SUBGRADE EXPLORATION

CUY-77-11.41 Part 1

PID 105743

Interstate 77 – Grant Avenue to Broadway Avenue Pavement Replacement

Cleveland, Cuyahoga County, Ohio

Submitted to ODOT District 12 Office

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Prepared by

AECOM

OHIO DEPARTMENT OF TRANSPORTATION

Table of Contents

1 Executive Summary 1-1
2 Introduction 2-1

2.1 Site Location 2-1
2.2 Project Understanding 2-1

3 Geology and Observations of the Project 3-1

3.1 Existing Site Conditions and Project Observations 3-1
3.2 Regional Geology 3-2

4 Exploration 4-1

4.1 Historic Boring Information 4-1
4.2 Field Exploration 4-1
4.3 Laboratory Testing 4-4
4.4 Supplemental Field Exploration 4-4

5 Findings 5-1

5.1 Subsurface Conditions - Introduction 5-1
5.2 Subsurface Conditions – I-77 Subgrade 5-1

5.2.1 Pavement and Subbase 5-1
5.2.2 Granular Fill 5-2
5.2.3 Fine-Grained Fill 5-2
5.2.4 Natural Sand and Gravel 5-2
5.2.5 Natural Fine-Grained 5-2
5.2.6 Groundwater 5-3

5.3 Subsurface Conditions – Ruffini Court Culvert 5-3

5.3.1 Surficial Materials 5-3
5.3.2 Sand and Silt 5-3
5.3.3 Dense Silt 5-3
5.3.4 Stiff to Very Stiff Clay 5-4
5.3.5 Groundwater 5-4

5.4 Subsurface Conditions – Morgana Run Trail Culvert 5-4

5.4.1 Surficial Materials 5-4
5.4.2 Fill 5-4
5.4.3 Silt 5-5
5.4.4 Stiff Clay 5-5

5.5 Results of Sulfate Testing 5-6

6 Analyses and Recommendations 6-1

6.1 Subgrade Analysis 6-1
6.2 Subgrade Improvement Recommendations 6-3

6.2.1 Subgrade Improvement Alternatives 6-3
6.2.2 Final Recommendations 6-4

6.3 Drainage Structure Recommendations 6-4

6.3.1 Junction Chamber D-71 Understanding of Scope 6-4
6.3.2 Synopsis of Subsurface Conditions 6-5
6.3.3 Excavation and Dewatering 6-5

6.4 General Geotechnical Recommendations 6-5

6.4.1 Pavement Design and Construction Recommendations 6-5
6.4.2 Engineered Fills 6-6

7 Limitations 7-1
Figures 7-1
Appendix A – Boring Logs 7-2
Appendix B – Pavement Core Photos 7-3
Appendix C – Laboratory Test Results 7-4
Appendix D – Subgrade Analysis (GB-1) 7-5
Appendix E – Geotechnical Profile Sheets 7-6
Appendix F – Certification of Geotechnical Plan Review 7-7
Appendix G – Roadway Exploration Data Report Junction Chamber D-71 7-1

List of Figures

Figure 1. General Location Map

List of Tables

Table 3-1: Summary of Project Alignments 3-1

Table 4-1: Summary of Historical Borings 4-1

Table 4-2: Summary of Subgrade Boring Locations 4-2

Table 4-3: Summary of Structure Boring Locations 4-3

Table 4-7: Summary of Laboratory Tests 4-4

Table 6-1: Subgrade Analysis Results – Chemical Stabilization Option 6-2

Table 6-2: Subgrade Analysis Results – Undercut and Replace Option 6-2

1 Executive Summary

This report presents the results of our geotechnical exploration for the proposed pavement improvements to Interstate 77 between Grant Avenue and Broadway Avenue in Cleveland, Ohio.

The project site is located within the city limits of Cleveland, Ohio. The general site location is shown in **Figure 1** in the report attachments. The Ohio Department of Transportation (ODOT) has undertaken a pavement replacement project along Interstate 77 (I-77) between Grant Avenue and Broadway Avenue in Cleveland, Ohio. This section of freeway is a portion of a connection between Interstate 480 (Outerbelt Freeway) and Interstates 490 and 90 in and around Downtown Cleveland.

AECOM's subsurface exploration at the project site included 36 soil borings (34 subgrade borings and 2 structure borings), numbered B-001-0-18 through B-039-0-18, each drilled to a depth of 6 feet below existing subgrade elevation for subgrade borings and to a depth of 50 ft below grade for structure borings. A series of pavement cores were also drilled, one at each boring location within the right driving lane at each boring location and one offset in the shoulder at each boring location. Soil borings and pavement cores were drilled by AECOM's subcontractor Ohio TestBor between March 11-27, 2019. Borings were spaced at approximately 400-ft intervals along the project alignment.

The predominant soil types along the proposed subgrade alignment generally included granular fill (ODOT Soil Types A-1-a, A-1-b, A-3, and A-3a), fine-grained fill (A-4a, and A-4b), natural sand and gravel (A-1-a, A-1-b, A-3, and A-3a), and natural fine-grained soils (A-4a, A-4b, and A-6a). Non-cohesive soils were generally medium dense to dense in compactness and cohesive fine-grained soils were generally medium stiff to hard in consistency. Moisture contents of the soils generally ranged from 4% to 51% with an average of 15%. Some loose and medium stiff areas of subgrade were identified in the borings, which may require improvements. A large portion of the subgrade consists of A-4b soils which will require improvement per ODOT Geotechnical Design Manual (GDM) Section 600.

Two soil samples from each boring were tested for sulfate content in accordance with ODOT SS1122. All but two samples tested had sulfate contents below 5,000 ppm, except for boring B-033 in which both samples tested and sulfate contents between 6,000 and 6,600 ppm.

Based on the results of the subgrade analysis performed in accordance with GDM Section 600, approximately 44% of the subgrade will require improvements due to the presence of A-4b soils within 3 ft of subgrade elevation, low SPT N-values, and/or elevated moisture content. Two alternatives designated Options A and B were considered for improvement of the project subgrade:

A. Perform cement stabilization to 14 inches on entire subgrade except for the following areas on which proof roll with cut-and-replace (12 inches with geogrid) as needed. GB-1 calls for stabilization of entire subgrade when chemical or other methods of global stabilization are used.
B. Perform cement stabilization to 14 inches on entire subgrade, accepting possible risk of sulfate interaction with Portland cement from Sta. 184+90 to 189+50 (vicinity of boring B-033).

Based on discussions among AECOM, TRC, ODOT District 12, and the ODOT Office of Geotechnical Engineering (OGE), it was determined that Option B, which consists of performing cement stabilization to a depth of 14 inches on the entire project subgrade is the preferred alternative.

2 Introduction

This report presents the results of our geotechnical exploration for the proposed pavement improvements to Interstate 77 between Grant Avenue and Broadway Avenue in Cleveland, Ohio. AECOM was contracted as part of the project team headed by TRC, by the Ohio Department of Transportation (ODOT), to perform the subsurface exploration and geotechnical data reporting as outlined in our Subconsultant Service Agreement for this project dated November 16, 2018.

The information derived from our exploration and analysis is assembled in this report and includes a description of the results of our field exploration, laboratory testing program and a graphic presentation of the boring logs. The report also provides recommendations for the proposed improvements to Interstate 77 and provides alternatives and cost comparison data to be used by the project team in selecting the proposed subgrade improvement method for inclusion into the project plans.

2.1 Site Location

The project site is located within the city limits of Cleveland, Ohio. The general site location is shown in Figure 1 in the report attachments.

2.2 Project Understanding

The Ohio Department of Transportation (ODOT) has undertaken a pavement replacement project along Interstate 77 (I-77) between Grant Avenue and Broadway Avenue in Cleveland, Ohio. This section of freeway is a portion of a connection between Interstate 480 (Outerbelt Freeway) and Interstates 490 and 90 in and around Downtown Cleveland.

The project plans provide graphical representation of the above-described layouts of the proposed improvements.

3 Geology and Observations of the Project

3.1 Existing Site Conditions and Project Observations

The geotechnical investigation program was undertaken to support the proposed pavement replacement for the Interstate 77 Roadway and removal and replacements of two bridge structures.

Project extents and stationing for each alignment are given in **Table 3-1** below:

Table 3-1: Summary of Project Alignments

Alignment ID	Start Station	End Station	Alignment Length (ft)
I-77 CL	75+00	220+00	14,500

I-77 provides three lanes in each direction in the project area with an asphalt shoulder on each side. The existing freeway is accessed from major surface roads in the City of Cleveland by various onramps and offramps, which expand the roadway width of 4 lanes in each direction in areas leading up to or away from interchange ramps. The existing pavement surface along the I-77 project alignment consists of asphalt and appears to be in moderate condition, with minor to moderate cracking noted. Major utilities along the project alignment include 15 to 42-inch storm sewers running along the approximate centerline of the I-77 freeway; the 15 to 42 inches storm sewers are periodically connected with lateral storm and sanitary sewer lines. Several 12-inch water supply mains cross I-77 roughly perpendicular to the roadway. A 24-inch gas main crosses under the I-77 freeway around Station 214+00. The northernmost end of the project meets with the southern end of the ongoing I-77 and I-490 interchange improvement project, ongoing at the time of this geotechnical exploration.

3.2 Regional Geology

The project site is located in the Ohio glaciated region. According to the Ohio Department of Natural Resources (ODNR) Map entitled "Physiographic Regions of Ohio, 1998" the site is located within the Erie Lake Plain of the glaciated Huron-Erie Lake Plains section of the Central Lowland Physiographic Province.

According to the ODNR map entitled "Surficial Geology of the Cleveland South Quadrangle, 2000," surficial materials generally consist of up to 20 feet of glacial till soils. Glacial till soils are generally an unsorted mix of clay, silt, sand, and gravel. Nearest to the surface, the till soils consist of up to 50 percent clay and 8 to 30 percent sand. The till soils are underlain by bedrock of the Upper-Devonian-age Bedford Shale unit.

According to the United States Geological Survey (USGS) Mineral Resources Online Spatial Data, the Bedford Shale is the lower unit of the Berea Sandstone and Bedford Shale, Undivided formation. The Bedford Shale unit consists of gray to brown shale, bedded thinly to medium with interbedded siltstone and sandstone and is between 80 to 180 feet thick.

4 Exploration

4.1 Historic Boring Information

Historic boring information was taken from one previous geotechnical exploration conducted at this site in 2012 and 2014. Historic records were accessed using the ODOT GeoMS online database. Borings were assigned new exploration ID's as necessary based on the procedure given in the Specifications for Geotechnical Exploration (SGE). The borings referenced for this project are summarized in **Table 4-1** below. All ten borings were sampled using SPT sampling. The 2012 borings were used in support of the subsurface characterization for the Ruffini Court Culvert, and the 2014 borings were used in support of the subgrade design for the roadway improvements.

Table 4-1: Summary of Historical Borings

GMS File No.	Project ID	Historic Boring ID	Exploration ID	Reference Alignment	Station	Offset	Surface Elevation (ft)	Boring Depth (ft)	Drill/ Sampling Method
N/A	CUY-77-13.31	--	B-005-0-12	I-77	175+50	61' RT	670.2	110.0	Auger/SPT
N/A	CUY-77-13.31	--	B-006-0-12	I-77	175+71	65' LT	665.1	110.0	Auger/SPT
N/A	CUY-77-13.80	--	B-003-0-14	Ramp J5	201+80	16' LT	661.6	61.5	Auger/SPT
N/A	CUY-77-13.80	--	B-004-0-14	Ramp J5	202+98	19' LT	661.7	61.5	Auger/SPT
N/A	CUY-77-13.80	--	B-005-0-14	Ramp J5	204+79	16' LT	661.7	61.5	Auger/SPT
N/A	CUY-77-13.80	--	B-006-0-14	Ramp J5	205+95	22' LT	662.5	61.5	Auger/SPT
N/A	CUY-77-13.80	--	B-008-0-14	Ramp J5	210+03	6' LT	657.4	61.5	Auger/SPT
N/A	CUY-77-13.80	--	B-010-0-14	Ramp J5	211+95	20' LT	660.5	61.5	Auger/SPT
N/A	CUY-77-13.80	--	B-017-0-14	Ramp J5	218+31	3' RT	654.4	61.5	Auger/SPT
N/A	CUY-77-13.80	--	B-019-0-14	Ramp J5	220+18	6' LT	657.7	61.5	Auger/SPT

4.2 Field Exploration

AECOM's subsurface exploration at the project site included 36 soil borings (34 subgrade borings and 2 structure borings), numbered B-001-0-18 through B-039-0-18, each drilled to a depth of 6 feet below existing subgrade elevation for subgrade borings and to a depth of 50 ft below grade for structure borings.

Borings were located in the field by an AECOM representative, prior to beginning the subsurface exploration. Prior to the start of drilling activities, the Ohio Utilities Protection Service was notified, and boring locations were verified as clear of utility conflicts. After completion of the subsurface exploration, boring locations were surveyed by AECOM. The boring locations are shown **Appendix E** of this report. **Tables 4-2** through **4-6**, below, contains a summary of boring locations per alignment and elevations to the nearest foot as estimated from the project plans.

Table 4-2: Summary of Subgrade Boring Locations

Exploration ID	Reference Alignment	Station	Offset	Surface Elevation (ft NAVD88)
B-001-0-18	I-77 EX CL	75+42	38’ RT	701.5
B-002-0-18	I-77 EX CL	78+71	39’ LT	696.0
B-003-0-18	I-77 EX CL	83+15	39’ RT	695.8
B-004-0-18	I-77 EX CL	87+04	52’ LT	695.6
B-005-0-18	I-77 EX CL	91+14	39’ RT	699.9
B-006-0-18	I-77 EX CL	94+44	39’ LT	696.4
B-007-0-18	I-77 EX CL	98+94	39’ RT	692.3
B-008-0-18	I-77 EX CL	102+91	56’ LT	687.8
B-009-0-18	I-77 EX CL	107+02	38’ RT	680.7
B-010-0-18	I-77 EX CL	110+99	39’ LT	676.8
B-011-0-18	I-77 EX CL	114+97	38’ RT	670.5
B-012-0-18	I-77 EX CL	118+90	39’ LT	665.9
B-013-0-18	I-77 EX CL	124+05	53’ RT	656.3
B-014-0-18	I-77 EX CL	126+88	51’ LT	654.1
B-015-0-18	I-77 EX CL	131+63	39’ RT	648.8
B-016-0-18	I-77 EX CL	134+90	40’ LT	651.8
B-017-0-18	I-77 EX CL	138+88	38’ RT	658.7
B-018-0-18	I-77 EX CL	142+99	39’ LT	666.6
B-019-0-18	I-77 EX CL	146+86	39’ RT	673.0
B-020-0-18	I-77 EX CL	151+03	39’ LT	680.6
B-021-0-18	I-77 EX CL	154+83	52’ RT	700.3
B-022-0-18	I-77 EX CL	159+05	40’ LT	682.2
B-023-0-18	I-77 EX CL	162+87	39’ RT	678.7
B-024-0-18	I-77 EX CL	166+86	40’ LT	678.0
B-027-0-18	I-77 EX CL	174+09	38’ RT	677.8
B-028-0-18	I-77 EX CL	174+35	40’ LT	680.7
B-031-0-18	I-77 EX CL	179+09	38’ RT	682.1
B-032-0-18	I-77 EX CL	182+84	40’ LT	684.5
B-033-0-18	I-77 EX CL	186+95	51’ RT	678.5
B-034-0-18	I-77 EX CL	191+92	40’ LT	676.9
B-035-0-18	I-77 EX CL	194+98	41’ RT	674.8

Exploration ID	Reference Alignment	Station	Offset	Surface Elevation (ft NAVD88)
B-036-0-18	I-77 EX CL	198+34	46' LT	663.2
B-037-0-18	I-77 EX CL	202+31	54' RT	661.4
B-039-0-18	I-77 EX CL	219+95	41' RT	659.3

Table 4-3: Summary of Structure Boring Locations

Exploration ID	Reference Alignment	Station	Offset	Surface Elevation (ft msl)	Boring Depth (ft)
B-025-0-18	I-77 EX CL	169+65	54' RT	656.1	50.0
B-026-0-18	I-77 EX CL	171+20	74' LT	653.6	50.0

AECOM subcontracted Ohio TestBor, Inc. of Cleveland, Ohio to provide drilling services. In order to safely access the boring locations within the existing roadways, it was necessary to set up temporary work zones in accordance with the ODOT Temporary Traffic Control Manual (TTCM). Work zone setup and traffic control measures were provided by AECOM's subcontractor, Cleveland Barricading Systems, LLC. All borings but B-036 were drilled using a Simco 2800 truck-mounted drill rig from March 11-27, 2019. Boring B-036 was drilled using a Diedrich D-25 trailer-mounted drill rig on March 27, 2019. All borings were drilled using either a 4.0-inch outer-diameter solid-stem auger or a 2.25-inch inner-diameter hollow-stem auger. During drilling activities, representative soil samples were collected from the borings for classification and/or testing. The samples were obtained by Standard Penetration Testing (SPT) with a split-spoon, in general accordance with the SGE and ASTM D 1586. A 140-pound automatic hammer falling 30 inches was used for sampling. The hammer for the Diedrich D-25 drill rig was calibrated on November 13, 2018 to an energy ratio of 87.4%. The hammer for the Simco 2800 HS (HT) drill rig was calibrated on November 13, 2018 to an energy ratio of 84.5%.

Groundwater was monitored during the drilling activities and measurements were taken during and after drilling. A complete set of boring logs, including soil descriptions, types of sampling, and laboratory test results, is provided in **Appendix A.**

In addition to the borings, pavement cores to document the thickness and condition of the existing pavement were obtained at each of the boring locations. A photographic log of the pavement cores with descriptions and thickness is provided in **Appendix B**.

4.3 Laboratory Testing

An AECOM geotechnical engineer selected SPT samples for laboratory testing. Selected soil samples were delivered to AECOM's subcontractor Resource International, Inc. soils laboratory in Valley View, Ohio where they were tested for classification index properties in accordance with applicable ASTM standards and for sulfate content testing in accordance with ODOT Supplemental Specification 1122. The laboratory-testing program included the type and number of tests presented in **Table 4-7**, which were assigned in general accordance with guidance given in ODOT's Geotechnical Bulletin No. 1: Plan Subgrades (GB-1).

Table 4-4: Summary of Laboratory Tests

TEST SPECIFICATION	REFERENCE STANDARD	NUMBER OF TESTS
Natural Moisture Content	ASTM D2216	176
Atterberg Limits	ASTM D4318	96
Particle Size Analysis – Sieve	ASTM D6913	96
Particle Size Analysis – Hydrometer	ASTM D7928	96
Organic Content	ASTM D2974	1
Unconfined Compressive Strength	ASTM D2166	1
Sulfate Content	ODOT SS1122	67

Pertinent test results are summarized in Section 5 of this report. Complete lab result sheets are presented in **Appendix C**.

4.4 Supplemental Field Exploration

A supplemental subsurface exploration was performed by SME in June 2025 in support of the design and construction of the proposed junction chamber D-71, located near I-77 CL Station 135+00 in the I-77 southbound roadside. The exploration consisted of one boring, designated B-001-0-25, drilled to a depth of 25 ft below existing grade. Details of this supplemental boring are provided in the subsurface exploration report issued by SME on July 14, 2025, provided for reference in **Appendix G.**

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5 Findings

5.1 Subsurface Conditions - Introduction

The following sections present the general site-specific subsurface conditions for each roadway alignment. The discussion is based on the results of the soil borings, and laboratory testing. For this and all subsequent sections of this report, borings drilled for the current geotechnical exploration will be referenced using only the initial letter and three numbers of the exploration ID for simplicity (e.g. B-001 references B-001-0-18). Historic borings, when referenced, will be referred to by their full exploration ID.

5.2 Subsurface Conditions – I-77 Subgrade

All borings from the current geotechnical exploration were drilled within the roadway of Interstate 77. For the purposes of this section, all soil stratum and groundwater depths are referenced from subgrade elevation and not surface elevation. Subgrade elevation is defined as the elevation of the bottom of existing pavement and/or subbase. For portions of the project where the proposed subgrade elevation differs from the existing subgrade elevation, that difference should be taken into account when interpreting the sections which follow. The subsurface profile along the I-77 alignment generally consists of the following general strata from generally uppermost to lowest: 1) pavement and subbase; 2) granular fill; 3) fine-grained fill; 4) natural sand and gravel; and 5) natural fine-grained soil. Some soil units exist as complex interlayer systems; similar soils within the interlayer systems are grouped together in the sections below for simplicity of description, so the units listed above are not necessarily vertically continuous in all areas of the site. The following subsections describe the makeup, thicknesses, extents, and general properties of each general soil type encountered.

5.2.1 Pavement and Subbase

Pavement cores were collected from the right driving lanes and right shoulders at each boring locations, except for B-036, where no shoulder core was collected. In the driving lanes, pavement generally consisted of 8.25 to 11.0 inches (average of 9.2 inches) of concrete overlain by 3.5 to 9.25 of asphalt (average of 7.2 inches) with total pavement thickness ranging from 12.25 to 19.0 inches (average of 16.1 inch). Pavement at B-032 consisted of 16.75 inches of asphalt within no concrete. Subbase material encountered below the pavement included 10 inches of gravel and crushed asphalt in B-005 and 4 inches of gravel in B-033.

In the shoulders, pavement thickness generally ranged from 8.0 to 19.5 inches (average of 14.2 inches). The predominant pavement section consisted entirely of asphalt with no concrete underlain. Concrete pavement ranging in thickness form 9.0 to 9.5 inches was encountered at X-003, X-009, X-015, X-020, X-037, and X-039. The asphalt overlying the concrete, where encountered in the shoulders ranged from 6.5 to 8.5 inches.

A photographic log of all pavement cores collected during this exploration is provided in **Appendix B**.

5.2.2 Granular Fill

Granular fill material was encountered below the pavement and/or subbase material in all borings but B-002, B-003, and B-008.

The granular fill consisted of gravel and stone fragments (ODOT soil type A-1-a), gravel and stone fragments with sand (A-1-b), fine sand (A-3) and coarse and fine sand (A-3a). Much of the granular fill material, particularly near the subgrade surface contained slag and crushed asphalt fragments. SPT N60 values within the granular fill material ranged from 6 to 89 blows per foot (bpf) with an average of 29 bpf, indicating a generally medium dense to dense compactness on average with some loose and very dense outliers. Moisture content measurements within the granular fill ranged from 4% to 51% with 11% on average.

5.2.3 Fine-Grained Fill

Fine-grained fill was encountered in borings B-001, B-005, B-006, B-010, B-011, B-012, B-014, B-015, B-016, B-020, B-021, B-023, B-024, B-027, B-028, B-031, B-034, B-035, and B-036.

The fine-grained fill material predominantly consists of sandy silt (A-4a) and silt (A4b). Fill soil consisting of silt (A-4b) 3 ft of the 0 proposed subgrade (which will require subgrade improvement according to ODOT GB-1) in sever of the borings; the specific areas in which shallow A-4b soils were noted are detailed in **Section 6.1**. SPT N60 values within the fine-grained fill material ranged from 7 to 65 blows per foot (bpf) with an average of 23 bpf. Pocket penetrometer readings within the fine-rained fill material ranged from 0.5 to 4.5 tons per square foot (tsf) with an average of 3.2 tsf, indicating a generally very stiff to hard consistency with some minor medium stiff to stiff interlayers. Moisture content measurements within the fine-grained fill ranged from 9% to 28% with 16% on average.

5.2.4 Natural Sand and Gravel

Natural sand and gravel soils were encountered in borings B-001 through B-004, B-006 through B-008, B-013, B-016, B-018, B-019 and B-039.

Natural sand and gravel material predominantly consists of gravel (A-1-a), gravel with sand (A-1-b), fine sand (A-3), and coarse and fine sand (A-3a). SPT N60 values within the natural sand and gravel material ranged from 6 to 50 blows per foot (bpf) with an average of 22 bpf, indicating a generally loose to very dense compactness with a medium dense compactness on average. Moisture content measurements within the natural sand and gravel ranged from 4% to 26% with 9% on average.

5.2.5 Natural Fine-Grained

Natural fine-grained soils were encountered in borings B-006 through B-009, B-013, B-014, B-017, B-018, B-021 through B-023, B-033, B-036, and B-037.

The natural fine-grained material predominantly consisted of silt (A-4b), sandy silt (A-4a), and silt and clay (A-6a). Natural fine-grained soil consisting of silt (A-4b) 3 ft of the proposed subgrade (which will require subgrade improvement according to ODOT GB-1) in sever of the borings; the specific areas in which shallow A-4b soils were noted are detailed in **Section 6.1.** SPT N60 values within the natural fine-grained material ranged from 8 to 38 blows per foot (bpf) with an average of 17 bpf. Pocket penetrometer readings within the fine-rained fill material ranged from 0.5 to 4.5

tons per square foot (tsf) with an average of 2.3 tsf, indicating a generally medium stiff to hard consistency with some minor medium stiff to stiff interlayers. Moisture content measurements within the natural fine-grained soils ranged from 15% to 27% with 20% on average.

5.2.6 Groundwater

Static groundwater was encountered in boring B-018 at an approximate depth of 2 ft below subgrade elevation (elevation 663 ft NAVD88). Perched water was encountered within permeable interlayers in borings B-001, through B-003, B-005, through B-007, B-009, B-012, B-013, B-017, B-033, B-036, B-037, and B-039. Groundwater levels and presence of perched water should be expected to fluctuate with seasonal variations and amount of rainfall.

5.3 Subsurface Conditions – Ruffini Court Culvert

Historical borings B-005-0-12 and B-006-0-12 were drilled at the locations of the abutments of the existing bridge newly constructed box culvert spanning Ruffini Court (SFN 1806610). The subsurface profile at the Ruffini Court Culvert generally consists of the following general strata from uppermost to lowest: 1) pavement and subbase; 2) loose to medium dense sand and silt; 3) dense silt; and 4) stiff to very stiff clay. The following subsections describe in detail the makeup, thicknesses, extents, and general properties of each stratum.

5.3.1 Surficial Materials

The surficial materials at the Ruffini Court Culvert borings at the time of drilling (June 2011) consisted of 2 inches of asphalt pavement overlying 10 inches of concrete pavement at boring B-005-0-12; and 6 inches of concrete pavement overlying 6 inches of granular base at boring B-006-0-12.

5.3.2 Sand and Silt

A stratum of sand and non-cohesive silt soils was encountered below the pavement and subbase material. Sand and non-cohesive silt soils extend to depths of around 25 ft below grade in both borings at the Ruffini Court Culvert, corresponding to approximate elevations of 645 ft NAVD88 at boring B-005-0-12 and 640 ft at boring B-006-0-12.

The predominant soil types within the fill soils at the Ruffini Court Culvert location include sandy silt (A-4a), fine sand (A-3), and coarse and fine sand (A-3a). SPT N60 values within the fill soils ranged from 10 to 46 blows per foot (bpf) with an average around 27 bpf, indicating a generally medium dense to dense compactness with a generally medium dense compactness on average. Moisture contents within the sand and silt layers above the water table (encountered around elevation 649 ft at the time of drilling) ranged from 3% to 19% with an average around 6%. Moisture contents within the sand and silt layers below the water table ranged from 19% to 33% with an average around 26%.

5.3.3 Dense Silt

A stratum of medium dense to dense silt soils was encountered below the sand and silt unit in both borings at the Ruffini Court Culvert. The silt stratum extends to depths of around 42 to 47 ft below grade in both borings, corresponding to approximate elevations of 628 ft NAVD88 at boring B-005-0-12 and 618 ft at boring B-006-0-12.

The dense silt unit consists of both sandy silt (A-4a) and silt (A-4b) soil types. SPT N60 values within the soil unit ranged from 17 to 117 blows per foot (bpf) with an average around 47 bpf, indicating a generally medium dense to very dense compactness with a generally dense compactness on average. Moisture contents within the dense silt unit ranged from 17% to 21% with an average around 19%.

5.3.4 Stiff to Very Stiff Clay

A stratum of clay soils was encountered below the dense silt unit in both borings at the Ruffini Court Culvert. The silt stratum extends to boring termination 110 ft below grade in both borings, corresponding to approximate elevations of 560 ft NAVD88 at boring B-005-0-12 and 555 ft at boring B-006-0-12.

The clay unit generally consists of silt and clay (A-6a) and silty clay (A-6b) soil types with one minor unit of silt (A-4b) encountered between 97 and 101.5 ft below ground surface in B-006-0-12. SPT N60 values within the soil unit ranged from 17 to 48 blows per foot (bpf) with an average around 28 bpf. Pocket penetrometer readings ranged from 1.25 to 4.25 tons per square foot (tsf) with an average around 2.6 tsf, indicating a generally stiff to hard consistency with very stiff consistency on average. Moisture contents within the stiff to very stiff clay unit ranged from 18% to 30% with an average around 24%.

5.3.5 Groundwater

Groundwater was encountered at a depth of 21 ft below ground surface in B-005-0-12 at a depth of 16 ft below ground surface in B-006-0-12. These depths correspond to an approximate elevation of 649 ft NAVD88. Groundwater levels and presence of perched water should be expected to fluctuate with seasonal variations and amount of rainfall.

5.4 Subsurface Conditions – Morgana Run Trail Culvert

Borings B-025-0-18 and B-026-0-18 were drilled at the locations of the abutments of the existing bridge and proposed replacement box culvert spanning Morgana Run Trail (SFN 1806572). The subsurface profile at the Morgana Run Trail Culvert generally consists of the following general strata from uppermost to lowest: 1) topsoil; 2) fill; 3) silt; and 4) stiff clay. The following subsections describe in detail the makeup, thicknesses, extents, and general properties of each stratum.

5.4.1 Surficial Materials

A thin layer of topsoil, 1 inch thick was encountered at the surface in boring B-026. No topsoil, pavement, or base materials were encountered in boring B-025. The pavement cores associated with B-025-0-18 (numbered X-025-0-18 and X-025-1-18 in the pavement core log) were drilled at the I-77 roadway level in the northbound right lane and shoulder just south of the Morgana Run culvert south abutment. The pavement section encountered in core X-025-0-18 consisted of a 3.75-in asphalt course overlying 9.25 inches of concrete. The pavement section encountered in core X-025-1-18 consisted of 15.0 inches of asphalt.

5.4.2 Fill

Fill materials were encountered in both borings B-025 and B-026. Fill soils extended to approximate depths of 3.5 ft bgs (elevation 653 ft NAVD88) in B-025 and 12 ft bgs (elevation 642 ft NAVD88) in B-026. The fill material in B-025 consists of gravel (A-1-a) and includes coal fragments and foundry

sand. The fill material in B-026 consists of interlayered gravel (A-1-a), coarse and fine sand (A-3a), sandy silt (A-4a), and silt (A-4b). Individual silt, sand, and gravel interlayers range in thickness from 0.6 ft to 3.1 ft. SPT N values within the fill soils exceed 50 bpf in B-025 and range from 6 to 25 with an average around 11 bpf in boring B-026, indicating a generally very dense compactness in B-025 and a loose to medium dense compactness in B-026.

Based on results of laboratory testing, the fill soils have particle size distributions with percent gravel sizes ranging from 0% to 53% with an average of 11%; coarse sand sizes ranging from 3% to 43% with an average of 21%; fine sand sizes ranging from 7% to 52% with an average of 26%; silt sizes ranging from 5% to 58% with an average of 25%, and clay sizes ranging from 2% to 32% with an average of 18%. Liquid limits ranged from non-plastic to 27 with an average of 12, plastic limits ranged from non-plastic to 18 with an average of 7, and plasticity indices ranged from non-plastic to 10 with an average of 4. Natural moisture contents ranged from 9% to 22% an average of 16%.

5.4.3 Silt

Silt soils were encountered below the fill in both borings B-025 and B-026. The silt soils include non-plastic sandy silt (A-4a) and cohesive silt (A-4b) soil types, and extend to approximate depths of 36 ft (620 ft NAVD88) in B-025 and 35 ft (619 ft NAVD88) in B-026. SPT N values within the non-plastic sandy silt soils range from 11 to 35 bpf with an average around 19 bpf. Pocket penetrometer readings generally ranged from 0.5 to 0.8 tons per square foot (tsf) with an average around 0.6 tsf, indicating a generally medium stiff consistency. A layer of very stiff to hard silt (A-4b) was encountered in both borings at depths of 17 to 22 ft in both borings; hand penetrometer readings within this very stiff to hard layer ranged from 2.7 to 4.1 tsf. Moisture content measured within the silt materials ranged from 19% to 32% with an average of 25%.

One undisturbed (Shelby Tube) sample from within this silt unit was tested for unconfined compressive strength in accordance with AASHTO T 208. The test sample was from a depth of 31.3 to 31.9 ft below existing grade. The test sample had a measured moisture content of 27.5%, a dry density of 97.7 pounds per cubic foot (pcf), a wet density of 124.6 pcf, and an unconfined compressive strength of 2398 psf. One additional Shelby Tube sample was attempted in boring B-026 at a depth of 30.5 ft but no material was recovered.

5.4.4 Stiff Clay

A unit of stiff clay soils was encountered below the silt soil unit in both borings and extended to boring termination at depths of 50 ft (elevations of 604 to 606 ft NAVD88). The stiff clay unit generally consists of silt and clay soil types (A-6a) with an interlayer of silt (A-4b) in B-026 at a depth of 46 to 49 ft (elevation 607 to 604 ft NAVD88). SPT N values within the clay unit ranged from 13 to 20 bpf with an average around 18 bpf. Pocket penetrometer readings within the clay unit ranged from 0.75 to 2.1 tsf with an average around 1.7 tsf, indicating and generally medium stiff to very stiff consistency with a stiff consistency on average. Moisture contents within the stiff clay ranged from 19% to 26% with an average of 23%.

One undisturbed (Shelby Tube) sample from within this clay unit in boring B-026 at a depth of 35.5 to 37.5 ft. Laboratory testing was originally planned for this sample when deep foundations were being considered for the Morgana Run Culvert. However the lab testing within this deep clay unit was determined to be unnecessary when a shallow foundation system was selected for the Morgana Run culvert.

5.5 Results of Sulfate Testing

Since chemical stabilization was considered as an alternative for subgrade stabilization on this project, sulfate content tests were performed on one to two samples from each subgrade boring drilled for this project and included a total of 67 samples tested. Complete sulfate test results are given in **Appendix C**.

Sulfate contents across all samples tested ranged from 13 to 6,640 parts per million (ppm) with an average of 732 ppm. Out of the 67 tests, only two of the results in boring B-033 exceeded 5,000 ppm, the threshold above which chemical stabilization is prohibited by ODOT Geotechnical Bulletin 1 (GB-1).

6 Analyses and Recommendations

6.1 Subgrade Analysis

Subgrade analysis was performed for each alignment in accordance with ODOT Geotechnical Design Manual (GDM), Section 600. One subgrade analysis spreadsheet was prepared using data from both historical borings and borings performed in the current geotechnical exploration. For all historical borings in which SPT sampling was used and hammer data was not specified, a hammer energy ratio of 60% was assumed for calculation of N60 values. The subgrade analysis spreadsheets is included in **Appendix D**.

The subgrade analysis indicates that improvements to the subgrade should be anticipated. There are two types of conditions which indicate that improvements will be necessary:

- Sections of subgrade where low SPT N-values and/or high moisture content were noted in the soil borings which indicate possible unstable areas of subgrade;
- Sections of subgrade where unsuitable soils were encountered. Unsuitable soils types encountered include A-4b-type (soils containing 50 percent or more silt-sized particles) soils within 36 inches of the proposed subgrade elevation.

Pertinent results of the subgrade analysis are summarized in **Tables 6-1** and **6-2** below. Overall, it is estimated that approximately 44 percent of the subgrade across the project will require improvements.

The ODOT GDM allows for two different options for stabilizing subgrade: undercuts and replacement and chemical stabilization. Chemical stabilization may be used for subgrade where improvements are necessary due to low SPT N-values or the presence of A-4b soils.

Table 6-1 lists the portion of the project alignment and depth required for the chemical stabilization option. **Table 6-2** details each section of the project alignment identified by the subgrade analysis as requiring improvements and also lists the recommended undercut depth for each section. Unless otherwise specified, undercut and stabilization depths in **Tables 6-1** and **6-2** are measured from the planned subgrade elevation.

Presence of A-4b soils require, per GDM Section 600, a minimum chemical stabilization depth of 14 inches below subgrade when that option is used. A-4b soils within 3 feet of the proposed subgrade were identified in nearly all areas requiring stabilization, so the required chemical stabilization depth for all alignments is 14 inches. **Table 6-2** also gives the maximum soil sulfate content measured in each area requiring stabilization. Chemical stabilization is not permitted to be used in any subgrade area where soil sulfate contents exceed 5,000 ppm.

Table 6-1: Subgrade Analysis Results – Chemical Stabilization Option

Alignment	Sta. Begin	Sta. End	Depth of Stabilization Below Proposed Subgrade(in)
I-77 EX CL	75+00	220+00	14

Table 6-2: Subgrade Analysis Results – Undercut and Replace Option

Alignment	Sta. Begin	Sta. End	Instability Cause	Undercut Depth (in)	Max. Sulfate Content* (ppm)
I-77 EX CL	75+00	77+10	Low N-Value	12	130
I-77 EX CL	89+10	96+70	A-4b Soil	36	530
I-77 EX CL	109+00	141+00	A-4b Soil	36	1,100
I-77 EX CL	148+90	153+00	A-4b Soil	36	1,100
I-77 EX CL	153+00	157+00	Low N-Value High Moisture	12	1,500
I-77 EX CL	164+80	176+70	A-4b Soil	36	2,900
I-77 EX CL	176+70	181+00	High Moisture	12	600
I-77 EX CL	184+90	189+50	High Moisture	12	6,600*
I-77 EX CL	196+70	200+10	Low N-Value	12	2,000
I-77 EX CL	202+00	203+90	A-4b Soil	36	1,800

*Sulfate content exceeds 5000 ppm.

Of the subgrade areas listed in **Table 6-2** above, the areas where A-4b soils are anticipated must be improved by performing the prescribed undercut, regardless of the results of proof roll inspection. Detailed recommendations for subgrade improvements are discussed in the **Section 6.2** below.

6.2 Subgrade Improvement Recommendations

The following section presents the recommended subgrade improvements to be performed based on the results of the Subgrade Analysis documented in **Section 6.1** above.

6.2.1 Subgrade Improvement Alternatives

Based on the subgrade analysis, approximately 44% of the subgrade will require improvements due to the presence of A-4b soils within 3 ft of subgrade elevation, low SPT N-values, and/or elevated moisture content. Two alternatives designated Options A and B were considered for improvement of the project subgrade. Probable cost analyses were performed for each alternative using the Historical Bid Data Item Search spreadsheet for years 2019-2022. Results of the cost analyses are provided in Tables 6-3 and 6-4.

Option A

Perform cement stabilization to 14 inches on entire subgrade except for the following areas on which proof roll with cut-and-replace (12 inches with geogrid) as needed. ODOT GDM Section 600 calls for stabilization of entire subgrade when chemical or other methods of global stabilization are used.

- Sta. 184+90 to 189+50 (B-033-0-18 with sulfates exceeding 5,000 ppm).

Table 6-3: Cost Analysis of Subgrade Improvement Option A

CMS No.	Item	Qty	Unit	Unit Price	Subtotal
206	Cement-Stabilized Subgrade, 14 inches deep	218,400	sq. yd.	$6.00	$1,310,400.00
206	Curing Coat	218,400	sq. yd.	$1.00	$218,400.00
204	Proof Rolling	113	hour	$220.00	$24,860.00
204	Excavation of Subgrade	7,200	cu. yd.	$27.00	$194,400.00
861	Geogrid for Subgrade Stabilization	7,200	sq. yd.	$4.00	$28,800.00
204	Granular Material, Type B	7,200	cu. yd.	$60.00	$432,000.00
TOTAL					$ $2,208,860.00
NOMINAL COST					$2.2 million

Option B

Perform cement stabilization to 14 inches on entire subgrade, accepting possible risk of sulfate interaction with Portland cement from Sta. 184+90 to 189+50 (vicinity of boring B-033).

Table 6-4: Cost Analysis of Subgrade Improvement Option B

CMS No.	Item	Qty	Unit	Unit Price	Subtotal
206	Cement-Stabilized Subgrade, 14 inches deep	225,600	sq. yd.	$6.00	$1,353,400.00
206	Curing Coat	225,600	sq. yd.	$1.00	$225,600.00
204	Proof Rolling	113	hour	$220.00	$24,860.00
TOTAL					$1,604,060.00
NOMINAL COST					$1.6 million

6.2.2 Final Recommendations

Based on discussions among AECOM, TRC, ODOT District 12, and the ODOT Office of Geotechnical Engineering (OGE), it was determined that Option B, which consists of performing cement stabilization to a depth of 14 inches on the entire project subgrade is the preferred alternative. Option B provides the following benefits over Option A:

- Option B provides an estimated cost savings of approximately $0.6 million.
- Option A would require multiple subgrade improvement operations (one for cement stabilization and a second for cut and replace). Having a single subgrade improvement operation will allow for simpler project phasing and maintenance of traffic.
- Stabilizing the entire subgrade reduces risk of unanticipated expense to stabilize unstable or unsuitable portions of the subgrade not identified in the subsurface exploration.

While the elevated sulfate contents (6,000 to 6,600 ppm) in boring B-033 do present a slight risk of subgrade expansion and/or heaving due to chemical interaction between Portland cement and sulfate compounds in the soil, it was determined by AECOM, TRC, and ODOT that the risk is small and manageable, particularly since it is confined to a single soil boring and no gypsum crystals or other minerals known to contain significant amounts of sulfate compounds were identified during the field exploration.

6.3 Drainage Structure Recommendations

The following section provides recommendations pertaining to design and construction of the Junction Chamber D-71 drainage structure located in the I-77 southbound roadside near I-77 CL Station 135+00.

6.3.1 Junction Chamber D-71 Understanding of Scope

Based on the Stage 3 Design Submittal plan sheets P.712 and P.714 for this project, the proposed Junction Chamber will be constructed on top of an existing reinforced concrete box culvert, providing drainage from the junction chamber into the box culvert. The junction chamber itself will have horizontal dimensions of 10.0 ft by 11.5 ft and a height of 10.0 ft above the top of the existing

box culvert. Top and bottom elevations of the proposed junction chamber are 637.6 ft and 626.53 ft. respectively. A 5.0-ft inner-diameter manhole riser will be constructed on top of the junction chamber, with a rim elevation of 643.9 ft. Installation of the junction chamber and manhole riser are anticipated to require an open-cut excavation approximately 20 ft in depth.

6.3.2 Synopsis of Subsurface Conditions

The subsurface soils indicated by boring B-001-0-25 generally consist of interlayers of both cohesive and non-cohesive fill material. Primary soil types include Gravel with Sand (A-1-b), Sandy Silt (A-4a), Silt (A-4b), and Silt and Clay (A-6a). N60 values within the non-cohesive materials generally range from 11 to 85 blows per foot (bpf) with an average around 30 bpf, indicating medium dense to very dense compactness, with a dense compactness on average. Hand penetrometer readings within the cohesive materials ranged from 1.5 to 4.5 tons per square foot (tsf), indicating consistencies ranging from stiff to hard. Moisture contents ranged from 8% to 31% with an average moisture content around 16%.

Groundwater was encountered in boring B-001-0-25 as free water at depths of 3 ft and 18 ft below existing grade (elevations 641.5 and 626.5 ft) and a static water level was indicated at a depth of 10.0 ft (elevation 634.5 ft).

6.3.3 Excavation and Dewatering

As stated above, construction of the proposed junction chamber is anticipated to require an excavation with a depth of around 20 ft below existing grade. Shoring and benching of the excavation sides should be performed in accordance with OSHA requirements as documented in 29 CFR Part 1926, Subpart P and the requirements of ODOT CMS Items 611.04 and 611.05. All soils in this location should be considered Type C as defined in Appendix A of 29 CFR Part 1926, Subpart P.

Dewatering of the excavation is likely to be required with moderate groundwater inflows through the sand and gravel soils in the excavation side slopes expected. Dewatering methods such as sumps with continuous high-volume pumping and/or dewatering wells will likely be necessary, and the contractor should be prepared to dewater the excavation as needed.

Backfill for the excavation should be performed in accordance with the requirements of ODOT CMS Item 611.06.

6.4 General Geotechnical Recommendations

6.4.1 Pavement Design and Construction Recommendations

Provided that the recommended stabilization described in **Section 6.2.1** and **6.2.2** above is fully implemented, a design California Bearing Ratio (CBR) of 9 may be assumed in the design.

Adequate drainage is one of the most critical variables in both the life and performance of flexible pavement. The necessity of maintaining adequate drainage is heightened considering that the majority of the subgrade soil that will support new pavement on this project are fine-grained, low permeability materials that are prone to soften upon water infiltration. The roadway geometry should be pitched or crowned such that positive surface drainage is maintained away from the pavement. Furthermore, the existing underdrain system should be extended into the new area such that all newly constructed pavement includes adequate subsurface drainage.

6.4.2 Engineered Fills

Engineered fill is anticipated, on an as-needed basis, to bring the existing site up to the proposed top of subgrade for the regions designated for improvements along the project limits. The general requirements of ODOT Item 203.05 for filling should be applicable.

In general, all new fill should be selected, placed, and compacted in accordance with ODOT CMS Item 203. In general, soils harvested from the site in excavation areas should be suitable for reuse as fill, but moisture conditioning of some on-site soils may be required and should be anticipated. It is further noted that Silt materials (A-4b) were encountered in more than half of the soil borings. A-4b materials should not be placed within three feet (vertically) of any pavements. These materials will need to be identified and segregated or will need to be suitably mixed with soils of other classifications prior to reuse. In addition, prior to placement of fills, all topsoil and vegetative cover shall be stripped to expose the subgrade materials that do not exhibit organic components. Organic materials such as topsoil may be temporarily stored onsite and later reused if directed by the Engineer.

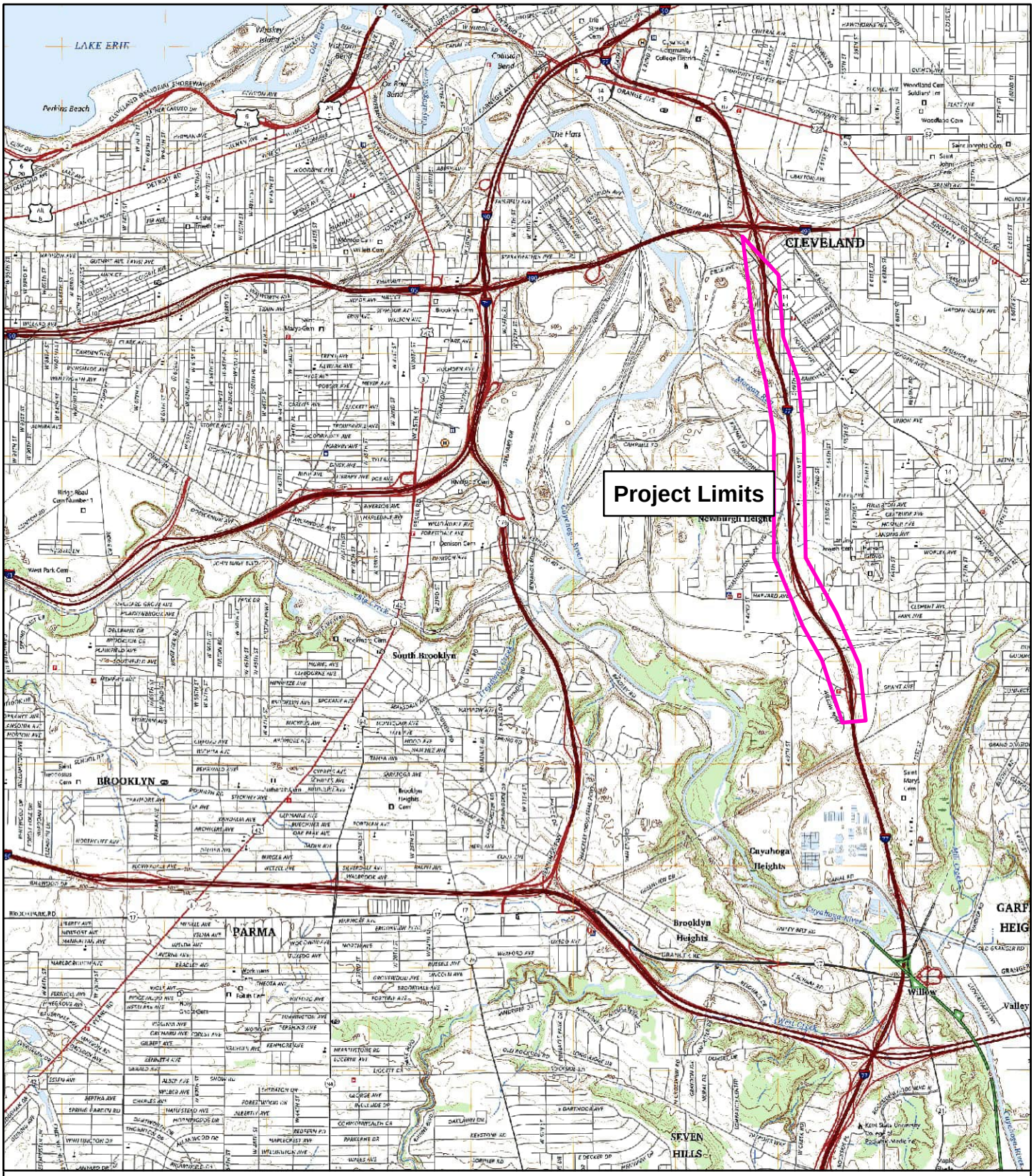
7 Limitations

This geotechnical investigation was performed in accordance with the standard of care commonly used as state-of-practice in our profession. Specifically, our services have been performed in accordance with generally accepted principles and practices of the geological and geotechnical engineering profession. This warranty is in lieu of all other warranties, either express or implied.

The data presented herein represent the conditions encountered at the specific locations and at the specific times at which our exploration took place. It should be noted that variations in soil and rock stratigraphy and characteristics and groundwater conditions between exploration locations, that may become evident during construction, are possible.

The geotechnical information presented in this report is based on the data collected for this project. The geotechnical information presented in this report should not be used for other projects or purposes. Conclusions made from these data by others are their responsibility. Our services were provided in a manner consistent with the level of care and skill ordinarily exercised by other professional consultants under similar circumstances. No other representation is intended. Background information, design basis, and other data have been furnished to AECOM by third parties, which AECOM has used in preparing this report. AECOM has relied on this information as furnished.

Figures



Map Data USGS Topo 2023

0 0.5 1 Miles

1 in = 1 miles

N

FIGURE 1

CUY-77-11.21
Geotechnical Exploration
General Location Map

AECOM

Appendix A – Boring Logs

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/5/26 09:33 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAINC

PROJECT: CUY-77-11.21	DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS	DRILL RIG: SIMCO 2800 (062012)	STATION / OFFSET: 75+42, 38' RT.
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: AECOM / TG	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-77 EX CL
PID: 105743 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 11/13/18	ELEVATION: 701.5 (MSL) EOB: 7.5 ft.
START: 3/11/19 END: 3/11/19	SAMPLING METHOD: SPT	ENERGY RATIO (%): 84.5	LAT / LONG: 41.438810, -81.649630

EXPLORATION ID: B-001-0-18

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 701.5	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
5" ASPHALT	701.1																	
8.5" CONCRETE	700.4																	
DENSE, BROWN, **GRAVEL WITH SAND**, LITTLE SILT, AS CRUSHED ASPHALT, FILL, MOIST	698.8		13 16 9	35	28	SS-1A	-	-	-	-	-	-	-	-	-	11	A-1b (V)	
MEDIUM DENSE, BROWN, **SANDY SILT**, FILL, DAMP	698.3					SS-1B	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
MEDIUM DENSE, BROWN, **FINE SAND**, TRACE TO LITTLE SILT, FILL, DAMP	697.3	W 697.3	5 4 4	11	83	SS-2A	-	-	-	-	-	-	-	-	-	7	A-4a (V)	
						SS-2B	-	-	-	-	-	-	-	-	-	-	A-3 (V)	
						SS-2C	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
MEDIUM STIFF, GRAY TO BROWN, **SILT**, WITH SILT LAMINAE, FILL, DAMP TO MOIST	695.9		2 2 5	10	78	SS-3A	0.75	0	1	2	65	32	31	21	10	26	A-4b (8)	
LOOSE, BROWN, **FINE SAND**, TRACE SILT, MOIST	695.5					SS-3B	-	-	-	-	-	-	-	-	-	-	A-3 (V)	
MEDIUM DENSE, BROWN, **GRAVEL WITH SAND**, TRACE SILT, MOIST	694.0		3 5 6	15	56	SS-4	-	46	42	8	4	0	NP	NP	NP	6	A-1b (0)	
		EOB																

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 5 IN. ASPHALT PATCH; PLACED 8.5 IN. CONCRETE; BACKFILLED WITH 6.4 FT. SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/5/26 09:33 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAINC

PROJECT: CUY-77-11.21
TYPE: SUBGRADE
PID: 105743 SFN:
START: 3/27/19 END: 3/27/19

DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS
SAMPLING FIRM / LOGGER: AECOM / TG
DRILLING METHOD: 4" SSA
SAMPLING METHOD: SPT

DRILL RIG: SIMCO 2800 (062012)
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 11/13/18
ENERGY RATIO (%): 84.5

STATION / OFFSET: 78+71, 39' LT.
ALIGNMENT: I-77 EX CL
ELEVATION: 696.0 (MSL) EOB: 7.6 ft.
LAT / LONG: 41.438810, -81.649630

EXPLORATION ID B-002-0-18

MATERIAL DESCRIPTION AND NOTES	ELEV. 696.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	ABAN-DONED
8" ASPHALT	695.4																	
11" CONCRETE	694.4																	
MEDIUM DENSE, BROWN, **GRAVEL**, SOME SAND, MOIST	694.1		3 5 8	18	72	SS-1A	-	59	19	13	9	0	NP	NP	NP	6	A-1-a (0)	
						SS-1B	1.00	-	-	-	-	-	-	-	-	-	A-4a (V)	
						SS-1C	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
STIFF, GRAY, **SANDY SILT**, MOIST	693.9																	
MEDIUM DENSE, BROWN, **GRAVEL WITH SAND**, TRACE TO LITTLE SILT, MOIST @ 2.4' - 3/4" SILT SEAM			7 9 7	23	72	SS-2	-	22	62	7	8	1	NP	NP	NP	5	A-1-b (0)	
			8 9 9	25	83	SS-3	-	40	50	7	3	0	NP	NP	NP	5	A-1-b (0)	
		W 689.4																
@ 6.6' - BECOMES WET WITH HORIZONTAL OXIDATION STAINING			9 8 8	23	67	SS-4	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
	688.4	EOB																

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 8 IN. ASPHALT PATCH; PLACED 11 IN. CONCRETE; BACKFILLED WITH 6 FT. SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/5/26 09:33 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAIN\C

PROJECT: CUY-77-11.21	DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS	DRILL RIG: SIMCO 2800 (062012)	STATION / OFFSET: 83+15, 39' RT.
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: AECOM / TG	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-77 EX CL
PID: 105743 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 11/13/18	ELEVATION: 695.8 (MSL) EOB: 7.5 ft.
START: 3/11/19 END: 3/11/19	SAMPLING METHOD: SPT	ENERGY RATIO (%): 84.5	LAT / LONG: 41.440910, -81.650140

EXPLORATION ID B-003-0-18

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 695.8	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
8.5" ASPHALT	695.1																	
10" CONCRETE	694.2	1																
MEDIUM DENSE, DARK BROWN TO LIGHT BROWN, **GRAVEL WITH SAND**, TRACE TO LITTLE SILT, TRACE GRAVEL, MOIST		2	9 13 14	38	83	SS-1	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
BECOMES LIGHT BROWN, TRACE TO LITTLE SILT	691.3	3 4	9 14 11	35	61	SS-2	-	13	57	22	8	0	NP	NP	NP	5	A-1-b (0)	
LOOSE, LIGHT BROWN, **GRAVEL**, SOME SAND, TRACE TO LITTLE SILT, MOIST TO WET	W 690.3	5 6	3 4 3	10	61	SS-3	-	-	-	-	-	-	-	-	-	11	A-1-a (V)	
	688.3	7 EOB	3 3 3	8	61	SS-4	-	67	21	7	4	1	NP	NP	NP	11	A-1-a (0)	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 8.5 IN. ASPHALT PATCH; PLACED 10 IN. CONCRETE; BACKFILLED WITH 6.0 FT. SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/5/26 09:33 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAIN\C

PROJECT: CUY-77-11.21
TYPE: SUBGRADE
PID: 105743 SFN:
START: 3/26/18 END: 3/26/18

DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS
SAMPLING FIRM / LOGGER: AECOM / TG
DRILLING METHOD: 4" SSA
SAMPLING METHOD: SPT

DRILL RIG: SIMCO 2800 (062012)
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 11/13/18
ENERGY RATIO (%): 84.5

STATION / OFFSET: 87+04, 52' LT.
ALIGNMENT: I-77 EX CL
ELEVATION: 695.6 (MSL) EOB: 7.5 ft.
LAT / LONG: 41.441890, -81.650860

EXPLORATION ID B-004-0-18

MATERIAL DESCRIPTION AND NOTES	ELEV. 695.6	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	ABAN-DONED
7.75" ASPHALT	694.9																	
8.75" CONCRETE WITH SLAG AGGREGATE @ 13" - 1/4" REBAR	694.2																	
	694.0		2	13	89	SS-1A	-	-	-	-	-	-	-	-	-	16	A-3 (V)	
MEDIUM DENSE, BROWN, **FINE SAND**, FILL, MOIST	693.7		4 5			SS-1B	2.50	-	-	-	-	-	-	-	-	-	A-4a (V)	
VERY STIFF, GRAY, **SANDY SILT**, FILL, MOIST						SS-1C	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
MEDIUM DENSE, BROWN, **GRAVEL WITH SAND**, FILL, MOIST @ 3.0' - BECOMES MEDIUM DENSE WITH TRACE INTERBEDDED GRAY SILT	691.1		5 6 7	18	89	SS-2	-	3	53	38	4	2	NP	NP	NP	7	A-1-b (0)	
MEDIUM DENSE, BROWN, **GRAVEL**, "AND" SAND, TRACE SILT, TRACE SHALE FRAGMENTS, MOIST			6 7 8	21	83	SS-3	-	-	-	-	-	-	-	-	-	5	A-1-a (V)	
	688.1	EOB	5 8 8	23	83	SS-4	-	56	36	4	4	0	NP	NP	NP	5	A-1-a (0)	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 8 IN. ASPHALT PATCH; PLACED 9 IN. CONCRETE; BACKFILLED WITH 6.1 FT. SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/5/26 09:33 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAINC

PROJECT: CUY-77-11.21	DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS	DRILL RIG: SIMCO 2800 (062012)	STATION / OFFSET: 91+14, 39' RT.
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: AECOM / TG	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-77 EX CL
PID: 105743 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 11/13/18	ELEVATION: 699.9 (MSL) EOB: 7.6 ft.
START: 3/11/19 END: 3/11/19	SAMPLING METHOD: SPT	ENERGY RATIO (%): 84.5	LAT / LONG: 41.442920, -81.651310

EXPLORATION ID B-005-0-18

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 699.9	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	ABAN-DONED
4.75" ASPHALT	699.5																	
9" CONCRETE @ 9.5" - 1/2" REBAR	698.7																	
10" GRAVEL AND CRUSHED ASPHALT BASE	697.9		13 13 11	34	100	SS-1A	-	-	-	-	-	-	-	-	-	12		
DENSE, BROWN, **GRAVEL WITH SAND**, FILL, MOIST	696.6					SS-1B	-	53	17	14	16	0	NP	NP	NP	7	A-1-b (0)	
						SS-2A	-	-	-	-	-	-	-	-	-	-	A-1-b (V)	
STIFF, BROWN, **SILT**, LITTLE SAND, TRACE BRICK FRAGMENTS, TRACE GRAVEL, INTERBEDDED WITH COARSE AND FINE SAND, FILL, MOIST	695.9		6 6 5	15	83	SS-2B	1.25	9	12	11	54	14	26	17	9	15	A-4b (7)	
						SS-2C	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
MEDIUM DENSE, BROWN, **SILT**, TRACE FINE SAND, TRACE COARSE SAND, FILL, MOIST @ 5.5' - BECOMES LOOSE			3 3 4	10	61	SS-3	-	2	4	10	74	10	NP	NP	NP	20	A-4b (8)	
@ 6.5' - 3" LAYER WITH DARK GRAY ORGANICS	692.3	W 692.9	2 2 4	8	78	SS-4	-	-	-	-	-	-	-	-	-	28	A-4b (V)	
		EOB																

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 5 IN. ASPHALT PATCH; PLACED 9 IN. CONCRETE; BACKFILLED WITH 6.4 FT. SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/5/26 09:33 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAINC

PROJECT: CUY-77-11.21	DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS	DRILL RIG: SIMCO 2800 (062012)	STATION / OFFSET: 94+44, 39' LT.
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: AECOM / TG	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-77 EX CL
PID: 105743 SFN:	DRILLING METHOD: 4" SSA	CALIBRATION DATE: 11/13/18	ELEVATION: 696.4 (MSL) EOB: 7.5 ft.
START: 3/26/18 END: 3/26/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 84.5	LAT / LONG: 41.443680, -81.652100

EXPLORATION ID B-006-0-18

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	ABAN-DONED
	696.4																	
5.75" ASPHALT	695.9																	
9" CONCRETE WITH SLAG AGGREGATE @ 10.75" - 1/4" REBAR	695.2																	
MEDIUM DENSE, BROWN, **GRAVEL**, SOME SAND, FILL, MOIST	694.4	1	6 7 9	23	89	SS-1A	-	59	17	12	11	1	NP	NP	NP	7	A-1-a (0)	
	693.6	2				SS-1B	4.5+	-	-	-	-	-	-	-	-	11	A-4a (V)	
MEDIUM DENSE, BROWN AND GRAY, TRACE BLACK, **SANDY SILT**, TRACE ASPHALT FRAGMENTS, FILL, MOIST	693.0	3	4 7 10	24	83	SS-2A	3.00	0	2	1	62	35	25	18	7	20	A-4b (8)	
	692.7	W 693.0				SS-2B	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
VERY STIFF, GRAY, **SILT**, MOIST		4				SS-2C	-	-	-	-	-	-	-	-	-	-	A-1-b (V)	
MEDIUM DENSE, BROWN, **SILT**, DILATANT, MOIST		5	5 6 6	17	78	SS-3A	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
MEDIUM DENSE, BROWN, **GRAVEL WITH SAND**, DAMP		6				SS-3B	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
	688.9	7 EOB	4 5 4	13	89	SS-4	-	3	79	9	9	0	NP	NP	NP	4	A-1-b (0)	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 6 IN. ASPHALT PATCH; PLACED 9 IN. CONCRETE; BACKFILLED WITH 6.2 FT. SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/5/26 09:33 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAINC

PROJECT: CUY-77-11.21
TYPE: SUBGRADE
PID: 105743 SFN:
START: 3/12/19 END: 3/12/19

DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS
SAMPLING FIRM / LOGGER: AECOM / TG
DRILLING METHOD: 2.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: SIMCO 2800 (062012)
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 11/13/18
ENERGY RATIO (%): 84.5

STATION / OFFSET: 98+94, 39' RT.
ALIGNMENT: I-77 EX CL
ELEVATION: 692.3 (MSL) EOB: 7.5 ft.
LAT / LONG: 41.444770, -81.652750

EXPLORATION ID B-007-0-18

MATERIAL DESCRIPTION AND NOTES	ELEV. 692.3	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	ABAN-DONED
8.75" ASPHALT	691.6																	
9.5" CONCRETE @ 13" - 1/4" REBAR	690.8																	
MEDIUM DENSE, BROWN, TRACE GRAY, **GRAVEL**, "AND" SAND, FILL, MOIST	689.3		6 7 9	23	56	SS-1	-	50	24	13	12	1	NP	NP	NP	7	A-1-a (0)	
MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, LITTLE SILT, TRACE GRAVEL, MOIST	687.8		7 9 8	24	50	SS-2	-	-	-	-	-	-	-	-	-	12	A-3a (V)	
MEDIUM DENSE, GRAY, **SILT**, SOME SAND, TRACE GRAVEL, HORIZONTALLY BEDDED, MOIST	686.3		5 8 10	25	67	SS-3	2.50	4	14	10	69	3	NP	NP	NP	16	A-4b (7)	
LOOSE, BROWN, **FINE SAND**, TRACE SILT, MOIST TO WET	684.8	W 685.8	3 2 2	6	72	SS-4	-	-	-	-	-	-	-	-	-	23	A-3 (V)	
		EOB																

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PATCHED AT SURFACE WITH 9 IN. ASPHALT PATCH; PLACED 10 IN. CONCRETE; BACKFILLED WITH 6.0 FT. SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/5/26 09:33 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAINC

PROJECT: CUY-77-11.21
TYPE: SUBGRADE
PID: 105743 SFN:
START: 3/26/18 END: 3/26/18

DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS
SAMPLING FIRM / LOGGER: AECOM / TG
DRILLING METHOD: 4" SSA
SAMPLING METHOD: SPT

DRILL RIG: SIMCO 2800 (062012)
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 11/13/18
ENERGY RATIO (%): 84.5

STATION / OFFSET: 102+91, 56' LT.
ALIGNMENT: I-77 EX CL
ELEVATION: 687.8 (MSL) EOB: 7.5 ft.
LAT / LONG: 41.445530, -81.653950

EXPLORATION ID B-008-0-18

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
5" ASPHALT	687.4																	
8.5" CONCRETE	686.7																	
VERY DENSE, BROWN AND GRAY, **GRAVEL**, SOME SAND, MOIST	685.3	1	50/4"	-	100	SS-1	-	66	26	2	4	2	NP	NP	NP	11	A-1-a (0)	
VERY DENSE, BROWN, **GRAVEL WITH SAND**, MOIST	683.8	2																
		3	50/6"	-	100	SS-2	-	-	-	-	-	-	-	-	-	17	A-1-b (V)	
VERY STIFF, BROWN, **SILT**, TRACE GRAVEL, TRACE SAND, MOIST		4																
@ 5.0' - BECOMES GRAYISH BROWN		5	3 4 4	11	89	SS-3	2.50	2	0	1	79	18	28	20	8	20	A-4b (8)	
		6																
	680.3	7	2 4 6	14	56	SS-4	3.38	-	-	-	-	-	-	-	-	19	A-4b (V)	
		EOB																

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PATCHED AT SURFACE WITH 5 IN. ASPHALT PATCH; PLACED 9 IN. CONCRETE; BACKFILLED WITH 6.3 FT. SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/5/26 09:33 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAIN\C

PROJECT: CUY-77-11.21	DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS	DRILL RIG: SIMCO 2800 (062012)	STATION / OFFSET: 107+02, 38' RT.
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: AECOM / TG	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-77 EX CL
PID: 105743 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 11/13/18	ELEVATION: 680.7 (MSL) EOB: 7.5 ft.
START: 3/12/19 END: 3/12/19	SAMPLING METHOD: SPT	ENERGY RATIO (%): 84.5	LAT / LONG: 41.446550, -81.654480

EXPLORATION ID: B-009-0-18

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 680.7	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
9.25" ASPHALT	679.9																	
8.5" CONCRETE	679.2																	
DENSE, BROWN, **GRAVEL WITH SAND AND SILT**, FILL, MOIST	677.7		4 13 16	41	67	SS-1	-	-	-	-	-	-	-	-	-	8	A-2-4 (V)	
DENSE, BROWN, **GRAVEL WITH SAND**, LITTLE SILT, FILL, MOIST	674.7		15 14 12	37	67	SS-2	-	6	63	19	10	2	NP	NP	NP	8	A-1-b (0)	
			9 6 5	15	67	SS-3	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
MEDIUM DENSE, BROWN, **GRAVEL WITH SAND**, TRACE SILT, FILL, MOIST	673.7	W 674.1	3 3 5	11	72	SS-4A	-	32	61	5	1	1	NP	NP	NP	16	A-1-b (0)	
VERY STIFF, BROWN, **SILT AND CLAY**, WITH SILT LAMINAE, MOIST	673.2	EOB				SS-4B	2.00	-	-	-	-	-	-	-	-	-	A-6a (V)	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PATCHED AT SURFACE WITH 9 IN. ASPHALT PATCH; PLACED 9 IN. CONCRETE; BACKFILLED WITH 6.0 FT. SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/5/26 09:33 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAIN\C

PROJECT: CUY-77-11.21	DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS	DRILL RIG: SIMCO 2800 (062012)	STATION / OFFSET: 110+99, 39' LT.
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: AECOM / TG	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-77 EX CL
PID: 105743 SFN:	DRILLING METHOD: 4" SSA	CALIBRATION DATE: 11/13/18	ELEVATION: 676.8 (MSL) EOB: 7.5 ft.
START: 3/20/19 END: 3/20/19	SAMPLING METHOD: SPT	ENERGY RATIO (%): 84.5	LAT / LONG: 41.447440, -81.655430

EXPLORATION ID: B-010-0-18

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 676.8	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
4.75" ASPHALT	676.4																	
9.75" CONCRETE @ 9.5" - 3/8" REBAR	675.6																	
MEDIUM DENSE, BROWN AND GRAY, **GRAVEL WITH SAND AND SILT**, FILL, MOIST	674.0	1	5 6 6	17	72	SS-1	-	-	-	-	-	-	-	-	-	8	A-2-4 (V)	
LOOSE, BROWN, TRACE DARK GRAY, **SILT**, SOME SAND, TRACE GRAVEL, FILL, MOIST	673.2	2	3 3 4	10	83	SS-2A	-	4	11	14	55	16	NP	NP	NP	23	A-4b (7)	
STIFF, GRAY AND BROWN, **SILT**, WITH SAND POCKETS, FILL, MOIST	672.3	3				SS-2B	1.25	-	-	-	-	-	-	-	-	-	A-4b (V)	
MEDIUM DENSE, BROWN AND BLACK, **SILT**, LITTLE SAND, TRACE GRAVEL, FILL, MOIST	671.6	4	3 5 7	17	83	SS-3A	-	2	2	11	82	3	NP	NP	NP	13	A-4b (8)	
VERY STIFF, BROWN, **SILT**, FILL, MOIST	670.3	5				SS-3B	3.00	-	-	-	-	-	-	-	-	-	A-4b (V)	
MEDIUM DENSE, BROWN, **SANDY SILT**, FILL, MOIST	669.8	6	5 6 6	17	89	SS-4A	2.50	-	-	-	-	-	-	-	-	14	A-4b (V)	
HARD, BROWN, **SILT**, FILL, MOIST	669.3	7				SS-4B	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
EOB						SS-4C	4.50	-	-	-	-	-	-	-	-	-	A-4b (V)	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PATCHED AT SURFACE WITH 5 IN. ASPHALT PATCH; PLACED 10 IN. CONCRETE; BACKFILLED WITH 6.3 FT. SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/5/26 09:33 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAIN\C

PROJECT: CUY-77-11.21
TYPE: SUBGRADE
PID: 105743 SFN:
START: 3/12/19 END: 3/12/19

DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS
SAMPLING FIRM / LOGGER: AECOM / TG
DRILLING METHOD: 2.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: SIMCO 2800 (062012)
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 11/13/18
ENERGY RATIO (%): 84.5

STATION / OFFSET: 114+97, 38' RT.
ALIGNMENT: I-77 EX CL
ELEVATION: 670.5 (MSL) EOB: 7.5 ft.
LAT / LONG: 41.448500, -81.655740

EXPLORATION ID B-011-0-18

MATERIAL DESCRIPTION AND NOTES	ELEV. 670.5	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
8.5" ASPHALT	669.8																	
8.5" CONCRETE	669.1	1																
MEDIUM DENSE, BROWN, **GRAVEL WITH SAND**, TRACE SILT, FILL, MOIST	667.5	2	4 7 4	15	44	SS-1	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
VERY STIFF, BROWN AND GRAY, **SILT**, LITTLE SAND, TRACE GRAVEL, FILL, MOIST	666.0	3 4	3 6 8	20	67	SS-2	3.92	4	8	7	61	20	26	17	9	16	A-4b (8)	
VERY DENSE, DARK BROWN, **SANDY SILT**, TRACE GRAVEL, FILL, MOIST	664.5	5	9 24 22	65	67	SS-3	-	2	32	26	39	1	NP	NP	NP	9	A-4a (1)	
MEDIUM DENSE, DARK BROWN, **SILT**, TRACE TO LITTLE SAND, FILL, MOIST	663.0	6 7	5 11 9	28	72	SS-4	4.00	-	-	-	-	-	-	-	-	15	A-4b (V)	
		EOB																

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PATCHED AT SURFACE WITH 8.5 IN. ASPHALT PATCH; PLACED 8.5 IN. CONCRETE; BACKFILLED WITH 6.1 FT. SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/5/26 09:33 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAIN\C

PROJECT: CUY-77-11.21
TYPE: SUBGRADE
PID: 105743 SFN:
START: 3/20/19 END: 3/20/19

DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS
SAMPLING FIRM / LOGGER: AECOM / TG
DRILLING METHOD: 4" SSA
SAMPLING METHOD: SPT

DRILL RIG: SIMCO 2800 (062012)
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 11/13/18
ENERGY RATIO (%): 84.5

STATION / OFFSET: 118+90, 39' LT.
ALIGNMENT: I-77 EX CL
ELEVATION: 665.9 (MSL) EOB: 7.5 ft.
LAT / LONG: 41.449490, -81.656590

EXPLORATION ID B-012-0-18

MATERIAL DESCRIPTION AND NOTES	ELEV. 665.9	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	ABAN-DONED
8.25" ASPHALT	665.2																	
9.25" CONCRETE @ 12.5" - 3/8" REBAR	664.4																	
LOOSE, BROWN, **GRAVEL WITH SAND**, FILL, MOIST	663.6		5 3 2	7	83	SS-1A	-	35	33	16	14	2	NP	NP	NP	9	A-1-b (0)	
MEDIUM STIFF, BROWN AND GRAY, **SANDY SILT**, TRACE SLAG FRAGMENTS, FILL, MOIST	662.9	W 662.9				SS-1B	1.00	-	-	-	-	-	-	-	-	19	A-4a (V)	
MEDIUM DENSE, BROWN WITH GRAY, TRACE RED, **SANDY SILT**, TRACE BRICK FRAGMENTS, DILATANT, FILL, WET	662.1		3 6 7	18	89	SS-2A	-	1	16	28	48	7	NP	NP	NP	15	A-4a (4)	
	661.4					SS-2B	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
MEDIUM DENSE, BROWN, **SANDY SILT**, DILATANT, FILL, WET	660.8		4 4 6	14	78	SS-3A	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
						SS-3B	4.5+	-	-	-	-	-	-	-	-	-	A-4b (V)	
LOOSE, BROWN, **SANDY SILT**, FILL, MOIST																		
HARD, BROWN AND GRAY, **SILT**, TRACE SAND, FILL, MOIST	658.4	EOB	3 3 6	13	78	SS-4	2.67	-	-	-	-	-	-	-	-	19	A-4b (V)	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PATCHED AT SURFACE WITH 8 IN. ASPHALT PATCH; PLACED 9 IN. CONCRETE; BACKFILLED WITH 6.1 FT. SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/5/26 09:33 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAIN\C

PROJECT: CUY-77-11.21
TYPE: SUBGRADE
PID: 105743 SFN:
START: 3/12/19 END: 3/12/19

DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS
SAMPLING FIRM / LOGGER: AECOM / TG
DRILLING METHOD: 2.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: SIMCO 2800 (062012)
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 11/13/18
ENERGY RATIO (%): 84.5

STATION / OFFSET: 124+05, 53' RT.
ALIGNMENT: I-77 EX CL
ELEVATION: 656.3 (MSL) EOB: 7.5 ft.
LAT / LONG: 41.450870, -81.656680

EXPLORATION ID B-013-0-18

MATERIAL DESCRIPTION AND NOTES	ELEV. 656.3	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	ABAN-DONED
6.75" ASPHALT	655.8																	
8.75" CONCRETE @ 10.5" - 5/8" REBAR	655.1																	
MEDIUM DENSE, BROWN, **STONE FRAGMENTS WITH SAND**, SOME SILT, STONE FRAGMENTS AS SLAG, FILL, MOIST	653.3	W 653.3	13 7 3	14	44	SS-1	-	62	14	8	16	0	NP	NP	NP	13	A-1-b (0)	
STIFF TO VERY STIFF, GRAY, **SILT**, TRACE SAND, DILATANT, MOIST TO WET			2 4 3	10	72	SS-2	2.42	-	-	-	-	-	-	-	-	18	A-4b (V)	
			2 3 3	8	56	SS-3	1.67	-	-	-	-	-	-	-	-	20	A-4b (V)	
@ 6.7' - 1" WET DILATANT SEAM	648.8	W 649.6	3 4 3	10	100	SS-4	1.58	0	0	1	72	27	27	19	8	21	A-4b (8)	
		EOB																

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PATCHED AT SURFACE WITH 6 IN. ASPHALT PATCH; PLACED 9 IN. CONCRETE; BACKFILLED WITH 6.2 FT. SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/5/26 09:33 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAINC

PROJECT: CUY-77-11.21
TYPE: SUBGRADE
PID: 105743 SFN:
START: 3/20/19 END: 3/20/19

DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS
SAMPLING FIRM / LOGGER: AECOM / TG
DRILLING METHOD: 4" SSA
SAMPLING METHOD: SPT

DRILL RIG: SIMCO 2800 (062012)
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 11/13/18
ENERGY RATIO (%): 84.5

STATION / OFFSET: 126+88, 51' LT.
ALIGNMENT: I-77 EX CL
ELEVATION: 654.1 (MSL) EOB: 7.5 ft.
LAT / LONG: 41.451600, -81.657160

EXPLORATION ID B-014-0-18

MATERIAL DESCRIPTION AND NOTES	ELEV. 654.1	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	ABAN-DONED
4.75" ASPHALT	653.7																	
9.5" CONCRETE	652.9																	
VERY DENSE, DARK BROWN, TRACE WHITE, **GRAVEL WITH SAND**, TRACE SILT, AS CEMENTED SLAG, FILL, MOIST	651.3	1	18 35 22	80	44	SS-1	-	50	44	2	3	1	NP	NP	NP	9	A-1-b (0)	
HARD, BROWN AND GRAY, **SILT**, SOME SAND, TRACE GRAVEL, FILL, MOIST		2	5 9 11	28	83	SS-2	4.33	-	-	-	-	-	-	-	-	12	A-4b (V)	
@ 4.5' - BECOMES VERY STIFF	648.1	3 4 5	8 6 5	15	94	SS-3	3.83	6	9	11	59	15	24	20	4	15	A-4b (8)	
HARD, GRAYISH BROWN, **SILT**, WITH SANDY SILT LAMINAE, MOIST	646.6	6 7	4 6 8	20	89	SS-4	4.42	-	-	-	-	-	-	-	-	15	A-4b (V)	
		EOB																

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PATCHED AT SURFACE WITH 5 IN. ASPHALT PATCH; PLACED 9 IN. CONCRETE; BACKFILLED WITH 6.3 FT. SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/5/26 09:33 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAIN\C

PROJECT: CUY-77-11.21	DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS	DRILL RIG: SIMCO 2800 (062012)	STATION / OFFSET: 131+63, 39' RT.	EXPLORATION ID B-015-0-18
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: AECOM / TG	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-77 EX CL	
PID: 105743 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 11/13/18	ELEVATION: 648.8 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1
START: 3/12/19 END: 3/13/19	SAMPLING METHOD: SPT	ENERGY RATIO (%): 84.5	LAT / LONG: 41.452900, -81.656960	

MATERIAL DESCRIPTION AND NOTES	ELEV. 648.8	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
8.5" ASPHALT	648.1																	
9" CONCRETE	647.3																	
DENSE, BROWN, **GRAVEL WITH SAND AND SILT**, FILL, MOIST	646.6	1	15 20 17	52	94	SS-1A	-	-	-	-	-	-	-	-	-	9	A-2-4 (V)	
						SS-1B	-	19	55	11	14	1	NP	NP	NP	6	A-1-b (0)	
DENSE, BROWN, **GRAVEL WITH SAND**, LITTLE SILT, FILL, MOIST	645.8	2																
VERY STIFF TO HARD, BROWN, **SILT**, LITTLE SAND, TRACE GRAVEL, FILL, MOIST @ 4.5' - BECOMES BROWN AND GRAY		3	7 11 13	34	100	SS-2	4.00	-	-	-	-	-	-	-	-	14	A-4b (V)	
@ 5.3' - 4" LAYER WITH INTERBEDDED COARSE TO FINE SAND		4																
		5	11 11 18	41	78	SS-3	4.50	-	-	-	-	-	-	-	-	13	A-4b (V)	
@ 6.0' - BECOMES GRAYISH BROWN, WITHOUT GRAVEL, WITH SANDY SILT LAMINAE, HORIZONTALLY BEDDED		6																
@ 7.0' - BECOMES VERY STIFF	641.3	7 EOB	6 7 6	18	100	SS-4	3.92	0	1	2	68	29	27	20	7	19	A-4b (8)	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PATCHED AT SURFACE WITH 9 IN. ASPHALT PATCH; PLACED 9 IN. CONCRETE; BACKFILLED WITH 6 FT. SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/5/26 09:33 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAINC

PROJECT: CUY-77-11.21
TYPE: SUBGRADE
PID: 105743 SFN:
START: 3/20/19 END: 3/20/19

DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS
SAMPLING FIRM / LOGGER: AECOM / TG
DRILLING METHOD: 4" SSA
SAMPLING METHOD: SPT

DRILL RIG: SIMCO 2800 (062012)
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 11/13/18
ENERGY RATIO (%): 84.5

STATION / OFFSET: 134+90, 40' LT.
ALIGNMENT: I-77 EX CL
ELEVATION: 651.8 (MSL) EOB: 7.5 ft.
LAT / LONG: 41.453800, -81.657320

EXPLORATION ID B-016-0-18

MATERIAL DESCRIPTION AND NOTES	ELEV. 651.8	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
8.5" ASPHALT	651.1																	
9.5" CONCRETE @ 12" - 3/8" REBAR	650.3	1																
VERY DENSE, DARK AND LIGHT BROWN, **STONE FRAGMENTS**, TRACE SILT, AS SLAG, FILL, MOIST	648.8	2	20 25 38	89	61	SS-1	-	64	33	1	2	0	NP	NP	NP	10	A-1-a (0)	
HARD, BROWN AND GRAY, **SANDY SILT**, TRACE GRAVEL, FILL, MOIST	647.3	3 4	7 8 9	24	94	SS-2	4.5+	4	14	17	49	16	24	17	7	13	A-4a (6)	
VERY STIFF, BROWN AND GRAY, **SILT**, TRACE GRAVEL, FILL, MOIST	646.3	5	7 12 13	35	100	SS-3A	3.08	-	-	-	-	-	-	-	-	9	A-4b (V)	
DENSE, BROWN, **COARSE AND FINE SAND**, MOIST	645.8	6				SS-3B	-	-	-	-	-	-	-	-	-	11	A-3a (V)	
MEDIUM DENSE, BROWN, TRACE GRAY, **SANDY SILT**, FILL, MOIST @ 6.9'-7.2' - 3" COARSE AND FINE SAND SEAM	644.3	7 EOB	9 9 11	28	100	SS-4	-	-	-	-	-	-	-	-	-	12	A-4a (V)	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PATCHED AT SURFACE WITH 9 IN. ASPHALT PATCH; PLACED 9 IN. CONCRETE; BACKFILLED WITH 6 FT. SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/5/26 09:33 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAIN\C

PROJECT: CUY-77-11.21	DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS	DRILL RIG: SIMCO 2800 (062012)	STATION / OFFSET: 138+88, 38' RT.
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: AECOM / TG	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-77 EX CL
PID: 105743 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 11/13/18	ELEVATION: 658.7 (MSL) EOB: 7.5 ft.
START: 3/13/19 END: 3/13/19	SAMPLING METHOD: SPT	ENERGY RATIO (%): 84.5	LAT / LONG: 41.454860, -81.657060

EXPLORATION ID: B-017-0-18

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 658.7	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
7.25" ASPHALT	658.1																	
8.75" CONCRETE	657.3	1																
MEDIUM DENSE, BROWN, **GRAVEL**, AND SAND, TRACE BRICK FRAGMENTS, LITTLE SILT, FILL, MOIST	655.9	2	8 9 9	25	94	SS-1A	-	52	23	13	10	2	NP	NP	NP	8	A-1-a (0)	
						SS-1B	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
STIFF, GRAY, **SILT**, TRACE GRAVEL, MOIST		3	7 9 6	21	83	SS-2	1.33	-	-	-	-	-	-	-	-	20	A-4b (V)	
		4																
		5	2 2 4	8	72	SS-3	1.17	1	0	0	77	22	24	18	6	21	A-4b (8)	
W 652.7		6																
@ 6.0' - BECOMES MEDIUM STIFF, WET, DILATANT	651.2	7	2 3 7	14	78	SS-4	0.50	-	-	-	-	-	-	-	-	21	A-4b (V)	
		EOB																

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PATCHED AT SURFACE WITH 7 IN. ASPHALT PATCH; PLACED 9 IN. CONCRETE; BACKFILLED WITH 6.2 FT. SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/5/26 09:33 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAIN\C

PROJECT: CUY-77-11.21	DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS	DRILL RIG: SIMCO 2800 (062012)	STATION / OFFSET: 142+99, 39' LT.	EXPLORATION ID B-018-0-18
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: AECOM / TG	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-77 EX CL	
PID: 105743 SFN:	DRILLING METHOD: 4" SSA	CALIBRATION DATE: 11/13/18	ELEVATION: 666.6 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1
START: 3/20/19 END: 3/20/19	SAMPLING METHOD: SPT	ENERGY RATIO (%): 84.5	LAT / LONG: 41.456000, -81.657430	

MATERIAL DESCRIPTION AND NOTES	ELEV. 666.6	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	ABAN-DONED
6" ASPHALT	666.1																	
9" CONCRETE WITH SLAG AGGREGATE	665.4																	
MEDIUM DENSE, BROWN, **GRAVEL WITH SAND**, LITTLE SILT, POSSIBLE FILL, MOIST	663.8		4 8 9	24	44	SS-1	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
MEDIUM DENSE, BROWN, **FINE SAND**, TRACE GRAVEL, TRACE SILT, POSSIBLE FILL, WET		▽ 663.4	5 5 5	14	44	SS-2	-	5	27	60	5	3	NP	NP	NP	23	A-3 (0)	
			4 5 7	17	83	SS-3	-	-	-	-	-	-	-	-	-	27	A-3 (V)	
	659.1	EOB	3 6 10	23	89	SS-4	-	0	13	82	3	2	NP	NP	NP	22	A-3 (0)	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PATCHED AT SURFACE WITH 6 IN. ASPHALT PATCH; PLACED 9 IN. CONCRETE; BACKFILLED WITH 6.3 FT. SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/5/26 09:33 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAINC

PROJECT: CUY-77-11.21
TYPE: SUBGRADE
PID: 105743 SFN:
START: 3/13/19 END: 3/13/19

DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS
SAMPLING FIRM / LOGGER: AECOM / TG
DRILLING METHOD: 2.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: SIMCO 2800 (062012)
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 11/13/18
ENERGY RATIO (%): 84.5

STATION / OFFSET: 146+86, 39' RT.
ALIGNMENT: I-77 EX CL
ELEVATION: 673.0 (MSL) EOB: 7.5 ft.
LAT / LONG: 41.457080, -81.657090

EXPLORATION ID B-019-0-18

MATERIAL DESCRIPTION AND NOTES	ELEV. 673.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	ABAN-DONED
8" ASPHALT	672.3																	
9" CONCRETE @ 10" - 1/4" REBAR	671.6																	
MEDIUM DENSE, BROWN, **GRAVEL**, SOME SAND, LITTLE SILT, FILL, DAMP TO MOIST	670.0	1	8 10 8	25	67	SS-1	-	57	24	10	7	2	NP	NP	NP	6	A-1-a (0)	
DENSE, BROWN, **GRAVEL WITH SAND AND SILT**, FILL, DAMP	668.5	2	10 11 11	31	83	SS-2	-	-	-	-	-	-	-	-	-	4	A-2-4 (V)	
DENSE, BROWN, **FINE SAND**, TRACE GRAVEL, TRACE SILT, FILL, DAMP	667.0	3 4 5	10 12 12	34	83	SS-3	-	3	18	70	6	3	NP	NP	NP	6	A-3 (0)	
MEDIUM DENSE, BROWN, **GRAVEL WITH SAND**, TRACE SILT, DAMP	665.5	6 7 EOB	10 9 9	25	67	SS-4	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PATCHED AT SURFACE WITH 8 IN. ASPHALT PATCH; PLACED 9 IN. CONCRETE; BACKFILLED WITH 6.1 FT. SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/5/26 09:33 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAINC

PROJECT: CUY-77-11.21
TYPE: SUBGRADE
PID: 105743 SFN:
START: 3/20/19 END: 3/20/19

DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS
SAMPLING FIRM / LOGGER: AECOM / TG
DRILLING METHOD: 4" SSA
SAMPLING METHOD: SPT

DRILL RIG: SIMCO 2800 (062012)
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 11/13/18
ENERGY RATIO (%): 84.5

STATION / OFFSET: 151+03, 39' LT.
ALIGNMENT: I-77 EX CL
ELEVATION: 680.6 (MSL) EOB: 7.5 ft.
LAT / LONG: 41.458290, -81.657300

EXPLORATION ID: B-020-0-18

MATERIAL DESCRIPTION AND NOTES	ELEV. 680.6	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	ABAN-DONED
9" ASPHALT	679.9																	
9.25" CONCRETE	679.1	1																
MEDIUM DENSE, DARK BROWN, **STONE FRAGMENTS WITH SAND**, LITTLE SILT, AS SLAG FRAGMENTS, FILL, MOIST	678.6		15	30	89	SS-1A	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
	677.5	2	11			SS-1B	-	58	20	10	10	2	NP	NP	NP	8	A-1-a (0)	
MEDIUM DENSE, BROWN, **GRAVEL**, SOME SAND, FILL, MOIST @ 3.0' - 1" RED BRICK FRAGMENT			10			SS-2A	-	-	-	-	-	-	-	-	-	-	A-1-a (V)	
		3	12	31	72	SS-2B	4.5+	0	0	5	72	23	26	20	6	14	A-4b (8)	
HARD, GRAYISH BROWN, **SILT**, POSSIBLE FILL, MOIST	675.4	4	10															
MEDIUM DENSE, GRAYISH BROWN, **SILT**, POSSIBLE FILL, MOIST	675.1		7	21	100	SS-3A	4.13	-	-	-	-	-	-	-	-	16	A-4b (V)	
		5	7			SS-3B	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
			8			SS-3C	-	-	-	-	-	-	-	-	-	-	A-3 (V)	
MEDIUM DENSE, BROWN, **FINE SAND**, POSSIBLE FILL, MOIST	673.7	6	4	30	100	SS-4A	-	-	-	-	-	-	-	-	-	18	A-3 (V)	
	673.1		8			SS-4B	2.25	-	-	-	-	-	-	-	-	18	A-4b (V)	
MEDIUM DENSE, BROWN TO GRAYISH BROWN, **SILT**, WITH OXIDATION STAINING, POSSIBLE FILL, MOIST		7 EOB	13															

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PATCHED AT SURFACE WITH 9 IN. ASPHALT PATCH; PLACED 9 IN. CONCRETE; BACKFILLED WITH 6 FT. SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/5/26 09:33 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAINC

PROJECT: CUY-77-11.21
TYPE: SUBGRADE
PID: 105743 SFN:
START: 3/13/19 END: 3/13/19

DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS
SAMPLING FIRM / LOGGER: AECOM / TG
DRILLING METHOD: 2.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: SIMCO 2800 (062012)
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 11/13/18
ENERGY RATIO (%): 84.5

STATION / OFFSET: 154+83, 52' RT.
ALIGNMENT: I-77 EX CL
ELEVATION: 682.2 (MSL) EOB: 7.5 ft.
LAT / LONG: 41.459230, -81.656850

EXPLORATION ID B-021-0-18

MATERIAL DESCRIPTION AND NOTES	ELEV. 682.2	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
5" ASPHALT	681.8																	
10" CONCRETE @ 11" - 3/8" REBAR	681.0	1																
DENSE, BROWN, **GRAVEL WITH SAND**, TRACE SILT, FILL, MOIST	679.2	2	10 13 13	37	89	SS-1	-	47	24	15	12	2	NP	NP	NP	7	A-1-b (0)	
MEDIUM DENSE, BROWN AND GRAY, **SANDY SILT**, FILL, MOIST	678.3	3	8 9 8	24	100	SS-2A	3.50	-	-	-	-	-	-	-	-	14	A-4a (V)	
						SS-2B	4.00	-	-	-	-	-	-	-	-	-	A-6a (V)	
STIFF TO HARD, GRAYISH BROWN, **SILT AND CLAY**, TRACE SAND, MOIST	676.2	4 5	4 4 6	14	72	SS-3	1.25	0	0	4	44	52	32	19	13	24	A-6a (9)	
MEDIUM STIFF, GRAYISH BROWN, **SILT AND CLAY**, WITH INTERBEDDED SILT LAMINAE, HORIZONTALLY BEDDED, MOIST	674.7	6 7	2 3 7	14	83	SS-4	0.67	-	-	-	-	-	-	-	-	17	A-6a (V)	
		EOB																

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PATCHED AT SURFACE WITH 5 IN. ASPHALT PATCH; PLACED 10 IN. CONCRETE; BACKFILLED WITH 6.25 FT. SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/5/26 09:33 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAIN\C

PROJECT: CUY-77-11.21	DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS	DRILL RIG: SIMCO 2800 (062012)	STATION / OFFSET: 159+05, 40' LT.
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: AECOM / TG	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-77 EX CL
PID: 105743 SFN:	DRILLING METHOD: 4" SSA	CALIBRATION DATE: 11/13/18	ELEVATION: 678.7 (MSL) EOB: 7.5 ft.
START: 3/19/18 END: 3/19/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 84.5	LAT / LONG: 41.460410, -81.657160

EXPLORATION ID B-022-0-18

MATERIAL DESCRIPTION AND NOTES	ELEV. 678.7	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
8" ASPHALT	678.0																	
9" CONCRETE	677.3																	
VERY DENSE, DARK BROWN, **STONE FRAGMENTS WITH SAND**, STONE FRAGMENTS AS SLAG, FILL, MOIST	676.2	1	30 50/2"	-	100	SS-1	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
VERY STIFF, BROWN, **SANDY SILT**, MOIST	675.4	2				SS-2A	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
VERY STIFF, GRAYISH BROWN, **SILT AND CLAY**, INTERBEDDED SILT LAMINAE, MOIST	674.2	3	5 5 6	15	56	SS-2B	2.88	0	0	1	50	49	31	19	12	22	A-6a (9)	
MEDIUM STIFF, GRAYISH BROWN, **SILTY CLAY**, MOIST	672.5	4 5 6	4 4 5	13	78	SS-3	0.58	0	0	1	30	69	39	23	16	27	A-6b (10)	
		7				SS-4A	1.00	-	-	-	-	-	-	-	-	16	A-6b (V)	
MEDIUM DENSE, GRAYISH BROWN, **SANDY SILT**, MOIST @ 6.9' - OXIDIZED @ 7.1' - BECOMES MOIST TO WET, DILATANT	671.2	EOB	7 9 9	25	83	SS-4B	-	-	-	-	-	-	-	-	-	-	A-4a (V)	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PATCHED AT SURFACE WITH 8 IN. ASPHALT PATCH; PLACED 9 IN. CONCRETE; BACKFILLED WITH 6.1 FT. SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/5/26 09:33 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAIN\C

PROJECT: CUY-77-11.21	DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS	DRILL RIG: SIMCO 2800 (062012)	STATION / OFFSET: 162+87, 39' RT.
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: AECOM / TG	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-77 EX CL
PID: 105743 SFN:	DRILLING METHOD: 2.25" HSA	CALIBRATION DATE: 11/13/18	ELEVATION: 678.0 (MSL) EOB: 7.5 ft.
START: 3/13/19 END: 3/13/19	SAMPLING METHOD: SPT	ENERGY RATIO (%): 84.5	LAT / LONG: 41.461490, -81.656970

EXPLORATION ID: B-023-0-18

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 678.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	ABAN-DONED
7.25" ASPHALT	677.4																	
9.25" CONCRETE	676.6																	
MEDIUM DENSE, BROWN, **GRAVEL WITH SAND**, LITTLE SILT, FILL, MOIST	675.5	1	11 9 6	21	94	SS-1A	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
						SS-1B	2.25	-	-	-	-	-	-	-	-	-	A-4b (V)	
VERY STIFF TO HARD, BROWN, **SILT**, SOME SAND, TRACE GRAVEL, GRAVEL AS BRICK FRAGMENTS, FILL, MOIST	674.0	2	5 5 7	17	83	SS-2A	4.50	4	11	7	56	22	24	20	4	17	A-4b (8)	
						SS-2B	4.50	-	-	-	-	-	-	-	-	-	A-4b (V)	
VERY STIFF TO HARD, BROWN, **SILT**, TRACE SAND, HORIZONALLY BEDDED WITH SILT LAMINAE, MOIST		3	2 4 7	15	100	SS-3	2.33	0	0	4	64	32	25	18	7	20	A-4b (8)	
		4																
		5	5 7 9	23	72	SS-4	4.50	-	-	-	-	-	-	-	-	17	A-4b (V)	
	670.5	6																
	EOB	7																

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PATCHED AT SURFACE WITH 7 IN. ASPHALT PATCH; PLACED 9 IN. CONCRETE; BACKFILLED WITH 6.2 FT. SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/5/26 09:33 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAIN\C

PROJECT: CUY-77-11.21	DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS	DRILL RIG: SIMCO 2800 (062012)	STATION / OFFSET: 166+86, 40' LT.
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: AECOM / TG	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-77 EX CL
PID: 105743 SFN:	DRILLING METHOD: 4" SSA	CALIBRATION DATE: 11/13/18	ELEVATION: 677.8 (MSL) EOB: 7.5 ft.
START: 3/19/18 END: 3/19/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 84.5	LAT / LONG: 41.462540, -81.657340

EXPLORATION ID: B-024-0-18

MATERIAL DESCRIPTION AND NOTES	ELEV. 677.8	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
7.75" ASPHALT	677.2																	
9.25" CONCRETE	676.4																	
VERY DENSE, GRAY, **STONE FRAGMENTS**, LITTLE SAND, STONE FRAGMENTS AS SLAG, FILL, DAMP	675.7	1	20 50/2"	-	100	SS-1	-	-	-	-	-	-	-	-	-	10	A-1-a (V)	
HARD, BROWN, **SILT**, SOME SAND, LITTLE BRICK FRAGMENTS, FILL, MOIST @ 3.6' - 2" CRUSHED GRAVEL	673.3	2 3 4	10 12 15	38	83	SS-2	4.5+	14	11	10	58	7	25	21	4	14	A-4b (6)	
DENSE, BROWN, **SANDY SILT**, LITTLE GRAVEL, FILL, MOIST	671.6	5 6	10 10 12	31	83	SS-3	-	5	8	38	37	12	NP	NP	NP	13	A-4a (3)	
HARD, BROWN AND GRAY, **SILT**, TRACE SAND, FILL, MOIST	670.3	7	5 5 7	17	83	SS-4A SS-4B	- 4.42	- -	- -	- -	- -	- -	- -	- -	- -	15 -	A-4a (V) A-4b (V)	
		EOB																

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PATCHED AT SURFACE WITH 8 IN. ASPHALT PATCH; PLACED 9 IN. CONCRETE; BACKFILLED WITH 6.1 FT. SOIL CUTTINGS

PROJECT: CUY-77-11.21	DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS	DRILL RIG: SIMCO 2800 (062012)	STATION / OFFSET: 169+65, 54' RT.	EXPLORATION ID B-025-0-18
TYPE: BRIDGE	SAMPLING FIRM / LOGGER: AECOM / TG	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-77 EX CL	
PID: 105743 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 11/13/18	ELEVATION: 656.1 (MSL) EOB: 50.0 ft.	PAGE 1 OF 1
START: 3/21/18 END: 3/21/18	SAMPLING METHOD: SPT	ENERGY RATIO (%): 84.5	LAT / LONG: 41.463260, -81.657250	

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
VERY DENSE, GRAY AND BROWN, **GRAVEL**, SOME SAND, LITTLE SILT, FILL, MOIST	656.1		8 50/5"	-	64	SS-1	-	53	24	16	5	2	NP	NP	NP	14	A-1-a (0)	
MEDIUM DENSE, BROWN AND BLACK, **GRAVEL**, AS MIXTURE OF COAL AND FOUNDARY SAND, FILL, MOIST	653.6																	
MEDIUM DENSE, BROWN, **GRAVEL WITH SAND**, TRACE SILT, OXIDIZED, MOIST	652.6		3 6 6	17	89	SS-2	-	52	15	19	- 14 -		NP	NP	NP	11	A-1-b (0)	
MEDIUM DENSE, BROWN, **SANDY SILT**, MOIST	650.6																	
	649.4		2 4 4	11	89	SS-3A	-	0	0	49	46	5	NP	NP	NP	22	A-4a (3)	
MEDIUM STIFF, BROWN, **SILT**, HOIZONTALLY BEDDED, MOIST	649.3					SS-3B	0.75	-	-	-	-	-	-	-	-	-	A-4b (V)	
						SS-3C	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
MEDIUM DENSE, BROWN, **SANDY SILT**, LITTLE SAND, MOIST		W 647.6																
@ 8.5' - BECOMES WET			2 4 4	11	78	SS-4	-	0	1	63	31	5	NP	NP	NP	27	A-4a (0)	
@ 9.2' - BECOMES GRAYISH BROWN																		
@ 13.5' - BECOMES DENSE			8 12 13	35	94	SS-5	-	-	-	-	-	-	-	-	-	23	A-4a (V)	
HARD, BROWNISH GRAY, **SILT**, MOIST	639.3		3 5 7	17	83	SS-6	4.08	2	0	1	73	24	25	19	6	19	A-4b (8)	
SOFT TO MEDIUM STIFF, BROWNISH GRAY, **SILT**, DILATANT, WITH INTERBEDDED NON-COHESIVE SILT SEAMS UP TO 1.5" THICK, WET	634.3		2 3 3	8	89	SS-7	0.50	-	-	-	-	-	-	-	-	27	A-4b (V)	
LOOSE, BROWNISH GRAY, **SILT**, TRACE SAND, WET	625.6		2 3 5	11	100	SS-8	0.67	0	0	0	65	35	26	19	7	32	A-4b (8)	
@ 31.3'-31.9' - UCS = 2398 PSF AT 10.2% STRAIN					100	ST-1	-	0	0	1	86	13	NP	NP	NP	28	A-4b (8)	
@ 33' - BECOMES WITH INTERBEDDED SILT LAMINAE			2 2 4	8	94	SS-9	-	-	-	-	-	-	-	-	-	27	A-4b (V)	
MEDIUM STIFF, BROWNISH GRAY, **SILT AND CLAY**, WITH SILT LAMINAE, MOIST	619.6																	
@ 38.9' - 0.5" DARK GRAY ORGANIC STAINING			3 4 5	13	94	SS-10	0.75	1	0	1	45	53	33	19	14	26	A-6a (10)	
@ 43.5' - BECOMES STIFF			3 6 8	20	100	SS-11	1.50	-	-	-	-	-	-	-	-	24	A-6a (V)	
@ 48.5' - BECOMES STIFF TO VERY STIFF	606.1	EOB	4 6 9	21	94	SS-12	2.00	-	-	-	-	-	-	-	-	-	A-6a (V)	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: MIXED WITH BENTONITE CHIPS; MIXED WITH BENTONITE POWDER; MIXED WITH CEMENT; BACKFILLED WITH SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 2/5/26 09:36 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAIN\CUY-77-11.21 BORING LOGS REV FEB 2026.GPJ

PROJECT: CUY-77-11.21	DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS	DRILL RIG: SIMCO 2800 (062012)	STATION / OFFSET: 171+20, 74' LT.	EXPLORATION ID B-026-0-18
TYPE: BRIDGE	SAMPLING FIRM / LOGGER: AECOM / TG	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-77 EX CL	
PID: 105743 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 11/13/18	ELEVATION: 653.6 (MSL) EOB: 50.0 ft.	PAGE 1 OF 1
START: 3/15/19 END: 3/15/19	SAMPLING METHOD: SPT	ENERGY RATIO (%): 84.5	LAT / LONG: 41.463700, -81.657880	

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
1" TOPSOIL	653.6																	
MEDIUM DENSE, BROWN AND GRAY, **GRAVEL**, AND SAND, FILL, MOIST	653.5		6 13 5	25	78	SS-1A	-	23	39	22	12	4	NP	NP	NP	17	A-1-b (0)	
VERY STIFF, BROWN, **SANDY SILT**, TRACE GRAVEL, FILL, MOIST	651.9					SS-1B	2.25	1	16	26	35	22	17	14	3	15	A-4a (4)	
LOOSE, BROWN, **COARSE AND FINE SAND**, FILL, MOIST	650.6		3 3 4	10	78	SS-2A	-	3	43	31	14	9	NP	NP	NP	9	A-3a (0)	
						SS-2B	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
STIFF, BROWN, **SILT**, LITTLE SAND, FILL, MOIST	649.2					SS-2C	-	0	3	7	58	32	26	18	8	18	A-4b (8)	
LOOSE, BROWN, **COARSE AND FINE SAND**, LITTLE TO SOME SILT, FILL, MOIST	648.1		2 2 2	6	67	SS-3A	-	3	24	52	11	10	NP	NP	NP	13	A-3a (0)	
STIFF TO HARD, BROWN, **SANDY SILT**, FILL, MOIST	647.0					SS-3B	4.5+	-	-	-	-	-	-	-	-	17	A-4a (V)	
LOOSE, BROWN, **SANDY SILT**, FILL, MOIST	644.1		1 2 2	6	78	SS-4A	1.00	5	10	17	37	31	27	17	10	21	A-4a (7)	
						SS-4B	-	-	-	-	-	-	-	-	-	17	A-4a (V)	
MEDIUM STIFF, GRAY WITH BLACK MOTTLING, **SANDY SILT**, TRACE ORGANICS, POSSIBLE FILL, MOIST	641.8		1 4 3	10	78	SS-5	0.70	0	5	34	31	30	25	15	10	22	A-4a (5)	
POSSIBLE COBBLEY ZONE	638.1																	
VERY STIFF, BROWNISH GRAY, **SILT**, MOIST	636.8																	
			3 4 5	13	83	SS-6	2.67	-	-	-	-	-	-	-	-	21	A-4b (V)	
@ 23.5' - BECOMES MEDIUM STIFF			2 3 5	11	100	SS-7	0.60	0	0	1	68	31	27	21	6	25	A-4b (8)	
@ 28.5' - WITH INTERBEDDED NON-COHESIVE SILT LAYERS, 1/16" TO 2" THICK			2 4 4	11	94	SS-8	0.65	-	-	-	-	-	-	-	-	26	A-4b (V)	
					0	ST-1	-	-	-	-	-	-	-	-	-	-		
@ 33.5' - BECOMES WET, DILATANT		W 620.1	2 2 4	8	100	SS-9	0.83	0	0	0	67	33	28	20	8	26	A-4b (8)	
STIFF TO VERY STIFF, BROWNISH GRAY, **SILT AND CLAY**, WITH SILT LAMINAE, MOIST	618.1				100	ST-2	2.13	-	-	-	-	-	-	-	-	-	A-6a (V)	
This Shelby Tube had 100% recovery, why is no test data provided for it?			2 4 5	13	100	SS-10	1.75	1	0	0	53	46	31	20	11	24	A-6a (8)	
			2 5 7	17	100	SS-11	1.92	-	-	-	-	-	-	-	-	23	A-6a (V)	
MEDIUM DENSE, BROWNISH GRAY, **SILT**, MOIST	606.8																	
VERY STIFF, BROWNISH GRAY, **SILT AND CLAY**, WITH SILT LAMINAE, MOIST	604.3 / 603.6	EOB	7 8 8	23	100	SS-12A	-	0	0	0	90	10	NP	NP	NP	19	A-4b (8)	
						SS-12B	2.13	-	-	-	-	-	-	-	-	23	A-6a (V)	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH CEMENT; BACKFILLED WITH SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 2/5/26 09:36 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAIN\CUY-77-11.21 BORING LOGS REV FEB 2026.GPJ

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/5/26 09:33 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAIN\C

PROJECT: CUY-77-11.21	DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS	DRILL RIG: SIMCO 2800 (062012)	STATION / OFFSET: 171+09, 38' RT.
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: AECOM / TG	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-77 EX CL
PID: 105743 SFN:	DRILLING METHOD: 4" SSA	CALIBRATION DATE: 11/13/18	ELEVATION: 680.7 (MSL) EOB: 7.0 ft.
START: 3/18/19 END: 3/18/19	SAMPLING METHOD: SPT	ENERGY RATIO (%): 84.5	LAT / LONG: 41.463700, -81.657420

EXPLORATION ID: B-027-0-18

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
3.5" ASPHALT	680.4																	
8.75" CONCRETE WITH SLAG AGGREGATE @ 8" - 3/8" REBAR	679.7																	
DENSE, BROWN, **GRAVEL WITH SAND**, FILL, MOIST	678.2	1	15 17 14	44	72	SS-1	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
MEDIUM DENSE, DARK BROWN, **GRAVEL AND STONE FRAGMENTS**, LITTLE SAND, TRACE SILT, STONE FRAGMENTS AS ASPHALT, FILL, WET	676.7	2 3	5 5 7	17	72	SS-2	-	58	25	10	6	1	NP	NP	NP	14	A-1-a (0)	
VERY STIFF, GRAY AND RED, **SANDY SILT**, LITTLE GRAVEL, TRACE BRICK FRAGMENTS, FILL, MOIST	675.2	4 5	4 14 23	52	83	SS-3A	2.25	-	-	-	-	-	-	-	-	13	A-4a (V)	
						SS-3B	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
VERY STIFF, GRAY, BROWN, AND RED, **SANDY SILT**, LITTLE GRAVEL, FILL, MOIST	673.7	6	13 13 13	37	83	SS-4	-	12	16	29	27	16	23	18	5	14	A-4a (2)	
		EOB 7																

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PATCHED AT SURFACE WITH 3 IN. ASPHALT PATCH; PLACED 9 IN. CONCRETE; BACKFILLED WITH 6 FT. SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/5/26 09:33 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAIN\C

PROJECT: CUY-77-11.21
TYPE: SUBGRADE
PID: 105743 SFN:
START: 3/19/18 END: 3/19/18

DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS
SAMPLING FIRM / LOGGER: AECOM / TG
DRILLING METHOD: 4" SSA
SAMPLING METHOD: SPT

DRILL RIG: SIMCO 2800 (062012)
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 11/13/18
ENERGY RATIO (%): 84.5

STATION / OFFSET: 174+35, 40' LT.
ALIGNMENT: I-77 EX CL
ELEVATION: 682.1 (MSL) EOB: 6.33 ft.
LAT / LONG: 41.464590, -81.657880

EXPLORATION ID: B-028-0-18

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
	682.1																	
5.75" ASPHALT	681.7																	
8.5" CONCRETE WITH SLAG AGGREGATE	680.9																	
MEDIUM DENSE, BROWN, **GRAVEL WITH SAND**, FILL, MOIST	680.7	1	7	20	78	SS-1A	-	-	-	-	-	-	-	-	-	-	A-1-b (V)	
			7 7			SS-1B	-	6	17	16	56	5	NP	NP	NP	15	A-4b (5)	
MEDIUM DENSE, BROWN AND GRAY, **SILT**, SOME SAND, TRACE GRAVEL, FILL, MOIST	679.4	2																
MEDIUM DENSE, BROWN AND GRAY, **SANDY SILT**, TRACE GRAVEL, FILL, MOIST	678.7	3	7	23	100	SS-2A	-	10	24	18	40	8	NP	NP	NP	18	A-4a (3)	
	677.9	4	8 8			SS-2B	-	24	33	19	17	7	NP	NP	NP	9	A-1-b (0)	
MEDIUM DENSE, BROWN, **GRAVEL WITH SAND**, SOME SILT, FILL, MOIST	677.1	5	5	-	93	SS-3A	2.00	-	-	-	-	-	-	-	-	15	A-4b (V)	
			18 50/2"			SS-3B	-	60	26	9	4	1	NP	NP	NP	9	A-1-a (0)	
STIFF, BROWN AND GRAY, **SILT**, LITTLE SAND, FILL, MOIST	675.8	6																
	EOB		50/4"	-	100	SS-4	-	-	-	-	-	-	-	-	-	8	A-1-a (V)	
VERY DENSE, GRAY, **STONE FRAGMENTS**, SOME SAND, TRACE SILT, STONE FRAGMENTS AS SLAG, FILL, MOIST																		

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PATCHED AT SURFACE WITH 6 IN. ASPHALT PATCH; PLACED 8 IN. CONCRETE; BACKFILLED WITH 5.2 FT. SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/5/26 09:33 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAINC

PROJECT: CUY-77-11.21	DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS	DRILL RIG: SIMCO 2800 (062012)	STATION / OFFSET: 179+09, 38' RT.	EXPLORATION ID B-031-0-18
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: AECOM / TG	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-77 EX CL	
PID: 105743 SFN:	DRILLING METHOD: 4" SSA	CALIBRATION DATE: 11/13/18	ELEVATION: 684.5 (MSL) EOB: 7.08 ft.	PAGE 1 OF 1
START: 3/18/19 END: 3/18/19	SAMPLING METHOD: SPT	ENERGY RATIO (%): 84.5	LAT / LONG: 41.465910, -81.657890	

MATERIAL DESCRIPTION AND NOTES	ELEV. 684.5	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
7.5" ASPHALT	683.9																	
8.75" CONCRETE WITH SLAG AGGREGATE @ 11" - 3/8" REBAR	683.2																	
VERY STIFF, BROWN, **SANDY SILT**, TRACE GRAVEL, TRACE WOOD FRAGMENTS, MOIST	681.5	1	5 9 7	23	67	SS-1	2.00	10	13	18	45	14	23	16	7	16	A-4a (5)	
HARD, BROWN, GRAY, AND DARK GRAY, **SANDY SILT**, LITTLE SAND, TRACE GRAVEL, TRACE BRICK FRAGMENTS, FILL, MOIST		2	6 7 8	21	72	SS-2	4.5+	-	-	-	-	-	-	-	-	16	A-4a (V)	
@ 4.5' - BECOMES VERY STIFF		3	5 7 9	23	83	SS-3	3.75	-	-	-	-	-	-	-	-	17	A-4a (V)	
@ 6.0' - BECOMES STIFF	678.1	4	8	-	92	SS-4A	1.75	-	-	-	-	-	-	-	-	-	A-4a (V)	
VERY DENSE, BROWN AND GRAY, **GRAVEL WITH SAND AND SILT**, FILL, MOIST	677.4	5	15 50/1"			SS-4B	-	26	13	33	17	11	18	14	4	10	A-2-4 (0)	
		EOB 6																
		7																

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PATCHED AT SURFACE WITH 8 IN. ASPHALT PATCH; PLACED 9 IN. CONCRETE; BACKFILLED WITH 6.1 FT. SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/5/26 09:33 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAINC

PROJECT: CUY-77-11.21
TYPE: SUBGRADE
PID: 105743 SFN:
START: 3/19/18 END: 3/19/18

DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS
SAMPLING FIRM / LOGGER: AECOM / TG
DRILLING METHOD: 4" SSA
SAMPLING METHOD: SPT

DRILL RIG: SIMCO 2800 (062012)
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 11/13/18
ENERGY RATIO (%): 84.5

STATION / OFFSET: 182+84, 50' LT.
ALIGNMENT: I-77 EX CL
ELEVATION: 678.5 (MSL) EOB: 7.4 ft.
LAT / LONG: 41.466800, -81.658610

EXPLORATION ID B-032-0-18

MATERIAL DESCRIPTION AND NOTES	ELEV. 678.5	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
16.75" ASPHALT	677.1	1																
LOOSE, BROWN, **GRAVEL**, TRACE TO LITTLE SAND, ROUNDED, FILL, MOIST		2	2 2 2	6	61	SS-1	-	-	-	-	-	-	-	-	-	6	A-1-a (V)	
		3	2 2 2	6	67	SS-2	-	95	3	1	-	1 -	NP	NP	NP	6	A-1-a (0)	
	674.1	4																
MEDIUM DENSE, BROWN AND GREENISH GRAY, **STONE FRAGMENTS**, LITTLE TO SOME SAND, AS SLAG FRAGMENTS, FILL, MOIST	672.6	5	5 5 4	13	56	SS-3	-	-	-	-	-	-	-	-	-	11	A-1-a (V)	
LOOSE, BROWN, **GRAVEL**, TRACE SAND, ROUNDED, FILL, MOIST		6	2 3 3	8	28	SS-4	-	-	-	-	-	-	-	-	-	-	A-1-a (V)	
	671.1	7																
		EOB																

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PATCHED AT SURFACE WITH 17 IN. ASPHALT PATCH; BACKFILLED WITH 6 FT. SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/5/26 09:33 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAIN\C

PROJECT: CUY-77-11.21
TYPE: SUBGRADE
PID: 105743 SFN:
START: 3/18/19 END: 3/18/19

DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS
SAMPLING FIRM / LOGGER: AECOM / TG
DRILLING METHOD: 4" SSA
SAMPLING METHOD: SPT

DRILL RIG: SIMCO 2800 (062012)
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 11/13/18
ENERGY RATIO (%): 84.5

STATION / OFFSET: 186+95, 51' RT.
ALIGNMENT: I-77 EX CL
ELEVATION: 676.9 (MSL) EOB: 7.5 ft.
LAT / LONG: 41.467980, -81.658770

EXPLORATION ID B-033-0-18

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
6.5" ASPHALT	676.3																	
10.5" CONCRETE	675.4																	
4" GRAY GRAVEL SUBBASE	675.1					SS-1A	-	-	-	-	-	-	-	-	-	-		
DENSE, BROWN AND GRAY, **GRAVEL WITH SAND AND SILT**, TRACE SLAG FRAGMENTS, FILL, MOIST	673.9		7 9 38	66	83	SS-1B	-	-	-	-	-	-	-	-	-	14	A-2-4 (V)	
MEDIUM DENSE, BROWN AND GRAY, **GRAVEL AND STONE FRAGMENTS**, STONE FRAGMENTS AS SLAG, LITTLE SAND, FILL, MOIST	672.4		16 17 12	41	72	SS-2	-	78	15	3	3	1	NP	NP	NP	11	A-1-a (0)	
VERY STIFF, GRAYISH BROWN, **SILT**, INTERBEDDED WITH NON-COHESIVE SILT, MOIST @ 5.5' - 4" NON-COHESIVE SILT SEAM, WET, DILATANT @ 6.0' - BECOMES WITH FINE SAND LAMINAE AND SANDY SILT LAMINAE	669.4	W 671.4	4 5 6	15	72	SS-3	2.83	1	2	8	72	17	22	18	4	18	A-4b (8)	
			3 4 4	11	72	SS-4	2.00	-	-	-	-	-	-	-	-	17	A-4b (V)	
		EOB																

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PATCHED AT SURFACE WITH 6 IN. ASPHALT PATCH; PLACED 11 IN. CONCRETE; BACKFILLED WITH 6.1 FT. SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/5/26 09:34 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAIN\C

PROJECT: CUY-77-11.21
TYPE: SUBGRADE
PID: 105743 SFN:
START: 3/19/18 END: 3/19/18

DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS
SAMPLING FIRM / LOGGER: AECOM / TG
DRILLING METHOD: 4" SSA
SAMPLING METHOD: SPT

DRILL RIG: SIMCO 2800 (062012)
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 11/13/18
ENERGY RATIO (%): 84.5

STATION / OFFSET: 191+92, 40' LT.
ALIGNMENT: I-77 EX CL
ELEVATION: 674.8 (MSL) EOB: 7.5 ft.
LAT / LONG: 41.469320, -81.659640

EXPLORATION ID B-034-0-18

MATERIAL DESCRIPTION AND NOTES	ELEV. 674.8	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
8.75" ASPHALT	674.1																	
9" CONCRETE WITH SLAG AGGREGATE @ 12" - 3/8" REBAR	673.3																	
MEDIUM DENSE, BROWN AND GREENISH GRAY, **STONE FRAGMENTS WITH SAND**, STONE FRAGMENTS AS SLAG, FILL, DAMP	672.7	1	11 8 10	25	94	SS-1A	-	8	52	24	15	1	NP	NP	NP	51	A-1-b (0)	
	671.8	2				SS-1B	4.5+	-	-	-	-	-	-	-	-	12	A-4b (V)	
HARD, BROWN AND GRAY, **SILT**, SOME SAND, TRACE GRAVEL, FILL, MOIST	670.3	3	5 8 9	24	83	SS-2	-	3	4	28	55	10	NP	NP	NP	13	A-4b (6)	
MEDIUM DENSE, BROWN AND GRAY, **SILT**, SOME SAND, TRACE GRAVEL, FILL, MOIST @ 4.0'-4.2' - 2" COHESIVE SANDY SILT SEAM	669.0	4	6 6 5	15	100	SS-3A	-	1	21	61	9	8	NP	NP	NP	16	A-3a (0)	
@ 4.2'-4.4' - 2" FINE SAND SEAM	668.8	5				SS-3B	2.50	-	-	-	-	-	-	-	-	-	A-6a (V)	
MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, LITTLE SILT, TRACE GRAVEL, FILL, MOIST	667.3	6	2 2 2	6	72	SS-4	-	36	29	20	11	4	19	14	5	9	A-1-b (0)	
VERY STIFF, BROWN, **SILT AND CLAY**, FILL, MOIST		7																
LOOSE, BROWN, **GRAVEL WITH SAND**, SOME SILT, TRACE BRICK FRAGMENTS, FILL, MOIST		EOB																

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PATCHED AT SURFACE WITH 9 IN. ASPHALT PATCH; PLACED 9 IN. CONCRETE; BACKFILLED WITH 6 FT. SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/5/26 09:34 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAINC

PROJECT: CUY-77-11.21	DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS	DRILL RIG: SIMCO 2800 (062012)	STATION / OFFSET: 194+98, 41' RT.	EXPLORATION ID B-035-0-18
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: AECOM / TG	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-77 EX CL	
PID: 105743 SFN:	DRILLING METHOD: 4" SSA	CALIBRATION DATE: 11/13/18	ELEVATION: 663.2 (MSL) EOB: 7.5 ft.	PAGE 1 OF 1
START: 3/18/19 END: 3/18/19	SAMPLING METHOD: SPT	ENERGY RATIO (%): 84.5	LAT / LONG: 41.470040, -81.659580	

MATERIAL DESCRIPTION AND NOTES	ELEV. 663.2	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
7.5" ASPHALT	662.5																	
10" CONCRETE	661.7																	
GRAVEL WITH SAND BASE	661.4																	
MEDIUM DENSE, BROWN, **GRAVEL WITH SAND**, LITTLE TO SOME SILT, FILL, MOIST	660.7	1	6 5 5	14	100	SS-1A	-	0	56	27	17		NP	NP	NP	60	A-1-b (0)	
						SS-1B	-	-	-	-	-	-	-	-	-	-	A-1-b (V)	
		2				SS-1C	1.00	-	-	-	-	-	-	-	-	17	A-4a (V)	
STIFF TO HARD, GRAY AND RED, **SANDY SILT**, LITTLE GRAVEL, TRACE WOOD FRAGMENTS, FILL, MOIST		3	4 7 10	24	89	SS-2	4.50	-	-	-	-	-	-	-	-	12	A-4a (V)	
@ 3.0' - BECOMES HARD, GRAY WITH TRACE RED, TRACE GRAVEL		4																
@ 4.0' - BECOMES BROWN		5	8 17 11	39	78	SS-3	4.5+	7	13	40	28	12	17	16	1	10	A-4a (1)	
@ 4.5' - BECOMES WITH TRACE SLAG FRAGMENTS		6	6 9 9	25	78	SS-4	4.5+	-	-	-	-	-	-	-	-	11	A-4a (V)	
	655.7	7 EOB																

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PATCHED AT SURFACE WITH 7 IN. ASPHALT PATCH; PLACED 10 IN. CONCRETE; BACKFILLED WITH 6.1 FT. SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/5/26 09:34 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAIN\C

PROJECT: CUY-77-11.21	DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS	DRILL RIG: DIEDRICH D-25 (162)	STATION / OFFSET: 198+34, 46' LT.
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: AECOM / TG	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-77 EX CL
PID: 105743 SFN:	DRILLING METHOD: 4" SSA	CALIBRATION DATE: 11/13/18	ELEVATION: 661.4 (MSL) EOB: 7.5 ft.
START: 3/27/19 END: 3/27/19	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87.4	LAT / LONG: 41.470920, -81.660050

EXPLORATION ID B-036-0-18

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 661.4	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	ABAN-DONED
13" ASPHALT	660.3																	
LOOSE, BROWN, **COARSE AND FINE SAND**, LITTLE GRAVEL, TRACE SILT, FILL, MOIST	659.3		4 3 4	10	94	SS-1A	-	19	38	15	26	2	NP	NP	NP	13	A-3a (0)	
						SS-1B	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
MEDIUM DENSE, BROWN, **SANDY SILT**, TRACE SLAG FRAGMENTS, FILL, MOIST			3 4 4	12	89	SS-2	-	-	-	-	-	-	-	-	-	18	A-4a (V)	
@ 5.2' - BECOMES WET	655.9	W 656.2	3 4 6	15	78	SS-3A	-	4	7	42	39	8	NP	NP	NP	19	A-4a (2)	
						SS-3B	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
LOOSE, GRAYISH BROWN, **SILT**, SOME SAND, WET			3 3 3	9	89	SS-4A	-	0	0	29	65	6	NP	NP	NP	25	A-4b (7)	
	653.9	EOB				SS-4B	-	-	-	-	-	-	-	-	-	-	A-4b (V)	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PATCHED AT SURFACE WITH 13 IN. ASPHALT PATCH; BACKFILLED WITH 6.4 FT. SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/5/26 09:34 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAINC

PROJECT: CUY-77-11.21
TYPE: SUBGRADE
PID: 105743 SFN:
START: 3/18/19 END: 3/18/19

DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS
SAMPLING FIRM / LOGGER: AECOM / TG
DRILLING METHOD: 4" SSA
SAMPLING METHOD: SPT

DRILL RIG: SIMCO 2800 (062012)
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 11/13/18
ENERGY RATIO (%): 84.5

STATION / OFFSET: 202+31, 54' RT.
ALIGNMENT: I-77 EX CL
ELEVATION: 659.3 (MSL) EOB: 7.2 ft.
LAT / LONG: 41.472050, -81.659750

EXPLORATION ID: B-037-0-18
PAGE: 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	ABAN-DONED
	659.3																	
6.5" ASPHALT	658.8																	
8.25" CONCRETE @ 10.5" - 1/4" REBAR	658.1	W 658.1 — 1																
	657.7		11 28 32	85	56	SS-1A	-	-	-	-	-	-	-	-	-	-	A-1-a (V)	
VERY DENSE, BROWN, **GRAVEL**, "AND" SAND, FILL, WET	656.6	2				SS-1B	-	-	-	-	-	-	-	-	-	42	A-1-a (V)	
VERY DENSE, GREEN, **STONE FRAGMENTS**, "AND" SAND, AS SLAG FRAGMENTS, FILL, WET	655.1	3 — 4	11 13 14	38	72	SS-2	-	0	1	17	76	6	NP	NP	NP	18	A-4b (8)	
DENSE, GRAY, TRACE DARK GRAY, **SILT**, LITTLE SAND, MOIST																		
MEDIUM DENSE, BROWN, TRACE DARK GRAY, **SILT**, "AND" SAND, WITH TRACE INTERBEDDED COHESIVE SILT LAYERS, WET	653.6	5	8 5 5	14	61	SS-3	-	0	0	45	50	5	NP	NP	NP	25	A-4b (4)	
LOOSE, BROWN, **SILT**, LITTLE SAND, WITH INTERBEDDED COHESIVE SILT, WET	652.1	6 — EOB — 7	2 3 3	8	72	SS-4	-	0	0	19	76	5	NP	NP	NP	25	A-4b (8)	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PATCHED AT SURFACE WITH 7 IN. ASPHALT PATCH; PLACED 8 IN. CONCRETE; BACKFILLED WITH 6.2 FT. SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/5/26 09:34 - C:\USERS\ERIK.BOGEN\ONEDRIVE - AECOM\PROJECTS\ODOT CUY-77\REPORT\STAGE 2 ODOT COMMENTS AGAINC

PROJECT: CUY-77-11.21	DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS	DRILL RIG: SIMCO 2800 (062012)	STATION / OFFSET: 210+95, 41' RT.	EXPLORATION ID B-039-0-18
TYPE: SUBGRADE	SAMPLING FIRM / LOGGER: AECOM / TG	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: I-77 EX CL	
PID: 105743 SFN:	DRILLING METHOD: 4" SSA	CALIBRATION DATE: 11/13/18	ELEVATION: 658.1 (MSL) EOB: 7.4 ft.	PAGE 1 OF 1
START: 3/18/19 END: 3/18/19	SAMPLING METHOD: SPT	ENERGY RATIO (%): 84.5	LAT / LONG: 41.474400, -81.660110	

MATERIAL DESCRIPTION AND NOTES	ELEV. 658.1	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	ABAN-DONED
6.75" ASPHALT	657.5																	
8.75" CONCRETE	656.8																	
MEDIUM DENSE, GRAY, **GRAVEL WITH SAND**, FILL, MOIST	656.1		24 13 7	28	72	SS-1A	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
						SS-1B	-	-	-	-	-	-	-	-	-	-	A-1-b (V)	
MEDIUM DENSE, BROWN, **GRAVEL WITH SAND**, TRACE SILT, MOIST	653.7		3 4 4	11	67	SS-2	-	9	65	20	3	3	NP	NP	NP	6	A-1-b (0)	
LOOSE, BROWN, **COARSE AND FINE SAND**, "AND" SILT, MOIST TO WET	652.2	W 652.7	3 2 2	6	78	SS-3	-	0	0	66	32	2	NP	NP	NP	21	A-3a (0)	
LOOSE, BROWN, **COARSE AND FINE SAND**, LITTLE SILT, WET	650.7		3 2 2	6	78	SS-4	-	0	0	89	10	1	NP	NP	NP	26	A-3a (0)	
		EOB																

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PATCHED AT SURFACE WITH 7 IN. ASPHALT PATCH; PLACED 9 IN. CONCRETE; BACKFILLED WITH 6.2 FT. SOIL CUTTINGS

Appendix B – Pavement Core Photos

AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

Photo No. 1	**Date:** 3/11/2019

Description:

Pavement Core
B-001-0-18

5” Asphalt
8.5” Concrete
13.5” TOTAL

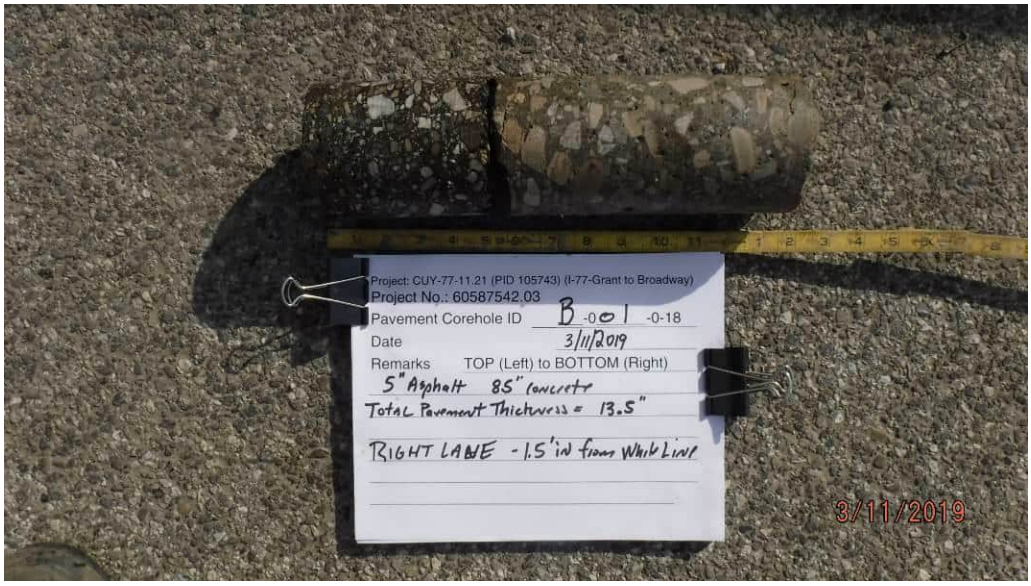
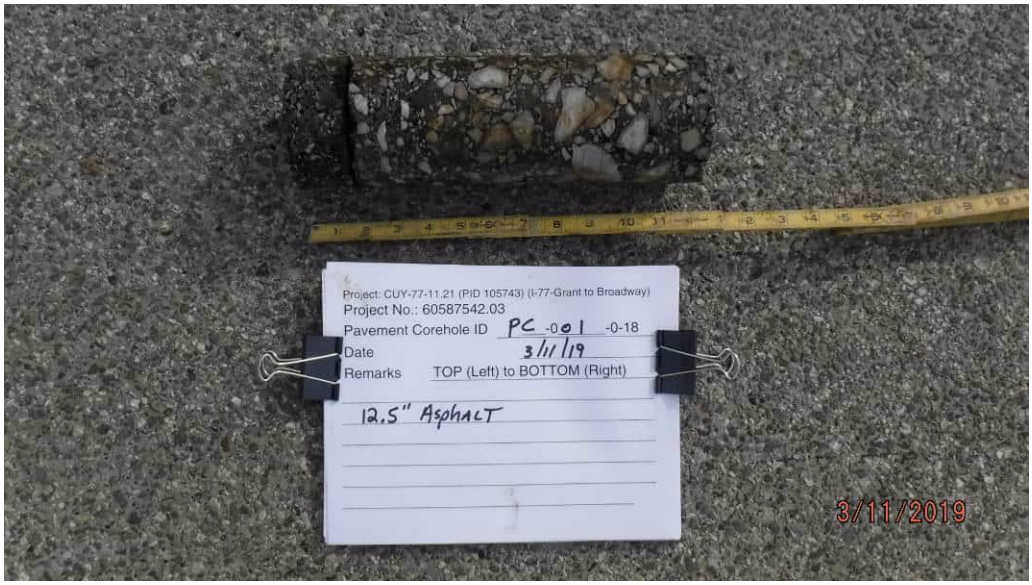


Photo No. 2	**Date:** 3/11/2019

Description:

Pavement Core
X-001-1-18

12.5” Asphalt
12.5” TOTAL



AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

Photo No. 3	**Date:** 3/27/2019

Description:

Pavement Core
B-002-0-18

8.0” Asphalt
11.0” Concrete
19.0” TOTAL

Photo No. 4	**Date:** 3/27/2019

Description:

Pavement Core
X-002-1-18

15.5” Asphalt
15.5” TOTAL

AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

-

Photo No. 5	**Date:** 3/11/2019

Description:

Pavement Core
B-003-0-018

8.5” Asphalt
10.0” Concrete
18.5” TOTAL

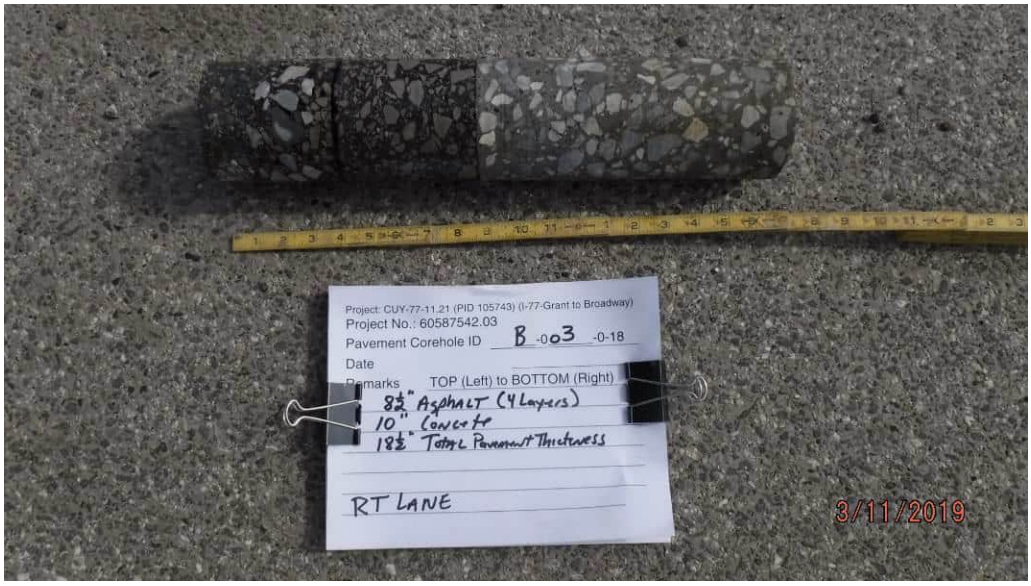
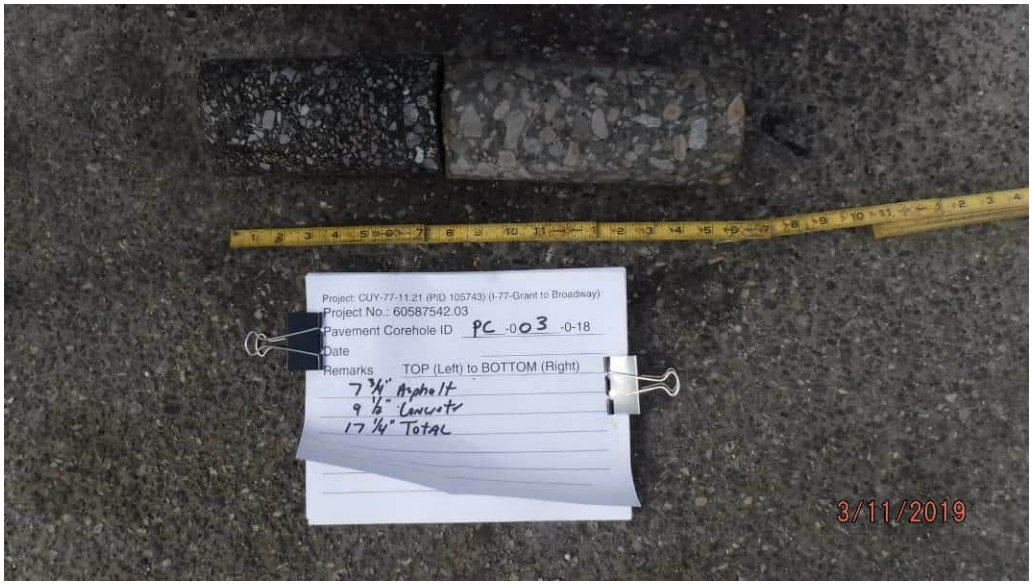


Photo No. 6	**Date:** 3/11/2019

Description:

Pavement Core
X-003-1-18

7.75” Asphalt
9.5” Concrete
17.25” TOTAL



AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

Photo No. 7	**Date:** 3/21/2019

Description:

Pavement Core
B-004-0-18

7.75” Asphalt
8.75” Concrete
16.5” TOTAL

Photo No. 8	**Date:** 3/26/2019

Description:

Pavement Core
X-004-1-18

9.5” Asphalt
9.5” TOTAL

AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

Photo No. 9	**Date:** 3/11/2019

Description:

Pavement Core
B-005-0-18

4.75” Asphalt
9.0” Concrete
13.75” TOTAL

Photo No. 10	**Date:** 3/11/2019

Description:

Pavement Core
X-005-1-18

11.0” Asphalt
11.0” TOTAL

AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

Photo No. 11	**Date:** 3/26/2019

Description:

Pavement Core
B-006-0-18

5.75” Asphalt
9.0” Concrete
14.75” TOTAL

Photo No. 12	**Date:** 3/26/2019

Description:

Pavement Core
X-006-1-18

12.5” Asphalt
12.5” TOTAL

AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

Photo No. 13	**Date:** 3/12/2019

Description:

Pavement Core
B-007-0-18

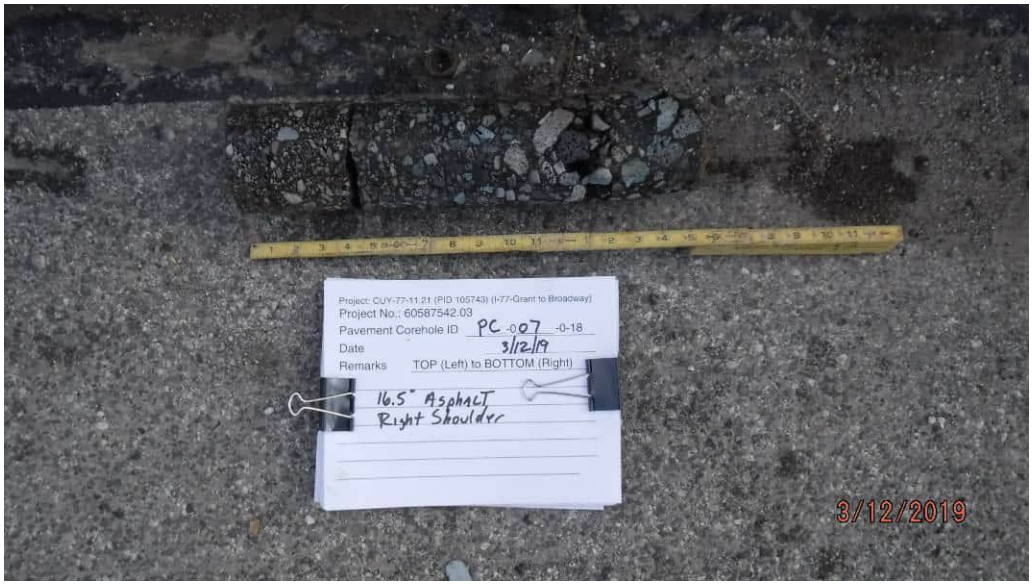
8.75” Asphalt
9.5” Concrete
18.25” TOTAL

Photo No. 14	**Date:** 3/12/2019

Description:

Pavement Core
X-007-1-18

16.5” Asphalt
16.5” TOTAL



AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

Photo No. 15	**Date:** 3/26/2019

Description:

Pavement Core
B-008-0-18

5.0” Asphalt
8.5” Concrete
13.5” TOTAL

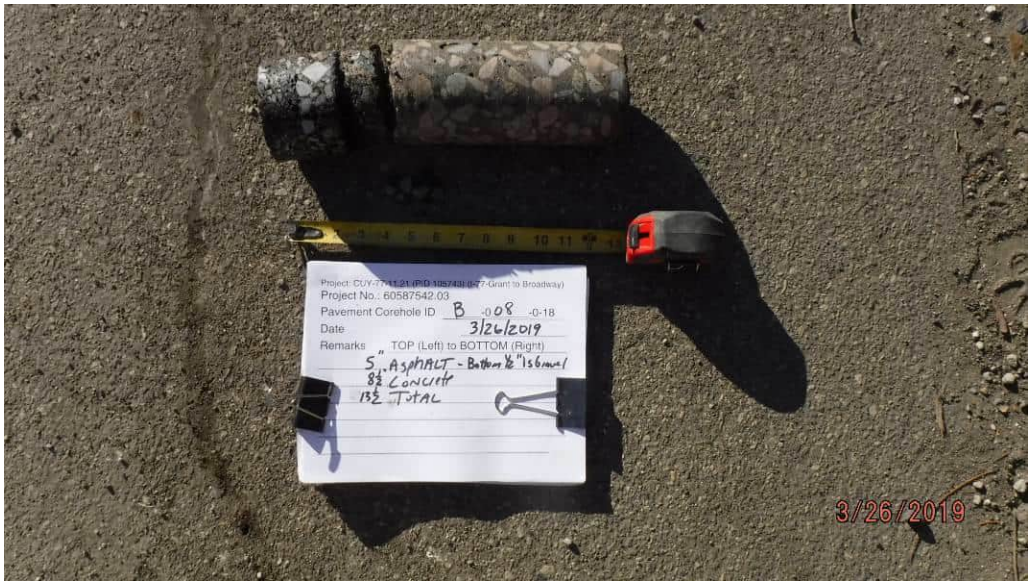


Photo No. 16	**Date:** 3/21/2019

Description:

Pavement Core
X-008-1-18

8.0” Asphalt
8.0” TOTAL

AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

Photo No. 17	**Date:** 3/12/2019

Description:

Pavement Core
B-009-0-18

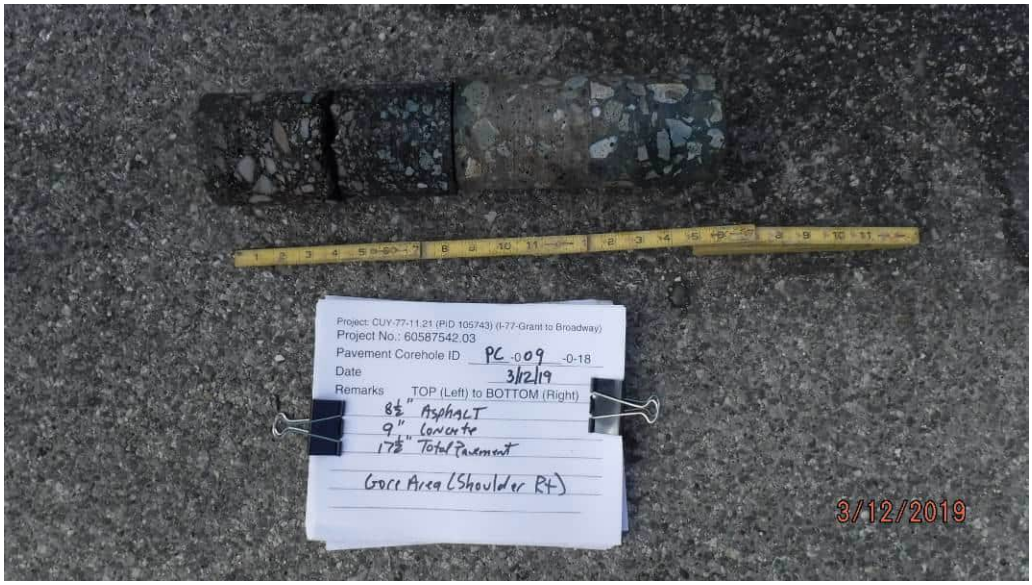
9.25” Asphalt
8.5” Concrete
17.75” TOTAL

Photo No. 18	**Date:** 3/12/2019

Description:

Pavement Core
X-009-1-18

8.5” Asphalt
9.0” Concrete
17.5” TOTAL



AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

Photo No. 19	**Date:** 3/20/2019

Description:

Pavement Core
B-010-0-18

4.75” Asphalt
9.75” Concrete
14.5” TOTAL

Photo No. 20	**Date:** 3/20/2019

Description:

Pavement Core
X-010-1-18

13.5” Asphalt
13.5” TOTAL

AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

Photo No. 21	**Date:** 3/12/2019

Description:

Pavement Core
B-011-0-18

8.5” Asphalt
8.5” Concrete
17.0” TOTAL

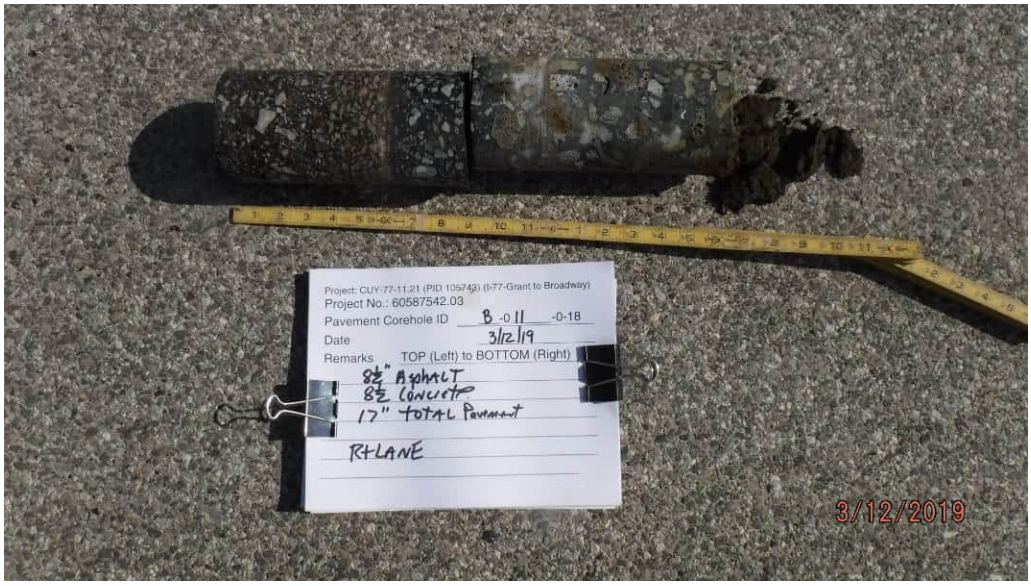


Photo No. 22	**Date:** 3/12/2019

Description:

Pavement Core
X-011-1-18

17.0” Asphalt
17.0” TOTAL

AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

Photo No. 23	**Date:** 3/21/2019

Description:

Pavement Core
B-012-0-18

8.25” Asphalt
9.25” Concrete
17.5” TOTAL

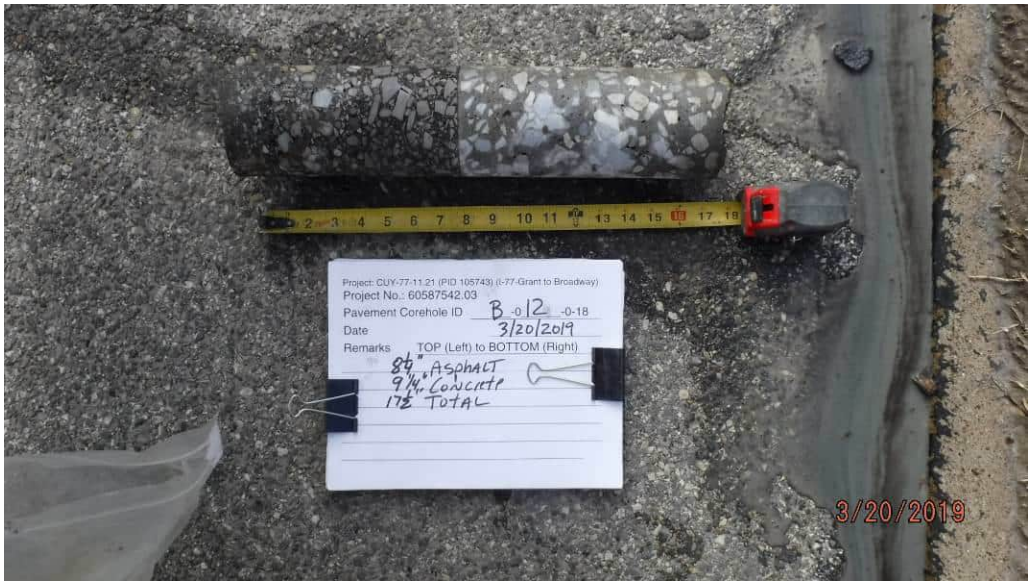


Photo No. 24	**Date:** 3/21/2019

Description:

Pavement Core
X-012-1-18

15.75” Asphalt
15.75” TOTAL

AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

Photo No. 25	**Date:** 3/12/2019

Description:

Pavement Core
B-013-0-18

6.75” Asphalt
8.75” Concrete
15.5” TOTAL

Photo No. 26	**Date:** 3/12/2019

Description:

Pavement Core
X-013-1-18

13.0” Asphalt
13.0” TOTAL

AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

Photo No. 27	**Date:** 3/21/2019

Description:

Pavement Core
B-014-0-18

4.75” Asphalt
9.5” Concrete
14.25” TOTAL

Photo No. 28	**Date:** 3/21/2019

Description:

Pavement Core
X-014-1-18

8.0” Asphalt
8.0” TOTAL

AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

Photo No. 29	**Date:** 3/12/2019

Description:

Pavement Core
B-015-0-18

8.5” Asphalt
9.0” Concrete
17.5” TOTAL

Photo No. 30	**Date:** 3/12/2019

Description:

Pavement Core
X-015-1-18

7.75” Asphalt
9.5” Concrete
17.25” TOTAL

AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

Photo No. 31	**Date:** 3/20/2019

Description:

Pavement Core
B-016-0-18

8.5” Asphalt
9.5” Concrete
18.0” TOTAL

Photo No. 32	**Date:** 3/20/2019

Description:

Pavement Core
X-016-1-18

16.75” Asphalt
16.75” TOTAL

AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

Photo No. 33	**Date:** 3/21/2019

Description:

Pavement Core
B-017-0-18

7.25” Asphalt
8.75” Concrete
16.0” TOTAL

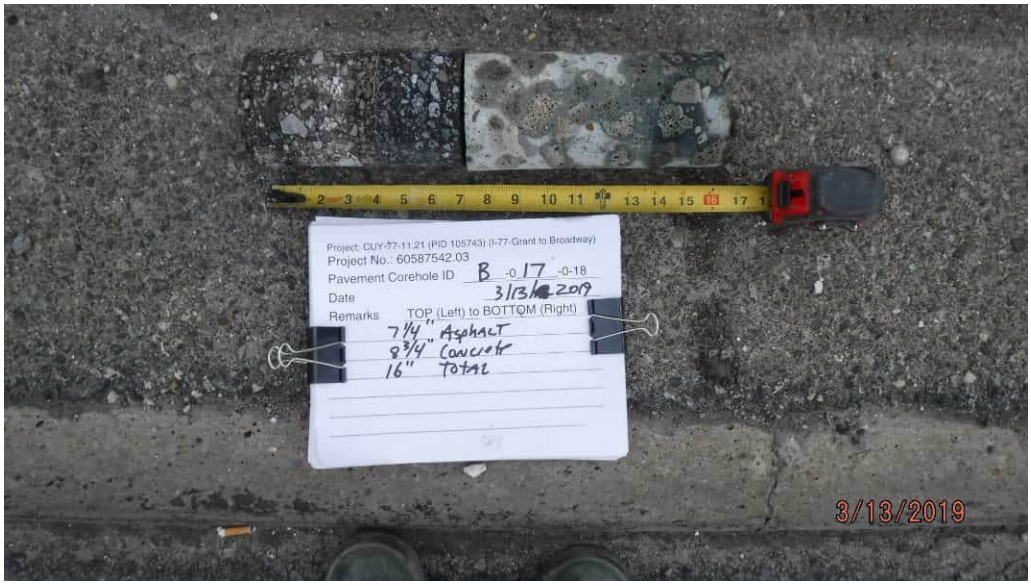


Photo No. 34	**Date:** 3/21/2019

Description:

Pavement Core
X-017-1-18

16.0” Asphalt
16.0” TOTAL

AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

Photo No. 35	**Date:** 3/20/2019

Description:

Pavement Core
B-018-0-18

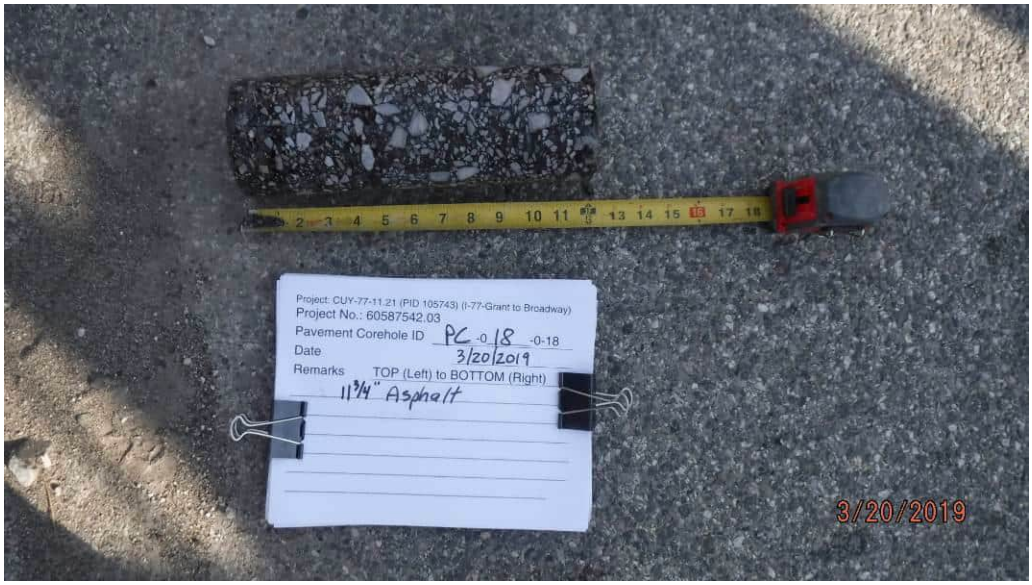
6.0” Asphalt
9.0” Concrete
15.0” TOTAL

Photo No. 36	**Date:** 3/20/2019

Description:

Pavement Core
X-018-1-18

11.75” Asphalt
11.75” TOTAL



AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

Photo No. 37	**Date:** 3/13/2019

Description:

Pavement Core
B-019-0-18

8.0” Asphalt
9.0” Asphalt
17.0” TOTAL

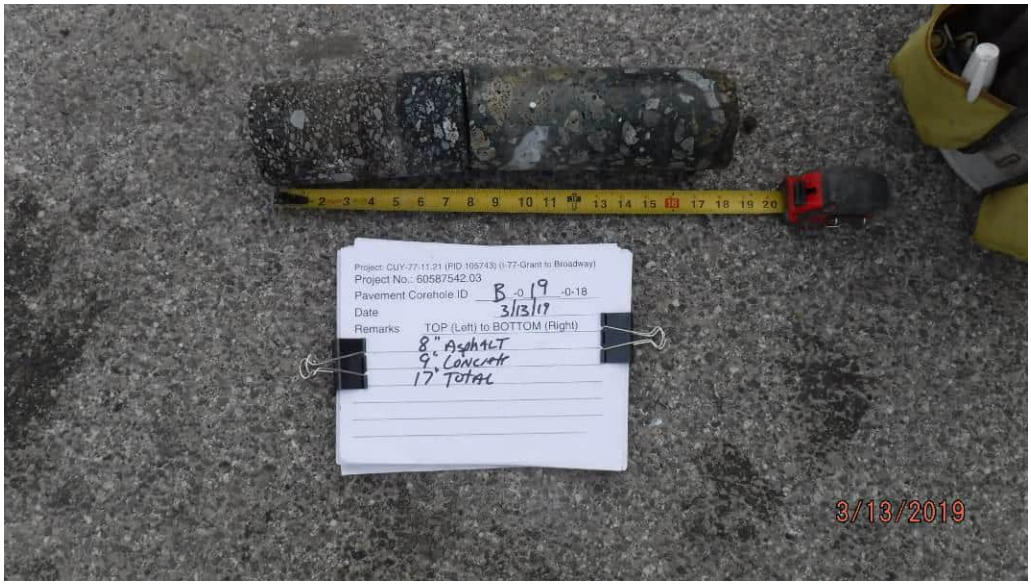
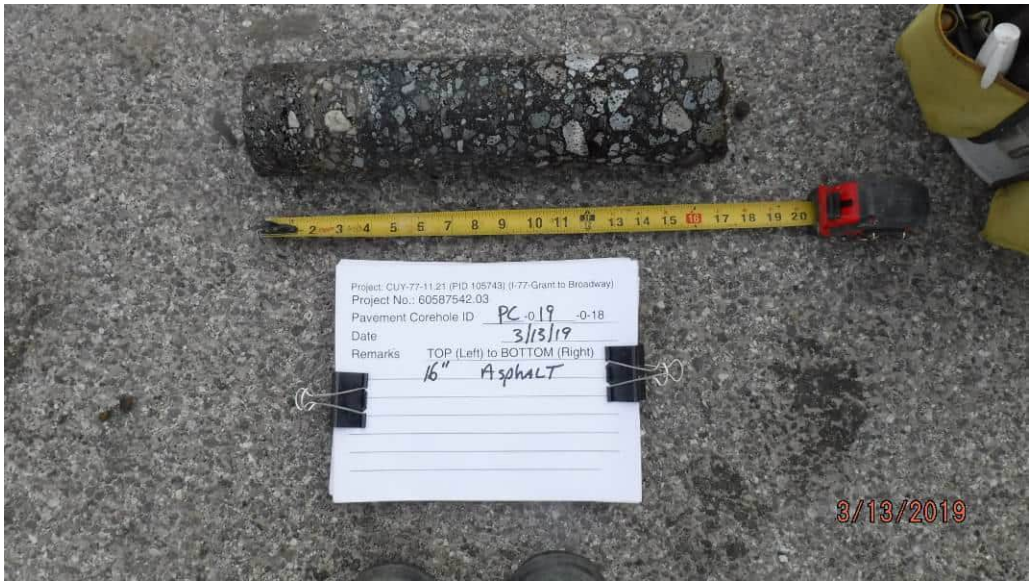


Photo No. 38	**Date:** 3/13/2019

Description:

Pavement Core
X-019-1-18

16.0” Asphalt
16.0” TOTAL



AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

Photo No. 39	**Date:** 3/20/2019

Description:

Pavement Core
B-020-0-18

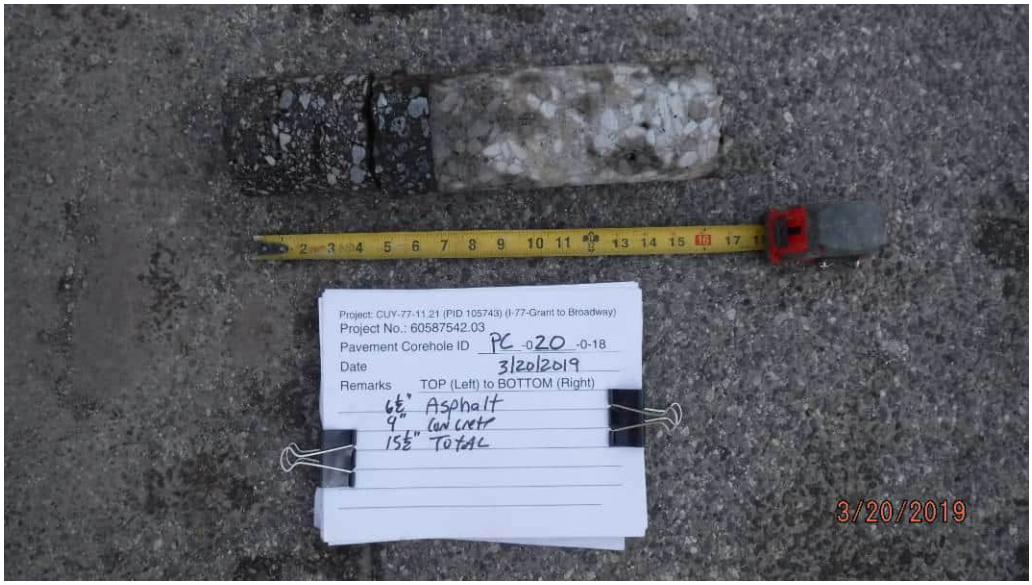
9.0” Asphalt
9.25” Concrete
18.25” TOTAL

Photo No. 40	**Date:** 3/20/2019

Description:

Pavement Core
X-020-1-18

6.5” Asphalt
9.0” Concrete
15.5” TOTAL



AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

Photo No. 41	**Date:** 3/13/2019

Description:

Pavement Core
B-021-0-18

5.0” Asphalt
10.0” Concrete
15.0” TOTAL

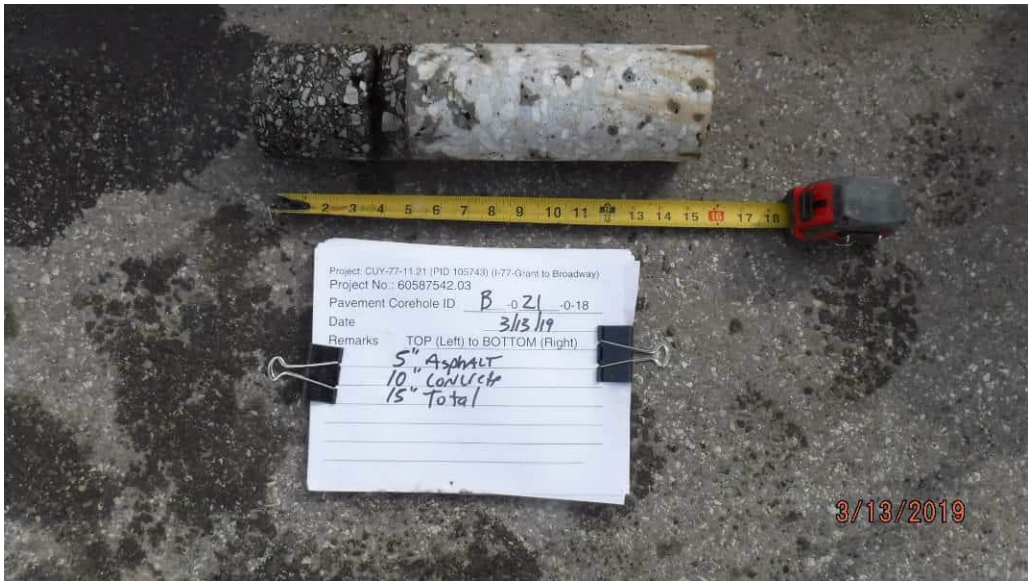


Photo No. 42	**Date:** 3/13/2019

Description:

Pavement Core
X-021-1-18

8.0” Asphalt
8.0” TOTAL

AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

Photo No. 43	**Date:** 3/21/2019

Description:

Pavement Core
B-022-0-18

8.0” Asphalt
9.0” Concrete
17.0” TOTAL

Photo No. 44	**Date:** 3/21/2019

Description:

Pavement Core
X-022-1-18

16.75” Asphalt
16.75” TOTAL

AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

Photo No. 45	**Date:** 3/13/2019

Description:

Pavement Core
B-023-0-18

7.25” Asphalt
9.25” Concrete with slag aggregate
16.5” TOTAL

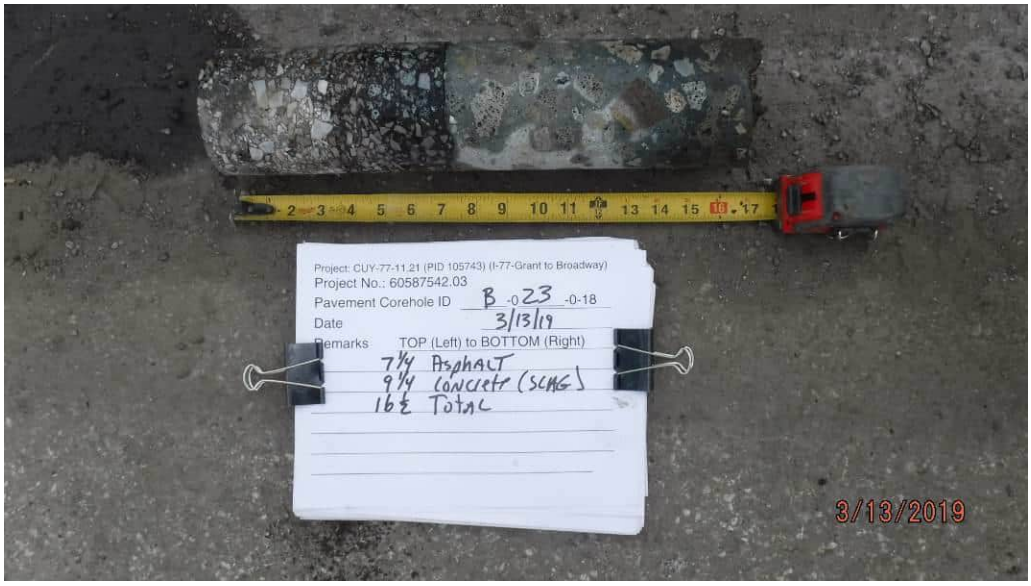


Photo No. 46	**Date:** 3/13/2019

Description:

Pavement Core
X-023-1-18

16.25” Asphalt
16.25” TOTAL

AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

Photo No. 47	**Date:** 3/19/2019

Description:

Pavement Core
B-024-0-18

7.75” Asphalt
9.25” Concrete
17.0” TOTAL

Photo No. 48	**Date:** 3/19/2019

Description:

Pavement Core
X-024-1-18

16.75” Asphalt
16.75” TOTAL

AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

Photo No. 49	**Date:** 3/13/2019

Description:

Pavement Core
X-025-0-18

3.75” Asphalt
9.25” Concrete
13.0” TOTAL

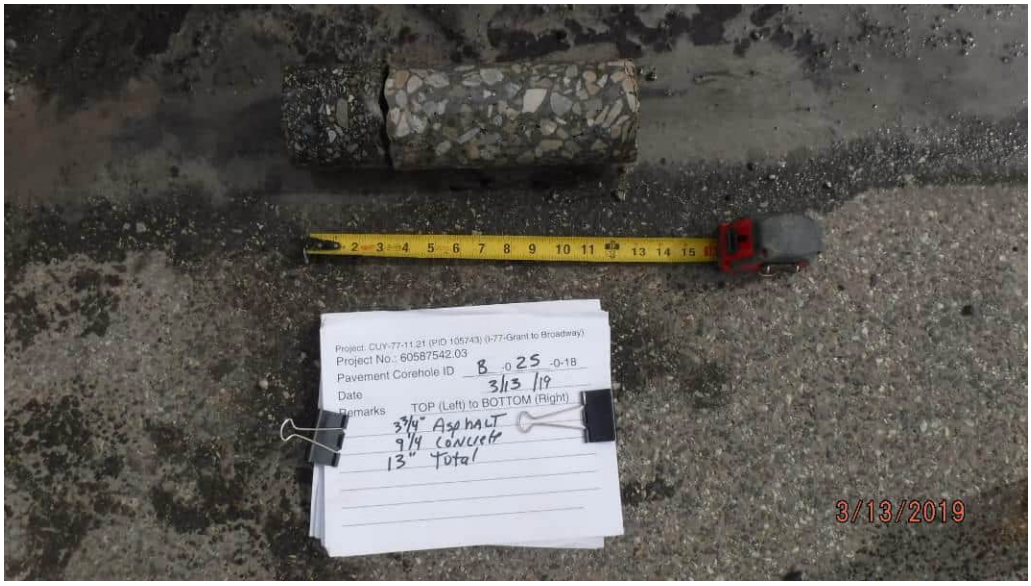
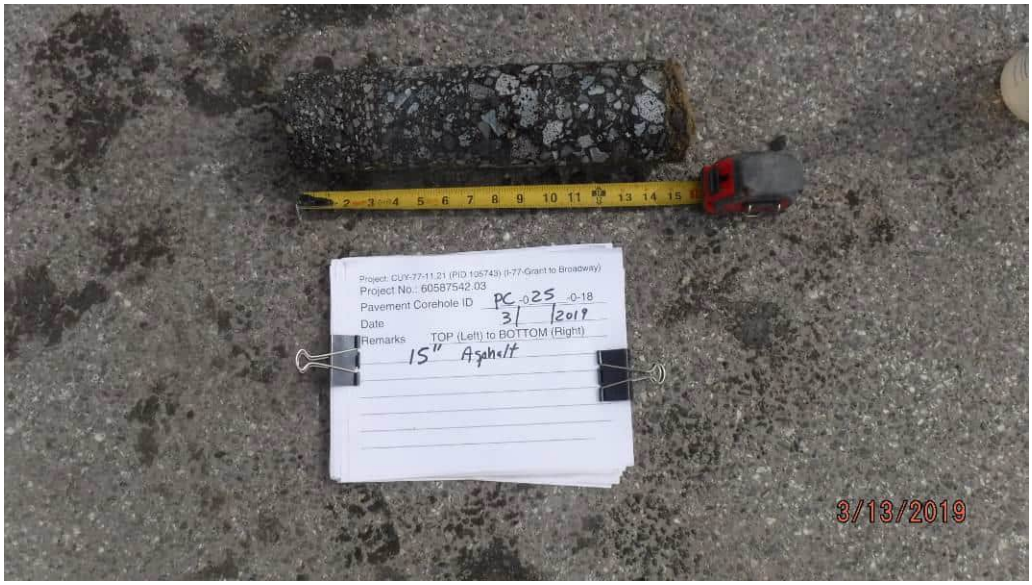


Photo No. 50	**Date:** 3/13/2019

Description:

Pavement Core
X-025-1-18

15.0” Asphalt
15.0” TOTAL



AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

Photo No. 51	**Date:** 3/18/2019

Description:

Pavement Core
B-027-0-18

3.5” Asphalt
8.75” Concrete
12.25” TOTAL

Photo No. 52	**Date:** 3/18/2019

Description:

Pavement Core
X-027-1-18

13.5” Asphalt
13.5” TOTAL

AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

Photo No. 53	**Date:** 3/21/2019

Description:

Pavement Core
B-028-0-18

5.75” Asphalt
8.5” Concrete
14.25” TOTAL

Photo No. 54	**Date:** 3/21/2019

Description:

Pavement Core
X-028-1-18

13.5” Asphalt
13.5” TOTAL

AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

Photo No. 55	**Date:** 3/18/2019

Description:

Pavement Core
B-031-0-18

7.5” Asphalt
8.75” Concrete
16.25” TOTAL

Photo No. 56	**Date:** 3/18/2019

Description:

Pavement Core
X-031-1-18

19.5” Asphalt
19.5” TOTAL

AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

Photo No. 57	**Date:** 3/19/2019

Description:

Pavement Core
B-032-0-18

16.75” Asphalt
16.75” TOTAL

Photo No. 58	**Date:** 3/19/2019

Description:

Pavement Core
X-032-1-18

11.0” Asphalt
11.0” TOTAL

AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

Photo No. 59	**Date:** 3/18/2019

Description:

Pavement Core
B-033-0-18

6.5” Asphalt
10.5” Concrete
17.0” TOTAL

Photo No. 60	**Date:** 3/18/2019

Description:

Pavement Core
X-033-1-18

11.0” Asphalt
11.0” TOTAL

AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

Photo No. 61	**Date:** 3/19/2019

Description:

Pavement Core
B-034-0-18

8.75” Asphalt
9.0” Concrete
17.75” TOTAL

Photo No. 62	**Date:** 3/19/2019

Description:

Pavement Core
X-034-1-18

14.0” Asphalt
14.0” TOTAL

AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

Photo No. 63	**Date:** 3/18/2019

Description:

Pavement Core
B-035-0-18

7.5” Asphalt
10.0” Concrete
17.5” TOTAL

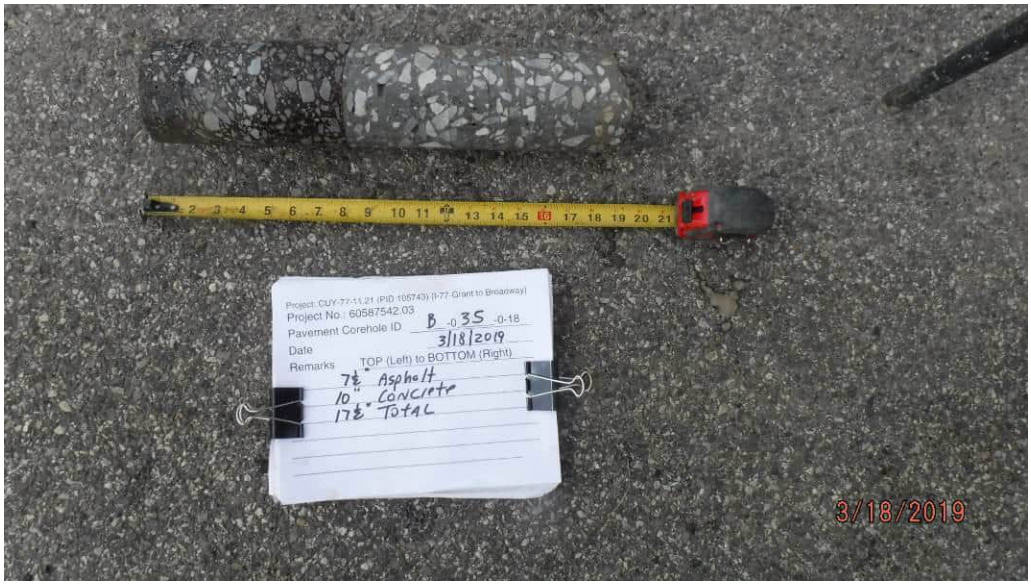


Photo No. 64	**Date:** 3/18/2019

Description:

Pavement Core
X-035-1-18

16.5” Asphalt
16.5” TOTAL

AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

Photo No. 65	**Date:** 3/27/2019

Description:

Pavement Core
B-036-0-18

13.0” Asphalt
13.0” TOTAL

AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

Photo No. 66	**Date:** 3/18/2019

Description:

Pavement Core
B-037-0-18

6.5” Asphalt
8.25” Concrete
14.75” TOTAL

Photo No. 67	**Date:** 3/18/2019

Description:

Pavement Core
X-037-1-18

6.5” Asphalt
9.0” Concrete
15.5” TOTAL

AECOM	PAVEMENT CORE PHOTO LOG	
Client: ODOT District 12 **Project Name:** CUY-77-11.21	**Site Location:** Cleveland, OH	**Project No.** 60587842

Photo No. 68	**Date:** 3/18/2019

Description:

Pavement Core
B-039-0-18

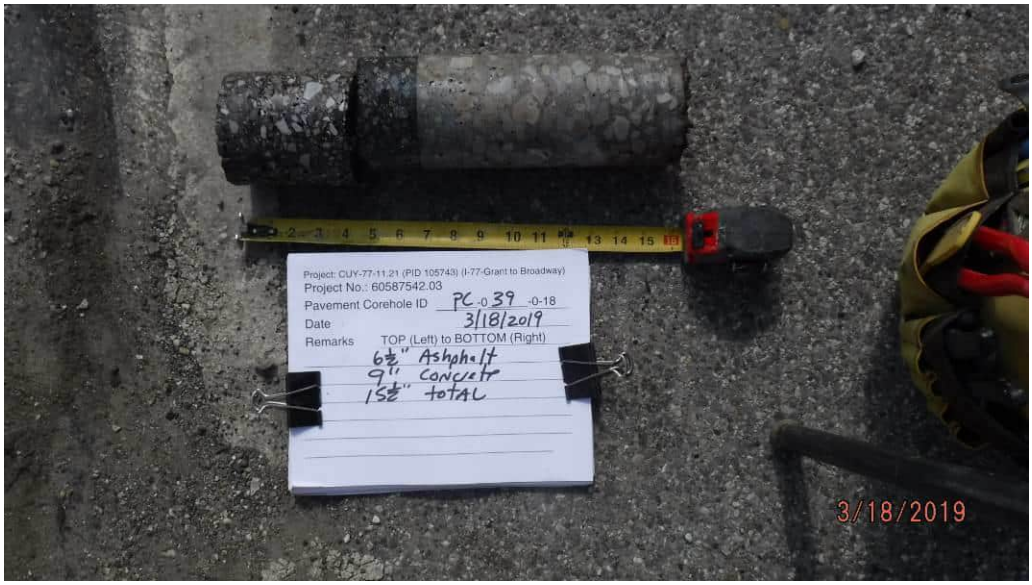
6.75” Asphalt
8.75” Concrete
15.0” TOTAL

Photo No. 69	**Date:** 3/18/2019

Description:

Pavement Core
X-039-1-18

6.5” Asphalt
9.0” Concrete
15.5” TOTAL



Appendix C - Laboratory Test Results

Resource International, Inc.
6350 Presidential Gateway
Columbus, Ohio 43231
Telephone: 614-823-4949
Fax: 614-823-4990

SUMMARY OF LABORATORY RESULTS

PROJECT CUY-77-11.21 (PID 105743) **PROJECT NO.:** N-19-009

Borehole	Sample	Depth	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	%<#200 Sieve	Classification	Visual or Just Color
B-001-0-18	SS-1A	1.5	11.3						A-1-b/Dark gr. Gr+Sa, tr. silt
B-001-0-18	SS-2A	3.0	7.4						A-3/Br. f Sa, tr. silt
B-001-0-18	SS-3A	4.5	25.5	31	21	10	97	A-4b	Grayish Brown
B-001-0-18	SS-4	6.0	5.8	NP	NP	NP	4	A-1-b	Brown
B-002-0-18	SS-1A	1.6	5.5	NP	NP	NP	9	A-1-a	Brown
B-002-0-18	SS-1C	2.4	7.7						A-3/Br fine Sand, tr. Si
B-002-0-18	SS-2	3.1	4.7	NP	NP	NP	9	A-1-b	Brown
B-002-0-18	SS-3	4.6	4.6	NP	NP	NP	3	A-1-b	Brown
B-002-0-18	SS-4	6.1	8.7						A-1-b/Br Gr+Sa, tr. Si
B-003-0-18	SS-1	1.5	5.3						A-3a/Br c-f Sa, tr. f Gr, tr. Si
B-003-0-18	SS-2	3.0	5.0	NP	NP	NP	8	A-1-b	Brown
B-003-0-18	SS-3	4.5	10.8						A-1-b/Br. Gr+Sa, li. Si
B-003-0-18	SS-4	6.0	11.3	NP	NP	NP	5	A-1-a	Brown
B-004-0-18	SS-1A	1.4	15.9						A-4a/Br. Sandy Si, tr. Cl
B-004-0-18	SS-1B	2.1	4.9						A-3 / Br. f Sand, tr. Si
B-004-0-18	SS-2	3.0	6.6	NP	NP	NP	6	A-1-b	Brown
B-004-0-18	SS-3	4.5	4.8						A-1-b/Gr-Br Gr.+Sa, tr. Si
B-004-0-18	SS-4	6.0	4.9	NP	NP	NP	4	A-1-a	Brown
B-005-0-18	SS-1A	1.6	12.1						A-1-b/Br-Gray Gr+Sand, li. asphalt+slag
B-005-0-18	SS-1B	2.4	6.9	NP	NP	NP	16	A-1-b	Brown
B-005-0-18	SS-2	3.1	15.3	26	17	9	68	A-4b	Grayish Brown
B-005-0-18	SS-3	4.6	20.3	NP	NP	NP	84	A-4b	Brown
B-005-0-18	SS-4	6.1	28.2						A-4b/Gray Si, li. Cl, tr. Sa
B-006-0-18	SS-1A	1.1	7.4	NP	NP	NP	12	A-1-a	Brown
B-006-0-18	SS-1B	1.9	11.4						A-4a/Br-Gray SaSi, tr. Cl, tr. f Gr
B-006-0-18	SS-2A	3.0	20.1	25	18	7	97	A-4b	Gray
B-006-0-18	SS-3A	4.5	4.1						A-3a/Br c-f Sa, tr. Si
B-006-0-18	SS-3B	5.2	4.6						A-3a/Br c-f Sa, tr. Si
B-006-0-18	SS-4	6.0	4.0	NP	NP	NP	9	A-1-b	Brown
B-007-0-18	SS-1	1.5	7.1	NP	NP	NP	13	A-1-a	Brown
B-007-0-18	SS-2	3.0	11.6						A-3a/Br. Sa, li. Si, tr f Gr
B-007-0-18	SS-3	4.5	16.1	NP	NP	NP	72	A-4b	Brownish Gray
B-007-0-18	SS-4	6.0	22.6						A-3/Br f Sa, tr. Si
B-008-0-18	SS-1	1.5	11.3	NP	NP	NP	6	A-1-a	Brown
B-008-0-18	SS-2	3.0	16.9						A-1-b/Br Gr+Sa, tr. Si
B-008-0-18	SS-3	4.5	20.4	28	20	8	97	A-4b	Dark Gray
B-008-0-18	SS-4	6.0	18.7						A-4b/Gray Si, tr. Cl, tr. f Gr
B-009-0-18	SS-1	1.5	7.8						A-2-4/Br. Gr+Sa+Si, tr. Cl
B-009-0-18	SS-2	3.0	7.8	NP	NP	NP	12	A-1-b	Brown
B-009-0-18	SS-3	4.5	6.3						A-3/Br. f Sa, tr. f Gr, tr. Si
B-009-0-18	SS-4A	6.0	16.2	NP	NP	NP	2	A-1-b	Brown
B-010-0-18	SS-1	1.2	8.3						A-2-4/Br Gr+Sa+Si, tr. Cl
B-010-0-18	SS-2A	3.0	22.7	NP	NP	NP	71	A-4b	Brown

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SUMMARY OF LABORATORY RESULTS

PROJECT CUY-77-11.21 (PID 105743) **PROJECT NO.:** N-19-009

Borehole	Sample	Depth	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	%<#200 Sieve	Classification	Visual or Just Color
B-010-0-18	SS-3B	4.5	13.1	NP	NP	NP	85	A-4b	Brown
B-010-0-18	SS-4B	6.0	13.7						A-6a/Gray-Br Si+Cl, li c-f Sa
B-011-0-18	SS-1	1.5	8.5						A-1-b/Br Gr+Sa, li. Si
B-011-0-18	SS-2	3.0	15.7	26	17	9	81	A-4b	Gray
B-011-0-18	SS-3	4.5	8.6	NP	NP	NP	40	A-4a	Brown
B-011-0-18	SS-4	6.0	15.2						A-4b/Gray Si, tr. Cl, tr f Sa
B-012-0-18	SS-1A	1.5	9.1	NP	NP	NP	16	A-1-b	Brown
B-012-0-18	SS-1B	2.2	18.6						A-6b/Br SiCl, tr. Sa, tr. Gr, tr. slag
B-012-0-18	SS-2B	3.0	15.2	NP	NP	NP	55	A-4a	Gray and dark gray /Tr. Slag+Brick fragments
B-012-0-18	SS-4	6.0	18.6						A-6b/Br+gray SiCl, tr. f Gr
B-013-0-18	SS-1	1.5	12.6	NP	NP	NP	16	A-1-b	Brown
B-013-0-18	SS-2	3.0	18.3						A-4b/Gray Si, tr. Cl, tr. f Gr
B-013-0-18	SS-3	4.5	20.1						A-4b/Gray Si, tr. Cl
B-013-0-18	SS-4	6.0	21.3	27	19	8	99	A-4b	Gray
B-014-0-18	SS-1	1.2	9.4	NP	NP	NP	4	A-1-b	Dark brown (Slag)
B-014-0-18	SS-2	3.0	12.4						A-4a/Br SaSi, li. Cl, tr. f Gr
B-014-0-18	SS-3	4.5	15.1	24	20	4	74	A-4b	Brown
B-014-0-18	SS-4	6.0	15.2						A-4b/Gray Si, li. c-f Sa, tr. f Gr
B-015-0-18	SS-1A	1.5	8.9						A-2-4/Red-Br Gr+Sa+Si
B-015-0-18	SS-1B	2.2	5.8	NP	NP	NP	15	A-1-b	Brown
B-015-0-18	SS-2	3.0	13.7						A-4a/Br Sa Si, li. Cl, tr. f Gr
B-015-0-18	SS-3	4.5	12.5						A-6a/Gray Si+Cl, li. c-f Sa
B-015-0-18	SS-4	6.0	19.0	27	20	7	97	A-4b	Gray
B-016-0-18	SS-1	1.5	9.5	NP	NP	NP	2	A-1-a	Brown
B-016-0-18	SS-2	3.0	12.8	24	17	7	65	A-4a	Brown
B-016-0-18	SS-3A	4.5	9.2						A-3a/Br c+f Sa, tr. Si
B-016-0-18	SS-3B	5.2	11.2						A-4a/Br SaSi, tr. f Gr
B-016-0-18	SS-4	6.0	12.3						A-4a/Br SaSi, tr. f Gr
B-017-0-18	SS-1	1.5	7.9	NP	NP	NP	12	A-1-a	Brown
B-017-0-18	SS-2	3.0	20.3						A-4b/Gray Si, tr. f Sa, tr. Cl
B-017-0-18	SS-3	4.5	20.9	24	18	6	99	A-4b	Gray
B-017-0-18	SS-4	6.0	21.1						A-4b/Gray Si, tr. Cl, tr. f Sa
B-018-0-18	SS-1	1.3	8.2						A-1-b/Red-Br Gr+Sa, li. Si
B-018-0-18	SS-2	3.0	22.6	NP	NP	NP	8	A-3	Brown
B-018-0-18	SS-3	4.5	27.4						A-3/Br. f Sa, tr. Si
B-018-0-18	SS-4	6.0	22.4	NP	NP	NP	5	A-3	Brown
B-019-0-18	SS-1	1.5	5.5	NP	NP	NP	9	A-1-a	Brown
B-019-0-18	SS-2	3.0	4.4						A-3a/Br Sa, tr. f Gr, tr. Si
B-019-0-18	SS-3	4.5	6.1	NP	NP	NP	9	A-3	Brown
B-019-0-18	SS-4	6.0	5.7						A-3a/Br c-f Sa, tr. f Gr, tr. Si
B-020-0-18	SS-1A	1.5	8.0						A-1-b/Dark Br Gr+Sa, tr. Si
B-020-0-18	SS-1B	2.2	8.0	NP	NP	NP	12	A-1-a	Brown
B-020-0-18	SS-2	3.0	13.7	26	20	6	95	A-4b	Gray

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SUMMARY OF LABORATORY RESULTS

PROJECT CUY-77-11.21 (PID 105743) **PROJECT NO.:** N-19-009

Borehole	Sample	Depth	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	%<#200 Sieve	Classification	Visual or Just Color
B-020-0-18	SS-3A	4.5	15.5						A-4b/Gray Si, tr. c-f Sa, tr. Cl
B-020-0-18	SS-4A	6.0	17.6						A-3/Br f Sa, tr. Si
B-020-0-18	SS-4B	6.8	18.4						A-4b/gray Si, tr. f Sa
B-021-0-18	SS-1	1.5	6.6	NP	NP	NP	14	A-1-b	Brown
B-021-0-18	SS-2A	3.0	14.0						A-4b/gr Si, li. f Sa, tr. f Gr
B-021-0-18	SS-3	4.5	23.5	32	19	13	96	A-6a	Gray
B-021-0-18	SS-4	6.0	17.2						A-6a/Gray Si+Cl, tr. f Sa
B-022-0-18	SS-1	1.4	11.1						A-1-b/Red-gray Gr+Sa, li. Si
B-022-0-18	SS-2B	3.0	21.7	31	19	12	99	A-6a	Gray
B-022-0-18	SS-3	4.5	26.8	39	23	16	99	A-6b	Gray
B-022-0-18	SS-4B	6.0	16.2						A-4b/Gray Si, li. c-f Sa, li. Cl
B-023-0-18	SS-1A	1.5	7.9						A-1-b/Red-Br Gr+Sa, li. Si
B-023-0-18	SS-2A	3.0	17.0	24	20	4	78	A-4b	Brown, tr. brick fragments
B-023-0-18	SS-3	4.5	19.7	25	18	7	96	A-4b	Gray
B-023-0-18	SS-4	6.0	16.5						A-4b/Gray Si, tr. Cl
B-024-0-18	SS-1	1.4	10.0						A-1-a/Dark Gray Gr, Sm. c-f Sa, tr. Si
B-024-0-18	SS-2	3.0	14.0	25	21	4	65	A-4b	Brown
B-024-0-18	SS-3	4.5	13.2	NP	NP	NP	49	A-4a	Brown
B-024-0-18	SS-4	6.0	15.4						A-4a/ Br. SaSi
B-025-0-18	SS-1	1.0	14.2	NP	NP	NP	7	A-1-a	Dark Gray
B-025-0-18	SS-2A	3.5	11.4	NP	NP	NP	14	A-1-b	Gray
B-025-0-18	SS-3A	6.0	22.2	NP	NP	NP	51	A-4a	Brown
B-025-0-18	SS-4	8.5	26.6	NP	NP	NP	36	A-4a	Gray
B-025-0-18	SS-5	13.5	22.8						A-4b/Gray Si, tr. f Sa
B-025-0-18	SS-6	18.5	19.1	25	19	6	97	A-4b	Gray
B-025-0-18	SS-7	23.5	27.0						A-4b/Gray Si, tr. Cl, tr. f Sa
B-025-0-18	SS-8	28.5	32.2	26	19	7	100	A-4b	Gray
B-025-0-18	ST-1	31.0	27.5	NP	NP	NP	99	A-4b	Gray (HP = 1.0)
B-025-0-18	SS-9	33.0	26.6						A-6a/Gray Si+Cl, tr. f Sa
B-025-0-18	SS-10	38.5	26.2	33	19	14	98	A-6a	Gray
B-025-0-18	SS-11	43.5	23.7						A-6a/Gray Silt+Cl, tr. f Sa
B-026-0-18	SS-1A	1.2	17.0	NP	NP	NP	16	A-1-b	Gray
B-026-0-18	SS-1B	1.9	14.5	17	14	3	57	A-4a	Brown
B-026-0-18	SS-2B	3.5	9.0	NP	NP	NP	23	A-3a	Brown
B-026-0-18	SS-2C	4.2	18.3	26	18	8	90	A-4b	Brown
B-026-0-18	SS-3A	6.0	13.0	NP	NP	NP	21	A-3a	Brown
B-026-0-18	SS-3B	6.8	16.7						A-4b/Br Si, tr. f Sa
B-026-0-18	SS-4A	8.5	21.3	27	17	10	68	A-4a	Brown
B-026-0-18	SS-4B	9.3	17.1						A-4a/Br SaSi
B-026-0-18	SS-5	13.5	21.7	25	15	10	61	A-4a	Gray
B-026-0-18	SS-6	18.5	21.1						A-4b/Gray Silt, tr. Cl
B-026-0-18	SS-7	23.5	25.3	27	21	6	99	A-4b	gray
B-026-0-18	SS-8	28.5	25.6						A-4b/Gray Si, tr. Cl

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SUMMARY OF LABORATORY RESULTS

PROJECT CUY-77-11.21 (PID 105743) **PROJECT NO.:** N-19-009

Borehole	Sample	Depth	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	%<#200 Sieve	Classification	Visual or Just Color
B-026-0-18	SS-9	33.5	26.2	28	20	8	100	A-4b	Gray
B-026-0-18	SS-10	38.5	23.7	31	20	11	99	A-6a	Gray
B-026-0-18	SS-11	43.5	23.1						A-6b/Gray SiCl, li. c-f Sa
B-026-0-18	SS-12A	48.5	18.7	NP	NP	NP	100	A-4b	Gray
B-026-0-18	SS-12B	49.3	22.7						A-6b/Gray SiCl, tr. c-f Sa
B-027-0-18	SS-1	1.0	6.9						A-4a/Gray SaSi, li. Cl
B-027-0-18	SS-2	2.5	14.3	NP	NP	NP	7	A-1-a	Reddish Brown
B-027-0-18	SS-3B	4.0	12.8						A-4a/Dark Gray SaSi, li. c-f Sa
B-027-0-18	SS-4	5.5	14.3	23	18	5	43	A-4a	Reddish Brown
B-028-0-18	SS-1B	1.2	15.2	NP	NP	NP	61	A-4b	Brown
B-028-0-18	SS-2A	2.7	17.6	NP	NP	NP	48	A-4a	Brown
B-028-0-18	SS-2B	3.5	9.2	NP	NP	NP	24	A-1-b	Brown
B-028-0-18	SS-3A	4.2	15.0						A-4a/Br SaSi, li. Cl, tr. f Gr
B-028-0-18	SS-3B	4.9	8.5	NP	NP	NP	5	A-1-a	Brown
B-028-0-18	SS-4	6.0	8.4						A-1-b/Black Gr+Sa, li. Si
B-031-0-18	SS-1	1.5	15.6	23	16	7	59	A-4a	Brown
B-031-0-18	SS-2	3.0	16.0						A-4a/Gray-Br SaSi, li. Cl, li fGr, brick fragm
B-031-0-18	SS-3	4.5	17.3						A-6a/Dark Br+Br Si+CL, li. c-f Sa, tr. f Gr
B-031-0-18	SS-4B	6.0	9.9	18	14	4	28	A-2-4	Brown
B-032-0-18	SS-1	1.4	6.4						A-1-a/Br gr, tr. c-f Sa, tr. Si
B-032-0-18	SS-2	2.9	5.5	NP	NP	NP	1	A-1-a	Brown
B-032-0-18	SS-3	4.4	11.1						A-1-a/Gray Gr (Slag), li. c-f Sa, tr. Si
B-033-0-18	SS-1B	1.5	13.5						A-2-4/Br-Gray Gr+Sa+Si, tr. asph. concr. slag.
B-033-0-18	SS-2	3.0	10.8	NP	NP	NP	4	A-1-a	Brown
B-033-0-18	SS-3	4.5	17.6	22	18	4	89	A-4b	Gray
B-033-0-18	SS-4	6.0	16.9						A-4b/Gray Silt, li. Cl, tr. c-f Sa
B-034-0-18	SS-1A	1.5	50.8	NP	NP	NP	16	A-1-b	Gray-Brown/Slag
B-034-0-18	SS-1B	2.2	12.0						A-4a/Gray SaSi, li. Cl, tr. f Gr
B-034-0-18	SS-2	3.0	13.1	NP	NP	NP	65	A-4b	Brown
B-034-0-18	SS-3A	4.5	16.4	NP	NP	NP	17	A-3a	Brown
B-034-0-18	SS-4	6.0	8.5	19	14	5	15	A-1-b	Brown
B-035-0-18	SS-1A	1.5	60.1	NP	NP	NP	17	A-1-b	Gray/Slag
B-035-0-18	SS-1C	2.2	16.8						A-4a/Dark Gray SaSi, tr. Cl;tr.brick, tr.org.
B-035-0-18	SS-2	3.0	12.3						A-4a/Dark Gray SaSi, li. Cl, wood fragments
B-035-0-18	SS-3	4.5	10.3	17	16	1	40	A-4a	Dark Gray
B-035-0-18	SS-4	6.0	10.8						A-4a/Gray SaSi, li. Cl, tr. f Gr
B-036-0-18	SS-1A	1.1	12.7	NP	NP	NP	28	A-3a	Brown
B-036-0-18	SS-2	3.0	17.6						A-4a/Br SaSi, tr. Cl
B-036-0-18	SS-3B	4.5	18.7	NP	NP	NP	47	A-4a	Brown
B-036-0-18	SS-4B	6.0	25.3	NP	NP	NP	71	A-4b	Gray
B-037-0-18	SS-1B	1.2	41.7						A-1-a/Light Bluish Gray Slag
B-037-0-18	SS-2	2.7	18.2	NP	NP	NP	82	A-4b	Gray
B-037-0-18	SS-3	4.2	25.4	NP	NP	NP	55	A-4b	Gray

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SUMMARY OF LABORATORY RESULTS

PROJECT CUY-77-11.21 (PID 105743) **PROJECT NO.:** N-19-009

Borehole	Sample	Depth	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	%<#200 Sieve	Classification	Visual or Just Color
B-037-0-18	SS-4	5.7	24.6	NP	NP	NP	81	A-4b	Gray
B-039-0-18	SS-1A	1.4	10.8						A-1-b/Gray Gr+Sa, tr. Si
B-039-0-18	SS-2	2.9	5.5	NP	NP	NP	6	A-1-b	Brown
B-039-0-18	SS-3	4.4	21.1	NP	NP	NP	34	A-3a	Brown
B-039-0-18	SS-4	5.9	26.3	NP	NP	NP	11	A-3a	Brown

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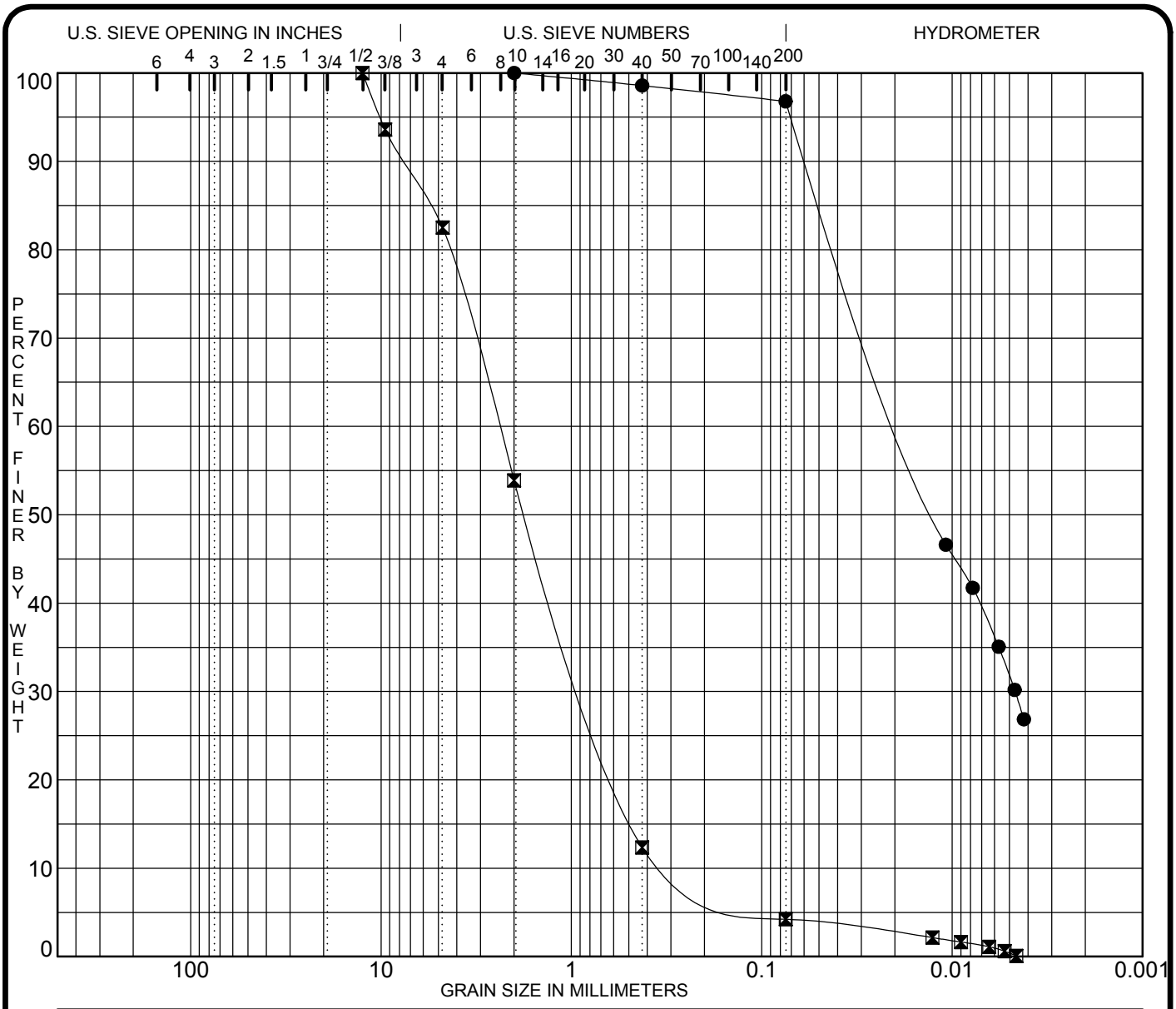

COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

	Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
●	**B-001-0-18 SS-3A**	**4.5**	**A-4b**	**26**	**31**	**21**	**10**		
⊠	**B-001-0-18 SS-4**	**6.0**	**A-1-b**	**6**	**NP**	**NP**	**NP**	**1.09**	**9.3**

	Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
●	**B-001-0-18 SS-3A**	**0.018**	**0.012**	**0.005**		**0.0**	**0.0**	**1.4**	**1.8**	**65.0**	**31.8**
⊠	**B-001-0-18 SS-4**	**2.406**	**1.730**	**0.821**	**0.2577**	**0.0**	**46.1**	**41.6**	**8.1**	**3.8**	**0.4**

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

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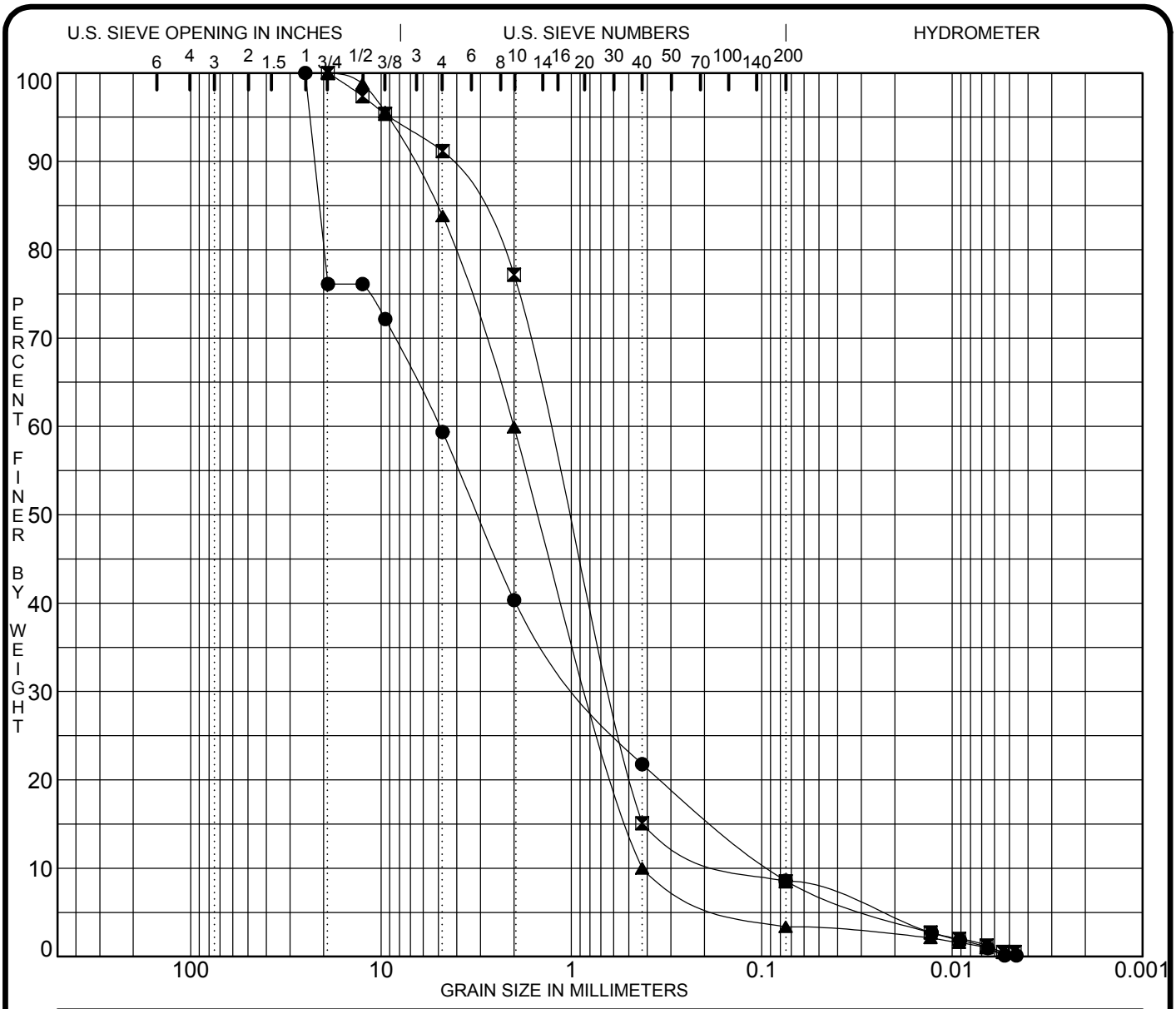


COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

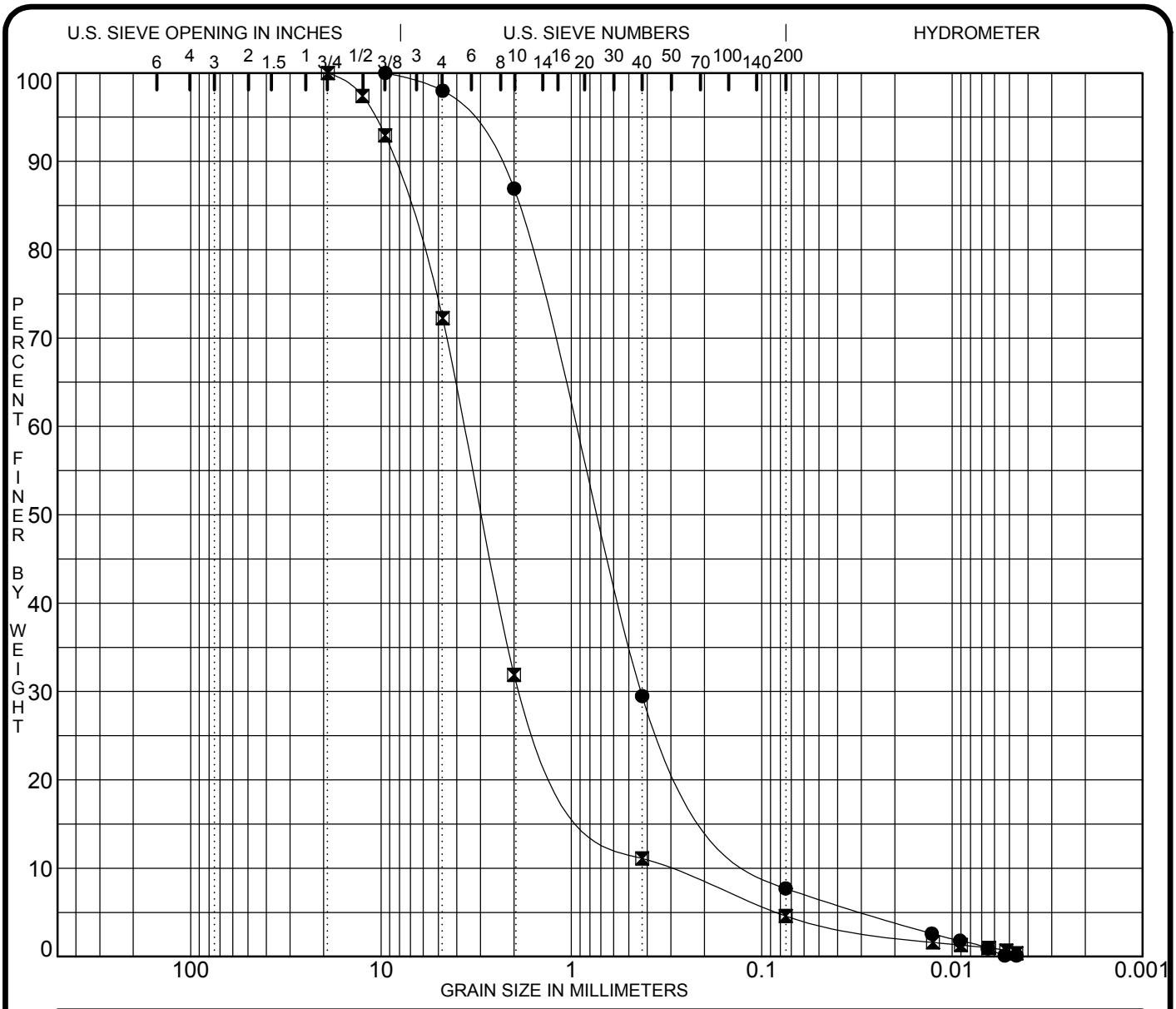
	Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
●	**B-002-0-18 SS-1A**	**1.6**	**A-1-a**	**6**	**NP**	**NP**	**NP**	**1.60**	**54.4**
⊠	**B-002-0-18 SS-2**	**3.1**	**A-1-b**	**5**	**NP**	**NP**	**NP**	**2.63**	**11.8**
▲	**B-002-0-18 SS-3**	**4.6**	**A-1-b**	**5**	**NP**	**NP**	**NP**	**0.73**	**4.7**

	Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
●	**B-002-0-18 SS-1A**	**4.916**	**3.103**	**0.844**	**0.0903**	**23.9**	**35.8**	**18.6**	**13.2**	**8.5**	**0.1**
⊠	**B-002-0-18 SS-2**	**1.303**	**1.016**	**0.617**	**0.1107**	**0.0**	**22.8**	**62.1**	**6.6**	**8.0**	**0.5**
▲	**B-002-0-18 SS-3**	**2.005**	**1.470**	**0.790**	**0.4251**	**0.0**	**40.1**	**49.9**	**6.6**	**3.0**	**0.4**

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

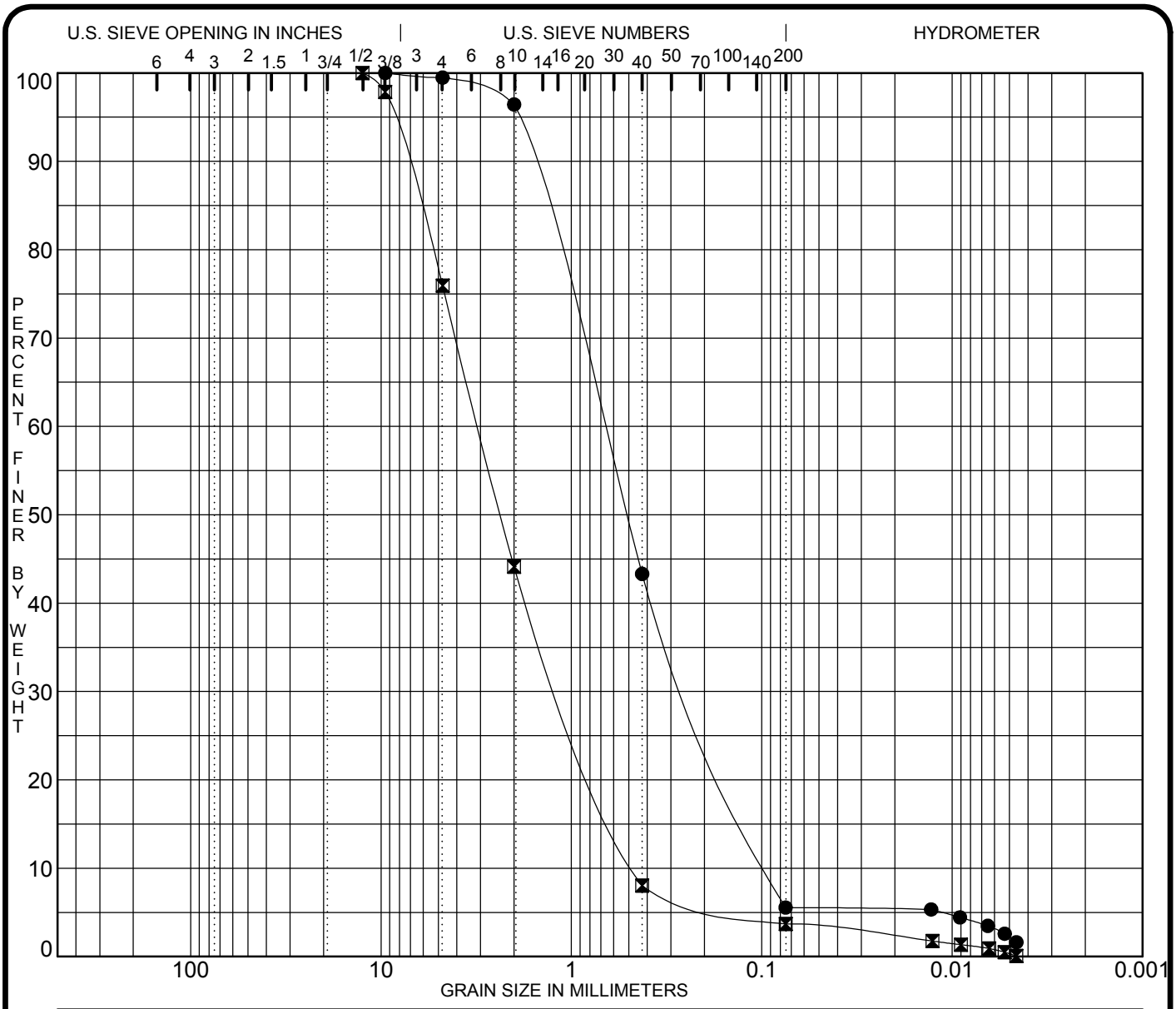
	Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
●	**B-003-0-18 SS-2**	**3.0**	**A-1-b**	**5**	**NP**	**NP**	**NP**	**2.13**	**10.8**
⊠	**B-003-0-18 SS-4**	**6.0**	**A-1-a**	**11**	**NP**	**NP**	**NP**	**2.61**	**11.5**

	Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
●	**B-003-0-18 SS-2**	**0.968**	**0.739**	**0.431**	**0.0900**	**0.0**	**13.1**	**57.4**	**21.8**	**7.6**	**0.1**
⊠	**B-003-0-18 SS-4**	**3.652**	**2.948**	**1.737**	**0.3165**	**0.0**	**68.1**	**20.8**	**6.5**	**4.0**	**0.6**

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

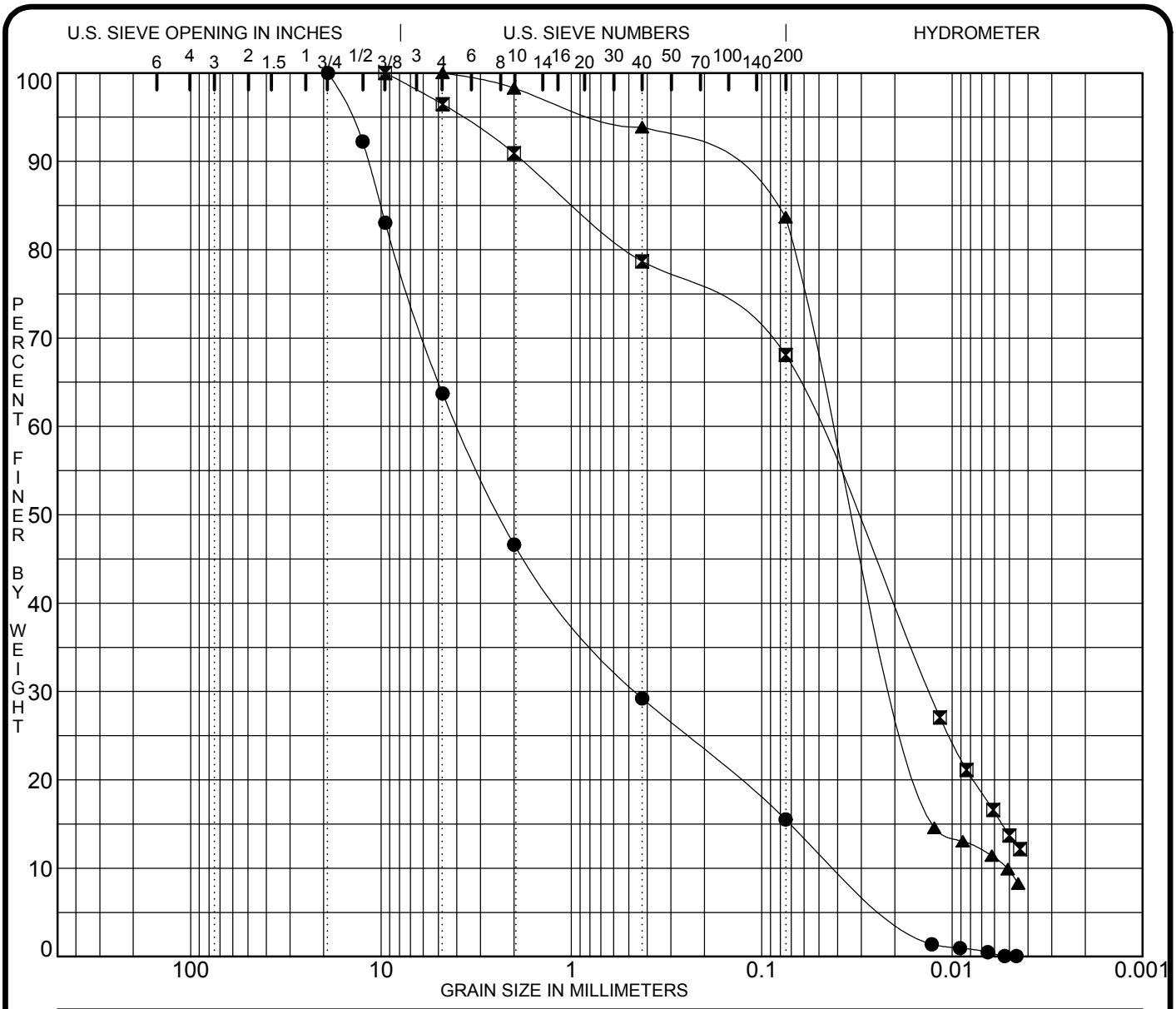
	Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
●	**B-004-0-18 SS-2**	**3.0**	**A-1-b**	**7**	**NP**	**NP**	**NP**	**0.84**	**7.5**
⊠	**B-004-0-18 SS-4**	**6.0**	**A-1-a**	**5**	**NP**	**NP**	**NP**	**0.84**	**6.7**

	Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
●	**B-004-0-18 SS-2**	**0.691**	**0.517**	**0.231**	**0.0920**	**0.0**	**3.6**	**53.1**	**37.8**	**3.4**	**2.2**
⊠	**B-004-0-18 SS-4**	**3.080**	**2.347**	**1.091**	**0.4623**	**0.0**	**55.9**	**36.1**	**4.3**	**3.4**	**0.3**

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

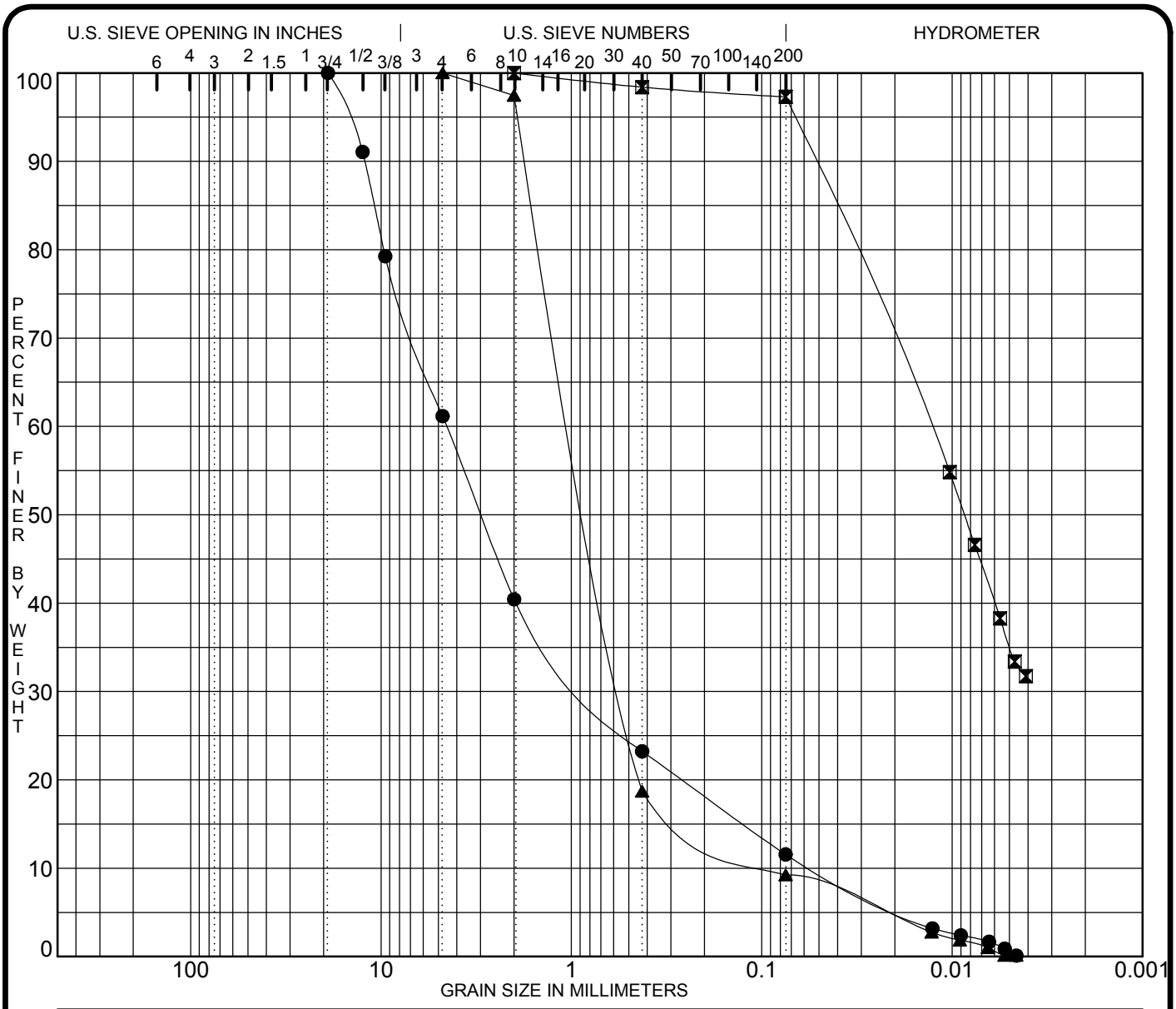
	Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
●	B-005-0-18 SS-1B	2.4	A-1-b	7	NP	NP	NP	1.40	104.6
⊠	B-005-0-18 SS-2	3.1	A-4b	15	26	17	9		
▲	B-005-0-18 SS-3	4.6	A-4b	20	NP	NP	NP	1.64	7.8

	Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
●	B-005-0-18 SS-1B	3.933	2.372	0.455	0.0376	0.0	53.4	17.4	13.7	15.5	0.1
⊠	B-005-0-18 SS-2	0.052	0.033	0.013		0.0	9.1	12.2	10.6	54.4	13.7
▲	B-005-0-18 SS-3	0.040	0.031	0.019	0.0052	0.0	1.7	4.4	10.2	74.0	9.6

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

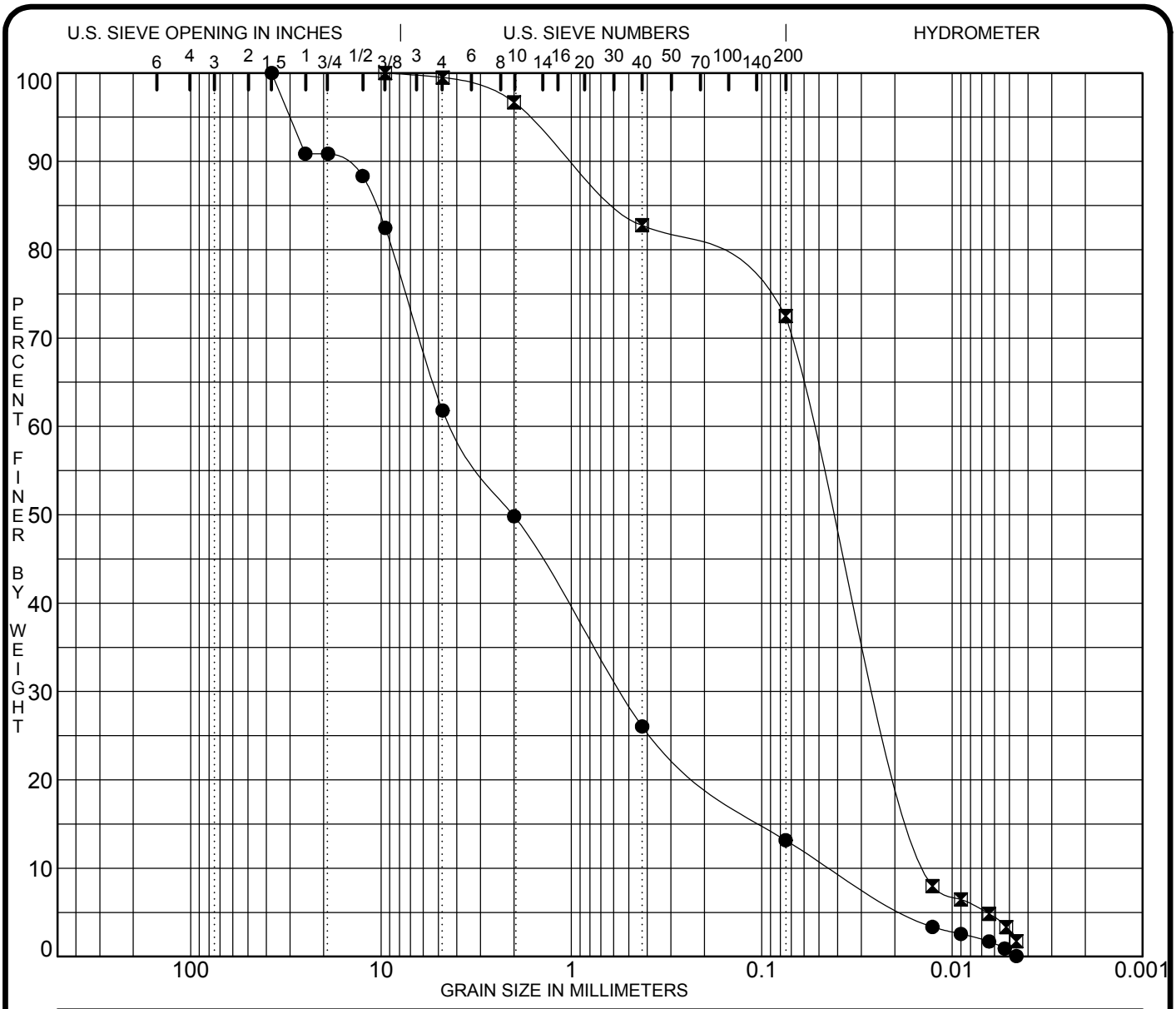
Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
● B-006-0-18 SS-1A	1.1	A-1-a	7	NP	NP	NP	2.51	84.0
⊠ B-006-0-18 SS-2A	3.0	A-4b	20	25	18	7		
▲ B-006-0-18 SS-4	6.0	A-1-b	4	NP	NP	NP	3.41	11.1

Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
● B-006-0-18 SS-1A	4.524	2.981	0.782	0.0539	0.0	59.6	17.2	11.7	11.0	0.6
⊠ B-006-0-18 SS-2A	0.013	0.009			0.0	0.0	1.6	1.1	62.2	35.1
▲ B-006-0-18 SS-4	0.957	0.787	0.531	0.0862	0.0	2.5	78.8	9.5	9.1	0.1

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

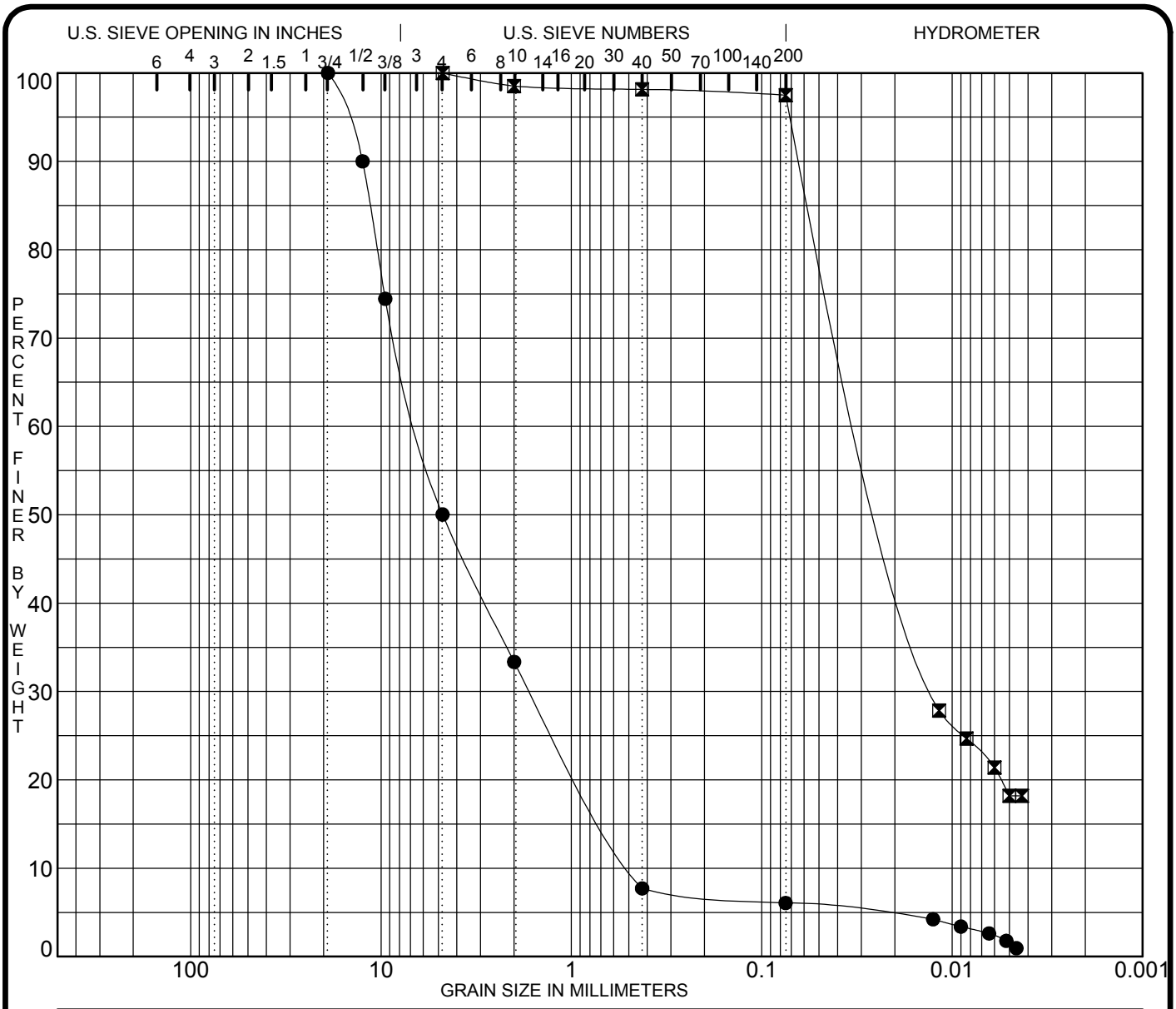
	Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
●	**B-007-0-18 SS-1**	**1.5**	**A-1-a**	**7**	**NP**	**NP**	**NP**	**1.72**	**98.7**
⊠	**B-007-0-18 SS-3**	**4.5**	**A-4b**	**16**	**NP**	**NP**	**NP**	**0.76**	**4.0**

	Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
●	**B-007-0-18 SS-1**	**4.171**	**2.025**	**0.550**	**0.0423**	**9.1**	**41.0**	**23.8**	**12.9**	**12.6**	**0.6**
⊠	**B-007-0-18 SS-3**	**0.053**	**0.040**	**0.023**	**0.0134**	**0.0**	**3.3**	**13.9**	**10.3**	**69.7**	**2.8**

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

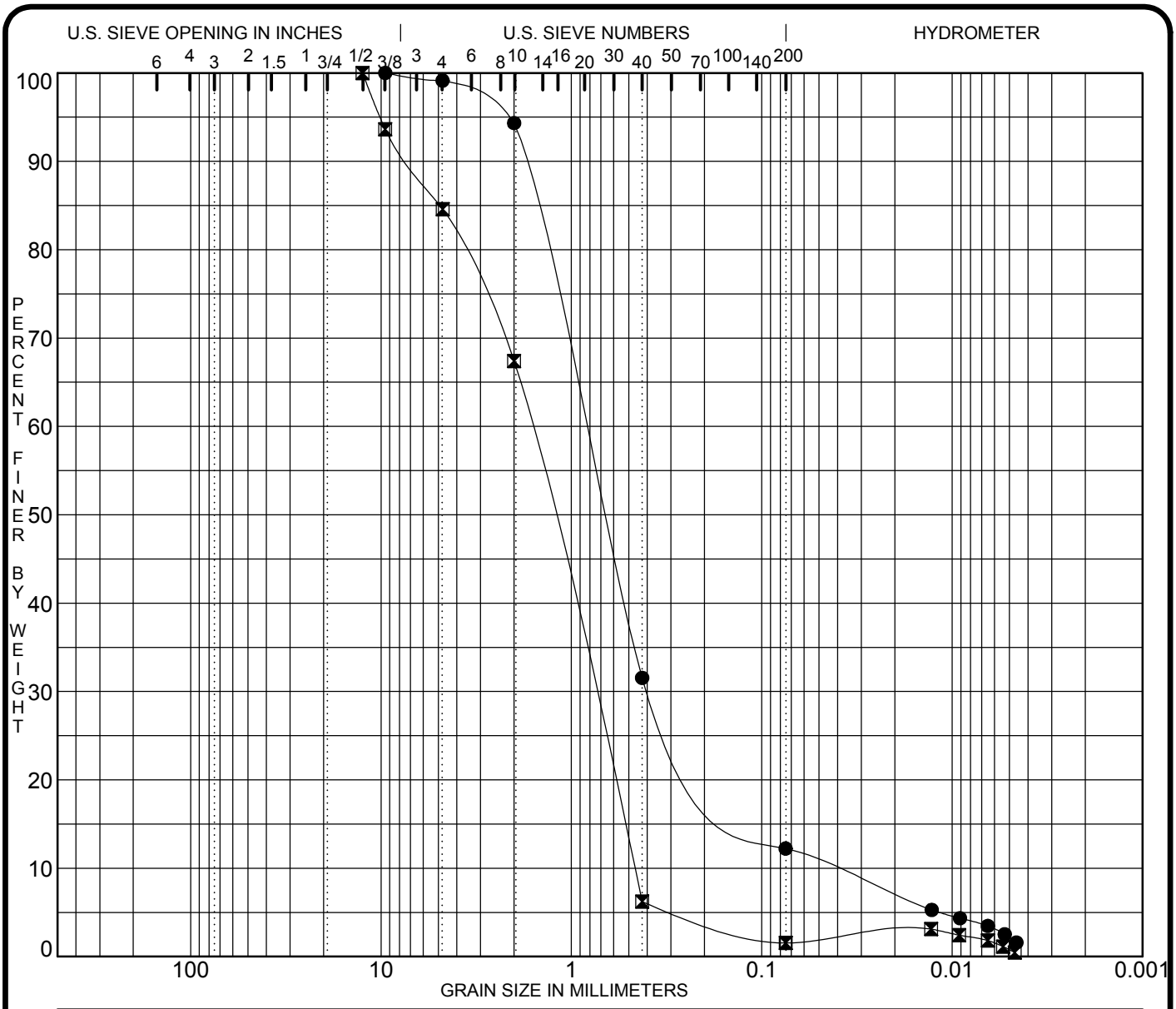
	Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
●	**B-008-0-18 SS-1**	**1.5**	**A-1-a**	**11**	**NP**	**NP**	**NP**	**0.87**	**12.9**
⊠	**B-008-0-18 SS-3**	**4.5**	**A-4b**	**20**	**28**	**20**	**8**		

	Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
●	**B-008-0-18 SS-1**	**6.305**	**4.743**	**1.633**	**0.4879**	**0.0**	**66.6**	**25.6**	**1.6**	**4.6**	**1.5**
⊠	**B-008-0-18 SS-3**	**0.028**	**0.021**	**0.012**		**0.0**	**1.5**	**0.4**	**0.6**	**79.3**	**18.2**

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

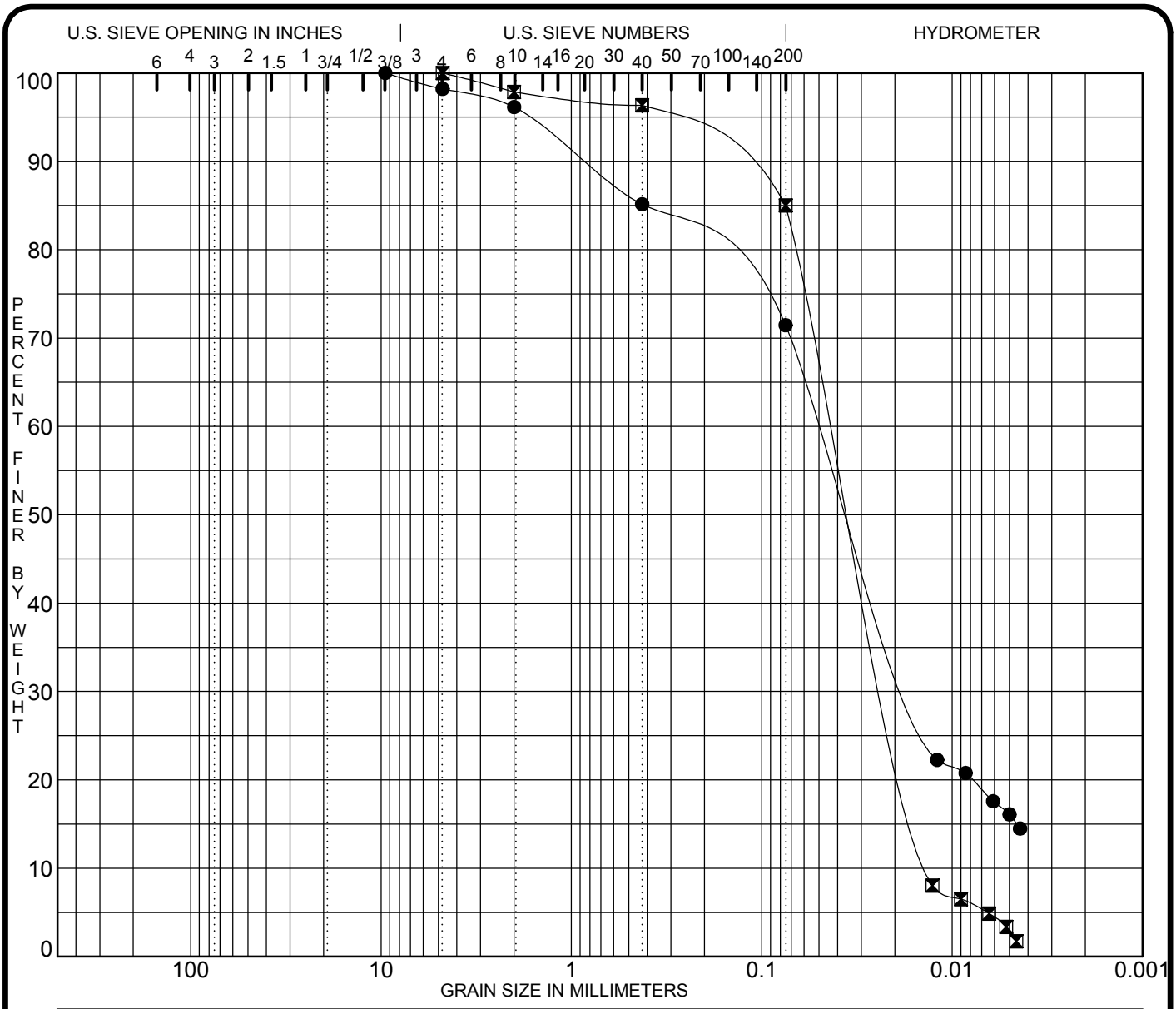
	Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
●	**B-009-0-18 SS-2**	**3.0**	**A-1-b**	**8**	**NP**	**NP**	**NP**	**3.75**	**20.1**
⊠	**B-009-0-18 SS-4A**	**6.0**	**A-1-b**	**16**	**NP**	**NP**	**NP**	**0.78**	**3.5**

	Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
●	**B-009-0-18 SS-2**	**0.858**	**0.670**	**0.370**	**0.0426**	**0.0**	**5.7**	**62.8**	**19.3**	**10.1**	**2.1**
⊠	**B-009-0-18 SS-4A**	**1.658**	**1.288**	**0.776**	**0.4677**	**0.0**	**32.6**	**61.2**	**4.7**	**0.8**	**0.8**

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

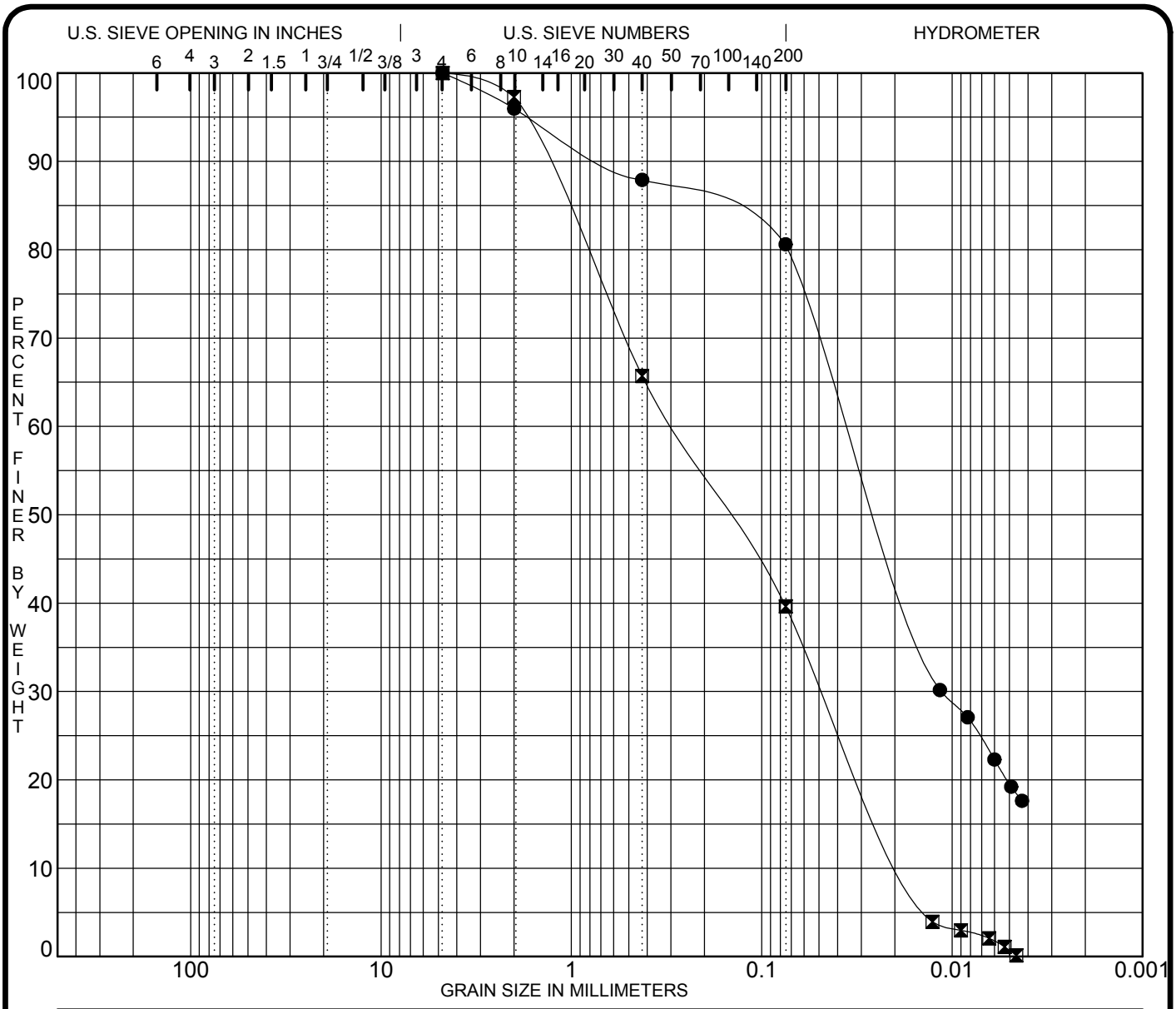
	Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
●	**B-010-0-18 SS-2A**	**3.0**	**A-4b**	**23**	**NP**	**NP**	**NP**		
⊠	**B-010-0-18 SS-3B**	**4.5**	**A-4b**	**13**	**NP**	**NP**	**NP**	**0.79**	**3.2**

	Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
●	**B-010-0-18 SS-2A**	**0.049**	**0.034**	**0.016**		**0.0**	**3.9**	**11.0**	**13.7**	**55.4**	**16.1**
⊠	**B-010-0-18 SS-3B**	**0.042**	**0.033**	**0.021**	**0.0133**	**0.0**	**2.2**	**1.5**	**11.3**	**82.2**	**2.8**

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

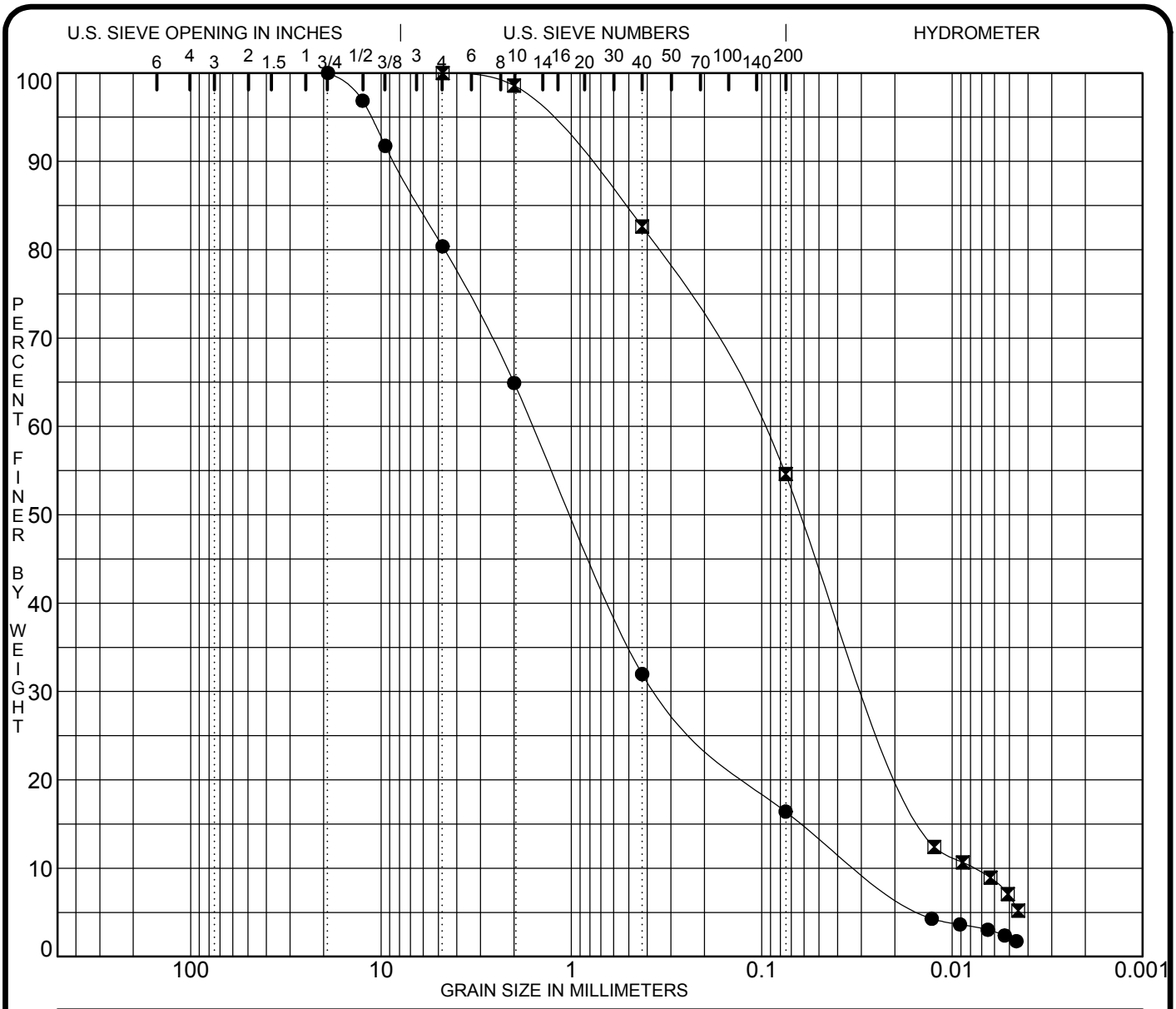
	Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
●	**B-011-0-18 SS-2**	**3.0**	**A-4b**	**16**	**26**	**17**	**9**		
⊠	**B-011-0-18 SS-3**	**4.5**	**A-4a**	**9**	**NP**	**NP**	**NP**	**0.43**	**16.9**

	Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
●	**B-011-0-18 SS-2**	**0.035**	**0.024**	**0.011**		**0.0**	**4.0**	**8.1**	**7.3**	**61.1**	**19.5**
⊠	**B-011-0-18 SS-3**	**0.291**	**0.150**	**0.046**	**0.0172**	**0.0**	**2.7**	**31.6**	**26.1**	**38.9**	**0.7**

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

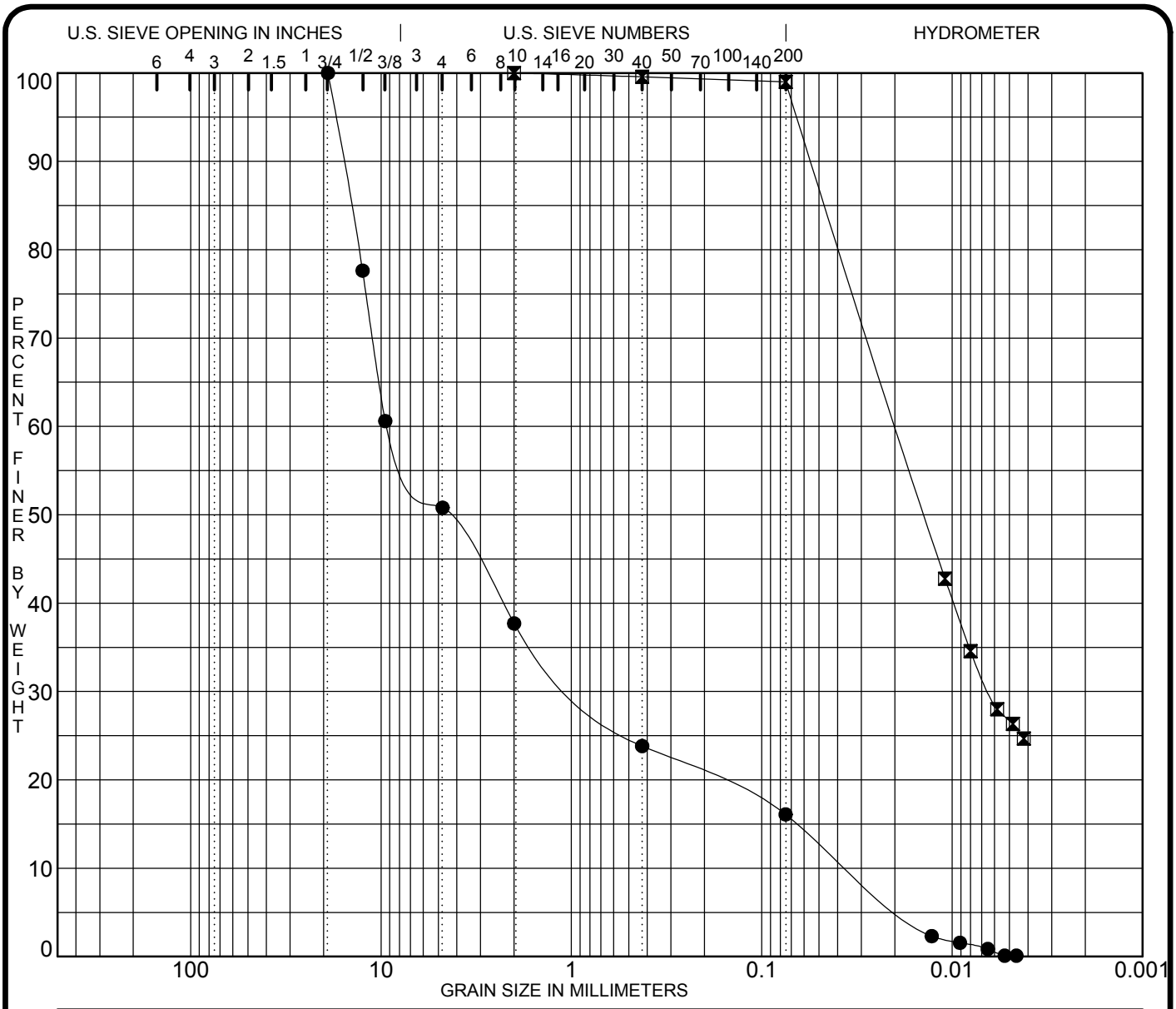
	Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
●	**B-012-0-18 SS-1A**	**1.5**	**A-1-b**	**9**	**NP**	**NP**	**NP**	**2.49**	**53.9**
⊠	**B-012-0-18 SS-2B**	**3.0**	**A-4a**	**15**	**NP**	**NP**	**NP**	**0.85**	**13.5**

	Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
●	**B-012-0-18 SS-1A**	**1.587**	**0.992**	**0.341**	**0.0295**	**0.0**	**35.1**	**32.9**	**15.6**	**14.3**	**2.1**
⊠	**B-012-0-18 SS-2B**	**0.105**	**0.062**	**0.026**	**0.0077**	**0.0**	**1.4**	**16.0**	**28.0**	**47.8**	**6.8**

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

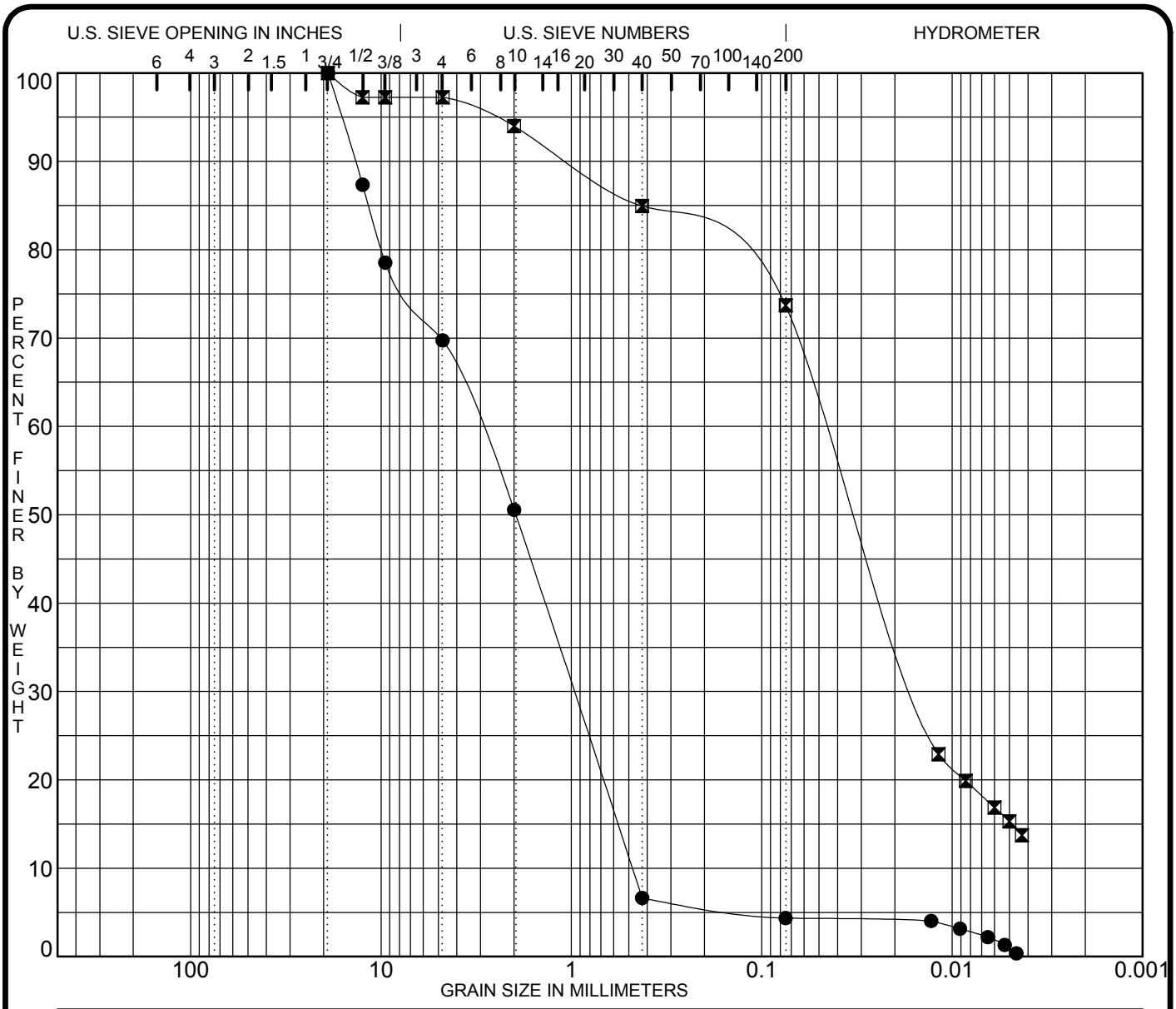
	Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
●	**B-013-0-18 SS-1**	**1.5**	**A-1-b**	**13**	**NP**	**NP**	**NP**	**2.29**	**265.1**
⊠	**B-013-0-18 SS-4**	**6.0**	**A-4b**	**21**	**27**	**19**	**8**		

	Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
●	**B-013-0-18 SS-1**	**9.101**	**4.504**	**0.847**	**0.0343**	**0.0**	**62.3**	**13.9**	**7.7**	**16.0**	**0.1**
⊠	**B-013-0-18 SS-4**	**0.020**	**0.014**	**0.006**		**0.0**	**0.0**	**0.4**	**0.6**	**72.3**	**26.7**

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

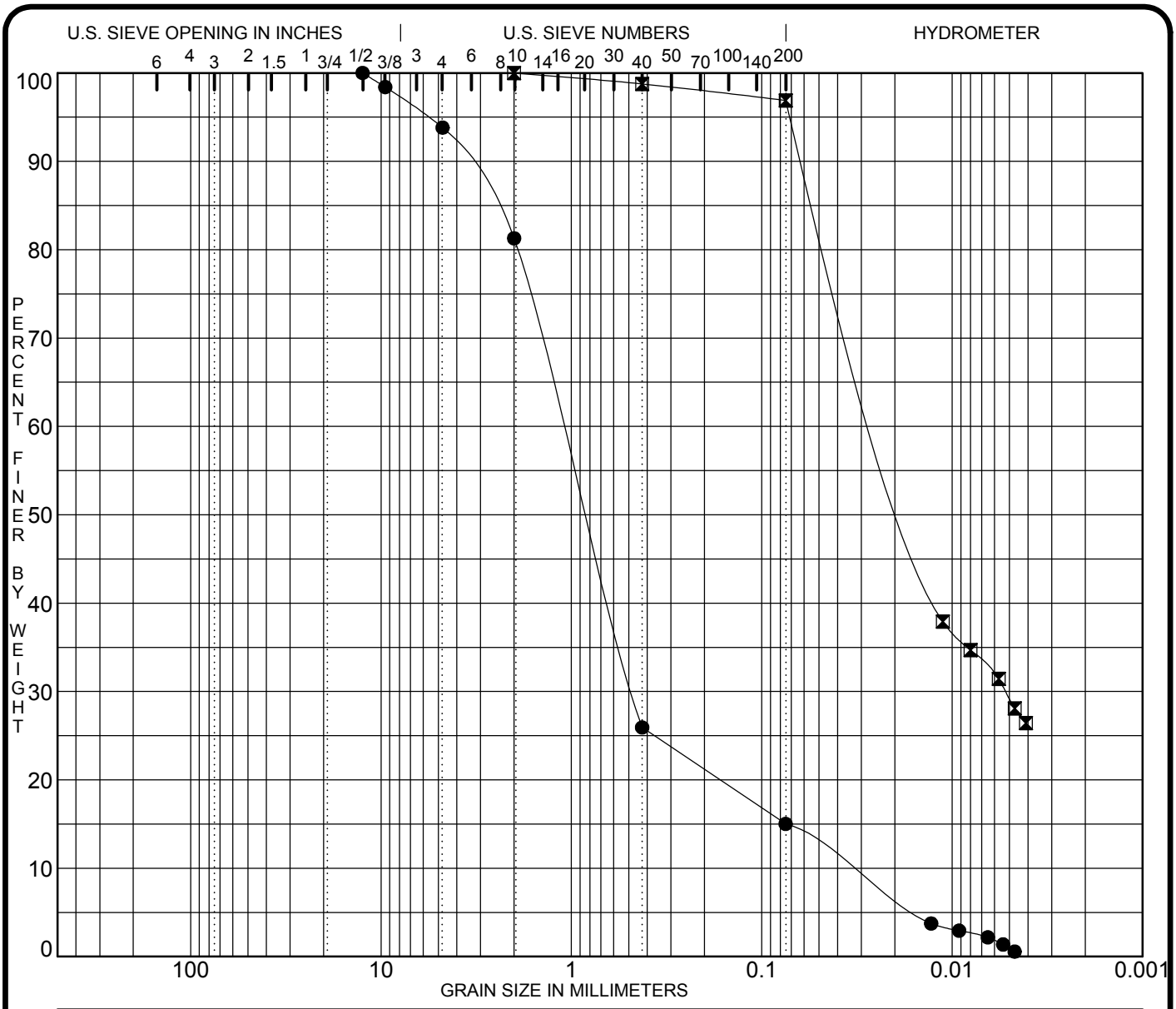
	Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
●	**B-014-0-18 SS-1**	**1.2**	**A-1-b**	**9**	**NP**	**NP**	**NP**	**0.64**	**6.4**
⊠	**B-014-0-18 SS-3**	**4.5**	**A-4b**	**15**	**24**	**20**	**4**		

	Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
●	**B-014-0-18 SS-1**	**3.062**	**1.961**	**0.969**	**0.4785**	**0.0**	**49.4**	**43.9**	**2.3**	**3.4**	**0.9**
⊠	**B-014-0-18 SS-3**	**0.046**	**0.032**	**0.015**		**0.0**	**6.0**	**9.1**	**11.2**	**58.4**	**15.3**

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

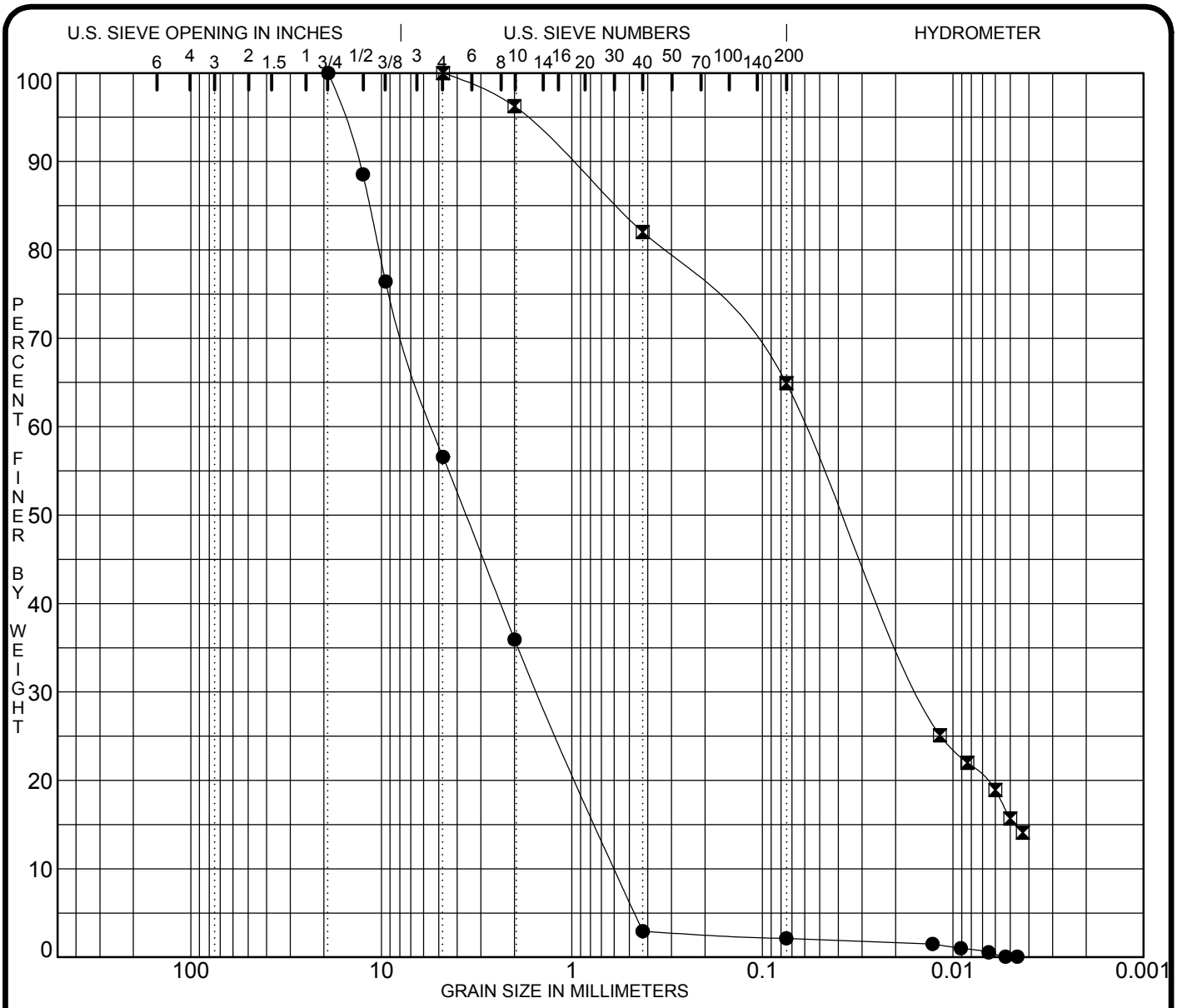
	Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
●	**B-015-0-18 SS-1B**	**2.2**	**A-1-b**	**6**	**NP**	**NP**	**NP**	**6.00**	**32.2**
⊠	**B-015-0-18 SS-4**	**6.0**	**A-4b**	**19**	**27**	**20**	**7**		

	Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
●	**B-015-0-18 SS-1B**	**1.102**	**0.833**	**0.476**	**0.0343**	**0.0**	**18.7**	**55.4**	**10.9**	**14.1**	**0.9**
⊠	**B-015-0-18 SS-4**	**0.023**	**0.017**	**0.005**		**0.0**	**0.0**	**1.2**	**1.9**	**67.7**	**29.2**

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

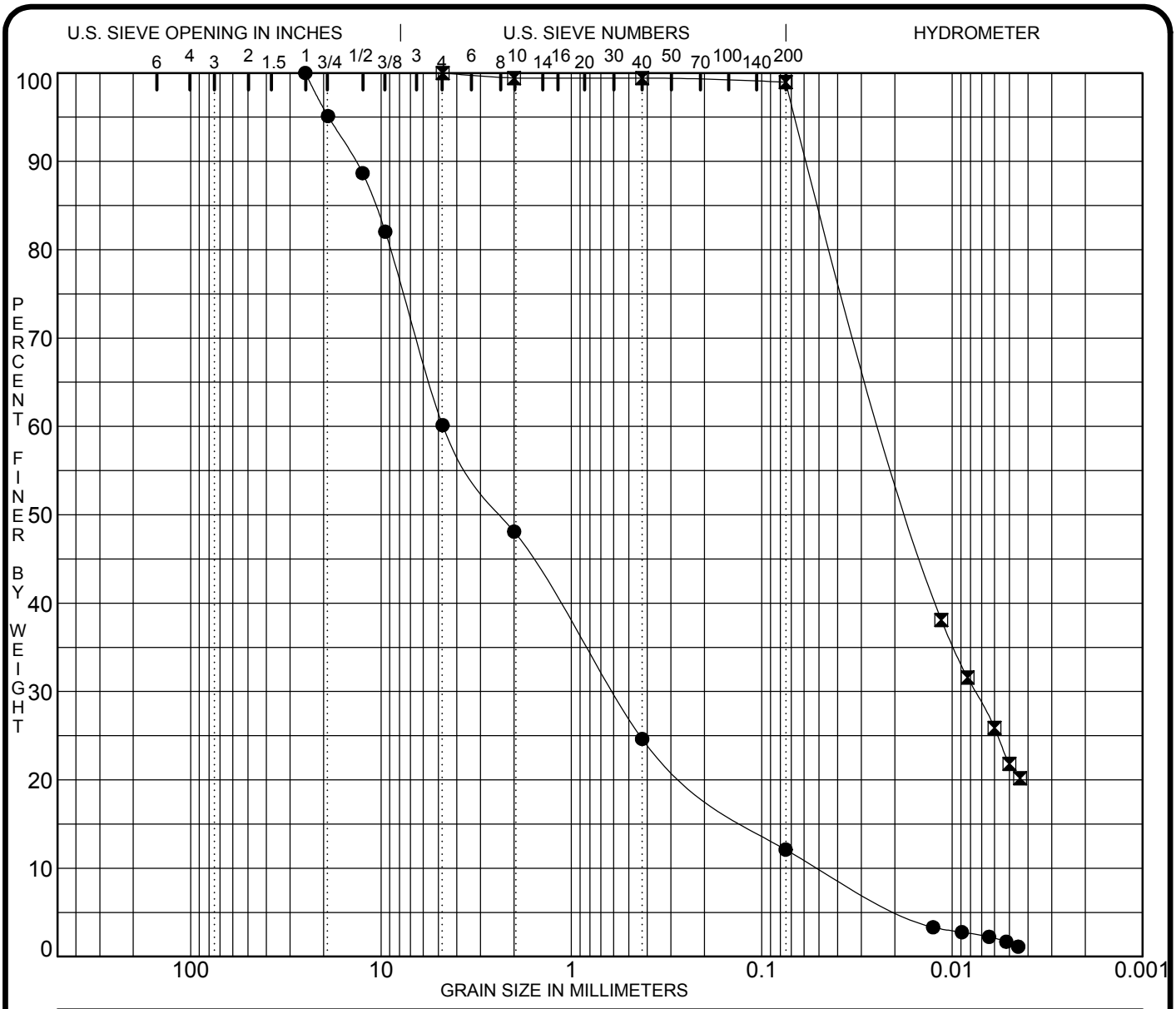
	Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
●	**B-016-0-18 SS-1**	**1.5**	**A-1-a**	**10**	**NP**	**NP**	**NP**	**0.72**	**9.0**
⊠	**B-016-0-18 SS-2**	**3.0**	**A-4a**	**13**	**24**	**17**	**7**		

	Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
●	**B-016-0-18 SS-1**	**5.352**	**3.605**	**1.514**	**0.5920**	**0.0**	**64.1**	**33.0**	**0.8**	**2.1**	**0.1**
⊠	**B-016-0-18 SS-2**	**0.060**	**0.037**	**0.015**		**0.0**	**3.8**	**14.2**	**17.1**	**49.2**	**15.7**

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

	Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
●	**B-017-0-18 SS-1**	**1.5**	**A-1-a**	**8**	**NP**	**NP**	**NP**	**1.60**	**96.1**
⊠	**B-017-0-18 SS-3**	**4.5**	**A-4b**	**21**	**24**	**18**	**6**		

	Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
●	**B-017-0-18 SS-1**	**4.703**	**2.293**	**0.606**	**0.0489**	**4.9**	**47.0**	**23.5**	**12.5**	**10.6**	**1.5**
⊠	**B-017-0-18 SS-3**	**0.022**	**0.016**	**0.008**		**0.0**	**0.6**	**0.0**	**0.5**	**77.2**	**21.8**

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

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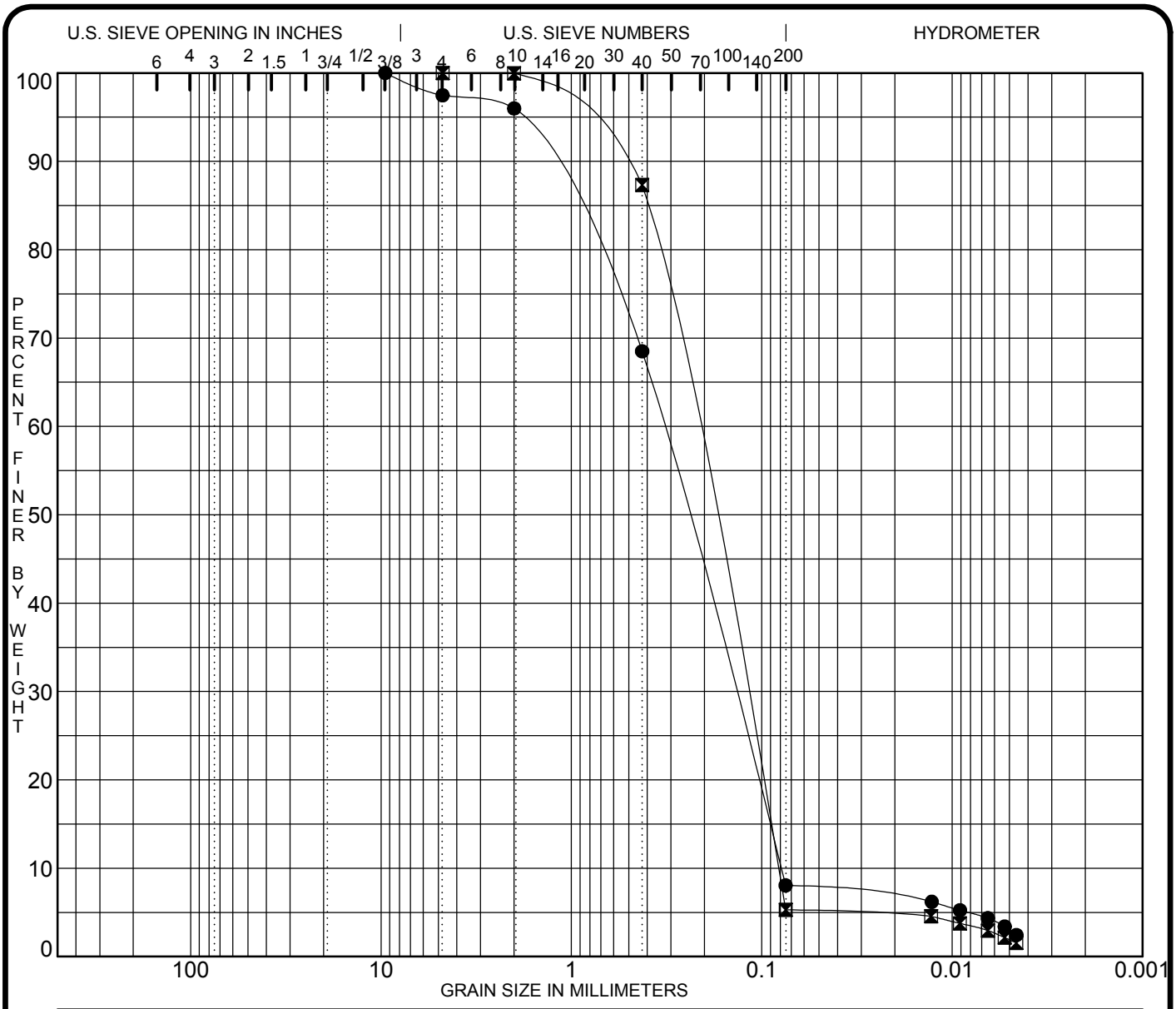

COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

	Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
●	**B-018-0-18 SS-2**	**3.0**	**A-3**	**23**	**NP**	**NP**	**NP**	**0.75**	**4.2**
⊠	**B-018-0-18 SS-4**	**6.0**	**A-3**	**22**	**NP**	**NP**	**NP**	**0.81**	**2.9**

	Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
●	**B-018-0-18 SS-2**	**0.333**	**0.250**	**0.141**	**0.0793**	**0.0**	**4.0**	**27.5**	**60.4**	**5.1**	**3.0**
⊠	**B-018-0-18 SS-4**	**0.238**	**0.193**	**0.126**	**0.0829**	**0.0**	**0.0**	**12.6**	**82.0**	**3.4**	**1.9**

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

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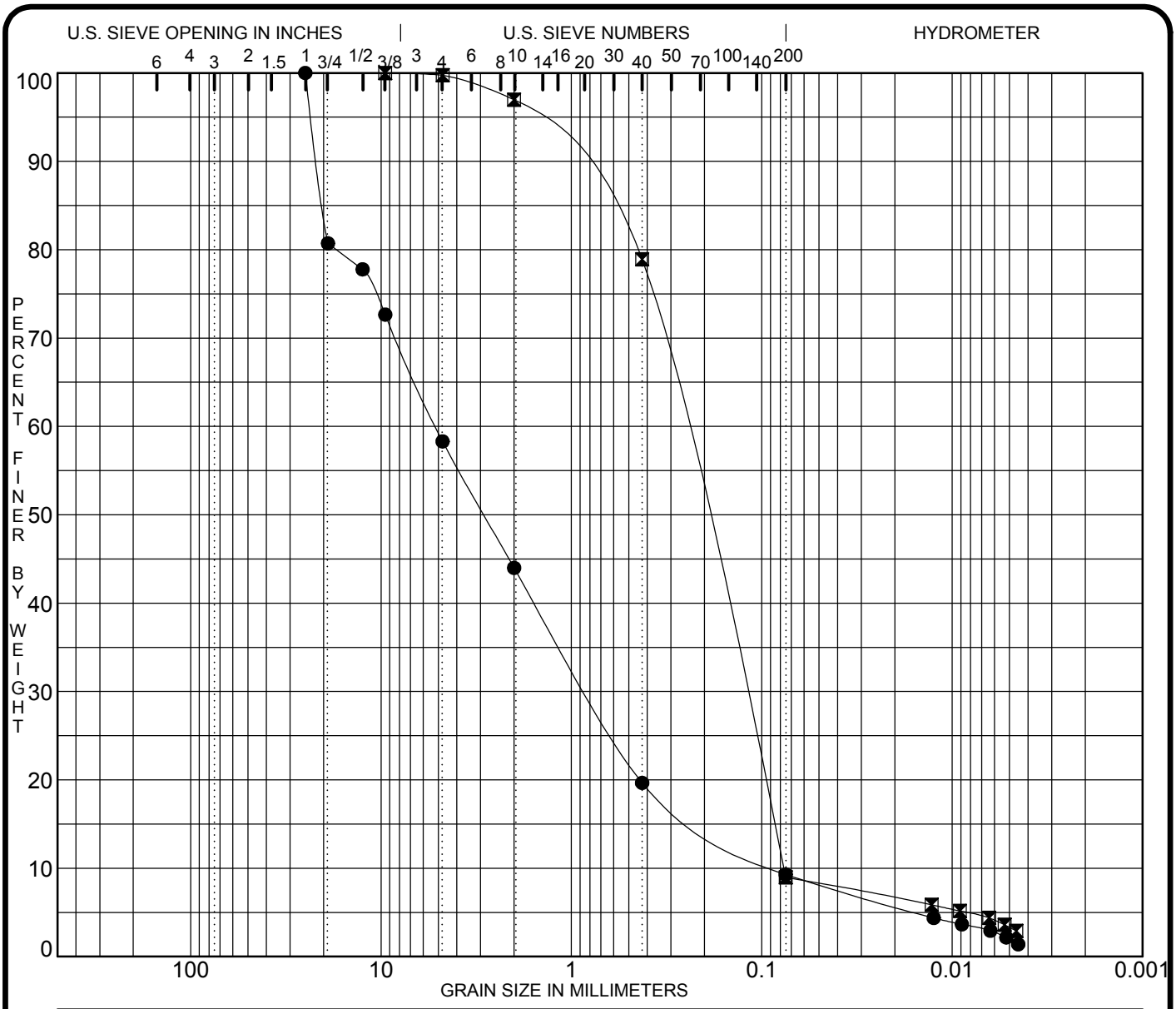


COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

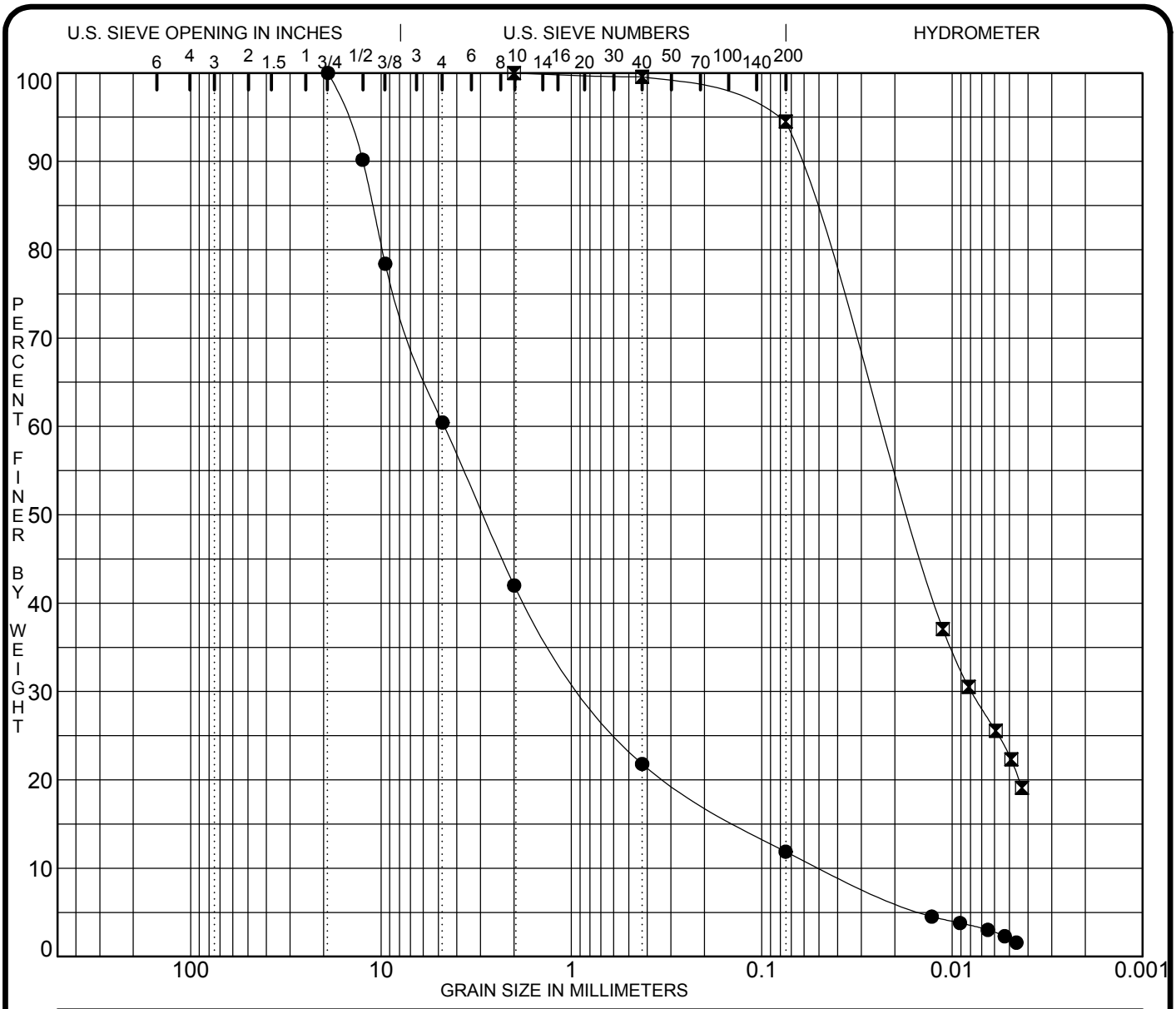
	Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
●	**B-019-0-18 SS-1**	**1.5**	**A-1-a**	**6**	**NP**	**NP**	**NP**	**1.55**	**61.1**
⊠	**B-019-0-18 SS-3**	**4.5**	**A-3**	**6**	**NP**	**NP**	**NP**	**0.78**	**3.5**

	Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
●	**B-019-0-18 SS-1**	**5.156**	**2.876**	**0.821**	**0.0844**	**19.3**	**36.7**	**24.3**	**10.4**	**7.3**	**2.0**
⊠	**B-019-0-18 SS-3**	**0.266**	**0.207**	**0.126**	**0.0769**	**0.0**	**3.0**	**18.0**	**70.0**	**5.7**	**3.3**

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

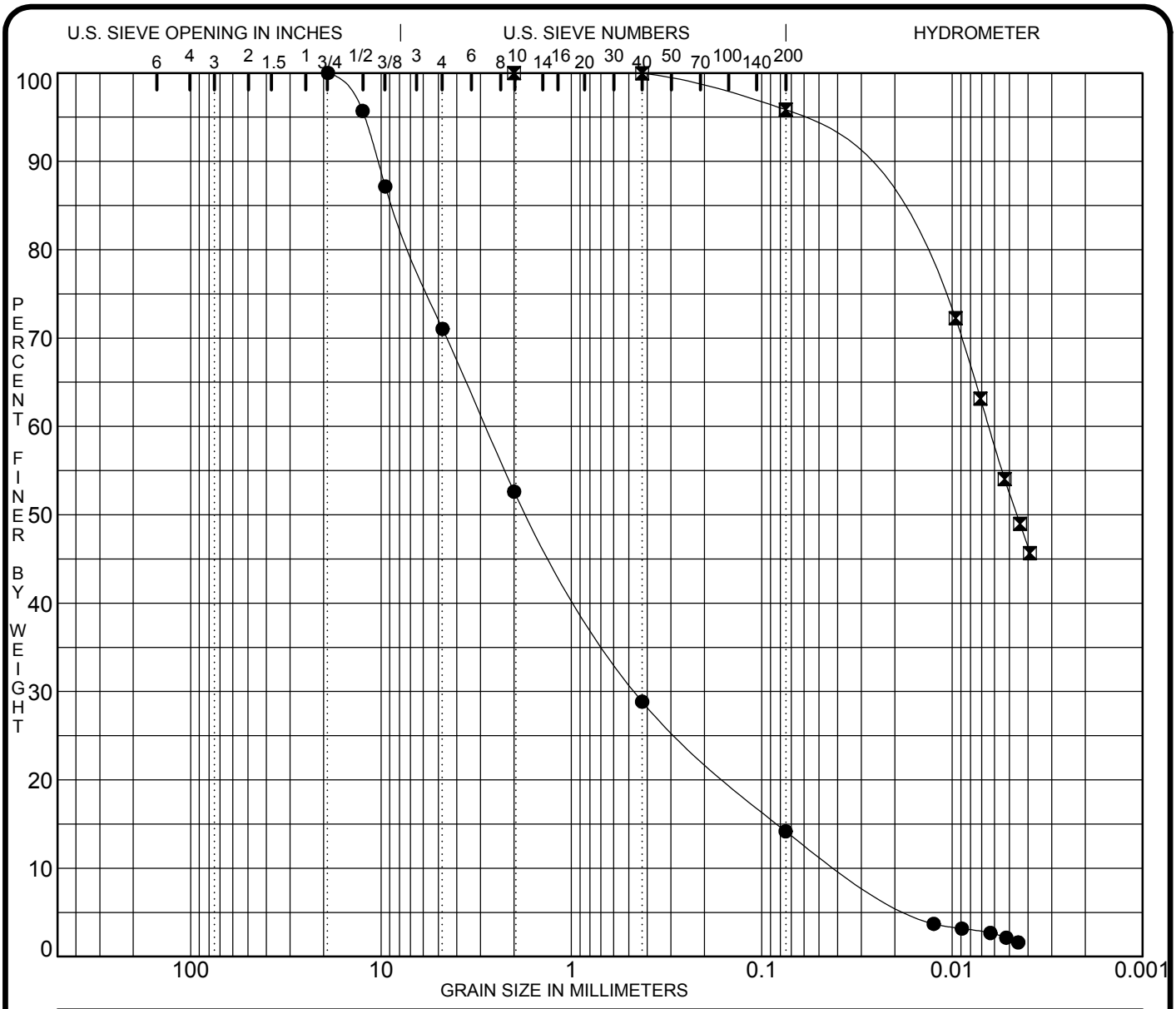
	Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
●	**B-020-0-18 SS-1B**	**2.2**	**A-1-a**	**8**	**NP**	**NP**	**NP**	**2.86**	**97.4**
⊠	**B-020-0-18 SS-2**	**3.0**	**A-4b**	**14**	**26**	**20**	**6**		

	Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
●	**B-020-0-18 SS-1B**	**4.654**	**2.911**	**0.797**	**0.0478**	**0.0**	**58.0**	**20.2**	**9.9**	**9.9**	**2.0**
⊠	**B-020-0-18 SS-2**	**0.024**	**0.017**	**0.008**		**0.0**	**0.0**	**0.4**	**5.1**	**71.8**	**22.7**

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

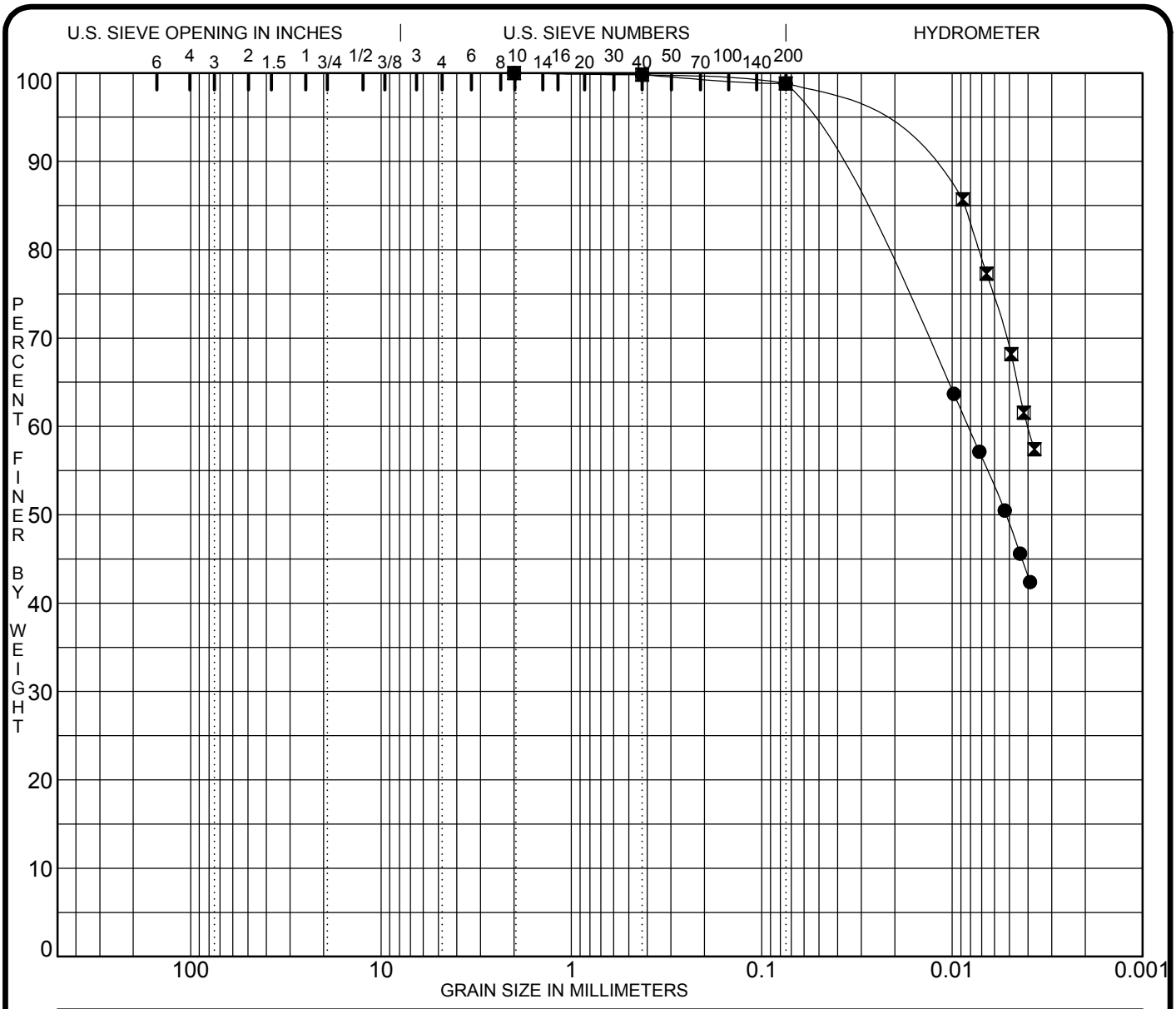
	Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
●	**B-021-0-18 SS-1**	**1.5**	**A-1-b**	**7**	**NP**	**NP**	**NP**	**2.02**	**77.1**
⊠	**B-021-0-18 SS-3**	**4.5**	**A-6a**	**24**	**32**	**19**	**13**		

	Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
●	**B-021-0-18 SS-1**	**2.828**	**1.686**	**0.458**	**0.0367**	**0.0**	**47.4**	**23.8**	**14.7**	**12.2**	**2.0**
⊠	**B-021-0-18 SS-3**	**0.006**	**0.005**			**0.0**	**0.0**	**0.0**	**4.1**	**43.4**	**52.5**

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

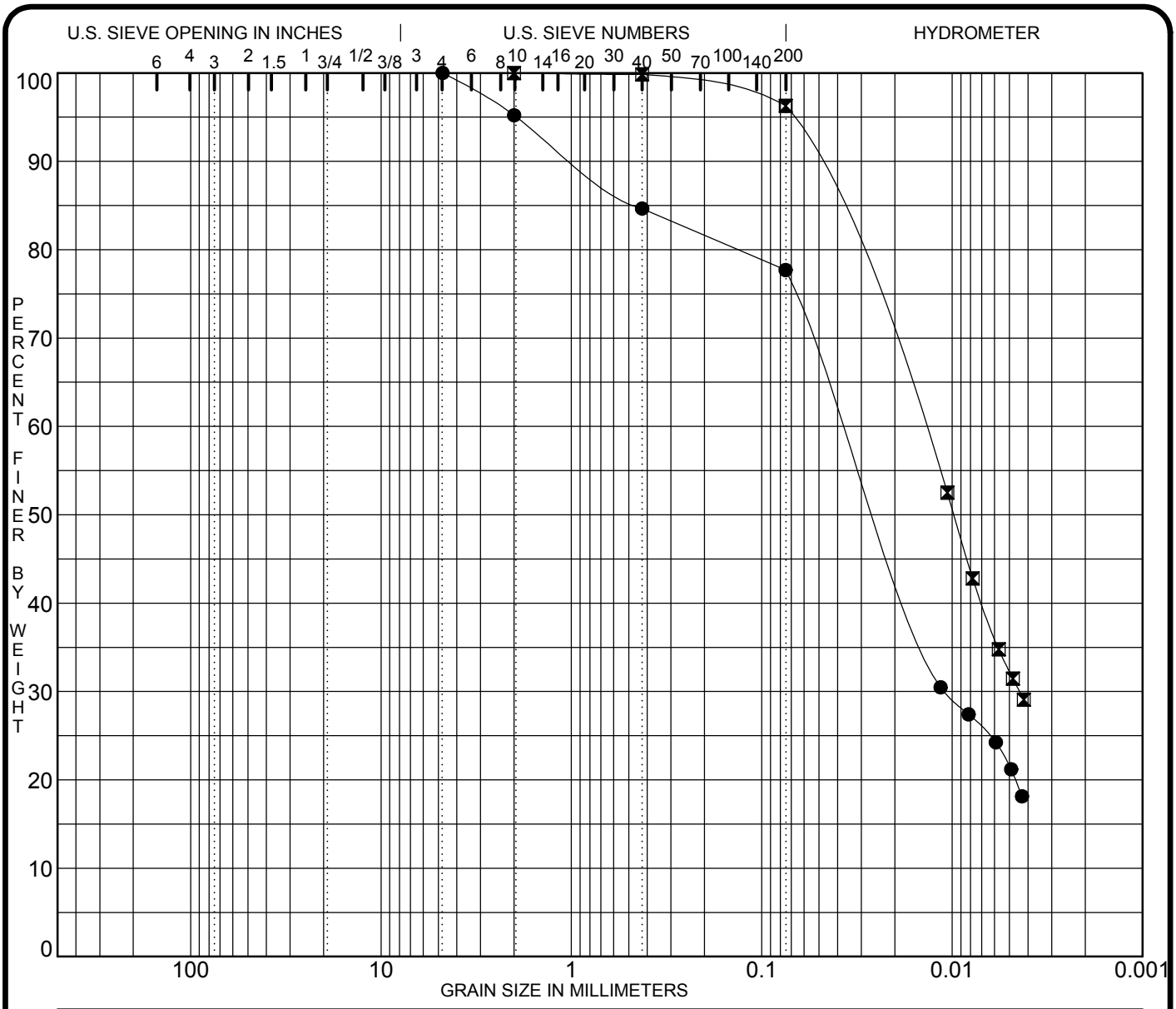
	Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
●	**B-022-0-18 SS-2B**	**3.0**	**A-6a**	**22**	**31**	**19**	**12**		
⊠	**B-022-0-18 SS-3**	**4.5**	**A-6b**	**27**	**39**	**23**	**16**		

	Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
●	**B-022-0-18 SS-2B**	**0.008**	**0.005**			**0.0**	**0.0**	**0.2**	**1.0**	**49.9**	**49.0**
⊠	**B-022-0-18 SS-3**	**0.004**				**0.0**	**0.0**	**0.2**	**1.0**	**30.0**	**68.8**

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

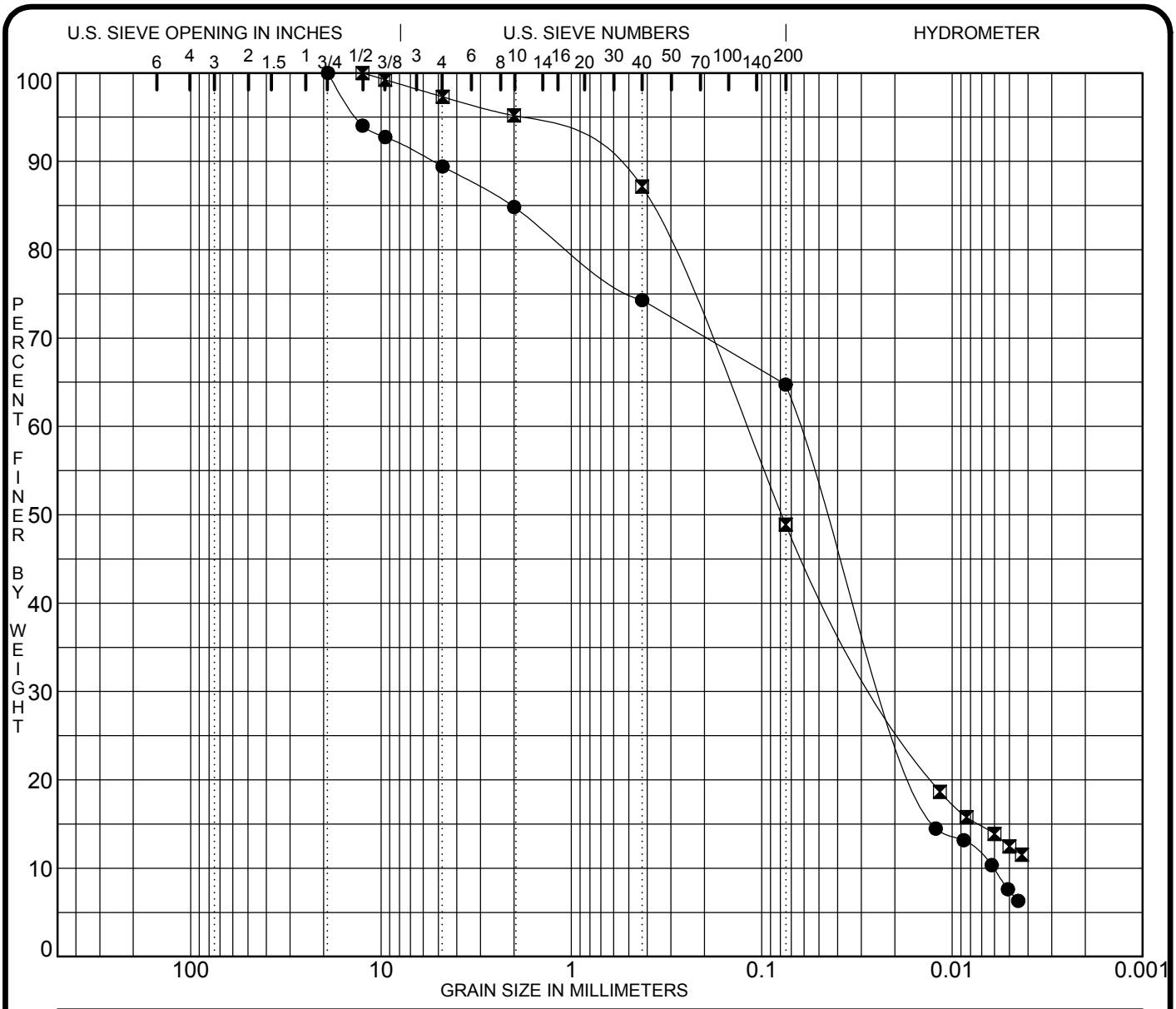
	Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
●	**B-023-0-18 SS-2A**	**3.0**	**A-4b**	**17**	**24**	**20**	**4**		
⊠	**B-023-0-18 SS-3**	**4.5**	**A-4b**	**20**	**25**	**18**	**7**		

	Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
●	**B-023-0-18 SS-2A**	**0.037**	**0.025**	**0.011**		**0.0**	**4.8**	**10.6**	**7.0**	**56.2**	**21.5**
⊠	**B-023-0-18 SS-3**	**0.015**	**0.010**	**0.004**		**0.0**	**0.0**	**0.2**	**3.6**	**64.0**	**32.3**

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

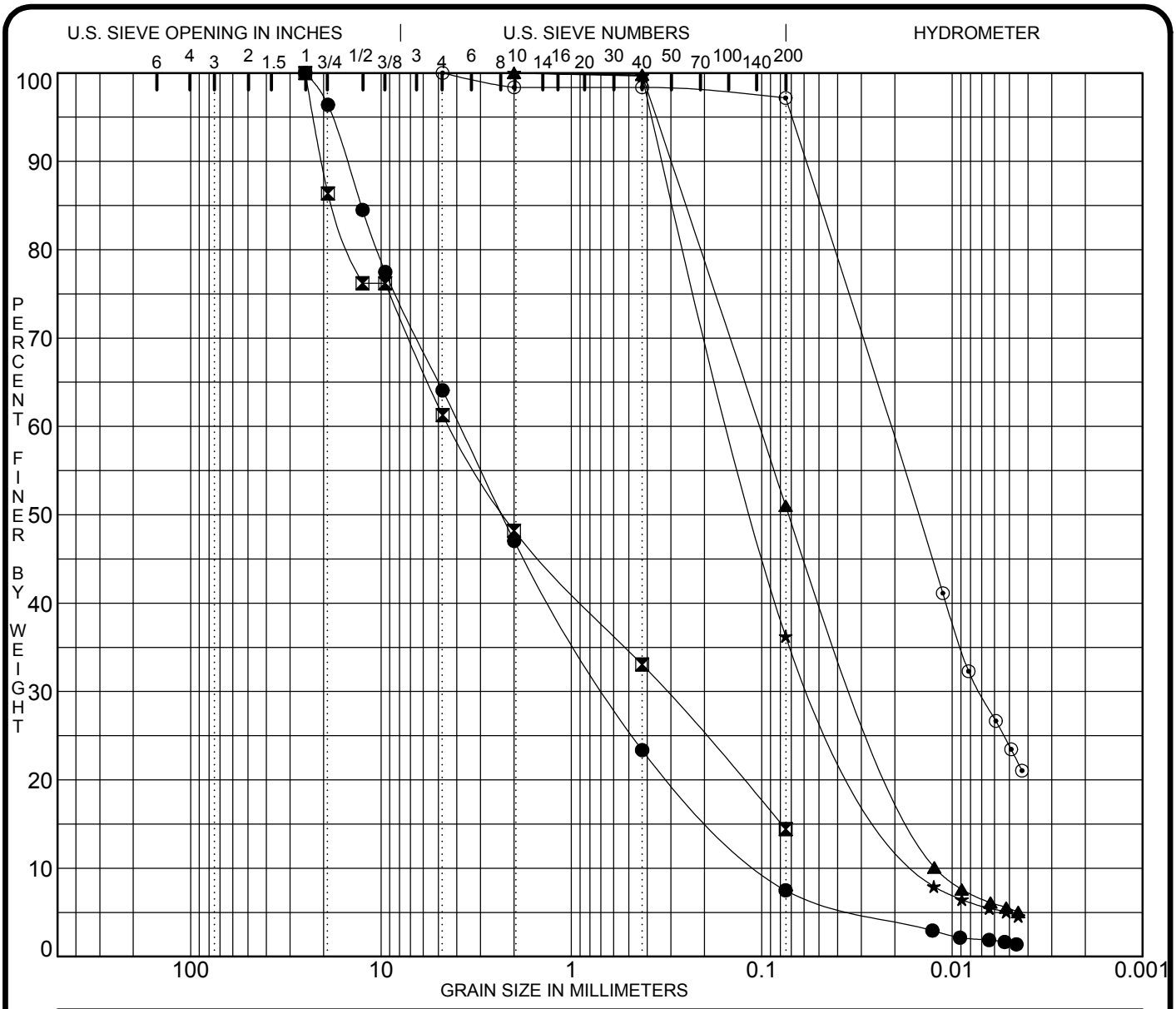
	Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
●	**B-024-0-18 SS-2**	**3.0**	**A-4b**	**14**	**25**	**21**	**4**	**1.20**	**10.5**
⊠	**B-024-0-18 SS-3**	**4.5**	**A-4a**	**13**	**NP**	**NP**	**NP**		

	Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
●	**B-024-0-18 SS-2**	**0.063**	**0.044**	**0.021**	**0.0060**	**0.0**	**15.2**	**10.5**	**9.6**	**57.3**	**7.4**
⊠	**B-024-0-18 SS-3**	**0.124**	**0.079**	**0.023**		**0.0**	**4.8**	**8.1**	**38.2**	**36.4**	**12.5**

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

	Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
●	B-025-0-18 SS-1	1.0	A-1-a	14	NP	NP	NP	1.13	39.2
⊠	B-025-0-18 SS-2A	3.5	A-1-b	11	NP	NP	NP		
▲	B-025-0-18 SS-3A	6.0	A-4a	22	NP	NP	NP	0.70	8.4
★	B-025-0-18 SS-4	8.5	A-4a	27	NP	NP	NP	1.25	10.1
⊙	B-025-0-18 SS-6	18.5	A-4b	19	25	19	6		

	Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
●	B-025-0-18 SS-1	3.861	2.323	0.656	0.0986	3.6	49.3	23.7	15.9	6.0	1.5
⊠	B-025-0-18 SS-2A	4.363	2.255	0.320		13.6	38.2	15.1	18.6	14.4	
▲	B-025-0-18 SS-3A	0.103	0.072	0.030	0.0123	0.0	0.0	0.2	48.8	45.6	5.4
★	B-025-0-18 SS-4	0.144	0.109	0.051	0.0142	0.0	0.0	0.3	63.4	31.3	4.9
⊙	B-025-0-18 SS-6	0.021	0.015	0.007		0.0	1.6	0.0	1.2	73.4	23.8

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

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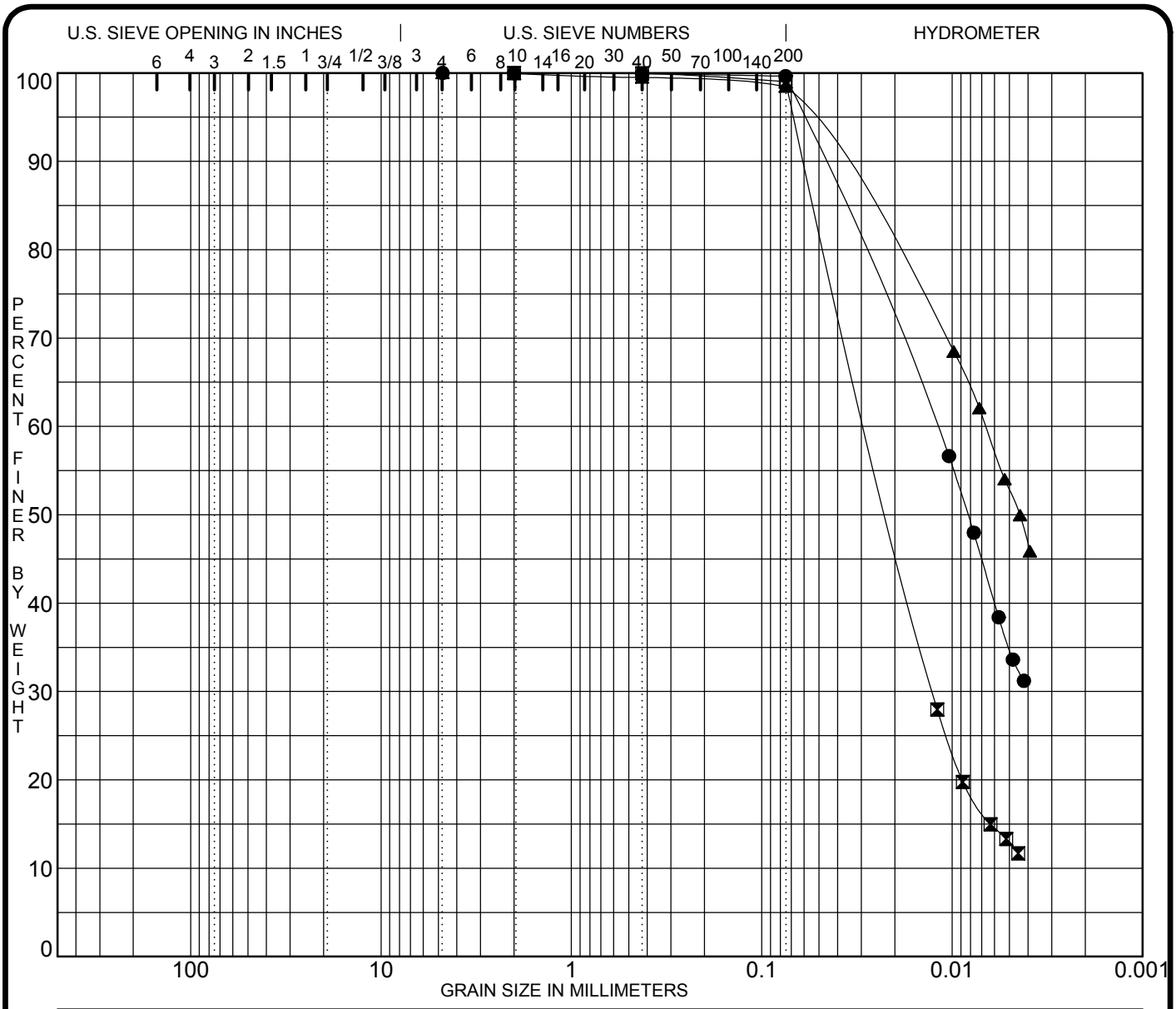


COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

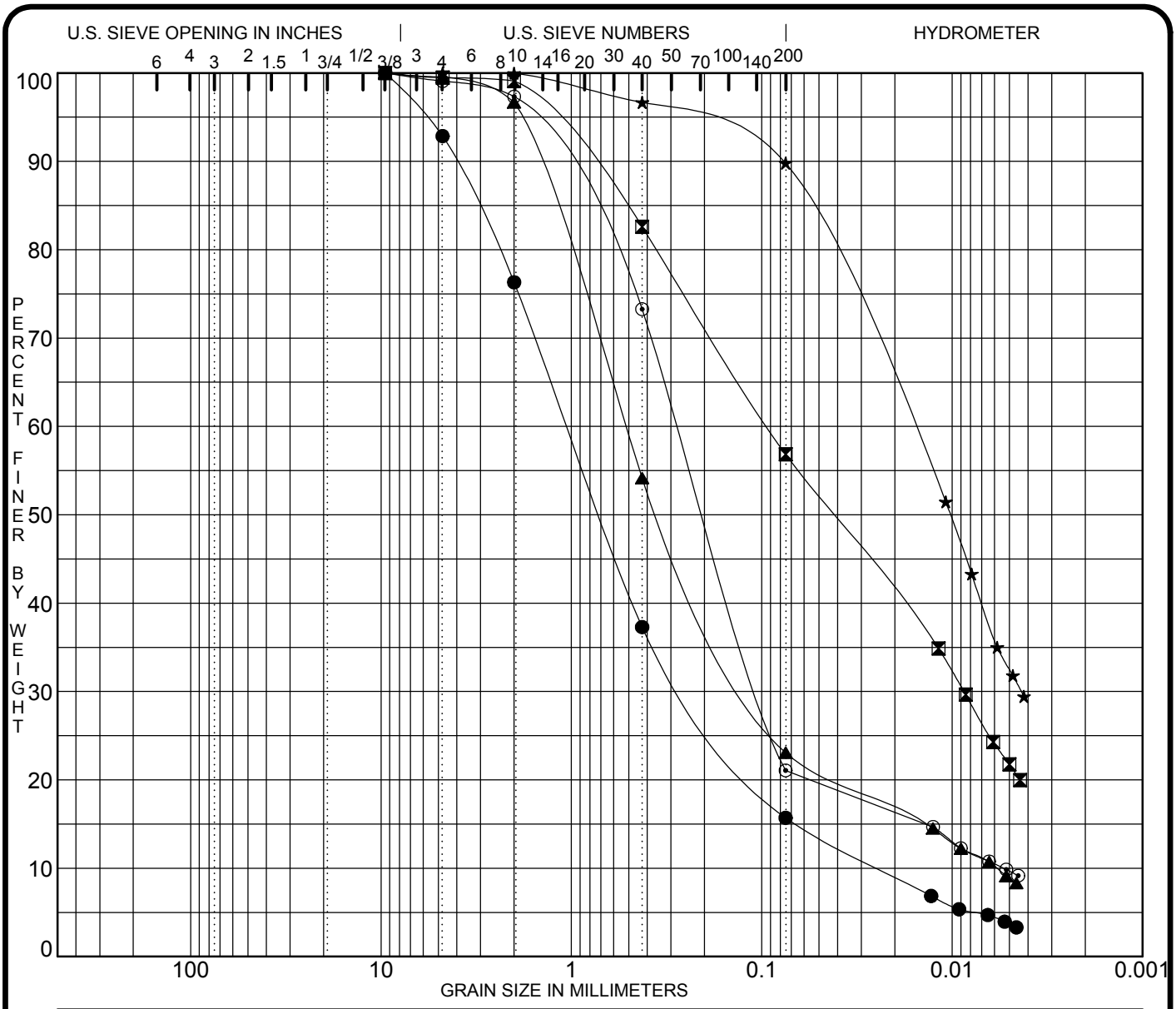
	Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
●	**B-025-0-18 SS-8**	**28.5**	**A-4b**	**32**	**26**	**19**	**7**		
⊠	**B-025-0-18 ST-1**	**31.0**	**A-4b**	**28**	**NP**	**NP**	**NP**		
▲	**B-025-0-18 SS-10**	**38.5**	**A-6a**	**26**	**33**	**19**	**14**		

	Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
●	**B-025-0-18 SS-8**	**0.012**	**0.008**			**0.0**	**0.0**	**0.1**	**0.3**	**64.9**	**34.7**
⊠	**B-025-0-18 ST-1**	**0.027**	**0.021**	**0.013**		**0.0**	**0.0**	**0.0**	**1.0**	**86.1**	**12.9**
▲	**B-025-0-18 SS-10**	**0.007**	**0.004**			**0.0**	**0.1**	**0.4**	**1.0**	**45.7**	**52.8**

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

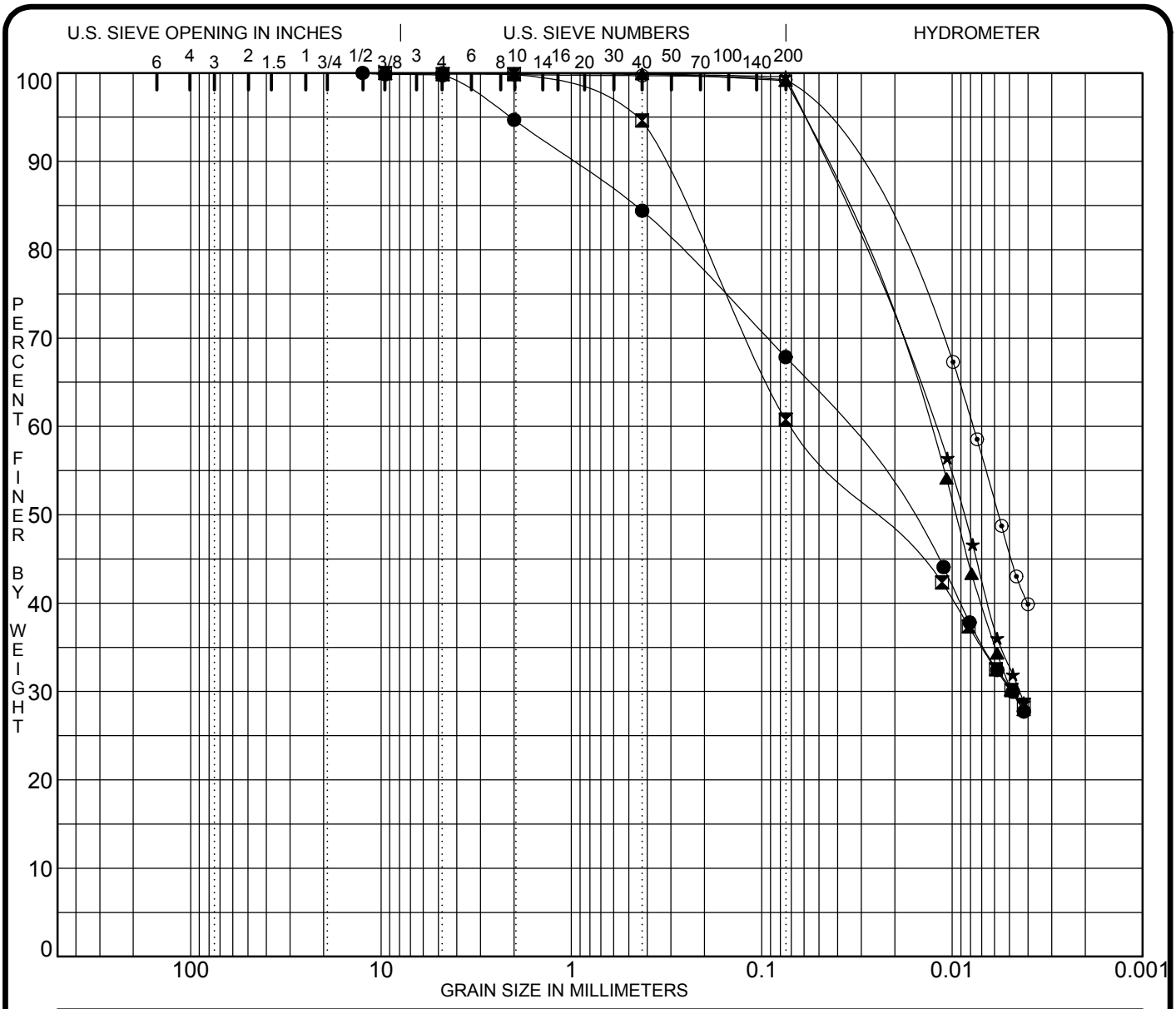
Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
● B-026-0-18 SS-1A	1.2	A-1-b	17	NP	NP	NP	2.22	43.4
⊠ B-026-0-18 SS-1B	1.9	A-4a	15	17	14	3		
▲ B-026-0-18 SS-2B	3.5	A-3a	9	NP	NP	NP	3.97	90.2
★ B-026-0-18 SS-2C	4.2	A-4b	18	26	18	8		
⊙ B-026-0-18 SS-3A	6.0	A-3a	13	NP	NP	NP	6.93	50.8

Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
● B-026-0-18 SS-1A	1.047	0.704	0.237	0.0241	0.0	23.7	39.0	21.6	12.0	3.7
⊠ B-026-0-18 SS-1B	0.093	0.042	0.009		0.0	0.9	16.5	25.8	35.1	21.7
▲ B-026-0-18 SS-2B	0.526	0.337	0.110	0.0058	0.0	3.3	42.5	31.1	14.2	8.9
★ B-026-0-18 SS-2C	0.017	0.010	0.004		0.0	0.0	3.3	6.9	57.3	32.5
⊙ B-026-0-18 SS-3A	0.273	0.196	0.101	0.0054	0.0	2.7	24.1	52.2	11.4	9.7

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

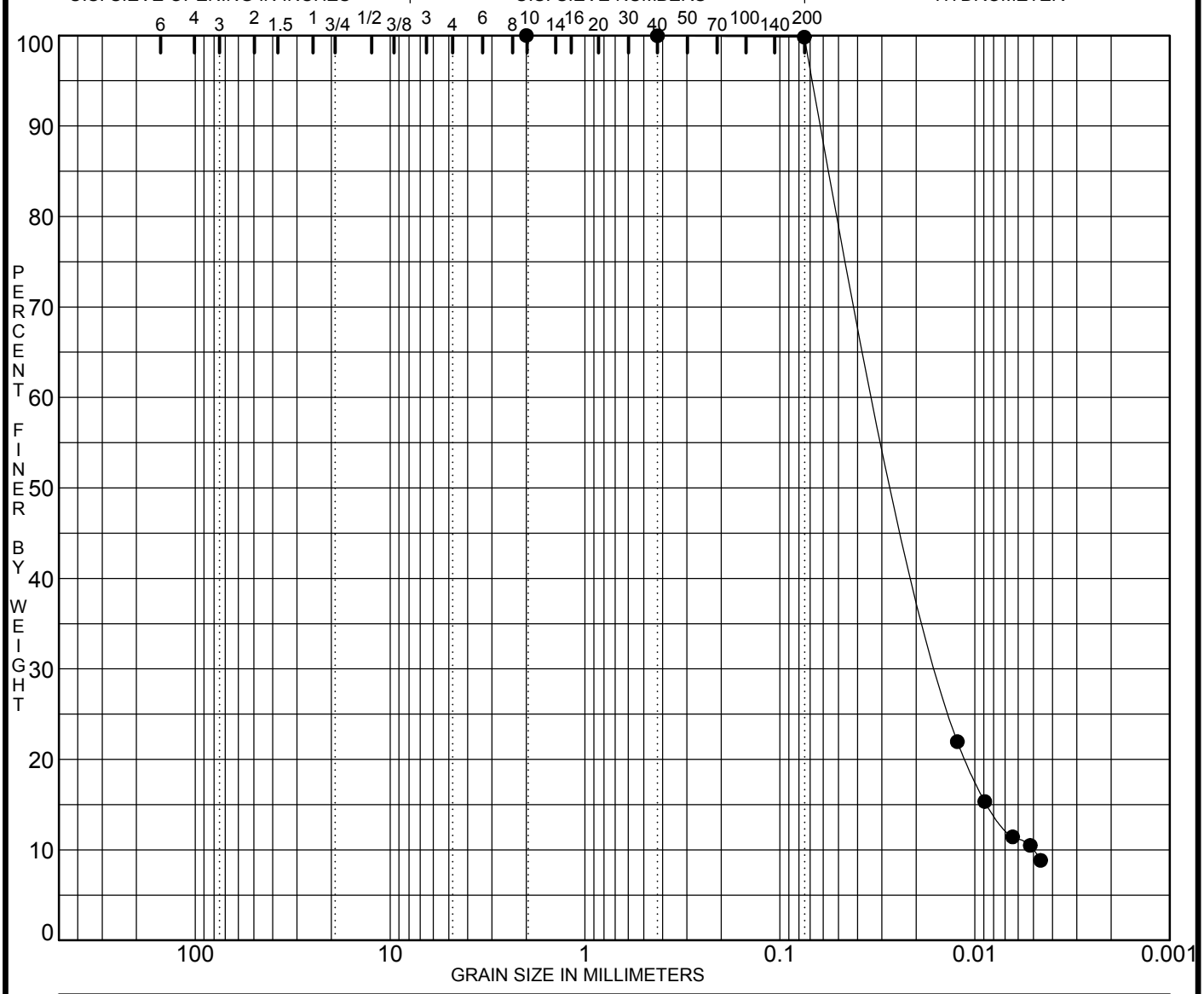
Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
● B-026-0-18 SS-4A	8.5	A-4a	21	27	17	10		
⊠ B-026-0-18 SS-5	13.5	A-4a	22	25	15	10		
▲ B-026-0-18 SS-7	23.5	A-4b	25	27	21	6		
★ B-026-0-18 SS-9	33.5	A-4b	26	28	20	8		
⊙ B-026-0-18 SS-10	38.5	A-6a	24	31	20	11		

Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
● B-026-0-18 SS-4A	0.040	0.018	0.005		0.0	5.3	10.3	16.6	37.3	30.5
⊠ B-026-0-18 SS-5	0.069	0.025	0.005		0.0	0.1	5.2	33.8	30.4	30.4
▲ B-026-0-18 SS-7	0.014	0.010	0.005		0.0	0.1	0.1	0.7	68.5	30.7
★ B-026-0-18 SS-9	0.012	0.009	0.004		0.0	0.1	0.1	0.3	66.8	32.8
⊙ B-026-0-18 SS-10	0.008	0.006			0.0	0.2	0.1	0.5	53.5	45.7

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

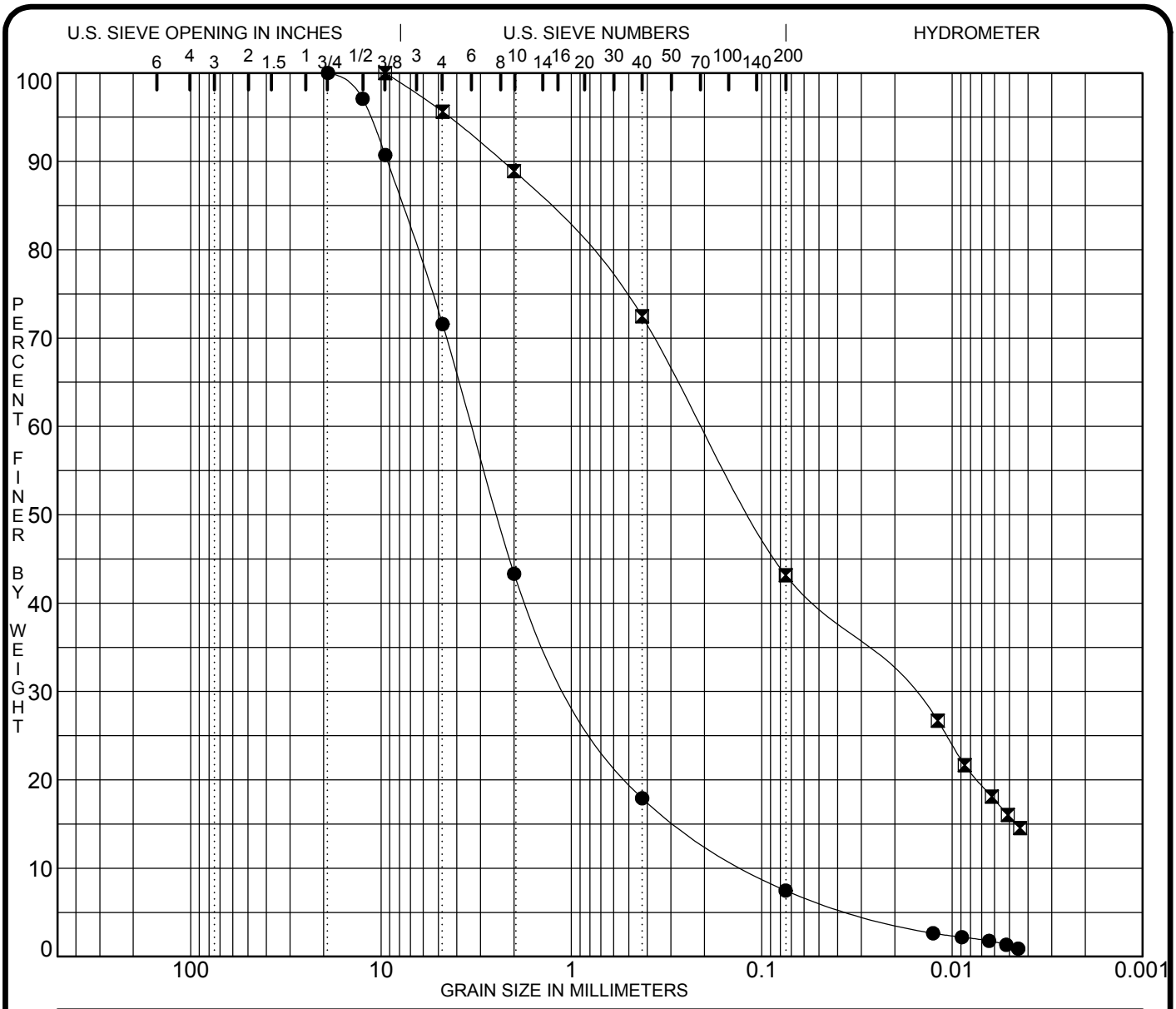
	Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
●	**B-026-0-18 SS-12A**	**48.5**	**A-4b**	**19**	**NP**	**NP**	**NP**	**1.47**	**5.9**

	Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
●	**B-026-0-18 SS-12A**	**0.030**	**0.024**	**0.015**	**0.0050**	**0.0**	**0.0**	**0.0**	**0.1**	**89.9**	**10.0**

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

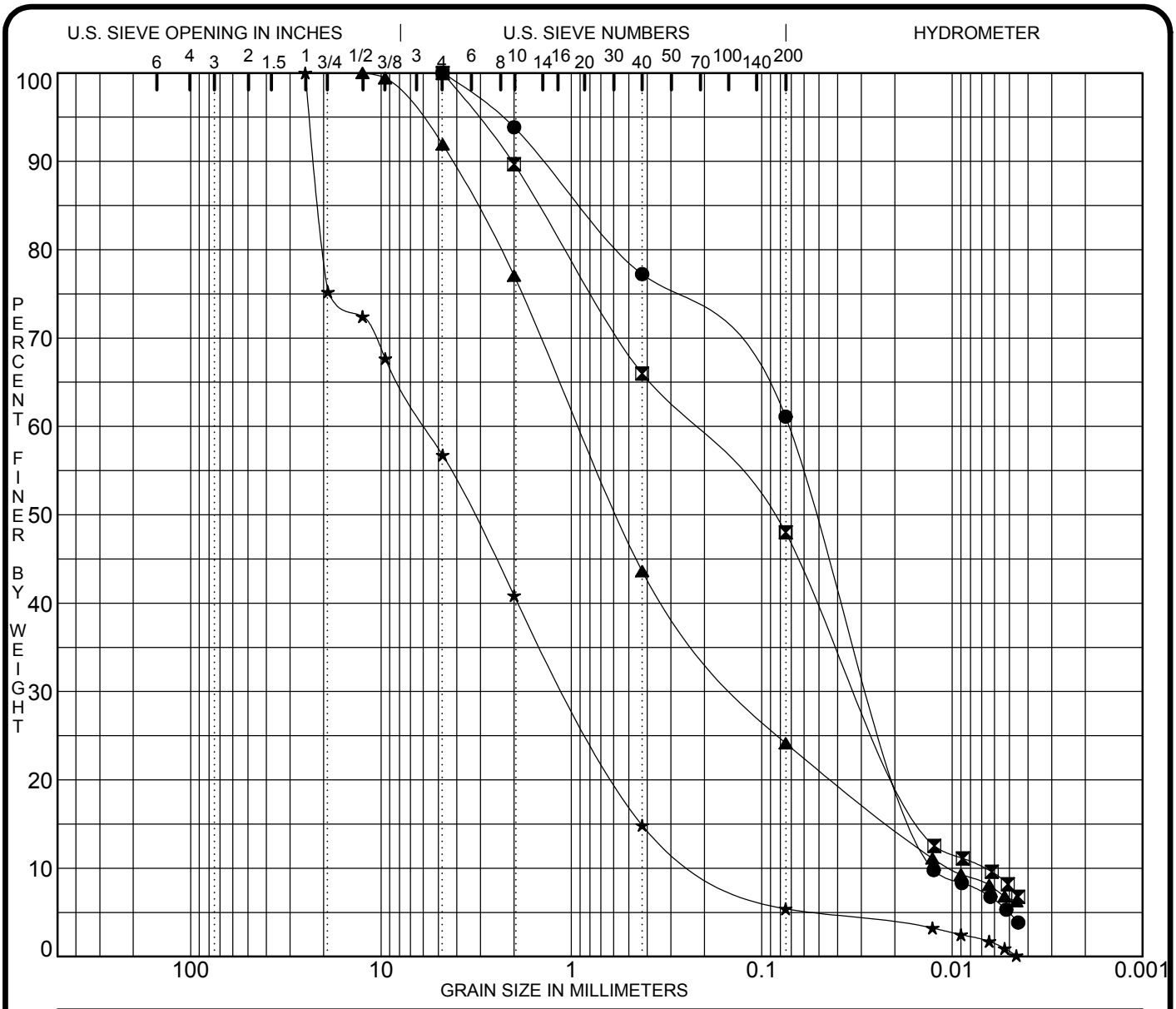
	Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
●	**B-027-0-18 SS-2**	**2.5**	**A-1-a**	**14**	**NP**	**NP**	**NP**	**2.07**	**29.2**
⊠	**B-027-0-18 SS-4**	**5.5**	**A-4a**	**14**	**23**	**18**	**5**		

	Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
●	**B-027-0-18 SS-2**	**3.332**	**2.454**	**0.888**	**0.1142**	**0.0**	**56.7**	**25.4**	**10.4**	**6.3**	**1.2**
⊠	**B-027-0-18 SS-4**	**0.203**	**0.112**	**0.017**		**0.0**	**11.1**	**16.4**	**29.3**	**27.3**	**15.8**

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

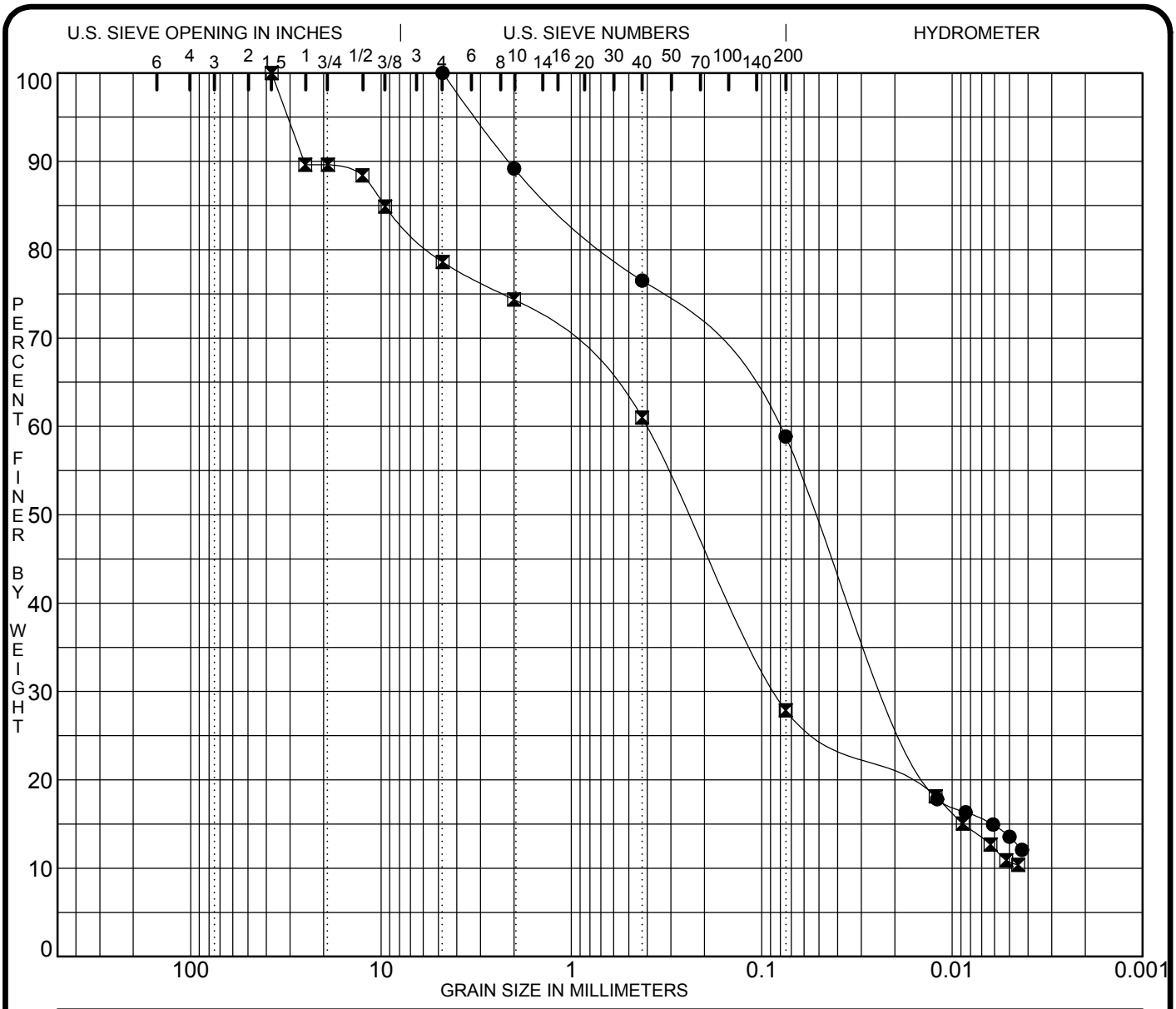
Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
● B-028-0-18 SS-1B	1.2	A-4b	15	NP	NP	NP	0.71	5.7
⊠ B-028-0-18 SS-2A	2.7	A-4a	18	NP	NP	NP	0.56	35.1
▲ B-028-0-18 SS-2B	3.5	A-1-b	9	NP	NP	NP	1.71	88.3
★ B-028-0-18 SS-3B	4.9	A-1-a	9	NP	NP	NP	1.08	33.5

Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
● B-028-0-18 SS-1B	0.072	0.051	0.025	0.0126	0.0	6.1	16.6	16.1	56.2	4.9
⊠ B-028-0-18 SS-2A	0.238	0.091	0.030	0.0068	0.0	10.3	23.7	18.0	40.0	8.0
▲ B-028-0-18 SS-2B	0.908	0.571	0.126	0.0103	0.0	22.9	33.4	19.5	17.6	6.6
★ B-028-0-18 SS-3B	5.836	3.289	1.048	0.1743	24.8	34.4	26.0	9.4	4.8	0.6

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

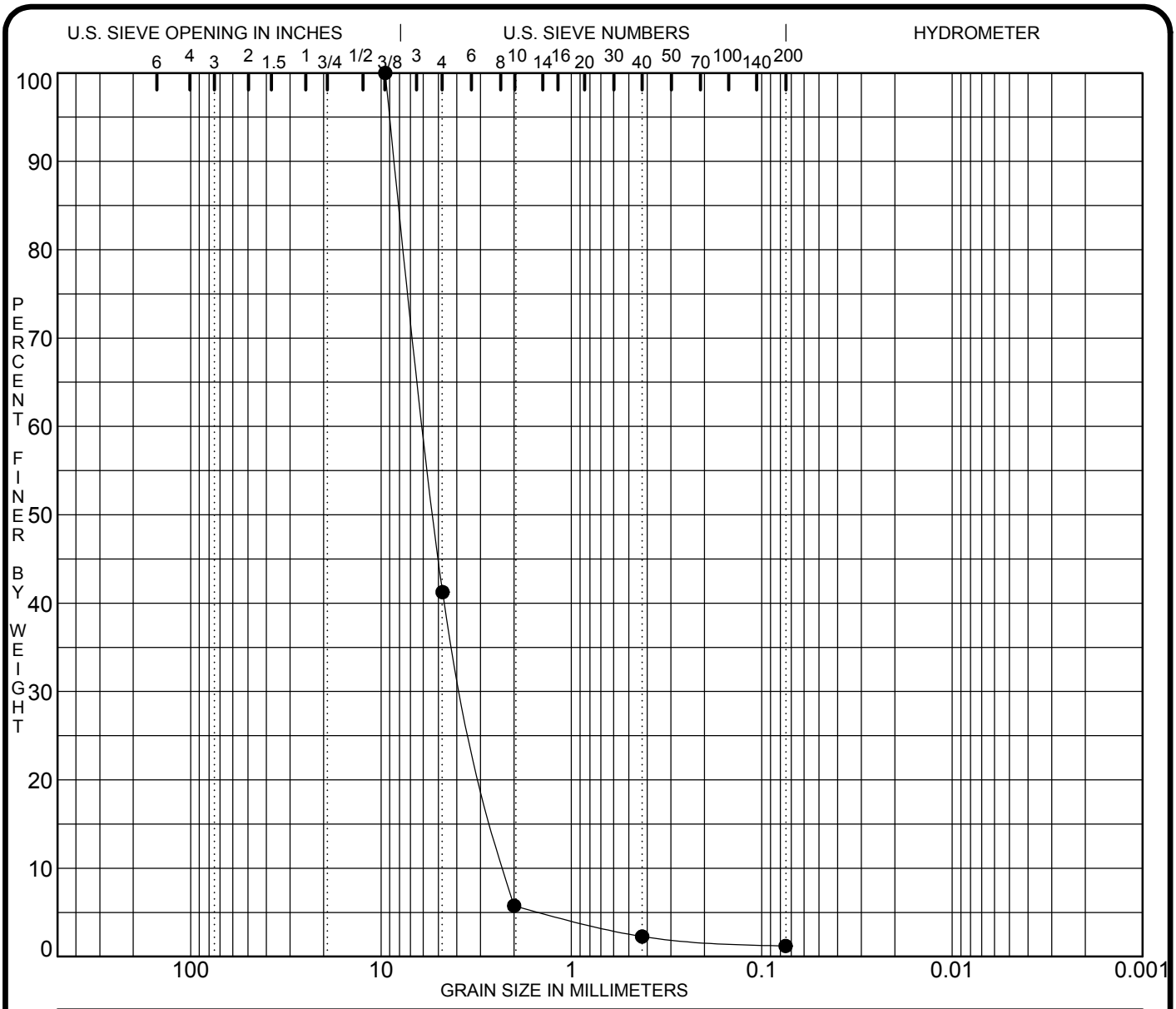
	Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
●	**B-031-0-18 SS-1**	**1.5**	**A-4a**	**16**	**23**	**16**	**7**		
⊠	**B-031-0-18 SS-4B**	**6.0**	**A-2-4**	**10**	**18**	**14**	**4**		

	Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
●	**B-031-0-18 SS-1**	**0.084**	**0.050**	**0.021**		**0.0**	**10.8**	**12.7**	**17.6**	**45.3**	**13.6**
⊠	**B-031-0-18 SS-4B**	**0.403**	**0.239**	**0.084**		**10.4**	**15.3**	**13.3**	**33.1**	**17.1**	**10.8**

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

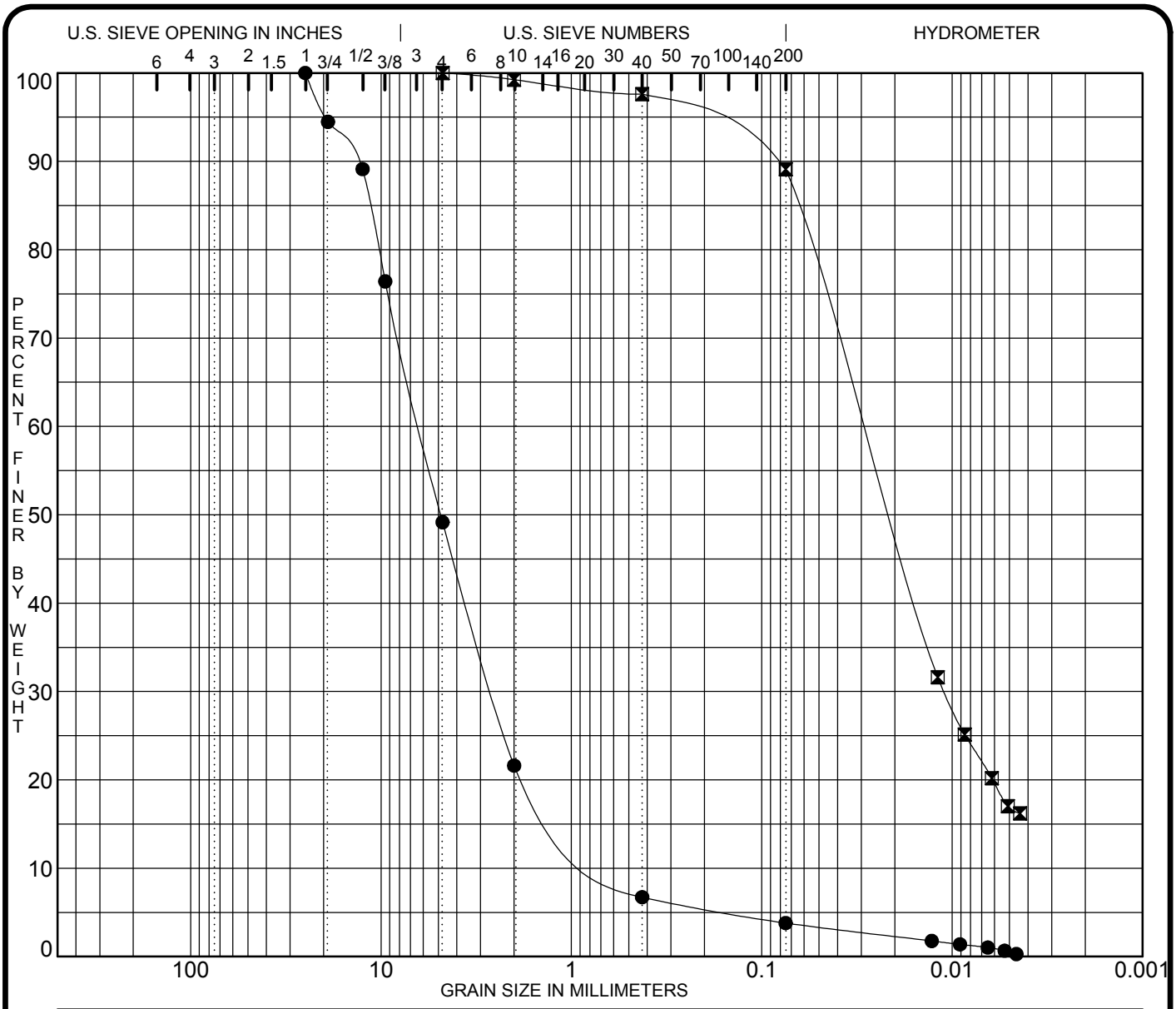
	Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
●	**B-032-0-18 SS-2**	**2.9**	**A-1-a**	**6**	**NP**	**NP**	**NP**	**0.99**	**2.7**

	Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
●	**B-032-0-18 SS-2**	**5.926**	**5.267**	**3.612**	**2.2183**	**0.0**	**94.3**	**3.5**	**1.1**	**1.2**	

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

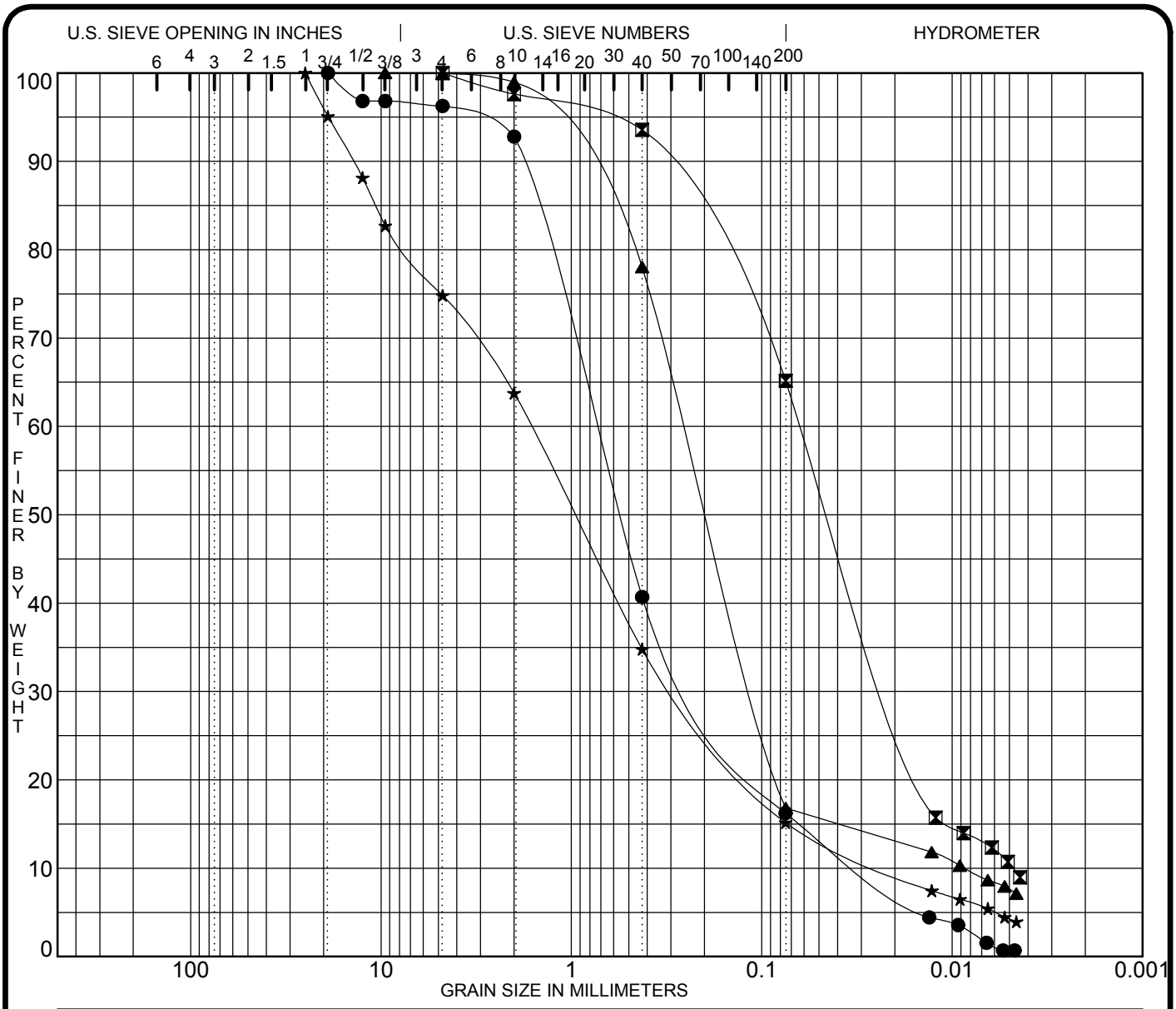
	Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
●	**B-033-0-18 SS-2**	**3.0**	**A-1-a**	**11**	**NP**	**NP**	**NP**	**1.81**	**10.5**
⊠	**B-033-0-18 SS-3**	**4.5**	**A-4b**	**18**	**22**	**18**	**4**		

	Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
●	**B-033-0-18 SS-2**	**6.258**	**4.853**	**2.603**	**0.5977**	**5.5**	**72.9**	**14.9**	**2.9**	**3.3**	**0.5**
⊠	**B-033-0-18 SS-3**	**0.030**	**0.021**	**0.011**		**0.0**	**0.8**	**1.6**	**8.5**	**72.2**	**16.9**

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

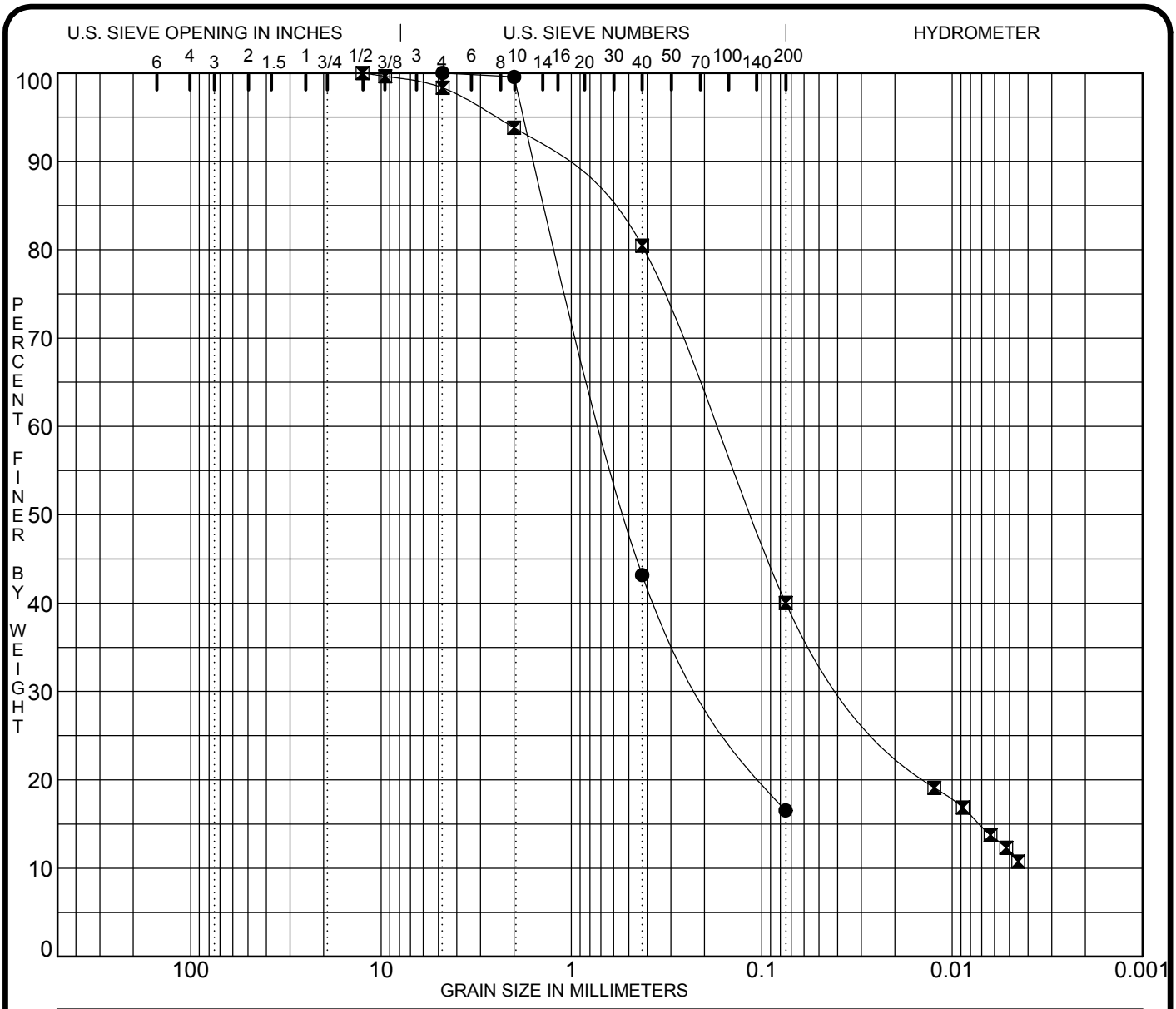
Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
● B-034-0-18 SS-1A	1.5	A-1-b	51	NP	NP	NP	1.75	25.2
⊠ B-034-0-18 SS-2	3.0	A-4b	13	NP	NP	NP	1.43	12.9
▲ B-034-0-18 SS-3A	4.5	A-3a	16	NP	NP	NP	5.43	29.7
★ B-034-0-18 SS-4	6.0	A-1-b	9	19	14	5	2.07	71.3

Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
● B-034-0-18 SS-1A	0.754	0.560	0.199	0.0299	0.0	7.2	52.1	24.5	15.5	0.7
⊠ B-034-0-18 SS-2	0.062	0.043	0.021	0.0048	0.0	2.4	4.1	28.4	54.7	10.5
▲ B-034-0-18 SS-3A	0.255	0.192	0.109	0.0086	0.0	1.0	20.9	61.2	9.2	7.6
★ B-034-0-18 SS-4	1.635	0.958	0.278	0.0229	4.9	31.3	29.0	19.6	10.9	4.3

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

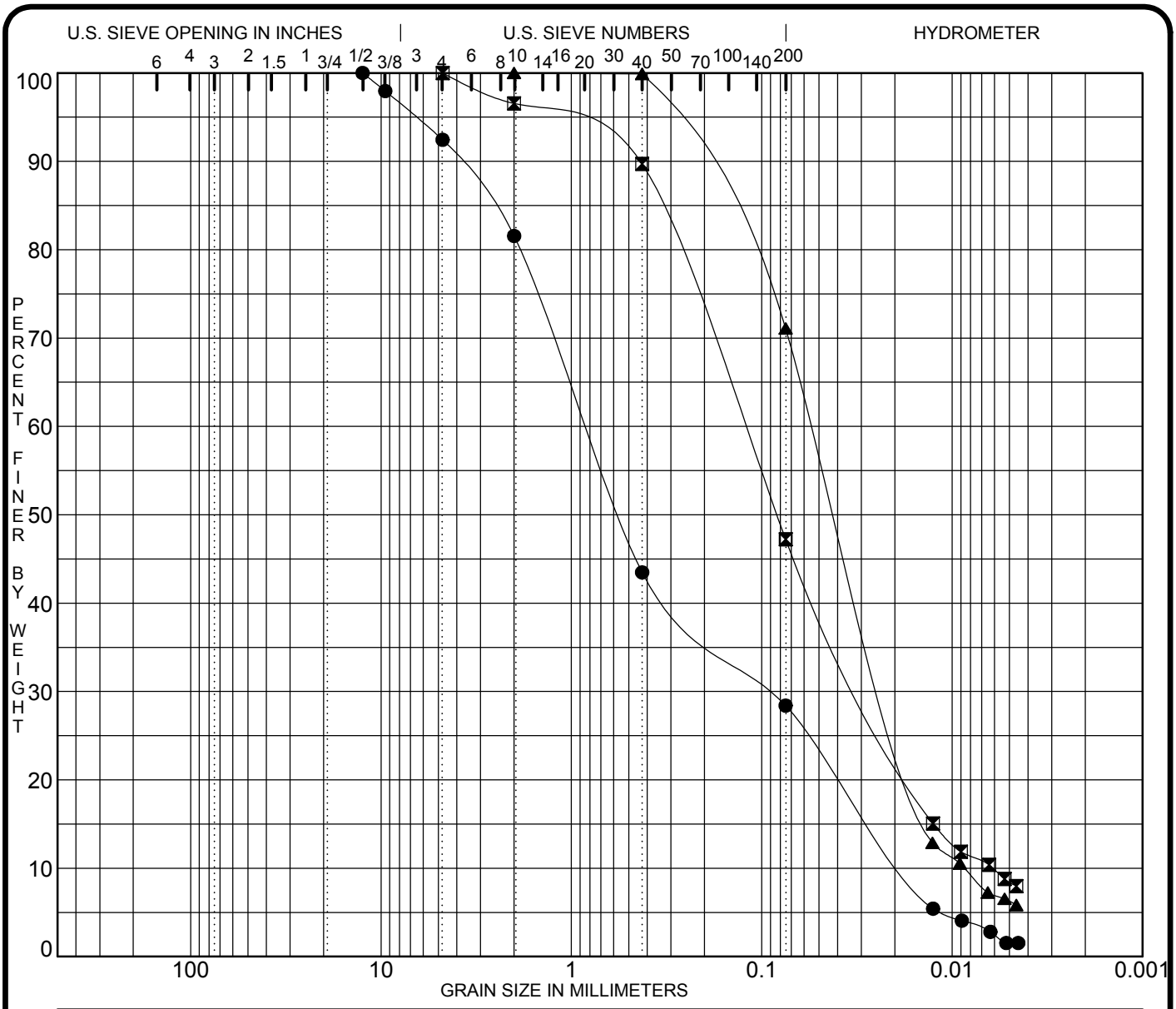
	Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
●	**B-035-0-18 SS-1A**	**1.5**	**A-1-b**	**60**	**NP**	**NP**	**NP**		
⊠	**B-035-0-18 SS-3**	**4.5**	**A-4a**	**10**	**17**	**16**	**1**		

	Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
●	**B-035-0-18 SS-1A**	**0.675**	**0.513**	**0.180**		**0.0**	**0.4**	**56.4**	**26.6**	**16.5**	
⊠	**B-035-0-18 SS-3**	**0.177**	**0.115**	**0.032**		**0.0**	**6.2**	**13.3**	**40.4**	**28.1**	**11.9**

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

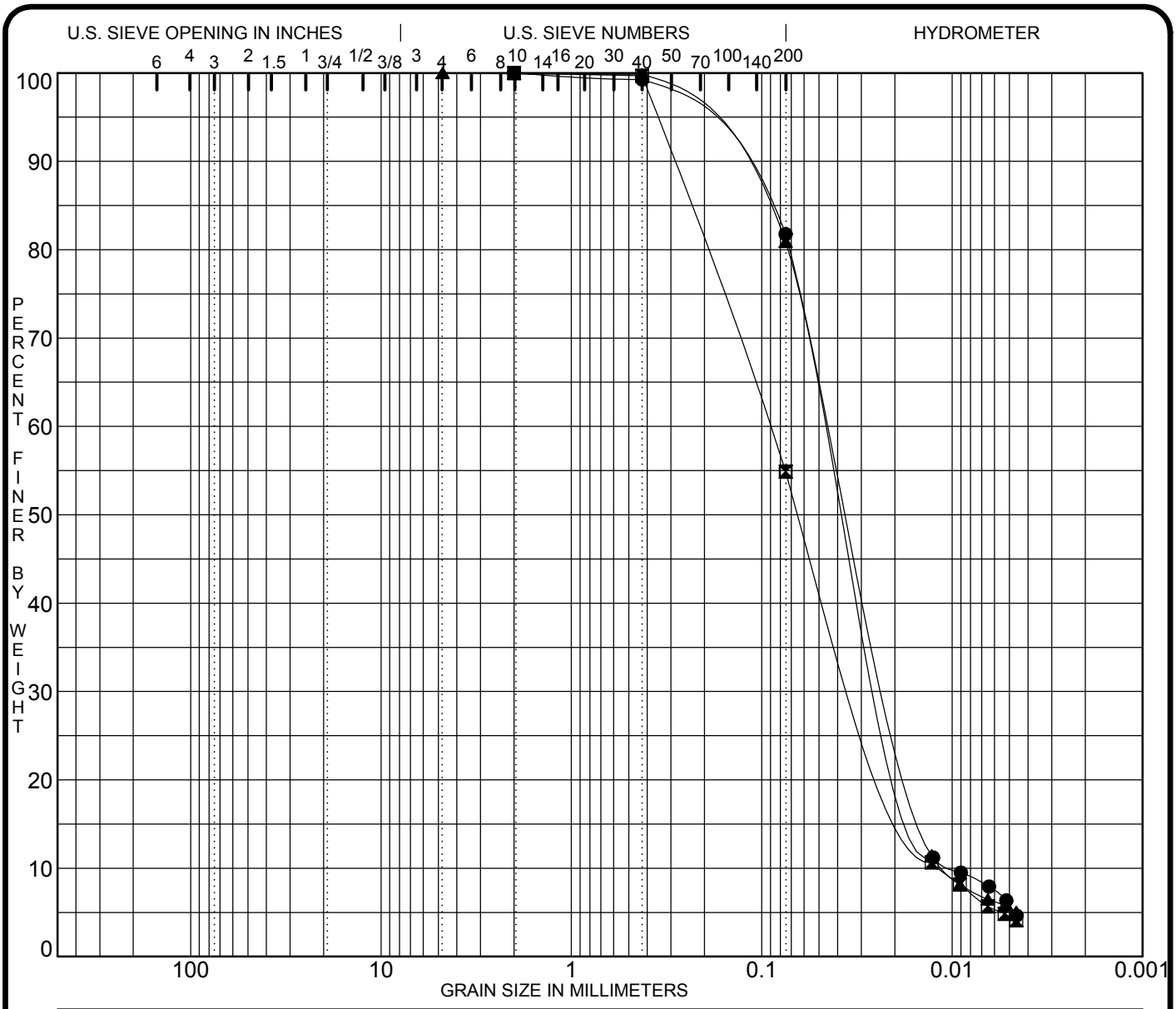
	Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
●	**B-036-0-18 SS-1A**	**1.1**	**A-3a**	**13**	**NP**	**NP**	**NP**	**0.54**	**46.3**
⊠	**B-036-0-18 SS-3B**	**4.5**	**A-4a**	**19**	**NP**	**NP**	**NP**	**1.08**	**20.6**
▲	**B-036-0-18 SS-4B**	**6.0**	**A-4b**	**25**	**NP**	**NP**	**NP**	**0.99**	**6.2**

	Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
●	**B-036-0-18 SS-1A**	**0.832**	**0.554**	**0.090**	**0.0180**	**0.0**	**18.4**	**38.1**	**15.1**	**26.9**	**1.5**
⊠	**B-036-0-18 SS-3B**	**0.126**	**0.084**	**0.029**	**0.0061**	**0.0**	**3.5**	**6.8**	**42.5**	**38.8**	**8.4**
▲	**B-036-0-18 SS-4B**	**0.053**	**0.039**	**0.021**	**0.0086**	**0.0**	**0.0**	**0.1**	**28.8**	**64.8**	**6.2**

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

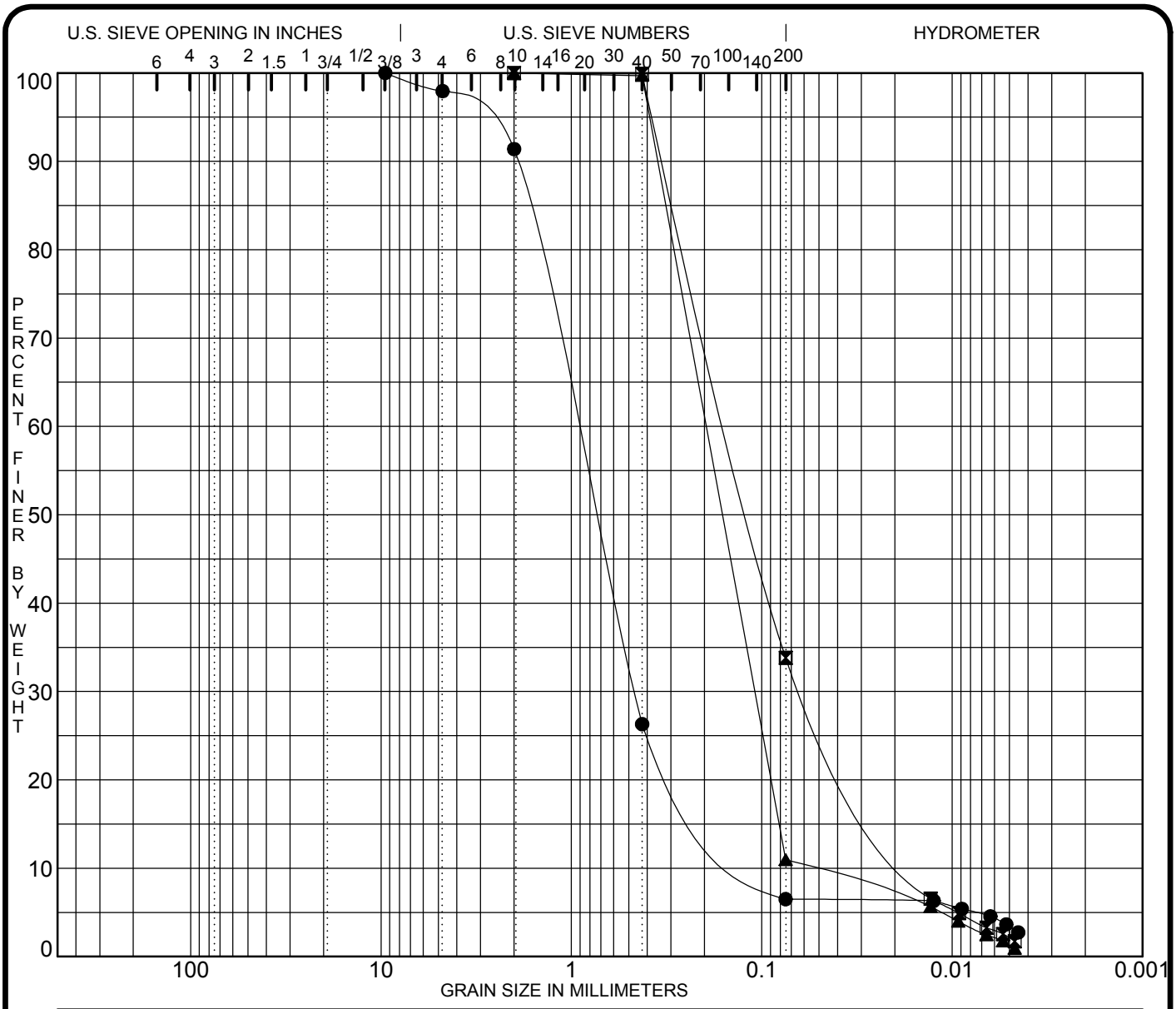
Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
● B-037-0-18 SS-2	2.7	A-4b	18	NP	NP	NP	0.96	4.4
⊠ B-037-0-18 SS-3	4.2	A-4b	25	NP	NP	NP	0.72	7.8
▲ B-037-0-18 SS-4	5.7	A-4b	25	NP	NP	NP	0.87	4.0

Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
● B-037-0-18 SS-2	0.043	0.034	0.020	0.0099	0.0	0.0	0.7	17.5	76.0	5.8
⊠ B-037-0-18 SS-3	0.091	0.062	0.028	0.0117	0.0	0.0	0.3	44.8	50.3	4.5
▲ B-037-0-18 SS-4	0.044	0.034	0.021	0.0110	0.0	0.1	0.0	19.0	75.4	5.5

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	fine	

Specimen Identification	Depth	Classification	MC%	LL	PL	PI	Cz	Cu
● B-039-0-18 SS-2	2.9	A-1-b	6	NP	NP	NP	2.23	9.3
⊠ B-039-0-18 SS-3	4.4	A-3a	21	NP	NP	NP	1.42	9.2
▲ B-039-0-18 SS-4	5.9	A-3a	26	NP	NP	NP	1.10	3.6

Specimen Identification	D60	D50	D30	D10	%Gravel coarse	%Gravel fine	%Sand coarse	%Sand fine	%Silt	%Clay
● B-039-0-18 SS-2	0.948	0.747	0.464	0.1019	0.0	8.6	65.1	19.8	3.1	3.4
⊠ B-039-0-18 SS-3	0.149	0.115	0.059	0.0162	0.0	0.0	0.1	66.1	31.7	2.1
▲ B-039-0-18 SS-4	0.196	0.161	0.109	0.0548	0.0	0.0	0.3	88.8	9.7	1.3

PROJECT **CUY-77-11.21 (PID 105743)** PROJECT NO. **N-19-009**

GRADATION CURVES

RII

play any undisturbed test results in graphical format on the Geotechnical Profile sheets prior to the presentation of the surface and subsurface data as per SGE 702.4 & 703.4."

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

UNCONFINED COMPRESSION

AASHTO T 208

PROJECT	CUY-77-11.21
JOB No.	N-19-009
BORING	B-025-0-18
STATION / OFFSET	
SAMPLE No. / DEPTH	ST-1 / 31.3' - 31.9'
DATE OF TESTING	05/16/2019
TESTED BY	K. Sarven

Soil Description: Gray SILT, little clay, trace fine sand.
Soil Classification: ODOT A-4b

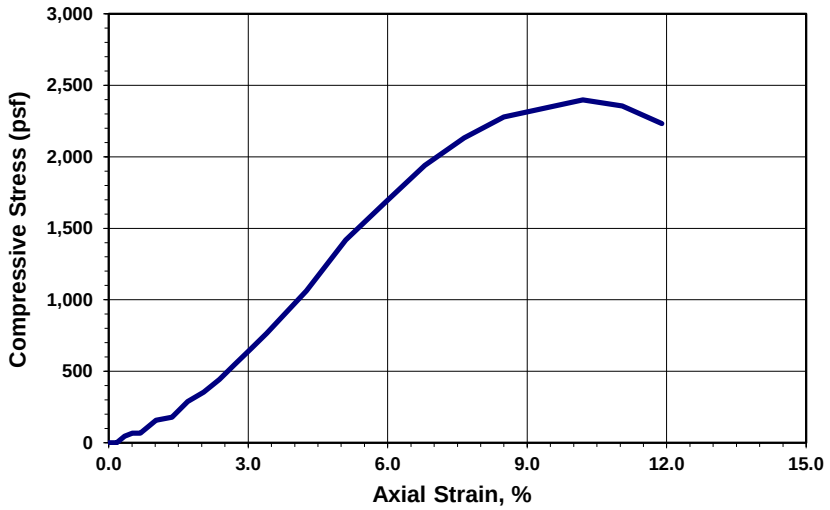
Physical Characteristics	L.L.	P.L.	P.I.	Gravel%	C. Sand%	F. Sand%	Silt%	Clay%
	NP	NP	NA	0	0	1.0	86.1	12.9

DIAMETER, D_0	2.846	in	72.3	mm	STRAIN RATE	1.00	%/min
AREA, A_0	6.363	in^2	41.1	cm^2	WET SOIL + PAN MASS	1329.4	g
HEIGHT, L_0	5.884	in	149.46	mm	PAN MASS	104.7	g
VOLUME, V_0	37.442	in^3	613.56	cm^3	DRY SOIL + PAN MASS	1065.3	g
MACH. RATE	0.059	in/min			WET DENSITY	124.61	lb/ft^3
WATER CONT.	27.49	%			DRY DENSITY	97.74	lb/ft^3

UNCONFINED COMPRESSION STRESS, q_u	**2,398**	**psf**	1.20	tsf
AXIAL STRAIN @ FAILURE			10.20	%
HAND PENETROMETER			1.00	tsf

Failure Sketch

Unconfined Compression Test



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Fax Number: (216) 573-0963

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Fax Number: (513) 769-7055

PROJECT	CUY-77-11.21
JOB NO.	N-19-009
DATE TESTED	5/20/2019-5/27/2019
TESTED BY	EM/KL

DETERMINING SULFATE CONTENT IN SOILS
COLORIMETRIC METHOD
ODOT SUPPLEMENT 1122

Sample ID	Station		State Plane Coordinates		Elevation	Soaking Time (hr)	Dilution Ratio	Replicate Sample Readings			Average Reading	Sulfate Content (ppm)
			Northing	Easting				1	2	3		
B-001	SS-1A					24	20	4	3	3	3.33	67
B-001	SS-2A					24	20	6	7	7	6.67	133
B-002	SS-1C					24	20	16	15	15	15.33	307
B-002	SS-2					24	20	11	11	12	11.33	227
B-003	SS-1					24	20	13	12	11	12.00	240
B-003	SS-2					24	20	4	3	2	3.00	60
B-004	SS-1B					24	20	3	2	2	2.33	47
B-004	SS-2					24	20	13	13	13	13.00	260
B-005	SS-1B					24	20	11	10	9	10.00	200
B-005	SS-2					24	20	23	23	23	23.00	460
B-006	SS-1B					24	20	27	26	26	26.33	527
B-006	SS-2					24	20	27	26	25	26.00	520
B-007	SS-1					24	20	19	19	19	19.00	380
B-007	SS-2					24	20	10	10	10	10.00	200
B-008	SS-1					24	20	83	84	84	83.67	1673
B-008	SS-2					24	40	66	65	64	65.00	2600
B-009	SS-1					24	20	22	22	23	22.33	447
B-009	SS-2					24	20	2	1	1	1.33	27
B-010	SS-1					24	20	6	5	4	5.00	100
B-010	SS-2A					24	20	8	8	8	8.00	160
B-011	SS-1					24	20	9	8	8	8.33	167
B-011	SS-2					24	20	41	41	40	40.67	813
B-012	SS-1B					24	20	27	26	26	26.33	527
B-012	SS-2B					24	20	24	24	24	24.00	480

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Fax Number: (513) 769-7055

PROJECT	CUY-77-11.21
JOB NO.	N-19-009
DATE TESTED	5/20/2019-5/27/2019
TESTED BY	EM/KL

DETERMINING SULFATE CONTENT IN SOILS
COLORIMETRIC METHOD
ODOT SUPPLEMENT 1122

Sample ID	Station	Offset	State Plane Coordinates		Elevation	Soaking Time (hr)	Dilution Ratio	Replicate Sample Readings			Average Reading	Sulfate Content (ppm)
			Northing	Easting				1	2	3		
B-013	SS-1					24	20	48	48	48	48.00	960
B-013	SS-2					24	20	53	52	53	52.67	1053
B-014	SS-1					24	20	51	52	52	51.67	1033
B-014	SS-2					24	20	16	16	16	16.00	320
B-015	SS-1A					24	20	13	14	15	14.00	280
B-015	SS-2					24	20	20	20	20	20.00	400
B-016	SS-1					24	20	6	7	8	7.00	140
B-016	SS-3A					24	20	18	18	18	18.00	360
B-017	SS-1					24	20	6	5	4	5.00	100
B-017	SS-2					24	20	35	36	36	35.67	713
B-018	SS-1					24	20	9	8	8	8.33	167
B-018	SS-2					24	20	9	8	7	8.00	160
B-019	SS-1					24	20	5	4	4	4.33	87
B-019	SS-2					24	20	3	2	1	2.00	40
B-020	SS-1B					24	20	13	12	11	12.00	240
B-020	SS-2					24	20	53	54	54	53.67	1073
B-021	SS-1					24	20	22	23	24	23.00	460
B-021	SS-2A					24	20	29	28	19	28.00	560
B-022	SS-1					24	20	73	74	75	74.00	1480
B-022	SS-2B					24	20	60	61	62	61.00	1220
B-023	SS-1A					24	20	7	6	5	6.00	120
B-023	SS-2A					24	20	27	27	26	26.67	533
B-024	SS-1					24	20	1	1	0	0.67	13
B-024	SS-2					24	20	19	20	21	20.00	400

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Fax Number: (513) 769-7055

PROJECT	CUY-77-11.21
JOB NO.	N-19-009
DATE TESTED	5/20/2019-5/27/2019
TESTED BY	EM/KL

DETERMINING SULFATE CONTENT IN SOILS
COLORIMETRIC METHOD
ODOT SUPPLEMENT 1122

Sample ID	Station	Offset	State Plane Coordinates		Elevation	Soaking Time (hr)	Dilution Ratio	Replicate Sample Readings			Average Reading	Sulfate Content (ppm)
			Northing	Easting				1	2	3		
B-027	SS-1					24	20	31	31	31	31.00	620
B-027	SS-2					24	40	72	72	71	71.67	2867
B-028	SS-1B					24	20	13	14	15	14.00	280
B-028	SS-2A					24	20	28	29	29	28.67	573
B-031	SS-1					24	20	23	23	23	23.00	460
B-031	SS-2					24	20	30	30	30	30.00	600
B-032	SS-1					24	20	2	1	1	1.33	27
B-033	SS-1B					24	80	81	82	82	81.67	6533
B-033	SS-2					24	80	82	83	84	83.00	6640
B-034	SS-1B					24	20	27	28	28	27.67	553
B-034	SS-2					24	20	26	25	25	25.33	507
B-035	SS-1C					24	20	51	52	53	52.00	1040
B-035	SS-2					24	20	16	16	16	16.00	320
B-036	SS-1A					24	20	7	7	7	7.00	140
B-036	SS-2					24	40	50	51	52	51.00	2040
B-037	SS-1B					24	40	45	45	45	45.00	1800
B-037	SS-2					24	20	52	52	52	52.00	1040
B-039	SS-1A					24	20	7	6	6	6.33	127
B-039	SS-2					24	20	16	16	17	16.33	327

Appendix D – Subgrade Analysis (GB-1)

OHIO DEPARTMENT OF TRANSPORTATION

OFFICE OF GEOTECHNICAL ENGINEERING

PLAN SUBGRADES
Geotechnical Bulletin GB1

CUY-77-11.21
105743
2.7 Miles of I-77 Freeway (Grant Ave. to Broadway Ave.); 1 New Culvert; 1 Embankment

AECOM

Prepared By: Erik J. Bogen, P.E.
Date prepared: 5/21/2019, rev. 02/16/2026

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NO. OF BORINGS: 42

#	Boring ID	Alignment	Station	Offset	Dir	Drill Rig	ER	Boring EL.	Proposed Subgrade EL	Cut Fill
1	B-001-0-18	I-77 CENTERLINE	75+42	38	Rt	Simco 2800 (062012)	85	701.5	700.0	1.5 C
2	B-002-0-18	I-77 CENTERLINE	78+71	39	Lt	Simco 2800 (062012)	85	696.0	694.5	1.5 C
3	B-003-0-18	I-77 CENTERLINE	83+15	39	Rt	Simco 2800 (062012)	85	695.8	694.3	1.5 C
4	B-004-0-18	I-77 CENTERLINE	87+04	52	Lt	Simco 2800 (062012)	85	695.6	694.1	1.5 C
5	B-005-0-18	I-77 CENTERLINE	91+14	39	Rt	Simco 2800 (062012)	85	699.9	698.4	1.5 C
6	B-006-0-18	I-77 CENTERLINE	94+44	39	Lt	Simco 2800 (062012)	85	696.4	694.9	1.5 C
7	B-007-0-18	I-77 CENTERLINE	98+94	39	Rt	Simco 2800 (062012)	85	692.3	690.8	1.5 C
8	B-008-0-18	I-77 CENTERLINE	102+91	56	Lt	Simco 2800 (062012)	85	687.8	686.3	1.5 C
9	B-009-0-18	I-77 CENTERLINE	107+02	38	Rt	Simco 2800 (062012)	85	680.7	679.2	1.5 C
10	B-010-0-18	I-77 CENTERLINE	110+99	39	Lt	Simco 2800 (062012)	85	676.8	675.3	1.5 C
11	B-011-0-18	I-77 CENTERLINE	114+97	38	Rt	Simco 2800 (062012)	85	670.5	669.0	1.5 C
12	B-012-0-18	I-77 CENTERLINE	118+90	39	Lt	Simco 2800 (062012)	85	665.9	664.4	1.5 C
13	B-013-0-18	I-77 CENTERLINE	124+05	53	Rt	Simco 2800 (062012)	85	656.3	654.8	1.5 C
14	B-014-0-18	I-77 CENTERLINE	126+88	51	Lt	Simco 2800 (062012)	85	654.1	652.6	1.5 C
15	B-015-0-18	I-77 CENTERLINE	131+63	39	Rt	Simco 2800 (062012)	85	648.8	647.3	1.5 C
16	B-016-0-18	I-77 CENTERLINE	134+90	40	Lt	Simco 2800 (062012)	85	651.8	650.3	1.5 C
17	B-017-0-18	I-77 CENTERLINE	138+88	38	Rt	Simco 2800 (062012)	85	658.7	657.2	1.5 C
18	B-018-0-18	I-77 CENTERLINE	142+99	39	Lt	Simco 2800 (062012)	85	666.6	665.1	1.5 C
19	B-019-0-18	I-77 CENTERLINE	146+86	39	Rt	Simco 2800 (062012)	85	673.0	671.5	1.5 C
20	B-020-0-18	I-77 CENTERLINE	151+03	39	Lt	Simco 2800 (062012)	85	680.6	679.1	1.5 C
21	B-021-0-18	I-77 CENTERLINE	154+83	52	Rt	Simco 2800 (062012)	85	682.2	680.7	1.5 C
22	B-022-0-18	I-77 CENTERLINE	159+05	40	Lt	Simco 2800 (062012)	85	678.7	677.2	1.5 C
23	B-023-0-18	I-77 CENTERLINE	162+87	39	Rt	Simco 2800 (062012)	85	678.0	676.5	1.5 C
24	B-024-0-18	I-77 CENTERLINE	166+86	40	Lt	Simco 2800 (062012)	85	677.8	676.3	1.5 C
25	B-027-0-18	I-77 CENTERLINE	171+09	38	Rt	Simco 2800 (062012)	85	680.7	679.2	1.5 C
26	B-028-0-18	I-77 CENTERLINE	174+35	40	Lt	Simco 2800 (062012)	85	682.1	680.6	1.5 C
27	B-031-0-18	I-77 CENTERLINE	179+09	38	Rt	Simco 2800 (062012)	85	684.5	683.0	1.5 C
28	B-032-0-18	I-77 CENTERLINE	182+84	50	Lt	Simco 2800 (062012)	85	678.5	677.0	1.5 C
29	B-033-0-18	I-77 CENTERLINE	186+95	51	Rt	Simco 2800 (062012)	85	676.9	675.4	1.5 C
30	B-034-0-18	I-77 CENTERLINE	191+92	40	Lt	Simco 2800 (062012)	85	674.8	673.3	1.5 C
31	B-035-0-18	I-77 CENTERLINE	194+98	41	Rt	Simco 2800 (062012)	85	663.2	661.7	1.5 C
32	B-036-0-18	I-77 CENTERLINE	198+34	46	Lt	Diedrich D-25 (162)	87	661.4	659.9	1.5 C
33	B-003-0-14	RAMP J5	201+80	16	Lt	CME 55	79	661.6	659.0	2.6 C
34	B-037-0-18	I-77 CENTERLINE	202+31	54	Rt	Simco 2800 (062012)	85	659.3	657.8	1.5 C
35	B-004-0-14	RAMP J5	202+98	19	Lt	CME 55	79	661.7	659.0	2.7 C
36	B-005-0-14	RAMP J5	204+79	16	Lt	Mobile B-58	92	661.7	659.0	2.7 C
37	B-006-0-14	RAMP J5	205+95	22	Lt	Mobile B-58	92	662.5	659.0	3.5 C
38	B-008-0-14	RAMP J5	210+03	6	Lt	CME 55	79	657.4	659.0	1.6 F
39	B-039-0-18	I-77 CENTERLINE	210+95	41	Rt	Simco 2800 (062012)	85	658.1	656.6	1.5 C
40	B-010-0-14	RAMP J5	211+95	20	Lt	CME 55	79	660.5	653.5	7.0 C
41	B-017-0-14	RAMP J5	218+31	3	Rt	CME 55	79	654.4	655.5	1.1 F
42	B-019-0-14	RAMP J5	220+18	6	Lt	Mobile B-58	92	657.7	661.0	3.3 F

OHIO DEPARTMENT OF TRANSPORTATION

Subgrade Analysis

V. 14.5 1/18/2019

#	Boring	Sample	Sample Depth		Subgrade Depth		Standard Penetration		HP (tsf)	Physical Characteristics						Moisture		Ohio DOT		Sulfate Content (ppm)	Problem		Excavate and Replace (Item 204)		Recommendation (Enter depth in inches)
			From	To	From	To	N_{60}	N_{60L}		LL	PL	PI	% Silt	% Clay	P200	M_C	M_{OPT}	Class	GI		Unsuitable	Unstable	Unsuitable	Unstable	
1	B	1A	1.5	2.7	0.0	1.2	35									11	6	A-1-b	0	100					12"
	001-0	1B/2A	2.7	3.2	1.2	1.7	11									7	10	A-4a	8	130		N_{60}			204 Geotextile
	18	2B	3.2	4.2	1.7	2.7	11										8	A-3	0						
		2C/3A	4.2	5.6	2.7	4.1	10	10	0.75	31	21	10	32	31	63	26	16	A-4b	6						
2	B	1C	2.1	3.1	0.6	1.6	18									8	6	A-1-b	0	310					
	002-0	2	3.1	4.6	1.6	3.1	23			NP	NP	NP	8	1	9	5	6	A-1-b	0	230					
	18	3	4.6	6.1	3.1	4.6	25			NP	NP	NP	3	0	3	5	6	A-1-b	0						
		4	6.1	7.6	4.6	6.1	23	18								9	6	A-1-b	0						
3	B	1	1.5	3.0	0.0	1.5	38									5	6	A-1-b	0	240					
	003-0	2	3.0	4.5	1.5	3.0	35			NP	NP	NP	8	0	8	5	6	A-1-b	0	100					
	18	3	4.5	6.0	3.0	4.5	10									11	6	A-1-a	0						
		4	6.0	7.5	4.5	6.0	8	8		NP	NP	NP	4	1	5	11	6	A-1-a	0						
4	B	1C	1.9	2.9	0.4	1.4	13									5	6	A-1-b	0	100					
	004-0	2	3.0	4.5	1.5	3.0	18			NP	NP	NP	4	2	6	7	6	A-1-b	0	260					
	18	3	4.5	6.0	3.0	4.5	21									5	6	A-1-a	0						
		4	6.0	7.5	4.5	6.0	23	13		NP	NP	NP	4	0	4	5	6	A-1-a	0						
5	B	1B	2.1	3.1	0.6	1.6	34			NP	NP	NP	16	0	16	7	6	A-1-b	0	200					36"
	005-0	2B	3.3	4.0	1.8	2.5	15		1.25	26	17	9	54	14	68	15	12	A-4b	7	460	A-4b	HP & Mc			204 Geotextile
	18	2C	4.0	4.6	2.5	3.1	15									20	10	A-4b	8		A-4b	Mc	37"		
		3	4.6	6.1	3.1	4.6	10	10		NP	NP	NP	74	10	84	28	11	A-4b	8						
6	B	1A	1.2	2.0	-0.3	0.5	23			NP	NP	NP	11	1	12	7	6	A-1-a	0						26"
	006-0	1B	2.0	2.7	0.5	1.2	23		4.5							11	10	A-4a	8	530					204 Geotextile
	18	2A/2B	3.0	3.7	1.5	2.2	24		3	25	18	7	62	35	97	20	13	A-4b	8	520	A-4b	Mc	26"		
		4	3.7	7.5	2.2	6.0	17	17		NP	NP	NP	9	0	9	4	6	A-1-b	0						
7	B	1	1.5	3.0	0.0	1.5	23			NP	NP	NP	12	1	13	7	6	A-1-a	0	380					
	007-0	2	3.0	4.5	1.5	3.0	24									12	8	A-3a	0	200					
	18	3	4.5	6.0	3.0	4.5	25		2.5	NP	NP	NP	69	3	72	16	11	A-4b	7						
		4	6.0	7.5	4.5	6.0	6	6								23	8	A-3	0						
8	B	1	1.5	1.8	0.0	0.3	50			NP	NP	NP	4	2	6	11	6	A-1-a	0	1700					
	008-0	2	3.0	3.5	1.5	2.0	50									17	6	A-1-b	0	2600					
	18	3	4.5	6.0	3.0	4.5	11		2.5	28	20	8	79	18	97	20	15	A-4b	8						
		4	6.0	7.5	4.5	6.0	14	11	3.75							19	10	A-4b	8						
9	B	1	1.5	3.0	0.0	1.5	41									8	10	A-2-4	0	450					
	009-0	2	3.0	4.5	1.5	3.0	37			NP	NP	NP	10	2	12	8	6	A-1-b	0	100					
	18	3	4.5	6.0	3.0	4.5	15									6	6	A-1-b	0						
		4A	6.0	7.0	4.5	5.5	11	11		NP	NP	NP	1	1	2	16	6	A-1-b	0						

OHIO DEPARTMENT OF TRANSPORTATION

Subgrade Analysis

V. 14.5 1/18/2019

#	Boring	Sample	Sample Depth		Subgrade Depth		Standard Penetration		HP (tsf)	Physical Characteristics						Moisture		Ohio DOT		Sulfate Content (ppm)	Problem		Excavate and Replace (Item 204)		Recommendation (Enter depth in inches)
			From	To	From	To	N_{60}	N_{60L}		LL	PL	PI	% Silt	% Clay	P200	M_C	M_{OPT}	Class	GI		Unsuitable	Unstable	Unsuitable	Unstable	
10	B	1	1.2	2.7	-0.3	1.2	17									8	10	A-2-4	0	100					36" 204 Geotextile
	010-0	2A	3.0	3.6	1.5	2.1	10			NP	NP	NP	55	16	71	23	11	A-4b	7	160	A-4b	N_{60} & Mc			
	18	2B	3.6	4.5	2.1	3.0	10		1.25								10	A-4b	8		A-4b	HP	36"		
		3A	4.5	5.2	3.0	3.7	17	10		NP	NP	NP	82	3	85	13	11	A-4b	8						
11	B	1	1.5	3.0	0.0	1.5	15									9	6	A-1-b	0	170					36" 204 Geotextile
	011-0	2	3.0	4.5	1.5	3.0	20		3.92	26	17	9	61	20	81	16	12	A-4b	8	810	A-4b	Mc			
	18	3	4.5	6.0	3.0	4.5	65			NP	NP	NP	39	1	40	9	11	A-4a	1						
		4	6.0	7.5	4.5	6.0	28	15	4							15	10	A-4b	8						
12	B	1A	1.5	2.3	0.0	0.8	7			NP	NP	NP	14	2	16	9	6	A-1-b	0						28" 204 Geotextile
	012-0	1B	2.3	3.0	0.8	1.5	7		1							19	10	A-4a	8	530		HP & Mc		15"	
	18	2A	3.0	3.8	1.5	2.3	18			NP	NP	NP	48	7	55	15	11	A-4a	4	480		Mc			
		2B/3A	3.8	5.2	2.3	3.7	14	7									10	A-4a	8						
13	B	1	1.5	3.0	0.0	1.5	14			NP	NP	NP	16	0	16	13	6	A-1-b	0	960					36" 204 Geotextile
	013-0	2	3.0	4.5	1.5	3.0	10		2.42							18	10	A-4b	8	1100	A-4b	N_{60} & Mc			
	18	3	4.5	6.0	3.0	4.5	8		1.67							20	10	A-4b	8						
		4	6.0	7.5	4.5	6.0	10	8	1.58	27	19	8	72	27	99	21	14	A-4b	8						
14	B	1	1.2	2.7	-0.3	1.2	80			NP	NP	NP	3	1	4	9	6	A-1-b	0	1000					36" 204 Geotextile
	014-0	2	3.0	4.5	1.5	3.0	28		4.33							12	10	A-4b	8	320	A-4b				
	18	3	4.5	6.0	3.0	4.5	15		3.83	24	20	4	59	15	74	15	15	A-4b	8						
		4	6.0	7.5	4.5	6.0	20	15	4.42							15	10	A-4b	8						
15	B	1A	1.5	2.2	0.0	0.7	52									9	10	A-2-4	0	280					36" 204 Geotextile
	015-0	1B	2.2	3.0	0.7	1.5	52			NP	NP	NP	14	1	15	6	6	A-1-b	0						
	18	2	3.0	4.5	1.5	3.0	34		4							14	10	A-4b	8	400	A-4b	Mc	36"		
		3	4.5	6.0	3.0	4.5	41	30	4.5							13	10	A-4b	8						
16	B	1	1.5	3.0	0.0	1.5	89			NP	NP	NP	2	0	2	10	6	A-1-a	0	140					36" 204 Geotextile
	016-0	2	3.0	4.5	1.5	3.0	24		4.5	24	17	7	49	16	65	13	12	A-4a	6						
	18	3A	4.5	5.5	3.0	4.0	35		3.08							9	10	A-4b	8	360					
		3B	5.5	6.0	4.0	4.5	35	24								11	8	A-3a	0						
17	B	1A	1.5	2.8	0.0	1.3	25			NP	NP	NP	10	2	12	8	6	A-1-a	0	100					36" 204 Geotextile
	017-0	2	3.0	4.5	1.5	3.0	21		1.33							20	10	A-4b	8	710	A-4b	HP & Mc			
	18	3	4.5	6.0	3.0	4.5	8		1.17	24	18	6	77	22	99	21	13	A-4b	8						
		4	6.0	7.5	4.5	6.0	14	8	0.5							21	10	A-4b	8						
18	B	1	1.2	2.7	-0.3	1.2	24									8	6	A-1-b	0	170					
	018-0	2	3.0	4.5	1.5	3.0	14			NP	NP	NP	5	3	8	23	8	A-3	0	160					
	18	3	4.5	6.0	3.0	4.5	17									27	8	A-3	0						
		4	6.0	7.5	4.5	6.0	23	14		NP	NP	NP	3	2	5	22	8	A-3	0						

OHIO DEPARTMENT OF TRANSPORTATION

Subgrade Analysis

V. 14.5 1/18/2019

#	Boring	Sample	Sample Depth		Subgrade Depth		Standard Penetration		HP (tsf)	Physical Characteristics						Moisture		Ohio DOT		Sulfate Content (ppm)	Problem		Excavate and Replace (Item 204)		Recommendation (Enter depth in inches)
			From	To	From	To	N_{60}	N_{60L}		LL	PL	PI	% Silt	% Clay	P200	M_C	M_{OPT}	Class	GI		Unsuitable	Unstable	Unsuitable	Unstable	
19	B	1	1.5	3.0	0.0	1.5	25			NP	NP	NP	7	2	9	6	6	A-1-a	0	100					
	019-0	2	3.0	4.5	1.5	3.0	31									4	10	A-2-4	0	100					
	18	3	4.5	6.0	3.0	4.5	34			NP	NP	NP	6	3	9	6	8	A-3	0						
		4	6.0	7.5	4.5	6.0	25	25								6	6	A-1-b	0						
20	B	1A	1.5	2.0	0.0	0.5	30									8	6	A-1-b	0						36''
	020-0	1B	2.0	3.0	0.5	1.5	30			NP	NP	NP	10	2	12	8	6	A-1-a	0	240					204 Geotextile
	18	2B	3.1	4.5	1.6	3.0	31		4.5	26	20	6	72	23	95	14	15	A-4b	8	1100	A-4b		36''		
		3A	4.5	5.2	3.0	3.7	21	21	4.13							16	10	A-4b	8						
21	B	1	1.5	3.0	0.0	1.5	37			NP	NP	NP	12	2	14	7	6	A-1-b	0	460					
	021-0	2A	3.0	3.9	1.5	2.4	24		3.5							14	10	A-4a	8	560		Mc			
	18	2B	3.9	4.5	2.4	3.0	14		4							24	14	A-6a	10			N_{60} & Mc			
		3	4.5	6.0	3.0	4.5	14	14	1.25	32	19	13	44	52	96	17	14	A-6a	9						
22	B	1	1.4	2.1	-0.1	0.6	50									11	6	A-1-b	0	1500					
	022-0	2A	3.0	3.3	1.5	1.8	15										10	A-4a	8						
	18	2B	3.3	4.5	1.8	3.0	13		2.88	31	19	12	50	49	99	22	14	A-6a	9	1200		N_{60} & Mc			
		3	4.5	6.0	3.0	4.5	25	13	0.58	39	23	16	30	69	99	27	18	A-6b	10						
23	B	1A	1.5	2.5	0.0	1.0	21									8	6	A-1-b	0	120					
	023-0	1B/2A	2.5	4.0	1.0	2.5	17		2.25	24	20	4	56	22	78	17	15	A-4b	8	530	A-4b		30''		
	18	2B/3	4.0	6.0	2.5	4.5	15		2.33	25	18	7	64	32	96	20	13	A-4b	8						
		4	6.0	7.5	4.5	6.0	23	15	4.5							17	10	A-4b	8						
24	B	1	1.4	2.1	-0.1	0.6	50									10	6	A-1-a	0	100					36''
	024-0	2	3.0	4.5	1.5	3.0	38		4.5	25	21	4	58	7	65	14	16	A-4b	6	400	A-4b				204 Geotextile
	18	3	4.5	6.0	3.0	4.5	31			NP	NP	NP	37	12	49	15	11	A-4a	3						
		4B	6.2	7.5	4.7	6.0	17	17	4.42								10	A-4b	8						
25	B	1	1.0	2.5	-0.5	1.0	44									7	6	A-1-b	0	620					30''
	027-0	2	2.5	4.0	1.0	2.5	17		2.25	NP	NP	NP	6	1	7	14	6	A-1-a	0	2900					204 Geotextile
	18	3B	4.3	5.5	2.8	4.0	52									13	10	A-4a	8						
		4	5.5	7.0	4.0	5.5	37	17		23	18	5	27	16	43	14	13	A-4a	2						
26	B	1B	1.4	2.7	-0.1	1.2	20		4.38	NP	NP	NP	56	5	61	15	11	A-4b	5	280	A-4b	Mc			36''
	028-0	2A	2.7	3.4	1.2	1.9	23		2	NP	NP	NP	40	8	48	18	11	A-4a	3	570		Mc			204 Geotextile
	18	2B	3.4	4.2	1.9	2.7	23			NP	NP	NP	17	7	24	9	6	A-1-b	0						
		3A	4.2	5.0	2.7	3.5	50	20	2							15	10	A-4b	8		A-4b	Mc	42''		
27	B	1	1.5	3.0	0.0	1.5	23		2	23	16	7	45	14	59	16	11	A-4a	5	460		Mc			
	031-0	2	3.0	4.5	1.5	3.0	21		4.5							16	10	A-4a	8	600		Mc			
	18	3	4.5	6.0	3.0	4.5	23		1.75							17	10	A-4a	8						
		4B	6.4	7.1	4.9	5.6	50	21		18	14	4	17	11	28	10	10	A-2-4	0						

OHIO DEPARTMENT OF TRANSPORTATION

Subgrade Analysis

V. 14.5 1/18/2019

#	Boring	Sample	Sample Depth		Subgrade Depth		Standard Penetration		HP (tsf)	Physical Characteristics						Moisture		Ohio DOT		Sulfate Content (ppm)	Problem		Excavate and Replace (Item 204)		Recommendation (Enter depth in inches)
			From	To	From	To	N_{60}	N_{60L}		LL	PL	PI	% Silt	% Clay	P200	M_C	M_{OPT}	Class	GI		Unsuitable	Unstable	Unsuitable	Unstable	
28	B	1	1.4	2.9	-0.1	1.4	6									6	6	A-1-a	0	100					
	032-0	2	2.9	4.4	1.4	2.9	6			NP	NP	NP	1	0	1	6	6	A-1-a	0						
	18	3	4.4	5.9	2.9	4.4	13									11	6	A-1-a	0						
		4	5.9	7.4	4.4	5.9	8	6									6	A-1-a	0						
29	B	1B	1.8	3.0	0.3	1.5	66									14	10	A-2-4	0	6500		Mc			
	033-0	2	3.0	4.5	1.5	3.0	41			NP	NP	NP	3	1	4	11	6	A-1-a	0	6600					
	18	3	4.5	6.0	3.0	4.5	15		2.83	22	18	4	72	17	89	18	13	A-4b	8						
		4	6.0	7.5	4.5	6.0	11	11	2							17	10	A-4b	8						
30	B	1A	1.5	2.1	0.0	0.6	25			NP	NP	NP	15	1	16	51	6	A-1-b	0						
	034-0	1B	2.1	3.0	0.6	1.5	25		4.5							12	10	A-4b	8	550	A-4b				
	18	2	3.0	4.5	1.5	3.0	24		4.5	NP	NP	NP	55	10	65	13	11	A-4b	6	510	A-4b		36''		
		3A	4.5	5.8	3.0	4.3	15	15		NP	NP	NP	9	8	17	16	8	A-3a	0						
31	B	1A/1B	1.5	2.5	0.0	1.0	14			NP	NP	NP	17	0	17	60	6	A-1-b	0						
	035-0	1C	2.5	3.0	1.0	1.5	14		1							17	10	A-4a	8	1000		HP & Mc		12''	
	18	2	3.0	4.5	1.5	3.0	24		4.5							12	10	A-4a	8	320					
		3	4.5	6.0	3.0	4.5	39	14	4.5	17	16	1	28	12	40	10	11	A-4a	1						
32	B	1A	1.1	2.1	-0.4	0.6	10			NP	NP	NP	26	2	28	13	8	A-3a	0	140					
	036-0	1B	2.1	2.6	0.6	1.1	12										10	A-4a	8						
	18	2	3.0	4.5	1.5	3.0	15									18	10	A-4a	8	2000		Mc			
		3A	4.5	5.5	3.0	4.0	9	9		NP	NP	NP	39	8	47	19	11	A-4a	2						
33	B	3	4.0	7.0	1.4	4.4	12			NP	NP	NP	71	16	87	26	11	A-4b	8						36''
	003-0	4	7.0	9.5	4.4	6.9	8									19	10	A-4b	8						204 Geotextile
	14	5	9.5	12.0	6.9	9.4	9			NP	NP	NP	75	18	93	26	11	A-4b							
		6	12.0	14.5	9.4	11.9	11	8								37	10	A-4b							
34	B	1	1.2	2.7	-0.3	1.2	85									42	6	A-1-a	0	1800					36''
	037-0	2	2.7	4.2	1.2	2.7	38			NP	NP	NP	76	6	82	18	11	A-4b	8	1000	A-4b	Mc			204 Geotextile
	18	3	4.2	5.7	2.7	4.2	14			NP	NP	NP	50	5	55	25	11	A-4b	4						
		4	5.7	6.2	4.2	4.7	8	8		NP	NP	NP	76	5	81	25	11	A-4b	8						
35	B	2	2.5	4.0	-0.2	1.3	25		4	21	18	3	44	16	60	17	13	A-4a	5			Mc			36''
	004-0	3	5.0	6.5	2.3	3.8	17									26	10	A-4b	8						204 Geotextile
	14	4	7.5	9.0	4.8	6.3	22									24	10	A-4b	8						
		5	10.0	11.5	7.3	8.8	24	17								26	10	A-4b							
36	B	2	2.5	4.0	-0.2	1.3	26									16	8	A-3a	0						
	005-0	3	5.0	6.5	2.3	3.8	25			NP	NP	NP	27	8	35	23	8	A-3a	0						
	14	4	7.5	9.0	4.8	6.3	25			NP	NP	NP	69	10	79	18	11	A-4b	8						
		5	10.0	11.5	7.3	8.8	28	25								20	8	A-3							

OHIO DEPARTMENT OF TRANSPORTATION

Subgrade Analysis

V. 14.5 1/18/2019

#	Boring	Sample	Sample Depth		Subgrade Depth		Standard Penetration		HP (tsf)	Physical Characteristics						Moisture		Ohio DOT		Sulfate Content (ppm)	Problem		Excavate and Replace (Item 204)		Recommendation (Enter depth in inches)
			From	To	From	To	N_{60}	N_{60L}		LL	PL	PI	% Silt	% Clay	P200	M_C	M_{OPT}	Class	GI		Unsuitable	Unstable	Unsuitable	Unstable	
37	B	2	2.5	4.0	-1.0	0.5	3			NP	NP	NP	6	5	11	8	8	A-3a	0						
	006-0	3	5.0	6.5	1.5	3.0	6									7	8	A-3a	0						
	14	4	7.5	9.0	4.0	5.5	31									24	10	A-4a	8						
		5	10.0	12.0	6.5	8.5		3		25	17	8	55	43	98	26	12	A-4b							
38	B	1	2.5	4.0	4.1	5.6	13			NP	NP	NP	4	3	7	6	6	A-1-b	0						
	008-0	2	5.0	6.5	6.6	8.1	5			NP	NP	NP	9	7	16	20	8	A-3a							
	14	3	7.5	9.0	9.1	10.6	11									22	8	A-3a							
		4	10.0	11.5	11.6	13.1	8	13								20	8	A-3a							
39	B	1A	1.4	2.0	-0.1	0.5	28									11	6	A-1-b	0	130					
	039-0	1B	2.0	2.9	0.5	1.4	28										6	A-1-b	0						
	18	2	2.9	4.4	1.4	2.9	11			NP	NP	NP	3	3	6	6	6	A-1-b	0	330					
		3	4.4	5.9	2.9	4.4	6	6		NP	NP	NP	32	2	34	21	8	A-3a	0						
40	B	3	7.5	9.0	0.5	2.0	17									6	8	A-3a	0						
	010-0	4	10.0	11.5	3.0	4.5	12									6	8	A-3a	0						
	14	5	12.5	14.0	5.5	7.0	9									25	8	A-3a							
		6	15.0	16.5	8.0	9.5	4	9								24	8	A-3a							
41	B	1	1.2	2.7	2.3	3.8	20									8	8	A-3a	0						
	017-0	2	5.0	6.5	6.1	7.6	20			NP	NP	NP	14	8	22	10	8	A-3a							
	14	3	7.5	9.0	8.6	10.1	8			NP	NP	NP	10	5	15	10	8	A-3a							
		4	10.0	11.5	11.1	12.6	4	20								13	8	A-3a							
42	B	1	1.5	3.0	4.8	6.3	30									13	8	A-3	0						
	019-0	2	5.0	6.5	8.3	9.8	32										8	A-3							
	14	3	7.5	9.0	10.8	12.3	22			NP	NP	NP	6	3	9	5	8	A-3							
		4	10.0	11.5	13.3	14.8	17	30								4	8	A-3							

OHIO DEPARTMENT OF TRANSPORTATION

Subgrade Analysis

V. 14.5 1/18/2019

PID: 105743

County-Route-Section: CUY-77-11.21
No. of Borings: 42

Geotechnical Consultant: AECOM
Prepared By: Erik J. Bogen, P.E.
Date prepared: 5/21/2019, rev. 02/16/2026

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

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

Design CBR	9

% Samples within 6 feet of subgrade			
$N_{60} \leq 5$	1%	HP ≤ 0.5	1%
$N_{60} < 12$	20%	0.5 < HP ≤ 1	3%
$12 \leq N_{60} < 15$	11%	1 < HP ≤ 2	8%
$N_{60} \geq 20$	55%	HP > 2	22%
M+	15%		
Rock	0%		
Unsuitable	30%		

Excavate and Replace at Surface	
Average	14''
Maximum	36''
Minimum	0''

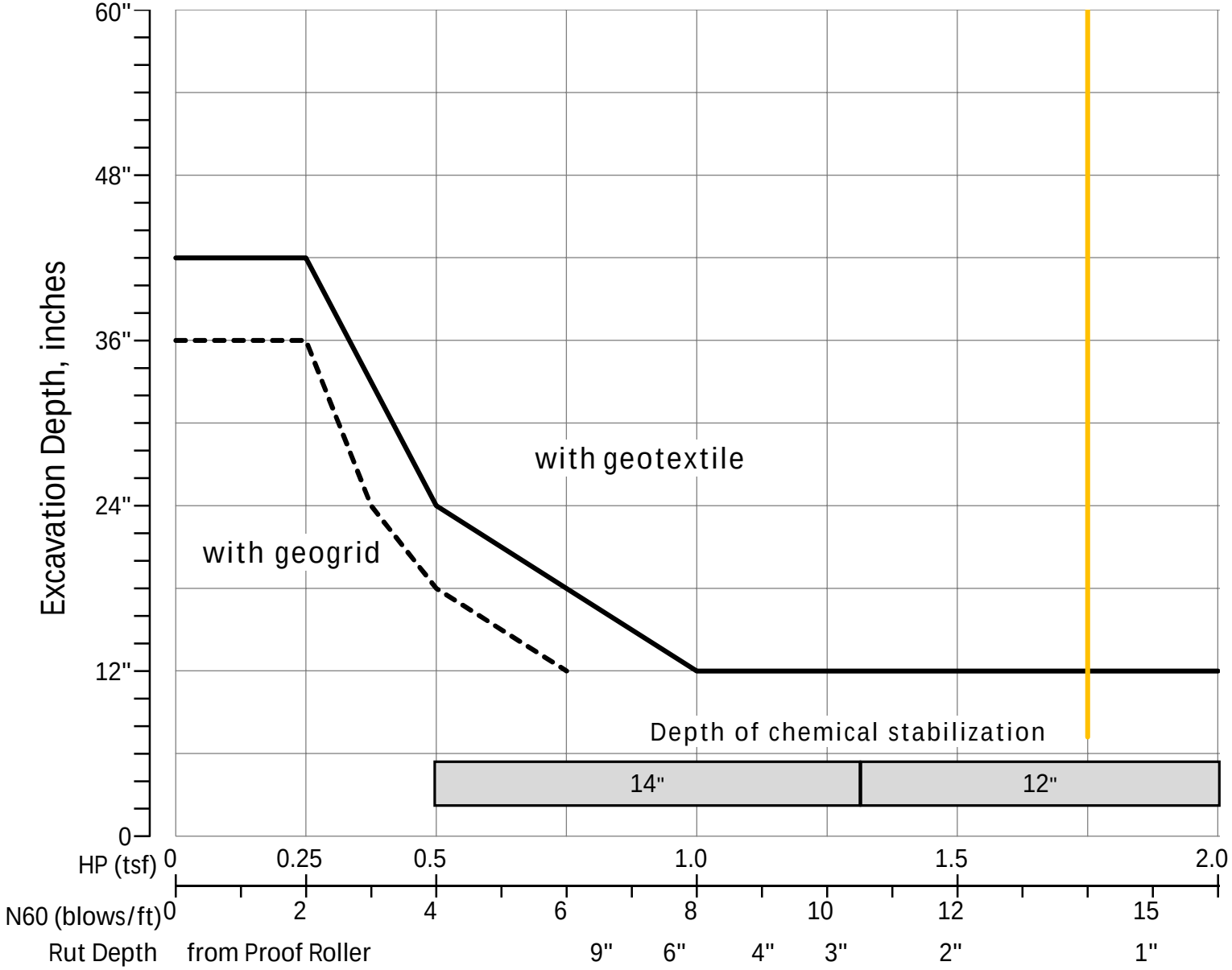
% Proposed Subgrade Surface	
Unstable & Unsuitable	44%
Unstable	26%
Unsuitable	19%

	N_{60}	N_{60L}	HP	LL	PL	PI	Silt	Clay	P 200	M_C	M_{OPT}	GI
Average	23	14	2.97	25	18	7	32	10	42	15	9	4
Maximum	89	30	4.50	39	23	16	82	69	99	60	18	10
Minimum	3	3	0.50	17	14	1	1	0	1	4	6	0

Classification Counts by Sample

ODOT Class	Rock	A-1-a	A-1-b	A-2-4	A-2-5	A-2-6	A-2-7	A-3	A-3a	A-4a	A-4b	A-5	A-6a	A-6b	A-7-5	A-7-6	A-8a	A-8b	Totals
Count	0	19	34	6	0	0	0	11	20	24	50	0	3	1	0	0	0	0	168
Percent	0%	11%	20%	4%	0%	0%	0%	7%	12%	14%	30%	0%	2%	1%	0%	0%	0%	0%	100%
% Rock|Granular|Cohesive	0%	68%									32%								100%
Surface Class Count	0	13	28	5	0	0	0	2	8	16	23	0	2	0	0	0	0	0	97
Surface Class Percent	0%	13%	29%	5%	0%	0%	0%	2%	8%	16%	24%	0%	2%	0%	0%	0%	0%	0%	100%

GB1 Figure B – Subgrade Stabilization



OVERRIDE TABLE

Calculated Average	New Values	Check to Override
2.97	0.50	☐ HP
14.10	6.00	☐ N60L

Average HP
Average N_{60L}

The subgrade analysis workbook consists of five worksheets. Each worksheet functions independently. In all of the worksheets the fields are color coded as follows:

- Every yellow highlighted field indicates a field to be entered by the user.
- Every salmon field is to indicate a problem/issue.
- Every gray or green field is a heading/informational field.

IMPORTANT: The sequence of filling out the data needs to be followed as outlined below:

1. Cover Sheet: this worksheet is designed for the purpose of entering the project information. Enter all the following fields:

County-Route-Section	This includes the county, route, section number assigned to the project.
PID	the Project Identification Number
Project Description	See Cover Sheet for list of example details
Geotechnical Consultant	The Geotechnical Consultant performing the analysis.
Prepared By	The preparer of the subgrade analysis
Date prepared	The date the analysis is performed.
Contact Information	Name, address, telephone #, and email address
No. of Borings	Enter the total number of borings within the alignment that is being analyzed.

2. Boring Logs Entry Worksheet: this worksheet has a programming code that will run in the background every time the sheet is activated and will make the sheet unresponsive for less than a minute. The code is designed to read the total number of borings from the cover sheet and generate the needed number of fields.
   a. All yellow highlighted fields are user's entry.
   b. ODOT has developed a text table export from gINT *(GB 1 Borings Log Entry Tab)* that will allow for copy and paste of all highlighted fields with the exception of proposed subgrade elevation. The designer must provide a proposed subgrade elevation in order for the spreadsheet to function properly.
   c. The Cut/Fill field is a calculated field that, based on the difference between the boring elevation and the proposed subgrade elevation, will highlight the cell either gray and adds the letter "C" to the end in a cut situation or highlights the cell in light purple and adds the letter "F" to the end in a fill situation.
   d. Every duplicate boring ID will be highlighted in salmon background and red text.
   e. IMPORTANT: After entering all the borings' information, the user must click "Add Subgrade Analysis Entry Fields" button. This will generate all the required fields in the "Subgrade Analysis" Worksheet.

3. Subgrade Analysis Worksheet:
   a. The boring number and boring ID is read from the "Boring Logs Entry Worksheet" excluding every boring that has six feet or more of fill.
   b. All yellow highlighted fields are to be entered by the user and salmon highlighted fields indicates a problem or issue.
   c. Every sample that has a Sulfate Content greater than or equal to 3000 will be highlighted in light salmon background. Every sample that has a Sulfate Content greater than or equal to 8000 will be highlighted in darker salmon background. Note the revised sulfate criteria in GB1 issued July 20, 2018.

d. Unsuitable/Unstable:

i. Unsuitable samples that are within 3 feet of the top of subgrade will be highlighted with salmon background and the class will be showing in this field.

ii. Unstable Samples that are within 3 feet of top of subgrade will be highlighted with salmon background and text to indicate the problem as follows:

Criterion	Stabilization Need Check	Text displayed in the field
A-1-a, A-1-b, A-3, or A-3a Soil Class	No Stabilization is needed	
HP ≥ 1.875	No Stabilization is needed	
$N_{60} \geq 15$	No Stabilization is needed	
$1.875 \geq HP \geq 1.5$ and $M_c \geq$ Opt. M_c+3	Unstable Subgrade	HP & Mc
$15 \geq N_{60} \geq 12$ and $M_c \geq$ Opt. M_c+3	Unstable Subgrade	N_{60} & Mc
HP ≤ 1.5	Unstable Subgrade	HP
$N_{60} \leq 12$	Unstable Subgrade	N_{60}

iii. The field is formulated to check for HP first and check for N_{60} second.

e. Excavate and Replace (Item 204) is going to be calculated based on the subgrade depth for each sample indicating an unsuitable or unstable problem.

f. Recommendation:

i. Geotextile Option is calculated and rounded to a multiple of 3 inches based on the subgrade depth for every sample indicating an unsuitable or unstable problem.

ii. GEOGRID Option is only offered in case of unstable subgrade problem and if the geotextile option indicates the need to excavate greater than 12 inches.

PLEASE NOTE: The Problem, Excavate & Replace, and Recommendation Fields are the responsibility of the Designer. These fields are being enhanced to attempt to capture the ODOT philosophy regarding the GB1 stabilization chart, but are considered still under development. If there are discrepancies between the spreadsheet output and the GB1 chart - the chart governs in conjunction with engineering judgement. Please contact Steve Taliaferro at stephen.taliaferro@dot.ohio.gov if you have any questions.

PLEASE NOTE: It is the Designer's responsibility to identify the most representative data when samples have been separated into multiple specimen (say 1.5 to 2.3 feet and 2.3 to 3.0 feet). The spreadsheet is not capable at this time of addressing this issue within a direct data export from gINT.

4. Results Summary:

All fields in this sheet are password protected and are either calculated or read from the other worksheets.

5. Graph Worksheet:

This worksheet is designed to read the average N_{60L} and the average HP from the Cover Sheet and plot a blue line for Average HP and orange line for Average N_{60L} on GB1 Figure B – Subgrade Stabilization. The Override Table can be used to enter HP and/or N_{60L} values that are different than the calculated averages. The Override values will change the global undercut recommendation in the Results Summary.

Appendix E – Geotechnical Profile Sheets

PROJECT DESCRIPTION

IMPROVEMENT OF EXISTING INTERSTATE I-77 BETWEEN GRANT AVENUE AND BROADWAY AVENUE INCLUDING PAVEMENT REPLACEMENT, ROADWAY WIDENING, REPLACEMENT CULVERT-TYPE UNDERPASS TO BE USED AS PEDESTRIAN ACCESS BELOW I-77 AT MORGANA RUN TRAIL, AND NINE RETAINING WALLS ALONG I-77.

HISTORIC RECORDS

HISTORIC BORING INFORMATION WAS TAKEN FROM FIVE PREVIOUS GEOTECHNICAL EXPLORATIONS CONDUCTED AT THE SITE BETWEEN 2001 AND 2014.

PROJECT ID	SUBBATCH NO.	BORING	STATION	OFFSET	REF. ALIGNMENT
CUY-77-11.69	NA	B-001-0-02	89+49.82	64.13' LT	I-77
CUY-77-11.69	NA	B-002-0-02	89+62.37	72.11' LT	I-77
CUY-77-11.11	NA	N-001-S-01	91+20.92	91.96' LT	I-77
CUY-77-11.78	NA	N-003-N-01	93+82.88	77.15' RT	I-77
CUY-77-11.78	NA	N-001-N-01	95+62.07	85.49' LT	I-77
CUY-77-13.31	20894	B-004-0-12	174+75	45' LT	I-77
CUY-77-13.31	20894	B-005-0-12	175+00	61' RT	I-77
CUY-77-13.31	20894	B-006-0-12	175+71	65' LT	I-77
CUY-77-13.75	20080	B-002-0-11	9+07	23' LT	PERSHING AVE.

GEOLOGY

THE PROJECT SITE IS LOCATED WITHIN THE OHIO GLACIATED HURON-ERIE LAKE PHYSIOGRAPHIC REGION WHICH IS CHARACTERIZED BY MAJOR STREAMS IN DEEP GORGES WITH ELEVATIONS RANGING FROM 570 FEET TO 800 FEET (BROCKMAN, 1998). IR-77 IN THIS LOCATION WAS CONSTRUCTED IN A TRENCH AT ABOUT ELEVATION 661 FT. THE NEW FRONTAGE RD WILL BE CONSTRUCTED IN THE WESTERN SLOPE OF IR-77 WITH CURRENT ELEVATIONS RANGING FROM 660.0 FEET TO 680.0 FEET.
ODNR MAP ENTITLED "SURFICIAL GEOLOGY OF THE CLEVELAND SOUTH QUADRANGLE, 2000," REVEALS 40 FEET OF SAND AND GRAVEL OVER WISCONSINAN AGE LACUSTRINE SILT AND CLAY REPORTED TO BE 290 FEET THICK. CLOSE TO THE SURFACE, THE LACUSTRINE TILL SOILS CONSIST OF UP TO 50 PERCENT CLAY AND 8 TO 30 PERCENT SAND TO THE SOUTH AND EAST OF THE SITE, IT SHOWS SHALLOW SAND AND WISCONSINAN AGE LACUSTRINE SILT AND CLAY OVER DEVONIAN AGE OHIO SHALE. THE LOCAL BEDROCK IS OHIO SHALE, WHICH RISES IN ELEVATION NORTH TO SOUTH FROM 450 FEET AT THE IR-490 RAMP TO APPROXIMATELY 625 FEET MSL AT THE SOUTH-EASTERN END OF THE PROJECT (VORMELKER, ET AL, 1996).

RECONNAISSANCE

I-77 PROVIDES THREE LANES IN EACH DIRECTION IN THE PROJECT AREA WITH AN ASPHALT SHOULDER ON EACH SIDE. THIS SEGMENT OF HIGHWAY IS BOUND BY COMMERCIAL, INDUSTRIAL, AND RESIDENTIAL AREAS WITH MANY ON-RAMPS, RAILROAD OVERPASSES, AND LOCAL ACCESS ROADS. THE EXISTING FREEWAY IS ACCESSED FROM MAJOR SURFACE ROADS IN THE CITY OF CLEVELAND BY VARIOUS ON-RAMPS AND OFF-RAMPS, WHICH EXPAND THE ROADWAY WIDTH OF 4 LANES IN EACH DIRECTION IN AREAS LEADING UP TO OR AWAY FROM INTERCHANGE RAMPS. THE EXISTING PAVEMENT SURFACE ALONG THE I-77 PROJECT ALIGNMENT CONSISTS OF ASPHALT AND APPEARS TO BE IN MODERATE CONDITION, WITH MINOR TO MODERATE CRACKING NOTED. MAJOR UTILITIES ALONG THE PROJECT ALIGNMENT INCLUDE 15 TO 42-INCH STORM SEWERS RUNNING ALONG THE APPROXIMATE CENTERLINE OF THE I-77 FREEWAY; THE 15 TO 42-INCH STORM SEWERS ARE PERIODICALLY CONNECTED WITH LATERAL STORM AND SANITARY SEWER LINES. SEVERAL 12-INCH WATER SUPPLY MAINS CROSS I-77 ROUGHLY PERPENDICULAR TO THE ROADWAY. A 24-INCH GAS MAIN CROSSES UNDER THE I-77 FREEWAY AROUND STATION 214+00. THE NORTHERNMOST END OF THE PROJECT MEETS WITH THE SOUTHERN END OF THE I-77 AND I-490 INTERCHANGE IMPROVEMENT PROJECT.

SUBSURFACE EXPLORATION

AECOM'S SUBSURFACE EXPLORATION AT THE PROJECT SITE INCLUDED 36 SOIL BORINGS (34 SUBGRADE BORINGS AND 2 STRUCTURE BORINGS), NUMBERED B-001-0-18 THROUGH B-039-0-18, EACH DRILLED TO A DEPTH OF 6 FEET BELOW EXISTING SUBGRADE ELEVATION FOR SUBGRADE BORINGS AND TO A DEPTH OF 50 FEET BELOW GRADE FOR STRUCTURE BORINGS. BORINGS WERE LOCATED IN THE FIELD BY AN AECOM REPRESENTATIVE, PRIOR TO BEGINNING THE SUBSURFACE EXPLORATION. PRIOR TO THE START OF DRILLING ACTIVITIES, THE OHIO UTILITIES PROTECTION SERVICE WAS NOTIFIED, AND BORING LOCATIONS WERE VERIFIED AS CLEAR OF UTILITY CONFLICTS. AFTER COMPLETION OF THE SUBSURFACE EXPLORATION, BORING LOCATIONS WERE SURVEYED BY AECOM.

B-022-0-18 AND B-026-0-18 WERE DRILLED USING A SIMCO 2800 TRUCK-MOUNTED DRILL RIG FROM MARCH 11-27, 2019. BORING B-036-0-18 WAS DRILLED USING A DEIDRICH D-25 TRAILER-MOUNTED DRILL RIG ON MARCH 27, 2019. ALL BORINGS WERE DRILLED USING EITHER A 4.0-INCH OUTER-DIAMETER SOLID-STEM AUGER OR A 2.25-INCH INNER DIAMETER HOLLOW-STEM AUGER. DURING DRILLING ACTIVITIES, REPRESENTATIVE SOIL SAMPLES WERE COLLECTED FROM THE BORINGS FOR CLASSIFICATION AND/OR TESTING. THE SAMPLES WERE OBTAINED BY STANDARD PENETRATION TESTING (SPT) WITH A SPLIT-SPOON, IN GENERAL ACCORDANCE WITH THE SGE AND ASTM D 1586. A 140-POUND AUTOMATIC HAMMER FALLING 30-INCHES WAS USED FOR SAMPLING. THE HAMMER FOR THE DEIDRICH D-25 DRILL RIG WAS CALIBRATED ON NOVEMBER 13, 2018 TO AN ENERGY RATIO OF 87.4%. THE HAMMER FOR THE SIMCO 2800 HS (HT) DRILL RIG WAS CALIBRATED ON NOVEMBER 13, 2018 TO AN ENERGY RATIO OF 84.5%. GROUNDWATER WAS MONITORED DURING THE DRILLING ACTIVITIES AND MEASUREMENTS WERE TAKEN DURING AND AFTER DRILLING.

THE RECOMMENDATIONS FOR THE PROPOSED STRUCTURES (RETAINING WALLS, UNDERPASS AND CCTV POLE FOUNDATION) UTILIZED EIGHT (8) HISTORIC BORINGS (BORINGS B-001-0-02,B-002-0-02, N-001-S-01, N-003-N-01, N-001-N-01, B-004-0-12, B-006-0-12, and B-002-0-11) FROM FIVE (5) PRIOR GEOTECHNICAL EXPLORATIONS CONDUCTED AT THE SITE BETWEEN 2001 AND 2014 AND TWO (2) BORINGS (BORINGS B-026-0-18 and B-022-0-18) FROM THE 2019 (CUY-77-11.21) EXPLORATION.

SUBSURFACE EXPLORATION CONTINUED, SEE SHEET 2

LEGEND

DESCRIPTION	ODOT CLASS	CLASSIFIED MECH./VISUAL	
GRAVEL AND/OR STONE FRAGMENTS	A-1-a	17	13
GRAVEL AND/OR STONE FRAGMENTS WITH SAND	A-1-b	28	53
GRAVEL AND/OR STONE FRAGS. WITH SAND & SILT	A-2-4	4	19
FINE SAND	A-3	5	17
COURSE & FINE SAND	A-3a	15	25
SANDY SILT	A-4a	29	107
SILT	A-4b	70	123
SILT & CLAY	A-6a	6	11
SILTY CLAY	A-6b	1	1
CLAY	A-7-6		
	TOTAL	175	369
PAVEMENT OR BASE = X = APPROXIMATE THICKNESS	VISUAL		
SOD AND TOPSOIL = X = APPROXIMATE THICKNESS	VISUAL		

BORING LOCATION - PLAN VIEW.

DRIVE SAMPLE AND/OR ROCK CORE BORING PLOTTED TO VERTICAL SCALE ONLY. HORIZONTAL BAR INDICATES A CHANGE IN STRATIGRAPHY.

WC — INDICATES WATER CONTENT IN PERCENT.

N_{60} — INDICATES STANDARD PENETRATION RESISTANCE NORMALIZED TO 60% DRILL ROD ENERGY RATIO.

X/D" — NUMBER OF BLOWS FOR STANDARD PENETRATION TEST (SPT): X/D" = NUMBER OF BLOWS (UNCORRECTED) FOR D" OF PENETRATION AT REFUSAL

X/Y/D" — NUMBER OF BLOWS FOR STANDARD PENETRATION TEST (SPT): X" = NUMBER OF BLOWS FOR 6 INCHES (UNCORRECTED) Y/D" = NUMBER OF BLOWS (UNCORRECTED) FOR D" OF PENETRATION AT REFUSAL

W — INDICATES FREE WATER ELEVATION

▽ — INDICATES WATER AT COMPLETION

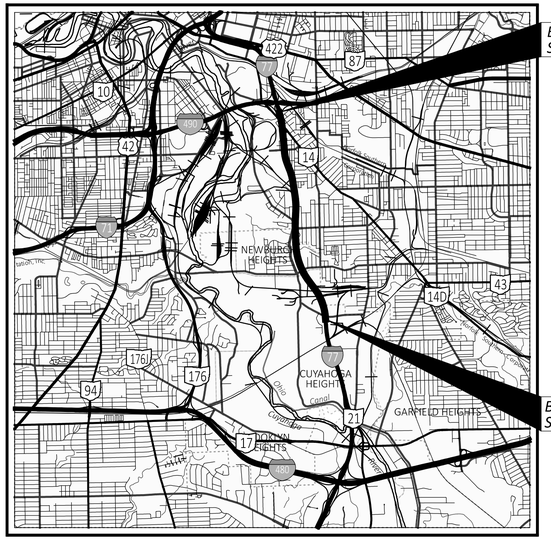
● — INDICATES A PLASTIC MATERIAL WITH A MOISTURE CONTENT EQUAL TO OR GREATER THAN THE LIQUID LIMIT MINUS 3.

⊖ — INDICATES A NON-PLASTIC MATERIAL WITH A MOISTURE CONTENT GREATER THAN 25 % OR GREATER THAN 19 % WITH A WET APPEARANCE.

SS — INDICATES A SPLIT SPOON SAMPLE.

ST — INDICATES A SHELBY TUBE SAMPLE.

NP — INDICATES A NON-PLASTIC SAMPLE.



LOCATION MAP

SCALE IN MILES

0 1 2 3 4

N

PARTICLE SIZE DEFINITIONS

12"	3"	2.0 mm	0.42 mm	0.074 mm	0.005 mm
BOULDERS	COBBLES	GRAVEL	COARSE SAND	FINE SAND	SILT	CLAY
		No. 10 SIEVE	No. 40 SIEVE	No. 200 SIEVE	

INDEX OF SHEETS

EXPLORATION NOTES (CONT.), SHEETS 2-3

SUMMARY OF SOIL TEST DATA, SHEETS 4-7

UNCONFINED COMPRESSION TEST RESULT, SHEET 8

LOCATION FROM STA.	LOCATION TO STA.	PLAN VIEW SHEET	PROFILE SHEET	STRUCTURE INCLUDED SHEET	STRUCTURE INCLUDED BRIDGE NO./ WALL	STRUCTURE INCLUDED SFN
IR 77						
70+00	82+50	9	9	-		
82+50	95+00	10	10	23	RETAINING WALL 1A	
				24	RETAINING WALL 1B	
				25	RETAINING WALL 1C	
				28	RETAINING WALL 2A	
				29	RETAINING WALL 2	
95+00	107+50	11	11	27	RETAINING WALL 1D	
				30-31	RETAINING WALL 3	
107+50	120+00	12	12	-		
120+00	132+50	13	13	32	RETAINING WALL 4	
132+50	145+00	14	14	-		
145+00	157+50	15	15	-		
157+50	170+00	16	16	33-34	RETAINING WALL 5A	
				37-38	RETAINING WALL 6	
				39	RETAINING WALL 7	
170+00	182+50	18	18	35	RETAINING WALL 5B	
				17	CUY-77-1331	1806572
				36	RETAINING WALL 5C	
				22	CUY-77-1331	1806610
182+50	195+00	19	19	-		
195+00	207+50	20	20	-		
207+50	220+00	21	21	-		

HISTORICAL BORING LOGS, SHEETS 40-58

BORING LOGS, SHEETS 59-85

RECON. - SDM 11/15/2021

DRILLING - TRC 12/01/2021-12/17/2021
AECOM 03/11/2019-03/27/2019

DRAWN - NMC 9/9/2022

REVIEWED - SDM 11/18/2025

GEOTECHNICAL PROFILES - ROADWAY & STRUCTURES

DESIGN AGENCY TRC

DESIGNER NMC

REVIEWER SDM 05/01/26

PROJECT ID 105743

SUBSET 1 | TOTAL 85

SHEET P.1185 | TOTAL P.1269

CUY-77-11.41

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pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ZC001.dgn

SUBSURFACE EXPLORATION (CONT.)

TWENTY-NINE (29) ADDITIONAL SOIL STRUCTURE BORINGS, B-040-0-20 THROUGH B-044-0-20, B-046-0-20, B-048-0-20 THROUGH B-056-0-20, B-059-0-20 THROUGH B-068-0-20 AND B-070-0-20 THROUGH B-073-0-20, WERE PERFORMED. EACH OF THE TWO CULVERT UNDERPASS BORINGS (BORINGS B-070-0-20 AND B-071-0-20) WERE DRILLED TO 110 FEET BELOW GROUND SURFACE (BGS), WHEREAS THE REMAINING BORINGS FOR THE WALLS, SLOPES AND DRAINAGE FACILITIES, WERE DRILLED TO DEPTHS RANGING FROM 15 TO 60 BGS. THE BORINGS WERE DRILLED USING CME 45 TRACK-MOUNTED AND CME 550X ATV DRILL RIGS BETWEEN 12/2/2021 AND 12/17/2021. ALL BORINGS WERE DRILLED USING A 3¼ INCH INNER-DIAMETER HOLLOW STEM AUGER TO ADVANCE THE HOLE BETWEEN SAMPLING POINTS. THE SAMPLES WERE OBTAINED BY PERFORMING STANDARD PENETRATION TESTING WITH A SPLIT-SPOON, IN GENERAL ACCORDANCE WITH ODOT SGE AND ASTM D 1586. IN THIS TEST, THE SPLIT SPOON SAMPLER IS DRIVEN INTO THE SOIL USING A 140-POUND AUTOMATIC HAMMER FALLING 30-INCHES. THE HAMMER FOR THE CME 45 DRILL RIG HAD AN ENERGY RATING OF 89.3% BASED ON CALIBRATION DATED 8/5/2020, WHEREAS THE HAMMER FOR THE CME 550X RIG HAD AN ENERGY RATING OF 85.6% BASED ON THE CALIBRATION DATED 10/19/2021. SPLIT SPOON SAMPLING WITH SPT TESTING WERE PERFORMED AT 2.5-FOOT INTERVALS WITHIN THE UPPER 20 FEET OF THE BORINGS AND AT 5.0-FOOT INTERVALS AFTERWARDS.

EXPLORATION FINDINGS

THE LOGS OF SOIL BORINGS SHOW GENERAL SIMILARITY AND UNIFORMITY OF THE SUBSURFACE PROFILES. BASED ON THESE BORINGS. DESCRIPTIONS FOR EACH STRUCTURE ARE PROVIDED IN MORE DETAIL BELOW:

WALL 1A

UNDER THE PAVEMENT AND GRANULAR BASE, BORINGS B-041-0-20 AND B-042-0-20 ENCOUNTERED GRANULAR MATERIAL COMPOSED OF APPROXIMATELY 10-FEET OF GRAVEL WITH STONE FRAGMENTS AND SAND (A-1-b) AND SAND (A-3 AND A-3a). BORING B-041-0-20 THEN ENCOUNTERED 5.0 FEET OF VERY STIFF SILT (A-4b), FOLLOWED BY A THIN LAYER OF HARD SANDY SILT (A-4b). THE BORING FINALLY ENCOUNTERED 11.5 FEET OF MEDIUM DENSE TO DENSE SILT. UNDER THE 2.0-FOOT-THICK AGGREGATE BASE, HISTORIC BORING B-001-0-02 ENCOUNTERED 6.0 FEET OF DENSE TO VERY DENSE SANDY SILT (A-4a), UNDERLAIN BY 8.0 FEET OF VERY STIFF TO HARD SANDY SILT (A-4a), FOLLOWED BY 3.5 FEET OF MEDIUM DENSE COARSE AND FINE SAND (A-3a). THE BORING THEN EXHIBITED DENSE TO VERY DENSE SAND (A-3 AND A-3a), EXTENDING TO THE TERMINATION DEPTH OF THE BORING. BORINGS B-041-0-20 AND B-042-0-20 AS WELL AS THE HISTORIC BORING B-001-0-02 WHICH IS LOCATED JUST BEFORE THE WALL WERE USED FOR DESIGN CALCULATIONS OF THIS WALL.

WALL 1B

UNDER THE PAVEMENT AND GRANULAR BASE, BORING B-043-0-20 EXHIBITED MOSTLY A MEDIUM DENSE, BROWN GRAVEL AND STONE FRAGMENTS WITH SAND (A-1-b) TO APPROXIMATE 16 FEET BGS FOLLOWED BY HARD, GRAY SILT LAYER (A-4b) TO THE BORING'S TERMINATION DEPTH. UNDER THE 2.0-FOOT-THICK AGGREGATE BASE, HISTORIC BORING B-001-0-00 ENCOUNTERED 6.0 FEET OF DENSE TO VERY DENSE SANDY SILT (A-4a), UNDERLAIN BY 8.0 FEET OF VERY STIFF TO HARD SANDY SILT (A-4a), FOLLOWED BY 3.5 FEET OF MEDIUM DENSE COARSE AND FINE SAND (A-3a). THE BORING THEN EXHIBITED DENSE TO VERY DENSE SAND (A-3 AND A-3a), EXTENDING TO THE TERMINATION DEPTH OF THE BORING. BORING B-043-0-20 AND THE HISTORIC BORING B-001-0-02 WHICH IS LOCATED JUST BEFORE THE WALL WERE USED FOR DESIGN CALCULATIONS OF THIS WALL.

WALL 1C

UNDER THE ASPHALT LAYER, BORING B-044-0-20 EXHIBITED APPROXIMATELY 15.5 FEET OF MEDIUM DENSE LAYERS OF GRAVEL AND STONE FRAGMENTS WITH SAND (A-1-b) AND MEDIUM DENSE FINE SAND (A-3) FOLLOWED BY 12.0 FEET VERY STIFF TO HARD GRAY SILT, SOME CLAY (A-4b). THE BORING FINALLY EXHIBITED 1.0 FOOT OF DENSE FINE SAND (A-3) BEFORE BEING TERMINATED. HISTORIC BORINGS N-001-S-01, WHICH WAS DRILLED BEFORE WALL 1C, INITIALLY ENCOUNTERED 5.0 FEET OF LOOSE TO MEDIUM DENSE SILT (A-4b), UNDERLAIN BY 8.5 FEET OF STIFF SANDY SILT WITH SOME CLAY (A-4a) FOLLOWED BY 1.5 FEET OF MEDIUM DENSE FINE SAND. THE BORING THEN ENCOUNTERED 20.0 FEET OF MEDIUM STIFF SILT AND CLAY (A-6a) FOLLOWED BY 7.5 FEET OF LOOSE TO MEDIUM DENSE GRAVEL WITH SAND (A-1-a). THE BORING THEN EXHIBITED 10.0 FEET OF VERY STIFF SILT AND CLAY (A-6a) AND SANDY SILT (A-4a). THE BORING THEN ENCOUNTERED 30.0 FEET OF DENSE TO VERY DENSE COARSE AND FINE SAND (A-3a) AND WAS TERMINATED AFTER ENCOUNTERING 0.9 FEET OF VERY DENSE SILT, LITTLE CLAY OF THE A-4b FORMATION. THE BORING WAS TERMINATED AFTER ENCOUNTERING 1.0 FOOT OF VERY DENSE SILT OF THE A-4B FORMATION. BORINGS B-044-0-20 AND N-001-S-01 WERE USED FOR DESIGN CALCULATIONS FOR THIS WALL.

WALL 1D

FOR WALL 1D, BORINGS B-048-0-20 THROUGH B-051-0-20 AS WELL AS HISTORIC BORINGS N-001-N-01 AND N-002-N-01 GENERALLY REVEALED GRANULAR SOILS OF THE A-1-b, A-2-4, A-3 AND A-3a FORMATION WITHIN THE UPPER 6.0 TO 9.0 FEET OF THE BORINGS UNDERLAIN BY MOSTLY COHESIVE SOILS OF SILT (A-4b), AND SANDY SILT CLAY (A-4a).

UNDER THE ASPHALT AND AGGREGATE BASE, BORING B-048-0-20 ENCOUNTERED 6.6 FEET OF VERY LOOSE TO LOOSE GRAVEL AND STONE FRAGMENTS WITH SAND (A-1-b), UNDERLAIN BY 15.0 FEET OF MEDIUM STIFF TO STIFF SILT, AND CLAY OF THE A-4b FORMATION FOLLOWED BY 11.0 FEET OF HARD SANDY SILT (A-4a) EXTENDING TO THE TERMINATION DEPTH OF THE BORING.

UNDER THE 1.5-FOOT THICK ASPHALT, BORING B-049-0-20 ENCOUNTERED 5.0 FEET OF MEDIUM DENSE GRAVEL AND STONE FRAGMENTS WITH SILT (A-2-4), UNDERLAIN BY 2.5 FEET IF LOOSE COARSE AND FINE SAND OF THE A-3 FORMATION. THE BORING THEN ENCOUNTERED 14.5 FEET OF VERY STIFF SILT WITH SOME CLAY (A-4b) UNDERLAIN BY MEDIUM DENSE SILT (A-4b) EXTENDING TO THE TERMINATION DEPTH OF THE BORING.

UNDER THE ASPHALT AND AGGREGATE BASE, BORING B-050-0-20 ENCOUNTER THE 5.0 FEET OF MEDIUM DENSE COARSE AND FINE SAND (A-3a), UNDERLAIN BY 12.5 FEET OF VERY STIFF SILT WITH CLAY OF THE A-4b FORMATION. THE BORING THEN EXHIBITED 16.5 FEET OF HARD SANDY SILT (A-4a) EXTENDING TO THE TERMINATION DEPTH OF THE BORING.

UNDER THE THIN ASPHALT LAYER, BORING B-051-0-20 ENCOUNTER THE 5.7 FEET OF STIFF SILT WITH SOME CLAY OF THE A-4b FORMATION, UNDERLAIN BY 17.5 OF HARD, TURNING INTO VERY STIFF SANDY SILT (A-4a). THE BORING THEN EXHIBITED 5.0 FEET OF MEDIUM DENSE SILT (A-4b), FOLLOWED BY 1.5 HARD SANDY SILT (A-4a) BEFORE THE BORING WAS TERMINATED.

BORINGS B-052-0-20 AND N-001-N-01 GENERALLY DEMONSTRATED SIMILAR STRATIGRAPHY, HOWEVER ONLY BORINGS B-048-020 THROUGH B-051-0-20 WERE UTILIZED IN THE WALL DESIGN.

LEGEND (HISTORIC BORINGS)

DESCRIPTION	ODOT CLASS	CLASSIFIED MECH./VISUAL	
GRAVEL AND/OR STONE FRAGMENTS	A-1-a	0	1
GRAVEL AND/OR STONE FRAGMENTS WITH SAND	A-1-b	6	6
GRAVEL AND/OR STONE FRAGS. WITH SAND & SILT	A-2-4	0	4
FINE SAND	A-3	5	5
COURSE & FINE SAND	A-3a	19	40
SANDY SILT	A-4a	9	21
SILT	A-4b	22	32
SILT & CLAY	A-6a	23	42
SILTY CLAY	A-6b	2	4
CLAY	A-7-6	1	0
	TOTAL	87	155
PAVEMENT OR BASE = X = APPROXIMATE THICKNESS	VISUAL		
SOD AND TOPSOIL = X = APPROXIMATE THICKNESS	VISUAL		

BORING LOCATION - HISTORIC

DRIVE SAMPLE AND/OR ROCK CORE BORING PLOTTED TO VERTICAL SCALE ONLY. HORIZONTAL BAR INDICATES A CHANGE IN STRATIGRAPHY.

WC — INDICATES WATER CONTENT IN PERCENT.

N_{60} — INDICATES STANDARD PENETRATION RESISTANCE NORMALIZED TO 60% DRILL ROD ENERGY RATIO.

X/D" — NUMBER OF BLOWS FOR STANDARD PENETRATION TEST (SPT):
X/D" = NUMBER OF BLOWS (UNCORRECTED) FOR D" OF PENETRATION AT REFUSAL

X/Y/D" — NUMBER OF BLOWS FOR STANDARD PENETRATION TEST (SPT):
X" = NUMBER OF BLOWS FOR 6 INCHES (UNCORRECTED)
Y/D" = NUMBER OF BLOWS (UNCORRECTED) FOR D" OF PENETRATION AT REFUSAL

W — INDICATES FREE WATER ELEVATION

▽ — INDICATES WATER AT COMPLETION

● — INDICATES A PLASTIC MATERIAL WITH A MOISTURE CONTENT EQUAL TO OR GREATER THAN THE LIQUID LIMIT MINUS 3.

⊖ — INDICATES A NON-PLASTIC MATERIAL WITH A MOISTURE CONTENT GREATER THAN 25 % OR GREATER THAN 19 % WITH A WET APPEARANCE.

SS — INDICATES A SPLIT SPOON SAMPLE.

ST — INDICATES A SHELBY TUBE SAMPLE.

NP — INDICATES A NON-PLASTIC SAMPLE.

GEOTECHNICAL PROFILES - ROADWAY & STRUCTURES (CONT.)

DESIGN AGENCY
TRC

DESIGNER
NMC

REVIEWER
SDM 05/01/26

PROJECT ID
105743

SUBSET 2 | TOTAL 85

SHEET P.1186 | TOTAL P.1269

CUY-77-11.41

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pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ZC002.dgn

EXPLORATION FINDINGS (CONT.)

WALL 2A

WITHIN THE INFLUENCE DEPTH OF THE WALL, UNDER THE 1.0-FOOT-THICK AGGREGATE BASE, BORING B-002-0-02 ENCOUNTERED APPROXIMATELY 14 FOOT LAYERS OF SANDY SILT AND SILTY CLAY (A-4A AND A-6a), UNDERLAIN BY 10 FEET OF MEDIUM DENSE TO LOOSE FINE SAND (A-3a). THE BORING THEN EXHIBITED 4.0 FEET OF MEDIUM STIFF SILT AND CLAY, 7.0 FEET OF MEDIUM DENSE GRAVEL WITH SAND (A-1-b), FOLLOWED BY 8.0 FEET OF VERY STIFF SILT AND CLAY (A-6a) AND SILT (A-4b). THE BORING THEN ENCOUNTERED 17 FEET OF MEDIUM DENSE TO DENSE COARSE AND FINE SAND (A-3a), UNDERLAIN BY VERY DENSE SAND LAYERS (A-3 AND A-3a) EXTENDING TO THE TERMINATION DEPTH OF THE BORING (74.4 FEET). DESIGN CALCULATIONS FOR THIS WALL ARE BASED ON THIS BORING.

WALL 2

UNDER THE AGGREGATE BASE, BORING B-046-0-20 ENCOUNTERED APPROXIMATELY 13.1 FEET OF FILL DESCRIBED AS MEDIUM DENSE SANDY SILT (A-4a) FOR THE UPPER 3.7 FEET, VERY STIFF SANDY SILT (A-4A) FOR THE NEXT 2.0 FEET AND VERY STIFF SILT AND CLAY (A-6a) FOR THE REMAINING FILL THICKNESS. THE BORING THEN ENCOUNTERED, 9.8 FEET OF LOOSE TO MEDIUM DENSE FINE SAND (A-3a), FOLLOWED BY 3.9 FEET OF MEDIUM STIFF SILT AND CLAY. THE BORING THEN ENCOUNTERED 7.2 FEET OF MEDIUM DENSE GRAVEL WITH SAND OF THE A-1-b FORMATION FOLLOWED BY 8.0 FEET OF VERY STIFF SILT AND CLAY (A-6a) AND SILT (A-4b). THE BORING THEN ENCOUNTERED 17.0 FEET OF MEDIUM DENSE TO DENSE COARSE AND FINE SAND (A-3a) FOLLOWED BY VERY DENSE FINE SAND (A-3) AND COARSE TO FINE SAND (A-3a), WHICH EXTENDED TO THE TERMINATION DEPTH OF THE BORING.

UNDER THE 2.0-FOOT-THICK AGGREGATE BASE, BORING N-003-N-01 ENCOUNTERED 6.5 FEET OF STIFF TO VERY STILL SANDY SILT (A-4a), UNDERLAIN BY 15 FEET OF STIFF SILT (A-4b) FOLLOWED BY 12.5 FEET OF MEDIUM DENSE SAND (A-3a) AND GRAVEL WITH SAND (A-1-b). THE BORING THEN ENCOUNTERED 7.5 FEET OF HARD TO VERY STIFF SILT AND CLAY (A-6a), 5.0 FEET OF DENSE COARSE AND FINE SAND (A-3a) AND 31.5 FEET OF MEDIUM DENSE TO VERY DENSE, NON-COHESIVE SILT (A-4b), EXTENDING TO THE TERMINATION DEPTH OF THE BORING.

BORING B-046-0-20 AND N-003-N-01 WERE UTILIZED FOR DESIGN OF THIS WALL.

WALL 3

BORINGS B-053-0-20 THROUGH B-055-0-20 THAT WERE DRILLED AS CLOSE AS POSSIBLE TO WALL-3 ALIGNMENT REVEALED MOSTLY STIFF TO VERY STIFF SILT (A-4b), SANDY SILT (A-4a), AND COARSE AND FINE SANDS (A-3a). DETAILED DESCRIPTIONS OF THE ENCOUNTERED SOILS IN EACH FORMATION ARE PROVIDED BELOW:

UNDER THE 0.5-FOOT-THICK TOPSOIL, BORING B-053-0-20 ENCOUNTERED APPROXIMATELY 15.5 FEET OF VERY STIFF SILT, AND CLAY OF THE A-4B FORMATION FOLLOWED BY 9.0 FEET OF VERY STIFF TO HARD SANDY SILT (A-4a), EXTENDING TO THE TERMINATION DEPTH OF THE BORING.

UNDER THE 0.5 FEET OF TOPSOIL, BORING B-054-0-20 ENCOUNTERED 5.5 FEET OF FILL DESCRIBED AS DENSE GRAVEL AND STONE FRAGMENTS WITH SAND (A-1-b), UNDERLAIN BY 8.5 FEET OF HARD SILT, SOME CLAY OF THE A-4b FORMATION. THE BORING THEN EXHIBITED 4.0 FEET OF MEDIUM DENSE SANDY SILT (A-4a) UNDERLAIN BY DENSE COARSE AND FINE SAND, WHICH EXTENDED TO THE TERMINATION DEPTH OF THE BORING AT 25 FEET BGS.

UNDER THE 0.5 FEET OF TOPSOIL, BORING B-055-0-20 ENCOUNTERED 3.0 FEET OF FILL DESCRIBED AS HARD SANDY SILT (A-4a), FOLLOWED BY STIFF TO VERY STIFF SILT, SOME CLAY OF THE A-4b FORMATION. THE BORING FINALLY ENCOUNTERED 10.0 FEET OF MEDIUM DENSE COARSE AND FINE SAND (A-3a) THAT EXTENDED TO THE TERMINATION DEPTH OF THE BORING

WALL 4

BORING B-060-0-20 AND B-061-0-20 WERE USED FOR DESIGN CALCULATIONS RELATED TO THIS WALL. UNDER THE THIN TOP SOIL, BORING B-060-0-20 ENCOUNTERED APPROXIMATELY 16 FEET OF FILL COMPOSED OF 8.3 FEET OF VERY STILL SILT (A-4b), 5.0 FEET OF VERY STIFF SANDY SILT OF THE A-4a FORMATION, UNDERLAIN BY 2.5 FEET OF VERY DENSE GRAVEL AND STONE FRAGMENTS WITH SAND AND CONCRETE FRAGMENTS (A-1-b). THE BORING THEN EXHIBITED 2.5 FEET OF VERY STIFF SILT (A-4b) FOLLOWED BY 11.5 FEET OF MEDIUM STIFF SILT (A-4b) WHICH EXTENDED TO THE TERMINATION DEPTH OF THE BORING.

UNDER THE THIN TOP SOIL, BORING B-061-0-20 ENCOUNTERED APPROXIMATELY 5.7 FEET OF FILL COMPOSED OF MEDIUM DENSE GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT (A-2-4), FOLLOWED BY 7.5 FEET OF LOOSE GRAVEL AND STONE FRAGMENTS WITH SAND (A-1-b). THE BORING THEN ENCOUNTERED 5.0 FEET OF MEDIUM DENSE FINE SAND (A-3), 5.0 FEET OF LOOSE COARSE AND FINE SAND (A-3a), FOLLOWED BY 6.5 FEET OF STIFF SANDY SILT (A-4a).

WALL 5A

BORING B-064-0-20 AND B-065-0-20 ENCOUNTERED FILL MATERIAL FOR THE ENTIRE DEPTHS OF THE BORINGS (35.0 FEET). THE FILL MATERIAL IN BORING B-064-0-20 CONSISTED OF 2.5 FEET OF MEDIUM DENSE GRAVEL AND STONE (A-1-a), 10.0 FEET OF MEDIUM DENSE SANDY SILT (A-4a), UNDERLAIN BY 7.5 FEET OF VERY LOOSE TO LOOSE COARSE AND FINE SAND (A-3a), FOLLOWED BY 14.0 FEET OF MEDIUM DENSE TO DENSE GRAVEL AND STONE FRAGMENTS, EXTENDING TO THE TERMINATION DEPTH OF THE BORING.

THE FILL IN BORING B-065-0-20 CONSISTED OF 6.0 FEET OF VERY DENSE GRAVEL AND STONE FRAGMENTS (A-1-a), UNDERLAIN BY 5.0 FEET OF STIFF SILT (A-4a) AND 5.0 FEET IF GRAVEL AND STONE FRAGMENTS (A-1-b). THE BORING FINALLY ENCOUNTERED 19.0 FEET OF STIFF SANDY SILT (A-4a) EXTENDING TO THE TERMINATION DEPTH OF THE BORING.

BORING B-066-0-20 ENCOUNTERED 11.0 FEET OF SLAG FILL COMPOSED OF MEDIUM DENSE TO DENSE GRAVEL AND STONE FRAGMENTS WITH SAND (A-1-b) UNDERLAIN BY 20.0 FEET OF LOOSE TO MEDIUM DENSE COARSE AND FINE SAND (A-3a). THE BORING THEN ENCOUNTERED 9.0 FEET OF VERY STIFF TO HARD SANDY SILT (A-4a), WHICH EXTENDED TO THE TERMINATION DEPTH OF THE BORING.

BORING B-067-0-20 INITIALLY ENCOUNTERED 3.5 FEET OF FILL, COMPOSED OF MEDIUM DENSE GRAVEL AND STONE FRAGMENTS (A-1-a), FOLLOWED BY 2.5 FEET OF HARD SILT (A-4b) AND 7.5 FEET OF LOOSE COARSE AND FINE SAND (A-3a). THE BORING THEN ENCOUNTERED 15.0 FEET OF STIFF TO VERY STIFF SILT (A-4b), UNDERLAIN BY 10.0 FEET OF MEDIUM DENSE SILT (A-4b). THE BORING THEN EXHIBITED 11.5 FEET OF STIFF TO VERY STIFF SANDY SILT (A-4a) EXTENDING TO THE BORING TERMINATION DEPTH.

EXPLORATION FINDINGS (CONT.)

WALL 5B

BORING B-068-0-20 INITIALLY ENCOUNTERED 6.0 FEET OF VERY LOOSE GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT (A-2-4), FOLLOWED BY 10.0 FEET OF LOOSE TO MEDIUM DENSE SILT (A-4b). THE BORING THEN ENCOUNTERED 27.5 FEET OF VERY STIFF TO HARD SILT, LITTLE CLAY (A-4b) FOLLOWED BY 16.5 FEET OF STIFF TO VERY STIFF SANDY SILT (A-4a) WHICH CONTINUED TO THE TERMINATION DEPTH OF THE BORING.

BORING B-070-0-20 INITIALLY ENCOUNTERED 8.5 FEET OF GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT (A-2-4) UNDERLAIN BY 5.0 FEET OF SOFT SANDY SILT (A-4a). THE BORING THEN ENCOUNTERED 75.0 FEET OF STIFF TO VERY STIFF SILT WITH SOME CLAY (A-4b), FOLLOWED BY 21.5 FEET OF STIFF SANDY SILT (A-4a) EXTENDING TO THE TERMINATION DEPTH OF THE BORINGS.

UNDER THE THIN TOPSOIL, BORING B-026-0-18 ENCOUNTERED 16.8 FEET OF FILL CONSISTING OF APPROXIMATELY 1.6 FEET OF MEDIUM DENSE GRAVEL WITH SAND (A-1-b), 2.1 FEET OF VERY STIFF SANDY SILT (A-4a), 0.6 FEET OF LOOSE COARSE AND FINE SAND (A-3a), 1.1 FEET OF VERY STIFF SILT (A-4b), LOOSE COARSE AND FINE SAND (A-3a) AND 2.9 FEET OF HARD SILT (A-4b AND A-4a). THE BORING THEN ENCOUNTERED 2.3 FEET OF LOOSE SANDY SILT (A-4a), TURNING INTO MEDIUM STIFF ELASTIC SILT AND CLAY (A-4a) OVER THE NEXT 3.7 FEET. THE BORING THEN EXHIBITED A ZONE OF POSSIBLE COBBLES FOR THE NEXT 1.3 FEET (BETWEEN APPROXIMATE ELEVATIONS 638.1 AND 636.8). THE BORING THEN ENCOUNTERED 18.7 FEET OF VERY STIFF SILT (A-4b), 11.3 FEET OF STIFF SILT AND CLAY (A-6A), FOLLOWED BY 2.5 FEET OF MEDIUM DENSE SILT (A-4b) AND 0.7 FEET OF VERY STIFF SILT (A-4a) EXTENDING TO THE TERMINATION DEPTH OF THE BORING AT 50.0 FEET.

UNDER THE PAVEMENT AND GRANULAR BASE, B-004-0-12 ENCOUNTERED FILL LAYERS CONSISTING OF 1.8 FEET OF MEDIUM DENSE COARSE AND FINE SAND (A-3a), 2.5 FEET OF MEDIUM DENSE SANDY SILT (A-4b) AND 2.5 FEET OF STIFF CLAY AND SILT (A-7-6). THE BORING THEN ENCOUNTERED 5.0 FEET OF STIFF TO VERY STIFF SILTY CLAY (A-6b), 28.7 FEET OF LOOSES TO MEDIUM DENSE, BECOMING DENSE COARSE AND FINE SAND (A-3A) WHICH INCLUDED 4.0-FOOT-THICK BAND OF FINE SAND (A-3). THE BORING THEN ENCOUNTERED 33.3 FEET OF DENSE TO VERY DENSE SILT (A-4b) WHICH EXTENDED TO THE TERMINATION DEPTH OF THE BORING.

WALL 5C

UNDER THE CONCRETE AND GRANULAR BASE, BORING B-006-00-12 ENCOUNTERED 7.0 FEET OF MEDIUM DENSE FINE SAND (A-3), 2.5 FEET OF LOOSE SANDY SILT (A-4a), UNDERLAIN BY 15.2 FEET OF MEDIUM DENSE TO DENSE COARSE AND FIND SAND (A-3a). THE BORING THEN EXHIBITED 21.5 FEET OF MEDIUM DENSE TO DENSE SILT WITH SOME CLAY (A-4b), 50.0 FEET OF STIFF TO VERY STIFF SILT AND CLAY (A-6a), FOLLOWED BY 4.5 FEET OF MEDIUM STIFF TO STIFF SILT AND CLAY (A-4b) AND 8.5 FEET OF SILT AND CLAY, EXTENDING TO THE TERMINATION DEPTH OF THE BORINGS.

WALL 6

UNDER THE 8-INCH-THICK ASPHALT, 9-INCH-THICK CONCRETE AND THE 1.1-THICK GRANULAR BASE (A-1-b), THE ROADWAY BORING B-022-0-18 ENCOUNTERED 0.8-FOOT-THICK MEDIUM DENSE SANDY SILT, FOLLOWED BY 1.2 FEET OF STIFF SILT AND CLAY (A-6a) AND 1.5 FEET OF MEDIUM STIFF SILTY CLAY (A-6b). THE BORING WAS TERMINATED AFTER EXHIBITING 1.5 FEET OF MEDIUM DENSE SANDY SILT.

GIVEN THE SMALL GRADE DIFFERENCE ON BOTH SIDES OF THE WALL (LESS THAN 2.0 FEET), THIS SHALLOW BORING CAN BE CONSIDERED ADEQUATE FOR EVALUATING THE STABILITY OF THE WALL WITH A LEVEL OF CONSERVATISM.

WALL 7 AND MORGANA RUN TRAIL CULVERT STRUCTURE

BORINGS B-070-0-20 AND B-071-0-20 INITIALLY OBSERVED 5.0 AND 2.5 FEET, RESPECTIVELY, OF SLAG FILL WITH SIZES RANGING FROM SILT TO GRAVEL. BORING B-070-0-20 THEN EXHIBITED 3.5 FEET OF GRAVEL AND STONE FRAGMENTS WITH SAND (A-1-b) FOLLOWED BY 5.5 FEET OF MEDIUM STIFF TO STIFF SANDY SILT (A-4a), WHEREAS BORING B-071-0-20 ENCOUNTERED 3.5 FEET OF FINE SAND (A-3) AND 2.5 FEET OF GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT (A-2-4). FOR THE MAINLINING DEPTHS, THE TWO BORINGS ENCOUNTERED ALTERNATING LAYERS OF SILT (A-4b), CLAYEY OR SANDY SILT (A-4a).

BORING AT CCTV POLE LOCATION

THE HISTORIC BORING (BORING B-002-0-11) WAS DRILLED CLOSE TO THE LOCATION OF THE PROPOSED CCTV POLE FOUNDATION FROM THE EXISTING BRIDGE DECK AND EXISTING SLOPE CONCRETE PROTECTION. WITHIN THE ESTIMATED DEPTH OF INFLUENCE FOR THE CCTV POLE FOUNDATION, THE BORING ENCOUNTERED 7.5 FEET OF FILL AND POSSIBLE FILL OF MOSTLY LOOSE SLAG AND COARSE AND FINE SAND (A-3a) UNDERLAIN BY 2.0 FEET OF VERY LOOSE COARSE AND FINE SAND (A-3a). THE BORING THEN ENCOUNTERED 11.5 FEET OF LOOSE SILT (A-4b), 5.5 FEET OF VERY STIFF TO HARD SILT AND CLAY (A-6a), FOLLOWED BY 16.0 FEET OF STIFF TO VERY STIFF SILT, SOME TO "AND" CLAY (A-4b). THE BORING THEN EXHIBITED 4.5 FEET OF VERY DENSE SILT, LITTLE CLAY (A4B) AND 4.5 FEET OF VERY DENSE COARSE AND FINE SAND (A-3), UNDERLAIN BY 18.5 FEET OF VERY DENSE TO DENSE SILT (A-4b). THE BORING CONTINUED TO THE TERMINATION DEPTH OF 125 FEET IN VERY STIFF TO HARD SILT AND CLAY (A-6A) AND SILTY CLAY (A-6b).

BORINGS FOR SLOPE STABILITY

BORING B-040-0-20 WHICH WAS DRILLED AT THE APPROXIMATE STA. 79+50, LEFT SIDE OF THE I-77, REVEALED 1.0 FOOT OF ASPHALT AND GRANULAR BASE UNDERLAIN BY 10.0 FEET OF LOOSE GRAVEL WITH STONE FRAGMENTS AND SAND (A-1-b), FOLLOWED BY 4.0 FEET OF STIFF SANDY SILT OF THE A-4a FORMATION. THE BORING THEN EXHIBITED 7.0 FEET STIFF TO VERY STIFF CLAYEY SILT (A-4a) FOLLOWED BY 3.0 FEET OF MEDIUM DENSE SILT WITH SOME SAND (A-4b) REACHING THE TERMINATION DEPTH OF THE BORING.

BORING B-052-0-20, WHICH WAS DRILLED AT THE APPROXIMATE STA. 102+75 ON THE RIGHT SIDE OF I-77 WITHIN WALL 1D LIMITS, ENCOUNTER THE 2.0 FEET OF GRAVEL AND STONE FRAGMENTS (A-1-b), FOLLOWED BY 5.0 FEET OF MEDIUM STIFF SILT (A-4b). THE BORING THEN ENCOUNTERED 10.0 FEET OF MEDIUM STIFF CLAYEY SILT (A-4a), FOLLOWED BY 5.0 FEET OF COARSE AND FINE SAND (A-3a) AND 1.5 FEET OF VERY STIFF SILT (A-4b) WHICH MARKED THE END OF EXPLORATION DEPTH FOR THE BORING,

BORING B-059-0-20 WHICH WAS DRILLED AT THE APPROXIMATE STA. 122+00 ON THE LEFT SIDE OF THE I-77, INITIALLY EXHIBITED 1.0 FOOT OF ASPHALT UNDERLAIN BY 9.0 FEET OF FILL COMPOSED OF GRAVEL AND STONE FRAGMENTS WITH SAND AND GRAVEL SIZED SLAG (A-1-b) AND SANDY SILT (A-4a). THE BORING THEN ENCOUNTERED 13.5 FEET OF STIFF SILT (A-4b), 4.0 FEET OF STIFF CLAYEY SILT (A-4a) FOLLOWED BY 1.5 FEET OF MEDIUM STIFF SANDY SILT (A-4a) WHICH MARKED THE TERMINATION DEPTH OF THE BORING.

EXPLORATION FINDINGS (CONT.)

BORINGS FOR SLOPE STABILITY (CONT.)

BORING B-061-0-20 WAS DRILLED WITHIN THE AREA OF WALL 4 AT THE APPROXIMATE STA. 131+25 ON THE LEFT SIDE OF I-77. THIS BORING INITIALLY ENCOUNTERED APPROXIMATELY 6.0 FEET OF UNCONTROLLED FILL COMPOSED OF GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT (A-2-4), FOLLOWED BY 7.5 FEET OF GRAVEL AND STONE FRAGMENTS WITH SAND (A-1-b). THE BORING THEN EXHIBITED 5.0 FEET OF LOOSE FINE SAND (A-3) AND 5.0 FEET OF LOOSE COARSE AND FINE SAND (A-3a), FOLLOWED BY 6.5 FEET OF VERY STIFF CLAYEY SILT (A-4b).

BORING B-063-0-20 WAS COMPLETELY DRILLED THROUGH EXISTING FILL MATERIALS FOR THE ENTIRE BORING DEPTH OF 30 FEET. IN RESPECTIVE ORDER OF DEPTH, THE FILL IS COMPOSED OF 3.0 FEET OF SANDY SILT (A-4a), 3.0 FEET OF SLAG OF GRAVEL AND SAND SIZE (A-1-b), 6.5 FEET OF SANDY SILT (A-4a), AND 17.5 FEET OF SILT SIZED SLAG (A-4b).

BORINGS FOR STORMWATER AND BMP DETENTION

UNDER THE 7-INCH-THICK TOP SOIL, BORING B-062-0-20 ENCOUNTERED 2.9 FEET OF VERY DENSE GRAVEL AND STONE FRAGMENTS WITH SILT (A-2-4), UNDERLAIN BY 10.0 FEET DENSE SANDY SILT (A-4a) AND HARD SANDY SILT (A-4a). THE BORING FINALLY ENCOUNTERED 6.5 FEET OF HARD SILT (A-4b) BEFORE THE BORING WAS TERMINATED AT 25.0 FEET BGS.

BORING B-072-0-20 (STA. 181+50, LEFT OF I-77) ENCOUNTERED APPROXIMATELY 15.0 FEET OF FILL COMPOSED OF HARD OR DENSE SANDY SILT, SLAB AND ROCK FRAGMENT (A-4a), UNDERLAIN BY 10.0 FEET OF VERY DENSE FINE SAND WITH SILT OF THE A-3 FORMATION TO REACH THE TERMINATION DEPTH OF THE BORING.

UNDER THE 4-INCH-THICK TOPSOIL, BORING B-073-0-20 ENCOUNTERED 3.1 FEET OF STIFF SILT (A-4b), UNDERLAIN BY 15.0 FEET OF VERY DENSE SANDY SILT (A-4a), FOLLOWED BY 6.5 FEET OF DENSE TO VERY DENSE COARSE AND FINE SAND WITH SOME SILT (A-3a), EXTENDING TO THE TERMINATION DEPTH OF THE BORING.

REMAINING BORINGS FOR THE STORM WATER LINES AND BMP BASINS WERE DESCRIBED EARLIER AS THEY COINCIDED WITH LOCATIONS OF WALLS OR SLOPE STABILITY.

GROUNDWATER OBSERVATIONS

GROUNDWATER OBSERVATIONS, DURING DRILLING AND AT COMPLETION ARE REPORTED ON THE LOGS OF BORINGS AND ARE SUMMARIZED IN TABLE 7 BELOW. BASED ON THESE MEASUREMENTS, WATER LEVELS ARE SHOWN TO VARY FROM ELEV. 633.2 TO 686.7 BETWEEN APPROXIMATE STATIONS FROM STA. 79+50 AND STA. 167+00.

BASED ON THE RELATIVELY PERMEABLE SOILS, THE MEASUREMENT MADE AT COMPLETION OF DRILLING ARE CONSIDERED REPRESENTATIVE OF THE STATIC WATER TABLE. HOWEVER, GROUNDWATER CONDITIONS ARE INFLUENCED BY SEASONAL VARIATIONS AND PERIODS OF RAIN OR SNOW. THE WATER MEASUREMENTS ARE PRESENTATIVE OF THE CONDITIONS AT THE DATE AND TIME OF THIS STUDY AND MAY NOT REPRESENT DAILY, SEASONAL, LONG-TERM FLUCTUATIONS, DEVELOPMENT OF PERCHED CONDITIONS, OR PONDING OF WATER IN LOW LYING AREAS DURING WET PERIODS. ACCORDINGLY, FOR DESIGN PURPOSES, GROUNDWATER WAS SAFELY TAKEN AT THE BOTTOM OF EACH WALL, AS REQUESTED BY ODOT.

SPECIFICATIONS

THIS GEOTECHNICAL EXPLORATION WAS PERFORMED IN ACCORDANCE WITH THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, OFFICE OF GEOTECHNICAL ENGINEERING,SPECIFICATIONS FOR GEOTECHNICAL EXPLORATIONS, REVISION DATED JULY 17, 2019.

AVAILABLE INFORMATION

THE SOIL AND GROUNDWATER INFORMATION COLLECTED FOR THIS SUBSURFACE EXPLORATION THAT CAN BE CONVENIENTLY DISPLAYED ON THE SOIL PROFILE SHEETS HAS BEEN PRESENTED. GEOTECHNICAL REPORTS, IF PREPARED, ARE AVAILABLE FOR REVIEW ON THE OFFICE OF CONTRACT SALES WEBSITE.

GEOTECHNICAL PROFILES - ROADWAY & STRUCTURES CONT.)

DESIGN AGENCY
TRC

DESIGNER
NMC

REVIEWER
SDM 05/01/26

PROJECT ID
105743

SUBSET | TOTAL
3 | 85

SHEET | TOTAL
P.1187 | P.1269

CUY-77-11.41

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:05:43 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ZC003.dgn

"SUMMARY OF SOIL TEST DAT A, CU Y-77-11.41, PID 105743"

EXPLOR. ID	STATION,	OFF	SET	LAT/NORTH	LONG/EAST	FROM-TO	SAMPLE ID	N60	% REC	tsf HP	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	ODOT CLASS (GI)	ppm SO4
B-001-0-18	75+42,	38'	RT.	41.43881	-81.64963	01.50-02.80	SS-1A	35	28	-	BROWN, GRAVEL WITH SAND, LITTLE SILT, AS CRUSHED ASPHALT (FILL)								11	A-1-b (VISUAL)	<100
						02.80-03.00	SS-1B	-	-	-	BROWN, SANDY SILT (FILL)								-	A-4a (VISUAL)	-
						03.00-03.20	SS-2A	11	83	-	SAME AS SS-1B								7	A-4a (VISUAL)	130
						03.20-04.25	SS-2B	-	-	-	BROWN, FINE SAND, TRACE TO LITTLE SILT (FILL)								-	A-3 (VISUAL)	-
						04.25-04.50	SS-2C	-	-	-	SAME AS SS-3A								-	A-4b (VISUAL)	-
						04.50-05.65	SS-3A	10	78	0.75	0	1	2	65	32	31	21	10	26	A-4b (8)	-
						05.65-06.00	SS-3B	-	-	-	BROWN, FINE SAND, TRACE SILT								-	A-3 (VISUAL)	-
						06.00-07.50	SS-4	15	56	-	46	42	8	4	0	NP	NP	NP	6	A-1-b (0)	-
B-002-0-18	78+71,	39'	LT.	41.43881	-81.64963	01.60-01.90	SS-1A	18	72	-	59	19	13	9	0	NP	NP	NP	6	A-1-a (0)	-
						01.90-02.10	SS-1B	-	-	1	GRAY, SANDY SILT								-	A-4a (VISUAL)	-
						02.10-03.10	SS-1C	-	-	-	SAME AS SS-2								8	A-1-b (VISUAL)	310
						03.10-04.60	SS-2	23	72	-	22	62	7	8	1	NP	NP	NP	5	A-1-b (0)	230
						04.60-06.10	SS-3	25	83	-	40	50	7	3	0	NP	NP	NP	5	A-1-b (0)	-
						06.10-07.60	SS-4	23	67	-	SAME AS SS-3								9	A-1-b (VISUAL)	-
B-003-0-18	83+15,	39'	RT.	41.44091	-81.65014	01.50-03.00	SS-1	38	83	-	SAME AS SS-2								5	A-1-b (VISUAL)	240
						03.00-04.50	SS-2	35	61	-	13	57	22	8	0	NP	NP	NP	5	A-1-b (0)	<100
						04.50-06.00	SS-3	10	61	-	SAME AS SS-4								11	A-1-a (VISUAL)	-
						06.00-07.50	SS-4	8	61	-	67	21	7	4	1	NP	NP	NP	11	A-1-a (0)	-
B-004-0-18	87+04,	52'	LT.	41.44189	-81.65086	01.40-01.60	SS-1A	13	89	-	BROWN, FINE SAND (FILL)								16	A-3 (VISUAL)	-
						01.60-01.90	SS-1B	-	-	2.5	GRAY, SANDY SILT (FILL)								-	A-4a (VISUAL)	-
						01.90-02.90	SS-1C	-	-	-	BROWN, GRAVEL WITH SAND (FILL)								5	A-1-b (VISUAL)	<100
						03.00-04.50	SS-2	18	89	-	3	53	38	4	2	NP	NP	NP	7	A-1-b (0)	260
						04.50-06.00	SS-3	21	83	-	SAME AS SS-4								5	A-1-a (VISUAL)	-
						06.00-07.50	SS-4	23	83	-	56	36	4	4	0	NP	NP	NP	5	A-1-a (0)	-
B-005-0-18	91+14,	39'	RT.	41.44292	-81.65131	02.00-03.10	SS-1B	-	-	-	53	17	14	16	0	NP	NP	NP	7	A-1-b (0)	200
						03.10-03.30	SS-2A	15	83	-	SAME AS SS-1B								-	A-1-b (VISUAL)	-
						03.30-04.00	SS-2B	-	-	1.25	9	12	11	54	14	26	17	9	15	A-4b (7)	460
						04.00-04.60	SS-2C	-	-	-	SAME AS SS-3								-	A-4b (VISUAL)	-
						04.60-06.10	SS-3	10	61	-	2	4	10	74	10	NP	NP	NP	20	A-4b (8)	-
						06.10-07.60	SS-4	8	78	-	SAME AS SS-3								28	A-4b (VISUAL)	-
B-006-0-18	94+44,	39'	LT.	41.44368	-81.6521	01.20-02.00	SS-1A	23	89	-	59	17	12	11	1	NP	NP	NP	7	A-1-a (0)	-
						02.00-02.70	SS-1B	-	-	4.5+	SANDY SILT (FILL)								11	A-4a (VISUAL)	530
						03.00-03.40	SS-2A	24	83	3	0	2	1	62	35	25	18	7	20	A-4b (8)	520
						03.40-03.70	SS-2B	-	-	-	GRAY, SILT								-	A-4b (VISUAL)	-
						03.70-04.50	SS-2C	-	-	-	SAME AS SS-4								-	A-1-b (VISUAL)	-
						04.50-05.00	SS-3A	17	78	-	SAME AS SS-4								4	A-1-b (VISUAL)	-
						05.00-06.00	SS-3B	-	-	-	SAME AS SS-4								5	A-1-b (VISUAL)	-
						06.00-07.50	SS-4	13	89	-	3	79	9	9	0	NP	NP	NP	4	A-1-b (0)	-
B-007-0-18	98+94,	39'	RT.	41.44477	-81.65275	01.50-03.00	SS-1	23	56	-	50	24	13	12	1	NP	NP	NP	7	A-1-a (0)	380
						03.00-04.50	SS-2	24	50	-	BROWN, COARSE AND FINE SAND								12	A-3a (VISUAL)	200
						04.50-06.00	SS-3	25	67	2.5	4	14	10	69	3	NP	NP	NP	16	A-4b (7)	-
						06.00-07.50	SS-4	6	72	-	BROWN, FINE SAND								23	A-3 (VISUAL)	-
B-008-0-18	102+91,	56'	LT.	41.44553	-81.65395	01.50-01.83	SS-1	50/4"	100	-	66	26	2	4	2	NP	NP	NP	11	A-1-a (0)	1700
						03.00-03.46	SS-2	50/6"	100	-	BROWN, GRAVEL WITH SAND								17	A-1-b (VISUAL)	2600
						04.50-06.00	SS-3	11	89	2.5	2	0	1	79	18	28	20	8	20	A-4b (8)	-
						06.00-07.50	SS-4	14	56	3.38	SAME AS SS-3								19	A-4b (VISUAL)	-
B-009-0-18	107+02,	38'	RT.	41.44655	-81.65448	01.50-03.00	SS-1	41	67	-	BROWN, GRAVEL WITH SAND AND SILT (FILL)								8	A-2-4 (VISUAL)	450
						03.00-04.50	SS-2	37	67	-	6	63	19	10	2	NP	NP	NP	8	A-1-b (0)	<100
						04.50-06.00	SS-3	15	67	-	SAME AS SS-2								6	A-1-b (VISUAL)	-
						06.00-07.00	SS-4A	11	72	-	32	61	5	1	1	NP	NP	NP	16	A-1-b (0)	-
						07.00-07.50	SS-4B	-	-	2	BROWN, SILT AND CLAY								-	A-6a (VISUAL)	-
B-010-0-18	110+99,	39'	LT.	41.44744	-81.65543	01.20-02.70	SS-1	17	72	-	BROWN, AND GRAY, GRAVEL WITH SAND AND SILT (FILL)								8	A-2-4 (VISUAL)	100
						03.00-03.60	SS-2A	10	83	-	4	11	14	55	16	NP	NP	NP	23	A-4b (7)	160

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:05:51 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
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CUY-77-11.41

GEOTECHNICAL PROFILE - ROADWAY
SUMMARY OF SOIL TEST DATA

DESIGN AGENCY
TRC

DESIGNER
EB

REVIEWER
SDM 05-01-26

PROJECT ID
105743

SUBSET 4 | TOTAL 85

SHEET P.1188 | TOTAL P.1269

"SUMMARY OF SOIL TEST DAT A, CU Y-77-11.41, PID 105743"

EXPLOR. ID	STATION,	OFF	SET	LAT/NORTH	LONG/EAST	FROM-TO	SAMPLE ID	N60	% REC	tsf HP	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	ODOT CLASS (GI)	ppm SO4
B-010-0-18	110+99,	39'	LT.	41.44744	-81.65543	03.60-04.50	SS-2B	-	-	1.25	GRAY AND BROWN, SILT (FILL)								-	A-4b (VISUAL)	-
						04.50-05.20	SS-3A	17	83	-	2	2	11	82	3	NP	NP	NP	13	A-4b (8)	-
						05.20-06.00	SS-3B	-	-	3	SAME AS SS-3A								-	A-4b (VISUAL)	-
						06.00-06.50	SS-4A	17	89	2.5	SAME AS SS-3A								14	A-4b (VISUAL)	-
						06.50-07.00	SS-4B	-	-	-	BROWN, SANDY SILT (FILL)								-	A-4a (VISUAL)	-
						07.00-07.50	SS-4C	-	-	4.5	BROWN, SILT (FILL)								-	A-4b (VISUAL)	-
B-011-0-18	114+97,	38'	RT.	41.4485	-81.65574	01.50-03.00	SS-1	15	44	-	BROWN, GRAVEL WITH SAND (FILL)								9	A-1-b (VISUAL)	170
						03.00-04.50	SS-2	20	67	3.92	4	8	7	61	20	26	17	9	16	A-4b (8)	810
						04.50-06.00	SS-3	65	67	-	2	32	26	39	1	NP	NP	NP	9	A-4a (1)	-
						06.00-07.50	SS-4	28	72	4	DARK BROWN, SILT (FILL)								15	A-4b (VISUAL)	-
B-012-0-18	118+90,	39'	LT.	41.44949	-81.65659	01.45-02.30	SS-1A	7	83	-	35	33	16	14	2	NP	NP	NP	9	A-1-b (0)	-
						02.30-02.95	SS-1B	-	-	1	SAME AS SS-2A								19	A-4a (VISUAL)	530
						03.00-03.75	SS-2A	18	89	-	1	16	28	48	7	NP	NP	NP	15	A-4a (4)	480
						03.75-04.50	SS-2B	-	-	-	SAME AS SS-2A								-	A-4a (VISUAL)	-
						04.50-05.10	SS-3A	14	78	-	SAME AS SS-2A								-	A-4a (VISUAL)	-
						05.10-06.00	SS-3B	-	-	4.5+	BROWN AND GRAY, SILT (FILL)								-	A-4b (VISUAL)	-
						06.00-07.50	SS-4	13	78	2.67	BROWN AND GRAY, SILT (FILL)								19	A-4b (VISUAL)	-
B-013-0-18	124+05,	53'	RT.	41.45087	-81.65668	01.50-03.00	SS-1	14	44	-	62	14	8	16	0	NP	NP	NP	13	A-1-b (0)	960
						03.00-04.50	SS-2	10	72	2.42	SAME AS SS-4								18	A-4b (VISUAL)	1100
						04.50-06.00	SS-3	8	56	1.67	SAME AS SS-4								20	A-4b (VISUAL)	-
						06.00-07.50	SS-4	10	100	1.58	0	0	1	72	27	27	19	8	21	A-4b (8)	-
B-014-0-18	126+88,	51'	LT.	41.4516	-81.65716	01.20-02.70	SS-1	80	44	-	50	44	2	3	1	NP	NP	NP	9	A-1-b (0)	1000
						03.00-04.50	SS-2	28	83	4.33	SAME AS SS-3								12	A-4b (VISUAL)	320
						04.50-06.00	SS-3	15	94	3.83	6	9	11	59	15	24	20	4	15	A-4b (8)	-
						06.00-07.50	SS-4	20	89	4.42	SAME AS SS-3								15	A-4b (VISUAL)	-
B-015-0-18	131+63,	39'	RT.	41.4529	-81.65696	01.50-02.20	SS-1A	52	94	-	BROWN, GRAVEL WITH SAND AND SILT (FILL)								9	A-2-4 (VISUAL)	280
						02.20-03.00	SS-1B	-	-	-	19	55	11	14	1	NP	NP	NP	6	A-1-b (0)	-
						03.00-04.50	SS-2	34	100	4	SAME AS SS-4								14	A-4b (VISUAL)	400
						04.50-06.00	SS-3	41	78	4.5	SAME AS SS-4								13	A-4b (VISUAL)	-
						06.00-07.50	SS-4	18	100	3.92	0	1	2	68	29	27	20	7	19	A-4b (8)	-
B-016-0-18	134+90,	40'	LT.	41.4538	-81.65732	01.50-03.00	SS-1	89	61	-	64	33	1	2	0	NP	NP	NP	10	A-1-a (0)	140
						03.00-04.50	SS-2	24	94	4.5+	4	14	17	49	16	24	17	7	13	A-4a (6)	-
						04.50-05.50	SS-3A	35	100	3.08	BROWN AND GRAY, SILT (FILL)								9	A-4b (VISUAL)	360
						05.50-06.00	SS-3B	-	-	-	BROWN, COARSE AND FINE SAND								11	A-3a (VISUAL)	-
						06.00-07.50	SS-4	28	100	-	BROWN, SANDY SILT								12	A-4a (VISUAL)	-
B-017-0-18	138+88,	38'	RT.	41.45486	-81.65706	01.50-02.80	SS-1A	25	94	-	52	23	13	10	2	NP	NP	NP	8	A-1-a (0)	100
						02.80-03.00	SS-1B	-	-	-	SAME AS SS-3								-	A-4b (VISUAL)	-
						03.00-04.50	SS-2	21	83	1.33	SAME AS SS-3								20	A-4b (VISUAL)	710
						04.50-06.00	SS-3	8	72	1.17	1	0	0	77	22	24	18	6	21	A-4b (8)	-
						06.00-07.50	SS-4	14	78	0.5	SAME AS SS-3								21	A-4b (VISUAL)	-
B-018-0-18	142+99,	39'	LT.	41.456	-81.65743	01.25-02.75	SS-1	24	44	-	BROWN, GRAVEL WITH SAND (FILL)								8	A-1-b (VISUAL)	170
						03.00-04.50	SS-2	14	44	-	5	27	60	5	3	NP	NP	NP	23	A-3 (0)	160
						04.50-06.00	SS-3	17	83	-	SAME AS SS-2								27	A-3 (VISUAL)	-
						06.00-07.50	SS-4	23	89	-	0	13	82	3	2	NP	NP	NP	22	A-3 (0)	-
B-019-0-18	146+86,	39'	RT.	41.45708	-81.65709	01.50-03.00	SS-1	25	67	-	57	24	10	7	2	NP	NP	NP	6	A-1-a (0)	<100
						03.00-04.50	SS-2	31	83	-	GRAVEL WITH SAND AND SILT (FILL)								4	A-2-4 (VISUAL)	<100
						04.50-06.00	SS-3	34	83	-	3	18	70	6	3	NP	NP	NP	6	A-3 (0)	-
						06.00-07.50	SS-4	25	67	-	BROWN, GRAVEL WITH SAND								6	A-1-b (VISUAL)	-
B-020-0-18	151+03,	39'	LT.	41.45829	-81.6573	01.50-02.00	SS-1A	30	89	-	DARK BROWN, STONE FRAGMENTS WITH SAND (FILL)								8	A-1-b (VISUAL)	-
						02.00-03.00	SS-1B	-	-	-	58	20	10	10	2	NP	NP	NP	8	A-1-a (0)	240
						03.00-03.10	SS-2A	31	72	-	SAME AS SS-1B								-	A-1-a (VISUAL)	-
						03.10-04.50	SS-2B	-	-	4.5+	0	0	5	72	23	26	20	6	14	A-4b (8)	1100
						04.50-05.20	SS-3A	21	100	4.13	SAME AS SS-2B								16	A-4b (VISUAL)	-

GEOTECHNICAL PROFILE - ROADWAY
SUMMARY OF SOIL TEST DATA

DESIGN AGENCY
TRC

DESIGNER
EB

REVIEWER
SDM 05-01-26

PROJECT ID
105743

SUBSET 5 | TOTAL 85

SHEET P.1189 | TOTAL P.1269

CUY-77-11.41

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:05:58 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
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"SUMMARY OF SOIL TEST DAT A, CU Y-77-11.41, PID 105743"

EXPLOR. ID	STATION,	OFF	SET	LAT/NORTH	LONG/EAST	FROM-TO	SAMPLE ID	N60	% REC	tsf HP	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	ODOT CLASS (GI)	ppm SO4
B-020-0-18	151+03,	39'	LT.	41.45829	-81.6573	05.20-05.50	SS-3B	-	-	-	GRAYISH BROWN, SILT (POSSIBLE FILL)								-	A-4b (VISUAL)	-
						05.50-06.00	SS-3C	-	-	-	BROWN, FINE SAND (POSSIBLE FILL)NE SAND								-	A-3 (VISUAL)	-
						06.00-06.90	SS-4A	30	100	-	BROWN, FINE SAND (POSSIBLE FILL)								18	A-3 (VISUAL)	-
						06.90-07.50	SS-4B	-	-	2.25	BROWN TO GRAYISH BROWN, SILT(POSSIBLE FILL)LT								18	A-4b (VISUAL)	-
B-021-0-18	154+83,	52'	RT.	41.45923	-81.65685	01.50-03.00	SS-1	37	89	-	47	24	15	12	2	NP	NP	NP	7	A-1-b (0)	460
						03.00-03.90	SS-2A	24	100	3.5	BROWN AND GRAY, SANDY SILT (FILL)								14	A-4a (VISUAL)	560
						03.90-04.50	SS-2B	-	-	4	SAME AS SS-3								-	A-6a (VISUAL)	-
						04.50-06.00	SS-3	14	72	1.25	0	0	4	44	52	32	19	13	24	A-6a (9)	-
						06.00-07.50	SS-4	14	83	0.67	GRAYISH BROWN, SILT AND CLAY								17	A-6a (VISUAL)	-
B-022-0-18	159+05,	40'	LT.	41.46041	-81.65716	01.42-02.08	SS-1	30/50/2"	100	-	DARK BROWN, STONE FRAGMENTS WITH SAND (FILL)								11	A-1-b (VISUAL)	1500
						03.00-03.30	SS-2A	15	56	-	BROWN, SANDY SILT								-	A-4a (VISUAL)	-
						03.30-04.50	SS-2B	-	-	2.88	0	0	1	50	49	31	19	12	22	A-6a (9)	1200
						04.50-06.00	SS-3	13	78	0.58	0	0	1	30	69	39	23	16	27	A-6b (10)	-
						06.00-06.20	SS-4A	25	83	1	SAME AS SS-3								16	A-6b (VISUAL)	-
						06.20-07.50	SS-4B	-	-	-	GRAYISH BROWN, SANDY SILT								-	A-4a (VISUAL)	-
B-023-0-18	162+87,	39'	RT.	41.46149	-81.65697	01.50-02.50	SS-1A	21	94	-	BROWN, GRAVEL WITH SAND (FILL)								8	A-1-b (VISUAL)	120
						02.50-03.00	SS-1B	-	-	2.25	BROWN, SILT (FILL)								-	A-4b (VISUAL)	-
						03.00-04.00	SS-2A	17	83	4.5	4	11	7	56	22	24	20	4	17	A-4b (8)	530
						04.00-04.50	SS-2B	-	-	4.5	SAME AS SS-3								-	A-4b (VISUAL)	-
						04.50-06.00	SS-3	15	100	2.33	0	0	4	64	32	25	18	7	20	A-4b (8)	-
						06.00-07.50	SS-4	23	72	4.5	SAME AS SS-3								17	A-4b (VISUAL)	-
B-024-0-18	166+86,	40'	LT.	41.46254	-81.65734	01.42-02.08	SS-1	20/50/2"	100	-	GRAY, STONE FRAGMENTS (FILL)								10	A-1-a (VISUAL)	<100
						03.00-04.50	SS-2	38	83	4.5+	14	11	10	58	7	25	21	4	14	A-4b (6)	400
						04.50-06.00	SS-3	31	83	-	5	8	38	37	12	NP	NP	NP	13	A-4a (3)	-
						06.00-06.20	SS-4A	17	83	-	SAME AS SS-3								15	A-4a (VISUAL)	-
						06.20-07.50	SS-4B	-	-	4.42	BROWN AND GRAY, SILT (FILL)								-	A-4b (VISUAL)	-
B-025-0-18	169+65,	54'	RT.	41.46326	-81.65725	01.00-01.92	SS-1	8/50/5"	64	-	53	24	16	5	2	NP	NP	NP	14	A-1-a (0)	-
						03.50-05.00	SS-2	17	89	-	52	15	19	-	-	NP	NP	NP	11	A-1-b (0)	-
						06.00-06.70	SS-3A	11	89	-	0	0	49	46	5	NP	NP	NP	22	A-4a (3)	-
						06.70-06.80	SS-3B	-	-	0.75	BROWN, SILT								-	A-4b (VISUAL)	-
						06.80-07.50	SS-3C	-	-	-	SAME AS SS-4								-	A-4a (VISUAL)	-
						08.50-10.00	SS-4	11	78	-	0	1	63	31	5	NP	NP	NP	27	A-4a (0)	-
						13.50-15.00	SS-5	35	94	-	BROWN, SANDY SILT								23	A-4a (VISUAL)	-
						18.50-20.00	SS-6	17	83	4.08	2	0	1	73	24	25	19	6	19	A-4b (8)	-
						23.50-25.00	SS-7	8	89	0.5	BROWNISH GRAY, SILT								27	A-4b (VISUAL)	-
						28.50-30.00	SS-8	11	100	0.67	0	0	0	65	35	26	19	7	32	A-4b (8)	-
						31.00-33.00	ST-1	ST	100	-	0	0	1	86	13	NP	NP	NP	28	A-4b (8)	-
						33.00-34.50	SS-9	8	94	-	SAME AS ST-1								27	A-4b (VISUAL)	-
						38.50-40.00	SS-10	13	94	0.75	1	0	1	45	53	33	19	14	26	A-6a (10)	-
						43.50-45.00	SS-11	20	100	1.5	SAME AS SS-10								24	A-6a (VISUAL)	-
						48.50-50.00	SS-12	21	94	2	SAME AS SS-10								-	A-6a (VISUAL)	-
B-026-0-18	171+20,	74'	LT.	41.4637	-81.65788	01.00-01.70	SS-1A	25	78	-	23	39	22	12	4	NP	NP	NP	17	A-1-b (0)	-
						01.70-02.50	SS-1B	-	-	2.25	1	16	26	35	22	17	14	3	15	A-4a (4)	-
						03.50-03.80	SS-2A	10	78	-	3	43	31	14	9	NP	NP	NP	9	A-3a (0)	-
						03.80-04.40	SS-2B	-	-	-	SAME AS SS-2A								-	A-3a (VISUAL)	-
						04.40-05.00	SS-2C	-	-	-	0	3	7	58	32	26	18	8	18	A-4b (8)	-
						06.00-06.60	SS-3A	6	67	-	3	24	52	11	10	NP	NP	NP	13	A-3a (0)	-
						06.60-07.50	SS-3B	-	-	4.5+	SAME AS SS-4A								17	A-4a (VISUAL)	-
						08.50-09.50	SS-4A	6	78	1	5	10	17	37	31	27	17	10	21	A-4a (7)	-
						09.50-10.00	SS-4B	-	-	-	BROWN, SANDY SILT (FILL)								17	A-4a (VISUAL)	-
						13.50-15.00	SS-5	10	78	0.7	0	5	34	31	30	25	15	10	22	A-4a (5)	-
						18.50-20.00	SS-6	13	83	2.67	SAME AS SS-7								21	A-4b (VISUAL)	-
						23.50-25.00	SS-7	11	100	0.6	0	0	1	68	31	27	21	6	25	A-4b (8)	-
						28.50-30.00	SS-8	11	94	0.65	SAME AS SS-9								26	A-4b (VISUAL)	-
						33.50-35.00	SS-9	8	100	0.83	0	0	0	67	33	28	20	8	26	A-4b (8)	-

GEOTECHNICAL PROFILE - ROADWAY
SUMMARY OF SOIL TEST DATA

DESIGN AGENCY
TRC

DESIGNER
EB

REVIEWER
SDM 05-01-26

PROJECT ID
105743

SUBSET 6 | TOTAL 85

SHEET P.1190 | TOTAL P.1269

CUY-77-11.41

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:06:05 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
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"SUMMARY OF SOIL TEST DAT A, CU Y-77-11.41, PID 105743"

EXPLOR. ID	STATION,	OFF	SET	LAT/NORTH	LONG/EAST	FROM-TO	SAMPLE ID	N60	% REC	tsf HP	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	ODOT CLASS (GI)	ppm SO4
B-026-0-18	171+20,	74'	LT.	41.4637	-81.65788	35.50-37.50	ST-2	ST	100	2.13	SAME AS SS-10								-	A-6a (VISUAL)	-
						38.50-40.00	SS-10	13	100	1.75	1	0	0	53	46	31	20	11	24	A-6a (8)	-
						43.50-45.00	SS-11	17	100	1.92	SAME AS SS-10								23	A-6a (VISUAL)	-
						48.50-49.30	SS-12A	23	100	-	0	0	0	90	10	NP	NP	NP	19	A-4b (8)	-
						49.30-50.00	SS-12B	-	-	2.13	BROWNISH GRAY, SILT AND CLAY								23	A-6a (VISUAL)	-
B-027-0-18	171+09,	38'	RT.	41.4637	-81.65742	01.00-02.50	SS-1	44	72	-	BROWN, GRAVEL WITH SAND (FILL)								7	A-1-b (VISUAL)	620
						02.50-04.00	SS-2	17	72	4.5+	58	25	10	6	1	NP	NP	NP	14	A-1-a (0)	2900
						04.00-04.30	SS-3A	52	83	2.25	GRAY AND RED, SANDY SILT (FILL)								13	A-4a (VISUAL)	-
						04.30-05.50	SS-3B	-	-	-	GRAY AND RED, SANDY SILT (FILL)								-	A-4a (VISUAL)	-
						05.50-07.00	SS-4	37	83	-	12	16	29	27	16	23	18	5	14	A-4a (2)	-
B-028-0-18	174+35,	40'	LT.	41.46459	-81.65788	01.19-01.40	SS-1A	20	78	-	BROWN, GRAVEL WITH SAND (FILL)								-	A-1-b (VISUAL)	-
						01.40-02.70	SS-1B	-	-	-	6	17	16	56	5	NP	NP	NP	15	A-4b (5)	280
						02.70-03.40	SS-2A	23	100	-	10	24	18	40	8	NP	NP	NP	18	A-4a (3)	570
						03.40-04.20	SS-2B	-	-	-	24	33	19	17	7	NP	NP	NP	9	A-1-b (0)	-
						04.20-05.00	SS-3A	5/18/50/2"	93	2	BROWN AND GRAY, SILT (FILL)								15	A-4b (VISUAL)	-
						05.00-05.37	SS-3B	-	-	-	60	26	9	4	1	NP	NP	NP	9	A-1-a (0)	-
						06.00-06.33	SS-4	50/4"	100	-	STONE FRAGMENTS WITH SAND (FILL)								8	A-1-a (VISUAL)	-
B-031-0-18	179+09,	38'	RT.	41.46591	-81.65789	01.50-03.00	SS-1	23	67	2	10	13	18	45	14	23	16	7	16	A-4a (5)	460
						03.00-04.50	SS-2	21	72	4.5+	BROWN, GRAY, AND DARK GRAY, SANDY SILT (FILL)								16	A-4a (VISUAL)	600
						04.50-06.00	SS-3	23	83	3.75	BROWN, GRAY, AND DARK GRAY, SANDY SILT (FILL)								17	A-4a (VISUAL)	-
						06.00-06.40	SS-4A	8/15/50/1"	92	1.75	BROWN, GRAY, AND DARK GRAY, SANDY SILT (FILL)								-	A-4a (VISUAL)	-
						06.40-07.08	SS-4B	-	-	-	26	13	33	17	11	18	14	4	10	A-2-4 (0)	-
B-032-0-18	182+84,	50'	LT.	41.4668	-81.65861	01.40-02.90	SS-1	6	61	-	SAME AS SS-2								6	A-1-a (VISUAL)	<100
						02.90-04.40	SS-2	6	67	-	95	3	1	-	-	NP	NP	NP	6	A-1-a (0)	-
						04.40-05.90	SS-3	13	56	-	BROWN AND GREENISH GRAY, STONE FRAGMENTS (FILL)								11	A-1-a (VISUAL)	-
						05.90-07.40	SS-4	8	28	-	BROWN, GRAVEL (FILL)								-	A-1-a (VISUAL)	-
B-033-0-18	186+95,	51'	RT.	41.46798	-81.65877	01.76-03.00	SS-1B	-	-	-	BROWN AND GRAY, GRAVEL WITH SAND AND SILT (FILL)								14	A-2-4 (VISUAL)	6500
						03.00-04.50	SS-2	41	72	-	78	15	3	3	1	NP	NP	NP	11	A-1-a (0)	6600
						04.50-06.00	SS-3	15	72	2.83	1	2	8	72	17	22	18	4	18	A-4b (8)	-
						06.00-07.50	SS-4	11	72	2	SAME AS SS-3								17	A-4b (VISUAL)	-
B-034-0-18	191+92,	40'	LT.	41.46932	-81.65964	01.50-02.10	SS-1A	25	94	-	8	52	24	15	1	NP	NP	NP	51	A-1-b (0)	-
						02.10-03.00	SS-1B	-	-	4.5+	SAME AS SS-2								12	A-4b (VISUAL)	550
						03.00-04.50	SS-2	24	83	-	3	4	28	55	10	NP	NP	NP	13	A-4b (6)	510
						04.50-05.75	SS-3A	15	100	-	1	21	61	9	8	NP	NP	NP	16	A-3a (0)	-
						05.75-06.00	SS-3B	-	-	2.5	BROWN, SILT AND CLAY (FILL)								-	A-6a (VISUAL)	-
						06.00-07.50	SS-4	6	72	-	36	29	20	11	4	19	14	5	9	A-1-b (0)	-
B-035-0-18	194+98,	41'	RT.	41.47004	-81.65958	01.50-01.80	SS-1A	14	100	-	0	56	27	17		NP	NP	NP	60	A-1-b (0)	
						01.80-02.50	SS-1B	-	-	-	SAME AS SS-1A								-	A-1-b (VISUAL)	-
						02.50-03.00	SS-1C	-	-	1	SAME AS SS-3								17	A-4a (VISUAL)	1000
						03.00-04.50	SS-2	24	89	4.5	SAME AS SS-3								12	A-4a (VISUAL)	320
						04.50-06.00	SS-3	39	78	4.5+	7	13	40	28	12	17	16	1	10	A-4a (1)	-
						06.00-07.50	SS-4	25	78	4.5+	SAME AS SS-3								11	A-4a (VISUAL)	-
B-036-0-18	198+34,	46'	LT.	41.47092	-81.66005	01.10-02.10	SS-1A	10	94	-	19	38	15	26	2	NP	NP	NP	13	A-3a (0)	140
						02.10-02.60	SS-1B	-	-	-	SAME AS SS-3A								-	A-4a (VISUAL)	-
						03.00-04.50	SS-2	12	89	-	SAME AS SS-3A								18	A-4a (VISUAL)	2000
						04.50-05.50	SS-3A	15	78	-	4	7	42	39	8	NP	NP	NP	19	A-4a (2)	-
						05.50-06.00	SS-3B	-	-	-	SAME AS SS-4A								-	A-4b (VISUAL)	-
						06.00-06.50	SS-4A	9	89	-	0	0	29	65	6	NP	NP	NP	25	A-4b (7)	-
						06.50-07.50	SS-4B	-	-	-	SAME AS SS-4A								-	A-4b (VISUAL)	-
B-037-0-18	202+31,	54'	RT.	41.47205	-81.65975	01.20-01.60	SS-1A	85	56	-	GRAVEL								-	A-1-a (VISUAL)	-
						01.60-02.70	SS-1B	-	-	-	GREEN, STONE FRAGMENTS, "AND" SAND (FILL)								42	A-1-a (VISUAL)	1800
						02.70-04.20	SS-2	38	72	-	0	1	17	76	6	NP	NP	NP	18	A-4b (8)	1000
						04.20-05.70	SS-3	14	61	-	0	0	45	50	5	NP	NP	NP	25	A-4b (4)	-
						05.70-07.20	SS-4	8	72	-	0	0	19	76	5	NP	NP	NP	25	A-4b (8)	-
B-039-0-18	210+95,	41'	RT.	41.4744	-81.66011	01.40-02.00	SS-1A	28	72	-	SAME AS SS-2								11	A-1-b (VISUAL)	130
						02.00-02.90	SS-1B	-	-	-	SAME AS SS-2								-	A-1-b (VISUAL)	-
						02.90-04.40	SS-2	11	67	-	9	65	20	3	3	NP	NP	NP	6	A-1-b (0)	330
						04.40-05.90	SS-3	6	78	-	0	0	66	32	2	NP	NP	NP	21	A-3a (0)	-
						05.90-07.40	SS-4	6	78	-	0	0	89	10	1	NP	NP	NP	26	A-3a (0)	-

GEOTECHNICAL PROFILE - ROADWAY
SUMMARY OF SOIL TEST DATA

DESIGN AGENCY
TRC

DESIGNER
EB

REVIEWER
SDM 05-01-26

PROJECT ID
105743

SUBSET 7 | TOTAL 85

SHEET P.1191 | TOTAL P.1269

CUY-77-11.41

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:06:12 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
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6350 Presidential Gateway
Columbus, Ohio 43231
Telephone: (614) 823-4949
Fax Number: (614) 823-4990

UNCONFINED COMPRESSION

AASHTO T 208

PROJECT	CUY-77-11.21
JOB No.	N-19-009
BORING	B-025-0-18
STATION / OFFSET	
SAMPLE No. / DEPTH	ST-1 / 31.3' - 31.9'
DATE OF TESTING	05/16/2019
TESTED BY	K. Sarven

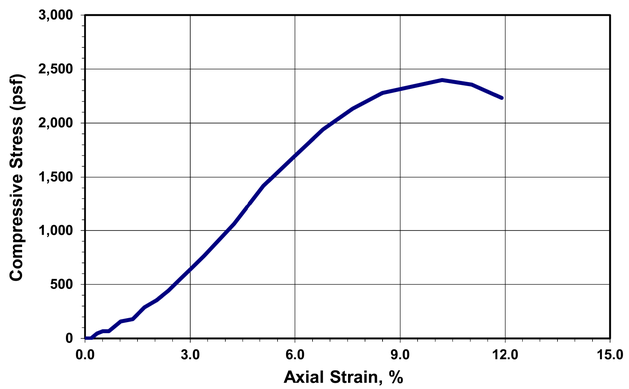
Soil Description: Gray SILT, little clay, trace fine sand.
Soil Classification: ODOT A-4b

Physical Characteristics	L.L.	P.L.	P.I.	Gravel%	C. Sand%	F. Sand%	Silt%	Clay%
	NP	NP	NA	0	0	1.0	86.1	12.9

DIAMETER, D_0	2.846 in	72.3 mm	STRAIN RATE	1.00	%/min
AREA, A_0	6.363 in^2	41.1 cm^2	WET SOIL + PAN MASS	1329.4	g
HEIGHT, L_0	5.884 in	149.46 mm	PAN MASS	104.7	g
VOLUME, V_0	37.442 in^3	613.56 cm^3	DRY SOIL + PAN MASS	1065.3	g
MACH. RATE	0.059	in/min	WET DENSITY	124.61	lb/ft^3
WATER CONT.	27.49	%	DRY DENSITY	97.74	lb/ft^3
UNCONFINED COMPRESSION STRESS, q_u		**2,398 psf**		1.20	tsf
AXIAL STRAIN @ FAILURE				10.20	%
HAND PENETROMETER				1.00	tsf

Failure Sketch

Unconfined Compression Test



GEOTECHNICAL PROFILE - ROADWAY
UNCONFINED COMPRESSION TEST RESULT

DESIGN AGENCY: TRC
DESIGNER: EB
REVIEWER: SDM 05/01/26
PROJECT ID: 105743
SUBSET: 8 TOTAL: 85
SHEET: P.1192 TOTAL: P.1269

CUY-77-11.41

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CUY-77-11.41

MODEL: CLP_I077 - Plan 1 PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:07:25 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
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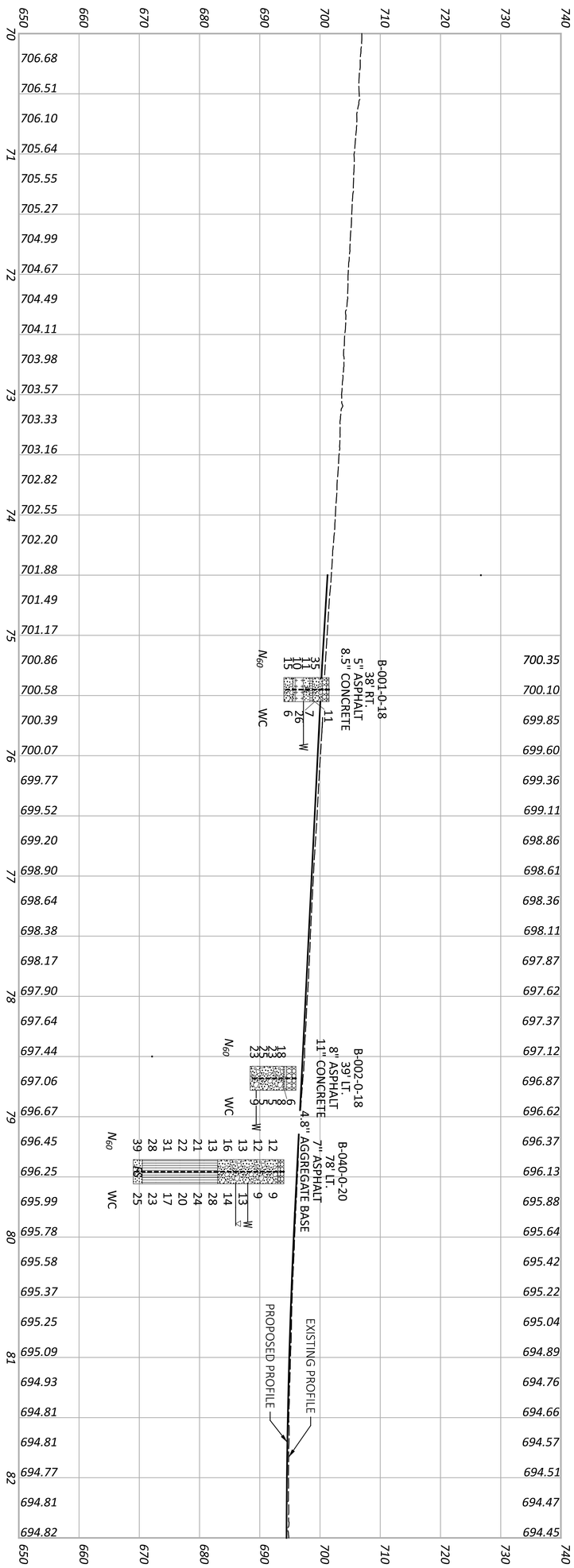

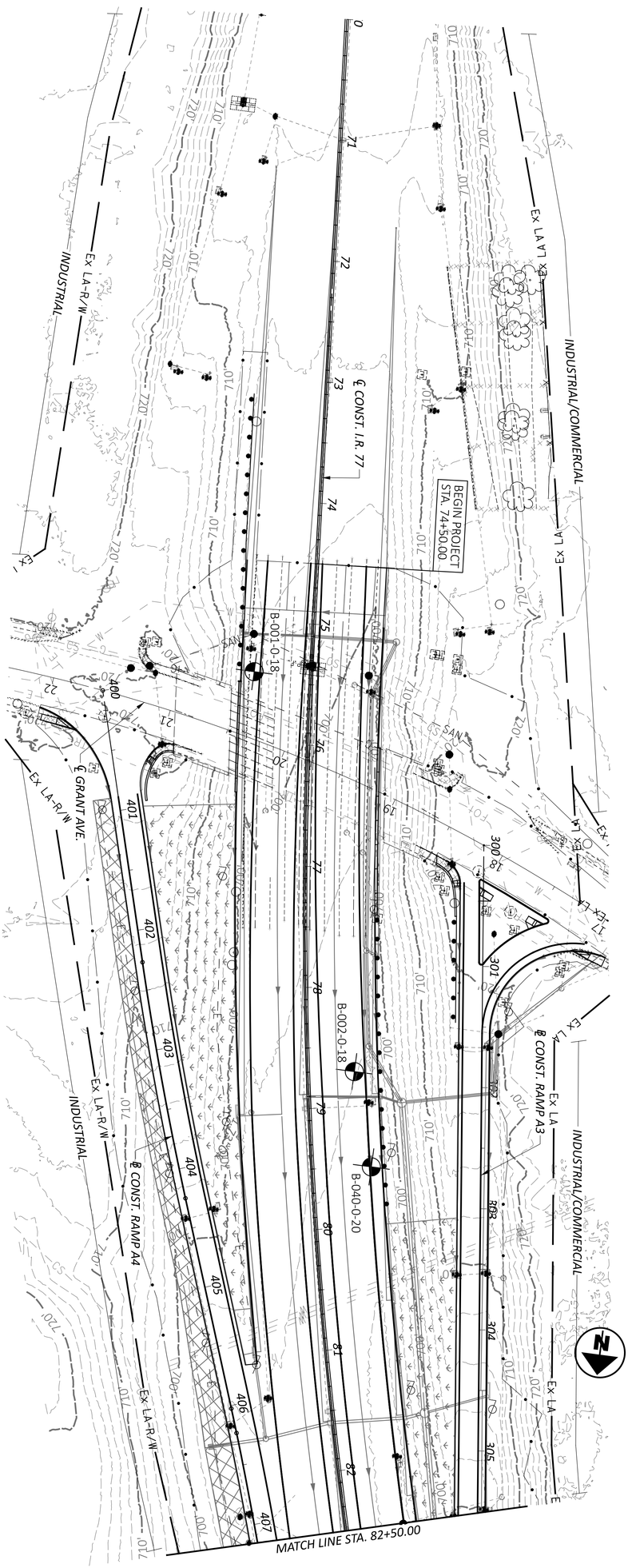

GEOTECHNICAL PROFILE - ROADWAY
CUY-77 - STA. 70+00 TO STA. 82+50

HORIZONTAL SCALE IN FEET
0 50
25 100

DESIGNER	DESIGN AGENCY
EB	TRC

REVIEWER	PROJECT ID	SUBSET	SHEET
SDM 05/01/26	105743	9	P.1193
		TOTAL 85	TOTAL P.1269

MODEL: CLP_U077 - Plan 2 PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:08:00 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCalazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
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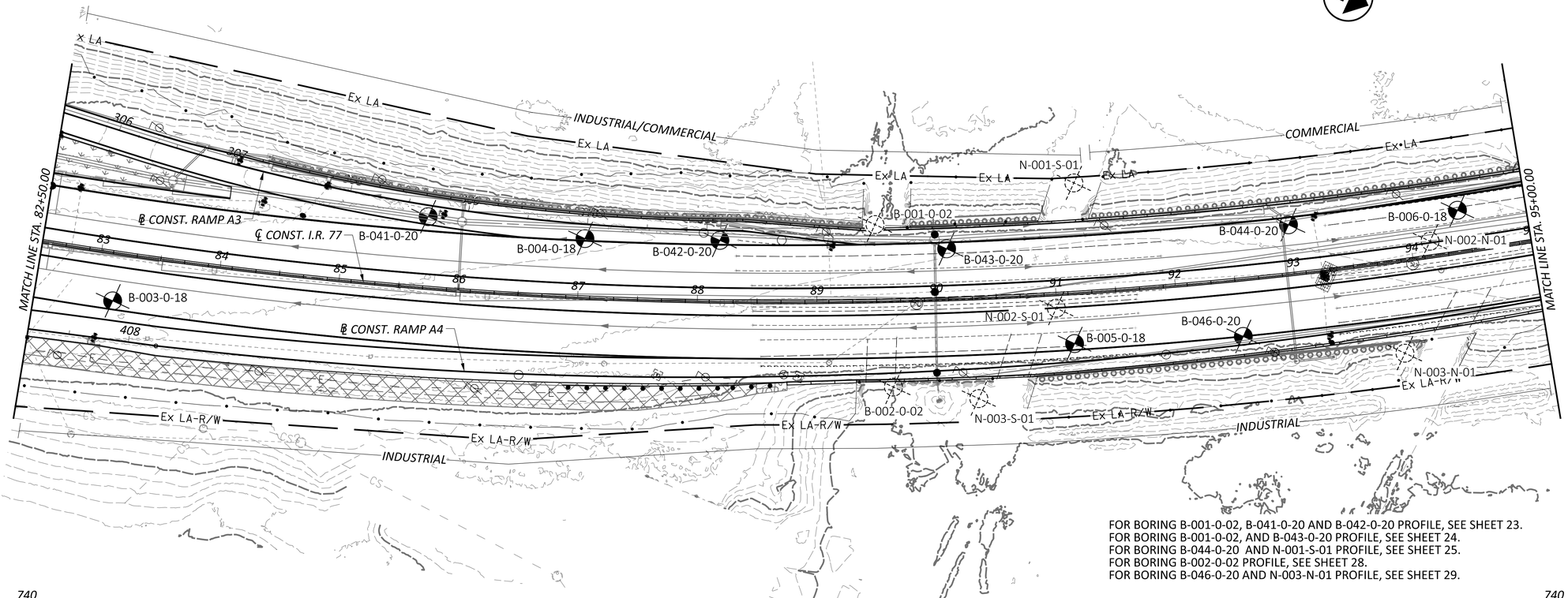
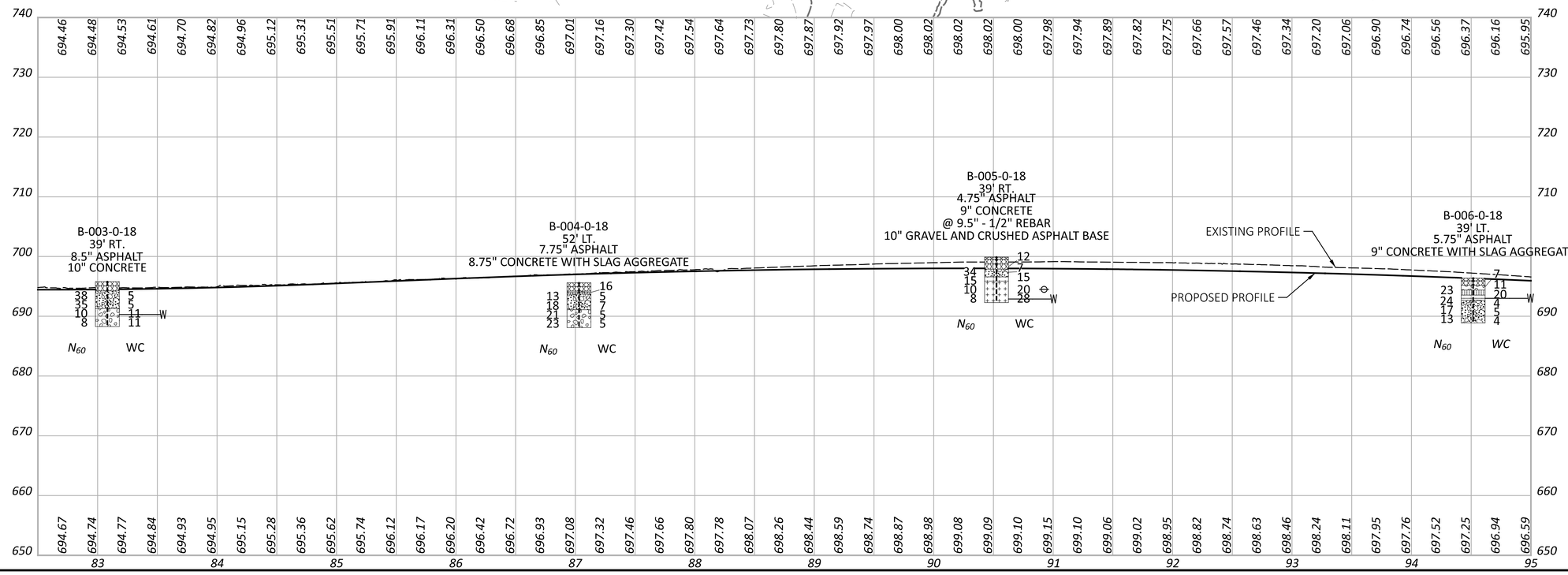


FOR BORING B-001-0-02, B-041-0-20 AND B-042-0-20 PROFILE, SEE SHEET 23.
FOR BORING B-001-0-02, AND B-043-0-20 PROFILE, SEE SHEET 24.
FOR BORING B-044-0-20 AND N-001-S-01 PROFILE, SEE SHEET 25.
FOR BORING B-002-0-02 PROFILE, SEE SHEET 28.
FOR BORING B-046-0-20 AND N-003-N-01 PROFILE, SEE SHEET 29.

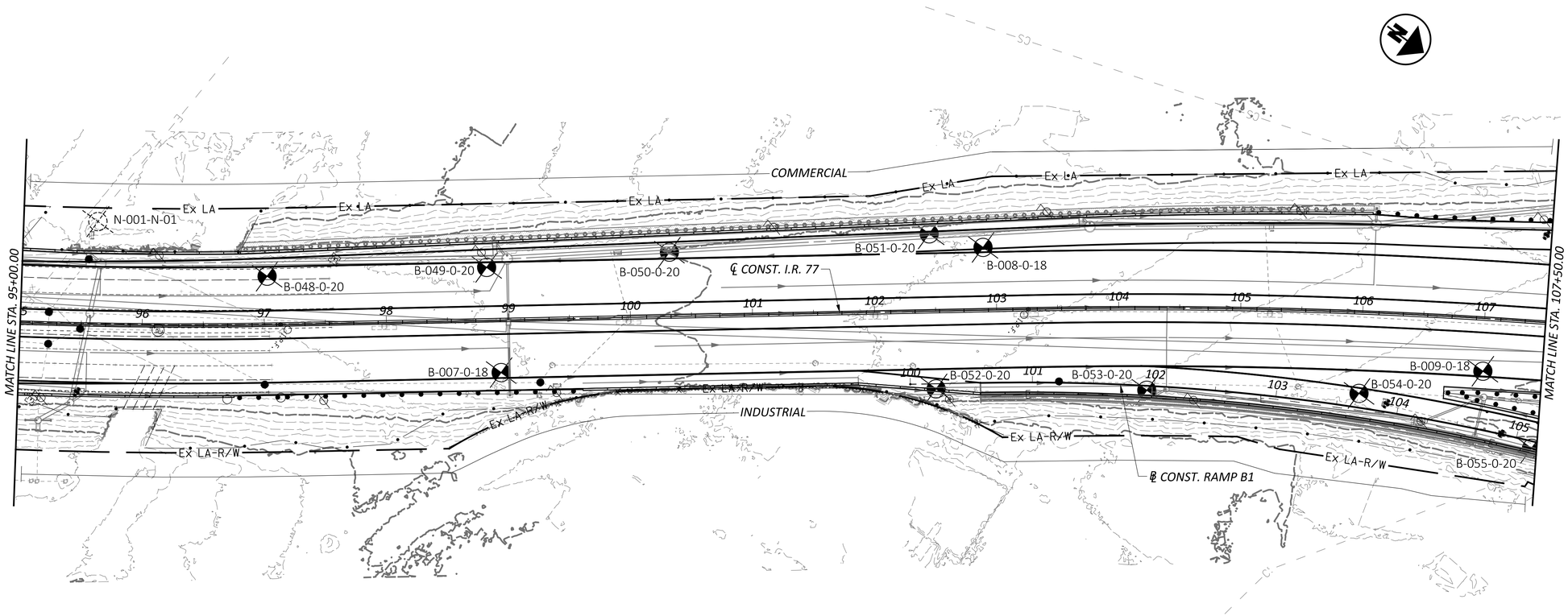


CUY-77-11.41

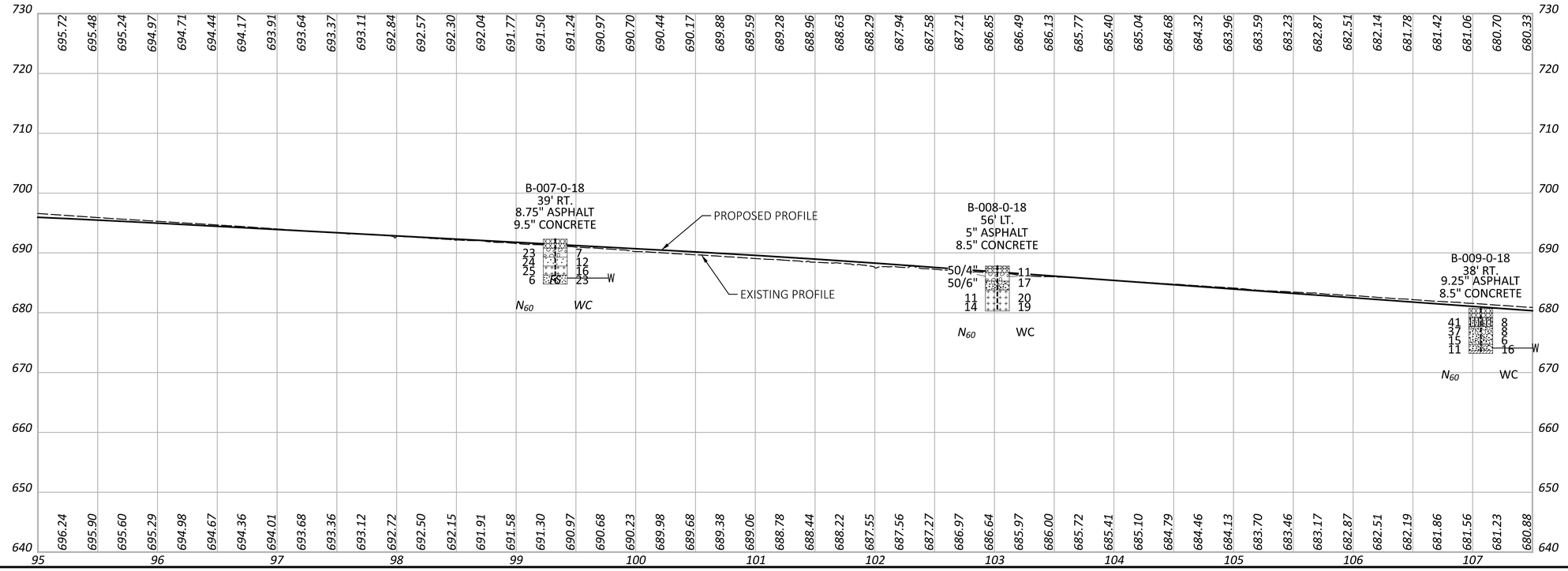
HORIZONTAL SCALE IN FEET
0 25 50 100

GEOTECHNICAL PROFILE - ROADWAY
CUY-77 - STA. 82+50 TO STA. 95+00

DESIGN AGENCY	TRC
DESIGNER	EB
REVIEWER	SDM 05/01/26
PROJECT ID	105743
SUBSET / TOTAL	10 / 85
SHEET / TOTAL	P.1194 / P.1269



FOR BORING N-001-N-01, B-048-0-20 B-049-0-20, B-050-0-20, B-051-0-20, B-052-0-20 PROFILE, SEE SHEETS 26 AND 27.
FOR BORING B-053-0-20, B-054-0-20, B-055-0-20 PROFILE, SEE SHEETS 30 AND 31.



HORIZONTAL SCALE IN FEET
0 25 50 100

GEOTECHNICAL PROFILE - ROADWAY
CUY-77 - STA. 95+00 TO STA. 107+50

DESIGN AGENCY
TRC

DESIGNER	EB
REVIEWER	SDM 05/01/26
PROJECT ID	105743
SUBSET	11
TOTAL	85
SHEET	P.1195
TOTAL	P.1269

CUY-77-11.41

MODEL: CLP_I077 - Plan 3 PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:08:28 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
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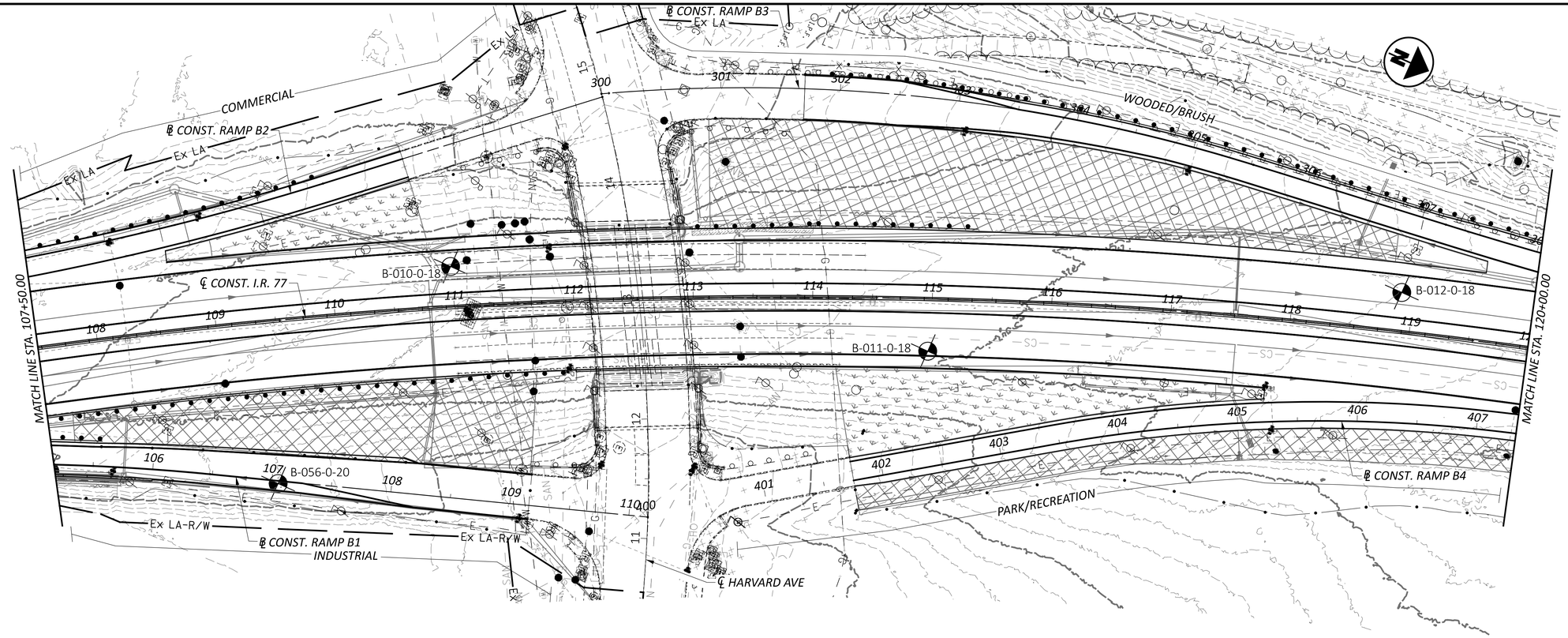

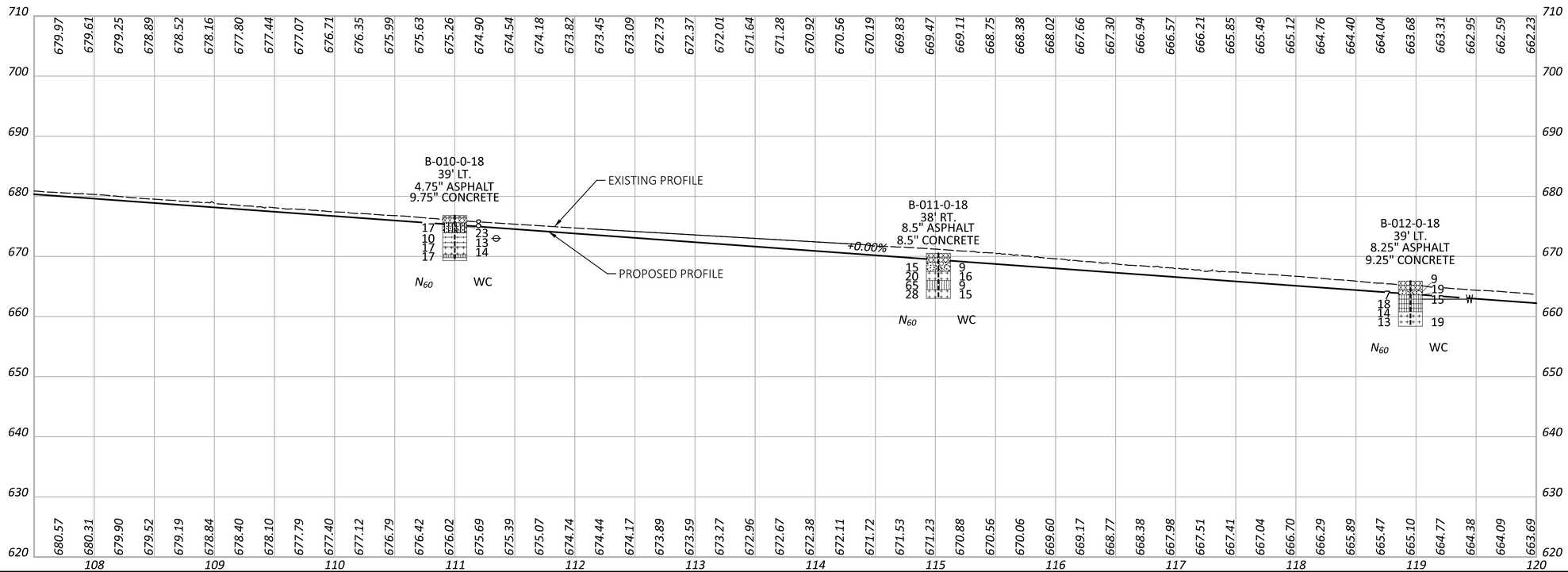

HORIZONTAL SCALE IN FEET
0 25 50 100

GEOTECHNICAL PROFILE - ROADWAY
CUY-77 - STA. 107+50 TO STA. 120+00

DESIGN AGENCY
TRC

DESIGNER	EB
REVIEWER	SDM 05/01/26
PROJECT ID	105743
SUBSET	TOTAL
12	85
SHEET	TOTAL
P.1196	P.1269

CUY-77-11.41

MODEL: CLP_I077 - Plan 4 PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:08:49 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
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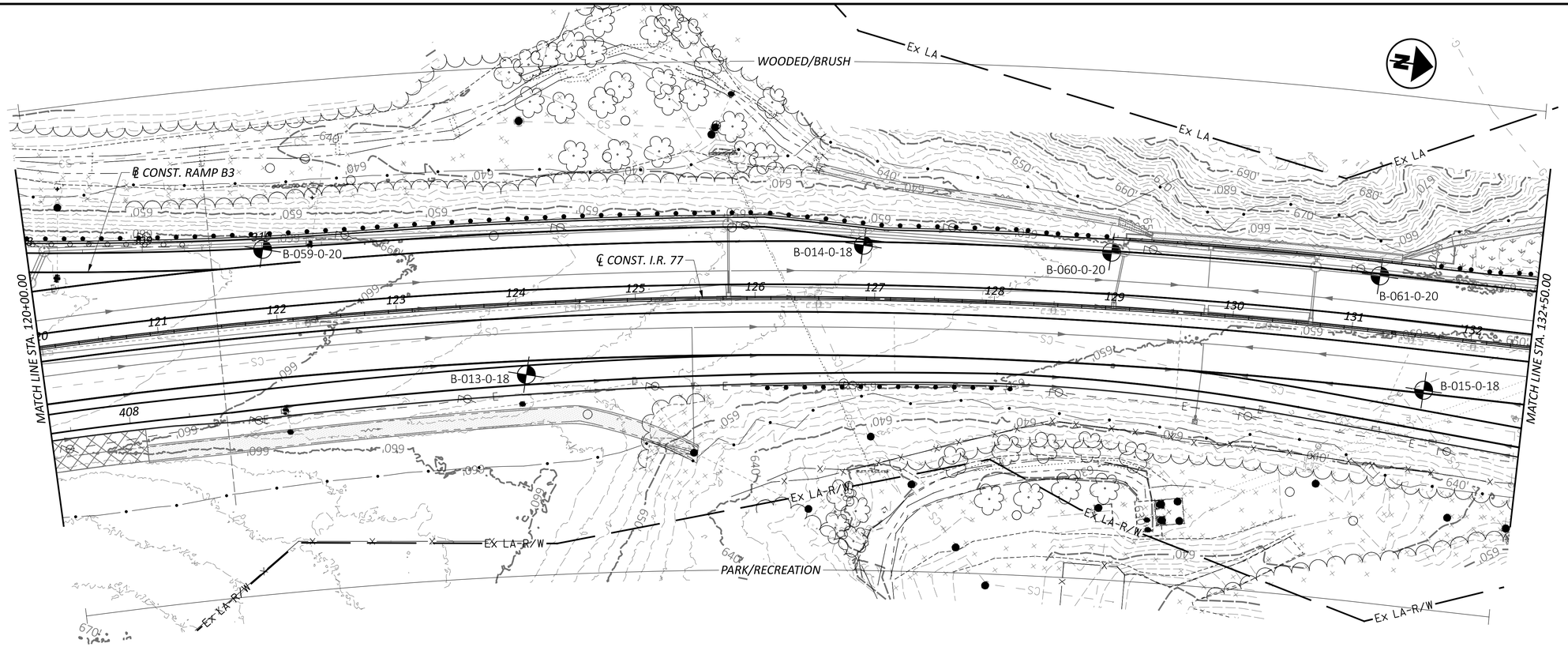
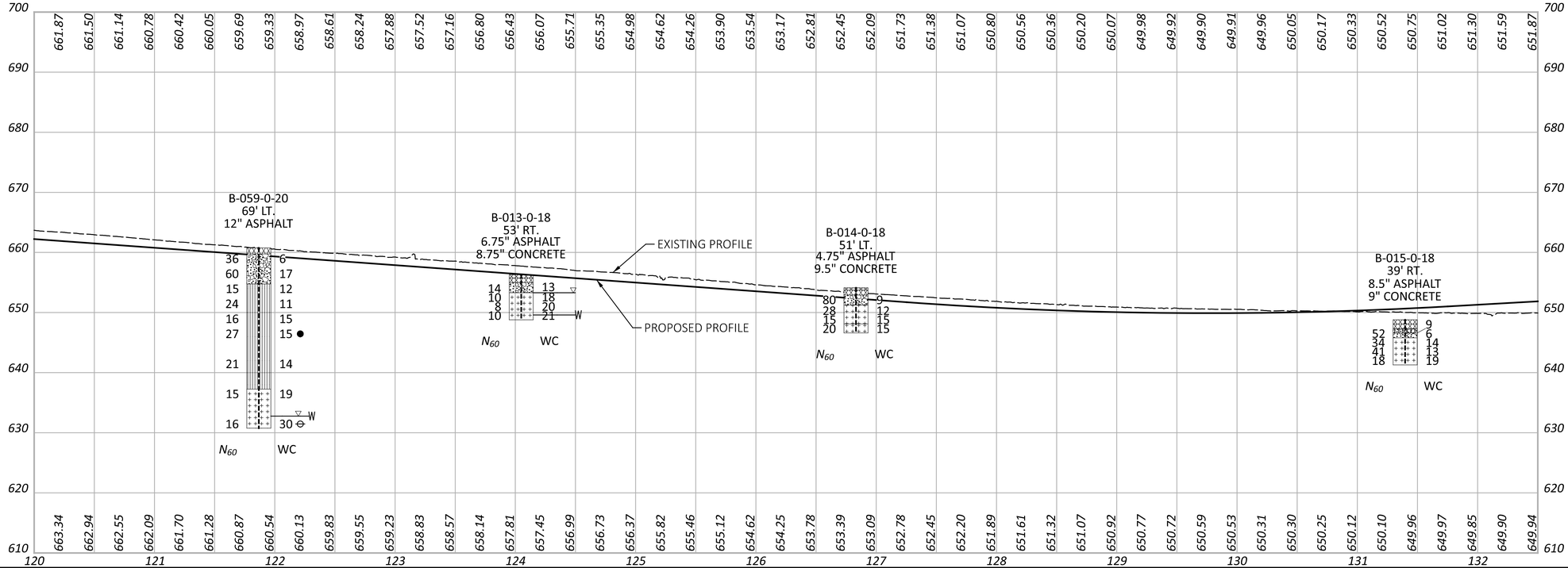


FOR BORING B-060-0-20 AND B-061-0-20 PROFILE, SEE SHEET 32.



HORIZONTAL SCALE IN FEET
0 25 50 100

GEOTECHNICAL PROFILE - ROADWAY
CUY-77 - STA. 120+00 TO STA. 132+50

CUY-77-11.41

MODEL: CLP_I077 - Plan 5 PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:09:08 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
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DESIGN AGENCY
TRC

DESIGNER	EB
REVIEWER	SDM 05/01/26
PROJECT ID	105743
SUBSET	TOTAL 13 | 85
SHEET	TOTAL P.1197 | P.1269

MODEL: CLP_I077 - Plan 6 PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:09:33 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCalazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
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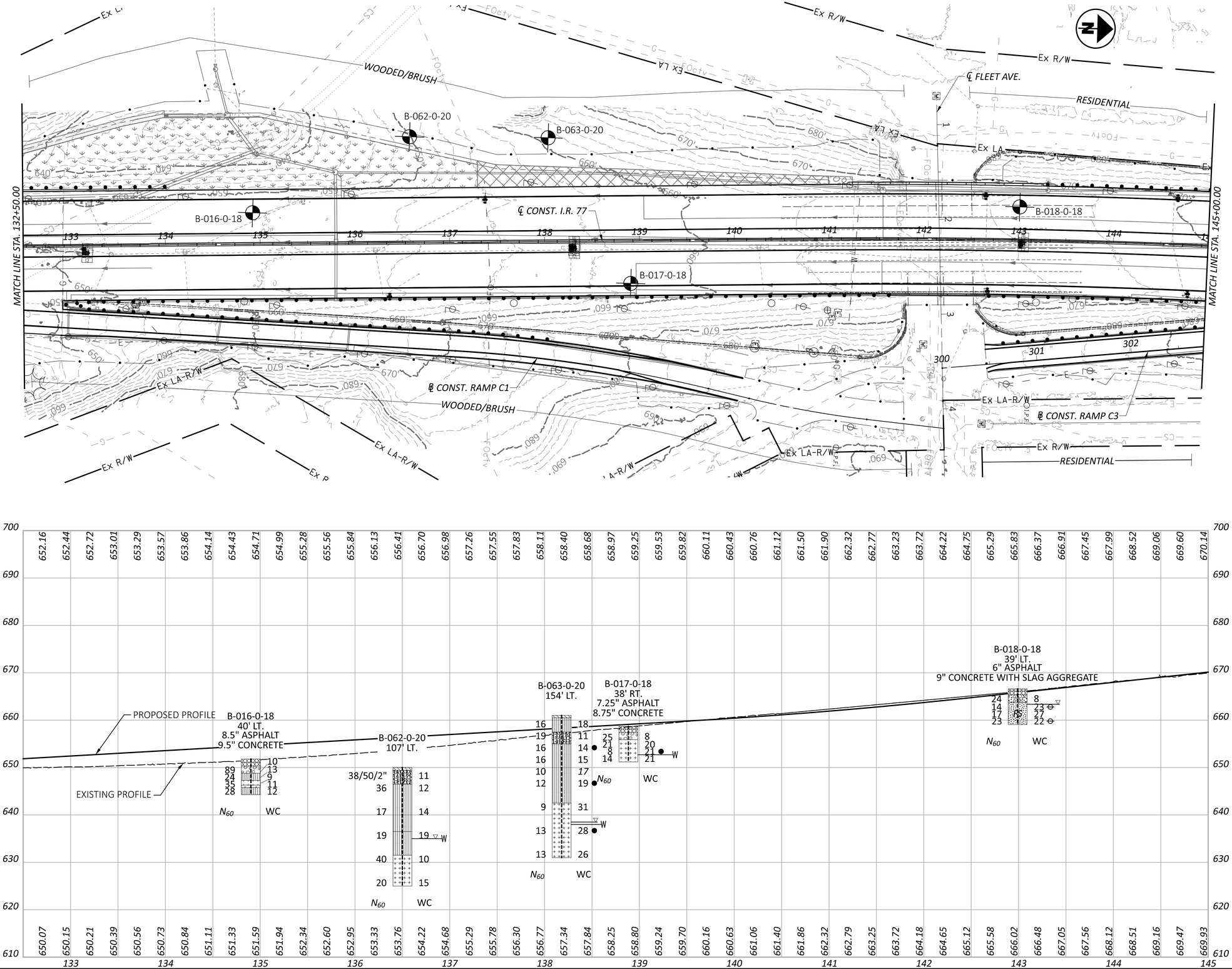
CUY-77-11.41



HORIZONTAL SCALE IN FEET
0 25 50 100

GEOTECHNICAL PROFILE - ROADWAY
CUY-77 - STA. 132+50 TO STA. 145+00

DESIGN AGENCY
TRC

DESIGNER	EB
REVIEWER	SDM 05/01/26
PROJECT ID	105743
SUBSET	14
TOTAL	85
SHEET	P.1198
TOTAL	P.1269

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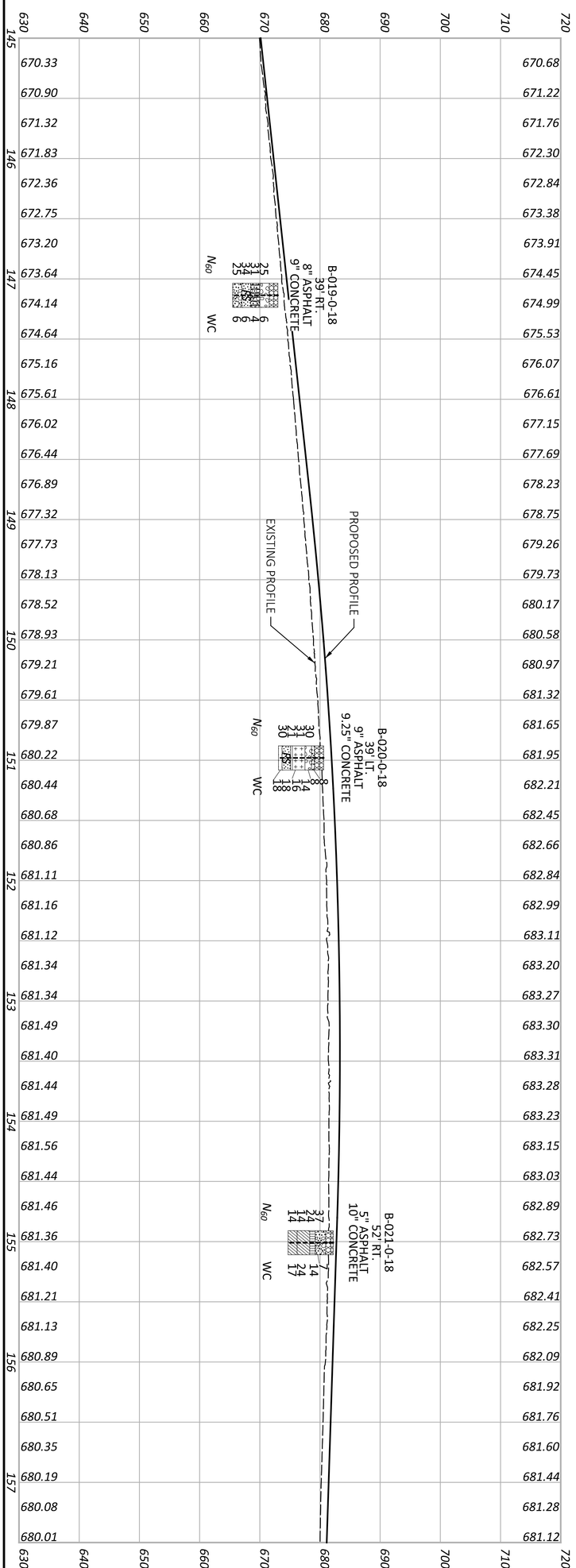

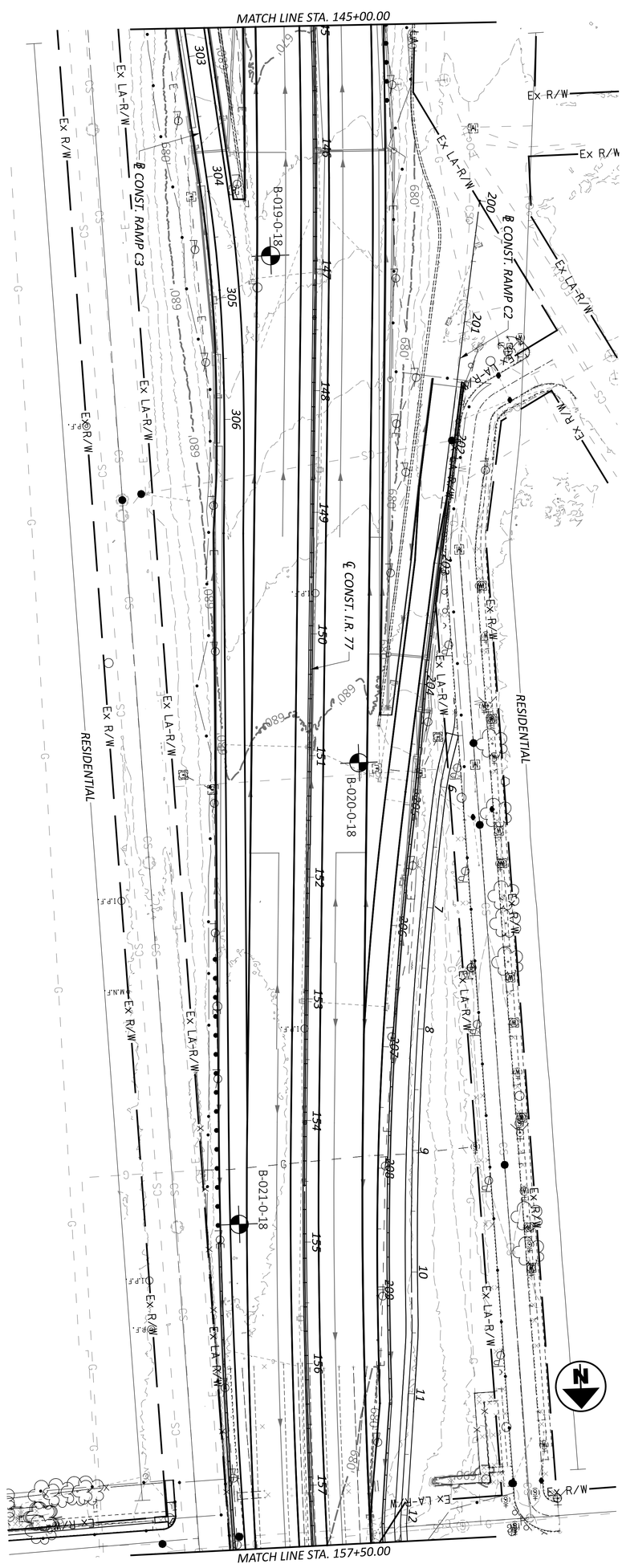

GEOTECHNICAL PROFILE - ROADWAY
CUY-77 - STA. 145+00 TO STA. 157+50

HORIZONTAL SCALE IN FEET
0 50
25 100

DESIGN AGENCY	DESIGNER	REVIEWER	PROJECT ID	SUBSET	SHEET
TRC	EB	SDM 05/01/26	105743	15 TOTAL 85	P.1199 P.1269

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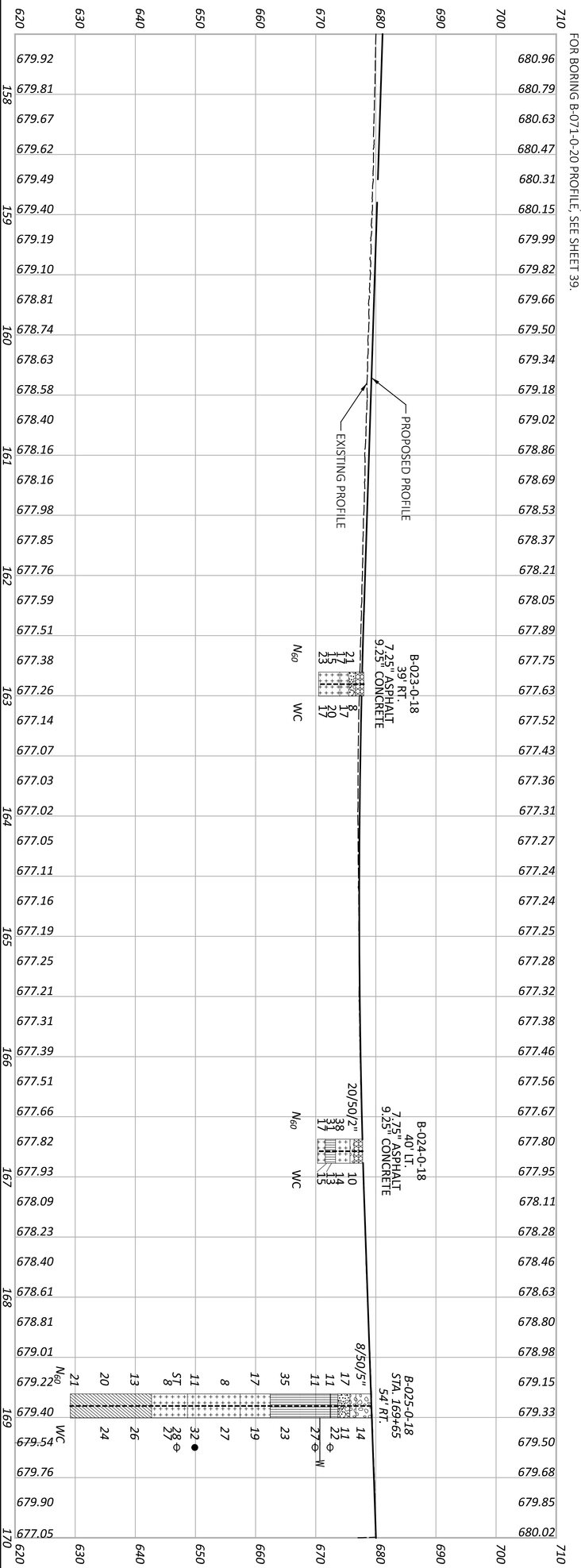
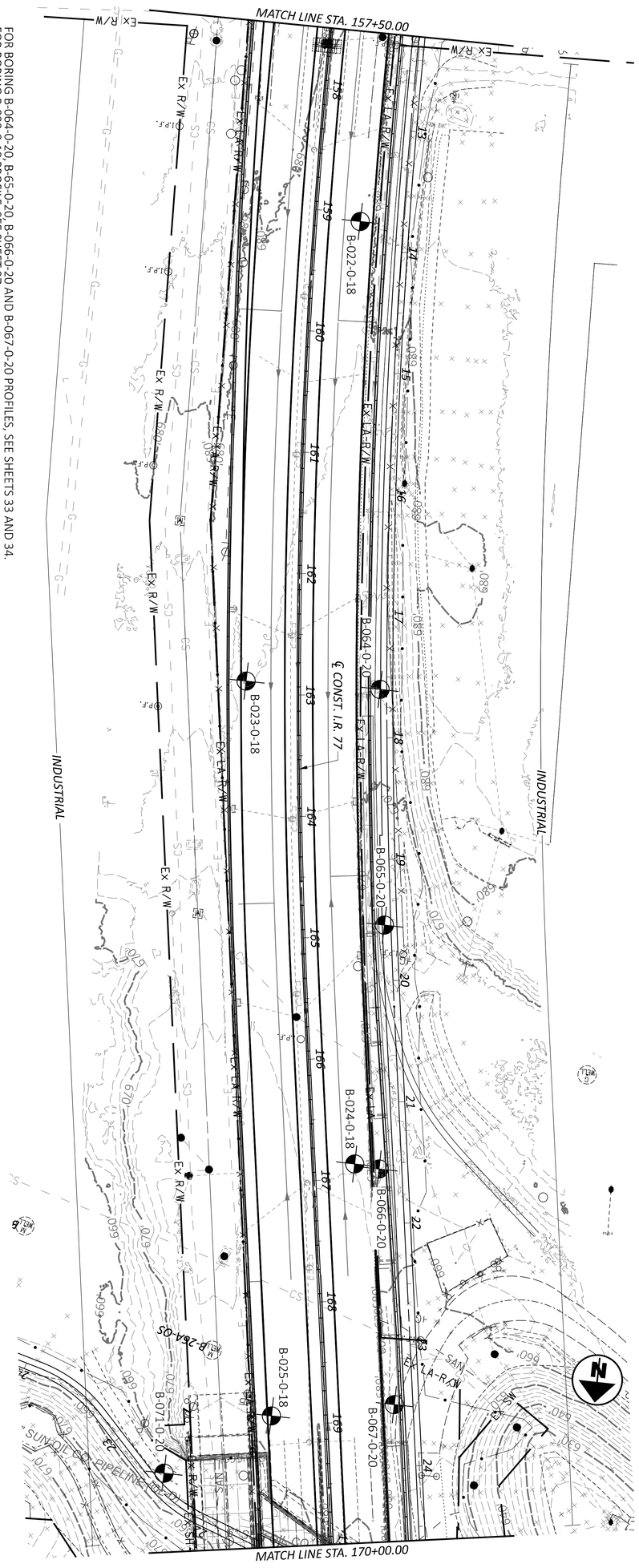




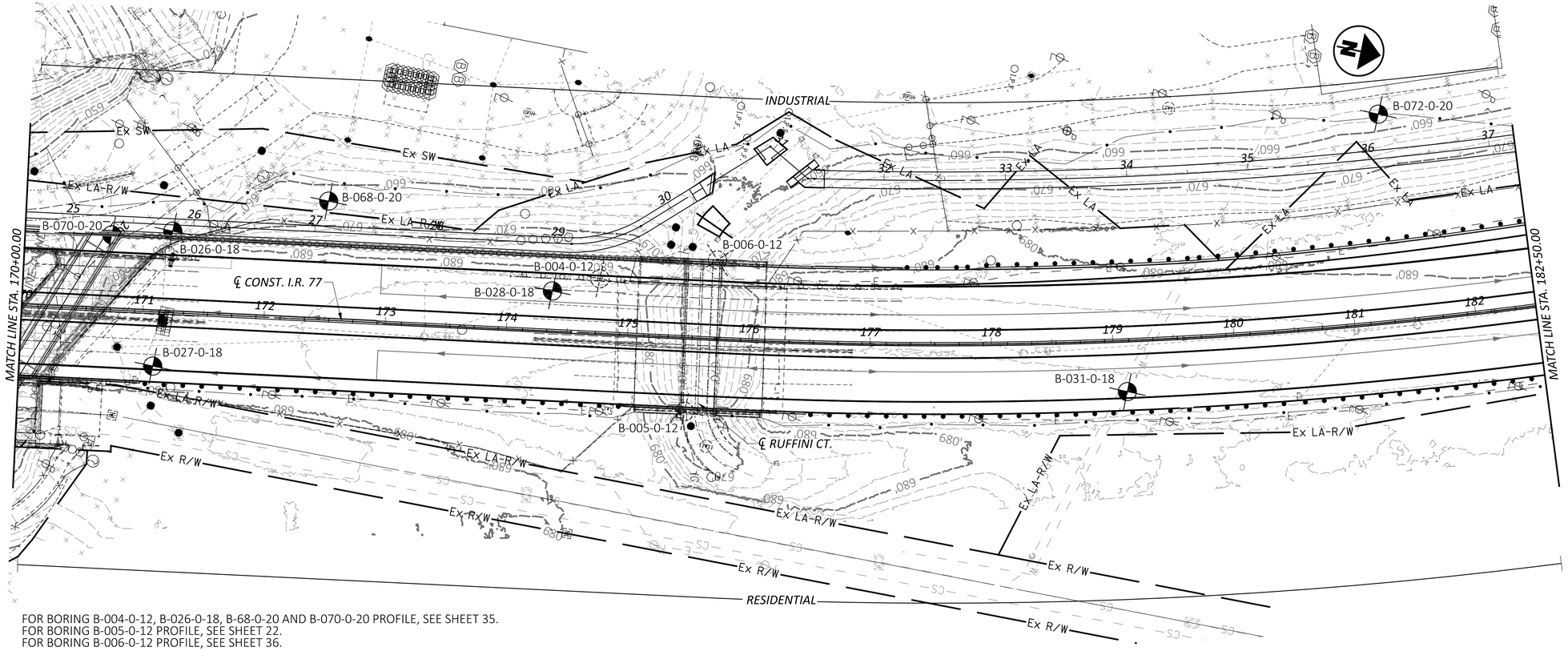
GEOTECHNICAL PROFILE - ROADWAY
CUY-77 - STA, 157+50 TO STA. 170+00

HORIZONTAL SCALE IN FEET
0 50
25 100

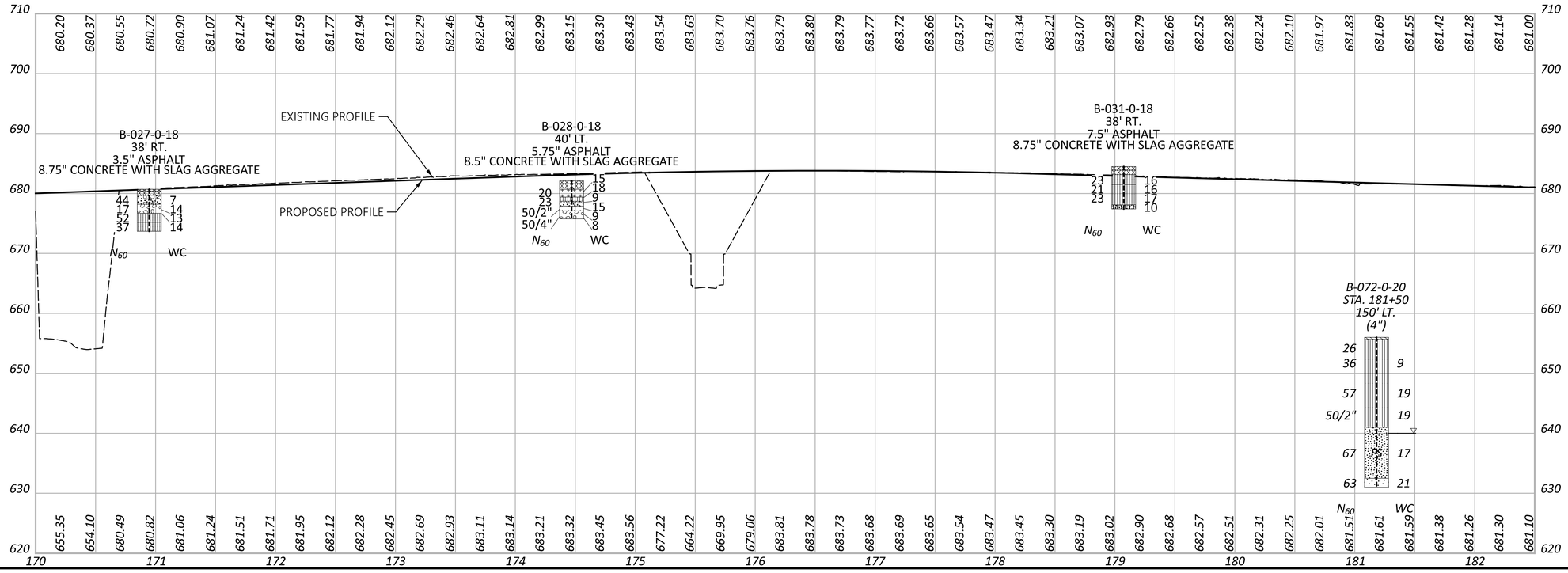
DESIGNER	DESIGN AGENCY
EB	TRC

REVIEWER	PROJECT ID	SUBSET	SHEET	TOTAL
SDM 05/01/26	105743	16	P.1200	P.1269

TOTAL 85



FOR BORING B-004-0-12, B-026-0-18, B-68-0-20 AND B-070-0-20 PROFILE, SEE SHEET 35.
FOR BORING B-005-0-12 PROFILE, SEE SHEET 22.
FOR BORING B-006-0-12 PROFILE, SEE SHEET 36.



HORIZONTAL SCALE IN FEET
0 25 50 100

GEOTECHNICAL PROFILE - ROADWAY
CUY-77 - STA. 170+00 TO STA. 182+50

CUY-77-11.41

MODEL: CLP_I077 - Plan 9 PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:10:36 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCalazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
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DESIGN AGENCY
TRC

DESIGNER	EB
REVIEWER	SDM 05/01/26
PROJECT ID	105743
SUBSET	17
TOTAL	85
SHEET	P.1201
TOTAL	P.1269

MODEL: CLP_I077 - Plan 10 PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:11:02 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
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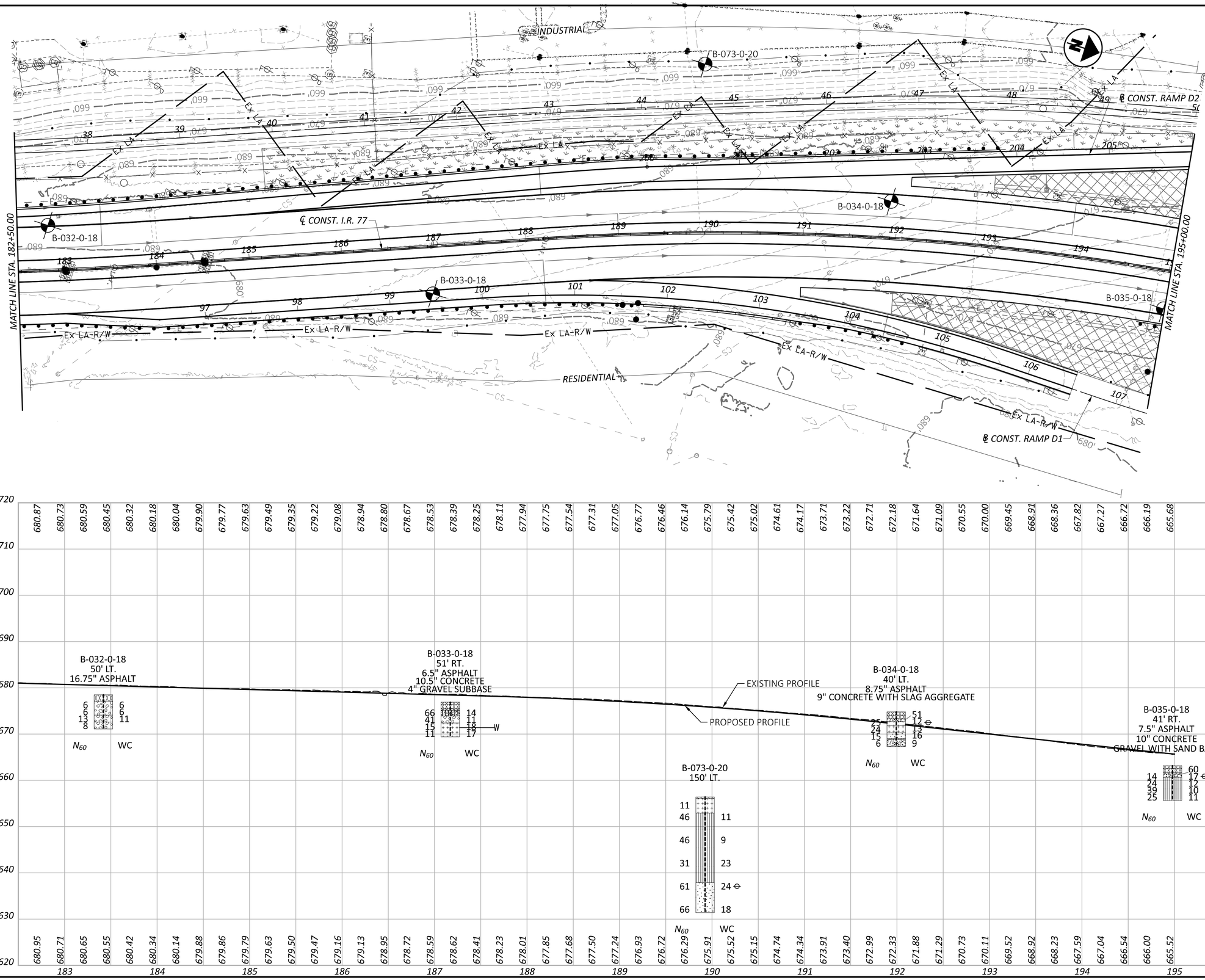
CUY-77-11.41

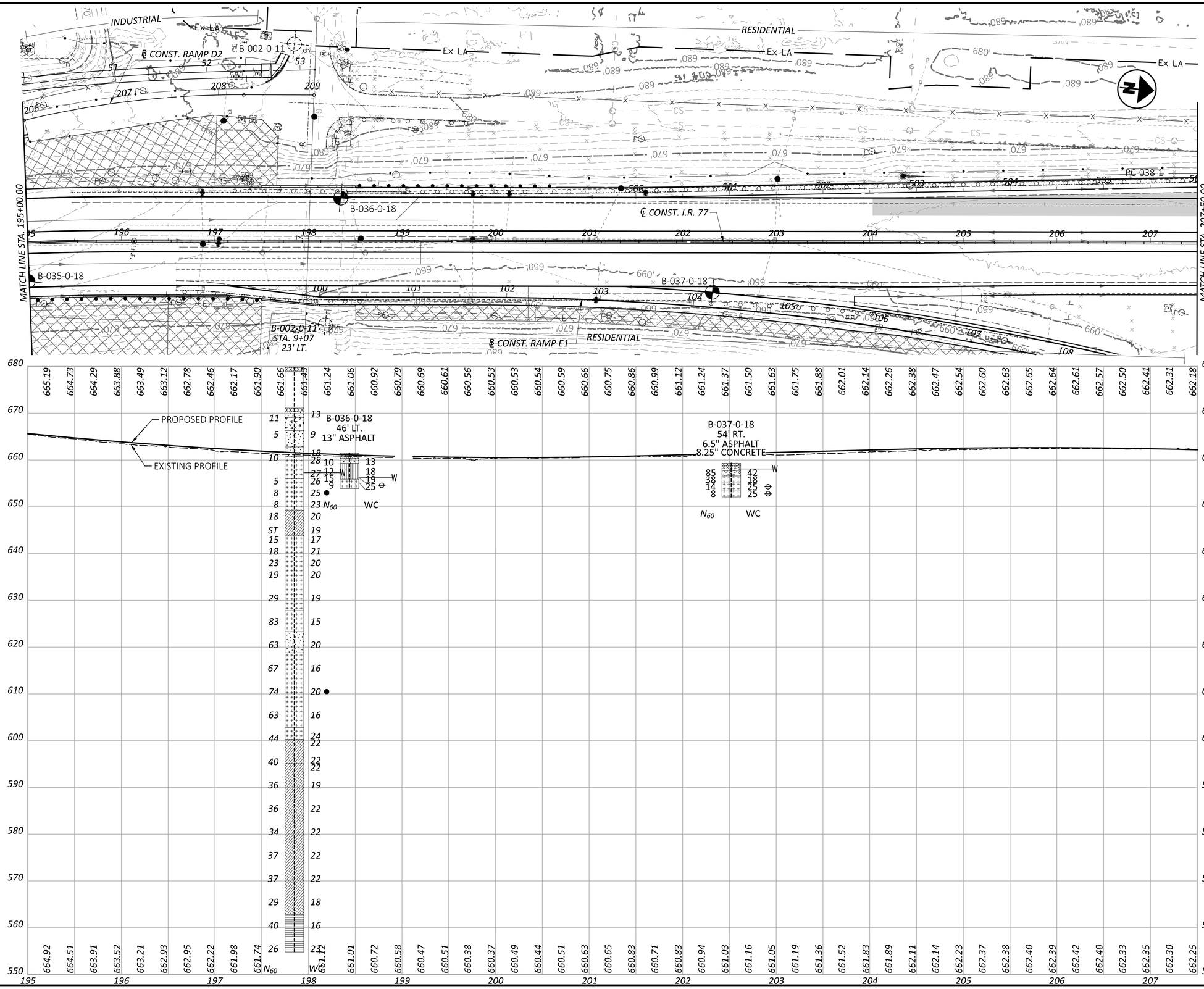


HORIZONTAL SCALE IN FEET
0 25 50 100

GEOTECHNICAL PROFILE - ROADWAY
CUY-77 - STA. 182+50 TO STA. 195+00

DESIGN AGENCY
TRC

DESIGNER	EB
REVIEWER	SDM 05/01/26
PROJECT ID	105743
SUBSET / TOTAL	18 / 85
SHEET / TOTAL	P.1202 / P.1269



GEOTECHNICAL PROFILE - ROADWAY
CUY-77 - STA. 195+50 TO STA. 207+50

CUY-77-11.41

MODEL: CLP_I077 - Plan 11 PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:11:31 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
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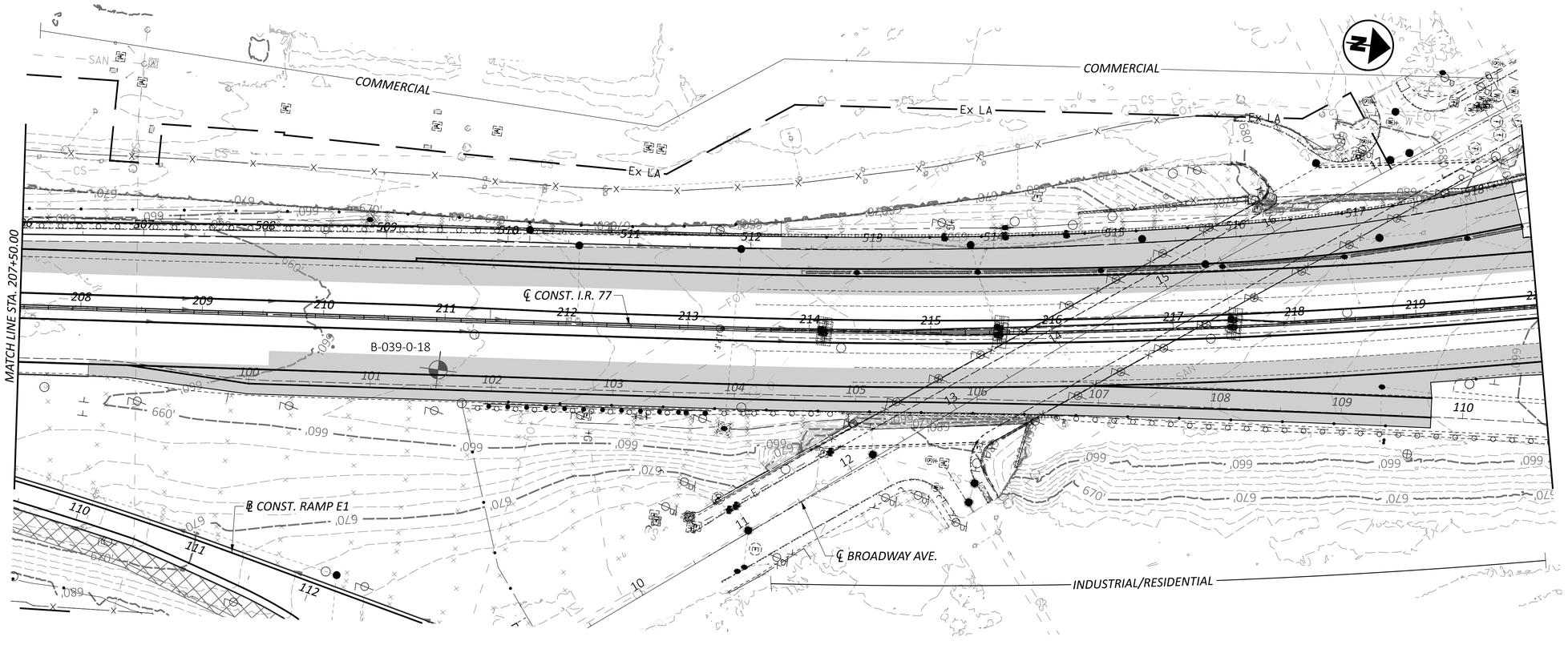
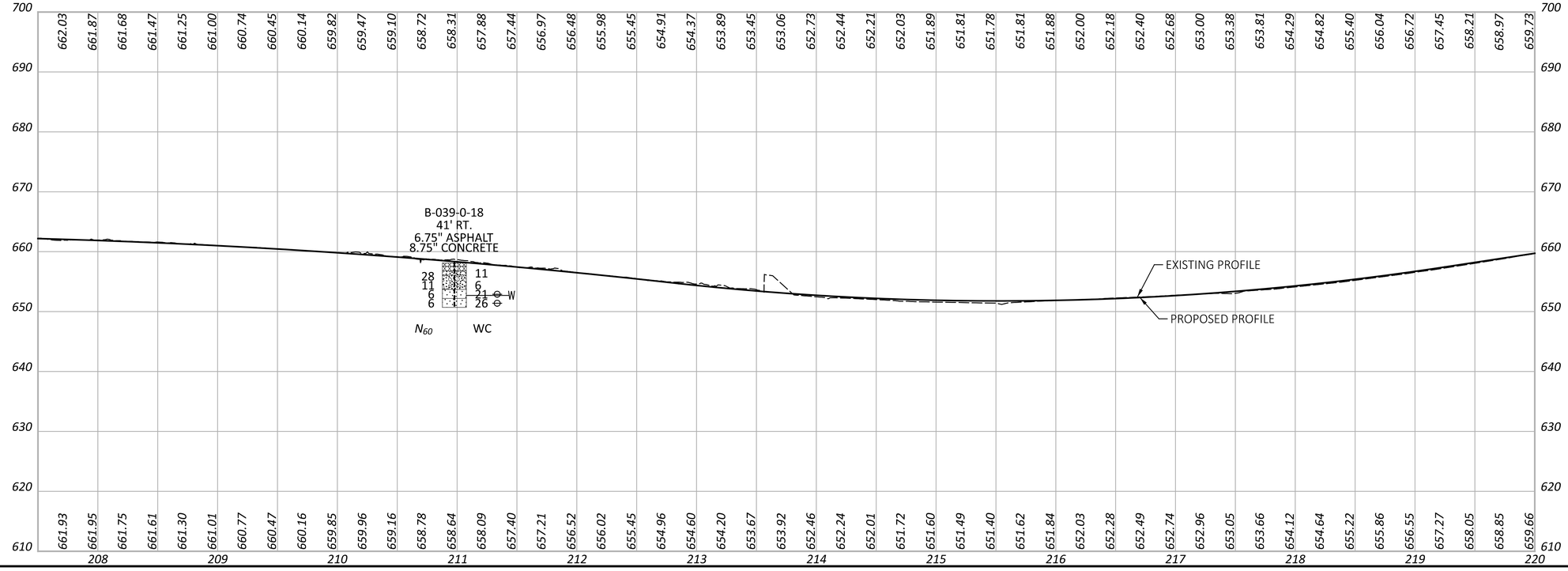
DESIGN AGENCY
TRC

DESIGNER	EB
REVIEWER	SDM 05/01/26
PROJECT ID	105743
SUBSET	19
TOTAL	85
SHEET	P.1203
TOTAL	P.1269





HORIZONTAL SCALE IN FEET
0 50 100
0 25

GEOTECHNICAL PROFILE - ROADWAY
CUY-77 - STA. 207+50 TO STA. 220+00

DESIGN AGENCY
TRC

DESIGNER	EB
REVIEWER	SDM 05/01/26
PROJECT ID	105743
SUBSET / TOTAL	20 / 85
SHEET / TOTAL	P.1204 / P.1269

CUY-77-11.41

MODEL: CLP_I077 - Plan 12 PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:11:53 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
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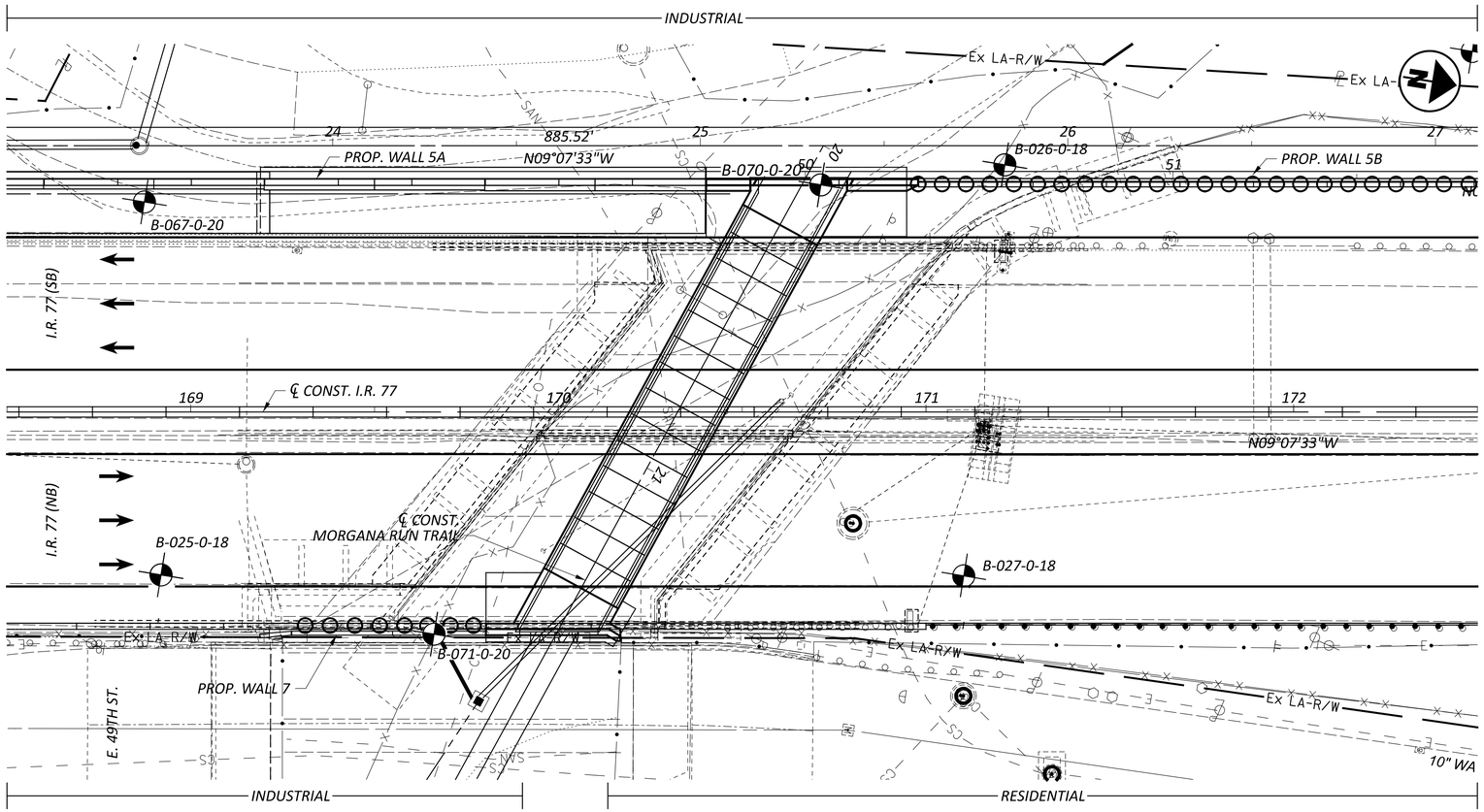

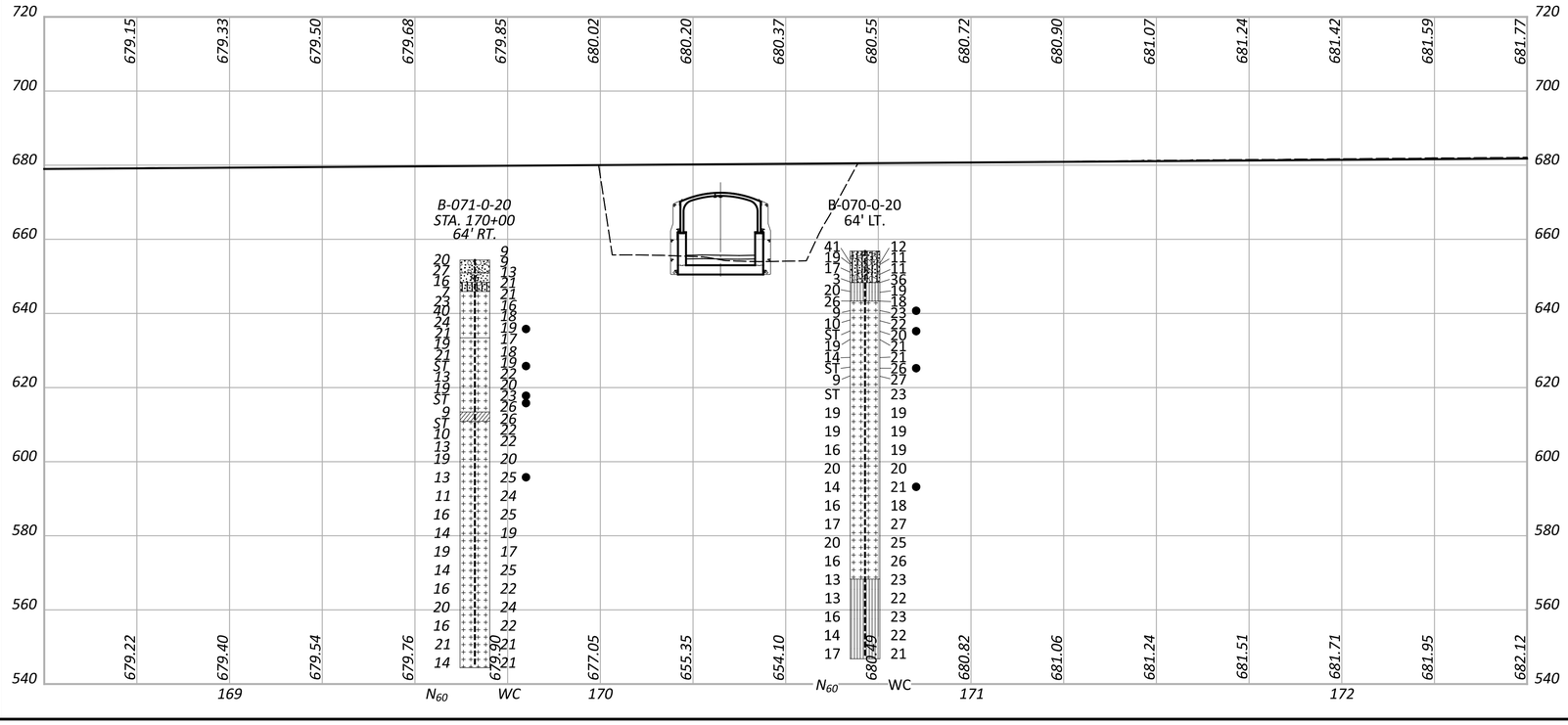

NOTES

FOR BORING B-025-0-18 PROFILE, SEE SHEET 16.
FOR BORING B-026-0-18 PROFILE, SEE SHEET 35.
FOR BORING B-027-0-18 PROFILE, SEE SHEET 17.
FOR BORING B-067-0-20 PROFILE, SEE SHEET 34.

HORIZONTAL SCALE IN FEET
0 10 20 40

GEOTECHNICAL PROFILE - STRUCTURE
BRIDGE NO. CUY-77-1322 OVER ABAND. W&LE RR (FUTURE MORGANA TRAIL)

DESIGN AGENCY
TRC

DESIGNER	NMC
REVIEWER	SDM 05/01/26
PROJECT ID	105743
SUBSET / TOTAL	21 / 85
SHEET / TOTAL	P.1205 / P.1269

CUY-77-11.41

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:12:18 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
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INDUSTRIAL

PROP. MUP LIMITS

PROP. WALL 5B

42" TYPE C RCP

B-006-0-12

PROPOSED WALL 5C

EX. MSE WALL
(TO BE REMOVED OR
PARTIALLY REMOVED)

℄ CONST. I.R. 77

N9°07'33"W

174

175

176

177

BEGIN EXISTING STRUCTURAL SLAB
℄ CONST. I.R. 77 STA. 175+07.41

END EXISTING STRUCTURAL SLAB
℄ CONST. I.R. 77 STA. 176+12.91

℄ CONST. I.R. 77 STA. 175+60.16
℄ CONST. RUFFINI COURT STA. 102+63.91

B-005-0-12

℄ CONST.
RUFFINI COURT

RESIDENTIAL

FOR BORING B-006-0-12 PROFILE, SEE SHEET 36.

15'-0"±
EX. APPROACH SLAB

105'-6"±
EX. STRUCTURAL SLAB ON FILL

15'-0"±
EX. APPROACH SLAB

EX. PROFILE GRADE

B-005-0-12
61' RT.

30'-0" +/- CLEAR SPAN

PROPOSED
PROFILE GRADE

N_{60}	WC
42	5
32	7
30	3
32	4
36	1
30	5
29	6
23	21
18	29 W
44	22
39	21
17	21
39	-
35	19
18	27
26	27
32	25
26	24
21	26
29	20
26	21
17	24
30	23
32	22
45	20
29	18
26	24
26	24

HORIZONTAL
SCALE IN FEET
0 10 20 40

GEOTECHNICAL PROFILE - STRUCTURE
BRIDGE NO. CUY-77-1331 OVER RUFFINI COURT

DESIGN AGENCY
TRC

DESIGNER	NMC
REVIEWER	SDM 05/01/26
PROJECT ID	105743
SUBSET / TOTAL	22 / 85
SHEET / TOTAL	P.1206 / P.1269

CUY-77-11.41

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:12:56 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
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INDUSTRIAL/COMMERCIAL

Ex Ex LA R/W
Ex LA
CONST. LIMITS
Ex LA R/W
Ex LA
Ex LA R/W
Ex LA
Ex LA R/W
Ex LA
POT WALL 1A STA. 4+24.75
℄ CONST. I.R. 77 STA. 88+37.31, 69.30' LT
BEGIN WALL 1A
℄ CONST. I.R. 77 STA. 84+30.13, 92.77' LT
℄ WALL 1A STA. 0+24.75
PROP. GRADING LIMITS
END WALL 1A
℄ CONST. I.R. 77 STA. 89+38.73, 61.33' LT
℄ WALL 1A STA. 5+24.75
B-001-0-02
℄ CONST. RAMP A3 AND E/P
N20°18'09"W
℄ WALL 1A
B-041-0-20
B-042-0-20
EX. ABUTMENT OF BRIDGE CUY-77-1169 (TO REMAIN)
B-004-0-18
℄ CONST. I.R. 77
307
308
309
310
311
85
86
87
88
89

FOR BORING B 004-0-18 PROFILE, SEE SHEET 10.

PROPOSED PAVEMENT ELEVATIONS AT TOE OF BARRIER
692.24 692.28 692.41 692.59 692.90 693.20 693.48 693.76 694.02 694.27 694.49 694.70 694.87 695.03 695.16 695.28 695.37 695.54 695.70 695.84 695.98

WALL 1A = 500.00' SOLDIER PILE RETAINING WALL
MEASURED ALONG FRONT FACE

PROPOSED GRADE AT BACK OF WALL
PROPOSED GRADE AT TOE OF BARRIER
EXISTING GROUND AT BACK OF WALL
TOP OF WALL
WALL 1A STA. 4+24.75
TOP OF WALL EL. 711.05
PROPOSED GRADE EL. 714.20
PROPOSED GRADE EL. 710.05
B-001-0-02
STA. 89+50
64' LT.
B-041-0-20
67' LT.
7'' ASPHALT
4.8'' AGGREGATE BASE
B-042-0-20
63' LT.
9'' ASPHALT
PROPOSED GRADE EL. 693.74
EXISTING ABUTMENT BOTTOM OF FOOTING EL. 689.4 +/-
BOTTOM OF WALL 1A EL. 690.69
BOTTOM OF WALL 1A EL. 691.01
BOTTOM OF WALL 1A EL. 691.37
BOTTOM OF WALL 1A EL. 692.40
BOTTOM OF WALL 1A EL. 692.69
BOTTOM OF WALL 1A EL. 692.96
BOTTOM OF WALL 1A EL. 693.20
BOTTOM OF WALL 1A EL. 693.57
BOTTOM OF WALL 1A EL. 694.10
BOTTOM OF WALL 1A EL. 694.28
N_{60} WC
EXISTING GROUND ELEVATIONS AT BACK OF WALL
694.55 694.45 694.43 694.46 694.89 695.66 696.44 696.74 696.63 697.28 697.42 697.51 698.13 699.35 700.70 702.19 703.26 702.97 703.60 703.30
780 760 740 720 700 680 660 640 620 600
0 1 2 3 4 5

HORIZONTAL SCALE IN FEET
0 10 20 40

GEOTECHNICAL PROFILE - STRUCTURE RETAINING WALL 1A

DESIGN AGENCY
TRC

DESIGNER	NMC
REVIEWER	SDM 05/01/26
PROJECT ID	105743
SUBSET	23
TOTAL	85
SHEET	P.1207
TOTAL	P.1269

CUY-77-11.41

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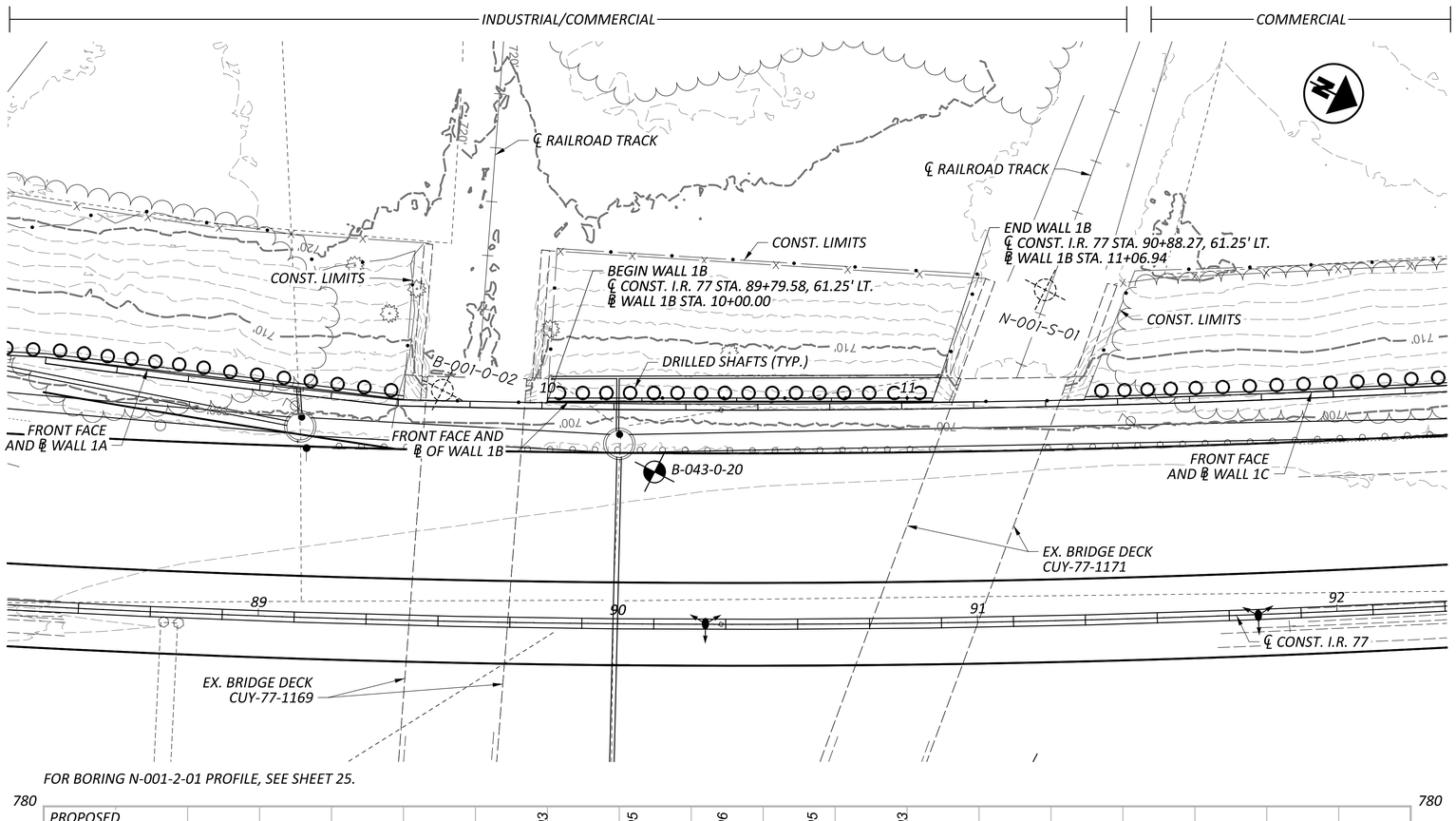
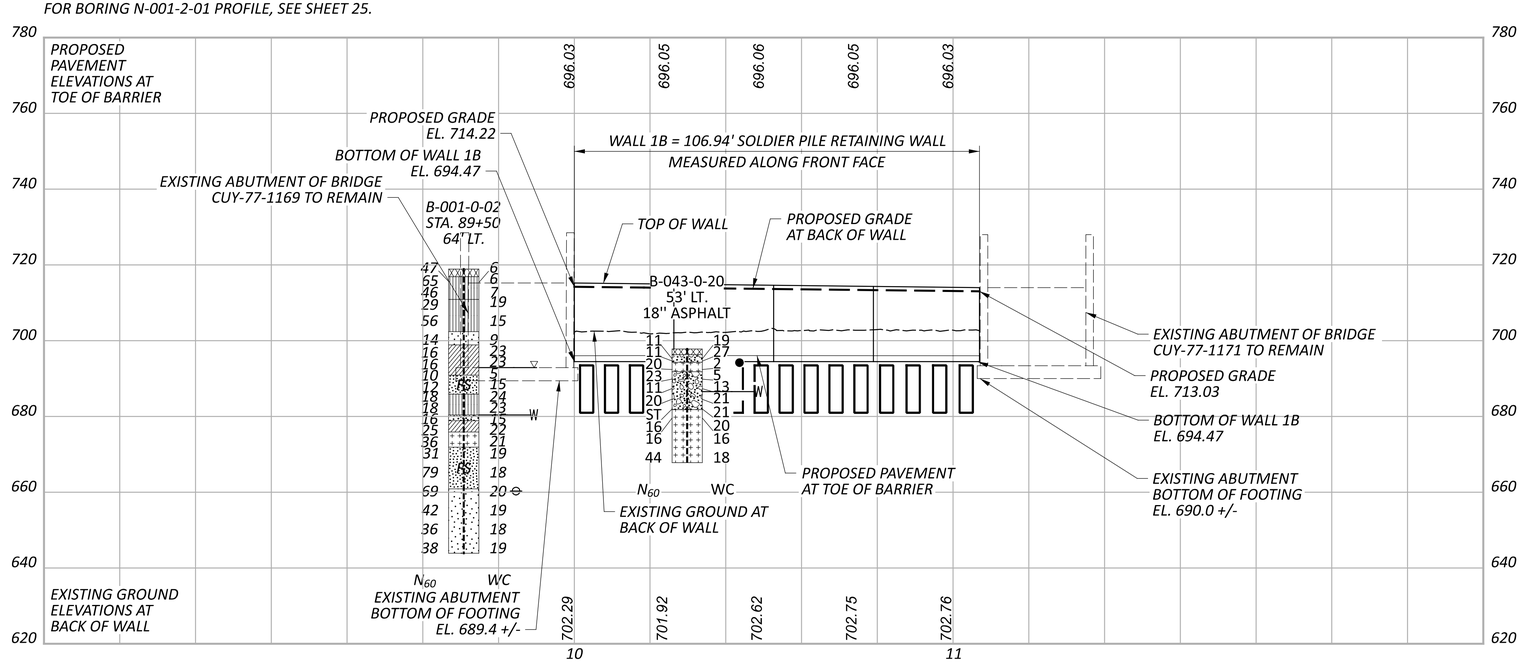


FOR BORING N-001-2-01 PROFILE, SEE SHEET 25.



HORIZONTAL SCALE IN FEET
0 10 20 40

GEOTECHNICAL PROFILE - STRUCTURE
RETAINING WALL 1B

DESIGN AGENCY
TRC

DESIGNER	NMC
REVIEWER	SDM 05/01/26
PROJECT ID	105743
SUBSET / TOTAL	24 / 85
SHEET / TOTAL	P.1208 / P.1269

CUY-77-11.41

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:14:02 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
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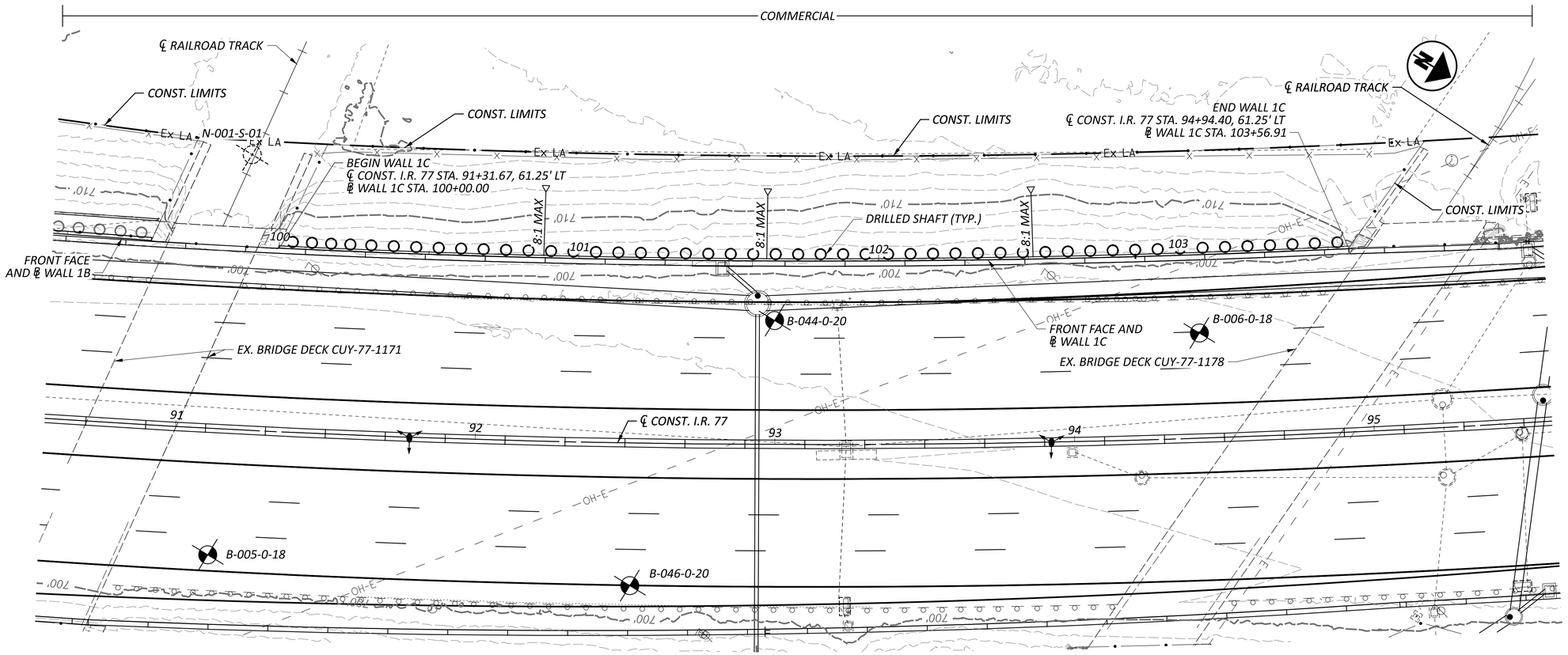
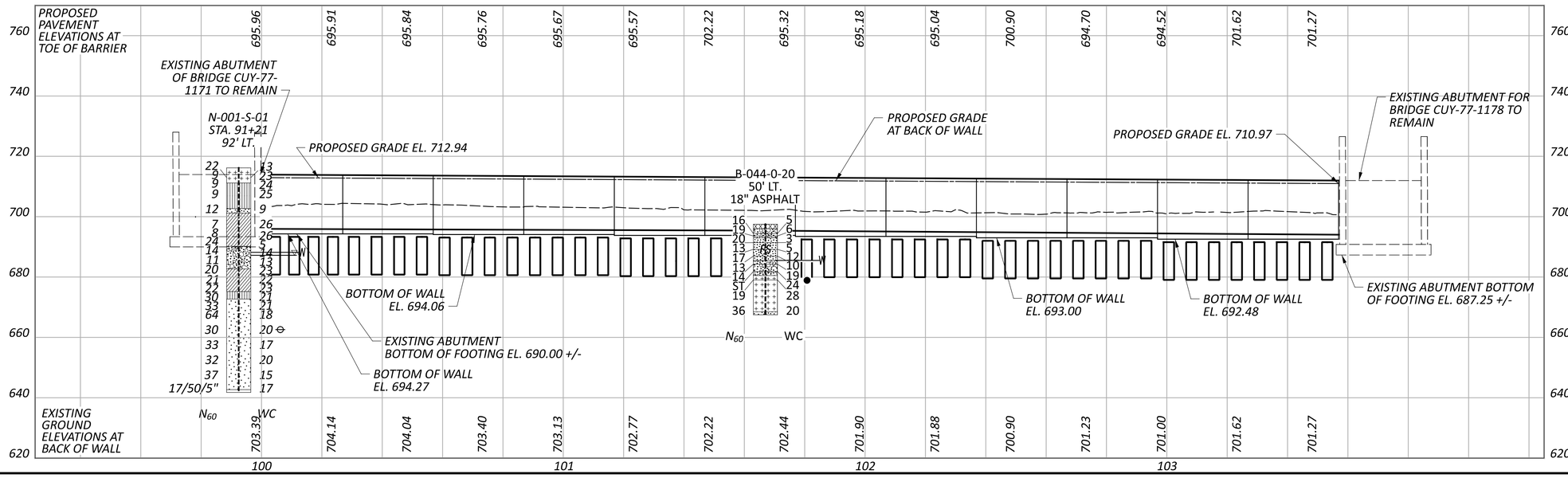


PLAN

FOR BORING B-005-0-18 AND B-006-0-18 PROFILES, SEE SHEET 10.
FOR BORING B-046-0-20 PROFILE, SEE SHEET 29.



PROFILE

HORIZONTAL SCALE IN FEET
0 10 20 40

GEOTECHNICAL PROFILE - STRUCTURE
RETAINING WALL 1C

DESIGN AGENCY
TRC

DESIGNER NMC
REVIEWER SDM 05/01/26
PROJECT ID 105743
SUBSET 25 | TOTAL 85
SHEET P.1209 | TOTAL P.1269

CUY-77-11.41

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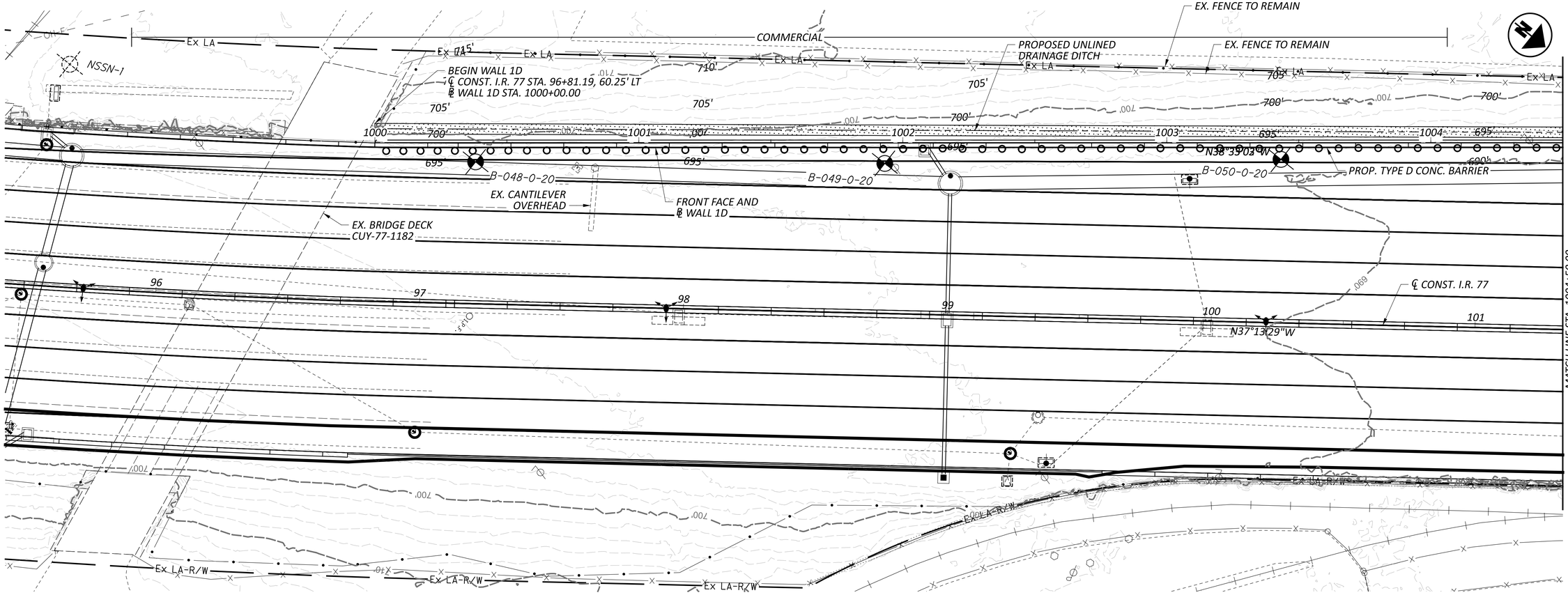
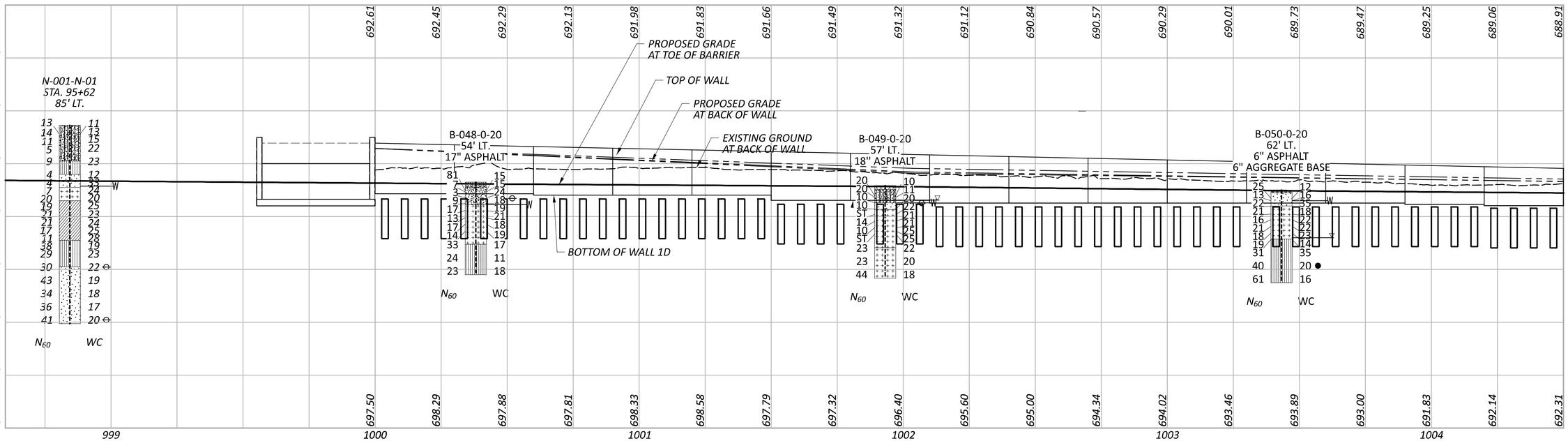
CUY-77-11.41





HORIZONTAL SCALE IN FEET
0 10 20 40

GEOTECHNICAL PROFILE - STRUCTURE
RETAINING WALL 1D

DESIGN AGENCY
TRC

DESIGNER	NMC
REVIEWER	SDM 05/01/26
PROJECT ID	105743
SUBSET	26
TOTAL	85
SHEET	P.1210
TOTAL	P.1269

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 9:33:31 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
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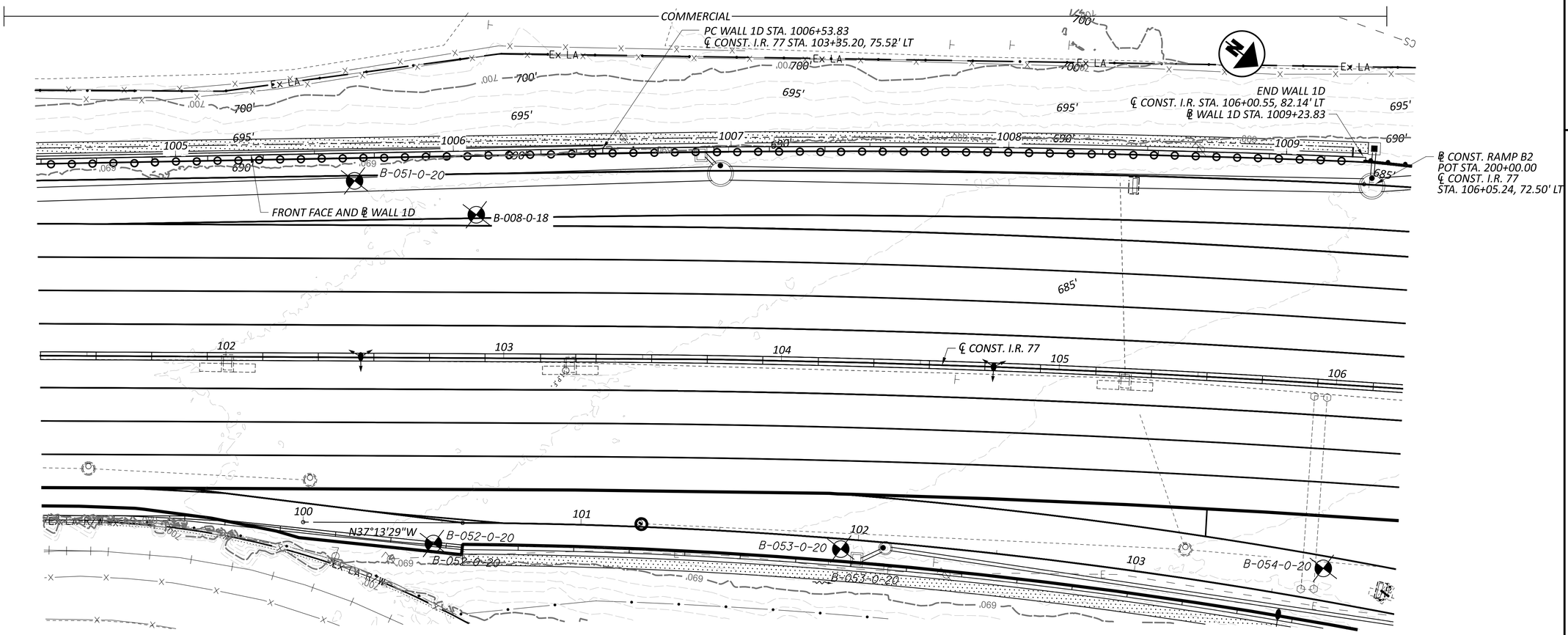
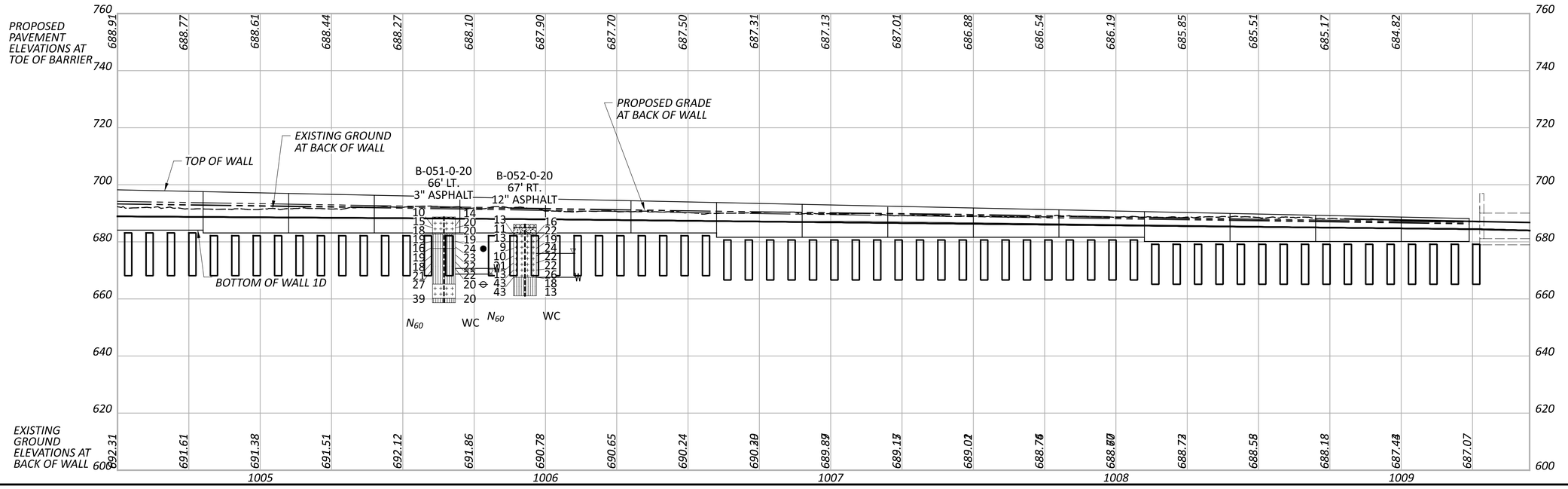
CUY-77-11.41



FOR BORING B-008-0-18 PROFILE, SEE SHEET 11.
FOR BORING B-053-0-20 AND B-054-0-20 PROFILES, SEE SHEET 30.



HORIZONTAL SCALE IN FEET
0 10 20 40

GEOTECHNICAL PROFILE -STRUCTURE RETAINING WALL 1D

DESIGN AGENCY
TRC

DESIGNER	NMC
REVIEWER	SDM 05/01/26
PROJECT ID	105743
SUBSET	27
TOTAL	85
SHEET	P.1211
TOTAL	P.1269

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:15:33 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
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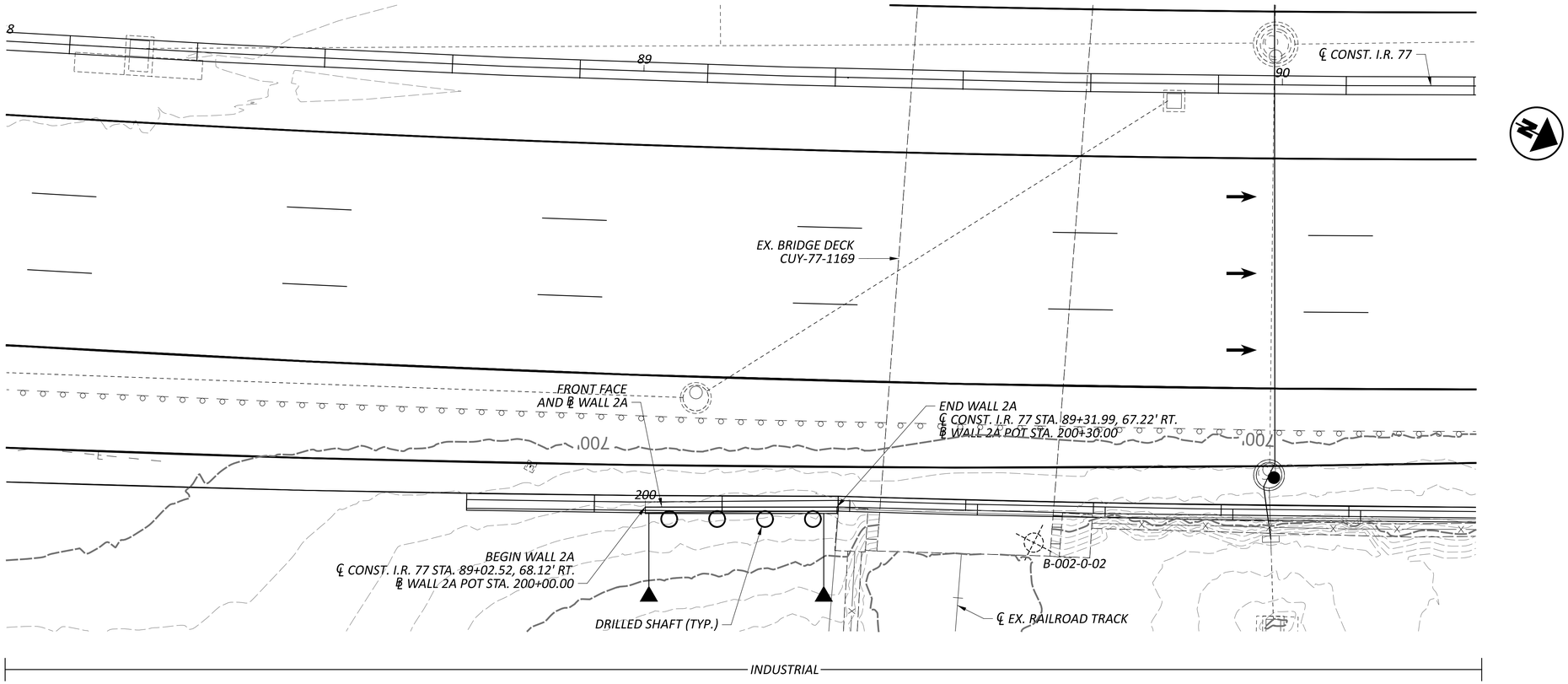
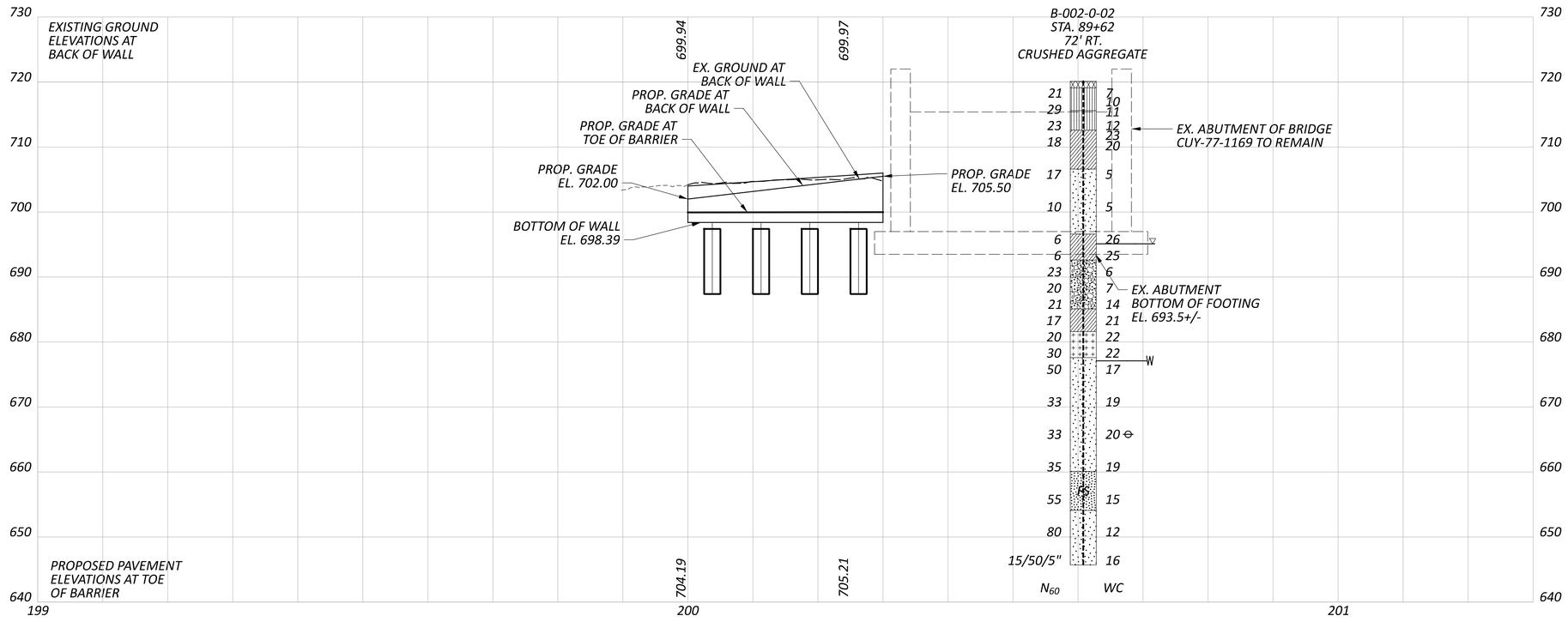
CUY-77-11.41



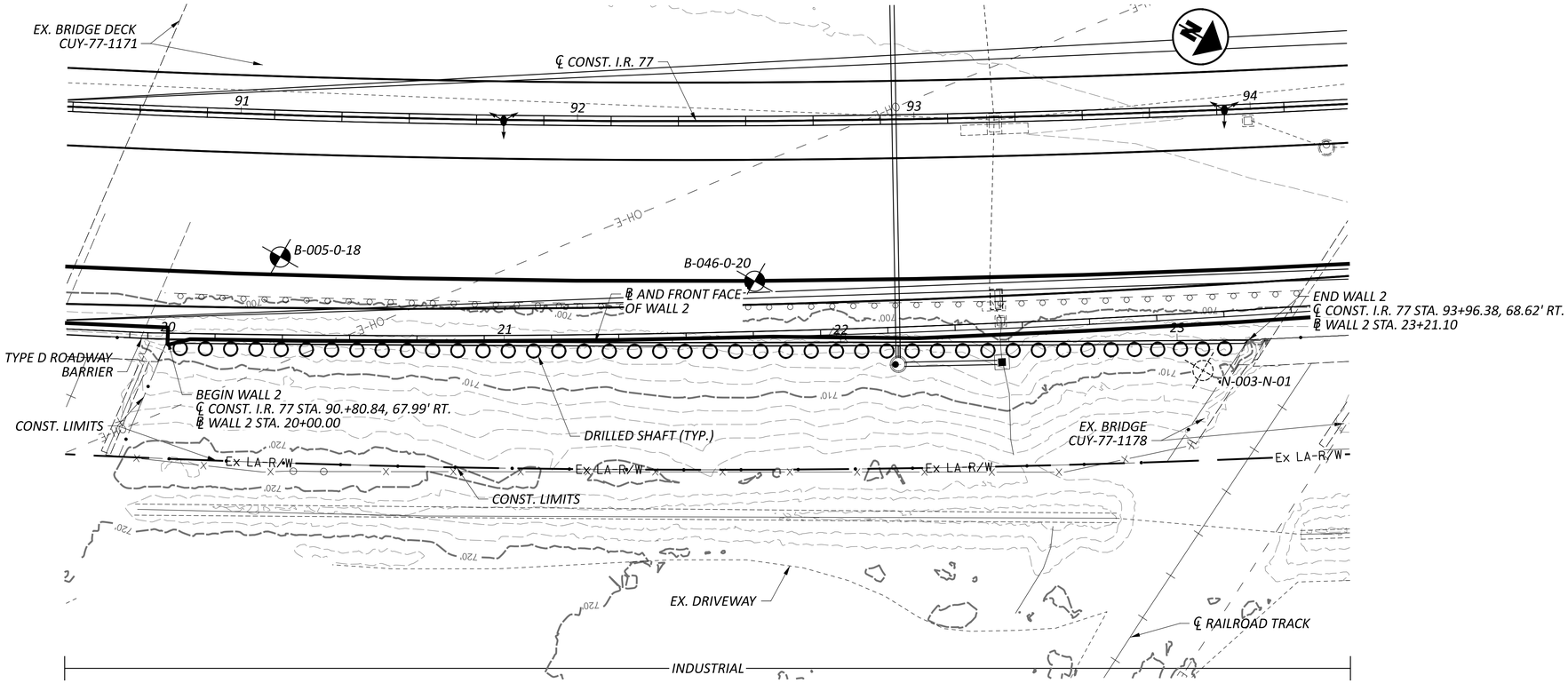


HORIZONTAL
SCALE IN FEET
0 10 20 40

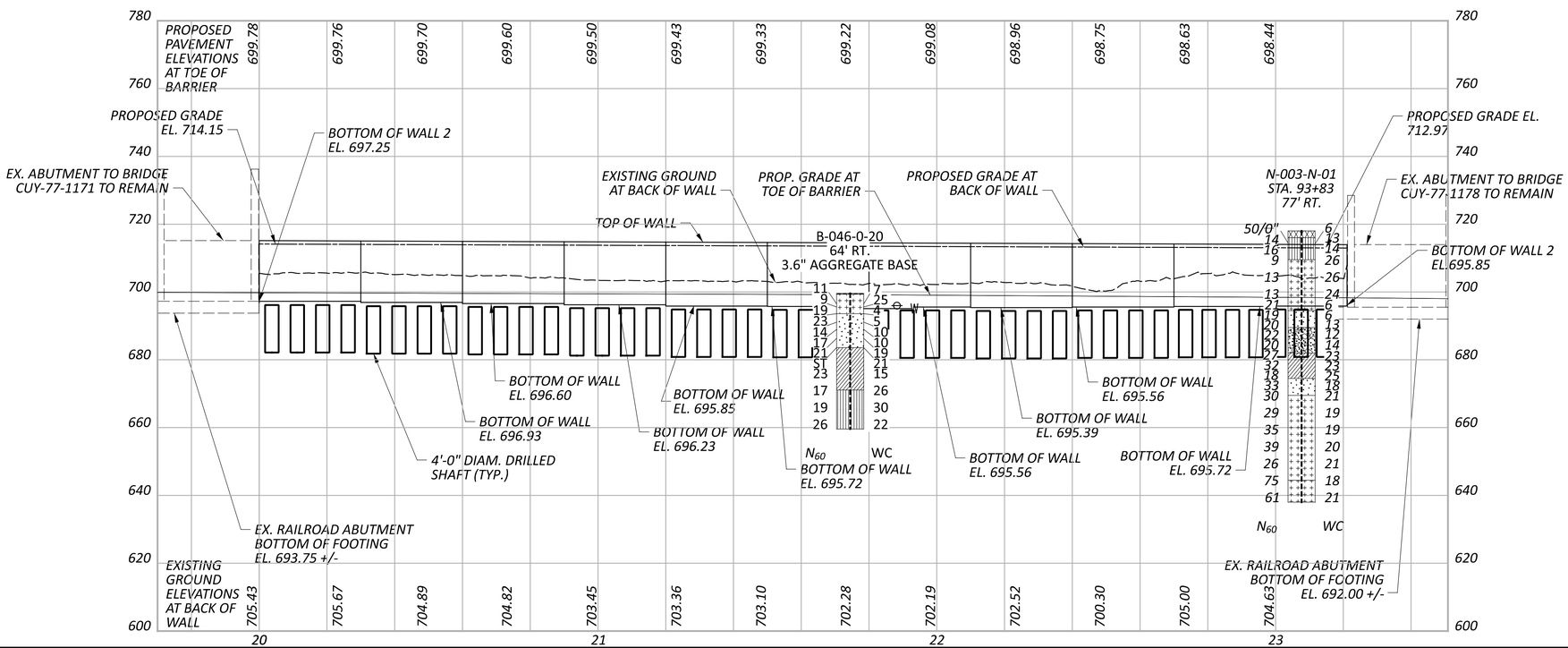
GEOTECHNICAL PROFILE - STRUCTURE
RETAINING WALL 2A

DESIGN AGENCY
TRC

DESIGNER	NMC
REVIEWER	SDM 05/01/26
PROJECT ID	105743
SUBSET / TOTAL	28 / 85
SHEET / TOTAL	P.1212 / P.1269



FOR BORING B-005-0-18 PROFILE, SEE SHEET 10.



HORIZONTAL SCALE IN FEET
0 10 20 40

GEOTECHNICAL PROFILE - STRUCTURE
RETAINING WALL 2

DESIGN AGENCY
TRC

DESIGNER	NMC
REVIEWER	SDM 05/01/26
PROJECT ID	105743
SUBSET	29
TOTAL	85
SHEET	P.1213
TOTAL	P.1269

CUY-77-11.41

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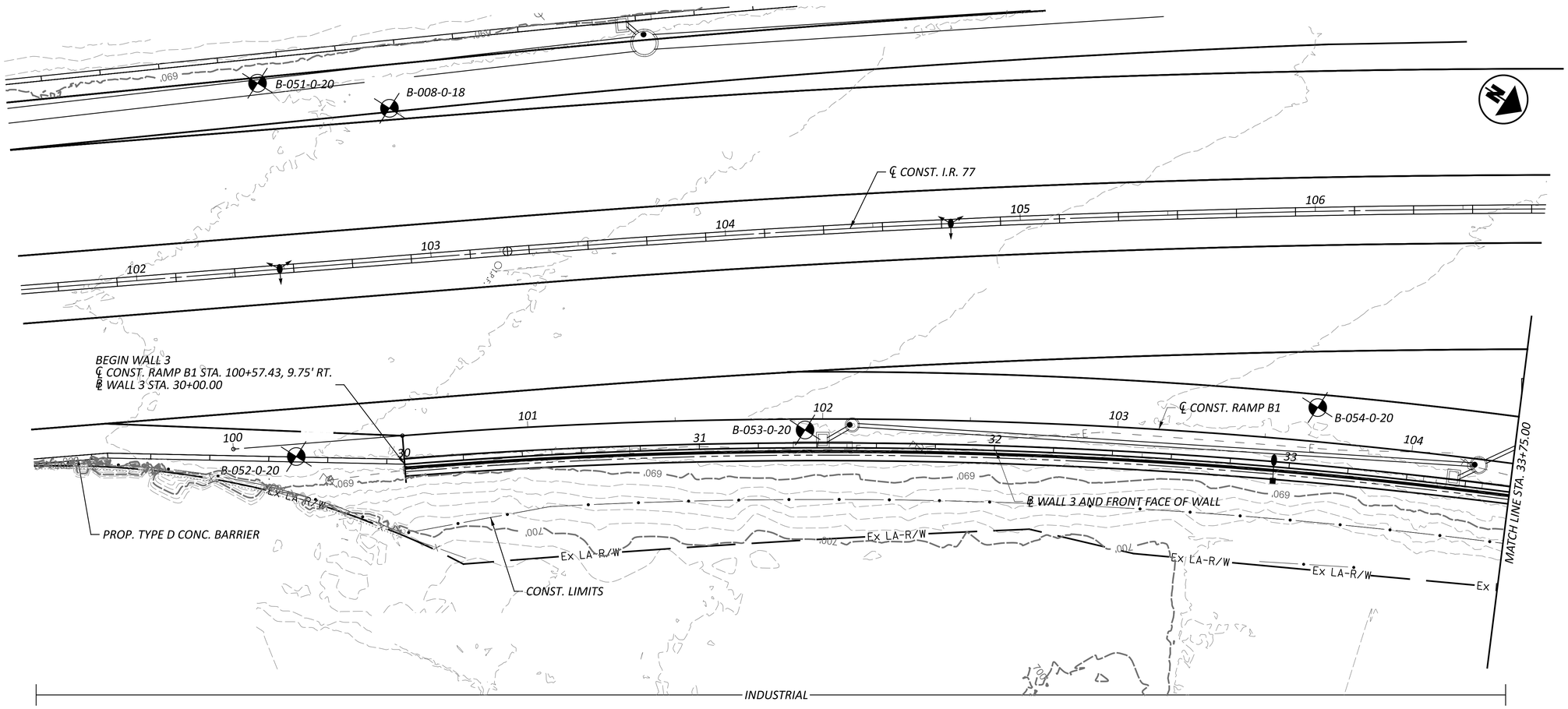
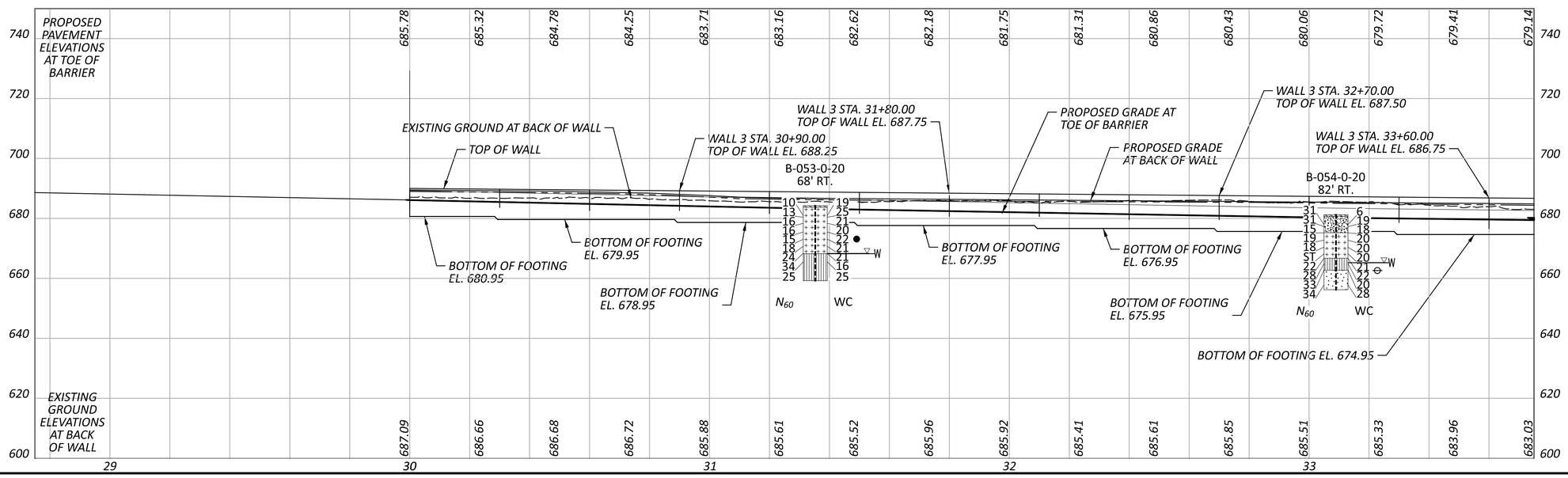


FOR BORING B-008-8-18 PROFILE, SEE SHEET 11.
FOR BORING B-051-0-20 AND B-052-0-20 PROFILES, SEE SHEET 27



HORIZONTAL SCALE IN FEET
0 10 20 40

GEOTECHNICAL PROFILE - STRUCTURE
RETAINING WALL 3

DESIGN AGENCY
TRC

DESIGNER	NMC
REVIEWER	SDM 05/01/26
PROJECT ID	105743
SUBSET	30
TOTAL	85
SHEET	P.1214
TOTAL	P.1269

CUY-77-11.41

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:16:49 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
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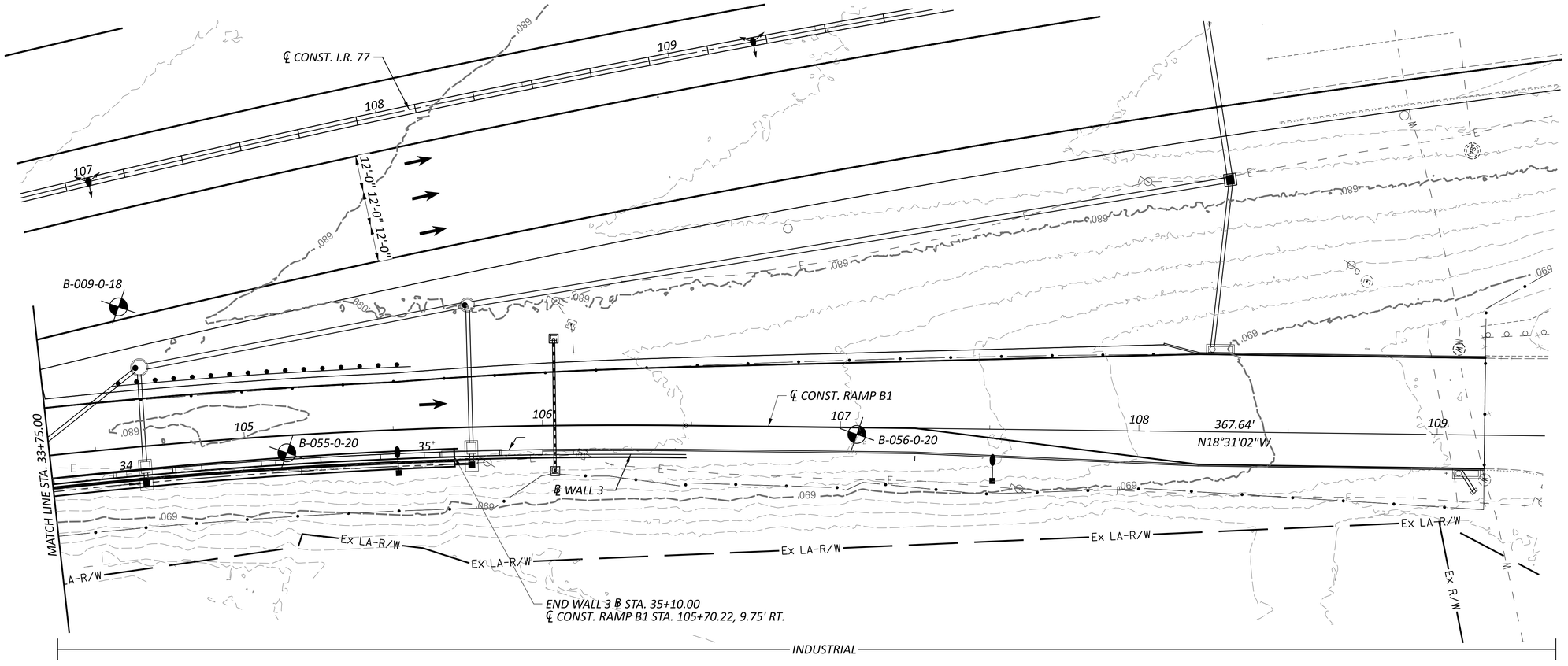
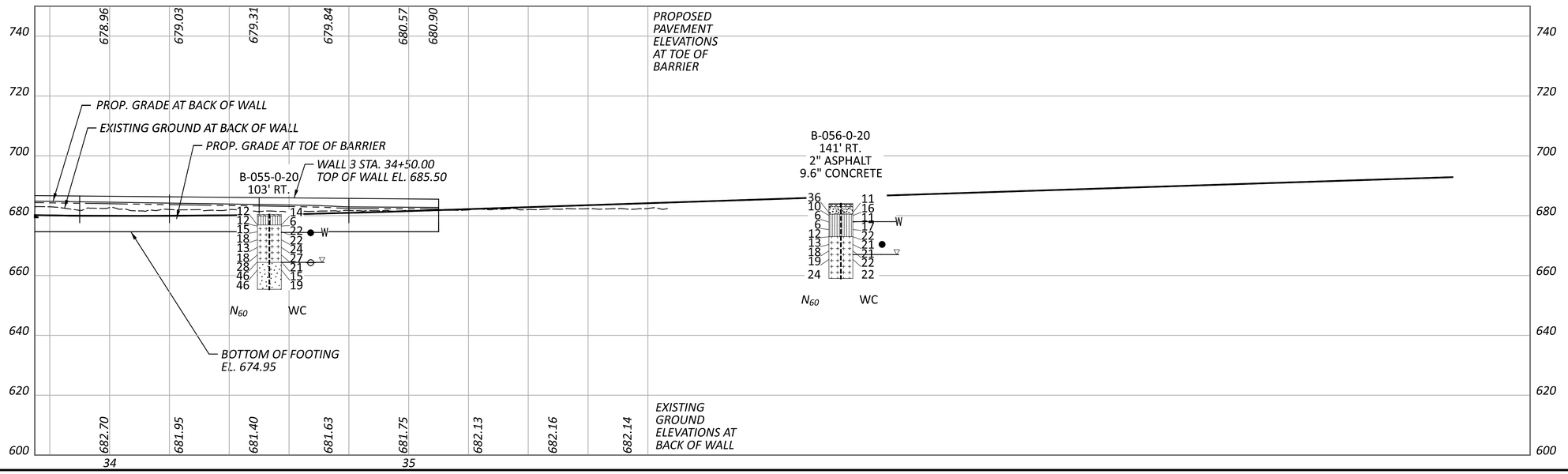


FOR BORING B-009-0-18 PROFILE, SEE SHEET 11.



HORIZONTAL SCALE IN FEET
0 10 20 40

GEOTECHNICAL PROFILE - STRUCTURE
RETAINING WALL 3

DESIGN AGENCY
TRC

DESIGNER	NMC
REVIEWER	SDM 05/01/26
PROJECT ID	105743
SUBSET	31
TOTAL	85
SHEET	P.1215
TOTAL	P.1269

CUY-77-11.41

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:17:14 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
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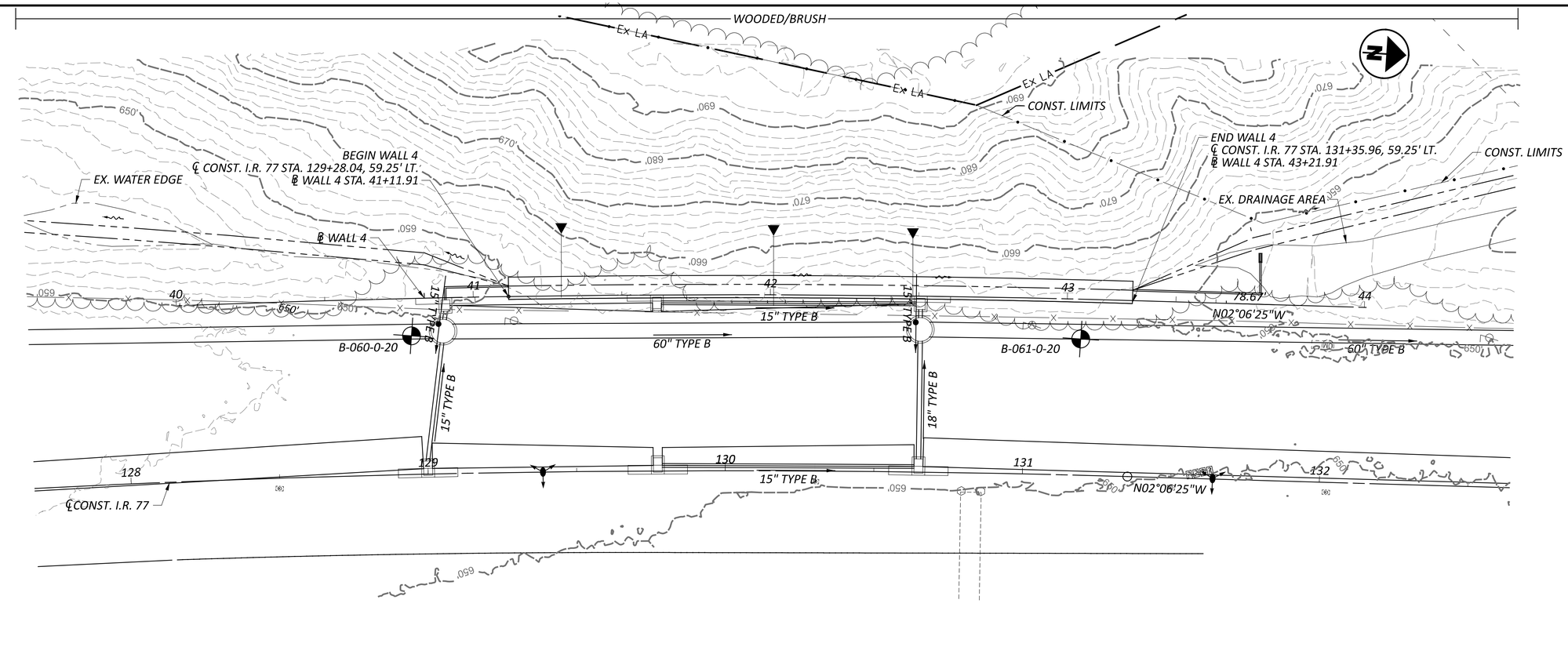
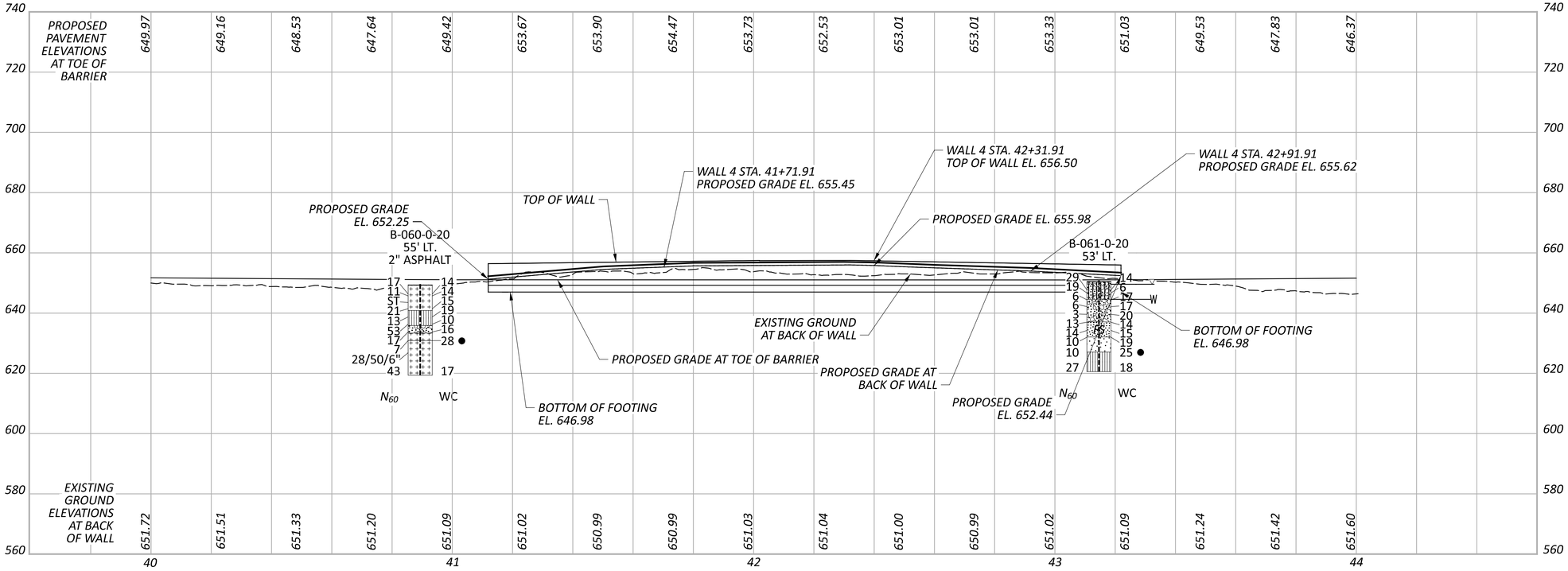
CUY-77-11.41



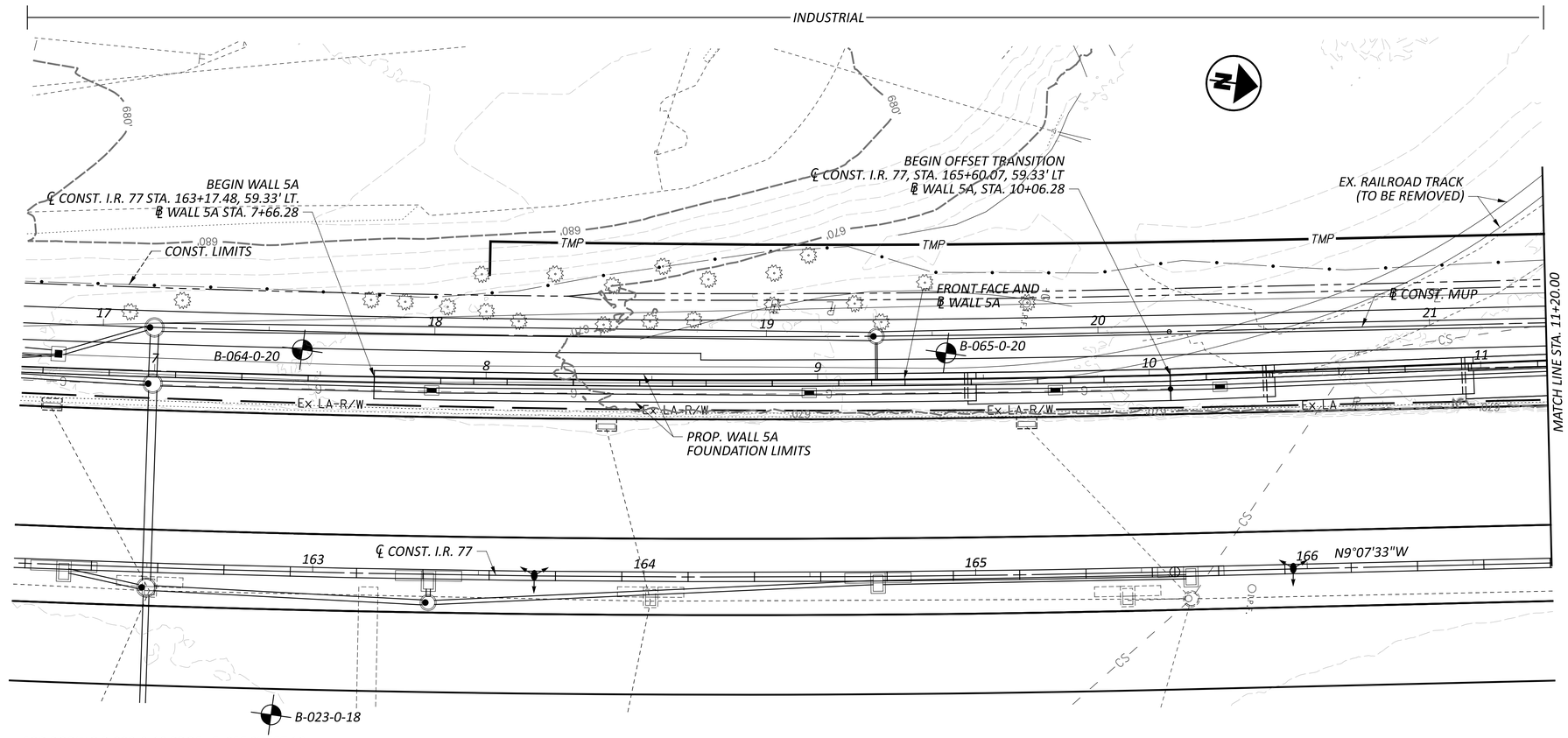


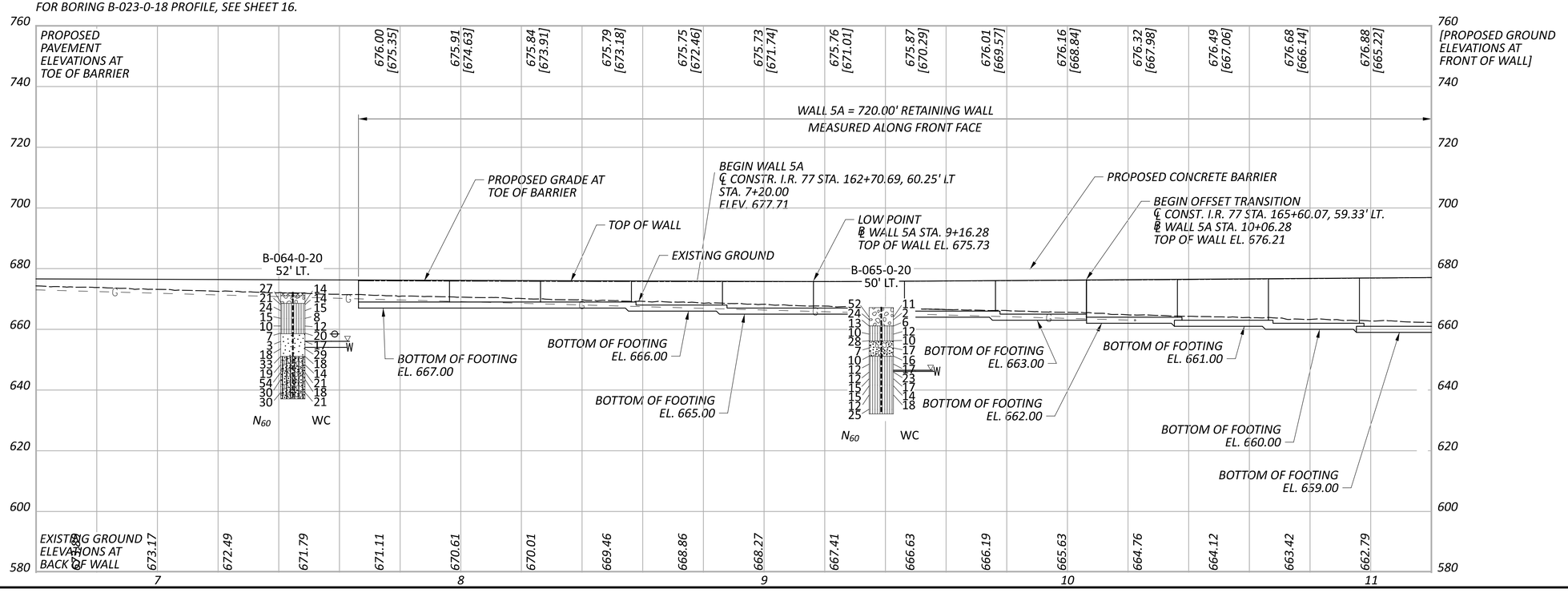
HORIZONTAL SCALE IN FEET
0 10 20 40

GEOTECHNICAL PROFILE - STRUCTURE RETAINING WALL 4

DESIGN AGENCY
TRC

DESIGNER	NMC
REVIEWER	SDM 05/01/26
PROJECT ID	105743
SUBSET	32
TOTAL	85
SHEET	P.1216
TOTAL	P.1269





HORIZONTAL SCALE IN FEET
0 10 20 40

GEOTECHNICAL PROFILE - STRUCTURE
RETAINING WALL 5A

DESIGN AGENCY
TRC

DESIGNER
NMC

REVIEWER
SDM 05/01/26

PROJECT ID
105743

SUBSET 33 | TOTAL 85

SHEET P.1217 | TOTAL P.1269

CUY-77-11.41

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:18:03 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
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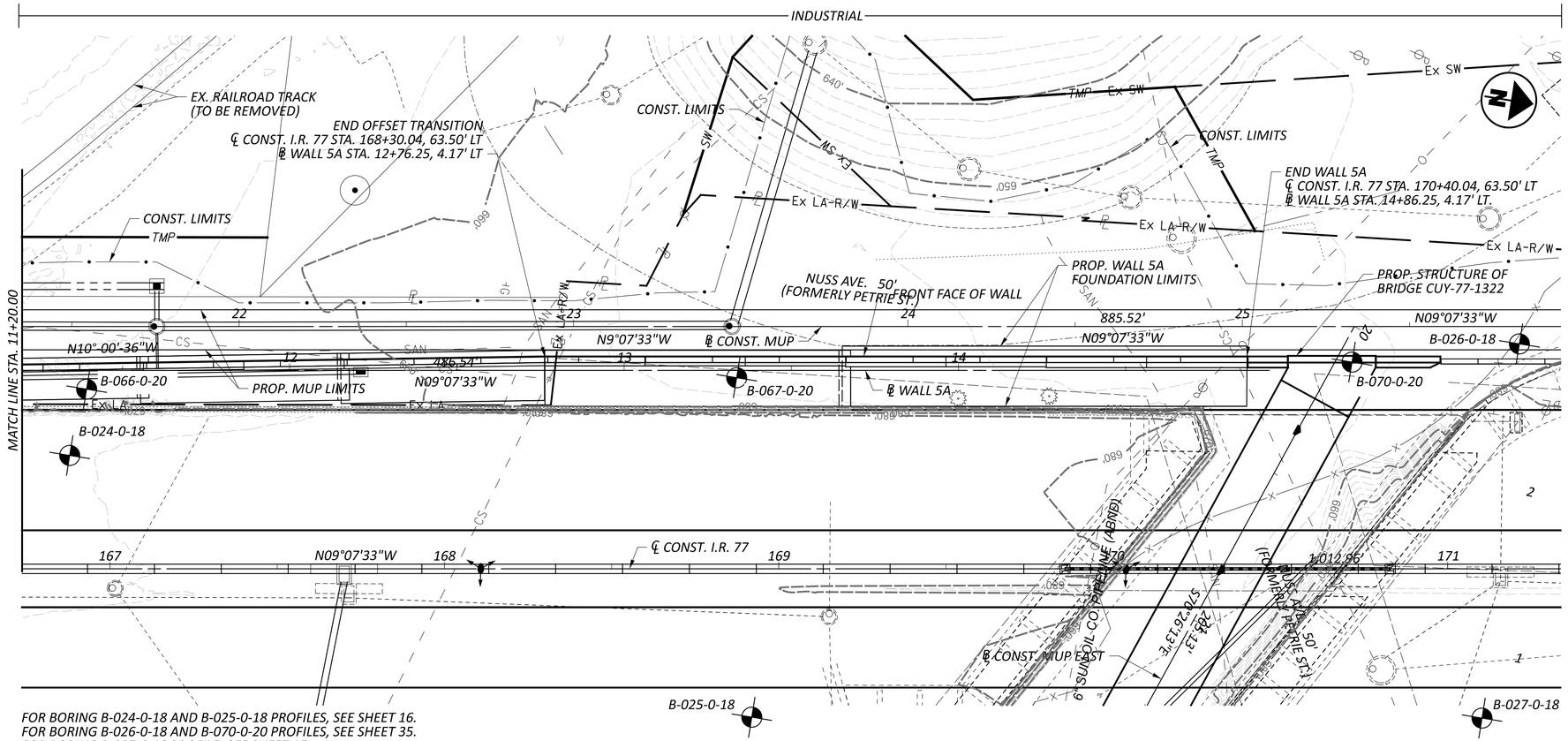

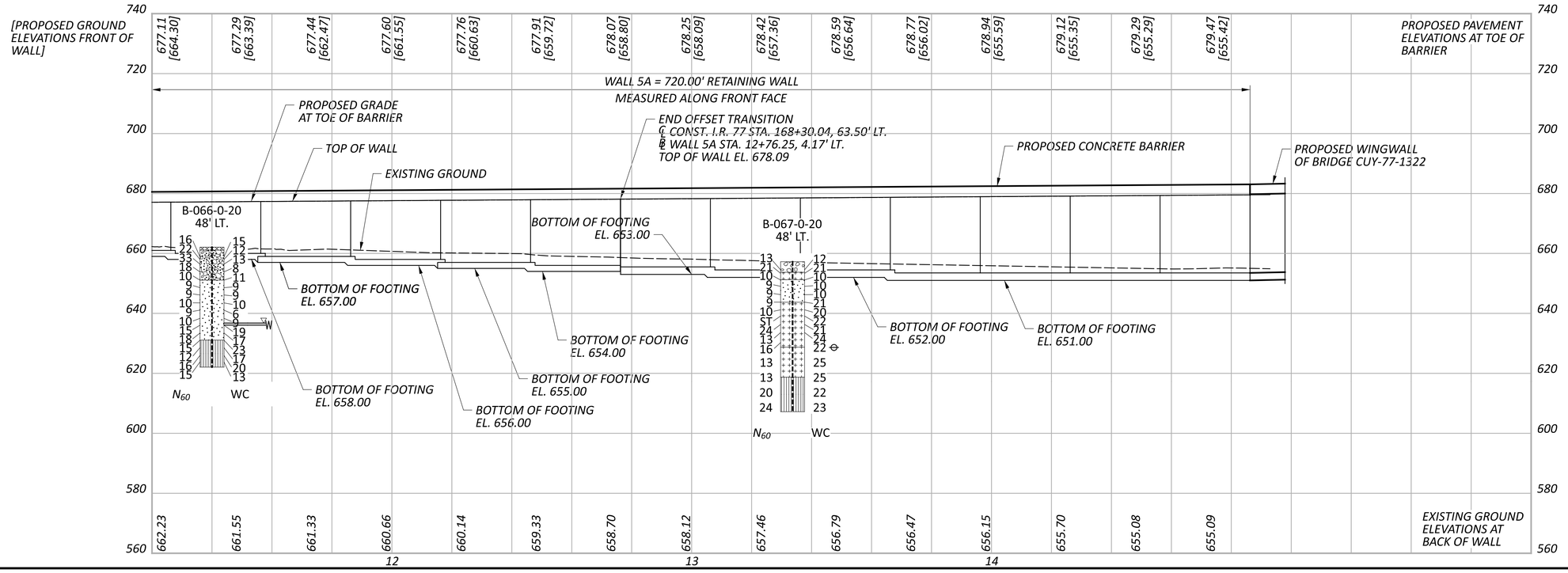

HORIZONTAL SCALE IN FEET
0 10 20 40

GEOTECHNICAL PROFILE - STRUCTURE RETAINING WALL 5A

DESIGN AGENCY
TRC

DESIGNER NMC
REVIEWER SDM 05/01/26
PROJECT ID 105743
SUBSET 34 | TOTAL 85
SHEET P.1218 | TOTAL P.1269

CUY-77-11.41

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:18:34 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
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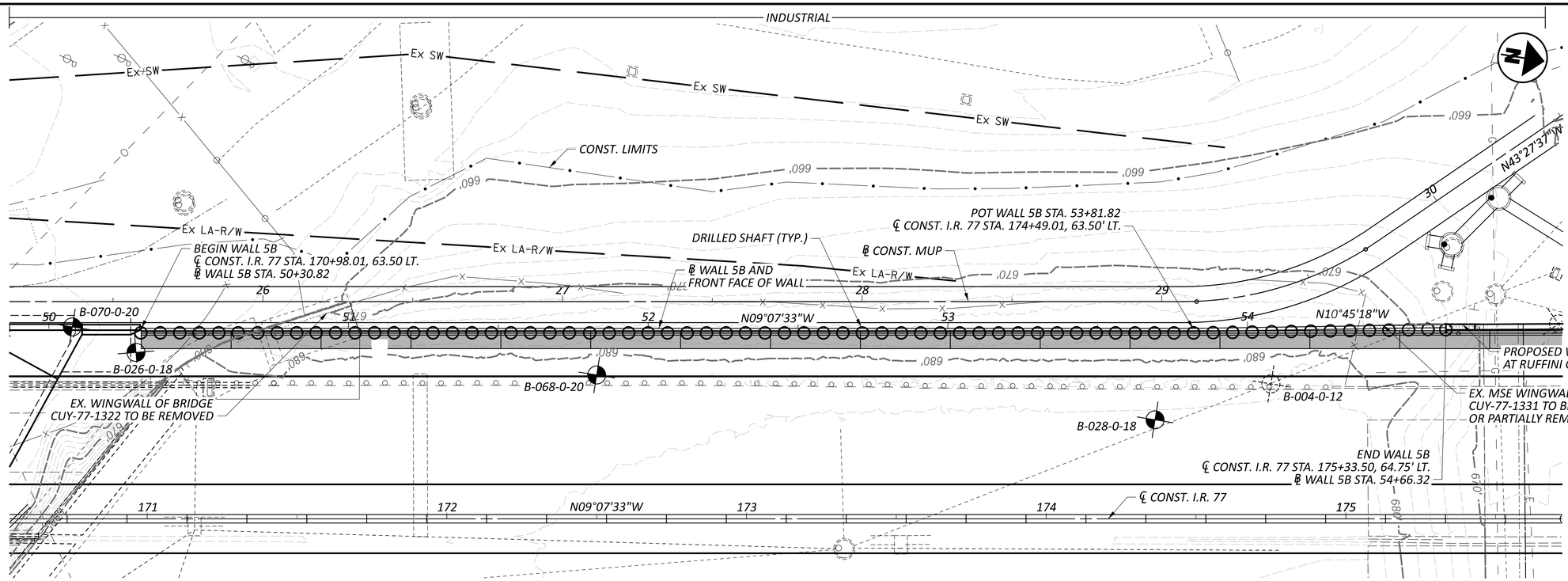
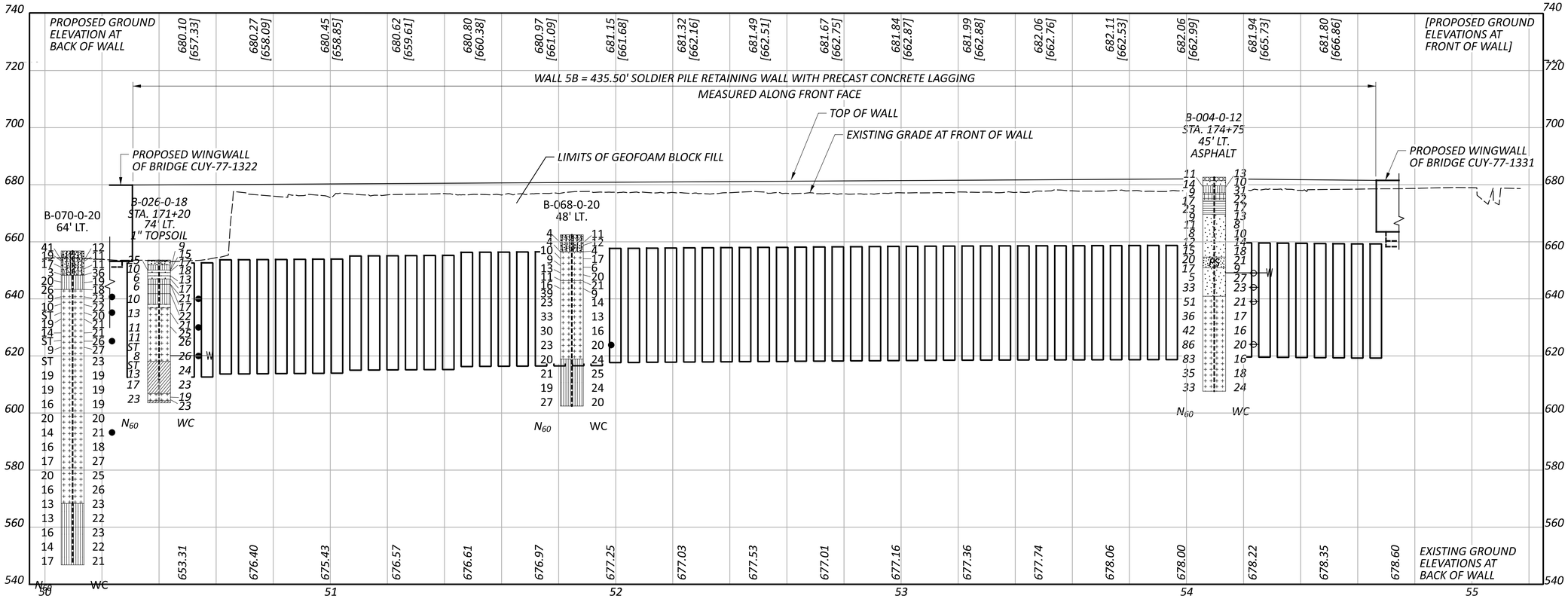
GEOTECHNICAL PROFILE - STRUCTURE
RETAINING WALL 5B

HORIZONTAL SCALE IN FEET
0 10 20 40



FOR BORING B-028-0-18 PROFILE, SEE SHEET 17.



DESIGN AGENCY	
TRC	
DESIGNER	NMC
REVIEWER	SDM 05/01/26
PROJECT ID	105743
SUBSET / TOTAL	35 / 85
SHEET / TOTAL	P.1219 / P.1269

CUY-77-11.41

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:19:14 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
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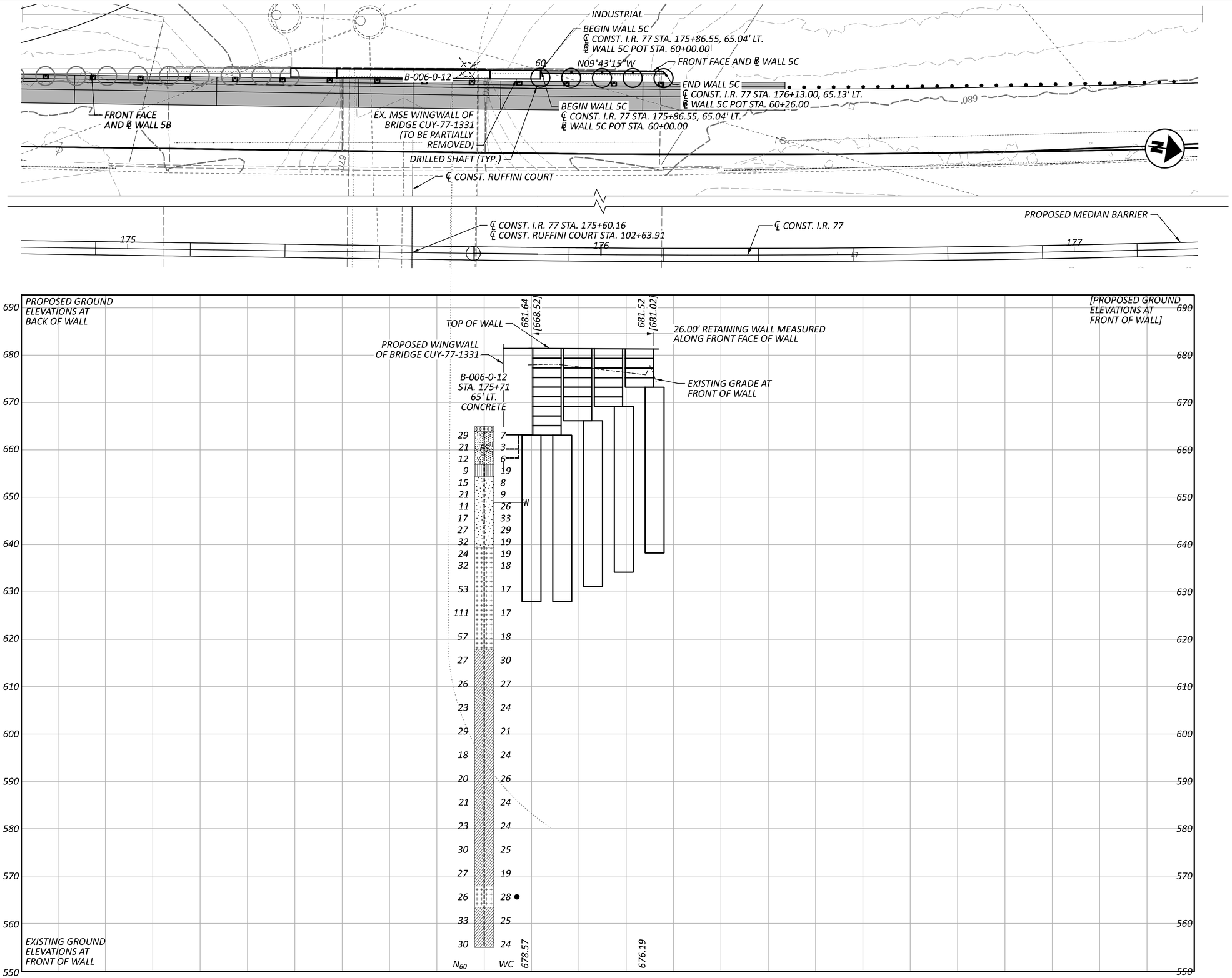

HORIZONTAL
SCALE IN FEET
0 10 20 40

GEOTECHNICAL PROFILE - STRUCTURE
RETAINING WALL 5C

DESIGN AGENCY
TRC

DESIGNER
NMC

REVIEWER
SDM 05/01/26

PROJECT ID
105743

SUBSET 36 | TOTAL 85

SHEET P.1220 | TOTAL P.1269

CUY-77-11.41

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 7:47:17 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
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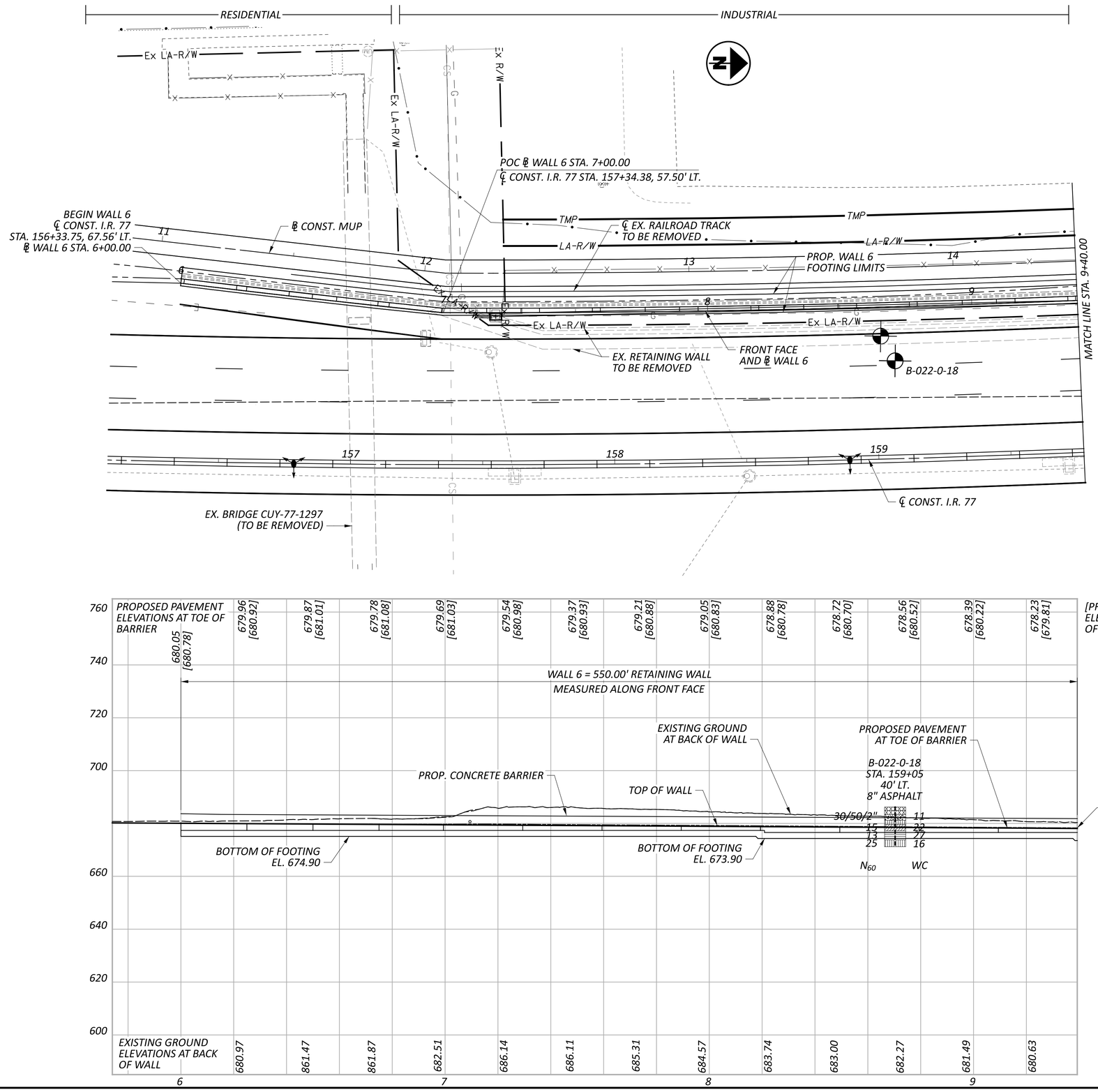
CUY-77-11.41

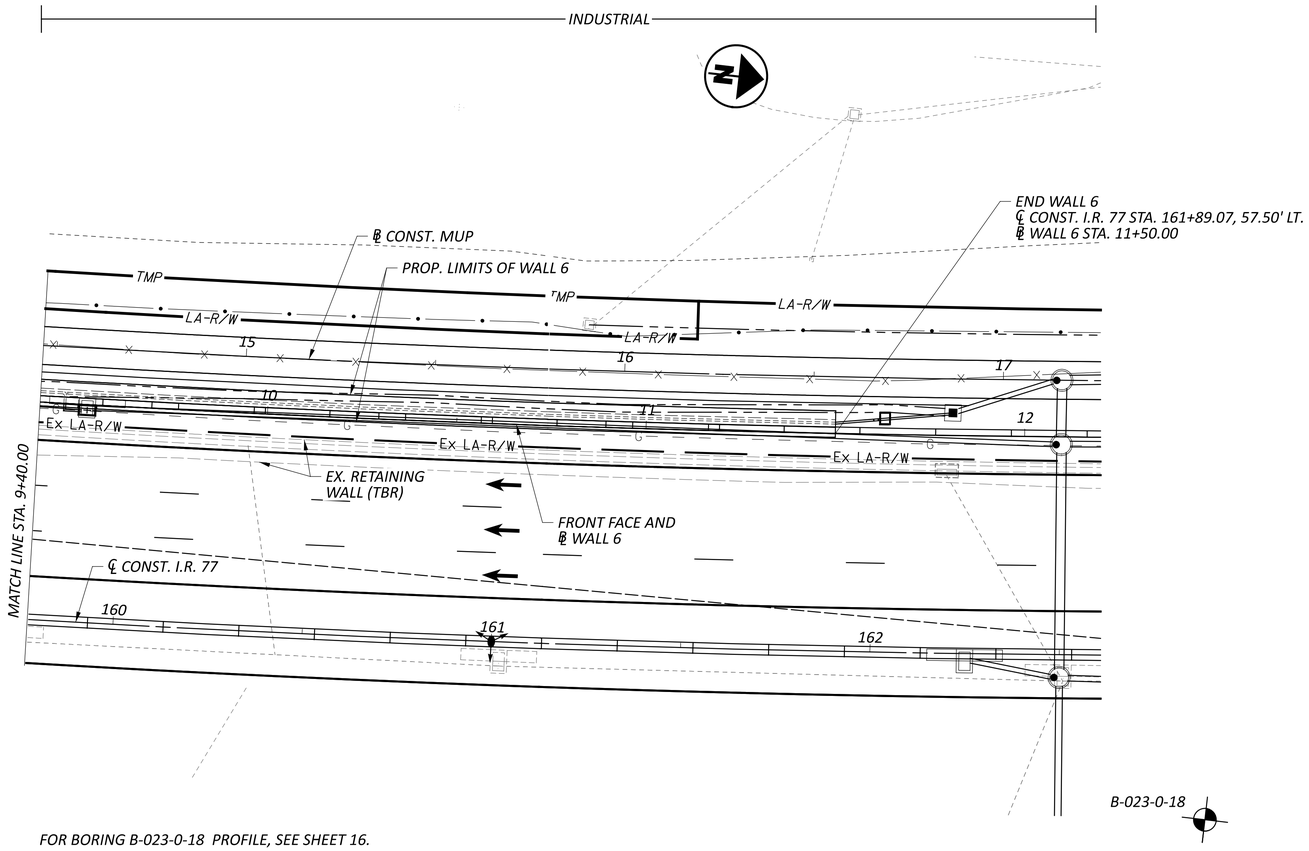


HORIZONTAL
SCALE IN FEET
0 10 20 40

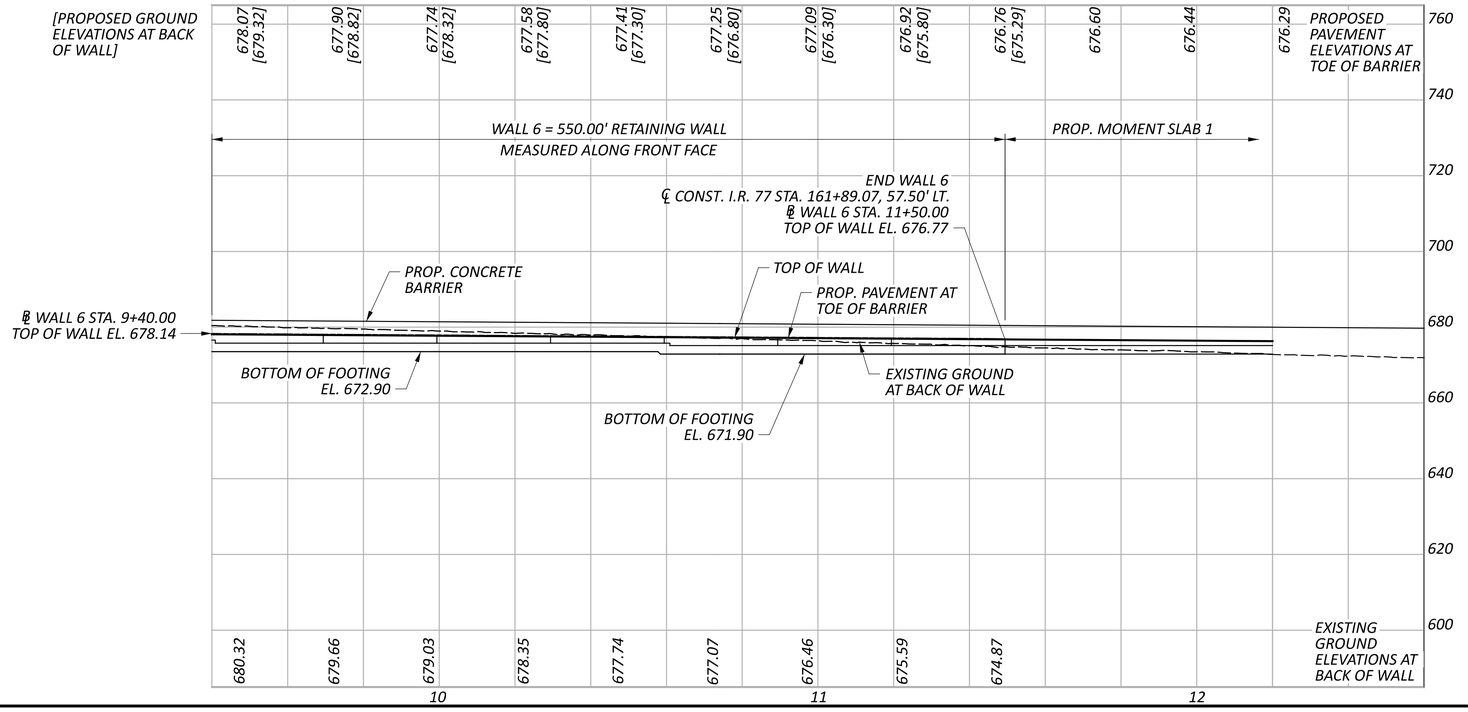
GEOTECHNICAL PROFILE - STRUCTURE
RETAINING WALL 6

DESIGN AGENCY
TRC

DESIGNER	NMC
REVIEWER	SDM 05/01/26
PROJECT ID	105743
SUBSET / TOTAL	37 / 85
SHEET / TOTAL	P.1221 / P.1269



FOR BORING B-023-0-18 PROFILE, SEE SHEET 16.



HORIZONTAL SCALE IN FEET
0 10 20 40

GEOTECHNICAL PROFILE - STRUCTURE
RETAINING WALL 6

DESIGN AGENCY
TRC

DESIGNER	NMC
REVIEWER	SDM 05/01/26
PROJECT ID	105743
SUBSET / TOTAL	38 / 85
SHEET / TOTAL	P.1222 / P.1269

CUY-77-11.41

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:20:28 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
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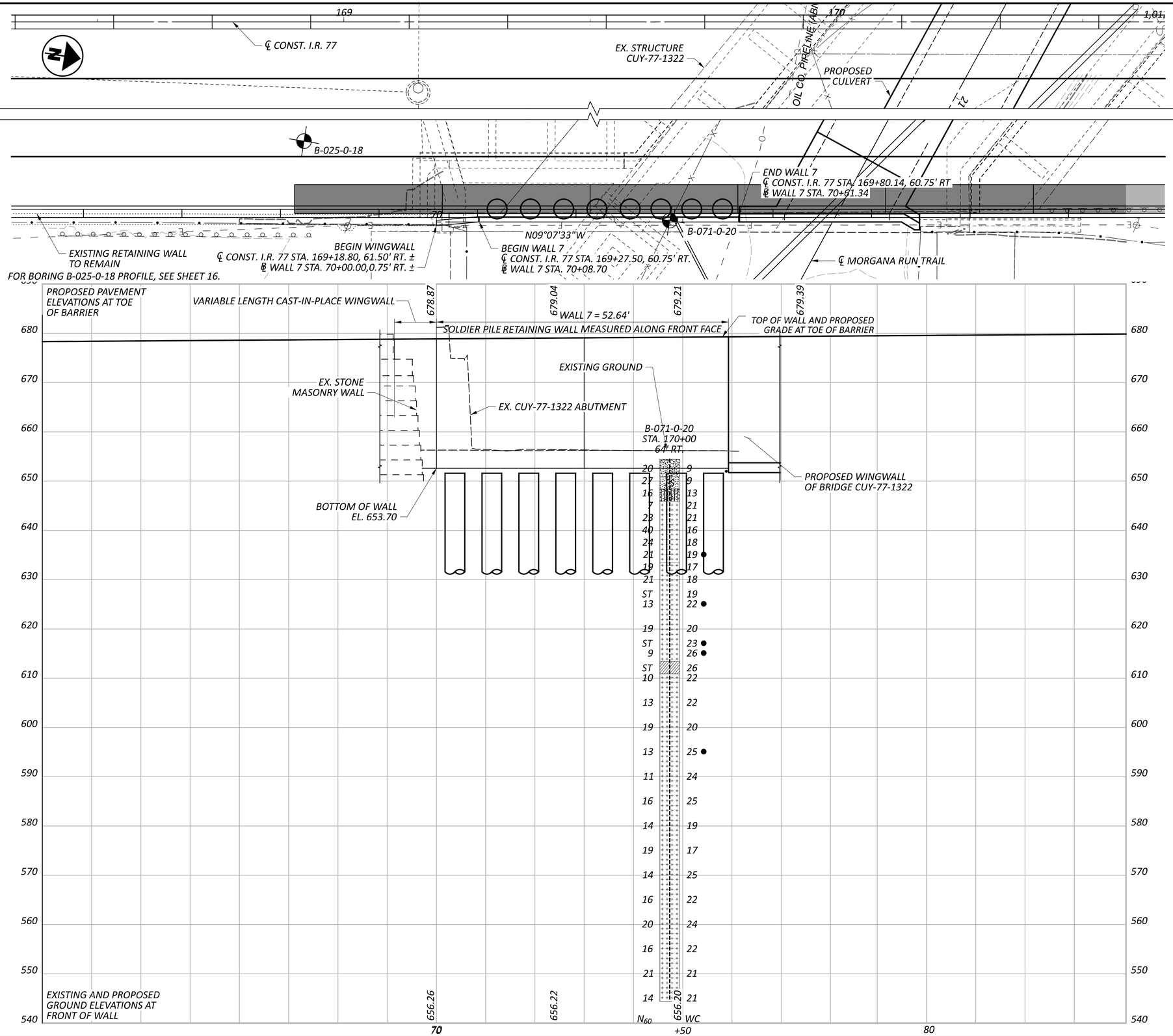

HORIZONTAL SCALE IN FEET
0 10 20 40

GEOTECHNICAL PROFILE - STRUCTURE RETAINING WALL 7

DESIGN AGENCY
TRC

DESIGNER
NMC

REVIEWER
SDM 05/01/26

PROJECT ID
105743

SUBSET 39 | TOTAL 85

SHEET P.1223 | TOTAL P.1269

CUY-77-11.41

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 8:07:44 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCalazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
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pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ID001.dgn

PROJECT: CUY-77-11.78	DRILLING FIRM / OPERATOR: ODOT / -	DRILL RIG: MOBILE B-53 R TRAILER	STATION / OFFSET: 95+62, 85' LT.	EXPLORATION ID N-001-N-01
TYPE: BRIDGE	SAMPLING FIRM / LOGGER: ODOT / -	HAMMER: SAFETY HAMMER	ALIGNMENT: I-77	
PID: G01037nn SFN: CUY-77-11.78	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: N/A	ELEVATION: 714.5 (ft) EOB: 75.0 ft.	PAGE 1 OF 2
START: 9/14/01 END: 9/14/01	SAMPLING METHOD: SPT	ENERGY RATIO (%): 60	COORD: 2201013.8900 N, 648636.0660 E	

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
LOOSE TO MEDIUM DENSE, BROWN AND BLACK, **GRAVEL WITH SAND AND SILT**, AND ROCK FRAGMENTS, SM ASPHALT FRAGMENTS, SM SLAG, RAILROAD EMBANKMENT FILL, MOIST	714.5		4 4 9	13	-	SS-1	-	-	-	-	-	-	-	-	-	11	A-2-4 (V)	
			5 7 7	14	-	SS-2	-	-	-	-	-	-	-	-	-	13	A-2-4 (V)	
			3 5 6	11	-	SS-3	-	-	-	-	-	-	-	-	-	15	A-2-4 (V)	
			2 2 3	5	-	SS-4	-	-	-	-	-	-	-	-	-	22	A-2-4 (V)	
STIFF, BROWN AND GRAY, **SANDY SILT**, POSSIBLE NATURAL SOIL, MOIST	701.0		4 4 5	9	-	SS-5	-	-	-	-	-	-	-	-	-	23	A-4a (V)	
VERY LOOSE, BROWN, **COARSE AND FINE SAND**, LITTLE GRAVEL, SOME SILT, MOIST TO WET	696.0		2 2 2	4	-	SS-6	-	-	-	-	-	-	-	-	-	12	A-3a (V)	
NOTE: ENCOUNTERED GROUNDWATER AT 23.0 FEET DURING DRILLING	691.0	W 691.5																
VERY LOOSE TO LOOSE, BROWN, **SILT**, TRACE CLAY, TRACE GRAVEL, MOIST NON-COHESIVE			2 2 2	4	-	SS-7	-	-	-	-	-	-	-	-	-	33	A-4b (V)	
			2 3 4	7	-	SS-8	-	-	-	-	-	-	-	-	-	24	A-4b (V)	
STIFF TO VERY STIFF, GRAY, **SILT AND CLAY**, TRACE TO NO SAND, MOIST	686.0		7 9 11	20	-	SS-9	-	-	-	-	-	-	-	-	-	20	A-6a (V)	
			6 10 9	19	-	SS-10	-	-	-	-	-	-	-	-	-	25	A-6a (V)	
			5 9 12	21	-	SS-11	-	0	1	0	- 99 -		31	19	12	23	A-6a (9)	
			5 7 14	21	-	SS-12	-	-	-	-	-	-	-	-	-	24	A-6a (V)	
			4 7 10	17	-	SS-13	-	-	-	-	-	-	-	-	-	25	A-6a (V)	
			3 5 6	11	-	SS-14	-	0	0	0	- 100 -		34	20	14	28	A-6a (10)	
MEDIUM DENSE TO DENSE, GRAY, **SANDY SILT**, TRACE CLAY, MOIST NON-COHESIVE	671.0		9 18 20	38	-	SS-15	-	-	-	-	-	-	-	-	-	19	A-4a (V)	
			10 13 16	29	-	SS-16	-	-	-	-	-	-	-	-	-	23	A-4a (V)	
MEDIUM DENSE TO DENSE, GRAY, **COARSE AND FINE SAND**, LITTLE TO SOME SILT AND CLAY, WET	661.0		9 15 15	30	-	SS-17	-	0	1	81	- 18 -		NP	NP	NP	22	A-3a (0)	
			15 18 25	43	-	SS-18	-	-	-	-	-	-	-	-	-	19	A-3a (V)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 6/29/26 12:55 - \\CLEVELAND-VFP\SYSPROJECTS\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\G01037NN_HISTORICAL CUY LOGS-11_8_2023.GPJ

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.1224 | P.1269 TOTAL	40 | 85 TOTAL	105743	SDM 05/01/26	NMC	TRC

GEOTECHNICAL PROFILE - ROADWAY
RETAINING WALL 1D
HISTORICAL BORING LOG FOR N-001-N-01

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:21:56 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ID002.dgn

PID: G01037nn | SFN: CUY-77-11.78 | PROJECT: CUY-77-11.78 | STATION / OFFSET: 95+62, 85' LT. | START: 9/14/01 | END: 9/14/01 | PG 2 OF 2 | N-001-N-01

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, GRAY, **COARSE AND FINE SAND**, LITTLE TO SOME SILT AND CLAY, WET *(continued)*	654.5	61																
		62																
		63																
		64	10 15 19	34	-	SS-19	-	-	-	-	-	-	-	-	-	18	A-3a (V)	
		65																
		66																
		67																
		68																
		69	12 16 20	36	-	SS-20	-	-	-	-	-	-	-	-	-	17	A-3a (V)	
		70																
		71																
		72																
		73																
		74	10 18 23	41	-	SS-21	-	0	2	75	-	23 -	NP	NP	NP	20	A-3a (0)	
	639.5	EOB 75																

NOTES: HISTORICAL BORING LOG RETYPED FROM BORING NO. NSSN-1 COMPLETED ON 9/14/2001 FOR PROJECT NO. G01037NN [CUY-77-11.78 (N&SS NORTH BRIDGE)]

ABANDONMENT METHODS, MATERIALS, QUANTITIES: NOT RECORDED

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 6/29/26 12:55 - \\CLEVELAND-VFP\SYSPROJECTS\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\G01037NN_HISTORICAL CUY LOGS-11_8_2023.GPJ

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.1225 TOTAL P.1269	41 TOTAL 85	105743	SDM 05/01/26	NMC	TRC

GEOTECHNICAL PROFILE - ROADWAY
RETAINING WALL 1D
HISTORICAL BORING LOG FOR N-001-N-01 (CONT.)

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:22:40 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ID003.dgn

PROJECT: CUY-77-11.11
TYPE: BRIDGE
PID: G01037ns SFN: CUY-77-11.11
START: 9/17/01 END: 9/17/01

DRILLING FIRM / OPERATOR: ODOT / -
SAMPLING FIRM / LOGGER: ODOT / -
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: MOBILE B-53 R TRAILER
HAMMER: SAFETY HAMMER
CALIBRATION DATE: N/A
ENERGY RATIO (%): 60

STATION / OFFSET: 91+21, 92' LT.
ALIGNMENT: I-77
ELEVATION: 716.2 (ft) EOB: 74.4 ft.
COORD: 2201233.5410 N, 648265.4850 E

EXPLORATION ID N-001-S-01

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
LOOSE TO MEDIUM DENSE, BROWN AND GRAY, **SILT**, TRACE CLAY, TRACE SLAG, RAILROAD EMBANKMENT FILL, MOIST NON-COHESIVE	716.2		6 10 12	22	-	SS-1	-	-	-	-	-	-	-	-	-	13	A-4b (V)	
			3 4 5	9	-	SS-2	-	-	-	-	-	-	-	-	-	23	A-4b (V)	
STIFF, GRAY TO BROWN, **SANDY SILT**, SOME CLAY, RAILROAD EMBANKMENT FILL, MOIST COHESIVE	711.2		3 3 6	9	-	SS-3	-	-	-	-	-	-	-	-	-	24	A-4a (V)	
			4 4 5	9	-	SS-4	-	-	-	-	-	-	-	-	-	25	A-4a (V)	
MEDIUM DENSE, BROWN, **FINE SAND**, TRACE SILT AND CLAY, RAILROAD EMBANKMENT FILL, MOIST	702.7		3 5 7	12	-	SS-5	-	-	-	-	-	-	-	-	-	9	A-3 (V)	
MEDIUM STIFF, BROWN, **SILT AND CLAY**, TRACE SAND, POSSIBLE NATURAL SOIL, MOIST	701.2		3 3 4	7	-	SS-6	-	-	-	-	-	-	-	-	-	26	A-6a (V)	
			4 4 4	8	-	SS-7	-	-	-	-	-	-	-	-	-	26	A-6a (V)	
LOOSE TO MEDIUM DENSE, BROWN, **GRAVEL WITH SAND**, TRACE SILT AND CLAY, MOIST TO WET	690.2		9 12 12	24	-	SS-8	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
NOTE: ENCOUNTERED GROUNDWATER AT 28.0 FEET DURING DRILLING AND AT 29.0 FEET UPON COMPLETION		W 688.2 ▽ 687.2	4 5 9	14	-	SS-9	-	-	-	-	-	-	-	-	-	14	A-1-b (V)	
			4 4 7	11	-	SS-10	-	32	38	22	- 8 -		NP	NP	NP	13	A-1-b (0)	
VERY STIFF, GRAY, **SILT AND CLAY**, TRACE SAND, MOIST	682.7		4 10 10	20	-	SS-11	-	-	-	-	-	-	-	-	-	23	A-6a (V)	
			5 9 12	21	-	SS-12	-	-	-	-	-	-	-	-	-	22	A-6a (V)	
			5 7 15	22	-	SS-13	-	0	0	1	- 99 -		32	19	13	23	A-6a (9)	
VERY STIFF, GRAY, **SANDY SILT**, MOIST COHESIVE	675.2		8 15 15	30	-	SS-14	-	-	-	-	-	-	-	-	-	21	A-4a (V)	
DENSE TO VERY DENSE, GRAY TO BROWN, **COARSE AND FINE SAND**, LITTLE SILT AND CLAY, MOIST	672.7		18 15 18	33	-	SS-15	-	-	-	-	-	-	-	-	-	21	A-3a (V)	
			20 29 35	64	-	SS-16	-	-	-	-	-	-	-	-	-	18	A-3a (V)	
			9 14 16	30	-	SS-17	-	0	4	79	- 17 -		NP	NP	NP	20	A-3a (0)	
			12 15 18	33	-	SS-18	-	-	-	-	-	-	-	-	-	17	A-3a (V)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 6/29/26 11:22 - \\CLEVELAND-VFP\SYSPROJECTS\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\G01037NS_HISTORICAL CUY LOGS-11_8_2023.GPJ

SHEET P.1226 TOTAL P.1269
SUBSET 42 TOTAL 85
PROJECT ID 105743
REVIEWER SDM 05/01/26
DESIGNER NMC
DESIGN AGENCY TRC

GEOTECHNICAL PROFILE - ROADWAY
RETAINING WALL 1C
HISTORICAL BORING LOG FOR N-001-S-01

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:23:28 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ID004.dgn

PID: G01037ns | SFN: CUY-77-11.11 | PROJECT: CUY-77-11.11 | STATION / OFFSET: 91+21, 92' LT. | START: 9/17/01 | END: 9/17/01 | PG 2 OF 2 | N-001-S-01

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
DENSE TO VERY DENSE, GRAY TO BROWN, **COARSE AND FINE SAND**, LITTLE SILT AND CLAY, MOIST *(continued)*	656.2	61																
		62																
		63																
		64	10 15 17	32	-	SS-19	-	-	-	-	-	-	-	-	-	20	A-3a (V)	
		65																
		66																
		67																
		68																
		69	12 17 20	37	-	SS-20	-	-	-	-	-	-	-	-	-	15	A-3a (V)	
		70																
		71																
		72																
		73																
	642.7																	
VERY DENSE, GRAY, **SILT**, LITTLE CLAY, TRACE GRAVEL, TRACE SAND, MOIST NON-COHESIVE	641.8	EOB 74	17 50/5"	-	-	SS-21	-	3	1	3	79	14	NP	NP	NP	17	A-4b (8)	

NOTES: HISTORICAL BORING LOG RETYPED FROM BORING NO. NSSS-1 COMPLETED ON 9/17/2001 FOR PROJECT NO. G01037NS [CUY-77-11.11]

ABANDONMENT METHODS, MATERIALS, QUANTITIES: NOT RECORDED

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 6/29/26 11:22 - \\CLEVELAND-VFP\SYSPROJECTS\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\G01037NS_HISTORICAL CUY LOGS-11_8_2023.GPJ

GEOTECHNICAL PROFILE - ROADWAY
RETAINING WALL 1C
HISTORICAL BORING LOG FOR N-001-S-01 (CONT.)

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.1227 / P.1269 TOTAL	43 / 85 TOTAL	105743	SDM 05/01/26	NMC	TRC

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:24:08 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ID005.dgn

PROJECT: CUY-77-11.78	DRILLING FIRM / OPERATOR: ODOT / -	DRILL RIG: MOBILE B-53 R TRAILER	STATION / OFFSET: 93+83, 77' RT.	EXPLORATION ID N-003-N-01
TYPE: BRIDGE	SAMPLING FIRM / LOGGER: ODOT / -	HAMMER: SAFETY HAMMER	ALIGNMENT: I-77	
PID: G01037nn SFN: CUY-77-11.78	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: N/A	ELEVATION: 718.0 (ft) EOB: 80.0 ft.	PAGE 1 OF 2
START: 9/14/01 END: 9/15/01	SAMPLING METHOD: SPT	ENERGY RATIO (%): 60	COORD: 2201247.5570 N, 648576.4490 E	

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
AGGREGATE BASE, RAILROAD BEDDING	718.0		50/0"	-	-	SS-1	-	-	-	-	-	-	-	-	-	6	UCF (V)	
	716.0																	
STIFF TO VERY STIFF, BROWN TO GRAY, **SANDY SILT**, SOME GRAVEL, SOME CLAY, TRACE ASPHALT FRAGMENTS, RAILROAD EMBANKMENT FILL, MOIST COHESIVE			6 7 7	14	-	SS-2	-	-	-	-	-	-	-	-	-	13	A-4a (V)	
			8 9 7	16	-	SS-3	-	-	-	-	-	-	-	-	-	14	A-4a (V)	
	709.5																	
STIFF, GRAY TO BROWN, **SILT**, SOME CLAY, TRACE GRAVEL, TRACE SAND, POSSIBLY NATURAL SOIL, MOIST			2 4 5	9	-	SS-4	-	-	-	-	-	-	-	-	-	26	A-4b (V)	
			5 6 7	13	-	SS-5	-	-	-	-	-	-	-	-	-	26	A-4b (V)	
			4 6 7	13	-	SS-6	-	-	-	-	-	-	-	-	-	24	A-4b (V)	
	694.5																	
MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, LITTLE SILT, TRACE GRAVEL, MOIST			4 10 11	21	-	SS-7	-	-	-	-	-	-	-	-	-	6	A-3a (V)	
			4 7 12	19	-	SS-8	-	-	-	-	-	-	-	-	-	6	A-3a (V)	
	689.5																	
MEDIUM DENSE, GRAY, **GRAVEL WITH SAND**, LITTLE SILT AND CLAY, MOIST TO WET NOTE: WET AT 32.0 FEET DURING DRILLING			9 10 10	20	-	SS-9	-	-	-	-	-	-	-	-	-	13	A-1-b (V)	
			8 9 13	22	-	SS-10	-	44	27	18	-	11 -	NP	NP	NP	12	A-1-b (0)	
			5 9 11	20	-	SS-11	-	-	-	-	-	-	-	-	-	14	A-1-b (V)	
	682.0																	
VERY STIFF TO HARD, GRAY, **SILT AND CLAY**, TRACE SAND, MOIST			7 10 17	27	-	SS-12	-	-	-	-	-	-	-	-	-	23	A-6a (V)	
			8 14 18	32	-	SS-13	-	-	-	-	-	-	-	-	-	23	A-6a (V)	
			4 8 10	18	-	SS-14	-	0	0	1	-	99 -	35	20	15	25	A-6a (10)	
	674.5																	
DENSE, GRAY, **COARSE AND FINE SAND**, LITTLE SILT AND CLAY, TRACE GRAVEL, WET			16 18 15	33	-	SS-15	-	1	10	76	-	13 -	NP	NP	NP	18	A-3a (0)	
	669.5																	
MEDIUM DENSE TO DENSE, GRAY, **SILT**, LITTLE CLAY, LITTLE SAND, TRACE TO NO GRAVEL, MOIST NON-COHESIVE			4 11 19	30	-	SS-16	-	-	-	-	-	-	-	-	-	21	A-4b (V)	
			7 12 17	29	-	SS-17	-	-	-	-	-	-	-	-	-	19	A-4b (V)	
			8 15 20	35	-	SS-18	-	-	-	-	-	-	-	-	-	19	A-4b (V)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 6/29/26 12:59 - \\CLEVELAND-VFP\SYSPROJECTS\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\G01037NN_HISTORICAL CUY LOGS-11_8_2023.GPJ

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.1228 TOTAL P.1269	44 TOTAL 85	105743	SDM 05/01/26	NMC	TRC

GEOTECHNICAL PROFILE - ROADWAY
RETAINING WALL 2
HISTORICAL BORING LOG FOR N-003-N-01

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:24:54 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ID006.dgn

PID: G01037nn	SFN: CUY-77-11.78	PROJECT: CUY-77-11.78	STATION / OFFSET: 93+83, 77' RT.	START: 9/14/01	END: 9/15/01	PG 2 OF 2	N-003-N-01

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, GRAY, **SILT**, LITTLE CLAY, LITTLE SAND, TRACE TO NO GRAVEL, MOIST NON-COHESIVE *(continued)*	658.0	61																
		62																
		63																
		64	10 17 22	39	-	SS-19	-	-	-	-	-	-	-	-	-	20	A-4b (V)	
		65																
		66																
		67																
		68																
		69	5 12 14	26	-	SS-20	-	-	-	-	-	-	-	-	-	21	A-4b (V)	
		70																
		71																
		72																
		73																
VERY DENSE		74	17 29 46	75	-	SS-21	-	0	0	14	69	17	NP	NP	NP	18	A-4b (8)	
		75																
		76																
		77																
		78																
		79	15 22 39	61	-	SS-22	-	-	-	-	-	-	-	-	-	21	A-4b (V)	
	638.0	EOB 80																

NOTES: HISTORICAL BORING LOG RETYPED FROM BORING NO. NSSN-3 COMPLETED ON 9/15/2001 FOR PROJECT NO. G01037NN [CUY-77-11.78 (N&SS NORTH BRIDGE)]

ABANDONMENT METHODS, MATERIALS, QUANTITIES: NOT RECORDED

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 6/29/26 12:59 - \\CLEVELAND-VFP\SYSPROJECTS\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\G01037NN_HISTORICAL CUY LOGS-11_8_2023.GPJ

GEOTECHNICAL PROFILE - ROADWAY
RETAINING WALL 2
HISTORICAL BORING LOG FOR N-003-N-01 (CONT.)

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:25:36 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ID007.dgn

PROJECT: CUY-77-11.69	DRILLING FIRM / OPERATOR: ODOT / -	DRILL RIG: MOBILE B-53 R TRAILER	STATION / OFFSET: 89+50, 64' LT.	EXPLORATION ID B-001-0-02
TYPE: BRIDGE	SAMPLING FIRM / LOGGER: ODOT / -	HAMMER: SAFETY HAMMER	ALIGNMENT: I-77	
PID: G01037 SFN: CUY-77-11.69	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: N/A	ELEVATION: 718.9 (ft) EOB: 75.0 ft.	PAGE 1 OF 2
START: 9/24/02 END: 9/24/02	SAMPLING METHOD: SPT	ENERGY RATIO (%): 60	COORD: 2201334.5490 N, 648128.8920 E	

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
AGGREGATE BASE, RAILROAD BEDDING	718.9																	
	716.9																	
DENSE TO VERY DENSE, BROWN, **SANDY SILT**, LITTLE ROCK FRAGMENTS, SOME CLAY, RAILROAD EMBANKMENT FILL, MOIST			10 20 27	47	-	SS-1	-	-	-	-	-	-	-	-	-	6		
			27 31 34	65	-	SS-2	-	6	11	46	13	24	NP	NP	NP	6	A-4a (0)	
			17 22 24	46	-	SS-3	-	-	-	-	-	-	-	-	-	7	A-4a (V)	
	710.9																	
VERY STIFF TO HARD, BROWN, **SANDY SILT**, SOME CLAY, TRACE ROCK/COAL FRAGMENTS, RAILROAD EMBANKMENT FILL, MOIST			7 12 17	29	-	SS-4	-	-	-	-	-	-	-	-	-	19	A-4a (V)	
			17 34 22	56	-	SS-5	-	-	-	-	-	-	-	-	-	15	A-4a (V)	
	702.4																	
MEDIUM DENSE, GRAY AND BROWN, **COARSE AND FINE SAND**, LITTLE SILT, NATURAL SOIL, MOIST			3 6 8	14	-	SS-6	-	-	-	-	-	-	-	-	-	9	A-3a (V)	
	698.9																	
VERY STIFF, GRAY, **SILT AND CLAY**, TRACE GRAVEL, TRACE SAND, MOIST			5 6 10	16	-	SS-7	-	1	1	6	- 92 -		33	19	14	23	A-6a (10)	
NOTE: GROUNDWATER MEASURED AT 26.0 FEET UPON COMPLETION OF DRILLING AFTER BORE HOLE HAD CAVED-IN		▼	8 7 9	16	-	SS-8	-	-	-	-	-	-	-	-	-	23	A-6a (V)	
	690.9																	
LOOSE TO MEDIUM DENSE, BROWN, **FINE SAND**, TRACE SILT, MOIST			7 5 5	10	-	SS-9	-	-	-	-	-	-	-	-	-	5	A-3 (V)	
F.S.			6 7 5	12	-	SS-10	-	2	40	52	- 6 -		NP	NP	NP	15	A-3 (0)	
	685.9																	
VERY STIFF, GRAY, **SANDY SILT**, AND CLAY, MOIST			6 8 10	18	-	SS-11	-	-	-	-	-	-	-	-	-	24	A-4a (V)	
			8 6 12	18	-	SS-12	-	0	0	1	40	59	28	19	9	23	A-4a (8)	
	680.4	W 680.4																
MEDIUM DENSE, GRAY, **GRAVEL WITH SAND**, TRACE SILT, WET	678.9		10 6 10	16	-	SS-13	-	30	49	18	- 3 -		NP	NP	NP	15	A-1-b (0)	
NOTE: GROUNDWATER ENCOUNTERED AT 38.5 FEET DURING DRILLING																		
VERY STIFF, GRAY, **SILT AND CLAY**, TRACE SAND, MOIST			12 13 12	25	-	SS-14	-	0	1	1	- 98 -		30	19	11	22	A-6a (8)	
	675.9																	
DENSE, GRAY, **SILT**, SOME SAND, LITTLE CLAY, WET			14 18 18	36	-	SS-15	-	-	-	-	-	-	-	-	-	21	A-4b (V)	
	671.9																	
DENSE TO VERY DENSE, GRAY, **FINE SAND**, TRACE SILT, TRACE GRAVEL, WET			12 14 17	31	-	SS-16	-	1	12	77	- 10 -		NP	NP	NP	19	A-3 (0)	
F.S.			24 37 42	79	-	SS-17	-	-	-	-	-	-	-	-	-	18	A-3 (V)	
NOTE: APPROXIMATELY 1.5 FEET OF HEAVING SAND UP TO 58.0 FEET	660.9																	
DENSE TO VERY DENSE, GRAY, **COARSE AND FINE SAND**, LITTLE SILT, TRACE TO NO GRAVEL, WET			17 32 37	69	-	SS-18	-	4	4	78	- 14 -		NP	NP	NP	20	A-3a (0)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 6/29/26 12:01 - \\CLEVELAND-VFP\SYSPROJECTS\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\G01037_HISTORICAL CUY LOGS-11_8_2023.GPJ

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.1230 TOTAL P.1269	46 TOTAL 85	105743	SDM 05/01/26	NMC	TRC

GEOTECHNICAL PROFILE - ROADWAY
RETAINING WALL 1A AND 1B
HISTORICAL BORING LOG FOR B-001-0-02

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:26:27 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ID008.dgn

PID: G01037 | SFN: CUY-77-11.69 | PROJECT: CUY-77-11.69 | STATION / OFFSET: 89+50, 64' LT. | START: 9/24/02 | END: 9/24/02 | PG 2 OF 2 | B-001-0-02

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
DENSE TO VERY DENSE, GRAY, **COARSE AND FINE SAND**, LITTLE SILT, TRACE TO NO GRAVEL, WET *(continued)*	658.9	61																
		62																
		63																
		64	10 17 25	42	-	SS-19	-	-	-	-	-	-	-	-	-	19	A-3a (V)	
		65																
		66																
		67																
		68																
		69	15 18 18	36	-	SS-20	-	-	-	-	-	-	-	-	-	18	A-3a (V)	
		70																
		71																
		72																
		73																
		74	21 18 20	38	-	SS-21	-	0	4	84	-	12 -	NP	NP	NP	19	A-3a (0)	
	643.9	75 EOB																

NOTES: HISTORICAL BORING LOG RETYPED FROM BORING NO. B-1 COMPLETED ON 9/24/2002 FOR PROJECT NO. G01037 [BRIDGE NO. CUY-77-11.69]

ABANDONMENT METHODS, MATERIALS, QUANTITIES: NOT RECORDED

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 6/29/26 12:01 - \\CLEVELAND-VFP\SYSPROJECTS\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\G01037_HISTORICAL CUY LOGS-11_8_2023.GPJ

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.1231	47	105743	SDM 05/01/26	NMC	TRC
TOTAL P.1269	TOTAL 85				

GEOTECHNICAL PROFILE - ROADWAY
RETAINING WALL 1A AND 1B
HISTORICAL BORING LOG FOR B-001-0-02 (CONT.)

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:27:12 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ID009.dgn

PROJECT: CUY-77-11.69
TYPE: BRIDGE
PID: G01037 SFN: CUY-77-11.69
START: 9/23/02 END: 9/23/02

DRILLING FIRM / OPERATOR: ODOT / -
SAMPLING FIRM / LOGGER: ODOT / -
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: MOBILE B-53 R TRAILER
HAMMER: SAFETY HAMMER
CALIBRATION DATE: N/A
ENERGY RATIO (%): 60

STATION / OFFSET: 89+62, 72' RT.
ALIGNMENT: I-77
ELEVATION: 720.1 (ft) EOB: 74.4 ft.
COORD: 2201451.6580 N, 648199.6360 E

EXPLORATION ID B-002-0-02

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
RAILROAD BEDDING CRUSHED AGGREGATE	720.1 719.1	1																
MEDIUM DENSE, BROWN, **SANDY SILT**, LITTLE ROCK FRAGMENTS, LITTLE TO TRACE CLAY, EMBANKMENT FILL, MOIST NON-COHESIVE		2	5 10 11	21	-	SS-1	-	-	-	-	-	-	-	-	-	7	A-4a (V)	
		3																
		4	8 13 16	29	-	SS-2A	-	-	-	-	-	-	-	-	-	10	A-4a (V)	
	715.6					SS-2B	-	-	-	-	-	-	-	-	-	11	A-4a (V)	
VERY STIFF, BROWN, **SANDY SILT**, LITTLE ROCK FRAGMENTS, LITTLE TO SOME CLAY, EMBANKMENT FILL, MOIST COHESIVE		5																
		6																
		7	3 10 13	23	-	SS-3	-	-	-	-	-	-	-	-	-	12	A-4a (V)	
	712.6	8																
VERY STIFF, GRAY AND BROWN, **SILT AND CLAY**, TRACE SAND, EMBANKMENT FILL, MOIST		9	2 8 10	18	-	SS-4A	-	0	1	2	97	-	36	25	11	23	A-6a (8)	
						SS-4B	-	-	-	-	-	-	-	-	-	20	A-6a (V)	
		10																
		11																
		12																
	706.6	13																
LOOSE TO MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, TRACE SILT, POSSIBLE NATURAL SOIL, MOIST		14	5 8 9	17	-	SS-5	-	-	-	-	-	-	-	-	-	5	A-3a (V)	
		15																
		16																
		17																
		18																
		19	4 5 5	10	-	SS-6	-	-	-	-	-	-	-	-	-	5	A-3a (V)	
		20																
		21																
		22																
	696.6	23																
MEDIUM STIFF, GRAY, **SILT AND CLAY**, TRACE SAND, MOIST		24	2 2 4	6	-	SS-7	-	0	0	2	98	-	35	22	13	26	A-6a (9)	
▼		25																
		26																
		27	1 2 4	6	-	SS-8	-	-	-	-	-	-	-	-	-	25	A-6a (V)	
	692.6	28																
MEDIUM DENSE, GRAY, **GRAVEL WITH SAND**, LITTLE SILT AND CLAY, MOIST		29	11 14 9	23	-	SS-9	-	19	35	30	16	-	NP	NP	NP	6	A-1-b (0)	
		30																
		31																
		32	8 9 11	20	-	SS-10	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
		33																
		34	14 11 10	21	-	SS-11	-	40	39	13	8	-	NP	NP	NP	14	A-1-b (0)	
	685.1	35																
VERY STIFF, GRAY, **SILT AND CLAY**, TRACE SAND, MOIST COHESIVE		36																
		37	8 7 10	17	-	SS-12	-	0	1	1	98	-	30	19	11	21	A-6a (8)	
	681.6	38																
VERY STIFF, GRAY, **SILT**, AND CLAY, TRACE SAND, MOIST COHESIVE		39	8 9 11	20	-	SS-13	-	-	-	-	-	-	-	-	-	22	A-4b (V)	
		40																
		41																
	677.6	42	9 14 16	30	-	SS-14	-	0	1	1	50	48	28	21	7	22	A-4b (8)	
MEDIUM DENSE TO DENSE, GRAY, **COARSE AND FINE SAND**, LITTLE SILT, WET		43																
W 677.1		44	13 21 29	50	-	SS-15	-	-	-	-	-	-	-	-	-	17	A-3a (V)	
		45																
NOTE: WET AT 43.0 FEET DURING DRILLING		46																
		47																
		48																
		49	9 16 17	33	-	SS-16	-	-	-	-	-	-	-	-	-	19	A-3a (V)	
		50																
		51																
		52																
		53																
		54	12 17 16	33	-	SS-17	-	0	1	82	17	-	NP	NP	NP	20	A-3a (0)	
		55																
		56																
		57																
		58																
	660.1	59	10 17 18	35	-	SS-18	-	-	-	-	-	-	-	-	-	19	A-3a (V)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 6/29/26 13:05 - \\CLEVELAND-VFP\SYSPROJECTS\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\G01037_HISTORICAL CUY LOGS-11_8_2023.GPJ

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.1232 TOTAL P.1269	48 TOTAL 85	105743	SDM 05/01/26	NMC	TRC

GEOTECHNICAL PROFILE - ROADWAY
RETAINING WALL 2A
HISTORICAL BORING LOG FOR B-002-0-02

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:28:01 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ID010.dgn

PID: G01037 | SFN: CUY-77-11.69 | PROJECT: CUY-77-11.69 | STATION / OFFSET: 89+62, 72' RT. | START: 9/23/02 | END: 9/23/02 | PG 2 OF 2 | B-002-0-02

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
	660.1																	
VERY DENSE, GRAY, **FINE SAND**, TRACE SILT, TRACE GRAVEL, WET		61																
		62																
		63																
		64	14 24 31	55	-	SS-19	-	2	19	69	- 10 -		NP	NP	NP	15	A-3 (0)	
	654.1	65																
VERY DENSE, GRAY, **COARSE AND FINE SAND**, LITTLE SILT, WET		66																
		67																
		68																
		69	27 37 43	80	-	SS-20	-	-	-	-	-	-	-	-	-	12	A-3a (V)	
		70																
		71																
		72																
		73																
	645.7	74 EOB	15 50/5"	-	-	SS-21	-	0	3	78	- 19 -		NP	NP	NP	16	A-3a (0)	

NOTES: HISTORICAL BORING LOG RETYPED FROM BORING NO. B-2 COMPLETED ON 9/23/2002 FOR PROJECT NO. G01037 [BRIDGE NO. CUY-77-11.69]

ABANDONMENT METHODS, MATERIALS, QUANTITIES: NOT RECORDED

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 6/29/26 13:05 - \\CLEVELAND-VFP\SYSPROJECTS\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\G01037_HISTORICAL CUY LOGS-11_8_2023.GPJ

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.1233	49	105743	SDM 05/01/26	NMC	TRC
TOTAL P.1269	TOTAL 85				

GEOTECHNICAL PROFILE - ROADWAY
RETAINING WALL 2A
HISTORICAL BORING LOG FOR B-002-0-02 (CONT.)

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:28:44 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ID011.dgn

PROJECT: CUY-77-11.2 | DRILLING FIRM / OPERATOR: OTB / D. HEPNER | DRILL RIG: OTB TRUCK 2800 | STATION / OFFSET: 9+07, 23' LT. | EXPLORATION ID B-002-0-11
TYPE: BRIDGE | SAMPLING FIRM / LOGGER: S&ME / E. KODRICH | HAMMER: CME AUTOMATIC | ALIGNMENT: PERSHING AVENUE
PID: 22891 SFN: CUY-77-13.75 | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 10/24/11 | ELEVATION: 679.8 (ft) EOB: 125.0 ft. | PAGE 1 OF 3
START: 12/7/11 END: 12/8/11 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 82 | COORD: 2198652.2970 N, 658427.8180 E

MATERIAL DESCRIPTION AND NOTES	ELEV. 679.8	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
BRIDGE DECK - 9 INCHES	679.0																	
AIR	671.1																	
SLOPE PROTECTION - 9 INCHES	670.3																	
LOOSE, BROWN, **COARSE AND FINE SAND**, LITTLE SILT, TRACE CLAY, TRACE FINE GRAVEL, FILL, MOIST	669.1		1 2 6	11	-	SS-1A	-	-	-	-	-	-	-	-	-	13	A-3a (V)	
						SS-1B	-	-	-	-	-	-	-	-	-	-	UCF (V)	
FILL SLAG AND CONCRETE RUBBLE	666.3																	
LOOSE, DARK BROWN, **COARSE AND FINE SAND**, LT FINE TO COARSE GRAVEL, TR SILT, TR CLAY, POSSIBLE FILL, MOIST	662.8		3 2 2	5	-	SS-2	-	-	-	-	-	-	-	-	-	9	A-3a (V)	
VERY LOOSE, BROWN, **COARSE AND FINE SAND**, SOME SILT, TRACE CLAY, MOIST	660.8					SS-3A	-	-	-	-	-	-	-	-	-	18	A-3a (V)	
LOOSE, BROWN, **SILT**, LITTLE FINE TO COARSE SAND, TRACE CLAY, WET CONTAINS FEW VERY STIFF CLAYEY SILT SEAMS NOTE: SEEPAGE ENCOUNTERED AT 19.3 FT			3 4 3	10	-	SS-3B	-	0	1	11	80	8	NP	NP	NP	28	A-4b (8)	
NOTE: GROUNDWATER ENCOUNTERED AT 22.5 FT DURING DRILLING	656.0	W 657.3																
LOOSE, GRAY, **SILT**, LT FINE SAND, LT CLAY, TR C/ SAND, TR F/ GRAVEL, WET CONTAINS FEW STIFF SILTY CLAY SEAMS			3 2 2	5	-	SS-4A	-	-	-	-	-	-	-	-	-	27	A-4b (V)	
						SS-4B	-	-	-	-	-	-	-	-	-	26	A-4b (V)	
			2 3 3	8	-	SS-5	-	1	1	19	62	17	18	18	NP	25	A-4b (8)	
			3 3 3	8	-	SS-6	-	-	-	-	-	-	-	-	-	23	A-4b (V)	
VERY STIFF TO HARD, GRAY, **SILT AND CLAY**, LITTLE FINE TO COARSE SAND, TRACE FINE GRAVEL, DAMP TO MOIST	649.3		3 5 8	18	-	SS-7	2.0-4.2	-	-	-	-	-	-	-	-	20	A-6a (V)	
					-	ST-8	2.0-2.5	2	4	9	46	39	28	17	11	19	A-6a (8)	
NOTE: USED 3-1/4" HSA TO A DEPTH OF 35.5 FT	643.8																	
STIFF TO VERY STIFF, GRAY, **SILT**, SM TO AND CLAY, LT F/C SAND, TR F/ GRAVEL, DAMP TO MOIST CONTAINS FEW HARD ZONES NOTE: MUD ROTARY DRILLING USING A 3-1/8" TRICONE ROLLER-BIT WAS USED FROM 35.5 FT TO 125.0 FT			4 5 6	15	-	SS-9	1.0-2.0	4	8	8	56	24	23	16	7	17	A-4b (8)	
			3 5 8	18	-	SS-10	1.3-2.0	-	-	-	-	-	-	-	-	21	A-4b (V)	
			4 9 8	23	-	SS-11	1.0-2.5	0	8	3	51	38	27	17	10	20	A-4b (8)	
			4 6 8	19	-	SS-12	1.2-2.8	-	-	-	-	-	-	-	-	20	A-4b (V)	
			4 8 13	29	-	SS-13	2.1-4.2	-	-	-	-	-	-	-	-	19	A-4b (V)	
	627.8																	
VERY DENSE, GRAY, **SILT**, LT CLAY, LT TO TR F/C SAND, TR FINE GRAVEL, MOIST	623.3		11 25 36	83	-	SS-14	-	1	1	16	62	20	19	17	2	15	A-4b (8)	
VERY DENSE, GRAY, **COARSE AND FINE SAND**, LITTLE SILT, TRACE CLAY, WET			18 20 26	63	-	SS-15	-	-	-	-	-	-	-	-	-	20	A-3a (V)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 6/29/26 13:16 - \\CLEVELAND-VFP\SYSPROJECTS\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\22891_HISTORICAL CUY LOGS-11_8_2023.GPJ

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.1234 TOTAL P.1269	50 TOTAL 85	105743	SDM 05/01/26	NMC	TRC

GEOTECHNICAL PROFILE - ROADWAY
CCTV POLE FOUNDATION
HISTORICAL BORING LOG FOR B-002-0-11

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:29:38 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ID012.dgn

PID: 22891 | SFN: CUY-77-11.21 | PROJECT: CUY-77-11.2 | STATION / OFFSET: 9+07, 23' LT. | START: 12/7/11 | END: 12/8/11 | PG 2 OF 3 | B-002-0-11

MATERIAL DESCRIPTION AND NOTES	ELEV. 619.8	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
	618.8	61																
VERY DENSE, BROWNISH-GRAY, **SILT**, LITTLE CLAY, TRACE TO LITTLE FINE TO COARSE SAND, MOIST TO WET CONTAINS FEW HARD CLAYEY SILT SEAMS		62																
		63																
		64	17 25 24	67	-	SS-16	-	-	-	-	-	-	-	-	-	16	A-4b (V)	
		65																
		66																
		67																
		68																
		69	14 22 32	74	-	SS-17	-	0	1	10	76	13	20	21	NP	20	A-4b (8)	
		70																
		71																
		72																
		73																
		74	14 18 28	63	-	SS-18	-	0	1	4	78	17	22	20	2	16	A-4b (8)	
		75																
	602.8	76																
DENSE, BROWNISH-GRAY, **SILT**, SOME CLAY, LITTLE FINE TO COARSE SAND, MOIST TO WET		77																
		78																
	600.3	79	11 15 17	44	-	SS-19A	-	-	-	-	-	-	-	-	-	24	A-4b (V)	
VERY STIFF TO HARD, BROWN, **SILT AND CLAY**, TRACE FINE TO COARSE SAND, MOIST CONTAINS FEW SILT LENSES		80				SS-19B	3.2-4.2	-	-	-	-	-	-	-	-	22	A-6a (V)	
		81																
		82																
		83																
	595.1	84	8 13 16	40	-	SS-20A	4.5+	0	1	1	56	42	29	17	12	22	A-6a (9)	
VERY STIFF TO HARD, GRAYISH-BROWN, **SILT AND CLAY**, TRACE FINE TO COARSE SAND, DAMP TO MOIST CONTAINS FEW SILT AND FINE SAND LENSES AND ZONES OF FINE TO COARSE GRAVEL		85				SS-20B	3.7-4.2	-	-	-	-	-	-	-	-	22	A-6a (V)	
		86																
		87																
		88																
		89	7 12 14	36	-	SS-21	2.4-4.5+	17	1	1	46	35	32	20	12	19	A-6a (V)	
		90																
		91																
		92																
		93																
		94	6 11 15	36	-	SS-22	2.6-4.5+	-	-	-	-	-	-	-	-	22	A-6a (V)	
		95																
		96																
		97																
		98																
		99	6 10 15	34	-	SS-23	2.0-4.5+	-	-	-	-	-	-	-	-	22	A-6a (V)	
		100																
		101																
		102																
		103																
		104	7 11 16	37	-	SS-24	2.0-4.5+	-	-	-	-	-	-	-	-	22	A-6a (V)	
		105																
		106																
		107																
		108																
		109	7 11 16	37	-	SS-25	2.6-4.5+	0	1	1	58	40	30	19	11	22	A-6a (8)	
NOTE: BOREHOLE CAVED IN AT 110.0 FT		110																
		111																
		112																
		113																
		114	6 8 13	29	-	SS-26	2.5-4.0	-	-	-	-	-	-	-	-	18	A-6a (V)	
		115																
		116																
	562.8	117																
VERY STIFF TO HARD, GRAY, **SILTY CLAY**, TRACE FINE TO COARSE SAND, TRACE FINE GRAVEL, DAMP TO MOIST		118																
		119	8 12 17	40	-	SS-27	3.6-4.5+	-	-	-	-	-	-	-	-	16	A-6b (V)	
		120																
		121																

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 6/29/26 13:16 - \\CLEVELAND-VFP\SYSPROJECTS\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\22891_HISTORICAL CUY LOGS-11_8_2023.GPJ

SHEET	TOTAL	SUBSET	TOTAL	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.1235	P.1269	51	85	105743	SDM 05/01/26	NMC	TRC

GEOTECHNICAL PROFILE - ROADWAY
CCTV POLE FOUNDATION
HISTORICAL BORING LOG FOR B-002-0-11 (CONT.)

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:30:21 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ID013.dgn

PID: 22891	SFN: CUY-77-11.21	PROJECT: CUY-77-11.2	STATION / OFFSET: 9+07, 23' LT.	START: 12/7/11	END: 12/8/11	PG 3 OF 3	B-002-0-11

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
VERY STIFF TO HARD, GRAY, **SILTY CLAY**, TRACE FINE TO COARSE SAND, TRACE FINE GRAVEL, DAMP TO MOIST *(continued)*	557.9	123																
		124	6 8 11	26	-	SS-28	2.0-4.5+	1	2	3	35	59	33	17	16	23	A-6b (10)	
	554.8	EOB 125																

NOTES: HISTORICAL BORING LOG RETYPED FROM BORING NO. B-002-0-11 COMPLETED ON 12/8/2011 FOR PROJECT NO. 22891 [CUY-77-11.69]

ABANDONMENT METHODS, MATERIALS, QUANTITIES: TREMIED 70 GAL. CEMENT; PLACED 1.5 BAGS QUICKCRETE

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 6/29/26 13:16 - \\CLEVELAND-VFP\SYSPROJECTS\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\22891_HISTORICAL CUY LOGS-11_8_2023.GPJ

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.1236 TOTAL P.1269	52 TOTAL 85	105743	SDM 05/01/26	NMC	TRC

GEOTECHNICAL PROFILE - ROADWAY
CCTV POLE FOUNDATION
HISTORICAL BORING LOG FOR B-002-0-11 (CONT.)

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:31:06 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ID014.dgn

PROJECT: CUY-77-13.31
TYPE: BRIDGE
PID: 85188 SFN: CUY-77-13.31
START: 8/14/12 END: 8/14/12

DRILLING FIRM / OPERATOR: B&P / R. WEBB
SAMPLING FIRM / LOGGER: B&P / R. BLASKO
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: MOBILE B57 ORV
HAMMER: DIEDRICH AUTOMATIC
CALIBRATION DATE: 6/30/11
ENERGY RATIO (%): 90"

STATION / OFFSET: 174+75, 45' LT.
ALIGNMENT: I-77
ELEVATION: 682.2 (ft) EOB: 75.0 ft.
COORD: 2199441.4960 N, 656216.6670 E

EXPLORATION ID B-004-0-12

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	682.2																	
	681.0	1																
MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, SOME SILT, LITTLE CLAY, TRACE GRAVEL, FILL, MOIST CONTAINS BRICK FRAGMENTS		2	12 3 4	11	-	SS-1	-	-	-	-	-	-	-	-	-	13	A-3a (V)	
	679.2	3																
MEDIUM DENSE, BROWN, **SANDY SILT**, LITTLE CLAY, TRACE GRAVEL, FILL, DAMP		4	4 4 5	14	-	SS-2	3.5-3.7	6	21	37	18	18	NP	NP	NP	10	A-4a (0)	
	676.7	5																
STIFF, BROWN AND GRAY, **CLAY**, AND SILT, LITTLE SAND, TRACE GRAVEL, FILL, MOIST		6	5 3 3	9	-	SS-3	1.5-1.7	2	7	13	36	42	42	24	18	31	A-7-6 (12)	
	674.2	7																
STIFF TO VERY STIFF, BROWN MOTTLED WITH GRAY AND DARK BROWN, **SILTY CLAY**, TRACE TO LITTLE SAND, TRACE GRAVEL, MOIST		8																
		9	2 4 7	17	-	SS-4	1.3-3.9	-	-	-	-	-	-	-	-	22	A-6b (V)	
		10																
		11																
		12	4 6 9	23	-	SS-5	2.9-4.3	-	-	-	-	-	-	-	-	17	A-6b (V)	
	669.2	13																
LOOSE TO MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, LT TO SM SILT, TR TO LT CLAY, TR GRAVEL, MOIST TO WET		14	3 3 3	9	-	SS-6	-	1	15	55	22	7	NP	NP	NP	13	A-3a (0)	
		15																
		16	3 3 4	11	-	SS-7	-	-	-	-	-	-	-	-	-	8	A-3a (V)	
		17																
		18																
		19	3 2 3	8	-	SS-8	-	-	-	-	-	-	-	-	-	10	A-3a (V)	
		20																
		21																
		22	4 3 5	12	-	SS-9	-	-	-	-	-	-	-	-	-	14	A-3a (V)	
		23																
		24	5 5 5	15	-	SS-10	-	0	1	73	14	12	NP	NP	NP	18	A-3a (0)	
		25																
		26																
CHANGES TO ORANGE-BROWN		27	4 6 7	20	-	SS-11	-	-	-	-	-	-	-	-	-	21	A-3a (V)	
	654.2	28																
MEDIUM DENSE, BROWN TO ORANGE-BROWN, **FINE SAND**, LITTLE COARSE SAND, TRACE SILT, TRACE CLAY, DAMP		29	4 5 6	17	-	SS-12	-	0	17	73	5	5	NP	NP	NP	9	A-3 (0)	
		30																
	650.5	31																
DENSE, BROWN WITH ORANGE-BROWN AND DARK GRAY, **COARSE AND FINE SAND**, LITTLE SILT, TRACE CLAY, TRACE GRAVEL, WET		32																
	W 648.7	33																
		34	6 2 1	5	-	SS-13	-	2	13	63	12	10	NP	NP	NP	27	A-3a (0)	
		35																
		36																
		37																
		38																
		39	7 10 12	33	-	SS-14	-	0	0	77	18	5	NP	NP	NP	23	A-3a (0)	
		40																
	640.5	41																
DENSE TO VERY DENSE, GRAY, **SILT**, SOME TO TRACE CLAY, LITTLE TO TRACE SAND, MOIST TO WET		42																
		43																
		44	20 17 17	51	-	SS-15	-	0	0	20	66	14	NP	NP	NP	21	A-4b (8)	
		45																
		46																
		47																
		48																
		49	9 10 14	36	-	SS-16	-	0	0	5	71	24	22	17	5	17	A-4b (8)	
		50																
		51																
		52																
		53																
		54	8 12 16	42	-	SS-17	-	-	-	-	-	-	-	-	-	16	A-4b (V)	
		55																
		56																
		57																
		58																
SS-18 CHANGES TO "AND SAND"; CONTAINS FEW DECAYED ROOTS		59	20 28 29	86	-	SS-18	-	0	0	38	53	9	NP	NP	NP	20	A-4b (5)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 6/29/26 13:33 - \\CLEVELAND-VFP\SYSPROJECTS\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\85188_HISTORICAL CUY LOGS-6-27-26 DA.GPJ

SHEET	TOTAL
P.1237	P.1269

SUBSET	TOTAL
53	85

PROJECT ID: 105743

REVIEWER: SDM 05/01/26

DESIGNER: NMC

DESIGN AGENCY: TRC

GEOTECHNICAL PROFILE - ROADWAY
RETAINING WALL 5B
HISTORICAL BORING LOG FOR B-004-0-12

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:31:52 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ID015.dgn

PID: 85188 | SFN: CUY-77-13.31 | PROJECT: CUY-77-13.31 | STATION / OFFSET: 174+75, 45' LT. | START: 8/14/12 | END: 8/14/12 | PG 2 OF 2 | B-004-0-12

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	ABAN-DONED
DENSE TO VERY DENSE, GRAY, **SILT**, SOME TO TRACE CLAY, LITTLE TO TRACE SAND, MOIST TO WET *(continued)*	622.2	61																
		62																
		63																
		64	40 50 5	83	-	SS-19	-	-	-	-	-	-	-	-	-	16	A-4b (V)	
		65																
		66																
		67																
		68																
		69	5 11 12	35	-	SS-20	-	-	-	-	-	-	-	-	-	18	A-4b (V)	
		70																
		71																
		72																
		73																
		74	6 10 12	33	-	SS-21	2.2-3.0	0	0	1	52	47	28	18	10	24	A-4b (8)	
	607.2	75 EOB																

NOTES: HISTORICAL BORING LOG RETYPED FROM BORING NO. B-004-0-12 COMPLETED ON 8/14/2012 FOR PROJECT NO. 85188 [BRIDGE NO. CUY-77-11.69]

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 1 BAG ASPHALT PATCH; PUMPED 2 BAGS BENTONITE GROUT; PLACED 2 BAGS QUICKCRETE

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 6/29/26 13:33 - \\CLEVELAND-VFP\SYSPROJECTS\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\85188_HISTORICAL CUY LOGS-6-27-26 DA.GPJ

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.1238	54	105743	SDM 05/01/26	NMC	TRC
TOTAL P.1269	TOTAL 85				

GEOTECHNICAL PROFILE - ROADWAY
RETAINING WALL 5B
HISTORICAL BORING LOG FOR B-004-0-12 (CONT.)

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:32:37 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ID016.dgn

PROJECT: CUY-77-13.31
TYPE: BRIDGE REPLACEMENT
PID: 85188 BR ID:
START: 8/7/12 END: 8/7/12

DRILLING FIRM / OPERATOR: B&P / R.WEBB
SAMPLING FIRM / LOGGER: B&P / R.BLASKO
DRILLING METHOD: 3.25" HSA / TRICONE
SAMPLING METHOD: SPT

DRILL RIG: MOBILE B57 ORV
HAMMER: DIEDRICH AUTOMATIC
CALIBRATION DATE: 6/30/11
ENERGY RATIO (%): 95.1

STATION / OFFSET: 175+50, 61.0 RT
ALIGNMENT: IR 77
ELEVATION: 670.2 (MSL), EOB: 110.0 ft.
COORD: 2199534.825 N, 656305.845 E

EXPLORATION ID B-005-0-12

MATERIAL DESCRIPTION AND NOTES	ELEV. 670.2	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
2.0", **ASPHALT**	670.0																	
10.0", **CONCRETE**	669.2																	
DENSE, BROWN, **SANDY SILT**, LITTLE CLAY, TRACE GRAVEL, CONTAINS BRICK AND CONCRETE FRAGMENTS AND FEW ROOTS, DRY **(FILL)**	667.2		15 15 13	44	89	SS-1	-	2	20	41	19	18	NP	NP	NP	5	A-4a (0)	
DENSE, BROWN, **COARSE AND FINE SAND** TRACE TO SOME SILT, TRACE CLAY, TRACE GRAVEL, DRY TO DAMP			8 10 11	33	83	SS-2	-	1	16	51	22	10	NP	NP	NP	5	A-3a (0)	
			12 10 10	32	94	SS-3	-	-	-	-	-	-	-	-	-	3	A-3a (V)	
			7 10 11	33	100	SS-4	-	-	-	-	-	-	-	-	-	4	A-3a (V)	
			9 11 13	38	100	SS-5	-	1	23	65	6	5	NP	NP	NP	4	A-3a (0)	
			9 12 8	32	100	SS-6	-	-	-	-	-	-	-	-	-	5	A-3a (V)	
			8 10 9	30	100	SS-7	-	-	-	-	-	-	-	-	-	6	A-3a (V)	
@18.5'; SS-8 TO SS-10 CHANGES TO MEDIUM DENSE, BROWN AND DARK BROWN, WET			6 8 7	24	94	SS-8	-	-	-	-	-	-	-	-	-	21	A-3a (V)	
		W	2 5 7	19	100	SS-9	-	0	0	77	18	5	NP	NP	NP	29	A-3a (0)	
			5 11 18	46	100	SS-10	-	0	1	80	14	5	NP	NP	NP	22	A-3a (0)	
	644.7																	
DENSE TO MEDIUM DENSE, GRAY, **SANDY SILT**, TRACE CLAY, TRACE GRAVEL, WET			8 12 14	41	100	SS-11	-	-	-	-	-	-	-	-	-	21	A-4a (V)	
			3 5 6	17	100	SS-12	-	-	-	-	-	-	-	-	-	21	A-4a (V)	
@38.5'; CHANGES TO HARD			6 10 16	41	100	SS-13	-	-	-	-	-	-	20	15	5	-	A-4b (V)	
			11 10 13	36	83	SS-14	4.5+	0	0	1	73	26	NP	NP	NP	19	A-4b (8)	
	628.5																	
STIFF TO VERY STIFF, GRAY, **SILT AND CLAY**, TRACE SAND, MOIST			3 6 6	19	94	SS-15	2.50	0	0	1	59	40	30	17	13	27	A-6a (9)	
			5 7 10	27	100	SS-16	3.50	-	-	-	-	-	-	-	-	27	A-6a (V)	
			6 10 11	33	94	SS-17	1.75 - 2.5	-	-	-	-	-	-	-	-	25	A-6a (V)	
@58.5'; SS-18 SILTY LENSES			5 8 9	27	94	SS-18	2.0 - 2.5	0	0	1	52	47	32	18	14	24	A-6a (10)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT GDT - 10/2/13 10:33 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\CUY-77-13.31 (ODOT)\BRIDGE BORINGS\CUY-77-13.31.GPJ

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P 1239 TOTAL P 1269	55 TOTAL 85	105743	SDM 05/01/26	NMC	TRC

GEOTECHNICAL PROFILE - ROADWAY
CUY-77-11.21
HISTORICAL BORING LOG FOR B-005-0-12

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:33:22 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ID017.dgn

PID: 85188 | BR ID: | PROJECT: CUY-77-13.31 | STATION / OFFSET: 175+50, 61.0 RT | START: 8/7/12 | END: 8/7/12 | PG 2 OF 2 | B-005-0-12

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 TO VERY STIFF, GRAY, **SILT AND CLAY**, TRACE SAND, MOIST *(continued)*	610.2	61																
		62																
		63																
		64	6 6 8	22	100	SS-19	1.75	-	-	-	-	-	-	-	-	26	A-6a (V)	
		65																
		66																
		67																
		68																
		69	5 8 11	30	100	SS-20	3.8 - 4.25	-	-	-	-	-	-	-	-	20	A-6a (V)	
		70																
		71																
		72																
		73																
		74	5 7 10	27	100	SS-21	3.25 - 3.5	-	-	-	-	-	-	-	-	21	A-6a (V)	
		75																
		76																
		77																
		78																
@78.5'; SS-22 GRAY WITH BROWN MOTTLES		79	4 5 6	17	100	SS-22	1.25 - 1.5	0	0	0	44	56	30	17	13	24	A-6a (9)	
		80																
		81																
		82																
		83																
@83.5'; SS-23 TO SS-24 CONTAINS SILT LENSES		84	5 8 12	32	94	SS-23	3.25 - 2.50	-	-	-	-	-	-	-	-	23	A-6a (V)	
		85																
		86																
		87																
		88																
		89	7 9 12	33	100	SS-24	2.0 - 2.75	-	-	-	-	-	-	-	-	22	A-6a (V)	
		90																
		91																
		92																
		93																
		94	10 12 18	48	94	SS-25	3.25 - 4.0	0	1	2	39	58	30	17	13	20	A-6a (9)	
		95																
		96																
	573.5	97																
STIFF TO VERY STIFF, GRAY MOTTLED WITH RED-BROWN, **SILTY CLAY**, LITTLE SAND, TRACE SAND, MOIST		98																
		99	7 8 11	30	100	SS-26	2.00	-	-	-	-	-	-	-	-	18	A-6b (V)	
		100																
		101																
		102																
		103																
		104	5 7 10	27	94	SS-27	1.75 - 2.6	-	-	-	-	-	-	-	-	24	A-6b (V)	
		105																
		106																
		107																
		108																
	560.2	109	6 7 10	27	100	SS-28	1.75	-	-	-	-	-	-	-	-	24	A-6b (V)	
		EOB 110																

NOTES: GROUNDWATER ENCOUNTERED AT 21.0' DURING DRILLING. CAVE DEPTH 25.0'. SWITCH TO TRICONE AT 35.0'.
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 3 BAGS BENTONITE GROUT; PLACED 1 BAG QUICKCRETE

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 10/2/13 10:33 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\CUY-77-13.31 (ODOT)\BRIDGE BORINGS\CUY-77-13.31.GPJ

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.1240 TOTAL P.1269	56 TOTAL 85	105743	SDM 05/01/26	NMC	TRC

GEOTECHNICAL PROFILE - ROADWAY
CUY-77-11.21
HISTORICAL BORING LOG FOR B-005-0-12 (CONT.)

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:34:10 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ID018.dgn

PROJECT: CUY-77-13.31
TYPE: BRIDGE
PID: 85188 SFN: CUY-77-13.31
START: 8/1/12 END: 8/2/12

DRILLING FIRM / OPERATOR: B&P / R. WEBB
SAMPLING FIRM / LOGGER: B&P / R. BLASKO
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: MOBILE B57 ORV
HAMMER: DIEDRICH AUTOMATIC
CALIBRATION DATE: 6/30/11
ENERGY RATIO (%): 90*

STATION / OFFSET: 175+71, 65' LT.
ALIGNMENT: I-77
ELEVATION: 665.1 (ft) EOB: 110.0 ft.
LAT / LONG: 41.465018, -81.657489

EXPLORATION ID B-006-0-12
PAGE 1 OF 2

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
	665.1																	
CONCRETE	664.6																	
GRANULAR BASE	664.1																	
MEDIUM DENSE, BROWN, **FINE SAND**, TRACE COARSE SAND, TRACE CLAY, TRACE SILT, DAMP			12 9 10	29	-	SS-1	-	-	-	-	-	-	-	-	-	7	A-3 (V)	
			5 6 8	21	-	SS-2	-	0	9	83	3	5	NP	NP	NP	3	A-3 (0)	
F S			3 4 4	12	-	SS-3	-	-	-	-	-	-	-	-	-	6	A-3 (V)	
	657.1																	
LOOSE, BROWN, **SILTY SAND**, LITTLE CLAY, WET			3 3 3	9	-	SS-4	-	0	1	48	40	11	NP	NP	NP	19	A-4a (3)	
	654.6																	
MEDIUM DENSE TO DENSE, BROWN, **COARSE AND FINE SAND**, TRACE SILT, TRACE CLAY, TRACE GRAVEL, MOIST TO WET			5 5 5	15	-	SS-5	-	3	6	75	9	7	NP	NP	NP	8	A-3a (0)	
			5 7 7	21	-	SS-6	-	0	9	79	6	6	NP	NP	NP	9	A-3a (0)	
		W 649.1																
NOTE: GROUNDWATER ENCOUNTERED AT 16.0 FT DURING DRILLING			3 3 4	11	-	SS-7	-	-	-	-	-	-	-	-	-	26	A-3a (V)	
			3 2 9	17	-	SS-8	-	-	-	-	-	-	-	-	-	33	A-3a (V)	
			7 8 10	27	-	SS-9	-	-	-	-	-	-	-	-	-	29	A-3a (V)	
			4 8 13	32	-	SS-10	-	-	-	-	-	-	-	-	-	19	A-3a (V)	
	639.6																	
MEDIUM DENSE TO DENSE, GRAY, **SILT**, SOME CLAY, LITTLE SAND, MOIST TO WET			4 7 9	24	-	SS-11	-	0	0	13	62	25	NP	NP	NP	19	A-4b (8)	
			5 8 13	32	-	SS-12	-	-	-	-	-	-	-	-	-	18	A-4b (V)	
CHANGES TO VERY DENSE NOTE: CAVE-IN DEPTH AT 34.0 FT			11 16 19	53	-	SS-13	-	0	0	2	74	24	NP	NP	NP	17	A-4b (8)	
			20 29 45	111	-	SS-14	-	-	-	-	-	-	-	-	-	17	A-4b (V)	
			13 18 20	57	-	SS-15	-	-	-	-	-	-	-	-	-	18	A-4b (V)	
	618.1																	
STIFF TO VERY STIFF, GRAY, **SILT AND CLAY**, TRACE GRAVEL, MOIST			4 8 10	27	-	SS-16	1.5-2.0	-	-	-	-	-	-	-	-	30	A-6a (V)	
			5 7 10	26	-	SS-17	1.25-1.5	1	0	0	54	45	31	18	13	27	A-6a (9)	
NOTE: SWITCHED TO TRICONE AT 55.0 FT			5 6 9	23	-	SS-18	1.25-1.5	-	-	-	-	-	-	-	-	24	A-6a (V)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 4/23/26 13:36 - W:\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\85188_HISTORICAL CUY LOGS-11_8_2023.GPJ

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.1241 TOTAL P.1269	57 TOTAL 85	105743	SDM 05/01/26	NMC	TRC

GEOTECHNICAL PROFILE - ROADWAY
RETAINING WALL 5C
HISTORICAL BORING LOG FOR B-006-0-12

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:34:54 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ID019.dgn

PID: 85188 | SFN: CUY-77-13.31 | PROJECT: CUY-77-13.31 | STATION / OFFSET: 175+71, 65' LT. | START: 8/1/12 | END: 8/2/12 | PG 2 OF 2 | B-006-0-12

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
STIFF TO VERY STIFF, GRAY, **SILT AND CLAY**, TRACE GRAVEL, MOIST *(continued)*	605.1	61–63																
		64	7 8 11	29	-	SS-19	2.25-2.75	-	-	-	-	-	-	-	-	21	A-6a (V)	
		65–68																
		69	5 5 7	18	-	SS-20	1.00	0	0	0	46	54	29	15	14	24	A-6a (10)	
		70–73																
		74	5 6 7	20	-	SS-21	1.25	-	-	-	-	-	-	-	-	26	A-6a (V)	
		75–78																
		79	5 6 8	21	-	SS-22	1.25-2.0	0	0	0	47	53	29	17	12	24	A-6a (9)	
		80–83																
		84	5 6 9	23	-	SS-23	0.6-0.75	-	-	-	-	-	-	-	-	24	A-6a (V)	
		85–88																
		89	7 9 11	30	-	SS-24	1.75-2.0	-	-	-	-	-	-	-	-	25	A-6a (V)	
		90–93																
		94	6 8 10	27	-	SS-25	0.75-1.0	-	-	-	-	-	-	-	-	19	A-6a (V)	
		95–98																
MEDIUM STIFF TO STIFF, GRAY, **SILT**, AND CLAY, TRACE GRAVEL, WET	568.1	99	10 8 9	26	-	SS-26	0.5-2.0	1	0	0	57	42	26	17	9	28	A-4b (8)	
	563.6	100–103																
SOFT TO MEDIUM STIFF, GRAY, **SILT AND CLAY**, TRACE SAND, TRACE GRAVEL, MOIST		104	8 10 12	33	-	SS-27	0.5-0.75	1	2	3	29	65	33	18	15	25	A-6a (10)	
		105–108																
		109	8 9 11	30	-	SS-28	0.5-0.75	-	-	-	-	-	-	-	-	24	A-6a (V)	
	555.1	EOB 110																

NOTES: HISTORICAL BORING LOG RETYPED FROM BORING NO. B-006-0-12 COMPLETED ON 8/2/2012 FOR PROJECT NO. 85188 [BRIDGE NO. CUY-77-11.69]

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 3 BAGS BENTONITE GROUT; PLACED 0.5 BAG QUICKCRETE

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 4/23/26 13:36 - W:\ODOT\301525 CUY-77-11.41 PID_105743\GEOTECHNICAL\TRC LOGS\85188_HISTORICAL CUY LOGS-11_8_2023.GPJ

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.1242 TOTAL P.1269	58 TOTAL 85	105743	SDM 05/01/26	NMC	TRC

GEOTECHNICAL PROFILE - ROADWAY
RETAINING WALL 5C
HISTORICAL BORING LOG FOR B-006-0-12 (CONT.)

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:35:38 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ID020.dgn

PROJECT: CUY-77-11.21
TYPE: SUBGRADE
PID: 105743 SFN:
START: 3/19/18 END: 3/19/18

DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS
SAMPLING FIRM / LOGGER: AECOM / TG
DRILLING METHOD: 4" SSA
SAMPLING METHOD: SPT

DRILL RIG: SIMCO 2800 (062012)
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 11/13/18
ENERGY RATIO (%): 84.5

STATION / OFFSET: 159+05, 40' LT.
ALIGNMENT: I-77 EX CL
ELEVATION: 678.7 (MSL) EOB: 7.5 ft.
LAT / LONG: 41.460410, -81.657160

EXPLORATION ID B-022-0-18
PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 678.7	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	ABAN-DONED
8" ASPHALT	678.0																	
9" CONCRETE	677.3	1																
VERY DENSE, DARK BROWN, **STONE FRAGMENTS WITH SAND**, STONE FRAGMENTS AS SLAG, FILL, MOIST	676.2	2	30 50/2"	-	100	SS-1	-	-	-	-	-	-	-	-	-	11	A-1b (V)	
VERY STIFF, BROWN, **SANDY SILT**, MOIST	675.4	3				SS-2A	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
STIFF, GRAYISH BROWN, **SILT AND CLAY**, INTERBEDDED SILT LAMINAE, MOIST	674.2	4	5 5 6	15	56	SS-2B	2.88	0	0	1	50	49	31	19	12	22	A-6a (9)	
MEDIUM STIFF, GRAYISH BROWN, **SILTY CLAY**, MOIST	672.5	5	4 4 5	13	78	SS-3	0.58	0	0	1	30	69	39	23	16	27	A-6b (10)	
		6				SS-4A	1.00	-	-	-	-	-	-	-	-	16	A-6b (V)	
MEDIUM DENSE, GRAYISH BROWN, **SANDY SILT**, MOIST @ 6.9' - OXIDIZED @ 7.1' - BECOMES MOIST TO WET, DILATANT	671.2 EOB	7	7 9 9	25	83	SS-4B	-	-	-	-	-	-	-	-	-	-	A-4a (V)	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PATCHED AT SURFACE WITH 8 IN. ASPHALT PATCH; PLACED 9 IN. CONCRETE; BACKFILLED WITH 6.1 FT. SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 6/26/26 19:06 - C:\USERS\TGWILLIAMS\ONEDRIVE - TRC\CUY-77\CUY-77-11.21 BORING LOGS REV NOV 2025.GPJ

SHEET P.1243 | TOTAL P.1269
SUBSET 59 | TOTAL 85
PROJECT ID 105743
REVIEWER SDM 05/01/26
DESIGNER NMC
DESIGN AGENCY TRC

GEOTECHNICAL PROFILE - ROADWAY
RETAINING WALL 6
BORING LOG FOR B-022-0-18

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:36:17 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCalabro@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_B021.dgn

639.3	HARD, BROWNISH GRAY, **SILT**, MOIST												
		3	5 7	17	83	SS-6	4.08	2	0	1	73	24	25
634.3	SOFT TO MEDIUM STIFF, BROWNISH GRAY, **SILT**, DILATENT, WITH INTERBEDDED NON-COHESIVE SILT SEAMS UP TO 1.5" THICK, WET												
		2	3 3	8	89	SS-7	0.50	-	-	-	-	-	-
		2	3 5	11	100	SS-8	0.67	0	0	0	65	35	26
625.6	LOOSE, BROWNISH GRAY, **SILT**, TRACE SAND, WET @ 31.3'-31.9': UCS = 2398 PSF, QU=2398 PSF @ 10.2% STRAIN, DD=97.74 PCF				100	ST-1	-	0	0	1	86	13	NI
	@ 33' - BECOMES WITH INTERBEDDED SILT LAMINAE	2	2 4	8	94	SS-9	-	-	-	-	-	-	-
619.6	MEDIUM STIFF, BROWNISH GRAY, **SILT AND CLAY**, WITH SILT LAMINAE, MOIST												
	@ 38.9' - 0.5" DARK GRAY ORGANIC STAINING	3	4 5	13	94	SS-10	0.75	1	0	1	45	53	33
	@ 43.5' - BECOMES STIFF	3	6 8	20	100	SS-11	1.50	-	-	-	-	-	-
	@ 48.5' - BECOMES STIFF TO VERY STIFF	4	6 9	21	94	SS-12	2.00	-	-	-	-	-	-
606.1	EOB												

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: MIXED WITH BENTONITE CHIPS; MIXED WITH BENTONITE POWDER; MIXED WITH CEMENT; BACI

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 6/26/26 19:18 - C:\USERS\TGWILLIAMS\ONEDRIVE - TRC\CUY-77\CUY-77-11.21 BORING LOGS REV NOV 2025.GPJ

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.1244 P.1269 TOTAL	60 TOTAL 85	105743	SDM 05/01/26	EB	TRC

GEOTECHNICAL PROFILE - ROADWAY
CUY-77-11.21
BORING LOG FOR B-025-0-18

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:37:01 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ID022.dgn

PROJECT: CUY-77-11.21
TYPE: BRIDGE
PID: 105743 SFN:
START: 3/15/19 END: 3/15/19

DRILLING FIRM / OPERATOR: OHIO TESTBOR / CS
SAMPLING FIRM / LOGGER: AECOM / TG
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: SIMCO 2800 (062012)
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 11/13/18
ENERGY RATIO (%): 84.5

STATION / OFFSET: 171+20, 74' LT.
ALIGNMENT: I-77 EX CL
ELEVATION: 653.6 (MSL) EOB: 50.0 ft.
LAT / LONG: 41.463700, -81.657880

EXPLORATION ID B-026-0-18

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
1" TOPSOIL	653.5																	
MEDIUM DENSE, BROWN AND GRAY, **GRAVEL WITH SAND**, FILL, MOIST	651.9		6 13 5	25	78	SS-1A	-	23	39	22	12	4	NP	NP	NP	17	A-1-b (0)	
VERY STIFF, BROWN, **SANDY SILT**, TRACE GRAVEL, FILL, MOIST	650.1					SS-1B	2.25	1	16	26	35	22	17	14	3	15	A-4a (4)	
LOOSE, BROWN, **COARSE AND FINE SAND**, FILL, MOIST	649.2		3 3 4	10	78	SS-2A	-	3	43	31	14	9	NP	NP	NP	9	A-3a (0)	
						SS-2B	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
STIFF, BROWN, **SILT**, LITTLE SAND, FILL, MOIST	648.1					SS-2C	-	0	3	7	58	32	26	18	8	18	A-4b (8)	
LOOSE, BROWN, **COARSE AND FINE SAND**, LITTLE TO SOME SILT, FILL, MOIST	647.0																	
STIFF TO HARD, BROWN, **SANDY SILT**, FILL, MOIST	645.1		2 2 2	6	67	SS-3A	-	3	24	52	11	10	NP	NP	NP	13	A-3a (0)	
						SS-3B	4.5+	-	-	-	-	-	-	-	-	17	A-4a (V)	
LOOSE, BROWN, **SANDY SILT**, FILL, MOIST	641.8		1 2 2	6	78	SS-4A	1.00	5	10	17	37	31	27	17	10	21	A-4a (7)	
						SS-4B	-	-	-	-	-	-	-	-	-	17	A-4a (V)	
MEDIUM STIFF, GRAY WITH BLACK MOTTLING, **SANDY SILT**, TRACE ORGANICS, POSSIBLE FILL, MOIST	638.1		1 4 3	10	78	SS-5	0.70	0	5	34	31	30	25	15	10	22	A-4a (5)	
POSSIBLE COBBLEY ZONE	636.8																	
VERY STIFF, BROWNISH GRAY, **SILT**, MOIST			3 4 5	13	83	SS-6	2.67	-	-	-	-	-	-	-	-	21	A-4b (V)	
@ 23.5' BECOMES MEDIUM STIFF			2 3 5	11	100	SS-7	0.60	0	0	1	68	31	27	21	6	25	A-4b (8)	
@ 28.5' - WITH INTERBEDDED NON-COHESIVE SILT LAYERS, 1/16" TO 2" THICK			2 4 4	11	94	SS-8	0.65	-	-	-	-	-	-	-	-	26	A-4b (V)	
					0	ST-1	-	-	-	-	-	-	-	-	-	-		
		W 620.1																
@ 33.5' - BECOMES WET, DILATANT			2 2 4	8	100	SS-9	0.83	0	0	0	67	33	28	20	8	26	A-4b (8)	
STIFF, BROWNISH GRAY, **SILT AND CLAY**, WITH SILT LAMINAE, MOIST	618.1				100	ST-2	2.13	-	-	-	-	-	-	-	-	-	A-6a (V)	
			2 4 5	13	100	SS-10	1.75	1	0	0	53	46	31	20	11	24	A-6a (8)	
MEDIUM DENSE, BROWNISH GRAY, **SILT**, MOIST	606.8																	
	604.3		7 8 8	23	100	SS-12A	-	0	0	0	90	10	NP	NP	NP	19	A-4b (8)	
VERY STIFF, BROWNISH GRAY, **SILT AND CLAY**, WITH SILT LAMINAE, MOIST	603.6	EOB				SS-12B	2.13	-	-	-	-	-	-	-	-	23	A-6a (V)	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH CEMENT; BACKFILLED WITH SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 6/26/26 19:39 - C:\USERS\TGWILLIAMS\ONEDRIVE - TRC\CUY-77\CUY-77-11.21 BORING LOGS REV NOV 2025.GPJ

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.1245 TOTAL P.1269	61 TOTAL 85	105743	SDM 05/01/26	EB	TRC

GEOTECHNICAL PROFILE - ROADWAY
RETAINING WALL 5B
BORING LOG FOR B-026-0-18

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:37:43 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ZL001.dgn

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 5/1/26 10:10 - W:\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\CUY LOGS-11_8_2023.GPJ

PROJECT: CUY-77-11.2 | DRILLING FIRM / OPERATOR: CTL / DONOVAN | DRILL RIG: CME 45 TRACKED | STATION / OFFSET: 79+50, 78' LT. | EXPLORATION ID B-040-0-20
TYPE: RETAINING WALL | SAMPLING FIRM / LOGGER: CTL / DONOVAN | HAMMER: AUTOMATIC HAMMER | ALIGNMENT: CL IR 77
PID: 105743 SFN: CUY-77-11.21 | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 8/5/20 | ELEVATION: 694.7 (ft) EOB: 25.0 ft. | PAGE 1 OF 1
START: 12/7/21 END: 12/7/21 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 89.3 | LAT / LONG: 41.439859, -81.650141

MATERIAL DESCRIPTION AND NOTES	ELEV. 694.7	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
ASPHALT (7")	694.1																	
AGGREGATE BASE, DRY	693.7																	
MEDIUM DENSE, BROWN, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND**, TRACE SILT, DAMP			8 3 5	12	100	SS-1	-	-	-	-	-	-	-	-	-	9	A-1b (V)	
			4 3 5	12	100	SS-2	-	-	-	-	-	-	-	-	-	9	A-1b (V)	
		W 688.7																
			4 4 5	13	100	SS-3	-	-	-	-	-	-	-	-	-	13	A-1b (V)	
		▽ 686.7																
			4 6 5	16	100	SS-4	-	41	38	17	- 4 -		NP	NP	NP	14	A-1b (0)	
	683.7																	
HARD, GRAY, **SANDY SILT**, "AND" CLAY,TRACE SAND,TRACE GRAVEL, WET			3 4 5	13	100	SS-5	-	-	-	-	-	-	-	-	-	28	A-4a (V)	
			5 6 8	21	100	SS-6	>4.5	0	0	0	46	54	29	20	9	24	A-4a (8)	
			5 7 8	22	100	SS-7	>4.5	-	-	-	-	-	-	-	-	20	A-4a (V)	
			6 10 11	31	100	SS-8	-	-	-	-	-	-	-	-	-	17	A-4a (V)	
@21' VERY STIFF			4 7 12	28	100	SS-9	-	-	-	-	-	-	-	-	-	23	A-4a (V)	
	671.2																	
DENSE, GRAY, **FINE SAND**, WET	669.7		7 12 14	39	100	SS-10	-	-	-	-	-	-	-	-	-	25	A-3 (V)	
		EOB																

NOTES: DUE TO GRANULAR NATURE OF SOILS, UNABLE TO RETRIEVE A SHELBY TUBES. FINE CONTENT REPORTED AS SILT IN SS-4

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH BENTONITE GROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 6/26/26 22:27 - \\CLEVELAND-VFP\SYS\PROJECTS\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS'

PROJECT: CUY-77-11.2 | DRILLING FIRM / OPERATOR: CTL / DONOVAN | DRILL RIG: CME 45 TRACKED | STATION / OFFSET: 85+65, 67' LT. | EXPLORATION ID B-041-0-20
TYPE: RETAINING WALL | SAMPLING FIRM / LOGGER: CTL / DONOVAN | HAMMER: AUTOMATIC HAMMER | ALIGNMENT: CL IR 77
PID: 105743 SFN: CUY-77-11.21 | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 8/5/20 | ELEVATION: 694.3 (ft) EOB: 30.0 ft. | PAGE 1 OF 1
START: 12/7/21 END: 12/7/21 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 89.3 | LAT / LONG: 41.441468, -81.650749

MATERIAL DESCRIPTION AND NOTES	ELEV. 694.3	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
ASPHALT (7")	693.7																	
AGGREGATE BASE, DRY	693.3																	
MEDIUM DENSE, GRAY AND BROWN, **FINE SAND**, SOME SILT, TRACE FINE GRAVEL, DAMP	690.8		3 4 6	15	100	SS-1	-	-	-	-	-	-	-	-	-	9	A-3 (V)	
MEDIUM DENSE TO DENSE, BROWN AND GRAY, **GRAVEL AND STONE FRAGMENTS WITH SAND**, TRACE SILT, MOIST			7 10 11	31	78	SS-2	-	31	45	17	- 7 -		NP	NP	NP	5	A-1-b (0)	
			3 3 6	13	100	SS-3	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
		W 686.3																
			4 7 7	21	100	SS-4	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
	683.3																	
VERY STIFF, GRAY, **SILT**, "AND" CLAY, MOIST			3 4 4	12	100	SS-5	2.25	-	-	-	-	-	-	-	-	25	A-4b (V)	
@12.5-14.5: DD=94.9-99.1 PCF, SEE DIRECT SHEAR TEST RESULTS					100	ST-6	-	0	0	0	60	40	29	21	8	26	A-4b (8)	
	678.3		3 4 5	13	100	SS-7	2.50	-	-	-	-	-	-	-	-	24	A-4b (V)	
HARD, GRAY, **SANDY SILT**, MOIST		▽ 677.3	7 10 14	36	100	SS-8	>4.5	-	-	-	-	-	-	-	-	15	A-4a (V)	
	675.8																	
MEDIUM DENSE TO DENSE, GRAY, **SILT**, LITTLE FINE SAND, TRACE COARSE SAND, MOIST			7 10 13	34	100	SS-9	-	-	-	-	-	-	-	-	-	19	A-4b (V)	
			5 6 8	21	100	SS-10	-	0	1	13	- 86 -		NP	NP	NP	23	A-4b (8)	
	664.3	EOB	4 7 10	25	100	SS-11	-	-	-	-	-	-	-	-	-	22	A-4b (V)	

NOTES: BOREHOLE CAVED IN AT 14.4 FT BGS. FINE CONTENT REPORTED AS SILT IN SS-2, SS-9

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH BENTONITE GROUT

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P 1246	62	105743	SDM 05/01/26	NMC	TRC
TOTAL P 1269	TOTAL 85				

GEOTECHNICAL PROFILE - ROADWAY
RETAINING WALL 1A
BORING LOG FOR B-040-0-20 and B-041-0-20

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:38:26 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ZL002.dgn

PROJECT: CUY-77-11.2
TYPE: RETAINING WALL
PID: 105743 SFN: CUY-77-11.21
START: 12/7/21 END: 12/7/21

DRILLING FIRM / OPERATOR: CTL / DONOVAN
SAMPLING FIRM / LOGGER: CTL / DONOVAN
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 45 TRACKED
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 8/5/20
ENERGY RATIO (%): 89.3

STATION / OFFSET: 88+24, 63' LT.
ALIGNMENT: CL IR 77
ELEVATION: 696.6 (ft) EOB: 35.0 ft.
LAT / LONG: 41.442102, -81.651046

EXPLORATION ID B-042-0-20

MATERIAL DESCRIPTION AND NOTES	ELEV. 696.6	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
ASPHALT (9")	695.8																	
MEDIUM DENSE, BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND**, TRACE SILT, DAMP		1	12 11 7	27	72	SS-1	-	-	-	-	-	-	-	-	-	13	A-1-b (V)	
	690.6	2																
MEDIUM DENSE, GRAY, **COARSE AND FINE SAND**, TRACE FINE GRAVEL, TRACE SILT, DAMP		3																
		4	3 5 4	13	78	SS-2	-	48	30	15	-	7 -	NP	NP	NP	5	A-1-b (0)	
		5																
	688.1	6																
MEDIUM DENSE, GRAY, **GRAVEL AND STONE FRAGMENTS WITH SAND**, TRACE SILT, MOIST		7	3 4 6	15	100	SS-3	-	-	-	-	-	-	-	-	-	8	A-3a (V)	
		W 688.6 8																
	685.6	9	3 4 5	13	100	SS-4	-	-	-	-	-	-	-	-	-	13	A-1-b (V)	
VERY STIFF, GRAY, **SANDY SILT**, "AND" CLAY, TRACE GRAVEL, MOIST TO WET		10																
		11																
		▽ 684.6 12	5 8 8	24	100	SS-5	3.50	-	-	-	-	-	-	-	-	20	A-4a (V)	
		13																
		14	4 6 7	19	100	SS-6	4.00	0	0	1	42	57	26	21	5	21	A-4a (8)	
@16' HARD		15																
		16																
		17	5 8 10	27	100	SS-7	>4.5	-	-	-	-	-	-	-	-	20	A-4a (V)	
		18																
		19	9 12 14	39	100	SS-8	-	-	-	-	-	-	-	-	-	10	A-4a (V)	
		20																
		21																
		22																
		23																
		24	6 12 15	40	100	SS-9	-	-	-	-	-	-	-	-	-	19	A-4a (V)	
		25																
		26																
		27																
		28																
		29	9 12 16	42	100	SS-10	-	-	-	-	-	-	-	-	-	18	A-4a (V)	
		30																
		31																
		32																
		33																
		34	12 20 22	63	100	SS-11	-	-	-	-	-	-	-	-	-	20	A-4a (V)	
	661.6	EOB 35																

NOTES: BOREHOLE CAVED IN AT 19.6 FT BGS. FINE CONTENT REPORTED AS SILT IN SS-2

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH BENTONITE GROUT

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 4/23/26 15:01 - W:\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\CUY LOGS-11_8_2023.GPJ

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P 1247 / P 1269 TOTAL	63 / 85 TOTAL	105743	SDM 05/01/26	NMC	TRC

GEOTECHNICAL PROFILE - ROADWAY
RETAINING WALL 1A
BORING LOG FOR B-042-0-20

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:39:09 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ZL003.dgn

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 6/26/26 22:32 - \\CLEVELAND-VFP\SYS\PROJECTS\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\CUY LOGS

PROJECT: CUY-77-11.2 | DRILLING FIRM / OPERATOR: CTL / JASON | DRILL RIG: CME 550X ATV | STATION / OFFSET: 90+25, 53' LT. | EXPLORATION ID B-043-0-20
TYPE: RETAINING WALL | SAMPLING FIRM / LOGGER: CTL / JASON | HAMMER: AUTOMATIC HAMMER | ALIGNMENT: CL IR 77
PID: 105743 SFN: CUY-77-11.21 | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 10/19/21 | ELEVATION: 697.8 (ft) EOB: 30.0 ft. | PAGE 1 OF 1
START: 12/7/21 END: 12/7/21 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 85.6 | LAT / LONG: 41.442584, -81.651305

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 (18")	697.8																	
	696.3	1																
MEDIUM DENSE, BROWN AND GRAY, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND**, DRY		2	6 4 4	11	100	SS-1	-	-	-	-	-	-	-	-	-	19	A-1b (V)	
	694.3	3																
MEDIUM DENSE, GRAY, **SILT**, TRACE GRAVEL, LITTLE COARSE TO FINE SAND, TRACE CLAY, MOIST		4	2 3 5	11	100	SS-2	-	1	1	18	76	4	20	22	NP	27	A-4b (8)	
	691.8	5																
MEDIUM DENSE, BROWN, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND**, TRACE SILT, TRACE CLAY, DAMP		6	9 8 6	20	100	SS-3	-	-	-	-	-	-	-	-	-	2	A-1b (V)	
		7																
		8	8 9 7	23	100	SS-4	-	29	34	30	-	7 -	NP	NP	NP	5	A-1b (0)	
	W 686.5	9																
		10																
		11	4 4 4	11	100	SS-5	-	-	-	-	-	-	-	-	-	13	A-1b (V)	
		12																
		13																
		14	4 7 7	20	100	SS-6	-	-	-	-	-	-	-	-	-	21	A-1b (V)	
	681.8	15																
HARD, GRAY, **SILT**, "AND" CLAY, TRACE GRAVEL, TRACE SAND, DAMP @16.0 - 18.0': DD = 101.2-106.1 PCF, SEE DIRECT SHEAR RESULTS		16			100	ST-7	>4.5	1	1	1	61	36	29	20	9	21	A-4b (8)	
		17																
		18																
@18.5' VERY STIFF		19	4 5 6	16	100	SS-8	4.00	-	-	-	-	-	-	-	-	20	A-4b (V)	
		20																
		21																
		22																
		23																
		24	4 5 6	16	89	SS-9	-	-	-	-	-	-	-	-	-	16	A-4b (V)	
		25																
		26																
		27																
		28																
@28.5' HARD		29	11 14 17	44	100	SS-10	-	-	-	-	-	-	-	-	-	18	A-4b (V)	
	667.8	EOB																

NOTES: BOREHOLE CAVED IN AT 9.9 FT BGS. FINE CONTENT REPORTED AS SILT IN SS-4

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH BENTONITE GROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 6/26/26 22:33 - \\CLEVELAND-VFP\SYS\PROJECTS\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS'

PROJECT: CUY-77-11.2 | DRILLING FIRM / OPERATOR: CTL / JASON | DRILL RIG: CME 550X ATV | STATION / OFFSET: 93+00, 50' LT. | EXPLORATION ID B-044-0-20
TYPE: RETAINING WALL | SAMPLING FIRM / LOGGER: CTL / JASON | HAMMER: AUTOMATIC HAMMER | ALIGNMENT: CL IR 77
PID: 105743 SFN: CUY-77-11.21 | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 10/19/21 | ELEVATION: 697.5 (ft) EOB: 30.0 ft. | PAGE 1 OF 1
START: 12/7/21 END: 12/7/21 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 85.6 | LAT / LONG: 41.443278, -81.651798

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 (18")	697.5																	
	696.0	1																
MEDIUM DENSE, GRAY, **GRAVEL AND STONE FRAGMENTS WITH SAND**, DAMP		2	8 5 6	16	33	SS-1	-	-	-	-	-	-	-	-	-	5	A-1b (V)	
	693.0	3																
MEDIUM DENSE, BROWN, **FINE SAND**, TRACE GRAVEL, TRACE SILT, DAMP		4	3 4 9	19	89	SS-2A	-	-	-	-	-	-	-	-	-	6	A-1b (V)	
						SS-2B	-	-	-	-	-	-	-	-	-	-	A-3 (0)	
		5																
		6	7 7 7	20	100	SS-3	-	4	36	51	-	9 -	NP	NP	NP	3	A-3 (0)	
		7																
		8																
		9	3 4 5	13	100	SS-4	-	8	13	71	-	8 -	NP	NP	NP	5	A-3 (0)	
	685.5	W 685.5																
		10																
		11																
		12	4 6 6	17	89	SS-5A	-	-	-	-	-	-	-	-	-	12	A-3 (V)	
MEDIUM DENSE, BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND**, WET						SS-5B	-	-	-	-	-	-	-	-	-	-	A-1b (V)	
		13																
		14	3 5 4	13	100	SS-6	-	-	-	-	-	-	-	-	-	10	A-1b (V)	
		15																
	680.5	16	6 4 6	14	100	SS-7A	-	-	-	-	-	-	-	-	-	19	A-1b (V)	
VERY STIFF TO HARD, GRAY, **SILT**, SOME CLAY, MOIST						SS-7B	>4.5	-	-	-	-	-	-	-	-	-	A-4b (V)	
		17																
@18.0-20.0': DD=94.4 - 98.7 PCF, SEE DIRECT SHEAR RESULTS		18			100	ST-8	-	0	0	0	63	37	27	21	6	24	A-4b (8)	
		19																
		20																
		21																
		22																
		23																
		24	4 6 7	19	78	SS-9	2.00	-	-	-	-	-	-	-	-	28	A-4b (V)	
		25																
		26																
		27																
		28																
	668.5					SS-10A	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
DENSE, GRAY, **FINE SAND**, LITTLE SILT, DAMP		29	7 10 15	36	100	SS-10B	-	-	-	-	-	-	-	-	-	20	A-3 (V)	
	667.5	EOB																

NOTES: BOREHOLE CAVED IN AT 10.3 FT BGS. FINE CONTENT REPORTED AS SILT IN SS-3, SS-4

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH BENTONITE GROUT

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P 1248	64	105743	SDM 05/01/26	NMC	TRC
TOTAL P 1269	TOTAL 85				

GEOTECHNICAL PROFILE - ROADWAY
RETAINING WALL 1B AND 1C
BORING LOG FOR B-043-0-20 and B-044-0-20

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:39:54 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ZL004.dgn

PROJECT: CUY-77-11.2	DRILLING FIRM / OPERATOR: CTL / JASON	DRILL RIG: CME 550X ATV	STATION / OFFSET: 92+50, 64' RT.	EXPLORATION ID B-046-0-20
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: CTL / JASON	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: CL IR 77	
PID: 105743 SFN: CUY-77-11.21	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 10/19/21	ELEVATION: 699.6 (ft) EOB: 40.0 ft.	PAGE 1 OF 1
START: 12/8/21 END: 12/8/21	SAMPLING METHOD: SPT	ENERGY RATIO (%): 85.6	LAT / LONG: 41.443288, -81.651430	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
AGGREGATE BASE, DRY	699.6 / 699.3																	
MEDIUM DENSE, BROWN AND GRAY, **SILT**, SOME CLAY, TRACE FINE SAND, DAMP			3 4 4	11	67	SS-1	-	-	-	-	-	-	-	-	-	7	A-4b (V)	
@3.5' LOOSE		W 695.1	3 2 4	9	72	SS-2	-	0	0	1	73	26	NP	NP	NP	25	A-4b (8)	
	693.6																	
MEDIUM DENSE, BROWN AND GRAY, **COARSE AND FINE SAND**, LITTLE GRAVEL, LITTLE SILT, DAMP			4 6 7	19	100	SS-3	-	-	-	-	-	-	-	-	-	4	A-3a (V)	
			8 9 7	23	100	SS-4	-	-	-	-	-	-	-	-	-	5	A-3a (V)	
			6 6 4	14	78	SS-5	-	12	28	49	- 11 -		NP	NP	NP	10	A-3a (0)	
			4 5 7	17	78	SS-6	-	-	-	-	-	-	-	-	-	10	A-3a (V)	
	683.6																	
HARD, BROWN AND GRAY, **SILT AND CLAY**, TRACE SAND, DAMP			4 5 10	21	100	SS-7	>4.5	-	-	-	-	-	-	-	-	19	A-6a (V)	
@20.0-22.0': QU = 3942.7 PSF @ 12.8% STRAIN, DD=109.4 PCF					100	ST-8	-	0	0	0	60	40	33	21	12	21	A-6a (9)	
@23.5' VERY STIFF			3 7 9	23	89	SS-9	-	-	-	-	-	-	-	-	-	15	A-6a (V)	
	671.1																	
VERY STIFF, BROWN AND GRAY, **SANDY SILT**, MOIST			6 6 6	17	100	SS-10	-	-	-	-	-	-	-	-	-	26	A-4a (V)	
			7 6 7	19	100	SS-11	-	-	-	-	-	-	-	-	-	30	A-4a (V)	
@38.5 HARD			6 8 10	26	100	SS-12	>4.5	-	-	-	-	-	-	-	-	22	A-4a (V)	
	659.6	EOB																

NOTES: BOREHOLE CAVED IN AT 13.4 FT BGS FINE CONTENT REPORTED AS SILT IN SS-5

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH BENTONITE GROUT

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 6/26/26 22:36 - \\CLEVELAND-VFPSYS\PROJECTS\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\CUY LOGS-11_8_2023.GPJ

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.1249 TOTAL P.1269	65 TOTAL 85	105743	SDM 05/01/26	NMC	TRC

GEOTECHNICAL PROFILE - ROADWAY
RETAINING WALL 2
BORING LOG FOR B-046-0-20

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:40:36 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ZL005.dgn

PROJECT: CUY-77-11.2
TYPE: RETAINING WALL
PID: 105743 SFN: CUY-77-11.21
START: 12/6/21 END: 12/6/21

DRILLING FIRM / OPERATOR: CTL / JASON
SAMPLING FIRM / LOGGER: CTL / JASON
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 550X ATV
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 10/19/21
ENERGY RATIO (%): 85.6

STATION / OFFSET: 97+20, 54' LT.
ALIGNMENT: CL IR 77
ELEVATION: 693.0 (ft) EOB: 35.0 ft.
LAT / LONG: 41.444193, -81.652595

EXPLORATION ID B-048-0-20

MATERIAL DESCRIPTION AND NOTES	ELEV. 693.0	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 (17")	691.6																	
AGGREGATE BASE, DRY	691.1		4 7 50	81	39	SS-1A	-	-	-	-	-	-	-	-	-	-		
VERY LOOSE TO LOOSE, BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND**, TRACE SILT, FILL, DRY FILL						SS-1B	-	-	-	-	-	-	-	-	-	15	A-1-b (V)	
			4 2 3	7	72	SS-2	-	-	-	-	-	-	-	-	-	15	A-1-b (V)	
@6' VERY LOOSE			1 1 1	3	67	SS-3	-	19	43	28	-	10 -	NP	NP	NP	24	A-1-b (0)	
	684.5	W 684.5																
VERY STIFF, BROWN TO GRAY, **SILT**, "AND" CLAY, TRACE SAND, DRY			3 2 4	9	72	SS-4	2.50	-	-	-	-	-	-	-	-	18	A-4b (V)	
			4 5 7	17	100	SS-5	3.50	-	-	-	-	-	-	-	-	19	A-4b (V)	
			4 4 5	13	100	SS-6	3.00	-	-	-	-	-	-	-	-	21	A-4b (V)	
@16' HARD, DAMP TO MOIST			4 5 7	17	100	SS-7	>4.5	0	0	3	58	39	25	19	6	18	A-4b (8)	
			3 4 6	14	100	SS-8	>4.5	-	-	-	-	-	-	-	-	19	A-4b (V)	
	669.5																	
HARD, BROWN TO GRAY, **SANDY SILT**, "AND" CLAY, TRACE SAND, DAMP TO MOIST			5 9 14	33	100	SS-9	-	-	-	-	-	-	-	-	-	17	A-4a (V)	
@28.5' VERY STIFF			6 7 10	24	100	SS-10	-	-	-	-	-	-	-	-	-	11	A-4a (V)	
	658.0	EOB	7 7 9	23	100	SS-11	-	-	-	-	-	-	-	-	-	18	A-4a (V)	

NOTES: BOREHOLE CAVED IN AT 2.6 FT BGS. FINE CONTENT REPORTED AS SILT IN SS-3

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH BENTONITE GROUT

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 4/23/26 15:01 - W:\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\CUY LOGS-11_8_2023.GPJ

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.1250 TOTAL P.1269	66 TOTAL 85	105743	SDM 05/01/26	NMC	TRC

GEOTECHNICAL PROFILE - ROADWAY
RETAINING WALL 1D
BORING LOG FOR B-048-0-20

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:41:21 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ZL006.dgn

PROJECT: CUY-77-11.2
TYPE: RETAINING WALL
PID: 105743 SFN: CUY-77-11.21
START: 12/6/21 END: 12/6/21

DRILLING FIRM / OPERATOR: CTL / JASON
SAMPLING FIRM / LOGGER: CTL / JASON
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 550X ATV
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 10/19/21
ENERGY RATIO (%): 85.6

STATION / OFFSET: 98+75, 57' LT.
ALIGNMENT: CL IR 77
ELEVATION: 691.7 (ft) EOB: 35.0 ft.
LAT / LONG: 41.444583, -81.652998

EXPLORATION ID B-049-0-20
PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 691.7	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
ASPHALT (18")	690.2																	
MEDIUM DENSE, BROWN, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT**, DAMP			4 6 8	20	67	SS-1	-	-	-	-	-	-	-	-	-	10	A-2-4 (V)	
		▽ 686.2	6 7 7	20	83	SS-2	-	-	-	-	-	-	-	-	-	11	A-2-4 (V)	
	685.2	W 685.2																
LOOSE, GRAY, **COARSE AND FINE SAND**, TRACE GRAVEL, LITTLE SILT, TRACE CLAY, DAMP	682.7		4 4 3	10	89	SS-3	-	8	23	59	- 10 -		NP	NP	NP	20	A-3a (0)	
VERY STIFF, GRAY, **SILT**, "AND" CLAY, TRACE SAND, TRACE GRAVEL, MOIST @10.0-12.0': QU = 4246.6 PSF @ 7.9% STRAIN, DD=105.9 PCF, Cc= 0.10, Cr=0.03			4 3 4	10	78	SS-4	2.75	-	-	-	-	-	-	-	-	22	A-4b (V)	
					100	ST-5	2.25	1	2	1	55	41	30	20	10	21	A-4b (8)	
@13.5' STIFF			4 4 6	14	100	SS-6	2.00	-	-	-	-	-	-	-	-	21	A-4b (V)	
			4 4 3	10	100	SS-7	-	-	-	-	-	-	-	-	-	25	A-4b (V)	
@17.5-19.5': DD=94.0-96.4 PCF, SEE DIRECT SHEAR RESULTS	668.2				100	ST-8	-	1	0	0	66	33	31	21	10	25	A-4b (8)	
MEDIUM DENSE, GRAY, **SILT**, TRACE FINE SAND, MOIST			6 7 9	23	83	SS-9	-	-	-	-	-	-	-	-	-	22	A-4b (V)	
			8 9 7	23	100	SS-10	-	-	-	-	-	-	-	-	-	20	A-4b (V)	
@33.5' DENSE	656.7	EOB	9 14 17	44	100	SS-11	-	-	-	-	-	-	-	-	-	18	A-4b (V)	

NOTES: BOREHOLE CAVED IN AT 6.1 FT BGS. FINE CONTENT REPORTED AS SILT IN SS-3

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH BENTONITE GROUT

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 6/26/26 22:37 - \\CLEVELAND-VFP\SYS\PROJECTS\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\CUY LOGS-11_8_2023.GPJ

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.1251	67	105743	SDM 05/01/26	NMC	TRC
TOTAL P.1269	TOTAL 85				

GEOTECHNICAL PROFILE - ROADWAY
RETAINING WALL 1D
BORING LOG FOR B-049-0-20

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:42:03 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ZL007.dgn

PROJECT: CUY-77-11.2
TYPE: RETAINING WALL
PID: 105743 SFN: CUY-77-11.21
START: 12/6/21 END: 12/6/21

DRILLING FIRM / OPERATOR: CTL / DONOVAN
SAMPLING FIRM / LOGGER: CTL / DONOVAN
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 45 TRACKED
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 8/5/20
ENERGY RATIO (%): 89.3

STATION / OFFSET: 100+25, 62' LT.
ALIGNMENT: CL IR 77
ELEVATION: 690.0 (ft) EOB: 35.0 ft.
LAT / LONG: 41.444898, -81.653352

EXPLORATION ID B-050-0-20

MATERIAL DESCRIPTION AND NOTES	ELEV. 690.0	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 (6")	689.5																	
AGGREGATE BASE, DRY	689.0																	
MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, LITTLE GRAVEL, LITTLE SILT, WET			12 8 9	25	78	SS-1	-	-	-	-	-	-	-	-	-	12	A-3a (V)	
		W 686.0	3 5 4	13	100	SS-2	-	21	22	45	- 12 -		NP	NP	NP	16	A-3a (0)	
	684.0																	
VERY STIFF, GRAY, **SILT**, "AND" CLAY, TRACE SAND, DAMP			4 6 9	22	100	SS-3	3.50	-	-	-	-	-	-	-	-	35	A-4b (V)	
			6 6 8	21	100	SS-4	4.00	-	-	-	-	-	-	-	-	18	A-4b (V)	
			4 5 6	16	100	SS-5	2.50	0	0	1	61	38	29	21	8	22	A-4b (8)	
			5 6 8	21	100	SS-6	2.75	-	-	-	-	-	-	-	-	22	A-4b (V)	
			4 5 7	18	100	SS-7	2.50	-	-	-	-	-	-	-	-	23	A-4b (V)	
	671.5	▽ 672.0																
HARD, GRAY, **SANDY SILT**, TRACE GRAVEL, LITTLE CLAY, MOIST TO WET			4 6 7	19	100	SS-8	4.50	-	-	-	-	-	-	-	-	14	A-4a (V)	
			8 11 10	31	100	SS-9	-	-	-	-	-	-	-	-	-	35	A-4a (V)	
@28.5' MEDIUM STIFF			8 11 16	40	100	SS-10	0.50	4	6	28	46	16	15	13	2	20	A-4a (5)	
@33.5' HARD			11 20 21	61	100	SS-11	-	-	-	-	-	-	-	-	-	16	A-4a (V)	
	655.0	EOB																

NOTES: BOREHOLE CAVED IN AT 17.4 FT BGS. FINE CONTENT REPORTED AS SILT IN SS-2
ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH BENTONITE GROUT

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 4/23/26 15:01 - W:\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\CUY LOGS-11_8_2023.GPJ

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P 1252	68	105743	SDM 05/01/26	NMC	TRC
TOTAL P 1269	TOTAL 85				

GEOTECHNICAL PROFILE - ROADWAY
RETAINING WALL 1D
BORING LOG FOR B-050-0-20

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:42:48 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ZL008.dgn

PROJECT: CUY-77-11.2 | DRILLING FIRM / OPERATOR: CTL / DONOVAN | DRILL RIG: CME 45 TRACKED | STATION / OFFSET: 102+50, 66' LT. | EXPLORATION ID: B-051-0-20
TYPE: RETAINING WALL | SAMPLING FIRM / LOGGER: CTL / DONOVAN | HAMMER: AUTOMATIC HAMMER | ALIGNMENT: CL IR 77
PID: 105743 SFN: CUY-77-11.21 | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 8/5/20 | ELEVATION: 688.7 (ft) EOB: 30.0 ft. | PAGE: 1 OF 1
START: 12/6/21 END: 12/6/21 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 89.3 | LAT / LONG: 41.445349, -81.653847

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")	688.4																	
STIFF, BROWN, **SILT**, SOME CLAY, LITTLE GRAVEL, LITTLE SAND, ROCK FRAGMENTS, SLAG, FILL, DRY ROCK FRAGMENTS, SLAG	682.7		7 4 3	10	78	SS-1	-	-	-	-	-	-	-	-	-	14	A-4b (V)	
			4 4 6	15	67	SS-2	-	15	4	8	53	20	24	20	4	20	A-4b (8)	
HARD, GRAY, **SANDY SILT**, DAMP	677.7		3 4 8	18	100	SS-3	4.00	-	-	-	-	-	-	-	-	20	A-4a (V)	
			4 5 8	19	100	SS-4	4.50	-	-	-	-	-	-	-	-	19	A-4a (V)	
VERY STIFF, GRAY, **SANDY SILT**, "AND" CLAY, DAMP			5 4 7	16	100	SS-5	3.00	0	1	1	48	50	26	19	7	24	A-4a (8)	
			4 6 7	19	100	SS-6	3.50	-	-	-	-	-	-	-	-	23	A-4a (V)	
			4 5 7	18	100	SS-7	3.50	-	-	-	-	-	-	-	-	22	A-4a (V)	
		W 670.7																
		▽ 668.7	5 6 8	21	100	SS-8	2.50	-	-	-	-	-	-	-	-	22	A-4a (V)	
	665.2																	
MEDIUM DENSE, GRAY, **SILT**, LITTLE CLAY, LITTLE SAND, MOIST TO WET			4 7 11	27	100	SS-9	-	0	6	12	66	16	NP	NP	NP	20	A-4b (8)	
	660.2																	
HARD, GRAY, **SANDY SILT**, MOIST TO WET	658.7	EOB	11 12 14	39	100	SS-10	-	-	-	-	-	-	-	-	-	20	A-4a (V)	

NOTES: BOREHOLE CAVED IN AT 14.2 FT BGS.
ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH BENTONITE GROUT

PROJECT: CUY-77-11.2 | DRILLING FIRM / OPERATOR: CTL / JASON | DRILL RIG: CME 550X ATV | STATION / OFFSET: 102+75, 67' RT. | EXPLORATION ID: B-052-0-20
TYPE: RETAINING WALL | SAMPLING FIRM / LOGGER: CTL / JASON | HAMMER: AUTOMATIC HAMMER | ALIGNMENT: CL IR 77
PID: 105743 SFN: CUY-77-11.21 | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 10/19/21 | ELEVATION: 686.1 (ft) EOB: 25.0 ft. | PAGE: 1 OF 1
START: 12/9/21 END: 12/9/21 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 85.6 | LAT / LONG: 41.445564, -81.653482

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")	685.1																	
AGGREGATE BASE, DRY	684.8		3 4 5	13	44	SS-1A	-	-	-	-	-	-	-	-	-	-		
MEDIUM DENSE, BROWN AND GRAY, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND**, TRACE SILT, FILL, DAMP	682.6					SS-1B	-	-	-	-	-	-	-	-	-	16	A-1-b (V)	
VERY STIFF, GRAY, **SILT**, SOME CLAY, TRACE SAND, MOIST			4 3 5	11	78	SS-2	3.25	-	-	-	-	-	-	-	-	22	A-4b (V)	
			3 4 5	13	28	SS-3	-	4	3	2	60	31	25	20	5	19	A-4b (8)	
		▽ 675.9	4 3 3	9	100	SS-4	3.00	-	-	-	-	-	-	-	-	24	A-4b (V)	
			3 3 4	10	100	SS-5	2.50	-	-	-	-	-	-	-	-	22	A-4b (V)	
@13.5' "AND" CLAY			6 7 8	21	72	SS-6	2.00	0	0	1	52	47	27	20	7	22	A-4b (8)	
	667.6	W 667.6	4 4 5	13	100	SS-7	3.25	-	-	-	-	-	-	-	-	26	A-4b (V)	
DENSE, GRAY, **SANDY SILT**, SOME SAND, WET			6 15 15	43	100	SS-8	-	-	-	-	-	-	-	-	-	18	A-4a (V)	
	661.1	EOB	9 15 15	43	100	SS-9	-	-	-	-	-	-	-	-	-	13	A-4a (V)	

NOTES: BOREHOLE CAVED IN AT 10.3 FT BGS.
ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH BENTONITE GROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 5/1/26 10:10 - W:\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\CUY LOGS-11_8_2023.GPJ

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.1253	69	105743	SDM 05/01/26	NMC	TRC
TOTAL P.1269	TOTAL 85				

GEOTECHNICAL PROFILE - ROADWAY
RETAINING WALL 1D
BORING LOG FOR B-051-0-20 & B-052-0-20

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:43:28 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ZL009.dgn

PROJECT: CUY-77-11.2
TYPE: RETAINING WALL
PID: 105743 SFN: CUY-77-11.21
START: 12/8/21 END: 12/8/21

DRILLING FIRM / OPERATOR: CTL / DONOVAN
SAMPLING FIRM / LOGGER: CTL / DONOVAN
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 45 TRACKED
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 8/5/20
ENERGY RATIO (%): 89.3

STATION / OFFSET: 104+25, 68' RT.
ALIGNMENT: CL IR 77
ELEVATION: 684.2 (ft) EOB: 25.0 ft.
LAT / LONG: 41.445952, -81.653844

EXPLORATION ID B-053-0-20
PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
TOPSOIL (6")	683.7																	
VERY STIFF, BROWN TO GRAY, **SILT**, "AND" CLAY, TRACE FINE SAND, MOIST			3 3 4	10	100	SS-1	-	-	-	-	-	-	-	-	-	19	A-4b (V)	
			4 4 5	13	100	SS-2	2.00	-	-	-	-	-	-	-	-	25	A-4b (V)	
			3 5 6	16	100	SS-3	2.75	0	0	1	54	45	25	19	6	21	A-4b (8)	
			4 4 7	16	100	SS-4	4.00	-	-	-	-	-	-	-	-	20	A-4b (V)	
			4 4 6	15	100	SS-5	3.50	0	0	0	62	38	23	18	5	22	A-4b (8)	
			5 4 8	18	100	SS-6	2.75	-	-	-	-	-	-	-	-	21	A-4b (V)	
	668.2	668.2 ▽																
VERY STIFF TO HARD, GRAY, **SANDY SILT**, SOME FINE SAND, DAMP			4 7 9	24	100	SS-7	-	-	-	-	-	-	-	-	-	21	A-4a (V)	
			7 10 13	34	100	SS-8	-	-	-	-	-	-	-	-	-	16	A-4a (V)	
	659.2	EOB	5 6 11	25	100	SS-9	-	-	-	-	-	-	-	-	-	25	A-4a (V)	

NOTES: BOREHOLE CAVED IN AT 12.5 FT BGS

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH BENTONITE GROUT

PROJECT: CUY-77-11.2
TYPE: RETAINING WALL
PID: 105743 SFN: CUY-77-11.21
START: 12/8/21 END: 12/8/21

DRILLING FIRM / OPERATOR: CTL / DONOVAN
SAMPLING FIRM / LOGGER: CTL / DONOVAN
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 45 TRACKED
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 8/5/20
ENERGY RATIO (%): 89.3

STATION / OFFSET: 106+00, 82' RT.
ALIGNMENT: CL IR 77
ELEVATION: 681.2 (ft) EOB: 25.0 ft.
LAT / LONG: 41.446344, -81.654205

EXPLORATION ID B-054-0-20
PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
TOPSOIL (6")	680.7																	
DENSE, BROWN, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND**, BRICK FRAGMENTS, FILL, DAMP			7 10 11	31	67	SS-1	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
			7 12 9	31	100	SS-2	-	-	-	-	-	-	-	-	-	19	A-1-b (V)	
	675.2																	
HARD, BROWN AND GRAY, **SILT**, SOME CLAY, TRACE GRAVEL, TRACE SAND, DAMP TO MOIST			3 4 6	15	100	SS-3	>4.5	-	-	-	-	-	-	-	-	18	A-4b (V)	
@8.5' VERY STIFF			7 6 7	19	100	SS-4	3.50	-	-	-	-	-	-	-	-	20	A-4b (V)	
			4 6 6	18	100	SS-5	2.75	-	-	-	-	-	-	-	-	20	A-4b (V)	
@12.5-14.5': DD=100.2-105.5 PCF, SEE DIRECT SHEAR RESULTS					100	ST-6	-	2	0	2	61	35	26	20	6	20	A-4b (8)	
	666.7																	
MEDIUM DENSE, BROWN, **SANDY SILT**, WET		665.2 ▽	4 6 9	22	100	SS-7	-	-	-	-	-	-	-	-	-	21	A-4a (V)	
			7 7 12	28	100	SS-8	-	-	-	-	-	-	-	-	-	22	A-4a (V)	
	662.7																	
DENSE, BROWN, **COARSE AND FINE SAND**, SOME SILT, WET			7 9 13	33	100	SS-9	-	0	0	78	- 22 -		NP	NP	NP	20	A-3a (0)	
	656.2	EOB	8 9 14	34	100	SS-10	-	-	-	-	-	-	-	-	-	28	A-3a (V)	

NOTES: BOREHOLE CAVED IN AT 14.2 FT BGS. FINE CONTENT REPORTED AS SILT IN SS-8

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH BENTONITE GROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 5/1/26 10:10 - W:\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\CUY LOGS-11_8_2023.GPJ

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 6/28/26 23:02 - \\CLEVELAND-VFP\SYS\PROJECTS\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS'

SHEET	TOTAL
P.1254	P.1269

SUBSET	TOTAL
70	85

PROJECT ID: 105743

REVIEWER: SDM 05/01/26

DESIGNER: NMC

DESIGN AGENCY: TRC

GEOTECHNICAL PROFILE - ROADWAY
RETAINING WALL 3
BORING LOG FOR B-053-0-20 & B-054-0-20

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:44:12 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ZL010.dgn

PROJECT: CUY-77-11.2 | DRILLING FIRM / OPERATOR: CTL / DONOVAN | DRILL RIG: CME 45 TRACKED | STATION / OFFSET: 107+50, 103' RT. | EXPLORATION ID B-055-0-20
TYPE: RETAINING WALL | SAMPLING FIRM / LOGGER: CTL / DONOVAN | HAMMER: AUTOMATIC HAMMER | ALIGNMENT: CL IR 77
PID: 105743 SFN: CUY-77-11.21 | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 8/5/20 | ELEVATION: 680.4 (ft) EOB: 25.0 ft. | PAGE 1 OF 1
START: 12/8/21 END: 12/8/21 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 89.3 | LAT / LONG: 41.446732, -81.654370

MATERIAL DESCRIPTION AND NOTES	ELEV. 680.4	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
TOPSOIL (6")	679.9																	
HARD, BROWN, **SANDY SILT**, FILL, DAMP		1	3 4 4	12	100	SS-1	>4.5	-	-	-	-	-	-	-	-	14	A-4a (V)	
	676.9	2																
STIFF TO VERY STIFF, GRAY, **SILT**, SOME CLAY, TRACE SAND, DAMP		3																
		4	5 4 4	12	100	SS-2	-	-	-	-	-	-	-	-	-	6	A-4b (V)	
	W 674.4	5																
		6	4 5 5	15	100	SS-3	2.25	0	0	1	73	26	20	19	1	22	A-4b (8)	
		7																
		8	4 6 6	18	100	SS-4	4.00	-	-	-	-	-	-	-	-	22	A-4b (V)	
		9																
		10																
		11	3 4 5	13	100	SS-5	1.25	-	-	-	-	-	-	-	-	24	A-4b (V)	
		12																
		13																
		14	4 5 7	18	100	SS-6	2.25	-	-	-	-	-	-	-	-	27	A-4b (V)	
	664.4 ▽ 664.4	15																
MEDIUM DENSE, BROWN AND GRAY, **COARSE AND FINE SAND**, SOME SILT, TRACE GRAVEL, DAMP		16	6 9 10	28	100	SS-7	-	0	1	67	22	10	NP	NP	NP	21	A-3a (0)	
		17																
@18.5' DENSE		18																
		19	7 13 18	46	100	SS-8	-	-	-	-	-	-	-	-	-	15	A-3a (V)	
		20																
		21																
		22																
		23																
		24	7 12 19	46	100	SS-9	-	-	-	-	-	-	-	-	-	19	A-3a (V)	
	655.4 EOB	25																

NOTES: BOREHOLE CAVED IN AT 13.6 FT BGS.
ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH BENTONITE GROUT

PROJECT: CUY-77-11.2 | DRILLING FIRM / OPERATOR: CTL / DONOVAN | DRILL RIG: CME 45 TRACKED | STATION / OFFSET: 109+50, 141' RT. | EXPLORATION ID B-056-0-20
TYPE: RETAINING WALL | SAMPLING FIRM / LOGGER: CTL / DONOVAN | HAMMER: AUTOMATIC HAMMER | ALIGNMENT: CL IR 77
PID: 105743 SFN: CUY-77-11.21 | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 8/5/20 | ELEVATION: 684.0 (ft) EOB: 25.0 ft. | PAGE 1 OF 1
START: 12/8/21 END: 12/8/21 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 89.3 | LAT / LONG: 41.447223, -81.654614

MATERIAL DESCRIPTION AND NOTES	ELEV. 684.0	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 (2")	683.8																	
GRAY, **CONCRETE**, DRY	683.0																	
DENSE, BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND**, SOME SILT, LITTLE CLAY, FILL, DAMP	680.5	1	12 14 10	36	56	SS-1	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
LOOSE, BROWN, **SANDY SILT**, SOME GRAVEL, LITTLE CLAY, DAMP		2																
		3	3 3 4	10	28	SS-2	-	29	12	22	26	11	NP	NP	NP	16	A-4a (0)	
		4																
	W 678.0	5																
		6	2 2 2	6	28	SS-3	-	-	-	-	-	-	-	-	-	11	A-4a (V)	
		7																
		8	2 2 2	6	33	SS-4	-	-	-	-	-	-	-	-	-	17	A-4a (V)	
	673.0	9																
MEDIUM DENSE, GRAY, **SILT**, SOME CLAY, TRACE SAND, MOIST TO DAMP		10																
		11	3 4 4	12	100	SS-5	-	-	-	-	-	-	-	-	-	22	A-4b (V)	
		12																
		13																
		14	4 4 5	13	100	SS-6	-	0	0	1	68	31	21	21	NP	21	A-4b (8)	
		15																
		16																
	▽ 667.0	17	5 6 6	18	100	SS-7	-	-	-	-	-	-	-	-	-	21	A-4b (V)	
		18																
		19	5 6 7	19	100	SS-8	-	-	-	-	-	-	-	-	-	22	A-4b (V)	
		20																
		21																
		22																
		23																
		24	5 7 9	24	89	SS-9	-	-	-	-	-	-	-	-	-	22	A-4b (V)	
	659.0 EOB	25																

NOTES: BOREHOLE CAVED IN AT 16.9 FT BGS.
ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH BENTONITE GROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 5/1/26 10:10 - W:\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\CUY LOGS-11_8_2023.GPJ

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P 1255	71	105743	SDM 05/01/26	NMC	TRC
TOTAL P 1269	TOTAL 85				

GEOTECHNICAL PROFILE - ROADWAY
RETAINING WALL 3
BORING LOG FOR B-055-0-20 & B-056-0-20

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:44:52 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ZL011.dgn

PROJECT: CUY-77-11.2 | DRILLING FIRM / OPERATOR: CTL / JASON | DRILL RIG: CME 45 TRACKED | STATION / OFFSET: 122+00, 69' LT. | EXPLORATION ID B-059-0-20
TYPE: RETAINING WALL | SAMPLING FIRM / LOGGER: CTL / DONOVAN | HAMMER: AUTOMATIC HAMMER | ALIGNMENT: CL IR 77
PID: 105743 SFN: CUY-77-11.21 | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 8/5/20 | ELEVATION: 661.2 (ft) EOB: 30.0 ft. | PAGE 1 OF 1
START: 12/9/21 END: 12/9/21 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 89.3 | LAT / LONG: 41.450204, -81.656910

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")	661.2 / 660.2																	
DENSE, BROWN, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND**, FILL, DAMP		1	17 10 14	36	56	SS-1	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
@3.5' VERY DENSE	655.2	4	12 18 22	60	100	SS-2	-	-	-	-	-	-	-	-	-	17	A-1-b (V)	
HARD, BROWN, **SANDY SILT**, SOME CLAY, TRACE GRAVEL, DAMP		7	6 5 5	15	100	SS-3	>4.5	3	3	26	48	20	18	15	3	12	A-4a (7)	
		9	7 8 8	24	100	SS-4	4.25	-	-	-	-	-	-	-	-	11	A-4a (V)	
@11.0' VERY STIFF		12	7 5 6	16	100	SS-5	-	-	-	-	-	-	-	-	-	15	A-4a (V)	
		14	6 8 10	27	100	SS-6	-	9	24	22	28	17	18	15	3	15	A-4a (2)	
@18.5' HARD		19	5 7 7	21	100	SS-7	>4.5	-	-	-	-	-	-	-	-	14	A-4a (V)	
	637.7																	
MEDIUM DENSE, BROWN AND GRAY, **SILT**, LITTLE CLAY, LITTLE SAND, TRACE GRAVEL, DAMP		24	3 4 6	15	100	SS-8	-	-	-	-	-	-	-	-	-	19	A-4b (V)	
	633.2 ▽																	
	631.2	29 EOB	4 4 7	16	89	SS-9	-	3	3	15	65	14	NP	NP	NP	30	A-4b (8)	

NOTES: BOREHOLE CAVED IN AT 21.4 FT BGS.
ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH BENTONITE GROUT

PROJECT: CUY-77-11.2 | DRILLING FIRM / OPERATOR: CTL / JASON | DRILL RIG: CME 550X ATV | STATION / OFFSET: 129+30, 55' LT. | EXPLORATION ID B-060-0-20
TYPE: RETAINING WALL | SAMPLING FIRM / LOGGER: CTL / JASON | HAMMER: AUTOMATIC HAMMER | ALIGNMENT: CL IR 77
PID: 105743 SFN: CUY-77-11.21 | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 10/19/21 | ELEVATION: 651.4 (ft) EOB: 30.0 ft. | PAGE 1 OF 1
START: 12/9/21 END: 12/9/21 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 85.6 | LAT / LONG: 41.452133, -81.657261

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")	651.4 / 651.2																	
VERY STIFF, BROWN TO GRAY, **SILT**, FILL, DAMP		1	3 5 7	17	72	SS-1	3.50	-	-	-	-	-	-	-	-	14	A-4b (V)	
@3.5' HARD		4	3 4 4	11	100	SS-2	4.50	-	-	-	-	-	-	-	-	14	A-4b (V)	
		6		0	ST-3	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
	642.9																	
VERY STIFF, GRAY, **SANDY SILT**, FILL, DAMP		9	5 7 8	21	100	SS-4	-	-	-	-	-	-	-	-	-	15	A-4a (V)	
		12	5 4 5	13	100	SS-5	2.50	-	-	-	-	-	-	-	-	19	A-4a (V)	
	637.9																	
VERY DENSE, BROWN AND GRAY, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND**, CONCRETE FRAGMENTS, FILL, DAMP		14	21 23 14	53	78	SS-6	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
	635.4																	
VERY STIFF, BROWN AND GRAY, **SILT**, TRACE SAND, DAMP		17	19 7 5	17	28	SS-7	3.50	-	-	-	-	-	-	-	-	16	A-4b (V)	
	632.9																	
MEDIUM STIFF, BROWN AND GRAY, **SILT**, "AND" CLAY, TRACE SAND, DAMP		19	9 2 3	7	72	SS-8	1.00	0	0	1	59	40	22	19	3	28	A-4b (8)	
@23.5' HARD, OCCASIONAL COBBLES		24	28 50	-	0	SS-9	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
	621.4	29 EOB	36 13 17	43	33	SS-10	-	-	-	-	-	-	-	-	-	17	A-4b (V)	

NOTES: BOREHOLE CAVED IN AT 12.8 FT BGS. FINE CONTENT REPORTED AS SILT IN SS-2
ABANDONMENT METHODS, MATERIALS, QUANTITIES: MIXED WITH BENTONITE CHIPS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 5/1/26 10:10 - W:\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\CUY LOGS-11_8_2023.GPJ

SHEET	TOTAL	SUBSET	TOTAL	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.1256	P.1269	72	85	105743	SDM 05/01/26	NMC	TRC

GEOTECHNICAL PROFILE - ROADWAY
RETAINING WALL 4
BORING LOG FOR B-059-0-20 & B-060-0-20

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:45:35 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ZL012.dgn

PROJECT: CUY-77-11.2 | DRILLING FIRM / OPERATOR: CTL / JASON | DRILL RIG: CME 550X ATV | STATION / OFFSET: 131+25, 53' LT. | EXPLORATION ID B-061-0-20
TYPE: RETAINING WALL | SAMPLING FIRM / LOGGER: CTL / JASON | HAMMER: AUTOMATIC HAMMER | ALIGNMENT: CL IR 77
PID: 105743 SFN: CUY-77-11.21 | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 10/19/21 | ELEVATION: 650.6 (ft) EOB: 30.0 ft. | PAGE 1 OF 1
START: 12/9/21 END: 12/9/21 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 85.6 | LAT / LONG: 41.452751, -81.657304

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
TOPSOIL (3")	650.6																	
MEDIUM DENSE, BROWN, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT**, FILL, DAMP	650.3	▽ 649.6	7 5 15	29	33	SS-1	-	-	-	-	-	-	-	-	-	14	A-2-4 (V)	
@2.5' COBBLES																		
@3.5' TRACE ORGANIC			11 7 6	19	28	SS-2	-	-	-	-	-	-	-	-	-	6	A-2-4 (V)	
LOOSE, BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND**, TRACE SILT, TRACE CLAY, MOIST TO WET	644.6	▼ 644.6	4 2 2	6	72	SS-3	-	-	-	-	-	-	-	-	-	17	A-1-b (V)	
			3 2 2	6	67	SS-4	-	23	39	22	- 16 -		NP	NP	NP	17	A-1-b (0)	
@11.0' VERY LOOSE			2 1 1	3	100	SS-5	-	-	-	-	-	-	-	-	-	20	A-1-b (V)	
MEDIUM DENSE, BROWN, **FINE SAND**, LITTLE SILT, MOIST	637.1	F.S.	4 3 6	13	100	SS-6	-	-	-	-	-	-	-	-	-	14	A-3 (V)	
			4 6 4	14	89	SS-7	-	-	-	-	-	-	-	-	-	15	A-3 (V)	
LOOSE, BROWN, **COARSE AND FINE SAND**, WET	632.1		5 4 3	10	100	SS-8	-	-	-	-	-	-	-	-	-	19	A-3a (V)	
STIFF, BROWN AND GRAY, **SANDY SILT**, "AND" CLAY, TRACE FINE SAND, TRACE GRAVEL, DAMP	627.1		4 3 4	10	56	SS-9	2.00	1	0	1	48	50	25	18	7	25	A-4a (8)	
@28.5' VERY STIFF	620.6	EOB	6 7 12	27	39	SS-10	-	-	-	-	-	-	-	-	-	18	A-4a (V)	

NOTES: BOREHOLE CAVED IN AT 7.3 FT BGS. FINE CONTENT REPORTED AS SILT IN SS-4

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH BENTONITE GROUT

PROJECT: CUY-77-11.2 | DRILLING FIRM / OPERATOR: CTL / JASON | DRILL RIG: CME 550X ATV | STATION / OFFSET: 136+50, 107' LT. | EXPLORATION ID B-062-0-20
TYPE: RETAINING WALL | SAMPLING FIRM / LOGGER: CTL / JASON | HAMMER: AUTOMATIC HAMMER | ALIGNMENT: CL IR 77
PID: 105743 SFN: CUY-77-11.21 | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 10/19/21 | ELEVATION: 650.0 (ft) EOB: 25.0 ft. | PAGE 1 OF 1
START: 12/9/21 END: 12/9/21 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 85.6 | LAT / LONG: 41.454228, -81.657598

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
TOPSOIL (7")	650.0																	
VERY DENSE, BROWN GRAY, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT**, SLAG, FILL, DRY	649.4		38 50/2"	-	125	SS-1	-	-	-	-	-	-	-	-	-	11	A-2-4 (V)	
DENSE, BROWN GRAY, **SANDY SILT**, FILL, DAMP	646.5		11 9 16	36	100	SS-2	-	-	-	-	-	-	-	-	-	12	A-4a (V)	
@8.5' MEDIUM DENSE			6 5 7	17	100	SS-3	-	-	-	-	-	-	-	-	-	14	A-4a (V)	
HARD, BROWN GRAY, **SANDY SILT**, "AND" CLAY, WET	636.5	▼ 635.0	6 5 8	19	100	SS-4	>4.5	0	1	4	44	51	32	23	9	19	A-4a (8)	
HARD, BROWN GRAY, **SILT**, "AND" CLAY, WET	631.5		17 12 16	40	100	SS-5	-	-	-	-	-	-	-	-	-	10	A-4b (V)	
	625.0	EOB	5 6 8	20	56	SS-6	>4.5	-	-	-	-	-	-	-	-	15	A-4b (V)	

NOTES: BOREHOLE CAVED IN AT 12.6 FT BGS.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH BENTONITE GROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 5/1/26 10:10 - W:\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\CUY LOGS-11_8_2023.GPJ

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P 1257 TOTAL P 1269	73 TOTAL 85	105743	SDM 05/01/26	NMC	TRC

GEOTECHNICAL PROFILE - ROADWAY
RETAINING WALL 4
BORING LOG FOR B-061-0-20 & B-062-0-20

CUY-77-11.41

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:46:16 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ZL013.dgn

PROJECT: CUY-77-11.2	DRILLING FIRM / OPERATOR: CTL / DONOVAN	DRILL RIG: CME 45 TRACKED	STATION / OFFSET: 138+18, 154' LT.
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: CTL / DONOVAN	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: CL IR 77
PID: 105743 SFN: CUY-77-11.21	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 8/5/20	ELEVATION: 661.0 (ft) EOB: 30.0 ft.
START: 12/9/21 END: 12/9/21	SAMPLING METHOD: SPT	ENERGY RATIO (%): 89.3	LAT / LONG: 41.454629, -81.657604

EXPLORATION ID B-063-0-20

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
TOPSOIL (6")	661.0																	
	660.5																	
MEDIUM DENSE, BROWN, **SANDY SILT**, "AND" GRAVEL, FILL, DAMP		1	3 5 6	16	100	SS-1	-	-	-	-	-	-	-	-	-	18	A-4a (V)	
	657.5	2																
MEDIUM DENSE, BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, SLAG, FILL, DAMP		3																
	655.0	4	7 6 7	19	100	SS-2	-	-	-	-	-	-	-	-	-	11	A-2-4 (V)	
VERY STIFF, BROWN, **SANDY SILT**, LITTLE CLAY, TRACE GRAVEL, FILL, DAMP		5																
		6	3 4 7	16	100	SS-3	2.00	5	12	36	36	11	16	14	2	14	A-4a (2)	
		7																
		8																
		9	4 4 7	16	100	SS-4	-	-	-	-	-	-	-	-	-	15	A-4a (V)	
		10																
		11																
		12	3 3 4	10	100	SS-5	2.50	-	-	-	-	-	-	-	-	17	A-4a (V)	
		13																
@13.5' "AND" CLAY, FIINE SLAG, MOIST		14	4 3 5	12	100	SS-6	2.25	3	4	16	41	36	22	16	6	19	A-4a (8)	
	642.5	15																
		16																
		17																
		18																
STIFF, BROWN AND GRAY, **SILT**, "AND" CLAY, FINE SLAG, WET		19	3 3 3	9	100	SS-7	1.25	-	-	-	-	-	-	-	-	31	A-4b (V)	
		20																
		21																
▽ 638.5		22																
W 638.0		23																
		24	3 4 5	13	100	SS-8	1.50	0	0	0	59	41	23	20	3	28	A-4b (8)	
		25																
		26																
		27																
		28																
		29	4 4 5	13	100	SS-9	1.50	-	-	-	-	-	-	-	-	26	A-4b (V)	
	631.0	EOB																

NOTES: BOREHOLE CAVED IN AT 19.0 FT BGS.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH BENTONITE GROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 5/1/26 10:10 - W:\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\CUY LOGS-11_8_2023.GPJ

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.1258 TOTAL P.1269	74 TOTAL 85	105743	SDM 05/01/26	NMC	TRC

GEOTECHNICAL PROFILE - ROADWAY
CUY-77-11.21
BORING LOG FOR B-063-0-20

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:46:43 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ZL014.dgn

PROJECT: CUY-77-11.2	DRILLING FIRM / OPERATOR: CTL / DONOVAN	DRILL RIG: CME 45 TRACKED	STATION / OFFSET: 163+00, 52' LT.	EXPLORATION ID B-064-0-20
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: CTL / DONOVAN	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: CL IR 77	
PID: 105743 SFN: CUY-77-11.21	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 8/5/20	ELEVATION: 672.1 (ft) EOB: 35.0 ft.	PAGE 1 OF 1
START: 12/2/21 END: 12/2/21	SAMPLING METHOD: SPT	ENERGY RATIO (%): 89.3	LAT / LONG: 41.461446, -81.657368	

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
GRAVEL	672.1 / 671.1																	
MEDIUM DENSE, BROWN, **GRAVEL AND/OR STONE FRAGMENTS**, SOME SAND, FILL, DRY	668.6		7 8 10	27	100	SS-1	-	-	-	-	-	-	-	-	-	14	A-1-a (V)	
MEDIUM DENSE, BROWN, **SANDY SILT**, SOME CLAY, TRACE GRAVEL, DRY			5 6 8	21	100	SS-2	-	0	3	45	- 52 -		NP	NP	NP	14	A-4 (3)	
			7 8 8	24	100	SS-3	-	-	-	-	-	-	-	-	-	15	A-4a (V)	
			4 4 6	15	100	SS-4	-	-	-	-	-	-	-	-	-	8	A-4a (V)	
@11.0' LOOSE	658.6		3 3 4	10	89	SS-5	-	-	-	-	-	-	-	-	-	12	A-4a (V)	
VERY LOOSE TO LOOSE, GRAY, **COARSE AND FINE SAND**, SOME GRAVEL, LITTLE CLAY, LITTLE SILT, FILL, WET		▽ 656.1	2 2 3	7	67	SS-6	-	27	34	25	- 14 -		NP	NP	NP	20	A-3a (0)	
			6 1 1	3	11	SS-7	-	-	-	-	-	-	-	-	-	17	A-3a (V)	
@18.5' MEDIUM DENSE	651.1	W 654.1	6 4 8	18	67	SS-8	-	-	-	-	-	-	-	-	-	29	A-3a (V)	
MEDIUM DENSE TO DENSE, GRAY, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT**, SLAG, FILL, WET			7 12 10	33	78	SS-9	-	-	-	-	-	-	-	-	-	18	A-2-4 (V)	
			12 4 9	19	56	SS-10	-	-	-	-	-	-	-	-	-	14	A-2-4 (V)	
@26.0' VERY DENSE			7 5 31	54	78	SS-11	-	-	-	-	-	-	-	-	-	21	A-2-4 (V)	
@28.5' MEDIUM DENSE			7 8 12	30	78	SS-12	-	25	9	39	- 27 -		NP	NP	NP	18	A-2-4 (0)	
	637.1	EOB	4 9 11	30	100	SS-13	-	-	-	-	-	-	-	-	-	21	A-2-4 (V)	

NOTES: BOREHOLE CAVED IN AT 14.2 FT BGS.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH BENTONITE GROUT

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 4/23/26 15:02 - W:\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\CUY LOGS-11_8_2023.GPJ

SHEET	TOTAL	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P 1259	P 1269	75 / 85	105743	SDM 05/01/26	NMC	TRC

GEOTECHNICAL PROFILE - ROADWAY
RETAINING WALL 5A
BORING LOG FOR B-064-0-20

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:47:25 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ZL015.dgn

PROJECT: CUY-77-11.2
TYPE: RETAINING WALL
PID: 105743 SFN: CUY-77-11.21
START: 12/2/21 END: 12/2/21

DRILLING FIRM / OPERATOR: CTL / DONOVAN
SAMPLING FIRM / LOGGER: CTL / DONOVAN
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 45 TRACKED
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 8/5/20
ENERGY RATIO (%): 89.3

STATION / OFFSET: 165+00, 50' LT.
ALIGNMENT: CL IR 77
ELEVATION: 667.1 (ft) EOB: 35.0 ft.
LAT / LONG: 41.461975, -81.657453

EXPLORATION ID B-065-0-20

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
VERY DENSE, DARK BROWN, **GRAVEL AND/OR STONE FRAGMENTS**, SOME SAND, TRACE SILT, TRACE CLAY, FILL, MOIST	667.1		12 14 21	52	100	SS-1	-	69	19	9	- 3 -		NP	NP	NP	11	A-1-a (0)	
@3.5' MEDIUM DENSE			8 7 9	24	78	SS-2	-	-	-	-	-	-	-	-	-	2	A-1-a (V)	
STIFF, BROWN, **SANDY SILT**, FILL, DRY	661.1		8 5 4	13	100	SS-3	-	-	-	-	-	-	-	-	-	6	A-4a (V)	
			2 3 4	10	100	SS-4	-	-	-	-	-	-	-	-	-	12	A-4a (V)	
MEDIUM DENSE, BROWN, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND**, SOME SILT SEAM, FILL, DAMP	656.1		8 6 13	28	100	SS-5	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
@13.5' LOOSE			17 2 3	7	17	SS-6	-	-	-	-	-	-	-	-	-	17	A-1-b (V)	
STIFF, BROWN AND DARK GRAY, **SANDY SILT**, SOME CLAY, TRACE GRAVEL,WITH BRICK FRAGMENTS, FILL, DAMP	651.1		2 3 4	10	100	SS-7	-	-	-	-	-	-	-	-	-	16	A-4a (V)	
			3 4 4	12	100	SS-8	-	5	8	21	- 66 -		22	19	3	17	A-4a (6)	
		▽ 646.5 ▼ 646.1	5 4 4	12	100	SS-9	-	-	-	-	-	-	-	-	-	23	A-4a (V)	
@23.5' "AND" CLAY			3 4 6	15	100	SS-10	-	1	15	14	- 70 -		24	18	6	17	A-4a (7)	
			4 3 7	15	100	SS-11	-	-	-	-	-	-	-	-	-	14	A-4a (V)	
			4 4 4	12	100	SS-12	-	-	-	-	-	-	-	-	-	18	A-4a (V)	
@33.5' VERY STIFF	632.1	EOB	4 7 10	25	100	SS-13	-	-	-	-	-	-	-	-	-	-	A-4a (V)	

NOTES: BOREHOLE CAVED IN AT 17.5 FT BGS.
ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH BENTONITE GROUT

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 4/23/26 15:02 - W:\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\CUY LOGS-11_8_2023.GPJ

SHEET	TOTAL	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.1260	P.1269	76 / 85	105743	SDM 05/01/26	NMC	TRC

GEOTECHNICAL PROFILE - ROADWAY
RETAINING WALL 5A
BORING LOG FOR B-065-0-20

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:48:09 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ZL016.dgn

PROJECT: CUY-77-11.2	DRILLING FIRM / OPERATOR: CTL / DONOVAN	DRILL RIG: CME 45 TRACKED	STATION / OFFSET: 167+00, 48' LT.	EXPLORATION ID B-066-0-20
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: CTL / DONOVAN	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: CL IR 77	
PID: 105743 SFN: CUY-77-11.21	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 8/5/20	ELEVATION: 662.1 (ft) EOB: 40.0 ft.	PAGE 1 OF 1
START: 12/2/21 END: 12/2/21	SAMPLING METHOD: SPT	ENERGY RATIO (%): 89.3	LAT / LONG: 41.462524, -81.657512	

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
GRAVEL, FILL	662.1																	
	661.1																	
MEDIUM DENSE TO DENSE, BROWN, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND**, FILL, MOIST		1	3 4 7	16	100	SS-1	-	-	-	-	-	-	-	-	-	15	A-1-b (V)	
		2																
		3																
		4	12 7 8	22	78	SS-2	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
		5																
		6																
		7	12 8 14	33	78	SS-3	-	-	-	-	-	-	-	-	-	13	A-1-b (V)	
		8																
		9	12 5 7	18	67	SS-4	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
		10																
	651.1																	
LOOSE TO MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, TRACE GRAVEL, TRACE SILT, DAMP		11	3 3 4	10	100	SS-5	-	-	-	-	-	-	-	-	-	11	A-3a (V)	
		12																
		13																
		14	3 3 3	9	100	SS-6	-	0	6	70	-	24 -	NP	NP	NP	9	A-3a (0)	
		15																
		16																
		17	3 2 4	9	100	SS-7	-	-	-	-	-	-	-	-	-	9	A-3a (V)	
		18																
		19	3 4 3	10	67	SS-8	-	-	-	-	-	-	-	-	-	10	A-3a (V)	
		20																
		21																
		22	3 3 3	9	100	SS-9	-	-	-	-	-	-	-	-	-	6	A-3a (V)	
		23																
		24	3 4 3	10	100	SS-10	-	-	-	-	-	-	-	-	-	9	A-3a (V)	
	▽ 636.8	25																
	W 636.1																	
		26	3 4 6	15	100	SS-11	-	0	11	79	-	10 -	NP	NP	NP	19	A-3a (0)	
		27																
		28																
		29	3 4 8	18	100	SS-12	-	-	-	-	-	-	-	-	-	17	A-3a (V)	
		30																
	631.1																	
VERY STIFF TO HARD, GRAY, **SANDY SILT**, WET		31	3 4 6	15	100	SS-13	-	-	-	-	-	-	-	-	-	23	A-4a (V)	
		32																
		33																
		34	4 4 4	12	100	SS-14	3.75	-	-	-	-	-	-	-	-	17	A-4a (V)	
		35																
		36																
		37	3 5 6	16	100	SS-15	4.50	-	-	-	-	-	-	-	-	20	A-4a (V)	
		38																
		39	4 3 7	15	100	SS-16	3.75	-	-	-	-	-	-	-	-	13	A-4a (V)	
	622.1	EOB	40															

NOTES: BOREHOLE CAVED IN AT 16.9 FT BGS. FINE CONTENT REPORTED AS SILT IN SS-6 & SS-11

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH BENTONITE GROUT

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 4/23/26 15:02 - W:\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\CUY LOGS-11_8_2023.GPJ

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.1261	77	105743	SDM 05/01/26	NMC	TRC
TOTAL P.1269	TOTAL 85				

GEOTECHNICAL PROFILE - ROADWAY
RETAINING WALL 5A
BORING LOG FOR B-066-0-20

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:48:53 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ZL017.dgn

PROJECT: CUY-77-11.2	DRILLING FIRM / OPERATOR: CTL / JASON	DRILL RIG: CME 550X ATV	STATION / OFFSET: 169+00, 48' LT.
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: CTL / KENTON F.	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: CL IR 77
PID: 105743 SFN: CUY-77-11.21	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 10/19/21	ELEVATION: 657.2 (ft) EOB: 50.0 ft.
START: 12/14/21 END: 12/14/21	SAMPLING METHOD: SPT	ENERGY RATIO (%): 85.6	LAT / LONG: 41.463050, -81.657630

EXPLORATION ID: B-067-0-20

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, BLACK AND BROWN, **GRAVEL**, DRY	657.2		4 4 5	13	75	SS-1	-	-	-	-	-	-	-	-	-	12	A-1-a (V)	
	653.7																	
HARD, BROWN, **SILT**, TRACE FINE SAND, DRY			17 9 6	21	75	SS-2	>4.5	-	-	-	-	-	-	-	-	21	A-4b (V)	
	651.2																	
LOOSE, GRAY, **COARSE AND FINE SAND**, SOME SILT, TRACE CLAY, TRACE GRAVEL, DAMP			3 3 4	10	75	SS-3	-	-	-	-	-	-	-	-	-	10	A-3a (V)	
			3 3 3	9	75	SS-4	-	3	8	68	21	-	NP	NP	NP	10	A-3a (0)	
			2 3 3	9	100	SS-5	-	-	-	-	-	-	-	-	-	10	A-3a (V)	
	643.7																	
STIFF TO VERY STIFF, BROWN, **SILT**, SOME CLAY, TRACE GRAVEL, TRACE SAND, MOIST			3 3 3	9	50	SS-6	-	-	-	-	-	-	-	-	-	21	A-4b (V)	
			3 4 3	10	75	SS-7	3.00	-	-	-	-	-	-	-	-	20	A-4b (V)	
@17.5-19.5: DD= 98.7-102.0 PCF, SEE DIRECT SHEAR RESULTS				81	ST-8	-	0	1	2	70	27	26	19	7	22	A-4b (8)		
@21.0' HARD			4 8 9	24	100	SS-9	>4.5	-	-	-	-	-	-	-	-	21	A-4b (V)	
@23.5' STIFF			3 4 5	13	100	SS-10	2.00	-	-	-	-	-	-	-	-	24	A-4b (V)	
	628.7																	
MEDIUM DENSE, BROWN, **SILT**, LITTLE CLAY, LITTLE SAND, MOIST			3 4 7	16	100	SS-11	-	0	0	12	78	10	NP	NP	NP	22	A-4b (8)	
			4 4 5	13	100	SS-12	-	-	-	-	-	-	-	-	-	25	A-4b (V)	
	618.7																	
STIFF TO VERY STIFF, GRAY, **SANDY SILT**, MOIST			3 5 4	13	100	SS-13	1.75	-	-	-	-	-	-	-	-	25	A-4a (V)	
			6 6 8	20	100	SS-14	2.00	-	-	-	-	-	-	-	-	22	A-4a (V)	
			5 7 10	24	100	SS-15	3.75	-	-	-	-	-	-	-	-	23	A-4a (V)	
	607.2	EOB																

NOTES: FINE CONTENT REPORTED AS SILT IN SS-4

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH BENTONITE GROUT

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 6/26/26 22:48 - \\CLEVELAND-VFP\SYS\PROJECTS\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\CUY LOGS-11_8_2023.GPJ

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.1262 TOTAL P.1269	78 TOTAL 85	105743	SDM 05/01/26	NMC	TRC

GEOTECHNICAL PROFILE - ROADWAY
RETAINING WALL 5A
BORING LOG FOR B-067-0-20

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:50:03 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ZL018.dgn

PROJECT: CUY-77-11.2	DRILLING FIRM / OPERATOR: CTL / JASON	DRILL RIG: CME 550X ATV	STATION / OFFSET: 172+00, 48' LT.
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: CTL / KENTON F.	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: CL IR 77
PID: 105743 SFN: CUY-77-11.21	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 10/19/21	ELEVATION: 662.0 (ft) EOB: 60.0 ft.
START: 12/14/21 END: 12/14/21	SAMPLING METHOD: SPT	ENERGY RATIO (%): 85.6	LAT / LONG: 41.464014, -81.657974

EXPLORATION ID B-068-0-20

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
VERY LOOSE, BLACK, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT**, SLAG, FILL, DRY	662.0	1	2 2 1	4	5	SS-1	-	23	16	32	- 29 -		NP	NP	NP	11	A-2-4 (0)	
		4	2 2 1	4	20	SS-2	-	-	-	-	-	-	-	-	-	12	A-2-4 (V)	
LOOSE TO MEDIUM DENSE, BROWN, **SILT**, TRACE CLAY, "AND" COARSE TO FINE SAND, TRACE GRAVEL, DRY	656.0	7	4 3 4	10	75	SS-3	-	-	-	-	-	-	-	-	-	4	A-4b (V)	
		9	3 3 3	9	75	SS-4	-	1	0	36	- 63 -		NP	NP	NP	17	A-4b (6)	
		12	4 4 5	13	75	SS-5	-	-	-	-	-	-	-	-	-	6	A-4b (V)	
		14	4 4 4	11	100	SS-6	-	-	-	-	-	-	-	-	-	20	A-4b (V)	
VERY STIFF TO HARD, GRAY, **SILT**, LITTLE CLAY, LITTLE SAND, DAMP	646.0	17	2 5 6	16	80	SS-7	-	-	-	-	-	-	-	-	-	21	A-4b (V)	
		19	8 12 15	39	70	SS-8	-	-	-	-	-	-	-	-	-	9	A-4b (V)	
		24	6 7 9	23	100	SS-9	>4.5	0	0	11	69	20	20	18	2	14	A-4b (8)	
		29	8 11 12	33	100	SS-10	>4.5	-	-	-	-	-	-	-	-	13	A-4b (V)	
		34	9 10 11	30	50	SS-11	>4.5	-	-	-	-	-	-	-	-	16	A-4b (V)	
		39	10 7 9	23	100	SS-12	3.50	0	0	1	68	31	22	20	2	20	A-4b (8)	
STIFF TO VERY STIFF, GRAY, **SANDY SILT**, DAMP TO MOIST	618.5	44	5 6 8	20	100	SS-13	3.00	-	-	-	-	-	-	-	-	24	A-4a (V)	
		49	5 7 8	21	100	SS-14	2.25	-	-	-	-	-	-	-	-	25	A-4a (V)	
		54	4 6 7	19	100	SS-15	1.50	-	-	-	-	-	-	-	-	24	A-4a (V)	
	602.0	59	6 8 11	27	100	SS-16	3.25	-	-	-	-	-	-	-	-	20	A-4a (V)	
		EOB																

NOTES: FINE CONTENT REPORTED AS SILT IN SS-1

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH BENTONITE GROUT

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 4/23/26 15:02 - W:\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\CUY LOGS-11_8_2023.GPJ

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.1263	79	105743	SDM 05/01/26	NMC	TRC
TOTAL P.1269	TOTAL 85				

GEOTECHNICAL PROFILE - ROADWAY
RETAINING WALL 5B
BORING LOG FOR B-068-0-20

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:51:08 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ZL019.dgn

PROJECT: CUY-77-11.2	DRILLING FIRM / OPERATOR: CTL / JASON	DRILL RIG: CME 550X ATV	STATION / OFFSET: 170+75, 64' LT.	EXPLORATION ID B-070-0-20
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: CTL / KENTON F.	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: CL IR 77	
PID: 105743 SFN: CUY-77-11.21	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 10/19/21	ELEVATION: 656.8 (ft) EOB: 110.0 ft.	PAGE 1 OF 2
START: 12/15/21 END: 12/15/21	SAMPLING METHOD: SPT	ENERGY RATIO (%): 85.6	LAT / LONG: 41.468506, -81.659955	

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
DENSE, BLACK, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT**, LITTLE SILT, SLAG, FILL, DAMP	656.8	1	15 14 15	41	100	SS-1	-	-	-	-	-	-	-	-	-	12	A-2-4 (V)	
@3.5' MEDIUM DENSE		4	9 8 5	19	50	SS-2	-	-	-	-	-	-	-	-	-	11	A-2-4 (V)	
		7	9 9 3	17	33	SS-3	-	35	11	39	- 15 -		NP	NP	NP	11	A-2-4 (0)	
SOFT, BROWN, **SANDY SILT**, MOIST	648.3	9	3 1 1	3	100	SS-4	-	-	-	-	-	-	-	-	-	36	A-4a (V)	
@11.0' VERY STIFF		12	4 7 7	20	70	SS-5	-	-	-	-	-	-	-	-	-	19	A-4a (V)	
STIFF TO VERY STIFF, GRAY, **SILT**, SOME CLAY, TRACE SAND, MOIST	643.3	14	7 7 11	26	70	SS-6	1.50	-	-	-	-	-	-	-	-	18	A-4b (V)	
		17	4 3 3	9	100	SS-7	2.00	0	0	1	70	29	22	20	2	23	A-4b (8)	
		19	3 3 4	10	75	SS-8	3-3.25	-	-	-	-	-	-	-	-	22	A-4b (V)	
@21.0' LITTLE CLAY @ 21.0-23.0: QU=6480 PSF @ 20.6% STRAIN, DD= 110.1 PCF, Cc=0.07, Cr=0.01		22			100	ST-9	-	0	0	1	80	19	22	19	3	20	A-4b (8)	
		24	3 7 6	19	100	SS-10	3.50	-	-	-	-	-	-	-	-	21	A-4b (V)	
		29	3 4 6	14	100	SS-11	2.75	-	-	-	-	-	-	-	-	21	A-4b (V)	
@ 31.0-33.0: QU=2016 PSF @ 14.0% STRAIN, DD= 99.6 PCF @ 31.0-33.0: QU=1627 PSF @ 11.3% STRAIN, DD= 98.7 PCF @ 31.0-33.0: QU=2534 PSF @ 17.6% STRAIN, DD= 99.7 PCF		32			100	ST-12	-	0	0	0	80	20	25	21	4	26	A-4b (8)	
		34	2 3 3	9	100	SS-13	1.25	-	-	-	-	-	-	-	-	27	A-4b (V)	
@ 38.0-40.0: QU=2736 PSF @ 8.9% STRAIN, DD= 103.0 PCF @ 38.0-40.0: QU=4608 PSF @ 8.9% STRAIN, DD= 98.2 PCF, Cc=0.13, Cr=0.03		39			100	ST-14	-	0	0	1	62	37	29	20	9	23	A-4b (8)	
@43.5' SOFT		44	3 6 7	19	100	SS-15	0.25	-	-	-	-	-	-	-	-	19	A-4b (V)	
@48.5' STIFF		49	4 7 6	19	100	SS-16	1.50	-	-	-	-	-	-	-	-	19	A-4b (V)	
@53.5' MEDIUM STIFF		54	4 5 6	16	100	SS-17	0.50	-	-	-	-	-	-	-	-	19	A-4b (V)	
@58.5' STIFF, "AND" CLAY		59	4 6 8	20	100	SS-18	1-1.5	0	0	0	60	40	24	19	5	20	A-4b (8)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 6/26/26 22:50 - \\CLEVELAND-VFP\SYS\PROJECTS\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\CUY LOGS-11_8_2023.GPJ

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.1264 TOTAL P.1269	80 TOTAL 85	105743	SDM 05/01/26	NMC	TRC

GEOTECHNICAL PROFILE - ROADWAY
BRIDGE NO. CUY-77-1322 AND RETAINING WALL 5B
BORING LOG FOR B-070-0-20

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:52:20 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ZL020.dgn

PID: 105743 | SFN: CUY-77-11.21 | PROJECT: CUY-77-11.2 | STATION / OFFSET: 170+75, 64' LT. | START: 12/15/21 | END: 12/15/21 | PG 2 OF 2 | B-070-0-20

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 TO VERY STIFF, GRAY, **SILT**, SOME CLAY, TRACE SAND, MOIST *(continued)*	596.8	61																
		62																
		63																
		64	4 4 6	14	100	SS-19	1.5-2	-	-	-	-	-	22	20	2	21	A-4b (V)	
		65																
		66																
		67																
		68																
		69	4 5 6	16	100	SS-20	1-1.5	-	-	-	-	-	-	-	-	18	A-4b (V)	
		70																
		71																
		72																
		73																
		74	3 5 7	17	100	SS-21	1-2.5	-	-	-	-	-	-	-	-	27	A-4b (V)	
		75																
		76																
		77																
		78																
		79	4 7 7	20	100	SS-22	1.50	-	-	-	-	-	-	-	-	25	A-4b (V)	
		80																
		81																
		82																
		83																
		84	4 5 6	16	100	SS-23	1.50	-	-	-	-	-	-	-	-	26	A-4b (V)	
		85																
		86																
		87																
		88																
STIFF, GRAY, **SANDY SILT**, "AND" CLAY, TRACE GRAVEL, MOIST	568.3	89	3 3 6	13	100	SS-24	1-1.5	1	2	3	40	54	29	19	10	23	A-4a (8)	
		90																
		91																
		92																
		93																
		94	1 3 6	13	100	SS-25	1-1.5	-	-	-	-	-	-	-	-	22	A-4a (V)	
		95																
		96																
		97																
		98																
		99	3 4 7	16	100	SS-26	1-1.5	-	-	-	-	-	-	-	-	23	A-4a (V)	
		100																
		101																
		102																
		103																
		104	3 4 6	14	100	SS-27	1-1.5	-	-	-	-	-	-	-	-	22	A-4a (V)	
		105																
		106																
		107																
		108																
	546.8	109	3 4 8	17	100	SS-28	1-1.5	-	-	-	-	-	-	-	-	21	A-4a (V)	
	EOB	110																

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH BENTONITE GROUT

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 6/26/26 22:50 - \\CLEVELAND-VFP\SYSP\PROJECTS\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\CUY LOGS-11_8_2023.GPJ

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P 1265 / P 1269 TOTAL	81 / 85 TOTAL	105743	SDM 05/01/26	NMC	TRC

GEOTECHNICAL PROFILE - ROADWAY
BRIDGE NO. CUY-77-1322 AND RETAINING WALL 5B
BORING LOG FOR B-070-0-20 (CONT.)

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:52:55 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ZL021.dgn

PROJECT: CUY-77-11.2
TYPE: RETAINING WALL
PID: 105743 SFN: CUY-77-11.21
START: 12/17/21 END: 12/17/21

DRILLING FIRM / OPERATOR: CTL / JASON
SAMPLING FIRM / LOGGER: CTL / KENTON F.
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 550X ATV
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 10/19/21
ENERGY RATIO (%): 85.6

STATION / OFFSET: 170+00, 64' RT.
ALIGNMENT: CL IR 77
ELEVATION: 654.4 (ft) EOB: 110.0 ft.
LAT / LONG: 41.463548, -81.657747

EXPLORATION ID B-071-0-20
PAGE 1 OF 2

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, BLACK, **GRAVEL AND STONE FRAGMENTS WITH SAND**, TRACE SILT, SLAG, FILL, DRY	654.4	15 6 8	20	33	SS-1	-	64	16	11	-	9 -	NP	NP	NP	9	A-1-b (0)	
MEDIUM DENSE, BROWN, **FINE SAND**, LITTLE SILT, DAMP	650.9	5 10 9	27	75	SS-2	-	-	-	-	-	-	-	-	-	9	A-3 (V)	
MEDIUM DENSE, DARK BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, DAMP	648.4	4 6 5	16	5	SS-3	-	-	-	-	-	-	-	-	-	13	A-2-4 (V)	
LOOSE TO MEDIUM DENSE, BROWN, **SILT**, LITTLE CLAY, TRACE FINE SAND, MOIST TO DAMP	645.9	2 2 3	7	50	SS-4	-	-	-	-	-	-	-	-	-	21	A-4b (V)	
		2 6 10	23	80	SS-5	-	-	-	-	-	-	-	-	-	21	A-4b (V)	
@13.5' DENSE		10 14 14	40	75	SS-6	-	-	-	-	-	-	-	-	-	16	A-4b (V)	
@16.0' MEDIUM DENSE		8 8 9	24	100	SS-7	-	-	-	-	-	-	-	-	-	18	A-4b (V)	
		3 5 10	21	100	SS-8	-	0	0	2	79	19	19	19	NP	19	A-4b (8)	
VERY STIFF, GRAY, **SILT**, SOME CLAY, TRACE SAND, TRACE GRAVEL, MOIST	633.4	6 6 7	19	100	SS-9	3.50	-	-	-	-	-	-	-	-	17	A-4b (V)	
		6 8 7	21	100	SS-10	3.50	-	-	-	-	-	-	-	-	18	A-4b (V)	
@ 26.0-28.0: QU=5760 PSF @ 20.4% STRAIN, DD= 109.4 PCF @ 26.0-28.0: QU=7632 PSF @ 20.4% STRAIN, DD= 108.7 PCF @ 26.0-28.0: QU=8784 PSF @ 19.2% STRAIN, DD= 110.6 PCF, Cc=0.08, Cr=0.01				100	ST-11	-	0	1	3	69	27	23	19	4	19	A-4b (8)	
		3 4 5	13	100	SS-12	3.50	0	0	1	67	32	21	19	2	22	A-4b (8)	
@ 36.0-38.0: QU=3629 PSF @ 21.3% STRAIN, DD= 110.0 PCF @ 36.0-38.0: QU=4320 PSF @ 21.3% STRAIN, DD= 103.7 PCF @ 36.0-38.0: QU=3038 PSF @ 20.0% STRAIN, DD= 103.4 PCF		4 7 6	19	100	SS-13	3.50	-	-	-	-	-	-	-	-	20	A-4b (V)	
				100	ST-14	-	0	0	1	77	22	22	19	3	23	A-4b (8)	
@38.5' STIFF, "AND" CLAY		2 2 4	9	100	SS-15	2.00	0	0	0	50	50	25	19	6	26	A-4b (8)	
GRAY, **SILT AND CLAY**, TRACE FINE SAND @ 41.0-43.0: QU=5040 PSF @ 15.2% STRAIN, DD= 104.7 PCF @ 41.0-43.0: QU=5472 PSF @ 11.8% STRAIN, DD= 105.0 PCF, Cc= 0.12, Cr = 0.03	613.4			100	ST-16	-	0	0	0	68	32	33	21	12	26	A-6a (9)	
STIFF TO VERY STIFF, GRAY, **SILT**, "AND" CLAY, MOIST TO DAMP	610.9	3 3 4	10	100	SS-17	1.5-2	-	-	-	-	-	-	-	-	22	A-4b (V)	
		4 3 6	13	100	SS-18	1.50	-	-	-	-	-	-	-	-	22	A-4b (V)	
		4 6 7	19	100	SS-19	3.00	-	-	-	-	-	-	-	-	20	A-4b (V)	
		2 4 5	13	100	SS-20	2.00	0	0	0	59	41	27	20	7	25	A-4b (8)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 6/26/26 22:52 - \\CLEVELAND-VFP\SYS\PROJECTS\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\CUY LOGS-11_8_2023.GPJ

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.1266	82	105743	SDM 05/01/26	NMC	TRC
TOTAL P.1269	TOTAL 85				

GEOTECHNICAL PROFILE - ROADWAY
BRIDGE NO. CUY-77-1322 AND RETAINING WALL 7
BORING LOG FOR B-071-0-20

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:53:36 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ZL022.dgn

PID: 105743 | SFN: CUY-77-11.21 | PROJECT: CUY-77-11.2 | STATION / OFFSET: 170+00, 64' RT. | START: 12/17/21 | END: 12/17/21 | PG 2 OF 2 | B-071-0-20

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 TO VERY STIFF, GRAY, **SILT**, "AND" CLAY, MOIST TO DAMP *(continued)*	594.4																	
@63.5' MEDIUM STIFF		64	2 3 5	11	100	SS-21	0.5-1	-	-	-	-	-	-	-	-	24	A-4b (V)	
		69	3 4 7	16	100	SS-22	1.00	-	-	-	-	-	-	-	-	25	A-4b (V)	
@73.5' VERY STIFF		74	3 4 6	14	100	SS-23	2.50	0	0	1	65	34	23	21	2	19	A-4b (8)	
@78.5' STIFF		79	5 5 8	19	100	SS-24	1.25	0	0	1	34	65	-	-	-	17	A-4b (V)	
		84	3 4 6	14	100	SS-25	1.50	-	-	-	-	-	-	-	-	25	A-4b (V)	
		89	3 4 7	16	100	SS-26	1.50	-	-	-	-	-	-	-	-	22	A-4b (V)	
		94	3 8 6	20	100	SS-27	1.50	-	-	-	-	-	-	-	-	24	A-4b (V)	
		99	4 4 7	16	100	SS-28	1.50	-	-	-	-	-	-	-	-	22	A-4b (V)	
		104	3 6 9	21	100	SS-29	1.5-2	-	-	-	-	-	-	-	-	21	A-4b (V)	
	544.4	EOB 110	3 4 6	14	100	SS-30	1.00	-	-	-	-	-	-	-	-	21	A-4b (V)	

NOTES: FINE CONTENT REPORTED AS SILT IN SS-1

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH BENTONITE GROUT

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 6/26/26 22:52 - \\CLEVELAND-VFP\SYS\PROJECTS\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\CUY LOGS-11_8_2023.GPJ

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P 1267 / P 1269 TOTAL	83 / 85 TOTAL	105743	SDM 05/01/26	NMC	TRC

GEOTECHNICAL PROFILE - ROADWAY
BRIDGE NO. CUY-77-1322 AND RETAINING WALL 7
BORING LOG FOR B-071-0-20 (CONT.)

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:54:09 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ZL023.dgn

PROJECT: CUY-77-11.2	DRILLING FIRM / OPERATOR: CTL / JASON	DRILL RIG: CME 550X ATV	STATION / OFFSET: 181+50, 150' LT.	EXPLORATION ID B-072-0-20
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: CTL / KENTON F.	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: CL IR 77	
PID: 105743 SFN: CUY-77-11.21	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 10/19/21	ELEVATION: 656.6 (ft) EOB: 25.0 ft.	PAGE 1 OF 1
START: 12/1/21 END: 12/1/21	SAMPLING METHOD: SPT	ENERGY RATIO (%): 85.6	LAT / LONG: 41.463258, -81.656963	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
TOPSOIL (4")	656.6																	
VERY STIFF TO HARD, BROWN TO BLACK, **SANDY SILT**, SLAG, ROCK FRAGMENTS, FILL, DRY	656.2		4 8 10	26	75	SS-1	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
			15 14 11	36	100	SS-2	-	-	-	-	-	-	-	-	-	9	A-4a (V)	
			32 18 22	57	25	SS-3	-	-	-	-	-	-	-	-	-	19	A-4a (V)	
			60/2"	-	5	SS-4	-	-	-	-	-	-	-	-	-	19	A-4a (V)	
	641.6																	
VERY DENSE, GRAY, **FINE SAND**, SOME SILT, MOIST TO WET		▽ 640.6	13 24 23	67	100	SS-5	-	0	1	75	-	24 -	NP	NP	NP	17	A-3 (0)	
	633.1																	
VERY DENSE, GRAY, **COARSE AND FINE SAND**, SOME SILT, MOIST TO WET	631.6	EOB	9 20 24	63	100	SS-6	-	-	-	-	-	-	-	-	-	21	A-3a (V)	

NOTES: FINE CONTENT REPORTED AS SILT IN SS-5

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH BENTONITE GROUT

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 6/26/26 22:56 - \\CLEVELAND-VFP\SYSP\PROJECTS\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\CUY LOGS-11_8_2023.GPJ

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.1268 TOTAL P.1269	84 TOTAL 85	105743	SDM 05/01/26	NMC	TRC

GEOTECHNICAL PROFILE - ROADWAY
CUY-77-11.21
BORING LOG FOR B-072-0-20

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 6/30/2026 TIME: 12:54:46 PM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: NCaiazzo@trcsolutions.com WORKSPACE: OHDOTCEv02 WORKSET: 105743 PRODUCT: OpenRoadsDesigner 24.00.02.25
pw:\\trc-pw.bentley.com:trc-pw-01\Documents\5 - Projects - External\Ohio Department of Transportation (ODOT)\301525 - CUY-77-11.21\105743\400-Engineering\Geotechnical\Sheets\105743_ZL024.dgn

PROJECT: CUY-77-11.2
TYPE: RETAINING WALL
PID: 105743 SFN: CUY-77-11.21
START: 12/1/21 END: 12/1/21

DRILLING FIRM / OPERATOR: CTL / JASON
SAMPLING FIRM / LOGGER: CTL / KENTON F.
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 550X ATV
HAMMER: AUTOMATIC HAMMER
CALIBRATION DATE: 10/19/21
ENERGY RATIO (%): 85.6

STATION / OFFSET: 190+00, 150' LT.
ALIGNMENT: CL IR 77
ELEVATION: 656.6 (ft) EOB: 25.0 ft.
LAT / LONG: 41.466303, -81.658850

EXPLORATION ID B-073-0-20
PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
TOPSOIL (4")	656.6																	
STIFF, DARK BROWN, **SILT**, "AND" SAND, DAMP	656.2		3 3 5	11	100	SS-1	1.50	-	-	-	-	-	-	-	-	-	A-4b (V)	
	653.1																	
DENSE, BROWN, **SANDY SILT**, TRACE CLAY, TRACE GRAVEL, MOIST TO WET			15 13 19	46	100	SS-2	-	3	13	41	- 43 -		NP	NP	NP	11	A-4a (2)	
			8 14 18	46	100	SS-3	-	-	-	-	-	-	-	-	-	9	A-4a (V)	
			8 10 12	31	50	SS-4	-	-	-	-	-	-	-	-	-	23	A-4a (V)	
	638.1																	
VERY DENSE, BROWN, **COARSE AND FINE SAND**, SOME SILT, DAMP			8 20 23	61	75	SS-5	-	0	0	66	- 34 -		NP	NP	NP	24	A-3a (0)	
			14 18 28	66	100	SS-6	-	-	-	-	-	-	-	-	-	18	A-3a (V)	
	631.6	EOB																

NOTES: FINE CONTENT REPORTED AS SILT IN SS-1 & SS-5

ABANDONMENT METHODS, MATERIALS, QUANTITIES: MIXED WITH BENTONITE CHIPS

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 4/23/26 15:02 - W:\ODOT\301525_CUY-77-11.41_PID_105743\GEOTECHNICAL\TRC LOGS\CUY LOGS-11_8_2023.GPJ

SHEET	SUBSET	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.1269 TOTAL P.1269	85 TOTAL 85	105743	SDM 05/01/26	NMC	TRC

GEOTECHNICAL PROFILE - ROADWAY
CUY-77-11.21
BORING LOG FOR B-073-0-20

Appendix F - Certification of Geotechnical Plan Review

AECOM
1300 East 9th Street
Suite 500
Cleveland, OH 44144

Date:
July 1, 2026

Mr. Andrew Chudzik, P.E.
Geotechnical Engineer
ODOT Office of Geotechnical Engineering
1980 West Broad Street, Mail Stop 5090
Columbus, OH 43223

Subject: Certification of Geotechnical Plan Review – Final
CUY-77-11.41, Part 1
PID 105743
Federal Project Number: E191575

Dear Ms. Kenzig,

As the Geotechnical Engineer of Record for the subject project, I certify that I have reviewed the Final plans for the subject project.

Respectfully,

Erik J. Bogen

Erik J. Bogen, P.E.
Geotechnical Engineer

cc: Michael Woodring, P.E. (AECOM)

Appendix G – Roadway Exploration Data Report
Junction Chamber D-71

Docusign Envelope ID: B2E0676A-3A29-4515-A367-4079BCB70F82

ROADWAY EXPLORATION DATA REPORT

CUY-77-11.21 STORM SEWER (PID No.: 105743)
CLEVELAND, OHIO

SME Project Number: 092062.25
July 14, 2025

SME®

Docusign Envelope ID: B2E0676A-3A29-4515-A367-4079BCB70F82

9375 Chillicothe Road
Kirtland, OH 44094-8501

T (440) 256-6500

www.sme-usa.com

July 14, 2025

Mr. Kyle J. Dohlen, PE
Transportation Engineer
Planning and Engineering
ODOT District 12
5500 Transportation Boulevard
Garfield Heights, Ohio 44125

Via E-Mail: Kyle.Dohlen@dot.ohio.gov

RE: CUY-77-11.21 Storm Sewer
VAR-District 12/District 3 Subs Inv for Pvmt & Bridges
Cleveland, Ohio
PID No.: 105743
Task D-12-25

Dear Mr. Dohlen:

The attached data report presents the results of our geotechnical exploration for the CUY-77-11.21 Storm Sewer in Cleveland, Ohio.

If you have questions, please let us know.

Sincerely,

SME

Brendan P. Lieske, PE
Senior Consultant/Project Manager

Enclosure: Geotechnical Data Report, Dated July 14, 2025

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Docusign Envelope ID: B2E0676A-3A29-4515-A367-4079BCB70F82

1. INTRODUCTION

This report presents the results of our geotechnical exploration for the CUY-77-11.21 storm sewer in Cleveland, Ohio. Subsurface conditions were evaluated by drilling one Standard Penetration Test (SPT) boring, designated B-001-0-25. The boring was performed in the grass-covered area about 55 feet west of the I-77 southbound lanes, about 0.25 miles south of mile marker 160. The boring was performed in accordance with the current ODOT Specifications for Geotechnical Explorations (latest revision date of January 24, 2025). Soil samples from the boring were taken to our Kirtland laboratory for visual classification and laboratory testing.

2. GEOLOGY AND OBSERVATIONS

2.1 GEOLOGY

Geologic references for the project area indicate the natural soils consist of lacustrine sands, silts, and clays from the Late Wisconsinan Age, followed by shale bedrock. Bedrock in this area consists of Devonian Age Ohio Shale.

2.2 RECONNAISSANCE

Mr. Thomas Olding with SME visited the project site on June 10, 2025, to perform site reconnaissance and stake/mark the boring location. Based on our site reconnaissance, the project area consists of grass and brush covered ground with some small trees. The ground surface slopes down from the highway to the south. At the bottom of the slope there is an existing culvert structure. A path had been cleared by others through the brush, trees, and fence down towards the culvert structure. At the time of our site visit, the subgrade south of the fence appeared to be wet and soft. The boring was staked just north of the fence for concern of rig access on the soft subgrade further down the hill.

2.3 EXISTING DATA

As part of our reconnaissance, we reviewed nearby historic boring logs through the ODOT TIMS database. The nearest historic boring was performed approximately 800 feet north of the project location. This is outside the area of interest for the project, and therefore we have not included historic boring logs in this report.

3. EXPLORATION

3.1 FIELD EXPLORATION

SME visited the site on June 12, 2025 to perform the field exploration. We obtained split-barrel samples at 2.5-foot intervals to approximately 25 feet below the top of subgrade. The approximate boring location is shown on the attached *Boring Location Diagram*. The before and after photographs of the boring locations are shown in Images 1 and 2.

Drilling equipment consisted of a CME-55-RT ATV rig with a CME auto hammer having an energy transfer ratio of 84 percent, based on our December 11, 2024 calibration. The field-measured blow counts are corrected to N_{60} based on calibration of the hammer system. Both the field-measured blow counts for each six-inch penetration interval, and the energy-corrected blow counts in blows per foot are reported on the boring logs. SME checked the boreholes for the presence of groundwater during drilling and prior to backfilling. The borehole was backfilled with cement-bentonite grout and plugged at the surface with an EPCO Holeplug.

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IMAGES NO. 1 and 2: Before and after photographs of B-001-0-25

3.2 LABORATORY TESTING

Soil samples were placed in clean glass jars each marked with project number, boring number, depth interval, and blow count data. The samples were taken to our laboratory where they were visually classified in accordance with the ODOT-modified AASHTO procedure. Laboratory testing included visual classification, water content, and hand penetrometer values on all samples and mechanical classifications, including grain size hydrometer and Atterberg limits tests, on three selected samples.

4. FINDINGS

The surface material at the borings consisted of 5 inches of topsoil.

Below the topsoil, SME encountered existing fill material to the explored depth of the boring, 25 feet below surface grade. The existing fill consisted of dense to very dense gravel with sand (A-1-b), medium dense coarse and fine sand (A-3a), loose to dense sandy silt (A-4a), very stiff sandy silt (A-4a), very stiff to hard silt (A-4b), and stiff silt and clay (A-6a).

Groundwater was encountered in boring B-001-0-25 during drilling at 3 and 18 feet, and before pulling augers at 10 feet below existing grade. No groundwater reading was taken after pulling augers, since the borehole was grouted upon completion. Groundwater levels should be expected to fluctuate during the year based on variations in precipitation, run-off, and other factors. Groundwater conditions indicated by the borings represent conditions at the time the readings were taken. Groundwater levels at other times may vary from those conditions noted on the boring logs.

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5. SIGNATURES

REPORT PREPARED BY:

Joseph Corrigan, PE
Project Engineer

REPORT REVIEWED BY:

Brendan P. Lieske, PE
Senior Consultant

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APPENDIX A

BORING LOCATION DIAGRAM
ODOT BORING LOG TERMINOLOGY
BORING LOG (B-001-0-25)

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LOCATION MAP
1 INCH = 0.8 MILES

LEGEND

APPROXIMATE BORING LOCATION

0' 70' 140'

GRAPHIC SCALE: 1" = 70'

NOTE:
1. AERIAL IMAGE TAKEN FROM NEARMAPS.COM WITH AN IMAGE DATE OF 09-03-2024.

No.	REVISION DATE	
		Date: 07-14-2025
		GIS Specialist: T. MAHANY
		Designed By: J. CORRIGAN
		Project: 092062.25

DRAWING NOTE: SCALE DEPICTED IS MEANT FOR A 8.5"X11" SHEET AND WILL SCALE INCORRECTLY IF PRINTED ON ANY OTHER SIZE MEDIA

BORING LOCATION DIAGRAM
CUY-77-11.21 I-77 SB STORM SEWER
INTERSTATE 77 SOUTH BOUND
INDEPENDENCE, OHIO

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Figure No. 1

Date Exported: 7/14/2025 10:58 AM User: tylor.mahany Path: \\Sme-inc\pz\WIP\092062.25\Project Data\GIS\Working Folder\GEO_09206225_ODOT105743\GEO_09206225_ODOT105743.aprx

Docusign Envelope ID: B2E0676A-3A29-4515-A367-4079BCB70F82

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 procedes 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% -50%

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_O/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.	$\leq$ 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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STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 7/14/25 11:35 - \\SME-INC\PZ\WIP\092062.25\PROJECT DATA\GINT\092062.25 I-77 SB STORM SEWER (PID 105743).GPJ

PROJECT: I-77 SB SEWER	DRILLING FIRM / OPERATOR: SME / RM/ SS/ WI	DRILL RIG: CME-55 RT ATV	STATION / OFFSET:
TYPE: UNDERGROUND UTILITY	SAMPLING FIRM / LOGGER: SME / JPC	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: N/A
PID: 105743 SFN: N/A	DRILLING METHOD: HSA	CALIBRATION DATE: 12/11/24	ELEVATION: 644.5 (MSL) EOB: 25.0 ft.
START: 6/12/25 END: 6/12/25	SAMPLING METHOD: SPT	ENERGY RATIO (%): 84	LAT / LONG: 41.454074, -81.657585

EXPLORATION ID: B-001-0-25

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
5" of TOPSOIL (Driller's Description)	644.1																	
LOOSE, DARK BROWN, **SANDY SILT**, TRACE GRAVEL, TRACE SLAG, TRACE ROOTS, **FILL**, MOIST	643.0		2 18 21	55	100	SS-1A	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
						SS-1B	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
DENSE, BROWN, GRAY, AND BLACK, **GRAVEL WITH SAND**, LITTLE SILT, TRACE CLAY, TRACE ASPHALT, TRACE SLAG, **FILL**, WET	641.0	W 641.5																
MEDIUM DENSE, BROWN, GRAY, AND BLACK, **GRAVEL WITH SAND**, LITTLE SILT, TRACE CLAY, TRACE ASPHALT, TRACE SLAG, **FILL**, WET	639.5		10 7 6	18	100	SS-2	-	41	29	13	12	5	NP	NP	NP	15	A-1-b (0)	
DENSE, BROWN, **SANDY SILT**, TRACE GRAVEL, TRACE CLAY, **FILL**, MOIST	636.0		7 10 12	31	100	SS-3	-	-	-	-	-	-	-	-	-	11	A-4a (V)	
VERY STIFF, BROWN, **SANDY SILT**, LITTLE CLAY, TRACE GRAVEL, **FILL**, MOIST	635.0		3 4 4	11	100	SS-4A	3.50	-	-	-	-	-	-	-	-	13	A-4a (V)	
		▼ 634.5				SS-4B	1.50	-	-	-	-	-	-	-	-	-	A-6a (V)	
STIFF, BROWN AND GRAY, **SILT AND CLAY**, LITTLE SAND, **FILL**, MOIST	633.5																	
MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, TRACE SILT, **FILL**, MOIST	633.0		9 9 8	24	100	SS-5A	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
						SS-5B	-	8	15	29	33	15	NP	NP	NP	10	A-4a (3)	
MEDIUM DENSE, BROWN, **SANDY SILT**, LITTLE CLAY, TRACE GRAVEL, **FILL**, DAMP	630.5																	
HARD, BROWN TO GRAY, **SILT**, SOME CLAY, TRACE SAND, **FILL**, MOIST	628.0		6 5 7	17	100	SS-6A	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
						SS-6B	4.50	-	-	-	-	-	-	-	-	18	A-4b (V)	
MEDIUM DENSE TO DENSE, BROWN, **SANDY SILT**, LITTLE CLAY, **FILL**, MOIST	626.5		6 10 15	35	100	SS-7A	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
						SS-7B	-	-	-	-	-	-	-	-	-	8	A-4a (V)	
VERY DENSE, LIGHT GRAY, **GRAVEL WITH SAND**, LITTLE SILT, TRACE SAND, **FILL**, WET	621.0		25 46 15	85	100	SS-8	-	14	39	25	15	7	NP	NP	NP	24	A-1-b (0)	
			9 25 50/4"	-	100	SS-9	-	-	-	-	-	-	-	-	-	31	A-1-b (V)	
MEDIUM DENSE, DARK BROWN AND BLACK, **SANDY SILT**, TRACE GRAVEL, TRACE SLAG, TRACE ODOR, **FILL**, MOIST	620.5		5 5 7	17	100	SS-10A	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
	619.5	EOB				SS-10B	3.50	-	-	-	-	-	-	-	-	17	A-4b (V)	
VERY STIFF, GRAY, **SILT**, TRACE GRAVEL, TRACE SAND, TRACE ROOTS, **FILL**, MOIST																		

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BENTONITE GROUT; HOLE PLUG

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APPENDIX B

IMPORTANT INFORMATION ABOUT THIS GEOTECHNICAL ENGINEERING REPORT

GENERAL COMMENTS

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Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, clients can benefit from a lowered exposure to the subsurface problems that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed below, contact your GBA-member geotechnical engineer. Active involvement in the Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Geotechnical-Engineering Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client. *Those who rely on a geotechnical-engineering report prepared for a different client can be seriously misled*. No one except authorized client representatives should rely on this geotechnical-engineering report without first conferring with the geotechnical engineer who prepared it. *And no one – not even you – should apply this report for any purpose or project except the one originally contemplated.*

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read it *in its entirety*. Do not rely on an executive summary. Do not read selected elements only. *Read this report in full.*

You Need to Inform Your Geotechnical Engineer about Change

Your geotechnical engineer considered unique, project-specific factors when designing the study behind this report and developing the confirmation-dependent recommendations the report conveys. A few typical factors include:

- the client's goals, objectives, budget, schedule, and risk-management preferences;
- the general nature of the structure involved, its size, configuration, and performance criteria;
- the structure's location and orientation on the site; and
- other planned or existing site improvements, such as retaining walls, access roads, parking lots, and underground utilities.

Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light-industrial plant to a refrigerated warehouse;
- the elevation, configuration, location, orientation, or weight of the proposed structure;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.*

This Report May Not Be Reliable

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, that it could be unwise to rely on a geotechnical-engineering report whose reliability may have been affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If your geotechnical engineer has not indicated an "apply-by" date on the report, ask what it should be*, and, in general, *if you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying it. A minor amount of additional testing or analysis – if any is required at all – could prevent major problems.

Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface through various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing were performed*. The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgment to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team from project start to project finish, so the individual can provide informed guidance quickly, whenever needed.

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This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, *they are not final*, because the geotechnical engineer who developed them relied heavily on judgment and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* revealed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a full-time member of the design team, to:

- confer with other design-team members,
- help develop specifications,
- review pertinent elements of other design professionals' plans and specifications, and
- be on hand quickly whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction observation.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for informational purposes only*. To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report, but they may rely on the factual data relative to the specific times, locations, and depths/elevations referenced. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely*. Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures*. If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk-management guidance. As a general rule, *do not rely on an environmental report prepared for a different client, site, or project, or that is more than six months old.*

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, none of the engineer's services were designed, conducted, or intended to prevent uncontrolled migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, ***proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration.*** Confront the risk of moisture infiltration by including building-envelope or mold specialists on the design team. ***Geotechnical engineers are not building-envelope or mold specialists.***

GEOPROFESSIONAL BUSINESS ASSOCIATION

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GENERAL COMMENTS

BASIS OF GEOTECHNICAL REPORT

This report has been prepared in accordance with generally accepted geotechnical engineering practices to assist in the design and/or evaluation of this project. If the project plans, design criteria, and/or other project information referenced in this report and utilized by SME to prepare our recommendations are changed, the conclusions and recommendations contained in this report are not considered valid unless the changes are reviewed, and the conclusions and recommendations of this report are modified or approved in writing.

The discussions and recommendations contained in this report are based on the available project information, described in this report, and the geotechnical data obtained from the field exploration at the locations indicated in the report. Variations in soil and groundwater conditions commonly occur between or away from sampling locations. The nature and extent of the variations may not become evident until the time of construction. If significant variations are observed during construction, SME must be contacted to reevaluate the recommendations of this report.

In the process of obtaining and testing samples and preparing this report, procedures are followed that represent reasonable and accepted practice in the field of geotechnical engineering. Specifically, field logs are prepared during the field exploration that describe field occurrences, sampling locations, and other information. Samples obtained in the field are frequently subjected to additional testing and reclassification in the laboratory and differences may exist between the field logs and the report logs.

The engineer preparing the report reviews the field logs, laboratory classifications, and test data and then prepares the report logs. Our recommendations are based on the contents of the report logs and the information contained therein.

REVIEW OF DESIGN DETAILS, PLANS, AND SPECIFICATIONS

Retain SME to review the design details, project plans, and specifications to verify those documents are consistent with the recommendations contained in this report.

REVIEW OF REPORT INFORMATION WITH PROJECT TEAM

Implementation of our recommendations may affect the design, construction, and performance of the proposed improvements, along with the potential inherent risks involved with the proposed construction. The client and key members of the design team, including SME, should discuss the issues covered in this report so the issues are understood and applied in a manner consistent with the owner's budget, tolerance of risk, and expectations for performance and maintenance.

FIELD VERIFICATION OF GEOTECHNICAL CONDITIONS

SME needs to be retained to continue our services through construction so we may observe and evaluate the actual subsurface conditions relative to the recommendations made in this report, and so we can verify the recommendations of this report are properly implemented during construction. This may avoid misinterpretation of our recommendations by other parties and will allow us to review and modify our recommendations if variations in the site subsurface conditions are encountered.

PROJECT INFORMATION FOR CONTRACTOR

This report and any future addenda or other reports regarding this site needs to be made available to prospective contractors prior to submitting their proposals for their information only and to supply them with facts relative to the subsurface evaluation and laboratory test results. If the selected contractor encounters subsurface conditions during construction, which differ from those presented in this report, the contractor needs to promptly describe the nature and extent of the differing conditions in writing and SME needs to be notified so we can verify those conditions. The construction contract needs to include provisions for dealing with differing conditions, and contingency funds for potential problems during earthwork and foundation construction. We would be pleased to assist with the development of contract provisions based on our experience.

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The contractor needs to be prepared to handle environmental conditions encountered at this site, which may affect the excavation, removal, or disposal of soil; dewatering of excavations; and health and safety of workers. Any Environmental Assessment reports prepared for this site need to be made available for review by bidders and the successful contractor.

THIRD PARTY RELIANCE/REUSE OF THIS REPORT

This report has been prepared solely for the use of our Client for the project specifically described in this report. This report cannot be relied upon by other parties not involved in the project, unless specifically allowed by SME in writing. SME also is not responsible for the interpretation by other parties of the geotechnical data and the recommendations provided herein.

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