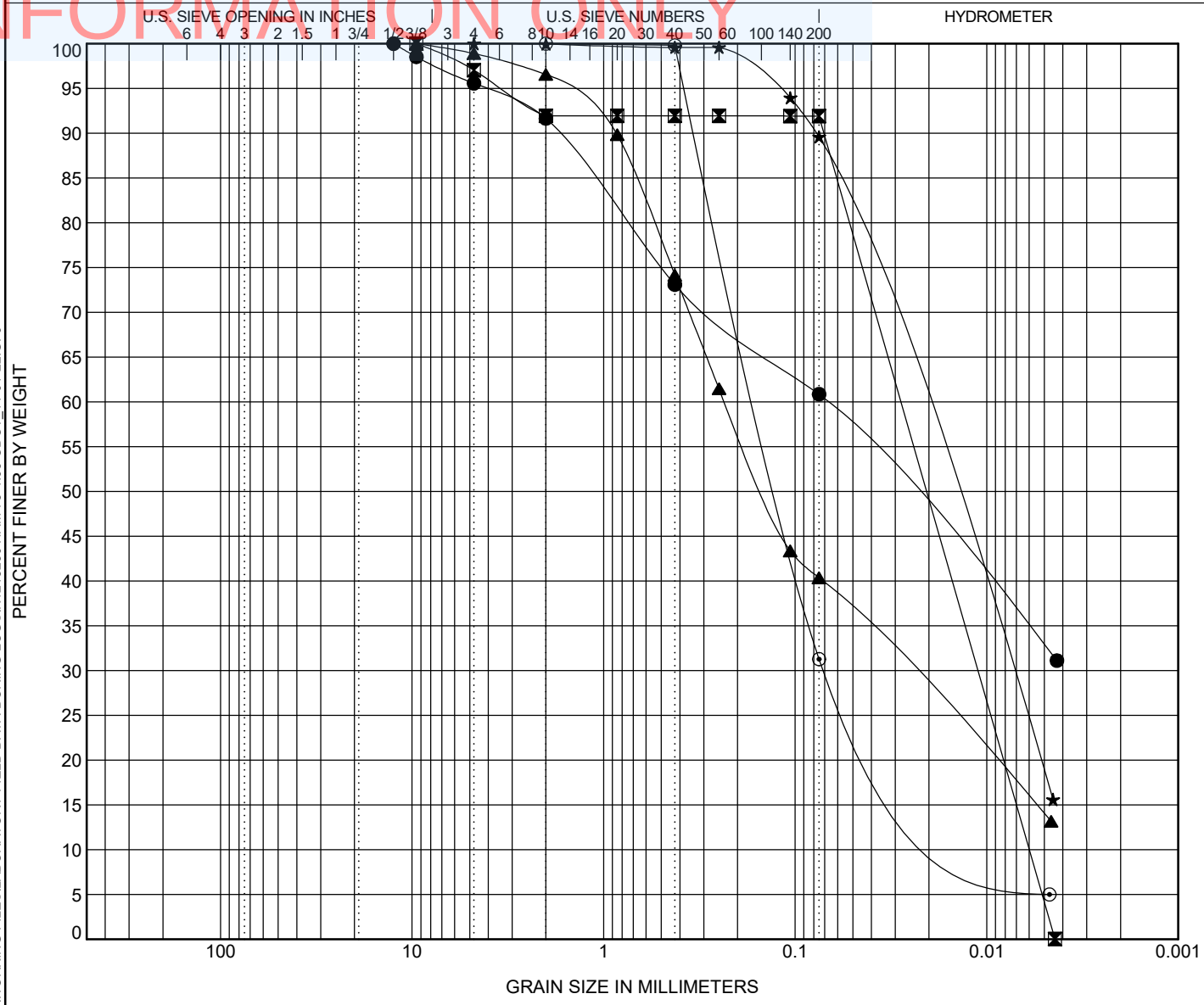
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GRAIN SIZE DISTRIBUTION

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PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-108-0-21	4.0	A-6a ~ SANDY LEAN CLAY(CL)	31	17	14
⊠	B-108-0-21	11.0	A-6a ~ LEAN CLAY(CL)	31	19	12
▲	B-108-0-21	18.5	A-4a ~ SILTY, CLAYEY SAND(SC-SM)	23	17	6
★	B-108-0-21	28.5	A-4b ~ SILTY CLAY(CL-ML)	24	17	7
⊙	B-108-0-21	43.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-108-0-21	4.0	1.744	0.026			8	19	12	28	33		
⊠	B-108-0-21	11.0	0.071	0.021	0.011	0.006	8	0	0	88	4	0.73	4.68
▲	B-108-0-21	18.5	0.868	0.145	0.026		4	22	34	26	14		
★	B-108-0-21	28.5	0.077	0.017	0.008		0	0	10	72	18		
⊙	B-108-0-21	43.5	0.332	0.12	0.066	0.008	0	0	69	25	6	3.48	19.49

GRAIN SIZE - OH DOT.GDT - 5/30/24 15:50 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

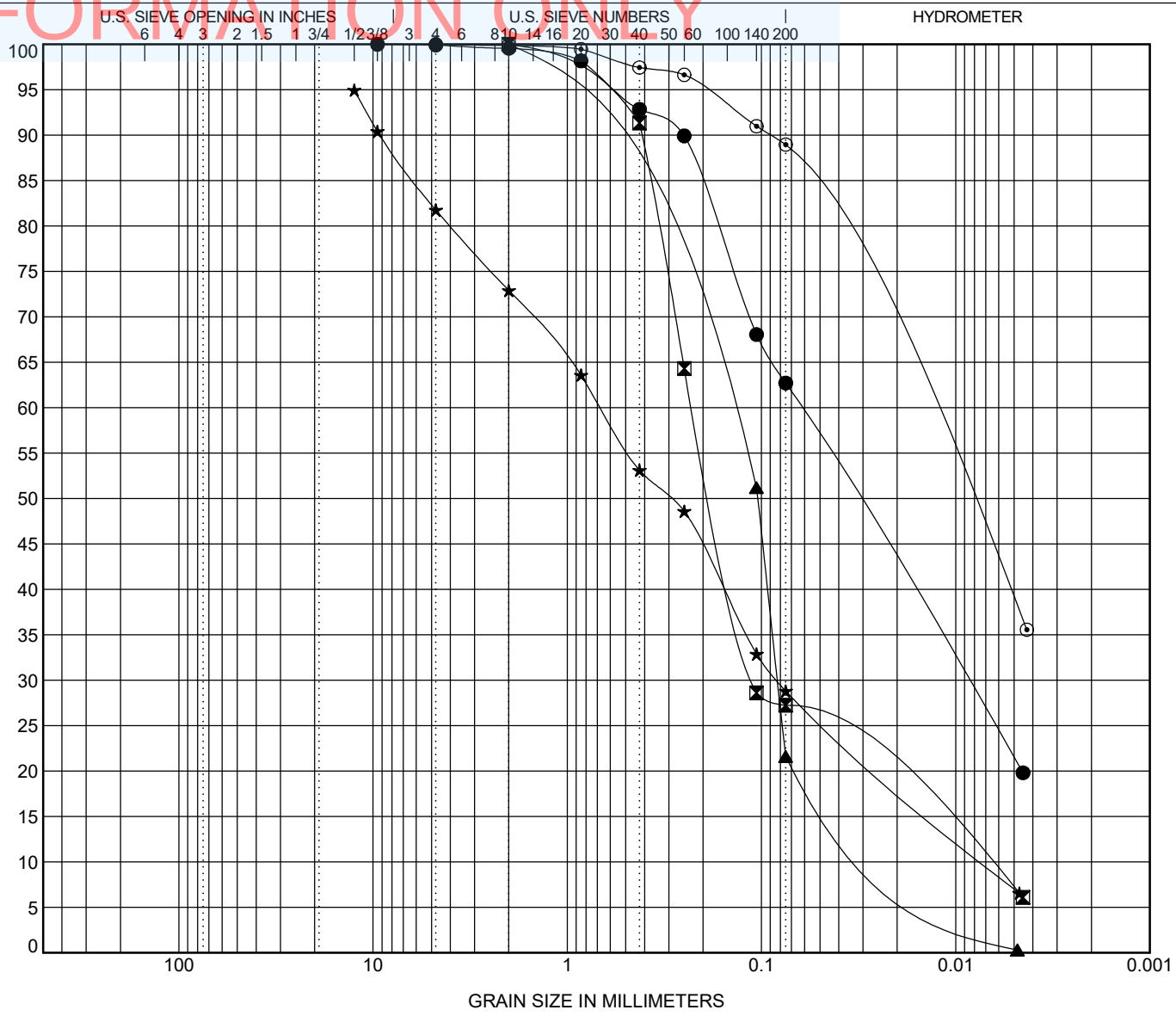
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
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PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-109-0-21	6.0	A-4a ~ SANDY LEAN CLAY(CL)	25	17	8
⊠	B-109-0-21	13.5	A-2-4 ~ SILTY, CLAYEY SAND(SC-SM)	23	16	7
▲	B-109-0-21	28.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP
★	B-110-0-21	3.5	A-2-4 ~ SILTY SAND with GRAVEL(SM)	NP	NP	NP
⊙	B-110-0-21	8.5	A-6b ~ LEAN CLAY(CL)	36	19	17

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-109-0-21	6.0	0.254	0.033	0.009		0	7	30	42	21		
⊠	B-109-0-21	13.5	0.414	0.177	0.11	0.008	0	9	64	20	7	7.04	29.77
▲	B-109-0-21	28.5	1.096	0.105	0.083	0.017	0	25	53	21	1	2.27	10.73
★	B-110-0-21	3.5	9.19	0.295	0.083	0.007	27	20	24	22	7	1.43	92.98
⊙	B-110-0-21	8.5	0.09	0.009			1	2	8	51	38		

GRAIN SIZE - OH DOT.GDT - 5/30/24 15:50 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

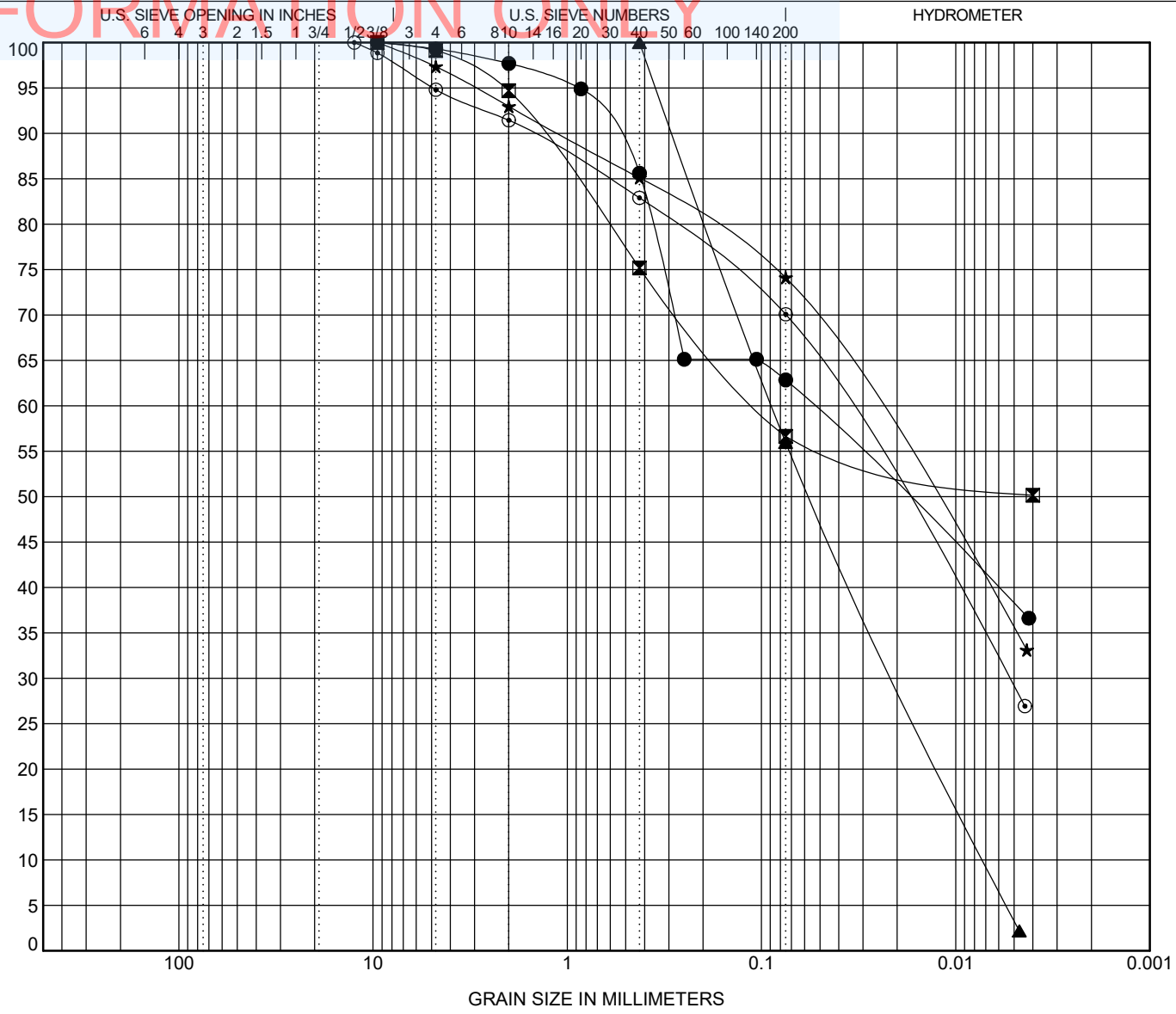
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GRAIN SIZE DISTRIBUTION

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PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-110-0-21	11.0	A-6b ~ SANDY LEAN CLAY(CL)	40	19	21
⊠	B-110-0-21	16.0	A-6a ~ SANDY LEAN CLAY(CL)	27	16	11
▲	B-110-0-21	23.5	A-4b ~ SANDY SILT(ML)	NP	NP	NP
★	B-111-0-21	4.5	A-6a ~ LEAN CLAY with SAND(CL)	32	18	14
⊙	B-111-0-21	11.0	A-6b ~ LEAN CLAY with SAND(CL)	34	18	16

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-110-0-21	11.0	0.59	0.018			2	12	23	25	38		
⊠	B-110-0-21	16.0	1.379				4	20	19	6	51		
▲	B-110-0-21	23.5	0.287	0.055	0.02	0.007	0	0	44	53	3	0.63	12.50
★	B-111-0-21	4.5	1.115	0.014			7	8	11	39	35		
⊙	B-111-0-21	11.0	1.539	0.02	0.005		8	9	13	41	29		

GRAIN SIZE - OH DOT.GDT - 5/30/24 15:51 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

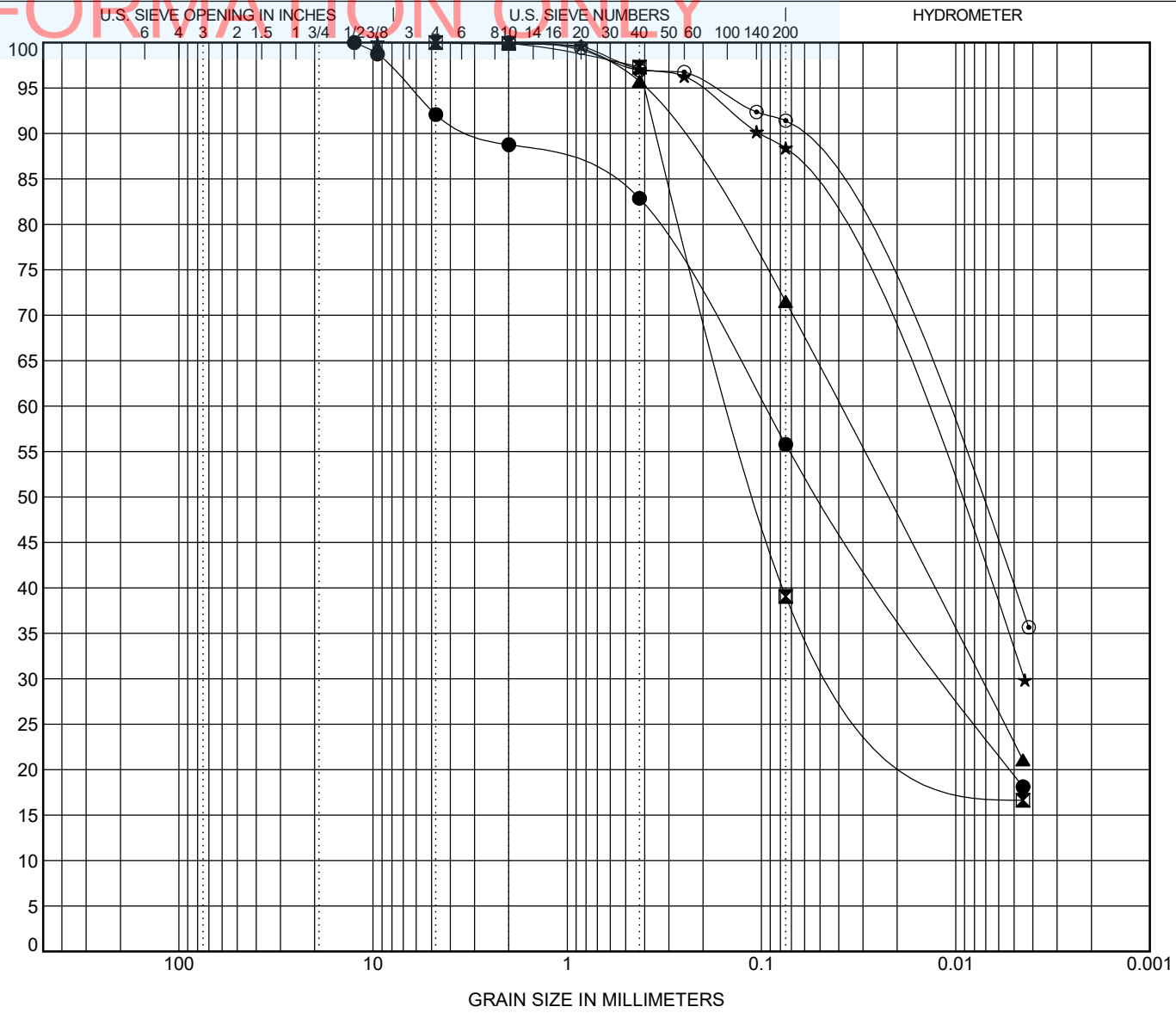
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GRAIN SIZE DISTRIBUTION

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PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-111-0-21	18.5	A-4a ~ SANDY LEAN CLAY(CL)	25	16	9
⊠	B-111-0-21	33.5	A-4a ~ SILTY SAND(SM)	21	19	2
▲	B-112-0-21	3.5	A-4a ~ SILTY CLAY with SAND(CL-ML)	23	16	7
★	B-112-0-21	11.0	A-6a ~ LEAN CLAY(CL)	34	22	12
⊙	B-112-0-21	16.0	A-7-6 ~ LEAN CLAY(CL)	41	19	22

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-111-0-21	18.5	2.763	0.049	0.011		11	6	27	36	20		
⊠	B-111-0-21	33.5	0.342	0.104	0.024		0	3	58	22	17		
▲	B-112-0-21	3.5	0.282	0.023	0.007		0	4	24	49	23		
★	B-112-0-21	11.0	0.102	0.012	0.004		0	3	9	56	32		
⊙	B-112-0-21	16.0	0.07	0.009			0	3	6	52	39		

GRAIN SIZE - OH DOT.GDT - 5/30/24 15:51 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

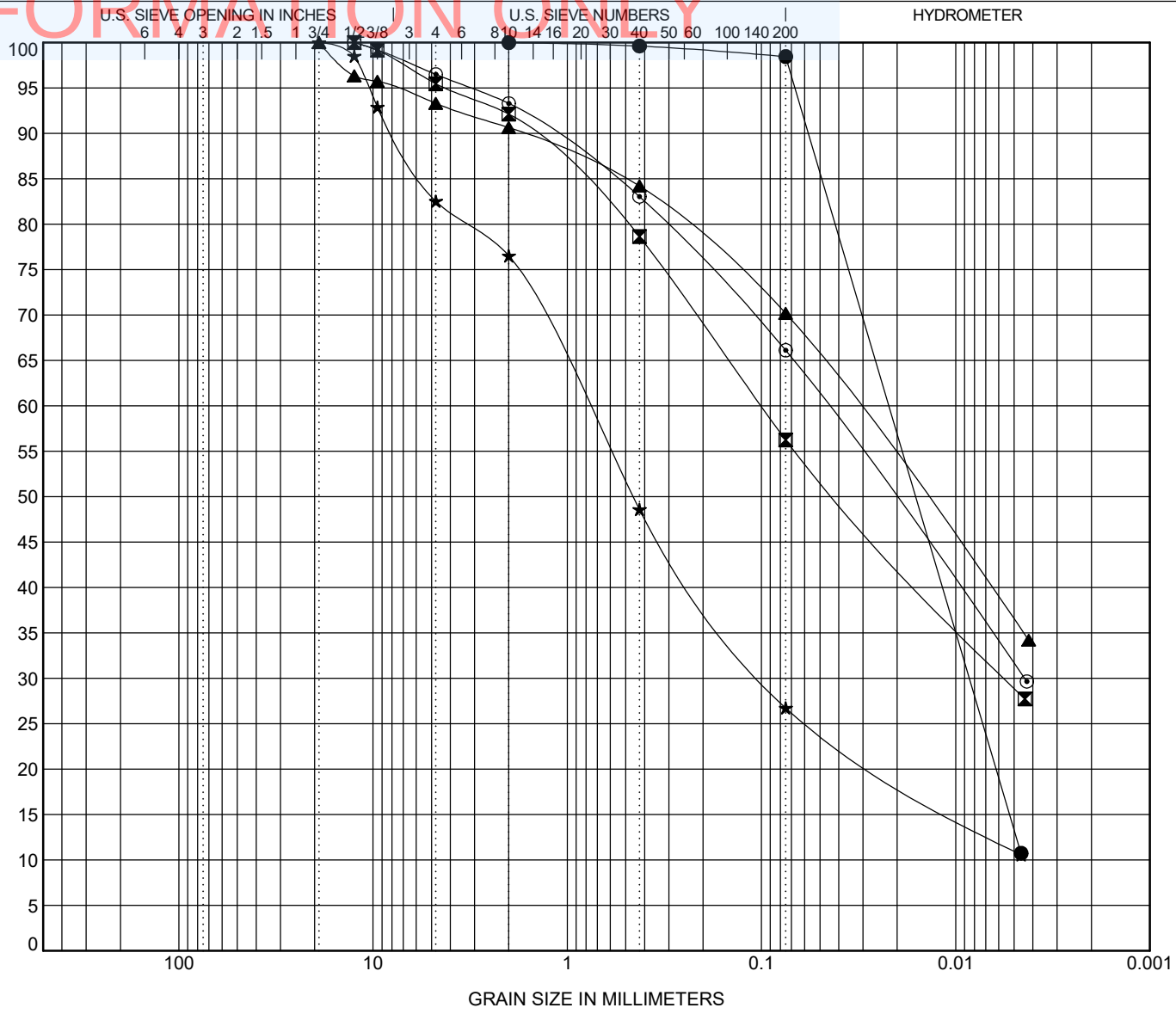
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PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-112-0-21	33.5	A-4b ~ SILT(ML)	NP	NP	NP
⊠	B-113-0-21	4.5	A-4a ~ SANDY LEAN CLAY(CL)	26	17	9
▲	B-113-0-21	8.0	A-6a ~ LEAN CLAY with SAND(CL)	31	19	12
★	B-113-0-21	11.0	A-3a ~ SILTY, CLAYEY SAND with GRAVEL(SC-SM)	20	15	5
⊙	B-113-0-21	18.5	A-4a ~ SANDY SILTY CLAY(CL-ML)	26	20	6

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-112-0-21	33.5	0.057	0.016	0.008		0	1	1	85	13		
⊠	B-113-0-21	4.5	1.567	0.04	0.006		9	13	22	27	29		
▲	B-113-0-21	8.0	1.716	0.015			10	6	14	34	36		
★	B-113-0-21	11.0	7.827	0.46	0.097		23	28	22	16	11		
⊙	B-113-0-21	18.5	1.216	0.021	0.004		7	10	17	34	32		

GRAIN SIZE - OH DOT.GDT - 5/30/24 15:52 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

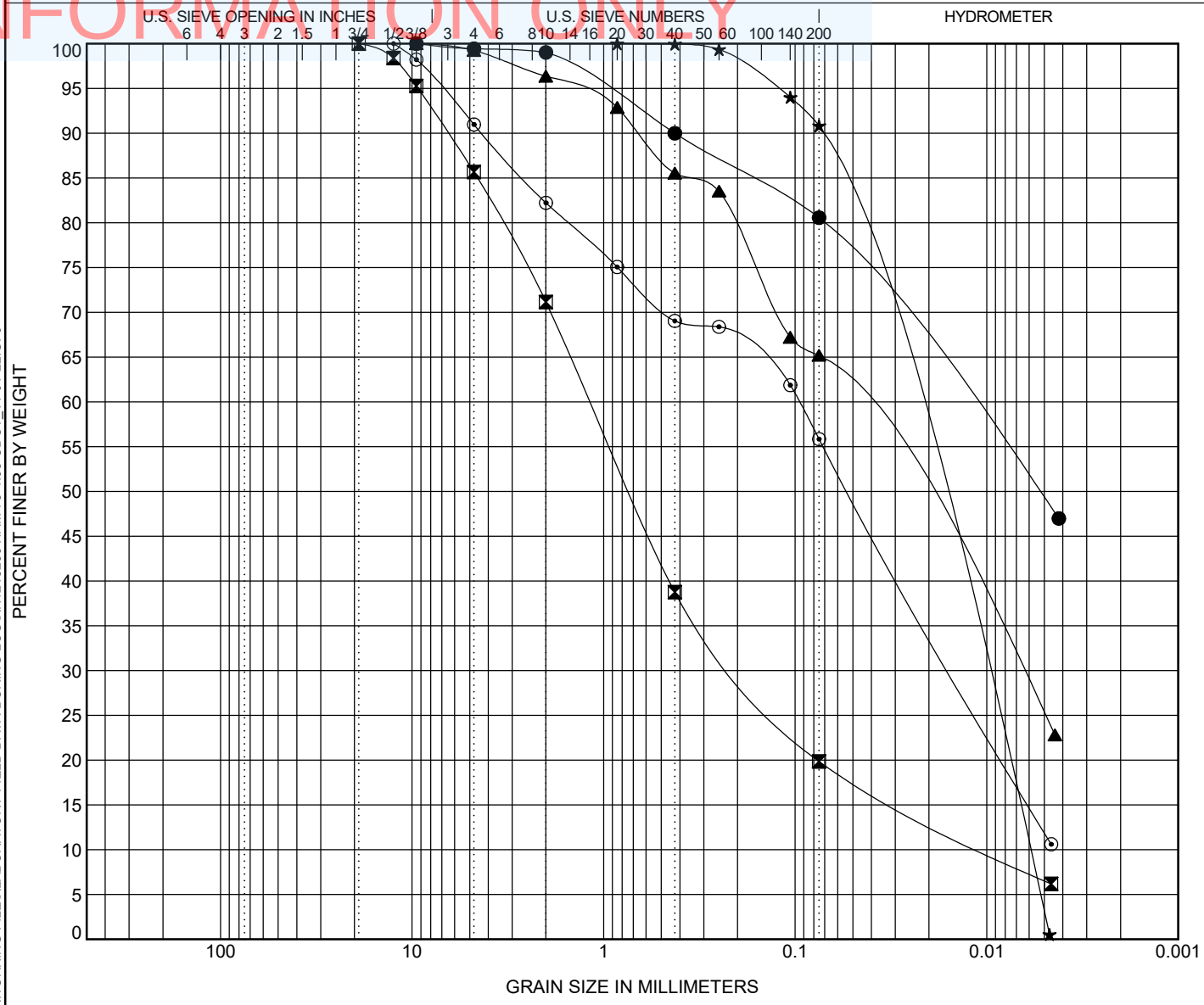
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PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-113-0-21	28.5	A-6b ~ LEAN CLAY with SAND(CL)	40	22	18
⊠	B-113-0-21	33.5	A-1-b ~ SILTY SAND(SM)	15	13	2
▲	B-114-0-21	3.5	A-4a ~ SANDY SILTY CLAY(CL-ML)	23	16	7
★	B-114-0-21	8.5	A-6b ~ LEAN CLAY(CL)	37	18	19
⊙	B-114-0-21	13.5	A-4a ~ SANDY SILTY CLAY(CL-ML)	22	16	6

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-113-0-21	28.5	0.426	0.005			1	9	9	32	49		
⊠	B-113-0-21	33.5	6.496	0.728	0.19	0.01	29	32	19	13	7	3.08	116.96
▲	B-114-0-21	3.5	0.648	0.027	0.007		4	11	20	40	25		
★	B-114-0-21	8.5	0.073	0.021	0.012	0.006	0	0	9	88	3	0.74	4.64
⊙	B-114-0-21	13.5	4.314	0.052	0.015		18	13	13	44	12		

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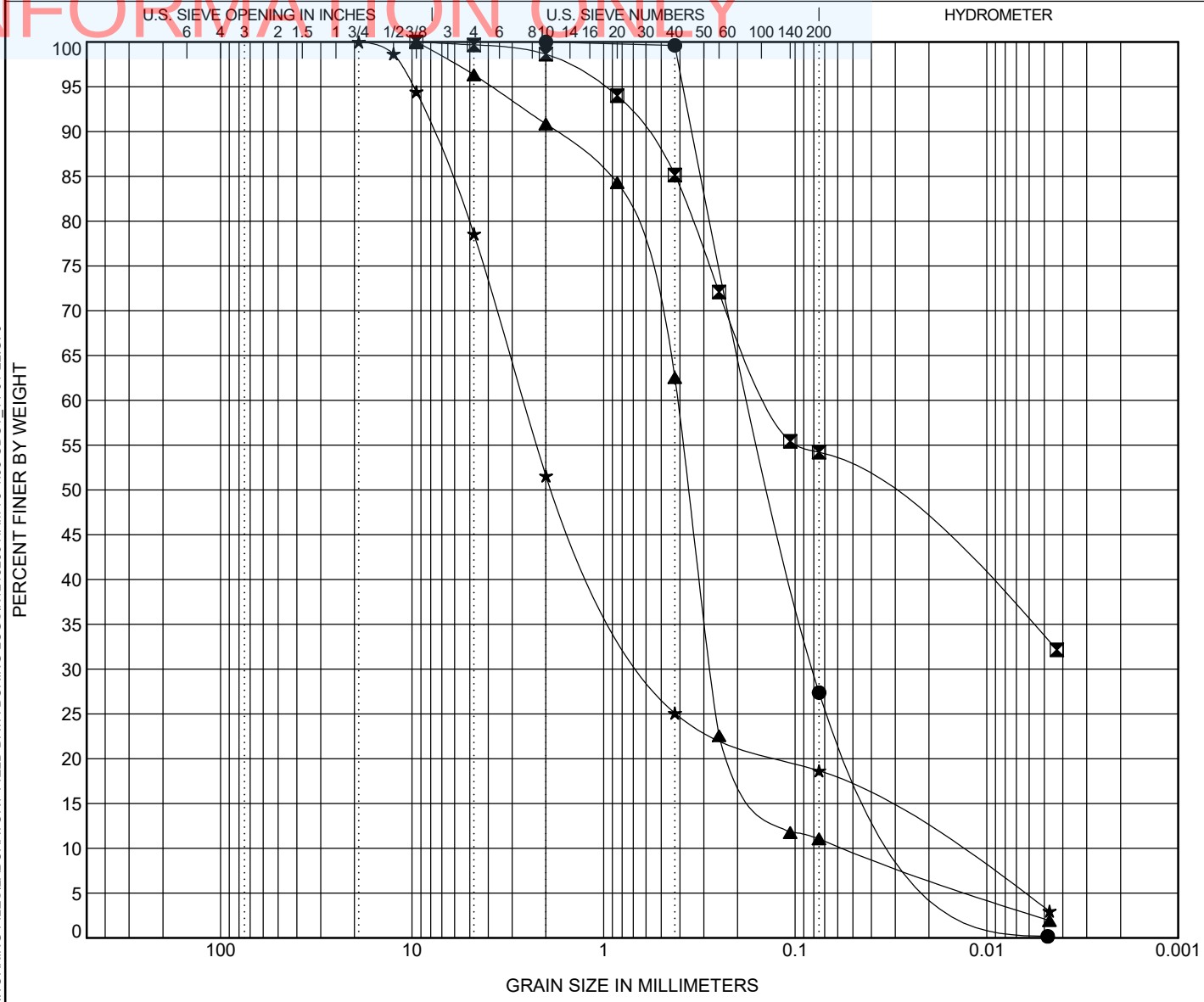
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GRAIN SIZE DISTRIBUTION

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PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-114-0-21	23.5	**A-3a ~ SILTY SAND(SM)**	**NP**	**NP**	**NP**
⊠	B-115-0-21	8.5	**A-6a ~ SANDY LEAN CLAY(CL)**	**34**	**21**	**13**
▲	B-115-0-21	13.5	**A-3a ~ POORLY GRADED SAND with SILT(SP-SM)**	**NP**	**NP**	**NP**
★	B-115-0-21	18.5	**A-1-b ~ SILTY SAND with GRAVEL(SM)**	**NP**	**NP**	**NP**
⊙	B-115-0-21	23.5	~			

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-114-0-21	23.5	**0.337**	**0.129**	**0.08**	**0.013**	**0**	**1**	**72**	**26**	**1**	**3.00**	**12.67**
⊠	B-115-0-21	8.5	**0.621**	**0.043**			**2**	**13**	**31**	**21**	**33**		
▲	B-115-0-21	13.5	**1.792**	**0.36**	**0.276**	**0.054**	**10**	**28**	**51**	**9**	**2**	**3.41**	**7.55**
★	B-115-0-21	18.5	**7.826**	**1.825**	**0.567**	**0.016**	**49**	**26**	**6**	**16**	**3**	**7.55**	**161.48**
⊙	B-115-0-21	23.5											

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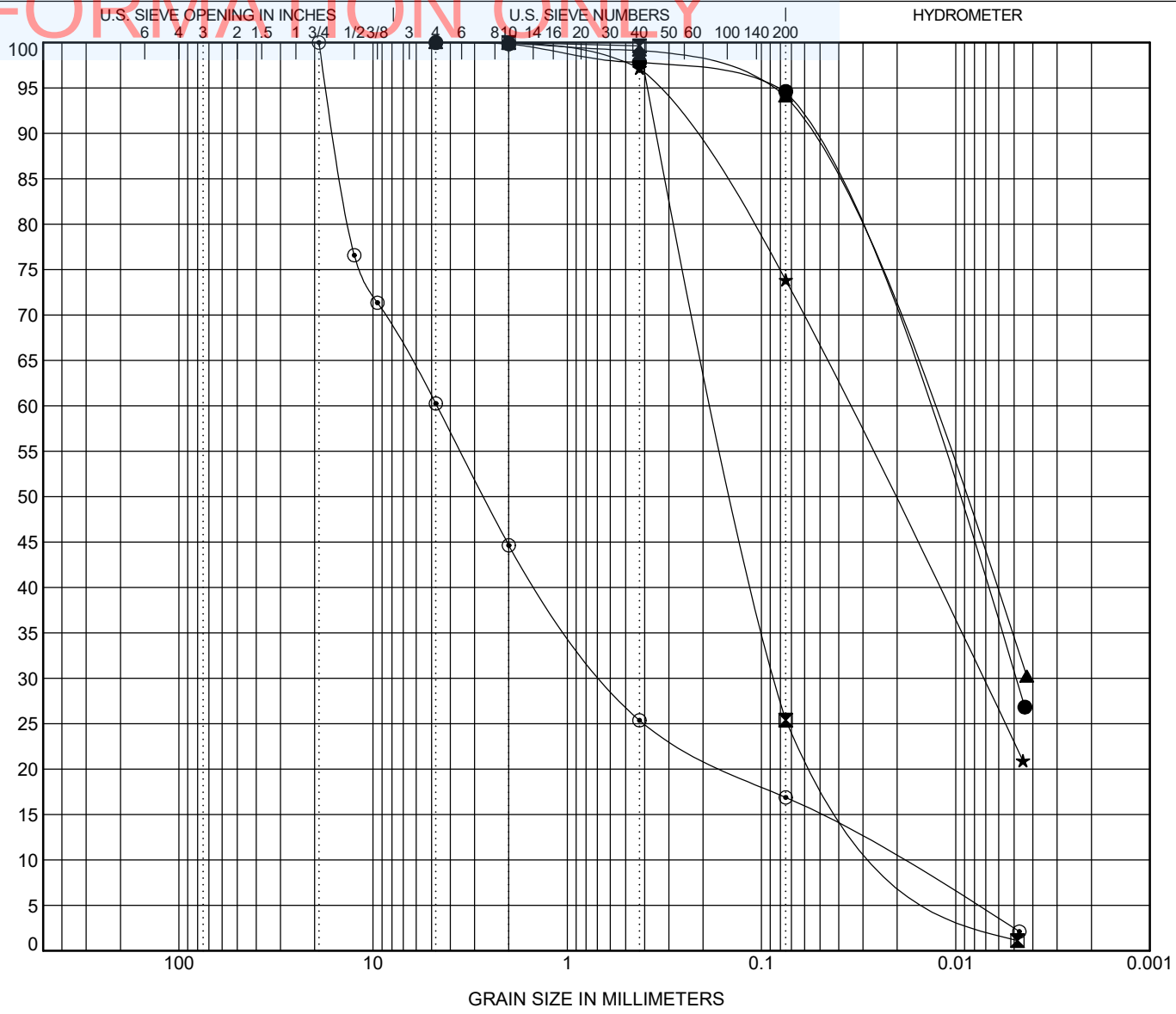
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PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-115-0-21	28.5	A-6a ~ LEAN CLAY(CL)	29	18	11
⊠	B-115-0-21	43.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP
▲	B-116-0-21	8.5	A-6a ~ LEAN CLAY(CL)	34	21	13
★	B-116-0-21	13.5	A-6a ~ LEAN CLAY with SAND(CL)	30	16	14
⊙	B-116-0-21	18.5	A-1-b ~ SILTY SAND with GRAVEL(SM)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-115-0-21	28.5	0.062	0.012	0.005		0	2	3	65	30		
⊠	B-115-0-21	43.5	0.339	0.133	0.084	0.013	0	1	74	24	1	3.16	12.83
▲	B-116-0-21	8.5	0.062	0.01			0	1	5	60	34		
★	B-116-0-21	13.5	0.249	0.021	0.007		0	3	23	51	23		
⊙	B-116-0-21	18.5	15.889	2.692	0.617	0.021	56	19	8	15	2	3.93	227.01

GRAIN SIZE - OH DOT.GDT - 5/30/24 15:53 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

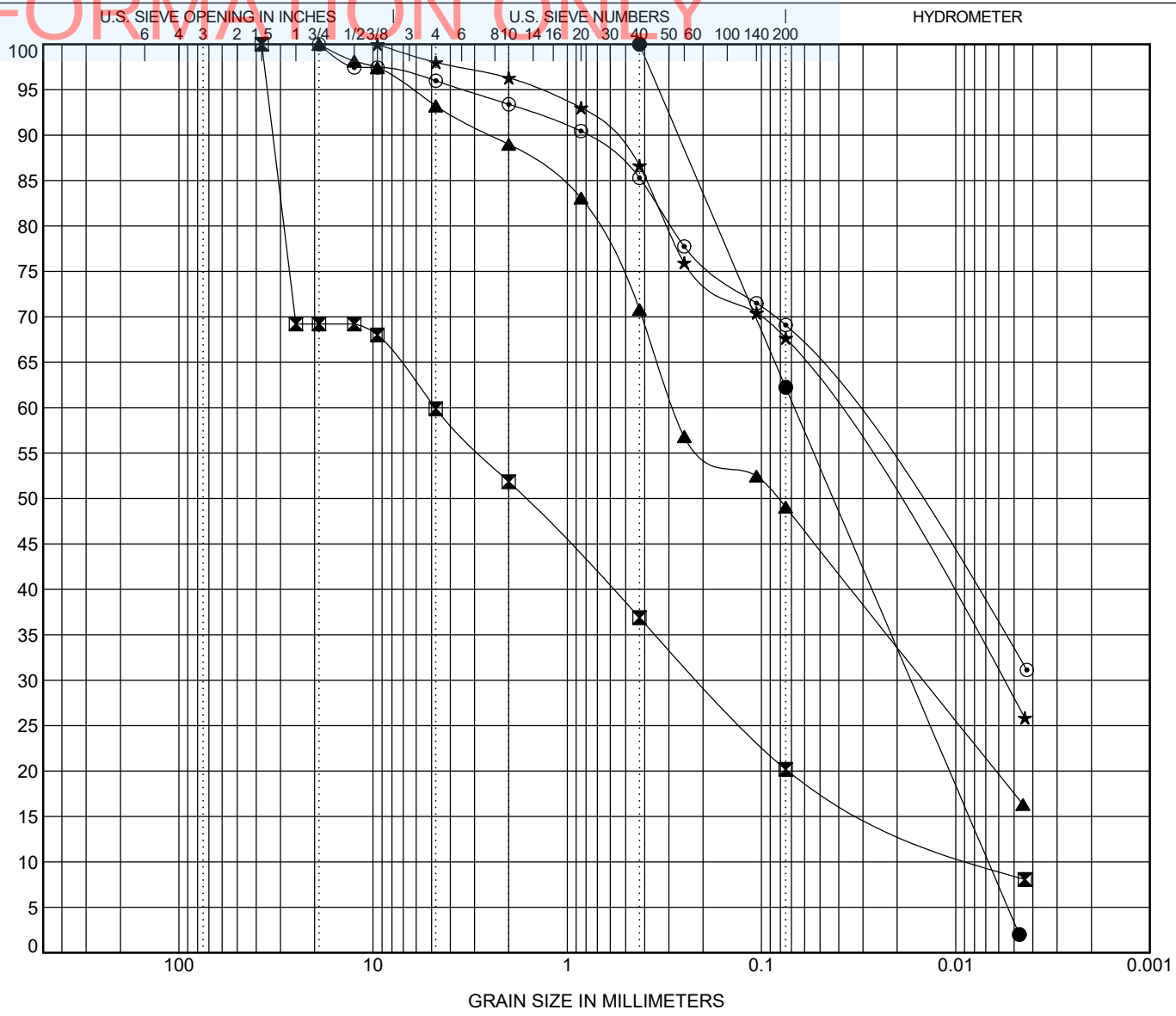
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PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-116-0-21	33.5	A-4b ~ SANDY SILT(ML)	NP	NP	NP
⊠	B-117-0-21	3.0	A-1-b ~ SILTY GRAVEL with SAND(GM)	NP	NP	NP
▲	B-117-0-21	4.5	A-4a ~ SILTY, CLAYEY SAND(SC-SM)	23	16	7
★	B-117-0-21	6.0	A-4a ~ SANDY SILTY CLAY(CL-ML)	23	17	6
⊙	B-117-0-21	11.0	A-4a ~ SANDY LEAN CLAY(CL)	28	19	9

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-116-0-21	33.5	0.268	0.043	0.017	0.007	0	0	38	59	3	0.63	9.97
⊠	B-117-0-21	3.0	32.873	1.654	0.208	0.007	48	15	17	11	9	1.30	693.61
▲	B-117-0-21	4.5	2.462	0.083	0.015		11	18	22	31	18		
★	B-117-0-21	6.0	0.612	0.023	0.006		3	10	19	40	28		
⊙	B-117-0-21	11.0	0.8	0.018			7	8	16	36	33		

GRAIN SIZE - OH DOT.GDT - 5/30/24 15:54 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

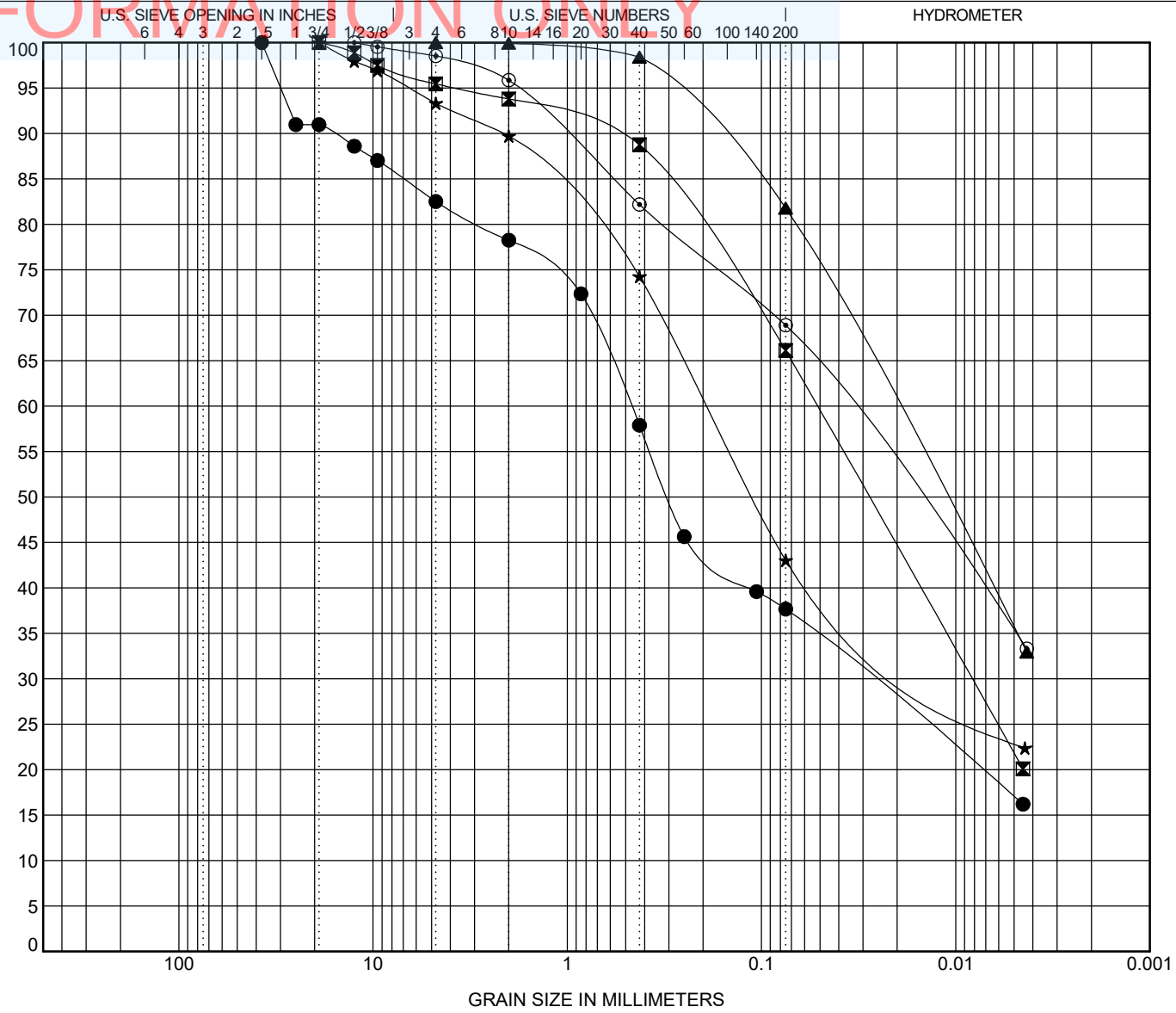
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GRAIN SIZE DISTRIBUTION

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PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-117-0-21	13.5	A-4a ~ CLAYEY SAND with GRAVEL(SC)	24	16	8
⊠	B-117-0-21	23.0	A-4a ~ SANDY SILT(ML)	28	25	3
▲	B-117-0-21	28.5	A-6a ~ LEAN CLAY with SAND(CL)	28	16	12
★	B-117-0-21	33.5	A-6b ~ CLAYEY SAND(SC)	35	15	20
⊙	B-120-0-21	6.0	A-7-6 ~ SANDY LEAN CLAY(CL)	45	17	28

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-117-0-21	13.5	16.004	0.302	0.027		22	20	20	21	17		
⊠	B-117-0-21	23.0	0.622	0.028	0.008		6	5	23	44	22		
▲	B-117-0-21	28.5	0.177	0.012			0	1	17	46	36		
★	B-117-0-21	33.5	2.142	0.11	0.013		11	15	31	20	23		
⊙	B-120-0-21	6.0	1.03	0.016			4	14	13	34	35		

GRAIN SIZE - OH DOT.GDT - 5/30/24 15:55 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

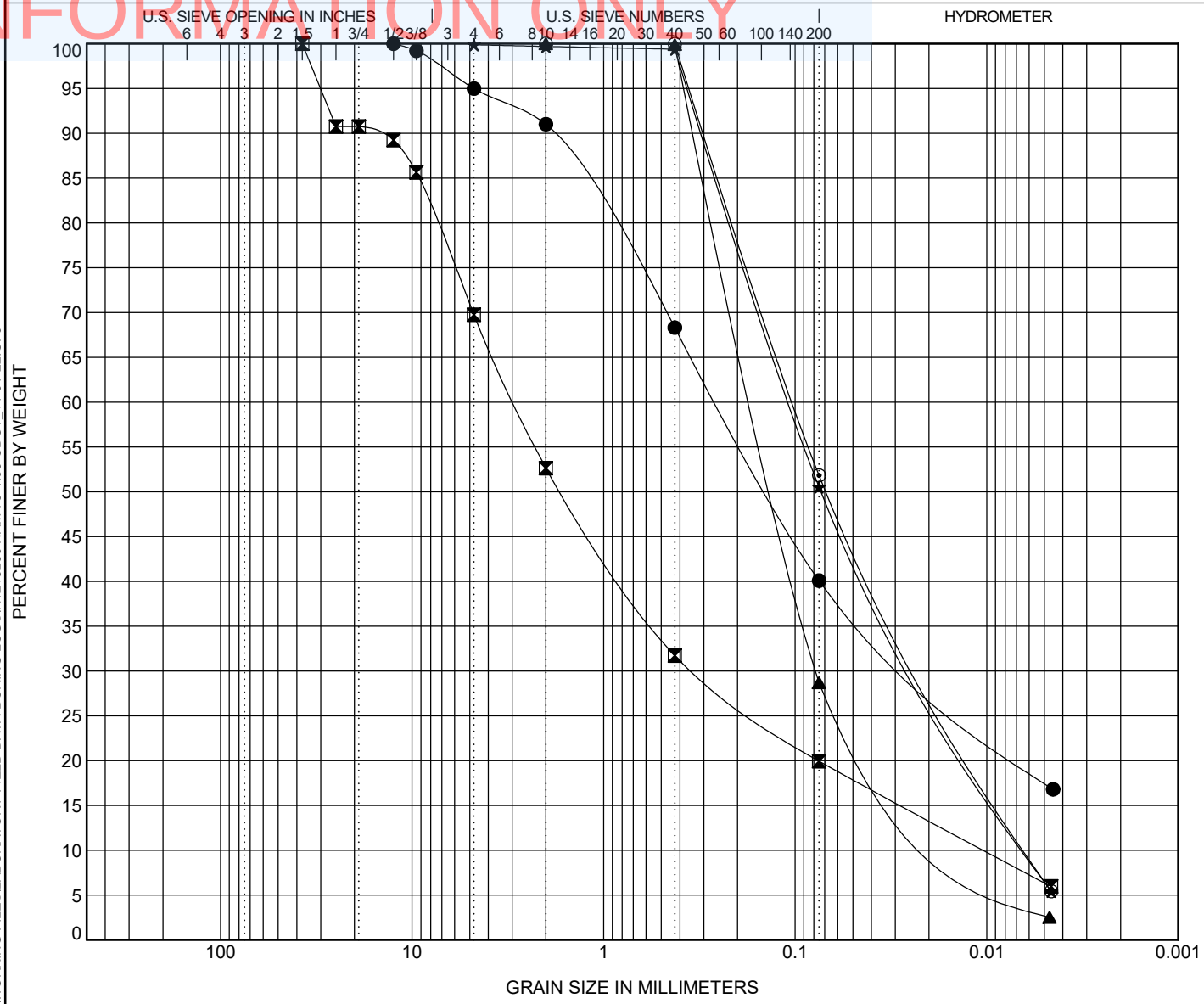
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PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-120-0-21	15.5	A-6a ~ CLAYEY SAND(SC)	27	13	14
⊠	B-120-0-21	18.5	A-2-4 ~ CLAYEY SAND with GRAVEL(SC)	25	15	10
▲	B-120-0-21	28.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP
★	B-120-0-21	43.5	A-4a ~ SANDY SILT(ML)	NP	NP	NP
⊙	B-120-0-21	63.5	A-4a ~ SANDY SILT(ML)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-120-0-21	15.5	1.867	0.138	0.022		9	23	28	22	18		
⊠	B-120-0-21	18.5	15.414	1.645	0.33	0.01	47	21	12	14	6	3.64	281.46
▲	B-120-0-21	28.5	0.334	0.126	0.077	0.01	0	0	71	26	3	3.59	15.50
★	B-120-0-21	43.5	0.304	0.073	0.021	0.006	0	0	49	44	7	0.69	17.19
⊙	B-120-0-21	63.5	0.297	0.067	0.02	0.006	0	0	48	45	7	0.67	16.62

GRAIN SIZE - OH DOT.GDT - 5/30/24 15:55 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

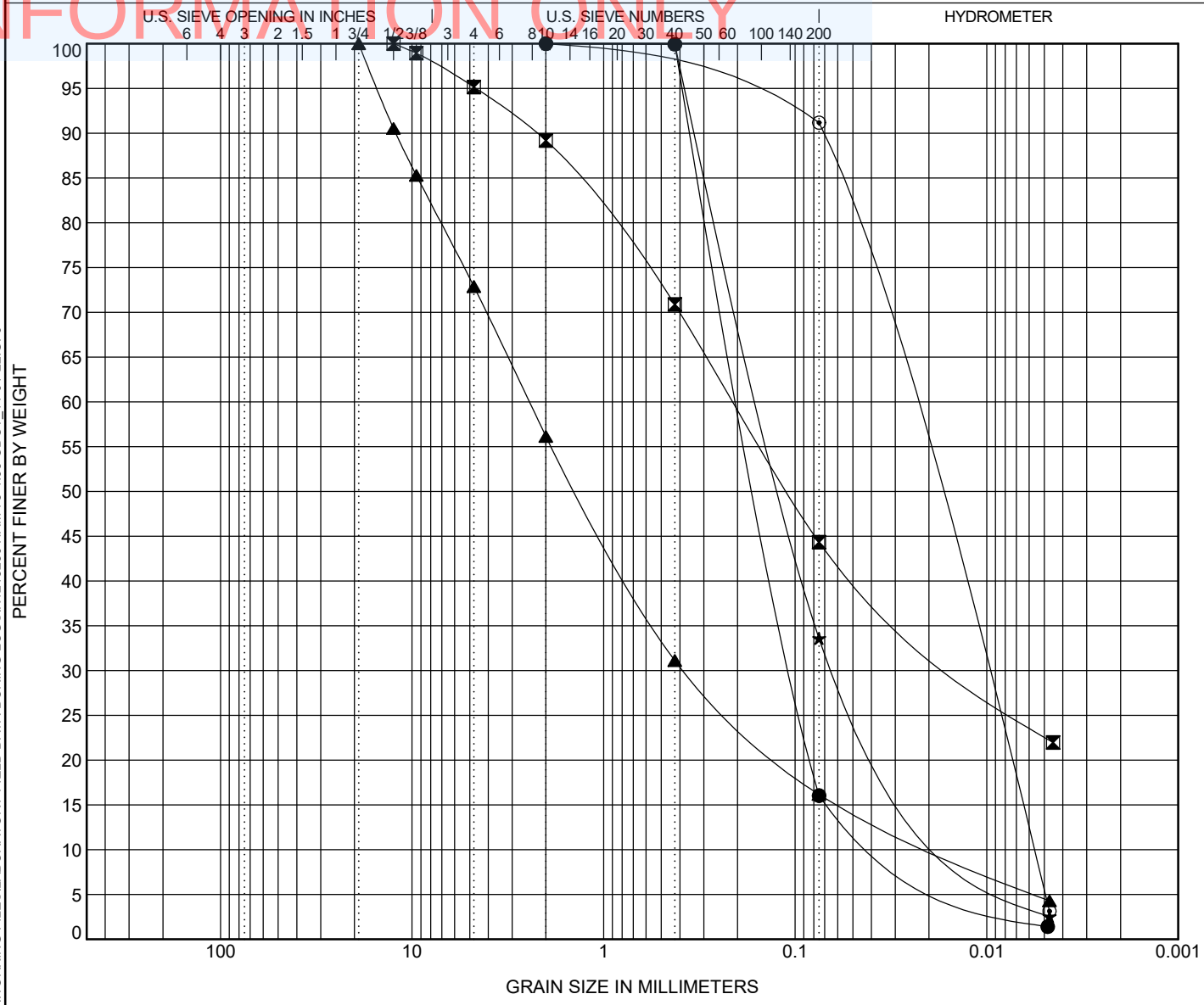
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-120-0-21	68.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP
⊠	B-121-0-21	3.5	A-6a ~ CLAYEY SAND(SC)	25	13	12
▲	B-121-0-21	13.5	A-1-b ~ SILTY SAND with GRAVEL(SM)	NP	NP	NP
★	B-121-0-21	28.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP
⊙	B-121-0-21	38.5	A-4b ~ SILT(ML)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-120-0-21	68.5	0.346	0.151	0.1	0.024	0	0	84	14	2	2.23	7.71
⊠	B-121-0-21	3.5	2.251	0.109	0.012		11	18	27	21	23		
▲	B-121-0-21	13.5	12.157	1.368	0.373	0.018	44	25	15	11	5	3.21	137.13
★	B-121-0-21	28.5	0.328	0.115	0.054	0.009	0	0	66	31	3	2.17	16.36
⊙	B-121-0-21	38.5	0.072	0.021	0.011	0.006	0	4	5	86	5	0.73	4.82

GRAIN SIZE - OH DOT.GDT - 5/30/24 15:56 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

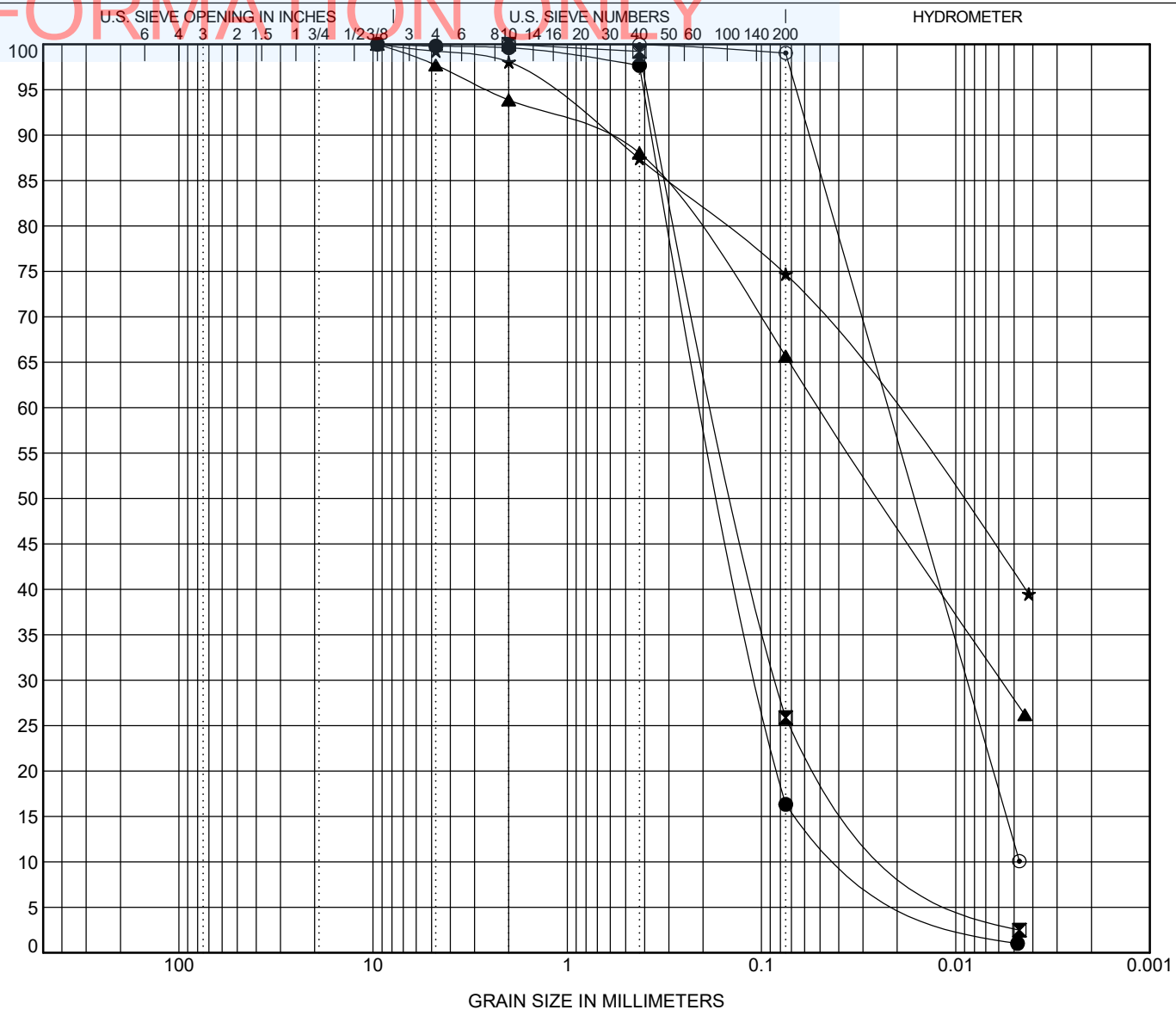
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-121-0-21	53.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP
⊠	B-121-0-21	68.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP
▲	B-123-0-21	6.0	A-6b ~ SANDY LEAN CLAY(CL)	33	9	24
★	B-123-0-21	11.0	A-7-6 ~ LEAN CLAY with SAND(CL)	45	20	25
⊙	B-123-0-21	18.5	A-4b ~ SILT(ML)	27	25	2

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-121-0-21	53.5	0.361	0.154	0.1	0.024	1	2	81	15	1	2.20	7.91
⊠	B-121-0-21	68.5	0.342	0.133	0.083	0.011	0	1	73	23	3	3.55	14.67
▲	B-123-0-21	6.0	0.717	0.024	0.006		6	6	22	38	28		
★	B-123-0-21	11.0	0.62	0.01			1	11	13	33	42		
⊙	B-123-0-21	18.5	0.057	0.016	0.009		0	0	1	87	12		

GRAIN SIZE - OH DOT.GDT - 5/30/24 15:57 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

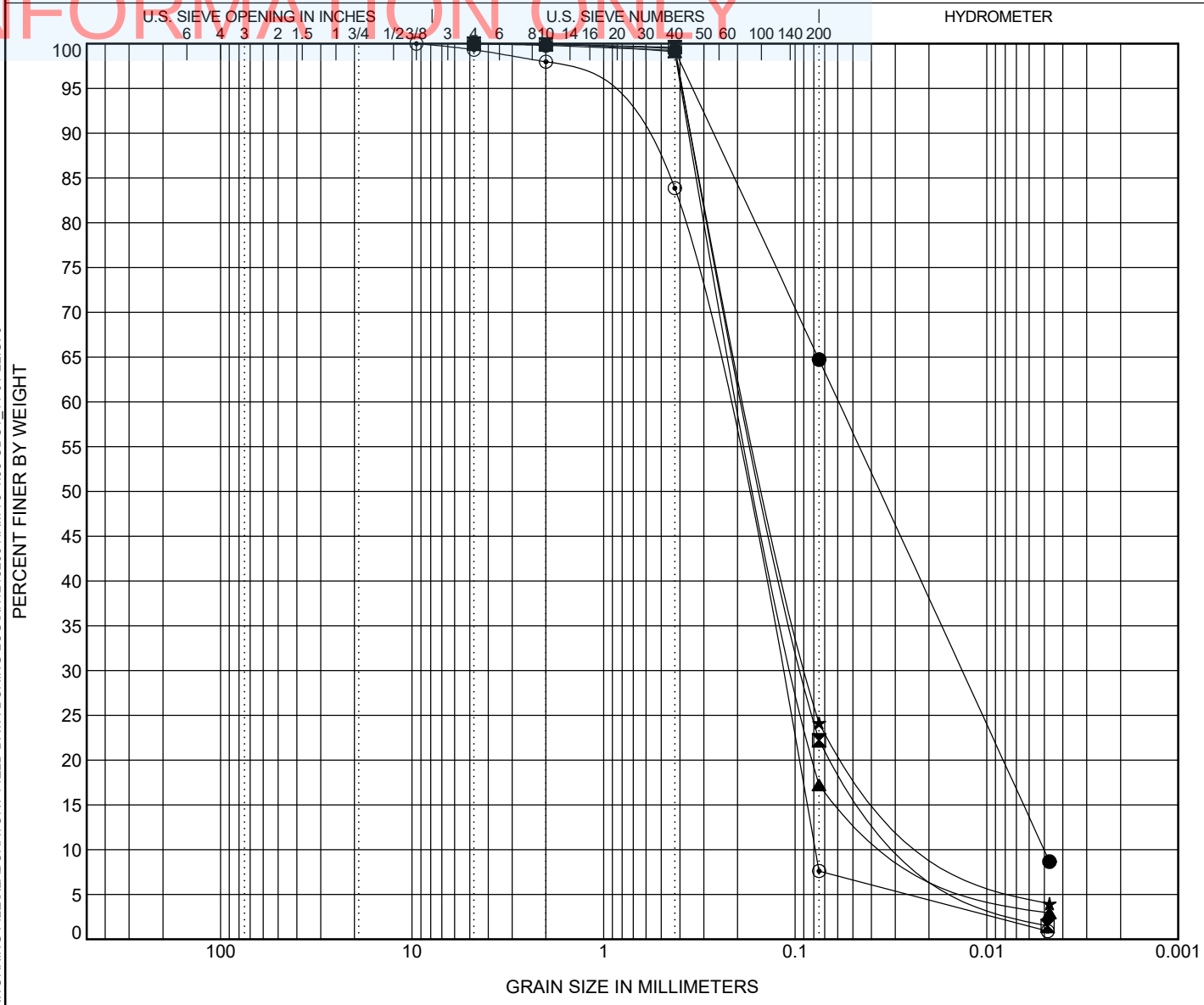
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-123-0-21	38.5	A-4b ~ SANDY SILT(ML)	20	20	NP
⊠	B-123-0-21	48.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP
▲	B-123-0-21	58.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP
★	B-123-0-21	68.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP
⊙	B-124-0-21	3.5	A-3 ~ POORLY GRADED SAND with SILT(SP-SM)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-123-0-21	38.5	0.267	0.036	0.013	0.005	0	0	35	55	10	0.61	11.83
⊠	B-123-0-21	48.5	0.343	0.14	0.089	0.015	1	0	77	20	2	3.07	11.78
▲	B-123-0-21	58.5	0.351	0.15	0.098	0.018	0	1	82	14	3	2.82	10.04
★	B-123-0-21	68.5	0.342	0.136	0.086	0.011	1	0	75	20	4	4.00	15.92
⊙	B-124-0-21	3.5	0.833	0.197	0.125	0.079	2	14	76	7	1	0.80	3.12

GRAIN SIZE - OH DOT.GDT - 5/30/24 15:58 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

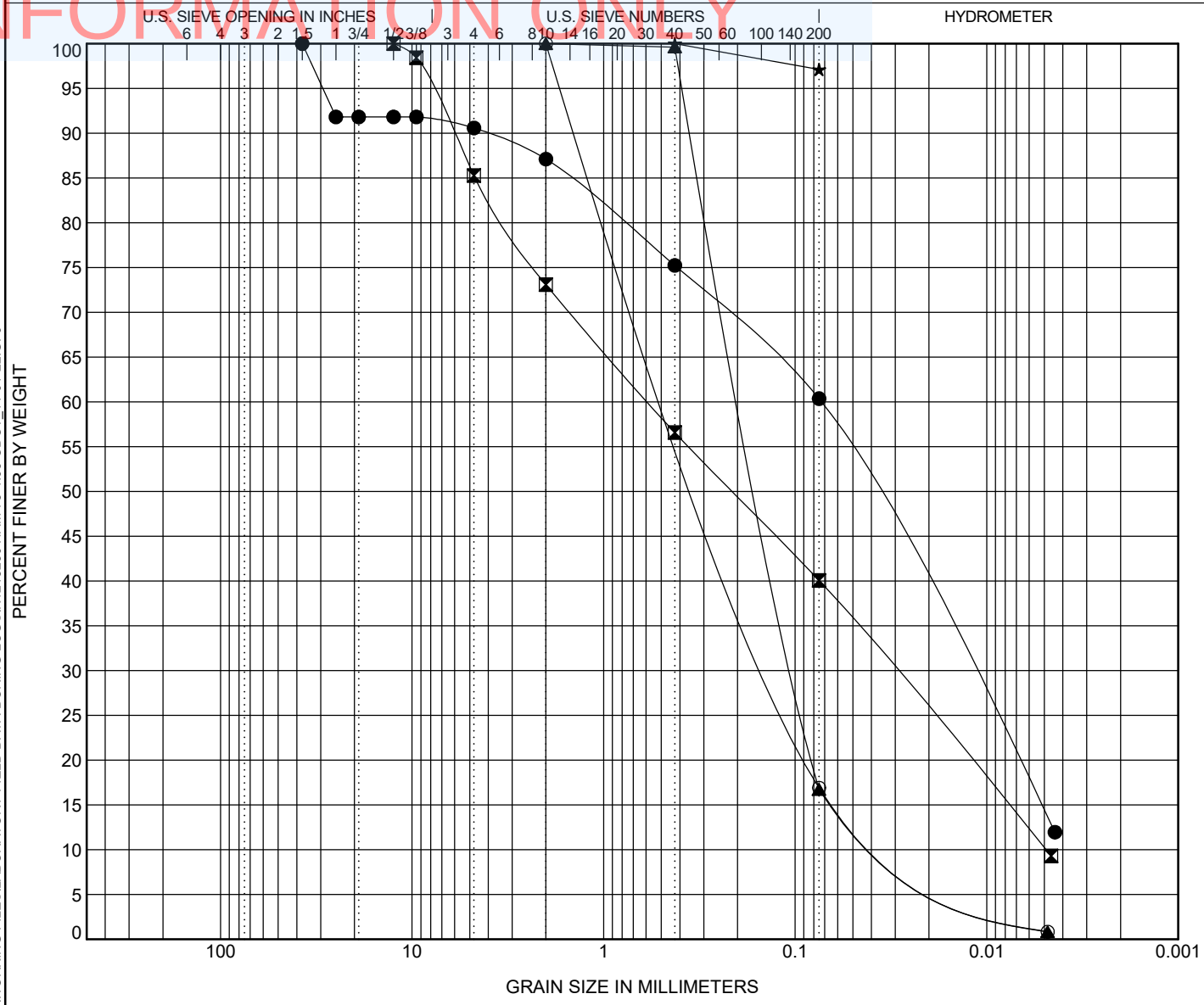
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-124-0-21	13.5	~			
⊠	B-124-0-21	18.5	A-6a ~ CLAYEY SAND(SC)	31	19	12
▲	B-124-0-21	23.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP
★	B-124-0-21	33.5	A-4 ~ SILT(ML)	NP	NP	NP
⊙	B-124-0-21	43.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-124-0-21	13.5	4.112	0.041	0.013		13	12	15	46	14		
⊠	B-124-0-21	18.5	6.094	0.213	0.03	0.005	26	17	17	30	10	0.32	119.47
▲	B-124-0-21	23.5	0.347	0.15	0.099	0.023	0	0	83	16	1	2.26	7.92
★	B-124-0-21	33.5					0	0	3	97			
⊙	B-124-0-21	43.5	1.347	0.277	0.126	0.023	0	39	44	16	1	1.67	17.87

GRAIN SIZE - OH DOT.GDT - 5/30/24 15:59 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

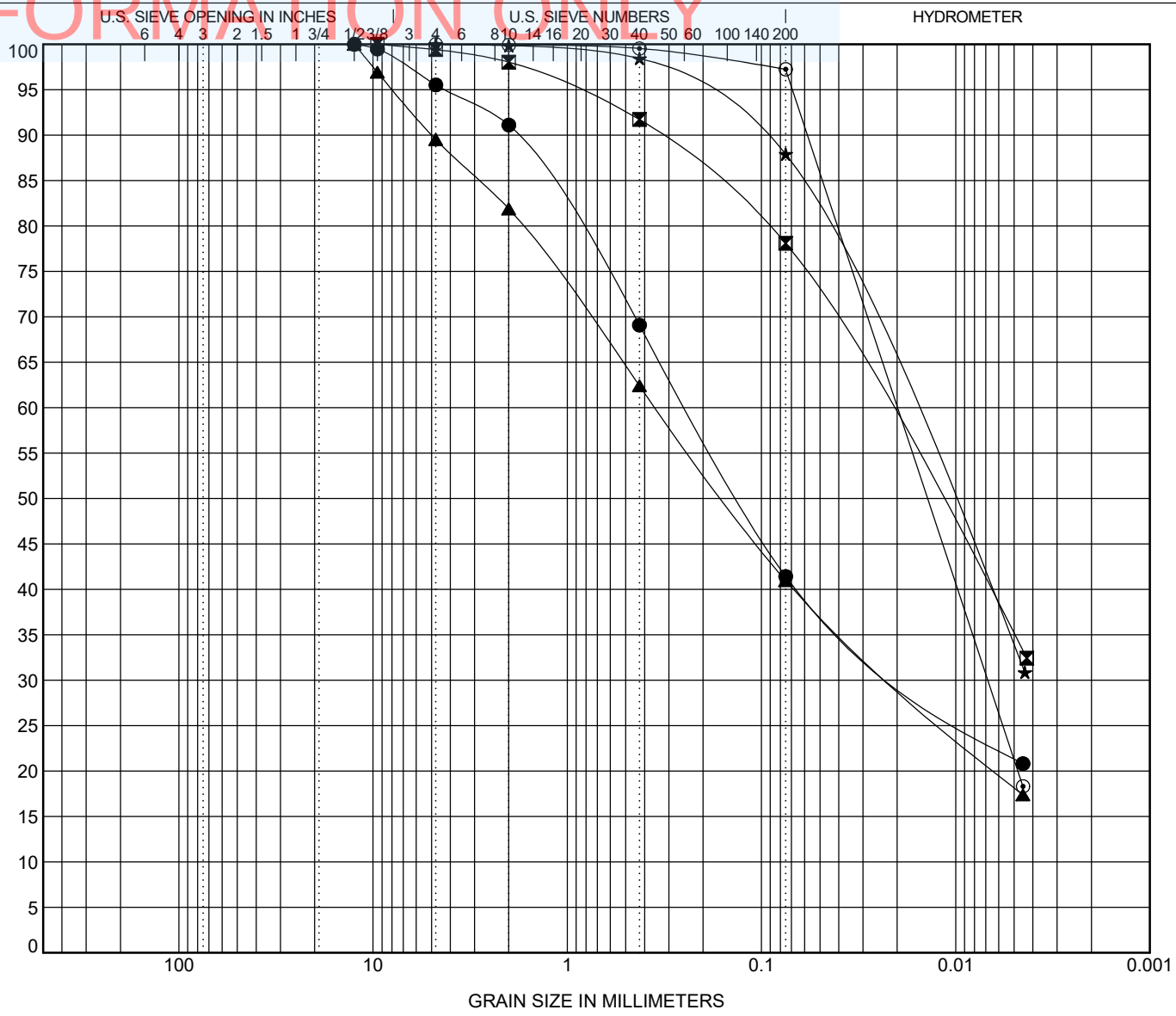
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-125-0-21	4.5	A-6a ~ CLAYEY SAND(SC)	27	16	11
⊠	B-125-0-21	11.0	A-6a ~ LEAN CLAY with SAND(CL)	33	19	14
▲	B-125-0-21	21.0	A-4a ~ SILTY, CLAYEY SAND(SC-SM)	23	17	6
★	B-125-0-21	33.5	A-6b ~ LEAN CLAY(CL)	36	20	16
⊙	B-125-0-21	43.5	A-7-6 ~ LEAN CLAY(CL)	45	22	23

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-125-0-21	4.5	1.85	0.128	0.016		9	22	28	19	22		
⊠	B-125-0-21	11.0	0.342	0.013			2	6	14	43	35		
▲	B-125-0-21	21.0	4.974	0.156	0.02		19	19	21	23	18		
★	B-125-0-21	33.5	0.106	0.011			0	1	11	55	33		
⊙	B-125-0-21	43.5	0.058	0.014	0.007		1	0	2	76	21		

GRAIN SIZE - OH DOT.GDT - 5/30/24 16:01 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

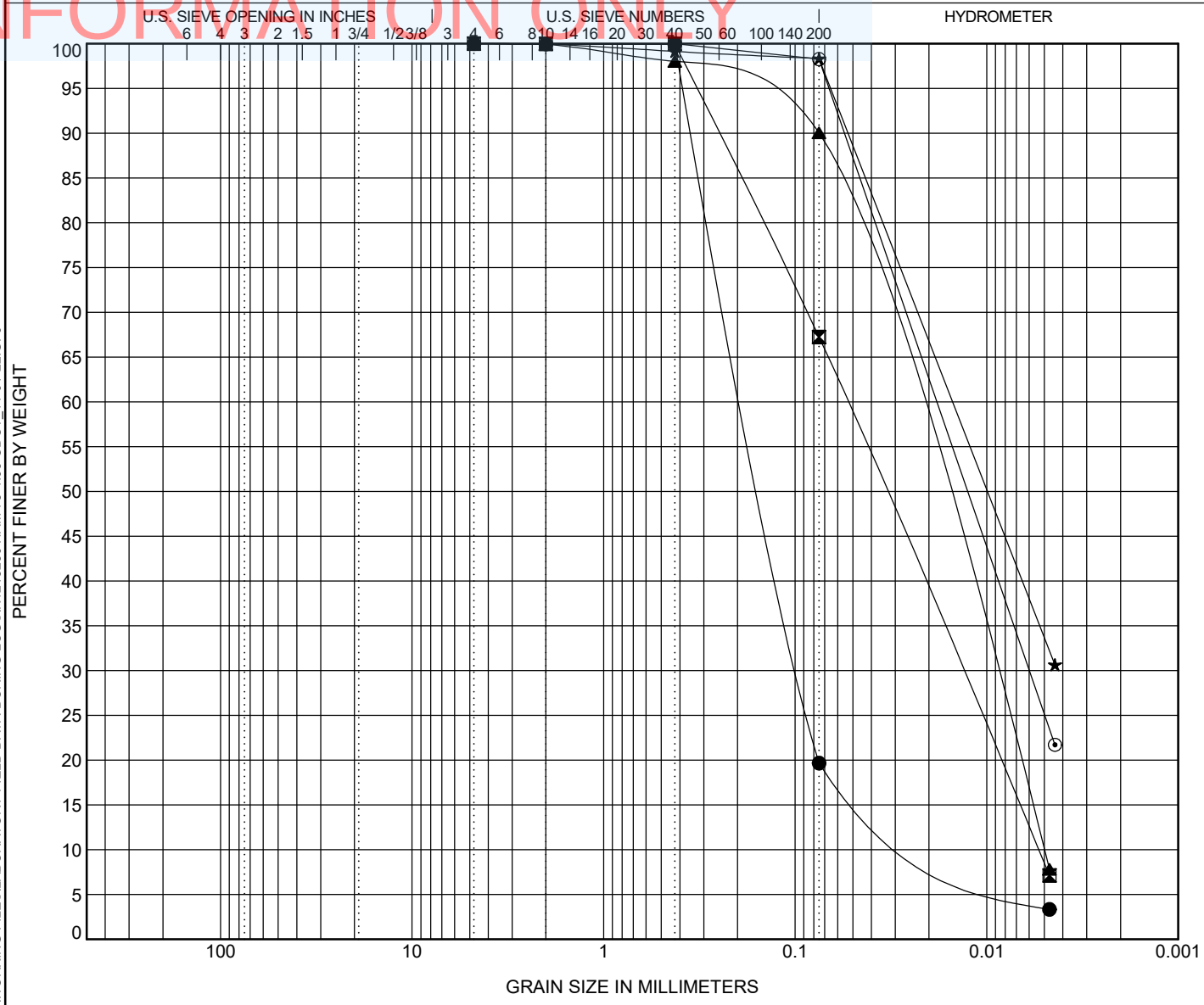
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

	Specimen Identification		ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-125-0-21	53.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP
⊠	B-125-0-21	63.5	A-4b ~ SANDY SILT(ML)	NP	NP	NP
▲	B-125-0-21	78.5	A-4b ~ SILT(ML)	21	20	1
★	B-126-0-21	8.5	A-6a ~ LEAN CLAY(CL)	35	21	14
⊙	B-126-0-21	13.5	A-4b ~ SILT(ML)	23	21	2

	Specimen Identification		D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-125-0-21	53.5	0.343	0.144	0.094	0.015	0	0	80	16	4	3.37	12.31
⊠	B-125-0-21	63.5	0.25	0.034	0.013	0.005	0	0	33	59	8	0.63	10.00
▲	B-125-0-21	78.5	0.075	0.019	0.01	0.005	0	2	8	80	10	0.71	5.39
★	B-126-0-21	8.5	0.053	0.01			0	1	1	64	34		
⊙	B-126-0-21	13.5	0.055	0.013	0.006		0	0	2	73	25		

GRAIN SIZE - OH DOT.GDT - 5/30/24 16:02 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

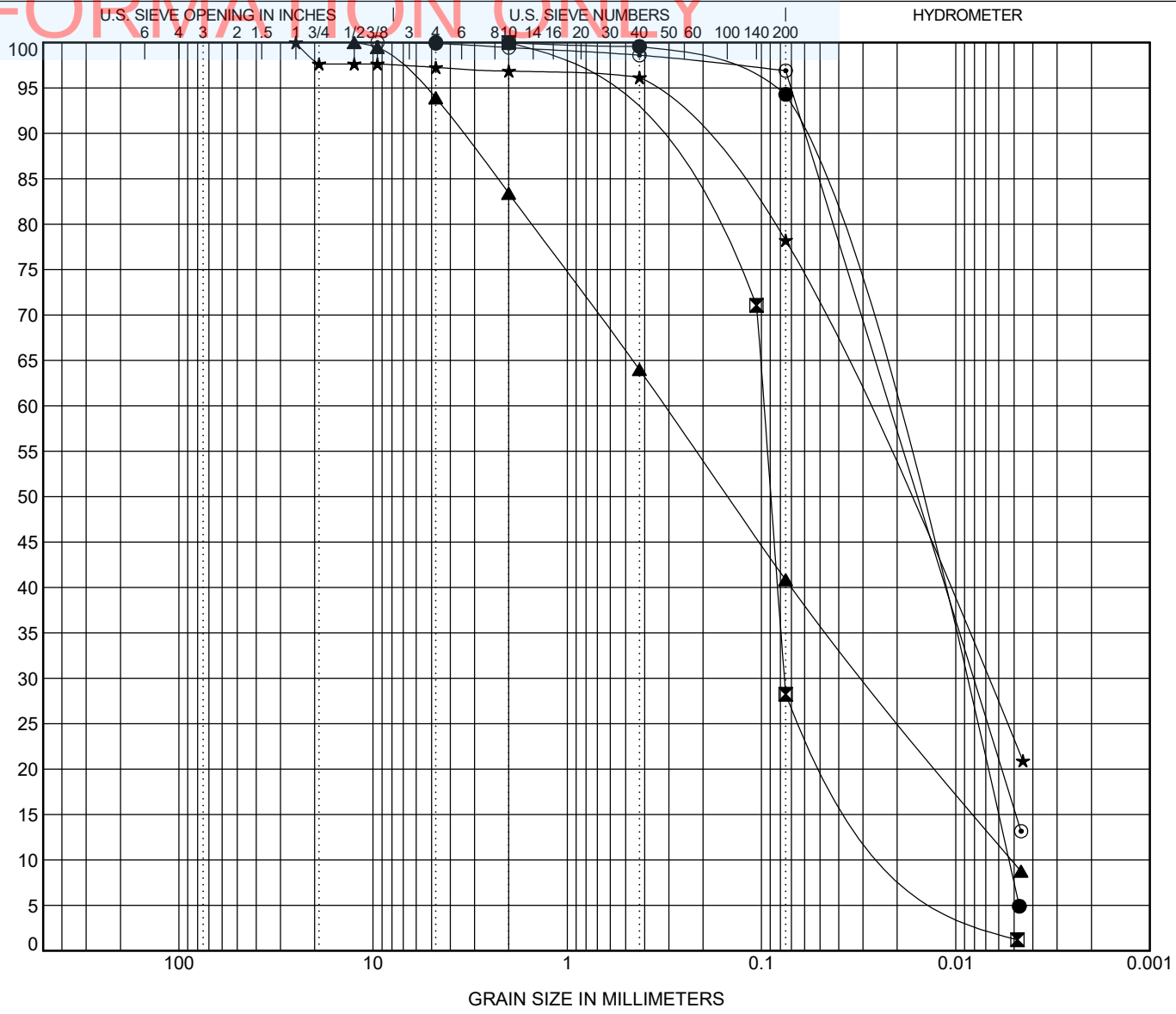
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-126-0-21	28.5	A-4b ~ SILT(ML)	24	25	NP
⊠	B-126-0-21	43.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP
▲	B-127-0-21	3.5	A-4a ~ SILTY SAND(SM)	NP	NP	NP
★	B-127-0-21	11.0	A-6a ~ LEAN CLAY with SAND(CL)	31	18	13
⊙	B-127-0-21	18.5	A-4b ~ SILT(ML)	26	22	4

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-126-0-21	28.5	0.066	0.019	0.01	0.006	1	0	5	87	7	0.73	4.71
⊠	B-126-0-21	43.5	0.725	0.089	0.076	0.012	0	15	57	26	2	5.08	8.26
▲	B-127-0-21	3.5	3.444	0.149	0.029	0.005	17	19	23	31	10	0.53	61.47
★	B-127-0-21	11.0	0.234	0.019	0.007		3	1	18	55	23		
⊙	B-127-0-21	18.5	0.06	0.016	0.008		0	1	2	81	16		

GRAIN SIZE - OH DOT.GDT - 5/30/24 16:03 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

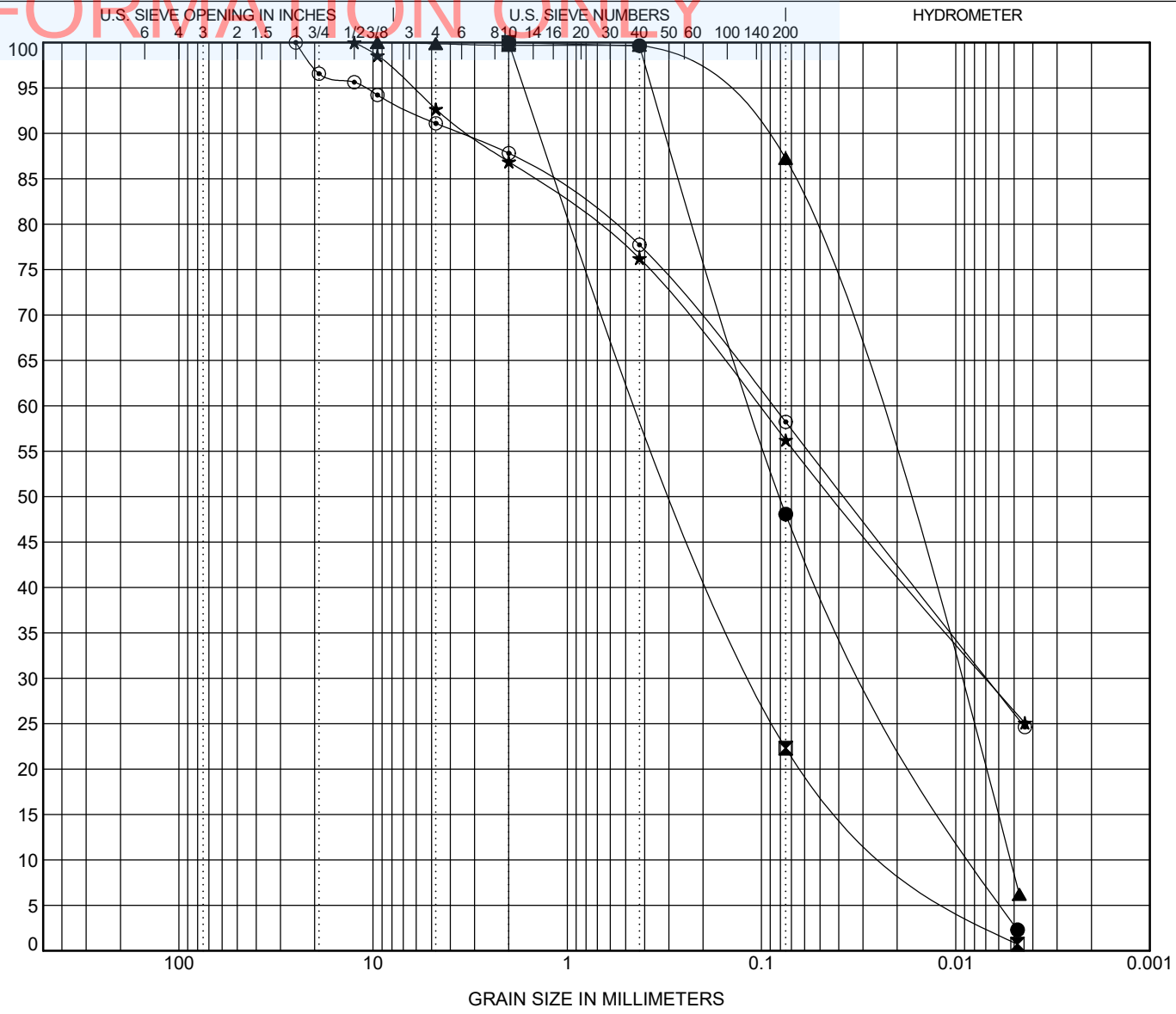
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GRAIN SIZE DISTRIBUTION

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OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-127-0-21	28.5	A-4a ~ SILTY SAND(SM)	NP	NP	NP
⊠	B-127-0-21	33.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP
▲	B-127-0-21	38.5	A-4b ~ LEAN CLAY(CL)	28	18	10
★	B-128-0-21	4.5	A-4a ~ SANDY LEAN CLAY(CL)	28	20	8
⊙	B-128-0-21	9.0	A-4a ~ SANDY LEAN CLAY(CL)	26	16	10

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-127-0-21	28.5	0.307	0.08	0.025	0.008	0	0	52	45	3	0.75	14.70
⊠	B-127-0-21	33.5	1.311	0.242	0.104	0.016	0	37	41	21	1	1.87	23.56
▲	B-127-0-21	38.5	0.11	0.021	0.011	0.005	1	0	12	79	8	0.71	5.52
★	B-128-0-21	4.5	3.19	0.043	0.007		13	11	20	30	26		
⊙	B-128-0-21	9.0	3.554	0.037	0.007		13	10	19	32	26		

GRAIN SIZE - OH DOT.GDT - 5/30/24 16:05 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

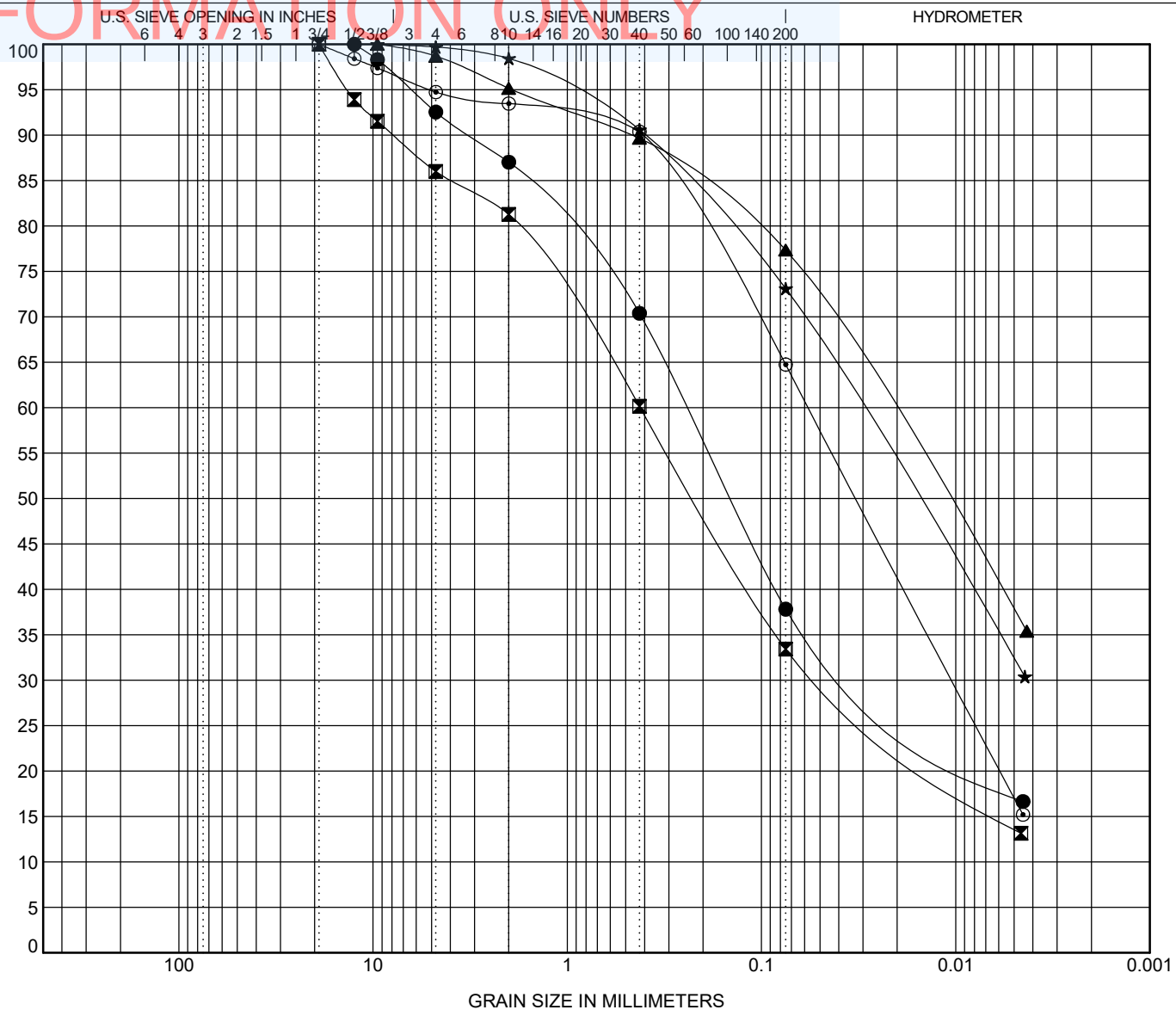
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GRAIN SIZE DISTRIBUTION

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PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-128-0-21	13.5	A-4a ~ SILTY, CLAYEY SAND(SC-SM)	20	15	5
⊠	B-128-0-21	16.5	A-2-4 ~ SILTY, CLAYEY SAND(SC-SM)	20	13	7
▲	B-129-0-21	3.5	A-6b ~ LEAN CLAY with SAND(CL)	40	20	20
★	B-129-0-21	11.0	A-6b ~ LEAN CLAY with SAND(CL)	38	19	19
⊙	B-129-0-21	18.5	A-4a ~ SANDY SILT(ML)	22	22	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-128-0-21	13.5	3.188	0.143	0.027		12	17	33	21	17		
⊠	B-128-0-21	16.5	7.844	0.22	0.047		19	21	27	19	14		
▲	B-129-0-21	3.5	0.47	0.012			5	6	12	39	38		
★	B-129-0-21	11.0	0.4	0.016			1	8	18	41	32		
⊙	B-129-0-21	18.5	0.414	0.032	0.01		6	3	26	48	17		

GRAIN SIZE - OH DOT.GDT - 5/30/24 16:07 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

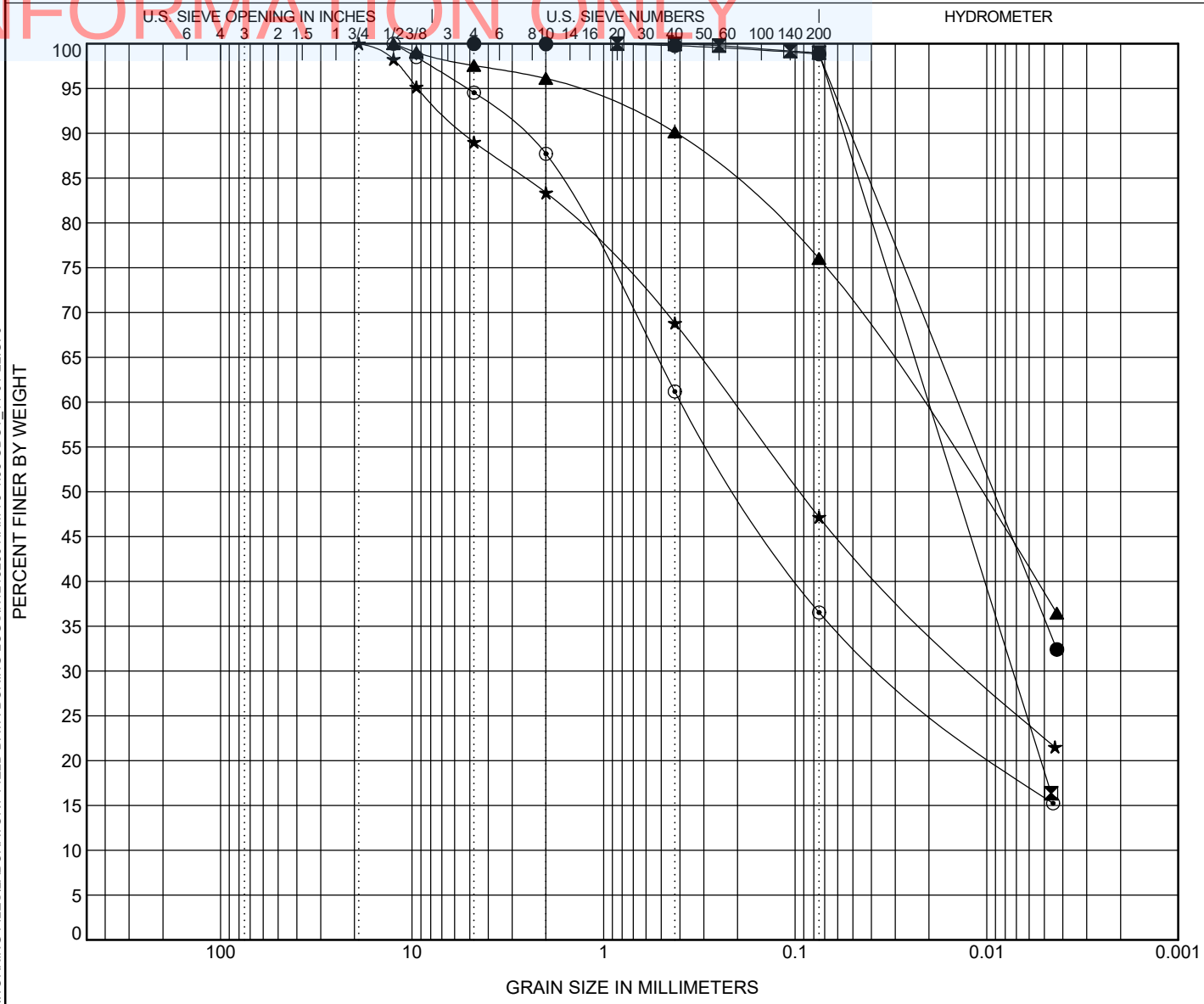
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-129-0-21	23.5	A-4b ~ LEAN CLAY(CL)	29	19	10
⊠	B-129-0-21	33.5	A-4b ~ SILT(ML)	23	21	2
▲	B-130-0-21	4.0	A-4a ~ LEAN CLAY with SAND(CL)	27	17	10
★	B-130-0-21	8.5	A-4a ~ CLAYEY SAND(SC)	28	18	10
⊙	B-130-0-21	13.0	A-4a ~ SILTY, CLAYEY SAND(SC-SM)	20	14	6

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-129-0-21	23.5	0.051	0.009			0	0	1	63	36		
⊠	B-129-0-21	33.5	0.055	0.014	0.007		0	0	1	80	19		
▲	B-130-0-21	4.0	0.418	0.011			4	6	14	37	39		
★	B-130-0-21	8.5	5.303	0.094	0.011		16	15	22	24	23		
⊙	B-130-0-21	13.0	2.672	0.193	0.032		11	27	25	21	16		

GRAIN SIZE - OH DOT.GDT - 5/30/24 16:08 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

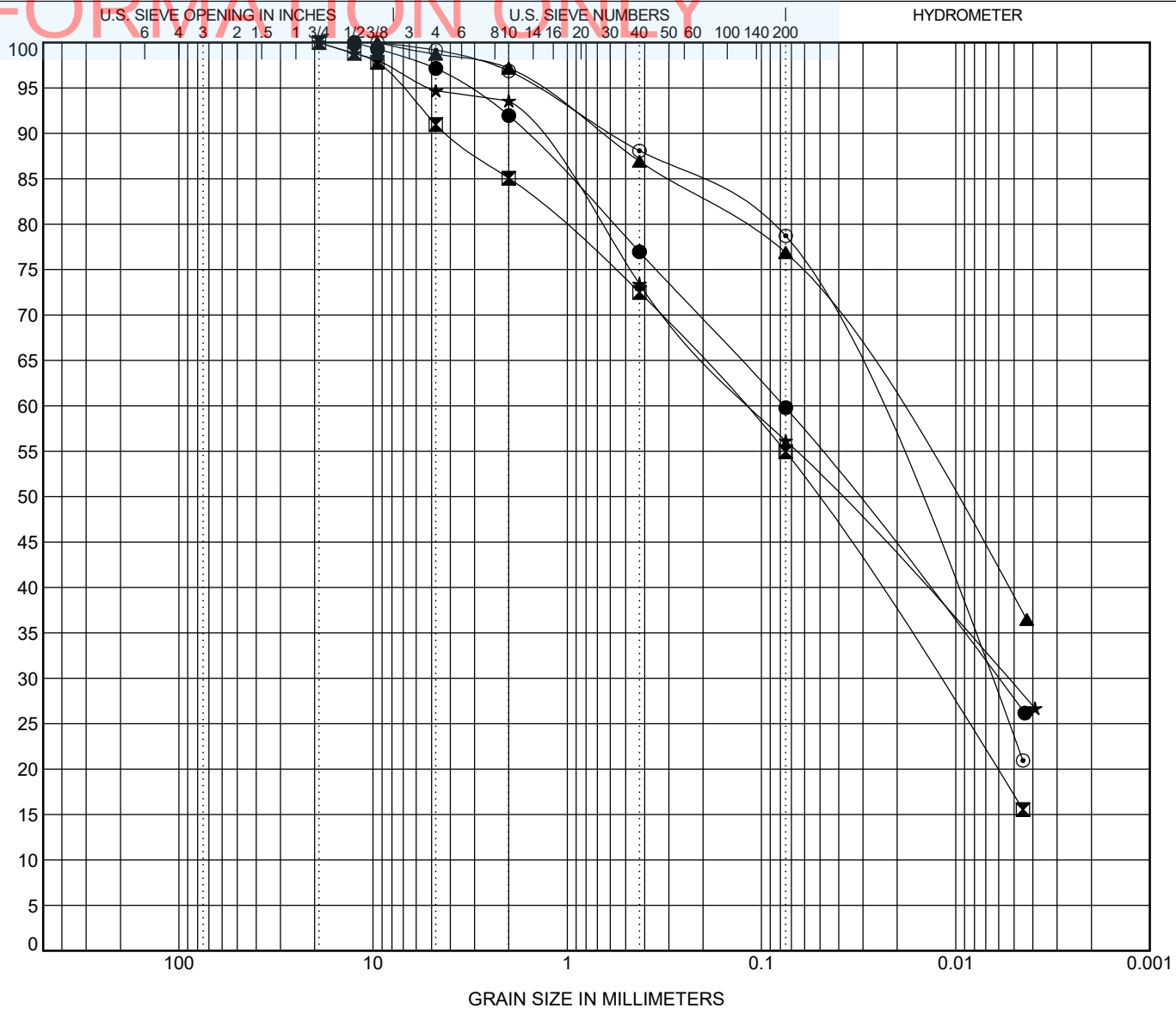
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-130-0-21	17.5	A-4a ~ SANDY LEAN CLAY(CL)	27	18	9
⊠	B-131-0-21	6.0	A-4a ~ SANDY LEAN CLAY(CL)	29	21	8
▲	B-131-0-21	13.5	A-7-6 ~ LEAN CLAY with SAND(CL)	42	19	23
★	B-131-0-21	16.0	A-6b ~ SANDY LEAN CLAY(CL)	40	17	23
⊙	B-131-0-21	23.5	A-4b ~ LEAN CLAY with SAND(CL)	26	18	8

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-130-0-21	17.5	1.634	0.033	0.006		8	15	17	32	28		
⊠	B-131-0-21	6.0	4.121	0.053	0.013		14	13	18	38	17		
▲	B-131-0-21	13.5	0.676	0.011			3	10	10	38	39		
★	B-131-0-21	16.0	1.519	0.04	0.005		7	20	17	27	29		
⊙	B-131-0-21	23.5	0.596	0.019	0.007		3	9	9	56	23		

GRAIN SIZE - OH DOT.GDT - 5/30/24 16:10 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

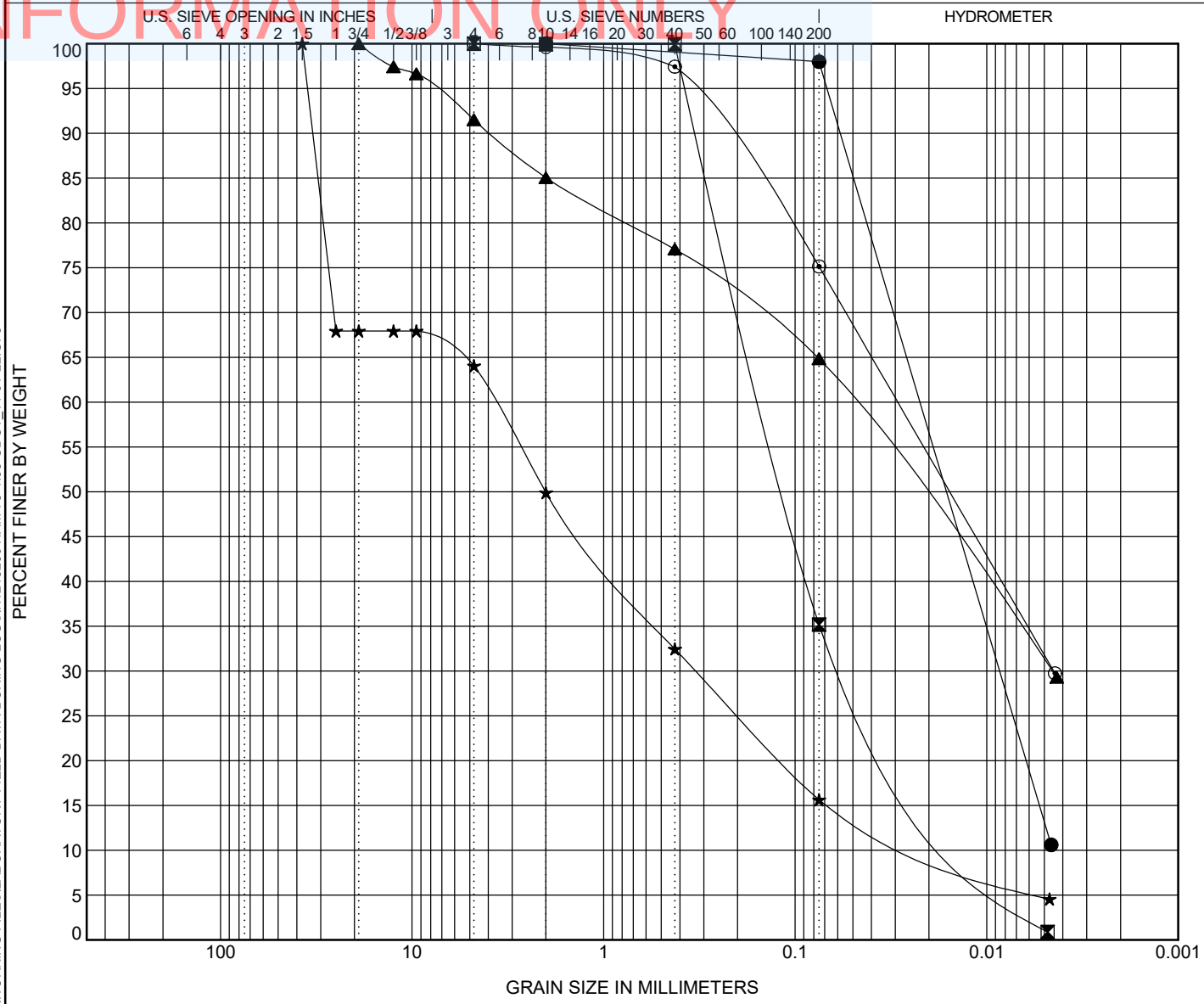
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-131-0-21	28.5	A-4b ~ SILT(ML)	NP	NP	NP
⊠	B-131-0-21	38.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP
▲	B-132-0-21	8.5	A-6a ~ SANDY LEAN CLAY(CL)	33	20	13
★	B-132-0-21	16.0	A-1-b ~ SILTY SAND with GRAVEL(SM)	NP	NP	NP
⊙	B-132-0-21	23.5	A-4a ~ LEAN CLAY with SAND(CL)	27	17	10

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-131-0-21	28.5	0.058	0.016	0.009		0	1	1	85	13		
⊠	B-131-0-21	38.5	0.326	0.112	0.049	0.01	0	0	65	34	1	1.69	14.62
▲	B-132-0-21	8.5	3.879	0.023	0.005		15	8	12	34	31		
★	B-132-0-21	16.0	33.044	2.012	0.33	0.018	50	17	17	11	5	1.60	202.50
⊙	B-132-0-21	23.5	0.238	0.016	0.004		1	2	22	43	32		

GRAIN SIZE - OH DOT.GDT - 5/30/24 16:12 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

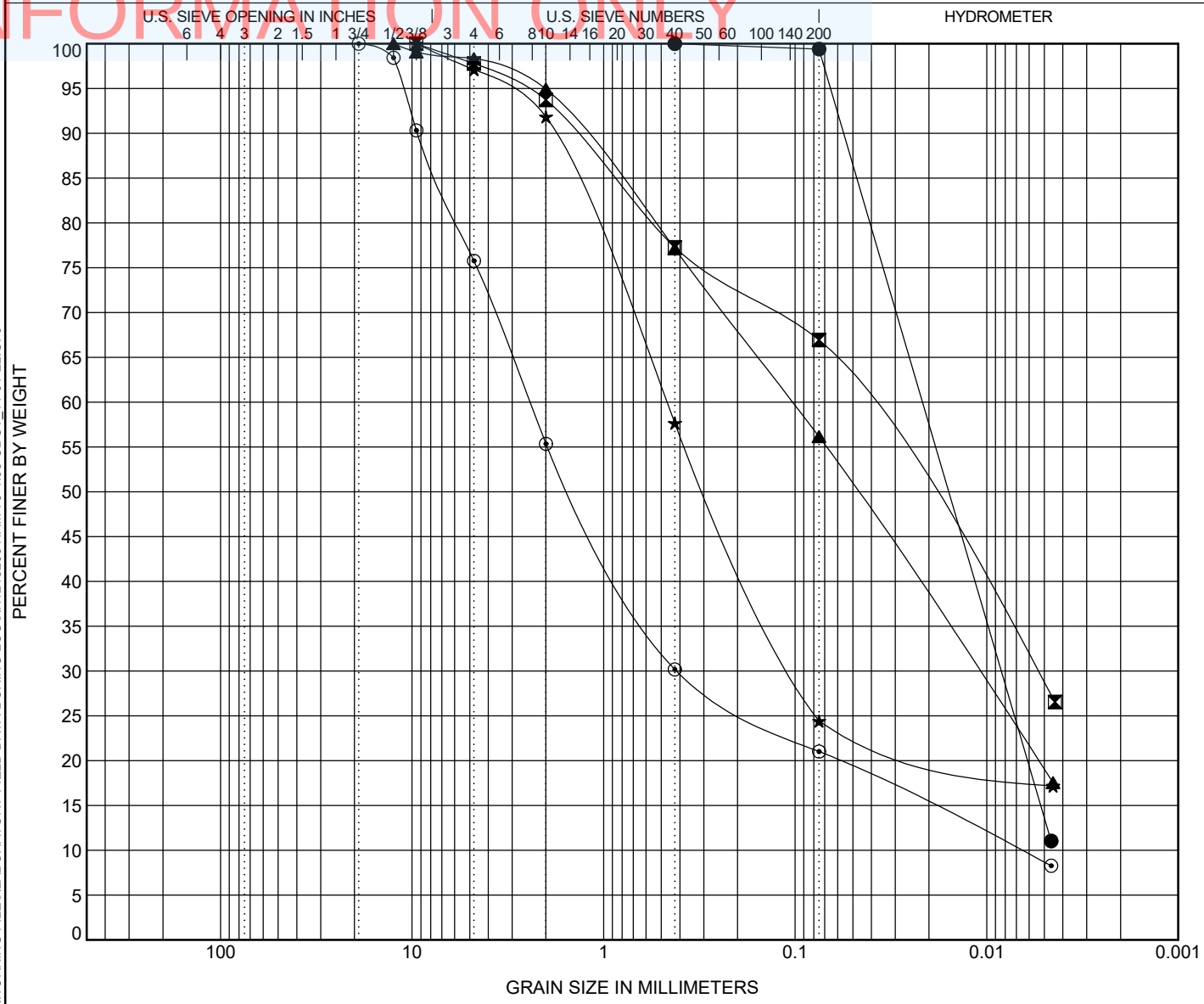
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-132-0-21	33.5	**A-4b ~ SILT(ML)**	**24**	**21**	**3**
⊠	B-133-0-21	3.5	**A-6a ~ SANDY LEAN CLAY(CL)**	**31**	**16**	**15**
▲	B-133-0-21	6.0	**A-6a ~ SANDY LEAN CLAY(CL)**	**33**	**21**	**12**
★	B-133-0-21	8.5	**A-3a ~ SILTY SAND(SM)**	**NP**	**NP**	**NP**
⊙	B-133-0-21	13.5	**A-1-b ~ SILTY, CLAYEY SAND with GRAVEL(SC-SM)**	**23**	**17**	**6**

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-132-0-21	33.5	**0.056**	**0.016**	**0.008**		**0**	**0**	**1**	**85**	**14**		
⊠	B-133-0-21	3.5	**1.407**	**0.023**	**0.006**		**7**	**16**	**10**	**39**	**28**		
▲	B-133-0-21	6.0	**1.302**	**0.048**	**0.011**		**5**	**18**	**21**	**37**	**19**		
★	B-133-0-21	8.5	**1.841**	**0.285**	**0.1**		**9**	**34**	**33**	**7**	**17**		
⊙	B-133-0-21	13.5	**9.354**	**1.439**	**0.411**	**0.007**	**45**	**25**	**9**	**12**	**9**	**10.32**	**362.64**

GRAIN SIZE - OH DOT.GDT - 5/30/24 16:14 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

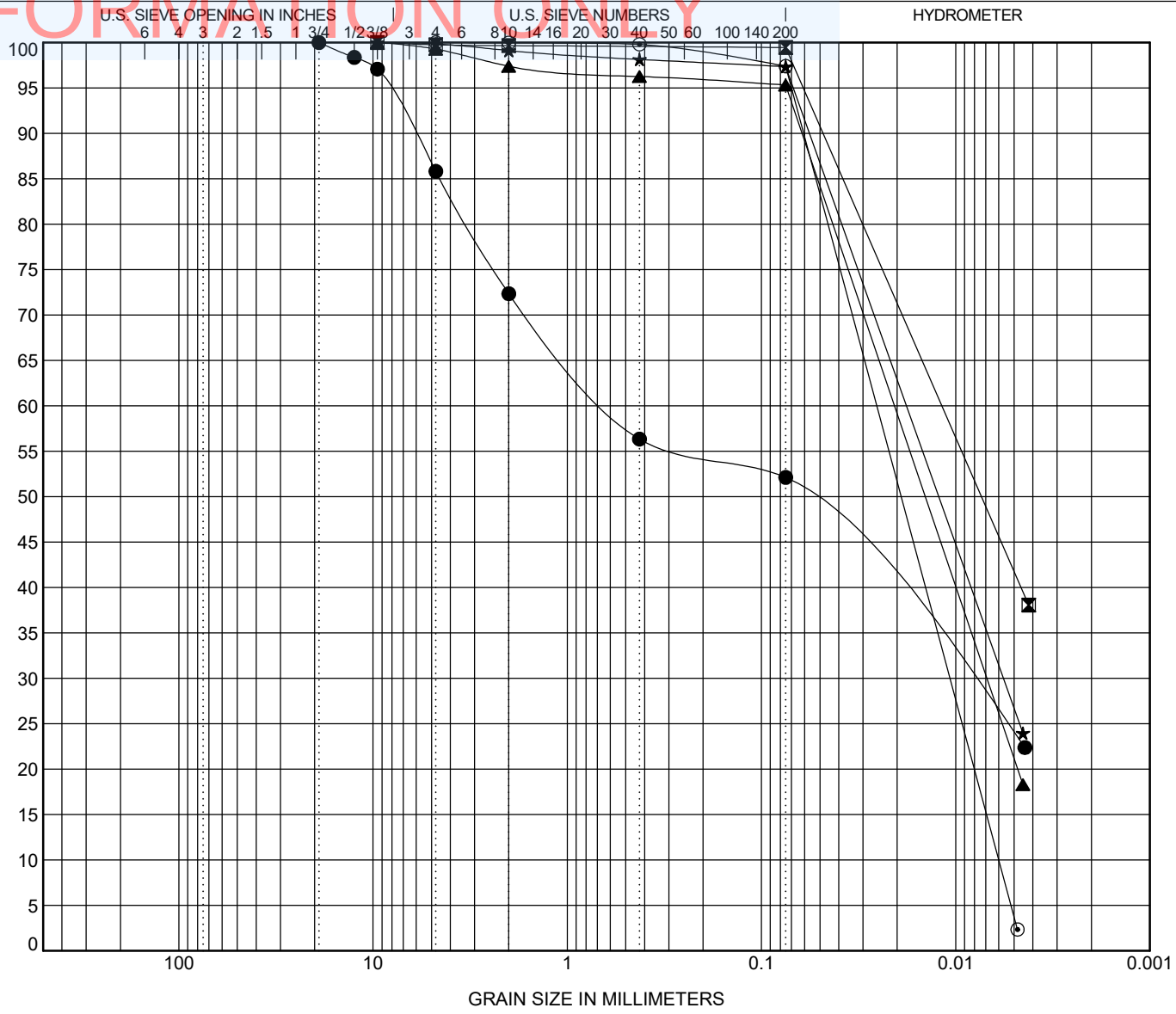
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-133-0-21	18.5	**A-6a ~ SANDY LEAN CLAY(CL)**	**32**	**20**	**12**
⊠	B-133-0-21	23.0	**A-6b ~ LEAN CLAY(CL)**	**32**	**16**	**16**
▲	B-133-0-21	28.5	**A-4b ~ SILTY CLAY(CL-ML)**	**26**	**21**	**5**
★	B-133-0-21	33.5	**A-4b ~ LEAN CLAY(CL)**	**28**	**20**	**8**
⊙	B-133-0-21	38.5	**A-4b ~ SILT(ML)**	**NP**	**NP**	**NP**

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-133-0-21	18.5	**6.146**	**0.061**	**0.009**		**28**	**16**	**4**	**28**	**24**		
⊠	B-133-0-21	23.0	**0.048**	**0.007**			**1**	**0**	**0**	**57**	**42**		
▲	B-133-0-21	28.5	**0.062**	**0.014**	**0.007**		**3**	**1**	**1**	**74**	**21**		
★	B-133-0-21	33.5	**0.057**	**0.012**	**0.006**		**1**	**1**	**1**	**70**	**27**		
⊙	B-133-0-21	38.5	**0.061**	**0.019**	**0.011**	**0.006**	**1**	**0**	**2**	**93**	**4**	**0.75**	**4.25**

GRAIN SIZE - OH DOT.GDT - 5/30/24 16:17 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

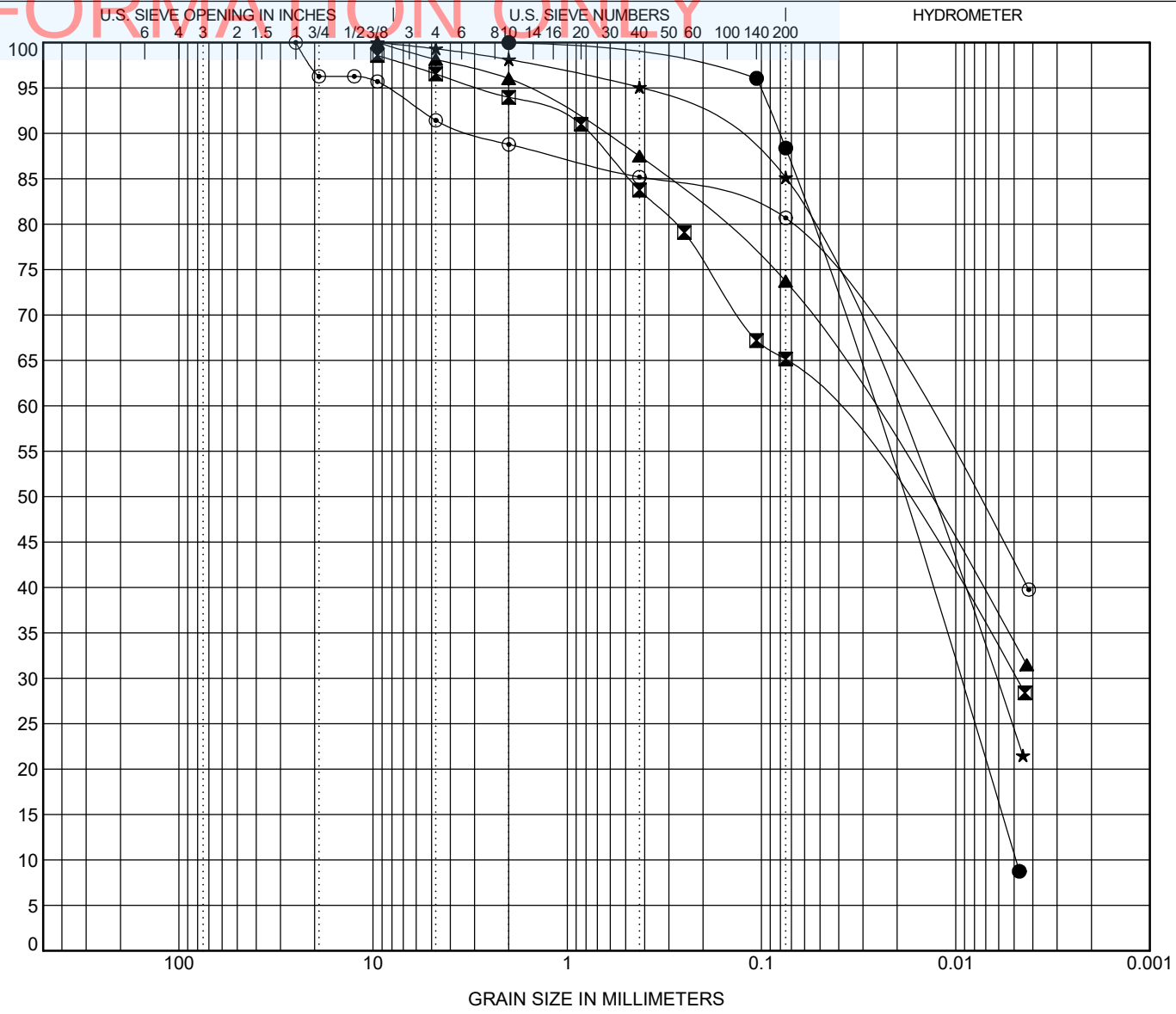
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-133-0-21	43.5	A-4b ~ SILT(ML)	NP	NP	NP
⊠	B-134-0-21	3.5	A-6a ~ SANDY LEAN CLAY(CL)	28	16	12
▲	B-134-0-21	8.5	A-6a ~ LEAN CLAY with SAND(CL)	29	18	11
★	B-135-0-21	4.0	A-6a ~ LEAN CLAY(CL)	32	18	14
⊙	B-135-0-21	11.0	A-6b ~ LEAN CLAY with SAND(CL)	40	22	18

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-133-0-21	43.5	0.081	0.02	0.01	0.005	0	2	10	77	11	0.71	5.69
⊠	B-134-0-21	3.5	0.773	0.023	0.005		6	10	19	35	30		
▲	B-134-0-21	8.5	0.669	0.015			3	9	14	40	34		
★	B-135-0-21	4.0	0.175	0.016	0.007		2	3	10	61	24		
⊙	B-135-0-21	11.0	2.976	0.009			11	4	4	39	42		

GRAIN SIZE - OH DOT.GDT - 5/30/24 16:19 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

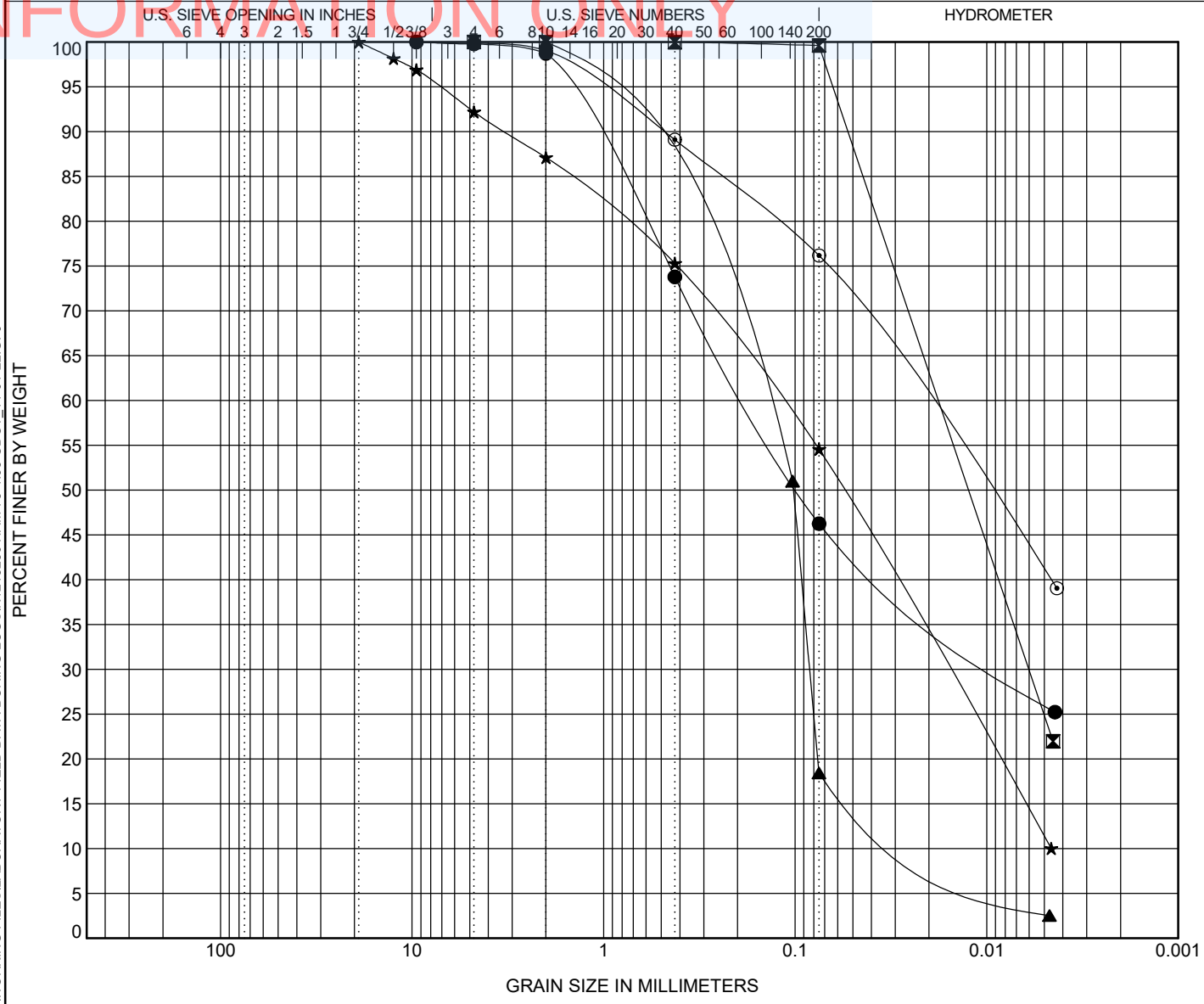
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
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PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-135-0-21	23.5	A-6b ~ CLAYEY SAND(SC)	36	19	17
⊠	B-135-0-21	28.5	A-4b ~ SILTY CLAY(CL-ML)	27	21	6
▲	B-135-0-21	48.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP
★	B-136-0-21	6.0	A-4a ~ SANDY LEAN CLAY(CL)	29	19	10
⊙	B-136-0-21	11.0	A-7-6 ~ LEAN CLAY with SAND(CL)	42	17	25

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-135-0-21	23.5	1.164	0.095	0.008		1	25	28	20	26		
⊠	B-135-0-21	28.5	0.053	0.012	0.006		0	0	0	75	25		
▲	B-135-0-21	48.5	1.092	0.102	0.084	0.017	0	26	56	15	3	2.30	10.28
★	B-136-0-21	6.0	3.269	0.056	0.016		12	12	21	44	11		
⊙	B-136-0-21	11.0	0.489	0.01			1	10	13	35	41		

GRAIN SIZE - OH DOT.GDT - 5/30/24 16:22 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

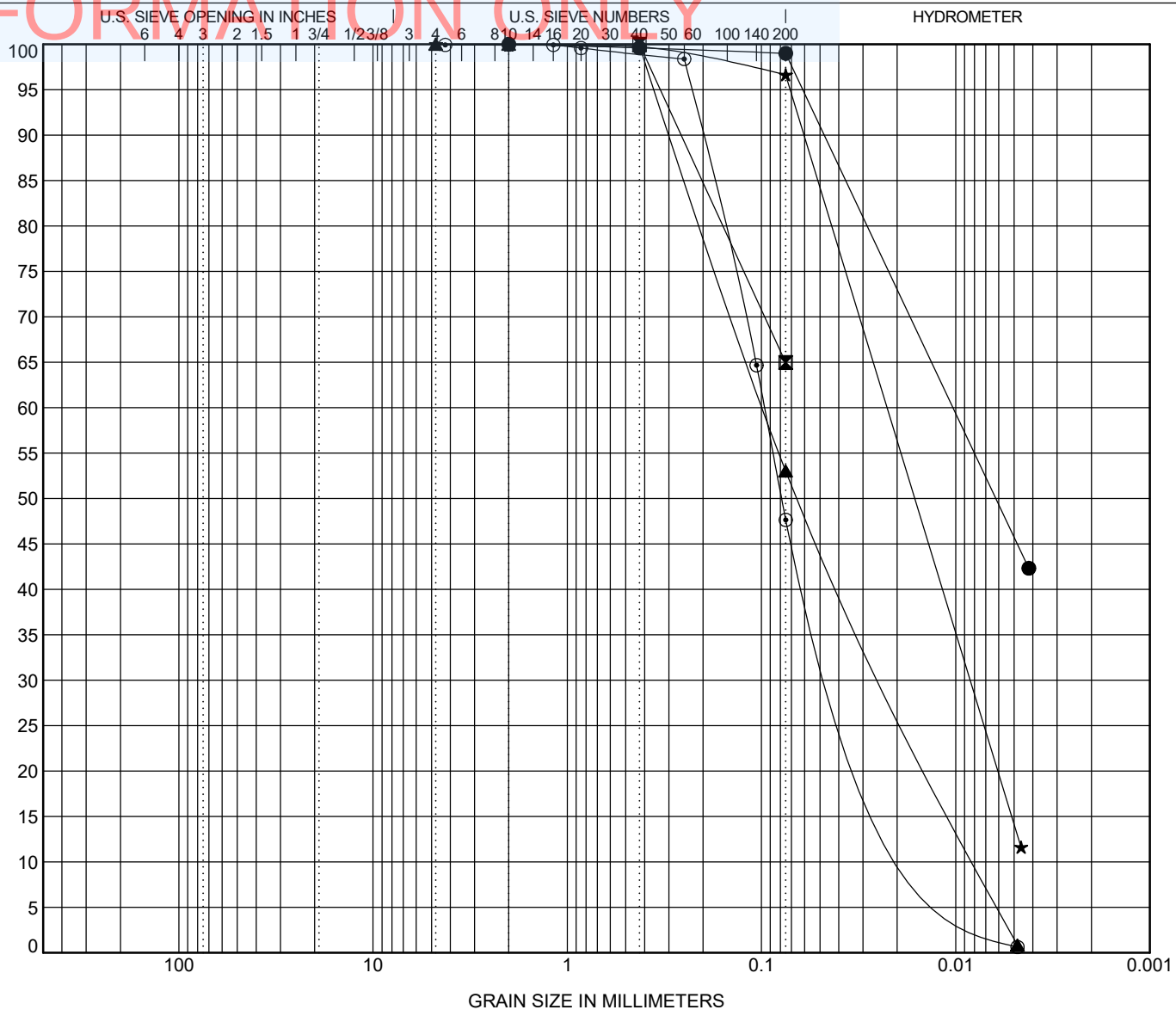
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GRAIN SIZE DISTRIBUTION

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PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-136-0-21	18.5	A-6a ~ LEAN CLAY(CL)	32	18	14
⊠	B-136-0-21	28.5	~			
▲	B-136-0-21	38.5	A-4b ~ SANDY SILT(ML)	NP	NP	NP
★	B-136-0-21	48.5	A-4b ~ SILT(ML)	NP	NP	NP
⊙	B-137-0-21	43.5	A-4a ~ SILTY SAND(SM)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-136-0-21	18.5	0.047	0.006			0	0	1	53	46		
⊠	B-136-0-21	28.5	0.259				0	0	35	65			
▲	B-136-0-21	38.5	0.295	0.064	0.022	0.008	0	0	47	51	2	0.66	12.50
★	B-136-0-21	48.5	0.06	0.016	0.008		0	0	3	83	14		
⊙	B-137-0-21	43.5	0.202	0.079	0.027	0.008	0	1	51	47	1	0.89	11.61

GRAIN SIZE - OH DOT.GDT - 5/30/24 16:24 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

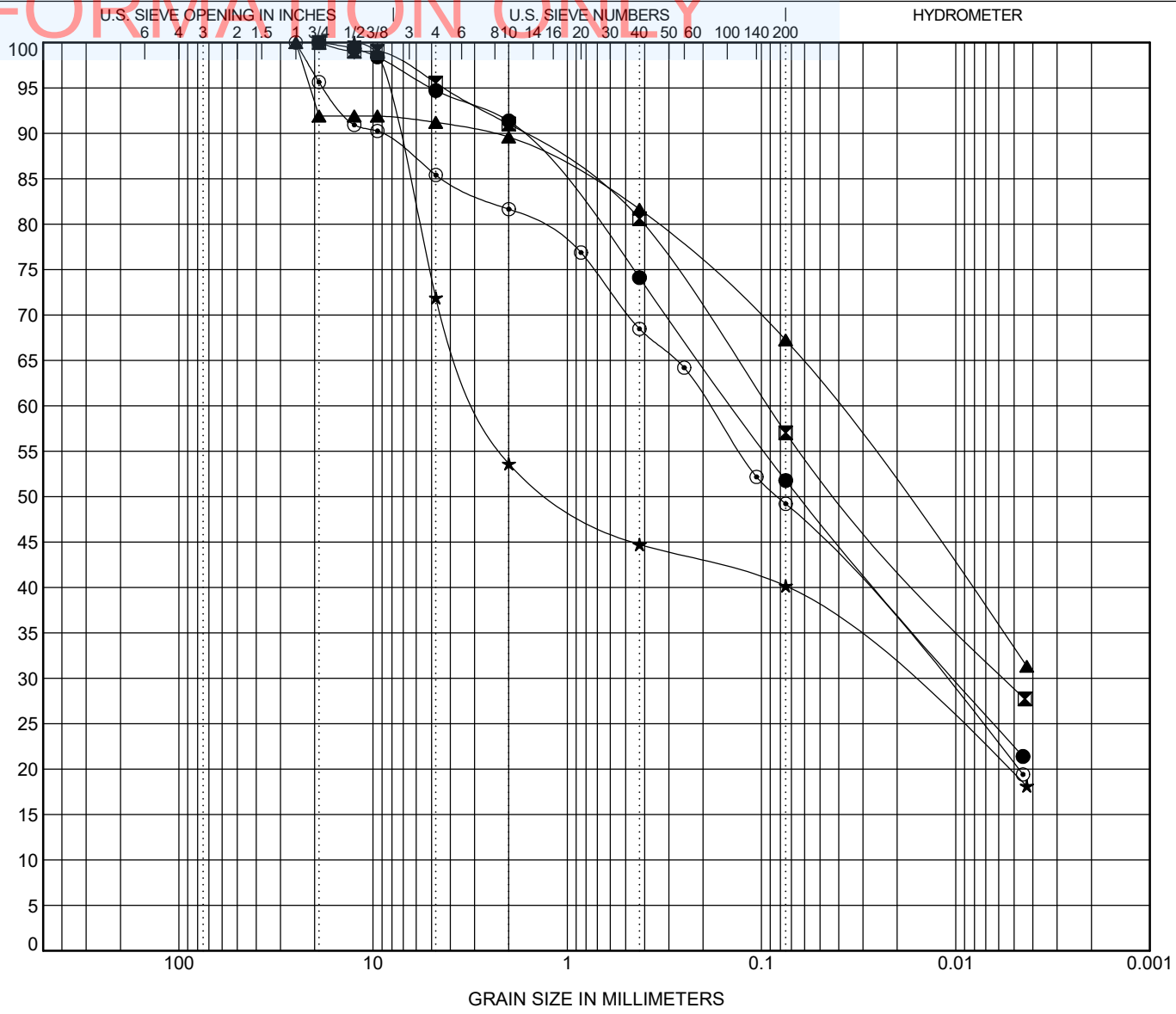
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PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-138-0-21	6.0	**A-6a ~ SANDY LEAN CLAY(CL)**	26	15	11
⊠	B-138-0-21	11.0	**A-6a ~ SANDY LEAN CLAY(CL)**	29	16	13
▲	B-138-0-21	16.0	**A-6a ~ SANDY LEAN CLAY(CL)**	31	18	13
★	B-139-0-21	4.0	**A-6a ~ CLAYEY SAND with GRAVEL(SC)**	35	20	15
⊙	B-139-0-21	13.5	**A-4a ~ CLAYEY SAND(SC)**	28	19	9

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-138-0-21	6.0	1.769	0.064	0.01		9	17	22	29	23		
⊠	B-138-0-21	11.0	1.715	0.038	0.005		9	10	24	28	29		
▲	B-138-0-21	16.0	2.488	0.019			11	8	14	34	33		
★	B-139-0-21	4.0	7.576	1.065	0.02		46	9	5	21	19		
⊙	B-139-0-21	13.5	9.15	0.082	0.012		19	13	19	28	21		

GRAIN SIZE - OH DOT.GDT - 5/30/24 16:27 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

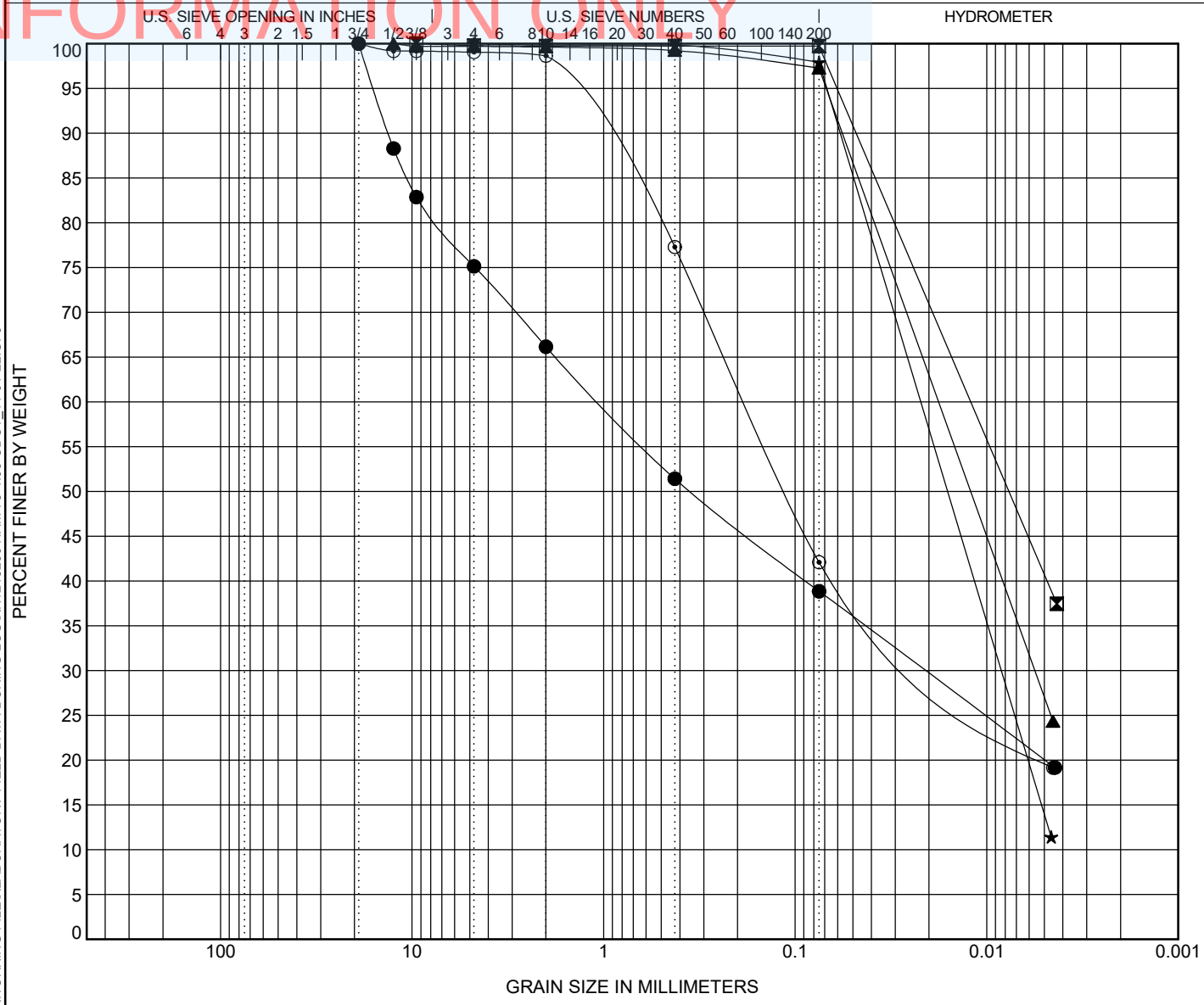
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GRAIN SIZE DISTRIBUTION

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PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-139-0-21	23.5	A-6b ~ CLAYEY SAND with GRAVEL(SC)	39	22	17
⊠	B-139-0-21	36.0	A-6a ~ LEAN CLAY(CL)	28	17	11
▲	B-139-0-21	48.5	A-4b ~ SILTY CLAY(CL-ML)	23	19	4
★	B-139-0-21	63.5	A-4b ~ SILT(ML)	NP	NP	NP
⊙	B-140-0-21	6.0	A-4a ~ SILTY SAND(SM)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-139-0-21	23.5	13.288	0.349	0.021		33	15	13	19	20		
⊠	B-139-0-21	36.0	0.048	0.008			0	0	0	59	41		
▲	B-139-0-21	48.5	0.057	0.012	0.006		1	0	2	70	27		
★	B-139-0-21	63.5	0.058	0.016	0.008		0	0	2	84	14		
⊙	B-140-0-21	6.0	1.068	0.111	0.017		2	21	35	22	20		

GRAIN SIZE - OH DOT.GDT - 5/30/24 16:30 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

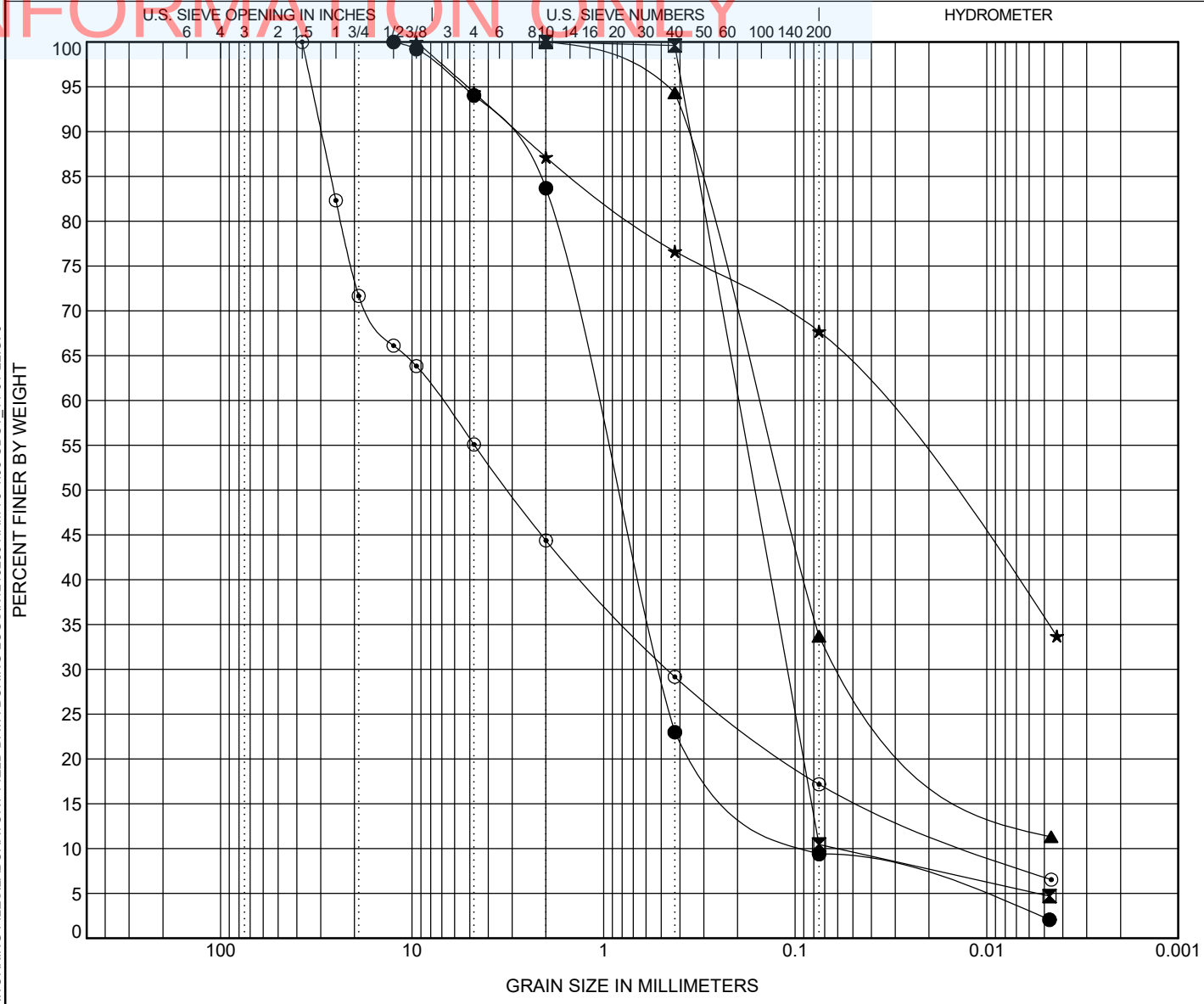
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PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-140-0-21	8.5	A-1-b ~ WELL-GRADED SAND with SILT(SW-SM)	NP	NP	NP
⊠	B-140-0-21	16.0	A-3 ~ POORLY GRADED SAND with SILT(SP-SM)	NP	NP	NP
▲	B-140-0-21	43.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP
★	B-141-0-21	6.0	A-6a ~ SANDY LEAN CLAY(CL)	30	19	11
⊙	B-141-0-21	11.0	A-1-b ~ SILTY GRAVEL with SAND(GM)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-140-0-21	8.5	3.391	0.847	0.508	0.081	16	61	14	7	2	2.92	13.48
⊠	B-140-0-21	16.0	0.353	0.162	0.11	0.06	0	1	89	5	5	1.02	3.27
▲	B-140-0-21	43.5	0.375	0.12	0.047		0	5	61	22	12		
★	B-141-0-21	6.0	2.818	0.017			12	11	9	32	36		
⊙	B-141-0-21	11.0	29.815	3.149	0.463	0.011	56	15	12	10	7	2.67	613.48

GRAIN SIZE - OH DOT.GDT - 5/30/24 16:33 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

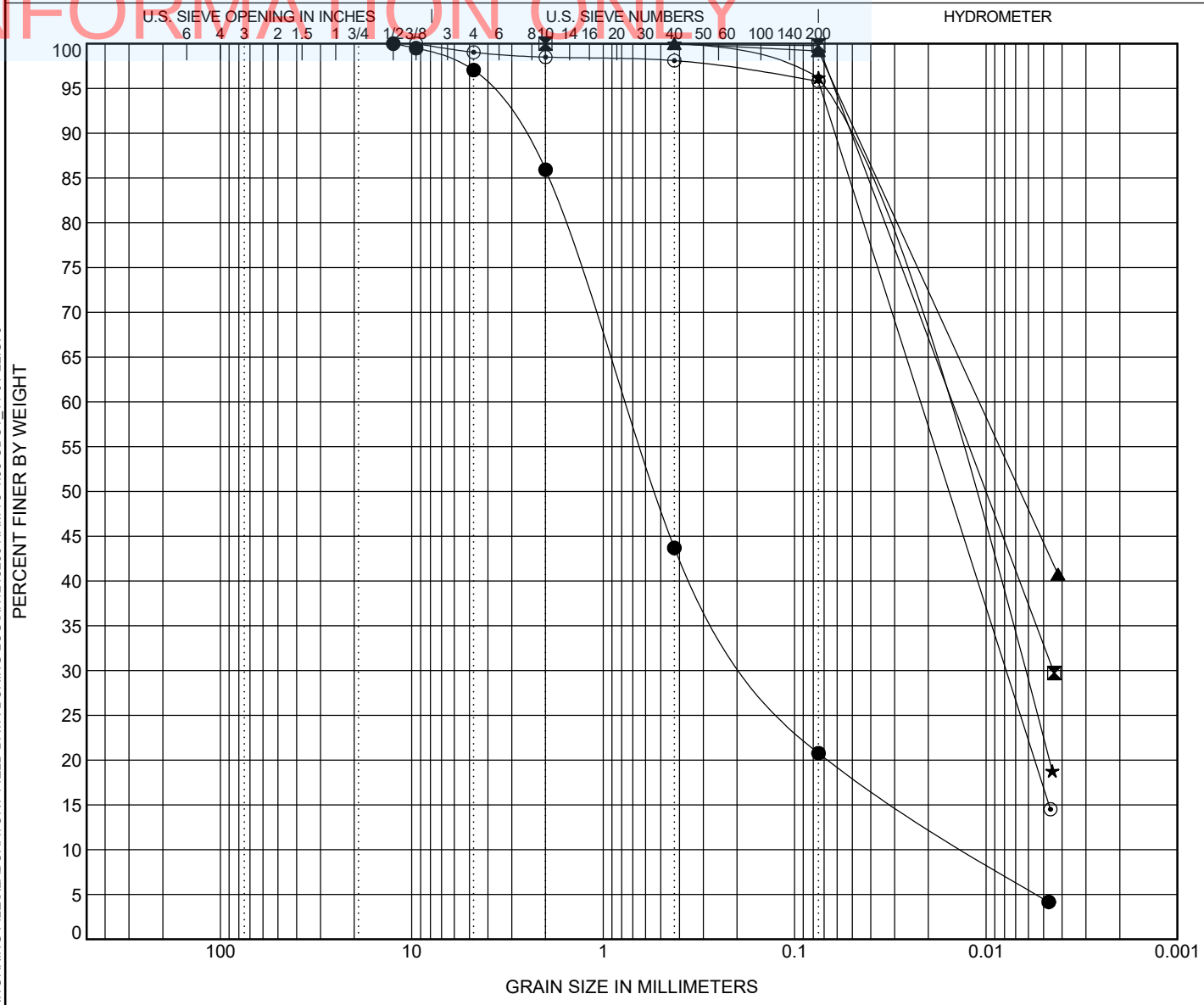
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-141-0-21	13.5	A-1-b ~ SILTY SAND(SM)	NP	NP	NP
⊠	B-141-0-21	28.0	A-4b ~ SILTY CLAY(CL-ML)	26	20	6
▲	B-141-0-21	33.5	A-4b ~ SILTY CLAY(CL-ML)	24	20	4
★	B-141-0-21	53.5	A-4b ~ SILTY CLAY(CL-ML)	23	19	4
⊙	B-141-0-21	68.5	A-4b ~ SILT(ML)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-141-0-21	13.5	2.746	0.536	0.151	0.012	14	42	23	16	5	2.36	62.14
⊠	B-141-0-21	28.0	0.05	0.01	0.004		0	0	0	67	33		
▲	B-141-0-21	33.5	0.048	0.007			0	0	1	55	44		
★	B-141-0-21	53.5	0.06	0.014	0.007		0	0	4	74	22		
⊙	B-141-0-21	68.5	0.061	0.016	0.008		2	0	2	79	17		

GRAIN SIZE - OH DOT.GDT - 5/30/24 16:36 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

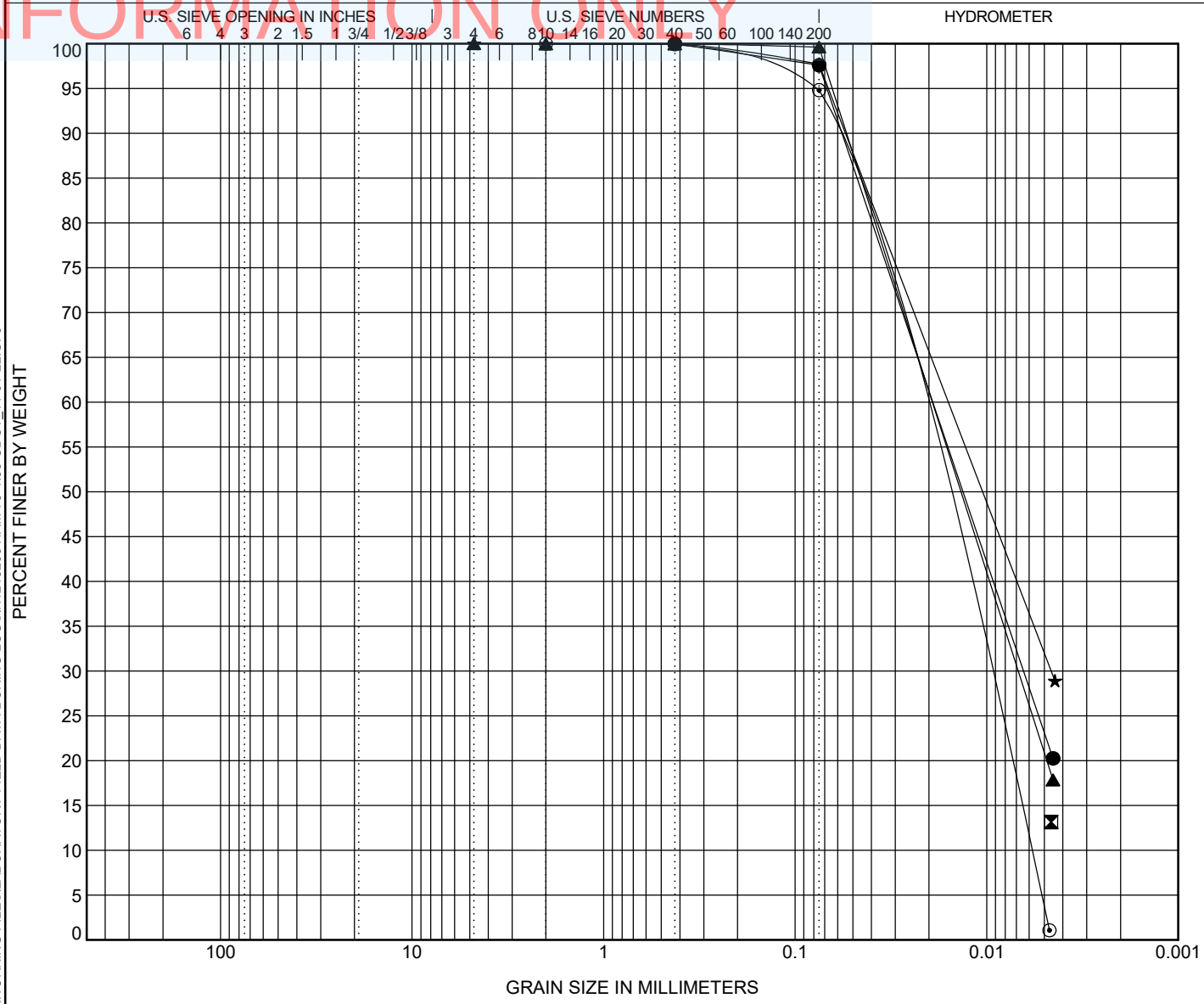
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-142-0-21	13.0	A-4b ~ SILTY CLAY(CL-ML)	24	18	6
⊠	B-142-0-21	18.5	~			
▲	B-142-0-21	23.5	A-4b ~ SILTY CLAY(CL-ML)	25	20	5
★	B-142-0-21	28.5	A-4b ~ SILTY CLAY(CL-ML)	23	18	5
⊙	B-142-0-21	53.5	A-4b ~ SILT(ML)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-142-0-21	13.0	0.057	0.013	0.006		0	0	2	75	23		
⊠	B-142-0-21	18.5											
▲	B-142-0-21	23.5	0.054	0.014	0.007		0	0	0	79	21		
★	B-142-0-21	28.5	0.055	0.01	0.005		0	0	2	66	32		
⊙	B-142-0-21	53.5	0.065	0.02	0.011	0.006	0	0	5	92	3	0.74	4.38

GRAIN SIZE - OH DOT.GDT - 5/30/24 16:40 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

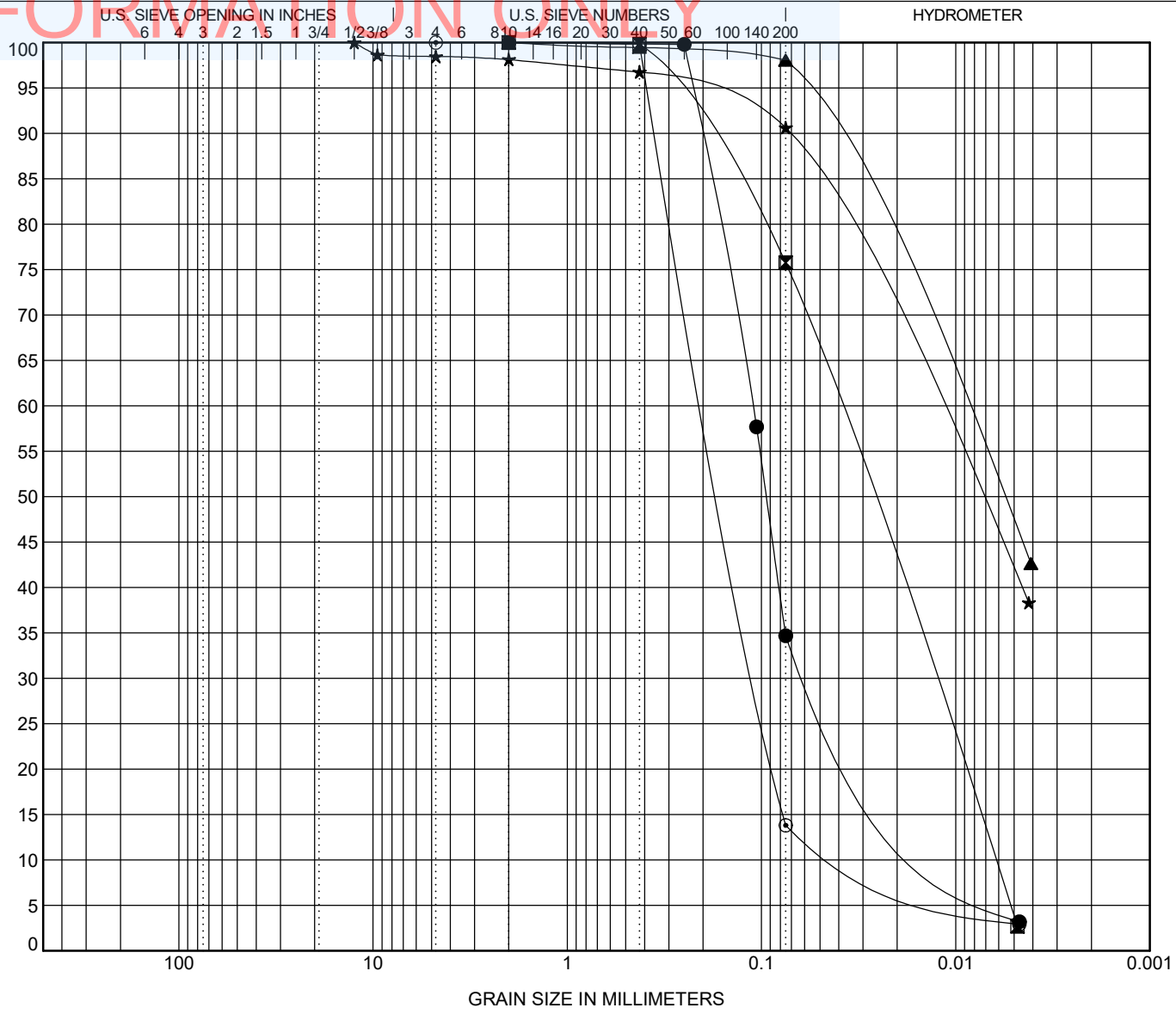
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-142-0-21	68.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP
⊠	B-143-0-21	13.0	A-4b ~ SILT with SAND(ML)	NP	NP	NP
▲	B-143-0-21	18.5	A-6a ~ LEAN CLAY(CL)	31	19	12
★	B-143-0-21	23.5	A-4b ~ SILTY CLAY(CL-ML)	25	18	7
⊙	B-143-0-21	43.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-142-0-21	68.5	0.205	0.094	0.05	0.009	0	0	65	31	4	2.60	12.99
⊠	B-143-0-21	13.0	0.21	0.028	0.013	0.006	0	0	24	72	4	0.69	6.56
▲	B-143-0-21	18.5	0.049	0.006			0	1	1	52	46		
★	B-143-0-21	23.5	0.072	0.008			2	1	6	50	41		
⊙	B-143-0-21	43.5	0.349	0.156	0.104	0.028	0	0	86	11	3	1.99	6.68

GRAIN SIZE - OH DOT.GDT - 5/30/24 16:43 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

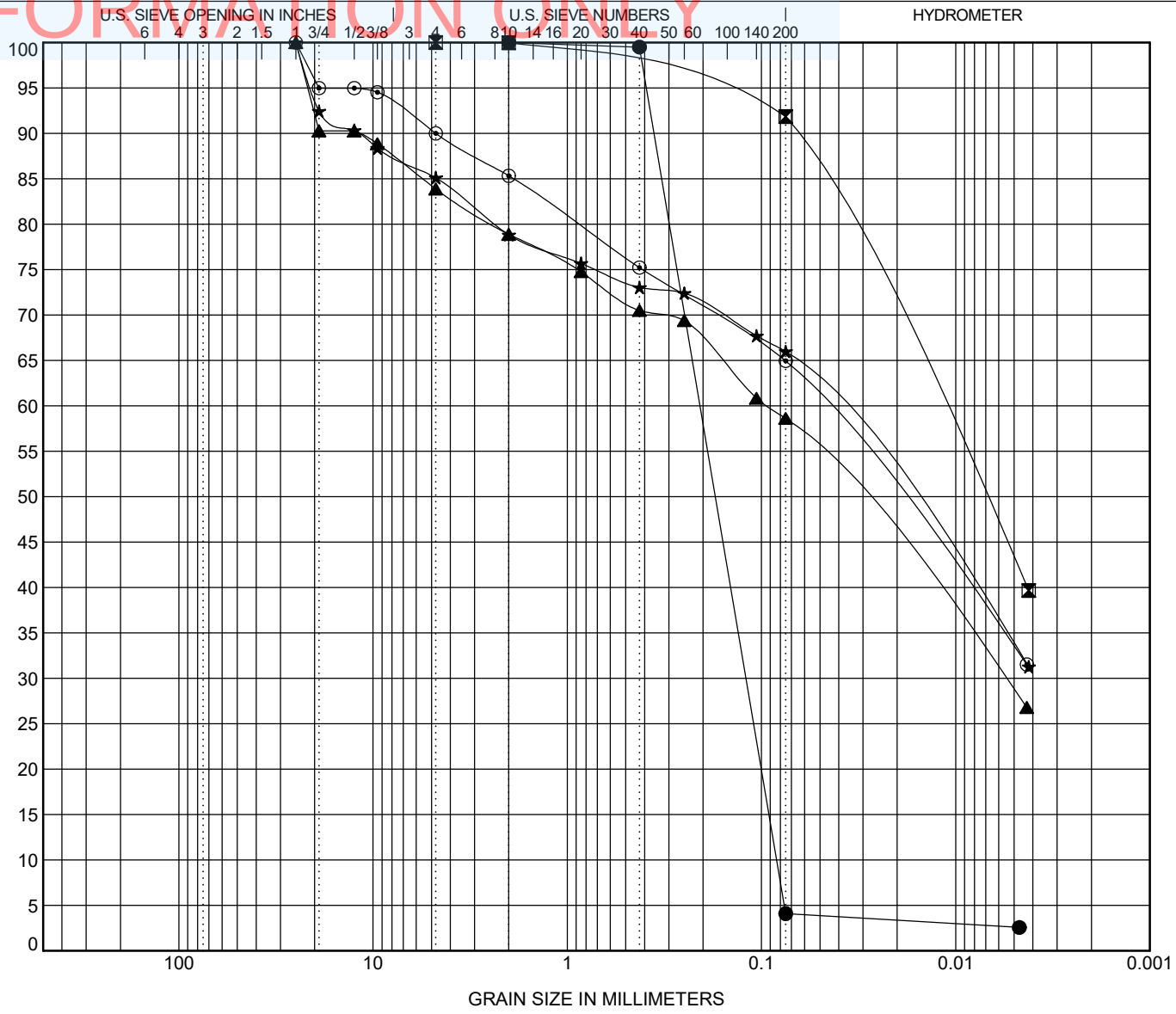
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-143-0-21	58.5	**A-3 ~ POORLY GRADED SAND(SP)**	**NP**	**NP**	**NP**
⊠	B-143-0-21	73.5	**A-6a ~ LEAN CLAY(CL)**	**35**	**20**	**15**
▲	B-144-0-21	4.5	**A-6a ~ SANDY LEAN CLAY with GRAVEL(CL)**	**31**	**16**	**15**
★	B-144-0-21	11.0	**A-6b ~ SANDY LEAN CLAY(CL)**	**36**	**18**	**18**
⊙	B-144-0-21	18.5	**A-6b ~ SANDY LEAN CLAY(CL)**	**37**	**19**	**18**

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-143-0-21	58.5	**0.358**	**0.173**	**0.12**	**0.084**	**0**	**1**	**95**	**1**	**3**	**0.83**	**2.48**
⊠	B-143-0-21	73.5	**0.068**	**0.007**			**0**	**4**	**4**	**49**	**43**		
▲	B-144-0-21	4.5	**11.843**	**0.035**	**0.006**		**21**	**8**	**12**	**31**	**28**		
★	B-144-0-21	11.0	**11.942**	**0.02**			**21**	**6**	**7**	**33**	**33**		
⊙	B-144-0-21	18.5	**4.752**	**0.021**			**15**	**10**	**10**	**32**	**33**		

GRAIN SIZE - OH DOT.GDT - 5/30/24 16:47 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

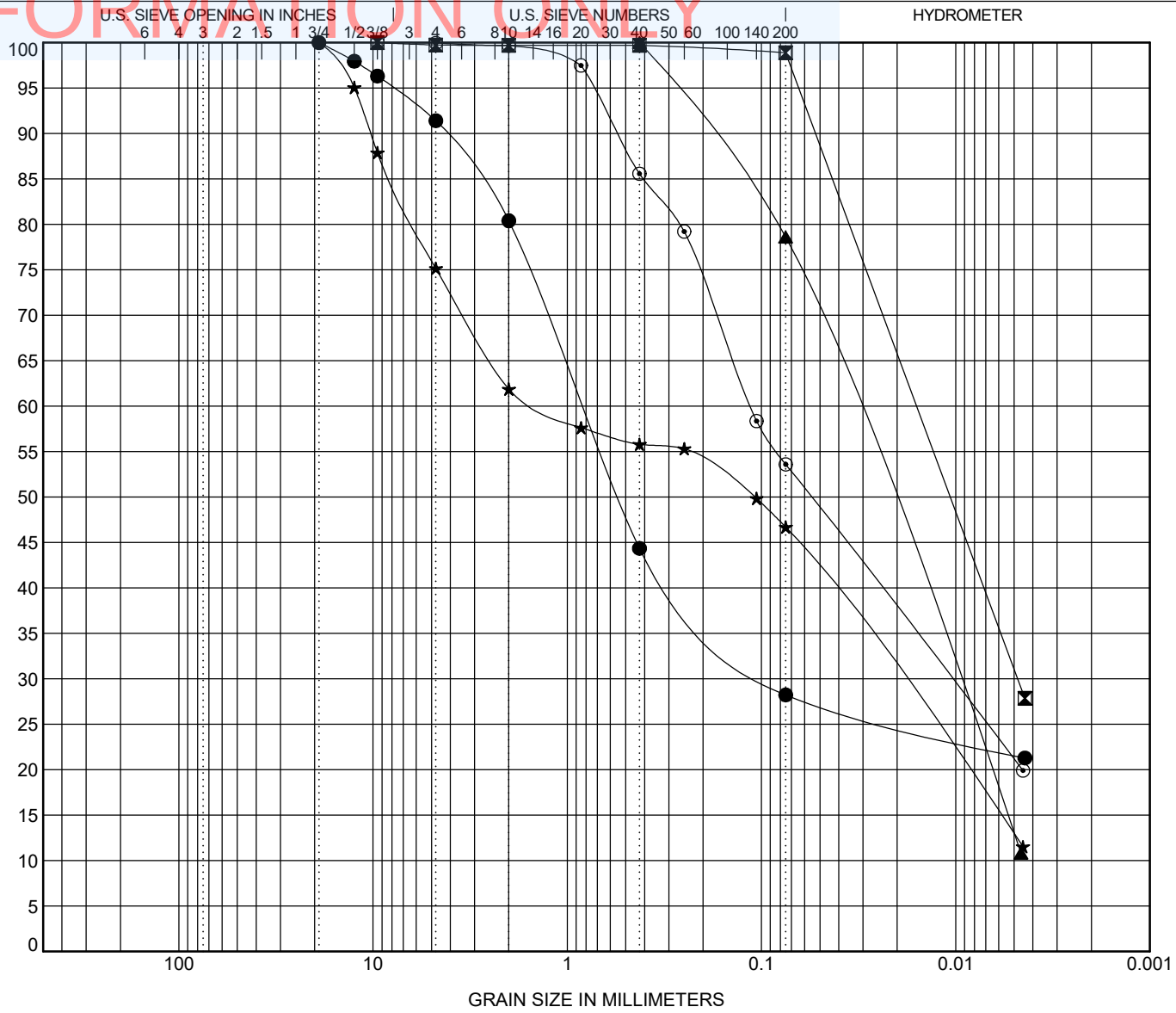
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-144-0-21	30.0	A-2-7 ~ CLAYEY SAND(SC)	43	21	22
⊠	B-144-0-21	38.5	A-4b ~ SILTY CLAY(CL-ML)	23	18	5
▲	B-144-0-21	53.5	A-4b ~ SILT with SAND(ML)	19	17	2
★	B-144-0-21	68.5	A-4a ~ SILTY, CLAYEY SAND with GRAVEL(SC-SM)	22	17	5
⊙	B-144-0-21	83.5	A-4a ~ SANDY SILT(ML)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-144-0-21	30.0	4.255	0.542	0.091		20	36	16	6	22		
⊠	B-144-0-21	38.5	0.053	0.011	0.005		0	0	1	68	31		
▲	B-144-0-21	53.5	0.189	0.023	0.01		0	0	21	66	13		
★	B-144-0-21	68.5	10.3	0.108	0.02		38	6	9	34	13		
⊙	B-144-0-21	83.5	0.55	0.056	0.01		0	14	32	33	21		

GRAIN SIZE - OH DOT.GDT - 5/30/24 16:51 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

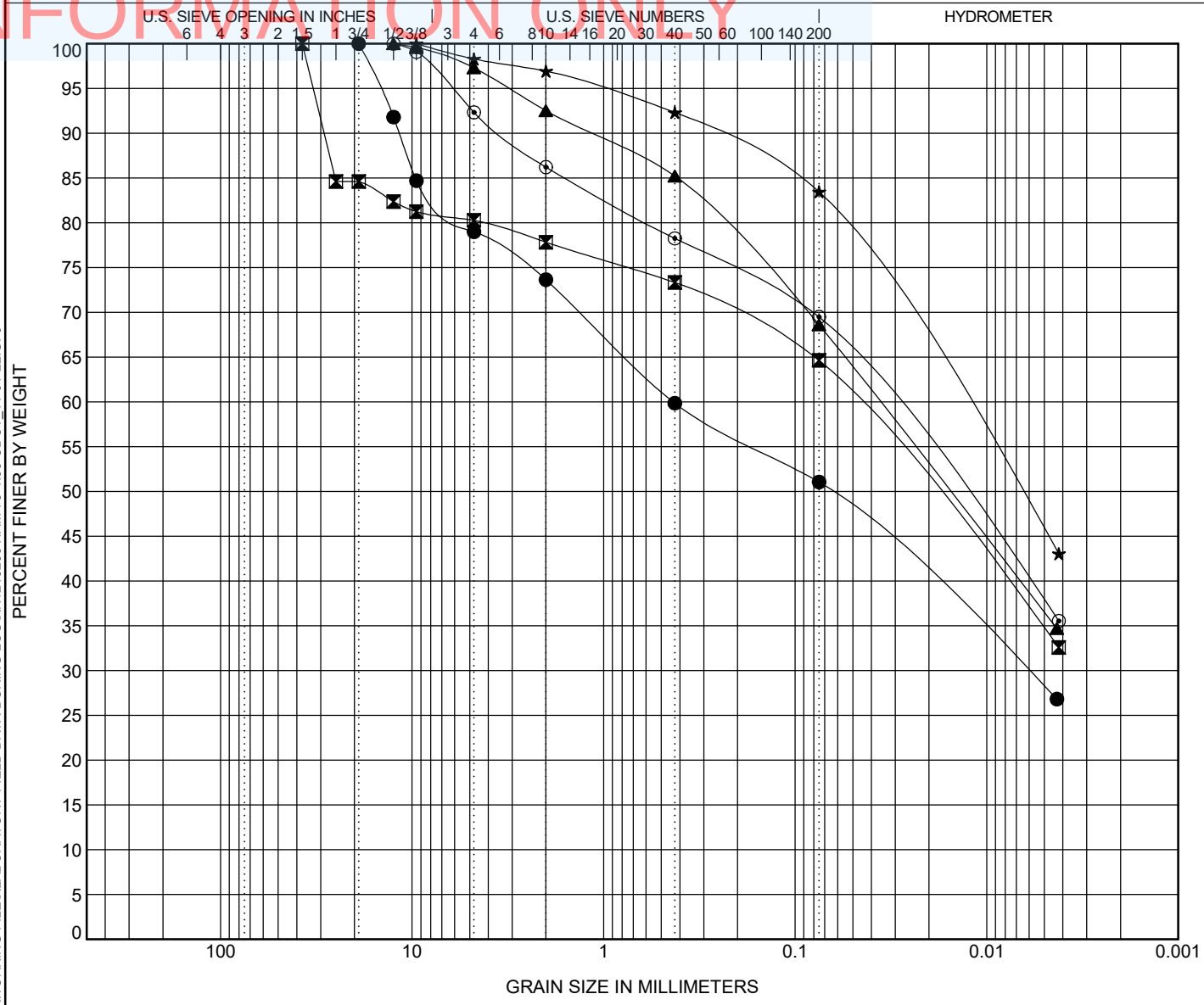
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-145-0-21	4.5	A-6b ~ SANDY LEAN CLAY with GRAVEL(CL)	38	19	19
⊠	B-145-0-21	6.0	A-6b ~ GRAVELLY LEAN CLAY with SAND(CL)	37	19	18
▲	B-145-0-21	8.0	A-6a ~ SANDY LEAN CLAY(CL)	31	20	11
★	B-145-0-21	13.5	A-7-6 ~ LEAN CLAY with SAND(CL)	41	19	22
⊙	B-145-0-21	21.0	A-6b ~ SANDY LEAN CLAY(CL)	39	19	20

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-145-0-21	4.5	11.662	0.066	0.006		26	14	9	23	28		
⊠	B-145-0-21	6.0	28.819	0.02			21	5	9	30	35		
▲	B-145-0-21	8.0	1.174	0.016			7	7	17	33	36		
★	B-145-0-21	13.5	0.27	0.007			3	5	9	38	45		
⊙	B-145-0-21	21.0	3.418	0.014			14	8	9	31	38		

GRAIN SIZE - OH DOT.GDT - 5/30/24 16:55 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

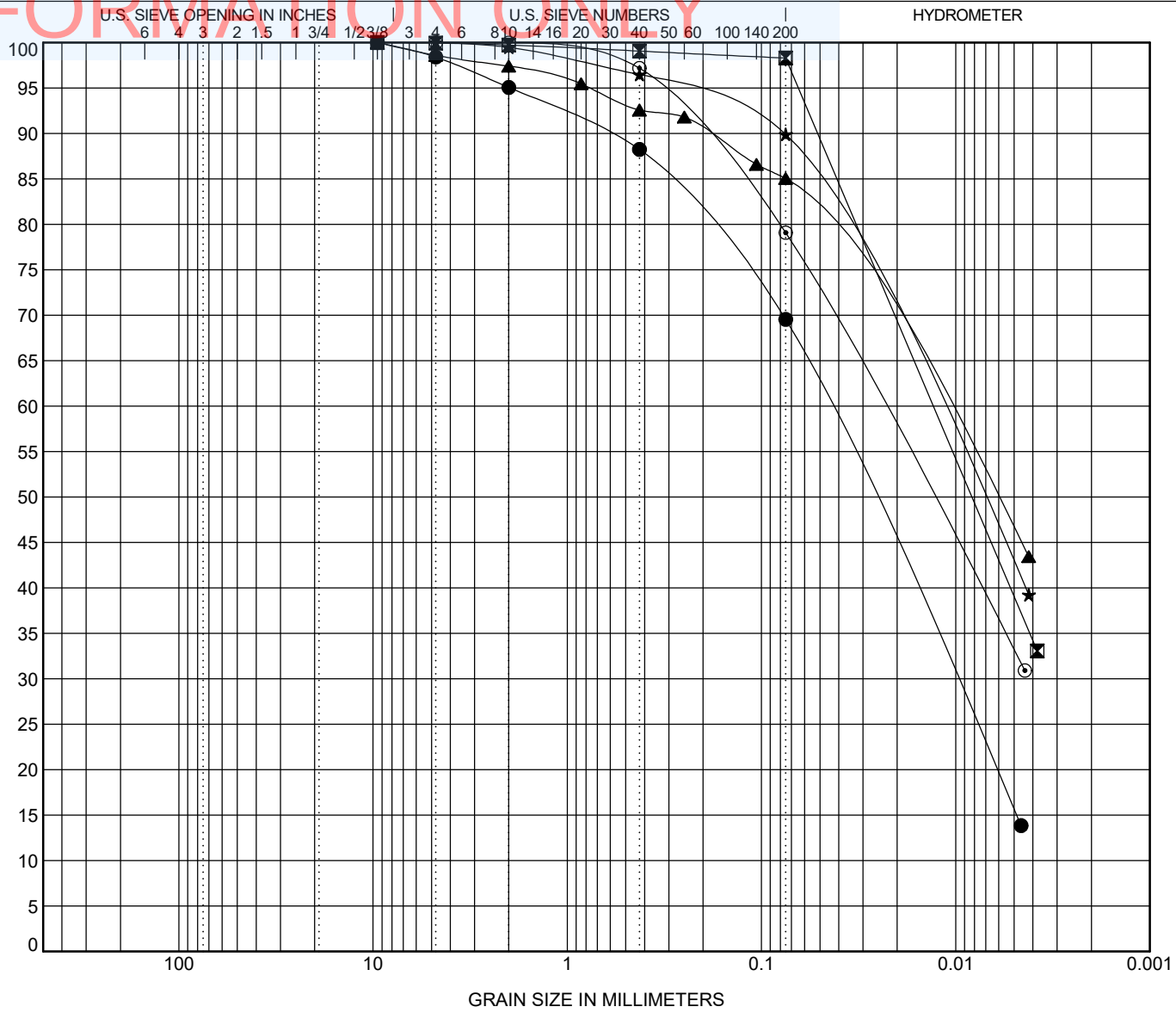
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-145-0-21	33.5	**A-4b ~ SANDY SILT(ML)**	**NP**	**NP**	**NP**
⊠	B-145-0-21	43.5	**A-4b ~ LEAN CLAY(CL)**	**29**	**20**	**9**
▲	B-147-0-21	3.5	**A-6b ~ LEAN CLAY(CL)**	**37**	**21**	**16**
★	B-147-0-21	8.5	**A-6a ~ LEAN CLAY(CL)**	**32**	**21**	**11**
⊙	B-147-0-21	13.5	**A-6b ~ LEAN CLAY with SAND(CL)**	**35**	**16**	**19**

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-145-0-21	33.5	**0.633**	**0.028**	**0.01**		**4**	**7**	**19**	**54**	**16**		
⊠	B-145-0-21	43.5	**0.051**	**0.008**			**0**	**1**	**1**	**59**	**39**		
▲	B-147-0-21	3.5	**0.186**	**0.007**			**2**	**5**	**8**	**39**	**46**		
★	B-147-0-21	8.5	**0.077**	**0.008**			**0**	**3**	**7**	**48**	**42**		
⊙	B-147-0-21	13.5	**0.214**	**0.014**			**0**	**3**	**18**	**46**	**33**		

GRAIN SIZE - OH DOT.GDT - 5/30/24 16:59 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

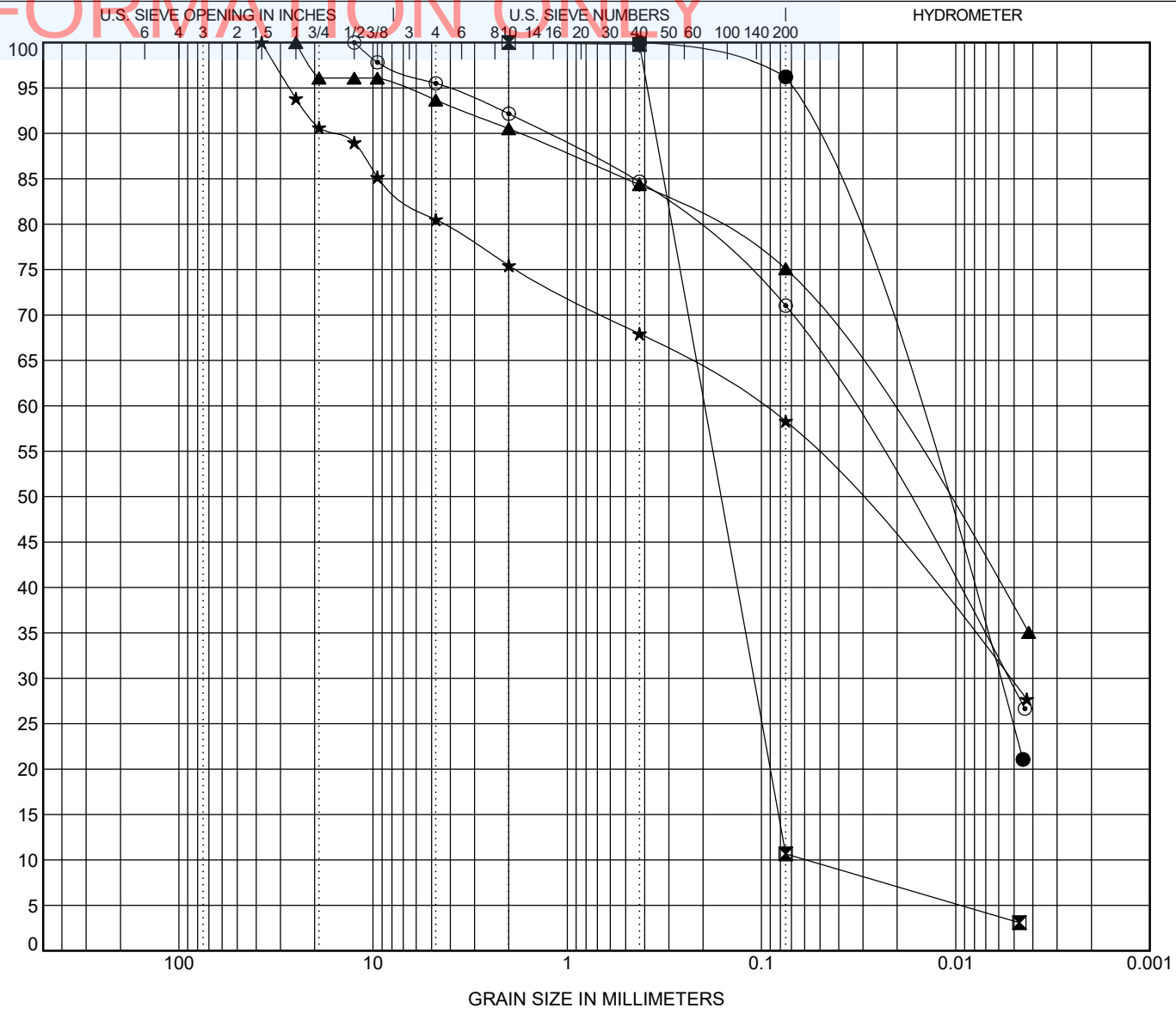
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-147-0-21	23.5	A-4b ~ SILTY CLAY(CL-ML)	26	19	7
⊠	B-147-0-21	33.5	A-3a ~ POORLY GRADED SAND with SILT(SP-SM)	NP	NP	NP
▲	B-148-0-21	4.0	A-7-6 ~ LEAN CLAY with SAND(CL)	41	22	19
★	B-148-0-21	11.0	A-6b ~ SANDY LEAN CLAY with GRAVEL(CL)	36	17	19
⊙	B-148-0-21	18.5	A-6a ~ LEAN CLAY with SAND(CL)	31	16	15

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-147-0-21	23.5	0.059	0.013	0.006		0	0	4	72	24		
⊠	B-147-0-21	33.5	0.351	0.161	0.109	0.059	0	0	89	8	3	1.04	3.34
▲	B-148-0-21	4.0	1.757	0.012			10	6	9	38	37		
★	B-148-0-21	11.0	16.152	0.034	0.005		24	8	10	29	29		
⊙	B-148-0-21	18.5	1.279	0.02	0.005		8	7	14	42	29		

GRAIN SIZE - OH DOT.GDT - 5/30/24 17:04 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

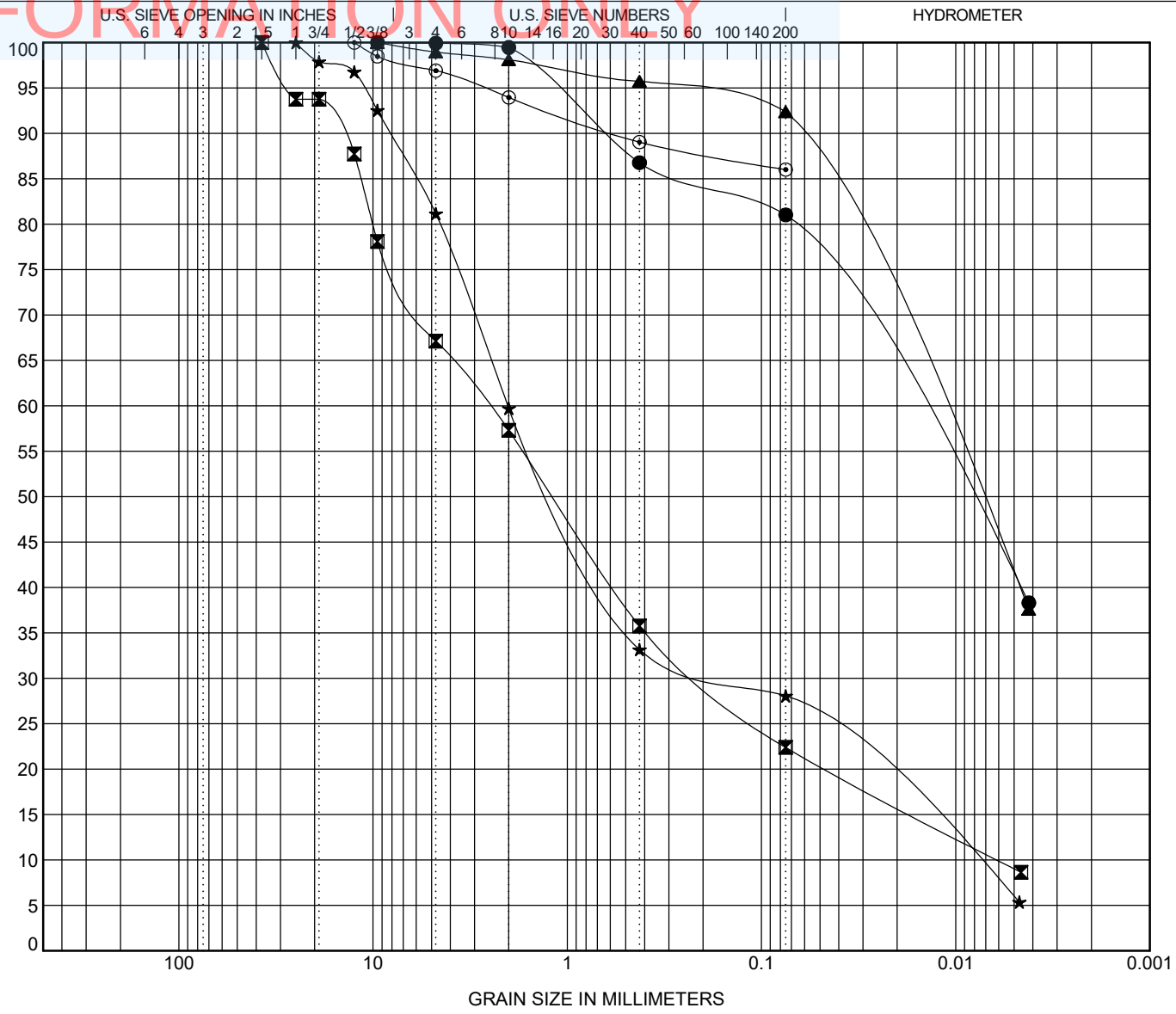
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GRAIN SIZE DISTRIBUTION

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PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-148-0-21	28.5	**A-7-6 ~ LEAN CLAY with SAND(CL)**	46	22	24
⊠	B-149-0-21	3.0	**A-2-4 ~ SILTY SAND with GRAVEL(SM)**	34	25	9
▲	B-149-0-21	11.0	**A-7-6 ~ SILT(ML)**	44	28	16
★	B-149-0-21	18.5	**A-2-4 ~ CLAYEY SAND with GRAVEL(SC)**	27	19	8
⊙	B-149-0-21	28.5	**A-7-6 ~ LEAN CLAY(CL)**	42	21	21

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-148-0-21	28.5	0.631	0.009			0	13	6	40	41		
⊠	B-149-0-21	3.0	14.632	1.184	0.201	0.006	43	22	13	13	9	2.64	418.98
▲	B-149-0-21	11.0	0.066	0.008			3	2	3	51	41		
★	B-149-0-21	18.5	8.139	1.135	0.145	0.008	40	27	5	22	6	1.25	244.37
⊙	B-149-0-21	28.5	0.576				6	5	3	86			

GRAIN SIZE - OH DOT.GDT - 5/30/24 17:08 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

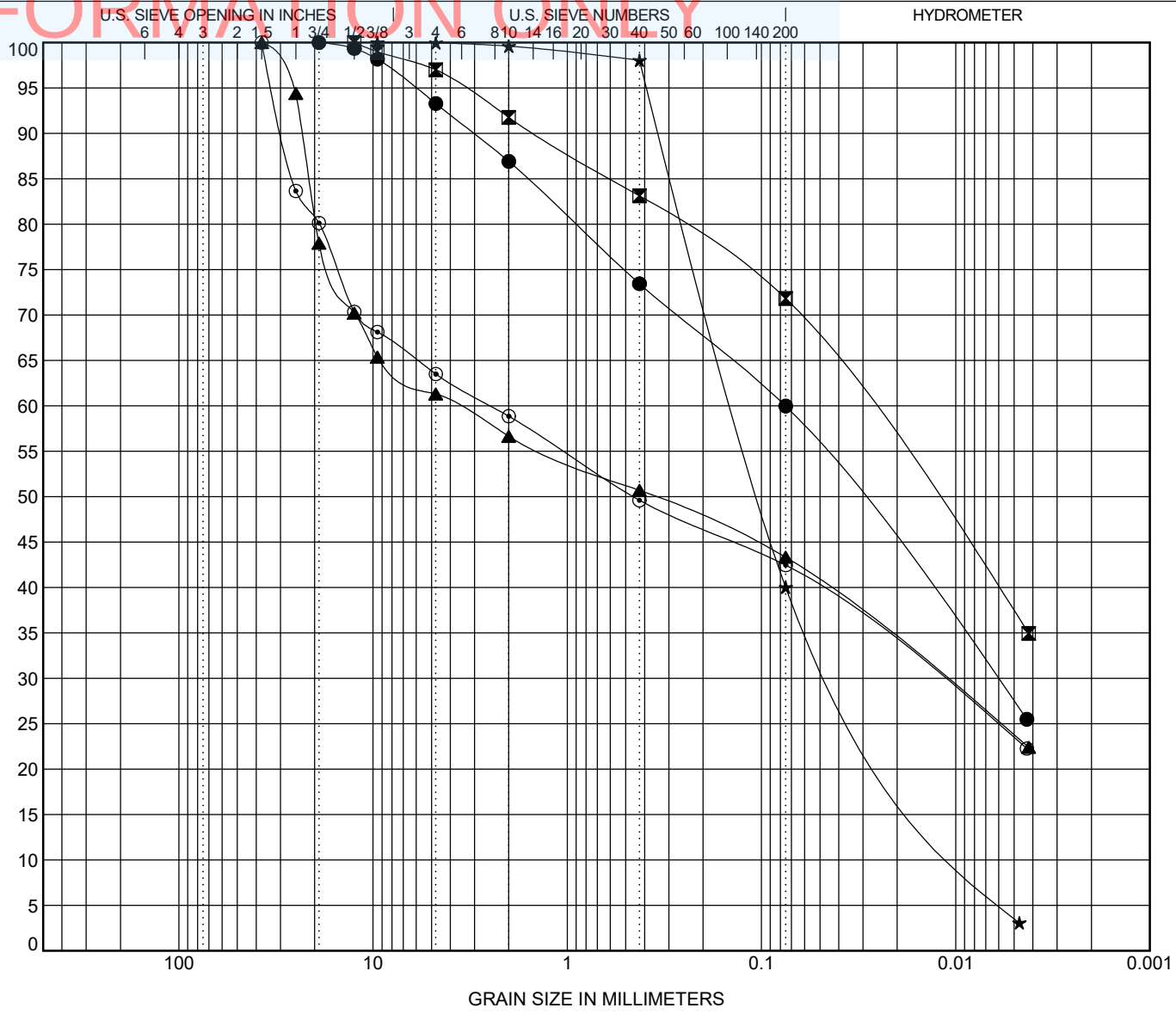
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GRAIN SIZE DISTRIBUTION

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OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-150-0-21	1.5	~			
⊠	B-150-0-21	4.5	A-6a ~ LEAN CLAY with SAND(CL)	35	20	15
▲	B-150-0-21	6.0	A-6b ~ CLAYEY GRAVEL with SAND(GC)	36	18	18
★	B-150-0-21	8.5	A-4a ~ SILTY SAND(SM)	NP	NP	NP
⊙	B-150-0-21	11.0	A-7-6 ~ CLAYEY GRAVEL with SAND(GC)	43	20	23

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-150-0-21	1.5	3.043	0.033	0.006		14	13	13	33	27		
⊠	B-150-0-21	4.5	1.459	0.014			8	9	11	35	37		
▲	B-150-0-21	6.0	23.239	0.36	0.012		44	6	7	19	24		
★	B-150-0-21	8.5	0.334	0.101	0.035	0.008	0	2	58	36	4	1.16	17.25
⊙	B-150-0-21	11.0	29.258	0.454	0.013		42	9	7	19	23		

GRAIN SIZE - OH DOT.GDT - 5/30/24 17:13 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

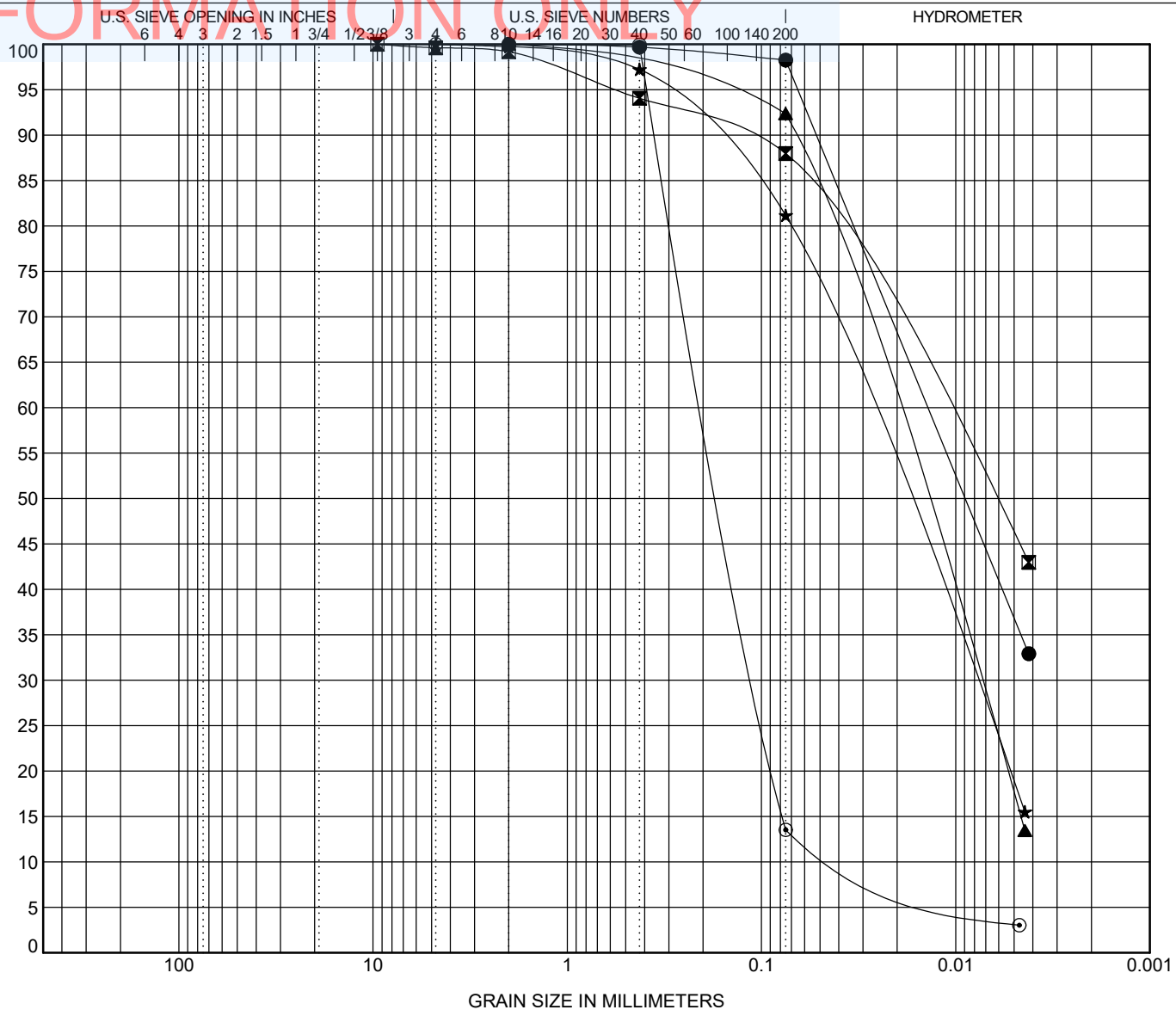
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-150-0-21	13.5	A-4b ~ SILT(ML)	NP	NP	NP
⊠	B-150-0-21	18.0	A-6b ~ LEAN CLAY(CL)	37	20	17
▲	B-150-0-21	28.5	A-4b ~ SILT(ML)	NP	NP	NP
★	B-150-0-21	33.5	A-4b ~ SILT with SAND(ML)	NP	NP	NP
⊙	B-150-0-21	48.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-150-0-21	13.5	0.052	0.009			0	1	1	61	37		
⊠	B-150-0-21	18.0	0.134	0.007			1	5	6	42	46		
▲	B-150-0-21	28.5	0.069	0.016	0.008		0	4	4	75	17		
★	B-150-0-21	33.5	0.195	0.02	0.008		0	3	16	63	18		
⊙	B-150-0-21	48.5	0.348	0.156	0.104	0.03	0	0	86	11	3	1.93	6.44

GRAIN SIZE - OH DOT.GDT - 5/30/24 17:18 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

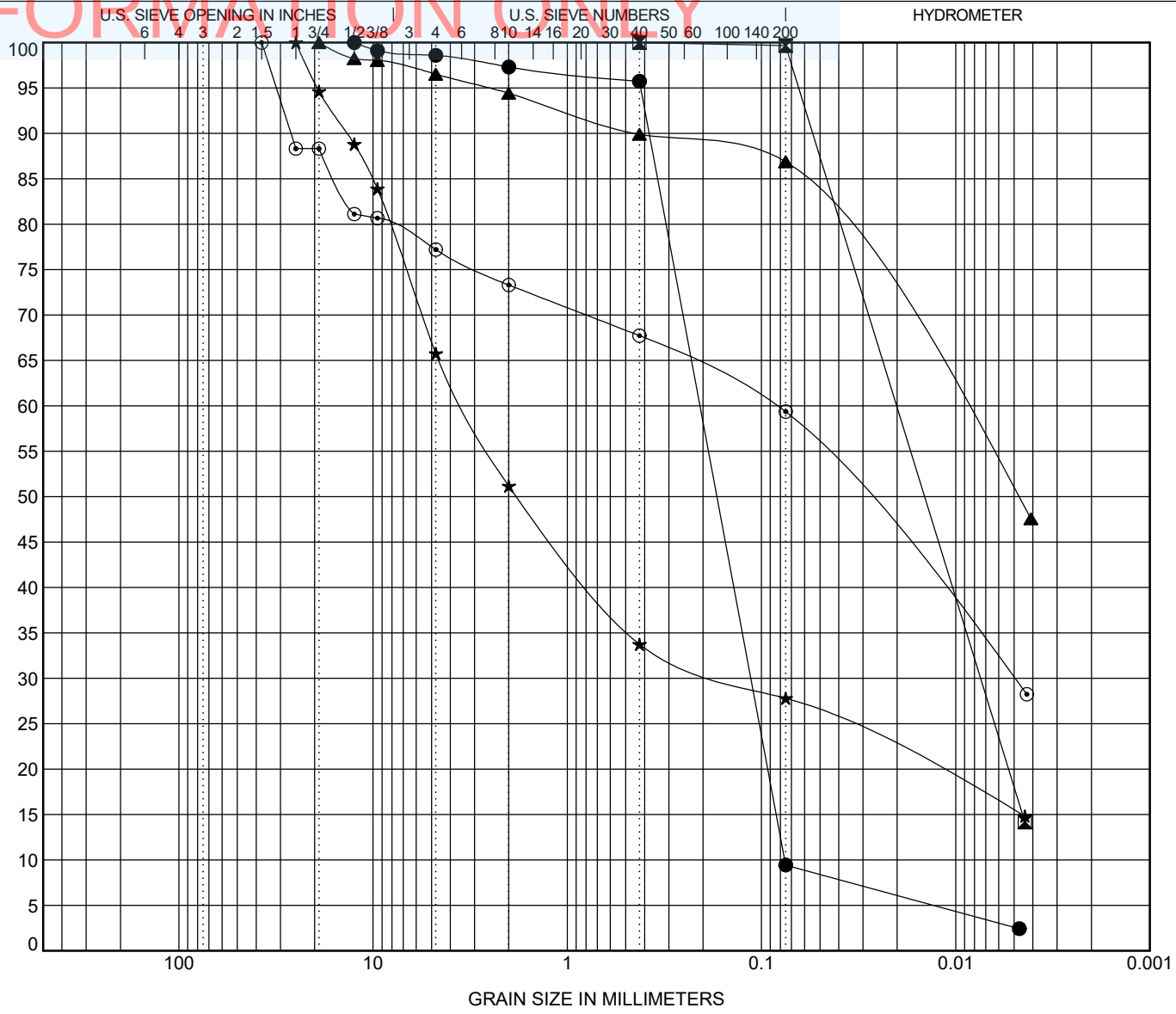
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-150-0-21	58.5	A-3 ~ POORLY GRADED SAND with SILT(SP-SM)	NP	NP	NP
⊠	B-150-0-21	68.5	A-4b ~ SILT(ML)	20	19	1
▲	B-150-0-21	78.5	A-7-6 ~ LEAN CLAY(CL)	43	25	18
★	B-151-0-21	3.5	A-2-6 ~ CLAYEY SAND with GRAVEL(SC)	32	18	14
⊙	B-151-0-21	8.5	A-6b ~ GRAVELLY LEAN CLAY with SAND(CL)	39	19	20

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-150-0-21	58.5	0.379	0.169	0.113	0.076	3	2	86	6	3	0.82	2.73
⊠	B-150-0-21	68.5	0.054	0.014	0.007		0	0	0	82	18		
▲	B-150-0-21	78.5	0.441	0.005			5	5	3	37	50		
★	B-151-0-21	3.5	13.613	1.803	0.143		49	17	6	13	15		
⊙	B-151-0-21	8.5	26.503	0.032	0.005		27	6	8	29	30		

GRAIN SIZE - OH DOT.GDT - 5/30/24 17:24 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

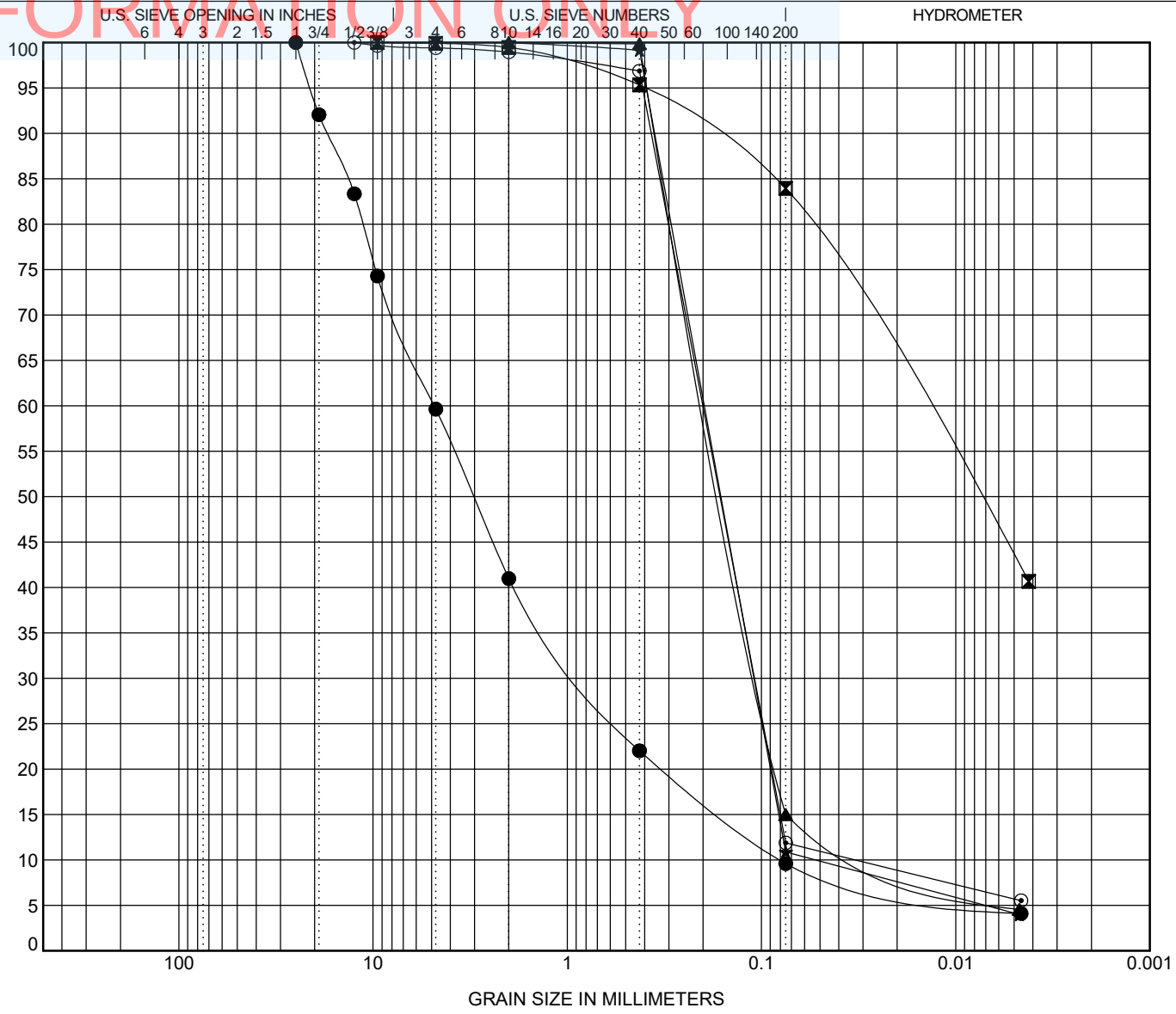
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-151-0-21	18.5	A-1-a ~ WELL-GRADED SAND with SILT and GRAVEL(SW-SM)	NP	NP	NP
⊠	B-151-0-21	28.5	A-7-6 ~ LEAN CLAY with SAND(CL)	43	19	24
▲	B-151-0-21	38.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP
★	B-151-0-21	48.5	A-3a ~ POORLY GRADED SAND with SILT(SP-SM)	NP	NP	NP
⊙	B-151-0-21	58.5	A-3a ~ POORLY GRADED SAND with SILT(SP-SM)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-151-0-21	18.5	17.215	3.039	0.816	0.079	59	19	12	6	4	1.74	60.97
⊠	B-151-0-21	28.5	0.189	0.008			1	4	11	41	43		
▲	B-151-0-21	38.5	0.347	0.153	0.102	0.02	0	0	85	10	5	2.77	9.45
★	B-151-0-21	48.5	0.355	0.162	0.109	0.053	0	1	88	7	4	1.15	3.75
⊙	B-151-0-21	58.5	0.369	0.163	0.109	0.033	1	2	85	6	6	1.79	6.09

GRAIN SIZE - OH DOT.GDT - 5/30/24 17:29 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

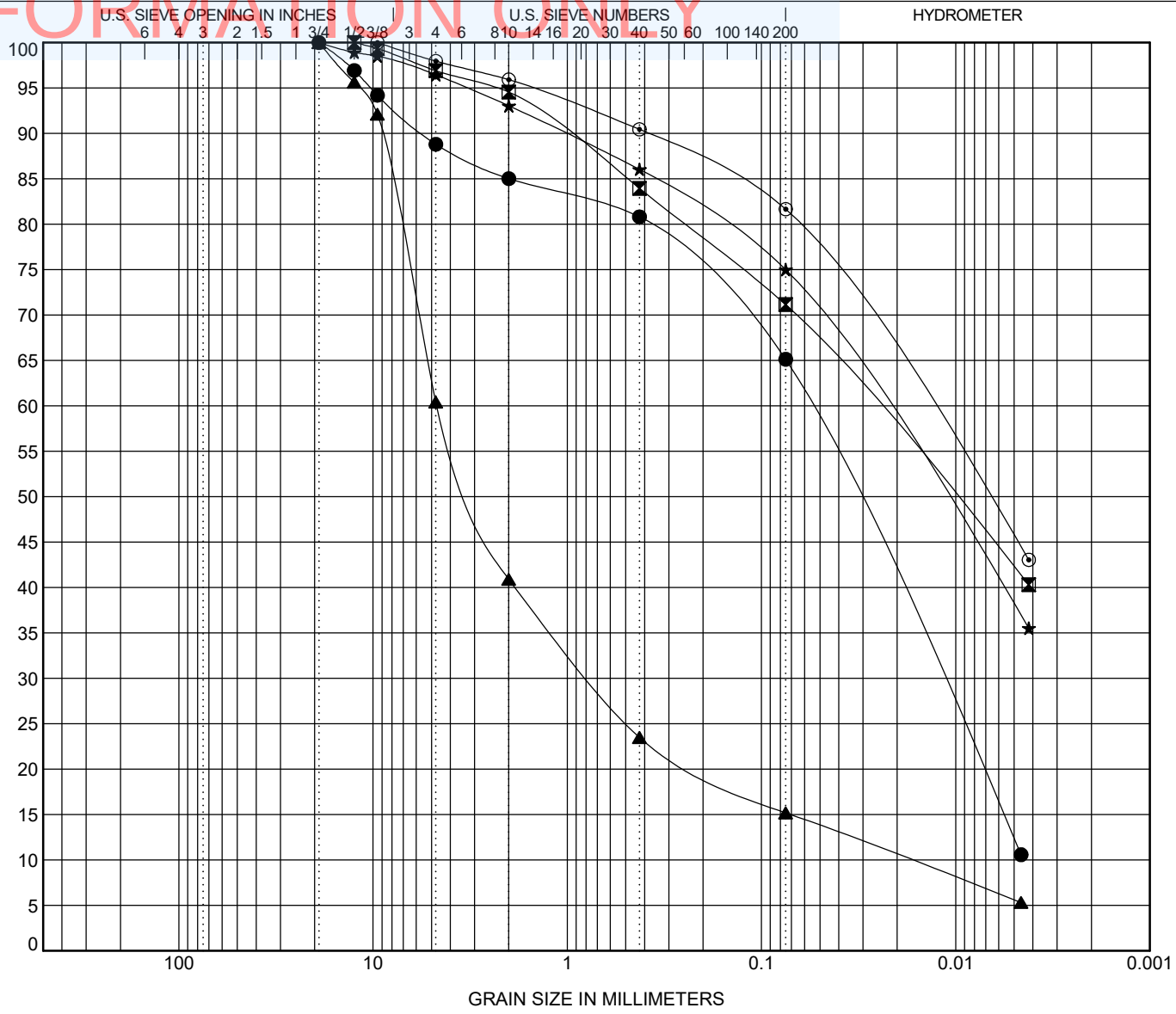
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-151-0-21	68.5	**A-4b ~ SANDY SILT(ML)**	**NP**	**NP**	**NP**
⊠	B-151-0-21	78.5	**A-6b ~ LEAN CLAY with SAND(CL)**	**36**	**19**	**17**
▲	B-152-0-21	2.5	**A-2-6 ~ CLAYEY SAND with GRAVEL(SC)**	**24**	**13**	**11**
★	B-152-0-21	5.5	**A-6b ~ LEAN CLAY with SAND(CL)**	**37**	**17**	**20**
⊙	B-152-0-21	13.5	**A-6b ~ LEAN CLAY with SAND(CL)**	**40**	**19**	**21**

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-151-0-21	68.5	**5.545**	**0.035**	**0.012**		**15**	**4**	**16**	**53**	**12**		
⊠	B-151-0-21	78.5	**1.029**	**0.01**			**5**	**11**	**13**	**29**	**42**		
▲	B-152-0-21	2.5	**9.072**	**2.995**	**0.759**	**0.017**	**60**	**17**	**8**	**9**	**6**	**7.13**	**269.46**
★	B-152-0-21	5.5	**1.022**	**0.012**			**7**	**7**	**11**	**37**	**38**		
⊙	B-152-0-21	13.5	**0.389**	**0.007**			**4**	**5**	**9**	**37**	**45**		

GRAIN SIZE - OH DOT.GDT - 5/30/24 17:35 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

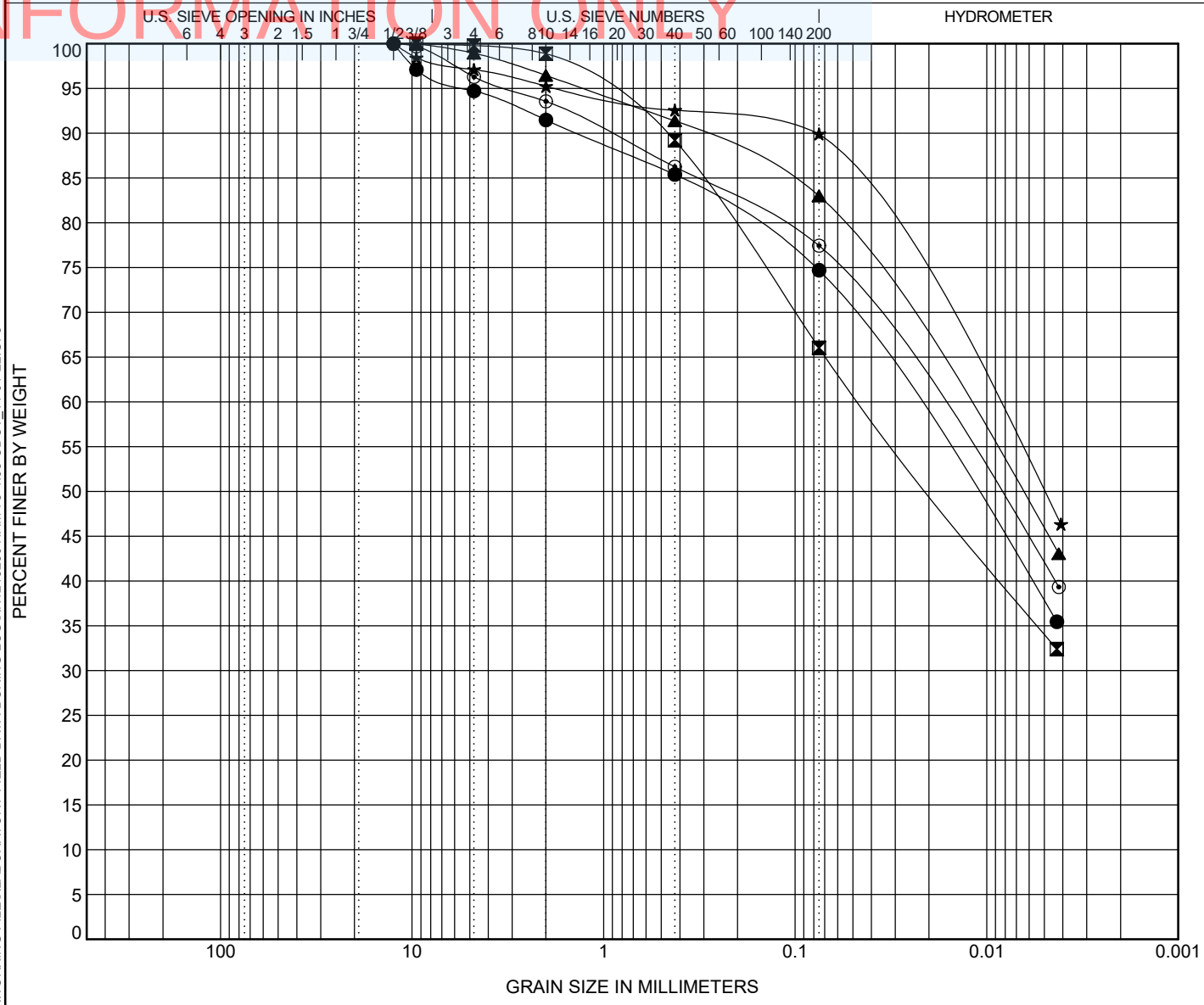
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-152-0-21	18.5	**A-6b ~ LEAN CLAY with SAND(CL)**	37	19	18
⊠	B-152-0-21	28.5	**A-6b ~ SANDY LEAN CLAY(CL)**	36	19	17
▲	B-153-0-21	4.0	**A-7-6 ~ LEAN CLAY with SAND(CL)**	42	19	23
★	B-153-0-21	11.0	**A-7-6 ~ LEAN CLAY(CL)**	45	25	20
⊙	B-153-0-21	18.5	**A-7-6 ~ LEAN CLAY with SAND(CL)**	42	20	22

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-152-0-21	18.5	1.375	0.012			8	6	11	37	38		
⊠	B-152-0-21	28.5	0.483	0.019			1	10	23	32	34		
▲	B-153-0-21	4.0	0.319	0.007			4	5	8	38	45		
★	B-153-0-21	11.0	0.079	0.005			4	3	3	41	49		
⊙	B-153-0-21	18.5	0.942	0.009			7	7	9	35	42		

GRAIN SIZE - OH DOT.GDT - 5/30/24 17:40 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

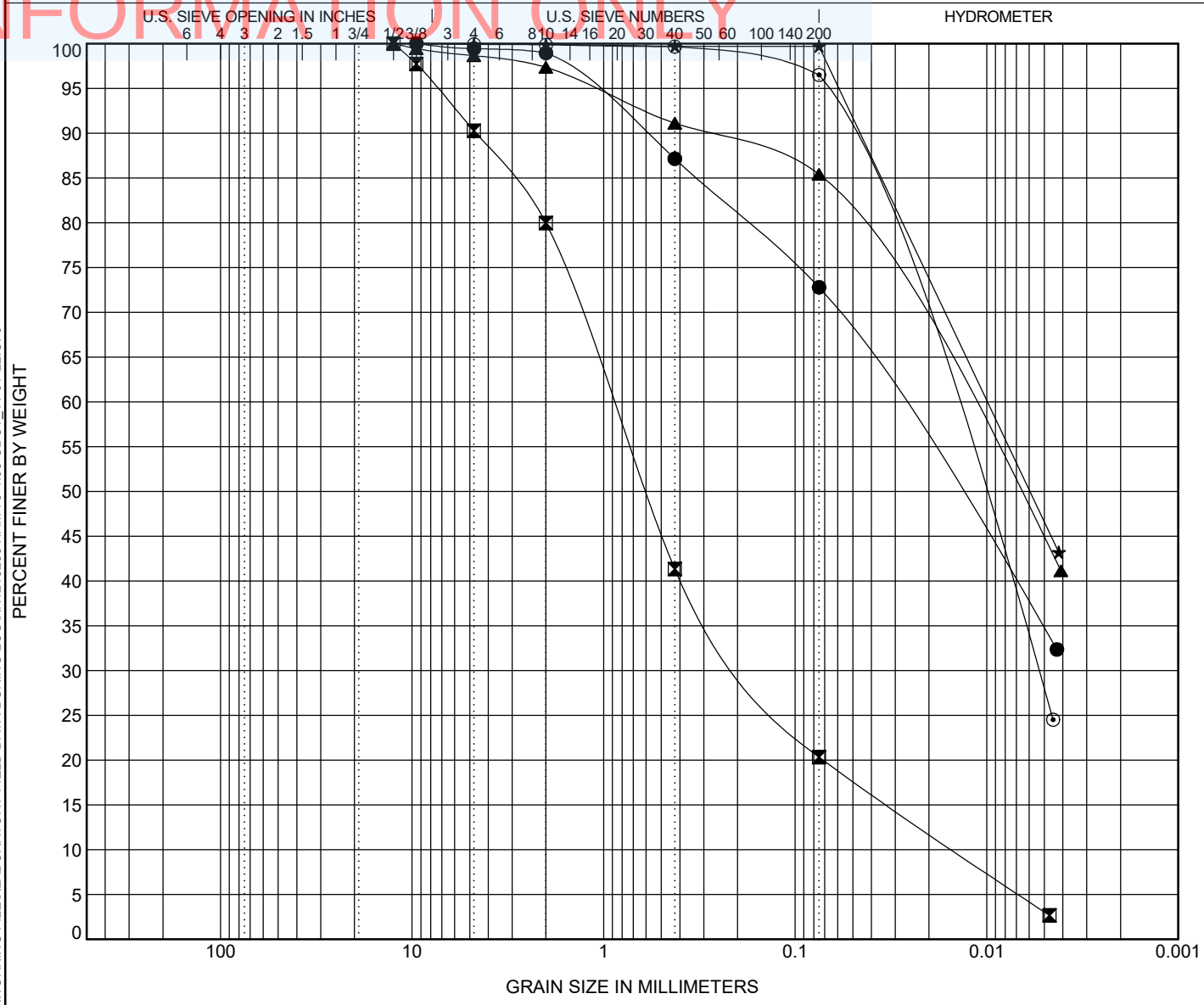
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GRAIN SIZE DISTRIBUTION

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PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-153-0-21	23.5	**A-6a ~ LEAN CLAY with SAND(CL)**	30	17	13
⊠	B-153-0-21	33.5	**A-1-b ~ SILTY SAND(SM)**	NP	NP	NP
▲	B-154-0-21	3.5	**A-6b ~ LEAN CLAY(CL)**	39	20	19
★	B-154-0-21	16.0	**A-6a ~ LEAN CLAY(CL)**	33	20	13
⊙	B-154-0-21	23.5	**A-4b ~ SILTY CLAY(CL-ML)**	25	19	6

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-153-0-21	23.5	**0.618**	**0.015**			**1**	**12**	**14**	**39**	**34**		
⊠	B-153-0-21	33.5	**4.641**	**0.602**	**0.167**	**0.015**	**20**	**39**	**21**	**17**	**3**	**2.08**	**60.49**
▲	B-154-0-21	3.5	**0.303**	**0.007**			**3**	**6**	**6**	**41**	**44**		
★	B-154-0-21	16.0	**0.046**	**0.006**			**0**	**0**	**0**	**53**	**47**		
⊙	B-154-0-21	23.5	**0.058**	**0.012**	**0.006**		**0**	**0**	**3**	**70**	**27**		

GRAIN SIZE - OH DOT.GDT - 5/30/24 17:47 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

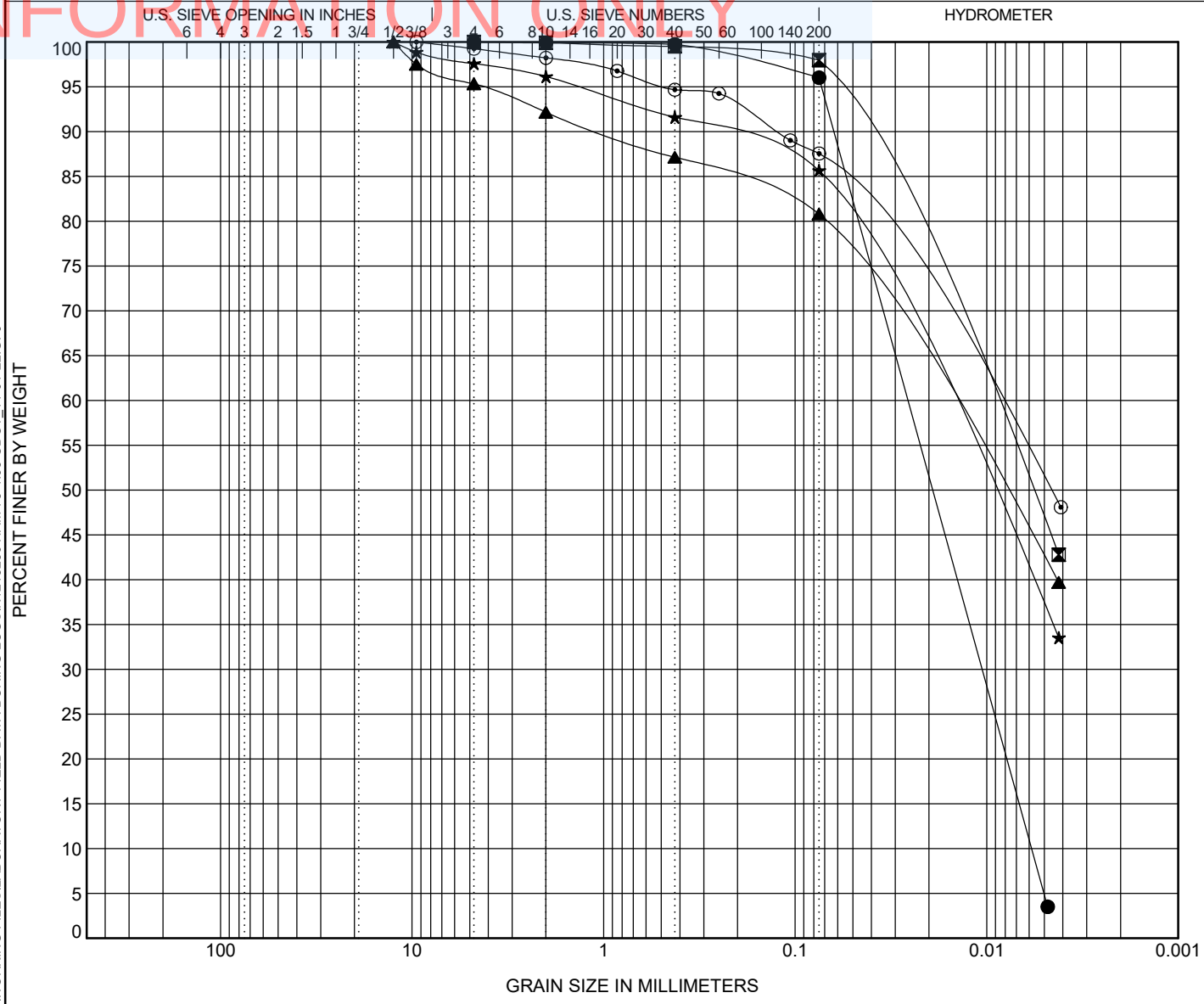
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-154-0-21	33.5	**A-4b ~ SILT(ML)**	22	20	2
⊠	B-154-0-21	43.5	**A-6a ~ LEAN CLAY(CL)**	32	19	13
▲	B-155-0-21	4.0	**A-7-6 ~ LEAN CLAY with SAND(CL)**	44	19	25
★	B-155-0-21	11.0	**A-6b ~ LEAN CLAY(CL)**	37	20	17
⊙	B-155-0-21	18.5	**A-7-6 ~ LEAN CLAY(CL)**	46	23	23

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-154-0-21	33.5	0.063	0.019	0.011	0.006	0	0	4	91	5	0.74	4.42
⊠	B-154-0-21	43.5	0.049	0.006			0	0	2	52	46		
▲	B-155-0-21	4.0	1.028	0.009			8	5	6	39	42		
★	B-155-0-21	11.0	0.266	0.01			3	5	6	49	37		
⊙	B-155-0-21	18.5	0.125	0.005			1	4	7	37	51		

GRAIN SIZE - OH DOT.GDT - 5/30/24 17:53 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

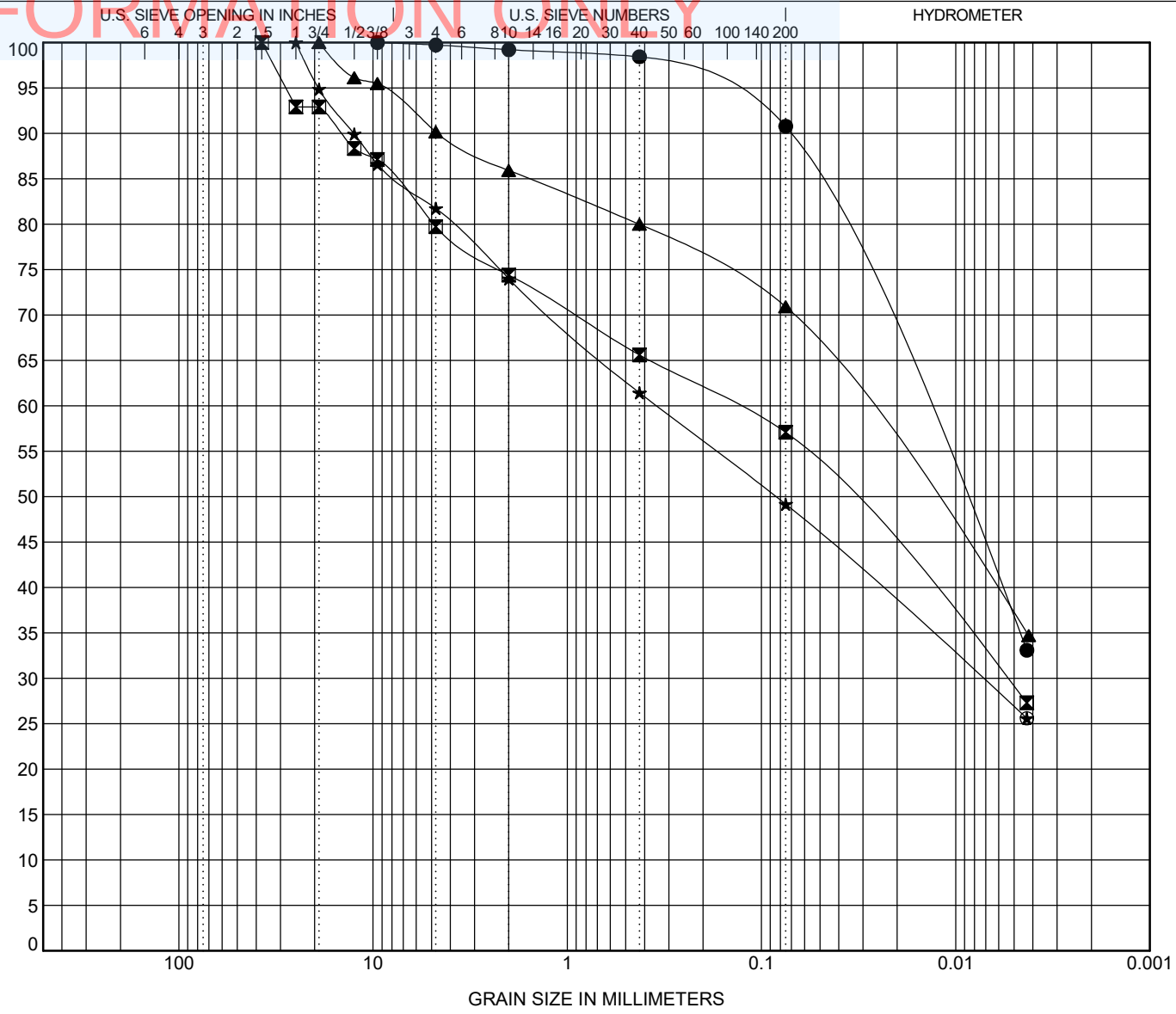
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GRAIN SIZE DISTRIBUTION

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PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-155-0-21	33.5	**A-6a ~ LEAN CLAY(CL)**	**30**	**19**	**11**
⊠	B-156-0-21	2.5	**A-6b ~ SANDY LEAN CLAY with GRAVEL(CL)**	**39**	**19**	**20**
▲	B-156-0-21	5.5	**A-6b ~ LEAN CLAY with SAND(CL)**	**40**	**16**	**24**
★	B-156-0-21	16.0	**A-6b ~ CLAYEY SAND with GRAVEL(SC)**	**36**	**17**	**19**
⊙	B-156-0-21	18.5	**~**			

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-155-0-21	33.5	**0.072**	**0.01**			**0**	**1**	**8**	**55**	**36**		
⊠	B-156-0-21	2.5	**14.543**	**0.038**	**0.006**		**25**	**9**	**9**	**28**	**29**		
▲	B-156-0-21	5.5	**4.613**	**0.014**			**14**	**6**	**9**	**34**	**37**		
★	B-156-0-21	16.0	**12.574**	**0.084**	**0.007**		**26**	**13**	**12**	**22**	**27**		
⊙	B-156-0-21	18.5											

GRAIN SIZE - OH DOT.GDT - 5/30/24 17:59 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

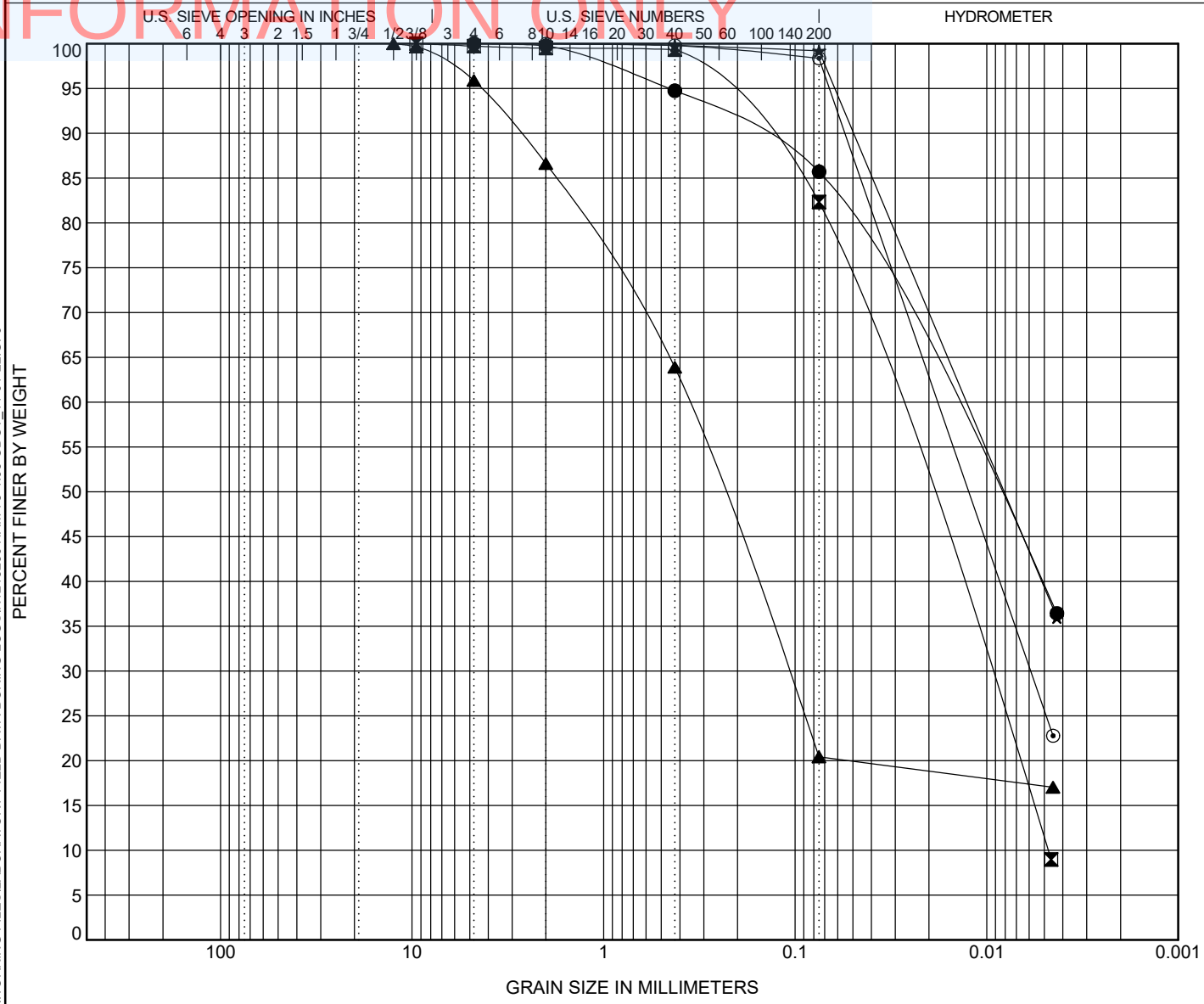
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GRAIN SIZE DISTRIBUTION

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PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-156-0-21	23.5	A-6a ~ LEAN CLAY(CL)	35	21	14
⊠	B-156-0-21	33.5	A-4b ~ SILT with SAND(ML)	NP	NP	NP
▲	B-157-0-21	6.0	A-2-6 ~ CLAYEY SAND(SC)	34	16	18
★	B-157-0-21	11.0	A-6a ~ LEAN CLAY(CL)	32	21	11
⊙	B-157-0-21	18.5	A-4b ~ LEAN CLAY(CL)	30	20	10

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-156-0-21	23.5	0.171	0.009			0	5	9	47	39		
⊠	B-156-0-21	33.5	0.164	0.022	0.01	0.005	1	0	17	71	11	0.68	6.70
▲	B-157-0-21	6.0	2.742	0.244	0.11		14	23	43	3	17		
★	B-157-0-21	11.0	0.049	0.008			0	0	1	60	39		
⊙	B-157-0-21	18.5	0.055	0.012	0.006		1	0	1	72	26		

GRAIN SIZE - OH DOT.GDT - 5/30/24 18:06 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

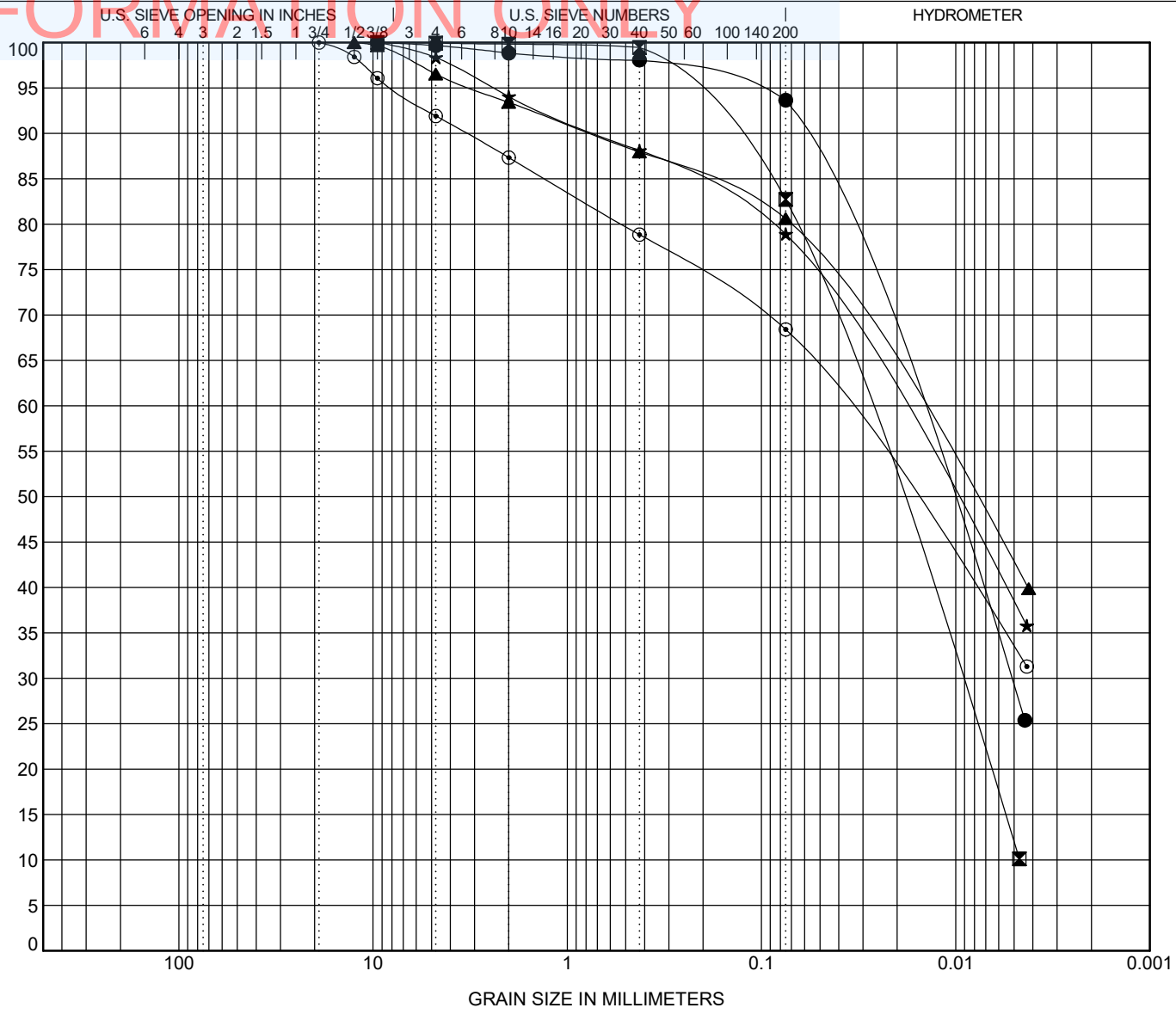
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GRAIN SIZE DISTRIBUTION

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PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-157-0-21	28.5	A-4b ~ LEAN CLAY(CL)	28	19	9
⊠	B-157-0-21	38.5	A-4b ~ SILT with SAND(ML)	20	19	1
▲	B-158-0-21	3.0	A-6b ~ LEAN CLAY with SAND(CL)	40	19	21
★	B-158-0-21	11.0	A-4a ~ SILT with SAND(ML)	NP	NP	NP
⊙	B-158-0-21	16.0	A-6b ~ SANDY LEAN CLAY(CL)	37	17	20

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-157-0-21	28.5	0.064	0.012	0.005		1	1	4	66	28		
⊠	B-157-0-21	38.5	0.159	0.022	0.01		0	0	17	71	12		
▲	B-158-0-21	3.0	0.76	0.009			7	5	7	39	42		
★	B-158-0-21	11.0	0.696	0.011			6	6	9	41	38		
⊙	B-158-0-21	16.0	3.311	0.018			14	8	10	35	33		

GRAIN SIZE - OH DOT.GDT - 5/30/24 18:13 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

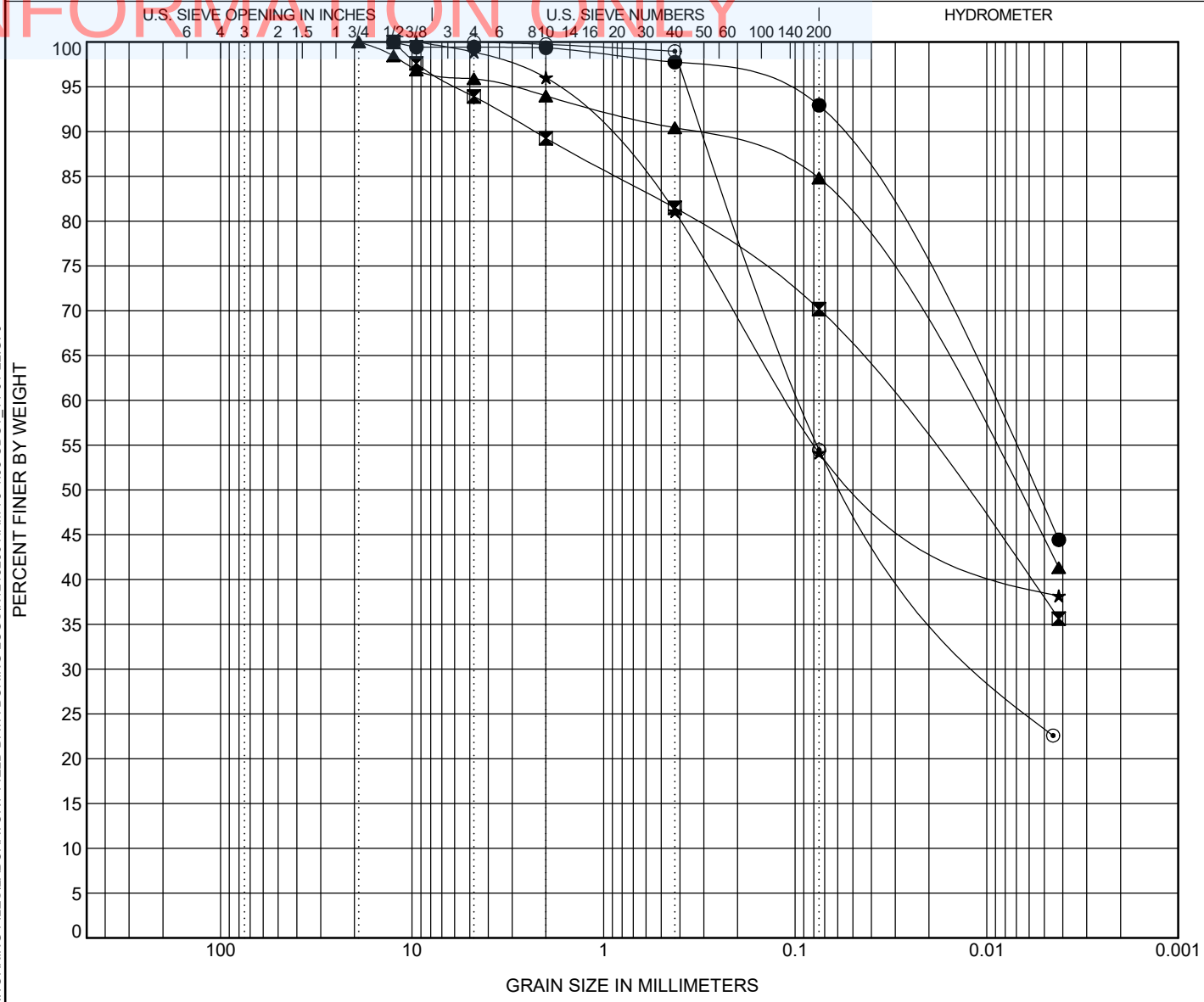
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-158-0-21	23.5	A-6b ~ LEAN CLAY(CL)	40	21	19
⊠	B-159-0-21	4.5	A-6b ~ LEAN CLAY with SAND(CL)	38	22	16
▲	B-159-0-21	11.0	A-7-6 ~ LEAN CLAY with SAND(CL)	44	19	25
★	B-159-0-21	23.5	A-6b ~ SANDY LEAN CLAY(CL)	40	17	23
⊙	B-159-0-21	33.5	A-4a ~ SANDY SILT(ML)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-158-0-21	23.5	0.063	0.006			0	2	5	46	47		
⊠	B-159-0-21	4.5	2.297	0.014			11	8	11	32	38		
▲	B-159-0-21	11.0	0.372	0.007			5	4	6	41	44		
★	B-159-0-21	23.5	1.071	0.036			4	15	27	15	39		
⊙	B-159-0-21	33.5	0.3	0.051	0.009		1	1	44	30	24		

GRAIN SIZE - OH DOT.GDT - 5/30/24 18:20 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

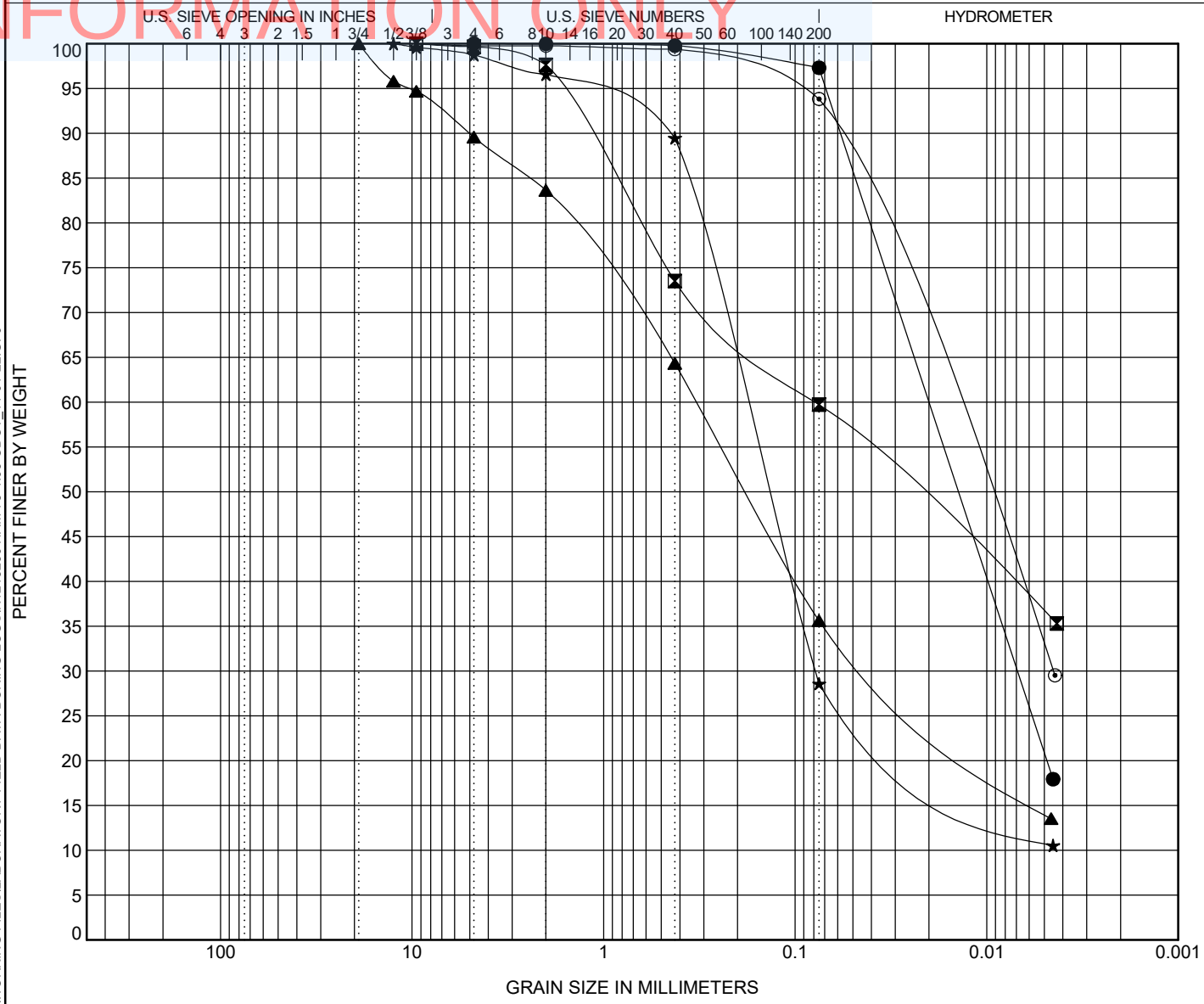
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-159-0-21	38.5	A-4b ~ SILT(ML)	22	19	3
⊠	B-160-0-21	6.0	A-7-6 ~ SANDY LEAN CLAY(CL)	45	21	24
▲	B-160-0-21	8.5	A-4a ~ SILTY, CLAYEY SAND(SC-SM)	20	16	4
★	B-160-0-21	13.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP
⊙	B-160-0-21	18.5	A-4b ~ SILTY CLAY(CL-ML)	25	19	6

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-159-0-21	38.5	0.058	0.014	0.007		1	0	2	76	21		
⊠	B-160-0-21	6.0	1.225	0.024			2	24	14	23	37		
▲	B-160-0-21	8.5	5.044	0.179	0.037		16	19	29	22	14		
★	B-160-0-21	13.5	0.477	0.138	0.078		3	7	61	18	11		
⊙	B-160-0-21	18.5	0.063	0.011	0.004		0	0	6	62	32		

GRAIN SIZE - OH DOT.GDT - 5/30/24 18:28 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

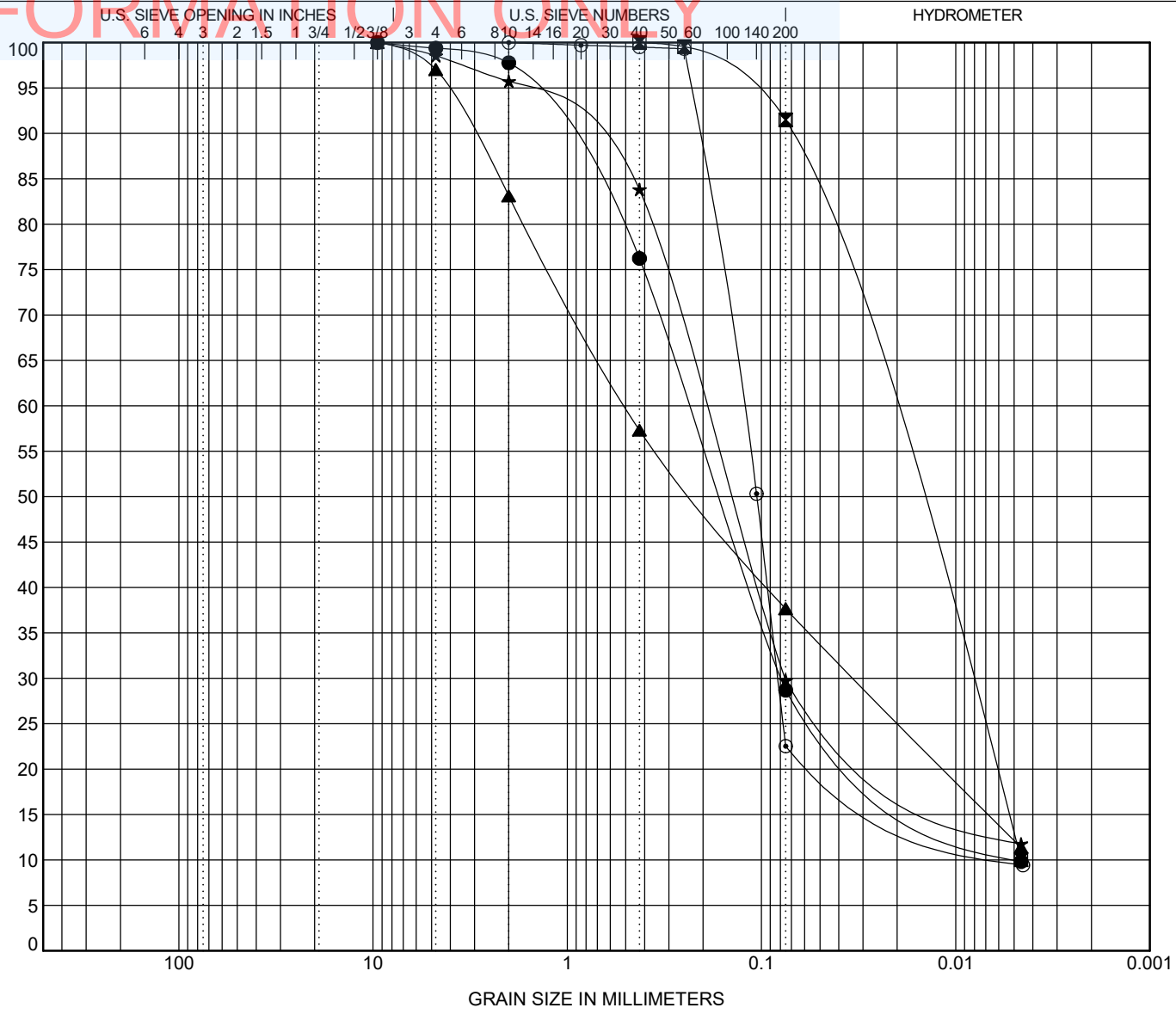
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-160-0-21	28.5	A-3a ~ SILTY SAND(SM)	17	14	3
⊠	B-160-0-21	33.5	A-6b ~ LEAN CLAY(CL)	37	18	19
▲	B-161-0-21	3.5	A-4a ~ SILTY SAND(SM)	23	21	2
★	B-161-0-21	8.5	A-2-6 ~ CLAYEY SAND(SC)	31	18	13
⊙	B-161-0-21	11.0	A-3a ~ SILTY, CLAYEY SAND(SC-SM)	22	16	6

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-160-0-21	28.5	1.144	0.163	0.079	0.005	1	22	48	19	10	5.58	49.77
⊠	B-160-0-21	33.5	0.071	0.018	0.009		0	0	9	79	12		
▲	B-161-0-21	3.5	3.069	0.223	0.033		16	26	20	26	12		
★	B-161-0-21	8.5	0.949	0.144	0.076		4	12	54	18	12		
⊙	B-161-0-21	11.0	0.212	0.106	0.082	0.005	0	0	77	13	10	10.60	24.66

GRAIN SIZE - OH DOT.GDT - 5/30/24 18:35 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

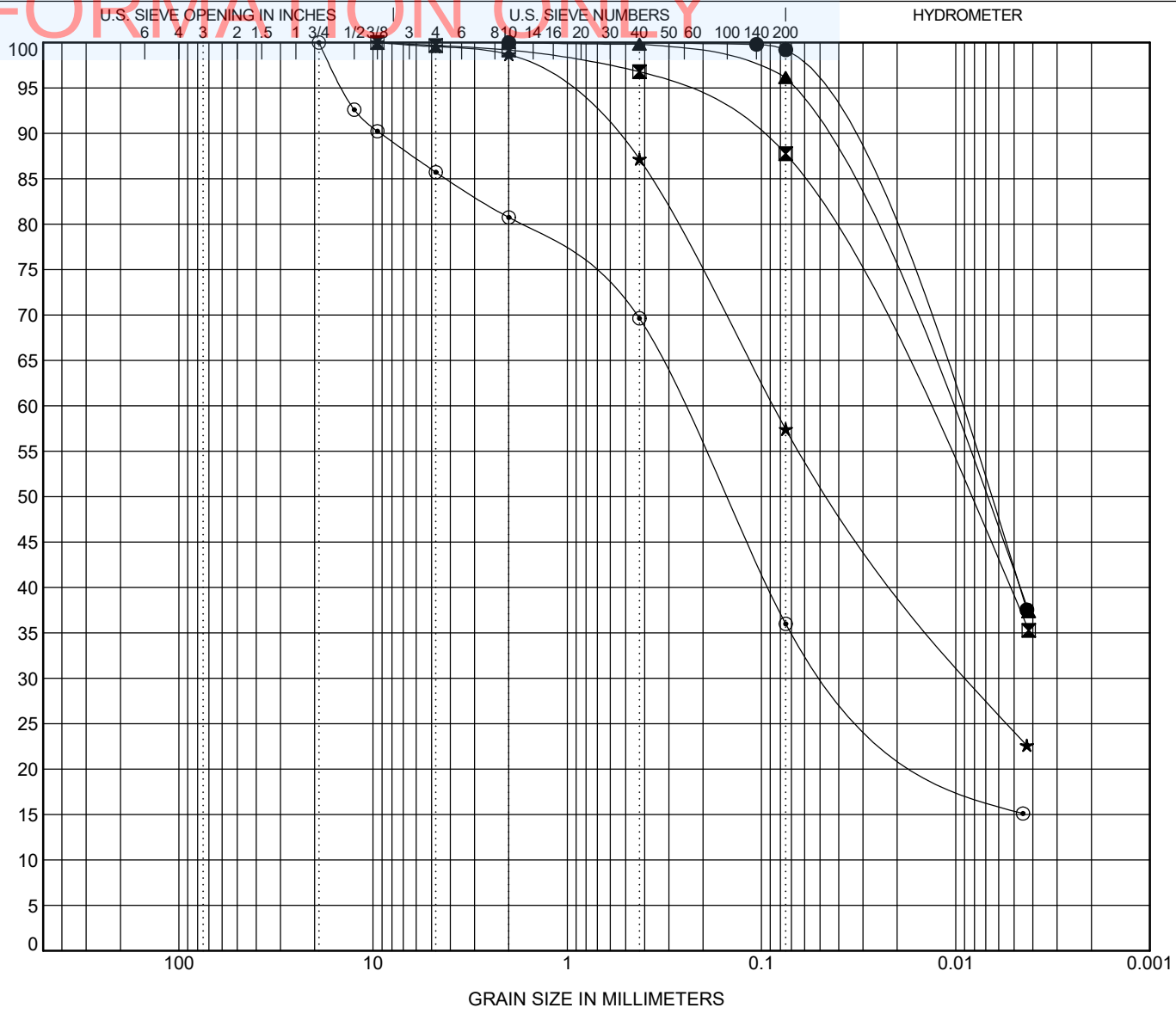
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-161-0-21	13.5	A-4b ~ SILT(ML)	NP	NP	NP
⊠	B-161-0-21	18.5	A-4b ~ SILT(ML)	NP	NP	NP
▲	B-161-0-21	28.5	A-4b ~ LEAN CLAY(CL)	29	20	9
★	B-161-0-21	38.5	A-6a ~ SANDY LEAN CLAY(CL)	30	18	12
⊙	B-162-0-21	8.5	A-4a ~ CLAYEY SAND(SC)	26	16	10

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-161-0-21	13.5	0.049	0.008			0	0	1	58	41		
⊠	B-161-0-21	18.5	0.116	0.009			1	2	9	50	38		
▲	B-161-0-21	28.5	0.055	0.008			0	0	4	55	41		
★	B-161-0-21	38.5	0.622	0.041	0.008		1	12	30	33	24		
⊙	B-162-0-21	8.5	9.16	0.154	0.033		19	11	34	20	16		

GRAIN SIZE - OH DOT.GDT - 5/30/24 18:43 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

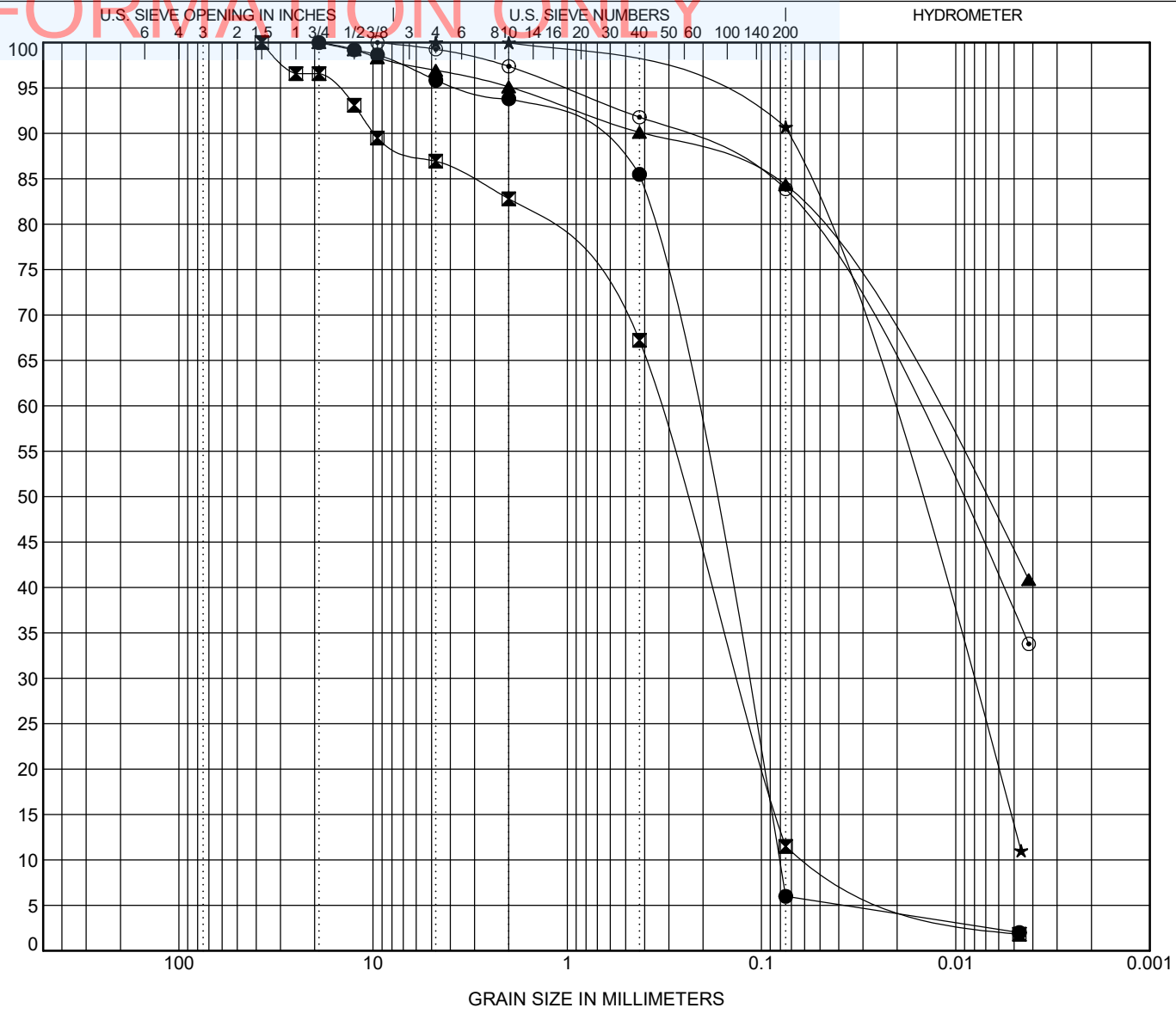
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-162-0-21	13.5	A-3 ~ POORLY GRADED SAND with SILT(SP-SM)	NP	NP	NP
⊠	B-162-0-21	18.5	A-3a ~ POORLY GRADED SAND with SILT(SP-SM)	NP	NP	NP
▲	B-162-0-21	28.5	A-6b ~ LEAN CLAY with SAND(CL)	40	22	18
★	B-162-0-21	48.5	A-4b ~ SILT(ML)	NP	NP	NP
⊙	B-163-0-21	1.0	A-4a ~ SILT with SAND(ML)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-162-0-21	13.5	0.985	0.196	0.127	0.082	7	8	79	4	2	0.80	2.98
⊠	B-162-0-21	18.5	9.872	0.249	0.133	0.049	17	16	56	9	2	1.07	6.91
▲	B-162-0-21	28.5	0.41	0.008			5	5	6	41	43		
★	B-162-0-21	48.5	0.073	0.018	0.009		0	4	5	78	13		
⊙	B-163-0-21	1.0	0.288	0.011			2	6	8	47	37		

GRAIN SIZE - OH DOT.GDT - 5/30/24 18:52 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

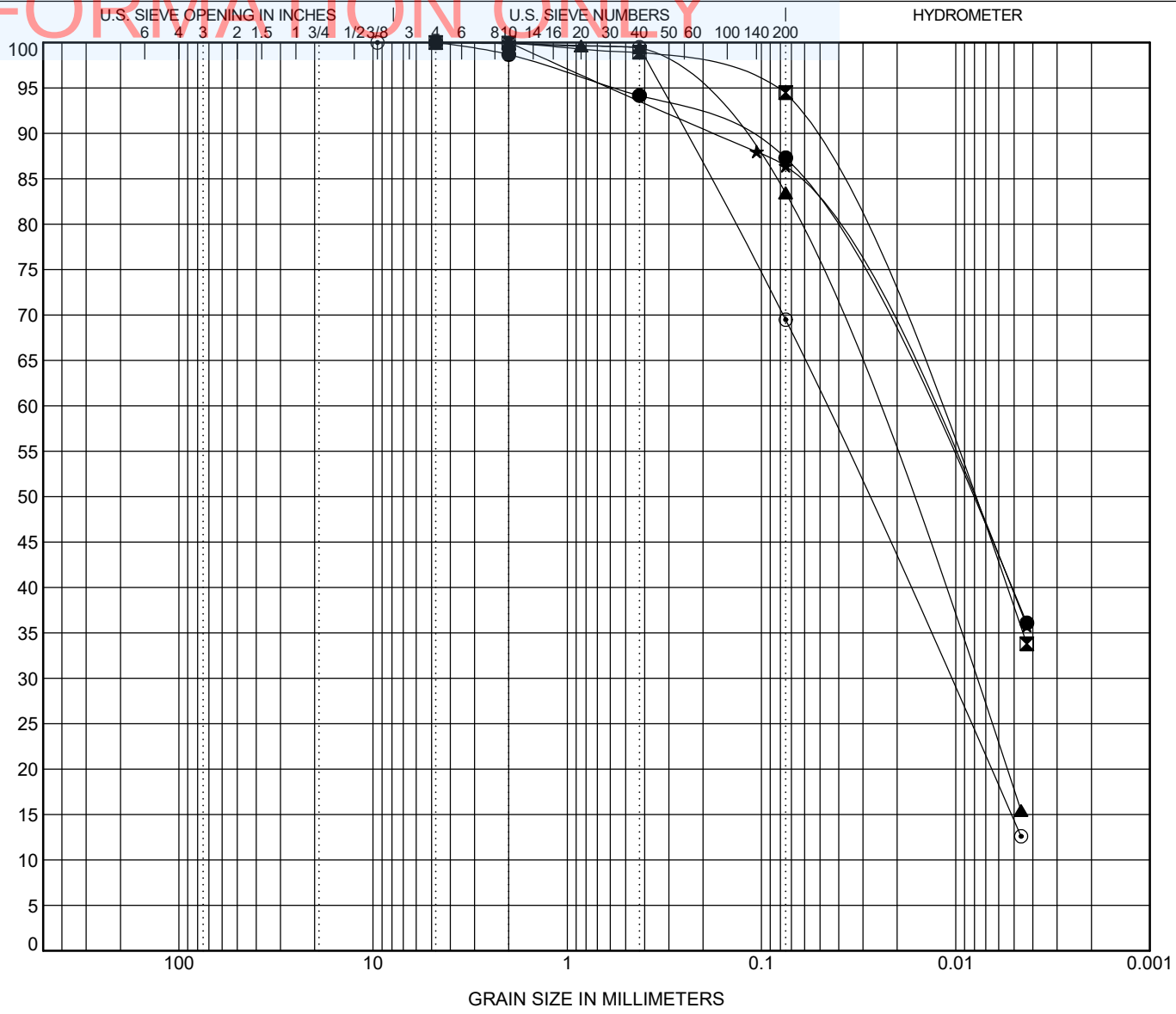
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-163-0-21	6.0	A-6a ~ LEAN CLAY(CL)	32	18	14
⊠	B-163-0-21	11.0	A-7-6 ~ LEAN CLAY(CL)	44	22	22
▲	B-163-0-21	18.5	A-4b ~ SILT with SAND(ML)	20	17	3
★	B-163-0-21	28.5	A-4a ~ LEAN CLAY(CL)	25	16	9
⊙	B-163-0-21	33.5	A-4b ~ SANDY SILT(ML)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-163-0-21	6.0	0.148	0.009			1	5	7	48	39		
⊠	B-163-0-21	11.0	0.061	0.009			1	1	4	57	37		
▲	B-163-0-21	18.5	0.153	0.019	0.008		0	1	16	66	17		
★	B-163-0-21	28.5	0.174	0.01			0	7	7	48	38		
⊙	B-163-0-21	33.5	0.246	0.029	0.011		1	0	30	55	14		

GRAIN SIZE - OH DOT.GDT - 5/30/24 19:00 - E:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

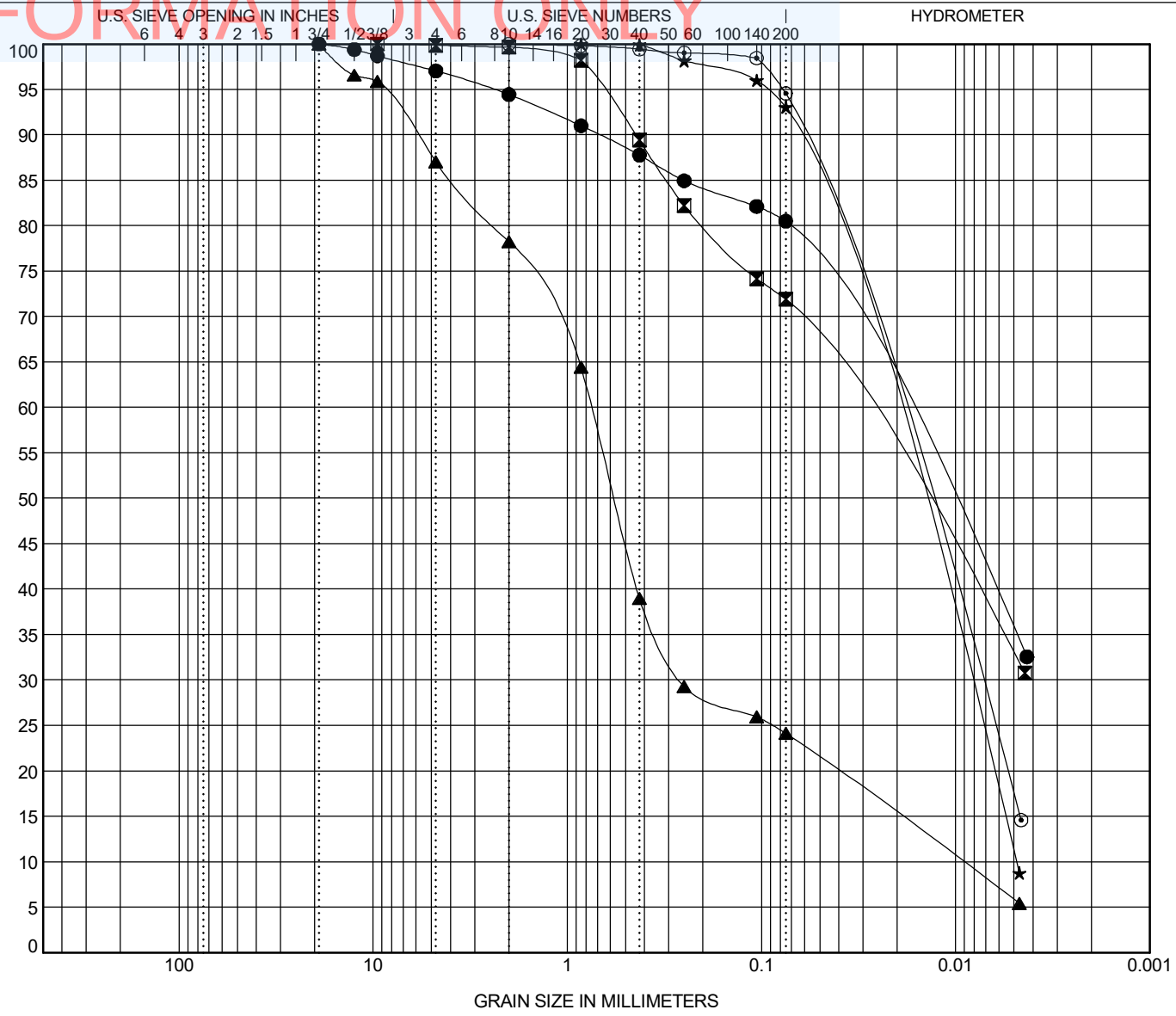
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GRAIN SIZE DISTRIBUTION

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PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-147-1-24	8.0	A-7-6 ~ LEAN CLAY with SAND(CL)	44	24	20
⊠	B-147-1-24	11.0	A-7-6 ~ LEAN CLAY with SAND(CL)	43	17	26
▲	B-147-1-24	16.0	A-2-6 ~ CLAYEY SAND(SC)	27	14	13
★	B-147-1-24	23.5	A-4b ~ SILT(ML)	NP	NP	NP
⊙	B-147-1-24	33.5	A-4b ~ SILT(ML)	NP	NP	NP

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-147-1-24	8.0	0.685	0.012			6	7	7	45	35		
⊠	B-147-1-24	11.0	0.446	0.017			1	10	17	39	33		
▲	B-147-1-24	16.0	5.989	0.574	0.26	0.009	22	39	15	18	6	9.68	81.05
★	B-147-1-24	23.5	0.068	0.018	0.009	0.005	0	0	7	82	11	0.72	5.17
⊙	B-147-1-24	33.5	0.064	0.016	0.008		0	0	5	78	17		

GRAIN SIZE - OH DOT.GDT - 4/9/25 12:14 - N:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

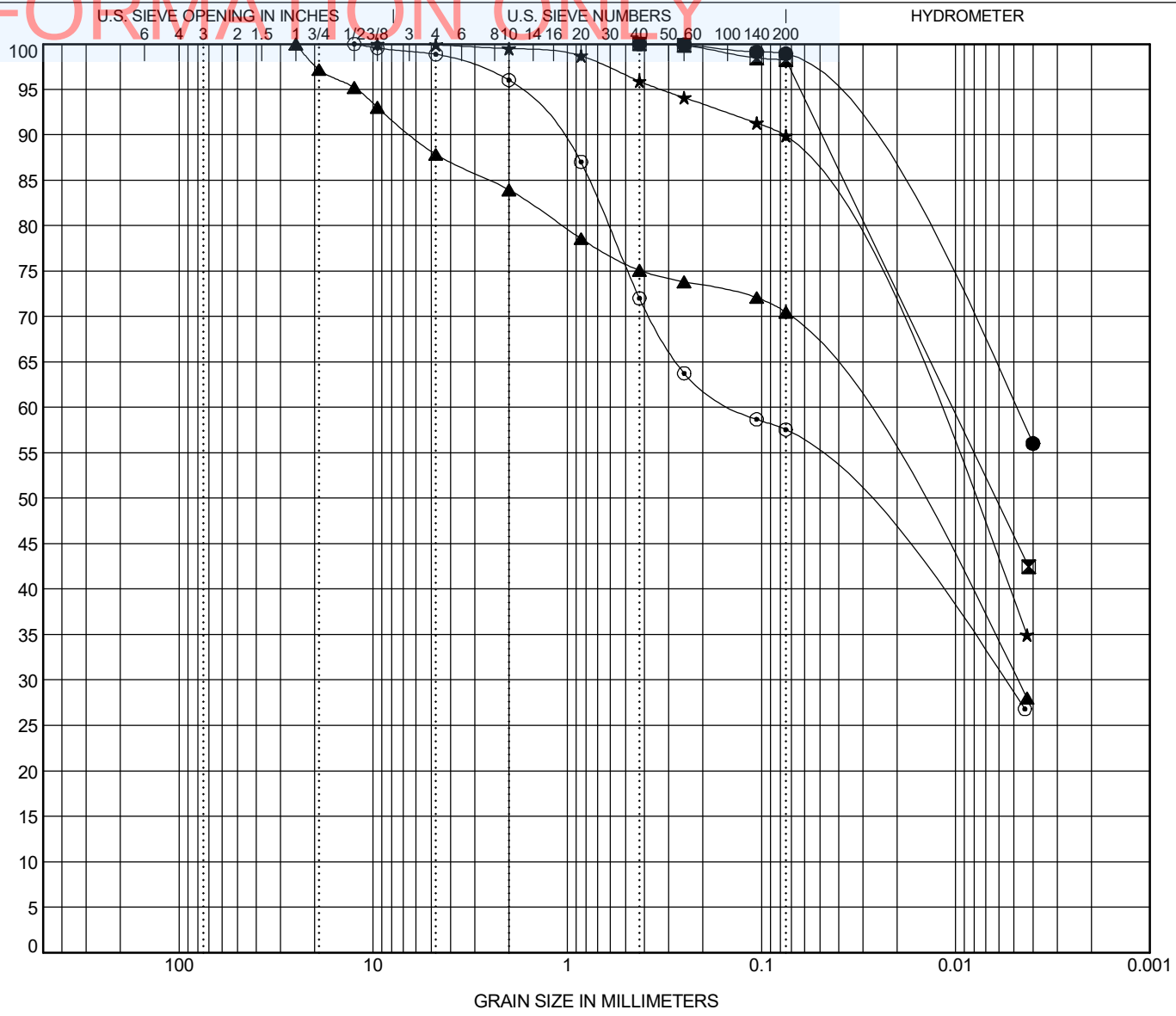
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PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-147-1-24	38.5	A-7-6 ~ LEAN CLAY(CL)	43	20	23
⊠	B-147-1-24	43.5	A-6b ~ LEAN CLAY(CL)	40	19	21
▲	B-147-1-24	53.5	A-6a ~ LEAN CLAY with SAND(CL)	34	22	12
★	B-153-1-24	6.0	A-6a ~ SILT(ML)	39	27	12
⊙	B-153-1-24	16.0	A-6b ~ SANDY LEAN CLAY(CL)	40	18	22

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-147-1-24	38.5	0.041				0	0	1	40	59		
⊠	B-147-1-24	43.5	0.049	0.006			0	0	2	52	46		
▲	B-147-1-24	53.5	6.328	0.019	0.005		15	9	5	41	30		
★	B-153-1-24	6.0	0.077	0.009			0	4	6	52	38		
⊙	B-153-1-24	16.0	1.128	0.037	0.006		4	24	14	30	28		

GRAIN SIZE - OH DOT.GDT - 4/9/25 12:14 - N:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

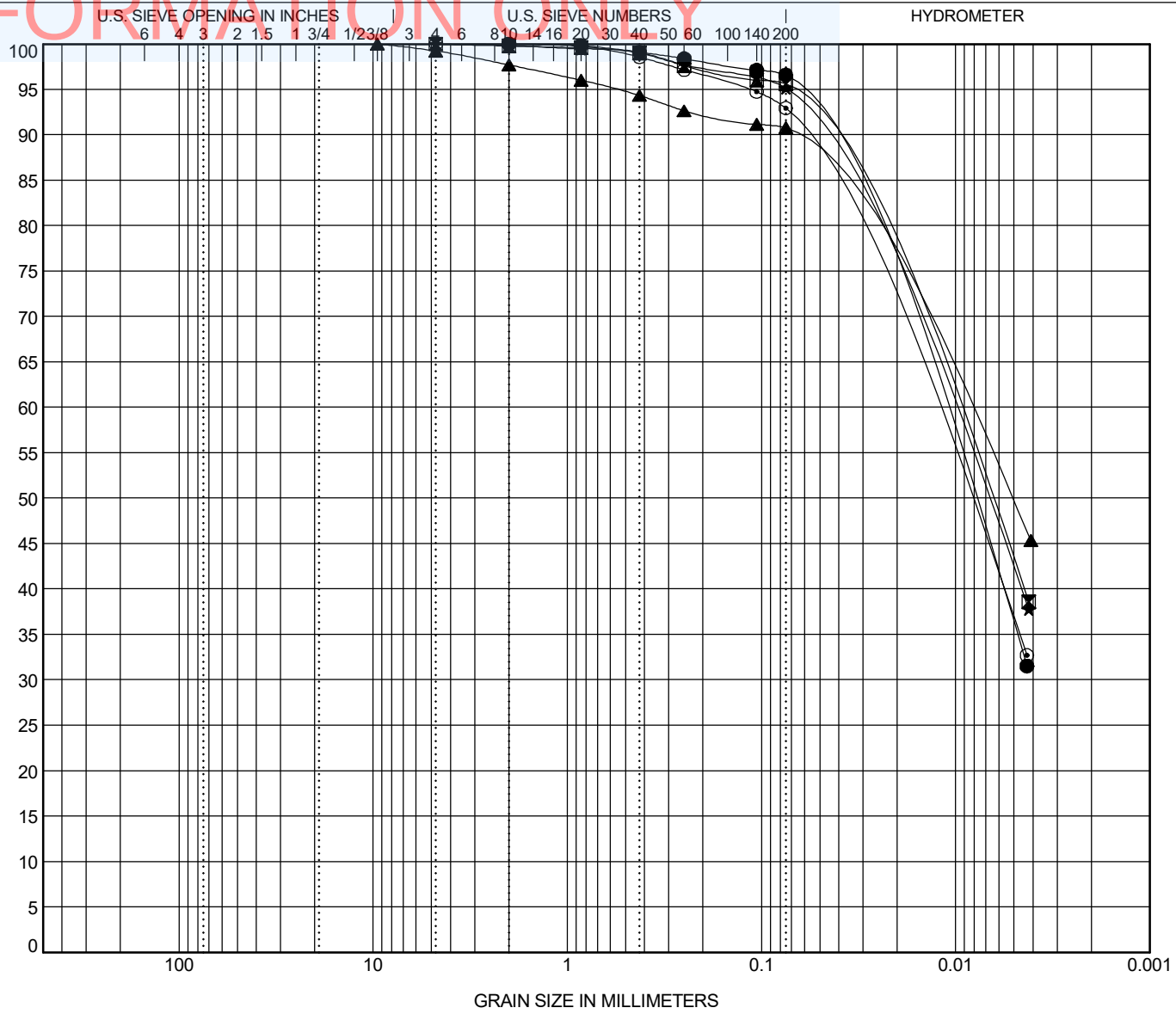
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PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-153-1-24	23.5	A-7-6 ~ LEAN CLAY(CL)	42	20	22
⊠	B-153-1-24	33.5	A-6a ~ LEAN CLAY(CL)	32	18	14
▲	B-153-1-24	43.5	A-7-6 ~ LEAN CLAY(CL)	47	21	26
★	B-158-1-24	3.5	A-7-6 ~ LEAN CLAY(CL)	46	20	26
⊙	B-158-1-24	8.5	A-7-6 ~ LEAN CLAY(CL)	41	18	23

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-153-1-24	23.5	0.056	0.01			0	0	3	62	35		
⊠	B-153-1-24	33.5	0.056	0.007			0	1	3	54	42		
▲	B-153-1-24	43.5	0.071	0.006			2	3	4	43	48		
★	B-158-1-24	3.5	0.058	0.008			0	1	4	54	41		
⊙	B-158-1-24	8.5	0.065	0.01			0	1	6	57	36		

GRAIN SIZE - OH DOT.GDT - 4/9/25 12:14 - N:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

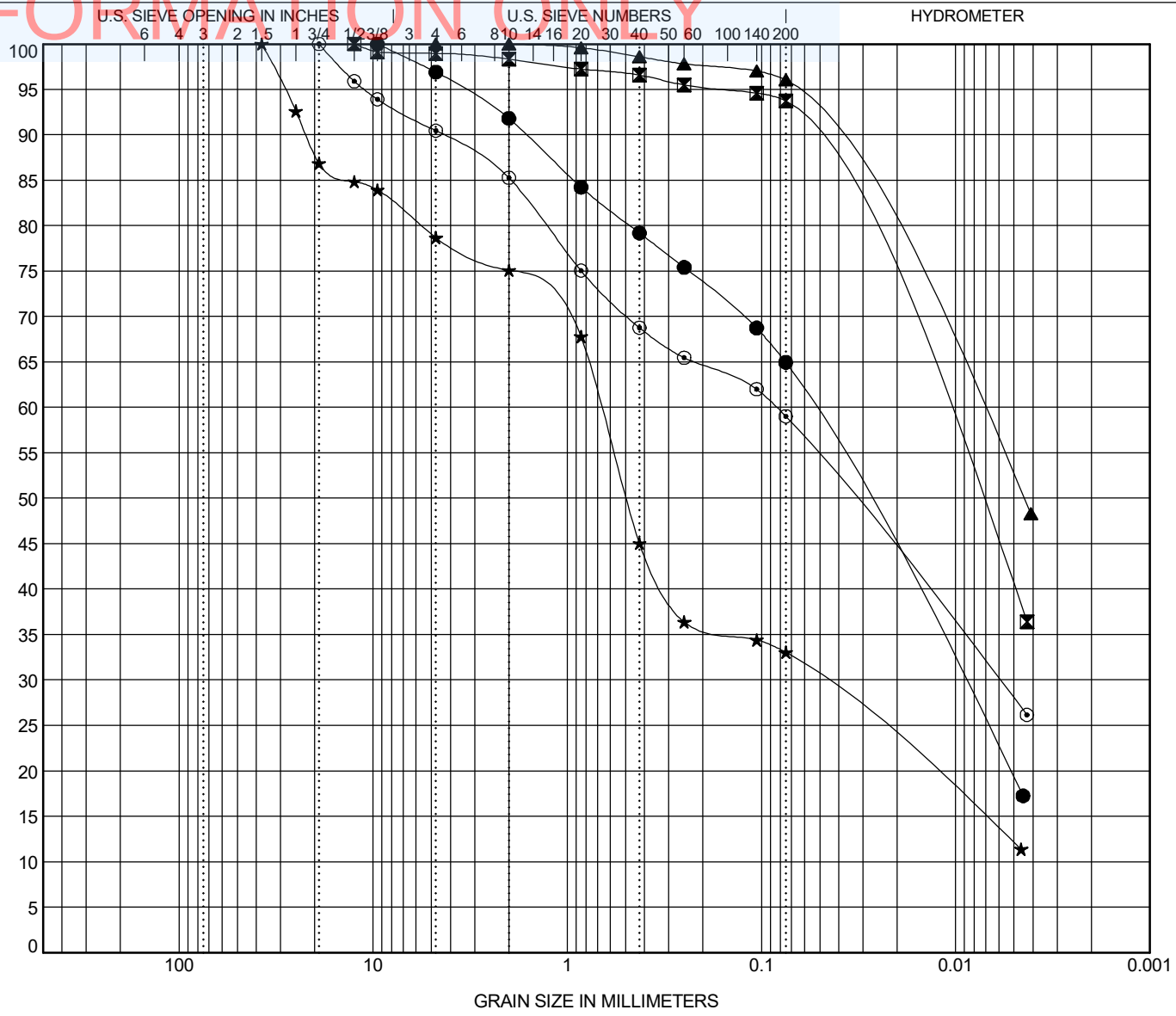
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PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-158-1-24	18.5	A-6b ~ SANDY LEAN CLAY(CL)	31	15	16
⊠	B-158-1-24	38.5	~			
▲	B-159-1-24	3.5	A-6a ~ LEAN CLAY(CL)	32	17	15
★	B-159-1-24	11.0	A-2-6 ~ CLAYEY SAND with GRAVEL(SC)	29	14	15
⊙	B-159-1-24	13.5	A-6b ~ SANDY LEAN CLAY(CL)	34	16	18

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-158-1-24	18.5	1.63	0.031	0.01		8	13	14	46	19		
⊠	B-158-1-24	38.5	0.062	0.008			1	2	3	55	39		
▲	B-159-1-24	3.5	0.052	0.005			0	1	3	44	52		
★	B-159-1-24	11.0	22.065	0.494	0.051		25	30	12	21	12		
⊙	B-159-1-24	13.5	4.404	0.034	0.006		14	17	10	31	28		

GRAIN SIZE - OH DOT.GDT - 4/9/25 12:14 - N:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

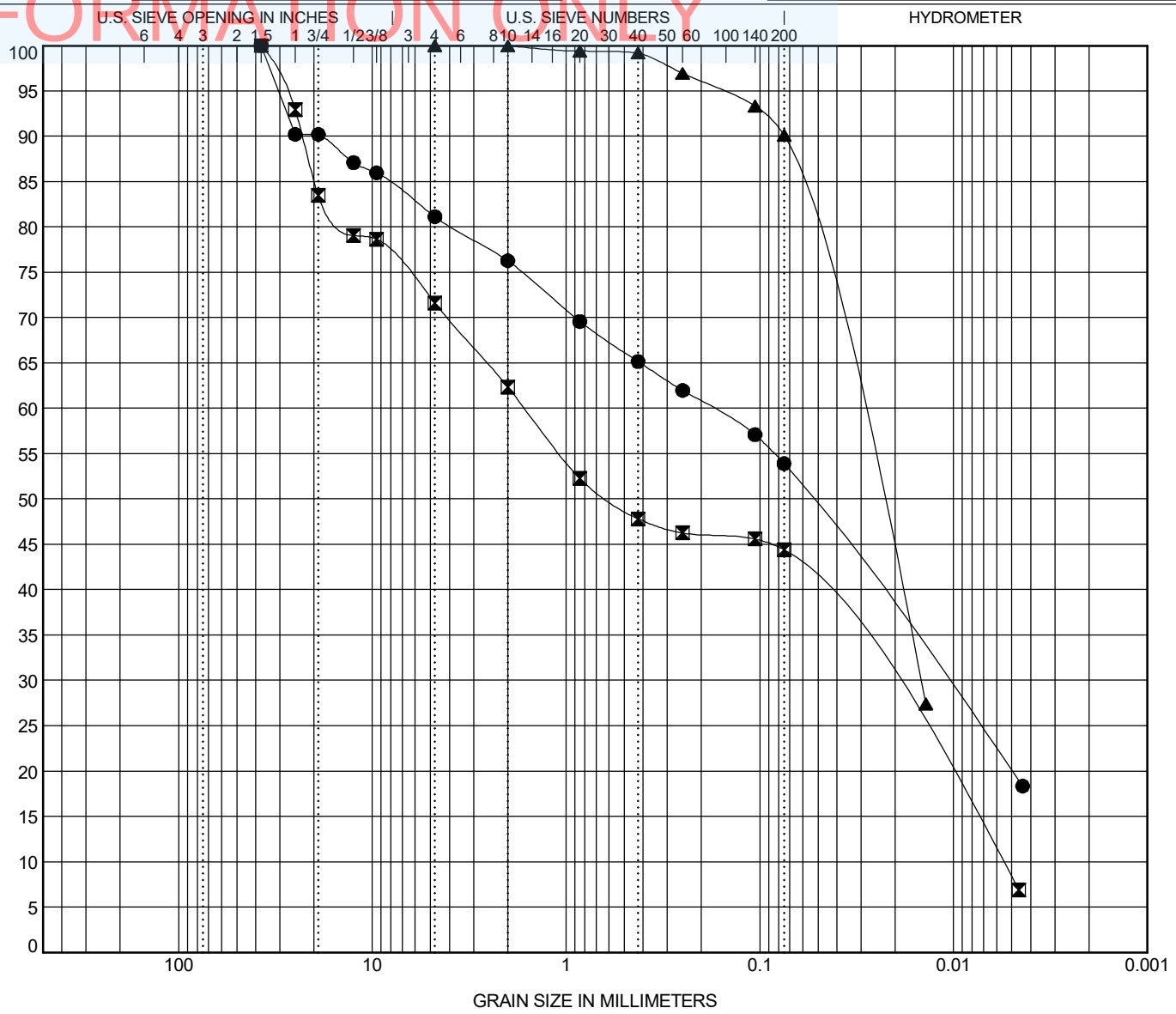
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OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-159-1-24	16.0	A-6a ~ SANDY LEAN CLAY with GRAVEL(CL)	30	16	14
⊠	B-159-1-24	23.5	A-6a ~ CLAYEY GRAVEL with SAND(GC)	30	18	12
▲	B-159-1-24	33.5	A-4b ~ SILTY CLAY(CL-ML)	27	20	7

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-159-1-24	16.0	18.469	0.055	0.011		24	11	11	34	20		
⊠	B-159-1-24	23.5	22.96	0.597	0.026	0.006	38	15	3	36	8	0.07	282.54
▲	B-159-1-24	33.5	0.075	0.026	0.015		0	1	9	90	0		

GRAIN SIZE - OH DOT.GDT - 4/9/25 12:14 - N:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

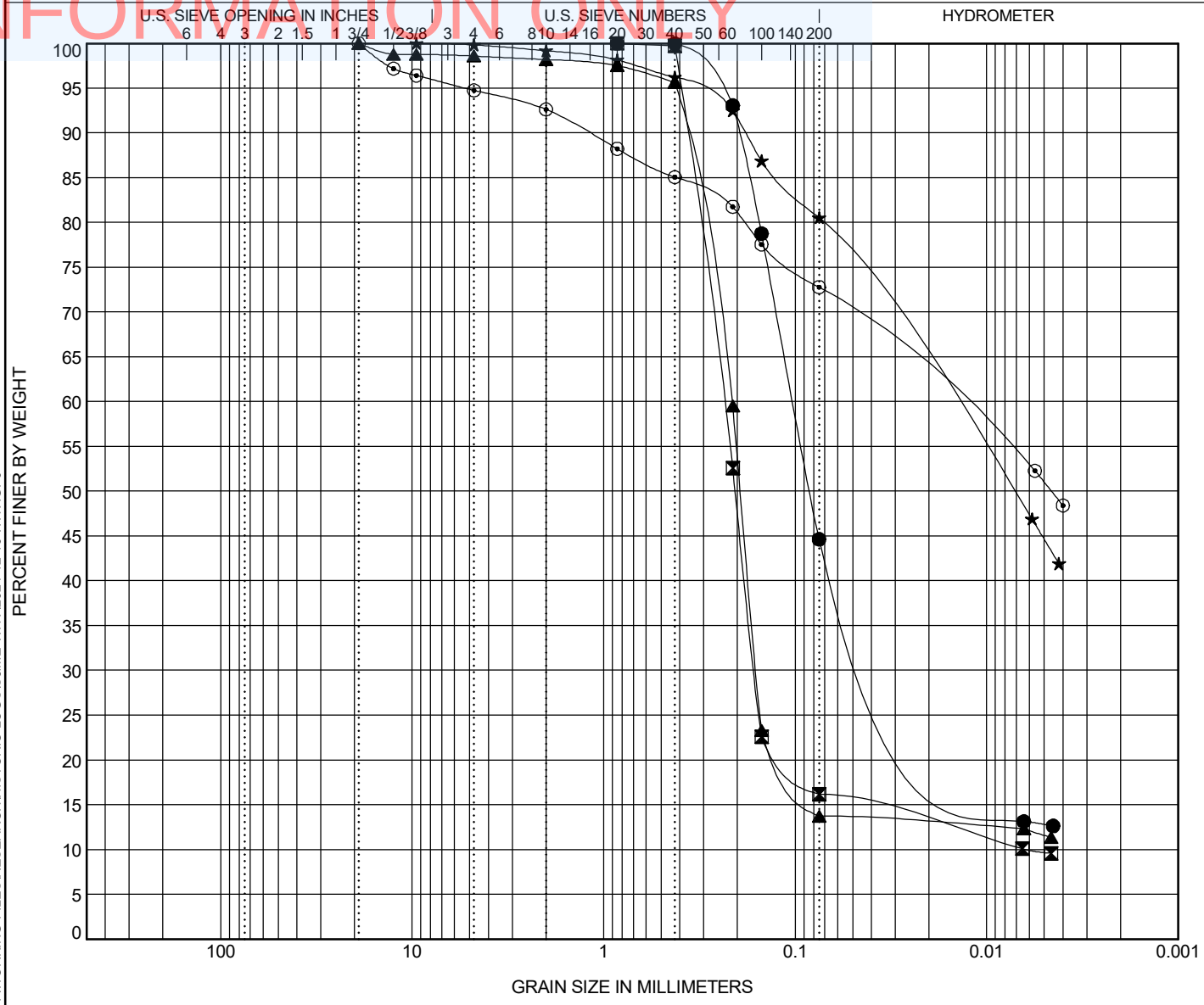
NOT FOR CONSTRUCTION INFORMATION ONLY

GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT -- **PID** 105349

OGE NUMBER Western Hills Viaduct **PROJECT TYPE**



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-019-0-22	38.5	**A-4a ~ SILTY SAND(SM)**	**NP**	**NP**	**NP**
⊠	B-019-0-22	43.5	**A-3a ~ SILTY SAND(SM)**	**NP**	**NP**	**NP**
▲	B-019-0-22	58.5	**A-3a ~ SILTY SAND(SM)**	**NP**	**NP**	**NP**
★	B-019-0-22	68.5	**A-6b ~ LEAN CLAY with SAND(CL)**	**33**	**16**	**17**
⊙	B-019-0-22	78.5	**A-6b ~ LEAN CLAY with SAND(CL)**	**36**	**16**	**20**

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-019-0-22	38.5	**0.197**	**0.084**	**0.024**		**0**	**0**	**55**	**32**	**13**		
⊠	B-019-0-22	43.5	**0.368**	**0.206**	**0.163**	**0.006**	**0**	**0**	**84**	**6**	**10**	**18.24**	**38.22**
▲	B-019-0-22	58.5	**0.381**	**0.194**	**0.16**		**1**	**3**	**82**	**2**	**12**		
★	B-019-0-22	68.5	**0.182**	**0.007**			**0**	**3**	**16**	**36**	**45**		
⊙	B-019-0-22	78.5	**1.2**	**0.005**			**7**	**8**	**12**	**22**	**51**		

GRAIN SIZE - OH DOT.GDT - 12/23/24 16:01 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\S&ME-WHV\2024-12-16 WHV.GPJ

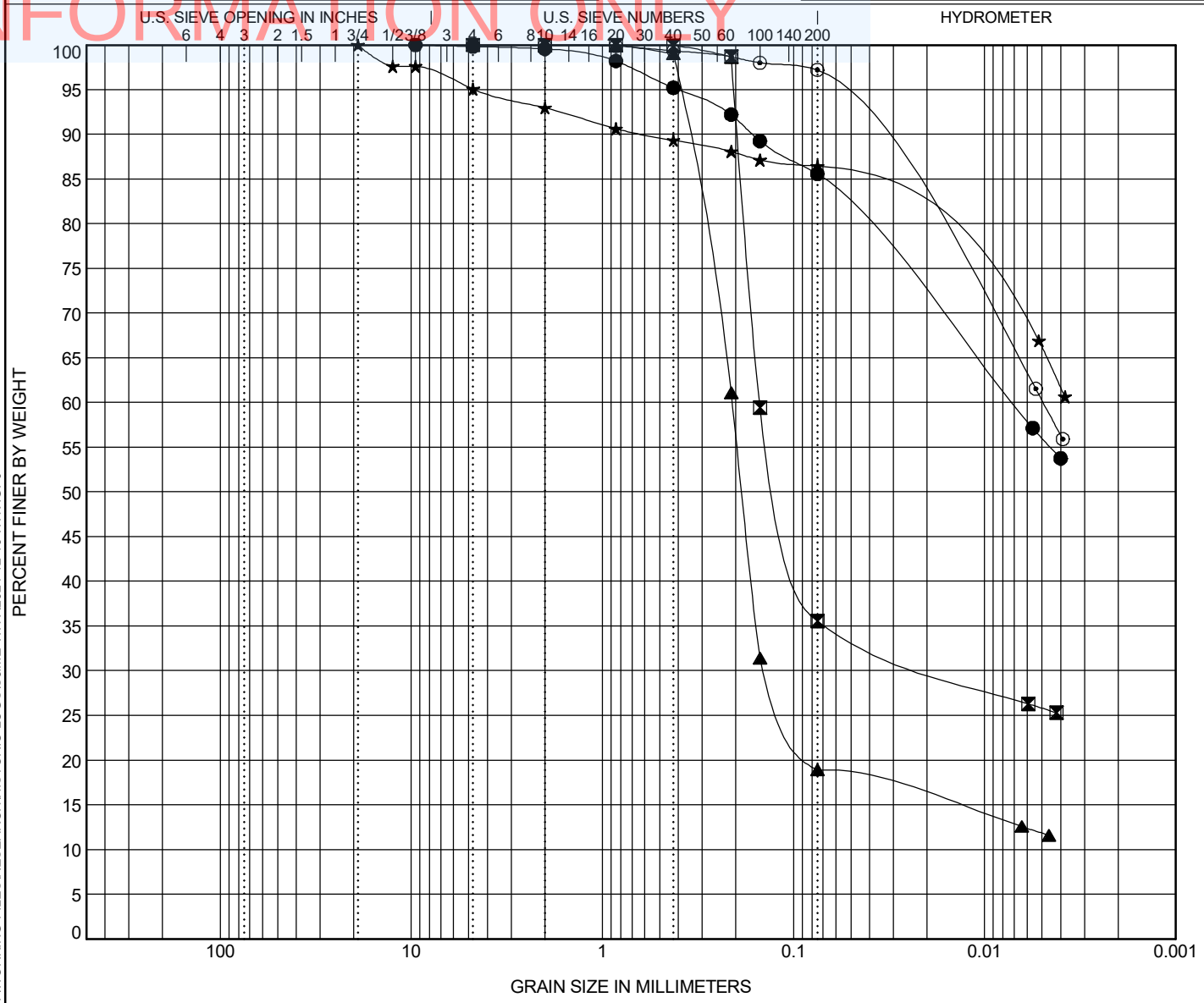
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT -- **PID** 105349

OGE NUMBER Western Hills Viaduct **PROJECT TYPE**



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-019-1-22	23.5	A-7-6 ~ LEAN CLAY(CL)	45	23	22
⊠	B-019-1-22	33.5	A-4a ~ SILTY, CLAYEY SAND(SC-SM)	23	17	6
▲	B-019-1-22	43.5	A-3a ~ SILTY SAND(SM)	NP	NP	NP
★	B-019-1-22	64.0	A-7-6 ~ FAT CLAY(CH)	51	22	29
⊙	B-020-0-22	6.0	A-6a ~ LEAN CLAY(CL)	32	18	14

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-019-1-22	23.5	0.164				0	4	10	30	56		
⊠	B-019-1-22	33.5	0.196	0.114	0.016		0	0	64	10	26		
▲	B-019-1-22	43.5	0.36	0.186	0.139		0	1	80	7	12		
★	B-019-1-22	64.0	0.608				7	4	3	20	66		
⊙	B-020-0-22	6.0	0.044				0	1	2	37	60		

GRAIN SIZE - OH DOT.GDT - 12/23/24 16:01 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\S&ME-WHV\2024-12-16 WHV.GPJ

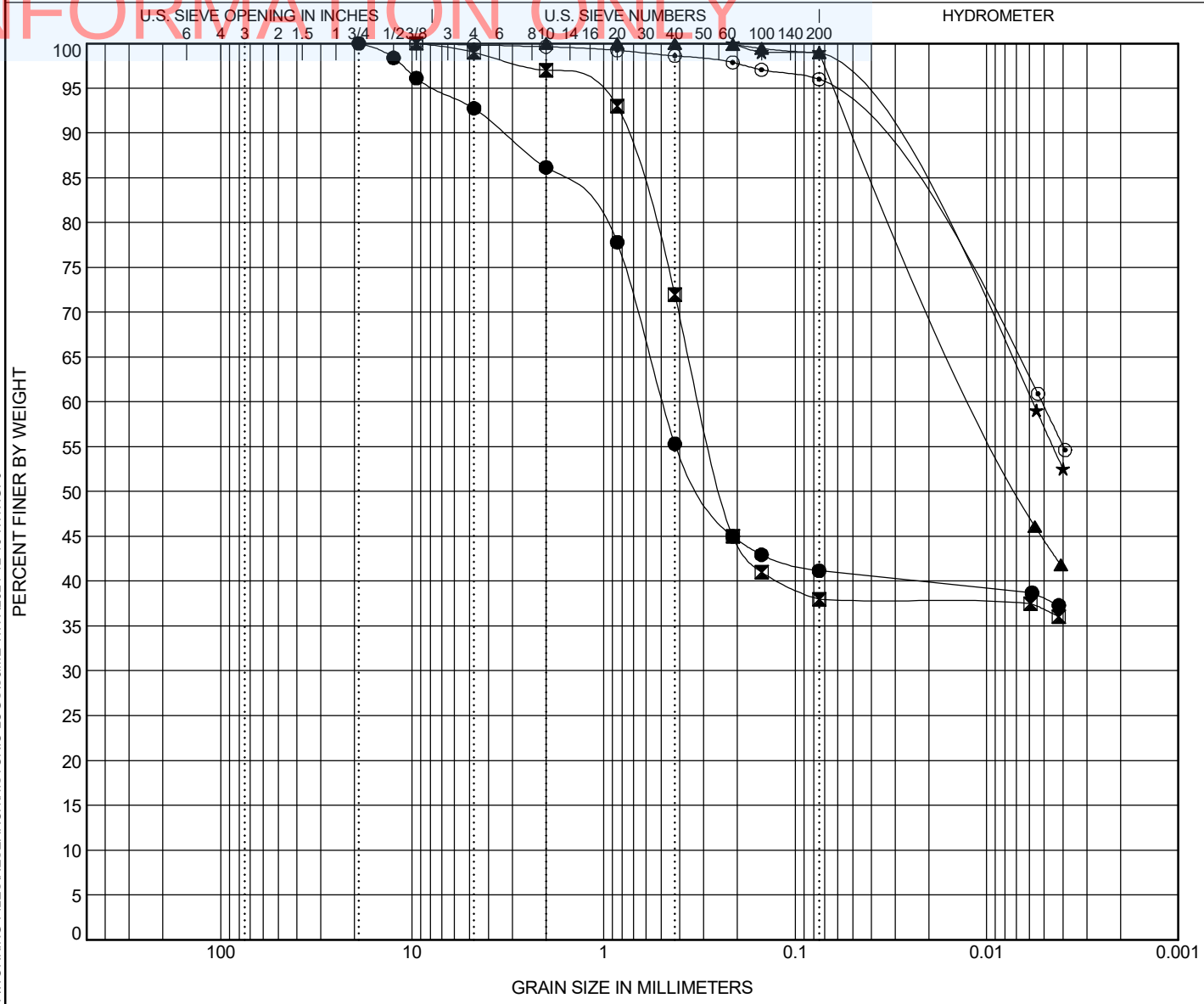
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT -- **PID** 105349

OGE NUMBER Western Hills Viaduct **PROJECT TYPE**



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-020-0-22	11.0	A-7-6 ~ CLAYEY SAND(SC)	50	18	32
⊠	B-020-0-22	13.5	A-6b ~ CLAYEY SAND(SC)	31	14	17
▲	B-020-0-22	28.5	A-4b ~ SILTY CLAY(CL-ML)	24	17	7
★	B-020-0-22	43.5	A-7-6 ~ FAT CLAY(CH)	57	26	31
⊙	B-020-1-22	8.5	A-7-6 ~ FAT CLAY(CH)	50	26	24

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-020-0-22	11.0	3.31	0.297			14	31	14	3	38		
⊠	B-020-0-22	13.5	0.77	0.241			3	25	34	1	37		
▲	B-020-0-22	28.5	0.048	0.007			0	0	1	54	45		
★	B-020-0-22	43.5	0.042				0	0	1	42	57		
⊙	B-020-1-22	8.5	0.048				0	1	3	37	59		

GRAIN SIZE - OH DOT.GDT - 12/23/24 16:01 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\S&ME-WHV\2024-12-16 WHV.GPJ

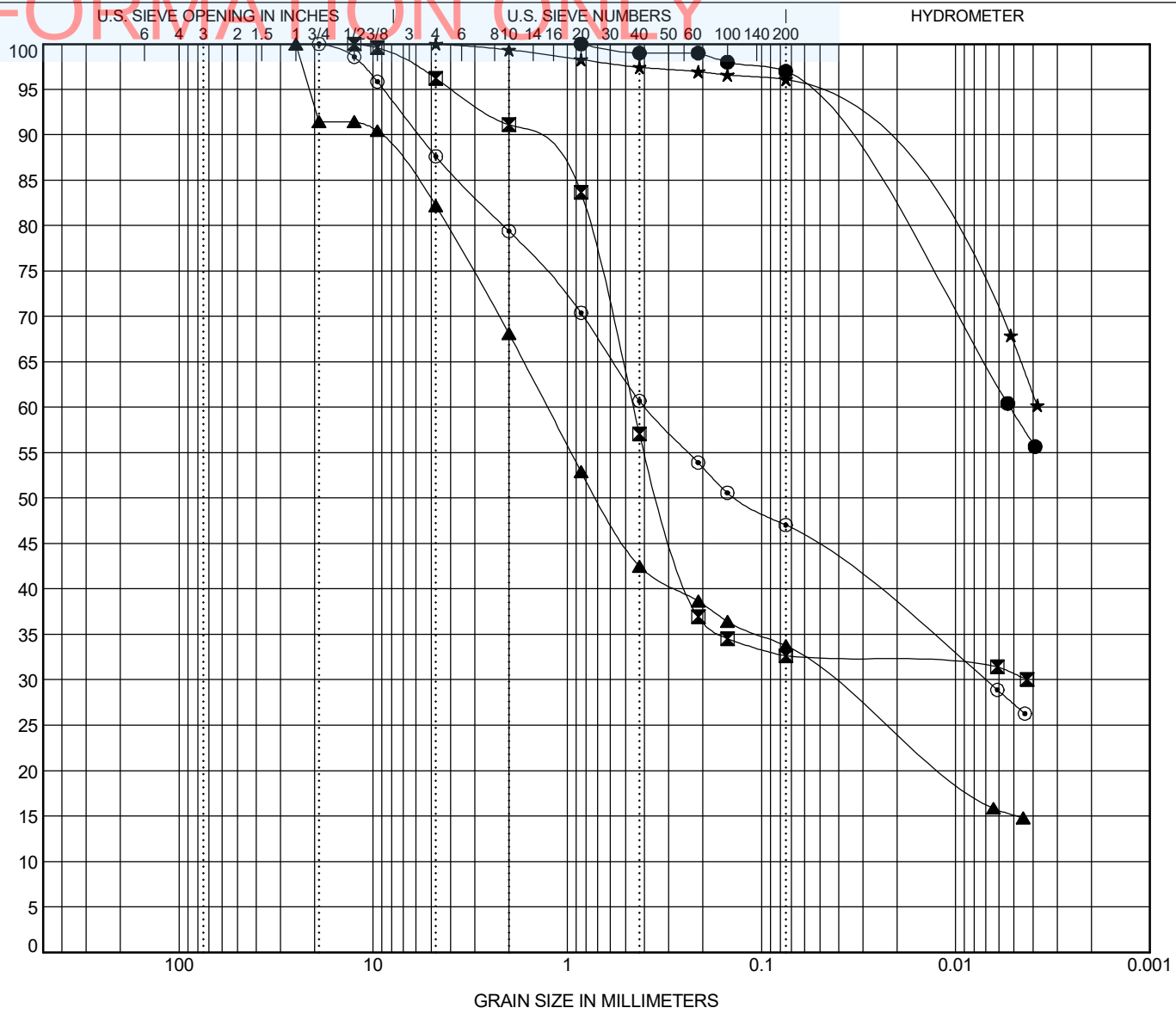
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT -- **PID** 105349

OGE NUMBER Western Hills Viaduct **PROJECT TYPE**



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-020-1-22	11.0	A-6a ~ LEAN CLAY(CL)	33	18	15
⊠	B-020-1-22	16.0	A-2-6 ~ CLAYEY SAND(SC)	36	18	18
▲	B-020-1-22	23.5	A-2-4 ~ SILTY SAND with GRAVEL(SM)	NP	NP	NP
★	B-020-1-22	33.5	A-6a ~ LEAN CLAY(CL)	36	21	15
⊙	B-021-0-22	3.5	A-4a ~ CLAYEY SAND(SC)	25	16	9

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-020-1-22	11.0	0.045				0	1	2	38	59		
⊠	B-020-1-22	16.0	1.758	0.333			9	34	24	2	31		
▲	B-020-1-22	23.5	9.146	0.7	0.045		31	26	9	19	15		
★	B-020-1-22	33.5	0.042				1	2	1	29	67		
⊙	B-021-0-22	3.5	5.802	0.134	0.007		20	19	14	20	27		

GRAIN SIZE - OH DOT.GDT - 12/23/24 16:01 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\S&ME-WHV\2024-12-16 WHV.GPJ

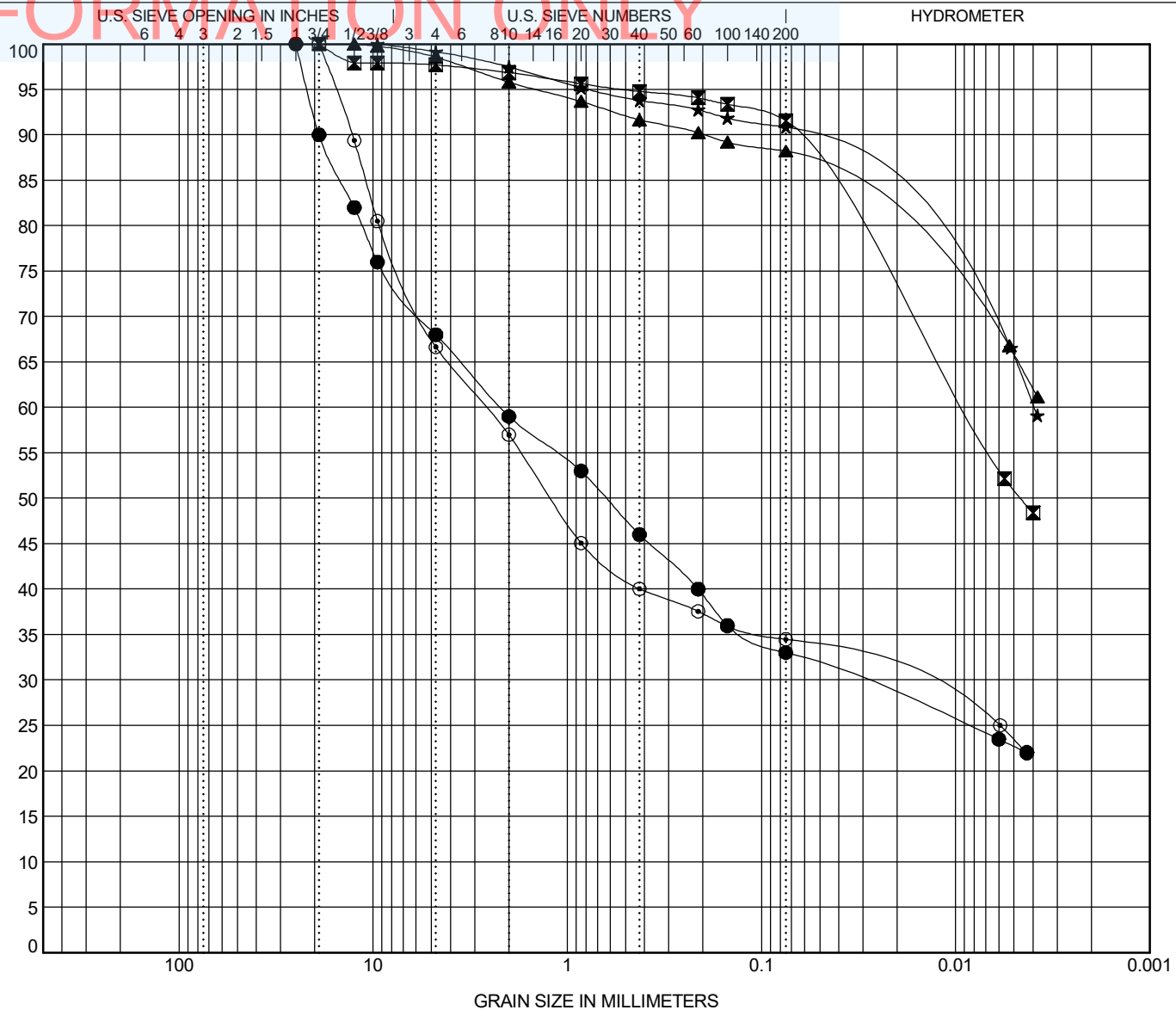
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT -- **PID** 105349

OGE NUMBER Western Hills Viaduct **PROJECT TYPE**



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-021-0-22	8.5	**A-2-6 ~ CLAYEY SAND with GRAVEL(SC)**	31	19	12
⊠	B-021-0-22	13.5	**A-6a ~ LEAN CLAY(CL)**	29	16	13
▲	B-021-0-22	18.5	**A-6b ~ LEAN CLAY(CL)**	37	19	18
★	B-021-1-22	3.5	**A-6b ~ LEAN CLAY(CL)**	40	21	19
⊙	B-021-1-22	16.0	**A-2-6 ~ CLAYEY GRAVEL with SAND(GC)**	38	23	15

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-021-0-22	8.5	19	0.632	0.034		41	13	13	10	23		
⊠	B-021-0-22	13.5	0.068	0.005			3	2	3	41	51		
▲	B-021-0-22	18.5	0.196				5	4	3	22	66		
★	B-021-1-22	3.5	0.068				2	4	3	25	66		
⊙	B-021-1-22	16.0	12.807	1.212	0.023		43	17	6	11	23		

GRAIN SIZE - OH DOT.GDT - 12/23/24 16:01 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\S&ME-WHV\2024-12-16 WHV.GPJ

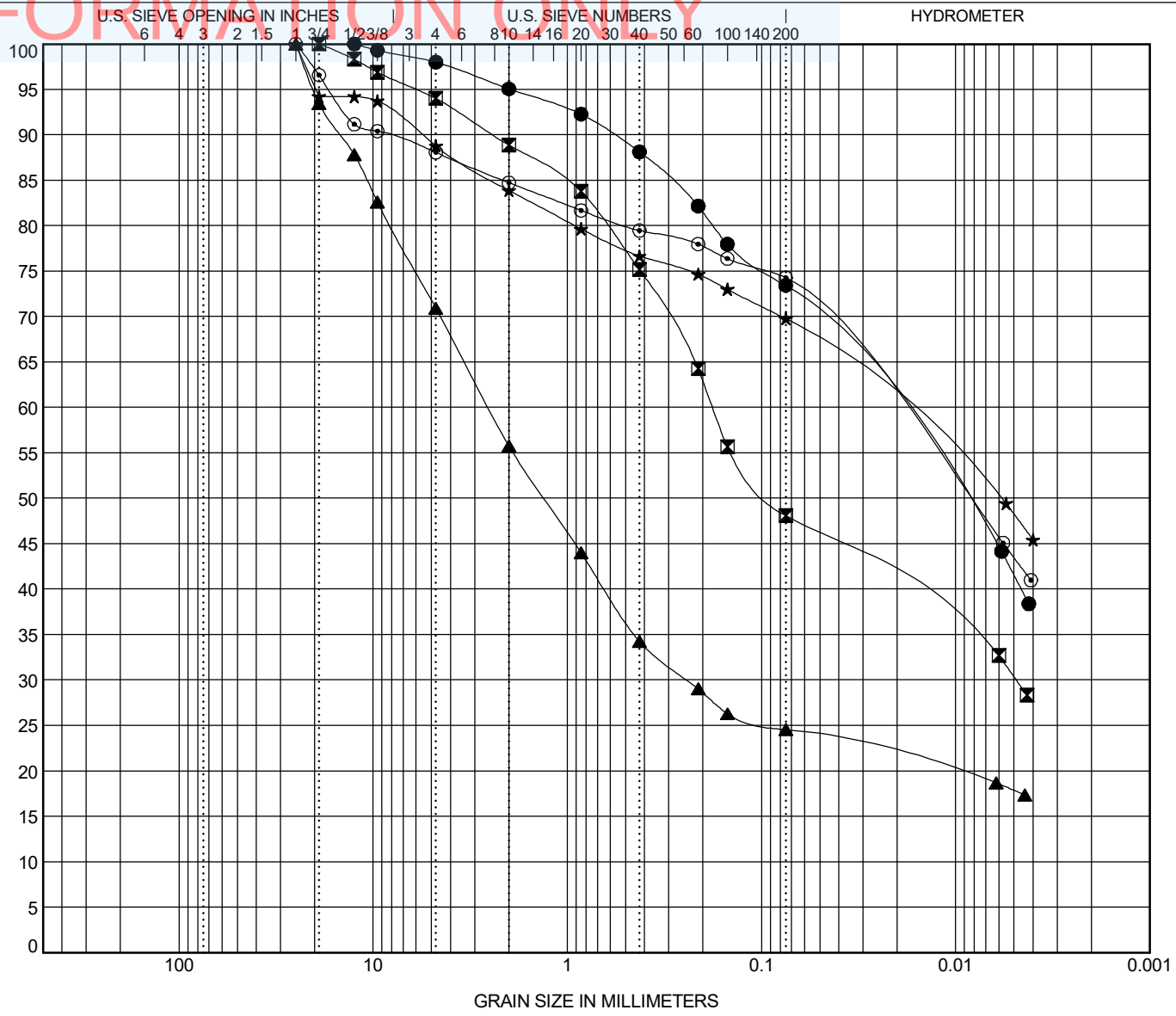
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT -- **PID** 105349

OGE NUMBER Western Hills Viaduct **PROJECT TYPE**



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-021-1-22	23.5	A-6a ~ LEAN CLAY with SAND(CL)	25	13	12
⊠	B-021-1-22	33.5	A-4a ~ CLAYEY SAND(SC)	24	14	10
▲	B-024-0-22	1.0	A-2-6 ~ CLAYEY SAND with GRAVEL(SC)	26	15	11
★	B-024-0-22	2.5	A-6b ~ SANDY LEAN CLAY(CL)	40	20	20
⊙	B-024-0-22	5.5	A-6b ~ LEAN CLAY with SAND(CL)	38	19	19

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-021-1-22	23.5	0.581	0.01			5	7	15	32	41		
⊠	B-021-1-22	33.5	2.42	0.089	0.005		11	14	27	18	30		
▲	B-024-0-22	1.0	14.712	1.315	0.242		43	22	10	7	18		
★	B-024-0-22	2.5	5.631	0.006			16	7	7	22	48		
⊙	B-024-0-22	5.5	8.424	0.009			16	5	5	31	43		

GRAIN SIZE - OH DOT.GDT - 12/23/24 16:02 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\S&ME-WHV\2024-12-16 WHV.GPJ

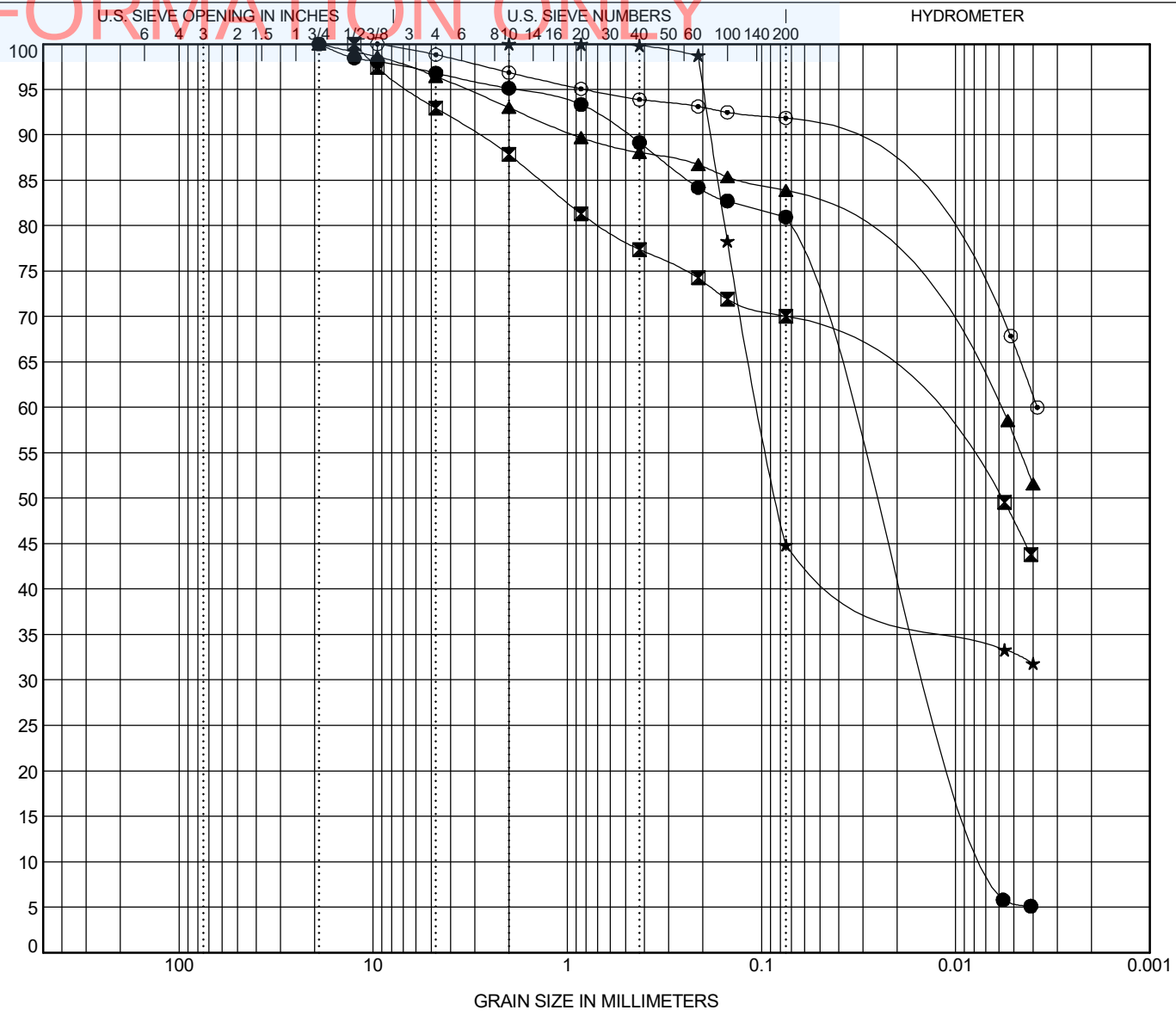
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT -- **PID** 105349

OGE NUMBER Western Hills Viaduct **PROJECT TYPE**



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-024-0-22	16.0	A-7-6 ~ LEAN CLAY with SAND(CL)	44	23	21
⊠	B-025-0-22	1.0	A-6b ~ LEAN CLAY with SAND(CL)	35	18	17
▲	B-025-0-22	3.5	A-7-6 ~ LEAN CLAY with SAND(CL)	44	19	25
★	B-025-0-22	48.5	A-6b ~ CLAYEY SAND(SC)	35	17	18
⊙	B-025-0-22	53.5	A-7-6 ~ FAT CLAY(CH)	51	23	28

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-024-0-22	16.0	0.489	0.026	0.013	0.007	5	6	8	75	6	0.71	5.55
⊠	B-025-0-22	1.0	2.889	0.006			13	10	7	23	47		
▲	B-025-0-22	3.5	0.923				7	5	4	27	57		
★	B-025-0-22	48.5	0.183	0.083			0	0	55	12	33		
⊙	B-025-0-22	53.5	0.061				3	3	2	25	67		

GRAIN SIZE - OH DOT.GDT - 12/23/24 16:02 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\S&ME-WHV\2024-12-16 WHV.GPJ

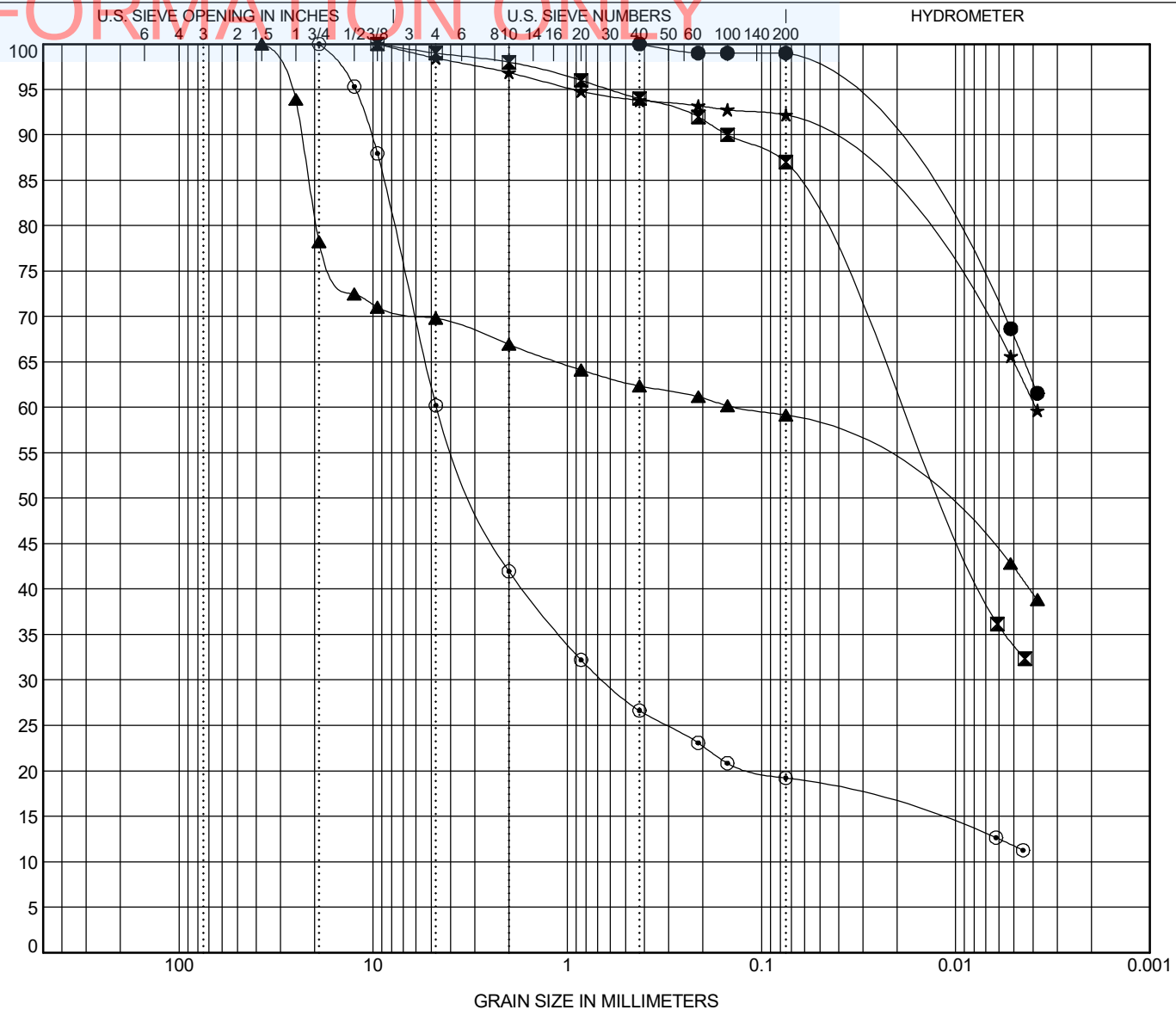
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT -- **PID** 105349

OGE NUMBER Western Hills Viaduct **PROJECT TYPE**



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification			ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	B-026-0-22	1.0	A-7-6 ~ LEAN CLAY(CL)	46	20	26
⊠	B-026-0-22	6.0	A-4b ~ LEAN CLAY(CL)	25	16	9
▲	B-026-0-22	8.5	A-6b ~ GRAVELLY LEAN CLAY(CL)	37	18	19
★	B-026-0-22	11.0	A-7-6 ~ LEAN CLAY(CL)	45	24	21
⊙	B-027-0-22	1.5	A-2-6 ~ CLAYEY SAND with GRAVEL(SC)	25	13	12

Specimen Identification			D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	B-026-0-22	1.0	0.034				0	0	1	31	68		
⊠	B-026-0-22	6.0	0.15	0.012			2	4	7	53	34		
▲	B-026-0-22	8.5	23.342	0.017			33	5	3	17	42		
★	B-026-0-22	11.0	0.06				3	3	2	27	65		
⊙	B-027-0-22	1.5	10.252	2.928	0.646		59	15	7	7	12		

GRAIN SIZE - OH DOT.GDT - 12/23/24 16:02 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\S&ME-WHV\2024-12-16 WHV.GPJ

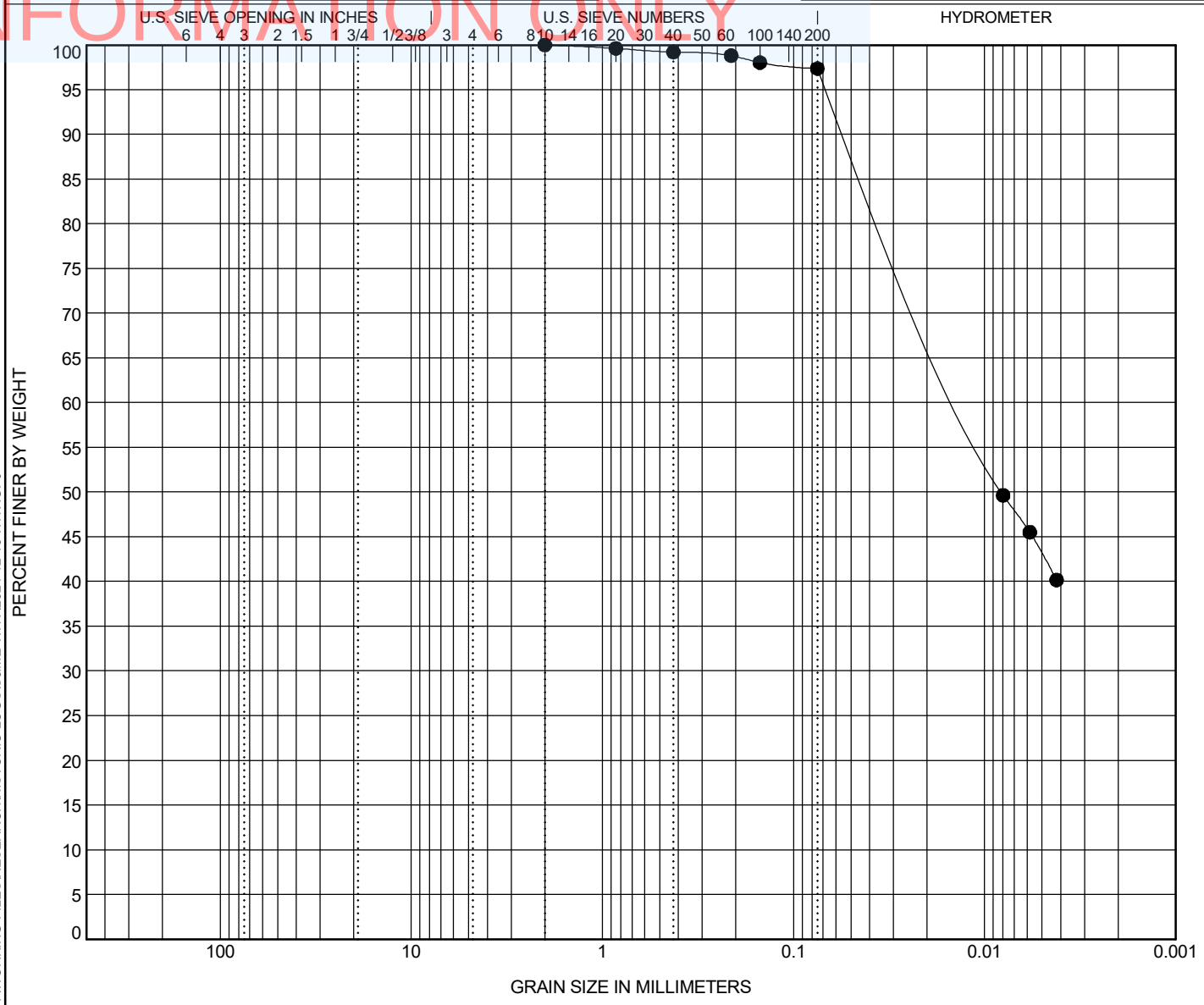
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GRAIN SIZE DISTRIBUTION

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

PROJECT -- **PID** 105349

OGE NUMBER Western Hills Viaduct **PROJECT TYPE**



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification		ODOT (Modified AASHTO) ~ USCS Classification	LL	PL	PI
●	**B-027-0-22 11.0**	**A-7-6 ~ LEAN CLAY(CL)**	**44**	**21**	**23**

Specimen Identification		D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
●	**B-027-0-22 11.0**	**0.053**	**0.008**			**0**	**1**	**2**	**54**	**43**		

GRAIN SIZE - OH DOT.GDT - 12/23/24 16:02 - N:\PROJECTS\2024\N1245017\WORKING FILES\RESEARCH\HISTORIC LOGS\S&ME-WHV\2024-12-16 WHV.GPJ

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UNCONFINED COMPRESSION TEST
AASHTO T - 208

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

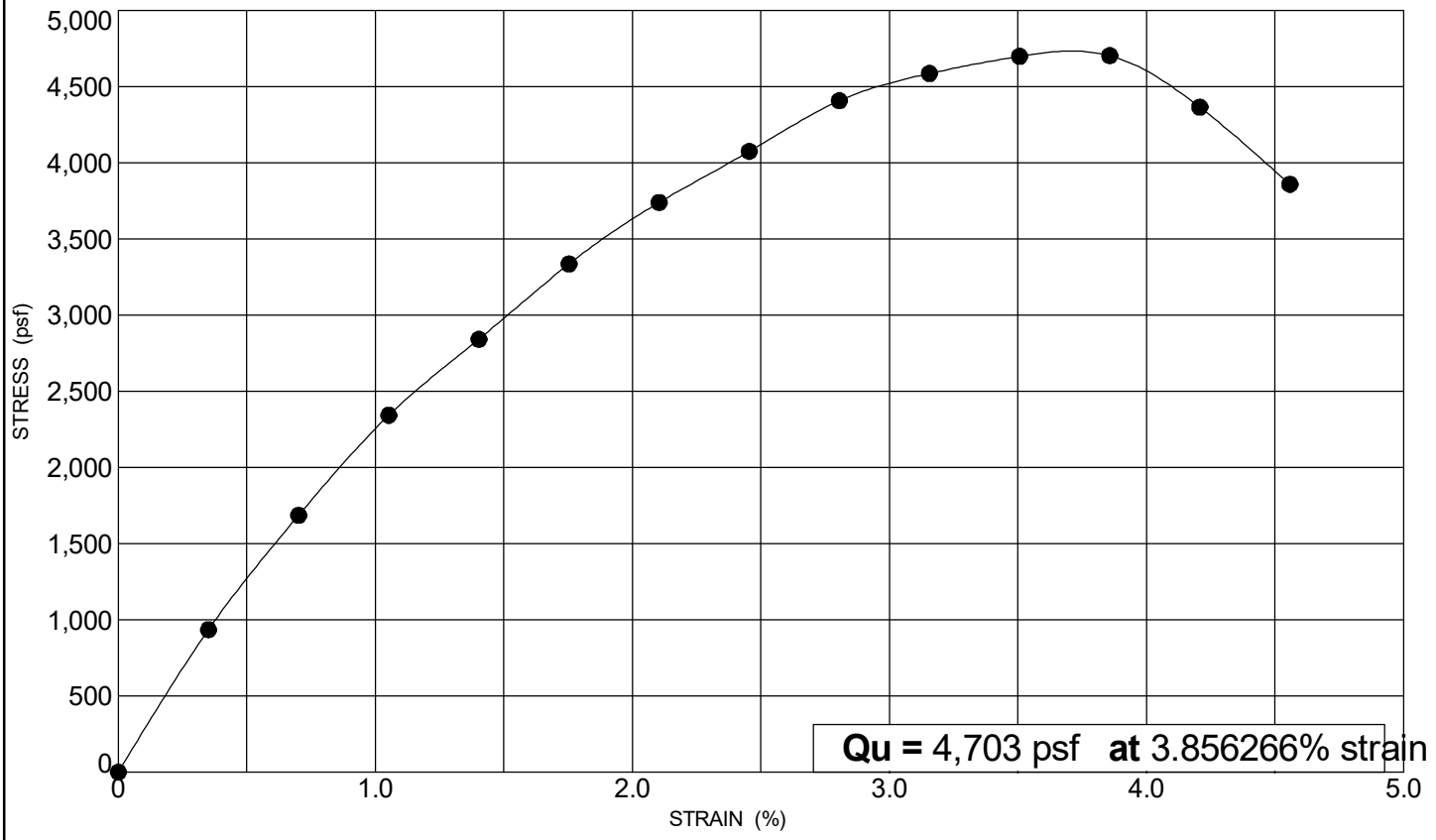
PROJECT HAM-75-1.05 **PID** 122902

OGE NUMBER N1245017 **PROJECT TYPE** STRUCTURE FOUNDATION

SAMPLE IDENTIFICATION

BORING ID: B-009-0-24 SAMPLE ID: ST-5

STATION: NOT RECORDED DEPTH: 11.5 - 13.5 feet



SPECIMEN FAILURE SKETCHES OR PHOTOGRAPHS



FRONT VIEW SIDE VIEW

SPECIMEN DETAILS

HEIGHT: 5.71 inches

DIAMETER: 2.86 inches

WET UNIT WT: 125.90 pcf

DRY UNIT WT: 104.02 pcf

TESTED BY: MF 11/7/2024

CLASSIFICATION RESULTS

GRADATION (%)

GR	CS	FS	SI	CL
1	5	22	32	40

ATTERBERG LIMITS MOISTURE

LL	PL	PI	WC
36	14	22	22

ODOT CLASS: A-6b HP (tsf): 4.25

DESCRIPTION:

OHDOT UNCONFINED COMPRESSION - OH DOT.GDT - 1/17/25 10:20 - \\PN1WFS02\DATA\PROJECTS\2024\N1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1245017-ODOT-HAM -75-1.05 MICROTUNNEL_REC.GPJ

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UNCONFINED COMPRESSION TEST
AASHTO T - 208

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

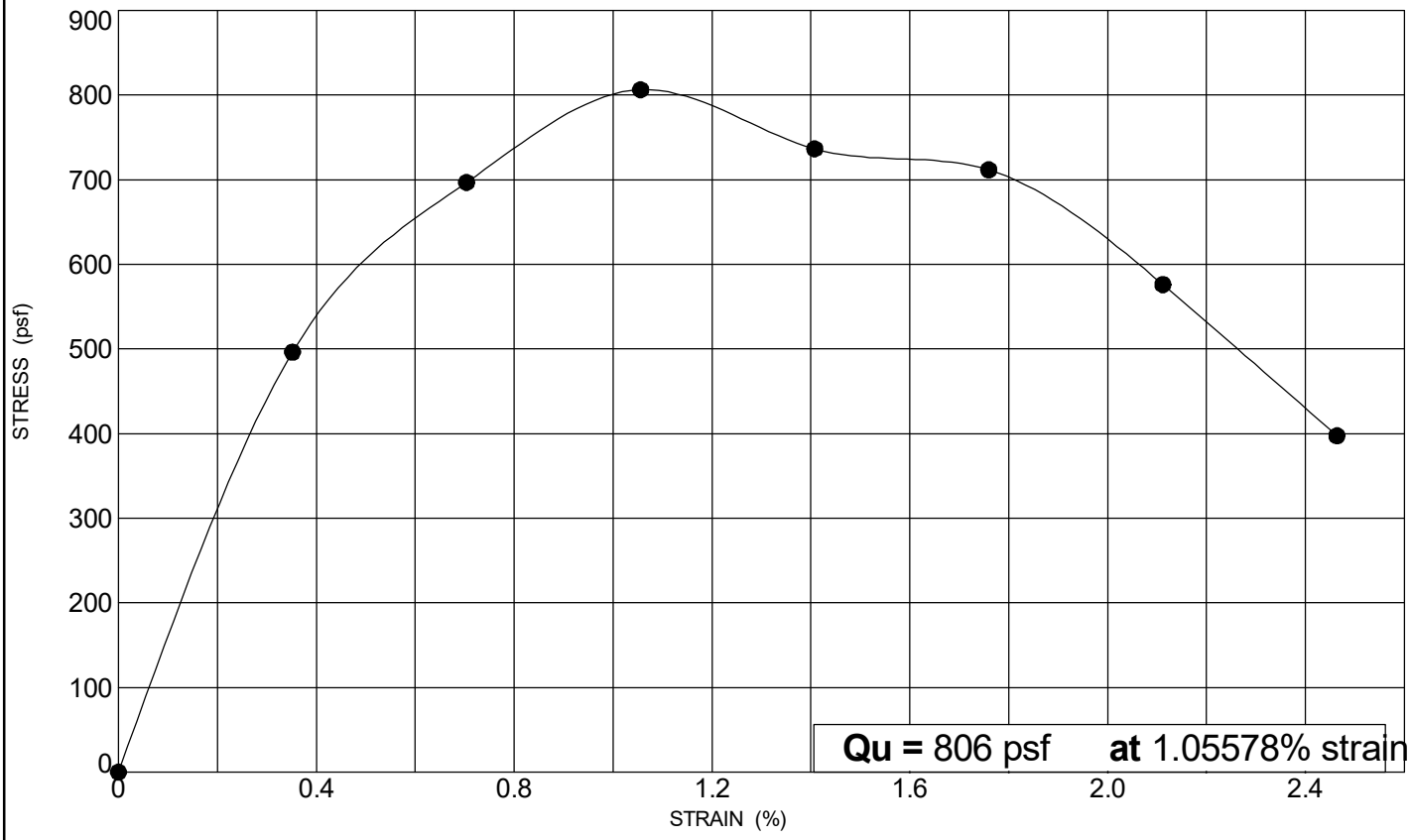
PROJECT HAM-75-1.05 **PID** 122902

OGE NUMBER N1245017 **PROJECT TYPE** STRUCTURE FOUNDATION

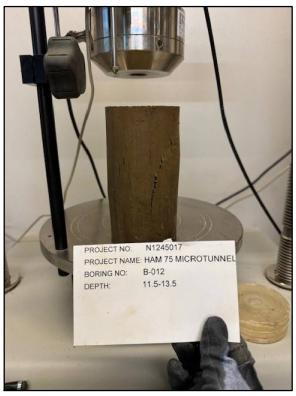
SAMPLE IDENTIFICATION

BORING ID: B-012-0-24 SAMPLE ID: ST-5

STATION: NOT RECORDED DEPTH: 11.5 - 13.5 feet



SPECIMEN FAILURE SKETCHES OR PHOTOGRAPHS



FRONT VIEW SIDE VIEW

SPECIMEN DETAILS

HEIGHT: 5.68 inches

DIAMETER: 2.85 inches

WET UNIT WT: 128.60 pcf

DRY UNIT WT: 107.75 pcf

TESTED BY: MF 11/7/2024

CLASSIFICATION RESULTS

GRADATION (%)

GR	CS	FS	SI	CL
1	15	17	30	37

ATTERBERG LIMITS			MOISTURE
LL	PL	PI	WC
34	16	18	19

ODOT CLASS: A-6b HP (tsf): 2.50

DESCRIPTION:

OHDOT UNCONFINED COMPRESSION - OH DOT.GDT - 1/17/25 10:13 - \\PN1WFS02\DATA\PROJECTS\2024\N1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1245017-ODOT-HAM -75-1.05 MICROTUNNEL_REC.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

UNCONFINED COMPRESSION TEST
AASHTO T - 208

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

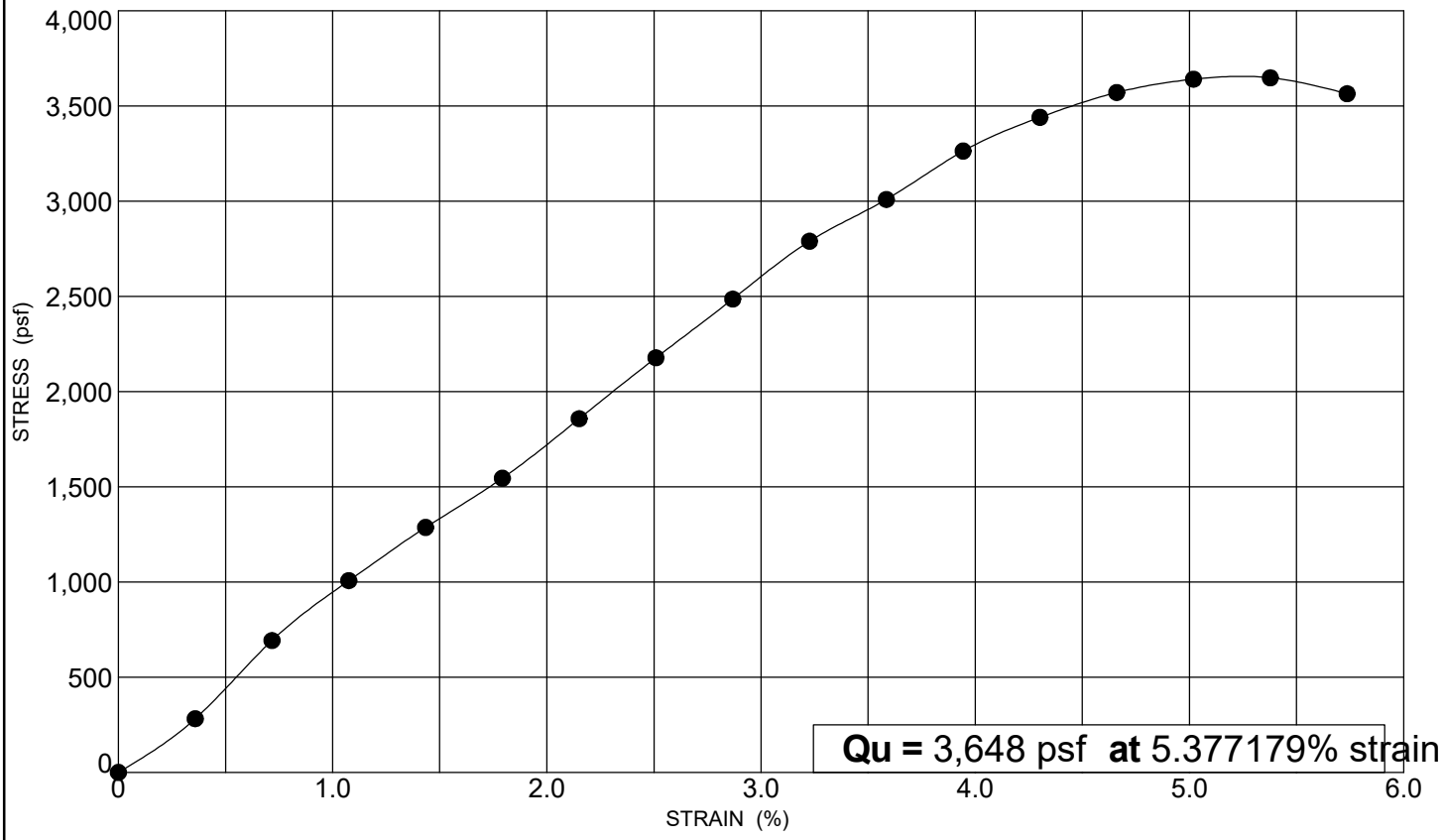
PROJECT N1215230 **PID**

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY

SAMPLE IDENTIFICATION

BORING ID: B-123-0-21 SAMPLE ID: ST-1

STATION: NOT RECORDED DEPTH: 6.0 - 8.0 feet



SPECIMEN FAILURE SKETCHES OR PHOTOGRAPHS



FRONT VIEW SIDE VIEW

SPECIMEN DETAILS

HEIGHT: 5.58 inches

DIAMETER: 2.86 inches

WET UNIT WT: 128.25 pcf

DRY UNIT WT: 108.37 pcf

TESTED BY: FCE 2/25/2022

CLASSIFICATION RESULTS

GRADATION (%)

GR	CS	FS	SI	CL
6	6	22	38	28

ATTERBERG LIMITS MOISTURE

LL	PL	PI	WC
33	9	24	18

ODOT CLASS: A-6b HP (tsf): -

DESCRIPTION:

OHDOT UNCONFINED COMPRESSION - OH DOT.GDT - 2/25/22 15:51 - N:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

UNCONFINED COMPRESSION TEST
AASHTO T - 208

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

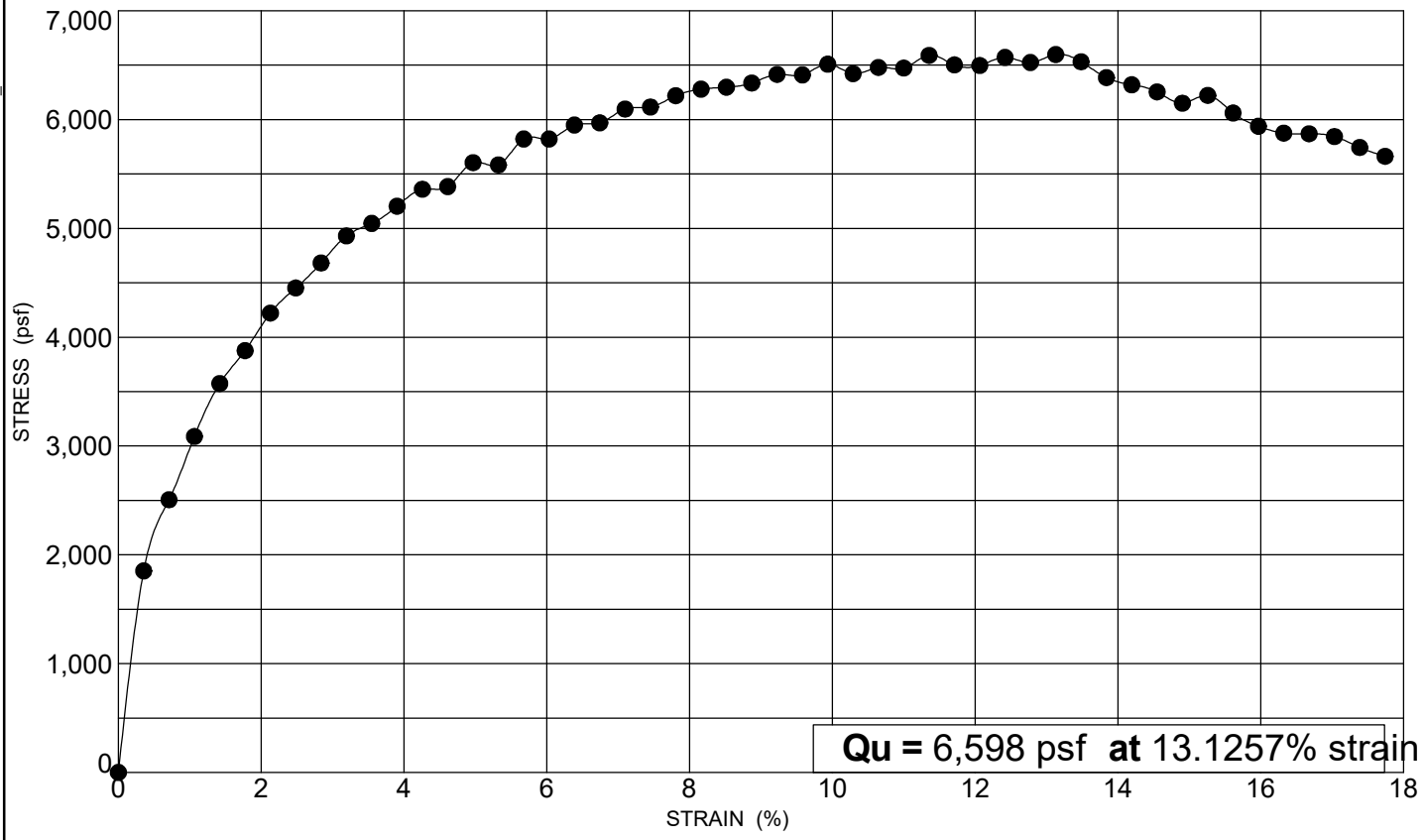
PROJECT N1215230 **PID** 114161

OGE NUMBER HAM-75-1.95 **PROJECT TYPE** ROADWAY

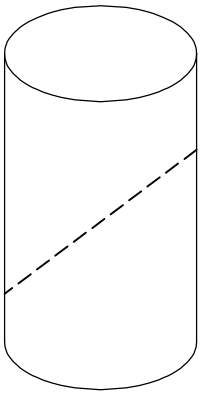
SAMPLE IDENTIFICATION

BORING ID: B-147-1-24 SAMPLE ID: ST-4

STATION: NOT RECORDED DEPTH: 8.0 - 10.0 feet



SPECIMEN FAILURE SKETCHES OR PHOTOGRAPHS



Failure Mode: Shear (dashed)

SPECIMEN DETAILS

HEIGHT: 5.64 inches

DIAMETER: 2.83 inches

WET UNIT WT: 131.02 pcf

DRY UNIT WT: 107.91 pcf

TESTED BY: MF 3/27/2025

CLASSIFICATION RESULTS

GRADATION (%)

GR	CS	FS	SI	CL
6	7	7	45	35

ATTERBERG LIMITS			MOISTURE
LL	PL	PI	WC
44	24	20	21

ODOT CLASS: A-7-6 HP (tsf): 1.00

DESCRIPTION:

OHDOT UNCONFINED COMPRESSION - OH DOT.GDT - 5/15/25 14:31 - N:\PROJECTS\2021\N1215230\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1215230 HAM-75-1.95 ODOT_11-01-22.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

UNCONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST
AASHTO T - 296

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

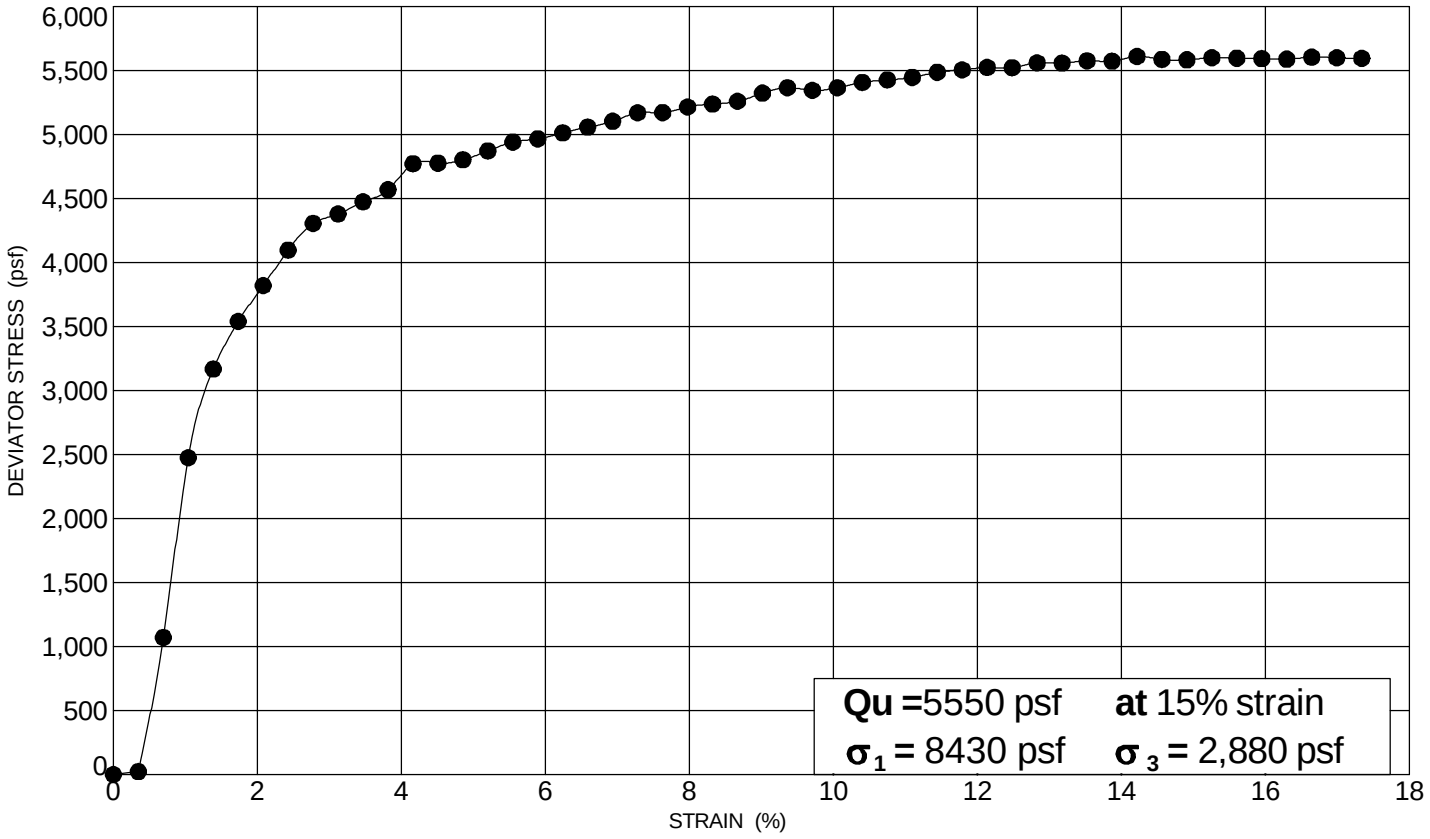
PROJECT HAM-75-1.05 **PID** 122902

OGE NUMBER N1245017 **PROJECT TYPE** STRUCTURE FOUNDATION

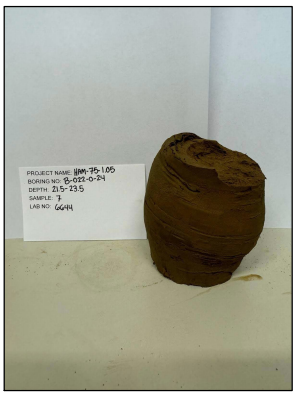
SAMPLE IDENTIFICATION

BORING ID: B-002-0-24 SAMPLE ID: ST-7

STATION: NOT RECORDED DEPTH: 21.5 - 23.5 feet



SPECIMEN FAILURE SKETCHES OR PHOTOGRAPHS



FRONT VIEW SIDE VIEW

SPECIMEN DETAILS TYPE: Undisturbed

HEIGHT: 5.766 inches DIAMETER: 2.827 inches

WET UNIT WT: 119.67 pcf DRY UNIT WT: 94.84 pcf

SPECIFIC GRAVITY: 2.67 (Assumed)

NOTES:

TESTED BY: CS 11/20/2024

CLASSIFICATION RESULTS

GRADATION (%)

GR	CS	FS	SI	CL
0	1	10	80	9

ATTERBERG LIMITS			MOISTURE
LL	PL	PI	WC
NP	NP	NP	27

ODOT CLASS: A-4b HP (tsf): 1.50

DESCRIPTION:

OHDOT UU TRIAXIAL TEST - OH DOT.GDT - 1/17/25 10:33 - \\PN1WFS02\DATA\PROJECTS\2024\N1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1245017-ODOT-HAM -75-1.05 MICROTUNNEL_REC.GPJ

NOT FOR CONSTRUCTION INFORMATION ONLY

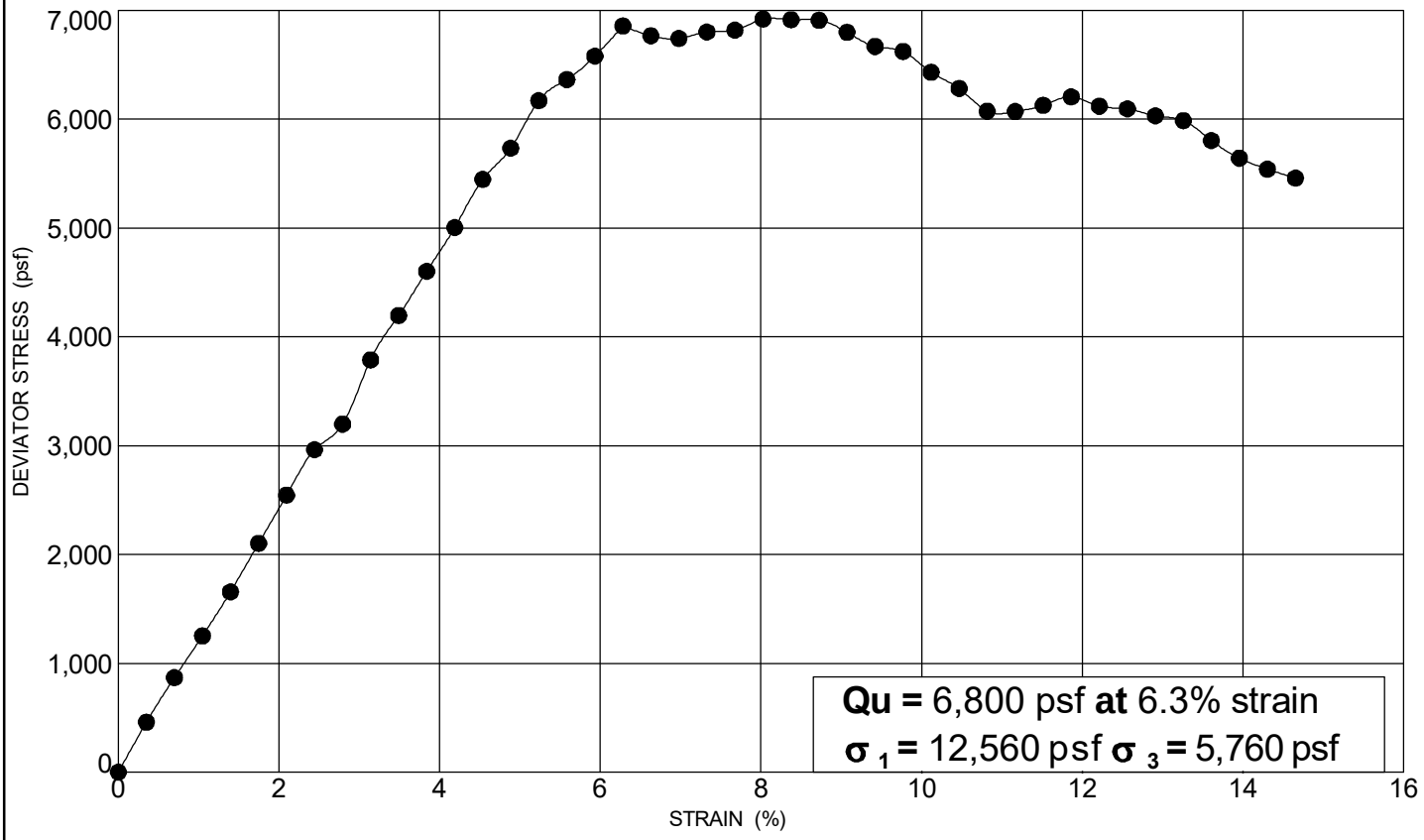
UNCONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST
AASHTO T - 296

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

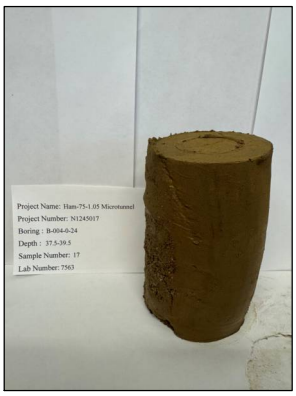
PROJECT HAM-75-1.05 **PID** 122902
OGE NUMBER N1245017 **PROJECT TYPE** STRUCTURE FOUNDATION

SAMPLE IDENTIFICATION

BORING ID: B-004-0-24 SAMPLE ID: ST-17
STATION: NOT RECORDED DEPTH: 37.5 - 39.5 feet



SPECIMEN FAILURE SKETCHES OR PHOTOGRAPHS



FRONT VIEW SIDE VIEW

SPECIMEN DETAILS TYPE: Undisturbed

HEIGHT: 5.731 inches DIAMETER: 2.822 inches
WET UNIT WT: 130.60 pcf DRY UNIT WT: 107.38 pcf
SPECIFIC GRAVITY: 2.67 (Assumed)
NOTES:

TESTED BY: CS 12/5/2024

CLASSIFICATION RESULTS

GRADATION (%)

GR	CS	FS	SI	CL
2	67	21	8	2

ATTERBERG LIMITS			MOISTURE
LL	PL	PI	WC
NP	NP	NP	22

ODOT CLASS: A-1-b HP (tsf): 1.00
DESCRIPTION:

OHDOT UU TRIAXIAL TEST - OH DOT.GDT - 1/17/25 11:21 - \\PN1WFS02\DATA\PROJECTS\2024\N1245017\WORKING FILES\LABORATORY-FIELD DATA-BORING LOGS\N1245017-ODOT-HAM -75-1.05 MICROTUNNEL_REC.GPJ

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UNCONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST
AASHTO T - 296

OHIO DEPARTMENT OF TRANSPORTION
OFFICE OF GEOTECHNICAL ENGINEERING

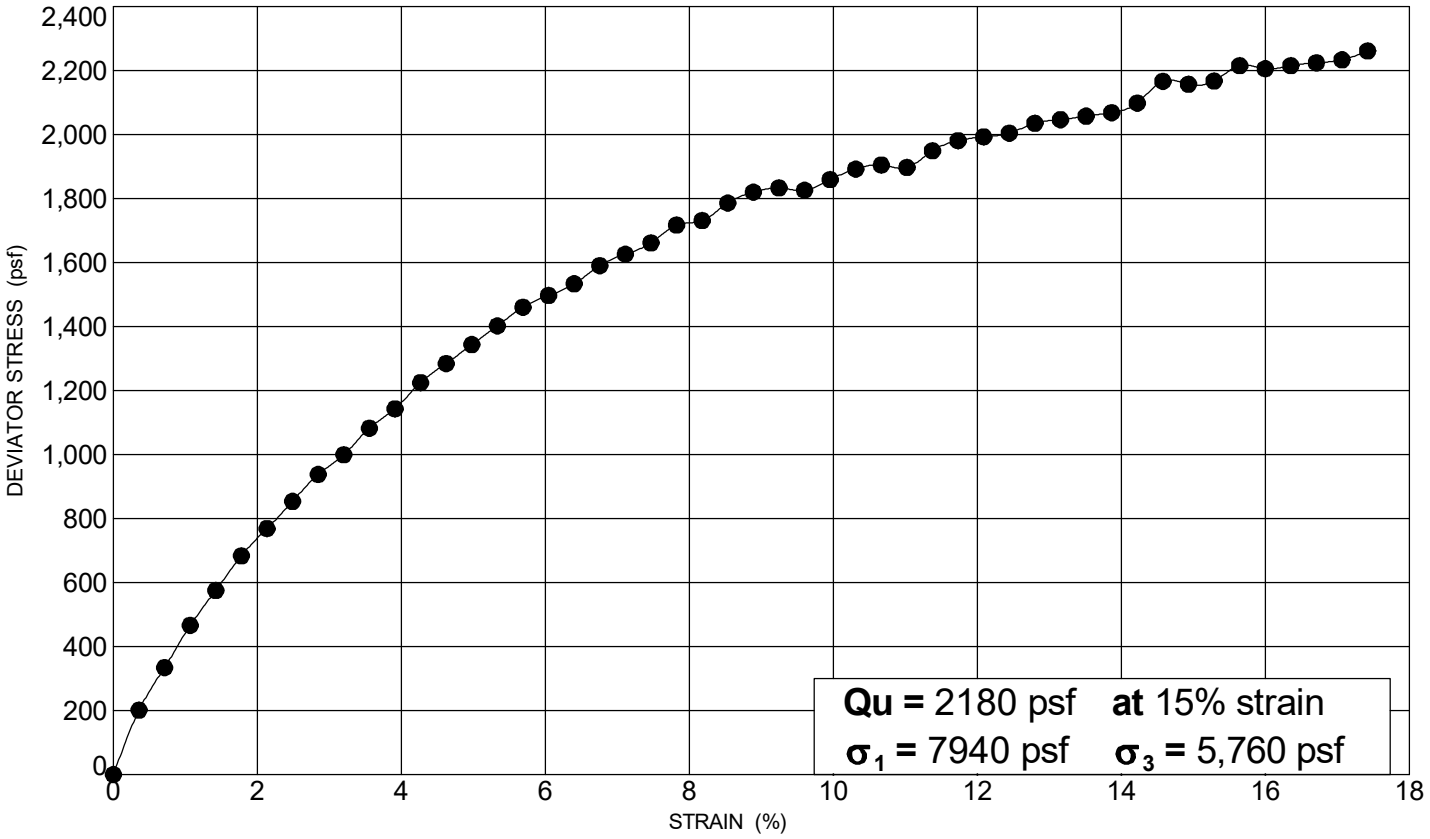
PROJECT HAM-75-1.05 **PID** 122902

OGE NUMBER N1245017 **PROJECT TYPE** STRUCTURE FOUNDATION

SAMPLE IDENTIFICATION

BORING ID: B-007-0-24 SAMPLE ID: ST-20

STATION: NOT RECORDED DEPTH: 42.5 - 44.0 feet



SPECIMEN FAILURE SKETCHES OR PHOTOGRAPHS



FRONT VIEW SIDE VIEW

SPECIMEN DETAILS TYPE: Undisturbed

HEIGHT: 5.626 inches DIAMETER: 2.856 inches

WET UNIT WT: 134.91 pcf DRY UNIT WT: 111.64 pcf

SPECIFIC GRAVITY: 2.67 (Assumed)

NOTES:

TESTED BY: CS 12/5/2024

CLASSIFICATION RESULTS

GRADATION (%)

GR	CS	FS	SI	CL
0	0	1	75	24

ATTERBERG LIMITS MOISTURE

LL	PL	PI	WC
26	20	6	21

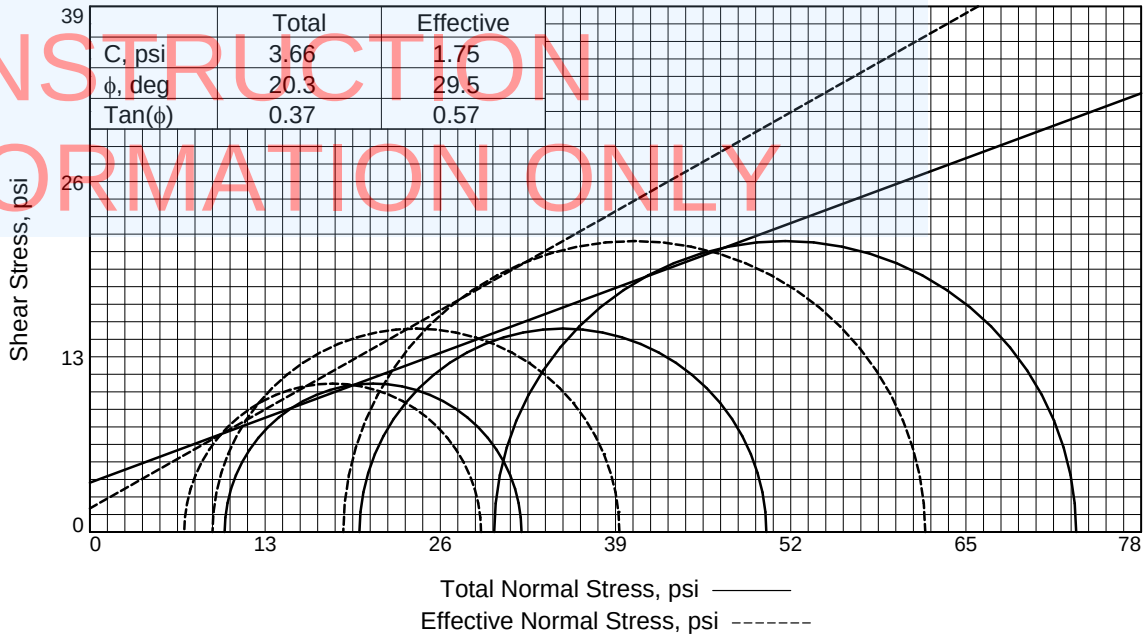
ODOT CLASS: A-4b HP (tsf): 0.50

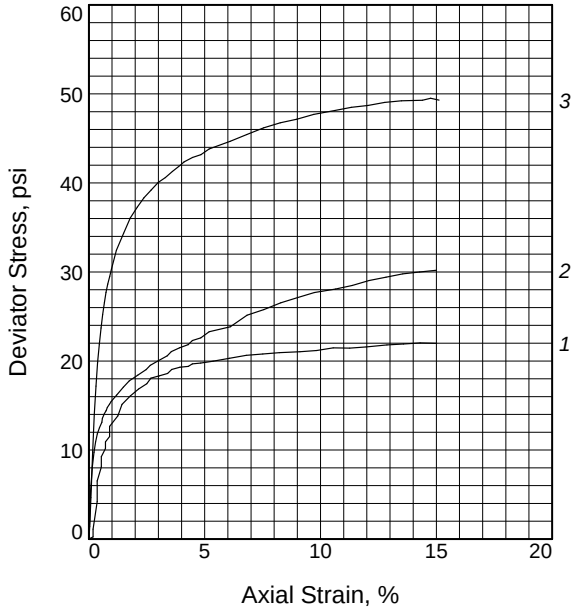
DESCRIPTION:

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	Total	Effective
C, psi	3.66	1.75
ϕ, deg	20.3	29.5
Tan(ϕ)	0.37	0.57





Sample No.		1	2	3
Initial	Water Content, %	24.5	19.8	19.0
	Dry Density, pcf	99.5	108.7	108.5
	Saturation, %	97.0	99.1	94.7
	Void Ratio	0.6746	0.5330	0.5363
	Diameter, in.	2.83	2.79	2.84
	Height, in.	5.79	5.74	5.74
At Test	Water Content, %	19.1	13.1	14.4
	Dry Density, pcf	110.3	123.5	120.4
	Saturation, %	100.0	100.0	100.0
	Void Ratio	0.5108	0.3499	0.3840
	Diameter, in.	2.74	2.68	2.74
	Height, in.	5.60	5.50	5.54
Strain rate, in./min.		0.013	0.000	0.001
Eff. Cell Pressure, psi		10.0	20.0	30.0
Fail. Stress, psi		22.0	30.2	43.2
Total Pore Pr., psi		51.2	66.9	61.2
Strain, %		14.3	15.0	4.8
Ult. Stress, psi				
Total Pore Pr., psi				
Strain, %				
$\bar{\sigma}_1$ Failure, psi		29.0	39.3	62.0
$\bar{\sigma}_3$ Failure, psi		7.0	9.1	18.8

Type of Test:
CU with Pore Pressures
Sample Type: Shelby Tube
Description: Lean Clay

LL= 29 **PL=** 14 **PI=** 15
Assumed Specific Gravity= 2.67
Remarks: Group A

Figure 7593

Client: Burgess & Niple Inc

Project: HAM-75-1.05 Microtunnel

Location: B-008-0-24, B-008-0-24, B-010-0-24

Depth: 9.0-11.0, 9.1, 9.0-11.0

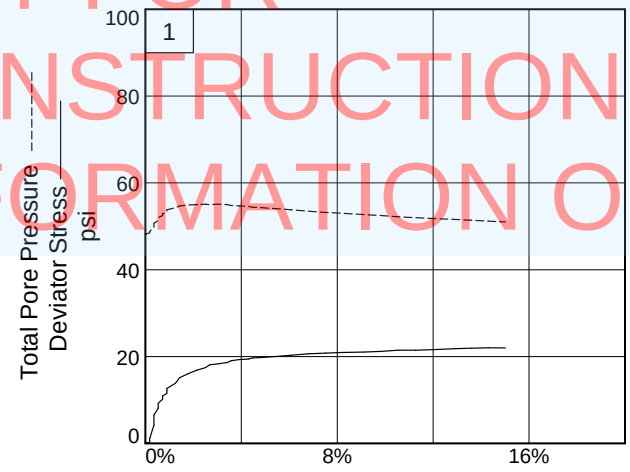
Proj. No.: N1245017 **Date Sampled:** 10/10/2024

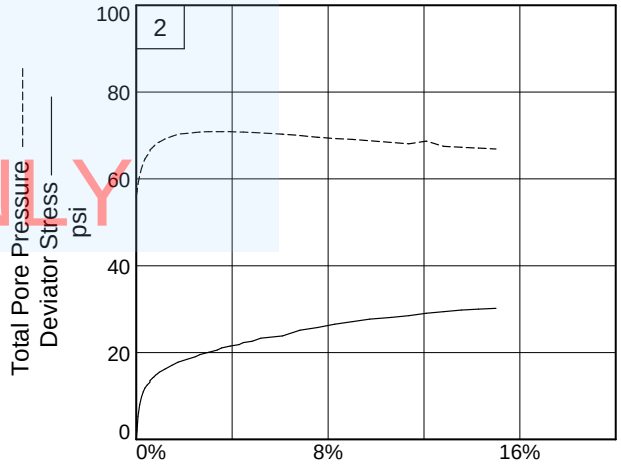
TRIAXIAL SHEAR TEST REPORT

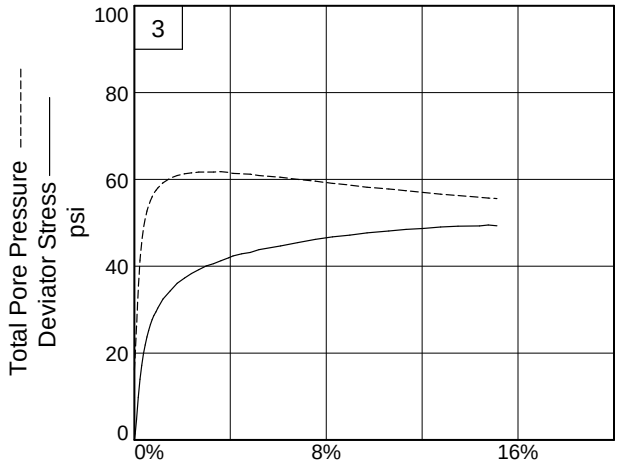
Terracon, Inc.
Cincinnati, Ohio

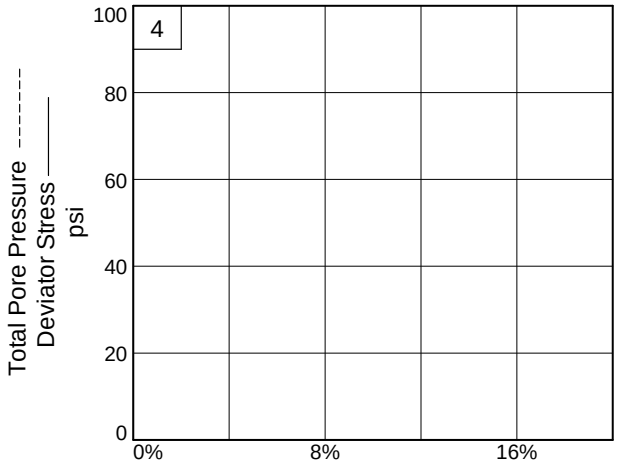
Tested By: Charissa Swinford **Checked By:** Kalyn Abrams

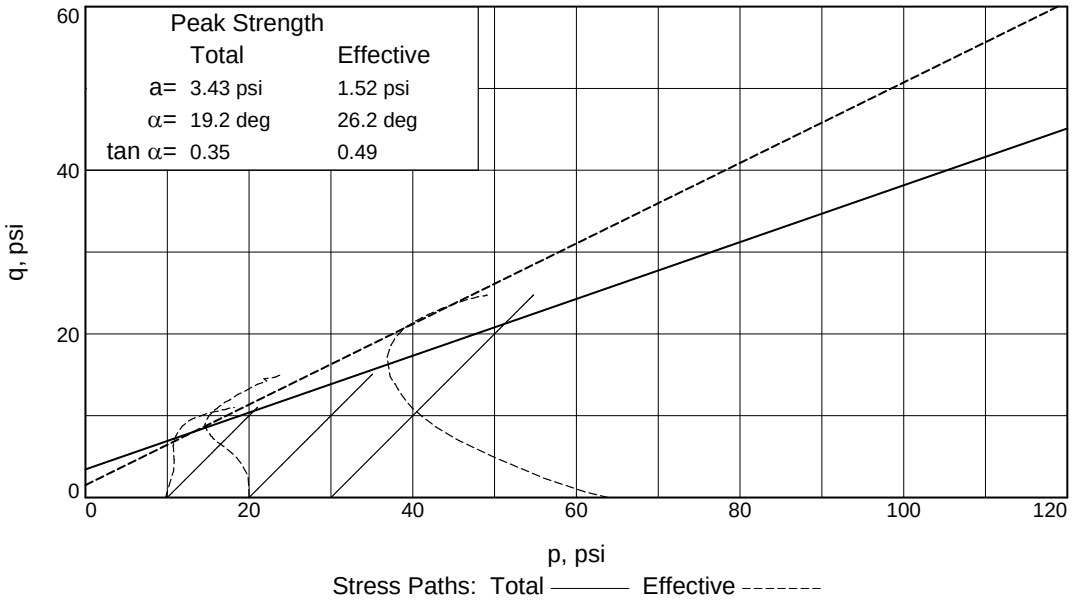
NOT FOR CONSTRUCTION INFORMATION ONLY











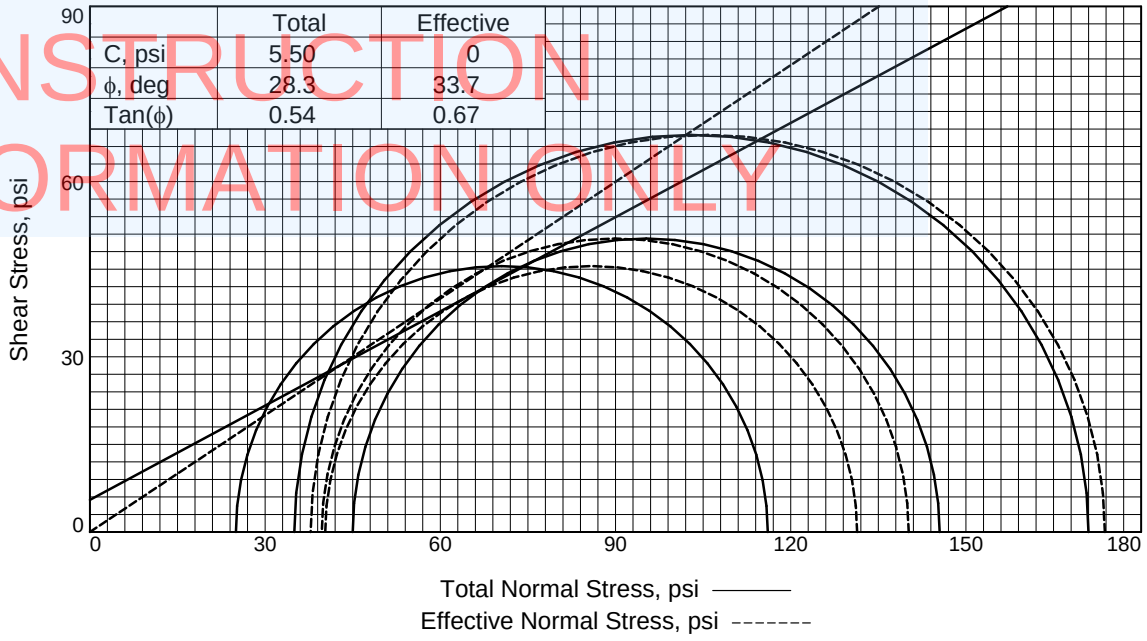
Client: Burgess & Niple Inc
Project: HAM-75-1.05 Microtunnel
Location: B-008-0-24, B-008-0-24, B-010-0-24 **Depth:** 9.0-11.0, 9.1, 9.0-11.0
Project No.: N1245017 **Figure** 7593

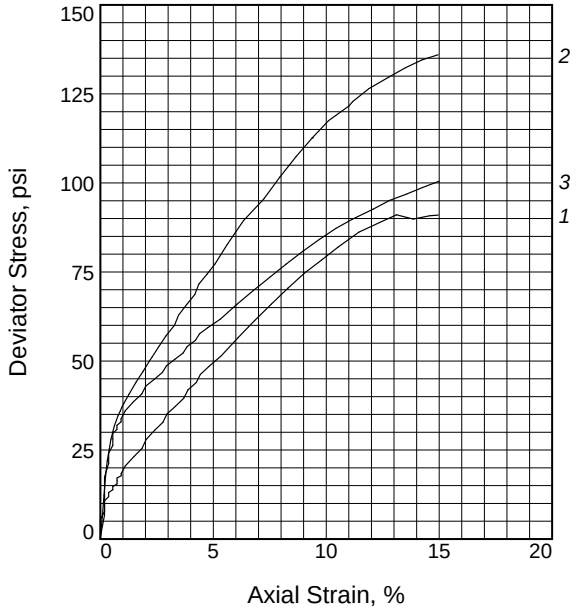
Terracon, Inc.

Tested By: Charissa Swinford **Checked By:** Kalyn Abrams

NOT FOR CONSTRUCTION INFORMATION ONLY

	Total	Effective
C, psi	5.50	0
ϕ, deg	28.3	33.7
Tan(ϕ)	0.54	0.67





Sample No.		1	2	3
Initial	Water Content, %	23.8	14.6	21.2
	Dry Density, pcf	104.3	105.4	112.6
	Saturation, %	99.0	65.9	99.5
	Void Ratio	0.6701	0.5997	0.6241
	Diameter, in.	2.87	2.93	2.83
	Height, in.	5.61	5.78	5.64
At Test	Water Content, %	17.9	15.9	16.1
	Dry Density, pcf	116.1	117.9	124.2
	Saturation, %	100.0	100.0	100.0
	Void Ratio	0.5008	0.4296	0.4729
	Diameter, in.	2.77	2.83	2.74
	Height, in.	5.42	5.57	5.47
Strain rate, in./min.		0.007	0.046	0.005
Eff. Cell Pressure, psi		25	35	45
Fail. Stress, psi		91	136	100
Total Pore Pr., psi		21	17	35
Strain, %		13.1	14.9	15.0
Ult. Stress, psi				
Total Pore Pr., psi				
Strain, %				
$\bar{\sigma}_1$ Failure, psi		131	174	140
$\bar{\sigma}_3$ Failure, psi		40	38	40

Type of Test:
CU with Pore Pressures
Sample Type: Shelby Tube
Description: Silt with Sand

LL= NV **PI=** NP
Assumed Specific Gravity= 2.79
Remarks: Group B

Figure 7572

Client: Burgess & Niple Inc

Project: HAM-75-1.05 Microtunnel

Location: B-006-0-24, B-006-0-24, B-005-0-24

Depth: 32.0-34.0, 32.1, 37.0-39.0

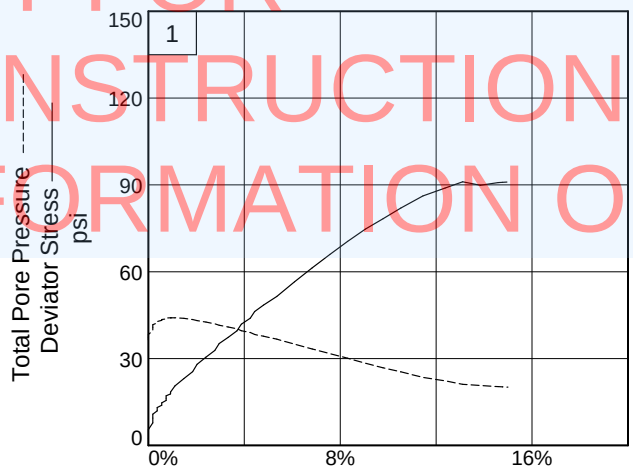
Proj. No.: N1245017 **Date Sampled:** 10/15/2024

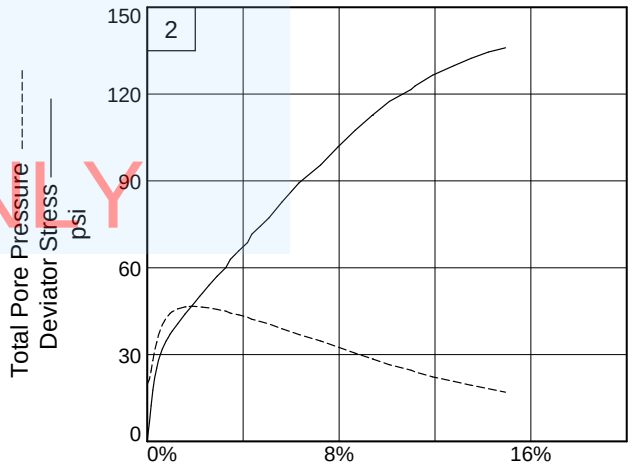
TRIAXIAL SHEAR TEST REPORT

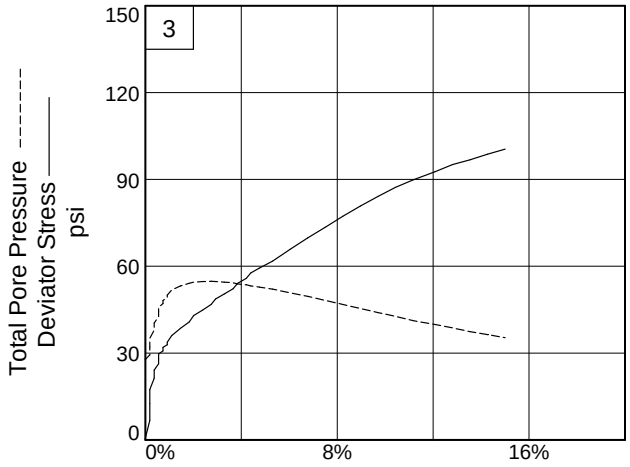
Terracon, Inc.
Cincinnati, Ohio

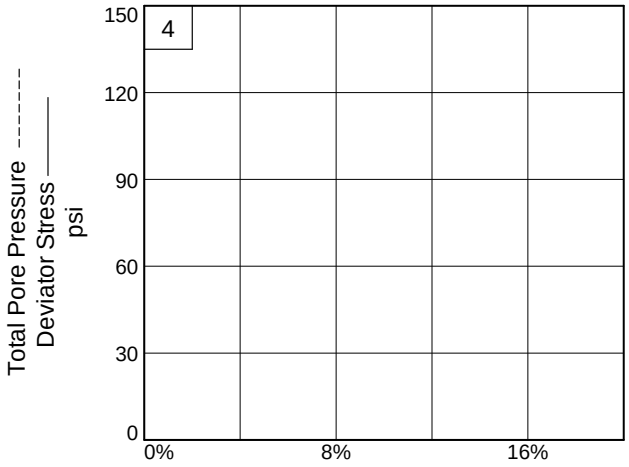
Tested By: Charissa Swinford **Checked By:** Kalyn Abrams

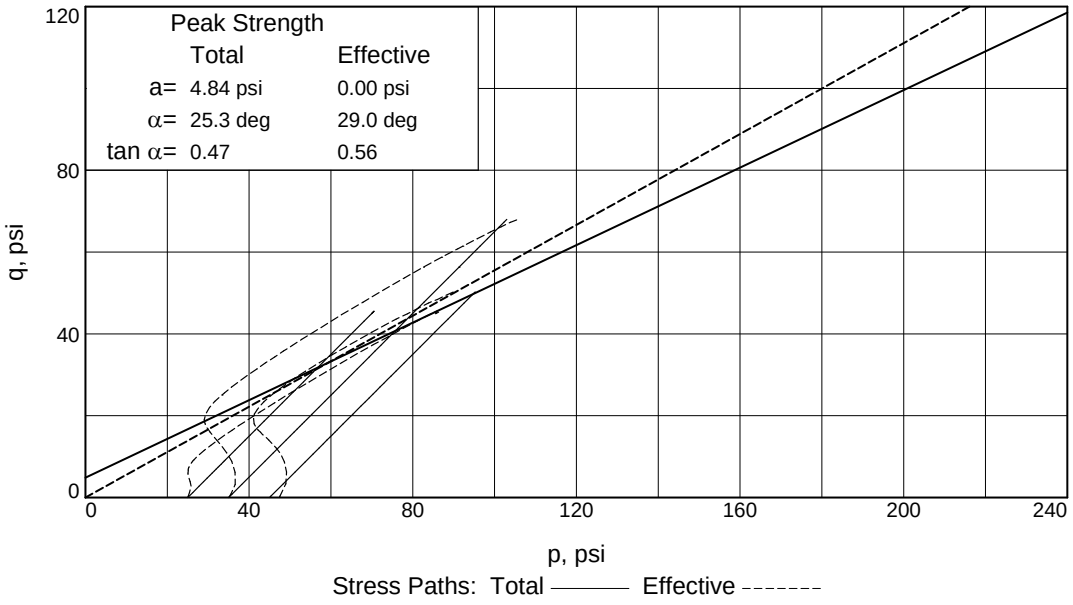
NOT FOR CONSTRUCTION INFORMATION ONLY









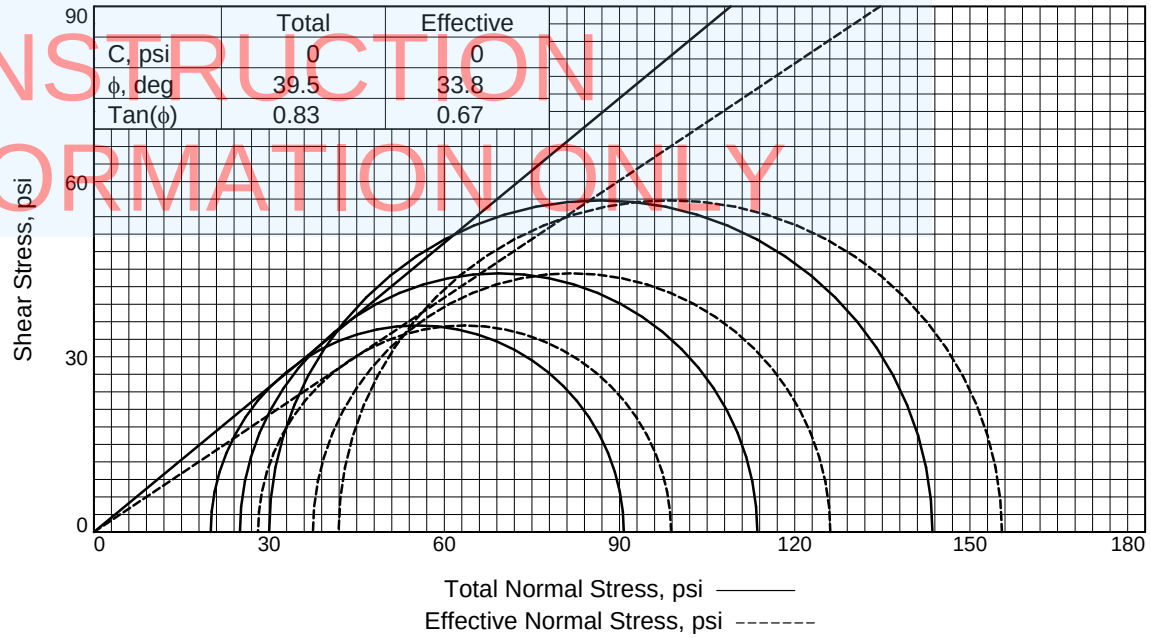


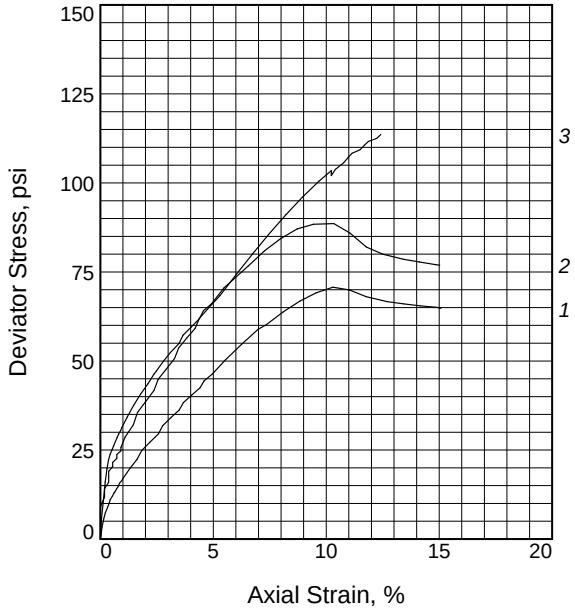
Client: Burgess & Niple Inc
Project: HAM-75-1.05 Microtunnel
Location: B-006-0-24, B-006-0-24, B-005-0-24 **Depth:** 32.0-34.0, 32.1, 37.0-39.0
Project No.: N1245017 **Figure** 7572

Terracon, Inc.

Tested By: Charissa Swinford **Checked By:** Kalyn Abrams

NOT FOR CONSTRUCTION INFORMATION ONLY





Sample No.		1	2	3
Initial	Water Content, %	21.6	17.7	21.5
	Dry Density, pcf	106.0	105.4	104.5
	Saturation, %	98.9	80.0	94.8
	Void Ratio	0.5904	0.5987	0.6126
	Diameter, in.	2.89	2.85	2.85
	Height, in.	5.64	5.74	5.67
At Test	Water Content, %	15.7	16.1	16.8
	Dry Density, pcf	118.4	117.4	116.0
	Saturation, %	100.0	100.0	100.0
	Void Ratio	0.4236	0.4356	0.4532
	Diameter, in.	2.78	2.75	2.75
	Height, in.	5.44	5.54	5.48
Strain rate, in./min.		0.013	0.018	0.015
Eff. Cell Pressure, psi		20	25	30
Fail. Stress, psi		71	89	114
Total Pore Pr., psi		43	42	39
Strain, %		10.3	10.3	12.4
Ult. Stress, psi				
Total Pore Pr., psi				
Strain, %				
$\bar{\sigma}_1$ Failure, psi		99	126	155
$\bar{\sigma}_3$ Failure, psi		28	38	42

Type of Test:
CU with Pore Pressures
Sample Type: Shelby Tube
Description: Silt

LL= 21 **PL=** 19 **PI=** 2
Assumed Specific Gravity= 2.70
Remarks: Group C

Figure 7597

Client: Burgess & Niple Inc

Project: HAM-75-1.05 Microtunnel

Location: B-008-0-24, B-007-0-24, B-008-0-24

Depth: 25.0-27.0, 24.0-26.0, 25.1

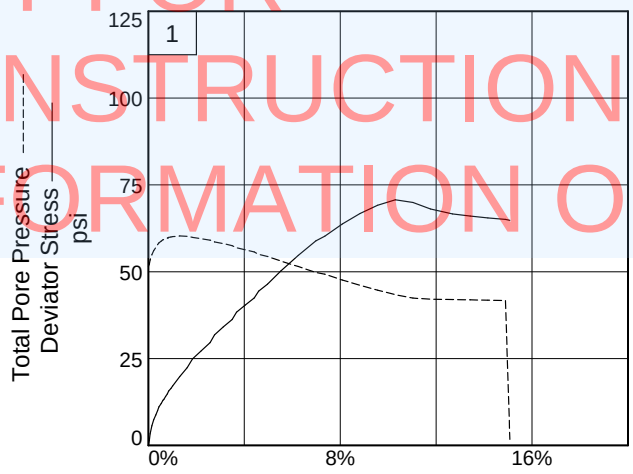
Proj. No.: N1245017 **Date Sampled:** 10/10/2024

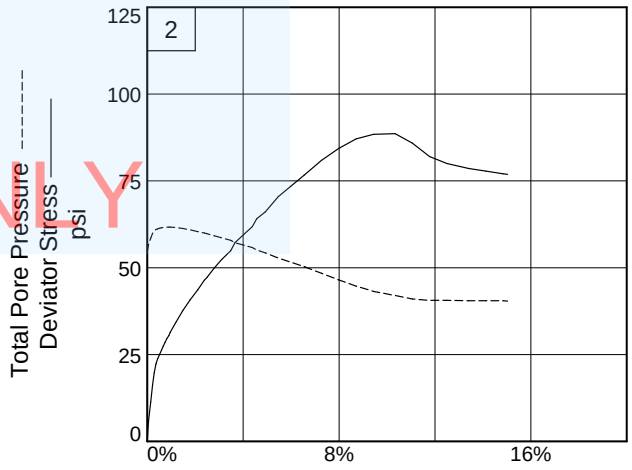
TRIAXIAL SHEAR TEST REPORT

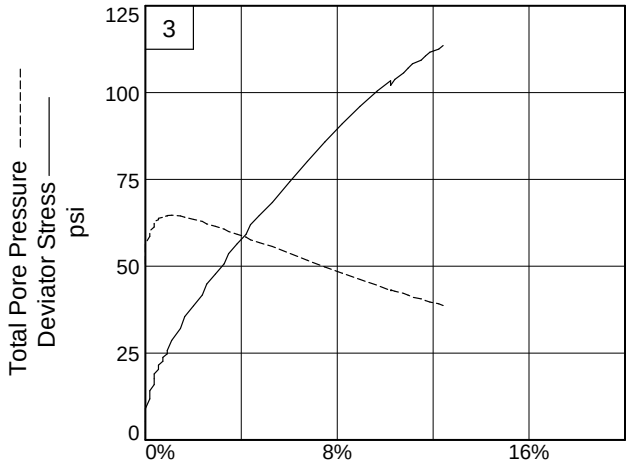
Terracon, Inc.
Cincinnati, Ohio

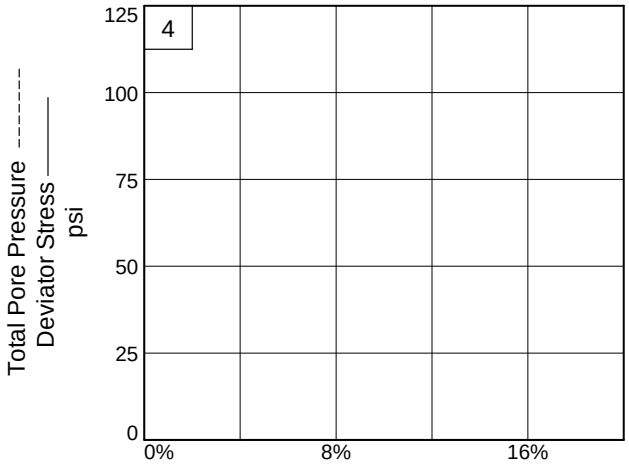
Tested By: Charissa Swinford **Checked By:** Kalyn Abrams

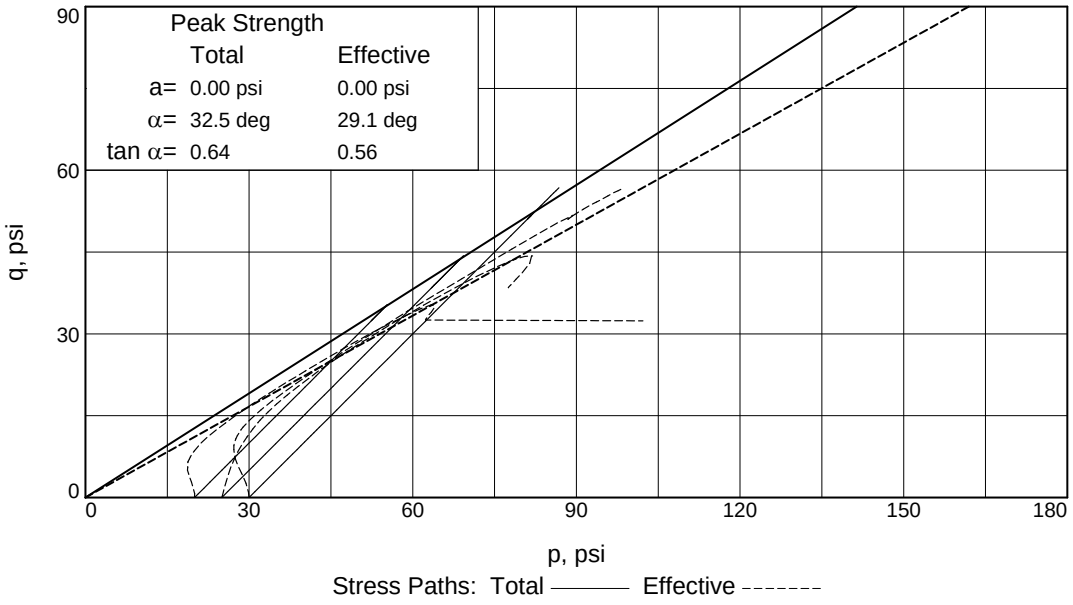
NOT FOR CONSTRUCTION INFORMATION ONLY









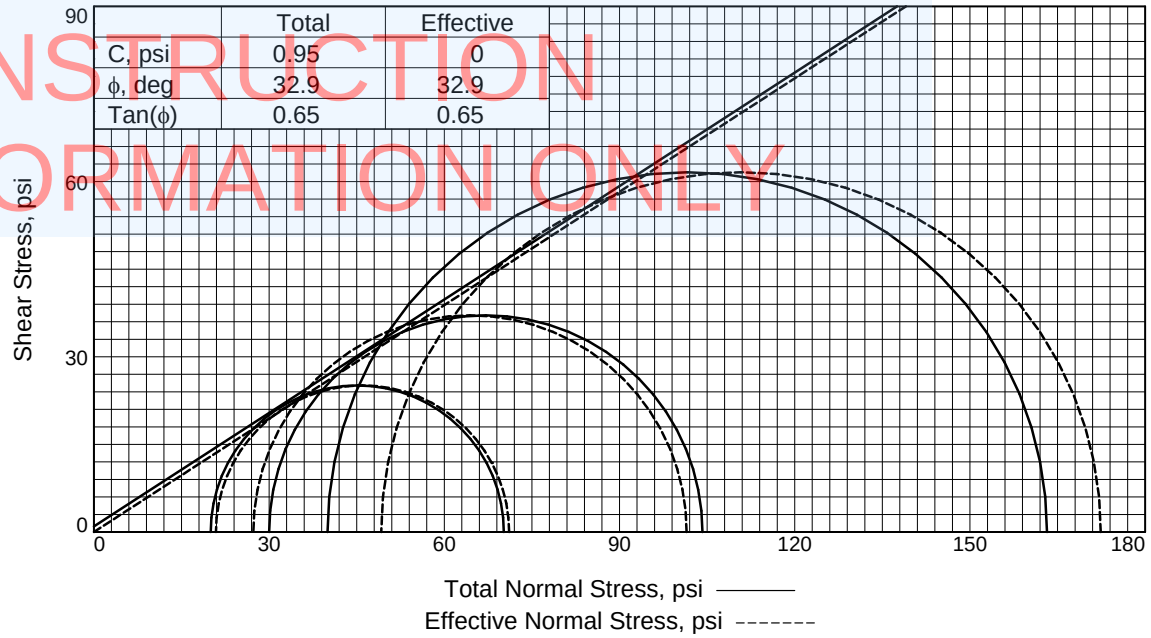


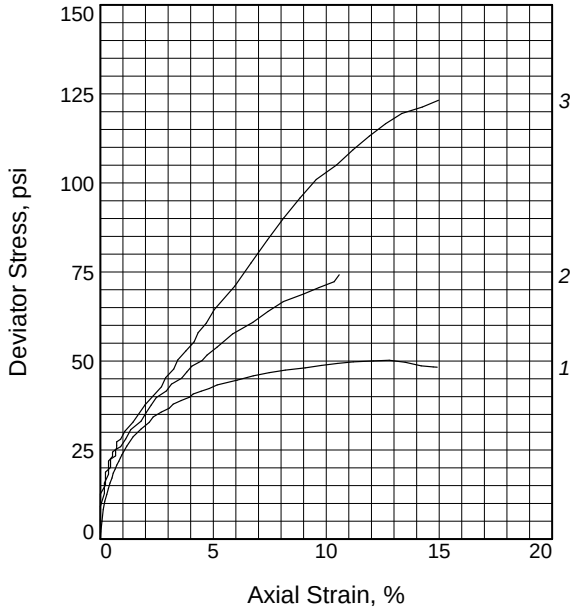
Client: Burgess & Niple Inc
Project: HAM-75-1.05 Microtunnel
Location: B-008-0-24, B-007-0-24, B-008-0-24 **Depth:** 25.0-27.0, 24.0-26.0, 25.1
Project No.: N1245017 **Figure** 7597

Terracon, Inc.

Tested By: Charissa Swinford **Checked By:** Kalyn Abrams

NOT FOR CONSTRUCTION INFORMATION ONLY





Sample No.		1	2	3
Initial	Water Content, %	26.3	23.9	24.0
	Dry Density, pcf	97.9	101.4	112.9
	Saturation, %	98.5	97.5	99.7
	Void Ratio	0.7209	0.6624	0.7692
	Diameter, in.	2.86	2.84	2.71
	Height, in.	5.67	4.46	5.58
At Test	Water Content, %	25.9	24.0	22.8
	Dry Density, pcf	99.2	102.2	115.4
	Saturation, %	100.0	100.0	100.0
	Void Ratio	0.6991	0.6490	0.7304
	Diameter, in.	2.85	2.83	2.69
	Height, in.	5.65	4.45	5.54
Strain rate, in./min.		0.001	0.001	0.001
Eff. Cell Pressure, psi		20	30	40
Fail. Stress, psi		50	74	123
Total Pore Pr., psi		50	53	21
Strain, %		12.8	10.6	15.0
Ult. Stress, psi				
Total Pore Pr., psi				
Strain, %				
$\bar{\sigma}_1$ Failure, psi		71	101	172
$\bar{\sigma}_3$ Failure, psi		21	27	49

Type of Test:
CU with Pore Pressures
Sample Type: Shelby Tube
Description: Silt

LL= 25 **PL=** 20 **PI=** 5
Assumed Specific Gravity= 2.70
Remarks: Group D

Figure 7619

Client: Burgess & Niple Inc

Project: HAM-75-1.05 Microtunnel

Location: B-010-0-24, B-010-0-24, B-011-0-24

Depth: 25.1, 25.0-27.0, 38.0-40.0

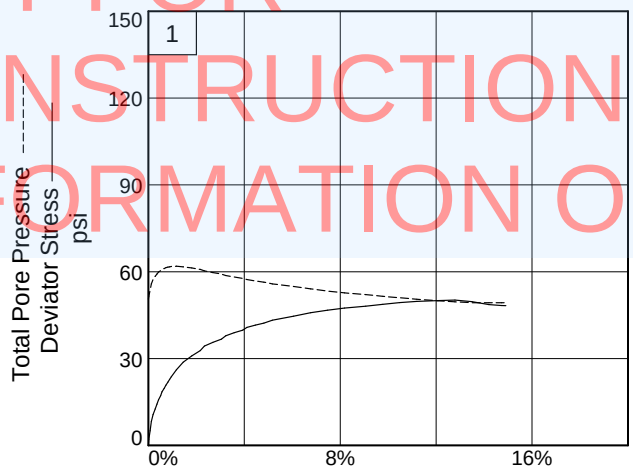
Proj. No.: N1245017 **Date Sampled:** 10/9/2024

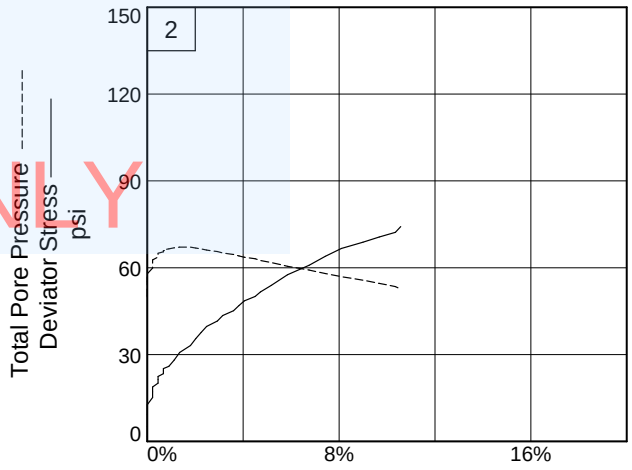
TRIAXIAL SHEAR TEST REPORT

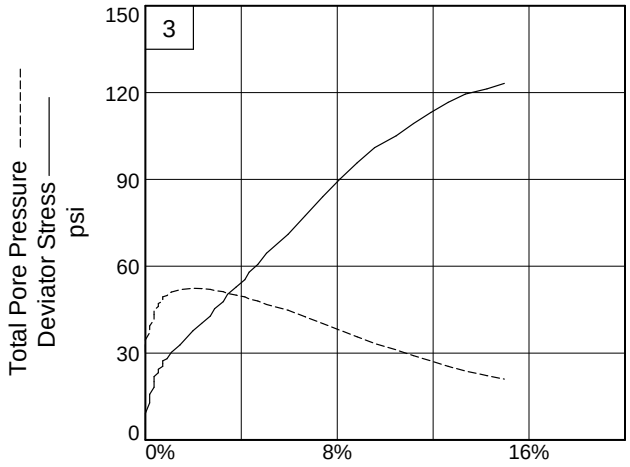
Terracon, Inc.
Cincinnati, Ohio

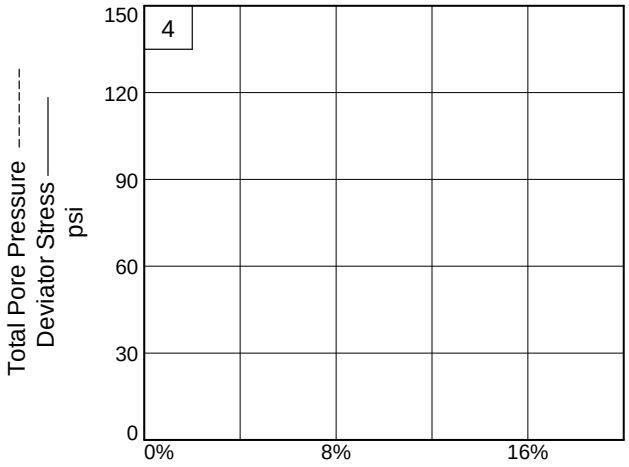
Tested By: Charissa Swinford **Checked By:** Kalyn Abrams

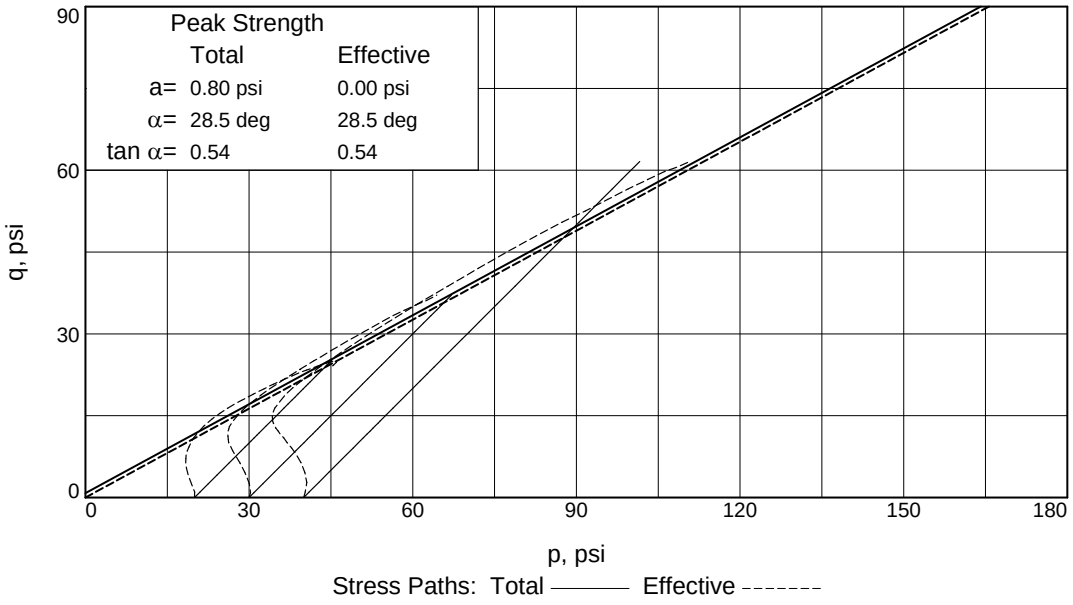
NOT FOR CONSTRUCTION INFORMATION ONLY











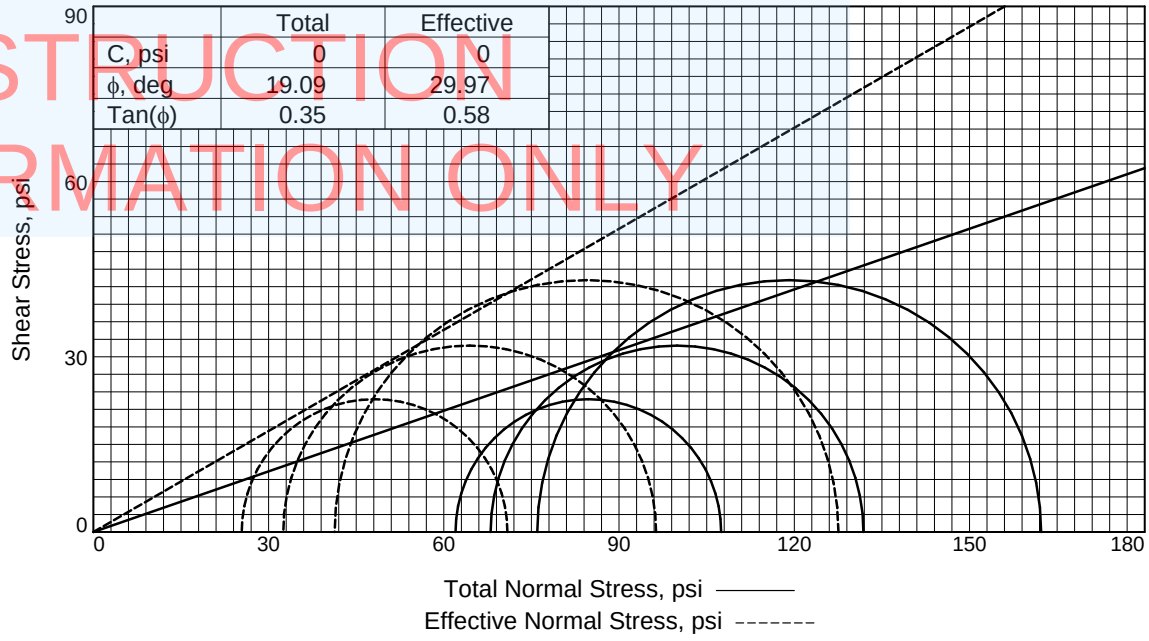
Client: Burgess & Niple Inc
Project: HAM-75-1.05 Microtunnel
Location: B-010-0-24, B-010-0-24, B-011-0-24 **Depth:** 25.1, 25.0-27.0, 38.0-40.0
Project No.: N1245017 **Figure** 7619

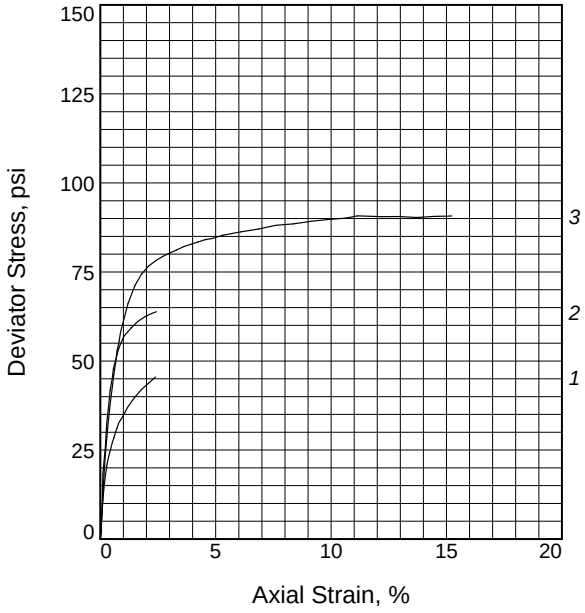
Terracon, Inc.

Tested By: Charissa Swinford **Checked By:** Kalyn Abrams

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	Total	Effective
C, psi	0	0
ϕ, deg	19.09	29.97
Tan(ϕ)	0.35	0.58





Sample No.		1	2	3
Initial	Water Content, %	22.9	22.9	22.9
	Dry Density, pcf	103.2	103.2	103.2
	Saturation, %	97.8	97.8	97.8
	Void Ratio	0.6330	0.6330	0.6330
	Diameter, in.	2.875	2.875	2.875
	Height, in.	5.744	5.744	5.744
At Test	Water Content, %	19.5	19.3	17.1
	Dry Density, pcf	110.5	110.8	115.4
	Saturation, %	100.0	100.0	100.0
	Void Ratio	0.5254	0.5213	0.4606
	Diameter, in.	2.810	2.842	2.838
	Height, in.	5.616	5.477	5.273
Strain rate, in./min.		0.0004	0.0004	0.0004
Back Pressure, psi		40.0	40.0	40.0
Cell Pressure, psi		102.0	108.0	116.0
Fail. Stress, psi		45.5	63.8	86.3
Excess Pore Pr., psi		36.6	35.5	34.7
Ult. Stress, psi				
Excess Pore Pr., psi				
$\bar{\sigma}_1$ Failure, psi		70.9	96.3	127.6
$\bar{\sigma}_3$ Failure, psi		25.4	32.5	41.3

Type of Test:
CU with Pore Pressures

Sample Type:

Description: BROWN GRAY SANDY LEAN CLAY

Assumed Specific Gravity= 2.70

Remarks: Stage Triaxial Test

Figure _____

Client:

Project: HAM-75-1.05

Source of Sample: B-089-0-21 **Depth:** 16-18'

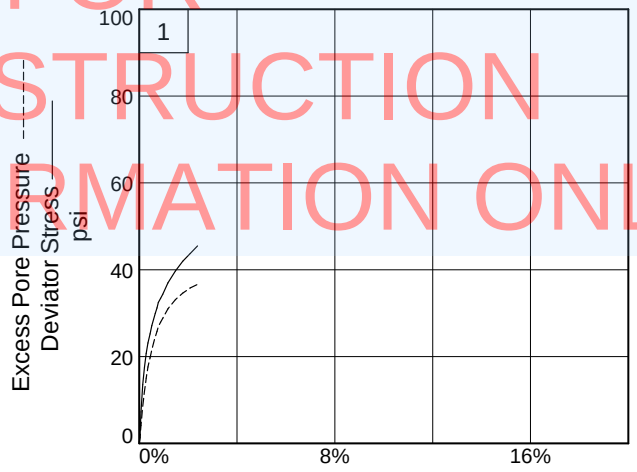
Proj. No.: N1215225 **Date Sampled:** 4-26-22

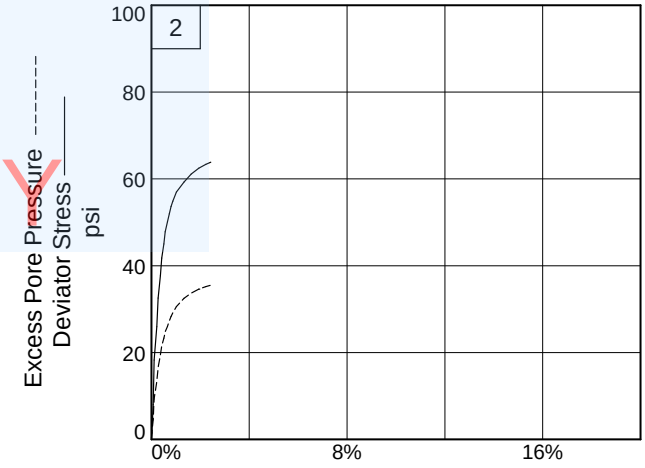
TRIAXIAL SHEAR TEST REPORT

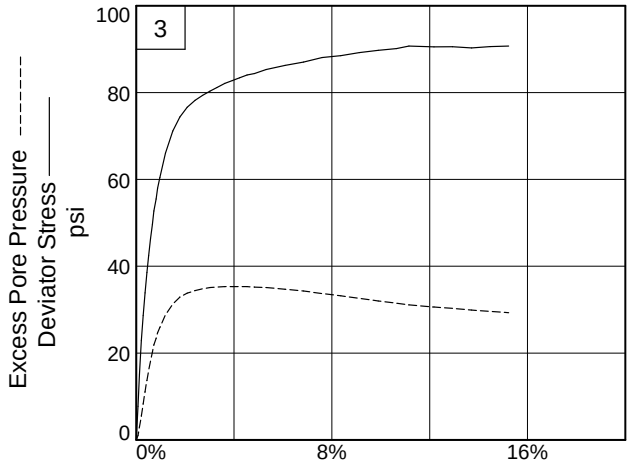
Terracon, Inc.
Cincinnati, Ohio

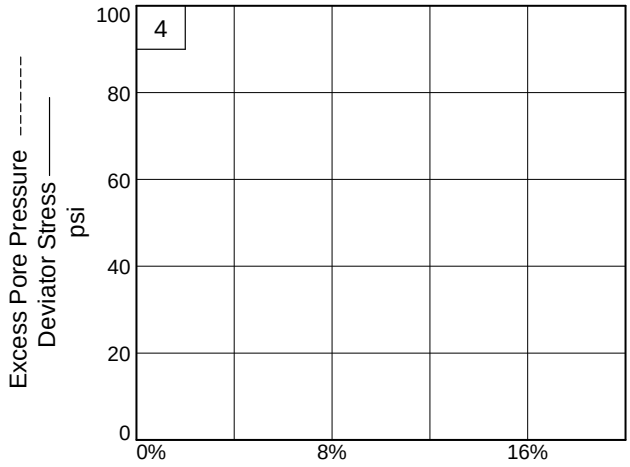
Tested By: FCE **Checked By:** GS

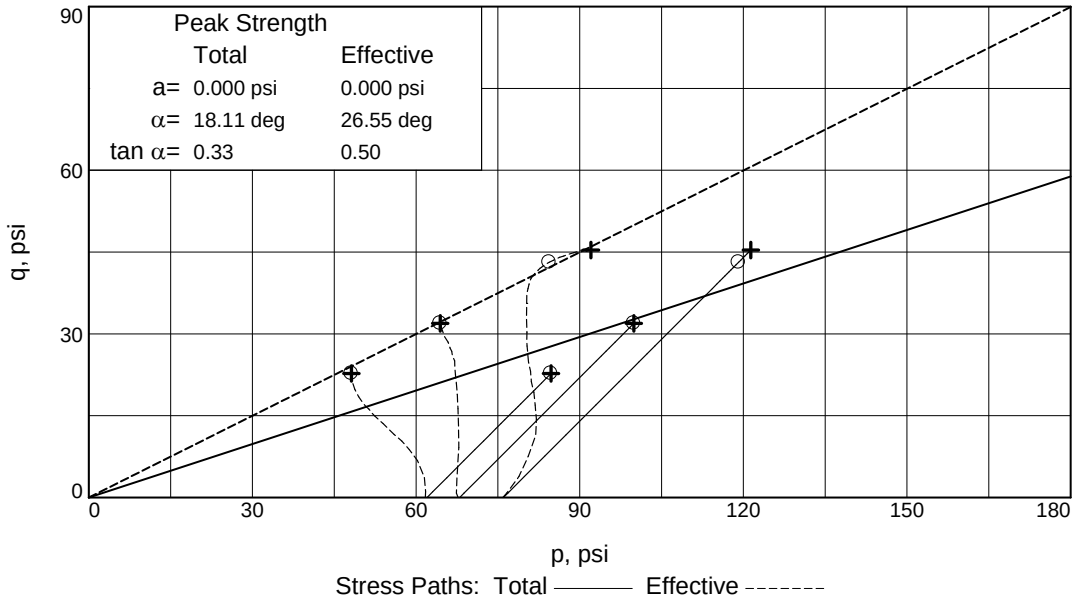
NOT FOR CONSTRUCTION INFORMATION ONLY









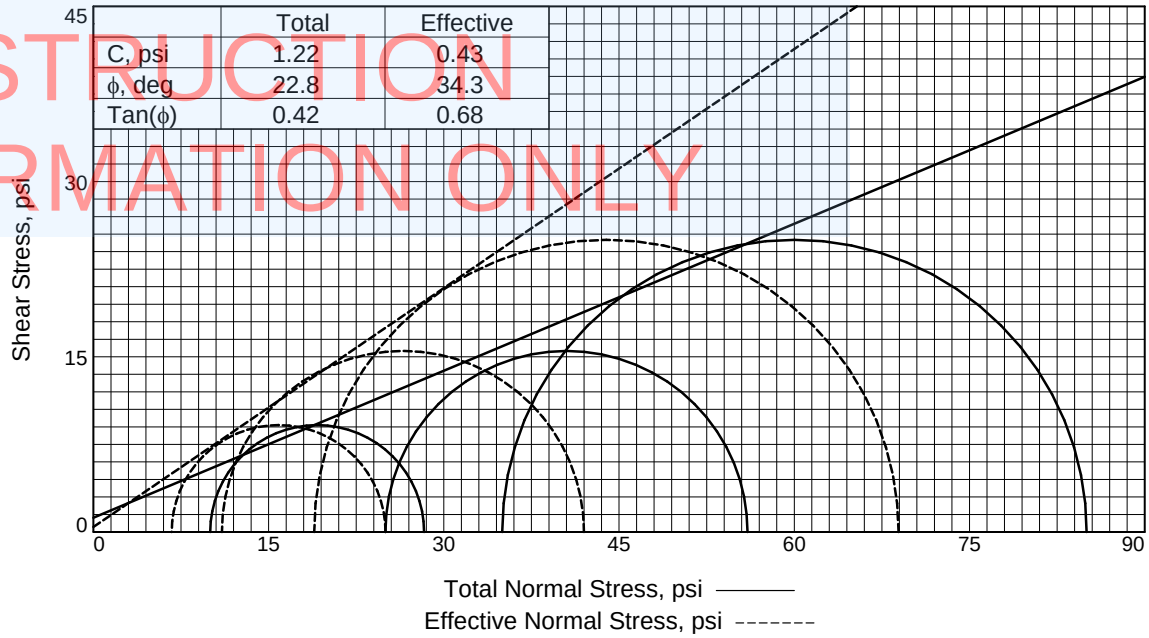


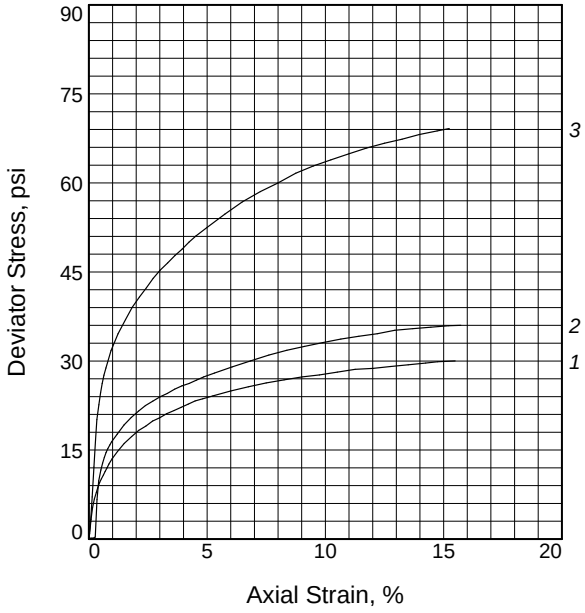
Client:
Project: HAM-75-1.05
Source of Sample: B-089-0-21 **Depth:** 16-18'
Project No.: N1215225 **Figure** _____

Terracon, Inc.

Tested By: FCE **Checked By:** GS

NOT FOR CONSTRUCTION INFORMATION ONLY





Sample No.		1	2	3
Initial	Water Content, %	18.8	21.9	18.5
	Dry Density, pcf	109.1	106.7	110.4
	Saturation, %	93.3	98.7	91.5
	Void Ratio	0.5449	0.6090	0.5552
	Diameter, in.	2.86	2.84	2.86
	Height, in.	5.73	5.67	5.71
At Test	Water Content, %	19.2	17.5	19.0
	Dry Density, pcf	111.0	116.0	112.8
	Saturation, %	100.0	100.0	100.0
	Void Ratio	0.5183	0.4804	0.5219
	Diameter, in.	2.85	2.76	2.84
	Height, in.	5.69	5.52	5.67
Strain rate, in./min.		0.0007	0.0007	0.0007
Back Pressure, psi		50.0	50.0	50.0
Cell Pressure, psi		60.0	75.0	85.0
Fail. Stress, psi		18.3	31.0	50.0
Total Pore Pr., psi		53.3	64.0	66.1
Ult. Stress, psi				
Total Pore Pr., psi				
$\bar{\sigma}_1$ Failure, psi		25.0	42.0	68.9
$\bar{\sigma}_3$ Failure, psi		6.7	11.0	18.9

Type of Test:
CU with Pore Pressures

Sample Type: Shelby Tube

Description: Brown Sandy Lean Clay

Assumed Specific Gravity= 2.70

Remarks:

Figure 6483

Client: ODOT

Project: HAM-75-1.95

Source of Sample: B-132-0-21 **Depth:** 20.0-22.0

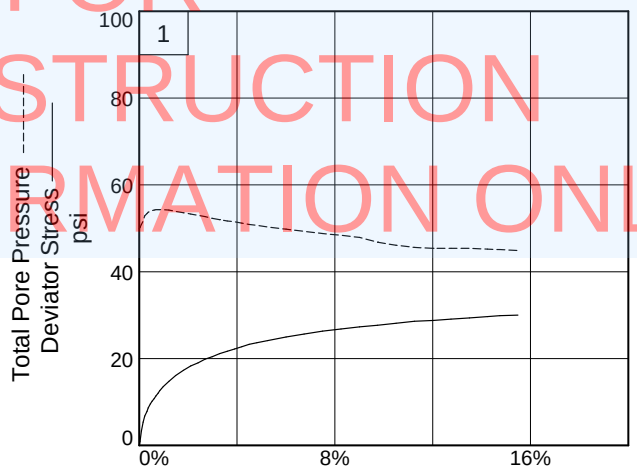
Proj. No.: N1215230 **Date Sampled:** Unknown

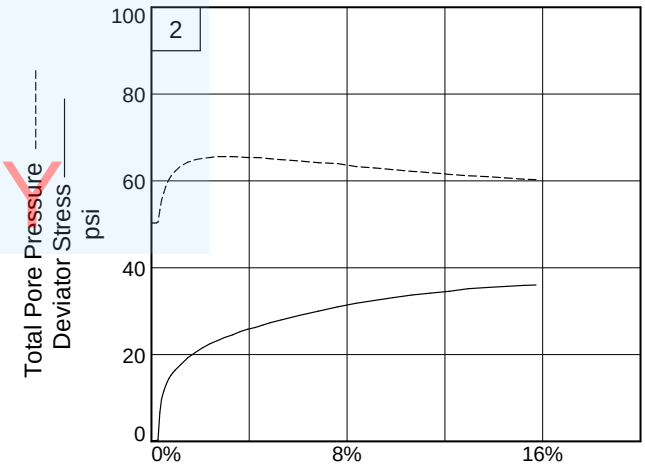
TRIAXIAL SHEAR TEST REPORT

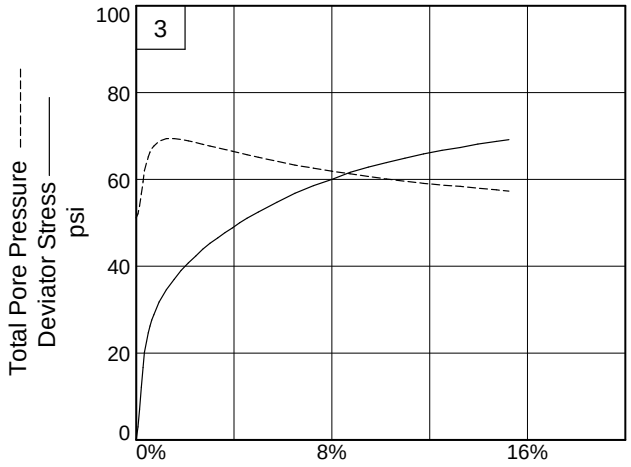
Terracon, Inc.
Cincinnati, Ohio

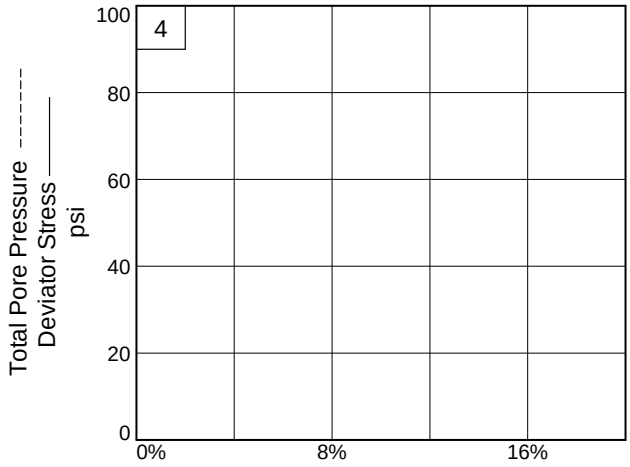
Tested By: FCE **Checked By:** KA

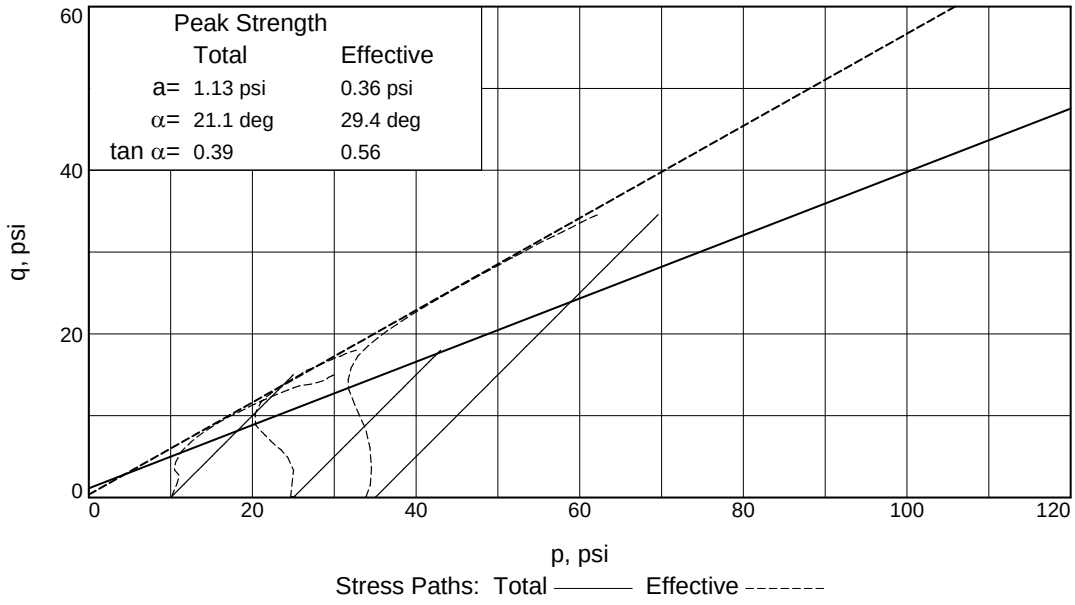
NOT FOR CONSTRUCTION INFORMATION ONLY











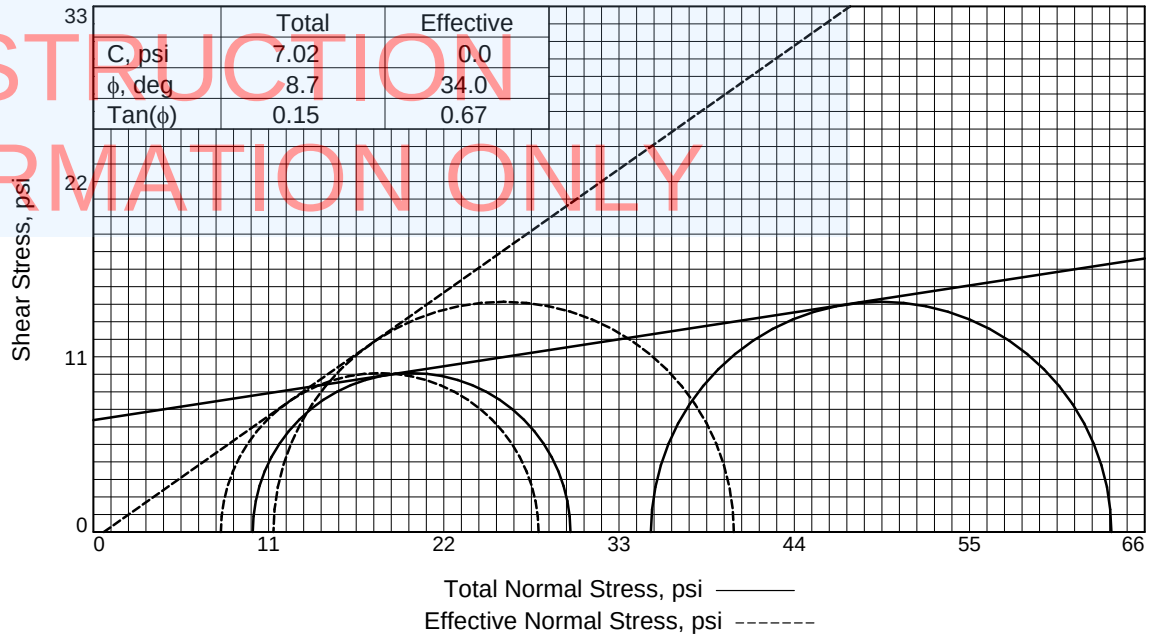
Client: ODOT
Project: HAM-75-1.95
Source of Sample: B-132-0-21 **Depth:** 20.0-22.0
Project No.: N1215230 **Figure** _____

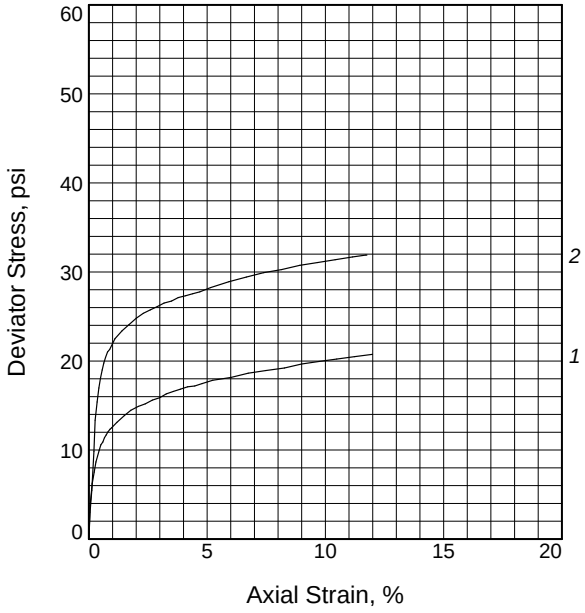
Terracon, Inc.

Tested By: FCE **Checked By:** KA

NOT FOR CONSTRUCTION INFORMATION ONLY

	Total	Effective
C, psi	7.02	0.0
ϕ, deg	8.7	34.0
Tan(ϕ)	0.15	0.67





Sample No.		1	2
Initial	Water Content, %	18.0	19.1
	Dry Density, pcf	111.5	107.4
	Saturation, %	95.2	90.5
	Void Ratio	0.5117	0.5688
	Diameter, in.	2.81	2.86
	Height, in.	5.79	5.76
At Test	Water Content, %	17.7	19.0
	Dry Density, pcf	114.0	111.4
	Saturation, %	100.0	100.0
	Void Ratio	0.4782	0.5137
	Diameter, in.	2.79	2.83
	Height, in.	5.75	5.70
Strain rate, in./min.		0.0005	0.0005
Back Pressure, psi		50.0	50.0
Cell Pressure, psi		60.0	85.0
Fail. Stress, psi		19.9	28.9
Total Pore Pr., psi		52.0	73.7
Ult. Stress, psi			
Total Pore Pr., psi			
$\bar{\sigma}_1$ Failure, psi		27.9	40.2
$\bar{\sigma}_3$ Failure, psi		8.0	11.3

Type of Test: CU with Pore Pressures

Sample Type: Shelby Tube

Description: Brown Sandy Lean Clay with trace Gravel

Assumed Specific Gravity= 2.70

Remarks:

Figure 6520

Client: ODOT

Project: HAM-75-1.95

Source of Sample: B-135-0-21 **Depth:** 26.0-28.0

Proj. No.: N1215230 **Date Sampled:** Unknown

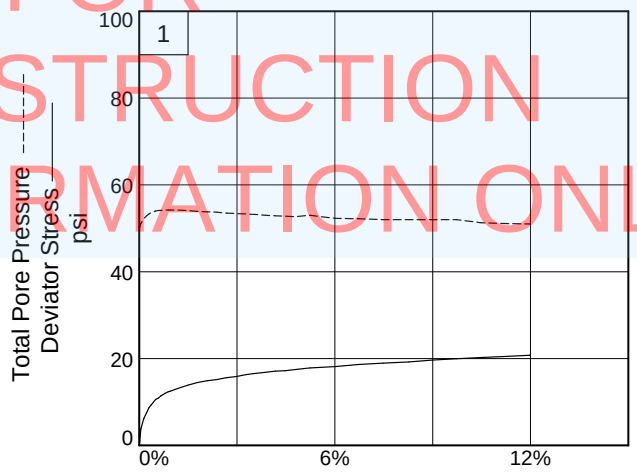
TRIAXIAL SHEAR TEST REPORT

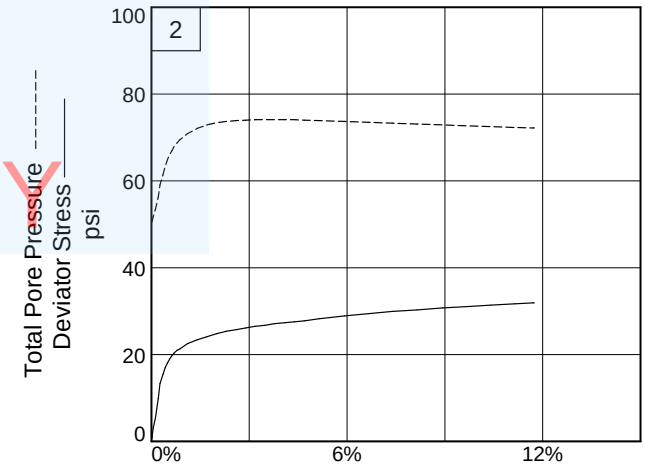
Terracon, Inc.

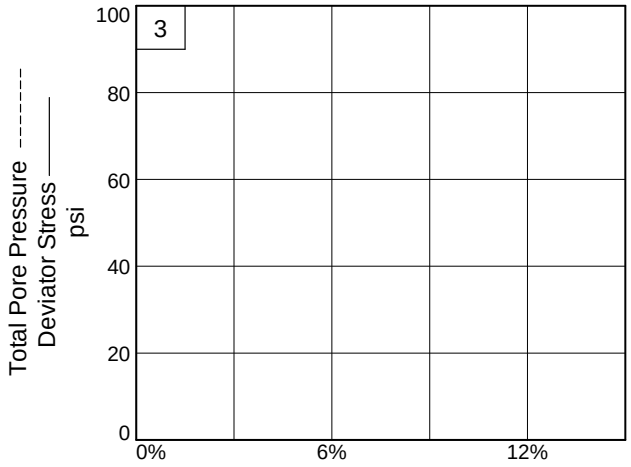
Cincinnati, Ohio

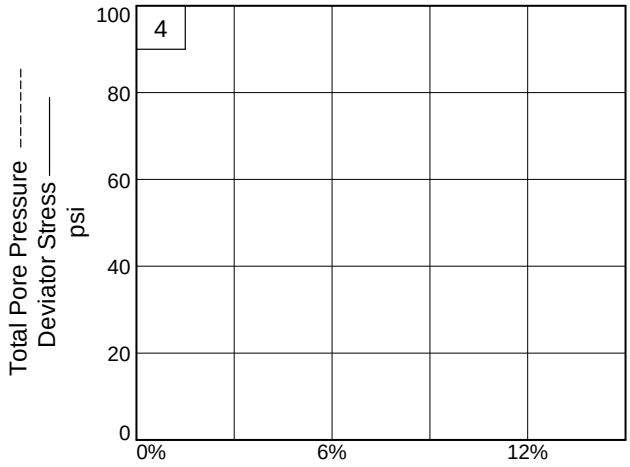
Tested By: FCE **Checked By:** KA

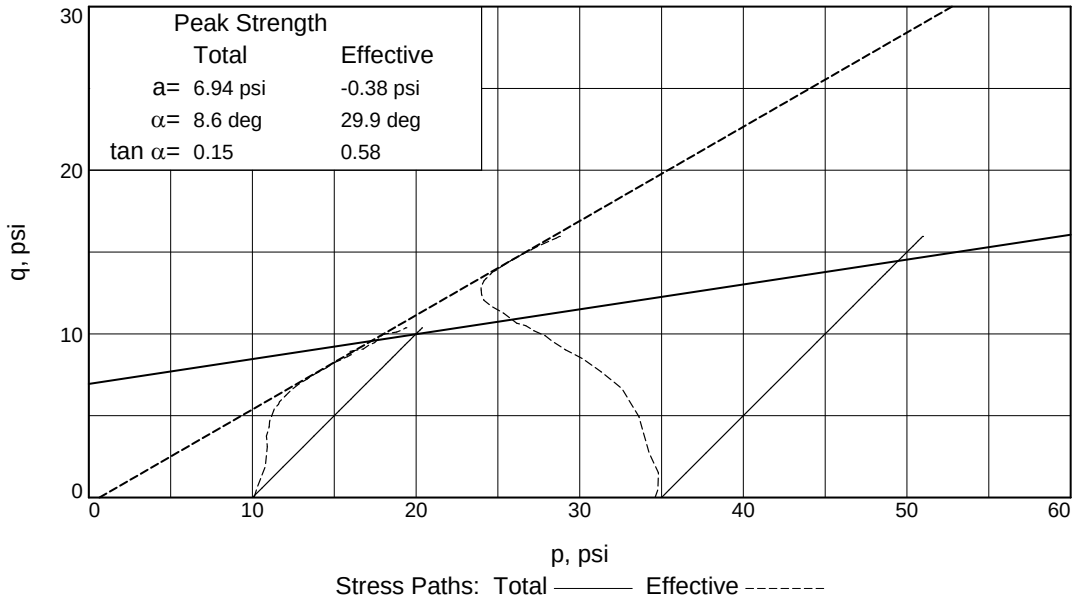
NOT FOR CONSTRUCTION INFORMATION ONLY











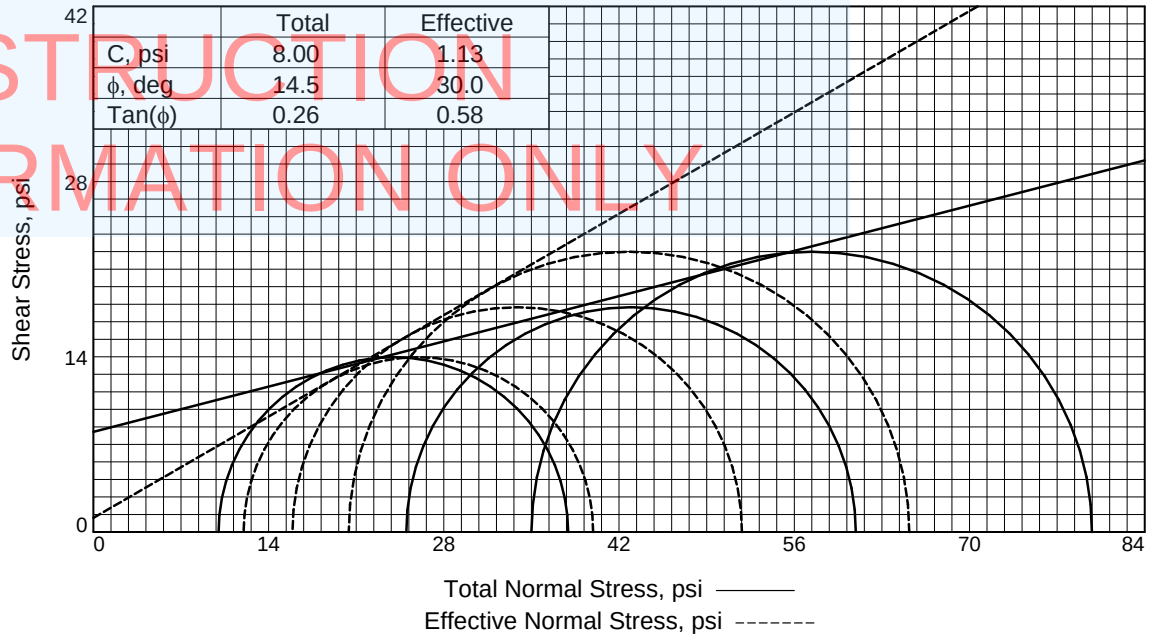
Client: ODOT
Project: HAM-75-1.95
Source of Sample: B-135-0-21 **Depth:** 26.0-28.0
Project No.: N1215230 **Figure** _____

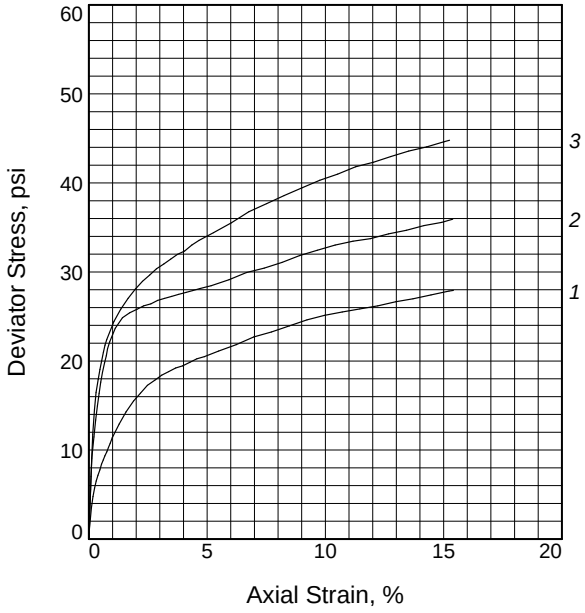
Terracon, Inc.

Tested By: FCE **Checked By:** KA

NOT FOR CONSTRUCTION INFORMATION ONLY

	Total	Effective
C, psi	8.00	1.13
ϕ, deg	14.5	30.0
Tan(ϕ)	0.26	0.58





Sample No.		1	2	3
Initial	Water Content, %	24.6	23.1	22.6
	Dry Density, pcf	103.1	104.3	106.5
	Saturation, %	99.2	95.4	98.7
	Void Ratio	0.6950	0.6764	0.6419
	Diameter, in.	2.83	2.85	2.83
	Height, in.	5.79	5.62	5.64
At Test	Water Content, %	24.5	22.6	20.5
	Dry Density, pcf	103.7	107.1	111.1
	Saturation, %	100.0	100.0	100.0
	Void Ratio	0.6863	0.6319	0.5727
	Diameter, in.	2.83	2.82	2.79
	Height, in.	5.78	5.57	5.56
Strain rate, in./min.		0.000	0.000	0.000
Back Pressure, psi		40.0	40.0	40.0
Cell Pressure, psi		50.0	65.0	75.0
Fail. Stress, psi		27.9	35.9	44.8
Total Pore Pr., psi		38.0	49.1	54.6
Ult. Stress, psi				
Total Pore Pr., psi				
$\bar{\sigma}_1$ Failure, psi		39.9	51.8	65.2
$\bar{\sigma}_3$ Failure, psi		12.0	15.9	20.4

Type of Test:
CU with Pore Pressures
Sample Type: Shelby Tube
Description: Lean Clay

LL= 38 **PL=** 20 **PI=** 18
Assumed Specific Gravity= 2.80
Remarks:

Figure 8620

Client: ODOT

Project: HAM-75-1.95

Source of Sample: B-150-0-21 **Depth:** 18.0

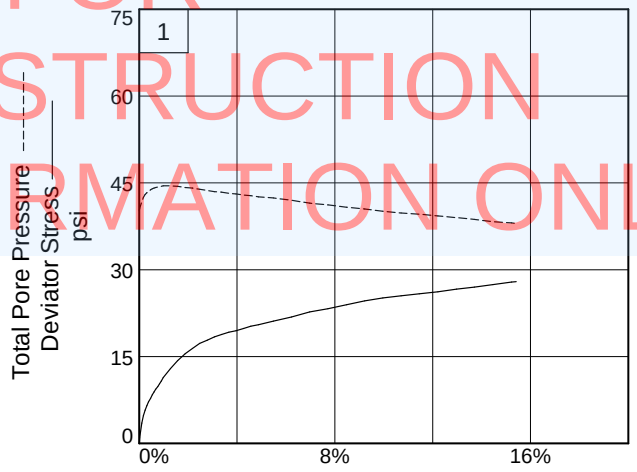
Proj. No.: N1215230 **Date Sampled:**

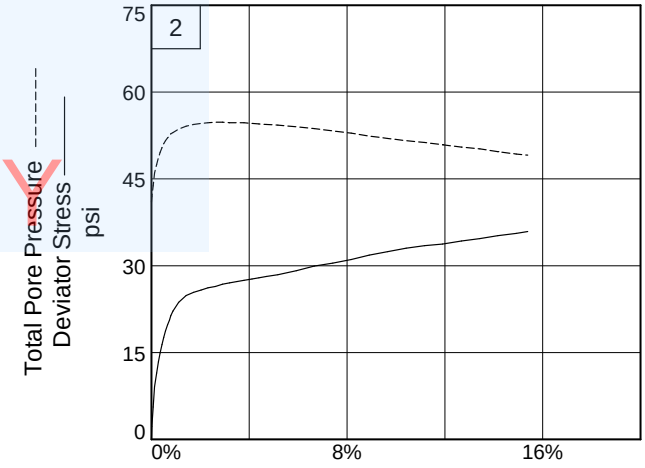
TRIAXIAL SHEAR TEST REPORT

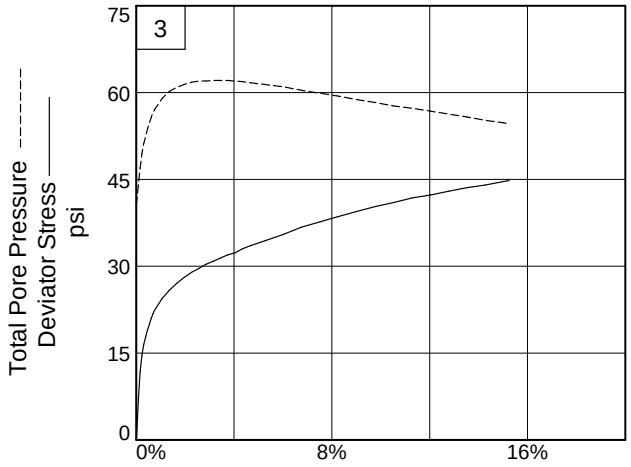
Terracon, Inc.
Cincinnati, Ohio

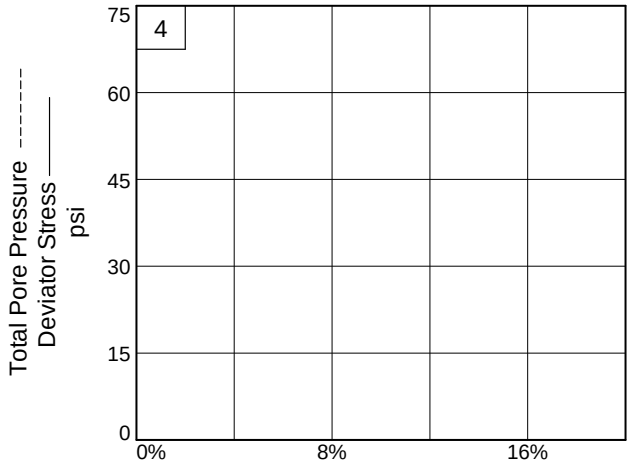
Tested By: Fred Eichler **Checked By:** Kalyn Abrams

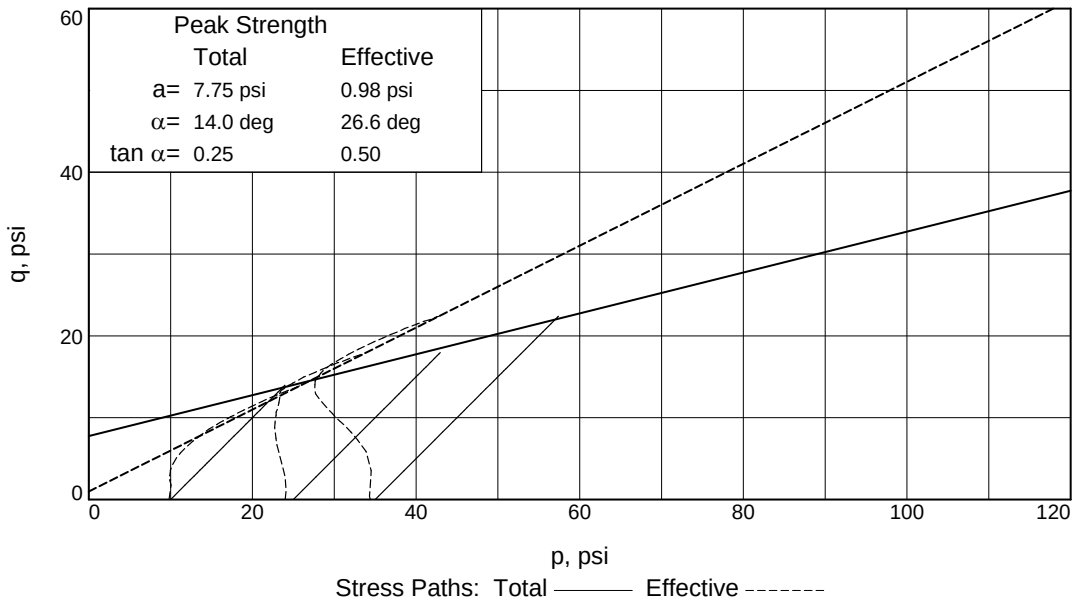
NOT FOR CONSTRUCTION INFORMATION ONLY











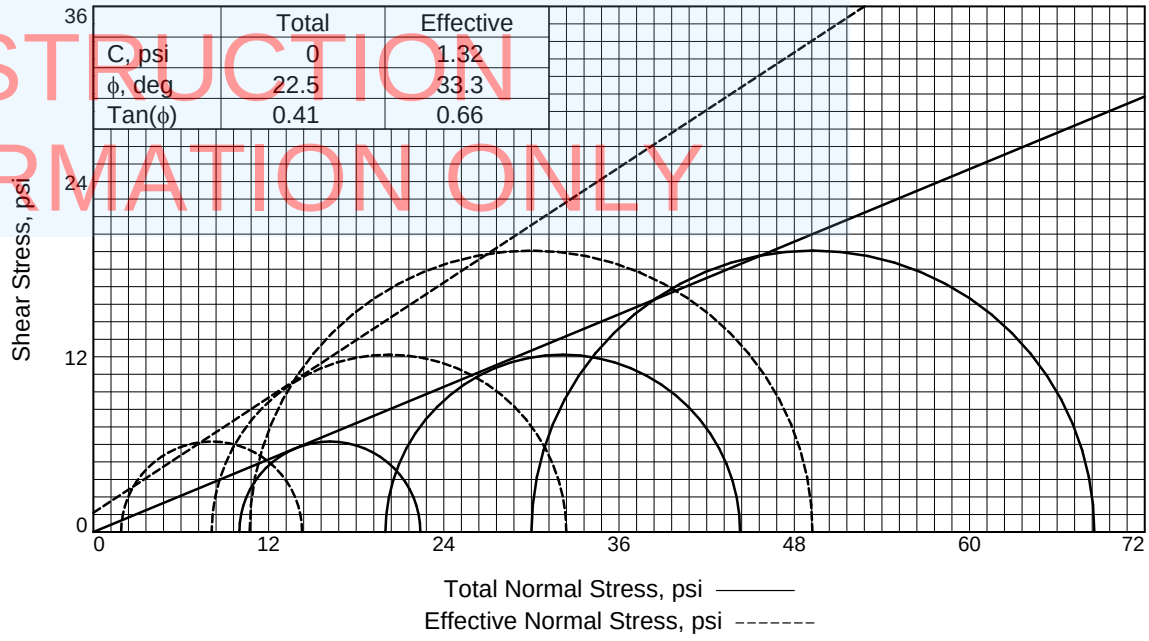
Client: ODOT
Project: HAM-75-1.95
Source of Sample: B-150-0-21 **Depth:** 18.0
Project No.: N1215230 **Figure** _____

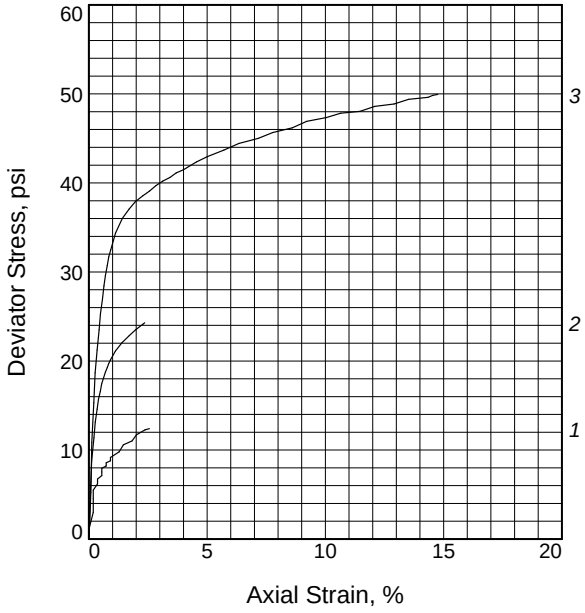
Terracon, Inc.

Tested By: Fred Eichler **Checked By:** Kalyn Abrams

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	Total	Effective
C, psi	0	1.32
ϕ, deg	22.5	33.3
Tan(ϕ)	0.41	0.66





Sample No.		1	2	3
Initial	Water Content, %	21.4	21.4	21.4
	Dry Density, pcf	109.2	109.2	109.2
	Saturation, %	99.9	99.9	99.9
	Void Ratio	0.6002	0.6002	0.6002
	Diameter, in.	2.85	2.85	2.85
	Height, in.	5.65	5.65	5.65
At Test	Water Content, %	16.2	11.2	6.6
	Dry Density, pcf	120.2	133.0	147.6
	Saturation, %	100.0	100.0	100.0
	Void Ratio	0.4546	0.3139	0.1840
	Diameter, in.	2.76	2.70	2.64
	Height, in.	5.47	5.16	4.87
Strain rate, in./min.		0.0001	0.0001	0.0001
Back Pressure, psi		48.0	47.8	44.3
Cell Pressure, psi		58.0	67.8	74.3
Fail. Stress, psi		12.4	24.3	38.5
Total Pore Pr., psi		56.1	59.7	63.6
Ult. Stress, psi				
Total Pore Pr., psi				
$\bar{\sigma}_1$ Failure, psi		14.3	32.4	49.2
$\bar{\sigma}_3$ Failure, psi		1.9	8.1	10.7

Type of Test:
CU with Pore Pressures
Sample Type: Shelby Tube
Description: Lean Clay

LL= 44 **PL=** 24 **PI=** 20
Specific Gravity= 2.80
Remarks:

Figure 1660

Client: ODOT

Project: HAM-75-1.95

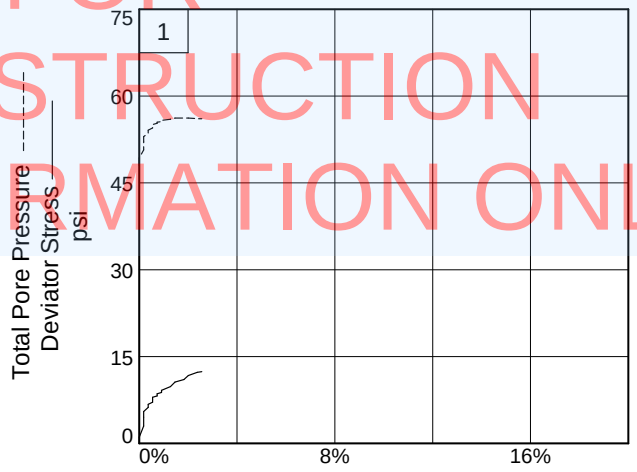
Location: B-147-1-24
Sample Number: 4 **Depth:** 8.0-10.0
Proj. No.: N1215230 **Date Sampled:** 2/12/2025

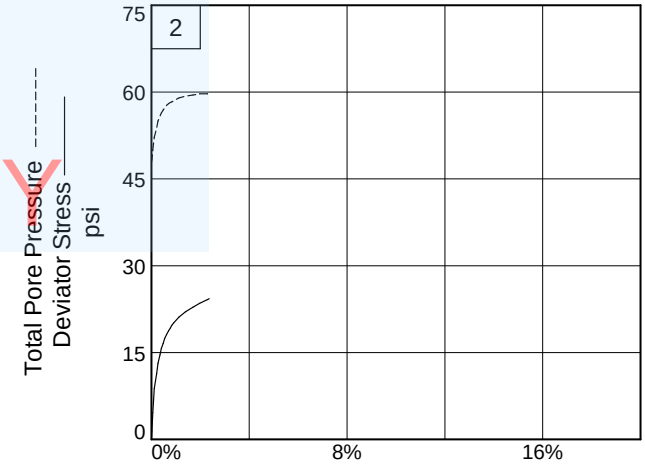
TRIAXIAL SHEAR TEST REPORT

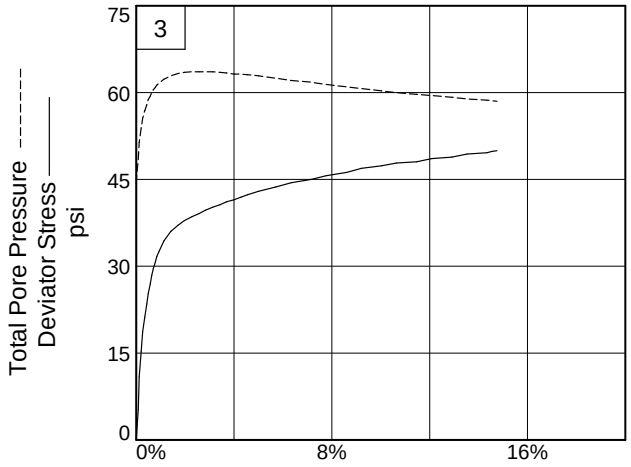
Terracon, Inc.
Cincinnati, Ohio

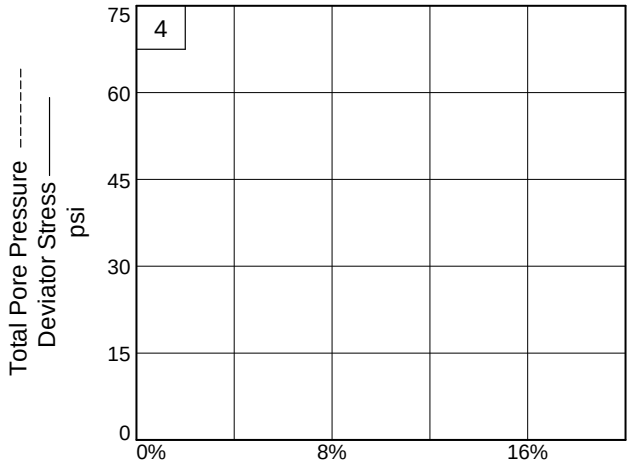
Tested By: Charissa Swinford **Checked By:** Kalyn Abrams

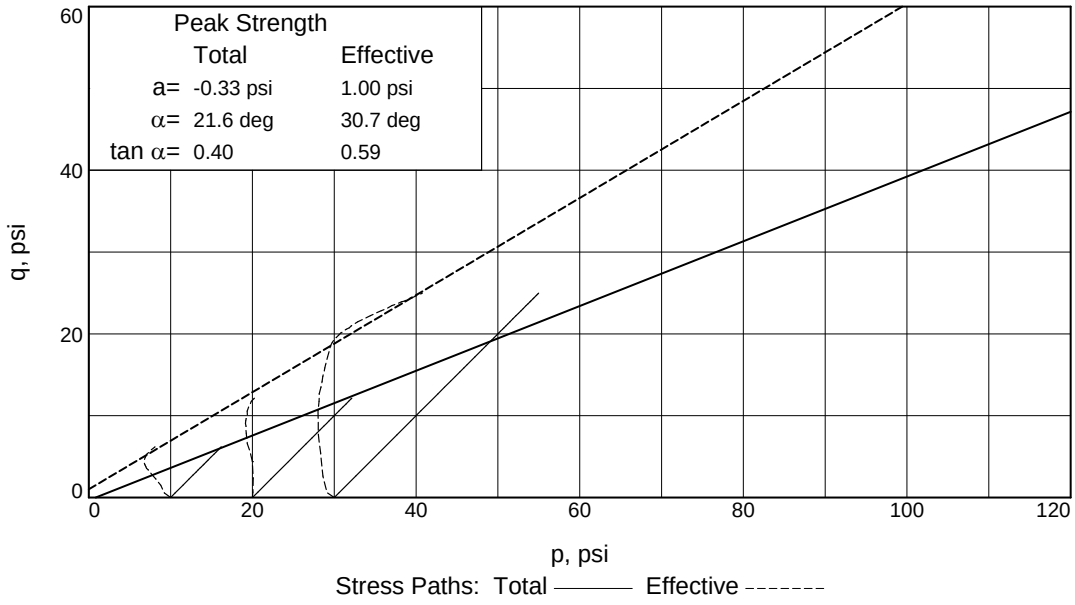
NOT FOR CONSTRUCTION INFORMATION ONLY









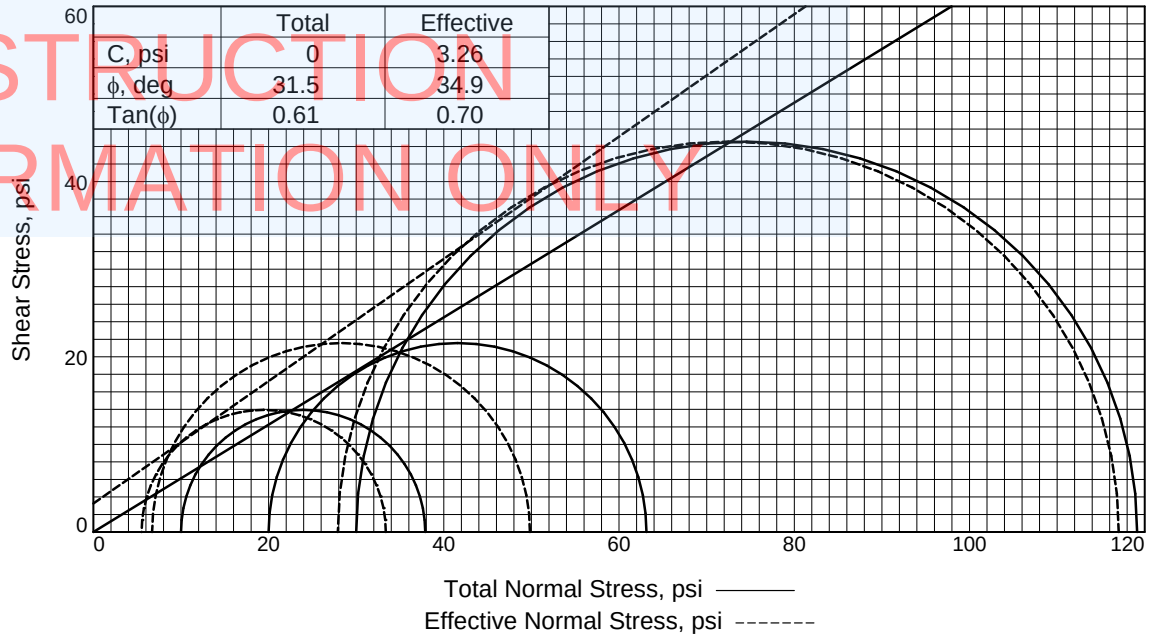


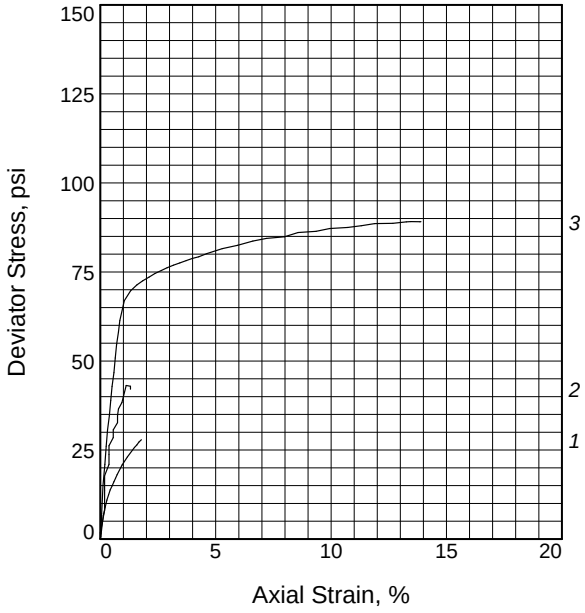
Client: ODOT
Project: HAM-75-1.95
Location: B-147-1-24 **Depth:** 8.0-10.0 **Sample Number:** 4
Project No.: N1215230 **Figure** 1660

Terracon, Inc.

Tested By: Charissa Swinford **Checked By:** Kalyn Abrams

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Sample No.		1	2	3
Initial	Water Content, %	17.1	17.1	17.1
	Dry Density, pcf	111.6	111.6	111.6
	Saturation, %	90.8	90.8	90.8
	Void Ratio	0.5098	0.5098	0.5098
	Diameter, in.	2.79	2.79	2.79
	Height, in.	5.82	5.82	5.82
At Test	Water Content, %	13.3	8.6	4.2
	Dry Density, pcf	124.1	136.7	151.4
	Saturation, %	100.0	100.0	100.0
	Void Ratio	0.3585	0.2331	0.1134
	Diameter, in.	2.70	2.63	2.56
	Height, in.	5.62	5.35	5.11
Strain rate, in./min.		0.0002	0.0002	0.0002
Back Pressure, psi		48	42	43
Cell Pressure, psi		58	62	73
Fail. Stress, psi		28	43	89
Total Pore Pr., psi		52	55	45
Ult. Stress, psi				
Total Pore Pr., psi				
$\bar{\sigma}_1$ Failure, psi		33	50	117
$\bar{\sigma}_3$ Failure, psi		6	7	28

Type of Test:
CU with Pore Pressures
Sample Type: Shelby Tube
Description: Lean Clay

LL= 41 **PL=** 18 **PI=** 23
Assumed Specific Gravity= 2.70
Remarks:

Figure 1661

Client: ODOT

Project: HAM-75-1.95

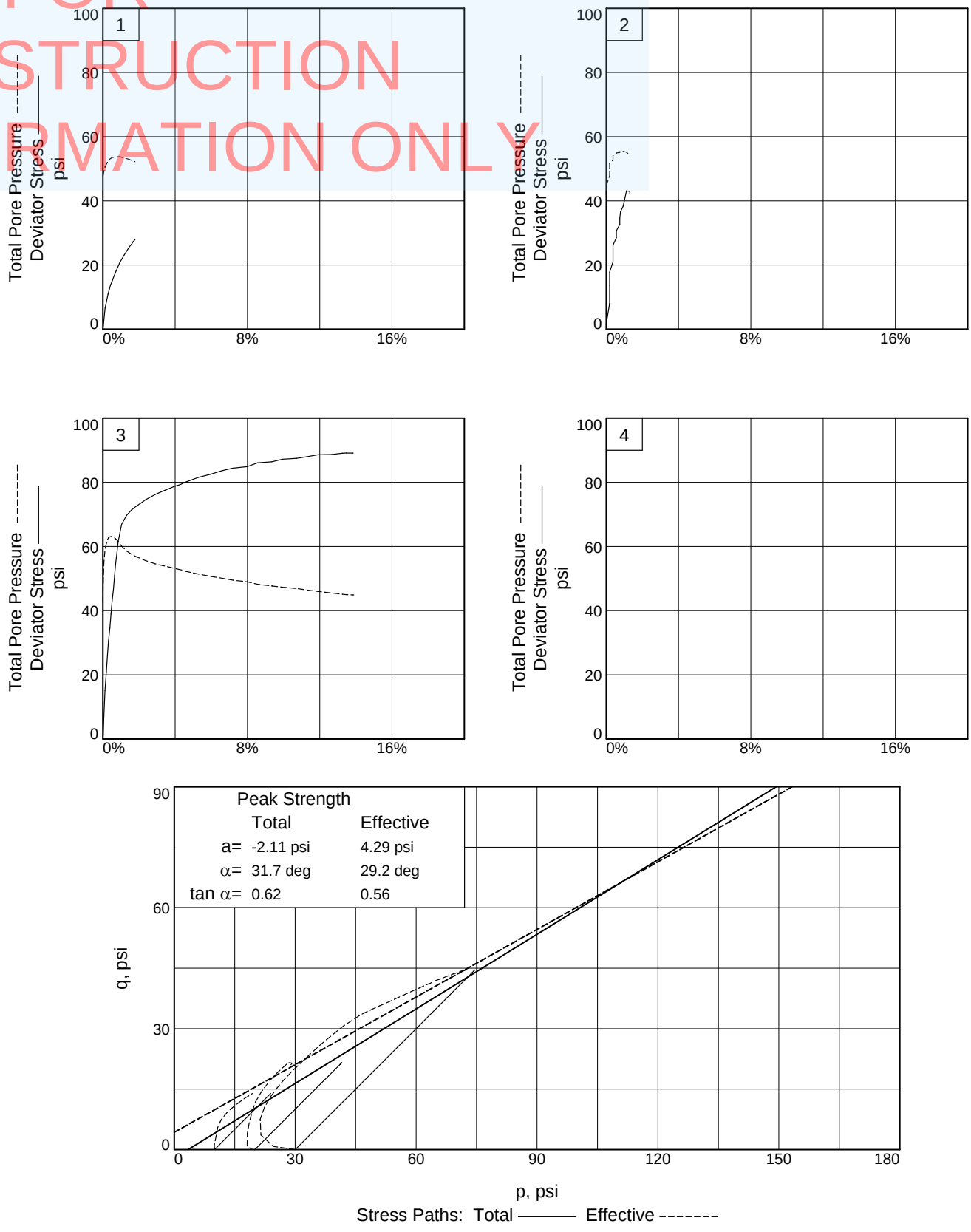
Location: B-158-1-24
Sample Number: 5 **Depth:** 11.0-13.0
Proj. No.: N1215230 **Date Sampled:** 2/13/2025

TRIAXIAL SHEAR TEST REPORT

Terracon, Inc.
Cincinnati, Ohio

Tested By: Charissa Swinford **Checked By:** Kalyn Abrams

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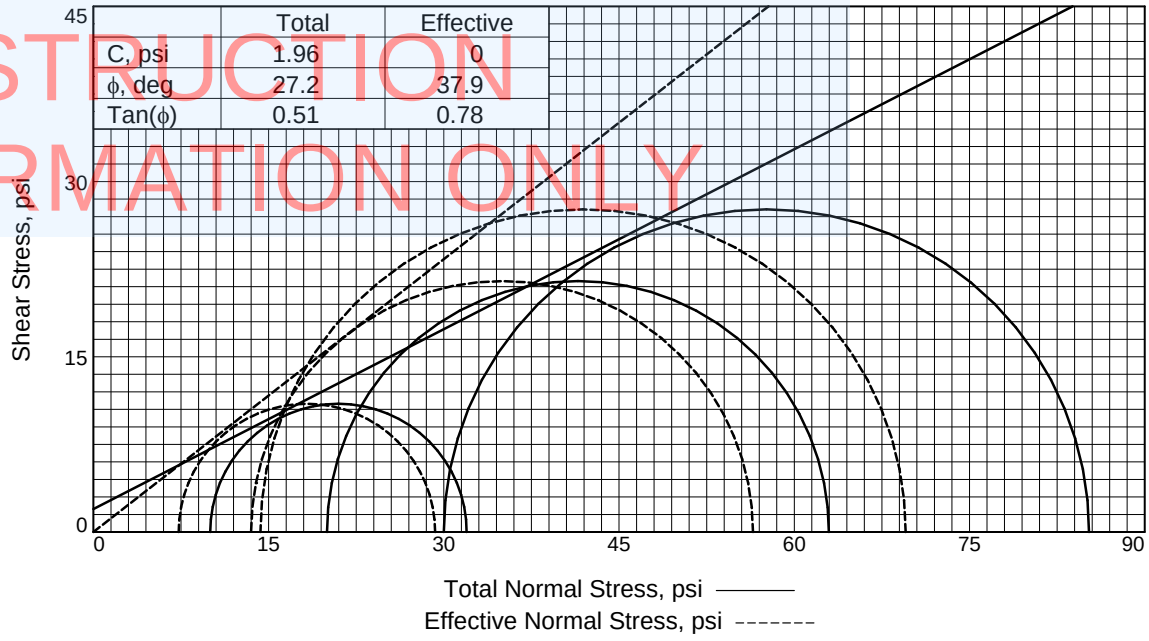
Client: ODOT
Project: HAM-75-1.95
Location: B-158-1-24 **Depth:** 11.0-13.0 **Sample Number:** 5
Project No.: N1215230 **Figure** 1661

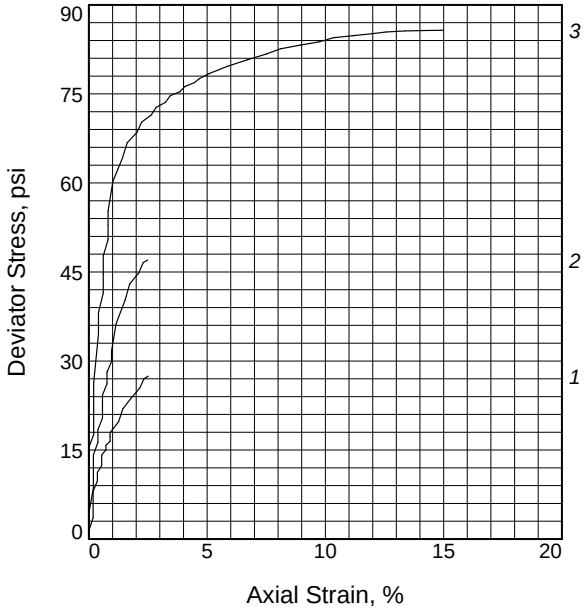
Terracon, Inc.

Tested By: Charissa Swinford **Checked By:** Kalyn Abrams

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	Total	Effective
C, psi	1.96	0
ϕ, deg	27.2	37.9
Tan(ϕ)	0.51	0.78





Sample No.		1	2	3
Initial	Water Content, %	16.9	16.9	16.9
	Dry Density, pcf	120.9	120.9	120.9
	Saturation, %	99.8	99.8	99.8
	Void Ratio	0.4867	0.4867	0.4867
	Diameter, in.	2.82	2.82	2.82
	Height, in.	5.72	5.72	5.72
At Test	Water Content, %	12.8	7.4	3.5
	Dry Density, pcf	131.4	148.1	163.5
	Saturation, %	100.0	100.0	100.0
	Void Ratio	0.3688	0.2144	0.0999
	Diameter, in.	2.75	2.67	2.62
	Height, in.	5.57	5.22	4.93
Strain rate, in./min.		0.0003	0.001	0.001
Back Pressure, psi		51.5	50.8	44.0
Cell Pressure, psi		61.5	70.8	74.0
Fail. Stress, psi		22.0	43.0	55.2
Total Pore Pr., psi		54.2	57.3	59.7
Ult. Stress, psi				
Total Pore Pr., psi				
$\bar{\sigma}_1$ Failure, psi		29.3	56.5	69.5
$\bar{\sigma}_3$ Failure, psi		7.3	13.5	14.3

Type of Test:
CU with Pore Pressures
Sample Type: Shelby Tube
Description: Sandy Lean Clay

LL= 34 **PL=** 16 **PI=** 18
Assumed Specific Gravity= 2.88
Remarks:

Figure 1662

Client: ODOT

Project: HAM-75-1.95

Location: B-159-1-24

Depth: 13.5-15.5

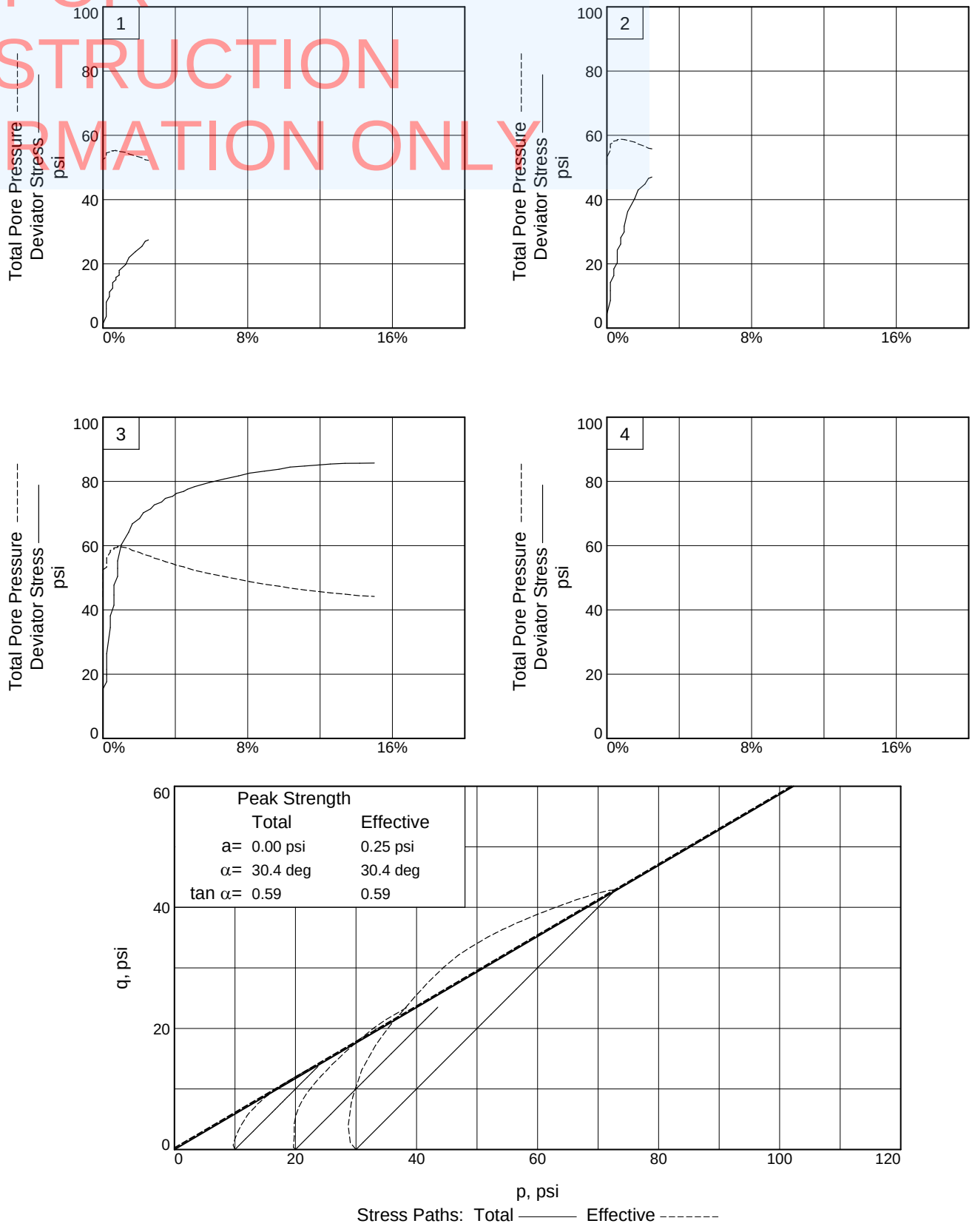
Proj. No.: N1215230 **Date Sampled:** 2/13/2025

TRIAXIAL SHEAR TEST REPORT

Terracon, Inc.
Cincinnati, Ohio

Tested By: Charissa Swinford **Checked By:** Kalyn Abrams

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Client: ODOT
Project: HAM-75-1.95
Location: B-159-1-24 **Depth:** 13.5-15.5
Project No.: N1215230

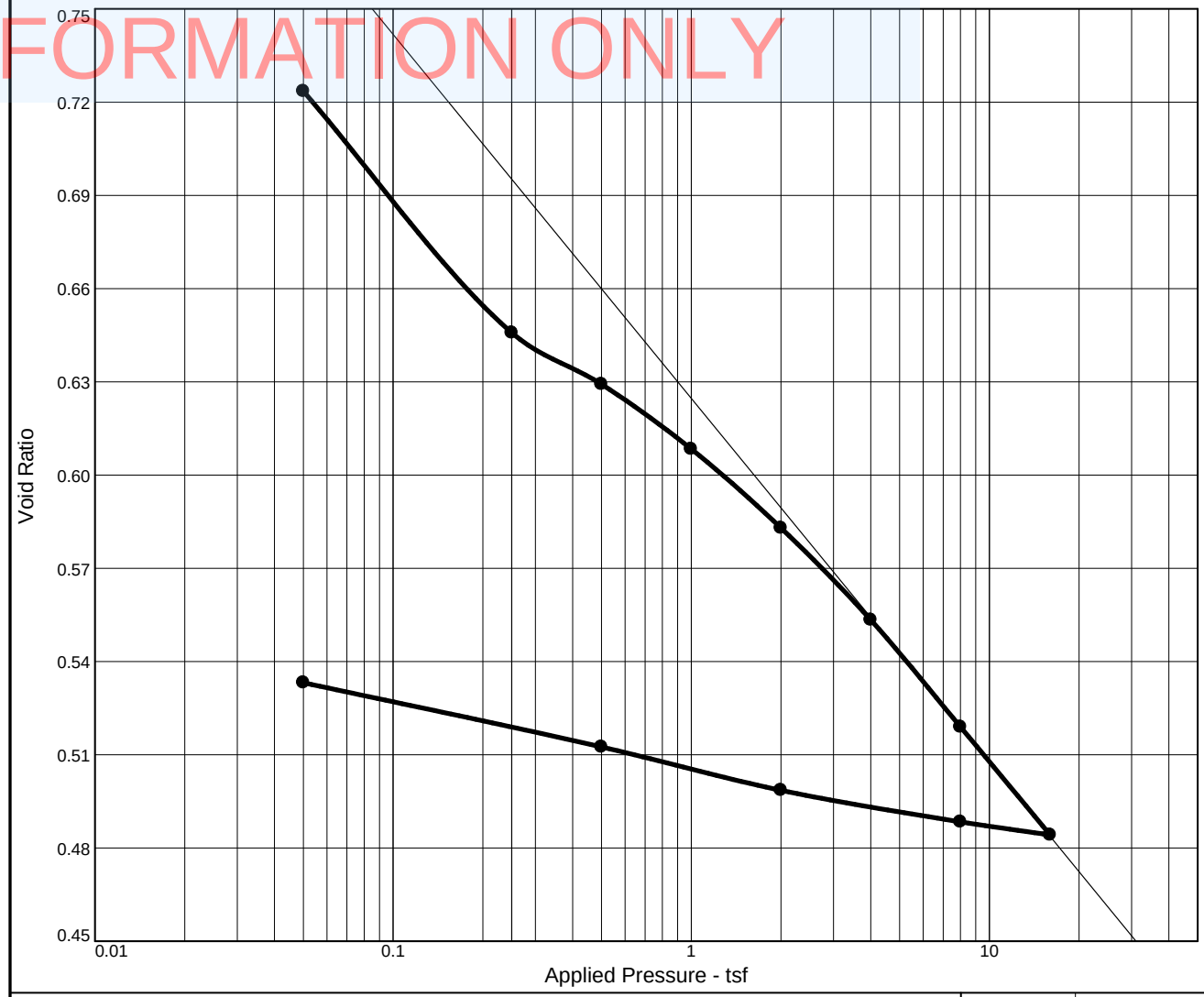
Figure 1662

Terracon, Inc.

Tested By: Charissa Swinford **Checked By:** Kalyn Abrams

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CONSOLIDATION TEST REPORT



MATERIAL DESCRIPTION	USCS	AASHTO
Silty Clay	CL-ML	A-4(5)

LL	PI	Sp. Gr.	Overburden (tsf)	Dry Dens. (pcf)		Moisture		Saturation		Void Ratio		P_c (tsf)	C_c
				Init.	Final	Init.	Final	Init.	Final	Init.	Final		
26	6	2.70	--	108.6	--	24.1 %	17.6 %	99.9 %	98.8 %	0.724	0.533	1.0	0.12

Preparation Process: Shelby Tube	D2435 Method	C_r	Swell Press. (tsf)	Swell %
Condition of Test: Saturated	B	0.02		

Project No. N1245017 **Client:** Burgess & Niple Inc

Project: HAM-75-1.05 Microtunnel

Location: B-007 **Depth:** 42.5-44.0 **Sample Number:** 20

Remarks:

Terracon, Inc.

Cincinnati, Ohio

Checked By: Kalyn Abrams

Title: Laboratory Manager

Figure 7590

Tested By: Dave Roelker

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CONSOLIDATION TEST REPORT



MATERIAL DESCRIPTION	USCS	AASHTO
Silt with Sand	ML	A-4(0)

LL	PI	Sp. Gr.	Overburden (tsf)	Dry Dens. (pcf)		Moisture		Saturation		Void Ratio		P_c (tsf)	C_c
				Init.	Final	Init.	Final	Init.	Final	Init.	Final		
NV	NP	2.73	--	103.7	--	23.4 %	22.4 %	99.4 %	100.0 %	0.643	0.546	2.3	0.13

Preparation Process: Shely Tube	D2435 Method	C_r	Swell Press. (tsf)	Swell %
Condition of Test: Saturated	B	0.02		

Project No. N1245017 **Client:** Burgess & Niple Inc

Project: HAM-75-1.05 Microtunnel

Location: B-011 **Depth:** 38.0-40.0 **Sample Number:** 20

Remarks:

Terracon, Inc.

Cincinnati, Ohio

Checked By: Kalyn Abrams

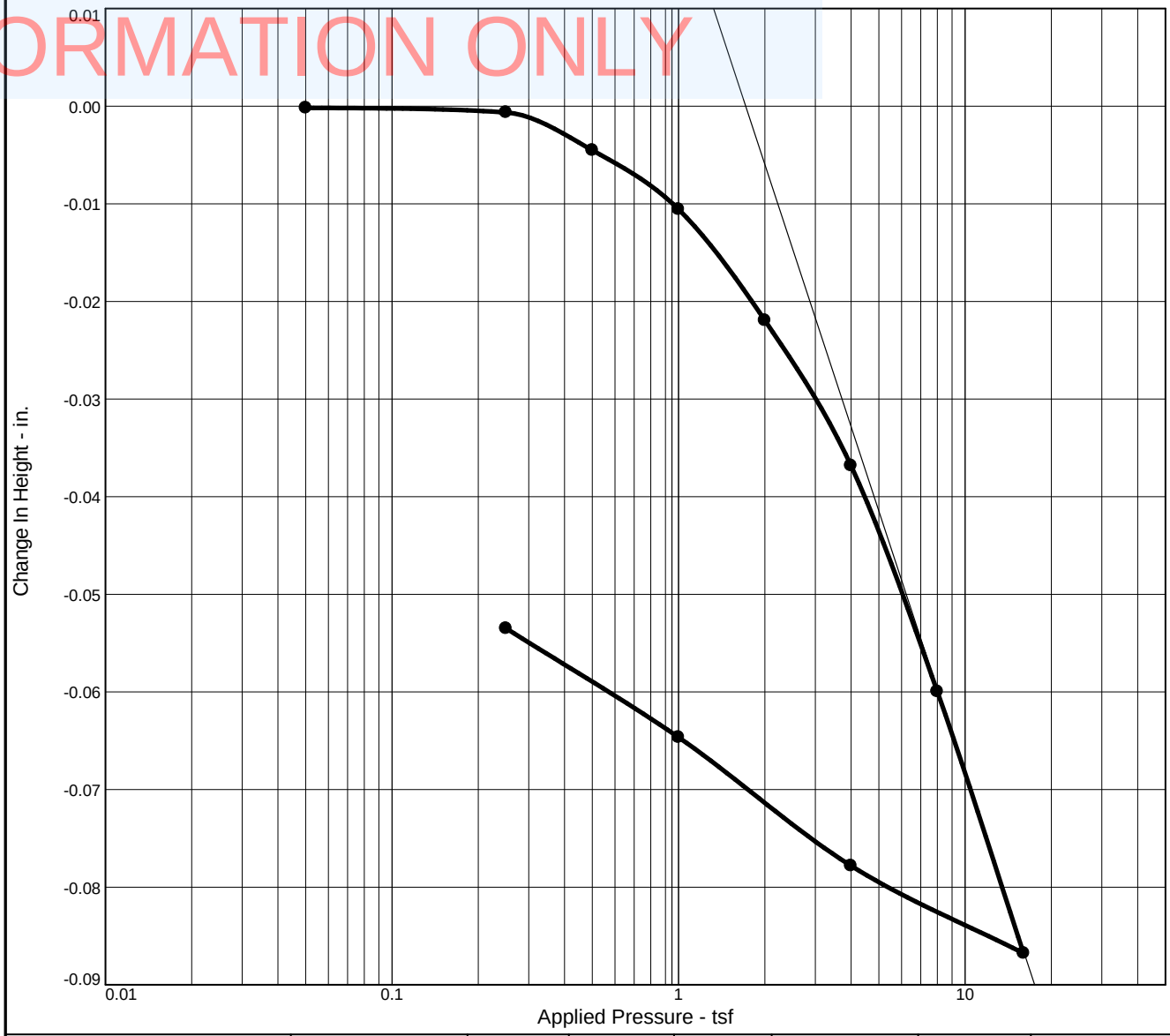
Title: Laboratory Manager

Figure 7637

Tested By: Dave Roelker

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CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
108.3 %	23.2 %	104.5			2.614	2.6	0.14	0.561

MATERIAL DESCRIPTION	USCS	AASHTO
Brown Silty Clay		

Project No. N1215225 **Client:** ODOT

Project: HAM-75-1.05

Source of Sample: B-067-0-21 **Depth:** 11.0-13.0

Remarks:

Terracon, Inc.

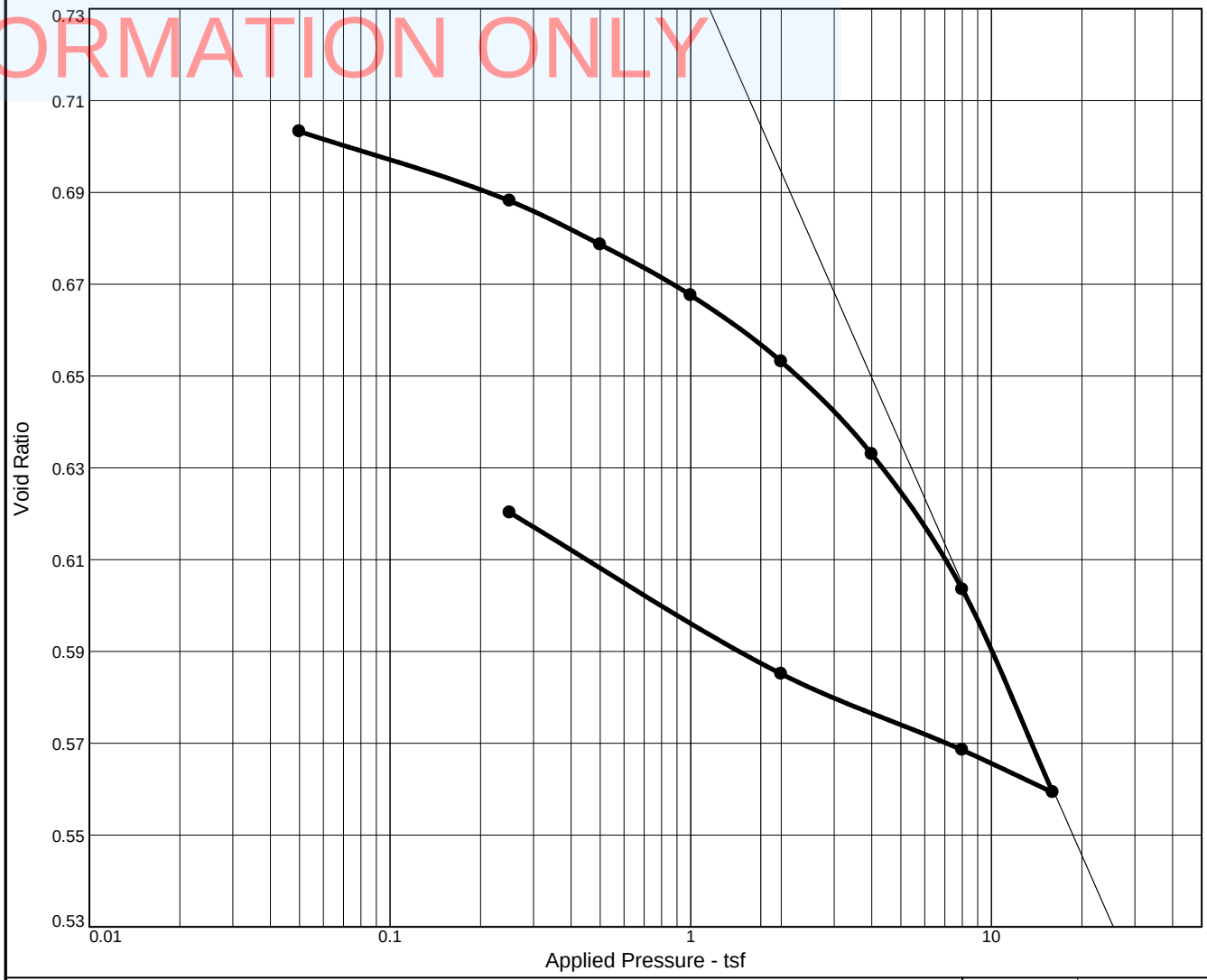
Cincinnati, Ohio

Figure 5935

Tested By: DR **Checked By:** KA

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CONSOLIDATION TEST REPORT



MATERIAL DESCRIPTION	USCS	AASHTO

LL	PI	Sp. Gr.	Overburden (tsf)	Dry Dens. (pcf)		Moisture		Saturation		Void Ratio		P_c (tsf)	C_c
				Init.	Final	Init.	Final	Init.	Final	Init.	Final		
		2.696		98.8		26.0 %	25.2 %	99.5 %	100.0 %	0.704	0.620	4.2	0.15

Preparation Process:	D2435 Method	C_r	Swell Press. (tsf)	Swell %
Condition of Test:		0.03		

Project No. N1215225 **Client:** ODOT

Project: HAM-75-1.05

Source of Sample: B-074-0-21 **Depth:** 13-13.2'

Remarks:

Checked By: GS

Title:

Terracon, Inc.

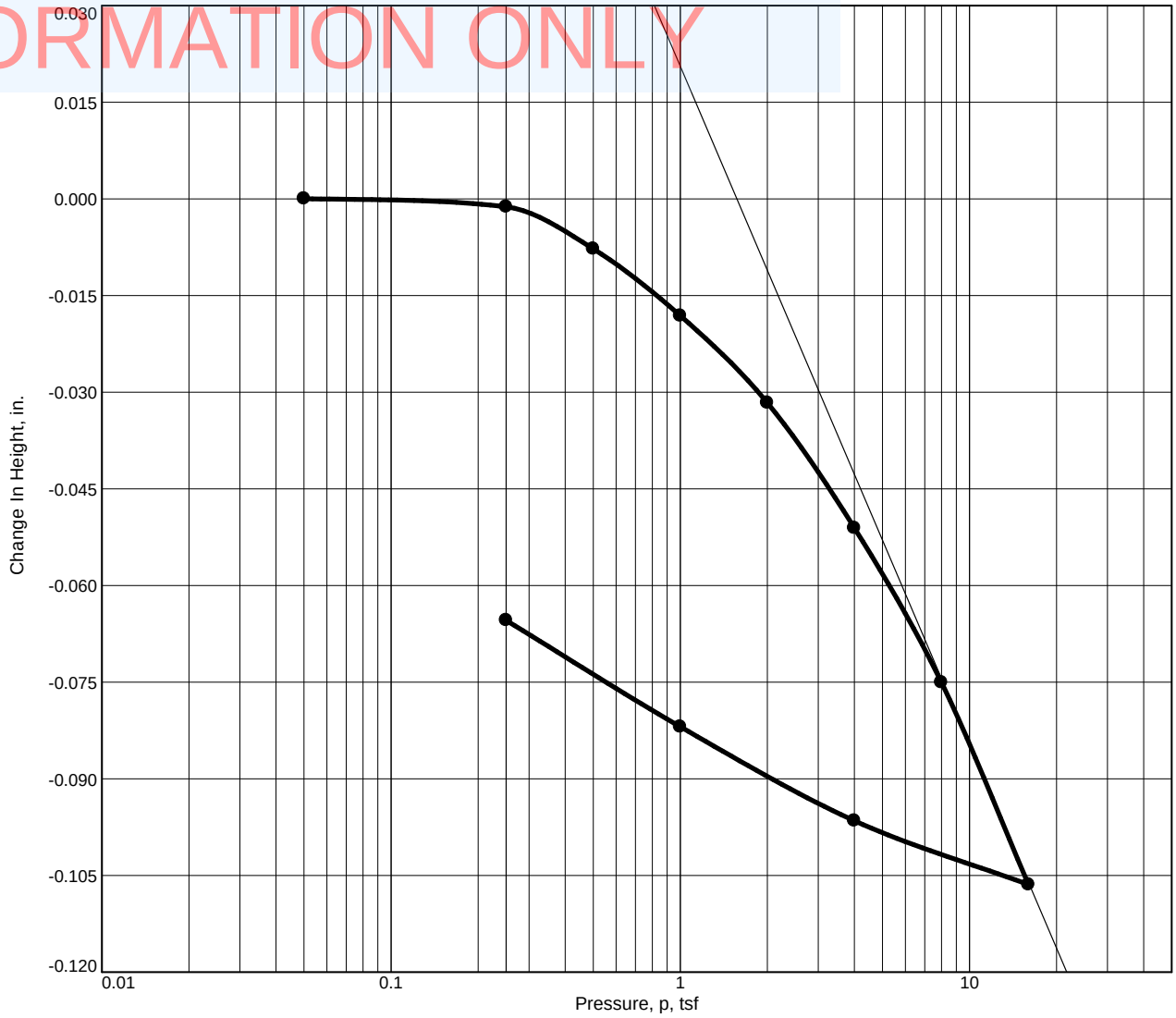
Cincinnati, Ohio

Figure

Tested By: GSS

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CONSOLIDATION TEST REPORT



SUMMARY OF TEST RESULTS

	DRY DENSITY (pcf)	MOISTURE CONTENT, (%)	SATURATION (%)	VOID RATIO	SPECIFIC GRAVITY	OVERBURDEN (tsf)	P_C (tsf)	C_C	SWELL PRESS. (tsf)
INITIAL	95.1	27.5	99.4	0.727	2.630		1.8	0.19	
FINAL		26.4	100.0	0.612					

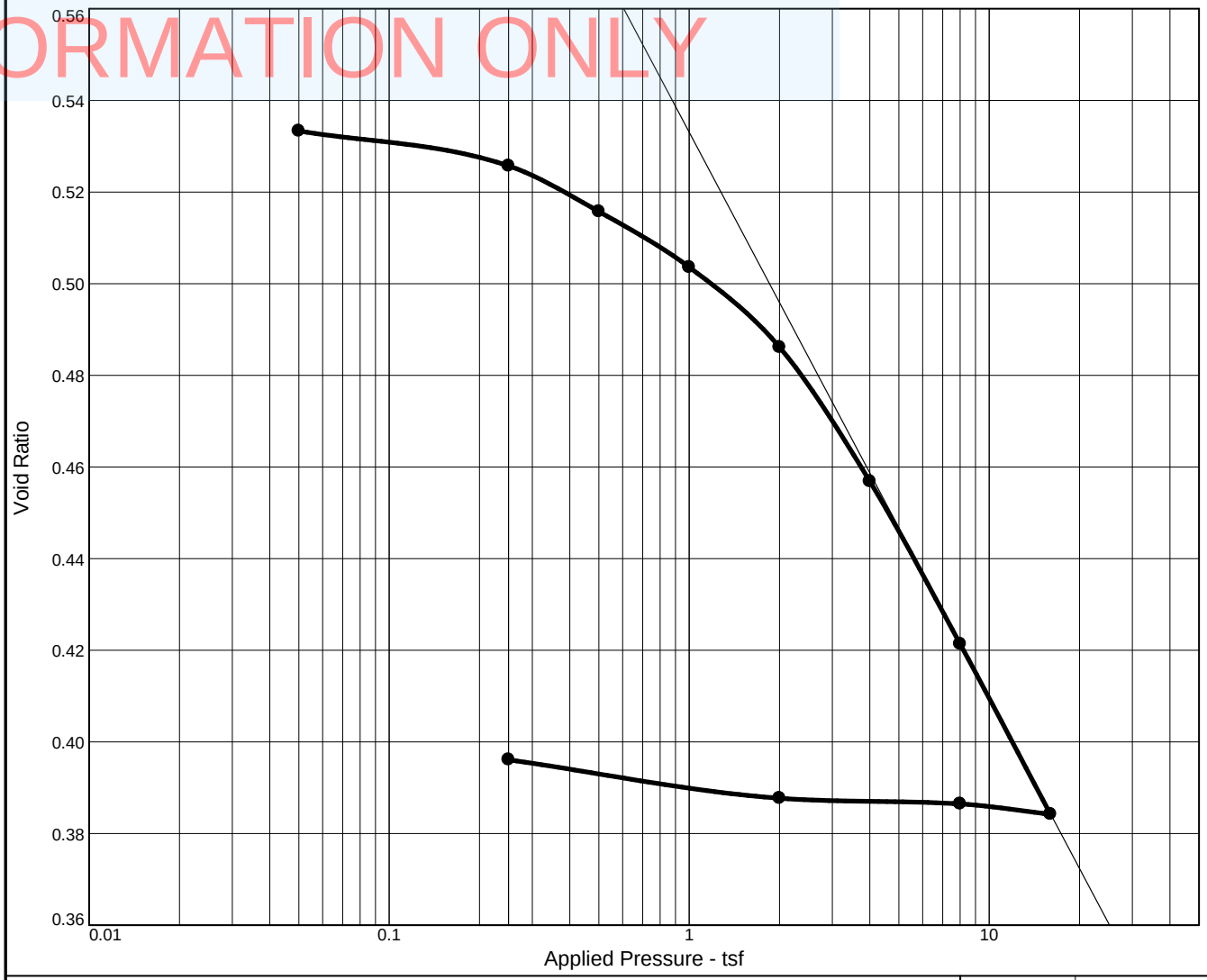
Source of Sample: B-075-0-21 **Depth:** 38.5-40.5
Material Description: Brown Clay **USCS:** **AASHTO:**
Remarks:

Terracon, Inc. **Cincinnati, Ohio**	**Client:** ODOT **Project:** HAM-75-1.05 **Project No.:** N1215225 **Figure**

Tested By: DR **Checked By:** KA

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CONSOLIDATION TEST REPORT



MATERIAL DESCRIPTION	USCS	AASHTO
209.52		

LL	PI	Sp. Gr.	Overburden (tsf)	Dry Dens. (pcf)		Moisture		Saturation		Void Ratio		P_c (tsf)	C_c
				Init.	Final	Init.	Final	Init.	Final	Init.	Final		
		2.686		109.4		13.4 %	15.6 %	67.4 %	100.0 %	0.533	0.396	1.4	0.12

Preparation Process:	D2435 Method	C_r	Swell Press. (tsf)	Swell %
Condition of Test:		0.01		

Project No. N1215225 **Client:** ODOT

Project: HAM-75-1.05

Source of Sample: B-079-0-21 **Depth:** 11-13.0'

Remarks:

Checked By: GS

Title:

Terracon, Inc.

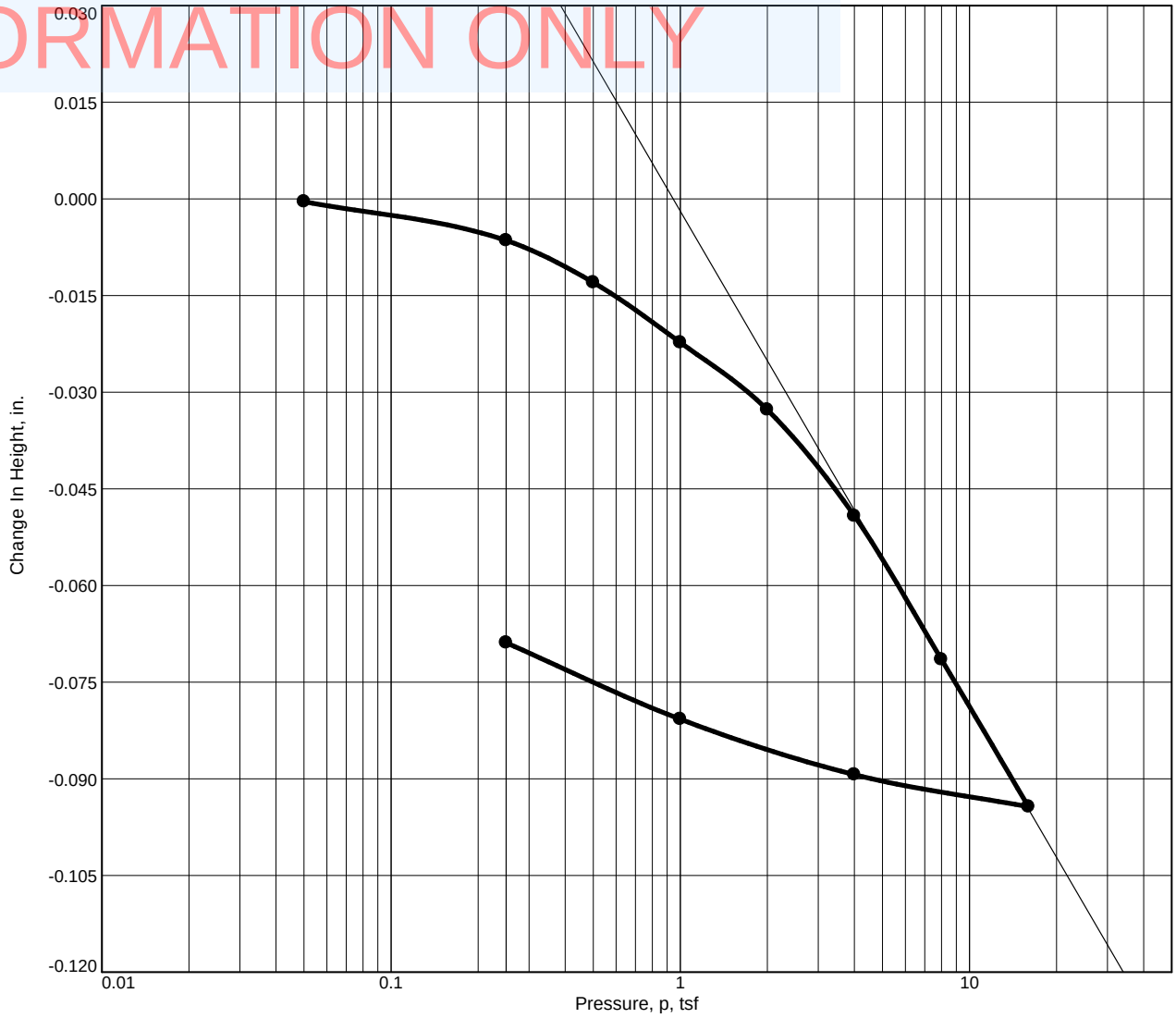
Cincinnati, Ohio

Figure

Tested By: GSS

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CONSOLIDATION TEST REPORT



SUMMARY OF TEST RESULTS

	DRY DENSITY (pcf)	MOISTURE CONTENT, (%)	SATURATION (%)	VOID RATIO	SPECIFIC GRAVITY	OVERBURDEN (tsf)	P_C (tsf)	C_C	SWELL PRESS. (tsf)
INITIAL	105.8	18.9	88.2	0.571	2.663		1.4	0.12	
FINAL		21.2	100.0	0.462					

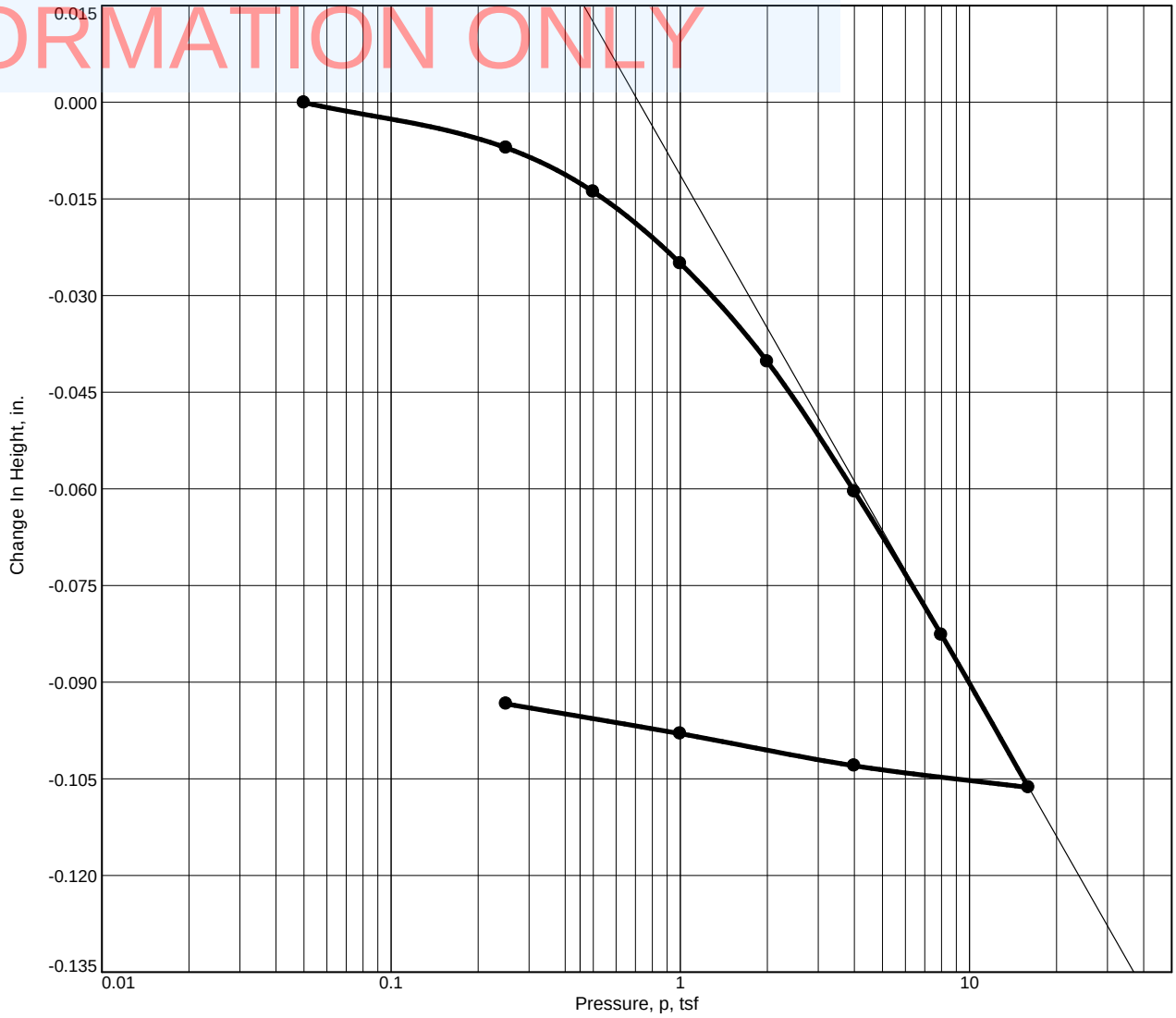
Source of Sample: B-082-0-21 **Depth:** 33.0-35.0
Material Description: Brown Clay **USCS:** **AASHTO:**
Remarks:

Terracon, Inc. **Cincinnati, Ohio**	**Client:** ODOT **Project:** HAM-75-1.05 **Project No.:** N1215225 **Figure** 5971

Tested By: DR **Checked By:** KA

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CONSOLIDATION TEST REPORT



SUMMARY OF TEST RESULTS

	DRY DENSITY (pcf)	MOISTURE CONTENT, (%)	SATURATION (%)	VOID RATIO	SPECIFIC GRAVITY	OVERBURDEN (tsf)	P_C (tsf)	C_C	SWELL PRESS. (tsf)
INITIAL	104.1	16.4	78.7	0.534	2.558		1.2	0.12	
FINAL		16.0	100.0	0.391					

Source of Sample: B-083-0-21 **Depth:** 41.0-43.0
Material Description:
Remarks:

USCS: **AASHTO:**

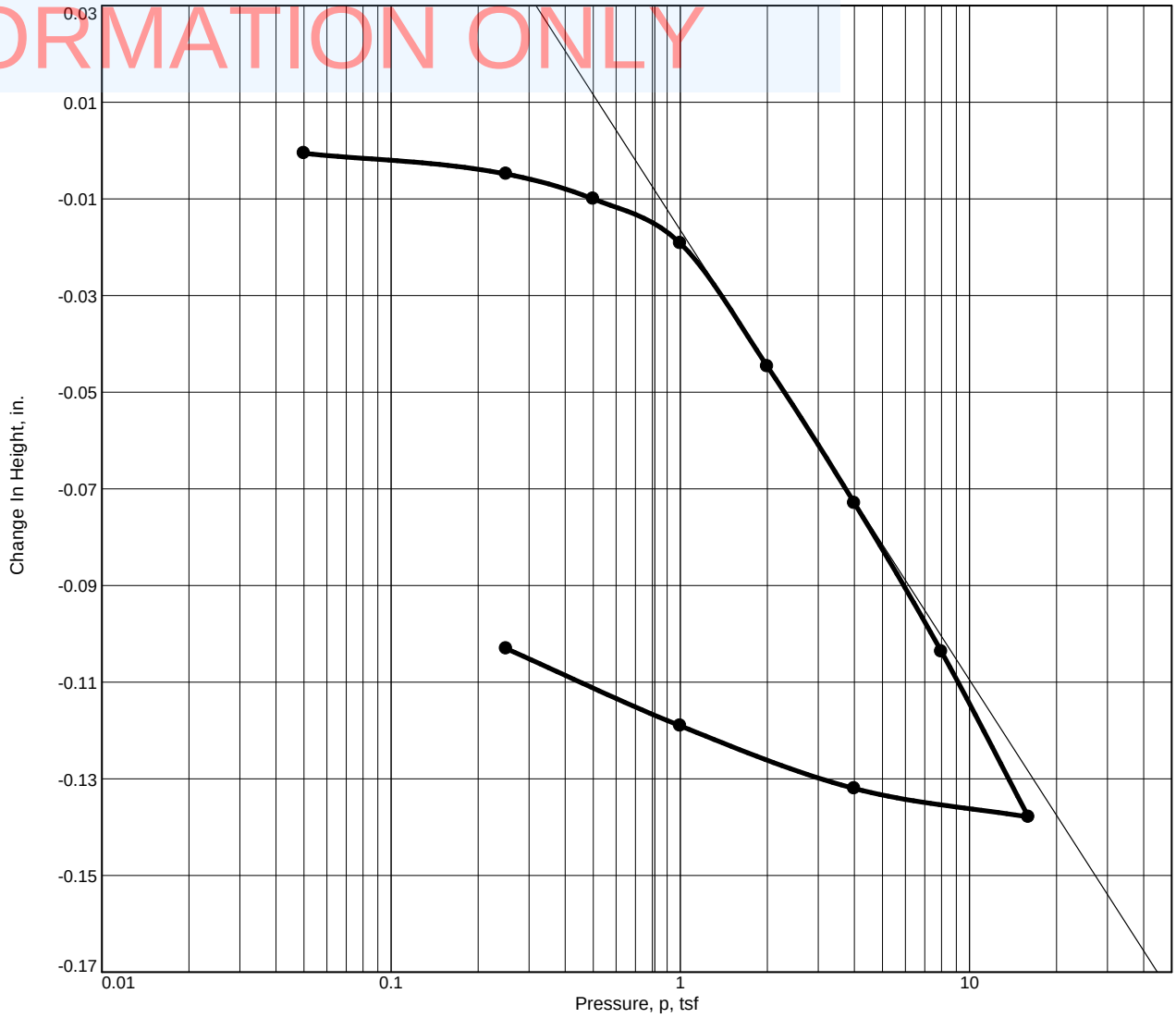
Terracon, Inc.
Cincinnati, Ohio

Client: ODOT
Project: HAM-75-1.05
Project No.: N1215225 **Figure** 5987

Tested By: DR **Checked By:** KA

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CONSOLIDATION TEST REPORT



SUMMARY OF TEST RESULTS

	DRY DENSITY (pcf)	MOISTURE CONTENT, (%)	SATURATION (%)	VOID RATIO	SPECIFIC GRAVITY	OVERBURDEN (tsf)	P_C (tsf)	C_C	SWELL PRESS. (tsf)
INITIAL	100.6	23.0	96.3	0.624	2.617		1.0	0.15	
FINAL		23.4	100.0	0.455					

Source of Sample: B-088-0-21
Material Description: Silty Clay
Remarks:

USCS: **AASHTO:**

Terracon, Inc.

Cincinnati, Ohio

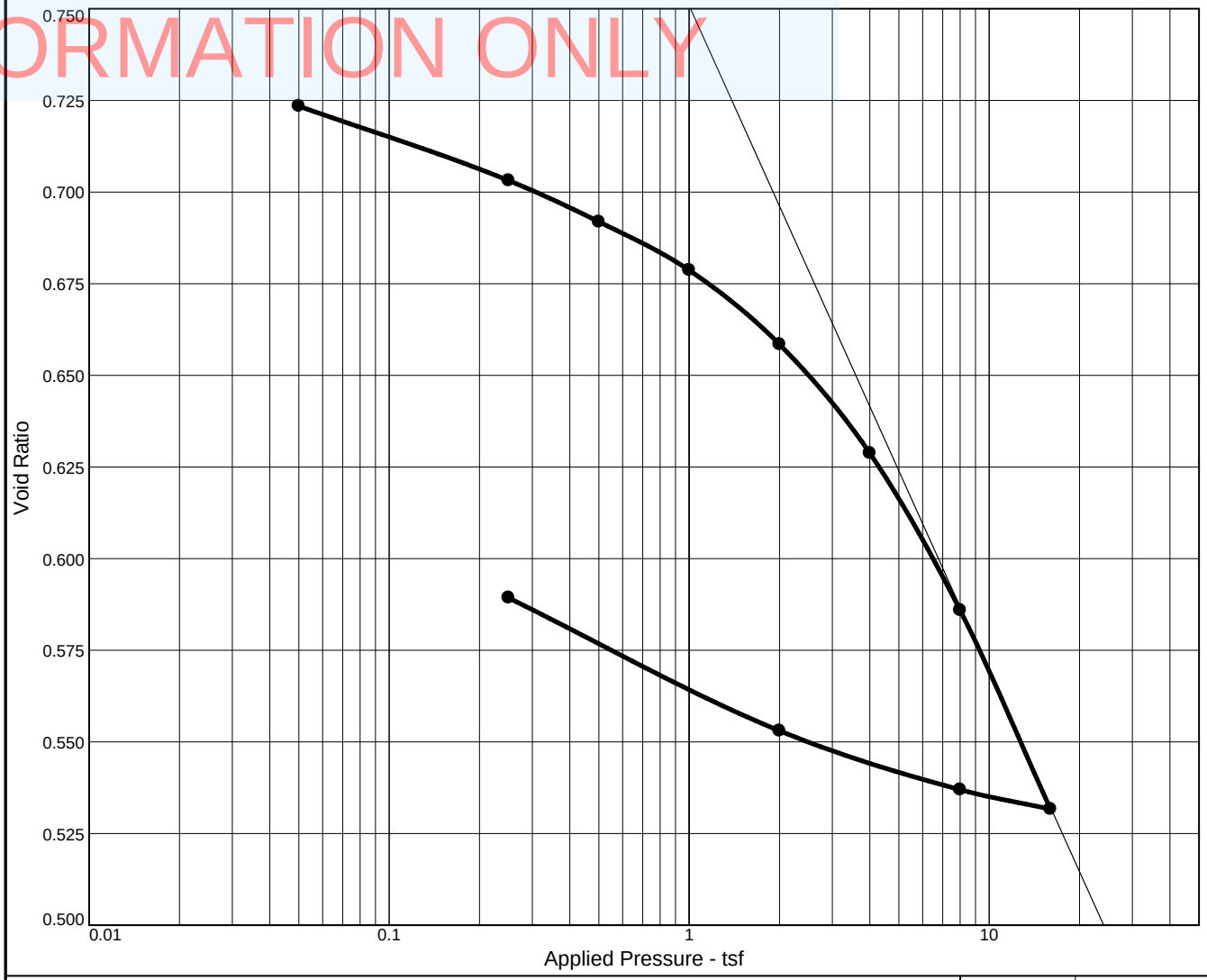
Client: ODOT
Project: HAM-75-1.05

Project No.: N1215225 **Figure** 6005

Tested By: DR **Checked By:** KA

NOT FOR CONSTRUCTION INFORMATION ONLY

CONSOLIDATION TEST REPORT



MATERIAL DESCRIPTION	USCS	AASHTO

LL	PI	Sp. Gr.	Overburden (tsf)	Dry Dens. (pcf)		Moisture		Saturation		Void Ratio		P_c (tsf)	C_c
				Init.	Final	Init.	Final	Init.	Final	Init.	Final		
		2.640		95.6		27.4 %	25.5 %	99.9 %	100.0 %	0.724	0.589	2.9	0.18

Preparation Process:	D2435 Method	C_r	Swell Press. (tsf)	Swell %
Condition of Test:		0.03		

Project No. N1215225 **Client:** ODOT

Project: HAM-75-1.05

Source of Sample: B-095-0-21 **Depth:** 33.5-35.5'

Terracon, Inc.

Cincinnati, Ohio

Remarks:

Checked By: GS

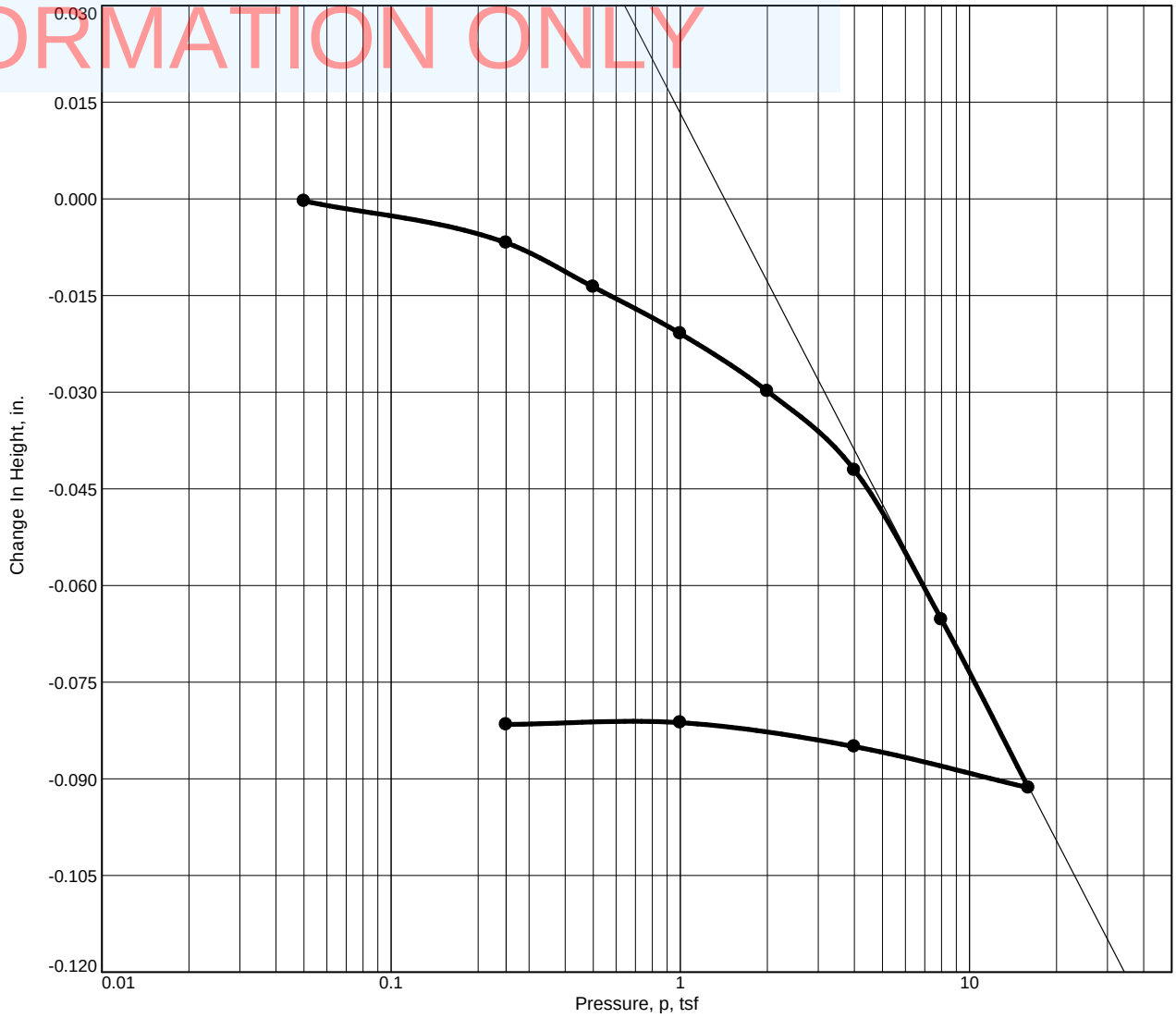
Title:

Figure

Tested By: GSS

NOT FOR CONSTRUCTION INFORMATION ONLY

CONSOLIDATION TEST REPORT



SUMMARY OF TEST RESULTS

	DRY DENSITY (pcf)	MOISTURE CONTENT, (%)	SATURATION (%)	VOID RATIO	SPECIFIC GRAVITY	OVERBURDEN (tsf)	P_C (tsf)	C_C	SWELL PRESS. (tsf)
INITIAL	97.9	4.3	16.7	0.685	2.643		2.2	0.15	
FINAL		20.8	100.0	0.547					

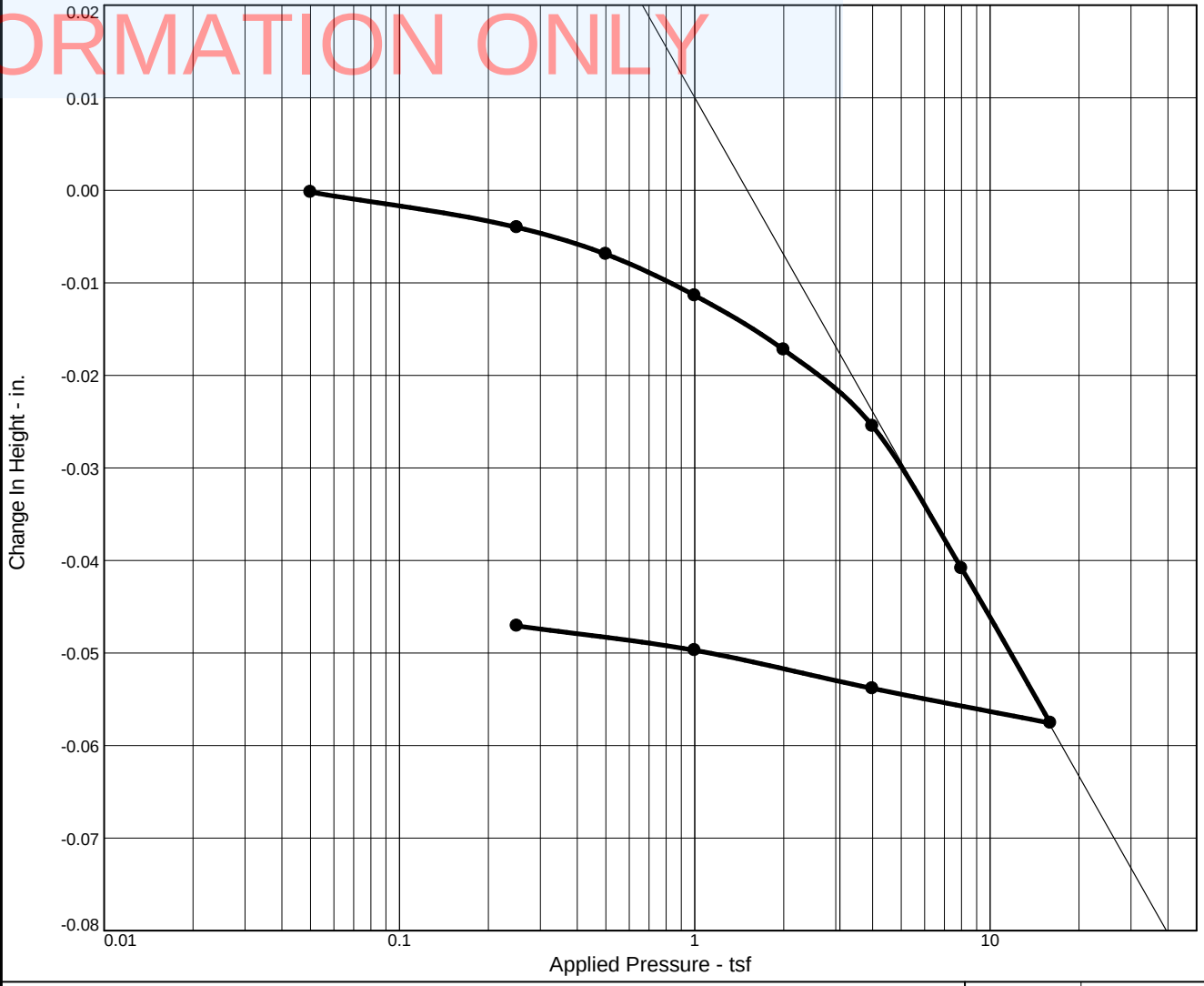
Source of Sample: B-103-0-21 **Depth:** 13.5-15.5
Material Description: Brown Sand **USCS:** **AASHTO:**
Remarks:

Terracon, Inc. **Cincinnati, Ohio**	**Client:** ODOT **Project:** HAM-75-1.95 **Project No.:** N1215230 **Figure** 6271

Tested By: KG **Checked By:** KA

NOT FOR CONSTRUCTION INFORMATION ONLY

CONSOLIDATION TEST REPORT



MATERIAL DESCRIPTION	USCS	AASHTO
Sandy Silt	ML	A-4(1)

LL	PI	Sp. Gr.	Overburden (tsf)	Dry Dens. (pcf)		Moisture		Saturation		Void Ratio		P_c (tsf)	C_c
				Init.	Final	Init.	Final	Init.	Final	Init.	Final		
28	3	2.639		106.4		17.8 %	18.5 %	85.5 %	100.0 %	0.549	0.475	3.9	0.09

Preparation Process: Shelby Tube	D2435 Method	C_r	Swell Press. (tsf)	Swell %
Condition of Test: Saturated				

Project No. N1215230 **Client:** ODOT

Project: HAM-75-1.95

Source of Sample: B-117-0-21 **Depth:** 23.0

Remarks:

Terracon, Inc.

Cincinnati, Ohio

Checked By: Kalyn Abrams

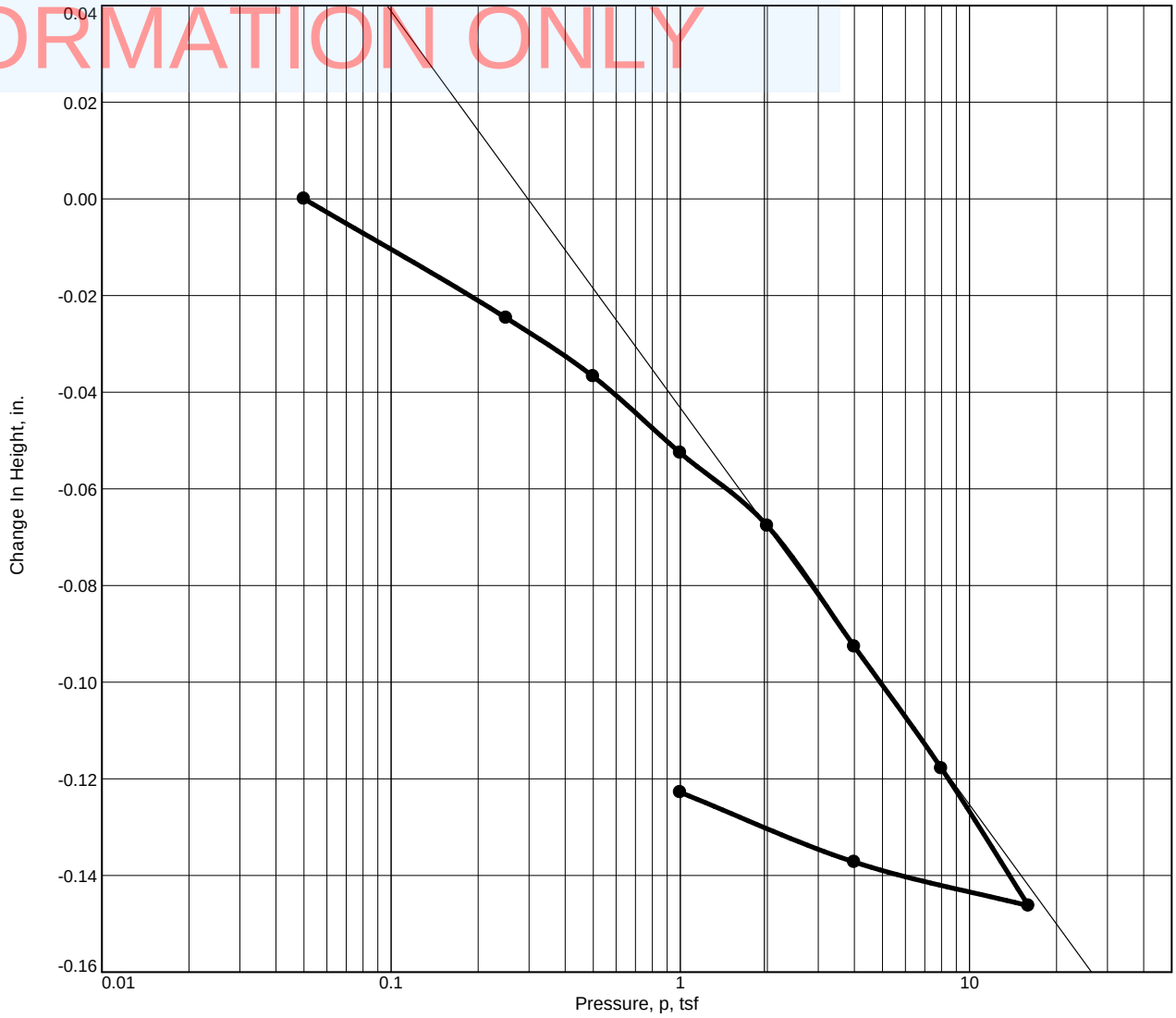
Title: Laboratory Supervisor

Figure 8592

Tested By: Dave Roelker

NOT FOR CONSTRUCTION INFORMATION ONLY

CONSOLIDATION TEST REPORT



SUMMARY OF TEST RESULTS

	DRY DENSITY (pcf)	MOISTURE CONTENT, (%)	SATURATION (%)	VOID RATIO	SPECIFIC GRAVITY	OVERBURDEN (tsf)	P_C (tsf)	C_C	SWELL PRESS. (tsf)
INITIAL	98.0	28.9	99.9	0.829	2.870		1.9	0.15	
FINAL		20.3	96.6	0.604					

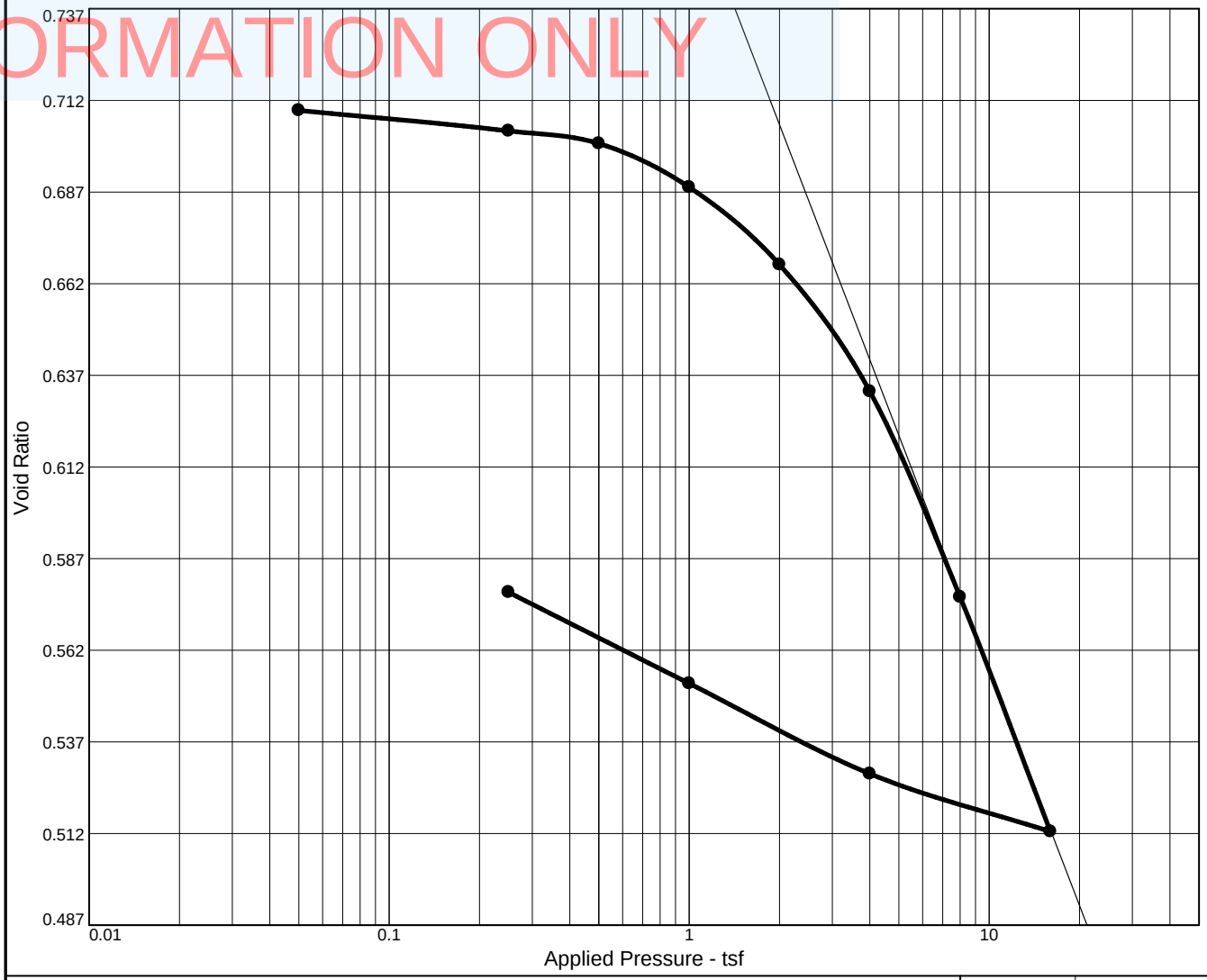
Source of Sample: B-126-0-21 **Depth:** 11.0-13.0
Material Description: Silt and Clay **USCS:** **AASHTO:**
Remarks:

Terracon, Inc. **Cincinnati, Ohio**	**Client:** ODOT **Project:** HAM-75-1.95 **Project No.:** N1215230 **Figure**

Tested By: DR **Checked By:** KA

NOT FOR CONSTRUCTION INFORMATION ONLY

CONSOLIDATION TEST REPORT



MATERIAL DESCRIPTION	USCS	AASHTO
BROWN SANDY CLAY		

LL	PI	Sp. Gr.	Overburden (tsf)	Dry Dens. (pcf)		Moisture		Saturation		Void Ratio		P_c (tsf)	C_c
				Init.	Final	Init.	Final	Init.	Final	Init.	Final		
		2.70		98.6		24.1 %	22.1 %	91.8 %	100.0 %	0.709	0.578	2.3	0.21

Preparation Process:	D2435 Method	C_r	Swell Press. (tsf)	Swell %
Condition of Test:		0.04		

Project No. N1215230 **Client:** ODOT

Project: HAM-75-1.95

Source of Sample: B-129-0-21 **Depth:** 11.0-13.0'

Remarks:

Checked By: GS

Title:

Terracon, Inc.

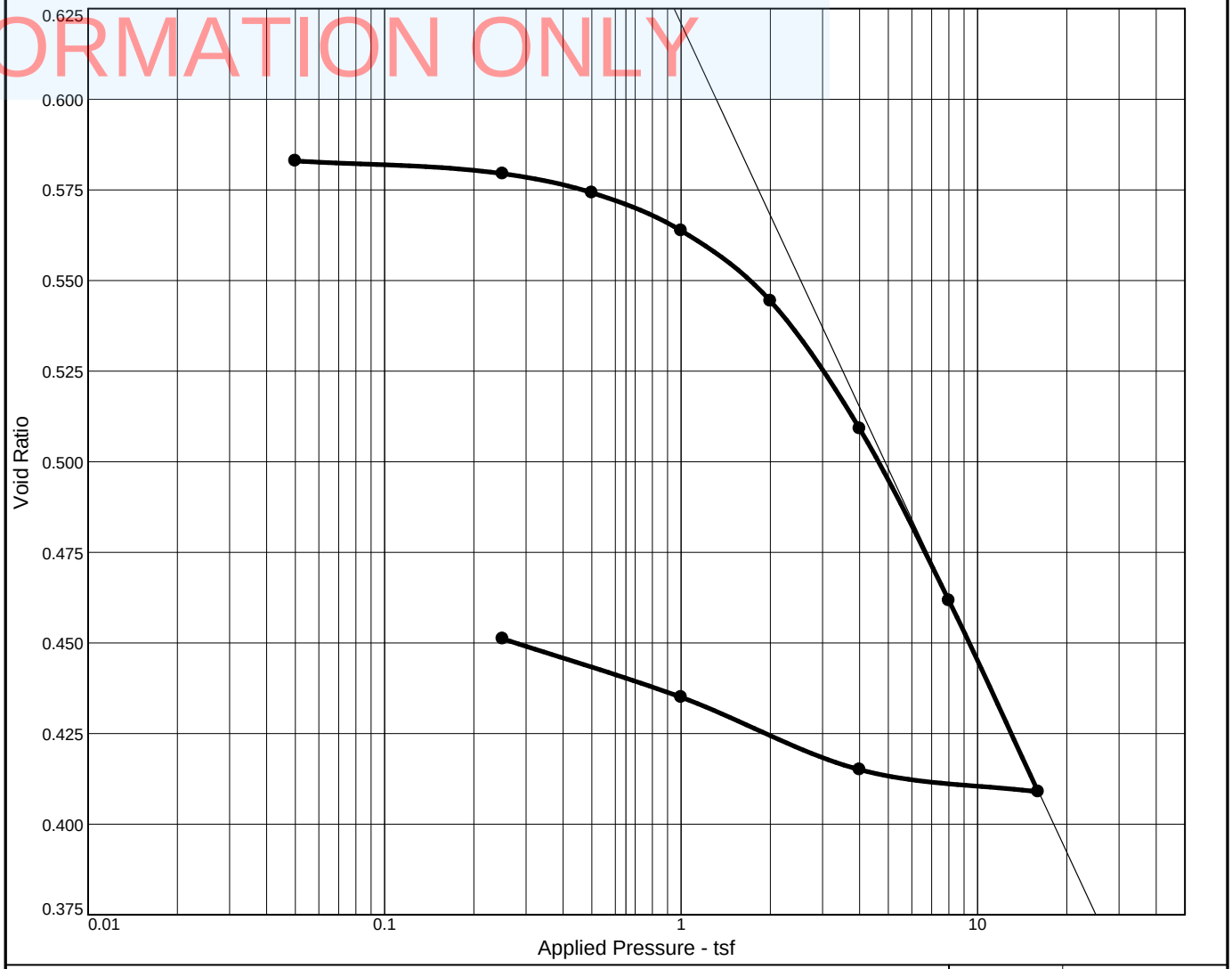
Cincinnati, Ohio

Figure

Tested By: DR

NOT FOR CONSTRUCTION INFORMATION ONLY

CONSOLIDATION TEST REPORT



MATERIAL DESCRIPTION	USCS	AASHTO
BROWN SANDY CLAY		

LL	PI	Sp. Gr.	Overburden (tsf)	Dry Dens. (pcf)		Moisture		Saturation		Void Ratio		P_c (tsf)	C_c
				Init.	Final	Init.	Final	Init.	Final	Init.	Final		
		2.70		106.5		18.6 %	17.8 %	86.3 %	100.0 %	0.583	0.451	2.1	0.18

Preparation Process:	D2435 Method	C_r	Swell Press. (tsf)	Swell %
Condition of Test:		0.02		

Project No. N1215230 **Client:** ODOT

Project: HAM-75-1.95

Source of Sample: B-131-0-21 **Depth:** 16.0-18.0'

Terracon, Inc.

Cincinnati, Ohio

Remarks:

Checked By: GS

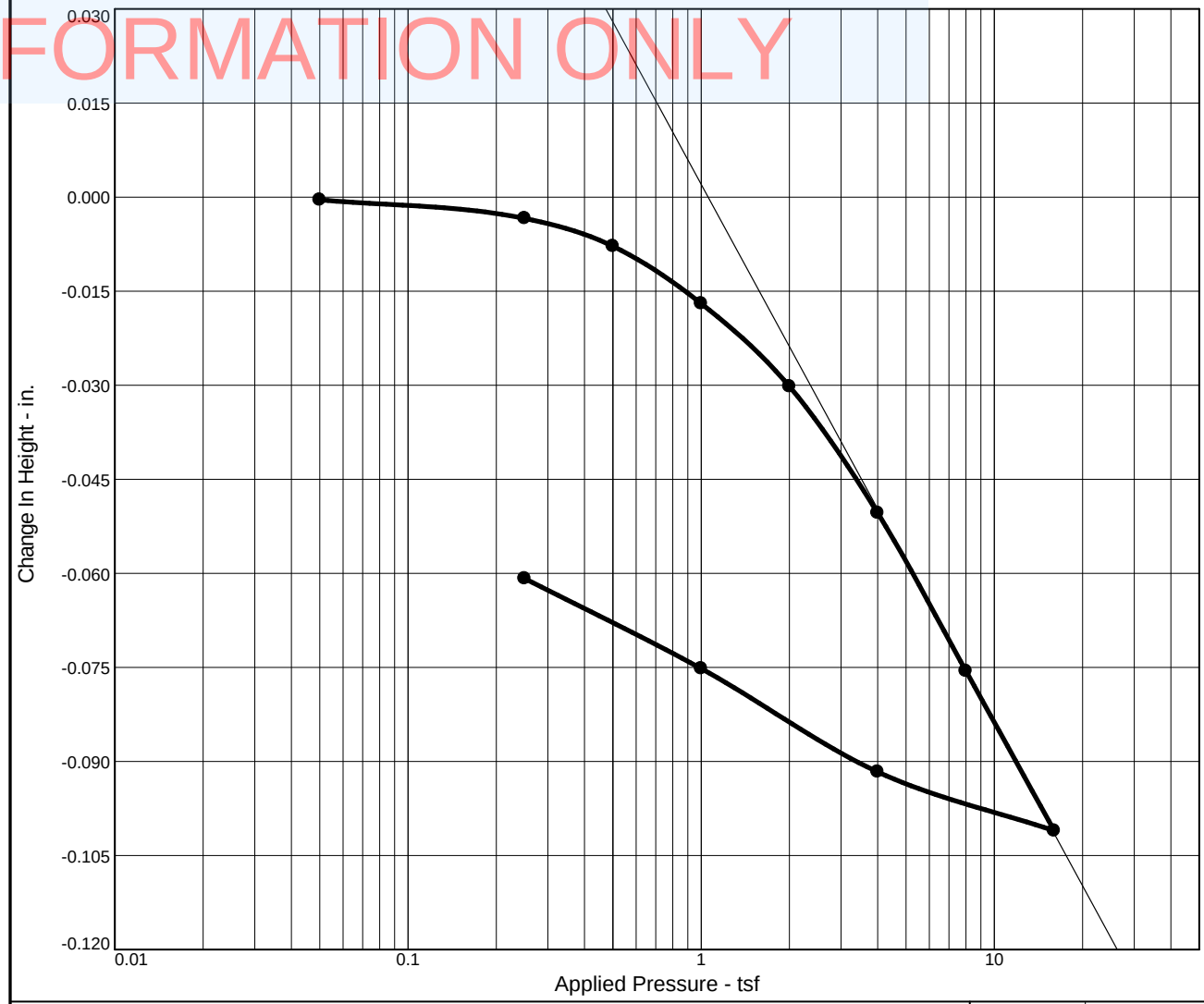
Title:

Figure

Tested By: DR

NOT FOR CONSTRUCTION INFORMATION ONLY

CONSOLIDATION TEST REPORT



MATERIAL DESCRIPTION	USCS	AASHTO
Sandy Lean Clay	CL	A-6(6)

LL	PI	Sp. Gr.	Overburden (tsf)	Dry Dens. (pcf)		Moisture		Saturation		Void Ratio		P_c (tsf)	C_c
				Init.	Final	Init.	Final	Init.	Final	Init.	Final		
31	11	2.823		106.5	--	22.6 %	17.9 %	97.3 %	91.5 %	0.655	0.553	1.5	0.14

Preparation Process: Shelby Tube	D2435 Method	C_r	Swell Press. (tsf)	Swell %
Condition of Test: Saturated	--			

Project No. N1215230 **Client:** ODOT

Project: HAM-75-1.95

Source of Sample: B-145-0-21 **Depth:** 8.0-10.0

Remarks:

Checked By: Kalyn Abrams

Title: Laboratory Manager

Terracon, Inc.

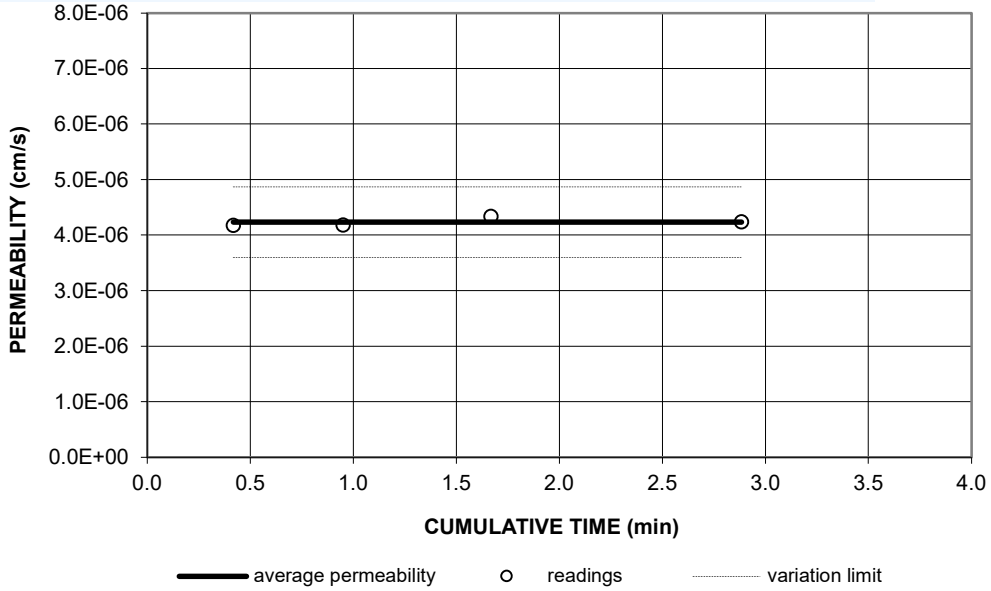
Cincinnati, Ohio

Figure 8601

Tested By: Dave Roelker

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FLEXIBLE WALL PERMEABILITY TEST



Test Specification: ASTM D 5084 Method F

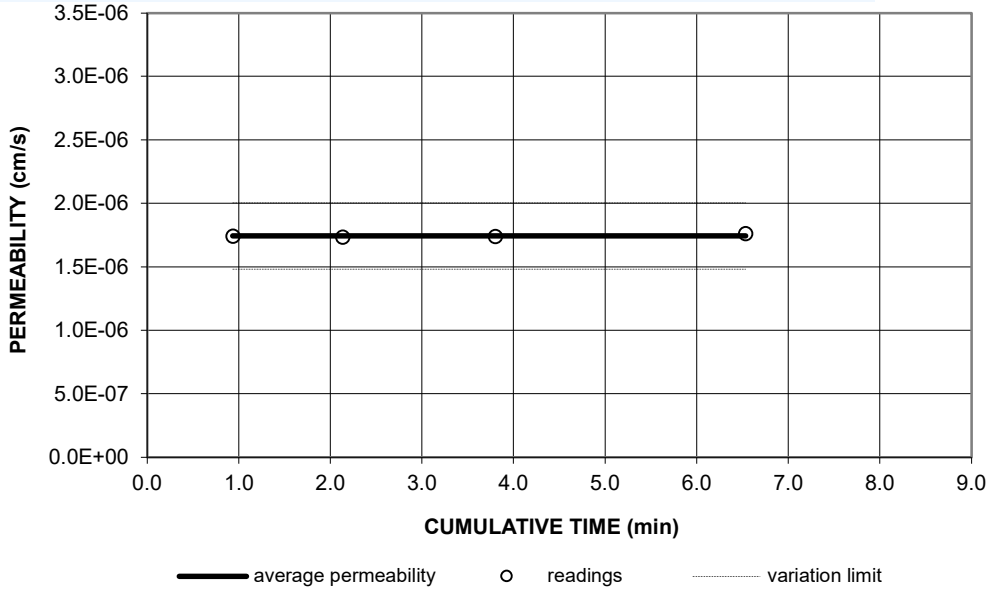
Fluid Temp. (°C)	Elapsed Time (min.)	Cumulative Time (min.)	Gradient (cm-Hg)	Calculated Permeability (cm/sec)	Average Permeability (cm/sec)
21.00	0.42	0.42	15.01	4.18E-06	
21.00	0.53	0.95	11.35	4.18E-06	
21.00	0.72	1.67	7.69	4.33E-06	**4.2E-06**
21.00	1.22	2.88	4.03	4.24E-06	

Compaction Data		Sample Data	Initial	Final
Proctor (pcf)		Specimen Height, (inches)	3.04	2.81
Opti. M.C., (%)		Specimen Diameter, (inches)	2.74	2.81
Comp. Method		Specimen Volume, (cu. In.)	17.84	17.36
% Recompct.		Moisture Content, (%)	19.43	16.18
Test Pressures (psi)		Percent Saturation (%)	111.17	100.00
Backpressure	90.00	Wet Mass Density (pcf)	136.71	136.66
Cell pressure	95.00	Dry Mass Density (pcf)	114.47	117.62
Eff. Stress	**5.00**	Void Ratio	0.47	0.44
Specific Gravity	2.70	Calculated Porosity, %	32.06	30.41

USCS:	Silt, ML	Specific Gravity Value Assumed	
Permeant Used:	Water	Tested By:	Rosie Bryant, 11/22/2024
Project:	HAM-75-1.05 Microtunnel	Reviewed By:	Kalyn Abrams, 11/22/2024
Project No.	N1245017		
Client:	Burgess & Niple Inc.	FLEXIBLE WALL PERMEABILITY TEST	
Sample Location:	B-004, 37.5-39.5	Terracon	

NOT FOR CONSTRUCTION INFORMATION ONLY

FLEXIBLE WALL PERMEABILITY TEST



Test Specification: ASTM D 5084 Method F

Fluid Temp. (°C)	Elapsed Time (min.)	Cumulative Time (min.)	Gradient (cm-Hg)	Calculated Permeability (cm/sec)	Average Permeability (cm/sec)
21.00	0.93	0.93	15.07	1.74E-06	
21.00	1.20	2.13	11.40	1.73E-06	
21.00	1.67	3.80	7.72	1.74E-06	**1.7E-06**
21.00	2.73	6.53	4.04	1.76E-06	

Compaction Data		Sample Data	Initial	Final
Proctor (pcf)		Specimen Height, (inches)	3.02	3.05
Opti. M.C., (%)		Specimen Diameter, (inches)	2.83	2.82
Comp. Method		Specimen Volume, (cu. In.)	18.95	19.00
% Recompct.		Moisture Content, (%)	18.76	23.76
Test Pressures (psi)		Percent Saturation (%)	80.81	100.00
Backpressure	90.00	Wet Mass Density (pcf)	122.99	127.81
Cell pressure	95.00	Dry Mass Density (pcf)	103.56	103.28
Eff. Stress	**5.00**	Void Ratio	0.63	0.64
Specific Gravity	2.70	Calculated Porosity, %	38.53	39.08

USCS:	Silt, ML	Specific Gravity Value Assumed	
Permeant Used:	Water	Tested By:	Rosie Bryant, 11/18/2024
Project:	HAM-75-1.05 Microtunnel	Reviewed By:	Kalyn Abrams, 11/18/2024
Project No.	N1245017		
Client:	Burgess & Niple Inc.	FLEXIBLE WALL PERMEABILITY TEST	
Sample Location:	B-007, 24.0-26.0	Terracon	

NOT FOR CONSTRUCTION INFORMATION ONLY

750 Pilot Road, Suite F
Las Vegas, Nevada 89119
(702) 597-9393

Client
Burgess & Niple Inc

Project
HAM-75-1.05 Microtunnel

Sample Submitted By: Terracon (N1) **Date Received:** 11/12/2024 **Lab No.: 24-0367**

Results of Corrosion Analysis

Sample Number	--	--	--	--
Sample Location	B-001	B-004	B-009	B-012
Sample Depth (ft.)	--	--	--	--
Chlorides, AASHTO T 291, (mg/kg)	91	117	93	147

Analyzed By _____
Nathan Campo
Laboratory Coordinator

The tests were performed in general accordance with applicable ASTM and AWWA test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full without the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparently similar or identical materials.

NOT FOR CONSTRUCTION INFORMATION ONLY

Client
Burgess & Niple Inc
Attn: Jon Brunot
525 Vine Street
Suite 1300
Cincinnati, OH 45202

Project
HAM-75-1.05 Microtunnel
I-75
Cincinnati, OH

Project No. N1245017

SUPPLEMENT 1122
DETERMINING SULFATE CONTENT IN SOILS

SAMPLE INFORMATION
Sample Type: Bagged Sample
Sample Location: Borings

Lab Number	Hole Number	Sample Number	Sample Depth	Sulfate Concentration, ppm
7652	B-001	Bag 1	32.0-55.0	< 100
7653	B-004	Bag 1	31.5-51.0	< 100
7654	B-009	Bag 1	23.5-37.5	< 100
7655	B-012	Bag 1	29.5-45.0	< 100

NOT FOR CONSTRUCTION INFORMATION ONLY

Client
Burgess & Niple Inc
Attn: Jon Brunot
525 Vine Street
Suite 1300
Cincinnati, OH 45202

Project
HAM-75-1.05 Microtunnel
I-75
Cincinnati, OH

Project No. N1245017

Laboratory Chemical Analysis

Sample Information

Boring:	B-001	Sample No.	Bag 1
Depth:	32.0-55.0	Lab No.	7652
Material Description:	--	Sample Date:	Unknown

Equipment Used

Balance ID:	B-47913	pH Meter ID:	Z-72510
Thermometer ID:	C-60041	Container ID:	1-1
ORP Meter ID:	Z-82817	ORP Probe ID:	Z-82818
ORP Calibration Value:	220 Mv	Miller Box ID:	45108
Photometer ID:	Z-82819		

pH, ASTM D4972, Method A

Method A	Soil/Water	Soil/$CaCl_2$
Sample Mass (g)	10.00	10.00
pH Reading	8.70	7.10
Temp. (°C)	20.10	20.10

Oxidation-Reduction Potential (ORP), ASTM G200

ORP Reading (Mv)	Temp. (°C)	Date/Time
375.0	21	11/11/2024 11:11
373.0	21	11/11/2024 11:12
372.0	21	11/11/2024 11:13

Soil Resistivity, ASTM G57, Large Box

Miller Box Readings (Ω x cm)	5810

Sulfide Testing

Reading (ppm)	0.011

No Chloride Testing

Sample Mass (g)	--
Meter Reading (mg/kg)	--

Natural Moisture Content

14.88%

Notes:

Sulfate testing was performed via ODOT Supplement 1122 and is reported separately. Chloride Testing was performed by the Las Vegas office of Terracon and is reported separately.

NOT FOR CONSTRUCTION INFORMATION ONLY

Client
Burgess & Niple Inc
Attn: Jon Brunot
525 Vine Street
Suite 1300
Cincinnati, OH 45202

Project
HAM-75-1.05 Microtunnel
I-75
Cincinnati, OH

Project No. N1245017

Laboratory Chemical Analysis

Sample Information

Boring:	B-004	Sample No.	Bag 1
Depth:	31.5-51.0	Lab No.	7653
Material Description:	--	Sample Date:	Unknown

Equipment Used

Balance ID:	B-47913	pH Meter ID:	Z-72510
Thermometer ID:	C-60041	Container ID:	030
ORP Meter ID:	Z-82817	ORP Probe ID:	Z-82818
ORP Calibration Value:	220 Mv	Miller Box ID:	45108
Photometer ID:	Z-82819		

pH, ASTM D4972, Method A

Method A	Soil/Water	Soil/$CaCl_2$
Sample Mass (g)	10.00	10.00
pH Reading	9.00	7.10
Temp. (°C)	20.10	20.10

Oxidation-Reduction Potential (ORP), ASTM G200

ORP Reading (Mv)	Temp. (°C)	Date/Time
322.0	21	11/11/2024 11:18
320.0	21	11/11/2024 11:19
319.0	21	11/11/2024 11:21

Soil Resistivity, ASTM G57, Large Box

Miller Box Readings (Ω x cm)	3940

Sulfide Testing

Reading (ppm)	0.000

No Chloride Testing

Sample Mass (g)	--
Meter Reading (mg/kg)	--

Natural Moisture Content

18.30%

Notes:

Sulfate testing was performed via ODOT Supplement 1122 and is reported separately. Chloride Testing was performed by the Las Vegas office of Terracon and is reported separately.

NOT FOR CONSTRUCTION INFORMATION ONLY

Client
Burgess & Niple Inc
Attn: Jon Brunot
525 Vine Street
Suite 1300
Cincinnati, OH 45202

Project
HAM-75-1.05 Microtunnel
I-75
Cincinnati, OH

Project No. N1245017

Laboratory Chemical Analysis

Sample Information

Boring:	B-009	Sample No.	Bag 1
Depth:	23.5-37.5	Lab No.	7564
Material Description:	--	Sample Date:	Unknown

Equipment Used

Balance ID:	B-47913	pH Meter ID:	Z-72510
Thermometer ID:	C-60041	Container ID:	Buzz
ORP Meter ID:	Z-82817	ORP Probe ID:	Z-82818
ORP Calibration Value:	220 Mv	Miller Box ID:	45108
Photometer ID:	Z-82819		

pH, ASTM D4972, Method A			Oxidation-Reduction Potential (ORP), ASTM G200		
Method A	Soil/Water	Soil/$CaCl_2$	**ORP Reading (Mv)**	**Temp. (°C)**	**Date/Time**
Sample Mass (g)	10.00	10.00	346.0	21	11/11/2024 11:22
pH Reading	8.60	6.90	343.0	21	11/11/2024 11:23
Temp. (°C)	20.20	20.10	340.0	21	11/11/2024 11:25

Soil Resistivity, ASTM G57, Large Box		Sulfide Testing	
Miller Box Readings (Ω x cm)	1930	**Reading (ppm)**	0.000

No Chloride Testing		Natural Moisture Content
Sample Mass (g)	--	15.54%
Meter Reading (mg/kg)	--	

Notes:
Sulfate testing was performed via ODOT Supplement 1122 and is reported separately. Chloride Testing was performed by the Las Vegas office of Terracon and is reported separately.

NOT FOR CONSTRUCTION INFORMATION ONLY

Client
Burgess & Niple Inc
Attn: Jon Brunot
525 Vine Street
Suite 1300
Cincinnati, OH 45202

Project
HAM-75-1.05 Microtunnel
I-75
Cincinnati, OH

Project No. N1245017

Laboratory Chemical Analysis

Sample Information

Boring:	B-012	Sample No.	Bag 1
Depth:	29.5-45.0	Lab No.	7565
Material Description:	--	Sample Date:	Unknown

Equipment Used

Balance ID:	B-47913	pH Meter ID:	Z-72510
Thermometer ID:	C-60041	Container ID:	Maggie
ORP Meter ID:	Z-82817	ORP Probe ID:	Z-82818
ORP Calibration Value:	220 Mv	Miller Box ID:	45108
Photometer ID:	Z-82819		

pH, ASTM D4972, Method A

Method A	Soil/Water	Soil/$CaCl_2$
Sample Mass (g)	10.00	10.00
pH Reading	8.90	7.00
Temp. (°C)	20.20	20.40

Oxidation-Reduction Potential (ORP), ASTM G200

ORP Reading (Mv)	Temp. (°C)	Date/Time
304.0	21	11/11/2024 11:30
301.0	21	11/11/2024 11:31
300.0	21	11/11/2024 11:31

Soil Resistivity, ASTM G57, Large Box

Miller Box Readings (Ω x cm)	2720

Sulfide Testing

Reading (ppm)	0.000

No Chloride Testing

Sample Mass (g)	--
Meter Reading (mg/kg)	--

Natural Moisture Content

19.75%

Notes:

Sulfate testing was performed via ODOT Supplement 1122 and is reported separately. Chloride Testing was performed by the Las Vegas office of Terracon and is reported separately.

NOT FOR CONSTRUCTION INFORMATION ONLY

Client
Burgess and Niple Inc
Cincinnati, OH

Project
HAM-75-1.05

Project No. N1215225

SUPPLEMENT 1122
DETERMINING SULFATE CONTENT IN SOILS

SAMPLE INFORMATION

Sample Type: Split Spoon

Lab Number	Hole Numer	Sample Number	Sample Depth	Sulfate Concentration, ppm
5901	B-064-0-21	---	1.5-3.0	420
5916	B-065-0-21	---	1.0-2.5	159
5944	B-075-0-21	---	1.0-2.5	604
5960	B-082-0-21	---	1.0-2.5	477
5974	B-083-0-21	---	1.0-2.5	397

NOT FOR CONSTRUCTION INFORMATION ONLY

Client
ODOT

Project
HAM-75-1.95

Project No. N1215230

SUPPLEMENT 1122
DETERMINING SULFATE CONTENT IN SOILS

SAMPLE INFORMATION

Sample Type: Jar

Lab Number	Hole Numer	Sample Number	Sample Depth	Sulfate Concentration, ppm
8704	B-113-0-21	---	1.5 and 3.0	<100
8705	B-117-0-21	---	1.5 and 3.0	<100
8706	B-145-0-21	---	1.5 and 3.0	<100
8707	B-150-0-21	---	1.5 and 3.0	<100
8708	B-159-0-21	---	1.5 and 3.0	<100

NOT FOR CONSTRUCTION INFORMATION ONLY

Client
EMH&T Columbus, OH

Project
HAM-75-1.95

Project No. N1215230

SUPPLEMENT 1122
DETERMINING SULFATE CONTENT IN SOILS

SAMPLE INFORMATION
Sample Type: Bulk

Lab Number	Hole Number	Sample Number	Sample Depth	Sulfate Concentration, ppm
6510	B-135-0-21	---	1-2.5	73
6535	B-139-0-21	---	1-2.5	231
6556	B-144-0-21	---	1.2-2.7	36
6248	B-101-0-21	---	3-4.5	138
6265	B-103-0-21	---	1.5-3.0	204
6298	B-108-0-21	---	1-2.5	111
6340	B-111-0-21	---	1.5-3.0	157
6409	B-125-0-21	---	1.5-3.0	520
6449	B-128-0-21	---	3-4.5	26
6642	B-155-0-21	---	2.5-4.0	111
6653	B-156-0-21	---	1.0-2.5	69

NOT FOR CONSTRUCTION INFORMATION ONLY

ASTM G75
Miller Number Report
For Geotesting Express

(HAM-75-1.05 Microtunnel – GTX NO: 320140)

Test Information

Test Number	Test Date	Slurry Description	Solids Concentration
241118.0	11/26/2024	B-001-O-24, Bag 1, 32-55'	50% by Mass - 150g Solids - 150g Water
241118.1	11/27/2024	B-0012-0-24, Bag 1, 29.5'-45'	50% by Mass - 150g Solids - 150g Water
241118.2	11/29/2024	B-004-0-24, Bag 1, 31.5'-51'	50% by Mass - 150g Solids - 150g Water
241118.3	11/30/2024	B-009-0-24, Bag 1, 23.5'-37.5'	50% by Mass - 150g Solids - 150g Water

Testing and Report prepared by Brant D. Miller
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Phone (214) 348-3001 Fax (469) 327-2643

WRES, Inc.
11500 Trails End Rd
Leander, TX 7864
(Austin Metroplex Area)

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Miller Number Determination by ASTM G75
For
GEOTESTING EXPRESS

Project Overview: Slurry Abrasivity Assessment for HAM-75-1.05 Microtunnel – GTX NO: 320140

Sample Submission and Preparation GeoTesting Express submitted 4 mineral samples for HAM-75-1.05 – GTX NO: 320140 to evaluate slurry abrasivity using the ASTM G75 Miller Number Test Procedure. The minerals were prepared by drying and splitting with a riffle splitter to ensure a homogeneous distribution.

Testing Procedure Following the ASTM G75 standard, each slurry batch was prepared by mixing 150 grams of solids with 150 grams of water, achieving a 50% by mass concentration. Additionally, a corrosion-inhibited slurry test using Calcium Hydroxide [$Ca(OH)_2$] was conducted as part of the standard Miller Number Test Procedure.

Results

- **Miller Number Abrasivity:**
  - The abrasivity values for the samples ranged from **129.1 to 145.0**.
  - For comparison, the standard AFS 50/70 test sand has a Miller Number of **120**.
- **Attrition Values:**
  - Ranged from **–11.0% to –4.0%**.
  - Negative attrition values indicate that slurry abrasivity decreases over time due to particle attrition.

Particle Size Distribution A wet sieve analysis was performed on the solids to determine the particle size distribution. Photomicrographs of the materials are provided on the following pages for visual reference.

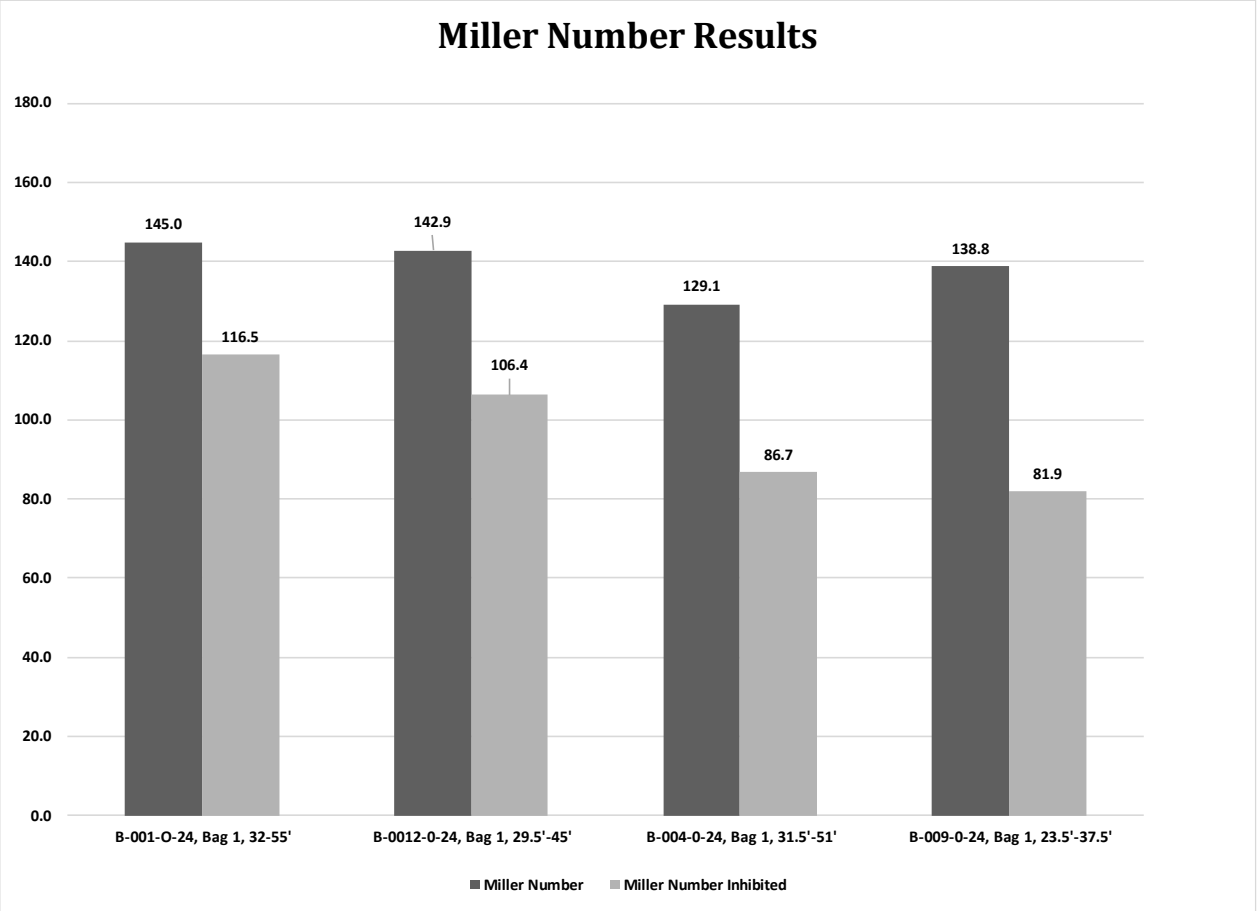
**Two sets of sieves are used for all minerals received. One set is for PAC (Powdered Activated Carbon) samples and the other set is for all other minerals. Though every attempt is made to remove all particles from sieve it is not possible and there may be particles photographed that are not part of supplied sample.

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Miller Number Results

Test Information				Miller/SAR					Miller Number Inhibited					
Test Number	Test Date	Slurry Description	Solids Concentration	Block 1 Loss	Block 2 Loss	Average Loss	Miller Number	Thickness Loss mm	Block 3 Loss	Block 4 Loss	Average Loss Inhibited	Miller Number Inhibited	pH High Inhibited	pH Low Inhibited
241118.0	11/26/2024	B-001-O-24, Bag 1, 32-55'	50% by Mass - 150g Solids - 150g Water	46.7	48.6	47.6	145.0	0.01947	38.9	37.7	38.3	116.5	14.0	12.3
241118.1	11/27/2024	B-0012-0-24, Bag 1, 29.5'-45'	50% by Mass - 150g Solids - 150g Water	45.7	48.2	47.0	142.9	0.01920	35.7	34.6	35.1	106.4	14.0	12.7
241118.2	11/29/2024	B-004-0-24, Bag 1, 31.5'-51'	50% by Mass - 150g Solids - 150g Water	39.5	46.7	43.1	129.1	0.01762	32.6	24.8	28.7	86.7	14.0	13.1
241118.3	11/30/2024	B-009-0-24, Bag 1, 23.5'-37.5'	50% by Mass - 150g Solids - 150g Water	48.4	43.9	46.1	138.8	0.01887	25.5	27.9	26.7	81.9	14.0	12.5



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General Discussion

Slurry abrasivity is a complex relationship between chemical and mechanical action on a wear block or wear specimen. The Miller Number abrasivity is a relative rate of wear index of the combined effects of both corrosion and mechanical erosion on a 27% Chrome Iron Wear Block. The Gold Number abrasivity is a relative rate of wear index of the mechanical erosion on a 24K Gold Wear Block. The Gold Number scaled to the Miller Number provides a more accurate measure of low abrasivity. The SAR Number (Slurry Abrasion Response) is a relative rate of volume loss of any solid wearing specimen in given slurry. There is also the potential for synergism to occur between the erosion and corrosion (chemical action) processes that result in higher material loss than is obtained by either process by itself. A standard part of conducting the Miller Number is to conduct a test with corrosion-inhibited slurry using Calcium Hydroxide to raise the pH to 12 + to reduce or eliminate corrosion. Miller Number abrasivity with the inhibited slurry is usually the result of mechanical erosion only. The Miller Number abrasivity difference between the regular slurry and the inhibited slurry is the result of corrosion or the synergistic effect of corrosion and mechanical wear. Oil based slurries will result in a lower Miller, Gold, or SAR Number because of fluid lubricity and reduced potential for corrosion.

Mechanical wear relates to the properties of the solids and fluid as well as the solid concentration and load applied to the wear block or wear specimen. Particle mineral composition, hardness, size, shape, and friability are the main contributing wear factors for the solid components of the slurry. Hardness of minerals as determined by Mohs scale is identified numerically by standard minerals, from 1 (softest) to 10 (hardest):

1. Talc
2. Gypsum
3. Calcite
4. Fluorite
5. Apatite
6. Orthoclase
7. Quartz
8. Topaz
9. Corundum
10. Diamond

A mineral of a given hardness will scratch or wear a mineral of a lower number. Miller Number abrasivity (rate of wear) correlates with the Mohs Hardness for a particular mineral tested. Rate of wear increases as hardness of the particle tested increases. The size of the particles in the slurry has a major effect on the degree of wear, similar to the action of sandpaper of different grits. Hence, the bigger the grains on sandpaper contributes to more wear. Particle shapes ranging from spherical to sharp and angular determine the degree wear. Beach sand worn to a rounded shape by wave action for eons of time is much less abrasive than newly fractured quartz of the same general size. Rounded material has a ball bearing effect creating less wear, where as sharp angular solids will gouge the wear block or wear specimen and therefore create more wear.

Mechanical wear directly relates to the concentration of the solids at the wear interface and the load applied. Increasing the concentration of the solids increases the rate of material loss from the wear block or wear specimen until the wear interface is saturated. Further increase in

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concentration after saturation has little effect on rate of wear. Saturation occurs in fast settling slurries at approximately 20% by mass solids concentration.

Slurry abrasivity as measured by wear on a solid wear block or specimen is a function of the particle characteristics and chemistry of the slurry. Particle characteristics that affect wear are mineral composition, hardness, size, shape and friability. The Aluminum Oxide as provided has a higher Miller Number because increased hardness, size, and shape of the Standard AFS 50-70 Test Sand, Mohs Hardness 9 versus 7, larger particle size distribution, and the shape and angularity particle shape versus rounded particle shape.

Wear Block (Miller Number) or Specimen (SAR Number) Hardness

The Miller Number Test procedure evaluates the relative abrasivity (rate of wear) of particular slurry on a 27% Chrome Iron or 24K Gold Wear Block. The Gold Wear Block is used to evaluate slurries with Miller Numbers less the 20. Gold Number standard 24K Gold Wear Block Hardness is 79-80 Re. The purpose of the Gold Wear block is to lose a significant quantity of material from the wear block in low abrasion slurries. The Gold Number is calculated based on the mass loss of the Gold Wear Block assuming it is a 27% Chrome Iron Wear Block. A factor based on prior silica sand test results is used to scale the Gold Number to approximate the Miller Number Scale. When the hardness of the slurry solids is below the 27% Chrome Iron hardness a lower abrasivity valve is obtained relative to the valve obtained with a 24K Gold Wear Specimen. Higher abrasivity values that may be observed with the 24K Gold Wear Specimens are valid for that particular environment.

Wear Specimen Slurry Abrasion Response (SAR) evaluates abrasion and corrosion response of materials that handle slurries. Hardness of these materials has a correlation to the mechanical abrasion component of the test. However, harder materials may not provide the best slurry abrasion resistance because of corrosion.

Corrosion (Chemical Reaction)

Normally the abrasivity represents the combination and often synergistic effects from corrosion (chemical reaction) and mechanical abrasion. The Gold Number represents the mechanical abrasion caused by the solids since Gold Wear Blocks are corrosion resistant. Oxidation of the 27% Chrome Iron can occur from Oxygen, Chlorides, or Sulfides. Sulfide scales tend to crack and spall more readily than oxidation products by oxygen or chlorides and result in a higher abrasivity. The Gold Number does not take into account the potential for corrosion in the actual slurry application because of the corrosion resistance of Gold. Corrosion must be considered in addition to the abrasivity value as determined by the Gold Number because corrosion may be present in the actual metallic slurry handling equipment. The SAR Numbers for the metal and Elastomer wear specimens are the combination of the mechanical wear and corrosion of the metal wear specimens and chemical action on the Elastomer wear specimens.

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ASTM G75 Slurry Abrasivity Determination
By Miller Number System

Test
- Type : Miller Number
- Number : M-241118.0
- Date : 26-Nov-2024

Project
- Description : 241118 Geotesting Express

Slurry
- Description : B-001-O-24, Bag 1, 32-55'
- AFS Test Sand Factor : 1.0000
- Concentration : 50% by Mass - 150g Solids - 150g Water
- Temperature : 75F

Wear Specimen
- Description : 27% Chrome Iron
- Specific Gravity : 7.58

Arm Load
- Force : 5.00 lbs-f (22.24 Newton) for Miller, Gold, & SAR Number (Metal, Rubber, Epoxy with Fillers)

Lap Material
- Description : Neoprene
- Hardness : 78-82 Shore A
- Wear Factor : 1.000

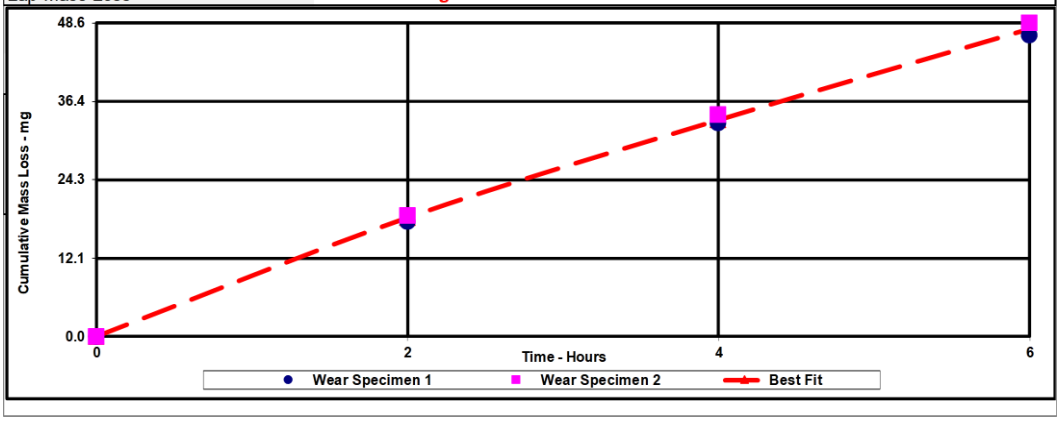
Tray	1			2			
Wear Specimen	2013-128			2013-129			
Hardness	65.1 Rc			64.5 Rc			
Scale Factor	1.062			1.093			
	pH	Mass	Loss	pH	Mass	Loss	
		g	mg		g	mg	
Weight Initial Dry (Elastomer Only)							
Weight Initial Wet or Dry	**8.4**	**12.4644**	0.0	**8.4**	**12.4015**	0.0	
Weight After 2 Hours	**8.6**	**12.4455**	18.9	**8.6**	**12.3810**	20.5	
Weight After 4 Hours	**8.6**	**12.4292**	16.3	**8.7**	**12.3639**	17.0	
Weight After 6 Hours	**8.7**	**12.4148**	14.4	**8.7**	**12.3484**	15.5	Actual
Weight Total Loss			49.6			53.1	102.6
Weight Final Dry (Elastomer Only)							
Dry Loss Factor			1.00			1.00	
LAP Serial Number	L-1			L-2			
Initial Wt							
Final Wt			-			-	

Best Fit Analysis	Adjusted Chart Data						
	Hours	C	D	Ave	*Best Fit	Error	
		mg	mg	mg	mg	mg	
Weight Initial Wet or Dry	0	0.0	0.0	0.0	0.0	0.000	
Weight After 2 Hours	2	17.8	18.8	18.3	18.4	-0.123	
Weight After 4 Hours	4	33.1	34.4	33.8	33.6	0.183	
Weight After 6 Hours	6	46.7	48.6	47.6	47.7	-0.081	Inc
	Cumm	Chart	Max	48.6		0.055	12.1

Click Here to Solve Curve Fit

Results

Best Fit Mass Loss	=	10.11 * Hours^ 0.866
Miller Number	145.00	Relative Rate of Mass/Volume loss at 2 hours
Departure	-7%	Relative Rate of Change in Mass/Volume loss at 2 hours
Lap Mass Loss	0.00	mg



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ASTM G75 Slurry Abrasivity Determination By Miller Number System

Test
Type : Miller Number
Number : M-241118.0
Date : 26-Nov-2024
Project
Description : 241118 Geotesting Express
Slurry
Description : B-001-O-24, Bag 1, 32-55'
AFS Test Sand Factor : 1.0000
Concentration : 50% by Mass - 150g Solids - 150g Water~ 1mg Ca(OH)2 Inhibited
Temperature : 75F
Wear Specimen
Description : 27% Chrome Iron
Specific Gravity : 7.58
Arm Load
Force : 5.00 lbs-f (22.24 Newton) for Miller, Gold, & SAR Number (Metal, Rubber, Epoxy with Fillers)
Lap Material
Description : Neoprene
Hardness : 78-82 Shore A

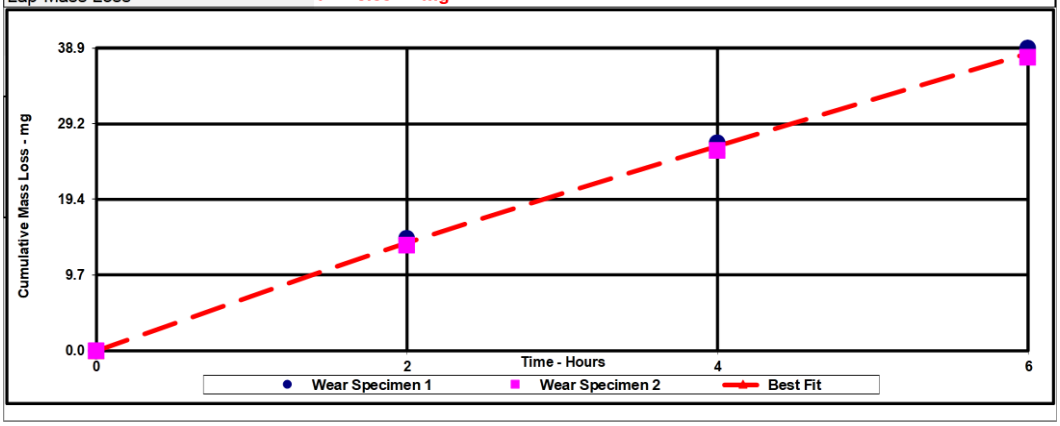
		3			4			
Tray	:							
Wear Specimen	:	**2013-130**			**2013-131**			
Hardness	:	**64.5 Rc**			**66.0 Rc**			
Scale Factor	:	**1.082**			**1.092**			
	:	pH	Mass	Loss	pH	Mass	Loss	
	:		g	mg		g	mg	
Weight Initial Dry (Elastomer Only)	:							
Weight Initial Wet or Dry	:	**14.0**	**12.7702**	0.0	**14.0**	**12.7121**	0.0	
Weight After 2 Hours	:	**14.0**	**12.7546**	15.6	**14.0**	**12.6974**	14.8	
Weight After 4 Hours	:	**13.7**	**12.7413**	13.3	**13.8**	**12.6840**	13.4	
Weight After 6 Hours	:	**12.3**	**12.7281**	13.2	**12.4**	**12.6709**	13.0	Actual
Weight Total Loss	:			42.1			41.2	83.3
Weight Final Dry (Elastomer Only)	:			0.0			0.0	
Dry Loss Factor				1.00			1.00	
LAP Serial Number		L-3			L-4			
Initial Wt	:							
Final Wt	:			-			-	

Best Fit Analysis		Adjusted Chart Data						
		Hours	2013-130	2013-131	Ave	*Best Fit	Error	
	:		mg	mg	mg	mg	mg	
Weight Initial Wet or Dry	:	0	0.0	0.0	0.0	0.0	0.000	
Weight After 2 Hours	:	2	14.4	13.5	14.0	13.9	0.068	
Weight After 4 Hours	:	4	26.7	25.8	26.2	26.3	-0.097	
Weight After 6 Hours	:	6	38.9	37.7	38.3	38.3	0.042	Inc
		Cumm	Chart	Max	38.9		0.016	9.7

Click Here to Solve Curve Fit

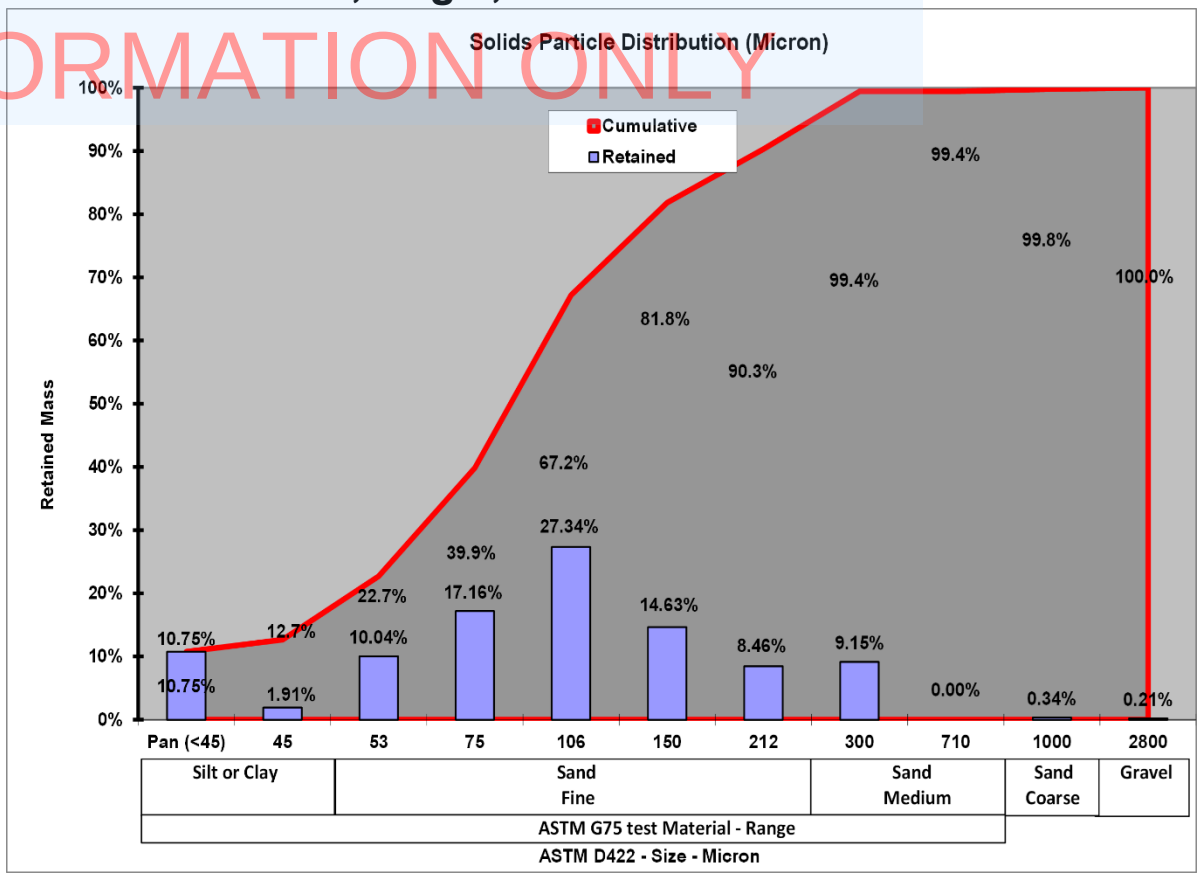
Results

Best Fit Mass Loss	:	=	7.34 * Hours^ 0.922
Miller Number	:	116.46	Relative Rate of Mass/Volume loss at 2 hours
Departure	:	-4%	Relative Rate of Change in Mass/Volume loss at 2 hours
Lap Mass Loss	:	0.00	mg



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B-001-O-24, Bag 1, 32-55' - Particle Distribution



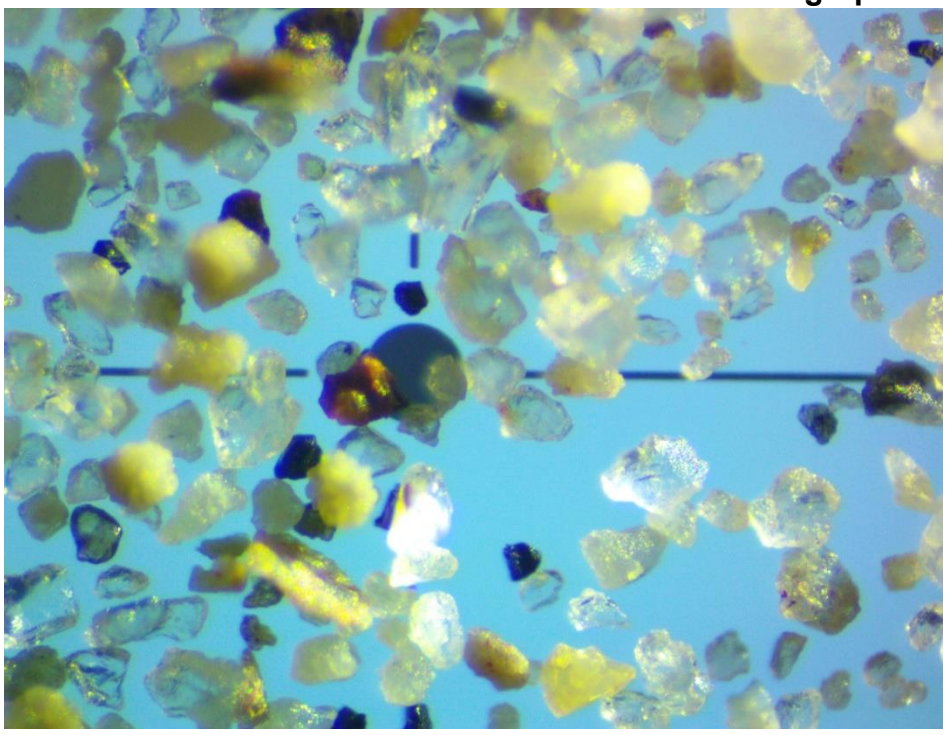


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B-001-O-24, Bag 1, 32-55' - Photos



Particles > 150 Micron with 200 Grid Photo Micrograph



Particles < 150 Micron with 200 Grid Photo Micrograph

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ASTM G75 Slurry Abrasivity Determination By Miller Number System

Test
- Type : Miller Number
- Number : M-241118.1
- Date : 27-Nov-2024

Project
- Description : 241118 Geotesting Express

Slurry
- Description : B-0012-0-24, Bag 1, 29.5'-45'
- AFS Test Sand Factor : 1.0000
- Concentration : 50% by Mass - 150g Solids - 150g Water
- Temperature : 75F

Wear Specimen
- Description : 27% Chrome Iron
- Specific Gravity : 7.58

Arm Load
- Force : 5.00 lbs-f (22.24 Newton) for Miller, Gold, & SAR Number (Metal, Rubber, Epoxy with Fillers)

Lap Material
- Description : Neoprene
- Hardness : 78-82 Shore A
- Wear Factor : 1.000

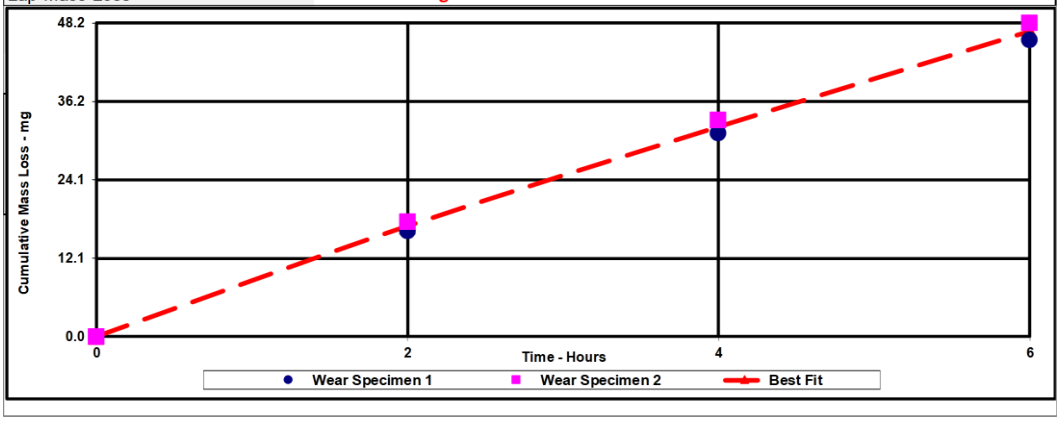
Tray	1			2			
Wear Specimen	2013-128			2013-129			
Hardness	65.1 Rc			64.5 Rc			
Scale Factor	1.062			1.093			
	pH	Mass	Loss	pH	Mass	Loss	
		g	mg		g	mg	
Weight Initial Dry (Elastomer Only)							
Weight Initial Wet or Dry	**7.4**	**12.4147**	0.0	**7.4**	**12.3480**	0.0	
Weight After 2 Hours	**8.0**	**12.3974**	17.2	**8.0**	**12.3286**	19.4	
Weight After 4 Hours	**8.2**	**12.3814**	16.0	**8.2**	**12.3116**	17.0	
Weight After 6 Hours	**8.1**	**12.3662**	15.2	**8.2**	**12.2953**	16.3	Actual
Weight Total Loss			48.5			52.7	101.2
Weight Final Dry (Elastomer Only)							
Dry Loss Factor			1.00			1.00	
LAP Serial Number	L-1			L-2			
Initial Wt							
Final Wt			-			-	

Best Fit Analysis	Adjusted Chart Data						
	Hours	C	D	Ave	*Best Fit	Error	
		mg	mg	mg	mg	mg	
Weight Initial Wet or Dry	0	0.0	0.0	0.0	0.0	0.000	
Weight After 2 Hours	2	16.2	17.7	17.0	17.0	-0.025	
Weight After 4 Hours	4	31.3	33.3	32.3	32.3	0.036	
Weight After 6 Hours	6	45.7	48.2	47.0	47.0	-0.016	Inc
	Cumm	Chart	Max	48.2		0.002	12.1

Click Here to Solve Curve Fit

Results

Best Fit Mass Loss	=	8.95 * Hours^ 0.925	
Miller Number	142.95	Relative Rate of Mass/Volume loss at 2 hours	
Departure	-4%	Relative Rate of Change in Mass/Volume loss at 2 hours	
Lap Mass Loss	0.00	mg	



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ASTM G75 Slurry Abrasivity Determination By Miller Number System

Test
Type : Miller Number
Number : M-241118.1
Date : 27-Nov-2024
Project
Description : 241118 Geotesting Express
Slurry
Description : B-0012-0-24, Bag 1, 29.5'-45'
AFS Test Sand Factor : 1.0000
Concentration : 50% by Mass - 150g Solids - 150g Water~ 1mg Ca(OH)2 Inhibited
Temperature : 75F
Wear Specimen
Description : 27% Chrome Iron
Specific Gravity : 7.58
Arm Load
Force : 5.00 lbs-f (22.24 Newton) for Miller, Gold, & SAR Number (Metal, Rubber, Epoxy with Fillers)
Lap Material
Description : Neoprene
Hardness : 78-82 Shore A

		3			4			
Tray	:							
Wear Specimen	:	2013-130			2013-131			
Hardness	:	64.5 Rc			66.0 Rc			
Scale Factor	:	1.082			1.092			
	:	pH	Mass	Loss	pH	Mass	Loss	
	:		g	mg		g	mg	
Weight Initial Dry (Elastomer Only)	:							
Weight Initial Wet or Dry	:	**14.0**	**12.7276**	0.0	**14.0**	**12.6705**	0.0	
Weight After 2 Hours	:	**14.0**	**12.7139**	13.7	**14.0**	**12.6573**	13.1	
Weight After 4 Hours	:	**13.9**	**12.7018**	12.2	**13.8**	**12.6452**	12.1	
Weight After 6 Hours	:	**12.7**	**12.6890**	12.8	**12.9**	**12.6327**	12.5	Actual
Weight Total Loss	:			38.6			37.7	76.3
Weight Final Dry (Elastomer Only)	:			0.0			0.0	
Dry Loss Factor	:			1.00			1.00	
LAP Serial Number		L-3			L-4			
Initial Wt	:							
Final Wt	:			-			-	

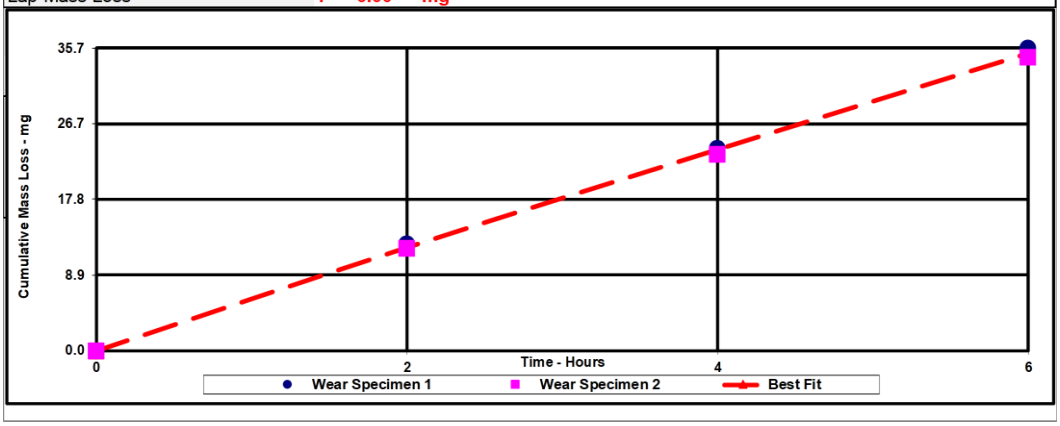
Best Fit Analysis

		Adjusted Chart Data						
		Hours	2013-130	2013-131	Ave	*Best Fit	Error	
	:		mg	mg	mg	mg	mg	
Weight Initial Wet or Dry	:	0	0.0	0.0	0.0	0.0	0.000	
Weight After 2 Hours	:	2	12.6	12.0	12.3	12.2	0.155	
Weight After 4 Hours	:	4	23.9	23.1	23.5	23.7	-0.215	
Weight After 6 Hours	:	6	35.7	34.6	35.1	35.0	0.092	Inc
		Cumm	Chart	Max	35.7		0.079	8.9

Click Here to Solve Curve Fit

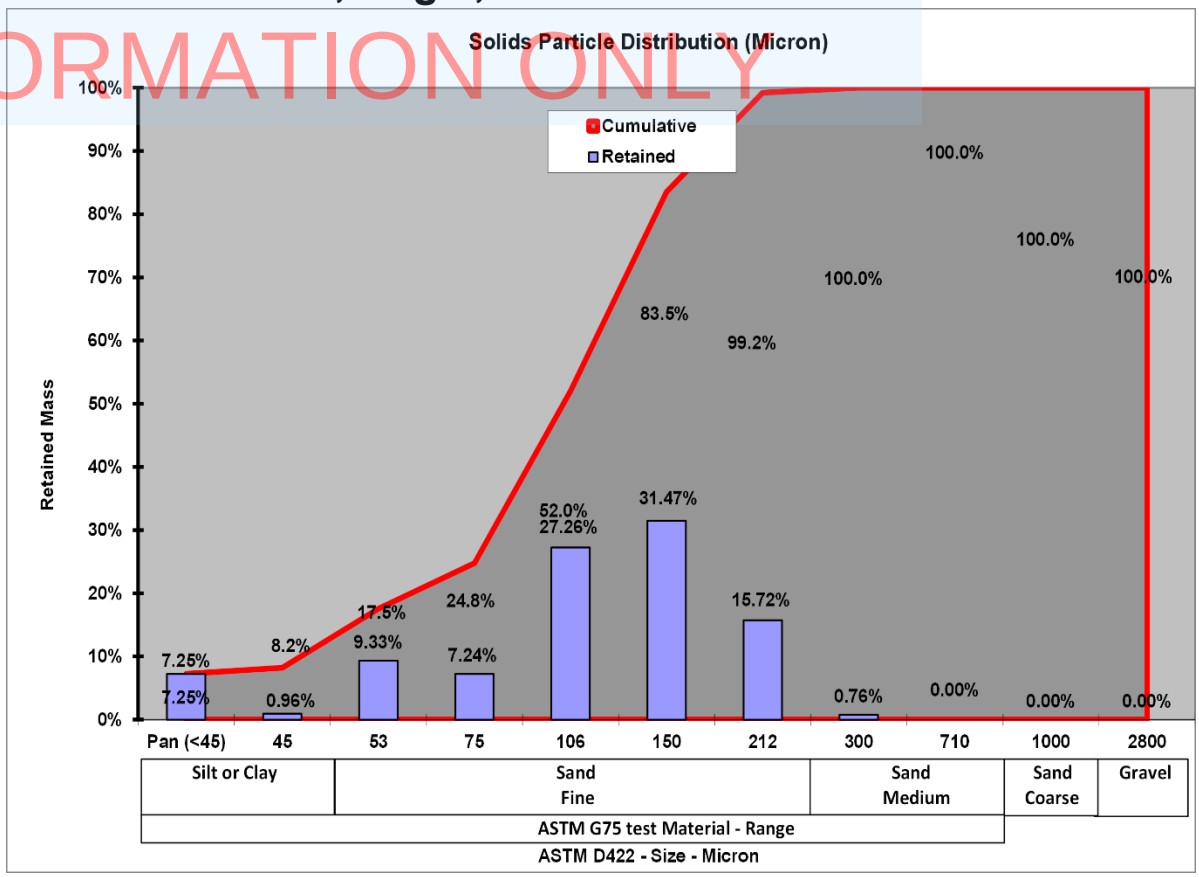
Results

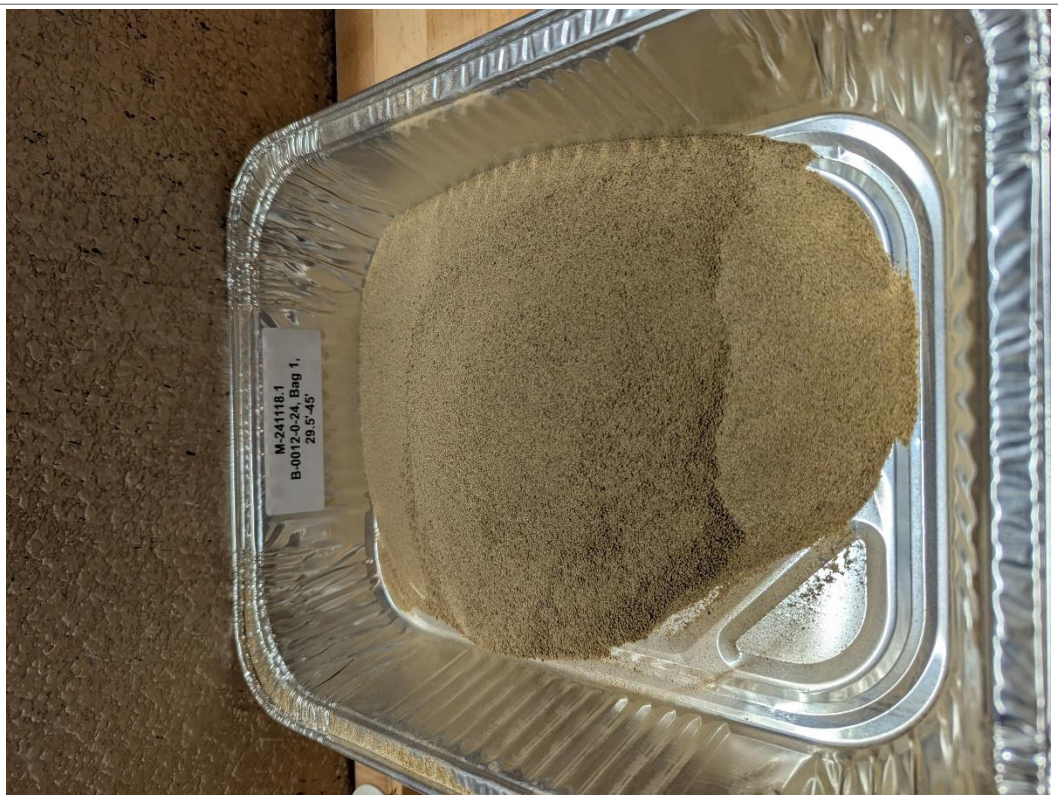
Best Fit Mass Loss	:	=	6.24 * Hours^ 0.962
Miller Number	:	106.40	Relative Rate of Mass/Volume loss at 2 hours
Departure	:	-2%	Relative Rate of Change In Mass/Volume loss at 2 hours
Lap Mass Loss	:	0.00	mg



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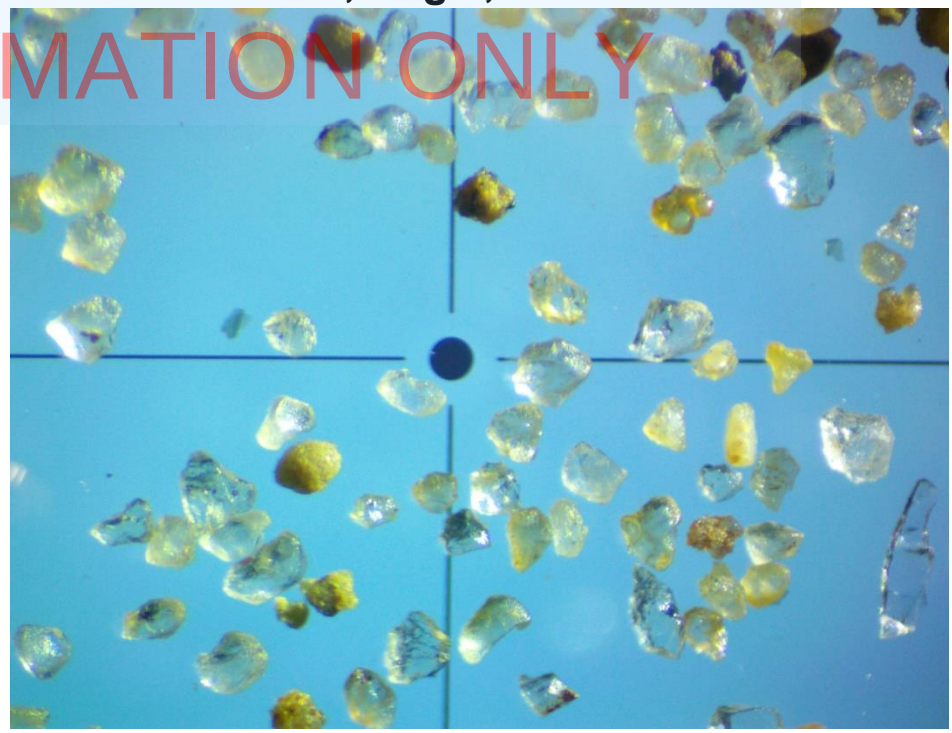
B-0012-0-24, Bag 1, 29.5'-45' - Particle Distribution



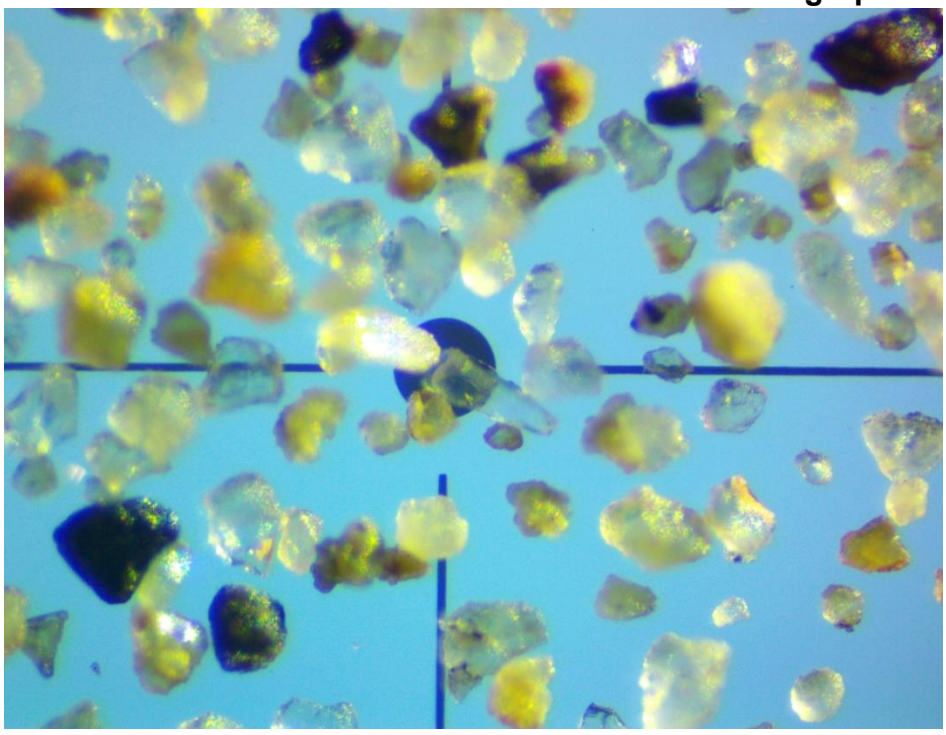


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B-0012-0-24, Bag 1, 29.5'-45' - Photos



Particles > 150 Micron with 200 Grid Photo Micrograph



Particles < 150 Micron with 200 Grid Photo Micrograph

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Pump Consulting Services

ASTM G75 Slurry Abrasivity Determination By Miller Number System

Test
Type : Miller Number
Number : M-241118.2
Date : 29-Nov-2024

Project
Description : 241118 Geotesting Express

Slurry
Description : B-004-0-24, Bag 1, 31.5'-51'
AFS Test Sand Factor : 1.0000
Concentration : 50% by Mass - 150g Solids - 150g Water
Temperature : 75F

Wear Specimen
Description : 27% Chrome Iron
Specific Gravity : 7.58

Arm Load
Force : 5.00 lbs-f (22.24 Newton) for Miller, Gold, & SAR Number (Metal, Rubber, Epoxy with Fillers)

Lap Material
Description : Neoprene
Hardness : 78-82 Shore A
Wear Factor : 1.000

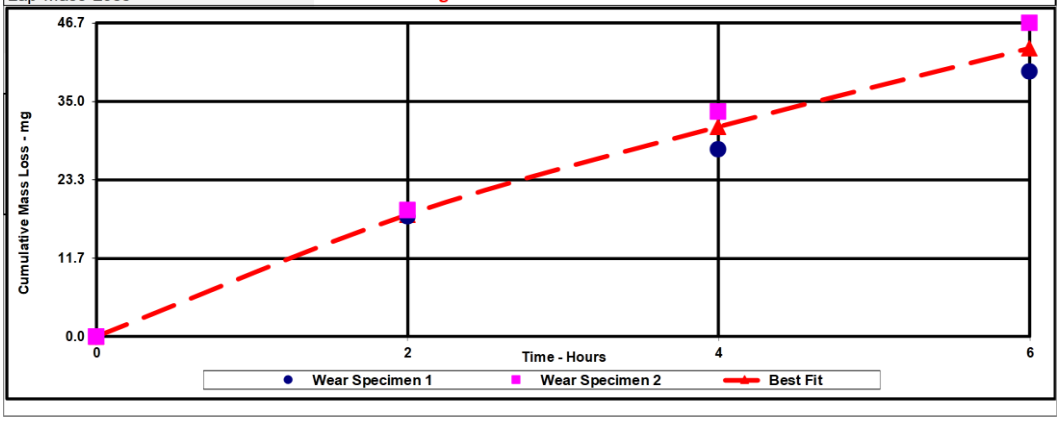
Tray	1			2			
Wear Specimen	2013-128			2013-129			
Hardness	65.1 Rc			64.5 Rc			
Scale Factor	1.062			1.093			
	pH	Mass	Loss	pH	Mass	Loss	
		g	mg		g	mg	
Weight Initial Dry (Elastomer Only)							
Weight Initial Wet or Dry	**8.4**	**12.3561**	0.0	**8.4**	**12.2858**	0.0	
Weight After 2 Hours	**8.5**	**12.3370**	19.1	**8.5**	**12.2652**	20.6	
Weight After 4 Hours	**8.6**	**12.3264**	10.6	**8.6**	**12.2493**	16.0	
Weight After 6 Hours	**8.7**	**12.3141**	12.3	**8.8**	**12.2348**	14.4	Actual
Weight Total Loss			42.0			51.0	93.0
Weight Final Dry (Elastomer Only)							
Dry Loss Factor			1.00			1.00	
LAP Serial Number	L-1			L-2			
Initial Wt							
Final Wt			-			-	

Best Fit Analysis	Adjusted Chart Data						
	Hours	C	D	Ave	*Best Fit	Error	
		mg	mg	mg	mg	mg	
Weight Initial Wet or Dry	0	0.0	0.0	0.0	0.0	0.000	
Weight After 2 Hours	2	18.0	18.8	18.4	18.1	0.304	
Weight After 4 Hours	4	28.0	33.5	30.7	31.2	-0.478	
Weight After 6 Hours	6	39.5	46.7	43.1	42.9	0.220	Inc
	Cumm	Chart	Max	46.7		0.370	11.7

Click Here to Solve Curve Fit

Results

Best Fit Mass Loss	=	10.52 * Hours^ 0.784	
Miller Number	129.13	Relative Rate of Mass/Volume loss at 2 hours	
Departure	-11%	Relative Rate of Change in Mass/Volume loss at 2 hours	
Lap Mass Loss	0.00	mg	



NOT FOR CONSTRUCTION INFORMATION ONLY

WRES, inc.
Pump Consulting Services

ASTM G75 Slurry Abrasivity Determination By Miller Number System

Test
Type : Miller Number
Number : M-241118.2
Date : 29-Nov-2024
Project
Description : 241118 Geotesting Express
Slurry
Description : B-004-0-24, Bag 1, 31.5'-51'
AFS Test Sand Factor : 1.0000
Concentration : 50% by Mass - 150g Solids - 150g Water~ 1mg Ca(OH)2 Inhibited
Temperature : 75F
Wear Specimen
Description : 27% Chrome Iron
Specific Gravity : 7.58
Arm Load
Force : 5.00 lbs-f (22.24 Newton) for Miller, Gold, & SAR Number (Metal, Rubber, Epoxy with Fillers)
Lap Material
Description : Neoprene
Hardness : 78-82 Shore A

Tray		3			4			
Wear Specimen		2013-130			2013-131			
Hardness		64.5 Rc			66.0 Rc			
Scale Factor		1.082			1.092			
		pH	Mass	Loss	pH	Mass	Loss	
			g	mg		g	mg	
Weight Initial Dry (Elastomer Only)								
Weight Initial Wet or Dry		**14.0**	**12.6812**	0.0	**14.0**	**12.6261**	0.0	
Weight After 2 Hours		**14.0**	**12.6699**	11.3	**14.0**	**12.6122**	13.9	
Weight After 4 Hours		**13.6**	**12.6586**	11.3	**13.4**	**12.6049**	7.3	
Weight After 6 Hours		**13.3**	**12.6460**	12.6	**13.1**	**12.5990**	5.9	Actual
Weight Total Loss				35.2			27.1	62.4
Weight Final Dry (Elastomer Only)				0.0			0.0	
Dry Loss Factor				1.00			1.00	
LAP Serial Number		L-3			L-4			
Initial Wt								
Final Wt				-			-	

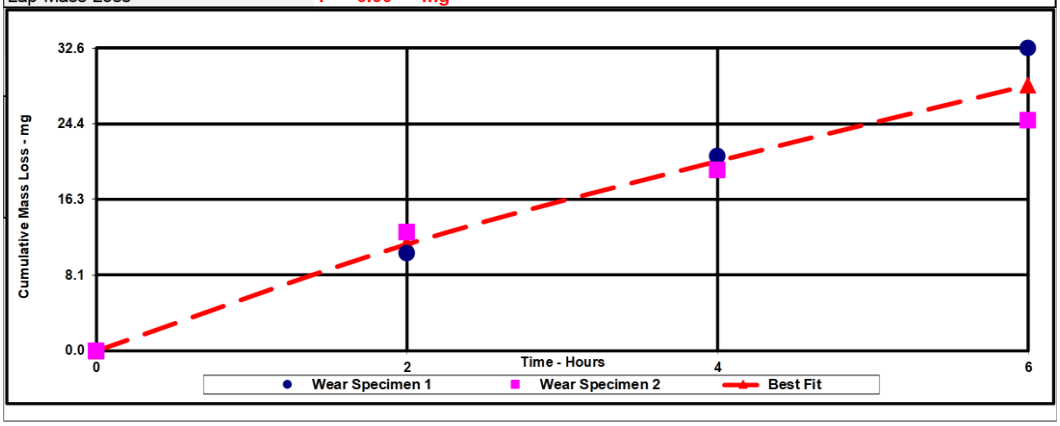
Best Fit Analysis — Adjusted Chart Data

	Hours	2013-130	2013-131	Ave	*Best Fit	Error	
		mg	mg	mg	mg	mg	
Weight Initial Wet or Dry	0	0.0	0.0	0.0	0.0	0.000	
Weight After 2 Hours	2	10.5	12.8	11.6	11.5	0.142	
Weight After 4 Hours	4	20.9	19.5	20.2	20.4	-0.217	
Weight After 6 Hours	6	32.6	24.8	28.7	28.6	0.098	Inc
	Cumm	Chart	Max	32.6		0.077	8.1

Click Here to Solve Curve Fit

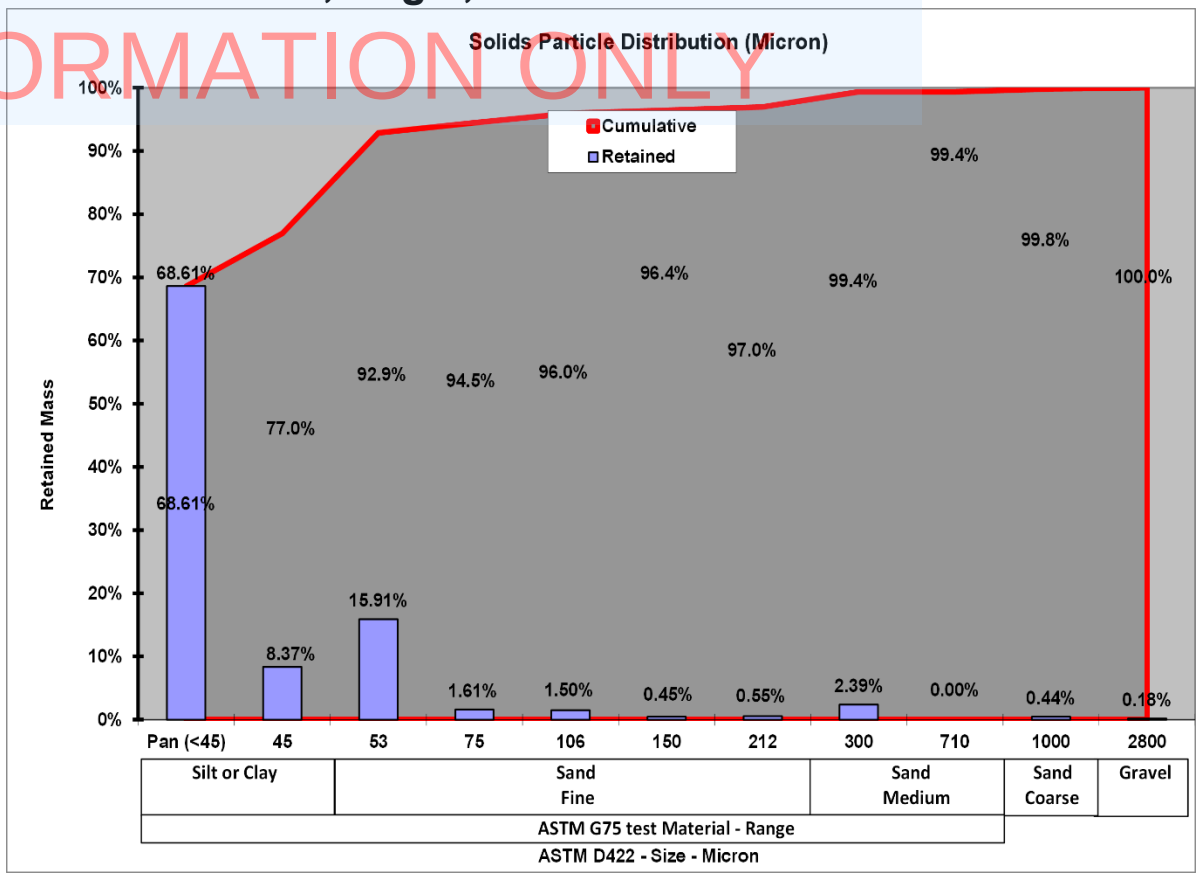
Results

Best Fit Mass Loss	=	6.45 * Hours^ 0.831	
Miller Number	86.70	Relative Rate of Mass/Volume loss at 2 hours	
Departure	-8%	Relative Rate of Change In Mass/Volume loss at 2 hours	
Lap Mass Loss	0.00	mg	



NOT FOR CONSTRUCTION INFORMATION ONLY

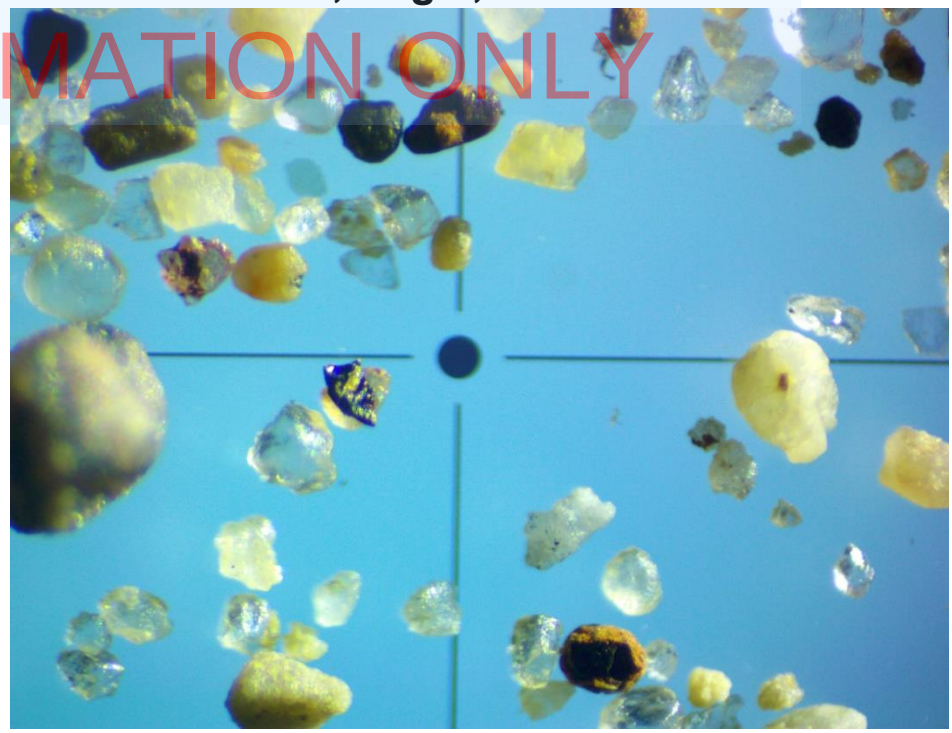
B-004-0-24, Bag 1, 31.5'-51' - Particle Distribution



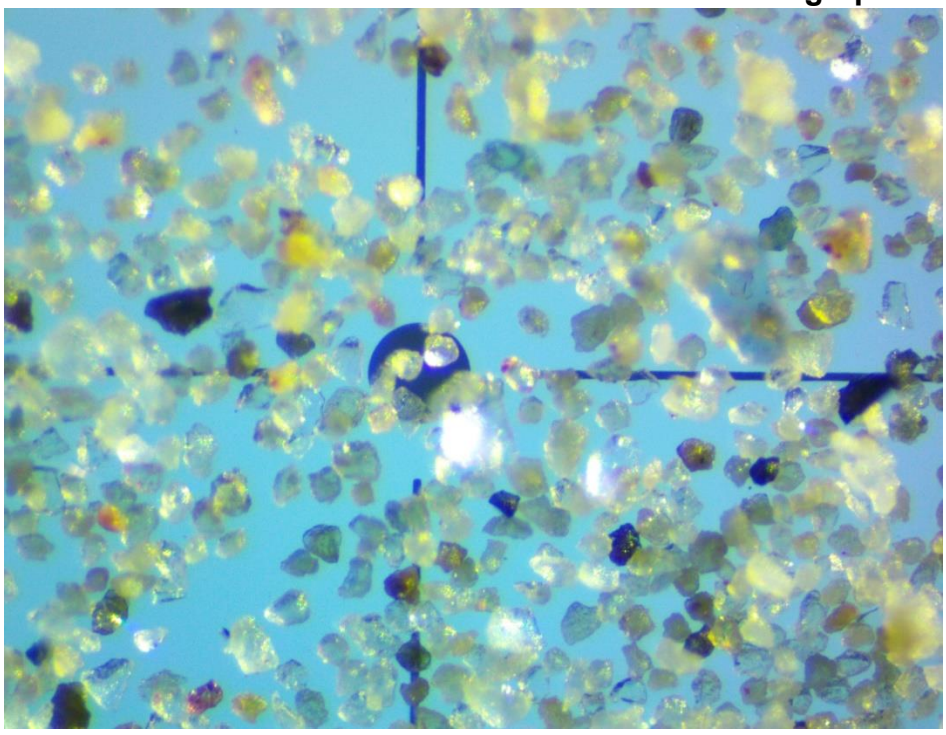


NOT FOR CONSTRUCTION INFORMATION ONLY

B-004-0-24, Bag 1, 31.5'-51' - Photos



Particles > 150 Micron with 200 Grid Photo Micrograph



Particles < 150 Micron with 200 Grid Photo Micrograph

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WRES, inc.
Pump Consulting Services

ASTM G75 Slurry Abrasivity Determination By Miller Number System

Test
Type : Miller Number
Number : M-241118.3
Date : 30-Nov-2024
Project
Description : 241118 Geotesting Express
Slurry
Description : B-009-0-24, Bag 1, 23.5'-37.5'
AFS Test Sand Factor : 1.0000
Concentration : 50% by Mass - 150g Solids - 150g Water
Temperature : 75F
Wear Specimen
Description : 27% Chrome Iron
Specific Gravity : 7.58
Arm Load
Force : 5.00 lbs-f (22.24 Newton) for Miller, Gold, & SAR Number (Metal, Rubber, Epoxy with Fillers)
Lap Material
Description : Neoprene
Hardness : 78-82 Shore A
Wear Factor : 1.000

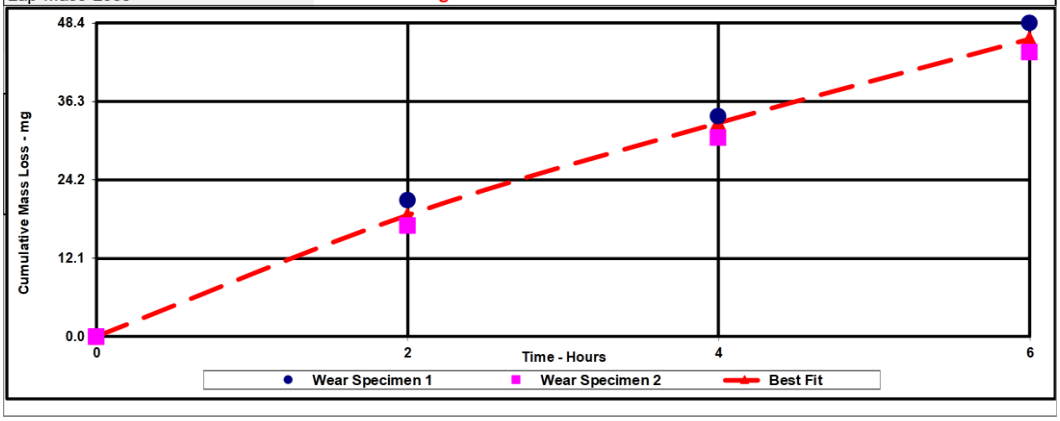
Tray	1			2			
Wear Specimen	2013-128			2013-129			
Hardness	65.1 Rc			64.5 Rc			
Scale Factor	1.062			1.093			
	pH	Mass	Loss	pH	Mass	Loss	
		g	mg		g	mg	
Weight Initial Dry (Elastomer Only)							
Weight Initial Wet or Dry	7.7	12.3016	0.0	7.7	12.2283	0.0	
Weight After 2 Hours	7.9	12.2793	22.4	7.9	12.2096	18.7	
Weight After 4 Hours	8.0	12.2655	13.8	8.0	12.1948	14.8	
Weight After 6 Hours	8.1	12.2503	15.2	8.1	12.1803	14.5	Actual
Weight Total Loss			51.4			48.0	99.4
Weight Final Dry (Elastomer Only)							
Dry Loss Factor			1.00			1.00	
LAP Serial Number	L-1			L-2			
Initial Wt							
Final Wt			-			-	

Best Fit Analysis	Adjusted Chart Data						
	Hours	C	D	Ave	*Best Fit	Error	
		mg	mg	mg	mg	mg	
Weight Initial Wet or Dry	0	0.0	0.0	0.0	0.0	0.000	
Weight After 2 Hours	2	21.1	17.1	19.1	18.7	0.391	
Weight After 4 Hours	4	34.0	30.7	32.3	32.9	-0.602	
Weight After 6 Hours	6	48.4	43.9	46.1	45.9	0.273	Inc
	Cumm	Chart	Max	48.4		0.590	12.1

Click Here to Solve Curve Fit

Results

Best Fit Mass Loss	=	10.62 * Hours^ 0.817	
Miller Number	138.85	Relative Rate of Mass/Volume loss at 2 hours	
Departure	-9%	Relative Rate of Change in Mass/Volume loss at 2 hours	
Lap Mass Loss	0.00	mg	



NOT FOR CONSTRUCTION INFORMATION ONLY

WRES, inc.
Pump Consulting Services

ASTM G75 Slurry Abrasivity Determination By Miller Number System

Test
Type : Miller Number
Number : M-241118.3
Date : 30-Nov-2024
Project
Description : 241118 Geotesting Express
Slurry
Description : B-009-0-24, Bag 1, 23.5'-37.5'
AFS Test Sand Factor : 1.0000
Concentration : 50% by Mass - 150g Solids - 150g Water~ 1mg Ca(OH)2 Inhibited
Temperature : 75F
Wear Specimen
Description : 27% Chrome Iron
Specific Gravity : 7.58
Arm Load
Force : 5.00 lbs-f (22.24 Newton) for Miller, Gold, & SAR Number (Metal, Rubber, Epoxy with Fillers)
Lap Material
Description : Neoprene
Hardness : 78-82 Shore A

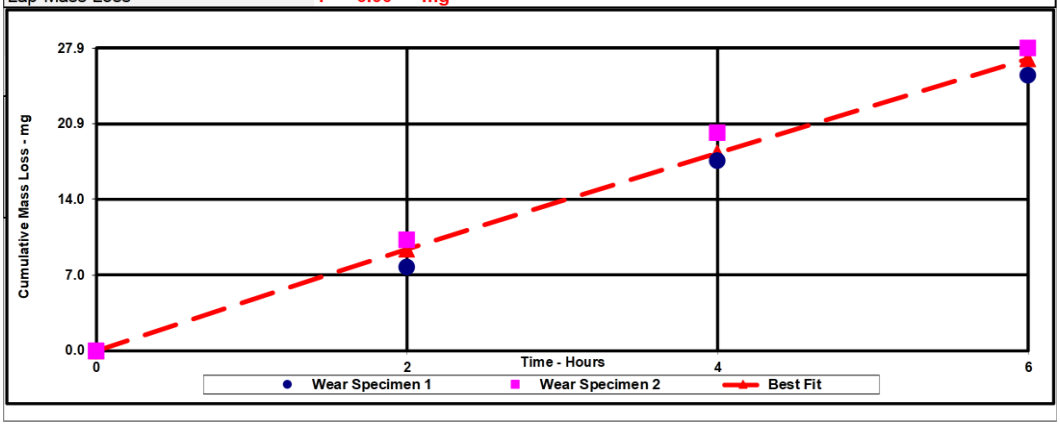
		3			4			
Tray	:							
Wear Specimen	:	2013-130			2013-131			
Hardness	:	64.5 Rc			66.0 Rc			
Scale Factor	:	1.082			1.092			
	:	pH	Mass	Loss	pH	Mass	Loss	
	:		g	mg		g	mg	
Weight Initial Dry (Elastomer Only)	:							
Weight Initial Wet or Dry	:	**14.0**	**12.6329**	0.0	**14.0**	**12.5880**	0.0	
Weight After 2 Hours	:	**14.0**	**12.6245**	8.4	**14.0**	**12.5768**	11.2	
Weight After 4 Hours	:	**13.3**	**12.6139**	10.6	**13.2**	**12.5660**	10.8	
Weight After 6 Hours	:	**12.5**	**12.6053**	8.6	**12.5**	**12.5575**	8.5	Actual
Weight Total Loss	:			27.5			30.5	58.0
Weight Final Dry (Elastomer Only)	:			0.0			0.0	
Dry Loss Factor	:			1.00			1.00	
LAP Serial Number		L-3			L-4			
Initial Wt	:							
Final Wt	:			-			-	

Best Fit Analysis		Adjusted Chart Data						
		Hours	2013-130	2013-131	Ave	*Best Fit	Error	
	:		mg	mg	mg	mg	mg	
Weight Initial Wet or Dry	:	0	0.0	0.0	0.0	0.0	0.000	
Weight After 2 Hours	:	2	7.7	10.2	9.0	9.4	-0.405	
Weight After 4 Hours	:	4	17.5	20.1	18.8	18.2	0.565	
Weight After 6 Hours	:	6	25.5	27.9	26.7	26.9	-0.241	Inc
		Cumm	Chart	Max	27.9		0.541	7.0

Click Here to Solve Curve Fit

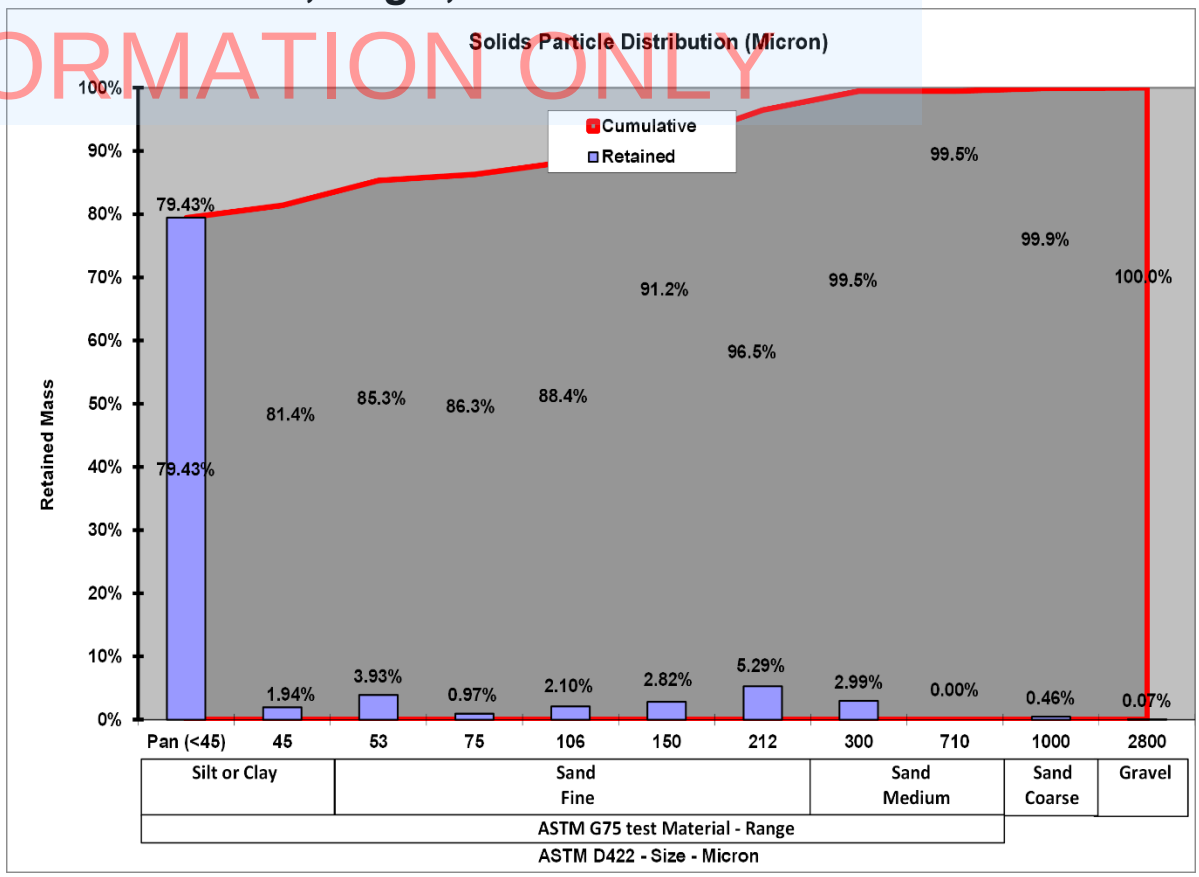
Results

Best Fit Mass Loss	:	=	4.82 * Hours^ 0.960
Miller Number	:	81.85	Relative Rate of Mass/Volume loss at 2 hours
Departure	:	-2%	Relative Rate of Change In Mass/Volume loss at 2 hours
Lap Mass Loss	:	0.00	mg



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B-009-0-24, Bag 1, 23.5'-37.5' - Particle Distribution



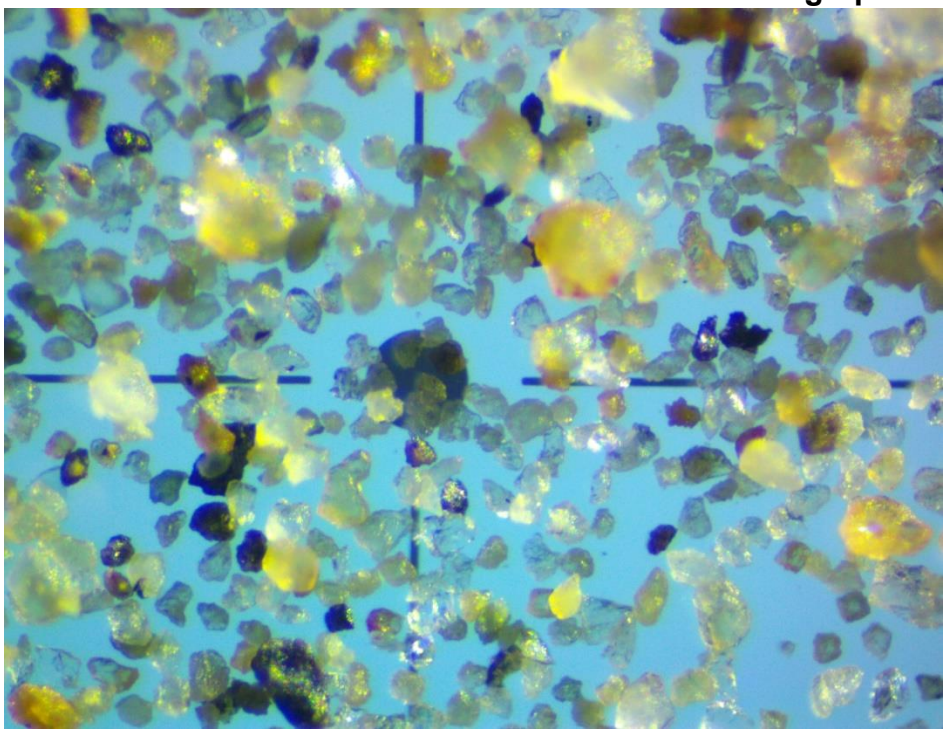


NOT FOR CONSTRUCTION INFORMATION ONLY

B-009-0-24, Bag 1, 23.5'-37.5' - Photos



Particles > 150 Micron with 200 Grid Photo Micrograph



Particles < 150 Micron with 200 Grid Photo Micrograph

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Terracon

Client
EMH&T
Attn: Abby Cueva
5500 New Albany Rd
Columbus, OH 43054

Project
HAM-75-1.95
I-75
Cincinnati, OH

Project No. N1215230

Splitting Tensile Strength of Intact Rock Core Specimens, ASTM D3967

Boring	B-153-01-24	**Material Description**	Shale
Sample No	NQ2-15C	**Equipment Used**	Tinius Olsen (120,000lbs)
Depth (ft)	54.6	**TICCS ID/Serial No.**	C-48999, 118285
Lab No	1551	**Calibration Date**	10/23/2024

	TENSILE STRENGTH				
Lab No.	1	2	3	4	5
Diameter (in)	1.96	1.97	1.96	1.95	1.94
Length (in)	0.54	0.45	0.44	0.45	0.34
Length Diameter Ratio	0.28	0.23	0.22	0.23	0.18
Rate of Loading	0.054	0.045	0.044	0.045	0.034
Moisture Condition	5.34%	5.34%	5.34%	5.34%	5.34%
Maximum Applied Load (lbf)	258	365	249	203	122
Splitting Tensile Strength (psi)	155.3	262.2	183.9	147.3	

	TENSILE STRENGTH				
Lab No.	6	7	8	9	10
Diameter (in)	2.01	2.05	2.01	2.03	
Length (in)	0.51	0.47	0.54	0.35	
Length Diameter Ratio	0.25	0.23	0.27	0.17	
Rate of Loading	0.051	0.047	0.054	0.035	
Moisture Condition	5.34%	5.34%	5.34%	5.34%	
Maximum Applied Load (lbf)	55	13	15	51	
Splitting Tensile Strength (psi)	34.2	8.6	8.8	45.7	

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EMH&T
Attn: Abby Cueva
5500 New Albany Rd
Columbus, OH 43054

Project
HAM-75-1.95
I-75
Cincinnati, OH

Project No. N1215230

Splitting Tensile Strength of Intact Rock Core Specimens, ASTM D3967

Boring	B-158-01-24	**Material Description**	Shale
Sample No	NQ2-16D	**Equipment Used**	Tinius Olsen (120,000lbs)
Depth (ft)	54.1	**TICCS ID/Serial No.**	C-48999, 118285
Lab No	1565	**Calibration Date**	10/23/2024

	TENSILE STRENGTH				
Lab No.	1	2	3	4	5
Diameter (in)	1.96	2.00	2.03	2.02	2.01
Length (in)	0.63	0.36	0.71	0.56	0.60
Length Diameter Ratio	0.32	0.18	0.35	0.28	0.30
Rate of Loading	0.063	0.036	0.071	0.056	0.06
Moisture Condition	4.94%	4.94%	4.94%	4.94%	4.94%
Maximum Applied Load (lbf)	223	130	34	14	180
Splitting Tensile Strength (psi)	115.0	115.0	15.0	7.9	95.1

	TENSILE STRENGTH				
Lab No.	6	7	8	9	10
Diameter (in)	1.99	1.99	2.03		
Length (in)	0.57	0.65	0.52		
Length Diameter Ratio	0.29	0.33	0.26		
Rate of Loading	0.057	0.065	0.052		
Moisture Condition	4.94%	4.94%	4.94%		
Maximum Applied Load (lbf)	165	461	11		
Splitting Tensile Strength (psi)	92.7	227.0	6.6		

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Client
EMH&T
Attn: Abby Cueva
5500 New Albany Rd
Columbus, OH 43054

Project
HAM-75-1.95
I-75
Cincinnati, OH

Project No. N1215230

Splitting Tensile Strength of Intact Rock Core Specimens, ASTM D3967

Boring	B-158-01-24	**Material Description**	Shale
Sample No	NQ2-17C	**Equipment Used**	Tinius Olsen (120,000lbs)
Depth (ft)	59.4	**TICCS ID/Serial No.**	C-48999, 118285
Lab No	1566	**Calibration Date**	10/23/2024

	TENSILE STRENGTH				
Lab No.	1	2	3	4	5
Diameter (in)	2	2.02	2.02	2.02	2.02
Length (in)	0.49	0.62	0.43	0.52	0.54
Length Diameter Ratio	0.25	0.31	0.21	0.26	0.27
Rate of Loading	0.049	0.062	0.043	0.052	0.054
Moisture Condition	4.87%	4.87%	4.87%	4.87%	4.87%
Maximum Applied Load (lbf)	38	101	26	26	128
Splitting Tensile Strength (psi)	24.7	51.4	19.1	15.8	74.7

	TENSILE STRENGTH				
Lab No.	6	7	8	9	10
Diameter (in)	2.02				
Length (in)	0.54				
Length Diameter Ratio	0.27				
Rate of Loading	0.054				
Moisture Condition	4.87%				
Maximum Applied Load (lbf)	145				
Splitting Tensile Strength (psi)	84.7				

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Terracon

SLAKE DURABILITY INDEX (SDI) TEST SUMMARY (ASTM D4644)

Client: EMH&T **Date:** 3/20/2025

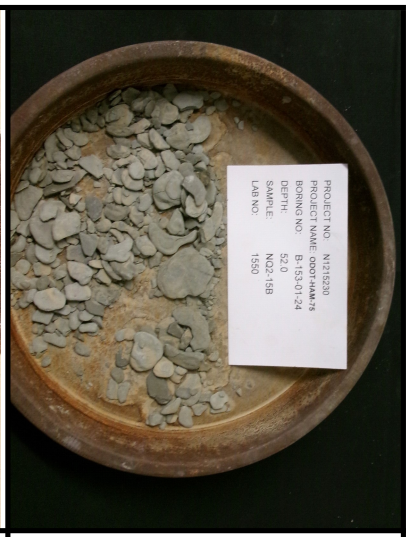
Project: HAM-75-1.95 **Project No:** N1215230

Location: B-153-01-24

Lab No.:			1550
Boring No.:			B-153-01-24
Sample No.:			NQ2-15B
Depth (ft):			52.00
Tare Weight (grams):			146.52
Moist weight, Sample+Tare (grams):			695.86
Dry weight, Sample+Tare (grams):			683.81
Natural Moisture Content (%):			**2.2**
After Cycle No. 1			
Temperature (°F)			Dry Weight, Sample +Tare (grams)
Start	End	Average	
20.33	20.67	20.50	361.12
After Cycle No. 2			
Temperature (°F)			Dry Weight, Sample +Tare (grams)
Start	End	Average	
21.28	21.18	21.23	251.41
SLAKE DURABILITY INDEX (%):			**19.5**
Fragment Type (1, 2 or 3):			**3**
Material Description:	Shale		
Notes/Comments:			



Before Test



After Test

Lab No.:			1552
Boring No.:			B-153-01-24
Sample No.:			NQ2-16B
Depth (ft):			58.00
Tare Weight (grams):			145.66
Moist weight, Sample+Tare (grams):			672.7
Dry weight, Sample+Tare (grams):			664.9
Natural Moisture Content (%):			**1.5**
After Cycle No. 1			
Temperature (°F)			Dry Weight, Sample +Tare (grams)
Start	End	Average	
19.22	19.94	19.58	367.51
After Cycle No. 2			
Temperature (°F)			Dry Weight, Sample +Tare (grams)
Start	End	Average	
21.28	21.18	21.23	265.10
SLAKE DURABILITY INDEX (%):			**23.0**
Fragment Type (1, 2 or 3):			**3**
Material Description:	Shale		
Notes/Comments:			



Before Test



After Test

NOT FOR CONSTRUCTION INFORMATION ONLY

Terracon

SLAKE DURABILITY INDEX (SDI) TEST SUMMARY (ASTM D4644)

Client: EMH&T **Date:** 3/20/2025

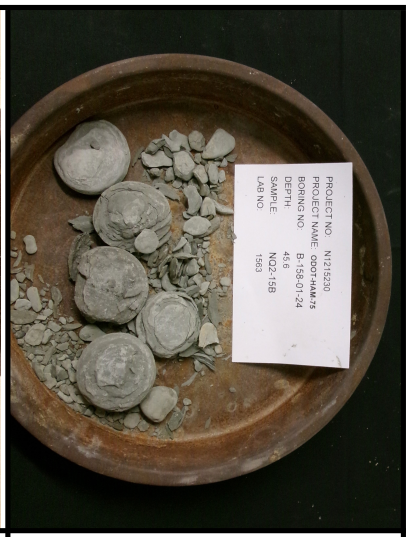
Project: HAM-75-1.95 **Project No:** N1215230

Location: B-158-01-24

Lab No.:			1563
Boring No.:			B-158-01-24
Sample No.:			NQ2-15B
Depth (ft):			45.60
Tare Weight (grams):			145.12
Moist weight, Sample+Tare (grams):			619.45
Dry weight, Sample+Tare (grams):			611.11
Natural Moisture Content (%):			**1.8**
After Cycle No. 1			
Temperature (°F)			Dry Weight, Sample +Tare (grams)
Start	End	Average	
20.67	20.91	20.79	444.35
After Cycle No. 2			
Temperature (°F)			Dry Weight, Sample +Tare (grams)
Start	End	Average	
21.19	21.22	21.21	350.03
SLAKE DURABILITY INDEX (%):			**44.0**
Fragment Type (1, 2 or 3):			**2**
Material Description:	Shale		
Notes/Comments:			



Before Test



After Test

Lab No.:			1564
Boring No.:			B-158-01-24
Sample No.:			NQ2-16C
Depth (ft):			53.40
Tare Weight (grams):			141.74
Moist weight, Sample+Tare (grams):			685.5
Dry weight, Sample+Tare (grams):			680.2
Natural Moisture Content (%):			**1.0**
After Cycle No. 1			
Temperature (°F)			Dry Weight, Sample +Tare (grams)
Start	End	Average	
19.94	20.40	20.17	521.46
After Cycle No. 2			
Temperature (°F)			Dry Weight, Sample +Tare (grams)
Start	End	Average	
21.19	21.22	21.21	434.06
SLAKE DURABILITY INDEX (%):			**54.3**
Fragment Type (1, 2 or 3):			**2**
Material Description:	Shale		
Notes/Comments:			



Before Test



After Test

NOT FOR CONSTRUCTION INFORMATION ONLY

Client:	Terracon Consultants, Inc.
Project Name:	Ham -75-1-95
Project Location:	---
GTX #:	320686
Test Date:	3/19/2025
Tested By:	jss
Checked By:	smd

Abrasiveness of Rock Using the CERCHAR Method by ASTM D7625-22

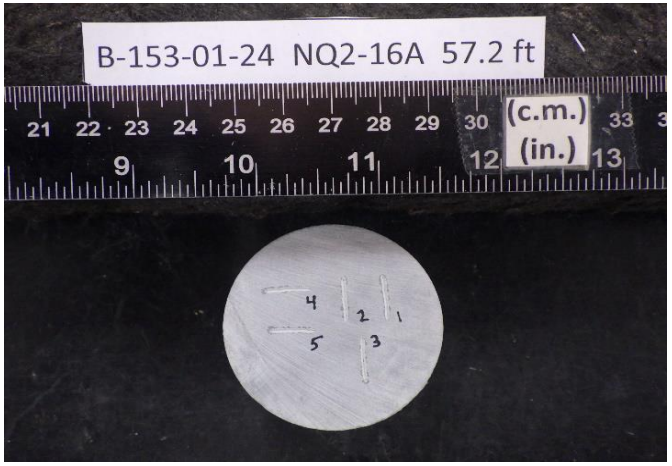
Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-153-01-24	NQ2-16A	57.2	1	0.2	0.1	0.15	
			2	0.3	0.2	0.25	
			3	0.3	0.3	0.30	
			4	0.3	0.2	0.25	
			5	0.2	0.3	0.25	
			Average CAIs			0.24	
			Average CAI *			0.27	
			CERCHAR Abrasiveness Index Classification			Very Low Abrasiveness	

Notes:

Test Surface: Saw Cut
Moisture Condition: As Received
Apparatus Type: Original CERCHAR
Stylus Hardness: Rockwell Hardness 54/56 HRC
Stylus Displacement Relative to Rock Fabric:
Styli 1-3: Normal; Styli 4-5: Parallel

* If CAIs $\leq$ 3.9, CAI = 1.14 X CAI_S
* If CAIs $\geq$ 4.0, CAI = (0.99 x CAI_S) + 0.48
CAIs = CERCHAR index for smooth (saw cut) surface
CAI = CERCHAR index for natural surface

Visual Description: Shale



After Test

NOT FOR CONSTRUCTION INFORMATION ONLY

Client:	Terracon Consultants, Inc.
Project Name:	Ham -75-1-95
Project Location:	---
GTX #:	320686
Test Date:	3/19/2025
Tested By:	jss
Checked By:	smd

Abrasiveness of Rock Using the CERCHAR Method by ASTM D7625-22

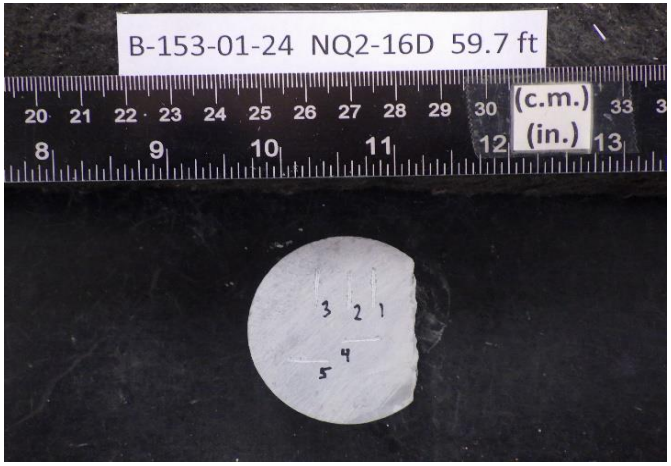
Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-153-01-24	NQ2-16D	59.7	1	0.6	0.8	0.70	
			2	2.0	0.3	1.15	
			3	0.9	1.0	0.95	
			4	0.7	0.9	0.80	
			5	0.9	0.9	0.90	
			Average CAIs			0.90	
			Average CAI *			1.03	
			CERCHAR Abrasiveness Index Classification			Medium Abrasiveness	

Notes:

Test Surface: Saw Cut
Moisture Condition: As Received
Apparatus Type: Original CERCHAR
Stylus Hardness: Rockwell Hardness 54/56 HRC
Stylus Displacement Relative to Rock Fabric:
Styli 1-3: Normal; Styli 4-5: Parallel

* If CAIs $\leq$ 3.9, CAI = 1.14 X CAI_S
* If CAIs $\geq$ 4.0, CAI = (0.99 x CAI_S) + 0.48
CAIs = CERCHAR index for smooth (saw cut) surface
CAI = CERCHAR index for natural surface

Visual Description: Limestone



After Test

NOT FOR CONSTRUCTION INFORMATION ONLY

Client:	Terracon Consultants, Inc.
Project Name:	Ham -75-1-95
Project Location:	---
GTX #:	320686
Test Date:	3/19/2025
Tested By:	jss
Checked By:	smd

Abrasiveness of Rock Using the CERCHAR Method by ASTM D7625-22

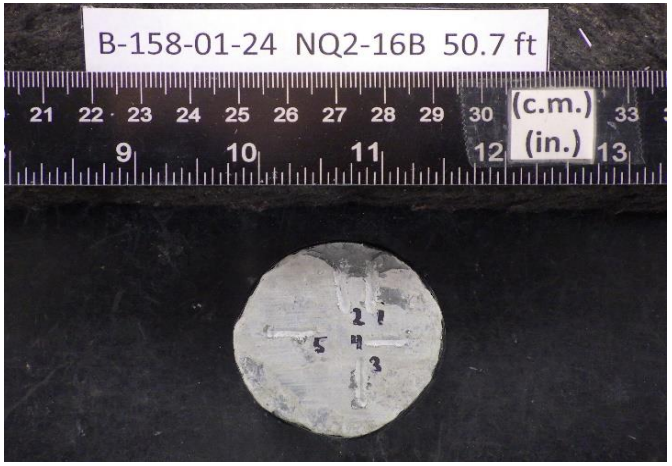
Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-158-01-24	NQ2-16B	50.7	1	0.2	0.3	0.25	
			2	0.1	0.2	0.15	
			3	0.1	0.1	0.10	
			4	0.2	0.2	0.20	
			5	0.4	0.3	0.35	
			Average CAIs			0.21	
			Average CAI *			0.24	
			CERCHAR Abrasiveness Index Classification			Very Low Abrasiveness	

Notes:

Test Surface: Saw Cut
Moisture Condition: As Received
Apparatus Type: Original CERCHAR
Stylus Hardness: Rockwell Hardness 54/56 HRC
Stylus Displacement Relative to Rock Fabric:
Styli 1-3: Normal; Styli 4-5: Parallel

* If CAIs $\leq$ 3.9, CAI = 1.14 X CAI_S
* If CAIs $\geq$ 4.0, CAI = (0.99 x CAI_S) + 0.48
CAIs = CERCHAR index for smooth (saw cut) surface
CAI = CERCHAR index for natural surface

Visual Description: Shale



After Test

NOT FOR CONSTRUCTION INFORMATION ONLY

Client:	Terracon Consultants, Inc.
Project Name:	Ham -75-1-95
Project Location:	---
GTX #:	320686
Test Date:	3/19/2025
Tested By:	jss
Checked By:	smd

Abrasiveness of Rock Using the CERCHAR Method by ASTM D7625-22

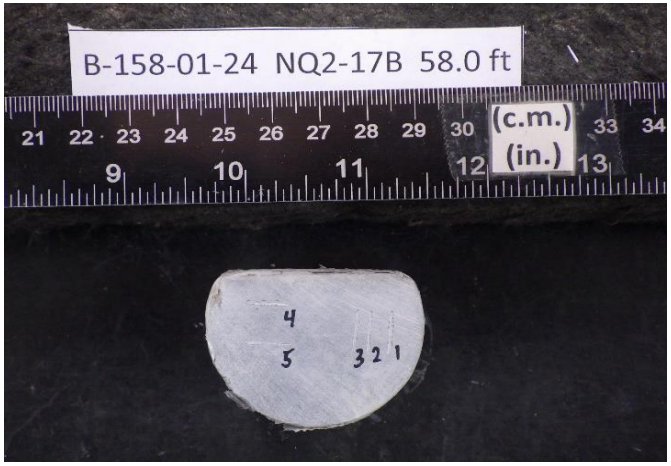
Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-158-01-24	NQ2-17B	58.0	1	0.5	0.6	0.55	
			2	0.5	0.4	0.45	
			3	1.3	1.2	1.25	
			4	0.1	0.2	0.15	
			5	1.1	1.3	1.20	
			Average CAIs			0.72	
			Average CAI *			0.82	
			CERCHAR Abrasiveness Index Classification			Low Abrasiveness	

Notes:

Test Surface: Saw Cut
Moisture Condition: As Received
Apparatus Type: Original CERCHAR
Stylus Hardness: Rockwell Hardness 54/56 HRC
Stylus Displacement Relative to Rock Fabric:
Styli 1-3: Normal; Styli 4-5: Parallel

* If CAIs $\leq$ 3.9, CAI = 1.14 X CAI_S
* If CAIs $\geq$ 4.0, CAI = (0.99 x CAI_S) + 0.48
CAIs = CERCHAR index for smooth (saw cut) surface
CAI = CERCHAR index for natural surface

Visual Description: Limestone



After Test

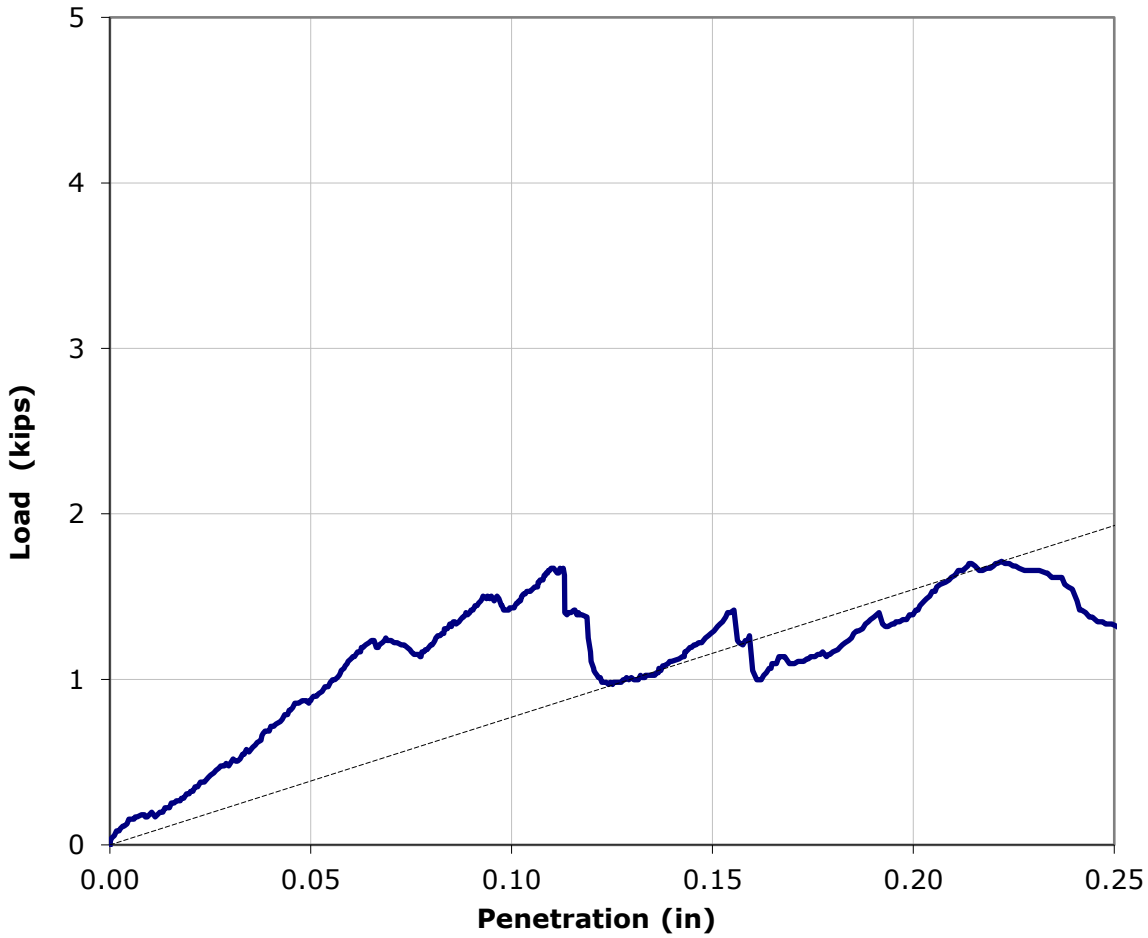
NOT FOR CONSTRUCTION INFORMATION ONLY

GeoTesting EXPRESS
A Sercel Business

Client:	Terracon Consultants, Inc.
Project Name:	Ham -75-1-95
Project Location:	---
GTX #:	320686
Test Date:	3/27/2025
Tested By:	gp
Checked By:	jsc
Boring ID:	B-158-01-24
Sample ID:	NQ2-15A
Depth, ft.:	45
Visual Description:	Shale

Punch Penetration Index Test

Moisture Condition:	as-received	Maximum Load, lbs:	1713
Penetration Rate, in/sec:	0.001	Peak Slope Index, kips/in:	7.7



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Field Permeability Test Results

Contents:

Table 1 – Aquifer Testing Results
Slug Testing Data and Graphs

Note: All attachments are one page unless noted above.

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TABLE 1
Aquifer Testing Results (Rising/Falling Head Tests)
HAM-75-1.05, Storm Sewer Storage (Micro-tunnel) Project
Ohio Department of Transportation
Cincinnati, Ohio

Well ID	Hydraulic Conductivity Values (feet/day)				
	RH Test	FH Test	Aquifer Parameters		
	20% Porosity	20% Porosity	Average K (ft/day)	Saturated Thickness (ft)	Average T (gpd/ft)
B-001	2.157	NA	2.157	23.05	49.719
B-004	2.429	NA	2.429	21.98	53.389
B-009	8.440	4.52^	6.480	19.91	129.017
B-012	15.020	NA	15.020	13.39	201.118

Notes:
K = Hydraulic Conductivity in feet per day (ft/day) calculated for the specified test performed at each well location
b = Saturated aquifer thickness in feet (ft) based on well completion logs and depth to water measurements for each well location measured after well development and immediately prior to slug testing
T = Transmissivity in gallons per day per foot (gpd/ft) of saturated aquifer thickness, where T = Kb at each well location
NA = Falling Head results considered unreliable and data Not Analyzed (where screened interval not fully saturated and initial wetting of initially dry soils occurs during falling head tests)
^ = Screened interval very near full saturation, therefore falling head testing results considered to be reliable
Porosity = assumed porosity of filter pack material

Average Aquifer Properties

Average K =	**6.52**	**ft/day is the average K of all *Rising Head* test values calculated for the area extending across all of the above-referenced wells.**
Average T =	**108.31**	**gpd/ft is the average T based on all K values calculated for the area extending across all of the above-referenced wells.**

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Data Set: C:\Users\djhess\OneDrive - Terracon Consultants Inc\Desktop\Cinn OH - SW Micro-Tunnel Aquifer Testi
Title: Rising Head
Date: 01/16/25
Time: 10:22:46

PROJECT INFORMATION

Location: Cincinnati, OH
Test Date: 11/8/2024
Test Well: B-001-0-24

AQUIFER DATA

Saturated Thickness: 23.05 ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: B-001

X Location: 0. ft
Y Location: 0. ft

Initial Displacement: 0.4965 ft
Static Water Column Height: 23.05 ft
Casing Radius: 0.0833 ft
Well Radius: 0.276 ft
Well Skin Radius: 0.276 ft
Screen Length: 30. ft
Total Well Penetration Depth: 54.5 ft

No. of Observations: 1594

Observation Data

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
1.	0.	798.	0.08
2.	0.	799.	0.08
3.	0.	800.	0.07
4.	0.	801.	0.07
5.	0.	802.	0.08
6.	0.	803.	0.08
7.	0.	804.	0.08
8.	0.	805.	0.08
9.	0.	806.	0.07
10.	0.	807.	0.08
11.	0.	808.	0.08
12.	0.	809.	0.08
13.	0.	810.	0.08
14.	0.	811.	0.08
15.	0.	812.	0.08
16.	0.	813.	0.08
17.	0.	814.	0.08
18.	0.	815.	0.08
19.	0.	816.	0.08
20.	0.	817.	0.08
21.	0.	818.	0.08
22.	0.	819.	0.08
23.	0.	820.	0.08
24.	0.	821.	0.08
25.	0.	822.	0.08
26.	0.	823.	0.08
27.	0.	824.	0.08
28.	0.	825.	0.08
29.	0.	826.	0.08
30.	0.	827.	0.08
31.	0.	828.	0.08
32.	0.	829.	0.08

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
33.	0.	830.	0.08
34.	0.	831.	0.08
35.	0.	832.	0.08
36.	0.	833.	0.08
37.	0.	834.	0.08
38.	0.	835.	0.08
39.	0.	836.	0.08
40.	0.	837.	0.08
41.	0.	838.	0.08
42.	0.	839.	0.08
43.	0.01	840.	0.08
44.	0.	841.	0.08
45.	0.01	842.	0.08
46.	0.01	843.	0.08
47.	0.01	844.	0.08
48.	0.01	845.	0.08
49.	0.01	846.	0.08
50.	0.01	847.	0.08
51.	0.01	848.	0.08
52.	0.01	849.	0.08
53.	0.01	850.	0.08
54.	0.01	851.	0.08
55.	0.01	852.	0.08
56.	0.01	853.	0.08
57.	0.01	854.	0.08
58.	0.01	855.	0.08
59.	0.01	856.	0.08
60.	0.01	857.	0.08
61.	0.01	858.	0.08
62.	0.01	859.	0.08
63.	0.01	860.	0.08
64.	0.01	861.	0.08
65.	0.01	862.	0.08
66.	0.01	863.	0.08
67.	0.01	864.	0.08
68.	0.01	865.	0.08
69.	0.01	866.	0.08
70.	0.01	867.	0.08
71.	0.01	868.	0.08
72.	0.01	869.	0.08
73.	0.01	870.	0.08
74.	0.01	871.	0.08
75.	0.01	872.	0.08
76.	0.01	873.	0.08
77.	0.01	874.	0.08
78.	0.01	875.	0.08
79.	0.01	876.	0.08
80.	0.01	877.	0.08
81.	0.01	878.	0.08
82.	0.01	879.	0.08
83.	0.01	880.	0.08
84.	0.01	881.	0.08
85.	0.01	882.	0.08
86.	0.01	883.	0.08
87.	0.01	884.	0.08
88.	0.01	885.	0.08
89.	0.01	886.	0.08
90.	0.01	887.	0.08
91.	0.01	888.	0.08
92.	0.01	889.	0.08
93.	0.01	890.	0.08
94.	0.01	891.	0.08
95.	0.01	892.	0.08
96.	0.01	893.	0.08
97.	0.01	894.	0.08
98.	0.01	895.	0.08

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
99.	0.01	896.	0.08
100.	0.01	897.	0.08
101.	0.01	898.	0.08
102.	0.01	899.	0.08
103.	0.01	900.	0.08
104.	0.01	901.	0.08
105.	0.01	902.	0.08
106.	0.01	903.	0.08
107.	0.01	904.	0.08
108.	0.01	905.	0.08
109.	0.01	906.	0.08
110.	0.01	907.	0.08
111.	0.01	908.	0.08
112.	0.01	909.	0.08
113.	0.01	910.	0.08
114.	0.01	911.	0.08
115.	0.01	912.	0.08
116.	0.01	913.	0.08
117.	0.01	914.	0.08
118.	0.01	915.	0.08
119.	0.01	916.	0.08
120.	0.02	917.	0.08
121.	0.01	918.	0.08
122.	0.02	919.	0.08
123.	0.02	920.	0.08
124.	0.02	921.	0.08
125.	0.02	922.	0.08
126.	0.02	923.	0.08
127.	0.02	924.	0.08
128.	0.02	925.	0.08
129.	0.02	926.	0.08
130.	0.02	927.	0.08
131.	0.02	928.	0.08
132.	0.02	929.	0.08
133.	0.02	930.	0.08
134.	0.02	931.	0.08
135.	0.02	932.	0.08
136.	0.02	933.	0.08
137.	0.02	934.	0.08
138.	0.02	935.	0.08
139.	0.02	936.	0.08
140.	0.02	937.	0.08
141.	0.02	938.	0.08
142.	0.02	939.	0.08
143.	0.02	940.	0.08
144.	0.02	941.	0.08
145.	0.02	942.	0.08
146.	0.02	943.	0.08
147.	0.02	944.	0.08
148.	0.02	945.	0.08
149.	0.02	946.	0.08
150.	0.02	947.	0.09
151.	0.02	948.	0.08
152.	0.02	949.	0.08
153.	0.02	950.	0.08
154.	0.02	951.	0.08
155.	0.02	952.	0.08
156.	0.02	953.	0.09
157.	0.02	954.	0.09
158.	0.02	955.	0.09
159.	0.02	956.	0.08
160.	0.02	957.	0.08
161.	0.02	958.	0.09
162.	0.02	959.	0.09
163.	0.02	960.	0.09
164.	0.02	961.	0.08

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
165.	0.02	962.	0.08
166.	0.02	963.	0.08
167.	0.02	964.	0.09
168.	0.02	965.	0.08
169.	0.02	966.	0.08
170.	0.02	967.	0.09
171.	0.02	968.	0.09
172.	0.02	969.	0.09
173.	0.02	970.	0.08
174.	0.02	971.	0.09
175.	0.02	972.	0.09
176.	0.02	973.	0.08
177.	0.02	974.	0.09
178.	0.02	975.	0.09
179.	0.02	976.	0.09
180.	0.02	977.	0.09
181.	0.02	978.	0.09
182.	0.02	979.	0.09
183.	0.02	980.	0.09
184.	0.02	981.	0.09
185.	0.02	982.	0.09
186.	0.02	983.	0.09
187.	0.02	984.	0.09
188.	0.02	985.	0.09
189.	0.02	986.	0.09
190.	0.02	987.	0.09
191.	0.02	988.	0.09
192.	0.02	989.	0.09
193.	0.02	990.	0.09
194.	0.02	991.	0.09
195.	0.02	992.	0.09
196.	0.02	993.	0.09
197.	0.02	994.	0.09
198.	0.02	995.	0.09
199.	0.02	996.	0.09
200.	0.02	997.	0.09
201.	0.02	998.	0.09
202.	0.02	999.	0.09
203.	0.03	1000.	0.09
204.	0.02	1001.	0.09
205.	0.02	1002.	0.09
206.	0.02	1003.	0.09
207.	0.03	1004.	0.09
208.	0.03	1005.	0.09
209.	0.03	1006.	0.09
210.	0.03	1007.	0.09
211.	0.02	1008.	0.09
212.	0.03	1009.	0.09
213.	0.03	1010.	0.09
214.	0.03	1011.	0.09
215.	0.03	1012.	0.09
216.	0.03	1013.	0.09
217.	0.02	1014.	0.09
218.	0.03	1015.	0.09
219.	0.03	1016.	0.09
220.	0.03	1017.	0.09
221.	0.03	1018.	0.09
222.	0.03	1019.	0.09
223.	0.03	1020.	0.09
224.	0.03	1021.	0.09
225.	0.03	1022.	0.09
226.	0.03	1023.	0.09
227.	0.03	1024.	0.09
228.	0.03	1025.	0.09
229.	0.03	1026.	0.09
230.	0.03	1027.	0.09

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
231.	0.03	1028.	0.09
232.	0.03	1029.	0.09
233.	0.03	1030.	0.09
234.	0.03	1031.	0.09
235.	0.03	1032.	0.09
236.	0.03	1033.	0.09
237.	0.03	1034.	0.09
238.	0.03	1035.	0.09
239.	0.03	1036.	0.09
240.	0.03	1037.	0.09
241.	0.03	1038.	0.09
242.	0.03	1039.	0.09
243.	0.03	1040.	0.09
244.	0.03	1041.	0.09
245.	0.03	1042.	0.09
246.	0.03	1043.	0.09
247.	0.03	1044.	0.09
248.	0.03	1045.	0.09
249.	0.03	1046.	0.09
250.	0.03	1047.	0.09
251.	0.03	1048.	0.09
252.	0.03	1049.	0.09
253.	0.03	1050.	0.09
254.	0.03	1051.	0.09
255.	0.03	1052.	0.09
256.	0.03	1053.	0.09
257.	0.03	1054.	0.09
258.	0.03	1055.	0.09
259.	0.03	1056.	0.09
260.	0.03	1057.	0.09
261.	0.03	1058.	0.09
262.	0.03	1059.	0.09
263.	0.03	1060.	0.09
264.	0.03	1061.	0.09
265.	0.03	1062.	0.09
266.	0.03	1063.	0.09
267.	0.03	1064.	0.09
268.	0.03	1065.	0.09
269.	0.03	1066.	0.09
270.	0.03	1067.	0.09
271.	0.03	1068.	0.09
272.	0.03	1069.	0.09
273.	0.03	1070.	0.09
274.	0.03	1071.	0.09
275.	0.03	1072.	0.09
276.	0.03	1073.	0.09
277.	0.03	1074.	0.09
278.	0.03	1075.	0.09
279.	0.03	1076.	0.09
280.	0.03	1077.	0.09
281.	0.03	1078.	0.09
282.	0.03	1079.	0.09
283.	0.03	1080.	0.09
284.	0.03	1081.	0.09
285.	0.03	1082.	0.09
286.	0.03	1083.	0.09
287.	0.03	1084.	0.09
288.	0.03	1085.	0.09
289.	0.03	1086.	0.09
290.	0.03	1087.	0.09
291.	0.03	1088.	0.09
292.	0.03	1089.	0.09
293.	0.03	1090.	0.09
294.	0.03	1091.	0.09
295.	0.03	1092.	0.09
296.	0.03	1093.	0.09

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
297.	0.03	1094.	0.09
298.	0.03	1095.	0.09
299.	0.03	1096.	0.09
300.	0.03	1097.	0.09
301.	0.03	1098.	0.09
302.	0.03	1099.	0.09
303.	0.03	1100.	0.09
304.	0.03	1101.	0.09
305.	0.03	1102.	0.09
306.	0.03	1103.	0.09
307.	0.03	1104.	0.09
308.	0.03	1105.	0.09
309.	0.03	1106.	0.09
310.	0.03	1107.	0.09
311.	0.03	1108.	0.09
312.	0.03	1109.	0.09
313.	0.03	1110.	0.09
314.	0.03	1111.	0.09
315.	0.03	1112.	0.09
316.	0.03	1113.	0.09
317.	0.03	1114.	0.09
318.	0.03	1115.	0.09
319.	0.03	1116.	0.09
320.	0.03	1117.	0.09
321.	0.03	1118.	0.09
322.	0.03	1119.	0.09
323.	0.04	1120.	0.09
324.	0.03	1121.	0.09
325.	0.03	1122.	0.09
326.	0.04	1123.	0.09
327.	0.03	1124.	0.09
328.	0.04	1125.	0.09
329.	0.03	1126.	0.09
330.	0.04	1127.	0.09
331.	0.04	1128.	0.09
332.	0.03	1129.	0.09
333.	0.04	1130.	0.09
334.	0.04	1131.	0.09
335.	0.04	1132.	0.09
336.	0.04	1133.	0.09
337.	0.04	1134.	0.09
338.	0.04	1135.	0.09
339.	0.04	1136.	0.09
340.	0.04	1137.	0.09
341.	0.03	1138.	0.09
342.	0.04	1139.	0.09
343.	0.04	1140.	0.09
344.	0.04	1141.	0.09
345.	0.04	1142.	0.09
346.	0.04	1143.	0.09
347.	0.04	1144.	0.09
348.	0.04	1145.	0.09
349.	0.04	1146.	0.09
350.	0.04	1147.	0.09
351.	0.04	1148.	0.09
352.	0.04	1149.	0.09
353.	0.04	1150.	0.09
354.	0.04	1151.	0.09
355.	0.04	1152.	0.09
356.	0.04	1153.	0.09
357.	0.04	1154.	0.09
358.	0.04	1155.	0.09
359.	0.04	1156.	0.09
360.	0.04	1157.	0.09
361.	0.04	1158.	0.09
362.	0.04	1159.	0.09

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
363.	0.04	1160.	0.09
364.	0.04	1161.	0.09
365.	0.04	1162.	0.09
366.	0.04	1163.	0.09
367.	0.04	1164.	0.09
368.	0.04	1165.	0.09
369.	0.04	1166.	0.09
370.	0.04	1167.	0.09
371.	0.04	1168.	0.09
372.	0.04	1169.	0.09
373.	0.04	1170.	0.09
374.	0.04	1171.	0.09
375.	0.04	1172.	0.09
376.	0.04	1173.	0.09
377.	0.04	1174.	0.09
378.	0.04	1175.	0.09
379.	0.04	1176.	0.09
380.	0.04	1177.	0.09
381.	0.04	1178.	0.09
382.	0.04	1179.	0.09
383.	0.04	1180.	0.1
384.	0.04	1181.	0.09
385.	0.04	1182.	0.1
386.	0.04	1183.	0.09
387.	0.04	1184.	0.09
388.	0.04	1185.	0.1
389.	0.04	1186.	0.09
390.	0.04	1187.	0.09
391.	0.04	1188.	0.1
392.	0.04	1189.	0.09
393.	0.04	1190.	0.1
394.	0.27	1191.	0.1
395.	0.5	1192.	0.1
396.	0.32	1193.	0.09
397.	0.23	1194.	0.09
398.	0.19	1195.	0.1
399.	0.16	1196.	0.1
400.	0.14	1197.	0.1
401.	0.14	1198.	0.1
402.	0.13	1199.	0.09
403.	0.13	1200.	0.1
404.	0.12	1201.	0.1
405.	0.12	1202.	0.1
406.	0.11	1203.	0.1
407.	0.11	1204.	0.1
408.	0.11	1205.	0.1
409.	0.01	1206.	0.1
410.	0.01	1207.	0.1
411.	0.02	1208.	0.1
412.	0.02	1209.	0.1
413.	0.02	1210.	0.1
414.	0.02	1211.	0.1
415.	0.02	1212.	0.1
416.	0.02	1213.	0.1
417.	0.02	1214.	0.1
418.	0.02	1215.	0.1
419.	0.02	1216.	0.1
420.	0.02	1217.	0.1
421.	0.02	1218.	0.1
422.	0.02	1219.	0.1
423.	0.02	1220.	0.1
424.	0.02	1221.	0.1
425.	0.01	1222.	0.1
426.	0.01	1223.	0.1
427.	0.01	1224.	0.1
428.	0.01	1225.	0.1

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
429.	0.01	1226.	0.1
430.	0.01	1227.	0.1
431.	0.01	1228.	0.1
432.	0.01	1229.	0.1
433.	0.01	1230.	0.1
434.	0.01	1231.	0.1
435.	0.01	1232.	0.1
436.	0.01	1233.	0.1
437.	0.01	1234.	0.1
438.	0.01	1235.	0.1
439.	0.01	1236.	0.1
440.	0.01	1237.	0.1
441.	0.01	1238.	0.1
442.	0.01	1239.	0.1
443.	0.01	1240.	0.1
444.	0.01	1241.	0.1
445.	0.	1242.	0.1
446.	0.	1243.	0.1
447.	0.	1244.	0.1
448.	0.	1245.	0.1
449.	0.	1246.	0.1
450.	0.	1247.	0.1
451.	0.	1248.	0.1
452.	0.	1249.	0.1
453.	0.	1250.	0.1
454.	0.	1251.	0.1
455.	0.	1252.	0.1
456.	0.	1253.	0.1
457.	0.	1254.	0.1
458.	0.01	1255.	0.1
459.	0.01	1256.	0.1
460.	0.01	1257.	0.1
461.	0.01	1258.	0.1
462.	0.01	1259.	0.1
463.	0.01	1260.	0.1
464.	0.01	1261.	0.1
465.	0.01	1262.	0.1
466.	0.01	1263.	0.1
467.	0.01	1264.	0.1
468.	0.01	1265.	0.1
469.	0.02	1266.	0.1
470.	0.02	1267.	0.1
471.	0.02	1268.	0.1
472.	0.02	1269.	0.1
473.	0.02	1270.	0.1
474.	0.02	1271.	0.1
475.	0.02	1272.	0.1
476.	0.02	1273.	0.1
477.	0.02	1274.	0.1
478.	0.02	1275.	0.1
479.	0.02	1276.	0.1
480.	0.02	1277.	0.1
481.	0.02	1278.	0.1
482.	0.02	1279.	0.1
483.	0.02	1280.	0.1
484.	0.02	1281.	0.1
485.	0.03	1282.	0.1
486.	0.03	1283.	0.1
487.	0.03	1284.	0.1
488.	0.03	1285.	0.1
489.	0.03	1286.	0.1
490.	0.03	1287.	0.1
491.	0.03	1288.	0.1
492.	0.03	1289.	0.1
493.	0.03	1290.	0.1
494.	0.03	1291.	0.1

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
495.	0.03	1292.	0.1
496.	0.03	1293.	0.1
497.	0.03	1294.	0.1
498.	0.03	1295.	0.1
499.	0.03	1296.	0.1
500.	0.03	1297.	0.1
501.	0.03	1298.	0.1
502.	0.03	1299.	0.1
503.	0.03	1300.	0.1
504.	0.03	1301.	0.1
505.	0.03	1302.	0.1
506.	0.03	1303.	0.1
507.	0.03	1304.	0.1
508.	0.03	1305.	0.1
509.	0.04	1306.	0.1
510.	0.03	1307.	0.1
511.	0.04	1308.	0.1
512.	0.04	1309.	0.1
513.	0.04	1310.	0.1
514.	0.04	1311.	0.1
515.	0.04	1312.	0.1
516.	0.04	1313.	0.1
517.	0.04	1314.	0.1
518.	0.04	1315.	0.1
519.	0.04	1316.	0.1
520.	0.04	1317.	0.1
521.	0.04	1318.	0.1
522.	0.04	1319.	0.1
523.	0.04	1320.	0.1
524.	0.04	1321.	0.1
525.	0.04	1322.	0.1
526.	0.04	1323.	0.1
527.	0.04	1324.	0.1
528.	0.04	1325.	0.1
529.	0.04	1326.	0.1
530.	0.04	1327.	0.1
531.	0.04	1328.	0.1
532.	0.04	1329.	0.1
533.	0.04	1330.	0.1
534.	0.04	1331.	0.1
535.	0.04	1332.	0.1
536.	0.04	1333.	0.1
537.	0.04	1334.	0.1
538.	0.05	1335.	0.1
539.	0.04	1336.	0.1
540.	0.05	1337.	0.1
541.	0.05	1338.	0.1
542.	0.05	1339.	0.1
543.	0.05	1340.	0.1
544.	0.05	1341.	0.1
545.	0.05	1342.	0.1
546.	0.05	1343.	0.1
547.	0.05	1344.	0.1
548.	0.05	1345.	0.1
549.	0.05	1346.	0.1
550.	0.05	1347.	0.1
551.	0.05	1348.	0.1
552.	0.05	1349.	0.1
553.	0.05	1350.	0.1
554.	0.05	1351.	0.1
555.	0.05	1352.	0.1
556.	0.05	1353.	0.1
557.	0.05	1354.	0.1
558.	0.05	1355.	0.1
559.	0.05	1356.	0.1
560.	0.05	1357.	0.1

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
561.	0.05	1358.	0.1
562.	0.05	1359.	0.1
563.	0.05	1360.	0.1
564.	0.05	1361.	0.1
565.	0.05	1362.	0.1
566.	0.05	1363.	0.1
567.	0.05	1364.	0.1
568.	0.05	1365.	0.1
569.	0.05	1366.	0.1
570.	0.05	1367.	0.1
571.	0.05	1368.	0.1
572.	0.05	1369.	0.1
573.	0.05	1370.	0.1
574.	0.05	1371.	0.1
575.	0.05	1372.	0.1
576.	0.05	1373.	0.1
577.	0.05	1374.	0.1
578.	0.06	1375.	0.1
579.	0.05	1376.	0.1
580.	0.06	1377.	0.1
581.	0.05	1378.	0.1
582.	0.06	1379.	0.1
583.	0.06	1380.	0.1
584.	0.05	1381.	0.1
585.	0.05	1382.	0.1
586.	0.06	1383.	0.1
587.	0.06	1384.	0.1
588.	0.06	1385.	0.1
589.	0.06	1386.	0.1
590.	0.06	1387.	0.1
591.	0.06	1388.	0.1
592.	0.06	1389.	0.1
593.	0.06	1390.	0.1
594.	0.06	1391.	0.1
595.	0.06	1392.	0.1
596.	0.06	1393.	0.1
597.	0.06	1394.	0.1
598.	0.06	1395.	0.1
599.	0.06	1396.	0.1
600.	0.06	1397.	0.1
601.	0.06	1398.	0.1
602.	0.06	1399.	0.1
603.	0.06	1400.	0.1
604.	0.06	1401.	0.1
605.	0.06	1402.	0.1
606.	0.06	1403.	0.1
607.	0.06	1404.	0.1
608.	0.06	1405.	0.1
609.	0.06	1406.	0.1
610.	0.06	1407.	0.1
611.	0.06	1408.	0.1
612.	0.06	1409.	0.1
613.	0.06	1410.	0.1
614.	0.06	1411.	0.1
615.	0.06	1412.	0.1
616.	0.06	1413.	0.11
617.	0.06	1414.	0.1
618.	0.06	1415.	0.1
619.	0.06	1416.	0.1
620.	0.06	1417.	0.1
621.	0.06	1418.	0.1
622.	0.06	1419.	0.1
623.	0.06	1420.	0.1
624.	0.06	1421.	0.1
625.	0.06	1422.	0.1
626.	0.06	1423.	0.1

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
627.	0.06	1424.	0.11
628.	0.06	1425.	0.1
629.	0.06	1426.	0.1
630.	0.06	1427.	0.11
631.	0.06	1428.	0.1
632.	0.06	1429.	0.11
633.	0.06	1430.	0.11
634.	0.06	1431.	0.11
635.	0.06	1432.	0.11
636.	0.06	1433.	0.11
637.	0.06	1434.	0.1
638.	0.06	1435.	0.1
639.	0.06	1436.	0.11
640.	0.06	1437.	0.11
641.	0.06	1438.	0.11
642.	0.06	1439.	0.11
643.	0.06	1440.	0.11
644.	0.06	1441.	0.11
645.	0.06	1442.	0.11
646.	0.06	1443.	0.1
647.	0.06	1444.	0.11
648.	0.06	1445.	0.11
649.	0.06	1446.	0.11
650.	0.06	1447.	0.11
651.	0.06	1448.	0.11
652.	0.06	1449.	0.11
653.	0.07	1450.	0.11
654.	0.06	1451.	0.11
655.	0.06	1452.	0.11
656.	0.06	1453.	0.11
657.	0.06	1454.	0.11
658.	0.06	1455.	0.11
659.	0.06	1456.	0.11
660.	0.06	1457.	0.11
661.	0.06	1458.	0.11
662.	0.07	1459.	0.11
663.	0.07	1460.	0.11
664.	0.07	1461.	0.11
665.	0.07	1462.	0.11
666.	0.07	1463.	0.11
667.	0.07	1464.	0.11
668.	0.07	1465.	0.11
669.	0.07	1466.	0.11
670.	0.07	1467.	0.11
671.	0.07	1468.	0.11
672.	0.07	1469.	0.11
673.	0.07	1470.	0.11
674.	0.07	1471.	0.11
675.	0.07	1472.	0.11
676.	0.07	1473.	0.11
677.	0.07	1474.	0.11
678.	0.07	1475.	0.11
679.	0.07	1476.	0.11
680.	0.07	1477.	0.11
681.	0.07	1478.	0.11
682.	0.07	1479.	0.11
683.	0.07	1480.	0.11
684.	0.07	1481.	0.11
685.	0.07	1482.	0.11
686.	0.07	1483.	0.11
687.	0.07	1484.	0.11
688.	0.07	1485.	0.11
689.	0.07	1486.	0.11
690.	0.07	1487.	0.11
691.	0.07	1488.	0.11
692.	0.07	1489.	0.11

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
693.	0.07	1490.	0.11
694.	0.07	1491.	0.11
695.	0.07	1492.	0.11
696.	0.07	1493.	0.11
697.	0.07	1494.	0.11
698.	0.07	1495.	0.11
699.	0.07	1496.	0.11
700.	0.07	1497.	0.11
701.	0.07	1498.	0.11
702.	0.07	1499.	0.11
703.	0.07	1500.	0.11
704.	0.07	1501.	0.11
705.	0.07	1502.	0.11
706.	0.07	1503.	0.11
707.	0.07	1504.	0.11
708.	0.07	1505.	0.11
709.	0.07	1506.	0.11
710.	0.07	1507.	0.11
711.	0.07	1508.	0.11
712.	0.07	1509.	0.11
713.	0.07	1510.	0.11
714.	0.07	1511.	0.11
715.	0.07	1512.	0.11
716.	0.07	1513.	0.11
717.	0.07	1514.	0.11
718.	0.07	1515.	0.11
719.	0.07	1516.	0.11
720.	0.07	1517.	0.11
721.	0.07	1518.	0.11
722.	0.07	1519.	0.11
723.	0.07	1520.	0.11
724.	0.07	1521.	0.11
725.	0.07	1522.	0.11
726.	0.07	1523.	0.11
727.	0.07	1524.	0.11
728.	0.07	1525.	0.11
729.	0.07	1526.	0.11
730.	0.07	1527.	0.11
731.	0.07	1528.	0.11
732.	0.07	1529.	0.11
733.	0.07	1530.	0.11
734.	0.07	1531.	0.11
735.	0.07	1532.	0.11
736.	0.07	1533.	0.11
737.	0.07	1534.	0.11
738.	0.07	1535.	0.11
739.	0.07	1536.	0.11
740.	0.07	1537.	0.11
741.	0.07	1538.	0.11
742.	0.07	1539.	0.11
743.	0.07	1540.	0.11
744.	0.07	1541.	0.11
745.	0.07	1542.	0.11
746.	0.07	1543.	0.11
747.	0.07	1544.	0.11
748.	0.07	1545.	0.11
749.	0.07	1546.	0.11
750.	0.07	1547.	0.11
751.	0.07	1548.	0.11
752.	0.07	1549.	0.11
753.	0.07	1550.	0.11
754.	0.07	1551.	0.11
755.	0.07	1552.	0.11
756.	0.07	1553.	0.11
757.	0.07	1554.	0.11
758.	0.07	1555.	0.11

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
759.	0.07	1556.	0.11
760.	0.07	1557.	0.11
761.	0.07	1558.	0.11
762.	0.07	1559.	0.11
763.	0.07	1560.	0.11
764.	0.07	1561.	0.11
765.	0.07	1562.	0.11
766.	0.07	1563.	0.11
767.	0.07	1564.	0.11
768.	0.07	1565.	0.11
769.	0.07	1566.	0.11
770.	0.07	1567.	0.11
771.	0.07	1568.	0.11
772.	0.07	1569.	0.11
773.	0.07	1570.	0.11
774.	0.07	1571.	0.11
775.	0.07	1572.	0.11
776.	0.07	1573.	0.11
777.	0.07	1574.	0.11
778.	0.07	1575.	0.11
779.	0.07	1576.	0.11
780.	0.07	1577.	0.11
781.	0.07	1578.	0.11
782.	0.07	1579.	0.11
783.	0.07	1580.	0.11
784.	0.07	1581.	0.11
785.	0.08	1582.	0.11
786.	0.07	1583.	0.11
787.	0.07	1584.	0.11
788.	0.07	1585.	0.11
789.	0.08	1586.	0.11
790.	0.07	1587.	0.11
791.	0.08	1588.	0.11
792.	0.07	1589.	0.11
793.	0.07	1590.	0.11
794.	0.07	1591.	0.11
795.	0.07	1592.	0.11
796.	0.07	1593.	0.11
797.	0.07	1594.	0.11

SOLUTION

Slug Test
Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
ln(Re/rw): 3.944

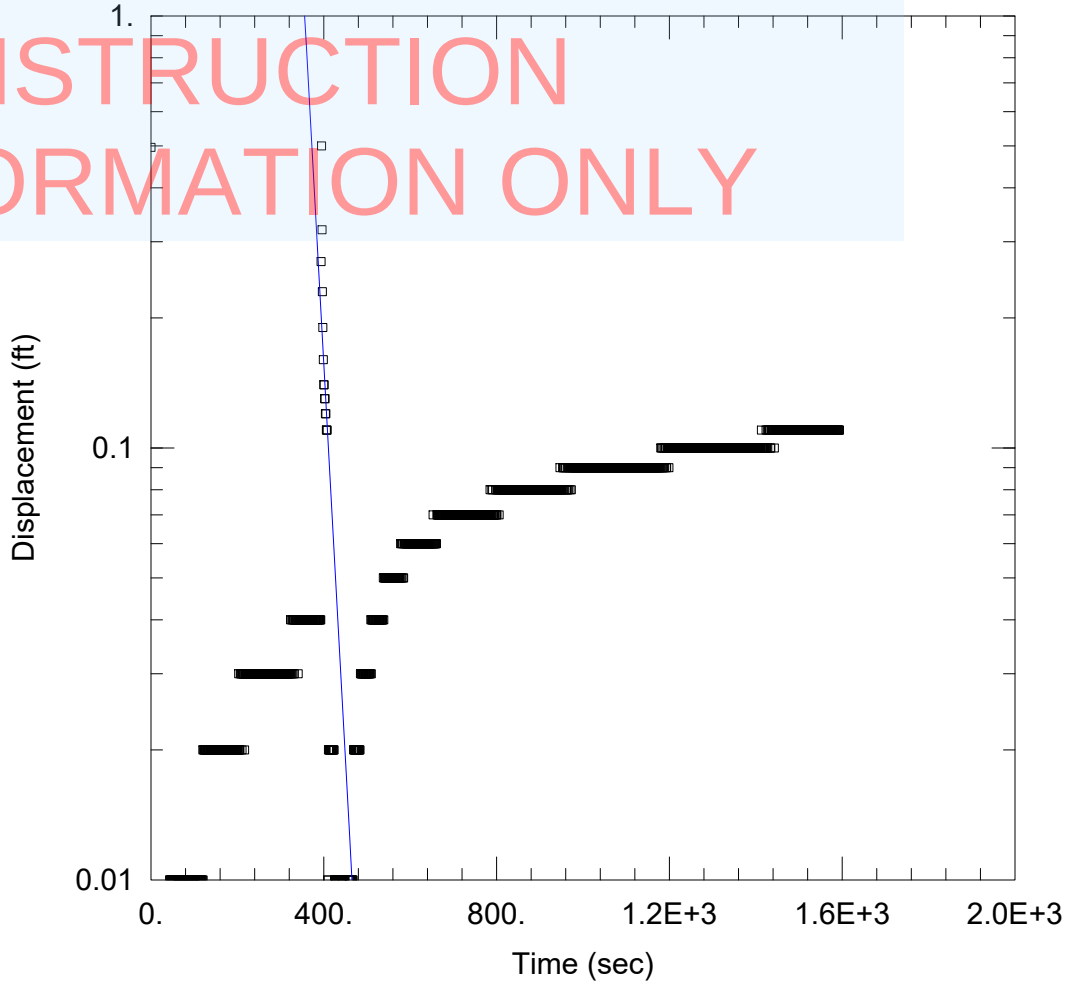
VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	2.157	ft/day
y0	3.165E+6	ft

K = 0.0007609 cm/sec
T = K*b = 49.72 ft²/day (0.5346 sq. cm/sec)

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RISING HEAD

Data Set: C:\...\B-001 RH v2.aqt
Date: 01/16/25 Time: 09:56:27

PROJECT INFORMATION

Location: Cincinnati, OH
Test Well: B-001-0-24
Test Date: 11/8/2024

AQUIFER DATA

Saturated Thickness: 23.05 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (B-001)

Initial Displacement: 0.4965 ft
Total Well Penetration Depth: 54.5 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 23.05 ft
Screen Length: 30. ft
Well Radius: 0.276 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 2.157 ft/day y0 = 3.165E+6 ft

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Data Set: C:\Users\djhess\OneDrive - Terracon Consultants Inc\Desktop\Cinn OH - SW Micro-Tunnel Aquifer Testi
Title: B-004 RH
Date: 01/16/25
Time: 11:37:46

PROJECT INFORMATION

Location: Cincinnati, OH
Test Date: 11/11/2024
Test Well: B-004-0-24

AQUIFER DATA

Saturated Thickness: 21.98 ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: B-004

X Location: 0. ft
Y Location: 0. ft

Initial Displacement: 1.408 ft
Static Water Column Height: 21.98 ft
Casing Radius: 0.0833 ft
Well Radius: 0.276 ft
Well Skin Radius: 0.276 ft
Screen Length: 30. ft
Total Well Penetration Depth: 49.5 ft

No. of Observations: 1261

Observation Data

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
1.	0.0011	632.	0.2167
2.	0.0021	633.	0.2164
3.	0.0016	634.	0.2191
4.	0.0026	635.	0.2191
5.	0.0017	636.	0.2132
6.	0.0002	637.	0.2181
7.	0.002	638.	0.2221
8.	0.0027	639.	0.2181
9.	0.0002	640.	0.2171
10.	0.0021	641.	0.2161
11.	0.0031	642.	0.2173
12.	0.0051	643.	0.2163
13.	0.0017	644.	0.214
14.	0.0004	645.	0.2104
15.	0.0009	646.	0.2133
16.	0.0009	647.	0.2146
17.	0.0043	648.	0.2117
18.	0.0021	649.	0.2118
19.	0.0061	650.	0.2116
20.	0.003	651.	0.2104
21.	0.0031	652.	0.2121
22.	0.0048	653.	0.2082
23.	0.0031	654.	0.2104
24.	0.0002	655.	0.2098
25.	0.0014	656.	0.2073
26.	0.0041	657.	0.2084
27.	0.006	658.	0.2072
28.	0.0039	659.	0.209
29.	0.0036	660.	0.2087
30.	0.0031	661.	0.206
31.	0.003	662.	0.2069
32.	0.0056	663.	0.206

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
33.	0.0041	664.	0.2072
34.	0.006	665.	0.2066
35.	0.0042	666.	0.2071
36.	0.0011	667.	0.2055
37.	0.0045	668.	0.2036
38.	0.0061	669.	0.2044
39.	0.0038	670.	0.2063
40.	0.0053	671.	0.2043
41.	0.0064	672.	0.2046
42.	0.0064	673.	0.2025
43.	0.0052	674.	0.2027
44.	0.0068	675.	0.2037
45.	0.0055	676.	0.2021
46.	0.008	677.	0.2015
47.	0.0067	678.	0.2012
48.	0.0053	679.	0.2038
49.	0.0073	680.	0.2006
50.	-0.0067	681.	0.2006
51.	0.004	682.	0.2002
52.	0.0028	683.	0.199
53.	0.0026	684.	0.1992
54.	0.0025	685.	0.1975
55.	0.002	686.	0.199
56.	0.0018	687.	0.198
57.	0.0021	688.	0.195
58.	0.0034	689.	0.1952
59.	0.0002	690.	0.1966
60.	0.0035	691.	0.1962
61.	0.0012	692.	0.1968
62.	0.0039	693.	0.1952
63.	0.003	694.	0.1973
64.	0.794	695.	0.1947
65.	0.5943	696.	0.1957
66.	1.033	697.	0.1931
67.	1.408	698.	0.1945
68.	1.221	699.	0.1954
69.	1.208	700.	0.193
70.	1.192	701.	0.1928
71.	1.182	702.	0.1936
72.	1.173	703.	0.1929
73.	1.169	704.	0.1919
74.	1.165	705.	0.193
75.	1.16	706.	0.1929
76.	1.152	707.	0.1941
77.	1.143	708.	0.1939
78.	1.135	709.	0.1943
79.	1.128	710.	0.1943
80.	1.122	711.	0.1915
81.	1.118	712.	0.1938
82.	1.111	713.	0.1923
83.	1.107	714.	0.1913
84.	1.103	715.	0.1939
85.	1.097	716.	0.1917
86.	1.092	717.	0.1918
87.	1.086	718.	0.1917
88.	1.081	719.	0.1906
89.	1.075	720.	0.1896
90.	1.071	721.	0.1882
91.	1.066	722.	0.1867
92.	1.061	723.	0.1878
93.	1.057	724.	0.1869
94.	1.05	725.	0.1875
95.	1.048	726.	0.1889
96.	1.043	727.	0.1873
97.	1.037	728.	0.1879
98.	1.035	729.	0.187

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
99.	1.028	730.	0.1881
100.	1.022	731.	0.1873
101.	1.02	732.	0.1851
102.	1.015	733.	0.1824
103.	1.009	734.	0.1816
104.	1.006	735.	0.1815
105.	1.001	736.	0.1843
106.	0.9971	737.	0.183
107.	0.9925	738.	0.1825
108.	0.9892	739.	0.1794
109.	0.9824	740.	0.1832
110.	0.9788	741.	0.1817
111.	0.9754	742.	0.1801
112.	0.9726	743.	0.1803
113.	0.9677	744.	0.1829
114.	0.963	745.	0.1819
115.	0.9596	746.	0.1799
116.	0.9546	747.	0.1808
117.	0.9485	748.	0.1798
118.	0.9453	749.	0.1816
119.	0.9413	750.	0.1808
120.	0.9383	751.	0.1798
121.	0.9343	752.	0.1777
122.	0.9318	753.	0.1773
123.	0.9267	754.	0.1769
124.	0.9246	755.	0.1758
125.	0.9192	756.	0.1778
126.	0.9161	757.	0.178
127.	0.9131	758.	0.1787
128.	0.9074	759.	0.1765
129.	0.9031	760.	0.18
130.	0.8999	761.	0.1755
131.	0.8963	762.	0.1757
132.	0.8925	763.	0.1758
133.	0.888	764.	0.1766
134.	0.8876	765.	0.1734
135.	0.8806	766.	0.1745
136.	0.8778	767.	0.1752
137.	0.8738	768.	0.173
138.	0.8719	769.	0.1728
139.	0.8665	770.	0.174
140.	0.864	771.	0.174
141.	0.8615	772.	0.1736
142.	0.8571	773.	0.1716
143.	0.8539	774.	0.173
144.	0.851	775.	0.1739
145.	0.8491	776.	0.1708
146.	0.8448	777.	0.1731
147.	0.8387	778.	0.1704
148.	0.8342	779.	0.1732
149.	0.8378	780.	0.1716
150.	0.8357	781.	0.1727
151.	0.8284	782.	0.1726
152.	0.8238	783.	0.1743
153.	0.8168	784.	0.1734
154.	0.8151	785.	0.1743
155.	0.8135	786.	0.1739
156.	0.8133	787.	0.1735
157.	0.8081	788.	0.1729
158.	0.8037	789.	0.1722
159.	0.8067	790.	0.1738
160.	0.7965	791.	0.1705
161.	0.7946	792.	0.1728
162.	0.7877	793.	0.1683
163.	0.7891	794.	0.1702
164.	0.7843	795.	0.1689

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
165.	0.7819	796.	0.1692
166.	0.7793	797.	0.1718
167.	0.778	798.	0.1676
168.	0.7746	799.	0.1667
169.	0.7717	800.	0.1653
170.	0.7688	801.	0.1665
171.	0.7652	802.	0.1717
172.	0.7618	803.	0.1687
173.	0.7579	804.	0.1706
174.	0.7568	805.	0.17
175.	0.7549	806.	0.1669
176.	0.7513	807.	0.1684
177.	0.7475	808.	0.1675
178.	0.7452	809.	0.169
179.	0.7401	810.	0.167
180.	0.7406	811.	0.167
181.	0.7372	812.	0.1664
182.	0.735	813.	0.165
183.	0.7334	814.	0.1656
184.	0.7283	815.	0.1649
185.	0.7264	816.	0.1665
186.	0.7257	817.	0.1672
187.	0.7215	818.	0.1666
188.	0.7182	819.	0.1664
189.	0.7154	820.	0.1656
190.	0.7126	821.	0.1623
191.	0.7099	822.	0.1645
192.	0.7093	823.	0.1659
193.	0.7061	824.	0.1633
194.	0.7041	825.	0.1656
195.	0.7003	826.	0.1653
196.	0.6983	827.	0.1638
197.	0.6974	828.	0.1659
198.	0.6939	829.	0.1656
199.	0.6917	830.	0.1659
200.	0.6897	831.	0.1641
201.	0.686	832.	0.1623
202.	0.6843	833.	0.1627
203.	0.6808	834.	0.1633
204.	0.6801	835.	0.1624
205.	0.6767	836.	0.1629
206.	0.6738	837.	0.1638
207.	0.6733	838.	0.1628
208.	0.6708	839.	0.1623
209.	0.6685	840.	0.1622
210.	0.6635	841.	0.1634
211.	0.6647	842.	0.1606
212.	0.6597	843.	0.1638
213.	0.6586	844.	0.1622
214.	0.6539	845.	0.1627
215.	0.6548	846.	0.1608
216.	0.6521	847.	0.1599
217.	0.65	848.	0.1599
218.	0.6464	849.	0.1614
219.	0.6442	850.	0.1591
220.	0.6419	851.	0.161
221.	0.6409	852.	0.1609
222.	0.6373	853.	0.1608
223.	0.635	854.	0.1615
224.	0.6349	855.	0.1614
225.	0.6317	856.	0.1593
226.	0.63	857.	0.1601
227.	0.6243	858.	0.1607
228.	0.6253	859.	0.1601
229.	0.6199	860.	0.1588
230.	0.621	861.	0.1587

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
231.	0.6191	862.	0.1595
232.	0.6171	863.	0.1604
233.	0.6144	864.	0.1604
234.	0.6126	865.	0.1581
235.	0.6104	866.	0.1598
236.	0.6071	867.	0.1595
237.	0.6093	868.	0.159
238.	0.6018	869.	0.1595
239.	0.602	870.	0.1575
240.	0.5998	871.	0.1569
241.	0.6002	872.	0.1596
242.	0.5967	873.	0.1547
243.	0.5928	874.	0.1584
244.	0.5912	875.	0.1568
245.	0.5884	876.	0.1569
246.	0.5858	877.	0.1555
247.	0.5837	878.	0.159
248.	0.5808	879.	0.1569
249.	0.579	880.	0.1559
250.	0.5784	881.	0.1548
251.	0.5755	882.	0.1576
252.	0.5744	883.	0.1557
253.	0.5725	884.	0.1542
254.	0.574	885.	0.1553
255.	0.5681	886.	0.1576
256.	0.567	887.	0.1576
257.	0.5658	888.	0.1562
258.	0.5634	889.	0.1554
259.	0.5624	890.	0.1564
260.	0.5605	891.	0.1571
261.	0.5578	892.	0.1548
262.	0.5569	893.	0.1584
263.	0.5563	894.	0.1565
264.	0.5544	895.	0.1564
265.	0.5521	896.	0.1567
266.	0.5499	897.	0.1562
267.	0.5481	898.	0.1551
268.	0.5458	899.	0.1561
269.	0.5462	900.	0.1555
270.	0.5439	901.	0.1557
271.	0.542	902.	0.1547
272.	0.5417	903.	0.1558
273.	0.5398	904.	0.1556
274.	0.5374	905.	0.1537
275.	0.5368	906.	0.1553
276.	0.5346	907.	0.1539
277.	0.5335	908.	0.152
278.	0.5302	909.	0.1527
279.	0.5228	910.	0.1532
280.	0.5245	911.	0.1526
281.	0.5238	912.	0.1528
282.	0.5268	913.	0.1536
283.	0.524	914.	0.1512
284.	0.5209	915.	0.152
285.	0.5203	916.	0.1515
286.	0.5183	917.	0.1512
287.	0.516	918.	0.1499
288.	0.5163	919.	0.1514
289.	0.5138	920.	0.1517
290.	0.511	921.	0.1541
291.	0.5096	922.	0.152
292.	0.5077	923.	0.1508
293.	0.5077	924.	0.1527
294.	0.5063	925.	0.1488
295.	0.5027	926.	0.1502
296.	0.5018	927.	0.1514

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
297.	0.4999	928.	0.1493
298.	0.4996	929.	0.1485
299.	0.4971	930.	0.1485
300.	0.4955	931.	0.1468
301.	0.4925	932.	0.1501
302.	0.492	933.	0.1522
303.	0.4902	934.	0.1473
304.	0.4903	935.	0.1521
305.	0.4868	936.	0.1474
306.	0.487	937.	0.1488
307.	0.4882	938.	0.1469
308.	0.4804	939.	0.1483
309.	0.4824	940.	0.1484
310.	0.4804	941.	0.1451
311.	0.4784	942.	0.1483
312.	0.4787	943.	0.1494
313.	0.4764	944.	0.148
314.	0.4747	945.	0.1482
315.	0.473	946.	0.1499
316.	0.4712	947.	0.146
317.	0.4708	948.	0.1448
318.	0.4689	949.	0.1488
319.	0.4659	950.	0.1486
320.	0.4679	951.	0.1481
321.	0.4653	952.	0.1483
322.	0.4623	953.	0.1475
323.	0.462	954.	0.1467
324.	0.4616	955.	0.1466
325.	0.4597	956.	0.1468
326.	0.4601	957.	0.1475
327.	0.4572	958.	0.1453
328.	0.4545	959.	0.1451
329.	0.4542	960.	0.1522
330.	0.4522	961.	0.1472
331.	0.4507	962.	0.147
332.	0.4493	963.	0.1468
333.	0.448	964.	0.1477
334.	0.448	965.	0.1474
335.	0.445	966.	0.1467
336.	0.4455	967.	0.1463
337.	0.4427	968.	0.1456
338.	0.4401	969.	0.146
339.	0.4409	970.	0.1421
340.	0.4384	971.	0.1438
341.	0.4406	972.	0.1441
342.	0.4359	973.	0.1456
343.	0.4354	974.	0.1488
344.	0.4328	975.	0.1445
345.	0.4317	976.	0.1473
346.	0.4321	977.	0.1443
347.	0.4299	978.	0.1433
348.	0.4265	979.	0.1428
349.	0.4271	980.	0.1445
350.	0.4281	981.	0.1452
351.	0.4241	982.	0.1433
352.	0.426	983.	0.1424
353.	0.4241	984.	0.1433
354.	0.4301	985.	0.1396
355.	0.405	986.	0.1434
356.	0.4145	987.	0.1412
357.	0.4192	988.	0.1412
358.	0.4164	989.	0.1419
359.	0.4178	990.	0.1427
360.	0.4146	991.	0.1466
361.	0.4153	992.	0.142
362.	0.413	993.	0.1405

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
363.	0.411	994.	0.1412
364.	0.4103	995.	0.1418
365.	0.41	996.	0.1443
366.	0.4086	997.	0.1397
367.	0.4052	998.	0.142
368.	0.407	999.	0.1424
369.	0.4052	1000.	0.1433
370.	0.4068	1001.	0.1409
371.	0.4035	1002.	0.1389
372.	0.4014	1003.	0.1417
373.	0.4045	1004.	0.1397
374.	0.3998	1005.	0.1409
375.	0.3992	1006.	0.1411
376.	0.3983	1007.	0.1392
377.	0.3966	1008.	0.1379
378.	0.3958	1009.	0.1384
379.	0.3939	1010.	0.1392
380.	0.3944	1011.	0.1377
381.	0.3953	1012.	0.1386
382.	0.3911	1013.	0.1403
383.	0.3921	1014.	0.1375
384.	0.3904	1015.	0.1395
385.	0.3876	1016.	0.1394
386.	0.3878	1017.	0.1412
387.	0.3878	1018.	0.1395
388.	0.3869	1019.	0.1393
389.	0.383	1020.	0.1391
390.	0.3833	1021.	0.1395
391.	0.3825	1022.	0.1398
392.	0.3822	1023.	0.1389
393.	0.3793	1024.	0.1419
394.	0.3798	1025.	0.1402
395.	0.3796	1026.	0.1381
396.	0.3785	1027.	0.1388
397.	0.3766	1028.	0.1384
398.	0.3753	1029.	0.1388
399.	0.3743	1030.	0.1375
400.	0.3743	1031.	0.1385
401.	0.3721	1032.	0.1376
402.	0.3705	1033.	0.1402
403.	0.3706	1034.	0.1373
404.	0.3692	1035.	0.1397
405.	0.3682	1036.	0.1371
406.	0.3693	1037.	0.1394
407.	0.3666	1038.	0.1394
408.	0.3644	1039.	0.1395
409.	0.3648	1040.	0.1405
410.	0.3625	1041.	0.1397
411.	0.3632	1042.	0.138
412.	0.3619	1043.	0.14
413.	0.3605	1044.	0.1391
414.	0.3602	1045.	0.1358
415.	0.3581	1046.	0.1384
416.	0.3597	1047.	0.1362
417.	0.3572	1048.	0.1354
418.	0.3587	1049.	0.1412
419.	0.3559	1050.	0.1386
420.	0.3568	1051.	0.1394
421.	0.3566	1052.	0.1366
422.	0.3537	1053.	0.1378
423.	0.353	1054.	0.1387
424.	0.3526	1055.	0.1361
425.	0.352	1056.	0.1361
426.	0.3493	1057.	0.1379
427.	0.3487	1058.	0.1389
428.	0.3497	1059.	0.1366

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
429.	0.3483	1060.	0.1384
430.	0.345	1061.	0.139
431.	0.3451	1062.	0.138
432.	0.3464	1063.	0.1406
433.	0.343	1064.	0.1376
434.	0.3394	1065.	0.1372
435.	0.3415	1066.	0.136
436.	0.3392	1067.	0.1369
437.	0.3416	1068.	0.1375
438.	0.3365	1069.	0.1362
439.	0.3417	1070.	0.138
440.	0.3399	1071.	0.1372
441.	0.3353	1072.	0.1375
442.	0.3355	1073.	0.1363
443.	0.3335	1074.	0.1371
444.	0.3303	1075.	0.1369
445.	0.3344	1076.	0.1373
446.	0.331	1077.	0.137
447.	0.3299	1078.	0.1374
448.	0.33	1079.	0.1368
449.	0.3295	1080.	0.1383
450.	0.3285	1081.	0.1366
451.	0.3291	1082.	0.1368
452.	0.3284	1083.	0.1347
453.	0.327	1084.	0.1372
454.	0.3249	1085.	0.1349
455.	0.3231	1086.	0.1362
456.	0.3216	1087.	0.1378
457.	0.3256	1088.	0.1361
458.	0.3205	1089.	0.134
459.	0.3201	1090.	0.1353
460.	0.3207	1091.	0.1345
461.	0.3188	1092.	0.1365
462.	0.3176	1093.	0.1354
463.	0.3166	1094.	0.1363
464.	0.3182	1095.	0.1371
465.	0.3157	1096.	0.1358
466.	0.3137	1097.	0.1358
467.	0.3133	1098.	0.1361
468.	0.313	1099.	0.1346
469.	0.3147	1100.	0.1344
470.	0.3127	1101.	0.134
471.	0.3108	1102.	0.1373
472.	0.3139	1103.	0.1355
473.	0.3081	1104.	0.1358
474.	0.3097	1105.	0.1358
475.	0.3082	1106.	0.1371
476.	0.3073	1107.	0.1372
477.	0.305	1108.	0.1362
478.	0.3062	1109.	0.1342
479.	0.3061	1110.	0.1341
480.	0.305	1111.	0.1374
481.	0.3052	1112.	0.1347
482.	0.3046	1113.	0.1355
483.	0.3038	1114.	0.1343
484.	0.303	1115.	0.1354
485.	0.3008	1116.	0.133
486.	0.3052	1117.	0.137
487.	0.2953	1118.	0.1338
488.	0.294	1119.	0.1374
489.	0.297	1120.	0.1347
490.	0.2974	1121.	0.134
491.	0.2953	1122.	0.1342
492.	0.2922	1123.	0.1355
493.	0.2966	1124.	0.1351
494.	0.2923	1125.	0.1348

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
495.	0.2959	1126.	0.1365
496.	0.297	1127.	0.1347
497.	0.2922	1128.	0.1356
498.	0.2914	1129.	0.1339
499.	0.2912	1130.	0.1354
500.	0.2897	1131.	0.1338
501.	0.2892	1132.	0.1343
502.	0.2887	1133.	0.135
503.	0.288	1134.	0.133
504.	0.2873	1135.	0.1321
505.	0.2876	1136.	0.1323
506.	0.2863	1137.	0.132
507.	0.2816	1138.	0.1348
508.	0.2825	1139.	0.1341
509.	0.2834	1140.	0.1315
510.	0.2853	1141.	0.134
511.	0.2824	1142.	0.1328
512.	0.2851	1143.	0.1303
513.	0.2804	1144.	0.1315
514.	0.2785	1145.	0.1337
515.	0.2781	1146.	0.1314
516.	0.2774	1147.	0.1323
517.	0.2779	1148.	0.1429
518.	0.2783	1149.	0.1348
519.	0.2763	1150.	0.137
520.	0.2749	1151.	0.1321
521.	0.2743	1152.	0.1304
522.	0.2711	1153.	0.13
523.	0.2726	1154.	0.1288
524.	0.2758	1155.	0.1316
525.	0.2725	1156.	0.1316
526.	0.2731	1157.	0.1306
527.	0.2716	1158.	0.1318
528.	0.2722	1159.	0.1326
529.	0.2722	1160.	0.1311
530.	0.2718	1161.	0.1312
531.	0.2708	1162.	0.1312
532.	0.2692	1163.	0.1321
533.	0.2701	1164.	0.1325
534.	0.267	1165.	0.1341
535.	0.2707	1166.	0.1324
536.	0.2657	1167.	0.1314
537.	0.2678	1168.	0.1314
538.	0.2653	1169.	0.1306
539.	0.2638	1170.	0.1316
540.	0.2635	1171.	0.129
541.	0.263	1172.	0.132
542.	0.2642	1173.	0.1275
543.	0.2619	1174.	0.1313
544.	0.261	1175.	0.1306
545.	0.2604	1176.	0.1347
546.	0.2616	1177.	0.1308
547.	0.2581	1178.	0.1321
548.	0.2617	1179.	0.1289
549.	0.2593	1180.	0.128
550.	0.2577	1181.	0.1316
551.	0.2594	1182.	0.13
552.	0.2574	1183.	0.1286
553.	0.2557	1184.	0.1286
554.	0.2537	1185.	0.1272
555.	0.2554	1186.	0.1295
556.	0.2533	1187.	0.1286
557.	0.2532	1188.	0.1257
558.	0.2545	1189.	0.1255
559.	0.2531	1190.	0.1246
560.	0.2504	1191.	0.1271

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
561.	0.2555	1192.	0.1254
562.	0.2525	1193.	0.1293
563.	0.2522	1194.	0.128
564.	0.2593	1195.	0.1285
565.	0.2552	1196.	0.127
566.	0.2534	1197.	0.1296
567.	0.2508	1198.	0.1298
568.	0.2493	1199.	0.1282
569.	0.245	1200.	0.1294
570.	0.2465	1201.	0.1302
571.	0.2444	1202.	0.1297
572.	0.244	1203.	0.1309
573.	0.2451	1204.	0.1304
574.	0.2459	1205.	0.1313
575.	0.2465	1206.	0.131
576.	0.2443	1207.	0.1308
577.	0.2496	1208.	0.1336
578.	0.2424	1209.	0.1309
579.	0.2306	1210.	0.1296
580.	0.2388	1211.	0.1297
581.	0.2405	1212.	0.1295
582.	0.2401	1213.	0.1306
583.	0.2392	1214.	0.1301
584.	0.2368	1215.	0.1309
585.	0.2332	1216.	0.1311
586.	0.2374	1217.	0.1306
587.	0.2362	1218.	0.1292
588.	0.2383	1219.	0.1288
589.	0.2378	1220.	0.1318
590.	0.2376	1221.	0.1266
591.	0.236	1222.	0.131
592.	0.2402	1223.	0.131
593.	0.236	1224.	0.129
594.	0.2388	1225.	0.1288
595.	0.2356	1226.	0.1299
596.	0.2343	1227.	0.1299
597.	0.2349	1228.	0.1325
598.	0.2345	1229.	0.1306
599.	0.2343	1230.	0.1271
600.	0.2341	1231.	0.1282
601.	0.2339	1232.	0.1276
602.	0.2327	1233.	0.13
603.	0.2306	1234.	0.1294
604.	0.2335	1235.	0.1291
605.	0.2309	1236.	0.1282
606.	0.2291	1237.	0.1312
607.	0.2298	1238.	0.1314
608.	0.2306	1239.	0.1298
609.	0.2295	1240.	0.1298
610.	0.2276	1241.	0.1294
611.	0.2299	1242.	0.1297
612.	0.2285	1243.	0.1281
613.	0.2284	1244.	0.1288
614.	0.2266	1245.	0.1312
615.	0.226	1246.	0.1296
616.	0.2271	1247.	0.1298
617.	0.2265	1248.	0.1302
618.	0.2261	1249.	0.1287
619.	0.2259	1250.	0.1299
620.	0.2251	1251.	0.1287
621.	0.2247	1252.	0.1299
622.	0.2236	1253.	0.128
623.	0.2241	1254.	0.1302
624.	0.2221	1255.	0.1305
625.	0.2229	1256.	0.1314
626.	0.2233	1257.	0.1293

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
627.	0.2209	1258.	0.1293
628.	0.2215	1259.	0.1294
629.	0.2199	1260.	0.1287
630.	0.2188	1261.	0.1293
631.	0.2192		

SOLUTION

Slug Test
Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
ln(Re/rw): 3.876

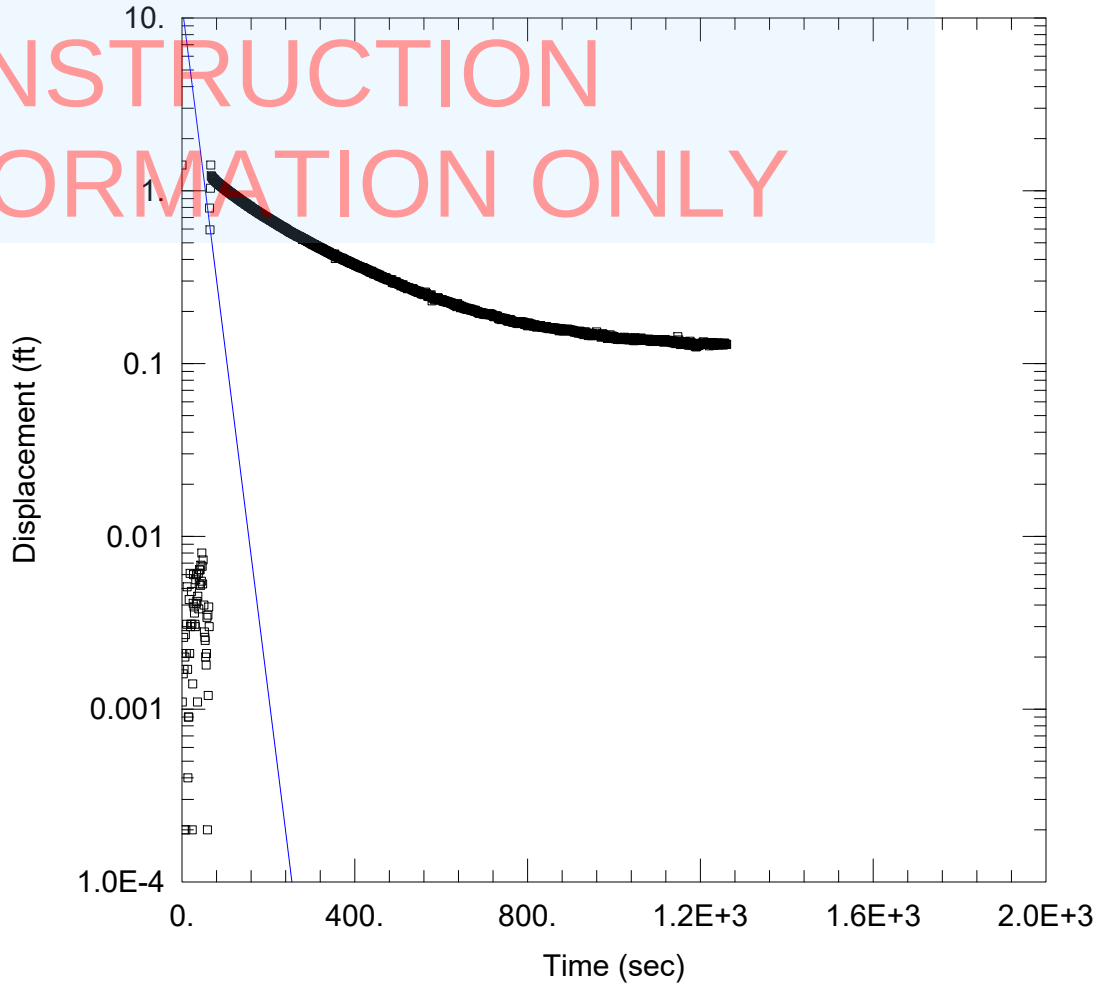
VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	2.429	ft/day
y0	12.04	ft

K = 0.0008569 cm/sec
T = K*b = 53.39 ft²/day (0.5741 sq. cm/sec)

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B-004 RH

Data Set: C:\...\B-004 RH v2.aqt
Date: 01/16/25 Time: 09:57:07

PROJECT INFORMATION

Location: Cincinnati, OH
Test Well: B-004-0-24
Test Date: 11/11/2024

AQUIFER DATA

Saturated Thickness: 21.98 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (B-004)

Initial Displacement: 1.408 ft
Total Well Penetration Depth: 49.5 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 21.98 ft
Screen Length: 30. ft
Well Radius: 0.276 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 2.429 ft/day y0 = 12.04 ft

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AQTESOLV for Windows

Data Set: C:\Users\djhess\OneDrive - Terracon Consultants Inc\Desktop\Cinn OH - SW Micro-Tunnel Aquifer Testi
Date: 01/16/25
Time: 11:40:04

PROJECT INFORMATION

Location: Cincinnati, OH
Test Date: 11/11/2024
Test Well: B-009-0-24

AQUIFER DATA

Saturated Thickness: 19.91 ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: B-009

X Location: 0. ft
Y Location: 0. ft

Initial Displacement: 0.5287 ft
Static Water Column Height: 20.44 ft
Casing Radius: 0.08333 ft
Well Radius: 0.276 ft
Well Skin Radius: 0.276 ft
Screen Length: 30. ft
Total Well Penetration Depth: 49.95 ft

No. of Observations: 480

Observation Data

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
1.	0.0014	241.	0.0152
2.	0.004	242.	0.0129
3.	0.0021	243.	0.0118
4.	0.0011	244.	0.0126
5.	0.0011	245.	0.0122
6.	0.0033	246.	0.0144
7.	0.0021	247.	0.0139
8.	0.	248.	0.0159
9.	0.0068	249.	0.0143
10.	0.0001	250.	0.0101
11.	0.0001	251.	0.0145
12.	0.0011	252.	0.0161
13.	0.0003	253.	0.0133
14.	0.0006	254.	0.0149
15.	0.0014	255.	0.0119
16.	0.0004	256.	0.0155
17.	0.0047	257.	0.016
18.	0.0019	258.	0.0162
19.	0.0011	259.	0.0159
20.	0.0013	260.	0.0108
21.	0.0008	261.	0.012
22.	0.0018	262.	0.014
23.	0.0012	263.	0.0129
24.	0.0005	264.	0.0134
25.	0.0031	265.	0.0124
26.	0.0022	266.	0.0121
27.	0.	267.	0.0126
28.	0.0015	268.	0.0143
29.	0.0003	269.	0.0119
30.	0.0001	270.	0.0136
31.	0.0004	271.	0.0161
32.	0.0002	272.	0.012
33.	0.0012	273.	0.0133

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
34.	0.0024	274.	0.0116
35.	0.0009	275.	0.0119
36.	0.0003	276.	0.0136
37.	0.0026	277.	0.0135
38.	0.0015	278.	0.0124
39.	0.0005	279.	0.0131
40.	0.0006	280.	0.0134
41.	0.0014	281.	0.0116
42.	0.0001	282.	0.0109
43.	0.0065	283.	0.0107
44.	0.0008	284.	0.0119
45.	0.0011	285.	0.011
46.	0.0002	286.	0.0107
47.	0.0019	287.	0.0113
48.	0.0022	288.	0.0133
49.	0.001	289.	0.0128
50.	0.0027	290.	0.011
51.	0.0008	291.	0.0087
52.	0.0027	292.	0.0113
53.	0.0007	293.	0.0077
54.	0.0013	294.	0.0087
55.	0.0046	295.	0.0092
56.	0.0038	296.	0.0107
57.	0.0005	297.	0.007
58.	0.0015	298.	0.0091
59.	0.0003	299.	0.0087
60.	0.	300.	0.0068
61.	0.0033	301.	0.0078
62.	0.0006	302.	0.0069
63.	0.0011	303.	0.0115
64.	0.0016	304.	0.01
65.	0.0028	305.	0.0131
66.	0.0033	306.	0.0087
67.	0.001	307.	0.0087
68.	0.0023	308.	0.0071
69.	0.0044	309.	0.0068
70.	0.0021	310.	0.0055
71.	0.0078	311.	0.0074
72.	0.0088	312.	0.0063
73.	0.0037	313.	0.0059
74.	0.0019	314.	0.0077
75.	0.0007	315.	0.0079
76.	0.0007	316.	0.0066
77.	0.0001	317.	0.0078
78.	0.4039	318.	0.0075
79.	0.3019	319.	0.0073
80.	0.5287	320.	0.0058
81.	0.4287	321.	0.0081
82.	0.4602	322.	0.009
83.	0.1681	323.	0.0057
84.	0.0075	324.	0.0079
85.	0.1426	325.	0.0072
86.	0.1441	326.	0.0078
87.	0.1265	327.	0.0049
88.	0.1218	328.	0.0075
89.	0.1172	329.	0.0081
90.	0.1154	330.	0.0062
91.	0.1089	331.	0.0008
92.	0.1018	332.	0.0049
93.	0.1031	333.	0.0053
94.	0.0998	334.	0.0076
95.	0.0941	335.	0.0078
96.	0.097	336.	0.0081
97.	0.0942	337.	0.0029
98.	0.0396	338.	0.0056
99.	0.091	339.	0.0046

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
100.	0.0835	340.	0.0035
101.	0.0741	341.	0.0032
102.	0.0802	342.	0.0045
103.	0.0774	343.	0.0038
104.	0.0752	344.	0.0078
105.	0.0776	345.	0.0048
106.	0.0739	346.	0.008
107.	0.0742	347.	0.0069
108.	0.0721	348.	0.0072
109.	0.0709	349.	0.0066
110.	0.0706	350.	0.0045
111.	0.0669	351.	0.0051
112.	0.068	352.	0.0038
113.	0.064	353.	0.0043
114.	0.0633	354.	0.0068
115.	0.0626	355.	0.0045
116.	0.0613	356.	0.0058
117.	0.0615	357.	0.0033
118.	0.0597	358.	0.0054
119.	0.0594	359.	0.0041
120.	0.0582	360.	0.0046
121.	0.0578	361.	0.0032
122.	0.0588	362.	0.0043
123.	0.0594	363.	0.0036
124.	0.0538	364.	0.0028
125.	0.0529	365.	0.002
126.	0.0588	366.	0.0072
127.	0.0536	367.	0.0046
128.	0.0516	368.	0.0035
129.	0.0538	369.	0.0024
130.	0.0544	370.	0.0023
131.	0.0518	371.	0.0044
132.	0.051	372.	0.0037
133.	0.0514	373.	0.0012
134.	0.0476	374.	0.0031
135.	0.0491	375.	0.0048
136.	0.0484	376.	0.0042
137.	0.0466	377.	0.0042
138.	0.0458	378.	0.0046
139.	0.047	379.	0.0011
140.	0.0466	380.	0.005
141.	0.048	381.	0.0032
142.	0.0461	382.	0.0046
143.	0.0464	383.	0.003
144.	0.0431	384.	0.0015
145.	0.0443	385.	0.0019
146.	0.0423	386.	0.0026
147.	0.0449	387.	0.0054
148.	0.0474	388.	0.007
149.	0.043	389.	0.0037
150.	0.0425	390.	0.0014
151.	0.0447	391.	0.0043
152.	0.0426	392.	0.0032
153.	0.0412	393.	0.0029
154.	0.0391	394.	0.004
155.	0.0378	395.	0.0043
156.	0.0403	396.	0.0011
157.	0.0391	397.	0.0058
158.	0.0389	398.	0.0071
159.	0.037	399.	0.0054
160.	0.0365	400.	0.0036
161.	0.0373	401.	0.0022
162.	0.0365	402.	0.0009
163.	0.0356	403.	0.0026
164.	0.0344	404.	0.0016
165.	0.0342	405.	0.0023

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
166.	0.0347	406.	0.0033
167.	0.0334	407.	0.0041
168.	0.0337	408.	0.0039
169.	0.0346	409.	0.0053
170.	0.0332	410.	0.0043
171.	0.0343	411.	0.0036
172.	0.031	412.	0.0034
173.	0.0339	413.	0.0019
174.	0.0336	414.	0.0033
175.	0.0309	415.	0.004
176.	0.0336	416.	0.0057
177.	0.0293	417.	0.0036
178.	0.0305	418.	0.0048
179.	0.0309	419.	0.0019
180.	0.0319	420.	0.0022
181.	0.0294	421.	0.0025
182.	0.0301	422.	0.0016
183.	0.029	423.	0.0016
184.	0.0299	424.	0.0005
185.	0.0278	425.	0.003
186.	0.0262	426.	0.0019
187.	0.0278	427.	0.0007
188.	0.0291	428.	0.0025
189.	0.0255	429.	0.0009
190.	0.0295	430.	0.0001
191.	0.0239	431.	0.0026
192.	0.0263	432.	0.002
193.	0.0233	433.	0.0026
194.	0.0238	434.	0.0052
195.	0.0246	435.	0.003
196.	0.0202	436.	0.0035
197.	0.0227	437.	0.0024
198.	0.0257	438.	0.0053
199.	0.0266	439.	0.0043
200.	0.0224	440.	0.0054
201.	0.0224	441.	0.0033
202.	0.0125	442.	0.0031
203.	0.0221	443.	0.0046
204.	0.0207	444.	0.004
205.	0.0208	445.	0.0032
206.	0.0211	446.	0.0019
207.	0.0205	447.	0.0027
208.	0.0192	448.	0.0027
209.	0.0202	449.	0.0033
210.	0.0222	450.	0.0031
211.	0.0199	451.	0.0072
212.	0.0202	452.	0.0029
213.	0.0215	453.	0.0039
214.	0.0213	454.	0.0025
215.	0.0223	455.	0.0035
216.	0.0186	456.	0.0028
217.	0.0199	457.	0.0021
218.	0.0196	458.	0.0021
219.	0.0198	459.	0.0015
220.	0.0186	460.	0.0052
221.	0.0192	461.	0.001
222.	0.0187	462.	0.0037
223.	0.0186	463.	0.0056
224.	0.0212	464.	0.0076
225.	0.0163	465.	0.0055
226.	0.023	466.	0.0013
227.	0.0163	467.	0.0001
228.	0.0165	468.	0.0023
229.	0.0167	469.	0.0034
230.	0.0163	470.	0.0038
231.	0.0188	471.	0.004

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
232.	0.0137	472.	0.0017
233.	0.0173	473.	0.0043
234.	0.0177	474.	0.0012
235.	0.0124	475.	0.0024
236.	0.0164	476.	0.0011
237.	0.0138	477.	0.0012
238.	0.0142	478.	0.0022
239.	0.0148	479.	0.0007
240.	0.0173	480.	0.0009

SOLUTION

Slug Test
Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
ln(Re/rw): 3.863

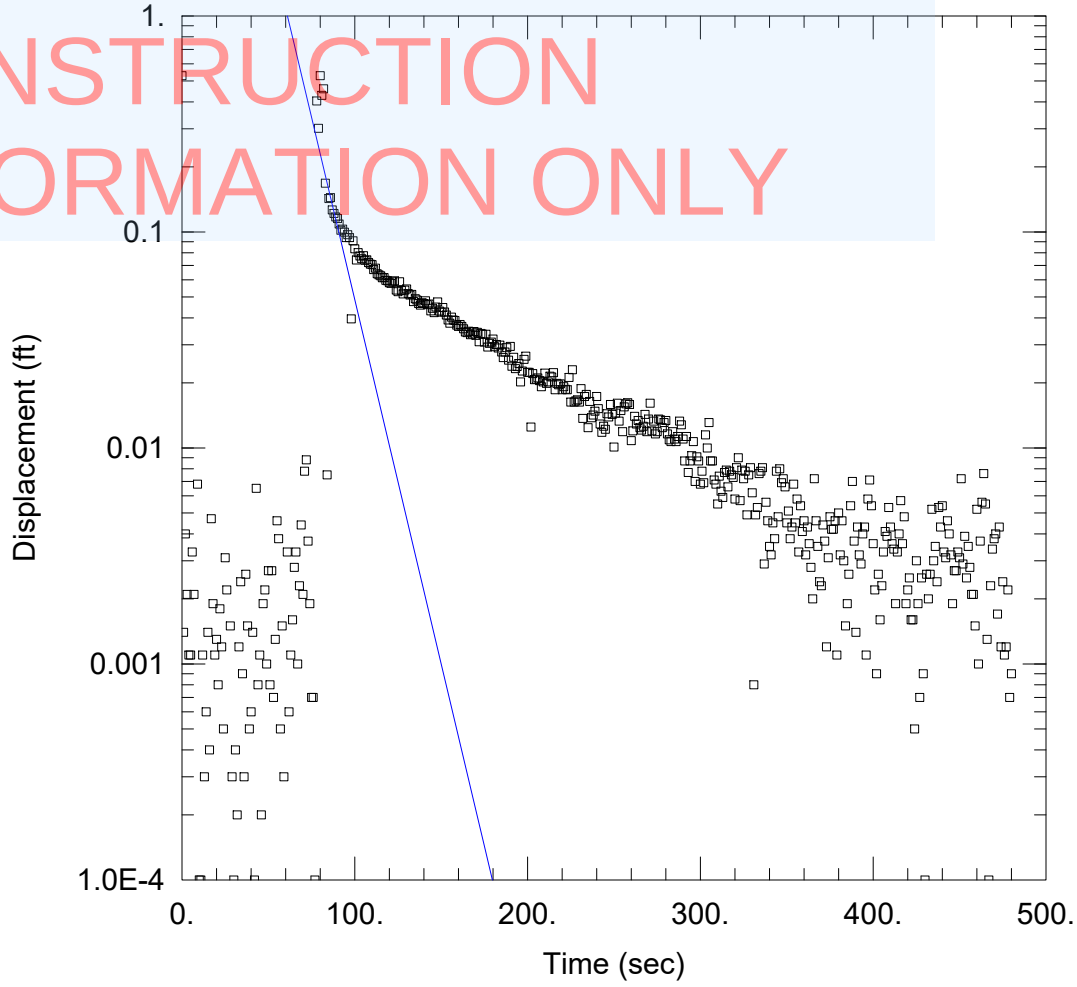
VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	4.52	ft/day
y0	114.7	ft

K = 0.001595 cm/sec
T = K*b = 90. ft²/day (0.9677 sq. cm/sec)

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WELL TEST ANALYSIS

Data Set: C:\...\B-009 FH v2.aqt
Date: 01/16/25 Time: 09:57:51

PROJECT INFORMATION

Location: Cincinnati, OH
Test Well: B-009-0-24
Test Date: 11/11/2024

AQUIFER DATA

Saturated Thickness: 19.91 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (B-009)

Initial Displacement: 0.5287 ft
Total Well Penetration Depth: 49.95 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 20.44 ft
Screen Length: 30. ft
Well Radius: 0.276 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 4.52 ft/day y0 = 114.7 ft

NOT FOR CONSTRUCTION INFORMATION ONLY

Data Set: C:\Users\djhess\OneDrive - Terracon Consultants Inc\Desktop\Cinn OH - SW Micro-Tunnel Aquifer Testi
Title: B-009 RH
Date: 01/16/25
Time: 11:39:02

PROJECT INFORMATION

Location: Cincinnati, OH
Test Date: 11/8/2024
Test Well: B-009-0-24

AQUIFER DATA

Saturated Thickness: 19.91 ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: B-009

X Location: 0. ft
Y Location: 0. ft

Initial Displacement: 1.451 ft
Static Water Column Height: 19.91 ft
Casing Radius: 0.08333 ft
Well Radius: 0.276 ft
Well Skin Radius: 0.276 ft
Screen Length: 30. ft
Total Well Penetration Depth: 49.95 ft

No. of Observations: 660

Observation Data

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
1.	0.0041	331.	0.0035
2.	0.004	332.	0.0073
3.	0.0032	333.	0.008
4.	0.0038	334.	0.003
5.	0.0013	335.	0.0045
6.	0.0015	336.	0.0051
7.	0.0017	337.	0.0048
8.	0.0029	338.	0.0058
9.	0.0035	339.	0.0045
10.	0.0027	340.	0.0056
11.	0.0015	341.	0.0046
12.	0.0017	342.	0.0029
13.	0.003	343.	0.0037
14.	0.0029	344.	0.0036
15.	0.004	345.	0.0041
16.	0.0016	346.	0.0043
17.	0.0072	347.	0.0046
18.	0.0025	348.	0.0029
19.	0.0013	349.	0.0035
20.	0.0013	350.	0.0024
21.	0.0023	351.	0.0031
22.	0.002	352.	0.0017
23.	0.0024	353.	0.0032
24.	0.0012	354.	0.0029
25.	0.0026	355.	0.0039
26.	0.0045	356.	0.0006
27.	0.0037	357.	0.0035
28.	0.0031	358.	0.0005
29.	0.003	359.	0.0013
30.	0.0019	360.	0.0013
31.	0.0021	361.	0.0005
32.	0.0043	362.	0.0001

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
33.	0.0006	363.	0.0005
34.	0.0026	364.	0.
35.	0.0002	365.	0.0022
36.	0.0014	366.	0.0025
37.	0.0031	367.	0.0011
38.	0.0007	368.	0.0024
39.	0.0028	369.	0.002
40.	0.0039	370.	0.0009
41.	0.0004	371.	0.0012
42.	0.0032	372.	0.0019
43.	0.0016	373.	0.0009
44.	0.0025	374.	0.0002
45.	0.0008	375.	0.0013
46.	0.0021	376.	0.0006
47.	0.0028	377.	0.0011
48.	0.0013	378.	0.0002
49.	0.0032	379.	0.0018
50.	0.0035	380.	0.0012
51.	0.0005	381.	0.0007
52.	0.0023	382.	0.0006
53.	0.0006	383.	0.0054
54.	0.0021	384.	0.0014
55.	0.0023	385.	0.0001
56.	0.0003	386.	0.0011
57.	0.0003	387.	0.0028
58.	0.0003	388.	0.0024
59.	0.0049	389.	0.0032
60.	0.0056	390.	0.0047
61.	0.0018	391.	0.0018
62.	0.0026	392.	0.0017
63.	0.0034	393.	0.0011
64.	0.0023	394.	0.0002
65.	1.451	395.	0.0003
66.	0.4296	396.	0.0005
67.	0.7316	397.	0.0021
68.	0.4314	398.	0.
69.	0.3107	399.	0.0027
70.	0.2393	400.	0.0003
71.	0.2077	401.	0.0012
72.	0.1801	402.	0.0008
73.	0.1614	403.	0.0006
74.	0.1677	404.	0.0024
75.	0.1339	405.	0.0027
76.	0.1277	406.	0.0001
77.	0.1285	407.	0.0033
78.	0.121	408.	0.0031
79.	0.1173	409.	0.0041
80.	0.1137	410.	0.0004
81.	0.1108	411.	0.0035
82.	0.1091	412.	0.003
83.	0.1049	413.	0.0027
84.	0.1035	414.	0.003
85.	0.1036	415.	0.0019
86.	0.1036	416.	0.0041
87.	0.0954	417.	0.0022
88.	0.0918	418.	0.0036
89.	0.0932	419.	0.005
90.	0.0912	420.	0.002
91.	0.092	421.	0.002
92.	0.0948	422.	0.0011
93.	0.0844	423.	0.0046
94.	0.0866	424.	0.0036
95.	0.0841	425.	0.0037
96.	0.0839	426.	0.0022
97.	0.0855	427.	0.0038
98.	0.0828	428.	0.0046

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
99.	0.0792	429.	0.0056
100.	0.0787	430.	0.0019
101.	0.0782	431.	0.0035
102.	0.0693	432.	0.0032
103.	0.0777	433.	0.0056
104.	0.0734	434.	0.0064
105.	0.0745	435.	0.0024
106.	0.0737	436.	0.0028
107.	0.0674	437.	0.003
108.	0.0714	438.	0.0091
109.	0.072	439.	0.0062
110.	0.0683	440.	0.0056
111.	0.0687	441.	0.0074
112.	0.0686	442.	0.0064
113.	0.0703	443.	0.0047
114.	0.0669	444.	0.0044
115.	0.0675	445.	0.0034
116.	0.0654	446.	0.0001
117.	0.0656	447.	0.0032
118.	0.0666	448.	0.0031
119.	0.0628	449.	0.0026
120.	0.0653	450.	0.0041
121.	0.0645	451.	0.0042
122.	0.0604	452.	0.0025
123.	0.0602	453.	0.0014
124.	0.0644	454.	0.0028
125.	0.0601	455.	0.0039
126.	0.0586	456.	0.0034
127.	0.0586	457.	0.0048
128.	0.0596	458.	0.0034
129.	0.0563	459.	0.0072
130.	0.0571	460.	0.0064
131.	0.0569	461.	0.0068
132.	0.0562	462.	0.0061
133.	0.0561	463.	0.004
134.	0.0525	464.	0.004
135.	0.0536	465.	0.0076
136.	0.0548	466.	0.0051
137.	0.0557	467.	0.0045
138.	0.054	468.	0.0036
139.	0.0541	469.	0.0024
140.	0.0504	470.	0.0047
141.	0.0523	471.	0.0065
142.	0.0502	472.	0.0068
143.	0.0502	473.	0.0083
144.	0.0511	474.	0.0085
145.	0.0501	475.	0.0061
146.	0.0484	476.	0.0059
147.	0.0459	477.	0.0067
148.	0.0469	478.	0.0019
149.	0.0517	479.	0.0063
150.	0.0465	480.	0.0047
151.	0.0422	481.	0.0052
152.	0.0419	482.	0.0074
153.	0.0482	483.	0.0084
154.	0.0448	484.	0.0059
155.	0.0454	485.	0.0045
156.	0.0452	486.	0.007
157.	0.042	487.	0.0076
158.	0.0437	488.	0.0093
159.	0.0432	489.	0.0084
160.	0.0421	490.	0.0037
161.	0.0452	491.	0.0039
162.	0.0392	492.	0.0083
163.	0.0436	493.	0.0085
164.	0.0414	494.	0.0061

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
165.	0.0418	495.	0.0073
166.	0.0419	496.	0.0078
167.	0.041	497.	0.006
168.	0.0412	498.	0.006
169.	0.0378	499.	0.0045
170.	0.0375	500.	0.0064
171.	0.0395	501.	0.0071
172.	0.0389	502.	0.0096
173.	0.0379	503.	0.0064
174.	0.0382	504.	0.0022
175.	0.0379	505.	0.0093
176.	0.0383	506.	0.0062
177.	0.038	507.	0.0084
178.	0.0373	508.	0.0076
179.	0.0364	509.	0.0068
180.	0.0405	510.	0.0068
181.	0.0343	511.	0.0075
182.	0.0351	512.	0.0033
183.	0.0355	513.	0.0054
184.	0.0341	514.	0.0076
185.	0.0368	515.	0.0059
186.	0.0367	516.	0.0097
187.	0.0324	517.	0.0077
188.	0.0367	518.	0.0081
189.	0.0346	519.	0.0108
190.	0.0371	520.	0.0134
191.	0.0309	521.	0.0096
192.	0.0317	522.	0.007
193.	0.0317	523.	0.0089
194.	0.0297	524.	0.0088
195.	0.0311	525.	0.0085
196.	0.0347	526.	0.0058
197.	0.0299	527.	0.009
198.	0.0299	528.	0.0098
199.	0.0302	529.	0.0039
200.	0.0301	530.	0.0079
201.	0.0289	531.	0.0103
202.	0.0291	532.	0.0104
203.	0.0274	533.	0.0067
204.	0.0282	534.	0.0107
205.	0.0305	535.	0.0155
206.	0.0273	536.	0.0092
207.	0.025	537.	0.0072
208.	0.0233	538.	0.0111
209.	0.0245	539.	0.0116
210.	0.0234	540.	0.0066
211.	0.0274	541.	0.0087
212.	0.0254	542.	0.0087
213.	0.0272	543.	0.011
214.	0.0279	544.	0.0082
215.	0.0264	545.	0.008
216.	0.0262	546.	0.0087
217.	0.0247	547.	0.007
218.	0.024	548.	0.0077
219.	0.0242	549.	0.0089
220.	0.0274	550.	0.0086
221.	0.0246	551.	0.0074
222.	0.0237	552.	0.0086
223.	0.0265	553.	0.0093
224.	0.0226	554.	0.0043
225.	0.024	555.	0.0066
226.	0.022	556.	0.0047
227.	0.0221	557.	0.0039
228.	0.0187	558.	0.0046
229.	0.0225	559.	0.0083
230.	0.0159	560.	0.0068

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
231.	0.0177	561.	0.0061
232.	0.021	562.	0.0077
233.	0.021	563.	0.004
234.	0.0189	564.	0.0107
235.	0.0191	565.	0.0092
236.	0.0209	566.	0.0066
237.	0.0198	567.	0.0075
238.	0.0199	568.	0.0078
239.	0.0186	569.	0.0102
240.	0.0188	570.	0.0072
241.	0.0189	571.	0.0052
242.	0.0194	572.	0.0065
243.	0.0198	573.	0.0124
244.	0.0203	574.	0.0097
245.	0.0183	575.	0.0065
246.	0.0179	576.	0.0113
247.	0.0182	577.	0.0069
248.	0.0173	578.	0.0083
249.	0.0174	579.	0.0103
250.	0.0176	580.	0.0107
251.	0.0194	581.	0.0112
252.	0.0198	582.	0.0111
253.	0.0169	583.	0.0087
254.	0.0176	584.	0.0099
255.	0.0143	585.	0.012
256.	0.0137	586.	0.0095
257.	0.0143	587.	0.0052
258.	0.0135	588.	0.0127
259.	0.0153	589.	0.0117
260.	0.01	590.	0.0112
261.	0.0116	591.	0.0059
262.	0.0145	592.	0.0086
263.	0.0128	593.	0.0102
264.	0.0118	594.	0.0096
265.	0.0114	595.	0.0081
266.	0.0085	596.	0.0048
267.	0.0124	597.	0.0084
268.	0.0127	598.	0.008
269.	0.0123	599.	0.0088
270.	0.0133	600.	0.0108
271.	0.011	601.	0.0101
272.	0.0132	602.	0.0136
273.	0.0103	603.	0.014
274.	0.0094	604.	0.0095
275.	0.0119	605.	0.0089
276.	0.0112	606.	0.0107
277.	0.0122	607.	0.0124
278.	0.0121	608.	0.0109
279.	0.0114	609.	0.0113
280.	0.0108	610.	0.0105
281.	0.0137	611.	0.0063
282.	0.0165	612.	0.0117
283.	0.0125	613.	0.0103
284.	0.0133	614.	0.0095
285.	0.0111	615.	0.0074
286.	0.0102	616.	0.0066
287.	0.0114	617.	0.0099
288.	0.0107	618.	0.0093
289.	0.0097	619.	0.0079
290.	0.0124	620.	0.0104
291.	0.0131	621.	0.0112
292.	0.0061	622.	0.0071
293.	0.0068	623.	0.0119
294.	0.0072	624.	0.0084
295.	0.0106	625.	0.0082
296.	0.0073	626.	0.0096

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
297.	0.0126	627.	0.0099
298.	0.0069	628.	0.0084
299.	0.0088	629.	0.0108
300.	0.0078	630.	0.0074
301.	0.0078	631.	0.0057
302.	0.0067	632.	0.0106
303.	0.0091	633.	0.0097
304.	0.0093	634.	0.0103
305.	0.0076	635.	0.0074
306.	0.005	636.	0.0085
307.	0.012	637.	0.01
308.	0.0088	638.	0.0077
309.	0.0081	639.	0.0085
310.	0.006	640.	0.0071
311.	0.0042	641.	0.0085
312.	0.0061	642.	0.0089
313.	0.0074	643.	0.008
314.	0.0051	644.	0.0079
315.	0.007	645.	0.009
316.	0.0055	646.	0.009
317.	0.004	647.	0.0077
318.	0.0041	648.	0.0077
319.	0.0055	649.	0.0093
320.	0.004	650.	0.0096
321.	0.006	651.	0.01
322.	0.0035	652.	0.008
323.	0.0066	653.	0.0081
324.	0.0052	654.	0.0083
325.	0.0056	655.	0.0074
326.	0.0046	656.	0.0073
327.	0.0043	657.	0.0079
328.	0.0054	658.	0.0072
329.	0.0055	659.	0.0056
330.	0.0048	660.	0.0076

SOLUTION

Slug Test
Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
ln(Re/rw): 3.863

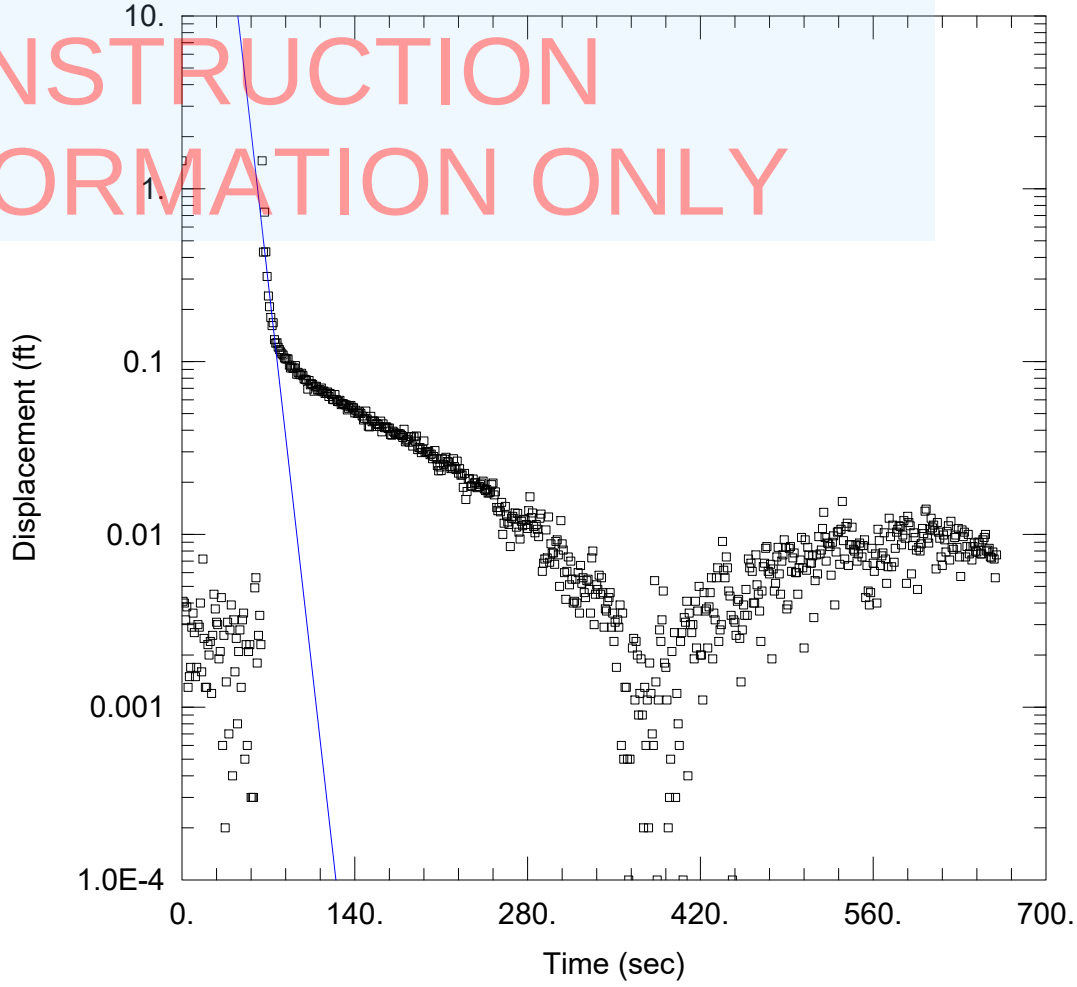
VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	8.44	ft/day
y0	7196.9	ft

K = 0.002978 cm/sec
T = K*b = 168. ft²/day (1.807 sq. cm/sec)

NOT FOR CONSTRUCTION INFORMATION ONLY



B-009 RH

Data Set: C:\...\B-009 RH v2.aqt
Date: 01/16/25 Time: 09:58:16

PROJECT INFORMATION

Location: Cincinnati, OH
Test Well: B-009-0-24
Test Date: 11/8/2024

AQUIFER DATA

Saturated Thickness: 19.91 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (B-009)

Initial Displacement: 1.451 ft
Total Well Penetration Depth: 49.95 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 19.91 ft
Screen Length: 30. ft
Well Radius: 0.276 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 8.44 ft/day
y0 = 7196.9 ft

NOT FOR CONSTRUCTION INFORMATION ONLY

Data Set: C:\Users\djhess\OneDrive - Terracon Consultants Inc\Desktop\Cinn OH - SW Micro-Tunnel Aquifer Testi
Title: B-012 RH
Date: 01/16/25
Time: 11:41:09

PROJECT INFORMATION

Location: Cincinnati, OH
Test Date: 11/8/2024
Test Well: B-012-0-24

AQUIFER DATA

Saturated Thickness: 13.39 ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: B-012

X Location: 0. ft
Y Location: 0. ft

Initial Displacement: 0.3276 ft
Static Water Column Height: 13.39 ft
Casing Radius: 0.0833 ft
Well Radius: 0.276 ft
Well Skin Radius: 0.276 ft
Screen Length: 30. ft
Total Well Penetration Depth: 41. ft

No. of Observations: 599

Observation Data

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
2.	0.0003	302.	0.3276
3.	0.0009	303.	0.1413
4.	0.0006	304.	0.0785
5.	0.0007	305.	0.0557
6.	0.0009	306.	0.038
7.	0.0002	307.	0.0299
8.	0.0004	308.	0.0281
9.	0.0011	309.	0.0218
10.	0.0013	310.	0.0185
11.	0.0008	311.	0.0178
12.	0.0002	312.	0.013
13.	0.0004	313.	0.0128
14.	0.	314.	0.0118
15.	0.0018	315.	0.0109
16.	0.0004	316.	0.0096
17.	0.0007	317.	0.0103
18.	0.0005	318.	0.0091
19.	0.0003	319.	0.0079
20.	0.0008	320.	0.0079
21.	0.	321.	0.0077
22.	0.0003	322.	0.0061
23.	0.0002	323.	0.0061
24.	0.0003	324.	0.006
25.	0.0023	325.	0.0047
26.	0.0006	326.	0.0049
27.	0.0007	327.	0.0051
28.	0.0002	328.	0.0039
29.	0.	329.	0.0046
30.	0.0002	330.	0.0029
31.	0.0003	331.	0.0036
32.	0.0004	332.	0.0038
33.	0.0004	333.	0.003

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
34.	0.	334.	0.0034
35.	0.0004	335.	0.0036
36.	0.0008	336.	0.0049
37.	0.0003	337.	0.0027
38.	0.0002	338.	0.003
39.	0.0004	339.	0.0033
40.	0.0002	340.	0.0015
41.	0.0001	341.	0.0006
42.	0.001	342.	0.0021
43.	0.001	343.	0.0021
44.	0.0007	344.	0.0025
45.	0.0003	345.	0.0019
46.	0.0016	346.	0.0014
47.	0.0013	347.	0.0013
48.	0.001	348.	0.0017
49.	0.0004	349.	0.0011
50.	0.0001	350.	0.0009
51.	0.0007	351.	0.0016
52.	0.0004	352.	0.0011
53.	0.0001	353.	0.001
54.	0.0009	354.	0.0014
55.	0.0001	355.	0.0006
56.	0.0004	356.	0.0003
57.	0.0003	357.	0.0007
58.	0.0007	358.	0.0009
59.	0.0003	359.	0.0003
60.	0.0005	360.	0.001
61.	0.0004	361.	0.0007
62.	0.0008	362.	0.0001
63.	0.0005	363.	0.0008
64.	0.0015	364.	0.001
65.	0.0003	365.	0.0007
66.	0.	366.	0.0003
67.	0.	367.	0.0008
68.	0.0008	368.	0.0009
69.	0.0006	369.	0.
70.	0.0005	370.	0.0007
71.	0.	371.	0.0008
72.	0.0008	372.	0.0009
73.	0.0009	373.	0.0003
74.	0.0003	374.	0.
75.	0.0012	375.	0.0006
76.	0.0007	376.	0.0008
77.	0.0011	377.	0.0012
78.	0.0009	378.	0.0002
79.	0.0003	379.	0.
80.	0.0011	380.	0.0007
81.	0.0001	381.	0.0008
82.	0.0001	382.	0.0004
83.	0.0015	383.	0.0008
84.	0.0011	384.	0.0003
85.	0.0004	385.	0.0005
86.	0.0005	386.	0.0013
87.	0.0013	387.	0.0002
88.	0.0005	388.	0.0001
89.	0.0012	389.	0.0015
90.	0.0002	390.	0.0006
91.	0.0006	391.	0.0006
92.	0.0011	392.	0.0015
93.	0.0009	393.	0.0011
94.	0.0009	394.	0.0014
95.	0.	395.	0.0016
96.	0.0001	396.	0.0004
97.	0.001	397.	0.0002
98.	0.0018	398.	0.0003
99.	0.0009	399.	0.0001

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
100.	0.0002	400.	0.0005
101.	0.0001	401.	0.0006
102.	0.0005	402.	0.0001
103.	0.0002	403.	0.0011
104.	0.	404.	0.0003
105.	0.0012	405.	0.0002
106.	0.0003	406.	0.
107.	0.0011	407.	0.0004
108.	0.	408.	0.0004
109.	0.0001	409.	0.0005
110.	0.0014	410.	0.0019
111.	0.0007	411.	0.0013
112.	0.0008	412.	0.
113.	0.0005	413.	0.
114.	0.0005	414.	0.0001
115.	0.0004	415.	0.0006
116.	0.002	416.	0.0012
117.	0.0015	417.	0.0012
118.	0.0007	418.	0.0002
119.	0.0007	419.	0.0009
120.	0.0001	420.	0.0007
121.	0.0001	421.	0.0005
122.	0.0004	422.	0.0005
123.	0.0012	423.	0.002
124.	0.0007	424.	0.0005
125.	0.0007	425.	0.0019
126.	0.0018	426.	0.0006
127.	0.0003	427.	0.0004
128.	0.0017	428.	0.001
129.	0.0002	429.	0.0009
130.	0.0006	430.	0.0003
131.	0.0013	431.	0.0016
132.	0.0019	432.	0.0011
133.	0.0003	433.	0.0008
134.	0.0013	434.	0.0005
135.	0.0004	435.	0.0016
136.	0.0006	436.	0.0002
137.	0.0011	437.	0.0005
138.	0.	438.	0.0017
139.	0.0003	439.	0.0012
140.	0.0007	440.	0.0011
141.	0.0006	441.	0.0003
142.	0.0005	442.	0.0009
143.	0.0003	443.	0.0003
144.	0.0013	444.	0.0004
145.	0.0017	445.	0.0008
146.	0.0003	446.	0.0009
147.	0.0004	447.	0.0016
148.	0.0005	448.	0.0019
149.	0.0007	449.	0.0012
150.	0.0007	450.	0.0011
151.	0.0008	451.	0.0006
152.	0.	452.	0.0003
153.	0.0005	453.	0.0007
154.	0.0005	454.	0.0001
155.	0.0002	455.	0.0014
156.	0.0006	456.	0.0015
157.	0.0006	457.	0.0007
158.	0.0004	458.	0.0001
159.	0.0005	459.	0.0019
160.	0.0011	460.	0.0007
161.	0.0013	461.	0.0009
162.	0.0008	462.	0.0006
163.	0.0003	463.	0.0012
164.	0.0011	464.	0.0019
165.	0.0001	465.	0.001

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
166.	0.0006	466.	0.0005
167.	0.0001	467.	0.0011
168.	0.0016	468.	0.0003
169.	0.0005	469.	0.0004
170.	0.0004	470.	0.0011
171.	0.	471.	0.0005
172.	0.0011	472.	0.001
173.	0.0011	473.	0.0024
174.	0.0028	474.	0.0013
175.	0.0016	475.	0.001
176.	0.0011	476.	0.0001
177.	0.0008	477.	0.0023
178.	0.0005	478.	0.0014
179.	0.0001	479.	0.0006
180.	0.0005	480.	0.0019
181.	0.0001	481.	0.0004
182.	0.0004	482.	0.0008
183.	0.	483.	0.0003
184.	0.0006	484.	0.0012
185.	0.0008	485.	0.0014
186.	0.0012	486.	0.0016
187.	0.0007	487.	0.0018
188.	0.0008	488.	0.0014
189.	0.001	489.	0.
190.	0.001	490.	0.0009
191.	0.0001	491.	0.0006
192.	0.0013	492.	0.0011
193.	0.0007	493.	0.0013
194.	0.0023	494.	0.0015
195.	0.0007	495.	0.0005
196.	0.0012	496.	0.0014
197.	0.	497.	0.0015
198.	0.0008	498.	0.0008
199.	0.001	499.	0.0018
200.	0.0016	500.	0.0012
201.	0.001	501.	0.0005
202.	0.0015	502.	0.0011
203.	0.0004	503.	0.001
204.	0.0002	504.	0.0008
205.	0.0003	505.	0.0007
206.	0.0009	506.	0.0005
207.	0.0004	507.	0.0012
208.	0.0013	508.	0.0017
209.	0.0001	509.	0.0016
210.	0.001	510.	0.001
211.	0.0005	511.	0.002
212.	0.0001	512.	0.0014
213.	0.0006	513.	0.0008
214.	0.0007	514.	0.0008
215.	0.0017	515.	0.0007
216.	0.0008	516.	0.0011
217.	0.0005	517.	0.0026
218.	0.0007	518.	0.0002
219.	0.0009	519.	-0.0004
220.	0.0008	520.	0.001
221.	0.0001	521.	0.0011
222.	0.0011	522.	0.0013
223.	0.0005	523.	0.0017
224.	0.0004	524.	0.0004
225.	0.0006	525.	0.0014
226.	0.0003	526.	0.0021
227.	0.0008	527.	0.0019
228.	0.0009	528.	0.0009
229.	0.0015	529.	0.
230.	0.0008	530.	0.0015
231.	0.0007	531.	0.0001

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
232.	0.0004	532.	0.0012
233.	0.0007	533.	0.0017
234.	0.001	534.	0.0006
235.	0.0017	535.	0.0003
236.	0.0009	536.	0.0008
237.	0.0009	537.	0.0016
238.	0.0017	538.	0.0003
239.	0.0008	539.	0.0011
240.	0.0008	540.	0.0012
241.	0.0003	541.	0.0018
242.	0.0011	542.	0.0011
243.	0.0011	543.	0.0005
244.	0.0013	544.	0.0015
245.	0.002	545.	0.0008
246.	0.0004	546.	0.0008
247.	0.0013	547.	0.0017
248.	0.0007	548.	0.0005
249.	0.0008	549.	0.0009
250.	0.0002	550.	0.0004
251.	0.0016	551.	0.
252.	0.0005	552.	0.0004
253.	0.0001	553.	0.0013
254.	0.0004	554.	0.0004
255.	0.0009	555.	0.
256.	0.0008	556.	0.0004
257.	0.0007	557.	0.0013
258.	0.0005	558.	0.0008
259.	0.0019	559.	0.0008
260.	0.0006	560.	0.0001
261.	0.0014	561.	0.0011
262.	0.0008	562.	0.0002
263.	0.0007	563.	0.0016
264.	0.0001	564.	0.0012
265.	0.0006	565.	0.0003
266.	0.0016	566.	0.0004
267.	0.0003	567.	0.001
268.	0.0004	568.	0.0012
269.	0.0005	569.	0.0016
270.	0.0001	570.	0.0015
271.	0.0004	571.	0.0005
272.	0.0009	572.	0.0009
273.	0.0003	573.	0.0007
274.	0.0002	574.	0.0012
275.	0.0003	575.	0.0018
276.	0.0002	576.	0.0011
277.	0.0009	577.	0.0005
278.	0.0009	578.	0.0011
279.	0.	579.	0.0021
280.	0.0006	580.	0.0004
281.	0.0002	581.	0.0007
282.	0.0003	582.	0.0006
283.	0.0013	583.	0.0009
284.	0.0019	584.	0.0002
285.	0.0002	585.	0.0006
286.	0.0008	586.	0.0006
287.	0.0004	587.	0.0004
288.	0.0001	588.	0.0015
289.	0.0005	589.	0.0008
290.	0.0001	590.	0.0014
291.	0.0015	591.	0.001
292.	0.0016	592.	0.0005
293.	0.0007	593.	0.0012
294.	0.0012	594.	0.0009
295.	0.0008	595.	0.0001
296.	0.0002	596.	0.001
297.	0.0007	597.	0.0015

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Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
298.	0.0004	598.	0.0013
299.	0.0006	599.	0.0024
300.	0.0002	600.	0.0007
301.	0.0007		

SOLUTION

Slug Test
Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
ln(Re/rw): 3.659

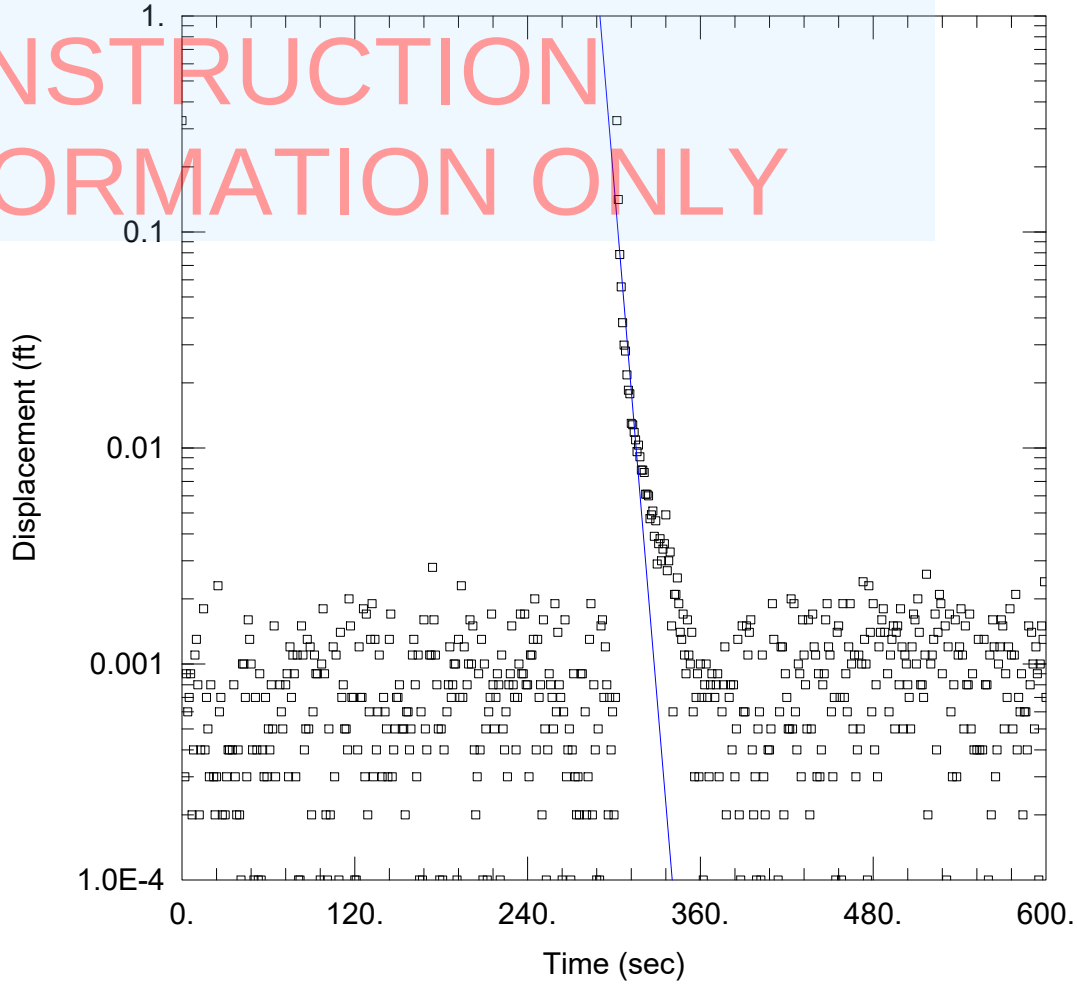
VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	15.02	ft/day
y0	1.302E+23	ft

K = 0.005299 cm/sec
T = K*b = 201.1 ft²/day (2.163 sq. cm/sec)

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B-012 RH

Data Set: C:\...\B-012 RH V2.aqt
Date: 01/16/25 Time: 09:58:37

PROJECT INFORMATION

Location: Cincinnati, OH
Test Well: B-012-0-24
Test Date: 11/8/2024

AQUIFER DATA

Saturated Thickness: 13.39 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (B-012)

Initial Displacement: 0.3276 ft
Total Well Penetration Depth: 41. ft
Casing Radius: 0.0833 ft
Static Water Column Height: 13.39 ft
Screen Length: 30. ft
Well Radius: 0.276 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 15.02 ft/day
y0 = 1.302E+23 ft

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Supporting Information

Contents:

ODOT Quick Reference Guide for Visual Description of Soils
ODOT Soil Classification System
ODOT Quick Reference Guide for Rock Description (2 pages)

Note: All attachments are one page unless noted above.

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APPENDIX A.1 - ODOT Quick Reference for Visual Description of Soils

1) Strength of Soil:

Non-Cohesive (granular) Soils - Compactness

Description	Blows Per Ft.
Very Loose	≤ 4
Loose	5 – 10
Medium Dense	11 – 30
Dense	31 – 50
Very Dense	> 50

2) Color :

If a color is a uniform color throughout, the term is single, modified by an adjective such as light or dark. If the predominate color is shaded by a secondary color, the secondary color precedes the primary color. If two major and distinct colors are swirled throughout the soil, the colors are modified by the term "mottled"

3) Primary Component

Use **DESCRIPTION** from ODOT Soil Classification Chart on Back

Cohesive (fine grained) Soils - Consistency

Description	Qu (TSF)	Blows Per Ft.	Hand Manipulation
Very Soft	<0.25	<2	Easily penetrates 2" by fist
Soft	0.25-0.5	2 - 4	Easily penetrates 2" by thumb
Medium Stiff	0.5-1.0	5 - 8	Penetrates by thumb with moderate effort
Stiff	1.0-2.0	9 - 15	Readily indents by thumb, but not penetrate
Very Stiff	2.0-4.0	16 - 30	Readily indents by thumbnail
Hard	>4.0	>30	Indent with difficulty by thumbnail

4) Component Modifiers:

Description	Percentage By Weight
Trace	0% - 10%
Little	>10% - 20%
Some	>20% - 35%
"And"	>35%

5) Soil Organic Content

Description	% by Weight
Slightly Organic	2% - 4%
Moderately Organic	4% - 10%
Highly Organic	> 10%

6) Relative Visual Moisture

Description	Criteria	
	Cohesive Soil	**Non-cohesive Soils**
Dry	Powdery; Cannot be rolled; Water content well below the plastic limit	No moisture present
Damp	Leaves very little moisture when pressed between fingers; Crumbles at or before rolled to $^1/_8$"; Water content below plastic limit	Internal moisture, but no to little surface moisture
Moist	Leaves small amounts of moisture when pressed between fingers; Rolled to $^1/_8$" or smaller before crumbling; Water content above plastic limit to -3% of the liquid limit	Free water on surface, moist (shiny) appearance
Wet	Very mushy; Rolled multiple times to $^1/_8$" or smaller before crumbles; Near or above the liquid limit	Voids filled with free water, can be poured from split spoon.

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CLASSIFICATION OF SOILS

Ohio Department of Transportation

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

SYMBOL	DESCRIPTION	Classifcation AASHTO	Classifcation OHIO	LL-0/LL x 100*	% Pass #40	% Pass #200	Liquid Limit (LL)	Plastic Index (PI)	Group Index Max.	REMARKS
	Gravel and/or Stone Fragments	A-1-a			30 Max.	15 Max.		6 Max.	0	Min. of 50% combined gravel, cobble and boulder sizes
	Gravel and/or Stone Fragments with Sand	A-1-b			50 Max.	25 Max.		6 Max.	0	
F S	Fine Sand	A-3			51 Min.	10 Max.	NON-PLASTIC		0	
	Coarse and Fine Sand	--	A-3a			35 Max.		6 Max.	0	Min. of 50% combined coarse and fine sand sizes
	Gravel and/or Stone Fragments with Sand and Silt	A-2-4				35 Max.	40 Max.	10 Max.	0	
		A-2-5					41 Min.			
	Gravel and/or Stone Fragments with Sand, Silt and Clay	A-2-6				35 Max.	40 Max.	11 Min.	4	
		A-2-7					41 Min.			
	Sandy Silt	A-4	A-4a	76 Min.		36 Min.	40 Max.	10 Max.	8	Less than 50% silt sizes
	Silt	A-4	A-4b	76 Min.		50 Min.	40 Max.	10 Max.	8	50% or more silt sizes
	Elastic Silt and Clay	A-5		76 Min.		36 Min.	41 Min.	10 Max.	12	
	Silt and Clay	A-6	A-6a	76 Min.		36 Min.	40 Max.	11 - 15	10	
	Silty Clay	A-6	A-6b	76 Min.		36 Min.	40 Max.	16 Min.	16	
	Elastic Clay	A-7-5		76 Min.		36 Min.	41 Min.	≤ LL-30	20	
	Clay	A-7-6		76 Min.		36 Min.	41 Min.	>LL-30	20	
	Organic Silt	A-8	A-8a	75 Max.		36 Min.				W/o organics would classify as A-4a or A-4b
	Organic Clay	A-8	A-8b	75 Max.		36 Min.				W/o organics would classify as A-5, A-6a, A-6b, A-7-5 or A-7-6

MATERIAL CLASSIFIED BY VISUAL INSPECTION

- Sod and Topsoil
- Pavement or Base
- Uncontrolled Fill (Describe)
- Bouldery Zone
- P — Peat

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

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APPENDIX A.2 – ODOT Quick Reference Guide for Rock Description

1: ROCK TYPE: Common rock types are: Claystone; Coal; Dolomite; Limestone; Sandstone; Siltstone; & Shale.
2: COLOR: To be determined when rock is wet. When using the GSA Color charts use only Name, not code.

3: Weathering

Description	Field Parameter
Unweathered	No evidence of any chemical or mechanical alternation of the rock mass. Mineral crystals have a bright appearance with no discoloration. Fractures show little or no staining on surfaces.
Slightly weathered	Slight discoloration of the rock surface with minor alterations along discontinuities. Less than 10% of the rock volume presents alteration.
Moderately weathered	Portions of the rock mass are discolored as evident by a dull appearance. Surfaces may have a pitted appearance with weathering "halos" evident. Isolated zones of varying rock strengths due to alteration may be present. 10 to 15% of the rock volume presents alterations.
Highly weathered	Entire rock mass appears discolored and dull. Some pockets of slightly too moderately weathered rock may be present and some areas of severely weathered materials may be present.
Severely weathered	Majority of the rock mass reduced to a soil-like state with relic rock structure discernable. Zones of more resistant rock may be present, but the material can generally be molded and crumbled by hand pressures.

4: Texture

Component		Grain Diameter
Boulder		>12"
Cobble		3"-12"
Gravel		0.08"-3"
Sand	Coarse	0.02"-0.08"
	Medium	0.01"-0.02"
	Fine	0.005"-0.01"
	Very Fine	0.003"-0.005"

5: Relative Strength

Description	Field Parameter
Very Weak	Core can be carved with a knife and scratched by fingernail. Can be excavated readily with a point of a pick. Pieces 1 inch or more in thickness can be broken by finger pressure.
Weak	Core can be grooved or gouged readily by a knife or pick. Can be excavated in small fragments by moderate blows of a pick point. Small, thin pieces can be broken by finger pressure.
Slightly Strong	Core can be grooved or gouged 0.05 inch deep by firm pressure of a knife or pick point. Can be excavated in small chips to pieces about 1-inch maximum size by hard blows of the point of a geologist's pick.
Moderately Strong	Core can be scratched with a knife or pick. Grooves or gouges to ¼" deep can be excavated by hand blows of a geologist's pick. Requires moderate hammer blows to detach hand specimen.
Strong	Core can be scratched with a knife or pick only with difficulty. Requires hard hammer blows to detach hand specimen. Sharp and resistant edges are present on hand specimen.
Very Strong	Core cannot be scratched by a knife or sharp pick. Breaking of hand specimens requires hard repeated blows of the geologist hammer.
Extremely strong	Core cannot be scratched by a knife or sharp pick. Chipping of hand specimens requires hard repeated blows of the geologist hammer.

6: Bedding

Description	Thickness
Very Thick	>36"
Thick	18" – 36"
Medium	10" – 18"
Thin	2" – 10"
Very Thin	0.4" – 2"
Laminated	0.1" – 0.4"
Thinly Laminated	<0.1"

7: Descriptors

Arenaceous – sandy	Argillaceous - clayey	Brecciated – contains angular to subangular gravel
Calcareous - contains calcium carbonate	Carbonaceous - contains carbon	Cherty- contains chert fragments
Conglomeritic - contains rounded to subrounded gravel	Crystalline – contains crystalline structure	Dolomitic- contains calcium/magnesium carbonate
Ferriferous – contains iron	Fissile – thin planner partings	Fossiliferous – contains fossils
Friable – easily broken down	Micaceous – contains mica	Pyritic – contains pyrite
Siliceous – contains silica	Stylolitic – contain stylotites (suture like structure)	Vuggy – contains openings

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APPENDIX A.2 – ODOT Quick Reference Guide for Rock Description

8: Discontinuities

a: Discontinuity Types

Type	Parameters
Fault	Fracture which expresses displacement parallel to the surface that does not result in a polished surface.
Joint	Planar fracture that does not express displacement. Generally occurs at regularly spaced intervals.
Shear	Fracture which expresses displacement parallel to the surface that results in polished surfaces or slickensides.
Bedding	A surface produced along a bedding plane.
Contact	A surface produced along a contact plane. (generally not seen in Ohio)

b: Degree of Fracturing

Description	Spacing
Unfractured	> 10 ft.
Intact	3 ft. – 10 ft.
Slightly fractured	1 ft. – 3 ft.
Moderately fractured	4 in. – 12 in.
Fractured	2 in. – 4 in.
Highly fractured	< 2 in.

c: Aperture Width

Description	Spacing
Open	> 0.2 in.
Narrow	0.05 in. - 0.2 in.
Tight	<0.05 in.

d: Surface Roughness

Description	Criteria
Very Rough	Near vertical steps and ridges occur on the discontinuity surface.
Slightly Rough	Asperities on the discontinuity surface are distinguishable and can be felt.
Slickensided	Surface has a smooth, glassy finish with visual evidence of striation.

11: Recovery

$$Run\ \text{Recovery} = \left(\frac{R_R}{L_R}\right) * 100$$

L_R = Run Length
R_R – Run Recovery

$$Unit\ \text{Recovery} = \left(\frac{R_U}{L_U}\right) * 100$$

L_U = Rock Unit Length
R_U – Rock Unit Recovery

9: GSI Description

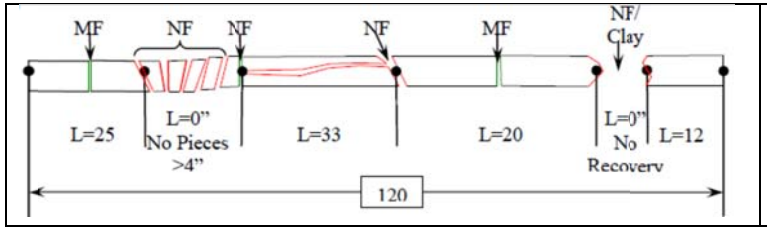
a: Structure

Description	Parameters
Intact or Massive	Intact rock with few widely spaced discontinuities
Blocky	Well interlocked undisturbed rock mass consisting of cubical blocks formed by three interesting discontinuity sets
Very Blocky	Interlocked, partially disturbed mass with multi-faceted angular blocks formed by 4 or more joint sets
Blocky/Disturbed/ Seamy	Angular blocks formed by many intersecting discontinuity sets, Persistence of bedding planes
Disintegrated	Poorly interlocked, heavily broken rock mass with mixture of angular and rounded rock pieces
Laminated/Sheared	Lack of blockiness due to close spacing of weak shear planes

b: Surface Condition

Description	Parameters
Very Good	Very rough, fresh unweathered surfaces
Good	Rough, slightly weathered, iron stained surface
Fair	Smooth, moderately weathered and altered surfaces
Poor	Slickensided, highly weathered surface with compact coatings or fillings or angular fragments
Very Poor	Slickensided, highly weathered surfaces with soft clay coating or fillings

10: RQD



$$RQD = \left(\frac{\sum Length\ of\ Pieces > 4inches}{Total\ Length\ of\ Core}\right) * 100$$

$$RQD = \left(\frac{25+33+20+12}{120}\right) * 100 = 75\%$$