
SUBGRADE EXPLORATION REPORT
MED-18-12.99
MEDINA COUNTY, OHIO
PID #: 92953

FOR:

GPD Group
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SUBMITTED BY:

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REVISED DRAFT
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EXECUTIVE SUMMARY

This report presents the results of the subgrade exploration for widening and improvements to approximately 2.1 miles of State Route 18 (SR-18), between Stationing 85+31.78 and 197+58.89, the Foote Road (Rd)/SR-18 Intersection and between Smith Rd and the River Styx Rd/SR-18 Intersection located within the City of Medina, in Medina County, Ohio.

The roadway alignment is located in the Killbuck-Glaciated Pittsburgh Plateau physiographic region, which is part of the Glaciated Allegheny Plateaus. This area is characterized by ridges and flat uplands dissected by steep valleys. This topography is reflected in the steep valley of the West Branch Rocky River which crosses MED-18 midway at an elevation of about 910 feet (ft) as compared to the western and eastern ends of the alignment which rise to ~1,000 ft and 1,060, respectively. The alignment is underlain by till from 80 to 320 ft deep.

The subsurface explorations included drilling a total of 54 borings between 8.0 and 61.5 ft deep; 9 of the borings were drilled for multiple purposes that included 5 culverts and a footbridge.

Soils representative of the subgrade along SR-18 consist primarily of silt and clay and silty clay [6a (40%) and 6b (40%)]; 7% were clay (7-6) and 5% were silt/sandy silt. One boring, B-025-0-14 contained (A-4b), a prohibited soil type at subgrade. Soil samples collected along the Frontage Roads, Foote Rd and River Styx Rd were also predominantly silt and clay and silty clay (6a and 6b) and no prohibited soil types were detected.

1. INTRODUCTION

This report presents the results of the subgrade exploration for widening and improvements to approximately 2.1 miles of SR-18, between Stationing 85+31.78 and 197+58.89, the Foote Rd/SR-18 Intersection and between Smith Rd and the River Styx Rd/SR-18 Intersection located within the City of Medina, Ohio in Medina County, Ohio.

The work was conducted in general accordance with Barr & Prevost Inc.'s (B&P)¹ proposal to GPD Group dated June 19, 2014 (revised June 23, 2014), the provisions of ODOT's *Specifications for Geotechnical Explorations* (SGE) (ODOT, 2015). The project included drilling 54 borings to characterize subgrade soils, laboratory testing of soil samples, and engineering analysis to assess subgrade and pavement design parameters. Nine of the borings were drilled for multiple purposes that included 5 culverts and a footbridge.

1.1. Proposed Construction

SR-18 Corridor:

- Widen SR-18 to provide a 7-lane section with 3 lanes in each direction and a center two-way left turn lane from eastern terminus of the project (existing 7-lane section) to River Styx Rd.
- Widen SR-18 to provide a 5-lane section with 2 lanes in each direction and a center two-way left turn lane from River Styx Rd to approximately 750 ft west of Foote Rd.
- Widen SR-18 to provide a 3-lane section with 1 lane in each direction and a center two-way left turn lane from approximately 750 ft west of Foote Rd to the western terminus of the project.

SR-18/ River Styx Rd Intersection to Smith Rd/River Styx Rd Intersection:

- Convert the northbound approach of River Styx Rd from a left turn lane and a shared thru-right to a shared left-thru and a channelized free-flow right turn lane that adds the third eastbound lane east of the intersection.
- Construct an additional westbound left turn lane on SR-18 (lane drop of third westbound lane east of the intersection) in order to provide dual left turn lanes onto southbound River Styx Rd.
- Construct two southbound lanes on River Styx Rd to Octagon Drive (Dr), then taper down to one lane just south of the Octagon Dr intersection, a two-way left turn lane between Octagon Dr and SR-18, and a single northbound lane between the southern project limits and SR-18.
- Turn lanes or a roundabout at the Smith Rd/River Styx Rd Intersection

SR-18/ Foote Rd Intersection:

- Construct a westbound right turn lane on SR-18 in addition to the second westbound thru lane being constructed at this intersection.
- Construct an additional southbound left turn lane on Foote Rd to provide dual left turn lanes onto eastbound SR-18.

¹ On October 19, 2014 Barr & Prevost Inc. (B&P) separated into two entities; Barr Engineering Inc. (BEI), the predecessor company to B&P, and Barr & Prevost, a JMT Division. BEI has retained the geotechnical exploration services for this project.

Construction of two Frontage Roads:

- Left Frontage Rd between 177+66.63, 107' LT to ~182+91.00, 107' LT
- Right Frontage Rd between 174+92.69, 107' RT to 185+40.00, 107' RT

2. GEOLOGY AND OBSERVATIONS OF THE PROJECT

This section contains the office and field reconnaissance notes for the project. The sources of information are noted in each sub-section and specific references are listed in the References section of the report.

2.1. Physiography

The roadway alignment is located in the Killbuck-Glaciated Pittsburgh Plateau physiographic region, which is part of the Glaciated Allegheny Plateaus (Brockman, 1998). This area is characterized by ridges and flat uplands dissected by steep valleys. This topography is reflected in the steep valley of the W Branch Rocky River which crosses MED-18 midway at an elevation of about 910 ft as compared to the western and eastern ends of the alignment which rise to ~1,000 ft and 1,060, respectively.

2.2. Geology

Mapping of the surficial geology of the alignment divides it into roughly three zones, west to east (ODNR, 2000):

1. Project Beginning to ~1,200 ft east of Foote Rd – 80 ft of Wisconsinan-age till (unsorted mix of clay, silt, sand, gravel and boulders) over sandstone and shale (Mississippian-age)
2. 1,200 ft east of Foote Rd to the Project End – 320 ft of till over sandstone and shale
3. A 750 ft band within Zone 2 surrounding the West Branch Rocky River – 10 feet of alluvium (Holocene-age) over 260 ft of till over sandstone and shale

Bedrock topography maps indicated depth of bedrock ranging from elevation 650 ft to 1,000 ft, placing it between 50 ft and 260 ft deep (Schumacher, et al, 1996). It is mapped as Mississippian-age Cuyahoga Formation (Slucher, et al, 1996).

2.3. Soils

Soils along the alignment have been mapped and rated for road development by the Natural Resources Conservation Service (U.S. Department of Agriculture, 2015) as follows:

Table 1: Soils Along the Alignment

Soils		Shallow Excavation Rating
EuB	Ellsworth-Urban land complex, 2 to 6% slopes	Very limited-depth to saturated zone, low strength, frost action, shrink-swell, ponding
MnA	Mahoning-Urban land complex, 0 to 2% slopes	Very limited-depth to saturated zone, low strength, frost action, shrink-swell, ponding
MgB	Mahoning silt loam, 2 to 6% slopes	Very limited-depth to saturated zone, low strength, frost action, shrink-swell, ponding
FIA	Fitchville silt loam, 0 to 2% slopes	Very limited-depth to saturated zone, flooding, low strength, frost action
EIC2	Ellsworth silt loam, 6 to 12% slopes, eroded	Very limited-depth to saturated zone, low strength, frost action, shrink-swell, slope
EIB	Ellsworth silt loam, 2 to 6% slopes	Very limited-depth to saturated zone, low strength, frost action, shrink-swell, ponding
EIB2	Ellsworth silt loam, 2 to 6% slopes, eroded	Very limited-depth to saturated zone, low strength, frost action, shrink-swell, ponding
EIF	Ellsworth silt loam 25 to 70% slopes	Very limited-depth to saturated zone, low strength, frost action, shrink-swell, slope
Le	Lobdell silt loam	Somewhat limited – frost action, flooding
MgA	Mahoning silt loam, 0 to 2% slopes	Very limited-depth to saturated zone, low strength, frost action, shrink-swell, ponding

2.4. Hydrology/Hydrogeology

SR-18 crosses over West Branch Rocky River at approximately Sta. 141+00 where the flow line elevation is 910 ft and likely represents the local groundwater table. Broadway Creek, a tributary to West Branch flows under SR-18 at approximately Sta 102+50 (U.S. Department of the Interior, 2013) and a tributary to Broadway flows under the alignment at ~Sta 111+50.

The West Branch Rocky River and the area immediately adjacent to it are located in a special flood hazard zone subject to inundation by the 1% annual chance flood (US Department of Homeland Security, 2013). The base flood elevation where SR-18 crosses West Branch is 917 ft.

A ~3.0 acre Freshwater Emergent Wetland lies immediately north of the alignment at West Branch Rocky River. Additional wetlands (freshwater ponds-6-acre, 0.5 acre and 3 acre) lie immediately north and south

of the alignment between 500 and 1,000 ft west of West Branch Rocky River.

2.5. Mines and Oil and Gas Wells

No abandoned mines are noted on ODNR's Abandoned Underground Mine Locator in the vicinity of the bridge site (ODNR, 2015⁽¹⁾).

The following gas wells were noted in the vicinity of the alignment (ODNR, 2015⁽²⁾). All but three are abandoned and/or plugged. The remaining 3 have not produced gas since 1993.

Table 2: Gas wells in Proximity to the Alignment

Well Name	Owner	Well No.	Formation	Status	Direction from Alignment
Medina Community Hospital	Ohio Fuel Gas Co.	Well No. 8	Gas-Clinton Sand	Plugged & Abandoned	~520 ft south
	Hydrocarbon Resources LTD	MCZ#1		Not Drilled	
	Buckeye Well Surveys	1	Gas-Clinton Sand	Abandoned 1996	
J H Witzel	O.F.S	2	Gas	Plugged & Abandoned	~765 ft south
ES Johnson	Martin H Lax	1	Gas	Abandoned 1991	~380 ft north
-	-	5	Gas	Plugged & Abandoned	~601 ft south
Tru-Fit	Tru-Filt Products Corp	5, 6A	Gas	Installed 1983 -Ohio Shale – Berea Sandstone – no production since 1993	~120 ft south

2.6. Field Reconnaissance

The site reconnaissance of the roadways was conducted on July 16, 2015 and August 7, 2015; referenced photographs are provided in Appendix A.

2.6.1. SR-18

SR-18 is 2-lane at the beginning of the project (Sta 85+31.78); at ~ Sta 125+00 a median lane is added. From ~ Sta 183+00 until the end of the project, SR-18 is 4-lane with a median lane, switching from a median lane to a median curb at ~Sta 193+15 (Photograph 1). Storm drains occur along both sides of the road, and appear to drain into the nearest pond, lake, creek, or river. SR-18 is a heavily traveled

road, often getting backed up a quarter of a mile or more, particularly where there is only 1-lane in either direction. Land use primarily consists of commercial development, with occasional residential properties and a few woodlands. Nearby buildings appeared in good condition showing no evidence of problems with soil conditions and no evidence of settlement in sidewalks was observed (Photograph 2).

The road itself appeared in fair condition overall. Longitudinal cracks were observed along the shoulder and the centerlines. Transverse cracking was not prevalent, and there did not appear to be any substantial differential settlement near the bridge/culverts. Existing embankments appeared in good shape, with only two places where the shoulder had cracked and started to disintegrate. There was no excess rutting at intersections noted, suggesting that the subgrade is well compacted. The pavement at intersections with other roadways did appear to be in worse condition than SR-18 and the local streets that connect to it (Photograph 3).

Several bodies of water and wet areas (possible swamps and marshes) are within close proximity, or in some instances cross SR-18, as listed below.

Creeks:

Broadway Creek: Sta. 102+55 (Photograph 4) crosses SR-18

An intermittent tributary to Broadway Creek: Sta. 111+50 (Photograph 5) crosses SR-18

An intermittent tributary to West Branch Rocky River: Sta. 190+00 to the south (Photograph 6)

Rivers:

West Branch Rocky River: Sta. 141+00 (Photograph 7) crosses SR-18

Ponds:

Sta. 127+00 to the north (Photograph 8)-designated as a Wetland (freshwater pond) by the US Fish and Wildlife Service (USF&W)

Sta. 127+00 to the south (Photograph 9)-designated as a Wetland (freshwater pond) by USF&W

Sta. 135+50 to the south (Photograph 10)- designated as a Wetland (freshwater pond) by USF&W

Wet Areas:

Sta. 166+00 to the north (Photograph 11)

Sta. 103+50 to the south (Photograph 12)-designated as a Wetland (freshwater emergent) by USF&W

Sta. 111+50 to the north (Photograph 13)

Sta. 137+50 to the south (Photograph 14)

Sta. 156+00 to the south (Photograph 15)

2.6.1.1. Historical Landslide Near Sta 127

ODOT's GeoMS database identified a landslide to the north of SR-18 near Sta 127. This location is next to a lake on a steep embankment of approximately 1.5:1 slope (Photograph 16). The embankment

is thickly vegetated with a grassed yard at the foot. A culvert runs from the southernmost point of the lake under SR-18 to connect with a pond on the opposite side of the road. The guardrail at the top of the embankment is vertical, but appears to be relatively new (Photograph 17). Several of the older trees in the area are also slanted downslope slightly, while the newer tree are slanted slightly more upslope (Photograph 18). Several sources of water flow into and out of this area, including 2 culverts, a lake, the roadway, and potential overflow of the pond, making high water levels during heavy rainfall extremely likely.

2.6.1.2. Historical Landslide Near Sta 166

ODOT's GeoMS site identified a second landslide to the north of SR-18 near Sta. 166. This location is adjacent to a swamp (Photograph 19) and on a steep, grass and weed covered embankment of greater than 1.5:1 slope in several places (Photograph 20). A thick wooded area is located between the bottom of the embankment and the swamp. The guardrail shows no signs of slope movement (it also appears to be relatively new), however a telephone pole is leaning significantly downslope (Photograph 21). Water is conveyed to and from the swamp by 2 culverts, runoff from the roadway, and runoff from a large empty lot to the north. The lot appears to send very large quantities of water into the swamp area, causing a massive eroded channel connecting the two locations (Photograph 22). The swamp appeared to have lower water levels than usual, as a large dry area to the north was covered in deposits from the swamp with very little growth occurring (Photograph 23).

2.6.1.3. Frontage Roads

Frontage roads are proposed along the north and south sides of SR-18 near Sta 175 on SR-18 traversing east until it connects with the drives for Bil-Jac near Sta 182+50 of SR-18 to the north and Kindercare near Sta 183+50 to the south. The southern frontage road is situated on a low slope grassed area between the commercial properties on either side (Photograph 24). No geotechnical concerns were visible on the grassed area. The northern frontage road starts in the middle of a woodland filled with water-carved hills (Photograph 25). A meandering creek bed has heavily eroded the landscape but was virtually dry at the time of the site visit (Photograph 26). Several culverts are present in the wooded area. One culvert inlet (under an abandoned Mack truck) appears to be buried in sediment, which could be causing higher than normal water levels and ponding (Photograph 27). Near Sta 188 of SR-18 the northern frontage road site transitions from woodlands into a commercial properties with lawns. The ground surface is slightly sloping and smooth until the end of the frontage road near Sta 182+50 of SR-18.

2.6.2. *Foote Rd*

Foote Rd is a concrete local road that intersects SR-18 near Sta 115+00. The nearby land use consists of residential properties to the south (Photograph 28) commercial properties to the east and commercial properties to the west to Sta 25+50 of Foote Rd at which point land use becomes residential again. The topography adjacent to Foote Rd includes a few rolling hills which parallel the roadway and may need to be graded, particularly near the intersection with SR-18 (Photograph 29). Nearby buildings and sidewalks appeared in good condition displaying no evidence of geotechnical foundation problems (Photograph 30).

2.6.3. *River Styx Rd*

Improvements to River Styx Rd start at its intersection with Smith Rd north through its intersection with SR 18 to its northern limit at Sta 924+95.68. The southern end of the project on this road is situated on sloping terrain that may need to be reworked (Photographs 31 and 32). Widening of both SR-18 and River Styx Rd may require retaining walls near the intersection, as they are sloped and will need to be cut substantially (Photographs 33 and 34). Surrounding land use is residential to the south becoming commercial at Sta 915 on the east and at Sta 919 on the west (travelling south to north). Several long longitudinal cracks were observed that were likely due to differential settlement, particularly in the stretch of road adjacent to a creek to the east (see Photograph 35). Bodies of water near the roadway include a creek at Sta 911+50 and a pond beyond the project limits at Sta 926+75 to the west.

2.6.3.1. *River Styx Rd and East Smith Rd Intersection*

River Styx Rd and East Smith Rd intersect approximately 1/3 of a mile south of SR-18. The existing roadways are well polished and have moderately sized longitudinal cracking. The intersection is heavily traveled particularly from River Styx Rd north and south bound, as well as East Smith Rd to the west of the intersection. While the roadways are asphalt over a granular base, the intersection itself is concrete (Photograph 36). The surrounding area is residential. No large elevation changes occur in the vicinity and all telephone poles appear as vertical as could be expected. A culvert is located to the south of the intersection.

The culvert is 60" RCP with headwall and located near Sta 911+50; it conveys a creek under the roadway. The creek has heavily eroded its banks on either side of the culvert, particularly to the east (Photograph 37). A gabion wall is positioned on the northern bank to the east of the culvert (Photograph 38). To the west, water has ponded several feet deep. The headwalls appear in good condition and no significant

scour was observed.

3. FIELD EXPLORATION

3.1. Historic Boring Programs

ODOT online FALCON Geotechnical Data Management System (GDMS) was queried for existing subsurface information for the alignment (FALCON, 2015). No useful historical borings were identified for the alignment. However there were 2 landslide areas noted along SR-18 at sections 13.76 and 14.5 – only 3 photographs were provided for each area. The District 3 Geotechnical Engineer was contacted about the landslides. He indicated the following via email:

“Both of these locations are rated a “1” because of the shallow surface failure (shoulder) that is present. The depth of the sliding surface is 3 feet at both locations. Longer guardrail posts along with a w-section of guardrail was placed along the bottom of the guardrail in order to help retain the shoulder in these two locations. The slope at the 13.76 location is estimated to be 13 feet high and the length of affected roadway is 230 feet. The slope at the 14.50 location is estimated to be 17 feet high and the length of affected roadway is 265 feet. I don’t think it would hurt to check global stability at these locations.”

Global stability analysis is suggested to conduct at historical landslide area 13.76 due to the proposed widening of the embankment. A deeper boring will be needed for the stability analysis. The existing slopes at the Landslide area 14.50 appear stable. The alignment of the roadway at this location will be revised to shift away from the historical landslide area 14.50, which will increase a higher factor of safety against global stability. Therefore, there is no need to perform additional stability analysis at this location.

3.2. Project Exploration Program

BEI drilled and sampled 54 borings for this project between June 29 and August 7, 2015; the locations of which are shown on Exhibits 1 through 33. A summary of the drilling information is presented below in Table 3. Nine borings were drilled for multiple purposes that included five culverts and a footbridge.

Table 3: Boring Summary

Boring Number	Latitude	Longitude	Surface Elevation (ft)	Depth (ft)	Bottom of Hole Elevation (ft)	Depth to Groundwater During Drilling (Completion)/ Elevation (ft)
B-001-0-14	41.139061	-81.842142	1013.8	8.0	1005.8	NE
B-002-0-14	41.139112	-81.840679	1022.2	8.0	1014.2	NE
B-003-0-14	41.139306	-81.839449	1018.2	9.0	1009.2	NE
B-004-0-14	41.138945	-81.838010	1011.1	9.0	1002.1	NE
B-005-0-14	41.138813	-81.836190	987.2	8.0	979.2	NE
B-006-0-14	41.138723	-81.836074	985.1	6.0	979.1	22.0/963.1
B-007-0-14	41.138708	-81.835945	983.9	6.0	977.9	13.0/970.9
B-008-0-14	41.138553	-81.833915	989.38	9.0	980.4	NE
B-009-0-14	41.138445	-81.832968	988.2	31.5	956.7	NE
B-010-0-14	41.138331	-81.832955	988.0	30.0	958.0	NE
B-011-0-14	41.138263	-81.832308	987.4	8.0	979.4	NE
B-012-0-14	41.138177	-81.830737	983.8	8.0	975.8	NE
B-013-0-14	41.137932	-81.829513	970.8	8.0	962.8	NE
B-014-0-14	41.137805	-81.827848	958.6	8.0	950.6	NE
B-015-0-14	41.137745	-81.827227	959.6	9.0	950.6	23.5/936.1
B-016-0-14	41.137619	-81.827141	959.9	6.0	953.9	15.0/941.9
B-017-0-14	41.137577	-81.826798	963.0	6.0	957.0	NE
B-018-0-14	41.137380	-81.825078	963.2	8.0	955.2	NE
B-019-0-14	41.137407	-81.823495	952.8	6.5	946.3	NE
B-020-0-14	41.137032	-81.822533	927.1	61.5	865.6	11.5(13.0)/925.6(914.1)
B-021-0-14	41.136970	-81.821995	924.7	61.5	863.2	20.0(18.0)/904.7(906.7)
B-022-0-14	41.136971	-81.820731	922.1	9.0	913.1	5.0/
B-023-0-14	41.136801	-81.819176	925.2	8.4	943.8	NE
B-024-0-14	41.136555	-81.817953	930.2	8.0	922.2	NE
B-025-0-14	41.136539	-81.816582	935.0	9.0	926.0	NE
B-026-0-14	41.136746	-81.815162	944.3	9.0	935.3	NE
B-027-0-14	41.136436	-81.813598	957.6	9.0	948.6	NE
B-028-0-14	41.136435	-81.812166	970.6	9.0	961.6	NE
B-029-0-14	41.136361	-81.810900	982.5	9.0	973.5	NE
B-029-1-14	41.136025	-81.809974	992.6	10.5	982.1	NE
B-029-2-14	41.136998	-81.809829	995.1	11.5	983.6	NE
B-030-0-14	41.136306	-81.809173	998.5	9.0	989.5	NE
B-030-1-14	41.136598	-81.808518	1003.4	11.5	991.9	NE
B-031-0-14	41.136180	-81.807802	1011.4	8.0	1003.4	NE
B-031-1-14	41.136041	-81.807537	1013.2	11.5	1001.7	NE

NE-not encountered.

Table 3: Boring Summary (Continued)

Boring Number	Latitude	Longitude	Surface Elevation (ft)	Depth (ft)	Bottom of Hole Elevation (ft)	Depth to Groundwater During Drilling (Completion)/ Elevation (ft)
B-031-2-14	41.136588	-81.807227	1017.5	11.5	1006.0	NE
B-031-3-14	41.135990	-81.806864	1018.8	11.5	1007.3	NE
B-032-0-14	41.136308	-81.806343	1023.9	8.0	1015.9	NE
B-033-0-14	41.136351	-81.804755	1035.9	31.5	1026.9	27.0/1008.9
B-034-0-14	41.136176	-81.803430	1046.4	8.0	1038.4	NE
B-035-0-14	41.136378	-81.802083	1056.8	8.0	1048.8	NE
B-036-0-14	41.136368	-81.831710	999.1	9.0	990.1	NE
B-037-0-14	41.137349	-81.831604	993.2	9.0	984.2	NE
B-038-0-14	41.138869	-81.831606	988.3	8.0	980.3	NE
B-039-0-14	41.139566	-81.831491	987.5	30.0	981.5	15.0/972.5
B-040-0-14	41.140425	-81.831637	979.5	9.0	970.5	NE
B-041-0-14	41.131509	-81.812431	936.0	8.0	928.0	NE
B-041-1-14	41.131062	-81.812345	933.7	8.0	925.7	NE
B-041-2-14	41.131222	-81.812679	933.2	8.0	925.2	NE
B-041-3-14	41.131248	-81.812158	934.7	8.0	926.7	NE
B-042-0-14	41.132267	-81.812627	946.8	9.0	937.8	NE
B-043-0-14	41.133550	-81.812528	944.8	31.5	913.3	11.0 (10.0)/933.8(934.8)
B-044-0-14	41.134448	-81.812273	960.0	9.0	951.0	NE
B-045-0-14	41.135364	-81.812001	977.5	9.0	968.5	NE
B-046-0-14	41.136950	-81.811549	974.2	9.0	965.2	NE

Drilling was accomplished using one of the following drilling rigs:

Drilling Rig	Augers	Hammer Energy Ratio	Calibration Date
CME 55	3.25" ID - HSA	78.8	1/26/14
CME 45B	3.25" ID - HSA	77.4	1/26/14
CME 55X	3.25" ID - HSA	81.2	1/26/14

Disturbed soil samples were obtained in accordance with the Standard Penetration Test (SPT) (AASHTO T206) and collected continuously for most of the borings. The 9 borings drilled for the structures were sampled continuously to 6 ft and 1.5 ft thereafter. Split spoon samples collected as part of the SPT were placed in sealed glass containers and transported to BEI's geotechnical laboratory in Columbus, OH. Hand penetrometer (HP) tests were conducted on a majority of the cohesive samples prior to their removal from the sampler. Borings were abandoned using one/or a combination of the following: bentonite chips, cement and asphalt patch, as indicated on the Log of Borings (see Appendix B). Field boring logs were maintained by

the drill crew that included a description of the soils and rock encountered, SPT test results recorded as hammer blows per 6-inch increment of penetration, and HP test results. Groundwater related observations were recorded as appropriate.

3.3. Laboratory Testing Program

Natural moisture content tests were performed on all soil samples. Generally, the upper two soil samples were selected for index property measurement (Atterberg Limits) and gradation testing for classification purposes. The results are presented on the log of borings.

Final classification of soil strata in accordance with AASHTO M-145 “Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes,” as modified by ODOT “Classification of Soils” was made once laboratory test results became available. Samples that were not tested were classified on the basis of comparison to those that were.

3.3.1. Standard Penetration Test Results

SPT and split-barrel (commonly known as split-spoon) sampling of soils was performed at 1.5 intervals. The hammer corrected SPT N-values ranged from 1 to high values typically in excess of 50 [blows per foot (bpf)]. N-values were adjusted to account for the high efficiency (95%) hammer used in the test. The resulting N_{60} values are shown on the log of borings.

3.3.2. Sulfate Testing

Selected soil samples were tested for the presence of sulfate using the colorimetric method TEX-145-E. Results are summarized below in Table 4.

Table 4: Sulfate Results

Boring Number	Sample Number	Depth (ft)	Average Sulfate Content (mg/kg)	Boring Number	Sample Number	Depth (ft)	Average Sulfate Content (mg/kg)
B-001-0-14	SS-1	2.0-3.5	<100	B-029-0-14	SS-2	3.0-4.5	209
B-002-0-14	SS-1	2.0-3.5	253	B-029-1-14	SS-1	1.5-3.0	<100
B-003-0-14	SS-1	1.5-3.0	<100	B-029-2-14	SS-1	0-1.5	<100
B-004-0-14	SS-1	0.0-1.5	<100	B-030-0-14	SS-1	1.5-3.0	173
B-005-0-14	SS-1	2.0-3.5	316	B-030-1-14	SS-2	2.5-4.0	<100
B-007-0-14	SS-1	1.5-3.0	1058	B-031-0-14	SS-1	2.0-3.5	147
B-008-0-14	SS-1	1.5-3.0	262	B-031-1-14	SS-2	2.5-4.0	<100

Table 4: Sulfate Results (Continued)

Boring Number	Sample Number	Depth (ft)	Average Sulfate Content (mg/kg)	Boring Number	Sample Number	Depth (ft)	Average Sulfate Content (mg/kg)
B-009-0-14	SS-1	1.5-3.0	667	B-031-2-14	SS-1	2.5-4.0	240
B-011-0-14	SS-2	3.5-5.0	387	B-031-3-14	SS-1	0-1.5	182
B-012-0-14	SS-1	2.0-3.5	396	B-032-0-14	SS-1	2.0-3.5	218
B-013-0-14	SS-1	2.0-3.5	<100	B-034-0-14	SS-1	2.0-3.5	236
B-014-0-14	SS-1	2.0-3.5	<100	B-035-0-14	SS-1	2.0-3.5	191
B-018-0-14	SS-1	2.0-3.5	<100	B-036-0-14	SS-2	3.0-4.5	333
B-020-0-14	SS-1	1.5-3.0	360	B-037-0-14	SS-2	3.0-4.5	1942
B-020-0-14	SS-2	3.0-4.5	<100	B-038-0-14	SS-1	2.0-3.5	169
B-021-0-14	SS-1	1.5-3.0	213	B-040-0-14	SS-1	1.5-3.0	2040
B-021-0-14	SS-2	3.0-4.5	267	B-041-0-14	SS-1	1.5-3.0	<100
B-022-0-14	SS-1	1.5-3.0	444	B-041-1-14	SS-1A	2.0-3.0	<100
B-023-0-14	SS-1	1.5-3.0	249	B-041-2-14	SS-1	2.0-3.5	231
B-024-0-14	SS-1	2.0-3.5	200	B-041-3-14	SS-1	2.0-3.5	<100
B-025-0-14	SS-1	1.5-3.0	227	B-042-0-14	SS-1	2.0-3.5	138
B-026-0-14	SS-1	1.5-3.0	<100	B-044-0-14	SS-1	1.5-3.0	<100
B-027-0-14	SS-1	1.5-3.0	320	B-045-0-14	SS-1	1.5-3.0	<100
B-028-0-14	SS-1	0.0-1.5	<100	B-046-0-14	SS-1	1.5-3.0	<100

4. FINDINGS AND RECOMMENDATIONS

The exploration findings are presented in the following sub-sections that address existing pavement, subgrade conditions and geotechnical pavement related design recommendations.

4.1. Existing Pavement

The thickness of asphalt and base was measured at each boring where pavement was present. A summary of these measurements, along with a description of the base and sub-base and the location within the roadway are summarized below in Table 5.

Table 5: Existing Pavement

Boring Number	Wearing Surface (in)	Base Thickness (in)	Roadway Location
B-001-0-14	8.0 asphalt	4.0 brick	SR-18, WB
B-002-0-14	8.0 asphalt	4.0 brick	SR-18, EB
B-003-0-14	7.0 concrete	-	SR-18, WB shoulder
B-005-0-14	10.0 asphalt	6.0 granular base	SR-18, WB
B-006-0-14	4.0 asphalt	11.0 granular base	SR-18, EB shoulder
B-007-0-14	5.0 asphalt	8.5 granular base	SR-18, EB shoulder
B-008-0-14	4.0 asphalt	-	SR-18, WB
B-009-0-14	4.0 asphalt	10.0 granular base	SR-18, WB shoulder
B-010-0-14	13.0 asphalt	-	SR-18, EB shoulder
B-011-0-14	6.0 asphalt	3.0 brick	SR-18, EB
B-012-0-14	10.0 asphalt	14.0 granular base	SR-18, WB shoulder
B-013-0-14	8.0 asphalt	4.0 brick, 8.0 concrete	SR-18, EB
B-014-0-14	9.0 asphalt	4.0 brick, 11.0 concrete w/aggregate base	SR-18, WB
B-015-0-14	6.0 asphalt	6.0 brick	SR-18, WB shoulder
B-016-0-14	3.0 asphalt	2.0 granular base	SR-18, EB shoulder
B-017-0-14	4.0 asphalt	3.0 granular base	SR-18, EB shoulder
B-018-0-14	15.0 asphalt	9.0 granular base	SR-18, EB
B-020-0-14	14.0 asphalt	12.0 granular base	SR-18, EB shoulder
B-021-0-14	12.0 asphalt	9.0 granular base	SR-18, EB shoulder
B-022-0-14	5.0 asphalt	11.0 granular base	SR-18, WB shoulder
B-023-0-14	4.8 asphalt	10.8 granular base	SR-18, WB
B-024-0-14	12.0 asphalt	-	SR-18, EB
B-025-0-14	5.0 asphalt	7.0 brick, 5.0 granular base	SR-18, WB
B-026-0-14	7.0 asphalt	6.0 granular base	SR-18, EB
B-027-0-14	5.0 asphalt	4.0 brick, 10.0 granular base	SR-18, WB
B-029-0-14	8 concrete	-	SR-18, WB shoulder
B-030-0-14	8.0 asphalt	-	SR-18, WB
B-031-0-14	8.5 asphalt	3.5 brick, 11.0 concrete	SR-18, EB
B-032-0-14	9.0 asphalt	17.0 granular base	SR-18, WB shoulder
B-033-0-14	12.0 asphalt	20.0 granular base	SR-18, WB shoulder
B-034-0-14	17.0 asphalt	5.0 granular base	SR-18, EB
B-035-0-14	10.0 asphalt	14.0 granular base	SR-19, WB
B-036-0-14	9.0 concrete	9.0 granular base	Foot Rd, SB

Table 5: Existing Pavement (Continued)

Boring Number	Wearing Surface (in)	Base Thickness (in)	Roadway Location
B-037-0-14	9.0 concrete	9.0 granular base	Foote Rd, NB
B-038-0-14	7.0 concrete	-	Foote Rd, SB, shoulder
B-040-0-14	13.0 concrete	7.0 granular base	Foote Rd, SB
B-041-0-14	8.0 concrete	16.0 granular base	River Styx Rd, SB
B-041-1-14	8.5 asphalt	13.5 granular base	River Styx Rd, NB
B-041-2-14			E Smith Rd
B-041-3-14	8.5 asphalt	11.5 granular base	E Smith Rd
B-042-0-14	9.0 concrete	15.0 granular base	River Styx Rd, SB
B-044-0-14	9.0 concrete	10.0 granular base	River Styx Rd, NB
B-045-0-14	9.0 concrete	9.0 granular base	River Styx Rd, SB
B-046-0-14	8.0 concrete	10.0 granular base	River Styx Rd, NB

(EB) – eastbound, (WB) – westbound, (SB) southbound and (NB) northbound.

4.2. Subgrade Soils

4.2.1. SR-18

Soils along SR-18 are represented by Borings B-001-0-14 through B-035-014.

Soils representative of the subgrade along SR-18 consist primarily of silt and clay and silty clay [A-6a (40%) and A-6b (40%)]; 6% were clay (A-7-6) and 5% were silt/sandy silt. The remaining 8% of samples consisted of granular soils with A-1-a and A-1-b predominant. One boring, B-025-0-14 contained (A-4b), a prohibited soil type within 36 inches of subgrade.

4.2.2. Foote Rd

Soils along Foote Rd are represented by Borings B-036-0-14 through B-040-0-14. Like SR-18, these soils are predominately silt and clay and silty clay [A-6a (25%) and A-6b (55%)] at the subgrade elevation. The remaining 20% of samples consisted of granular soils with A-2-6 predominant (10%) and 5% each of A-1b and A-3a.

4.2.3. *River Styx Rd*

Soils along River Styx Rd are represented by Borings B-41-0-14 through B-046-0-14. These soils were similar to the other alignments consisting predominantly of silt and clay and silty clay [A-6a (54%) and A-6b (32%)] at the subgrade elevation. 7% of samples consisted of clay (A-7-6) and 7% consisted of A-4a.

4.2.4. *Smith Rd*

Soils along Smith Rd are represented by Borings B-041-2-14 and B-041-3-14. Unlike the soil underlying the other roads, these soils were 63% sandy silt (A-4a), with the remainder A-6a, A-6b and A-7-6 (13% each).

4.2.5. *Frontage Rds Left and Right*

Soils along Frontage Rd L are represented by borings B-029-2-14, B-030-14, B-030-1-14 and B-032-2-14 and soils along Frontage Rd R are represented by borings B-029-1-14, B-030-14, B-031-1-14 and B-031-3-14. These soils were similar to the other alignments consisting predominantly of silt and clay and silty clay [A-6a (58%) and A-6b (25%)] at the subgrade elevation. The remaining 17% of samples consisted of gravel and/or stone with sand (A-1b).

4.3. **Groundwater**

Groundwater was encountered infrequently during drilling. It was noted only in the borings that were deeper and served both as a structure borings and subgrade borings. They included: B-006-0-14, B-007-0-14, B-015-0-14, B-016-0-14, B-020-0-14, B-021-0-14, B-033-0-14 and B-043-0-14. A summary of groundwater elevations is presented in Table 3.

4.4. **Geotechnical Pavement Design Recommendations**

4.4.1. *General Design Considerations*

The laboratory and SPT test data were analyzed using the ODOT GB 1 method. The required spreadsheet-based analysis was conducted, the output from which is presented in Appendix C. The results are

summarized in Table 6.

Table 6: Subgrade Evaluation Summary

Road Segment	Average N_{60L}	P1	CBR
SR-18	12.1	16.0	6
Foote Rd	19.0	16.0	7
River Styx Rd	8.3	15.4	6
Smith Rd	7.0	11.0	7
Frontage Rd Left	14.2	14.0	7
Frontage Rd Right	14.0	13.3	7

Subgrade conditions are generally satisfactory with a CBR in the range 6 - 7. Global chemical stabilization of the subgrade beneath interstates and other divided highways with four or more lanes, more than a mile long is required (GB1- D). Much of MED-18 is four lanes, but since it is not considered a 'divided highway', is exempt from this requirement. Other criteria may be applicable that require local remediation of subgrade, as described below.

1. The design should call for removal and replacement of 36" of silt-rich subgrade (prohibited soil type A-4b) that was encountered in B-025-0-14. Removal should be shown extending from Sta 154+90 to 158+90.
2. Soils that are unstable because of high moisture content are not typically encountered at subgrade. Where excessively moist soils are encountered, they should be conditioned in accordance with ODOT C&MS Item 203. Where such soils are encountered, the Project Engineer should be alert to the fact that these materials have the potential to be A-4b soils that are prohibited within 36" of subgrade and should be removed.
3. GB-1 flags several borings - generally located in the western half of the MED-18 alignment - as containing excessively weak soil at subgrade, requiring undercut and replacement to depths of 12 - 16-inches. (See Table 7). These areas may also be remediated using a 12-inch undercut with geogrid at the designer's discretion. GB-1 states that where remediation is required for 30% or more of the subgrade, consideration should be given to remediating it all as a matter of construction efficiency. This concept is employed in Area 1.

As spot remediation is being recommended, the whole project should be proof rolled before any remediation is performed. Actual limits should be based on the results of the proof rolling as directed by the Project Engineer. The lengths presented in Table 7 should be incorporated in the drawings, but with the understanding that they are approximate and intended for the purpose of estimating quantities for bidding purposes.

Table 7: Local Remediation

Area Number	Segment	Begin Sta	End Sta	Length (ft)	Remediation	Note
1	MED-18	85+50	115+00	2950	12" undercut with geogrid	7 of 11 borings in this area exhibit weak soil at subgrade
2		127+00	728+00	100	12" undercut with geogrid	B-016-0-14 (weak soil)
3		133+20	138+00	480	12" undercut with geogrid	B-019-0-14 (weak soil)
4		151+25	154+90	365	12" undercut with geogrid	B-024-0-14 (weak soil)
5		154+90	158+90	400	36" undercut of unsuitable soil	B-025-0-14 (A-4b soil)
6		158+00	163+00	500	12" undercut with geogrid	B-026-0-14 (weak soil)
7		187+50	191+50	400	12" undercut with geogrid	B-033-0-14 (weak soil)
8	Foote Rd	20+80	23+60	280	36" undercut with geogrid	B-039-0-14 (weak soil)
9	River Styx Rd	903+50	905+50	200	12" undercut with geogrid	B-041-1-14, B-041-0-14 (weak soil)
10		909+50	913+50	400	12" undercut with geogrid	B-043-0-14 (weak soil)
10	Frontage L	40+60	45+90	530	12" undercut - no geogrid	B-030-1-14, B-031-2-14 (weak soil)
11	Frontage R				None required	
12	Smith Rd	All		150	12" undercut – with geogrid	B-041-2-14 and B-041-3-14 (weak soil)

4.4.2. Global Stabilization

The Pavement Selection Committee instructed GPD Group to go with the complete replacement with flexible pavement for the project (David J. Humphrey, November 30, 2015). The selected buildup is as follows:

1.5"	442	Asphalt Concrete Surface Course, 12.5 mm, Type A (446)
	407	Tack Coat for Intermediate Course
1.75"	442	Asphalt Concrete Intermediate Course, 19mm, Type A (446)
5.5"	302	Asphalt Concrete Base
6"	304	Aggregate Base

As stated by Office of Pavement Engineering, "The selected pavement design includes the structural benefit of global chemical stabilization. It is very important that the stabilization be performed as designed with no

changes in construction. To improve the material properties, GB1 spreadsheet analysis for chemical stabilization is summarized in Table 8.

Table 8: Global Stabilization

Area Number	Segment	Item 206 Depth (inch)	Exception	Note
1	MED-18	12	36" undercut of unsuitable soil from Sta. 154+90 to 158+90	B-025-0-14 (A-4b soil)
2	Foot Rd	12	36" undercut of unsuitable soil from Sta. 20+80 to 23+60	B-039-0-14 (N ₆₀ < 4)
3	River Styx Rd	14	-	-
4	Frontage L	12	-	-
5	Frontage R	12	-	-
6	Smith Rd	14	-	-

Chemical stabilization should be accomplished using either cement or lime kiln dust (LKD). The application will include the upper 12-inches of subgrade, and stabilization should extend 18-inches beyond the edge of the paved roadway, shoulder or median. Mix design should be conducted in accordance with ODOT CMS Supplement 1120 (Mixture Design for Chemically Stabilized Soils). For design purposes it may be assumed that the cement addition will be 6% or the LKD, 7% using the following formulae.

$$\text{Cement: } C = 0.75 * T * 110 * 0.06$$

$$\text{LKD: } C = 0.75 * T * 110 * 0.07 \text{ where}$$

C=amount of chemical in pounds / square yard and

T=thickness of the treatment zone in inches

A dry density of 110-pounds/cubic foot is assumed.

The requirement for global treatment means that those areas where chemical stabilization is prohibited must be subject to excavate and replace. Excavation should extend to the required depth below subgrade and replacement material will consist of Item 204 Granular Material. Type B will be required in areas where underdrains are provided; Type C can be used in other locations. Stabilization should extend 18-inches beyond the edge of the paved roadway, shoulder or median.

5. QUALIFICATIONS

This investigation was performed in accordance with accepted geotechnical engineering practice for the purpose of determining roadway and subgrade design related recommendations only. The analyses and recommendations submitted in this report are based upon the data obtained from the borings drilled at the locations shown on Appendix D, and presented on the Logs of Borings (Appendix B). This report does not reflect any variations that may occur between the borings or elsewhere on the site, or variations whose nature and extent may not become evident until a later stage of construction. In the event that any changes in the nature, design or location of the proposed improvements are made, the conclusions and recommendations contained in this report should not be considered valid until the changes are reviewed, and the conclusions and recommendations in this report have been modified or verified in writing by a geotechnical engineer.

It has been a pleasure to be of service to the GPD Group, Inc. in performing this geotechnical exploration for the MED-18-12.99 project.

Respectfully Submitted,

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APPENDIX A

SITE RECONNAISSANCE PHOTOGRAPHS

**MED-18-13.54-Subgrade Exploration
Field Reconnaissance Photographs**



Photograph 1: SR-18 near Sta 193+00 where median changes to a curb.



Photograph 2: View of sidewalk along SR-18.

**MED-18-13.54-Subgrade Exploration
Field Reconnaissance Photographs**



Photograph 3: Typical intersection of SR-18 with other roadways.



Photograph 4: View of Broadway Creek at SR-18 ~Sta 102+55.

**MED-18-13.54-Subgrade Exploration
Field Reconnaissance Photographs**

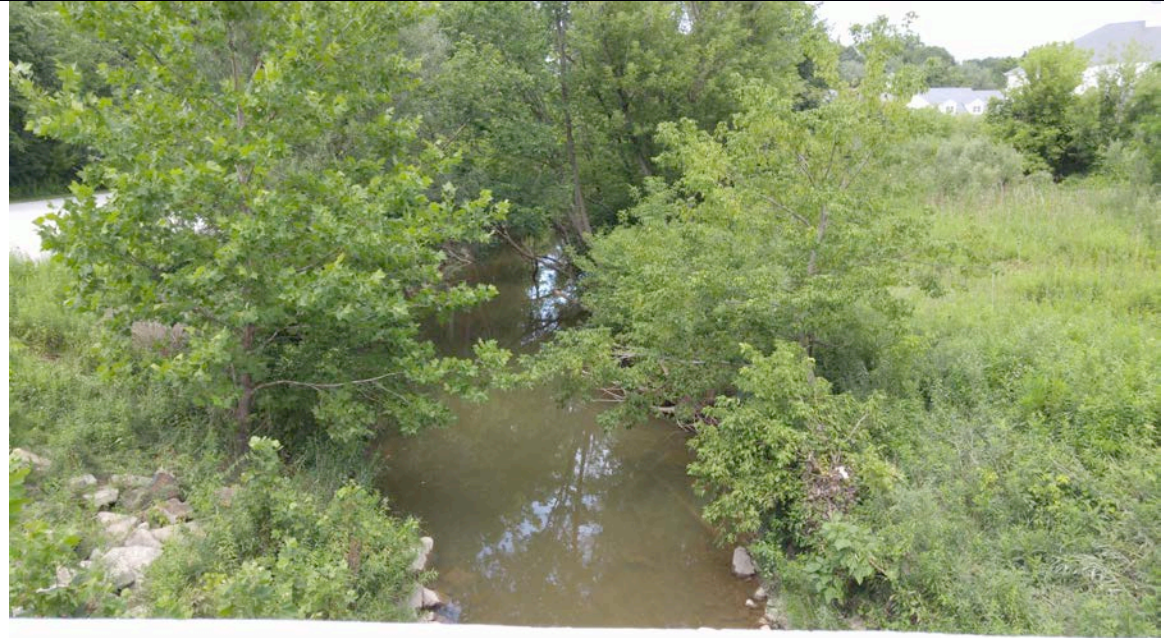


Photograph 5: View of a tributary to Broadway Creek at ~Sta 111+50 along SR-18.



Photograph 6: View of an intermittent tributary to W Branch Rocky River ~Sta 190+00 along SR-18.

**MED-18-13.54-Subgrade Exploration
Field Reconnaissance Photographs**



Photograph 7: View of W Branch Rocky River at Sta 141+00 along SR-18.



Photograph 8: View of lake immediately north of SR-18 ~ Sta 127+00.

**MED-18-13.54-Subgrade Exploration
Field Reconnaissance Photographs**



Photograph 9: View of pond south of SR-18 at ~Sta 127+00.



Photograph 10: View of pond south of SR-18 at ~Sta 135+50.

**MED-18-13.54-Subgrade Exploration
Field Reconnaissance Photographs**



Photograph 11: View of swamp north of SR-18 at ~Sta 166+00.



Photograph 12: Looking toward a marsh south of SR-18 at ~Sta 103+50.

**MED-18-13.54-Subgrade Exploration
Field Reconnaissance Photographs**



Photograph 13: View of a marsh north of SR-18 at ~Sta 111+50.



Photograph 14: Looking at a marsh south of SR-18 at ~Sta 137+50.

**MED-18-13.54-Subgrade Exploration
Field Reconnaissance Photographs**



Photograph 15: Looking at a marsh south of SR-18 at ~Sta 156+00.



Photograph 16: Embankment at historical landslide near Sta 127

**MED-18-13.54-Subgrade Exploration
Field Reconnaissance Photographs**



Photograph 17: Guardrail at historical landslide near Sta 127



Photograph 18: Tree alignments at historical landslide near Sta 127

**MED-18-13.54-Subgrade Exploration
Field Reconnaissance Photographs**



Photograph 19: Swamp at historical landslide near Sta 166



Photograph 20: Embankment at historical landslide near Sta 166

**MED-18-13.54-Subgrade Exploration
Field Reconnaissance Photographs**



Photograph 21: Guardrail at historical landslide near Sta 166



Photograph 22: Eroded channel at historical landslide near Sta 166

**MED-18-13.54-Subgrade Exploration
Field Reconnaissance Photographs**



Photograph 23: Large dry area at historical landslide near Sta 166



Photograph 24: Grassed area at the site of the southern Frontage Rd

**MED-18-13.54-Subgrade Exploration
Field Reconnaissance Photographs**



Photograph 25: Woodland at the site of the northern Frontage Rd



Photograph 26: Erosion along creek at the site of the northern Frontage Rd

**MED-18-13.54-Subgrade Exploration
Field Reconnaissance Photographs**



Photograph 27: View of culvert buried in sediment – northern Frontage Rd



Photograph 28: View of concrete along Foote Rd and surrounding residences.

**MED-18-13.54-Subgrade Exploration
Field Reconnaissance Photographs**



Photograph 29: View of SR-18 and Foot Rd intersection.



Photograph 30: Sidewalks along Foote Rd.

**MED-18-13.54-Subgrade Exploration
Field Reconnaissance Photographs**



Photograph 31: View of the sloping terrain along the southern end of River Styx Rd.



Photograph 32: Another view of the southern end of River Styx Rd.

**MED-18-13.54-Subgrade Exploration
Field Reconnaissance Photographs**



Photograph 33: Looking along the slopes near the intersection of SR-18 and River Styx Rd.



Photograph 34: Another view of the intersection of SR-18 and River Styx Rd.

**MED-18-13.54-Subgrade Exploration
Field Reconnaissance Photographs**



Photograph 35: Longitudinal crack along River Styx Rd near the creek to the east at ~Sta 912+00.



Photograph 36: River Styx Rd and E Smith Rd Intersection

**MED-18-13.54-Subgrade Exploration
Field Reconnaissance Photographs**



Photograph 37: Creek at Sta 900 along River Styx Rd



Photograph 38: Gabion wall at River Styx Rd culvert at Sta 900.

APPENDIX B

**LOGS OF BORINGS AND LABORATORY
TESTING RESULTS**

LEGEND

SYMBOL	DESCRIPTION	ODOT CLASSIFICATION	SYMBOL	DESCRIPTION	ODOT CLASSIFICATION
	Gravel and/or Stone Fragments	A-1-a		Shale	Visual
	Gravel and/or Stone Fragments with Sand	A-1-b		Weathered Shale	Visual
	Fine Sand	A-3		Sandstone	Visual
	Coarse and Fine Sand	A-3a			
	Gravel and/or Stone Fragments with Sand and Silt	A-2-4		GRADATION (%)	
	Gravel and/or Stone Fragments with Sand, Silt and Clay	A-2-5		GR Gravel	
	Sandy Silt	A-2-6		CS Coarse Sand	
	Silt	A-2-7		MS Medium Sand	
	Elastic Silt and Clay	A-4a		FS Fine Sand	
	Silt and Clay	A-4b		SI Silt	
	Silty Clay	A-5		CL Clay (<5 micron)	
	Elastic Clay	A-6a			
	Clay	A-6b		SAMPLER SYMBOLS	
	Organic Silt	A-7-5		Shelby Tube	
	Organic Clay	A-7-6		Rock Core	
				Split Spoon Sample (SS)	
				* Indicates a Sample Taken Within 3 ft of Proposed Grade	

ABBREVIATIONS

LL	LIQUID LIMIT (%)	HP	HAND PENETROMETER
PI	PLASTIC INDEX (%0	PID	PHOTOIONIZATION DETECTOR
WC	MOISTURE CONTENT (%)	UC	UNCONFINED COMPRESSION
SPT	STANDARD PENETRATION TEST	ppm	PARTS PER MILLION
NP	NON PLASTIC	W	WATER FIRST ENCOUNTERED
-200	PERCENT PASSING NO. 200 SIEVE	▼	WATER LEVEL UPON COMPLETION
N ₆₀	ADJUSTED SPT RESULT	WOH	WEIGHT OF HAMMER
EOB	END OF BORING		

MATERIAL CLASSIFIED BY VISUAL INSPECTION

	Sod and Topsoil		Uncontrolled Fill (Describe)		Bouldery Zone		Peat, S-Sedimentary W-Woody F-Fibrous L-Loamy & etc
	Pavement or Base						
	Concrete						

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:52 - \COLUMBUS\LAB\LABACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / J.HODGES</u>	DRILL RIG: <u>CME 55</u>	STATION / OFFSET: <u>85+63, 9 LT</u>	EXPLORATION ID <u>B-001-0-14</u>
TYPE: <u>EXISTING PAVEMENT SUBGRADE</u>	SAMPLING FIRM / LOGGER: <u>BARR / C.PATRICK</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR-18</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>1013.8 (MSL)</u> , EOB: <u>8.0 ft.</u>	PAGE 1 OF 1
START: <u>7/15/15</u> END: <u>7/15/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>78.8</u>	COORD: <u>41.139061, -81.842142</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL			
								GR	CS	FS	SI	CL	LL	PL	PI						
8.0", ASPHALT	1013.8																	X			
4.0", BRICK	1013.1	1																X			
VERY STIFF TO HARD, BROWN MOTTLED WITH GRAY AND LIGHT GRAY, SILTY CLAY , LITTLE SAND, TRACE GRAVEL, CONTAINS SILT FILLED DESICCATION CRACKS, DAMP TO MOIST @3.5'; SS-2 CONTAINS IRON STAINING	1012.8	2	4	4	11	44	SS-1	2.25 - 3.0	1	5	11	36	47	38	18	20	20	A-6b (12)	>>>		
		3	2	5	9	100	SS-2	2.4 - 3.0	3	5	12	37	43	35	17	18	18	A-6b (11)	>>>		
		4	5	8	8	21	100	SS-3	4.5+	-	-	-	-	-	-	-	-	16	A-6b (V)	>>>	
		5	6	7	7	9	25	100	SS-4	4.5+	-	-	-	-	-	-	-	-	16	A-6b (V)	>>>
		6	7	8	8	9	10													>>>	
		7	8																	>>>	
		8	EOB																	>>>	
		1005.8																		>>>	

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 4.5'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:52 - \COLUMBUS\LAB\LAB\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / J.HODGES</u>	DRILL RIG: <u>CME 55</u>	STATION / OFFSET: <u>89+66, 11 RT</u>	EXPLORATION ID <u>B-002-0-14</u>
TYPE: <u>EXISTING PAVEMENT SUBGRADE</u>	SAMPLING FIRM / LOGGER: <u>BARR / C.PATRICK</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR-18</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>1022.2 (MSL)</u> , EOB: <u>8.0 ft.</u>	PAGE 1 OF 1
START: <u>7/15/15</u> END: <u>7/15/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>78.8</u>	COORD: <u>41.139112, -81.840679</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI			
8.0", ASPHALT	1022.2																	
4.0", BRICK	1021.5	1																
VERY STIFF TO HARD, BROWN MOTTLED WITH GRAY, CLAY , "AND" SILT, LITTLE SAND, CONTAINS OCCASIONAL GRAY SILT LENSE, SS-1 CONTAINS IRON STAINING, DAMP TO MOIST	1021.2	2	3															
		3	5	7	16	100	SS-1	2.75 - 4.0	0	3	11	40	46	50	21	29	21	A-7-6 (18)
		4	3	5	6	14	100	SS-2	2.3 - 4.5+	-	-	-	-	-	-	-	22	A-7-6 (V)
HARD, BROWN MOTTLED WITH GRAY AND LIGHT GRAY, SILTY CLAY , LITTLE SAND, TRACE GRAVEL, CONTAINS GRAY SILT FILLED DESICCATION CRACKS AND FEW IRON STAINS, DAMP	1017.2	5	3	7	21	100	SS-3	4.5+	2	4	11	37	46	39	19	20	18	A-6b (12)
		6	7	9														
		7	7	11	14	33	100	SS-4	4.5+	-	-	-	-	-	-	-	15	A-6b (V)
	1014.2	8																
		EOB																

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 4.5'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:52 - \COLUMBUS\LAB\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / J.HODGES</u>	DRILL RIG: <u>CME 55</u>	STATION / OFFSET: <u>93+03, 61 LT</u>	EXPLORATION ID <u>B-003-0-14</u>
TYPE: <u>EXISTING PAVEMENT SUBGRADE</u>	SAMPLING FIRM / LOGGER: <u>BARR / C.PATRICK</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR-18</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>1018.2 (MSL)</u> , EOB: <u>9.0 ft.</u>	PAGE 1 OF 1
START: <u>7/15/15</u> END: <u>7/15/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>78.8</u>	COORD: <u>41.139306, -81.839449</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI				
7.0", CONCRETE	1018.2																		
VERY STIFF TO HARD, BROWN MOTTLED WITH GRAY AND LIGHT GRAY, SILTY CLAY , LITTLE TO SOME SAND, TRACE GRAVEL, DAMP TO MOIST	1017.6	1																	
		2	3	11	100	SS-1	2.50	2	4	14	42	38	37	19	18	22	A-6b (11)		
		3	5																
		4	6	2	11	100	SS-2	4.5+	-	-	-	-	-	-	-	-	19	A-6b (V)	
		5	6	6															
@6.0'; SS-4 CONTAIN SILT FILLED DESICCATION CRACKS		6	10	28	100	SS-3	4.5+	4	8	13	38	37	32	16	16	15	A-6b (10)		
		7	11	30	100	SS-4	4.5+	-	-	-	-	-	-	-	-	15	A-6b (V)		
		8	12	7															
		9	10	29	100	SS-5	4.5+	-	-	-	-	-	-	-	-	16	A-6b (V)		
	1009.2	EOB																	

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 5.2'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:52 - \COLUMBUS\LAB\LABACTIVE PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / J.HODGES</u>	DRILL RIG: <u>CME 55</u>	STATION / OFFSET: <u>97+08, 36 RT</u>	EXPLORATION ID <u>B-004-0-14</u>
TYPE: <u>EXISTING PAVEMENT SUBGRADE</u>	SAMPLING FIRM / LOGGER: <u>BARR / C.PATRICK</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR-18</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>1011.1 (MSL)</u> , EOB: <u>9.0 ft.</u>	PAGE 1 OF 1
START: <u>7/14/15</u> END: <u>7/14/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>78.8</u>	COORD: <u>41.138945, -81.838010</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI				
VERY STIFF TO HARD, ORANGISH BROWN MOTTLED WITH DARK BROWN, SILTY CLAY , LITTLE SAND, TRACE GRAVEL, DAMP TO MOIST @1.5'; SS-2 AND SS-3 BECOME BROWN MOTTLED WITH GRAY	1011.1	1	2	5	100	SS-1	3.25	1	4	11	36	48	40	20	20	21	A-6b (12)		
		2	3	5	20	100	SS-2	4.5+	3	5	12	38	42	37	18	19	18	A-6b (12)	
@4.5'; SS-4 BECOMES STIFF TO VERY STIFF, BROWN	1005.1	3	2	5	56	SS-3	2.75	-	-	-	-	-	-	-	-	24	A-6b (V)		
		4	2	2	3	14	100	SS-4	1.0-2.5	-	-	-	-	-	-	-	25	A-6b (V)	
HARD, BROWN, SILT AND CLAY , LITTLE SAND, LITTLE GRAVEL, CONTAINS SILT FILLED DESICCATION CRACKS, DAMP	1002.1	5	5	11	30	100	SS-5	4.5+	11	6	11	34	38	32	19	13	14	A-6a (9)	
		6	11	12	11	16	46	100	SS-6	4.5+	-	-	-	-	-	-	16	A-6a (V)	
		EOB	9	19															

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 4.5'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:52 - \COLUMBUS\LAB\LABIACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-13

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / J.HODGES</u>	DRILL RIG: <u>CME 55</u>	STATION / OFFSET: <u>102+12, 5 RT</u>	EXPLORATION ID <u>B-005-0-14</u>
TYPE: <u>EXISTING PAVEMENT SUBGRADE</u>	SAMPLING FIRM / LOGGER: <u>BARR / C.PATRICK</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR-18</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>987.2 (MSL)</u> , EOB: <u>8.0 ft.</u>	PAGE 1 OF 1
START: <u>7/14/15</u> END: <u>7/14/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>78.8</u>	COORD: <u>41.138813, -81.836190</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI			
10.0", ASPHALT	987.2																	
6.0", GRANULAR BASE	985.9	1																
HARD, BROWN MOTTLED WITH GRAY, SILT AND CLAY , LITTLE SAND, TRACE GRAVEL, DAMP	983.7	2	3	4	12	100	SS-1	4.0- 4.1	3	7	12	34	44	34	19	15	18	A-6a (10)
HARD, BROWN MOTTLED WITH GRAY, SILTY CLAY , LITTLE SAND, LITTLE GRAVEL, SS-2 CONTAINS IRON STAINING, DAMP TO MOIST		3	3	3	11	67	SS-2	4.5+	11	5	9	34	41	36	19	17	17	A-6b (11)
@5.0'; SS-3 BECOMES ORANGISH BROWN MOTTLED WITH GRAY, TRACE GRAVEL	980.7	4	3	4	13	100	SS-3	4.25- 4.5+	-	-	-	-	-	-	-	-	21	A-6b (V)
VERY STIFF, BROWN TO ORANGISH BROWN, SILT AND CLAY , LITTLE SAND, TRACE GRAVEL, MOIST	979.2	5	4	5	16	100	SS-4	2.5- 3.5	-	-	-	-	-	-	-	-	18	A-6a (V)
	979.2	6	4	5	16	100	SS-4	2.5- 3.5	-	-	-	-	-	-	-	-	18	A-6a (V)
		7	4	5	16	100	SS-4	2.5- 3.5	-	-	-	-	-	-	-	-	18	A-6a (V)
		8	4	5	16	100	SS-4	2.5- 3.5	-	-	-	-	-	-	-	-	18	A-6a (V)
		EOB																

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 4.3'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 11:02 - \\COLUMBUS\LAB\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / ASHBAUGH</u>	DRILL RIG: <u>CME 45B</u>	STATION / OFFSET: <u>102+49, 32 RT</u>	EXPLORATION ID <u>B-006-0-14</u>
TYPE: <u>RETAINING WALL</u>	SAMPLING FIRM / LOGGER: <u>BARR / ASHBAUGH</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR-18</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>985.1 (MSL)</u> , EOB: <u>31.5 ft.</u>	PAGE 1 OF 2
START: <u>7/9/15</u> END: <u>7/10/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>77.4</u>	COORD: <u>41.138723, -81.836074</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)								WC	ODOT CLASS (GI)	BACK FILL
								GR	CS	FS	SI	CL	LL	PL			
4", ASPHALT	985.1																
11", GRANULAR BASE	984.8	1															
MEDIUM DENSE, DARK BROWN AND GRAY, GRAVEL, TRACE SAND, TRACE SILT, TRACE CLAY, DRY (FILL)	983.9	2	6														
		3	7	19	6	SS-1	-	-	-	-	-	-	-	-	2	A-1-a (V)	
LOOSE, BROWN, GRAVEL WITH SAND AND SILT, TRACE CLAY, DAMP (FILL)	982.1	4	6														
		5	4	9	56	SS-2	-	38	29	16	12	5	26	19	7	8	A-2-4 (0)
		6	3														
		7	4	10	28	SS-3	-	-	-	-	-	-	-	-	-	7	A-2-4 (V)
LOOSE, BROWN, GRAVEL WITH SAND, SS-4 CONTAINS ASPHALT, DAMP (FILL)	979.1	8	5														
		9	4	10	17	SS-4	-	-	-	-	-	-	-	-	-	9	A-1-b (V)
		10	4														
@10.0'; SS-5 CONTAINS FEW ROOTS		11	4	3	8	SS-5	-	-	-	-	-	-	-	-	-	11	A-1-b (V)
		12	3														
		13	4	3	9	SS-6	-	-	-	-	-	-	-	-	-	10	A-1-b (V)
		14	3														
MEDIUM STIFF TO HARD, GRAY MOTTLED WITH BROWN, SILT AND CLAY, LITTLE SAND, TRACE GRAVEL, MOIST TO DAMP	970.6	15	4	3	8	SS-7	1.5-3.2	2	5	12	43	38	34	19	15	22	A-6a (10)
@17.5'; SS-8 BECOMES GRAY, "AND" SAND		16	3														
		17	3	3	8	SS-8	0.7-1.4	5	15	34	28	18	29	18	11	20	A-6a (3)
@20.0'; SS-9 TO SS-10 BECOME GRAY MOTTLED WITH BROWN, LITTLE SAND		18	2														
		19	2	2	5	SS-9	0.5-1.3	-	-	-	-	-	-	-	-	19	A-6a (V)
		20	7														
@25.0'; SS-11 TO SS-13 BECOME GRAYISH BROWN		21	7	9	21	SS-10	1.6-3.1	-	-	-	-	-	-	-	-	12	A-6a (V)
		22	5														
		23	8	10	23	SS-11	3.4-3.9	5	6	11	40	38	28	16	12	15	A-6a (9)
		24	5														
		25	8	9	22	SS-12	2.6-4.5+	4	7	12	40	37	28	17	11	15	A-6a (8)
		26	5														
		27	8	9													
		28	5														
		29	8	9													

NOTES: GROUNDWATER ENCOUNTERED AT 22.0' DURING DRILLING. CAVE DEPTH 20.0'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

MATERIAL DESCRIPTION AND NOTES	ELEV. 955.1	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI				
	953.6	31	4 5 9	18	100	SS-13	2.2 4.5+	-	-	-	-	-	-	-	-	-	15	A-6a (V)	< >

EOB

NOTES: GROUNDWATER ENCOUNTERED AT 22.0' DURING DRILLING. CAVE DEPTH 20.0'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

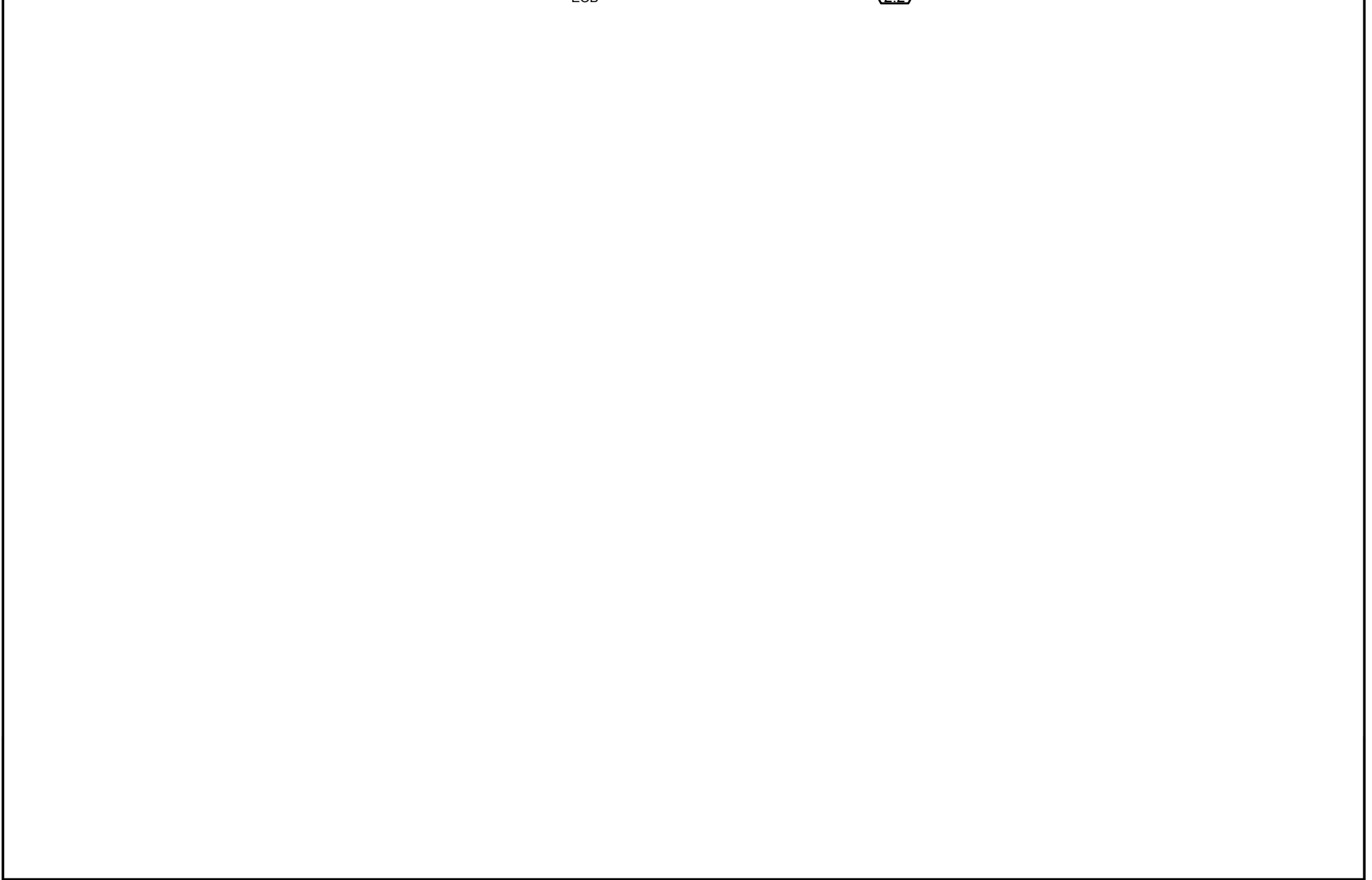
STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 11/23/15 11:15 - \COLUMBUS\LAB\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13.

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / ASHBAUGH</u>	DRILL RIG: <u>CME 45B</u>	STATION / OFFSET: <u>102+85, 32 RT</u>	EXPLORATION ID <u>B-007-0-14</u>
TYPE: <u>CULVERT</u>	SAMPLING FIRM / LOGGER: <u>BARR / ASHBAUGH</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR-18</u>	PAGE 1 OF 2
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>983.9 (MSL)</u> , EOB: <u>31.5 ft.</u>	
START: <u>7/10/15</u> END: <u>7/10/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>77.4</u>	COORD: <u>41.138708, -81.835945</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)								WC	ODOT CLASS (GI)	BACK FILL
								GR	CS	FS	SI	CL	LL	PL			
5", ASPHALT	983.9																
8.5", GRANULAR BASE	982.8	1															
STIFF TO VERY STIFF, BROWN AND GRAY, SILT AND CLAY, LITTLE SAND, LITTLE GRAVEL, MOIST (FILL)	980.9	2	3	6	72	SS-1	1.4 - 2.2	15	8	12	29	36	32	17	15	20	A-6a (8)
STIFF TO VERY STIFF, BROWN AND GRAY, SILTY CLAY, LITTLE SAND, TRACE GRAVEL, DAMP TO MOIST (FILL)	974.4	3	2	8	61	SS-2	2.0 - 3.4	-	-	-	-	-	-	-	-	19	A-6b (V)
		4	2	8	56	SS-3	1.4 - 1.9	-	-	-	-	-	-	-	-	20	A-6b (V)
		5	2	4		WOH											
		6	2	3	6	78	SS-4	1.2 - 2.8	-	-	-	-	-	-	-	21	A-6b (V)
		7															
		8	2	3	9	61	SS-5	1.2 - 3.7	-	-	-	-	-	-	-	18	A-6b (V)
STIFF TO VERY STIFF, BROWN AND GRAY, SILTY CLAY, TRACE SAND, TRACE GRAVEL, DAMP (POSSIBLE FILL)	971.9	9	4	3	4												
STIFF TO VERY STIFF, BROWN MOTTLED WITH GRAY, SILTY CLAY, LITTLE SAND, TRACE GRAVEL, DAMP	967.4	10	4	6	14	67	SS-6	1.4 - 3.2	6	6	10	35	43	35	17	18	A-6b (11)
		11	3	5	14	22	SS-7	0.7 - 0.9	-	-	-	-	-	-	-	-	19
@15.0'; SS-7 BECOMES MOIST, BROWN AND DARK GRAY @ 16.6' SWITCHED RIG DUE TO BREAKDOWN CME 55X: CME Automatic Hammer Energy Ratio: 81.2% Drilled by: J. Hodges Logged By: D.Lyon	964.4	12	3	6	14	22	SS-7	0.7 - 0.9	-	-	-	-	-	-	-	19	A-6b (V)
LOOSE, BROWN, GRAVEL, TRACE SAND, TRACE SILT, TRACE CLAY, (POSSIBLE CUTTINGS), DAMP	964.4	13	5	3	8	28	SS-8	-	-	-	-	-	-	-	-	-	A-1-a (V)
		14	3	3	8	28	SS-8	-	-	-	-	-	-	-	-	-	A-1-a (V)
VERY STIFF TO HARD, GRAY MOTTLED WITH BROWN, SANDY SILT, "AND" CLAY, TRACE GRAVEL, DAMP	964.4	15	5	8	25	83	SS-9	3.7 - 4.5+	-	-	-	-	-	-	-	16	A-4a (V)
		16	5	11	25	83	SS-9	3.7 - 4.5+	-	-	-	-	-	-	-	16	A-4a (V)
@22.5'; BECOMES GRAYISH BROWN	959.4	17	5	6	19	100	SS-10	2.4 - 4.5+	8	6	12	38	36	26	16	10	A-4a (8)
		18	5	9	19	100	SS-10	2.4 - 4.5+	8	6	12	38	36	26	16	10	A-4a (8)
MEDIUM STIFF TO VERY STIFF, GRAYISH BROWN, SILT AND CLAY, TRACE SAND, TRACE GRAVEL, DAMP TO MOIST	959.4	19	5	5	17	100	SS-11	2.0 - 3.75	-	-	-	-	-	-	-	16	A-6a (V)
		20	5	8	17	100	SS-11	2.0 - 3.75	-	-	-	-	-	-	-	16	A-6a (V)
		21															
		22	7	5	15	100	SS-12	1.7 - 3.0	3	6	13	37	41	29	17	12	A-6a (9)
		23	5	7	15	100	SS-12	1.5 - 3.0	-	-	-	-	-	-	-	23	A-6a (V)
		24															
		25															
		26															
		27															
		28															
		29															

NOTES: GROUNDWATER ENCOUNTERED AT 13.0' DURING DRILLING. CAVE DEPTH 9.5'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI				
Continued from Above	953.9																		
	952.4	EOB	31	3	12	100	SS-13	0.9	2	4	6	35	53	33	20	13	23	A-6a (9)	< >
				6				2.0	-	-	-	-	-	-	-	-	20	A-6a (V)	< >



NOTES: GROUNDWATER ENCOUNTERED AT 13.0' DURING DRILLING. CAVE DEPTH 9.5'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:52 - \COLUMBUS\LAB\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / ASHBAUGH</u>	DRILL RIG: <u>CME 45B</u>	STATION / OFFSET: <u>108+46, 16 LT</u>	EXPLORATION ID <u>B-008-0-14</u>
TYPE: <u>EXISTING PAVEMENT SUBGRADE</u>	SAMPLING FIRM / LOGGER: <u>BARR / ASHBAUGH</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR-18</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>989.4 (MSL)</u> , EOB: <u>9.0 ft.</u>	PAGE 1 OF 1
START: <u>7/9/15</u> END: <u>7/9/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>77.4</u>	COORD: <u>41.138553, -81.833915</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI			
4" ASPHALT	989.4																	
VERY STIFF, BROWN MOTTLED WITH GRAY, SILTY CLAY , LITTLE SAND, TRACE GRAVEL, DAMP (FILL)	989.1	1																
		2	6				2.25 - 4.0	6	6	12	33	43	35	18	17	15	A-6b (11)	
HARD, BROWN, SILT AND CLAY , LITTLE SAND, TRACE GRAVEL, DAMP (FILL)	986.4	3	7															
@4.5'; SS-3 CONTAINS ASPHALT		4	8	25	72	SS-2	4.5+	3	6	11	34	46	33	18	15	15	A-6a (10)	
		5	5															
		6	6	19	67	SS-3	4.5+	-	-	-	-	-	-	-	-	15	A-6a (V)	
VERY STIFF TO HARD, BROWN TO BROWN MOTTLED WITH GRAY, SILT AND CLAY , LITTLE TO SOME SAND, TRACE GRAVEL, DAMP	983.4	7	5															
		8	6	21	100	SS-4	4.5+	-	-	-	-	-	-	-	-	16	A-6a (V)	
		9	4															
	980.4	EOB	7	21	100	SS-5	3.00	-	-	-	-	-	-	-	-	18	A-6a (V)	

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 5.5'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

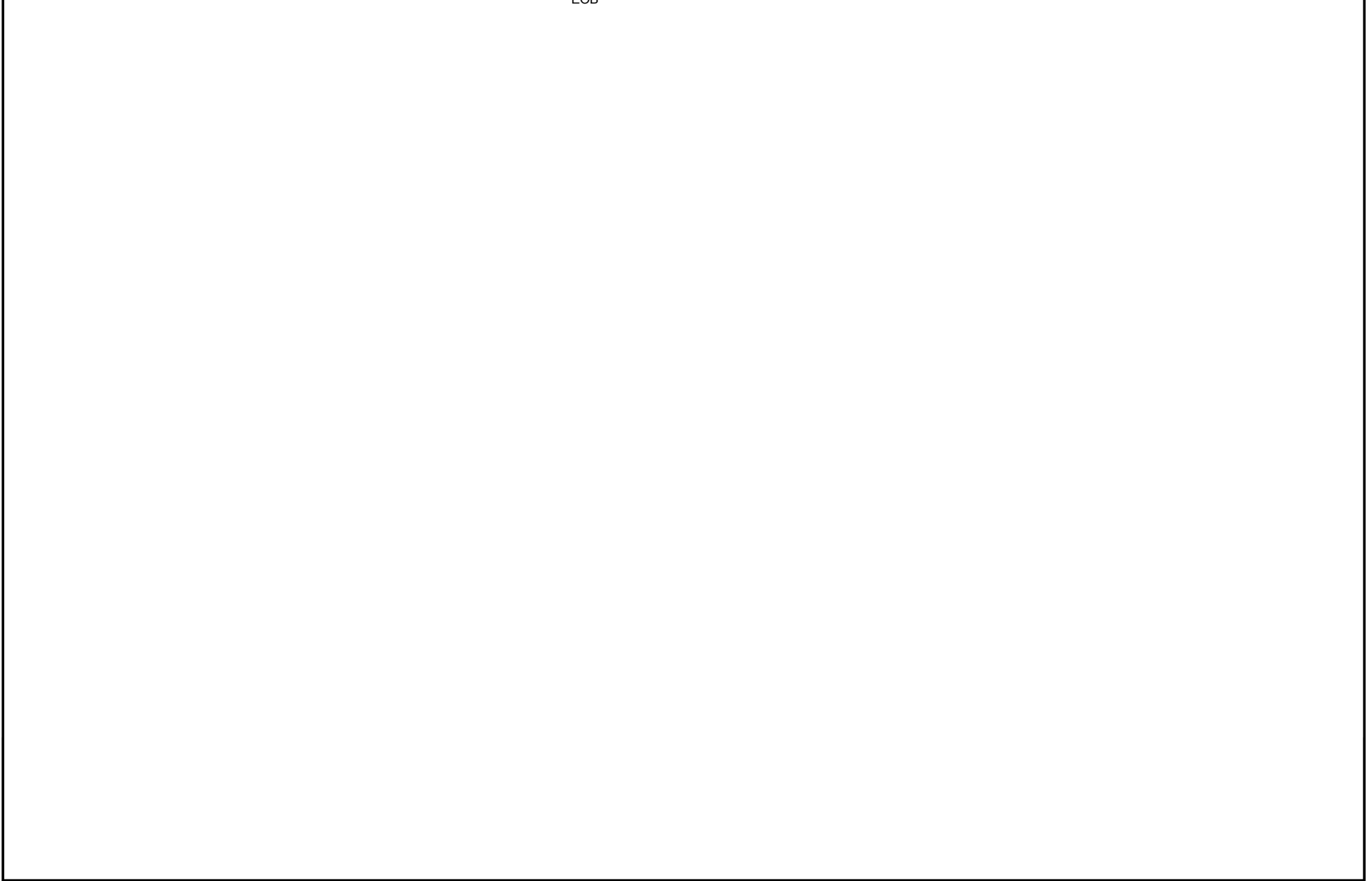
STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:46 - \\COLUMBUS\LAB\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13.

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / ASHBAUGH</u>	DRILL RIG: <u>CME 45B</u>	STATION / OFFSET: <u>111+10, 19 LT</u>	EXPLORATION ID <u>B-009-0-14</u>
TYPE: <u>CULVERT</u>	SAMPLING FIRM / LOGGER: <u>BARR / ASHBAUGH</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR-18</u>	PAGE 1 OF 2
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>988.2 (MSL)</u> , EOB: <u>31.5 ft.</u>	
START: <u>7/9/15</u> END: <u>7/9/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>77.4</u>	COORD: <u>41.138445, -81.832968</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI				
4", ASPHALT	988.2																		
10", GRANULAR BASE	987.9																		
STIFF TO VERY STIFF, BROWN WITH GRAY, SILT AND CLAY, LITTLE SAND, TRACE GRAVEL, DAMP (POSSIBLE FILL)	987.1	1																	
		2	3																
		3	4	12	67	SS-1	1.7-2.5	4	6	10	36	44	34	19	15	19	A-6a (10)		
		4	4	8	28	SS-2	1.7-1.9	-	-	-	-	-	-	-	-	21	A-6a (V)		
		5	4	3	8	SS-3	1.0-1.2	-	-	-	-	-	-	-	-	19	A-6a (V)		
		6																	
		7																	
		8	3	4	10	67	SS-4	2.0-3.2	-	-	-	-	-	-	-	23	A-6a (V)		
		9	4	4															
		978.7	10	4	4	10	100	SS-5	1.2-2.0	-	-	-	-	-	-	23	A-6a (V)		
	STIFF TO VERY STIFF, DARK GRAY MOTTLED WITH BROWN, SILT AND CLAY, LITTLE SAND, TRACE GRAVEL, SS-5 CONTAINS DECAYED ROOTS, MOIST		11	4	4														
			12																
@12.5'; SS-6 BECOMES STIFF TO HARD, BROWN MOTTLED WITH GRAY, DAMP		13	8	9	27	100	SS-6	4.5+	4	8	12	37	39	32	18	14	16	A-6a (10)	
		14		12															
		15	22	50	-	100	SS-7	4.5+	-	-	-	-	-	-	-	14	A-6a (V)		
		16																	
		17																	
		18	14	18	22	52	100	SS-8	4.2-4.5+	-	-	-	-	-	-	14	A-6a (V)		
		19																	
		20	22	34	39	94	100	SS-9	3.5-4.5+	4	7	12	40	37	28	16	12	14	A-6a (9)
		21																	
		22																	
		23	4	5	8	17	100	SS-10	1.7-2.4	-	-	-	-	-	-	15	A-6a (V)		
		24																	
		25	5	6	9	19	100	SS-11	1.2-1.4	-	-	-	-	-	-	17	A-6a (V)		
		26																	
		27																	
		28	4	4	5	12	100	SS-12	1.7-2.5	2	7	12	41	38	28	16	12	16	A-6a (9)
		29																	

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 23.0'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

MATERIAL DESCRIPTION AND NOTES	ELEV. 958.2	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI				
	956.7	31	6	19	100	SS-13	1.7 - 2.4	-	-	-	-	-	-	-	-	-	16	A-6a (V)	< >



NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 23.0'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:46 - \COLUMBUS\LAB\LAB\ACTIVE PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: MED-18-12.99	DRILLING FIRM / OPERATOR: BARR / J.HODGES	DRILL RIG: CME 55	STATION / OFFSET: 111+20, 22 RT	EXPLORATION ID B-010-0-14
TYPE: CULVERT	SAMPLING FIRM / LOGGER: BARR / C.PATRICK	HAMMER: CME AUTOMATIC	ALIGNMENT: SR-18	PAGE 1 OF 1
PID: 92953 BR ID:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 1/26/14	ELEVATION: 988.0 (MSL), EOB: 30.0 ft.	
START: 7/13/15 END: 7/13/15	SAMPLING METHOD: SPT	ENERGY RATIO (%): 78.8	COORD: 41.138331, -81.832955	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI				
13.0", ASPHALT	988.0																		
VERY STIFF TO HARD, BROWN MOTTLED WITH GRAY, SILTY CLAY, LITTLE SAND, TRACE GRAVEL, DAMP TO MOIST @6.5'; SS-4 TO SS-6 BECOMES BROWN MOTTLED WITH GRAY AND DARK GRAY	986.9	1																	
		2	3																
		3	4	11	100	SS-1	2.2-4.5+	4	5	10	35	46	34	17	17	18	A-6b (11)		
		4	2	3	8	44	SS-2	3.1-4.5+	-	-	-	-	-	-	-	-	17	A-6b (V)	
		5	2	3	8	67	SS-3	1.9-2.9	-	-	-	-	-	-	-	-	22	A-6b (V)	
		6	3	3															
		7	2	4	11	67	SS-4	2.2-4.5+	3	4	11	37	45	37	19	18	19	A-6b (11)	
		8																	
		9																	
		10																	
		11	4	4	14	100	SS-5	3.5-4.5+	-	-	-	-	-	-	-	-	20	A-6b (V)	
		12																	
13	6	8	25	100	SS-6	3.2-4.5+	-	-	-	-	-	-	-	-	18	A-6b (V)			
14																			
15																			
16	8	9	25	100	SS-7	4.5+	-	-	-	-	-	-	-	-	15	A-6b (V)			
17																			
18	970.0																		
VERY STIFF TO HARD, GRAY MOTTLED WITH BROWN, SILT AND CLAY, LITTLE SAND, TRACE GRAVEL, DAMP	966.7	19	5	6	18	100	SS-8	3.5-4.5+	5	8	12	38	37	29	17	12	15	A-6a (9)	
20																			
VERY STIFF, BROWN, SILT, SOME CLAY, TRACE SAND, DAMP	965.0	21	6	10	26	100	SS-9	4.5+	-	-	-	-	-	-	-	16	A-6a (V)		
22																			
STIFF TO VERY STIFF, GRAY MOTTLED WITH BROWN BECOMING GRAY, SILT AND CLAY, LITTLE SAND, TRACE GRAVEL, DAMP	958.0	23																	
24		5	7	22	100	SS-10	1.5-3.2	-	-	-	-	-	-	-	17	A-6a (V)			
25																			
26																			
27		3	3	12	100	SS-11	2.2-2.9	3	7	12	41	37	28	17	11	15	A-6a (8)		
28																			
29		3	4	14	100	SS-12	1.9-2.5	-	-	-	-	-	-	-	-	16	A-6a (V)		

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 15.8'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:52 - \COLUMBUS\LAB\LABACTIVE PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / J.HODGES</u>	DRILL RIG: <u>CME 55</u>	STATION / OFFSET: <u>113+00, 17 RT</u>	EXPLORATION ID <u>B-011-0-14</u>
TYPE: <u>EXISTING PAVEMENT SUBGRADE</u>	SAMPLING FIRM / LOGGER: <u>BARR / C.PATRICK</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR-18</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>987.4 (MSL)</u> , EOB: <u>8.0 ft.</u>	PAGE 1 OF 1
START: <u>7/13/15</u> END: <u>7/13/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>78.8</u>	COORD: <u>41.138263, -81.832308</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI			
6.0", ASPHALT 3.0", BRICK VERY STIFF TO HARD, BROWN WITH GRAY, SILTY CLAY , LITTLE TO SOME SAND, TRACE GRAVEL, DAMP SS-3 CHANGES TO GRAYISH BROWN (FILL)	987.4 986.9 986.6	1 2 3 4 5 6 7 8	3 3 2 2 2 2 8 11 16	8 3 7 9 5	33 44 39 56	SS-1 SS-2 SS-3 SS-4	4.0-4.5+ 3.00 4.5+ -	3 5 -	9 6 -	12 9 -	27 33 -	49 47 -	38 36 -	20 19 -	18 17 -	19 19 17 23	A-6b (11) A-6b (11) A-6b (V) A-6a (V)	
HARD, BROWN, SILT AND CLAY , SOME SAND, SOME GRAVEL, CONTAINS BRICK FRAGMENTS, MOIST (FILL)			EOB	8														

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 5.5'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:53 - \COLUMBUS\LAB\LABACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / J.HODGES</u>	DRILL RIG: <u>CME 55X</u>	STATION / OFFSET: <u>117+32, 22 LT</u>	EXPLORATION ID <u>B-012-0-14</u>
TYPE: <u>EXISTING PAVEMENT SUBGRADE</u>	SAMPLING FIRM / LOGGER: <u>BARR / D.LYON</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR-18</u>	PAGE 1 OF 1
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>983.8 (MSL)</u> , EOB: <u>8.0 ft.</u>	
START: <u>7/9/15</u> END: <u>7/9/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>81.2</u>	COORD: <u>41.138177, -81.830737</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI				
10", ASPHALT	983.8																		
14", GRANULAR BASE	983.0	1																	
HARD, BROWN, SILTY CLAY , LITTLE SAND, TRACE GRAVEL, CONTAINS SILT FILLED DESICCATION CRACKS, DAMP	981.8	2	5																
		3	7 11	24	89	SS-1	4.5+	2	5	10	36	47	36	19	17	15	A-6b (11)		
		4	4	6 10	22	100	SS-2	4.5+	5	6	10	35	44	35	17	18	15	A-6b (11)	
		5	5	9 10	26	100	SS-3	4.5+	-	-	-	-	-	-	-	-	16	A-6b (V)	
		6	6	10 13	31	100	SS-4	4.5+	-	-	-	-	-	-	-	-	16	A-6b (V)	
		7	7																
	975.8	8																	
		EOB																	

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 3.5'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:53 - \COLUMBUS\LAB\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13.

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / J.HODGES</u>	DRILL RIG: <u>CME 55X</u>	STATION / OFFSET: <u>120+79, 12 RT</u>	EXPLORATION ID <u>B-013-0-14</u>
TYPE: <u>EXISTING PAVEMENT SUBGRADE</u>	SAMPLING FIRM / LOGGER: <u>BARR / D.LYON</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR-18</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>970.8 (MSL)</u> , EOB: <u>8.0 ft.</u>	PAGE 1 OF 1
START: <u>7/9/15</u> END: <u>7/9/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>81.2</u>	COORD: <u>41.137932, -81.829513</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL		
								GR	CS	FS	SI	CL	LL	PL	PI					
8", ASPHALT	970.8																			
4", BRICK	969.8	1																X		
8", CONCRETE	969.1	2																X		
STIFF TO HARD, BROWN MOTTLED WITH GRAY, CLAY, SOME TO "AND" SILT, LITTLE SAND, TRACE GRAVEL, DAMP TO MOIST		3	4	5	6	15	89	SS-1	1.5 - 4.5+	1	3	10	37	49	46	20	26	22	A-7-6 (16)	>>>
		4	3	5	7	16	78	SS-2	2.9 - 4.5+	1	3	9	30	57	43	20	23	20	A-7-6 (14)	>>>
		5	4	6	7	18	78	SS-3	4.5+	-	-	-	-	-	-	-	-	18	A-7-6 (V)	>>>
		6	6	7	8	26	78	SS-4	4.0 - 4.5+	-	-	-	-	-	-	-	-	18	A-7-6 (V)	>>>
		7	6	8	11					-	-	-	-	-	-	-	-	18	A-7-6 (V)	>>>
	962.8	8																	EOB	

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 4.2'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:53 - \COLUMBUS\LAB\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / J.HODGES</u>	DRILL RIG: <u>CME 55</u>	STATION / OFFSET: <u>125+39, 17 LT</u>	EXPLORATION ID <u>B-014-0-14</u>
TYPE: <u>EXISTING PAVEMENT SUBGRADE</u>	SAMPLING FIRM / LOGGER: <u>BARR / C.PATRICK</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR-18</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>958.6 (MSL)</u> , EOB: <u>8.0 ft.</u>	PAGE 1 OF 1
START: <u>7/13/15</u> END: <u>7/13/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>78.8</u>	COORD: <u>41.137805, -81.827848</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI				
9.0", ASPHALT	958.6																		
4.0", BRICK	957.9	1																	
11.0", CONCRETE WITH AGGREGATE BASE	957.5	2																	
VERY STIFF TO HARD, BROWN MOTTLED WITH GRAY, SILT AND CLAY , LITTLE SAND, TRACE GRAVEL @3.5'; SS-2 TO SS-5 BECOMES BROWN @5.0'; SS-3 CONTAINS SILT FILLED DESICCATION CRACKS	956.6	3	5	6	18	100	SS-1	4.5+	3	6	13	38	40	31	16	15	15	A-6a (10)	
		4	4	5	13	100	SS-2	2.4-3.2	8	7	12	35	38	33	18	15	16	A-6a (10)	
		5	6	7	22	100	SS-3	4.5+	-	-	-	-	-	-	-	-	-	16	A-6a (V)
		6	7	10	28	100	SS-4	4.5+	-	-	-	-	-	-	-	-	-	16	A-6a (V)
		7	8	10	11														
	950.6	EOB																	

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 4.3'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 11/17/15 11:02 - \COLUMBUS\LAB\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13.

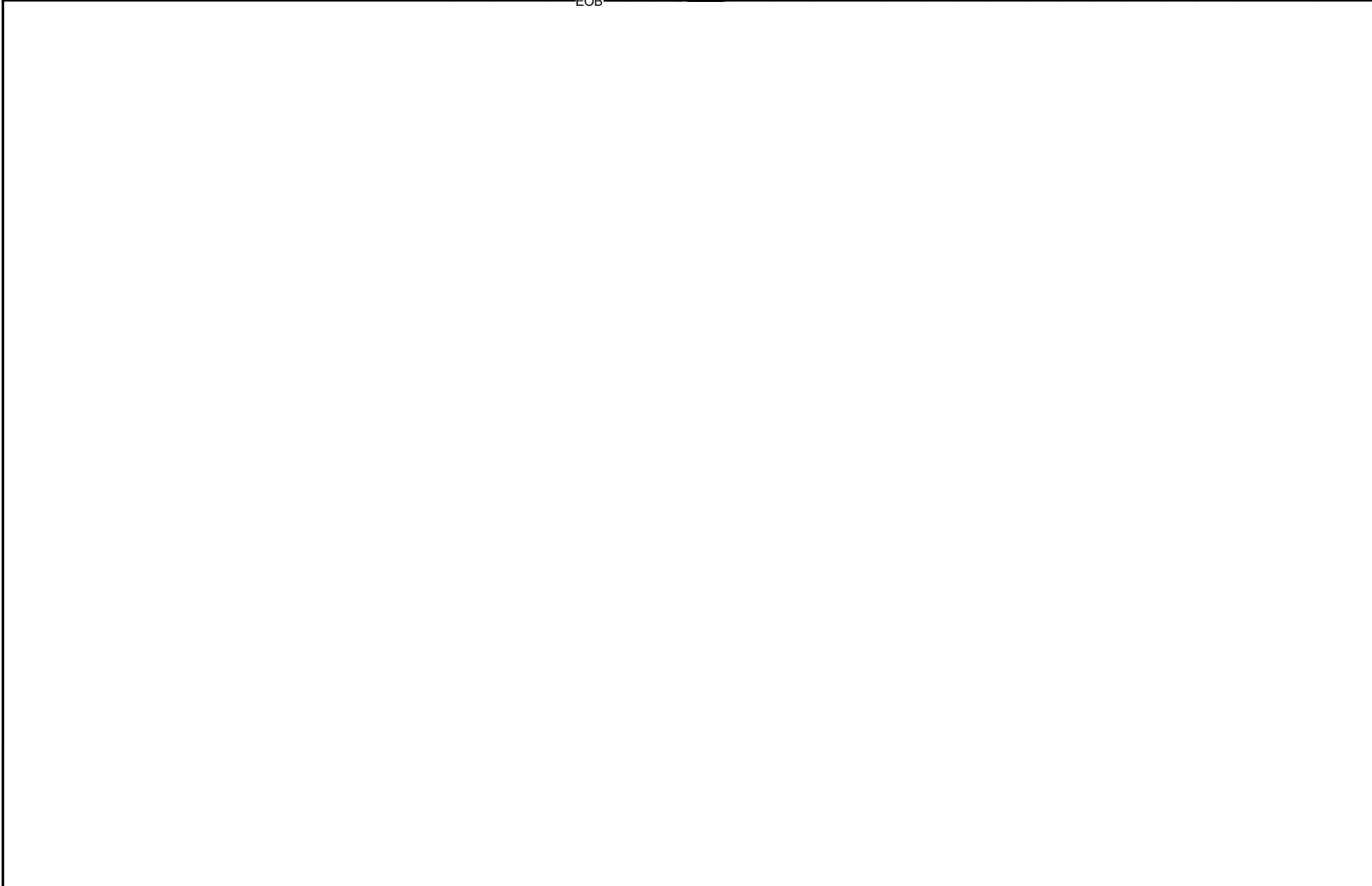
PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / ASHBAUGH</u>	DRILL RIG: <u>CME 45B</u>	STATION / OFFSET: <u>127+12, 23 LT</u>	EXPLORATION ID <u>B-015-0-14</u>
TYPE: <u>RETAINING WALL</u>	SAMPLING FIRM / LOGGER: <u>BARR / ASHBAUGH</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR-18</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>959.6 (MSL)</u> , EOB: <u>31.5 ft.</u>	PAGE 1 OF 2
START: <u>7/8/15</u> END: <u>7/8/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>77.4</u>	COORD: <u>41.137745, -81.827227</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	LABORATORY TESTS							WC	ODOT CLASS (GI)	HOLE SEALED
								GR	CS	FS	SI	CL	LL	PL			
6" ASPHALT	959.6																
6" BRICK	958.6	1															
SOFT TO VERY STIFF, BROWN CHANGING TO BROWN AND GRAY, SILTY CLAY , LITTLE SAND, TRACE GRAVEL, MOIST (FILL)		2	4				1.7-2.1	-	-	-	-	-	-	-	-	21	A-6b (V)
		3	7	21	44	SS-1											
		4	3				0.4-0.5	-	-	-	-	-	-	-	-	24	A-6b (V)
		5	4	10	6	SS-2											
@7.5'; CHANGES TO VERY STIFF TO HARD		6	4				1.2-1.5	-	-	-	-	-	-	-	-	24	A-6b (V)
		7	6	17	39	SS-3											
		8	8				2.0-4.5+	7	8	11	32	42	38	19	19	18	A-6b (11)
VERY STIFF TO HARD, BROWN, SILTY CLAY , LITTLE SAND, TRACE GRAVEL, DAMP	950.1	9	16	53	56	SS-4											
		10	7				2.0-4.5+	-	-	-	-	-	-	-	-	18	A-6b (V)
STIFF TO HARD, SILT AND CLAY, LITTLE SAND, TRACE GRAVEL , DAMP	947.6	11	10	28	67	SS-5											
		12	7				2.0-4.5+	-	-	-	-	-	-	-	-	18	A-6b (V)
		13	4				2.0-4.5+	5	6	12	34	43	33	18	15	18	A-6a (10)
		14	8	48	72	SS-6											
@16.4'; ENCOUNTERED COBBLE		15	5				1.7-4.5+	-	-	-	-	-	-	-	-	16	A-6a (V)
		16	18		88	SS-7											
		17	50/5"														
STIFF, BROWN MOTTLED WITH GRAY, SILTY CLAY , SOME SAND, LITTLE GRAVEL, MOIST	940.3	18	36		83	SS-8	4.5+	-	-	-	-	-	-	-	-	17	A-6a (V)
		19	50														
@22.5'; SS-10 NO RECOVERY	938.6	20	3				1.2-1.6	16	10	12	29	33	36	19	17	20	A-6b (8)
		21	5	13	100	SS-9											
		22	5				-	-	-	-	-	-	-	-	-	-	-
VERY SOFT TO MEDIUM STIFF, BROWN MOTTLED WITH GRAY, SANDY SILT , SOME CLAY, TRACE GRAVEL, MOIST		23	3	9	0	SS-10											
		24	4				0.5-0.8	-	-	-	-	-	-	-	-	29	A-4a (V)
		25	3	8	22	SS-11											
		26	3				0.2-0.6	6	8	12	46	28	26	16	10	18	A-4a (8)
		27	3	8	100	SS-12											
		28	3														
		29	3														

NOTES: GROUNDWATER ENCOUNTERED AT 23.5' DURING DRILLING. CAVE DEPTH 26.0'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SOIL MIXED WITH BENTONITE PELLETS

PID: 92953	BR ID:	PROJECT: MED-18-12.99	STATION / OFFSET: 127+11.51, 23.0 LT	START: 7/8/15	END: 7/8/15	PG 2 OF 2	B-015-0-14
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MATERIAL DESCRIPTION AND NOTES	ELEV. 929.6	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	HOLE SEALED
								GR	CS	FS	SI	CL	LL	PL	PI			
@30.0'; SS-13 NO RECOVERY	928.1	31	7 9 10	25	0	SS-13	-	-	-	-	-	-	-	-	-	-	-	-



NOTES: GROUNDWATER ENCOUNTERED AT 23.5' DURING DRILLING. CAVE DEPTH 26.0'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SOIL MIXED WITH BENTONITE PELLETS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 11/17/15 11:02 - \COLUMBUS\LAB\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13.

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / J.HODGES</u>	DRILL RIG: <u>CME 45B</u>	STATION / OFFSET: <u>127+42, 19 RT</u>	EXPLORATION ID <u>B-016-0-14</u>
TYPE: <u>RETAINING WALL</u>	SAMPLING FIRM / LOGGER: <u>BARR / C.PATRICK</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR-18</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>959.9 (MSL)</u> , EOB: <u>30.0 ft.</u>	PAGE 1 OF 1
START: <u>7/2/15</u> END: <u>7/2/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>77.4</u>	COORD: <u>41.137619, -81.827141</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)								WC	ODOT CLASS (GI)	BACK FILL
								GR	CS	FS	SI	CL	LL	PL			
3", ASPHALT	959.9																
2", GRANULAR BASE	959.7 959.5	1															
HARD, BROWN WITH GRAY, SILT AND CLAY, LITTLE SAND, TRACE GRAVEL, DAMP (FILL)	956.9	2	3	9	56	SS-1	4.5+	-	-	-	-	-	-	-	-	18	A-6a (V)
VERY STIFF TO HARD, BROWN WITH GRAY, CLAY, SOME SILT, LITTLE SAND, TRACE GRAVEL, CONTAINS FEW ROOT HAIRS, MOIST (FILL)		3	3	4	12	SS-2	2.75-3.0	1	3	9	28	59	47	20	27	21	A-7-6 (16)
@4.5'; SS-3 CONTAINS FIELD TILL FRAGMENTS		4	3	4	13	SS-3	2.5-4.5+	-	-	-	-	-	-	-	-	21	A-7-6 (V)
		5	3	4	6												
VERY STIFF, BROWN WITH GRAY, SILTY CLAY, LITTLE SAND, TRACE GRAVEL, DAMP (POSSIBLE FILL)	952.6	6															
		7															
		8															
		9	4	4	12	SS-4	2.6-4.0	-	-	-	-	-	-	-	-	17	A-6b (V)
		10	4	5													
STIFF TO VERY STIFF, GRAYISH BROWN MOTTLED W/ GRAY BROWN AND DARK GRAY, CLAY, "AND" SILT, LITTLE SAND, CONTAINS FEW FINE ROOTS, MOIST	948.6	11															
		12															
		13	3	3	10	SS-5	1.4-3.2	0	4	9	36	51	49	21	28	24	A-7-6 (17)
		14	3	5													
DENSE, GRAYISH BROWN, GRAVEL WITH SAND AND SILT, LITTLE CLAY, MOIST	944.6	15															
		16															
		17	7	23	46	SS-6	-	-	-	-	-	-	-	-	-	24	A-2-4 (V)
		18	7	13													
STIFF, BROWN MOTTLED WITH GRAYISH BROWN, SILTY CLAY, LITTLE SAND, TRACE GRAVEL, MOIST	940.6	19															
		20															
		21	6	11	49	SS-7	1.4-1.7	-	-	-	-	-	-	-	-	23	A-6b (V)
		22	6	27													
STIFF TO VERY STIFF, OLIVE GRAY MOTTLED WITH GRAY, SILT AND CLAY, LITTLE SAND, TRACE GRAVEL, MOIST	936.6	23															
		24															
		25	3	3	9	SS-8	1.25-4.0	-	-	-	-	-	-	-	-	22	A-6a (V)
		26	3	4													
VERY STIFF, GRAY, SANDY SILT, LITTLE CLAY, TRACE GRAVEL, DAMP	932.6	27															
		28															
		29	4	8	25	SS-9	2.75-3.25	8	15	16	42	19	22	16	6	13	A-4a (5)
	929.9		4	11													

NOTES: GROUNDWATER ENCOUNTERED AT 15.0' DURING DRILLING. CAVE DEPTH 20.0'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:57 - \COLUMBUS\LAB\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13.

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / J.HODGES</u>	DRILL RIG: <u>CME 45B</u>	STATION / OFFSET: <u>128+38, 18 RT</u>	EXPLORATION ID <u>B-017-0-14</u>
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>BARR / C.PATRICK</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR-18</u>	PAGE 1 OF 1
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>963.0 (MSL)</u> , EOB: <u>10.0 ft.</u>	
START: <u>7/2/15</u> END: <u>7/2/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>77.4</u>	COORD: <u>41.137577, -81.826798</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI			
4", ASPHALT	963.0																	
3", GRANULAR BASE	962.7 962.4	1																
VERY STIFF TO HARD, BROWN TO GRAYISH BROWN, SILT AND CLAY, LITTLE SAND, TRACE TO LITTLE GRAVEL, FEW IRON STAINS, CONTAINS ASPHALT FRAGMENTS, DAMP (FILL)	958.5	2	6															
		3	7	25	100	SS-1	4.5+	3	7	12	38	40	30	17	13	15	A-6a (9)	
VERY STIFF TO HARD, GRAYISH BROWN, SILT AND CLAY, LITTLE SAND, TRACE GRAVEL, SS-3 CONTAINS FEW IRON STAINS, DAMP	958.5	4	4															
		5	5	18	100	SS-2	3.25 4.5+	-	-	-	-	-	-	-	-	16	A-6a (V)	
	958.5	6	6															
		7	9	25	100	SS-3	2.75 4.5+	-	-	-	-	-	-	-	-	17	A-6a (V)	
	953.0	8																
		9	2															
	953.0	10	5	15	100	SS-4	4.5+	-	-	-	-	-	-	-	-	16	A-6a (V)	
		EOB	7															

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:53 - \COLUMBUS\LAB\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / J.HODGES</u>	DRILL RIG: <u>CME 55X</u>	STATION / OFFSET: <u>133+17, 14 RT</u>	EXPLORATION ID <u>B-018-0-14</u>
TYPE: <u>EXISTING PAVEMENT SUBGRADE</u>	SAMPLING FIRM / LOGGER: <u>BARR / D.LYON</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR-18</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>963.2 (MSL)</u> , EOB: <u>8.0 ft.</u>	PAGE 1 OF 1
START: <u>7/9/15</u> END: <u>7/9/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>81.2</u>	COORD: <u>41.137380, -81.825078</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI				
15", ASPHALT	963.2																		
9", GRANULAR BASE	962.0	1																	
HARD, BROWN, SILT AND CLAY, LITTLE SAND, LITTLE GRAVEL, CONTAINS SILT FILLED DESICCATION CRACKS, DAMP @3.5'; SS-2 AND 3 BECOMES BROWN MOTTLED WITH GRAY, TRACE GRAVEL @6.5'; SS-4 BECOMES BROWN	961.2	2	9																
		3	8	27	39	SS-1	4.5+	18	6	10	31	35	30	16	14	13	A-6a (8)		
		4	6	9	26	89	SS-2	4.5+	3	8	12	38	39	30	17	13	15	A-6a (9)	
		5	4	7	22	100	SS-3	4.5+	-	-	-	-	-	-	-	-	16	A-6a (V)	
	955.2	6	7	9															
		7	6	8	24	100	SS-4	4.5+	-	-	-	-	-	-	-	16	A-6a (V)		
		8	8	10															

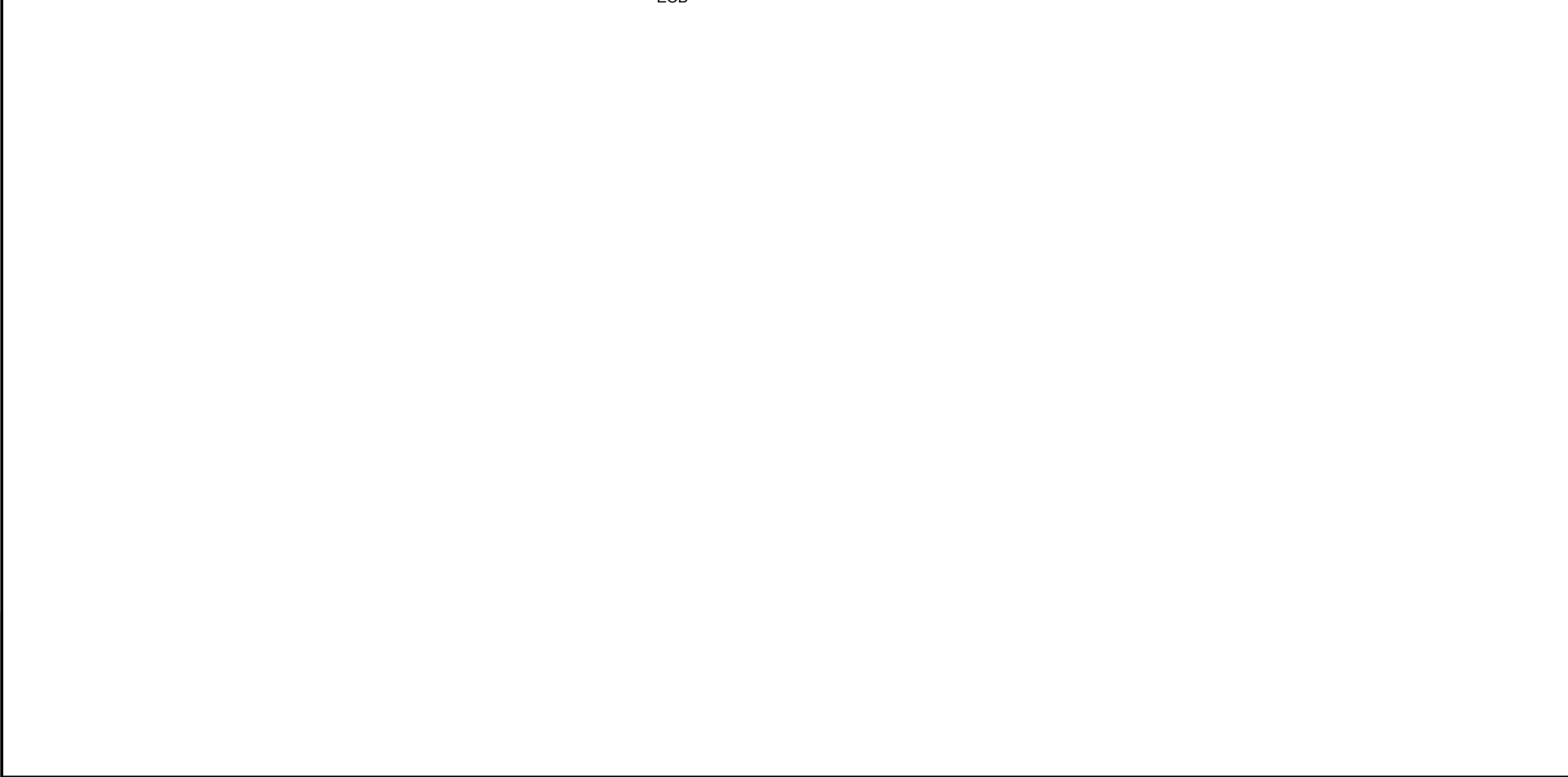


NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 4.0'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 11:00 - \COLUMBUS\LAB\LABACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13.

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / J.HODGES</u>	DRILL RIG: <u>CME 55X</u>	STATION / OFFSET: <u>135+30, 36 RT</u>	EXPLORATION ID <u>B-019-0-14</u>
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>BARR / D. LYON</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR-18</u>	PAGE 1 OF 1
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>952.8 (MSL)</u> , EOB: <u>6.5 ft.</u>	
START: <u>7/10/15</u> END: <u>7/10/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>81.2</u>	COORD: <u>41.137407, -81.823495</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI			
6.0" TOPSOIL	952.8																	
STIFF TO VERY STIFF, BROWN WITH GRAY, CLAY , LITTLE SILT, TRACE SAND, TRACE GRAVEL, MOIST (FILL)	952.3	1																
		2	2															
		3	4	11	100	SS-1	1.5-3.25	1	3	7	22	67	50	20	30	25	A-7-6 (18)	
STIFF TO HARD, BROWN, SILTY CLAY , LITTLE SAND, "AND" GRAVEL, DAMP TO MOIST	949.3	4	3															
		5	5	14	83	SS-2	1.25-1.5	37	9	9	15	30	36	16	20	14	A-6b (5)	
@5.0'; SS-3 BECOMES TRACE GRAVEL		6	5															
	946.3	6	6	18	94	SS-3	2.25-4.5+	3	5	12	27	53	37	16	21	18	A-6b (12)	
		EOB	7															



NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 11:13 - \COLUMBUS\LAB\ACTIVE PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13.

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / J.HODGES</u>	DRILL RIG: <u>CME 55</u>	STATION / OFFSET: <u>140+30, 30 RT</u>	EXPLORATION ID <u>B-020-0-14</u>
TYPE: <u>BRIDGE</u>	SAMPLING FIRM / LOGGER: <u>BARR / D.LYON</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR-18</u>	PAGE 1 OF 2
PID: <u>92953</u> BR ID: <u>MED-18-1403</u>	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>927.1 (MSL)</u> , EOB: <u>61.5 ft.</u>	
START: <u>7/6/15</u> END: <u>7/6/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>78.8</u>	COORD: <u>41.137032, -81.822534</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)								WC	ODOT CLASS (GI)	BACK FILL
								GR	CS	FS	SI	CL	LL	PL			
14", ASPHALT	927.1																
12", GRANULAR BASE	925.9	1															
HARD, GRAYISH BROWN, SILT AND CLAY, SOME SAND, TRACE GRAVEL, DAMP (FILL)	924.9	2	6														
	924.1	3	5	16	61	SS-1	4.5+	5	9	17	37	32	31	17	14	14	A-6a (8)
HARD, GRAY AND BROWN, SILT AND CLAY, LITTLE TO SOME SAND, TRACE GRAVEL, DAMP TO MOIST (FILL) @4.5'; SS-3 TO SS-5 CHANGE TO MEDIUM STIFF TO VERY STIFF		4	4														
		5	3	11	72	SS-2	4.5+	1	5	15	43	36	33	19	14	19	A-6a (10)
		6	2														
		7	2	5	33	SS-3	1.0-3.5	-	-	-	-	-	-	-	-	25	A-6a (V)
		8	2														
		9	3	7	22	SS-4	0.75-2.2	-	-	-	-	-	-	-	-	17	A-6a (V)
		10	2														
		11	3	8	89	SS-5	0.75-2.5	-	-	-	-	-	-	-	-	19	A-6a (V)
	917.6	12															
SOFT, DARK GRAY, SANDY SILT, TRACE CLAY, CONTAINS DECAYED VEGETATION, WET		13	1	4	100	SS-6	0.25-0.5	-	-	-	-	-	-	-	-	27	A-4a (V)
	915.1	14															
STIFF TO VERY STIFF, GRAY MOTTLED WITH BROWN, SILTY CLAY, LITTLE SAND, MOIST		15	2	3	100	SS-7	1.0-2.5	0	6	12	38	44	33	16	17	22	A-6b (11)
	912.6	16															
VERY SOFT TO SOFT, BLACK MOTTLED WITH BROWN, SILT AND CLAY, TRACE SAND, SLIGHTLY ORGANIC, CONTAINS DECAYED VEGETATION, WET		17	WOH	5	100	SS-8	0.2-0.5	0	0	4	58	38	37	23	14	35	A-6a (10)
	910.1	18	2														
VERY SOFT TO VERY STIFF, DARK GRAY MOTTLED WITH BROWN, SANDY SILT, SOME CLAY, TRACE GRAVEL, CONTAINS DECAYED VEGETATION, WET		19	WOH	8	100	SS-9	1.2-2.2	1	4	23	44	28	NP	NP	NP	34	A-4a (7)
		20	3														
		21	1	7	78	SS-10	0.2-0.75	-	-	-	-	-	-	-	-	34	A-4a (V)
	905.1	22	4														
VERY LOOSE, GRAY, GRAVEL WITH SAND, TRACE SILT, TRACE CLAY, MOIST		23	2	5	11	SS-11	-	-	-	-	-	-	-	-	-	18	A-1-b (V)
	902.8	24	2														
MEDIUM STIFF TO VERY STIFF, GRAY TO GRAYISH BROWN, SANDY SILT, LITTLE CLAY, TRACE GRAVEL, CONTAINS FEW SILT LENSES, DAMP TO MOIST		25	3	5	83	SS-12	0.5-1.9	5	11	19	48	17	20	16	4	17	A-4a (6)
		26	2														
		27															
		28	4	13	94	SS-13	1.0-3.0	-	-	-	-	-	-	-	-	16	A-4a (V)
	897.6	29	5														

NOTES: GROUNDWATER ENCOUNTERED AT 11.5' DURING DRILLING, 13.0' UPON COMPLETION. CAVE DEPTH 31.7'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

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)	BACK FILL		
VERY STIFF TO HARD, GRAYISH BROWN, SILT AND CLAY , SOME SAND, TRACE GRAVEL, DAMP (continued from above)	897.1	31	4 6	13	83	SS-14	2.5- 4.5+	-	-	-	-	-	-	-	-	-	14	A-6a (V)	▽▽▽▽ ▽▽▽▽ ▽▽▽▽	
	893.8	32																		▽▽▽▽ ▽▽▽▽ ▽▽▽▽
	890.1	33																		▽▽▽▽ ▽▽▽▽ ▽▽▽▽
LOOSE, GRAY, GRAVEL WITH SAND , LITTLE SAND, LITTLE SILT, TRACE CLAY, WET		34																	▽▽▽▽ ▽▽▽▽ ▽▽▽▽	
GRAYISH BROWN, COARSE AND FINE SAND , LITTLE SILT, LITTLE GRAVEL, TRACE CLAY	890.1	35	2 5	9	56	SS-15	-	21	38	23	14	4	NP	NP	NP		15	A-1-b (0)	▽▽▽▽ ▽▽▽▽ ▽▽▽▽	
	887.1	36																		▽▽▽▽ ▽▽▽▽ ▽▽▽▽
	887.1	37																		▽▽▽▽ ▽▽▽▽ ▽▽▽▽
VERY SOFT TO STIFF, GRAY, SILT , "AND" CLAY, TRACE SAND, MOIST TO WET @40.1'; 8' OF HEAVE		38																	▽▽▽▽ ▽▽▽▽ ▽▽▽▽	
		39																	▽▽▽▽ ▽▽▽▽ ▽▽▽▽	
		40	WOH 1 2	4	100	SS-16	0.2- 1.0	-	-	-	-	-	-	-	-	-	25	A-4b (V)	▽▽▽▽ ▽▽▽▽ ▽▽▽▽	
	41																	▽▽▽▽ ▽▽▽▽ ▽▽▽▽		
	42																			▽▽▽▽ ▽▽▽▽ ▽▽▽▽
@40.1'; 8' OF HEAVE		43																	▽▽▽▽ ▽▽▽▽ ▽▽▽▽	
		44																	▽▽▽▽ ▽▽▽▽ ▽▽▽▽	
		45	4 6	13	100	SS-17	0.5- 1.5	0	1	2	51	46	29	19	10		23	A-4b (8)	▽▽▽▽ ▽▽▽▽ ▽▽▽▽	
	46																	▽▽▽▽ ▽▽▽▽ ▽▽▽▽		
	47																			▽▽▽▽ ▽▽▽▽ ▽▽▽▽
@55.0'; SS-19 BECOMES LOOSE, LITTLE CLAY		48																	▽▽▽▽ ▽▽▽▽ ▽▽▽▽	
		49																	▽▽▽▽ ▽▽▽▽ ▽▽▽▽	
		50	1 2 4	8	100	SS-18	0.75- 1.7	-	-	-	-	-	-	-	-	-	20	A-4b (V)	▽▽▽▽ ▽▽▽▽ ▽▽▽▽	
	51																	▽▽▽▽ ▽▽▽▽ ▽▽▽▽		
	52																			▽▽▽▽ ▽▽▽▽ ▽▽▽▽
@55.0'; SS-19 BECOMES LOOSE, LITTLE CLAY		53																	▽▽▽▽ ▽▽▽▽ ▽▽▽▽	
		54																	▽▽▽▽ ▽▽▽▽ ▽▽▽▽	
		55	1 2 3	7	100	SS-19	0.25- 0.75	0	1	2	82	15	NP	NP	NP		26	A-4b (8)	▽▽▽▽ ▽▽▽▽ ▽▽▽▽	
	56																	▽▽▽▽ ▽▽▽▽ ▽▽▽▽		
	57																			▽▽▽▽ ▽▽▽▽ ▽▽▽▽
VERY STIFF TO HARD, GRAYISH BROWN, SANDY SILT , LITTLE GRAVEL, LITTLE CLAY, DAMP	868.8	58																	▽▽▽▽ ▽▽▽▽ ▽▽▽▽	
		59																	▽▽▽▽ ▽▽▽▽ ▽▽▽▽	
	865.6	60	6 10 14	32	111	SS-20	2.0- 4.5+	-	-	-	-	-	-	-	-	-	11	A-4a (V)	▽▽▽▽ ▽▽▽▽ ▽▽▽▽	
	61																	▽▽▽▽ ▽▽▽▽ ▽▽▽▽		
																				▽▽▽▽ ▽▽▽▽ ▽▽▽▽

NOTES: GROUNDWATER ENCOUNTERED AT 11.5' DURING DRILLING, 13.0' UPON COMPLETION. CAVE DEPTH 31.7'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 11/17/15 11:14 - \COLUMBUS\LAB\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / J.HODGES</u>	DRILL RIG: <u>CME 55</u>	STATION / OFFSET: <u>141+80, 31 RT</u>	EXPLORATION ID <u>B-021-0-14</u>
TYPE: <u>BRIDGE</u>	SAMPLING FIRM / LOGGER: <u>BARR / D.LYON</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR-18</u>	
PID: <u>92953</u> BR ID: <u>MED-18-1403</u>	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>924.7 (MSL)</u> , EOB: <u>61.5 ft.</u>	PAGE 1 OF 2
START: <u>7/6/15</u> END: <u>7/6/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>78.8</u>	COORD: <u>41.136970, -81.821995</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	CORRELATION					WC	ODOT CLASS (GI)	BACK FILL			
								GR	CS	FS	SI	CL				LL	PL	PI
12", ASPHALT	924.7																	
9", GRANULAR BASE	923.7	1																
MEDIUM DENSE, BROWN, GRAVEL WITH SAND AND SILT, LITTLE CLAY, CONTAINS CONCRETE AND BRICK FRAGMENTS, DAMP (FILL)	922.9	2	5	21	67	SS-1	-	-	-	-	-	-	-	14	A-2-4 (V)			
		3	4	12														
		4	5	6	13	SS-2	-	41	17	13	17	12	22	15	7	9	A-2-4 (0)	
	920.2	5	2	3	8	SS-3	1.0-2.0	22	14	14	27	23	31	18	13	15	A-6a (4)	
MEDIUM STIFF TO STIFF, BROWN, GRAY, AND DARK GRAY, SILT AND CLAY, SOME SAND, LITTLE TO SOME GRAVEL, CONTAINS CONCRETE, BRICK, AND LIMESTONE FRAGMENTS, DAMP TO MOIST (FILL)		6	2	3	5	SS-4	0.5-1.0	-	-	-	-	-	-	-	-	20	A-6a (V)	
		7	1	3	5	SS-4	0.5-1.0	-	-	-	-	-	-	-	-	20	A-6a (V)	
		8	WOH	2	7	SS-5	0.9-1.75	-	-	-	-	-	-	-	-	20	A-6a (V)	
		9	2	3														
		10	2	4	8	78	SS-6	1.0-2.0	-	-	-	-	-	-	-	19	A-6a (V)	
	912.7	11	2	4	8	78	SS-6	1.0-2.0	-	-	-	-	-	-	-	19	A-6a (V)	
SOFT TO STIFF, GRAY BECOMING DARK GRAY, SANDY SILT, LITTLE CLAY, SS-7 CONTAINS FEW SAND LENSES, MOIST		12	3	3	8	100	SS-7	1.7-2.0	0	1	46	37	16	NP	NP	NP	21	A-4a (4)
		13	3	3	8	100	SS-7	1.7-2.0	0	1	46	37	16	NP	NP	NP	21	A-4a (4)
@15.0'; SS-8 CONTAINS MANY DECAYED ROOTS		14																
		15	WOH	2	3	100	SS-8	0.25-0.6	-	-	-	-	-	-	-	-	30	A-4a (V)
		16	WOH	2	3	100	SS-8	0.25-0.6	-	-	-	-	-	-	-	-	30	A-4a (V)
@17.0'; SS-9 CONTAINS FEW SAND LENSES		17																
		18	2	1	4	100	SS-9	0.7-1.0	-	-	-	-	-	-	-	-	29	A-4a (V)
	905.2	19	1	2	4	100	SS-9	0.7-1.0	-	-	-	-	-	-	-	-	29	A-4a (V)
STIFF TO VERY STIFF, GRAYISH BROWN, SILT AND CLAY, LITTLE SAND, TRACE GRAVEL, MOIST		20	4	3	11	89	SS-10	1.5-3.5	3	7	13	39	38	28	16	12	17	A-6a (9)
	902.7	21	4	3	11	89	SS-10	1.5-3.5	3	7	13	39	38	28	16	12	17	A-6a (9)
VERY STIFF, GRAYISH BROWN, SANDY SILT, "AND" CLAY, TRACE GRAVEL, DAMP		22	3	3	11	94	SS-11	2.0-3.1	2	8	13	41	36	26	16	10	15	A-4a (8)
	900.2	23	3	3	11	94	SS-11	2.0-3.1	2	8	13	41	36	26	16	10	15	A-4a (8)
MEDIUM STIFF TO VERY STIFF, GRAYISH BROWN, SILT AND CLAY, LITTLE SAND, TRACE GRAVEL, DAMP TO MOIST		24	3	4	14	89	SS-12	1.2-2.2	1	7	12	37	43	28	17	11	18	A-6a (8)
		25	3	4	14	89	SS-12	1.2-2.2	1	7	12	37	43	28	17	11	18	A-6a (8)
		26	3	4	14	89	SS-12	1.2-2.2	1	7	12	37	43	28	17	11	18	A-6a (8)
		27																
		28	2	3	11	100	SS-13	0.75-1.5	-	-	-	-	-	-	-	-	17	A-6a (V)
	895.2	29	2	3	11	100	SS-13	0.75-1.5	-	-	-	-	-	-	-	-	17	A-6a (V)

NOTES: GROUNDWATER ENCOUNTERED AT 20.0' DURING DRILLING, 18.0' UPON COMPLETION. CAVE DEPTH 39.0'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SOIL CUTTINGS

PID: 92953		BR ID: MED-18-1403		PROJECT: MED-18-12.99		STATION / OFFSET: 141+79.56, 31.0 RT		START: 7/6/15		END: 7/6/15		PG 2 OF 2		B-021-0-14						
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)	BACK FILL
MEDIUM STIFF TO STIFF, GRAYISH BROWN, SILTY CLAY , TRACE SAND, WET (continued from above)			894.7	31	3 5 5	13	100	SS-14	0.9-1.25	-	-	-	-	-	-	-	-	32	A-6b (V)	[Pattern]
			892.7	32																
MEDIUM DENSE, GRAY, COARSE AND FINE SAND , LITTLE GRAVEL, LITTLE SILT, TRACE CLAY, WET			886.7	33	7 8 8	21	100	SS-15	-	14	33	34	14	5	NP	NP	NP	14	A-3a (0)	[Pattern]
				34																
MEDIUM STIFF TO HARD, GRAYISH BROWN, SANDY SILT , SOME TO "AND" CLAY, TRACE GRAVEL, DAMP TO MOIST			886.7	35	4 3 7	13	100	SS-16	-	-	-	-	-	-	-	-	-	17	A-3a (V)	[Pattern]
				36																
			886.4	37																[Pattern]
				38																
			866.4	39																[Pattern]
				40																
			863.2	41	9 3 4	9	39	SS-17	1.2-2.25	1	5	4	46	44	29	20	9	21	A-4a (8)	[Pattern]
				42																
			863.2	43																[Pattern]
				44																
			863.2	45	3 4 5	12	100	SS-18	0.5-1.75	-	-	-	-	-	-	-	-	26	A-4a (V)	[Pattern]
				46																
			863.2	47																[Pattern]
				48																
			863.2	49																[Pattern]
				50																
			863.2	51	5 7 12	25	100	SS-19	3.0-4.5+	10	9	17	43	21	20	15	5	12	A-4a (6)	[Pattern]
				52																
			863.2	53																[Pattern]
				54																
			863.2	55	7 12 13	33	100	SS-20	2.2-4.5	-	-	-	-	-	-	-	-	12	A-4a (V)	[Pattern]
				56																
			863.2	57																[Pattern]
				58																
DENSE, GRAY AND BROWN, GRAVEL WITH SAND , TRACE SILT, TRACE CLAY, WET			863.2	59																[Pattern]
				60																
			863.2	61	20 17 12	38	100	SS-21	-	32	28	18	16	6	NP	NP	NP	12	A-1-b (0)	[Pattern]
				62																

NOTES: GROUNDWATER ENCOUNTERED AT 20.0' DURING DRILLING, 18.0' UPON COMPLETION. CAVE DEPTH 39.0'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:53 - \\COLUMBUS\LAB\ACTIVE PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / ASHBAUGH</u>	DRILL RIG: <u>CME 45B</u>	STATION / OFFSET: <u>145+24, 18 LT</u>	EXPLORATION ID <u>B-022-0-14</u>
TYPE: <u>EXISTING PAVEMENT SUBGRADE</u>	SAMPLING FIRM / LOGGER: <u>BARR / ASHBAUGH</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR-18</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>922.1 (MSL)</u> , EOB: <u>9.0 ft.</u>	PAGE 1 OF 1
START: <u>7/8/15</u> END: <u>7/8/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>77.4</u>	COORD: <u>41.136971, -81.820731</u>	

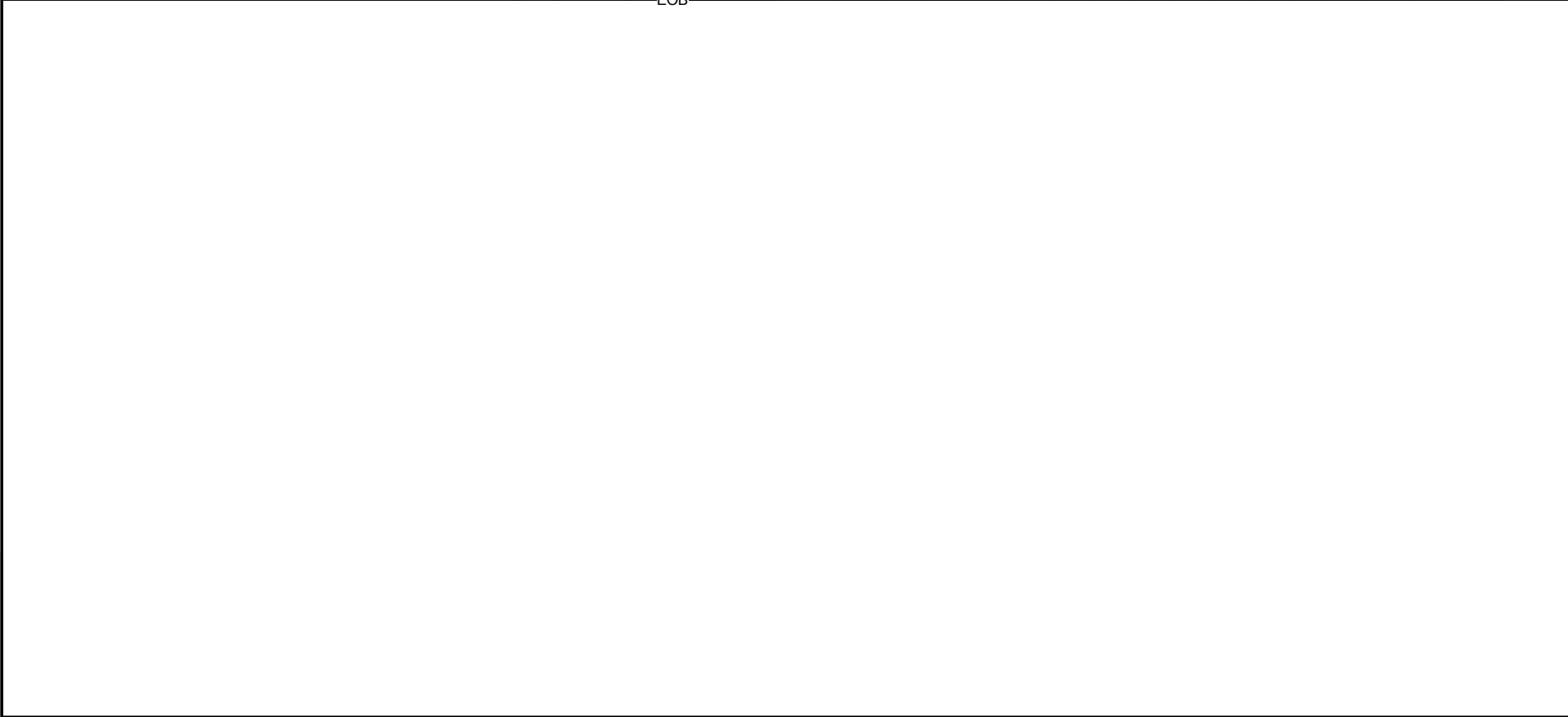
MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI			
5", ASPHALT	922.1																	
11", GRANULAR BASE	921.7																	
DENSE, GRAY, GRAVEL WITH SAND , LITTLE SILT, TRACE CLAY, DAMP (FILL)	920.8	1																
@3.0'; SS-2 CONTAINS ASPHALT FRAGMENTS	919.0	2	22	31	56	SS-1	-	45	20	16	16	3	NP	NP	NP	7	A-1-b (0)	
STIFF TO HARD, BROWN, SILTY CLAY , LITTLE SAND, TRACE GRAVEL, DAMP TO MOIST		3	14	10														
@6.0'; SS-4A BECOMES VERY SOFT TO SOFT MEDIUM STIFF TO STIFF, GRAYISH BROWN, SILT AND CLAY , TRACE SAND, SS-4 CONTAINS DECAYED ROOTS, MOIST		4	4	3	13	SS-2	4.5+	-	-	-	-	-	-	-	-	2	A-1-b (V)	
		5	7	7	13	SS-2										15	A-6b (V)	
		6	16	28	57	SS-3	1.7- 2.2	2	6	10	38	44	35	18	17	20	A-6b (11)	
	915.9	7	4	17	30	SS-4	0.2- 0.5	-	-	-	-	-	-	-	-	21	A-6b (V)	
		8	6	7	26	SS-5	0.7- 0.9	-	-	-	-	-	-	-	-	28	A-6a (V)	
@7.5'; SS-5 BECOMES BROWN	913.1	9	7	13	26	SS-5	1.2- 1.4	0	1	7	58	34	35	20	15	25	A-6a (10)	
		EOB																

NOTES: GROUNDWATER ENCOUNTERED AT 5.0' DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:53 - \COLUMBUS\LAB\LABACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13.

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / ASHBAUGH</u>	DRILL RIG: <u>CME 45B</u>	STATION / OFFSET: <u>149+57, 17 LT</u>	EXPLORATION ID <u>B-023-0-14</u>
TYPE: <u>EXISTING PAVEMENT SUBGRADE</u>	SAMPLING FIRM / LOGGER: <u>BARR / ASHBAUGH</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR-18</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>925.2 (MSL)</u> , EOB: <u>8.4 ft.</u>	PAGE 1 OF 1
START: <u>7/7/15</u> END: <u>7/7/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>77.4</u>	COORD: <u>41.136801, -81.819176</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI			
4.8", ASPHALT	925.2																	
10.8", GRANULAR BASE	924.8	1																
HARD, BROWN AND GRAY, SILTY CLAY , LITTLE SAND, TRACE GRAVEL, CONTAINS ASPHALT, DAMP (FILL)	923.9	2	4	14	67	SS-1	4.5+	10	5	13	33	39	37	17	20	15	A-6b (11)	▽▽▽
		3	14	6														▽▽▽
			4	16	49	22	SS-2	4.5+	-	-	-	-	-	-	-	13	A-6b (V)	▽▽▽
HARD, BROWN MOTTLED WITH GRAY, SILT AND CLAY , LITTLE SAND, TRACE GRAVEL, DAMP	920.9	5	14	21	70	SS-3	4.5+	3	5	10	38	44	31	17	14	15	A-6a (10)	▽▽▽
		6	17	33														▽▽▽
		7	25	32	74	89	SS-4	4.5+	-	-	-	-	-	-	-	16	A-6a (V)	▽▽▽
		8	21	50/5"	-	82	SS-5	4.5+	-	-	-	-	-	-	-	17	A-6a (V)	▽▽▽
	916.8																	



NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 5.0'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:53 - \\COLUMBUS\LAB\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / J.HODGES</u>	DRILL RIG: <u>CME 55</u>	STATION / OFFSET: <u>153+03, 24 RT</u>	EXPLORATION ID <u>B-024-0-14</u>
TYPE: <u>EXISTING PAVEMENT SUBGRADE</u>	SAMPLING FIRM / LOGGER: <u>BARR / C.PATRICK</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR-18</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>930.2 (MSL)</u> , EOB: <u>8.0 ft.</u>	PAGE 1 OF 1
START: <u>7/14/15</u> END: <u>7/14/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>78.8</u>	COORD: <u>41.136555, -81.817953</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI			
12.0", ASPHALT	930.2																	
HARD, BROWN, SILT AND CLAY , LITTLE SAND, TRACE GRAVEL, DAMP (FILL)	929.2	1																
		2	4	4	11	67	SS-1	4.2-4.5+	2	6	12	38	42	31	18	13	16	A-6a (9)
	926.7	3																
MEDIUM STIFF, GRAY AND DARK GRAY, SILT AND CLAY , TRACE SAND, CONTAINS DECAYED ROOTS, MOIST	926.5	4	3	2	5	67	SS-2	0.7-0.8 1.9-2.2	-	-	-	-	-	-	-	-	22	A-6a (V)
		5	2	2														
STIFF TO VERY STIFF, GRAYISH BROWN, SILT AND CLAY , LITTLE SAND, TRACE GRAVEL, MOIST		6	3	5	11	100	SS-3	1.4-2.0	3	6	11	38	42	28	16	12	17	A-6a (9)
		7																
	922.2	8	WOH 2	2	5	56	SS-4	1.1-1.2	-	-	-	-	-	-	-	-	17	A-6a (V)
		EOB																

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 5.4'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:53 - \COLUMBUS\LAB\LABACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / ASHBAUGH</u>	DRILL RIG: <u>CME 45B</u>	STATION / OFFSET: <u>156+79, 8 LT</u>	EXPLORATION ID <u>B-025-0-14</u>
TYPE: <u>EXISTING PAVEMENT SUBGRADE</u>	SAMPLING FIRM / LOGGER: <u>BARR / ASHBAUGH</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR-18</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>935.0 (MSL)</u> , EOB: <u>9.0 ft.</u>	PAGE 1 OF 1
START: <u>7/8/15</u> END: <u>7/8/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>77.4</u>	COORD: <u>41.136539, -81.816582</u>	

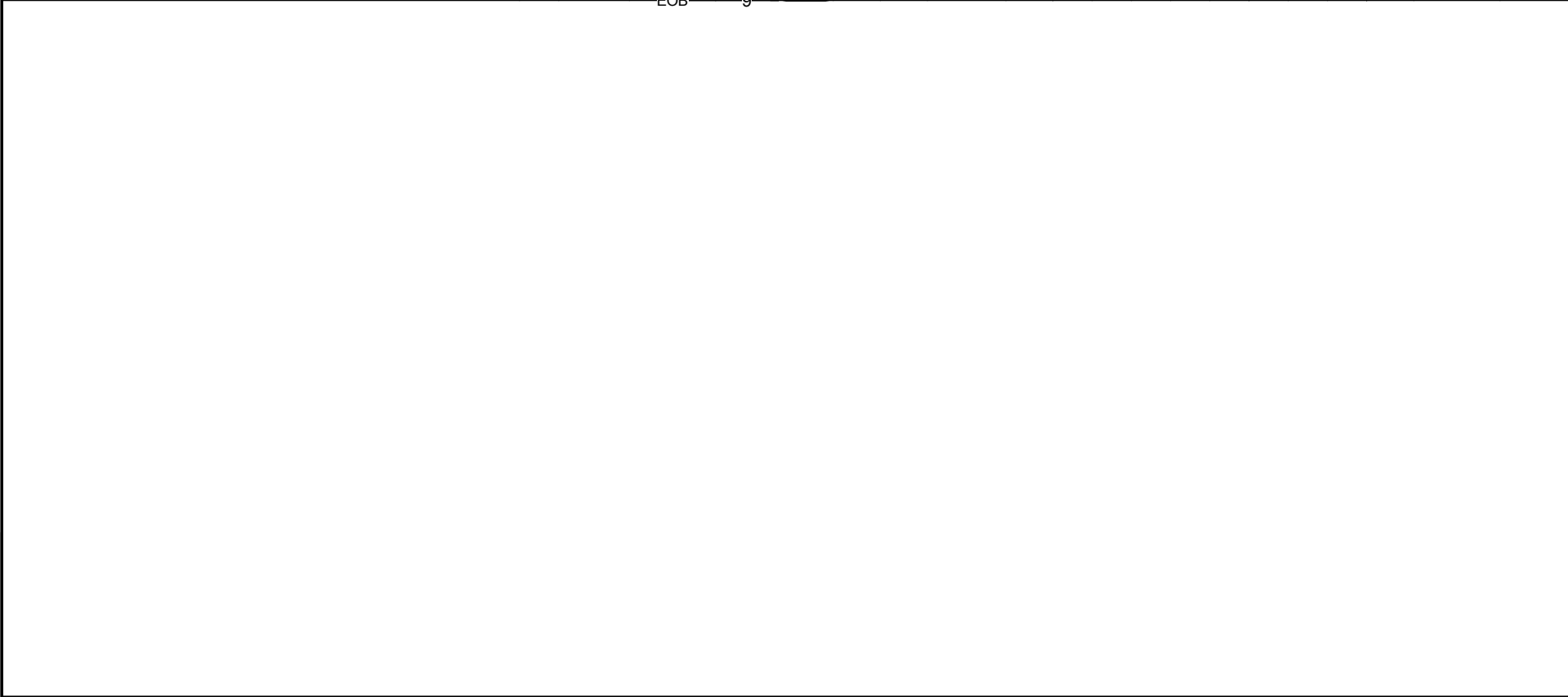
MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI			
5", ASPHALT	934.6																	
7", BRICK	934.0																	
5", GRANULAR BASE	933.6																	
VERY STIFF, BROWN WITH GRAY, SILT, SOME CLAY, TRACE SAND, TRACE GRAVEL, DAMP (FILL)	932.0	1	8															
		2	16 19	45	100	SS-1	3.0- 3.5	6	4	2	55	33	32	23	9	23	A-4b (8)	
		3	3															
		4	5	13	100	SS-2	1.75- 4.3	0	2	3	65	30	32	24	8	27	A-4b (8)	
		5	3															
		6	4	10	100	SS-3	2.5- 3.75	-	-	-	-	-	-	-	-	29	A-4b (V)	
		7	7															
		8	9 10	25	100	SS-4	2.0- 3.25	-	-	-	-	-	-	-	-	27	A-4b (V)	
		9	5 6	15	100	SS-5	4.25	-	-	-	-	-	-	-	-	21	A-4b (V)	
	926.0	EOB																

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:53 - \COLUMBUS\LAB\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13.

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / ASHBAUGH</u>	DRILL RIG: <u>CME 45B</u>	STATION / OFFSET: <u>160+88, 16 RT</u>	EXPLORATION ID <u>B-026-0-14</u>
TYPE: <u>EXISTING PAVEMENT SUBGRADE</u>	SAMPLING FIRM / LOGGER: <u>BARR / D. LYON</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR-18</u>	PAGE 1 OF 1
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>944.3 (MSL)</u> , EOB: <u>9.0 ft.</u>	
START: <u>8/6/15</u> END: <u>8/6/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>77.4</u>	COORD: <u>41.136413, 81.815052</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI			
7.0", ASPHALT	944.3																	
6.0", GRANULAR BASE	943.7																	
VERY STIFF TO HARD, GRAYISH BROWN AND REDDISH BROWN, SILT AND CLAY , LITTLE SAND, TRACE GRAVEL, DAMP (PROBABLE FILL)	943.2	1																
		2	3	12	78	SS-1	2.75 - 4.5+	6	6	14	29	45	33	18	15	18	A-6a (10)	
VERY STIFF TO HARD, LIGHT GRAY MOTTLED WITH BROWN, LIGHT BROWN AND DARK GRAY, SILTY CLAY , LITTLE SAND, TRACE GRAVEL, SS-3 CONTAINS FEW ROOTS, ORGANIC ODOR, MOIST	939.8	3	4	12	50	SS-2	3.5 - 4.4	-	-	-	-	-	-	-	-	18	A-6a (V)	
		4	4	5	12	89	SS-3	3.25 - 4.5+	2	3	11	37	47	35	18	17	20	A-6b (11)
		5	4	12	89	SS-3	3.25 - 4.5+	2	3	11	37	47	35	18	17	20	A-6b (11)	
		6	4	5	12	89	SS-3	3.25 - 4.5+	2	3	11	37	47	35	18	17	20	A-6b (11)
		7	5	9	18	SS-4	2.75 - 3.4	-	-	-	-	-	-	-	-	20	A-6b (V)	
		8	6	7	17	94	SS-5	2.9 - 4.5+	-	-	-	-	-	-	-	-	19	A-6b (V)
	935.3	9	6	7	17	94	SS-5	2.9 - 4.5+	-	-	-	-	-	-	-	19	A-6b (V)	
		EOB																



NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 7.6'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:53 - \COLUMBUS\LAB\LABRACTIVE PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / ASHBAUGH</u>	DRILL RIG: <u>CME 45B</u>	STATION / OFFSET: <u>165+02, 38 LT</u>	EXPLORATION ID <u>B-027-0-14</u>
TYPE: <u>EXISTING PAVEMENT SUBGRADE</u>	SAMPLING FIRM / LOGGER: <u>BARR / ASHBAUGH</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR-18</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>957.6 (MSL)</u> , EOB: <u>9.0 ft.</u>	PAGE 1 OF 1
START: <u>7/8/15</u> END: <u>7/8/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>77.4</u>	COORD: <u>41.136436, -81.813598</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI			
5", ASPHALT	957.6																	
4", BRICK	957.2																	
10", GRANULAR BASE	956.9																	
HARD, BROWN AND GRAY, SILTY CLAY, LITTLE SAND, TRACE GRAVEL, DAMP (FILL)	956.1	1																
	954.6	2	10	46	67	SS-1	4.5+	4	8	11	30	47	34	18	16	17	A-6b (10)	
	953.6	3	14	22														
VERY DENSE, BROWN AND REDDISH BROWN, GRAVEL WITH SAND AND SILT, TRACE CLAY, CONTAINS BRICK FRAGMENTS, DRY (FILL)	952.8	4	50/4"	-	25	SS-2	-	-	-	-	-	-	-	-	-	-	2	A-2-4 (V)
	948.6	5	11	134	67	SS-3	4.5+	3	5	9	33	50	36	19	17	17	A-6b (V)	
BROWN, SILTY CLAY, LITTLE SAND, SOME GRAVEL, CONTAINS BRICK FRAGMENTS, DAMP (FILL)		6	37	67														
HARD, BROWN MOTTLED WITH GRAY, SILTY CLAY, LITTLE SAND, TRACE GRAVEL, DAMP @6.0'; SS-4 AND SS-5 BECOME GRAY MOTTLED WITH BROWN		7	50	-	100	SS-4	4.5+	-	-	-	-	-	-	-	-	-	16	A-6b (V)
		8	14	29	102	SS-5	4.5+	-	-	-	-	-	-	-	-	-	11	A-6b (V)
		9	50															
		EOB																

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 5.0'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:53 - \\COLUMBUS\LAB\LABACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / ASHBAUGH</u>	DRILL RIG: <u>CME 45B</u>	STATION / OFFSET: <u>169+00, 31 LT</u>	EXPLORATION ID <u>B-028-0-14</u>
TYPE: <u>EXISTING PAVEMENT SUBGRADE</u>	SAMPLING FIRM / LOGGER: <u>BARR / ASHBAUGH</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR-18</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>970.6 (MSL)</u> , EOB: <u>9.0 ft.</u>	PAGE 1 OF 1
START: <u>7/7/15</u> END: <u>7/7/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>77.4</u>	COORD: <u>41.136435, -81.812166</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI				
2.4" TOPSOIL	970.6																		
HARD, DARK BROWN, SILTY CLAY , SOME SAND, TRACE GRAVEL, CONTAINS ROOTS, DAMP	970.4	1	4	7	22	61	SS-1	4.5+	4	6	18	42	30	40	22	18	19	A-6b (11)	<< >>
(FILL)	969.1	2	7	10	36	17	SS-2	4.5+	-	-	-	-	-	-	-	-	15	A-6a (V)	<< >>
HARD, BROWN, SILT AND CLAY , LITTLE SAND, SOME GRAVEL, CONTAINS MANY CONCRETE FRAGMENTS, DAMP	967.4	3	6	18	23	33	SS-3	4.5+	-	-	-	-	-	-	-	-	18	A-6a (V)	<< >>
(FILL) @3.0' SS-3A CONTAINS CINDERS		4	7	11	23	33	SS-3	4.40	7	6	11	37	39	30	16	14	16	A-6a (10)	<< >>
VERY STIFF TO HARD, DARK GRAY, SILT AND CLAY , LITTLE SAND, TRACE GRAVEL, CONTAINS FEW ROOTS, DAMP	964.6	5	3	4	10	0	SS-4	-	-	-	-	-	-	-	-	-	-	A-6a (V)	<< >>
(FILL) @4.5'; SS-4 NO RECOVERY		6	4	4	10	0	SS-4	-	-	-	-	-	-	-	-	-	-	A-6a (V)	<< >>
VERY STIFF, GRAYISH BROWN MOTTLED WITH GRAY AND DARK GRAY, SILTY CLAY , LITTLE SAND, TRACE GRAVEL, CONTAINS FEW ROOTS, MOIST	961.6	7	6	9	19	89	SS-5	2.0-2.75	3	5	11	37	44	34	18	16	21	A-6b (10)	<< >>
		8	4	9	26	67	SS-6	2.0-2.5	-	-	-	-	-	-	-	-	20	A-6b (V)	<< >>
		9	4	11	26	67	SS-6	2.0-2.5	-	-	-	-	-	-	-	-	20	A-6b (V)	<< >>
		EOB																	

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 5.0'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:53 - \COLUMBUS\LAB\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13.

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / ASHBAUGH</u>	DRILL RIG: <u>CME 45B</u>	STATION / OFFSET: <u>172+49, 20 LT</u>	EXPLORATION ID <u>B-029-0-14</u>
TYPE: <u>EXISTING PAVEMENT SUBGRADE</u>	SAMPLING FIRM / LOGGER: <u>BARR / ASHBAUGH</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR-18</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>982.5 (MSL)</u> , EOB: <u>9.0 ft.</u>	PAGE 1 OF 1
START: <u>7/7/15</u> END: <u>7/7/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>77.4</u>	COORD: <u>41.136361, -81.810900</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI			
8", CONCRETE	981.8	1																X
(FILL) @1.5'; SS-1 NO RECOVERY		2	6	12	0	SS-1	-	-	-	-	-	-	-	-	-	-	-	> <
@3.0'; HARD, BROWN, SILT AND CLAY, SOME GRAVEL, LITTLE SAND, CONTAINS CONCRETE FRAGMENTS, DAMP	978.5	3	3	14	56	SS-2	4.5+	27	4	9	30	30	34	19	15	13	A-6a (7)	> <
VERY STIFF TO HARD, BROWN, SILT AND CLAY, LITTLE SAND, TRACE GRAVEL, DAMP		4	4	7	21	SS-3	4.5+	-	-	-	-	-	-	-	-	17	A-6a (V)	> <
		5	4	9	67	SS-3	4.5+	-	-	-	-	-	-	-	-	17	A-6a (V)	> <
		6	4	7	17	SS-4	4.0- 4.5+	1	7	11	38	43	32	18	14	18	A-6a (10)	> <
		7	6	7	100	SS-4	4.0- 4.5+	1	7	11	38	43	32	18	14	18	A-6a (10)	> <
		8	7	7	22	SS-5	3.1- 4.5+	-	-	-	-	-	-	-	-	15	A-6a (V)	> <
	973.5	9	7	10	94	SS-5	3.1- 4.5+	-	-	-	-	-	-	-	-	15	A-6a (V)	> <
		EOB																

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/23/15 10:46 - \\COLUMBUS\LAB\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / ASHBAUGH</u>	DRILL RIG: <u>CME 45B</u>	STATION / OFFSET: <u>21+22, 3 LT</u>	EXPLORATION ID <u>B-029-1-14</u>
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>BARR / D. LYON</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>S FRONTAGE RD</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>992.6 (MSL)</u> , EOB: <u>10.5 ft.</u>	PAGE 1 OF 1
START: <u>8/6/15</u> END: <u>8/6/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>77.4</u>	COORD: <u>41.136011, -81.809915</u>	

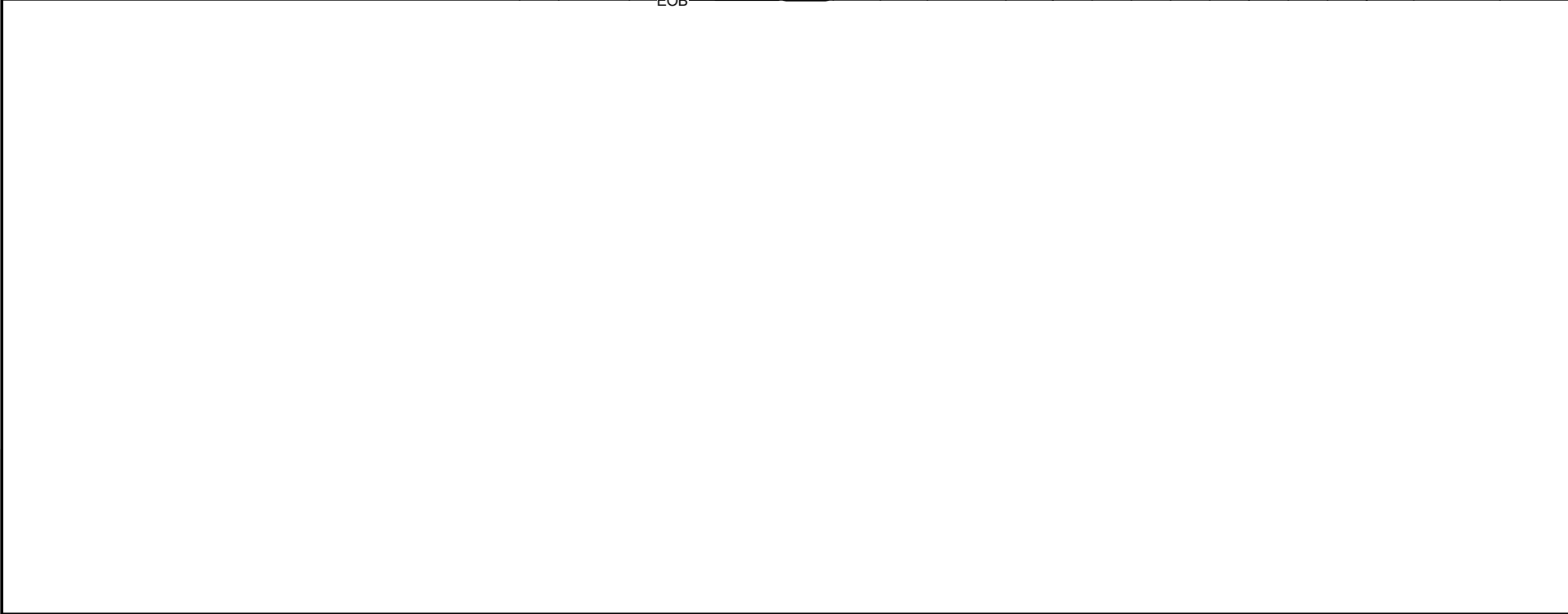
MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI			
6.5", ASPHALT	992.6																	
7.5", GRANULAR BASE	992.1	1																
HARD, GRAYISH BROWN MOTTLED WITH LIGHT BROWN AND LIGHT GRAY, SILT AND CLAY , LITTLE SAND, TRACE GRAVEL, DAMP	991.4	2	3	5	17	83	SS-1	4.5+	2	5	11	39	43	31	18	13	15	A-6a (9)
		3		8														
		4	4	7	22	67	SS-2	4.5+	4	5	11	39	41	29	18	11	15	A-6a (8)
@4.0'; SS-2 BECOMES BROWN MOTTLED WITH DARK GRAY		5		10														
		6																
		7	2	5	15	72	SS-3	4.0 - 4.5+	-	-	-	-	-	-	-	-	17	A-6a (V)
		8		7														
@9.0'; SS-4 BECOMES GRAYISH BROWN		9																
	982.1	10	3	5	17	83	SS-4	4.5+	-	-	-	-	-	-	-	-	17	A-6a (V)
		EOB		8														

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 5.0'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/23/15 10:46 - \\COLUMBUS\LAB\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / ASHBAUGH</u>	DRILL RIG: <u>CME 45B</u>	STATION / OFFSET: <u>175+30, 79 LT</u>	EXPLORATION ID <u>B-029-2-14</u>
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>BARR / D. LYON</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR-18</u>	PAGE 1 OF 1
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>995.1 (MSL)</u> , EOB: <u>11.5 ft.</u>	
START: <u>8/6/15</u> END: <u>8/6/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>77.4</u>	COORD: <u>41.136512, -81.809877</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI			
5.0" TOPSOIL HARD, BROWN AND LIGHT BROWN, SILT AND CLAY , LITTLE SAND, TRACE GRAVEL, DAMP @2.5'; S-2 CONTAINS IRON STAINING @5.0'; SS-3 TO SS-4 BECOME DARK GRAYISH BROWN, CONTAIN ROOT HAIRS VERY STIFF, GRAY, SANDY SILT , "AND" CLAY, TRACE GRAVEL, DAMP	995.1																	
	994.7	1	8	23	61	SS-1	4.5+	2	5	11	39	43	32	19	13	13	A-6a (9)	< >
		2	10															< >
		3	9	21	67	SS-2	4.5+	6	5	11	38	40	30	18	12	14	A-6a (9)	< >
		4	8															< >
		5	5	21	72	SS-3	4.5+	-	-	-	-	-	-	-	-	16	A-6a (V)	< >
		6	8															< >
		7	5															< >
		8	6	18	89	SS-4	4.5+	-	-	-	-	-	-	-	-	17	A-6a (V)	< >
	985.6	9	8															< >
		10	4															< >
	983.6	11	4	14	89	SS-5	2.25 3.9	4	5	12	42	37	26	16	10	15	A-4a (8)	< >



NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 4.7'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:55 - \COLUMBUS\LAB\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13.

PROJECT: MED-18-12.99	DRILLING FIRM / OPERATOR: BARR / ASHBAUGH	DRILL RIG: CME 45B	STATION / OFFSET: 177+25, 7 LT	EXPLORATION ID: B-030-0-14
TYPE: EXISTING PAVEMENT SUBGRADE	SAMPLING FIRM / LOGGER: BARR / ASHBAUGH	HAMMER: CME AUTOMATIC	ALIGNMENT: SR-18	
PID: 92953 BR ID:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 1/26/14	ELEVATION: 998.5 (MSL), EOB: 9.0 ft.	PAGE: 1 OF 1
START: 7/7/15 END: 7/7/15	SAMPLING METHOD: SPT	ENERGY RATIO (%): 77.4	COORD: 41.136306, -81.809173	

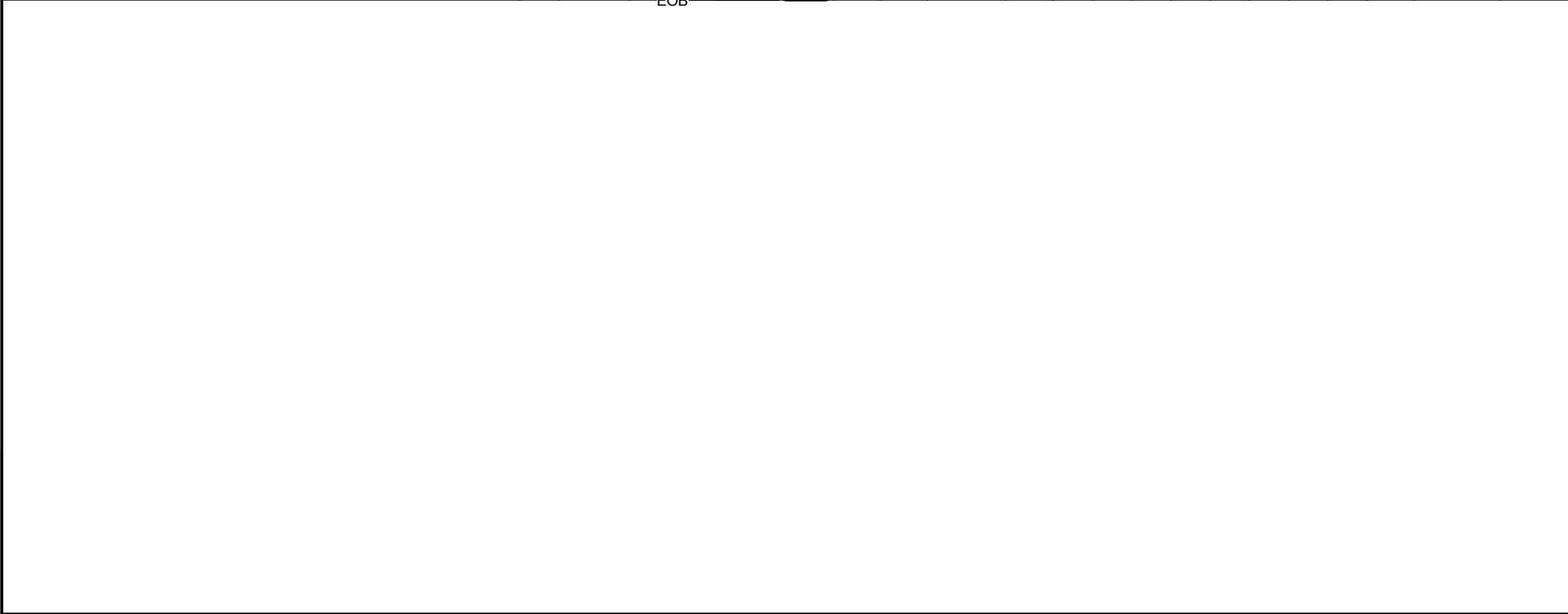
MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI			
8" ASPHALT	997.8																	
MEDIUM DENSE TO DENSE, BROWN, GRAVEL WITH SAND, LITTLE SILT, TRACE CLAY, DAMP (FILL)		1																
@3.0'; SS-2 CONTAINS ASPHALT FRAGMENTS		2	12	36	67	SS-1	-	55	16	13	12	4	NP	NP	NP	4	A-1-b (0)	
		3	13	15														
		4	6	8	21	SS-2	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
	994.0	5	4	5	15	SS-3	4.5+	-	-	-	-	-	-	-	-	13	A-6a (V)	
VERY STIFF TO HARD, BROWN, SILT AND CLAY, LITTLE SAND, TRACE GRAVEL, DAMP		6	7	7														
		7	7	8	27	SS-4	4.5+	2	5	13	39	41	31	17	14	16	A-6a (10)	
@7.5'; BECOMES BROWN MOTTLED WITH GRAY		8	4	6	17	SS-5	3.0-4.5+	-	-	-	-	-	-	-	-	15	A-6a (V)	
	989.5	9	6	7	17	SS-5	3.0-4.5+	-	-	-	-	-	-	-	-	15	A-6a (V)	
		EOB																

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 5.0'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/23/15 10:46 - \\COLUMBUS\LAB\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / ASHBAUGH</u>	DRILL RIG: <u>CME 45B</u>	STATION / OFFSET: <u>41+43, 14 RT</u>	EXPLORATION ID <u>B-030-1-14</u>
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>BARR / D. LYON</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>N FRONTAGE RD</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>1003.4 (MSL)</u> , EOB: <u>11.5 ft.</u>	PAGE 1 OF 1
START: <u>8/6/15</u> END: <u>8/6/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>77.4</u>	COORD: <u>41.136539, -81.808739</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL			
								GR	CS	FS	SI	CL	LL	PL	PI						
5.0", TOPSOIL HARD, BROWN AND LIGHT BROWN, SILT AND CLAY , LITTLE SAND, TRACE GRAVEL, SS-1 TO SS-3 CONTAINS FEW ROOTS, DAMP @7.5'; SS-4 CONTAINS IRON STAINING @10.0'; SS-5 BECOMES VERY STIFF, GRAY	1003.4																				
	1003.0	1	6	5	14	22	SS-1	4.5+	-	-	-	-	-	-	-	-	-	14	A-6a (V)	<> <> <>	
		2		6																	<> <> <>
		3		6	5	18	83	SS-2	4.5+	2	6	13	40	39	28	17	11	15	A-6a (8)	<> <> <>	
		4																			<> <> <>
		5		4																	<> <> <>
		6		6	9	19	83	SS-3	4.5+	-	-	-	-	-	-	-	-	16	A-6a (V)	<> <> <>	
		7																			<> <> <>
		8		5	6	17	94	SS-4	4.5+	-	-	-	-	-	-	-	-	15	A-6a (V)	<> <> <>	
		9																			<> <> <>
		10		4	4	13	78	SS-5	2.1- 2.8	2	5	12	42	39	27	16	11	16	A-6a (8)	<> <> <>	
	991.9	11	4	6																<> <> <>	



NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 5.4'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:55 - \COLUMBUS\LAB\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / J.HODGES</u>	DRILL RIG: <u>CME 55X</u>	STATION / OFFSET: <u>181+03, 34 RT</u>	EXPLORATION ID <u>B-031-0-14</u>
TYPE: <u>EXISTING PAVEMENT SUBGRADE</u>	SAMPLING FIRM / LOGGER: <u>BARR / D.LYON</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR-18</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>1011.4 (MSL)</u> , EOB: <u>8.0 ft.</u>	PAGE 1 OF 1
START: <u>7/10/15</u> END: <u>7/10/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>81.2</u>	COORD: <u>41.136180, -81.807802</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI				
8.5", ASPHALT	1011.4																		
3.5", BRICK	1010.4	1																	
11", CONCRETE	1009.5	2																	
HARD, BROWN WITH GRAY, SILT AND CLAY , LITTLE SAND, TRACE GRAVEL, DAMP (FILL)	1006.4	3	4	7	9	22	83	SS-1	4.5+	3	5	11	39	42	30	17	13	15	A-6a (9)
		4	5	10	15	34	78	SS-2	4.5+	-	-	-	-	-	-	-	-	13	A-6a (V)
HARD, BROWN, SILT AND CLAY , LITTLE SAND, TRACE GRAVEL, DAMP	1003.4	5	5	8	10	24	100	SS-3	4.5+	4	5	11	39	41	30	17	13	15	A-6a (9)
		6	4	2	7	12	89	SS-4	4.5+	-	-	-	-	-	-	-	-	15	A-6a (V)
		7																	
		8																	
		EOB																	

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 4.4'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/23/15 10:47 - \\COLUMBUS\LAB\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13.

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / ASHBAUGH</u>	DRILL RIG: <u>CME 45B</u>	STATION / OFFSET: <u>27+79, 15 RT</u>	EXPLORATION ID <u>B-031-1-14</u>
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>BARR / D. LYON</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>S FRONTAGE RD</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>1013.2 (MSL)</u> , EOB: <u>11.5 ft.</u>	PAGE 1 OF 1
START: <u>8/6/15</u> END: <u>8/6/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>77.4</u>	COORD: <u>41.135938, -81.807531</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL		
								GR	CS	FS	SI	CL	LL	PL	PI					
6.5" TOPSOIL HARD, BROWN TO BROWN MOTTLED WITH GRAY, SILT AND CLAY , LITTLE SAND, TRACE GRAVEL, DAMP @10.0'; SS-5 BECOMES LITTLE GRAVEL	1013.2																			
	1012.7	1	5	8	18	17	SS-1	-	-	-	-	-	-	-	-	-	9	A-6a (V)	<> <> <>	
		2		6																<> <> <>
		3		4	7	22	72	SS-2	4.5+	2	5	10	40	43	32	18	14	14	A-6a (10)	<> <> <>
		4			10															<> <> <>
		5		8	9	28	67	SS-3	4.5+	4	6	10	35	45	34	19	15	15	A-6a (10)	<> <> <>
		6			13															<> <> <>
		7																		<> <> <>
		8		7	13	45	94	SS-4	4.5+	-	-	-	-	-	-	-	-	14	A-6a (V)	<> <> <>
		9			22															<> <> <>
		10		5	9	27	89	SS-5	4.5+	-	-	-	-	-	-	-	-	16	A-6a (V)	<> <> <>
	1001.7	11		12					-	-	-	-	-	-	-	-			<> <> <>	

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 5.3'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/23/15 10:47 - \COLUMBUS\LAB\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13.

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / ASHBAUGH</u>	DRILL RIG: <u>CME 45B</u>	STATION / OFFSET: <u>45+53, 9 RT</u>	EXPLORATION ID <u>B-031-2-14</u>
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>BARR / D. LYON</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>N FRONTAGE RD</u>	PAGE 1 OF 1
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>1017.5 (MSL)</u> , EOB: <u>11.5 ft.</u>	
START: <u>8/6/15</u> END: <u>8/6/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>77.4</u>	COORD: <u>41.136538, -81.807253</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL		
								GR	CS	FS	SI	CL	LL	PL	PI					
5.5", ASPHALT	1017.5																			
24.5", GRANULAR BASE	1017.1	1																		
	1015.0	2																		
HARD, BROWN, GRAY, AND LIGHT BROWN, SILT AND CLAY , LITTLE SAND, TRACE GRAVEL, DAMP (FILL)		3	10	6	5	14	33	SS-1	4.5+	4	5	10	38	43	32	18	14	15	A-6a (10)	
		4																		
		5	3	5	27	41	39	SS-2	4.5+	-	-	-	-	-	-	-	-	-	14	A-6a (V)
6.0' to 6.8' ENCOUNTERED BOULDER	1010.7	6																		
		7																		
VERY STIFF TO HARD, BROWN MOTTLED WITH GRAY AND DARK GRAY, SILTY CLAY , LITTLE SAND, TRACE GRAVEL, DAMP TO MOIST		8	2	3	3	8	72	SS-3	3.0-4.25	3	4	12	35	46	40	19	21	20	A-6b (12)	
		9																		
		10																		
		11	4	7	8	19	78	SS-4	4.5+	-	-	-	-	-	-	-	-	-	17	A-6b (V)
	1006.0	EOB																		

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 6.0'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/23/15 10:47 - \\COLUMBUS\LAB\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / ASHBAUGH</u>	DRILL RIG: <u>CME 45B</u>	STATION / OFFSET: <u>29+32, 1 RT</u>	EXPLORATION ID <u>B-031-3-14</u>
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>BARR / D. LYON</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>S FRONTAGE RD</u>	PAGE 1 OF 1
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>1018.8 (MSL)</u> , EOB: <u>11.5 ft.</u>	
START: <u>8/6/15</u> END: <u>8/6/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>77.4</u>	COORD: <u>41.135970, -81.806976</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI				
4.0", TOPSOIL STIFF TO VERY STIFF, BROWN WITH BLACK, SILT AND CLAY , SOME SAND, LITTLE GRAVEL, SS-1 CONTAINS ASPHALT FRAGMENTS AND FEW ROOTS, DAMP (FILL) @2.5'; SS-2 NO RECOVERY @5.0'; SS-3 TO SS-5A CHANGES TO GRAYISH BROWN AND GRAY, LITTLE SAND, TRACE GRAVEL, CONTAINS ROOTS SOFT, GRAYISH BROWN, SANDY SILT , SOME CLAY, LITTLE GRAVEL, MOIST TO WET VERY STIFF TO HARD, BROWN MOTTLED WITH GRAY, SILT AND CLAY , LITTLE SAND, TRACE GRAVEL, DAMP	1018.8																		
	1018.5	1	13	36	89	SS-1	-	17	20	14	27	22	28	16	12	7	A-6a (3)	< \ / >	
		2	16																< \ / >
		3	6	14	0	SS-2	-	-	-	-	-	-	-	-	-	-			< \ / >
		4	7	4															< \ / >
		5	2																< \ / >
		6	3	6	50	SS-3	1.5-3.75	1	5	9	47	38	31	19	12	10	A-6a (9)	< \ / >	
		7	2																< \ / >
		8	2	6	6	SS-4	-	-	-	-	-	-	-	-	-	15	A-6a (V)	< \ / >	
		9	2	3															< \ / >
		10	2																< \ / >
	1009.3																	< \ / >	
	1007.8																	< \ / >	
	1007.3		1	5	83	SS-5	0.25-0.5-3.25-4.5	-	-	-	-	-	-	-	17	A-4a (V)	< \ / >		
			3					-	-	-	-	-	-	-	19	A-6a (V)	< \ / >		
																		< \ / >	

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 7.3'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:55 - \COLUMBUS\LAB\LABACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / J.HODGES</u>	DRILL RIG: <u>CME 55X</u>	STATION / OFFSET: <u>185+04, 18 LT</u>	EXPLORATION ID <u>B-032-0-14</u>
TYPE: <u>EXISTING PAVEMENT SUBGRADE</u>	SAMPLING FIRM / LOGGER: <u>BARR / D.LYON</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR-18</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>1023.9 (MSL)</u> , EOB: <u>8.0 ft.</u>	PAGE 1 OF 1
START: <u>7/8/15</u> END: <u>7/8/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>81.2</u>	COORD: <u>41.136308, -81.806343</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI			
9", ASPHALT	1023.9																	
17", GRANULAR BASE	1023.2	1																
HARD, BROWN, SILT AND CLAY, LITTLE SAND, TRACE GRAVEL, CONTAINS SILT FILLED DESICCATION CRACKS, DAMP	1021.8	2	6															
	1020.4	3	9 10	26	78	SS-1	4.5+	2	5	11	40	42	30	18	12	16	A-6a (9)	
HARD, BROWN MOTTLED WITH GRAY, SILTY CLAY, LITTLE SAND, TRACE GRAVEL, CONTAINS SILT FILLED DESICCATION CRACKS, MOIST		4	8															
		5	6 7	18	67	SS-2	4.5+	4	5	11	39	41	32	15	17	16	A-6b (11)	
		6	5 6															
		7	6 10	22	89	SS-3	4.5+	-	-	-	-	-	-	-	-	16	A-6b (V)	
	1015.9	8	6 8 11	26	100	SS-4	4.5+	-	-	-	-	-	-	-	-	20	A-6b (V)	
		EOB																

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 4.75'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:58 - \COLUMBUS\LAB\LABACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / J.HODGES</u>	DRILL RIG: <u>CME 45B</u>	STATION / OFFSET: <u>189+42, 37 LT</u>	EXPLORATION ID <u>B-033-0-14</u>
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>BARR / D.LYON</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR-18</u>	PAGE 1 OF 1
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>1035.9 (MSL)</u> , EOB: <u>9.0 ft.</u>	
START: <u>7/7/15</u> END: <u>7/7/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>77.4</u>	COORD: <u>41.136351, -81.804755</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI			
12", ASPHALT	1035.9																	
20", GRANULAR BASE	1034.9	1																
STIFF TO HARD, BROWN AND DARK GRAY, SILTY CLAY, SOME SAND, TRACE GRAVEL, DAMP TO MOIST (FILL)	1033.3	2	10	26	83	SS-1	-	56	16	13	11	4	NP	NP	NP	3	A-1-a (0)	
		3	4	10	56	SS-2	1.75- 4.5+	-	-	-	-	-	-	-	-	18	A-6b (V)	
		4	4	10	56	SS-2	2.25- 4.5+	5	10	17	34	34	32	16	16	15	A-6b (9)	
		5	4	10	78	SS-3	1.9- 3.25	-	-	-	-	-	-	-	-	15	A-6b (V)	
		6	4	10	78	SS-3	1.9- 3.25	-	-	-	-	-	-	-	-	15	A-6b (V)	
@7.5'; SS-5 CHANGES TO BROWN AND GRAY		7	3	9	78	SS-4	1.0- 2.25	-	-	-	-	-	-	-	16	A-6b (V)		
		8	3	4	9	SS-4	1.0- 2.25	-	-	-	-	-	-	-	16	A-6b (V)		
		9	4	12	89	SS-5	1.2- 2.8	-	-	-	-	-	-	-	21	A-6b (V)		
	1026.9	EOB																

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 6.9'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:55 - \COLUMBUS\LAB\LABIACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / J.HODGES</u>	DRILL RIG: <u>CME 55X</u>	STATION / OFFSET: <u>193+07, 27 RT</u>	EXPLORATION ID <u>B-034-0-14</u>
TYPE: <u>EXISTING PAVEMENT SUBGRADE</u>	SAMPLING FIRM / LOGGER: <u>BARR / D.LYON</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR-18</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>1046.4 (MSL)</u> , EOB: <u>8.0 ft.</u>	PAGE 1 OF 1
START: <u>7/10/15</u> END: <u>7/10/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>81.2</u>	COORD: <u>41.136176, -81.803430</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI			
17", ASPHALT	1046.4																	
5", GRANULAR BASE	1045.0	1																
HARD, BROWN MOTTLED WITH GRAY, SILT AND CLAY, SOME SAND, TRACE GRAVEL, DAMP	1044.6	2	7															
	1042.9	3	8 11	26	100	SS-1	4.5+	4	7	14	37	38	31	17	14	15	A-6a (10)	
VERY STIFF TO HARD, DARK BROWN, BROWN AND GRAY, SANDY SILT, LITTLE CLAY, TRACE TO LITTLE GRAVEL, CONTAINS IRON STAINING, DAMP @5.0'; SS-3 BECOMES GRAY AND BROWN		4	6 12 12	32	100	SS-2	4.5+	15	16	27	25	17	22	13	9	9	A-4a (1)	
		5	5															
		6	9 9	24	100	SS-3	4.5+	9	9	45	20	17	17	12	5	10	A-4a (0)	
	1038.9	7	5															
	1038.4	8	6 6	16	94	SS-4	3.50 2.5 - 4.5+	-	-	-	-	-	-	-	-	-	A-4a (V)	
VERY STIFF TO HARD, ORANGE BROWN BECOMING GRAY, SILTY CLAY, LITTLE SAND, TRACE GRAVEL, CONTAINS IRON STAINING, DAMP		EOB																

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 4.3'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:55 - \COLUMBUS\LAB\LABACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / J.HODGES</u>	DRILL RIG: <u>CME 55X</u>	STATION / OFFSET: <u>196+78, 47 LT</u>	EXPLORATION ID <u>B-035-0-14</u>
TYPE: <u>EXISTING PAVEMENT SUBGRADE</u>	SAMPLING FIRM / LOGGER: <u>BARR / D.LYON</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>SR-18</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>1056.8 (MSL)</u> , EOB: <u>8.0 ft.</u>	PAGE 1 OF 1
START: <u>7/8/15</u> END: <u>7/8/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>81.2</u>	COORD: <u>41.136378, -81.802083</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI				
10", ASPHALT	1056.8																		
14", GRANULAR BASE	1056.0	1																	
HARD, BROWN, SILT AND CLAY , SOME SAND, TRACE GRAVEL, CONTAINS SILT FILLED DESICCATION CRACKS, DAMP	1054.8	2	7																
		3	8	9	23	94	SS-1	4.5+	5	9	17	36	33	30	17	13	13	A-6a (8)	
		4	7	8	8	22	100	SS-2	4.5+	4	9	13	38	36	30	17	13	14	A-6a (9)
		5	4	6	8	19	100	SS-3	4.5+	-	-	-	-	-	-	-	-	14	A-6a (V)
		6	7	10	15	34	100	SS-4	4.5+	-	-	-	-	-	-	-	-	16	A-6a (V)
	1048.8	8																	



NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 5.2'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:55 - \COLUMBUS\LAB\LABACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / J.HODGES</u>	DRILL RIG: <u>CME 45B</u>	STATION / OFFSET: <u>10+43, 10 LT</u>	EXPLORATION ID <u>B-036-0-14</u>
TYPE: <u>EXISTING PAVEMENT SUBGRADE</u>	SAMPLING FIRM / LOGGER: <u>BARR / C.PATRICK</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>FOOTE RD</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>999.1 (MSL)</u> , EOB: <u>9.0 ft.</u>	PAGE 1 OF 1
START: <u>7/1/15</u> END: <u>7/1/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>77.4</u>	COORD: <u>41.136368, -81.831710</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI				
9", CONCRETE	999.1																		
9", GRANULAR BASE	998.4	1																	
HARD, BROWN, SILT AND CLAY, SOME SAND, LITTLE GRAVEL, DAMP (POSSIBLE FILL)	997.6	2	4																
HARD, BROWN MOTTLED WITH GRAY, SILT AND CLAY, LITTLE SAND, TRACE GRAVEL, DAMP @4.5'; SS-3 TO SS-5 LITTLE IRON STAINING	996.1	3	6	23	11	SS-1	4.25	-	-	-	-	-	-	-	-	-	15	A-6a (V)	
		4	7	9	25	83	SS-2	4.5+	5	5	9	33	48	37	19	18	16	A-6b (11)	
		5	4	11	36	100	SS-3	4.5+	-	-	-	-	-	-	-	-	-	16	A-6b (V)
		6	6	11	32	100	SS-4	4.5+	3	6	10	36	45	34	18	16	16	A-6b (10)	
		8	4	12	35	100	SS-5	4.5+	-	-	-	-	-	-	-	-	-	16	A-6b (V)
	990.1	9	15																
		EOB																	

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:55 - \COLUMBUS\LAB\LABRACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / J.HODGES</u>	DRILL RIG: <u>CME 45B</u>	STATION / OFFSET: <u>14+01, 16 RT</u>	EXPLORATION ID <u>B-037-0-14</u>
TYPE: <u>EXISTING PAVEMENT SUBGRADE</u>	SAMPLING FIRM / LOGGER: <u>BARR / C.PATRICK</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>FOOTE RD</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>993.2 (MSL)</u> , EOB: <u>9.0 ft.</u>	PAGE 1 OF 1
START: <u>7/1/15</u> END: <u>7/1/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>77.4</u>	COORD: <u>41.137349, -81.831604</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI			
9", CONCRETE	993.2																	
9", GRANULAR BASE	991.7	1																
MEDIUM DENSE, LIGHT GRAYISH BROWN, GRAVEL WITH SAND , LITTLE SILT, TRACE CLAY, (BASE MATERIAL), DAMP	990.2	2	8	28	67	SS-1	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
HARD, BROWN, SILTY CLAY , LITTLE SAND, LITTLE GRAVEL, (GRAVEL IS BASE MATERIAL), DAMP	988.7	3	7	23	100	SS-2	4.5+	16	9	11	30	34	34	17	17	14	A-6b (9)	
(POSSIBLE FILL)		4	6															
HARD, BROWN WITH FEW GRAY MOTTLES, SILTY CLAY , LITTLE SAND, TRACE GRAVEL, DAMP		5	7	21	100	SS-3	4.5+	4	6	10	38	42	34	18	16	15	A-6b (10)	
		6	4															
		7	7	22	100	SS-4	4.5+	-	-	-	-	-	-	-	-	18	A-6b (V)	
		8	6															
@7.5'; BECOMES BROWN MOTTLE WITH GRAY AND ORANGE BROWN, SOME SAND, LITTLE GRAVEL, CONTAINS FEW IRON STAINS	984.2	8	9	28	100	SS-5	4.5+	-	-	-	-	-	-	-	-	17	A-6b (V)	
		9	13															
		EOB																

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 9.0'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:55 - \COLUMBUS\LAB\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / J.HODGES</u>	DRILL RIG: <u>CME 55</u>	STATION / OFFSET: <u>19+56, 14 LT</u>	EXPLORATION ID <u>B-038-0-14</u>
TYPE: <u>EXISTING PAVEMENT SUBGRADE</u>	SAMPLING FIRM / LOGGER: <u>BARR / C.PATRICK</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>FOOTE RD</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>988.3 (MSL)</u> , EOB: <u>8.0 ft.</u>	PAGE 1 OF 1
START: <u>7/13/15</u> END: <u>7/13/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>78.8</u>	COORD: <u>41.138869, -81.831606</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI			
7.0", CONCRETE	987.7																	X
HARD, BROWN MOTTLED WITH GRAY, SILTY CLAY , LITTLE SAND, TRACE GRAVEL, CONTAINS SILT FILLED DESICCATION CRACKS, DAMP @5.0'; SS-3 AND SS-4 BECOME BROWN		1																>>>
		2	7															>>>
		3	10 11	28	100	SS-1	4.5+	5	6	10	33	46	38	20	18	15	A-6b (11)	>>>
		4	6 9 13	29	67	SS-2	4.5+	6	5	11	33	45	37	19	18	15	A-6b (11)	>>>
	5	7																>>>
	6	10 13	30	100	SS-3	4.5+	-	-	-	-	-	-	-	-	17	A-6b (V)	>>>	
	7	7	9	24	100	SS-4	4.5+	-	-	-	-	-	-	-	17	A-6a (V)	>>>	
	980.3	8	9	9														>>>
		EOB																

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 4.9'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:58 - \\COLUMBUS\LAB\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13.

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / J.HODGES</u>	DRILL RIG: <u>CME 45B</u>	STATION / OFFSET: <u>22+09, 23 RT</u>	EXPLORATION ID <u>B-039-0-14</u>
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>BARR / C.PATRICK</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>FOOTE RD</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>987.5 (MSL)</u> , EOB: <u>6.0 ft.</u>	PAGE 1 OF 1
START: <u>6/29/15</u> END: <u>7/1/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>77.4</u>	COORD: <u>41.139566, -81.831491</u>	

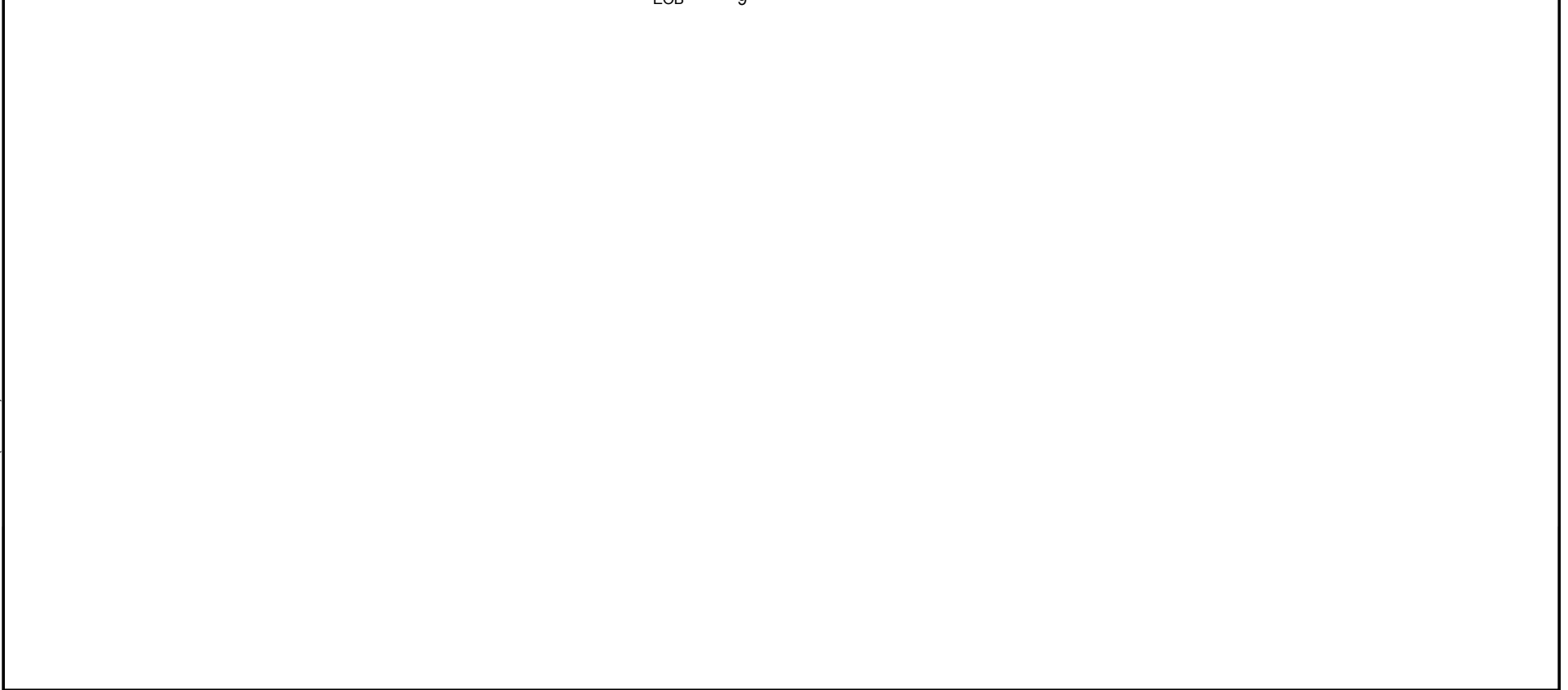
MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL			
								GR	CS	FS	SI	CL	LL	PL	PI						
VERY LOOSE TO LOOSE, BROWN TO BROWN AND GRAY, GRAVEL WITH SAND, SILT, AND CLAY , DAMP (FILL)	987.5	1	2	3	9	56	SS-1	-	-	-	-	-	-	-	-	-	-	10	A-2-6 (V)	< > < >	
			4	1	3	56	SS-2	-	60	6	7	14	13	29	18	11	10	A-2-6 (0)	< > < >		
VERY STIFF TO HARD, BROWN MOTTLED WITH GRAY, SILT AND CLAY , LITTLE SAND, TRACE GRAVEL, SS-3 CONTAINS IRON STAINING, DAMP TO MOIST	984.5	3	3	4	12	56	SS-3	2.25	-	-	-	-	-	-	-	-	-	21	A-6a (V)	< > < >	
		4	5	8	23	100	SS-4	4.5+	6	7	10	35	42	33	18	15	18	A-6a (10)	< > < >		
		5	6	10																	< > < >
		6																			< > < >
	981.5	EOB	6																		

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:55 - \COLUMBUS\LAB\LABACTIVE PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / J.HODGES</u>	DRILL RIG: <u>CME 45B</u>	STATION / OFFSET: <u>25+23, 11 LT</u>	EXPLORATION ID <u>B-040-0-14</u>
TYPE: <u>EXISTING PAVEMENT SUBGRADE</u>	SAMPLING FIRM / LOGGER: <u>BARR / C.PATRICK</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>FOOTE RD</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>979.5 (MSL)</u> , EOB: <u>9.0 ft.</u>	PAGE 1 OF 1
START: <u>7/1/15</u> END: <u>7/1/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>77.4</u>	COORD: <u>41.140425, -81.831637</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI			
13", CONCRETE	979.5																	
7", GRANULAR BASE	978.4	1																
VERY DENSE, BROWN, COARSE AND FINE SAND , SOME SILT, LITTLE GRAVEL, TRACE CLAY, WET (FILL)	977.8	2	27		-	73	SS-1	-	12	36	24	21	7	NP	NP	NP	17	A-3a (0)
	977.0	3	4															
HARD, BROWN MOTTLED WITH GRAY, SILT AND CLAY , SOME SAND, TRACE GRAVEL, SS-3 CONTAINS FEW IRON STAINS, DAMP		4	8	25	100		SS-2	4.5+	6	13	12	32	37	35	20	15	16	A-6a (9)
		5	4															
	973.5	6	9	30	100		SS-3	4.5+	-	-	-	-	-	-	-	-	18	A-6a (V)
		7	16															
HARD, BROWN WITH FEW GRAY MOTTLES, SILTY CLAY , LITTLE SAND, TRACE GRAVEL, FEW IRON STAINS, DAMP		8	18	41	100		SS-4	4.25 - 4.5+	1	7	11	41	40	33	17	16	15	A-6b (10)
		9	3															
	970.5	EOB	7	23	100		SS-5	4.5+	-	-	-	-	-	-	-	-	16	A-6b (V)



NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:55 - \COLUMBUS\LAB\LABACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / J.HODGES</u>	DRILL RIG: <u>CME 55X</u>	STATION / OFFSET: <u>904+35, 11 RT</u>	EXPLORATION ID <u>B-041-0-14</u>
TYPE: <u>EXISTING PAVEMENT SUBGRADE</u>	SAMPLING FIRM / LOGGER: <u>BARR / D. LYON</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>RIVER STYX RD</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>936.0 (MSL)</u> , EOB: <u>8.0 ft.</u>	PAGE 1 OF 1
START: <u>7/8/15</u> END: <u>7/8/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>81.2</u>	COORD: <u>41.131509, -81.812431</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI			
8.0", CONCRETE	936.0																	
16.0", GRANULAR BASE	935.3	1																
STIFF TO VERY STIFF, GRAYISH BROWN MOTTLED WITH BLACK, SILTY CLAY , TRACE SAND, TRACE GRAVEL, DAMP TO MOIST	934.0	2	2	4	8	100	SS-1	1.0-3.25	1	2	8	42	47	40	21	19	29	A-6b (12)
		3	2	4	9	100	SS-2	2.0-3.5	-	-	-	-	-	-	-	-	21	A-6b (V)
VERY STIFF TO HARD, BROWN, CLAY , SOME SILT, TRACE SAND, TRACE GRAVEL, DAMP TO MOIST	931.0	4	2	4	9	100	SS-2	2.0-3.5	-	-	-	-	-	-	-	-	21	A-6b (V)
		5	5	8	19	100	SS-3	3.0-4.5+	5	3	6	31	55	46	19	27	21	A-7-6 (16)
	928.0	6	5	8	19	100	SS-3	3.0-4.5+	5	3	6	31	55	46	19	27	21	A-7-6 (16)
		7	5	7	23	100	SS-4	4.25-4.5+	-	-	-	-	-	-	-	-	17	A-7-6 (V)
		8		10														



NOTES: GROUNDWATER NOT ENCOUNTERED DURING. CAVE DEPTH 5.7'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/23/15 10:49 - \COLUMBUS\LAB\LABACTIVE PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / ASHBAUGH</u>	DRILL RIG: <u>CME 45B</u>	STATION / OFFSET: <u>902+70, 9 RT</u>	EXPLORATION ID <u>B-041-1-14</u>
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>BARR / ASHBAUGH</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>RIVER STYX RD</u>	PAGE 1 OF 1
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>933.7 (MSL)</u> , EOB: <u>8.0 ft.</u>	
START: <u>8/6/15</u> END: <u>8/6/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>77.4</u>	COORD: <u>41.131062, -81.812345</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI				
8.5", ASPHALT	933.7																		
13.5", GRANULAR BASE	931.9	1																	
STIFF, BROWN AND ORANGISH BROWN, SANDY SILT , LITTLE CLAY, TRACE GRAVEL, DAMP	930.7	2	3																
VERY STIFF, GRAY MOTTLED WITH ORANGISH BROWN AND DARK GRAY, SILTY CLAY , TRACE SAND, MOIST @3.5'; SS-2 TO SS-3 BECOME BROWN MOTTLED WITH ORANGISH BROWN, CONTAINS IRON STAINING	927.2	3	4	10	78	SS-1	-	6	11	33	31	19	24	17	7	15	A-4a (3)		
		4	2	4				3.75	-	-	-	-	-	-	-	-	21	A-6b (V)	
		5	3	3	8	56	SS-2	3.75 4.0	0	1	2	59	38	38	21	17	22	A-6b (11)	
SOFT, GRAY MOTTLED WITH ORANGISH BROWN, SANDY SILT , LITTLE CLAY, TRACE GRAVEL, CONTAINS IRON STAINING, MOIST TO WET	925.7	6	2	5	89	SS-3	2.25 2.6	-	-	-	-	-	-	-	-	-	23	A-6b (V)	
		7	2	1	4	89	SS-4	0.25	-	-	-	-	-	-	-	-	25	A-4a (V)	
		8	2																

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/23/15 10:49 - \\COLUMBUS\LAB\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / ASHBAUGH</u>	DRILL RIG: <u>CME 45B</u>	STATION / OFFSET: <u>16+28, 8 RT</u>	EXPLORATION ID <u>B-041-2-14</u>
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>BARR / ASHBAUGH</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>E SMITH RD</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>933.2 (MSL)</u> , EOB: <u>8.0 ft.</u>	PAGE 1 OF 1
START: <u>8/6/15</u> END: <u>8/6/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>77.4</u>	COORD: <u>41.131222, -81.812679</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI				
10.5", ASPHALT	933.2																		
9.5", GRANULAR BASE	932.3	1																	
STIFF TO VERY STIFF, BROWN, GRAY AND ORANGISH BROWN, SANDY SILT, SOME GRAVEL, LITTLE CLAY, DAMP (FILL)	931.5	2	6	17	72	SS-1	-	22	21	18	26	13	24	18	6	11	A-4a (1)		
		3	4	9	67	SS-2	-	29	14	15	29	13	27	20	7	12	A-4a (1)		
		4	4	3	8	100	SS-3	-	-	-	-	-	-	-	-	-	15	A-4a (V)	
		5	4	3	8	100	SS-3	1.5 - 3.25	-	-	-	-	-	-	-	-	21	A-7-6 (V)	
STIFF TO VERY STIFF, ORANGISH BROWN MOTTLED WITH GRAY, CLAY, "AND" SILT, TRACE TO LITTLE SAND, DAMP TO MOIST	927.2	6	3	3	8	83	SS-4	1.4 - 2.4	0	1	5	56	38	41	22	19	26	A-7-6 (12)	
		7	3	3	8	83	SS-4	1.4 - 2.4	0	1	5	56	38	41	22	19	26	A-7-6 (12)	
	925.2	8	3	3	8	83	SS-4	1.4 - 2.4	0	1	5	56	38	41	22	19	26	A-7-6 (12)	



NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 4.7'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/23/15 10:49 - \COLUMBUS\LAB\LABACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / ASHBAUGH</u>	DRILL RIG: <u>CME 45B</u>	STATION / OFFSET: <u>17+78, 8 RT</u>	EXPLORATION ID <u>B-041-3-14</u>
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>BARR / ASHBAUGH</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>E SMITH RD</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>934.7 (MSL)</u> , EOB: <u>8.0 ft.</u>	PAGE 1 OF 1
START: <u>8/6/15</u> END: <u>8/6/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>77.4</u>	COORD: <u>41.131248, -81.812158</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI			
8.5", ASPHALT	934.7																	
11.5", GRANULAR BASE	933.0	1																
HARD, GRAY WITH ORANGISH BROWN, SILT AND CLAY , LITTLE SAND, TRACE GRAVEL, DAMP (FILL)	931.2	2	2															
STIFF TO VERY STIFF, ORANGISH BROWN WITH GRAY, SANDY SILT , LITTLE CLAY, LITTLE TO SOME GRAVEL, SS-2 CONTAINS ASPHALT FRAGMENTS, DAMP (FILL)	929.0	3	4	5	12	78	SS-1	4.0 - 4.5+	1	3	8	47	41	34	20	14	19	A-6a (10)
		4	5	4	9	67	SS-2	1.9 - 2.5	11	11	22	37	19	26	17	9	15	A-4a (4)
STIFF TO VERY STIFF, ORANGISH BROWN MOTTLED WITH GRAY, SILTY CLAY , LITTLE SAND, TRACE GRAVEL, CONTAINS IRON STAINING, MOIST	926.7	5	2	3	9	56	SS-3	1.75 - 2.25	-	-	-	-	-	-	-	-	15	A-4a (V)
		6	3	4	9	56	SS-3	2.25 - 2.5	-	-	-	-	-	-	-	-	21	A-6b (V)
		7	2	4	6	89	SS-4	1.6 - 1.75	-	-	-	-	-	-	-	-	25	A-6b (V)
		8	2	3														



NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/23/15 10:49 - \\COLUMBUS\LAB\LABACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13.

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / J.HODGES</u>	DRILL RIG: <u>CME 55X</u>	STATION / OFFSET: <u>907+15, 11 LT</u>	EXPLORATION ID <u>B-042-0-14</u>
TYPE: <u>ROADWAY</u>	SAMPLING FIRM / LOGGER: <u>BARR / D. LYON</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>RIVER STYX RD</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>946.8 (MSL)</u> , EOB: <u>9.0 ft.</u>	PAGE 1 OF 1
START: <u>7/8/15</u> END: <u>7/8/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>81.2</u>	COORD: <u>41.132267, -81.812627</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI				
9.0", CONCRETE	946.8																		
15.0", GRANULAR BASE	946.1	1																	
STIFF TO VERY STIFF, BROWN AND LIGHT GRAY, SILTY CLAY , LITTLE SAND, LITTLE GRAVEL, DAMP (FILL) VERY STIFF TO HARD, BROWN, SILTY CLAY , LITTLE SAND, TRACE GRAVEL, DAMP	944.8	2	8	15	50	SS-1	1.5-3.5	14	6	9	28	43	39	18	21	17	A-6b (12)		
	943.8	3	3	5	18	78	SS-2	3.5-4.5+	4	4	10	35	47	35	18	17	15	A-6b (11)	
		4	6	10	27	100	SS-3	4.5+	-	-	-	-	-	-	-	-	15	A-6b (V)	
		5	7	7	24	94	SS-4	4.5+	3	3	8	38	48	34	17	17	14	A-6b (11)	
		6	7	7	11														
		7	4	6	20	100	SS-5	4.5+	-	-	-	-	-	-	-	-	17	A-6b (V)	
		8	4	6	9														
		9	9	6	9														
		937.8	EOB																

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILING. CAVEN DEPTH 3.5'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

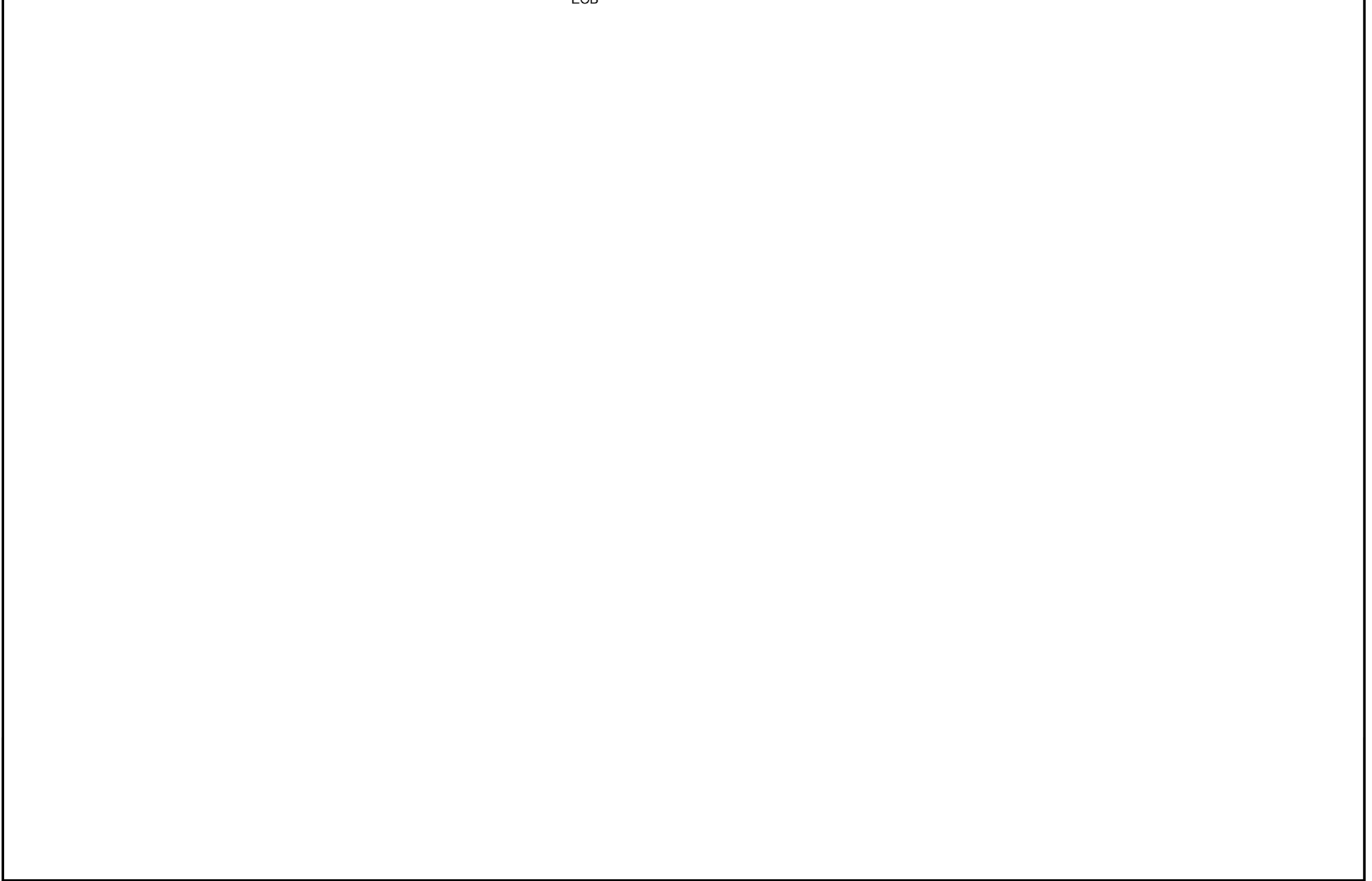
STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 11/17/15 10:47 - \COLUMBUS\LAB\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13.

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / J.HODGES</u>	DRILL RIG: <u>CME 55X</u>	STATION / OFFSET: <u>911+83, 21 RT</u>	EXPLORATION ID <u>B-043-0-14</u>
TYPE: <u>CULVERT</u>	SAMPLING FIRM / LOGGER: <u>BARR / D. LYON</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>RIVER STYX RD</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>944.8 (MSL)</u> , EOB: <u>31.5 ft.</u>	PAGE 1 OF 2
START: <u>7/7/15</u> END: <u>7/8/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>81.2</u>	COORD: <u>41.133550, -81.812528</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)								WC	ODOT CLASS (GI)	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL				PI
6.5", TOPSOIL	944.8		3															
STIFF TO HARD, BROWN MOTTLED WITH BLACK, SILT AND CLAY, SOME SAND, TRACE GRAVEL, MOIST	944.2	1	2	8	67	SS-1	1.25-4.5+	-	-	-	-	-	-	-	-	19	A-6a (V)	
(FILL)	943.3	2	4	11	94	SS-2	1.75-4.0	13	7	20	32	28	33	18	15	18	A-6a (7)	
STIFF TO VERY STIFF, DARK GRAY MOTTLED WITH BROWN, SILT AND CLAY, SOME SAND, LITTLE GRAVEL, DAMP TO MOIST		3	2	7	39	SS-3	2.5-4.0	-	-	-	-	-	-	-	-	17	A-6a (V)	
@4.5'; SS-4 BECOMES SOFT TO STIFF		4	2															
		5	1	4	78	SS-4	0.25-1.5	11	12	19	30	28	29	17	12	21	A-6a (5)	
SOFT TO STIFF, DARK GRAY TO DARK GRAYISH BROWN, SANDY SILT, LITTLE CLAY, TRACE GRAVEL, CONTAINS WOOD FRAGMENTS, MOIST	938.8	6	WOH															
		7	2	7	100	SS-5	0.25-1.0	-	-	-	-	-	-	-	-	27	A-4a (V)	
		8	1	4	89	SS-6	0.25-0.75	-	-	-	-	-	-	-	-	24	A-4a (V)	
	935.3	9	2															
STIFF TO HARD, GRAY, SILT AND CLAY, TRACE TO LITTLE SAND, TRACE GRAVEL, MOIST		10	3															
		11	4	15	89	SS-7	2.5-3.75	-	-	-	-	-	-	-	-	18	A-6a (V)	
		12	7															
		13	4	20	100	SS-8	3.75-4.5+	1	0	1	64	34	27	16	11	17	A-6a (8)	
		14	9															
		15	4															
		16	5	16	100	SS-9	1.25-2.0	4	5	9	37	45	30	16	14	19	A-6a (10)	
		17	7															
		18	4	18	100	SS-10	1.5-4.0	-	-	-	-	-	-	-	-	27	A-6a (V)	
		19	8															
		20	4															
		21	5	16	72	SS-11	1.0-2.25	-	-	-	-	-	-	-	-	24	A-6a (V)	
	922.8	22	7															
STIFF TO VERY STIFF, GRAY, SANDY SILT, SOME CLAY, DAMP TO MOIST		23	2	12	100	SS-12	1.5-3.5	-	-	-	-	-	-	-	-	27	A-4a (V)	
		24	7															
		25	3															
		26	3	8	94	SS-13	1.0-2.25	0	2	19	46	33	27	21	6	29	A-4a (8)	
		27	3															
@27.5'; SS-14 TO SS-15 BECOME "AND" GRAVEL		28	3	14	100	SS-14	1.0-2.25	-	-	-	-	-	-	-	-	17	A-4a (V)	
		29	6															

NOTES: GROUNDWATER ENCOUNTERED AT 11.0' DURING DRILLING, 10.0" UPON COMPLETION. CAVE DEPTH 10.5'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 0.5 BAG BENTONITE GROUT; SHOVELED SOIL CUTTINGS

MATERIAL DESCRIPTION AND NOTES	ELEV. 914.8	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL
								GR	CS	FS	SI	CL	LL	PL	PI			
STIFF TO VERY STIFF, GRAY, SANDY SILT, SOME CLAY, DAMP TO MOIST (continued from above)	913.3	31	4 6 9	20	89	SS-15	3.25 4.5+	-	-	-	-	-	-	-	-	14	A-4a (V)	< > < > < > < >

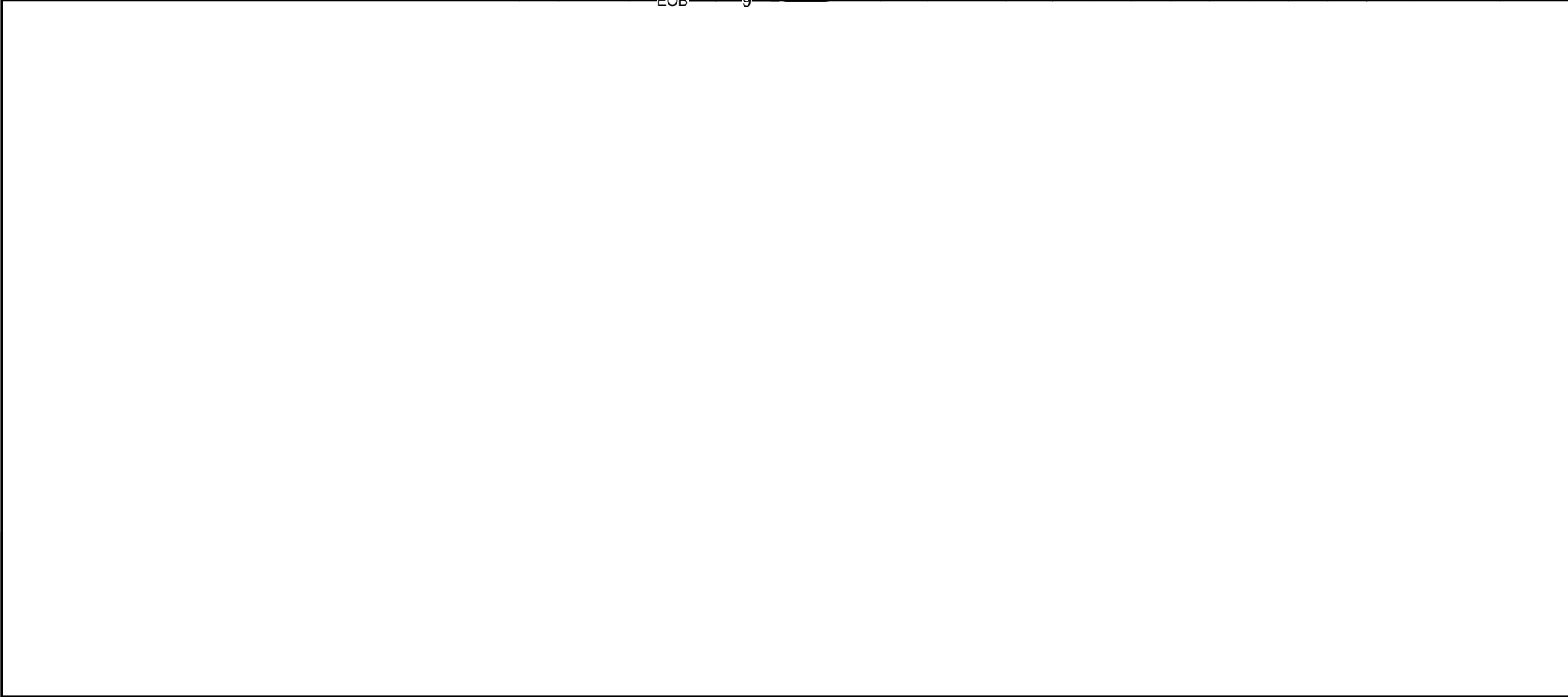


NOTES: GROUNDWATER ENCOUNTERED AT 11.0' DURING DRILLING, 10.0" UPON COMPLETION. CAVE DEPTH 10.5'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 0.5 BAG BENTONITE GROUT; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:56 - \COLUMBUS\LAB\LABACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / J.HODGES</u>	DRILL RIG: <u>CME 45B</u>	STATION / OFFSET: <u>915+23, 12 RT</u>	EXPLORATION ID <u>B-044-0-14</u>
TYPE: <u>EXISTING PAVEMENT SUBGRADE</u>	SAMPLING FIRM / LOGGER: <u>BARR / C.PATRICK</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>RIVER STYX RD</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>960.0 (MSL)</u> , EOB: <u>9.0 ft.</u>	PAGE 1 OF 1
START: <u>7/1/15</u> END: <u>7/1/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>77.4</u>	COORD: <u>41.134448, -81.812273</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI				
9", CONCRETE	960.0																		
10", GRANULAR BASE	959.2	1																	
STIFF TO VERY STIFF, BROWN, GRAY, DARK GRAY, AND OLIVE, SILT AND CLAY , SOME SAND, LITTLE TO SOME GRAVEL, SS-1 AND SS-2 CONTAIN FEW ROOTS, SLIGHTLY ORGANIC, DAMP (FILL) @3.0'; SS-2 TO SS-4 CHANGE TO GRAYISH BROWN, CONTAIN WOOD FRAGMENTS	958.4	2	5	13	100	SS-1	1.75 - 3.6	18	16	15	27	24	30	17	13	15	A-6a (4)	↖ ↗	
		3	4	5	13	100	SS-2	3.00	24	15	17	26	18	29	16	13	14	A-6a (3)	↖ ↗
		4	2	1	4	100	SS-3	1.0 - 2.25	-	-	-	-	-	-	-	-	18	A-6a (V)	↖ ↗
		5	1	1	3	22	SS-4	2.25	-	-	-	-	-	-	-	-	10	A-6a (V)	↖ ↗
		6	4	7	23	100	SS-5	2.9 - 4.0	-	-	-	-	-	-	-	-	24	A-6b (V)	↖ ↗
VERY STIFF, BROWN MOTTLED WITH GRAY, SILTY CLAY , LITTLE SAND, TRACE GRAVEL, DAMP	952.5	7																	
	951.0	8																	
		9																	

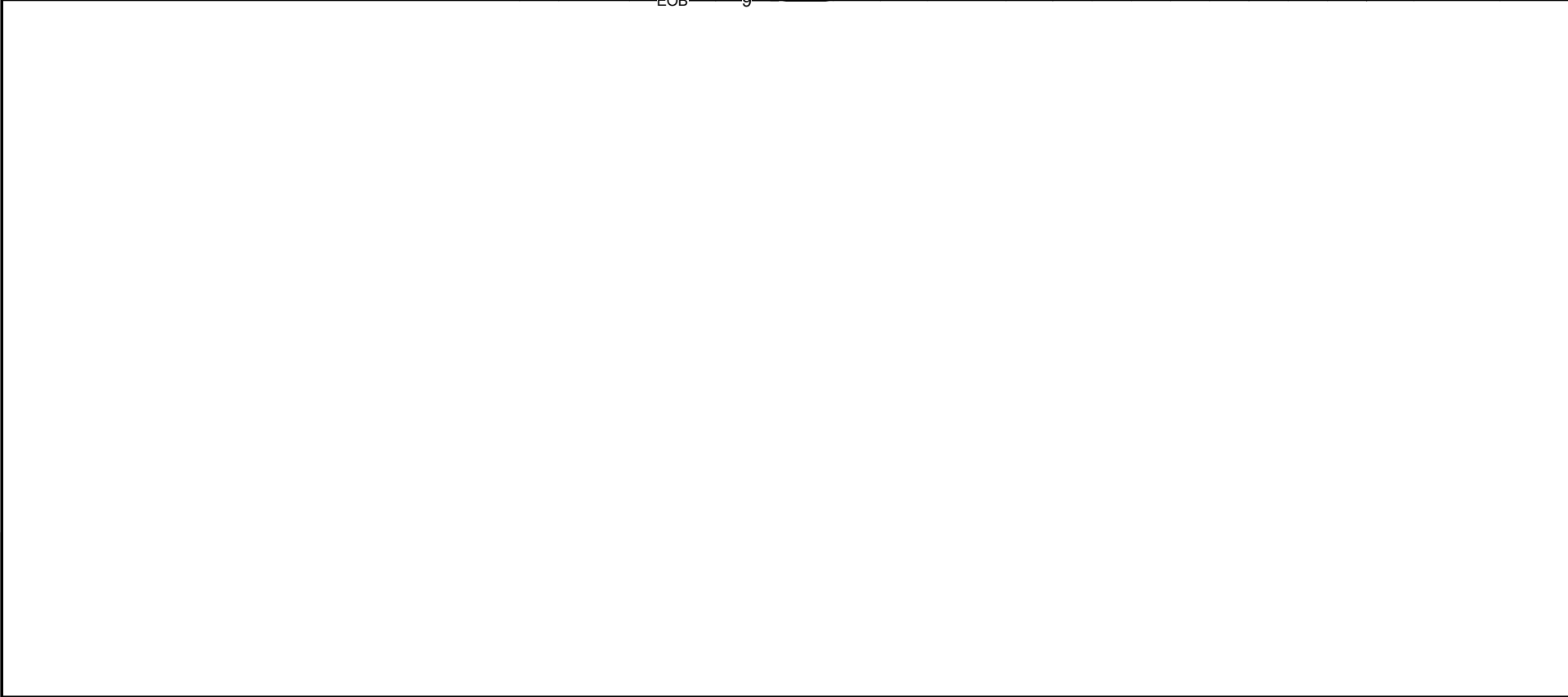


NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 9.0'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:56 - \\COLUMBUS\LAB\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / J.HODGES</u>	DRILL RIG: <u>CME 45B</u>	STATION / OFFSET: <u>918+65, 13 LT</u>	EXPLORATION ID <u>B-045-0-14</u>
TYPE: <u>EXISTING PAVEMENT SUBGRADE</u>	SAMPLING FIRM / LOGGER: <u>BARR / C.PATRICK</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>RIVER STYX RD</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>977.5 (MSL)</u> , EOB: <u>9.0 ft.</u>	PAGE 1 OF 1
START: <u>7/1/15</u> END: <u>7/1/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>77.4</u>	COORD: <u>41.135364, -81.812001</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI				
9", CONCRETE	977.5																		
9", GRANULAR BASE	976.7	1																	
HARD, BROWN, SILT AND CLAY, LITTLE SAND, TRACE GRAVEL, DAMP @6.0'; SS-4 BECOME BROWN TO GRAYISH BROWN @7.5'; SS-5 BECOME BROWN MOTTLED WITH GRAY	976.0	2	1	18	100	SS-1	4.25 - 4.5+	2	5	10	40	43	29	17	12	17	A-6a (9)		
		3	9	23	100	SS-2	4.5+	3	5	10	39	43	30	18	12	16	A-6a (9)		
		4	3	8	22	11	SS-3	-	-	-	-	-	-	-	-	-	17	A-6a (V)	
		5	8	10	26	100	SS-4	4.5+	-	-	-	-	-	-	-	-	18	A-6a (V)	
		6	2	6	17	100	SS-5	4.5+	-	-	-	-	-	-	-	-	17	A-6a (V)	
	968.5	9																	

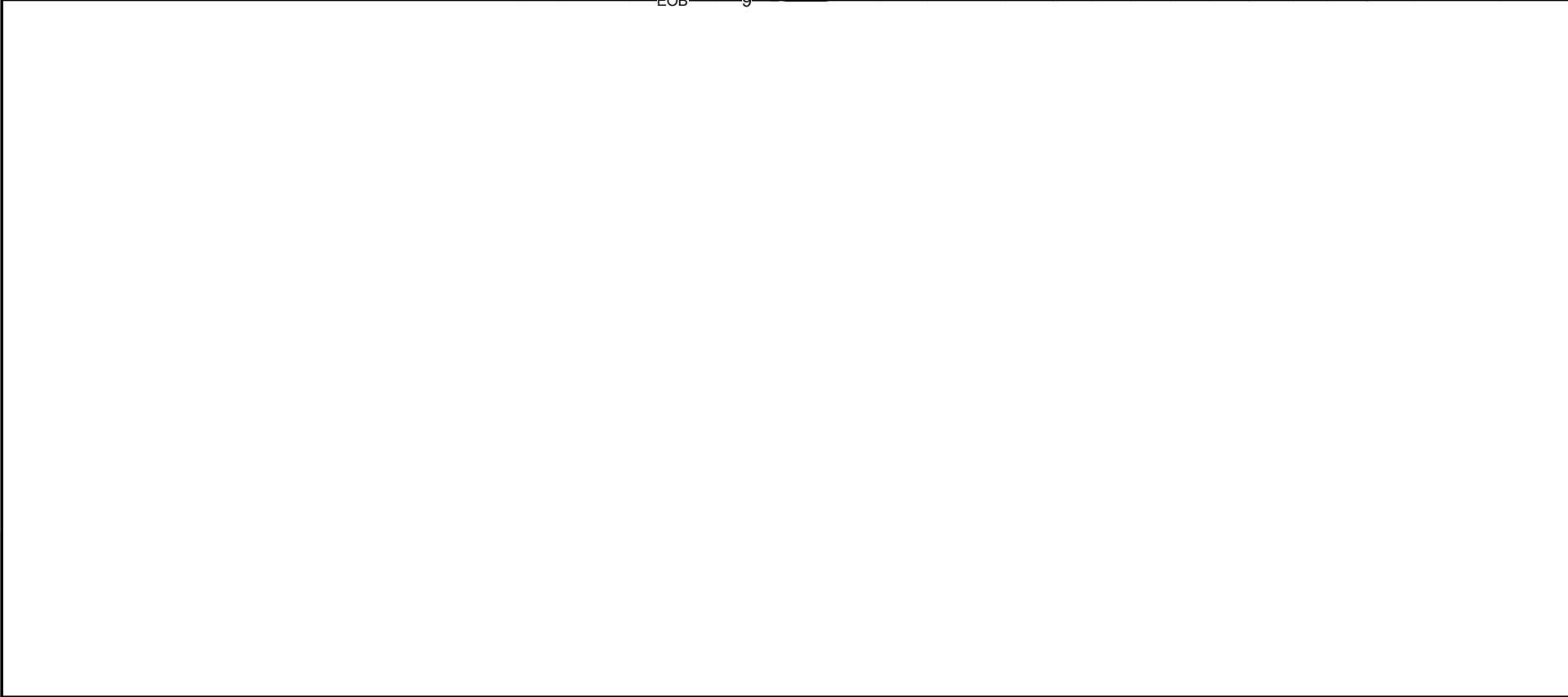


NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 9.0'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/17/15 10:56 - \COLUMBUS\LAB\LABACTIVE PROJECTS\ACTIVE SOIL PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13-

PROJECT: <u>MED-18-12.99</u>	DRILLING FIRM / OPERATOR: <u>BARR / J.HODGES</u>	DRILL RIG: <u>CME 45B</u>	STATION / OFFSET: <u>924+62, 9 LT</u>	EXPLORATION ID <u>B-046-0-14</u>
TYPE: <u>EXISTING PAVEMENT SUBGRADE</u>	SAMPLING FIRM / LOGGER: <u>BARR / C.PATRICK</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>RIVER STYX RD</u>	
PID: <u>92953</u> BR ID: _____	DRILLING METHOD: <u>3.25" HSA</u>	CALIBRATION DATE: <u>1/26/14</u>	ELEVATION: <u>974.2 (MSL)</u> , EOB: <u>9.0 ft.</u>	PAGE 1 OF 1
START: <u>7/2/15</u> END: <u>7/2/15</u>	SAMPLING METHOD: <u>SPT</u>	ENERGY RATIO (%): <u>77.4</u>	COORD: <u>41.136950, -81.811549</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)									WC	ODOT CLASS (GI)	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI				
8", CONCRETE	974.2																		
10", GRANULAR BASE	973.5	1																	
HARD, BROWN MOTTLED WITH GRAY, SILTY CLAY , LITTLE SAND, TRACE GRAVEL, DAMP	972.7	2	4	6	15	100	SS-1	4.5+	6	6	11	38	39	32	16	16	16	A-6b (10)	
STIFF TO HARD, BROWN MOTTLED WITH GRAY, SILT AND CLAY , LITTLE SAND, TRACE GRAVEL, DAMP @4.5'; SS-3 CONTAINS FEW IRON STAINS	971.2	3	3	4	13	100	SS-2	3.9-4.25	4	6	11	38	41	31	18	13	17	A-6a (9)	
		4	1	2	6	100	SS-3	1.9-2.0	-	-	-	-	-	-	-	-	18	A-6a (V)	
		5	3	4	13	100	SS-4	2.0-2.1	-	-	-	-	-	-	-	-	-	18	A-6a (V)
		6	3	4	13	100	SS-4	2.0-2.1	-	-	-	-	-	-	-	-	-	18	A-6a (V)
		7	3	5	13	100	SS-5	1.6-1.9	-	-	-	-	-	-	-	-	-	18	A-6a (V)
	965.2	8	3	5	13	100	SS-5	1.6-1.9	-	-	-	-	-	-	-	-	18	A-6a (V)	
		9	5	5															



NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE DEPTH 8.0'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED .5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

APPENDIX C

ODOT GB 1 SPREADSHEETS

00000MED-18-13.54
SR-18 GB 1 Spreadsheet

#	Boring				Cut Fill	Subgrade		Standard Penetration						Physical Characteristics					Moisture		Class		Comments	Problem		Undercuts		Analysis
	B #	Boring Location	Depth	To		Depth	To	n ₂	n ₃	N	Rig	N ₆₀	N _{60L}	LL	PL	PI	% Silt	% Clay	P 200	M	M _{OPT}	Ohio DOT		GI	w/ Class	w/ MN	UC Class	UC MN
12	B-012-0-14	117+31.93, 22' LT	2.0 3.5 5.0 6.5	3.5 5.0 6.5 8.0	0.0	2.0 3.5 5.0 6.5	3.5 5.0 6.5 8.0	7 6 9 10	11 10 10 13	18 16 19 23	C 22 26 31	24 22 26 22	36 35	19 17	17 18	36 35	47 44	83 79	15 15 16 16	16 16 16 16	6b 6b 6b 6b	11 11 10 V					396	
13	B-013-0-14	120+79.24, 12' RT	2.0 3.5 5.0 6.5	3.5 5.0 6.5 8.0	0.0	2.0 3.5 5.0 6.5	3.5 5.0 6.5 8.0	5 5 6 8	6 7 7 11	11 12 13 19	C 15 16 18 26	15 16 18 15	46 43	20 20	26 23	37 30	49 57	86 87	22 20 18 18	18 18 18 18	7-6 7-6 7-6 7-6	16 14 14 V					<100	
14	B-014-0-14	125+39.30, 17' LT	2.0 3.5 5.0 6.5	3.5 5.0 6.5 8.0	0.0	2.0 3.5 5.0 6.5	3.5 5.0 6.5 8.0	6 5 7 10	8 5 10 11	14 10 17 21	D 13 22 28	18 13 22 13	31 33	16 18	15 15	38 35	40 38	78 73	15 16 16 16	14 14 14 14	6a 6a 6a 6a	10 10 8 V					<100	
15	B-015-0-14	127+11.51, 23' LT	1.5 3.0 4.5 7.5	3.0 4.5 6.0 9.0	0.0	1.5 3.0 4.5 7.5	3.0 4.5 6.0 9.0	7 4 6 16	9 4 7 25	16 8 13 41	B 21 10 53	21 10 17 10							21 24 24 18	16 16 16 16	6b 6b 6b 6b	10 10 10 V		N M	15			
16	B-016-0-14	127+42.41, 19' RT	1.5 3.0 4.5 8.5	3.0 4.5 6.0 10.0	0.0	1.5 3.0 4.5 8.5	3.0 4.5 6.0 10.0	3 4 4 4	4 5 6 5	7 9 10 9	B 9 12 13 12	9 12 13 9		47	20	27	28	59	87	18 21 21 17	14 18 18 16	6a 7-6 7-6 6b	8 16 14 V		N	16		
17	B-017-0-14	128+38.20, 18' RT	1.5 3.0 4.5 8.5	3.0 4.5 6.0 10.0	0.0	1.5 3.0 4.5 8.5	3.0 4.5 6.0 10.0	7 5 9 5	12 9 10 7	19 14 19 12	B 24 18 24 15	24 18 24 15	30	17	13	38	40	78	15 16 17 16	14 14 14 14	6a 6a 6a 6a	9 8 8 V						
18	B-018-0-14	133+17.01, 14' RT	2.0 3.5 5.0 6.5	3.5 5.0 6.5 8.0	0.0	2.0 3.5 5.0 6.5	3.5 5.0 6.5 8.0	8 9 7 8	12 10 9 10	20 19 16 18	C 27 22 22 22	15 22 22 22	30 30	16 17	14 13	31 38	35 39	66 77	13 15 16 16	14 14 14 14	6a 6a 6a 6a	8 9 8 V					<100	
19	B-019-0-14	135+29.74, 36' RT	2.0 3.5 5.0 7.5	3.5 5.0 6.5 9.0	0.0	2.0 3.5 5.0 7.5	3.5 5.0 6.5 9.0	4 5 6 7	4 5 13 11	8 10 13 18	C 11 14 18 24	11 14 18 11	50 36 37	20 16	30 21	22 15	67 30	89 45 80	25 14 18 18	18 16 16 16	7-6 6b 6b 6b	18 5 12 V		N	14			
20	B-020-0-14	140+29.75, 30' RT	1.5 3.0 4.5 6.0	3.0 4.5 6.0 7.5	0.0	1.5 3.0 4.5 6.0	3.0 4.5 6.0 7.5	5 3 2 3	7 5 2 2	12 8 4 5	D 16 11 5 7	16 11 5 5	31 33	17 19	14 14	37 34	32 36	69 70	14 19 25 17	14 14 14 14	6a 6a 6a 6a	8 9 8 V		N N N	14 27	360 <100		
21	B-021-0-14	141+79.56, 31' RT	1.5 3.0 4.5 6.0	3.0 4.5 6.0 7.5	0.0	1.5 3.0 4.5 6.0	3.0 4.5 6.0 7.5	4 6 3 1	12 4 3 3	16 10 6 4	D 21 13 8 5	21 13 8 5		22	15	7	17	12	29	9	10	2-4 2-4 6a 6a	0 0 4 V		N	18 27	213 267	
22	B-022-0-14	145+24.20, 18' LT	1.5 3.0 4.5 6.0	3.0 4.5 6.0 7.5	0.0	1.5 3.0 4.5 6.0	3.0 4.5 6.0 7.5	14 3 16 17	10 7 22 30	24 10 38 47	B 31 13 56 60	31 13 56 13	NP 35	NP 18	NP 17	16 38	3 44	19 82	7 20 20 21	6 16 16 16	1b 6b 6b 6b	0 10 11 V					444	
23	B-023-0-14	149+57.04, 17' LT	1.5 3.0 4.5 6.0	3.0 4.5 6.0 7.5	0.0	1.5 3.0 4.5 6.0	3.0 4.5 6.0 7.5	5 16 21 25	6 22 33 32	11 38 57 57	B 14 49 69 73	14 49 69 14	37 31	17 17	20 14	33 38	39 44	72 82	15 13 15 16	16 16 14 14	6b 6b 6a 6a	11 10 10 V					249	
24	B-024-0-14	153+02.98, 24' RT	2.0 3.5 5.0 6.5	3.5 5.0 6.5 8.0	0.0	2.0 3.5 5.0 6.5	3.5 5.0 6.5 8.0	4 2 3 2	4 5 8 2	8 4 11 4	D 11 5 11 5	11 5 11 5	31 28	18 16	13 12	38 38	42 42	80 80	16 22 17 17	14 14 14 14	6a 6a 6a 6a	9 8 9 V		N N N N	14 27 14 27	200		
25	B-025-0-14	156+79.01, 8' LT	1.5 3.0 4.5 6.0	3.0 4.5 6.0 7.5	0.0	1.5 3.0 4.5 6.0	3.0 4.5 6.0 7.5	16 5 4 9	19 5 10 10	35 10 13 19	B 45 13 10 24	45 13 10 10	32 32	23 24	9 8	55 65	33 30	88 95	23 27 29 27	18 19 10 10	4b 4b 4b 4b	8 8 V V	4b 4b 4b 4b	MN N N M	36 36 36 36	12 15	227	
26	B-026-0-14	160+88.16, 16' RT	1.5 3.0 4.5 6.0	3.0 4.5 6.0 7.5	0.0	1.5 3.0 4.5 6.0	3.0 4.5 6.0 7.5	3 4 4 5	6 5 9 9	9 9 12 14	B 12 12 12 18	12 12 12 12	33 35	18 18	15 17	29 37	45 47	74 84	18 18 20 20	14 14 16 16	6a 6a 6b 6b	10 8 11 V		MN MN MN	12 12 12			
27	B-027-0-14	165+01.81, 38' LT	1.5	3.0	0.0	1.5	3.0	14	22	36	B	46	34	18	16	30	47	77	17	16	6b	10						320

MED-18-13.54
E Smith Rd GB 1 Spreadsheet

Subgrade Analysis		Global Options		Classification Counts by Sample																	Surface Class		% Borings		% Surface		Rig		ER		
V. 12.00 12/30/11		320	R&R	No	R	1a	1b	3	3a	2-4	2-5	2-6	2-7	4a	4b	5	6a	6b	7-5	7-6	8a	8b	2-5	0	N _{60L} ≤ 5	0%	50%		A	60	
Design CBR 7		206	CS	Option	0	0	0	0	0	0	0	0	0	5	0	0	1	1	0	1	0	0	0	4b	0	≤ 10	100%	0%	50%	B	77
			LS	No	0%																	5	0	≥ 20	0%			C	81		
			LKD	Option	0%																	7-5	0	M+	100%			D			
			206	Depth	14	0%																	7-6	0	R	0%			E		
					0%																	8a	0			F					
					0%																	8b	0			G					
					0%																	R	0			H					
Total Borings 2		Location MED-18-12.99			Subgrade		Standard Penetration				Physical Characteristics					Moisture		Class		Comments		Problem		Undercuts		Analysis					
#	B #	Boring Location	Depth	To	Cut Fill	Depth	To	n ₂	n ₃	N	Rig	N ₆₀	N _{60L}	LL	PL	PI	% Silt	% Clay	P 200	M	M _{OPT}	Ohio DOT	GI		w/ Class	w/ MN	UC Class	UC MN			
1	B-041-2-14	16+27.70, 8' RT	2.0	3.5	-1.5	0.5	2.0	7	6	13	B	17		24	18	6	26	13	39	11	13	4a	1							231	
			3.5	5.0		2.0	3.5	4	3	7		9		27	20	7	29	13	42	12	15	4a	1								
			5.0	6.5		3.5	5.0	3	3	6		8					15	10		15	10	4a	5	VV							
			6.5	8.0		5.0	6.5	3	3	6		8	8	41	22	19	56	38	94	26	19	7-6	12								
2	B-041-3-14	17+78.07, 8' RT	2.0	3.5	-1.5	0.5	2.0	4	5	9	B	12		34	20	14	47	41	88	19	15	6a	10							<100	
			3.5	5.0		2.0	3.5	4	3	7		9		26	17	9	37	19	56	15	12	4a	4								
			5.0	6.5		3.5	5.0	3	4	7		9					15	10		15	10	4a	5	V							
			6.5	8.0		5.0	6.5	2	3	5		6	6				25	16		25	16	6b	10	V							

APPENDIX D

SOIL PROFILE SHEETS

PROJECT DESCRIPTION

THE MED-18-13.54 IMPROVEMENTS PROJECT INVOLVES WIDENING APPROXIMATELY 2.1 MILES OF STATE ROUTE 18 (SR-18), THE FOOTE ROAD (RD)/SR-18 INTERSECTION, BETWEEN SMITH RD AND THE RIVER STYX RD/SR-18 INTERSECTION, BUILDING A NEW MULTI-USE PATH BRIDGE OVER THE WEST BRANCH ROCKY RIVER AND WIDENING FIVE CULVERTS IN MEDINA OH.

HISTORIC RECORDS

TWO HISTORICAL BORINGS WERE RELIES UPON:
 -MED-18-14.03, SFN: 5200733 (B-001-P-99 AND B-002-P-99)

GEOLOGY

THE ALIGNMENT IS LOCATED IN THE KILLBUCK-GLACIATED PITTSBURGH PLATEAU PHYSIOGRAPHIC REGION, PART OF THE GLACIATED ALLEGHENY PLATEAUS. THIS AREA IS CHARACTERIZED BY RIDGES AND FLAT UPLANDS DISSECTED BY STEEP VALLEYS. THIS TOPOGRAPHY IS REFLECTED IN THE STEEP VALLEY OF THE WEST BRANCH ROCKY RIVER.

MAPPING OF THE SURFICIAL GEOLOGY OF THE ALIGNMENT DIVIDES IT INTO ROUGHLY THREE ZONES, WEST TO EAST:

- PROJECT BEGINNING TO ABOUT 1,200 FT EAST OF FOOTE RD 80 FT OF WISCONSINAN-AGE TILL (UNSORTED MIX OF CLAY, SILT, SAND, GRAVEL AND BOULDERS) OVER SANDSTONE AND SHALE (MISSISSIPPIAN-AGE)
- 1,200 FT EAST OF FOOTE RD TO THE PROJECT END 320 FT OF TILL OVER SANDSTONE AND SHALE
- A 750 FT BAND WITHIN ZONE 2 SURROUNDING THE WEST BRANCH ROCKY RIVER 10 FEET OF ALLUVIUM (HOLOCENE-AGE) OVER 260 FT OF TILL OVER SANDSTONE AND SHALE

BEDROCK TOPOGRAPHY MAPS INDICATED DEPTH OF BEDROCK RANGING FROM ELEVATION 650 FT TO 1,000 FT, PLACING IT BETWEEN 50 FT AND 260 FT DEEP AND MAPPED AS MISSISSIPPIAN-AGE CUYAHOGA FORMATION.

THE LOCAL HYDROGEOLOGIC REGIME IS DOMINATED BY WEST BRANCH RIVER, WHERE THE FLOW LINE ELEVATION IS 910 FT, WHICH REPRESENTS THE LOCAL GROUNDWATER TABLE. BROADWAY CREEK, A TRIBUTARY TO WEST BRANCH FLOWS UNDER SR-18 AT APPROXIMATELY STA 102+50 AND A TRIBUTARY TO BROADWAY FLOWS UNDER THE ALIGNMENT NEAR STA 11+50.

THE WEST BRANCH ROCKY RIVER AND THE AREA IMMEDIATELY ADJACENT TO IT ARE LOCATED IN A SPECIAL FLOOD HAZARD ZONE SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD. THE BASE FLOOD ELEVATION AT THE BRIDGE AND WHERE SR-18 CROSSES WEST BRANCH IS 917 FT. APPROXIMATELY 3.0 ACRE FRESHWATER EMERGENT WETLAND LIES IMMEDIATELY NORTH OF THE ALIGNMENT AT WEST BRANCH ROCKY RIVER. ADDITIONAL WETLANDS (FRESHWATER PONDS-6-ACRE, 0.5 ACRE AND 3 ACRE) LIE IMMEDIATELY NORTH AND SOUTH OF THE ALIGNMENT BETWEEN 500 AND 1,000 FT WEST OF WEST BRANCH ROCKY RIVER.

RECONNAISSANCE

A FIELD RECONNAISSANCE OF THE PROPOSED MULTI-USE PATH BRIDGE OVER WEST BRANCH ROCKYRIVER AND THE ROADWAYS WAS CONDUCTED ON JULY 16 AND AUGUST 7, 2015.

SUBGRADE

SR-18 STORM DRAINS OCCUR ALONG BOTH SIDES OF THE ROAD, AND APPEAR TO DRAIN INTO THE NEAREST POND, LAKE, CREEK, OR RIVER. LAND USE PRIMARILY CONSISTS OF COMMERCIAL DEVELOPMENT, WITH OCCASIONAL RESIDENTIAL PROPERTIES AND A FEW WOODLANDS. NEARBY BUILDINGS APPEARED IN GOOD CONDITION SHOWING NO EVIDENCE OF PROBLEMS WITH SOIL CONDITIONS AND NO EVIDENCE OF SETTLEMENT IN SIDEWALKS WAS OBSERVED. THE ROAD ITSELF APPEARED IN FAIR CONDITION OVERALL. LONGITUDINAL CRACKS WERE OBSERVED ALONG THE SHOULDER AND THE CENTERLINES. TRANSVERSE CRACKING WAS NOT PREVALENT, AND THERE DID NOT APPEAR TO BE ANY SUBSTANTIAL DIFFERENTIAL SETTLEMENT NEAR THE BRIDGE/CULVERTS. EXISTING EMBANKMENTS APPEARED IN GOOD SHAPE, WITH ONLY TWO PLACES WHERE THE SHOULDER HAD CRACKED AND STARTED TO DISINTEGRATE. THERE WAS NO EXCESS RUTTING AT INTERSECTIONS NOTED, SUGGESTING THAT THE SUBGRADE IS WELL COMPACTED. THE PAVEMENT AT INTERSECTIONS WITH OTHER ROADWAYS DID APPEAR TO BE IN WORSE CONDITION THAN SR-18 AND THE LOCAL STREETS THAT CONNECT TO IT. SEVERAL BODIES OF WATER AND WET AREAS (POSSIBLE SWAMPS AND MARSHES) ARE WITHIN CLOSE PROXIMITY, OR IN SOME INSTANCES CROSS SR-18, AS LISTED BELOW.

- CREEKS:**
 BROADWAY CREEK: STA. 102+55, CROSSES SR-18
 AN INTERMITTENT TRIBUTARY TO BROADWAY CREEK: STA. 111+50, CROSSES SR-18
 AN INTERMITTENT TRIBUTARY TO WEST BRANCH ROCKY RIVER: STA. 190+00 TO THE SOUTH
- RIVERS:**
 WEST BRANCH ROCKY RIVER: STA. 141+00, CROSSES SR-18
- PONDS:**
 STA. 127+00 TO THE NORTH, DESIGNATED AS A WETLAND (FRESHWATER POND) BY THE US FISH AND WILDLIFE SERVICE (USF&W)
 STA. 127+00 TO THE SOUTH, DESIGNATED AS A WETLAND (FRESHWATER POND) BY USF&W
 STA. 135+50 TO THE SOUTH, DESIGNATED AS A WETLAND (FRESHWATER POND) BY USF&W
- WET AREAS:**
 STA. 166+00 TO THE NORTH
 STA. 103+50 TO THE SOUTH, DESIGNATED AS A WETLAND (FRESHWATER EMERGENT) BY USF&W
 STA. 111+50 TO THE NORTH
 STA. 137+50 TO THE SOUTH

FRONTAGE ROADS
 FRONTAGE ROADS ARE PROPOSED ALONG THE NORTH AND SOUTH SIDES OF SR-18 NEAR STA 175 ON SR-18 TRAVERSING EAST UNTIL IT CONNECTS WITH THE DRIVES FOR BIL-JAC NEAR

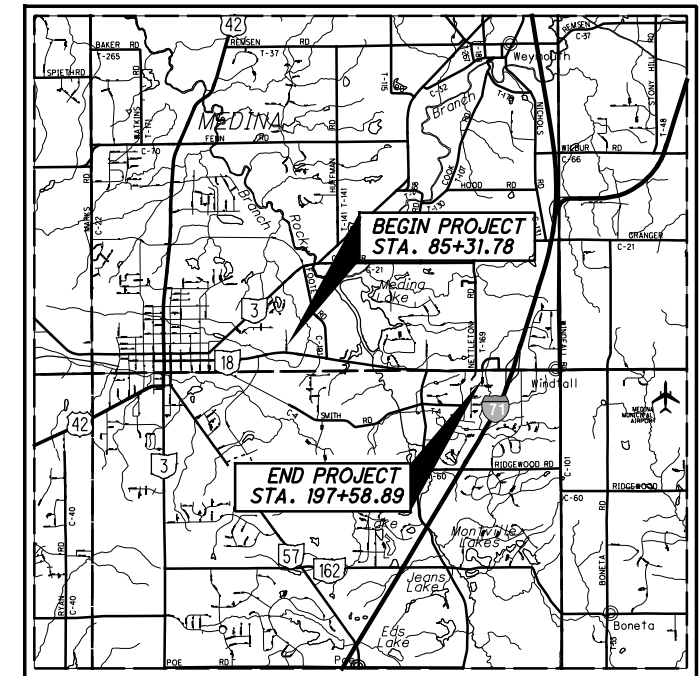
LEGEND

DESCRIPTION	ODOT CLASS	CLASSIFIED MECH./VISUAL	
GRAVEL AND/OR STONE FRAGMENTS	A-1-a	1	3
GRAVEL AND/OR STONE FRAGS. W/SAND	A-1-b	4	7
GRAVEL AND/OR ST. FRAGS. W/SAND AND SILT	A-2-4	2	4
GRAVEL AND/OR ST. FRAGS. W/SAND, SILT AND CLAY	A-2-6	1	1
COURSE AND FINE SAND	A-3a	2	1
SANDY SILT	A-4a	18	21
SILT	A-4b	5	5
SILT AND CLAY	A-6a	68	93
SILTY CLAY	A-6b	44	60
CLAY	A-7-6	8	6
TOTAL		153	201
PAVEMENT OR BASE = X = APPROXIMATE THICKNESS	VISUAL		
SOD AND TOPSOIL = X = APPROXIMATE THICKNESS	VISUAL		
BORING LOCATION - PLAN VIEW.			
HISTORIC BORING LOCATION - PLAN VIEW - MED-18-14.00, 1999			
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/Y/Z	NUMBER OF BLOWS FOR STANDARD PENETRATION TEST (SPT): X= NUMBER OF BLOWS FOR FIRST 6 INCHES. Y= NUMBER OF BLOWS FOR SECOND 6 INCHES. Z= NUMBER OF BLOWS FOR THIRD 6 INCHES.		
W—	INDICATES FREE WATER ELEVATION.		
●	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.		
*	INDICATES A SAMPLE TAKEN WITHIN 3 FT OF PROPOSED GRADE.		
SS	INDICATES A SPLIT SPOON SAMPLE.		
NP	INDICATES A NON-PLASTIC SAMPLE.		

RECONNAISSANCE (CONT.)

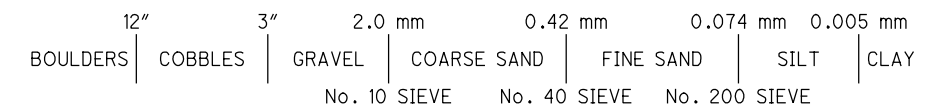
STA 182+50 OF SR-18 TO THE NORTH AND KINDERCARE NEAR STA 183+50 TO THE SOUTH. THE SOUTHERN FRONTAGE ROAD IS SITUATED ON A LOW SLOPE GRASSED AREA BETWEEN THE COMMERCIAL PROPERTIES ON EITHER SIDE. NO GEOTECHNICAL CONCERNS WERE VISIBLE ON THE GRASSED AREA. THE NORTHERN FRONTAGE ROAD STARTS IN THE MIDDLE OF A WOODLAND FILLED WITH WATER-CARVED HILLS. A MEANDERING CREEK BED HAS HEAVILY ERODED THE LANDSCAPE BUT WAS VIRTUALLY DRY AT THE TIME OF THE SITE VISIT. SEVERAL CULVERTS ARE PRESENT IN THE WOODED AREA. ONE CULVERT INLET (UNDER AN ABANDONED MACK TRUCK) APPEARS TO BE BURIED IN SEDIMENT, WHICH COULD BE CAUSING HIGHER THAN NORMAL WATER LEVELS AND PONDING. NEAR STA 788 OF SR-18 THE NORTHERN FRONTAGE ROAD SITE TRANSITIONS FROM WOODLANDS INTO COMMERCIAL PROPERTIES WITH LAWNS. THE GROUND SURFACE IS SLIGHTLY SLOPING AND SMOOTH UNTIL THE END OF THE FRONTAGE ROAD NEAR STA 182+50 OF SR-18.

FOOTE RD
 FOOTE RD IS A CONCRETE LOCAL ROAD THAT INTERSECTS SR-18 NEAR STA 115+00. THE NEARBY LAND USE CONSISTS OF RESIDENTIAL PROPERTIES TO THE SOUTH, COMMERCIAL PROPERTIES TO THE EAST AND COMMERCIAL PROPERTIES TO THE WEST TO STA 25+50 OF FOOTE RD AT WHICH POINT LAND USE BECOMES RESIDENTIAL AGAIN. THE TOPOGRAPHY ADJACENT TO FOOTE RD INCLUDES A FEW ROLLING HILLS WHICH PARALLEL THE ROADWAY AND MAY NEED TO BE GRADED, PARTICULARLY NEAR THE INTERSECTION WITH SR-18. NEARBY BUILDINGS AND SIDEWALKS APPEARED IN GOOD CONDITION DISPLAYING NO EVIDENCE OF GEOTECHNICAL FOUNDATION PROBLEMS.



LOCATION MAP
 SCALE IN MILES

PARTICLE SIZE DEFINITIONS



HISTORIC BORING DESCRIPTION	ODOT CLASS	CLASSIFIED MECH./VISUAL	
GRAVEL AND/OR STONE FRAGS. W/SAND	A-1-b	1	1
GRAVEL AND/OR ST. FRAGS. W/ SAND AND SILT	A-2-4	2	1
COARSE AND FINE SAND	A-3a	0	2
SANDY SILT	A-4a	2	15
SILT	A-4b	0	5
SILT AND CLAY	A-6a	1	13
TOTAL		6	37

- RECON. - ML 07/16/15-08/07/15
- DRILLING - JH, CA 06/29/15-08/07/15
- DRAWN - CH, GL, SP 11/15/15-11/20/15
- REVIEWED - CH 11/20/15

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DESIGN AGENCY
 BARR ENGINEERING, INC
 2800 CORPORATE EXCHANGE DR., ST 240
 COLUMBUS, OH 43231
 (614) 714-0270 FAX (614) 714-0323

PID NO.
92953

SOIL PROFILE

MED-18-12.99

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RECONNAISSANCE (CONT.)

RIVER STYX RD IMPROVEMENTS TO RIVER STYX RD START AT ITS INTERSECTION WITH SMITH RD NORTH THROUGH ITS NORTHERN LIMIT AT STA 924+95.68. THE SOUTHERN END OF THE PROJECT ON THIS ROAD IS SITUATED ON SLOPING TERRAIN THAT MAY NEED TO BE REWORKED. WIDENING OF BOTH SR-18 AND RIVER STYX RD MAY REQUIRE RETAINING WALLS NEAR THE INTERSECTION, AS THEY ARE SLOPED AND WILL NEED TO BE CUT SUBSTANTIALLY. SURROUNDING LAND USE IS RESIDENTIAL TO THE SOUTH BECOMING COMMERCIAL AT STA 915 ON THE EAST AND AT STA 919 ON THE WEST (TRAVELLING SOUTH TO NORTH). SEVERAL LONG LONGITUDINAL CRACKS WERE OBSERVED THAT WERE LIKELY DUE TO DIFFERENTIAL SETTLEMENT, PARTICULARLY IN THE STRETCH OF ROAD ADJACENT TO A CREEK TO THE EAST. BODIES OF WATER NEAR THE ROADWAY INCLUDE A CREEK AT STA 911+50 AND A POND BEYOND THE PROJECT LIMITS AT STA 927+00 TO THE WEST.

RIVER STYX RD AND EAST SMITH RD INTERSECTION
RIVER STYX RD AND EAST SMITH RD INTERSECT APPROXIMATELY 1/3 OF A MILE SOUTH OF SR-18. THE EXISTING ROADWAYS ARE WELL POLISHED AND HAVE MODERATELY SIZED LONGITUDINAL CRACKING. THE INTERSECTION IS HEAVILY TRAVELED PARTICULARLY FROM RIVER STYX RD NORTH AND SOUTH BOUND, AS WELL AS EAST SMITH RD TO THE WEST OF THE INTERSECTION. WHILE THE ROADWAYS ARE ASPHALT OVER A GRANULAR BASE, THE INTERSECTION ITSELF IS CONCRETE. THE SURROUNDING AREA IS RESIDENTIAL. NO LARGE ELEVATION CHANGES OCCUR IN THE VICINITY AND ALL TELEPHONE POLES APPEAR AS VERTICAL AS COULD BE EXPECTED. A CULVERT IS LOCATED TO THE SOUTH OF THE INTERSECTION. THE CULVERT IS APPROXIMATELY 6 FT HIGH BY 12 FT WIDE AND LOCATED NEAR STA 900+00, IT CONVEYS A CREEK UNDER THE ROADWAY. THE CREEK HAS HEAVILY ERODED ITS BANKS ON EITHER SIDE OF THE CULVERT, PARTICULARLY TO THE EAST. A GABION WALL IS POSITIONED ON THE NORTHERN BANK TO THE EAST OF THE CULVERT. TO THE WEST, WATER HAS PONDED SEVERAL FEET DEEP. THE HEADWALLS APPEAR IN GOOD CONDITION AND NO SIGNIFICANT SCOUR WAS OBSERVED.

PROPOSED MULTI-USE BRIDGE
LAND USE TO THE NORTH INCLUDES LAKE MEDINA AND A WOODED AREA TO THE SOUTH. A PROPOSED MULTI-USE PATH BRIDGE IS TO BE BUILT OVER WEST BRANCH ROCKY RIVER SOUTH OF SR-18. SOUTH OF THE WESTERN END OF THE PATH IS A MARSH AREA THAT DRAINS INTO WEST BRANCH ROCKY RIVER THE EMBANKMENT IS CURRENTLY THICKLY COVERED IN VEGETATION WITH A SLOPE OF APPROXIMATELY 2:1. RIPRAP OVERLAYS THE BOTH BANKS THAT THE BRIDGE WILL CROSS. THE RIVER IS APPROXIMATELY 25 FT ACROSS AND 2 FT DEEP NEAR THE PROPOSED CROSSING. DRAINAGE DITCHES BOTH EAST AND WEST OF THE RIVER RUN ALONG THE PROPOSED PATH ALIGNMENT. THE WESTERN BANK OF THE RIVER, SOUTH OF THE PROPOSED PATH, IS SHOWING SIGNS OF EROSION.

SR-18 CILVERT NEAR STA. 102+56
THE IMMEDIATE SURROUNDING AREA IS WOODED WITH A MARSH TO THE SOUTHEAST THAT DRAINS INTO BROADWAY CREEK. THE NORTHERN SIDE OF THE EMBANKMENT HAS A SLOPE OF APPROXIMATELY 3:1, WHILE THE SOUTHERN SIDE HAS A STEEPER SLOPE OF APPROXIMATELY 2:1. SIGNS OF MINOR BANK EROSION ARE PRESENT AT BOTH ENDS OF THE CULVERT IRON STAINING IS PRESENT IN SEVERAL PORTIONS OF THE CREEK CHANNEL AND IS VERY VISIBLY COMING FROM THE MARSH. THE EMBANKMENT ABOVE AND SURROUNDING THE CULVERT THAT SUPPORTS THE ROADWAY APPEARS IN GOOD CONDITION, HOWEVER THERE ARE SIGNS OF THE SLOPE CREEPING (ROTATED GUARD RAIL SUPPORTS. THE ROADWAY ABOVE THE CULVERT APPEARS TO BE IN GOOD CONDITION, WITH NO NOTICEABLE SIGNS OF DIFFERENTIAL SETTLEMENT.

SR-18 CULVERT NEAR STA. 111+50
THE EXISTING 36" CULVERT STARTS APPROXIMATELY AT 111+50 ON SR 18'S NORTH SIDE AND RUNS SOUTH BY SOUTHEAST UNDER SR-18. THERE IS A MARSHY AREA NORTH ALONG THE COURSE OF THE STREAM, WHICH IS SURROUNDED BY GENTLE, GRASS-COVERED SLOPES ADJACENT TO PARKING LOTS. THE SOUTHERN END OF THE CULVERT IS LOCATED IN A WOODED AREA BEHIND A BARBED-WIRE FENCE. THE CULVERT APPEARED TO BE IN GOOD CONDITION.

SR-18 CULVERT NEAR STA. 127+37
AN EXISTING 4' X 4' BOX CULVERT IS LOCATED APPROXIMATELY 50' NORTH OF SR-18 AT ROUGHLY STA. 127+37 AND TRAVERSES SOUTH BY SOUTHEAST UNDER BOTH SR-18 AND WATERFORD DR. THIS CULVERT CONNECTS A LAKE TO THE NORTH WITH A POND TO THE SOUTH. THE CULVERT APPEARS TO BE IN GOOD CONDITION.

RIVER STYX RD. CULVERT STA. 911+50
AN EXISTING CULVERT IS TO REMAIN ON RIVER STYX RD AT STA 911+50. ITS PURPOSE IS TO CARRY A CREEK FROM THE NORTHEAST TO THE SOUTHWEST UNDER THE ROADWAY. AT THE SOUTHWEST OUTLET, WITHIN THE CULVERT, 2 OTHER SMALLER CULVERTS JOIN HALFWAY. THE SURROUNDING LAND USE IS RESIDENTIAL, WITH A NARROW WOODLAND PARALLELING THE CREEK AFTER CROSSING RIVER STYX RD. AT THE TIME OF THE RECONNAISSANCE, TRAFFIC APPEARED QUITE HEAVY ON RIVER STYX RD, WITH MANY DRIVERS ENTERING AND EXITING THE NEARBY OCTAGON DRIVE. WIDENING RIVER STYX RD REQUIRES EXTENSION OF THE CULVERT. EVIDENCE OF SCOUR WAS NOT VISIBLE AT THE NORTHEAST INLET, HOWEVER NEAR THE SOUTHWEST OUTLET, THE SOUTHERN BANK IS ERODING DUE TO A PILE OF RUBBLE IN THE MIDDLE OF THE CREEK.

SUBSURFACE EXPLORATION

THE SUNSURFACE EXPRORATIONS WERE CONDUCTED BETWEEN JUNE 29 AND AUGUST 7, 2015 AND INCLUDED 54 BORINGS DRILLED BETWEEN 6.0 FT AND 61.5 FT BELOW GROUND SURFACE (BGS). NINE BORINGS WERE DRILLED FOR MULTIPLE PURPOSES THAT INCLUDED FIVE CULVERTS AND A FOOTBRIDGE. THE BORINGS WERE DRILLED USING ONE OF THE FOLLOWING DRILLING RIGS:

- CME 45B AUTOMATIC RIG WITH 3.25-INCH-DIAMETER, AUTO-HAMMER CALIBRATED JANUARY 26, 2014 AS 77.4% EFFICIENT.
- CME-55X AUTOMATIC RIG WITH 3.25-INCH-DIAMETER, AUTO-HAMMER CALIBRATED JANUARY 26, 2014 AS 81.2% EFFICIENT.
- CME-55 AUTOMATIC RIG WITH 3.25-INCH-DIAMETER, AUTO-HAMMER CALIBRATED JANUARY 26, 2014 AS 78.8% EFFICIENT.

DISTURBED SOIL SAMPLES WERE OBTAINED IN ACCORDANCE WITH THE STANDARD

SUBSURFACE EXPLORATION (CONT.)

PENETRATION TEST (SPT) (AASHTO T206) AND COLLECTED CONTINUOUSLY FOR MOST OF THE BORINGS. THE 9 BORINGS DRILLED FOR THE STRUCTURES WERE SAMPLED CONTINUOUSLY TO 6 FT AND 1.5 FT THEREAFTER. SPLIT SPOON SAMPLES COLLECTED AS PART OF THE SPT WERE PLACED IN SEALED GLASS CONTAINERS AND TRANSPORTED TO BEI'S GEOTECHNICAL LABORATORY IN COLUMBUS, OH. HAND PENETROMETER (HP) TESTS WERE CONDUCTED ON A MAJORITY OF THE COHESIVE SAMPLES PRIOR TO THEIR REMOVAL FROM THE SAMPLER. BORINGS WERE ABANDONED USING ONE/OR A COMBINATION OF THE FOLLOWING: BENTONITE CHIPS, CEMENT AND ASPHALT PATCH, AS INDICATED ON THE LOG OF BORINGS. FIELD BORING LOGS WERE MAINTAINED BY THE DRILL CREW THAT INCLUDED A DESCRIPTION OF THE SOILS AND ROCK ENCOUNTERED, SPT TEST RESULTS RECORDED AS HAMMER BLOWS PER 6-INCH INCREMENT OF PENETRATION, AND HP TEST RESULTS. GROUNDWATER RELATED OBSERVATIONS WERE RECORDED AS APPROPRIATE.

EXPLORATION FINDINGS

SUBGRADE

SR-18
SOILS REPRESENTATIVE OF THE SUBGRADE ALONG SR-18 CONSIST PRIMARILY OF SILT AND CLAY AND SILTY CLAY (A-6a (40%) AND A-6b (40%)), 6% WERE CLAY (A-7-6) AND 5% WERE SILT/SANDY SILT. THE REMAINING 8% OF SAMPLES CONSISTED OF GRANULAR SOILS WITH A-1-a AND A-1-b PREDOMINANT. ONE BORING, CONTAINED (A-4b), A PROHIBITED SOIL TYPE WITHIN 36 INCHES OF SUBGRADE.

FOOTE RD
SOILS ARE PREDOMINATELY SILT AND CLAY AND SILTY CLAY [A-6a (25%) AND A- 6b (55%)] AT THE SUBGRADE ELEVATION. THE REMAINING 20% OF SAMPLES CONSISTED OF GRANULAR SOILS WITH A-2-6 PREDOMINANT (10%) AND 5% EACH OF A-1b AND A-3a.

RIVER STYX RD
SOILS CONSISTING PREDOMINANTLY OF SILT AND CLAY AND SILTY CLAY [A-6a (54%) AND A-6b (32%)] AT THE SUBGRADE ELEVATION. 7% OF SAMPLES CONSISTED OF CLAY (A-7-6) AND 7% CONSISTED OF A-4a.

SMITH RD
THESE SOILS ARE 63% SANDY SILT (A-4a), WITH THE REMAINDER A-6a, A-6b AND A-7-6 (13% EACH).

FRONTAGE ROADS LEFT AND RIGHT
THERE SOILS CONSISTING PREDOMINANTLY OF SILT AND CLAY AND SILTY CLAY (A-6a (58%) AND A-6b (25%)) AT THE SUBGRADE ELEVATION. THE REMAINING 17% OF SAMPLES CONSISTED OF GRAVEL AND/OR STONE WITH SAND (A-1-b).

PROPOSED BRIDGE
THE BORINGS ENCOUNTERED ABOUT 50 FT OF WHAT APPEARS TO BE GLACIALLY DERIVED ALLUVIUM IN THE FORM OUTWASH AND/OR LAKE DEPOSITS WITH ZONES OF TILL OBSERVED INFREQUENTLY. THESE MATERIALS ARE PREDOMINANTLY FINEGRAINED SILT AND CLAY MIXTURES WITH OCCASIONAL SAND AND GRAVEL LENSES. THE NATURAL SOILS ARE MANTLED BY EMBANKMENT FILL THAT WAS OBSERVED TO BE 10 - 12 FEET IN THICKNESS AND CONSISTS MOSTLY OF FINE GRAINED REWORKED GLACIAL TILL. THE CONSISTENCY OF THE SOILS IS FAIR OVERALL WITH MOST OF THE MATERIALS BELOW THE ASSUMED PILE CAP ELEVATION OF AROUND 917 FT INCLUDING BOTH ZONES OF STIFF TO VERY STIFF MATERIAL AS WELL AS SOFT TO VERY SOFT OR LOOSE AND VERY LOOSE. LOW N60 VALUES IN THE SILTY SOILS ARE FREQUENTLY ATTRIBUTABLE TO UNBALANCED HYDROSTATIC HEADS IN THE SOIL AND AUGERS RESULTING IN THE POTENTIAL FOR APPARENT STRENGTH REDUCTION IN SUSCEPTIBLE SILTS AND FINE SANDS. SOILS AT THE ASSUMED PILE CAP LEVEL TEND TO BE SOME OF THE POOREST ENCOUNTERED AND INCLUDE SILTS THAT ARE SENSITIVE TO HYDROSTATIC CONDITIONS AND A THIN STRATUM OF SOFT CLAY WITH ORGANICS THAT COULD BE A FORMER GROUND SURFACE.

SR-18 NEAR STA. 702+56
BORING B-006-0-14 ENCOUNTERED ABOUT 15' OF GRANUAL FILL THAT WAS PROBABLY PLACED AS BACKFILL OVER THE CULVERT, OVERLYING CLAY-RICH GLACIAL TILL. B-007-0-14 PENETRATED EMBANKMENT FILL CONSISTING OF RE-WORKED GLACIAL TILL BEFORE REACHING SIMILAR NATURAL SOILS WITH OCCASIONAL SAND AND GRAVEL LENSES. THE CONSISTENCY OF THE GLACIAL TILL RANGES TYPICALLY FROM STIFF TO HARD WITH SIGNIFICANT VARIABILITY OVER SHORT DISTANCES. LIKELY FOUNDATION SOILS FOR HEADWALLS AT AN ELEVATION OF +968 FT ARE EXPECTED TO BE STIFF TO VERY STIFF SILTY CLAY. GROUNDWATER WAS OBSERVED AT ELEVATIONS 970 AND 963 FT DURING DRILLING. THE ESTIMATED FLOW-LINE ELEVATION OF THE CREEK IS + 971 FT.

SR-18 NEAR STA 711+50
THE SOILS ARE REASONABLY SIMILAR AT BOTH BORING LOCATIONS WITH STIFF TO VERY STIFF CLAY (A-6B) AND SILT AND CLAY (A-6A) DOMINATING THE PROFILE TO THE DEPTHS DRILLED. AT B-090-0-14 THERE IS SOME VARIABILITY IN THE UPPER 5 FT WHERE TRACE SAND AND GRAVEL ARE ALSO REPORTED; A ROOT ZONE AT ABOUT 10 FT SUGGEST THAT THE MATERIAL ABOVE IT IS FILL. A ZONE OF HARD TILL WAS ENCOUNTERED IN BOTH BORING FROM ELEVATION +976 TO 966 FT.

SR-18 NEAR STA 727+37
THIS CULVERT HAS BEEN EXTENDED TO THE SOUTH BENEATH THE RELATIVELY NEW WATERFORD DR AND WILL BE LENGTHENED ONLY TO THE NORTH WITH CORRESPONDING CONSTRUCTION OF A NEW HEADWALL AS PART OF THIS PROJECT. THE FLOW-LINE ELEVATION AT THE DISCHARGE APPEARS TO BE ON THE ORDER OF 939 FT. B-015-0-14 IS LOCATED CLOSE TO CULVERT ON THE NORTH SIDE OF SR-18 AND ENCOUNTERED 10 FT OF CLAY-RICH EMBANKMENT FILL OVERLYING A FURTHER 10 FT OF VERY COMPACT GLACIAL TILL THAT MIGHT ALSO BE EMBANKMENT. THE UNDERLYING SOILS ARE SANDY SILT THAT EXHIBIT RELATIVELY LOW STRENGTH PROPERTIES. THESE ARE THE EXPECTED FOUNDATION SOILS FOR THE PROPOSED HEADWALL. SOIL CONDITIONS AT THIS ELEVATION ARE SOMEWHAT VARIABLE; AT B-016-0-14 ABOUT 60 FT AWAY, THEY CONSIST OF STIFF CLAY. GROUNDWATER WAS ENCOUNTERED AT AN ELEVATION OF +937 - GENERALLY CONSISTENT WITH THE ESTIMATED FLOW-LINE ELEVATION OF 939 FT. THE PRESENCE OF GROUNDWATER AT THIS ELEVATION MAY ADVERSELY AFFECT THE INDICATED STRENGTH PROPERTIES OF SILTY SOILS BELOW THE GROUNDWATER TABLE.

EXPLORATION FINDINGS (CONT.)

SR-18 NEAR STA 174+32
THE CULVERT WILL BE EXTENDED 20 FT TO THE NORTHEAST. EXPLORATION FOR THE NEW HEADWALL IS ON-GOING; BASED ON THE LOG OF NEARBY BORING B-029-2-14, THE SOILS AT THIS LOCATION ARE EXPECTED TO BE VERY STIFF TO HARD GLACIAL TILL. GROUNDWATER SHOULD BE EXPECTED AT OR NEAR THE FLOW-LINE ELEVATION OF ABOUT 978 FT.

RIVER STYX RD NEAR STA 911+50
THE RIVER STYX RD BORING LOG INDICATES SOILS THAT ARE ALSO PRIMARILY GLACIAL TILL, COMPOSED OF SILT AND CLAY (A-6A) AND SANDY SILT (A-4a) TO THE DEPTH DRILLED. IN THE TOP FOOT OF SILT AND CLAY SOME SAND AND GRAVEL WAS ENCOUNTERED. THE CONSISTENCY OF THESE MATERIALS IS STIFF TO HARD WITH A LOOSE SANDY SILT STRATUM FROM ELEVATION ABOUT 940 - 935.5 FT.

SPECIFICATIONS

THIS GEOTECHNICAL EXPLORATION WAS PERFORMED IN ACCORDANCE WITH THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, OFFICE OF GEOTECHNICAL ENGINEERING, SPECIFICATIONS FOR GEOTECHNICAL EXPLORATIONS, DATE JULY 2015.

AVAILABLE INFORMATION

ALL AVAILABLE SOIL AND BEDROCK INFORMATION THAT CAN BE CONVENIENTLY SHOWN ON THE GEOTECHNICAL EXPLORATION SHEETS HAS BEEN SO REPORTED. ADDITIONAL EXPLORATIONS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECT OF THE PROJECT. COPIES OF THIS DATA, IF ANY, MAY BE INSPECTED IN THE DISTRICT DEPUTY DIRECTOR'S OFFICE, THE OFFICE OF GEOTECHNICAL ENGINEERING AT 1600 WEST BROAD STREET OR THE OFFICE OF STRUCTURAL ENGINEERING AT 1980 WEST BROAD STREET.

INDEX OF SHEETS						
LOCATION		PLAN VIEW SHEET	PROFILE SHEET	CROSS-SEC TION SHEET	CUT MAX.	FILL EMB. MAX.
FROM STA.	TO STA.					
SR-18						
76+50	89+00	6	6	-	- FT	- FT
89+00	101+50	7	7	-	- FT	- FT
101+50	114+00	8	8	-	- FT	- FT
114+00	126+50	9	9	-	- FT	- FT
126+50	139+00	10	10	-	- FT	- FT
139+00	151+50	11	11, 12	-	- FT	- FT
151+50	164+00	13	13	-	- FT	- FT
164+00	176+50	14	14	-	- FT	- FT
176+50	189+00	15	15	-	- FT	- FT
189+00	201+50	16	16	-	- FT	- FT
201+50	210+33	17	17	-	- FT	- FT
FOOTE RD						
10+00	22+00	18	18	-	5 FT	- FT
22+00	33+50	19	19	-	- FT	- FT
RIVER STYX RD						
900+00	912+50	20	20	-	- FT	- FT
912+50	925+00	21	21	-	4 FT	- FT
925+00	930+48	22	22	-	- FT	- FT
N FRONTAGE RD						
40+00	46+00	23	23	-	- FT	4 FT
S FRONTAGE RD						
20+00	32+50	24	24	-	3 FT	1 FT
E SMITH RD						
10+00	23+00	25	25	-	- FT	- FT

SUMMARY OF SOIL TEST DATA
SR-18

SUMMARY OF SOIL TEST DATA
SR-18

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	% N ₆₀	HP REC	HP tsf	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	OHIO CLASS	SO4 ppm
B-001-0-14 STA. 85+63, 9' LT LATITUDE = 41.139061 LONGITUDE = -81.842142	2.00	3.50	SS-1	11	44	2.25 - 3.0	1	5	11	36	47	38	18	20	20	A-6b (12) *	<100
	3.50	5.00	SS-2	9	100	2.4 - 3.0	3	5	12	37	43	35	17	18	18	A-6b (11) *	
	5.00	6.50	SS-3	21	100	4.5+			SAME AS SS-2						16	A-6b (V)	
	6.50	8.00	SS-4	25	100	4.5+			SAME AS SS-2						16	A-6b (V)	
B-002-0-14 STA. 89+66, 11' RT LATITUDE = 41.139112 LONGITUDE = -81.840679	2.00	3.50	SS-1	16	100	2.75 - 4.0	0	3	11	40	46	50	21	29	21	A-7-6 (18) *	253
	3.50	5.00	SS-2	14	100	2.3 - 4.5+			SAME AS SS-1						22	A-7-6 (V)	
	5.00	6.50	SS-3	21	100	4.5+	2	4	11	37	46	39	19	20	18	A-6b (12)	
	6.50	8.00	SS-4	33	100	4.5+			SAME AS SS-3						15	A-6b (V)	
B-003-0-14 STA. 93+03, 61' LT LATITUDE = 41.139306 LONGITUDE = -81.839449	1.50	3.00	SS-1	11	100	2.5	2	4	14	42	38	37	19	18	22	A-6b (11) *	<100
	3.00	4.50	SS-2	11	100	4.5+			SAME AS SS-1						19	A-6b (V) *	
	4.50	6.00	SS-3	28	100	4.5+	4	8	13	38	37	32	16	16	15	A-6b (10)	
	6.00	7.50	SS-4	30	100	4.5+			SAME AS SS-3						15	A-6b (V)	
	7.50	9.00	SS-5	29	100	4.5+			SAME AS SS-3						16	A-6b (V)	
B-004-0-14 STA. 97+08, 36' RT LATITUDE = 41.138945 LONGITUDE = -81.838010	0.00	1.50	SS-1	5	100	3.25	1	4	11	36	48	40	20	20	21	A-6b (12) *	<100
	1.50	3.00	SS-2	20	100	4.5+	3	5	12	38	42	37	18	19	18	A-6b (12) *	
	3.00	4.50	SS-3	5	56	2.75			SAME AS SS-2						24	A-6b (0) *	
	4.50	6.00	SS-4	14	100	1.0 - 2.5			SAME AS SS-2						25	A-6b (V)	
	6.00	7.50	SS-5	30	100	4.5+	11	6	11	34	38	32	19	13	14	A-6a (9)	
	7.50	9.00	SS-6	46	100	4.5+			SAME AS SS-5						16	A-6a (V)	
B-005-0-14 STA. 102+12, 5' RT LATITUDE = 41.138813 LONGITUDE = -81.836190	2.00	3.50	SS-1	12	100	4.0 - 4.1	3	7	12	34	44	34	19	15	18	A-6b (10) *	316
	3.50	5.00	SS-2	11	67	4.5+	11	5	9	34	41	36	19	17	17	A-6b (11)	
	5.00	6.50	SS-3	13	100	4.25 - 4.5+			SAME AS SS-2						21	A-6b (V)	
	6.50	8.00	SS-4	16	100	2.5 - 3.5			SAME AS SS-2						18	A-6b (V)	
B-008-0-14 STA. 108+46, 16' LT LATITUDE = 41.138553 LONGITUDE = -81.833915	1.50	3.00	SS-1	12	78	2.25 - 4.0	6	6	12	33	43	35	18	17	15	A-6b (11) *	262
	3.00	4.50	SS-2	25	72	4.5+	3	6	11	34	46	33	18	15	15	A-6b (10)	
	4.50	6.00	SS-3	19	67	4.5+			SAME AS SS-2						15	A-6b (V)	
	6.00	7.50	SS-4	21	100	4.5+			GRAY & BROWN, SILT & CLAY						16	A-6b (V)	
	7.50	9.00	SS-5	21	100	3.0			SAME AS SS-4						18	A-6b (V)	
B-011-0-14 STA. 113+00, 17' RT LATITUDE = 41.138263 LONGITUDE = -81.832308	2.00	3.50	SS-1	8	33	4.0 - 4.5+	3	9	12	27	49	38	20	18	19	A-6b (11) *	
	3.50	5.00	SS-2	7	44	3.0	5	6	9	33	47	36	19	17	19	A-6b (11)	387
	5.00	6.50	SS-3	9	39	4.5+			SAME AS SS-2						17	A-6b (V)	
	6.50	8.00	SS-4	35	56	-			BROWN, SILT AND CLAY						23	A-6a (V)	
B-012-0-14 STA. 117+32, 22' LT LATITUDE = 41.138177 LONGITUDE = -81.830737	2.00	3.50	SS-1	24	89	4.5+	2	5	10	36	47	36	19	17	15	A-6b (11) *	396
	3.50	5.00	SS-2	22	100	4.5+	5	6	10	35	44	35	17	18	15	A-6b (11)	
	5.00	6.50	SS-3	26	100	4.5+			SAME AS SS-2						16	A-6b (V)	
	6.50	8.00	SS-4	31	100	4.5+			SAME AS SS-2						16	A-6b (V)	
B-013-0-14 STA. 120+79, 12' RT LATITUDE = 41.137932 LONGITUDE = -81.829513	2.00	3.50	SS-1	15	89	1.5 - 4.5+	1	3	10	37	49	46	20	26	22	A-7-6 (16) *	100
	3.50	5.00	SS-2	16	78	2.9 - 4.5+	1	2	9	30	57	43	20	23	20	A-7-6 (14)	
	5.00	6.50	SS-3	18	78	4.5+			SAME AS SS-2						18	A-7-6 (V)	
	6.50	8.00	SS-4	26	78	4.0 - 4.5+			SAME AS SS-2						18	A-7-6 (V)	
B-014-0-14 STA. 125+39, 17' LT LATITUDE = 41.137805 LONGITUDE = -81.827848	2.00	3.50	SS-1	18	100	4.5+	3	6	13	38	40	31	16	15	15	A-6a (10) *	<100
	3.50	5.00	SS-2	13	100	2.4 - 3.2	8	7	12	35	38	33	18	15	16	A-6a (10)	
	5.00	6.50	SS-3	22	100	4.5+			SAME AS SS-2						16	A-6a (V)	
	6.50	8.00	SS-4	28	100	4.5+			SAME AS SS-2						16	A-6a (V)	
B-017-0-14 STA. 128+38, 18' RT LATITUDE = 41.137577 LONGITUDE = -81.826798	1.50	3.00	SS-1	25	100	4.5+	3	7	12	38	40	30	17	13	15	A-6a (9) *	
	3.00	4.50	SS-2	18	100	3.25 - 4.5+			SAME AS SS-1						16	A-6a (V)	
	4.50	6.00	SS-3	25	100	2.75 - 4.5+			SAME AS SS-1						17	A-6a (V)	
	8.50	10.00	SS-4	15	100	4.5+			SAME AS SS-1						16	A-6a (V)	

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	% N ₆₀	HP REC	HP tsf	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	OHIO CLASS	SO4 ppm
B-018-0-14 STA. 133+17, 14' RT LATITUDE = 41.137380 LONGITUDE = -81.825078	2.00	3.50	SS-1	27	39	4.5+	18	6	10	31	35	30	16	14	13	A-6a (8) *	<100
	3.50	5.00	SS-2	26	89	4.5+	3	8	12	38	39	30	17	13	15	A-6a (9)	
	5.00	6.50	SS-3	22	100	4.5+			SAME AS SS-2						16	A-6a (V)	
	6.50	8.00	SS-4	24	100	4.5+			SAME AS SS-2						16	A-6a (V)	
B-019-0-14 STA. 135+30, 36' RT LATITUDE = 41.137407 LONGITUDE = -81.823495	2.00	3.50	SS-1	11	100	1.5 - 3.25	1	3	7	22	67	50	20	30	25	A-7-6 (18) *	
	3.50	5.00	SS-2	14	83	1.25 - 1.5	37	9	9	15	30	36	16	20	14	A-6b (5)	
	5.00	6.50	SS-3	18	94	2.25 - 4.5+	3	5	12	27	53	37	16	21	18	A-6b (12)	
	6.50	8.00	SS-4	24	100	4.5+			SAME AS SS-2						16	A-6a (V)	
B-022-0-14 STA. 145+24, 18' LT LATITUDE = 41.136971 LONGITUDE = -81.820731	1.50	3.00	SS-1	31	56	-	45	20	16	16	3	NP	NP	NP	7	A-1-b (0) *	444
	3.00	3.10	SS-2A	13	67	-			SAME AS SS-1						2	A-1-b (V)	
	3.10	4.50	SS-2B	13	67	4.5+			SAME AS SS-3						15	A-6b (V)	
	4.50	6.00	SS-3	57	83	1.7 - 2.2	2	6	10	38	44	35	18	17	20	A-6b (11)	
	6.00	6.20	SS-4A	61	72	0.2 - 0.5			SAME AS SS-3						21	A-6b (V)	
	6.20	7.50	SS-4B	61	72	0.7 - 0.9			GRAYISH BROWN, SILT AND CLAY						28	A-6a (V)	
	7.50	9.00	SS-5	26	83	1.2 - 1.4	0	1	7	58	34	35	20	15	25	A-6a (10)	
B-023-0-14 STA. 149+57, 17' LT LATITUDE = 41.136801 LONGITUDE = -81.819176	1.50	3.00	SS-1	14	67	4.5+	10	5	13	33	39	37	17	20	15	A-6b (11) *	249
	3.00	4.50	SS-2	49	22	4.5+			SAME AS SS-1						13	A-6b (V)	
	4.50	6.00	SS-3	70	67	4.5+	3	5	10	38	44	31	17	14	15	A-6a (10)	
	6.00	7.50	SS-4	74	89	4.5+			SAME AS SS-3						16	A-6a (V)	
	7.50	8.50	SS-5	50/5"	82	4.5+			SAME AS SS-3						17	A-6a (V)	
B-024-0-14 STA. 153+03, 24' RT LATITUDE = 41.136555 LONGITUDE = -81.817953	2.00	3.50	SS-1	11	67	4.2 - 4.5+	2	6	12	38	42	31	18	13	16	A-6a (9) *	200
	3.50	3.70	SS-2A	5	67	0.7 - 0.8			SAME AS SS-1						22	A-6a (V)	
	3.70	5.00	SS-2B	5	67	1.9 - 2.2			SAME AS SS-1						17	A-6a (V)	
	5.00	6.50	SS-3	11	100	1.4 - 2.0	3	6	11	38	42	28	16	12	17	A-6a (9)	
	6.50	8.00	SS-4	5	56	1.1 - 1.2			SAME AS SS-3						17	A-6a (V)	
B-025-0-14 STA. 156+79, 8' LT LATITUDE = 41.136539 LONGITUDE = -81.816582	1.50	3.00	SS-1	45	100	3.0 - 3.5	6	4	2	55	33	32	23	9	23	A-4b (8) *	227
	3.00	4.50	SS-2	13	100	1.75 - 4.3	0	2	3	65	30	32	24	8	27	A-4b (8)	

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SUMMARY OF SOIL TEST DATA
SR-18

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	% N ₆₀	HP REC	HP tsf	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	OHIO CLASS	SO4 ppm
B-030-0-14	1.50	- 3.00	SS-1	36	67	-	55	16	13	12	4	NP	NP	NP	4	A-1-b (0) *	173
STA. 177+25, 7' LT	3.00	- 4.50	SS-2	21	22	-									5	A-1-b (V)	
LATITUDE = 41.136306	4.50	- 6.00	SS-3	15	83	4.5+									13	A-6a (V)	
LONGITUDE = -81.809173	6.00	- 7.50	SS-4	27	100	4.5+	2	5	13	39	41	31	17	14	16	A-6a (10)	
	7.50	- 9.00	SS-5	17	89	3.0 - 4.5+									15	A-6a (V)	
B-031-0-14	2.00	- 3.50	SS-1	22	83	4.5+	3	5	11	39	42	30	17	13	15	A-6a (9) *	147
STA. 181+03, 34' RT	3.50	- 5.00	SS-2	34	78	4.5+									13	A-6a (V)	
LATITUDE = 41.136180	5.00	- 6.50	SS-3	24	100	4.5+	4	5	11	39	41	30	17	13	15	A-6a (9)	
LONGITUDE = -81.807802	6.50	- 8.00	SS-4	12	89	4.5+									15	A-6a (V)	
B-032-0-14	2.00	- 3.50	SS-1	26	78	4.5+	2	5	11	40	42	30	18	12	16	A-6a (9) *	218
STA. 185+04, 18' LT	3.50	- 5.00	SS-2	18	67	4.5+	4	5	11	39	41	32	15	17	16	A-6a (11)	
LATITUDE = 41.136308	5.00	- 6.50	SS-3	22	89	4.5+									16	A-6a (V)	
LONGITUDE = -81.806343	6.50	- 8.00	SS-4	26	100	4.5+									20	A-6a (V)	
B-033-0-14	1.50	- 2.60	SS-1A	26	83	-	56	16	13	11	4	NP	NP	NP	3	A-1-a (0) *	
STA. 189+42, 37' LT	2.60	- 3.00	SS-1B	26	83	1.75 - 4.5+									18	A-6b (V)	
LATITUDE = 41.136351	3.00	- 4.50	SS-2	10	56	2.25 - 4.5+	5	10	17	34	34	32	16	16	15	A-6b (9)	
LONGITUDE = -81.804755	4.50	- 6.00	SS-3	10	78	1.9 - 3.25									15	A-6b (V)	
	6.00	- 7.50	SS-4	9	78	1.0 - 2.25									16	A-6b (V)	
	7.50	- 9.00	SS-5	12	89	1.2 - 2.8									21	A-6b (V)	
B-034-0-14	2.00	- 3.50	SS-1	26	100	4.5+	4	7	14	37	38	31	17	14	15	A-6a (10) *	236
STA. 193+07, 27' RT	3.50	- 5.00	SS-2	32	100	4.5+	15	16	27	25	17	22	13	9	9	A-4a (1)	
LATITUDE = 41.136176	5.00	- 6.50	SS-3	24	100	4.5+	9	9	45	20	17	17	12	5	10	A-4a (0)	
LONGITUDE = -81.803430	6.50	- 7.50	SS-4A	16	94	3.5									11	A-4a (V)	
	7.50	- 8.00	SS-4B	16	94	2.5 - 4.5+									14	A-6b (V)	
B-035-0-14	2.00	- 3.50	SS-1	23	94	4.5+	5	9	17	36	33	30	17	13	13	A-6a (8) *	191
STA. 196+78, 47' LT	3.50	- 5.00	SS-2	22	100	4.5+	4	9	13	38	36	30	17	13	14	A-6a (9)	
LATITUDE = 41.136378	5.00	- 6.50	SS-3	19	100	4.5+									14	A-6a (V)	
LONGITUDE = -81.802083	6.50	- 8.00	SS-4	34	100	4.5+									16	A-6a (V)	

SUMMARY OF SOIL TEST DATA
FOOTE RD

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	% N ₆₀	HP REC	HP tsf	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	OHIO CLASS	SO4 ppm
B-036-0-14	1.50	- 3.00	SS-1	23	11	4.25											
STA. 10+43, 10' LT	3.00	- 4.50	SS-2	25	83	4.5+	5	5	9	33	48	37	19	18	16	A-6a (V) *	
LATITUDE = 41.136368	4.50	- 6.00	SS-3	36	100	4.5+									16	A-6b (V)	333
LONGITUDE = -81.831710	6.00	- 7.50	SS-4	32	100	4.5+	3	6	10	36	45	34	18	16	16	A-6b (10)	
	7.50	- 9.00	SS-5	35	100	4.5+									16	A-6b (V)	
B-037-0-14	1.50	- 3.00	SS-1	28	67	-											
STA. 14+01, 16' RT	3.00	- 4.50	SS-2	23	100	4.5+	16	9	11	30	34	34	17	17	14	A-6b (9)	1942
LATITUDE = 41.137349	4.50	- 6.00	SS-3	21	100	4.5+	4	6	10	38	42	34	18	16	15	A-6b (10) *	
LONGITUDE = -81.831604	6.00	- 7.50	SS-4	22	100	4.5+									18	A-6b (V) *	
	7.50	- 9.00	SS-5	28	100	4.5+									17	A-6b (V) *	
B-038-0-14	2.00	- 3.50	SS-1	28	100	4.5+	5	6	10	33	46	38	20	18	15	A-6b (11) *	169
STA. 19+56, 14' LT	3.50	- 5.00	SS-2	29	67	4.5+	6	5	11	33	45	37	19	18	15	A-6b (11) *	
LATITUDE = 41.138869	5.00	- 6.50	SS-3	30	100	4.5+									17	A-6b (V)	
LONGITUDE = -81.831606	6.50	- 8.00	SS-4	24	100	4.5+									17	A-6b (V)	
B-039-0-14	0.00	- 1.50	SS-1	9	56	-											
STA. 22+09, 23' RT	1.50	- 3.00	SS-2	3	56	-	60	6	7	14	13	29	18	11	10	A-2-6 (0)	
LATITUDE = 41.139566	3.00	- 4.50	SS-3	12	56	2.25									21	A-6a (V)	
LONGITUDE = -81.831491	4.50	- 6.00	SS-4	23	100	4.5+	6	7	10	35	42	33	18	15	18	A-6a (10)	
B-040-0-14	1.50	- 2.40	SS-1	50/5*	73	-	12	36	24	21	7	NP	NP	NP	17	A-3a (0)	2040
STA. 25+23, 11' LT	3.00	- 4.50	SS-2	25	100	4.5+	6	13	12	32	37	35	20	15	16	A-6a (9)	
LATITUDE = 41.140425	4.50	- 6.00	SS-3	30	100	4.5+									18	A-6a (V)	
LONGITUDE = -81.831637	6.00	- 7.50	SS-4	41	100	4.25 - 4.5+	1	7	11	41	40	33	17	16	15	A-6b (10)	
	7.50	- 9.00	SS-5	23	100	4.5+									16	A-6b (V)	

SUMMARY OF SOIL TEST DATA
E SMITH RD

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	% N ₆₀	HP REC	HP tsf	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	OHIO CLASS	SO4 ppm
B-041-2-14	2.00	- 3.50	SS-1	17	72	-	22	21	18	26	13	24	18	6	11	A-4a (1)	231
STA. 16+28, 8' RT	3.50	- 5.00	SS-2	9	67	-	29	14	15	29	13	27	20	7	12	A-4a (1)	
LATITUDE = 41.131222	5.00	- 6.00	SS-3A	8	100	-									15	A-4a (V)	
LONGITUDE = -81.812679	6.00	- 6.50	SS-3B	8	100	1.5 - 3.25									21	A-7-6 (V)	
	6.50	- 8.00	SS-4	8	83	1.4 - 2.4	0	1	5	56	38	41	22	19	26	A-7-6 (12)	
B-041-3-14	2.00	- 3.50	SS-1	12	78	4.0 - 4.5+	1	3	8	47	41	34	20	14	19	A-6a (10)	<100
STA. 17+78, 8' RT	3.50	- 5.00	SS-2	9	67	1.9 - 2.5	11	11	22	37	19	26	17	9	15	A-4a (4)	
LATITUDE = 41.131248	5.00	- 5.70	SS-3A	9	56	1.75									15	A-4a (V)	
LONGITUDE = -81.812158	5.70	- 6.50	SS-3B	9	56	2.25 - 2.5									21	A-6b (V)	
	6.50	- 8.00	SS-4	6	89	1.6 - 1.75									25	A-6b (V)	

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SOIL PROFILE
SUMMARY OF SOIL TEST DATA

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SUMMARY OF SOIL TEST DATA
RIVER STYX RD

SUMMARY OF SOIL TEST DATA
S FRONTAGE RD

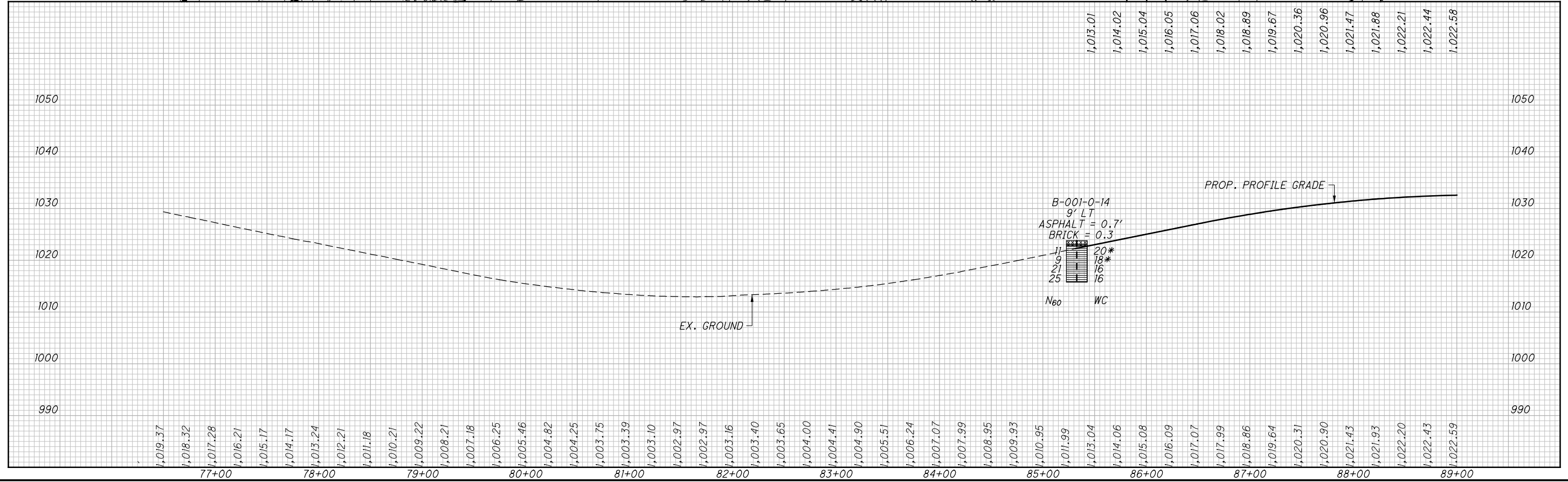
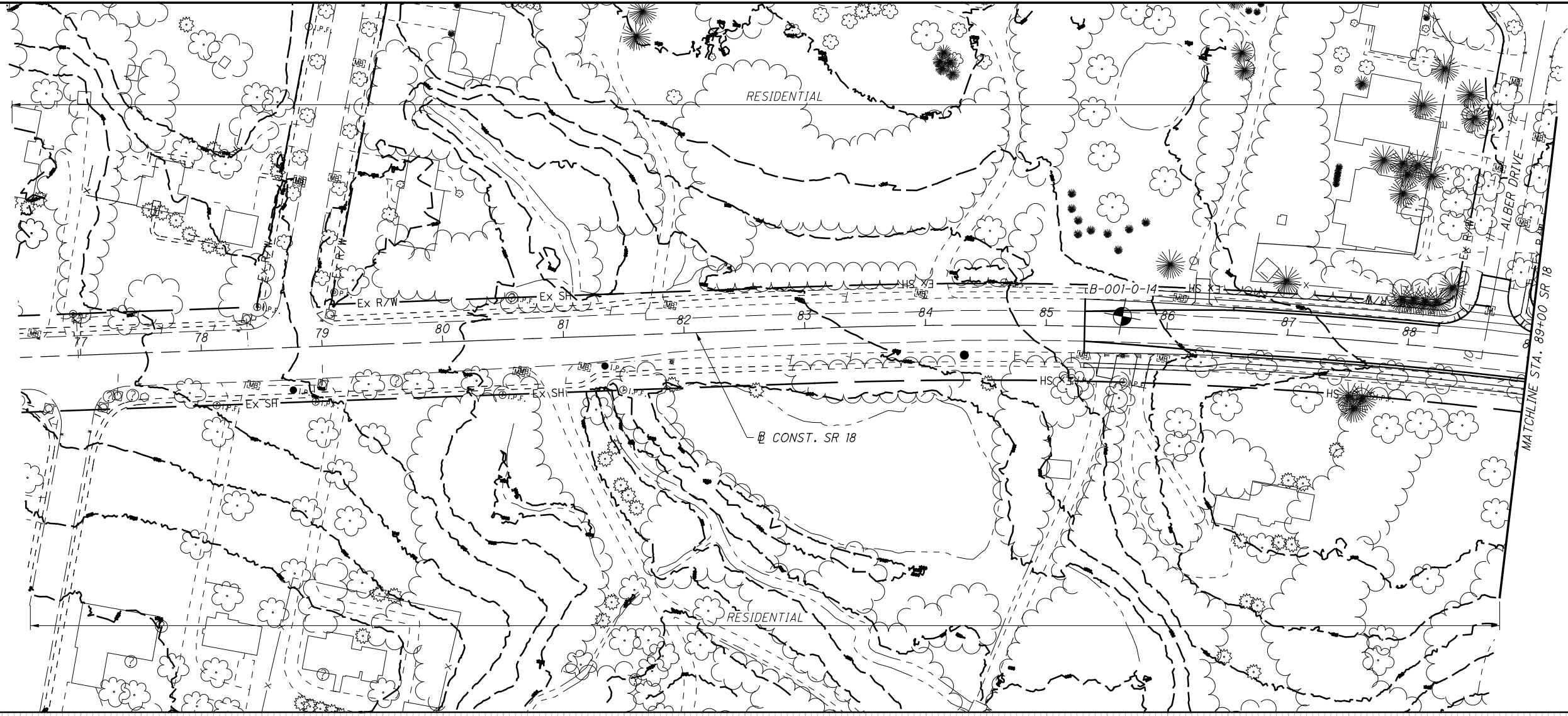
EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	% N ₆₀	HP REC	HP tsf	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	OHIO CLASS	SO4 ppm
B-041-1-14	2.00	3.00	SS-1A	10	78	-	6	11	33	31	19	24	17	7	15	A-4a (3)	<100
STA. 902+70, 9' RT	3.00	3.50	SS-1B	10	78	3.75			SAME AS SS-2						21	A-6b (V)	
LATITUDE = 41.131062	3.50	5.00	SS-2	8	56	3.75 - 4.0	0	1	2	59	38	38	21	17	22	A-6b (11)	
LONGITUDE = -81.812345	5.00	6.50	SS-3	5	89	2.25 - 2.6			SAME AS SS-2						23	A-6b (V)	
	6.50	8.00	SS-4	4	89	0.25			GRAY & BROWN, SANDY SILT						25	A-4a (V)	
B-041-0-14	2.00	3.50	SS-1	8	100	1.0 - 3.25	1	2	8	42	47	40	21	19	29	A-6b (12) *	<100
STA. 904+35, 11' RT	3.50	5.00	SS-2	9	100	2.0 - 3.5			SAME AS SS-1						21	A-6b (V)	
LATITUDE = 41.131509	5.00	6.50	SS-3	19	100	3.0 - 4.5+	5	3	6	31	55	46	19	27	21	A-7-6 (16)	
LONGITUDE = -81.812431	6.50	8.00	SS-4	23	100	4.25 - 4.5+			SAME AS SS-3						17	A-7-6 (V)	
B-042-0-14	1.50	3.00	SS-1	15	50	1.5 - 3.5	14	6	9	28	43	39	18	21	17	A-6b (12) *	138
STA. 907+15, 11' LT	3.00	4.50	SS-2	18	78	3.5 - 4.5+	4	4	10	35	47	35	18	17	15	A-6b (11)	
LATITUDE = 41.132267	4.50	6.00	SS-3	27	100	4.5+			SAME AS SS-2						15	A-6b (V)	
LONGITUDE = -81.812627	6.00	7.50	SS-4	24	94	4.5+	3	3	8	38	48	34	17	17	14	A-6b (11)	
	7.50	9.00	SS-5	20	100	4.5+			SAME AS SS-4						17	A-6b (V)	
B-044-0-14	1.50	3.00	SS-1	13	100	1.75 - 3.6	18	16	15	27	24	30	17	13	15	A-6a (4)	<100
STA. 915+23, 12' RT	3.00	4.50	SS-2	13	100	3.0	24	15	17	26	18	29	16	13	14	A-6a (3)	
LATITUDE = 41.134448	4.50	6.00	SS-3	4	100	1.0 - 2.25			SAME AS SS-2						18	A-6a (V)	
LONGITUDE = -81.812273	6.00	7.50	SS-4	3	22	2.25			SAME AS SS-2						10	A-6a (V)	
	7.50	9.00	SS-5	23	100	2.9 - 4.0			BROWN & GRAY, SILTY CLAY						24	A-6b (V)	
B-045-0-14	1.50	3.00	SS-1	18	100	4.25 - 4.5+	2	5	10	40	43	29	17	12	17	A-6a (9) *	<100
STA. 918+65, 13' LT	3.00	4.50	SS-2	23	100	4.5+	3	5	10	39	43	30	18	12	16	A-6a (9)	
LATITUDE = 41.135364	4.50	6.00	SS-3	22	11	-			SAME AS SS-2						17	A-6a (V)	
LONGITUDE = -81.812001	6.00	7.50	SS-4	26	100	4.5+			SAME AS SS-2						18	A-6a (V)	
	7.50	9.00	SS-5	17	100	4.5+			SAME AS SS-2						17	A-6a (V)	
B-046-0-14	1.50	3.00	SS-1	15	100	4.5+	6	6	11	38	39	32	16	16	16	A-6b (10) *	<100
STA. 924+62, 9' LT	3.00	4.50	SS-2	13	100	3.9 - 4.25	4	6	11	38	41	31	18	13	17	A-6a (9)	
LATITUDE = 41.136950	4.50	6.00	SS-3	6	100	1.9 - 2.0			SAME AS SS-2						18	A-6a (V)	
LONGITUDE = -81.811549	6.00	7.50	SS-4	13	100	2.0 - 2.1			SAME AS SS-2						18	A-6a (V)	
	7.50	9.00	SS-5	13	100	1.6 - 1.9			SAME AS SS-2						18	A-6a (V)	

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	% N ₆₀	HP REC	HP tsf	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	OHIO CLASS	SO4 ppm
B-029-1-14	1.50	3.00	SS-1	17	83	4.5+	2	5	11	39	43	31	18	13	15	A-6a(9) *	<100
STA. 21+22, 3' LT	4.00	5.50	SS-2	22	67	4.5+	4	5	11	39	41	29	18	11	15	A-6a(8)	
LATITUDE = 41.136011	6.50	8.00	SS-3	15	72	4.0 - 4.5+			SAME AS SS-2						17	A-6a(V)	
LONGITUDE = -81.809915	9.00	10.50	SS-4	17	83	4.5+			SAME AS SS-2						17	A-6a(V)	
B-031-1-14	0.00	1.50	SS-1	18	17	-			BROWN & GRAY, SILT & CLAY						9	A-6a(V) *	
STA. 27+79, 15' RT	2.50	4.00	SS-2	22	72	4.5+	2	5	10	40	43	32	18	14	14	A-6a(10)	<100
LATITUDE = 41.135938	5.00	6.50	SS-3	28	67	4.5+	4	6	10	35	45	34	19	15	15	A-6a(10)	
LONGITUDE = -81.807531	7.50	9.00	SS-4	45	94	4.5+			SAME AS SS-3						14	A-6a(V)	
	10.00	11.50	SS-5	27	89	4.5+			SAME AS SS-3						16	A-6a(V)	
B-031-3-14	0.00	1.50	SS-1	36	89	-	17	20	14	27	22	28	16	12	7	A-6a(0) *	182
STA. 29+32, 1' RT	2.50	4.00	SS-2	14	0	-			NO RECOVERY						-	NR	
LATITUDE = 41.135970	5.00	6.50	SS-3	6	50	1.5 - 3.75	1	5	9	47	38	31	19	12	10	A-6a(0)	
LONGITUDE = -81.806976	7.50	9.00	SS-4	6	6	-			SAME AS SS-3						15	A-6a(V)	
	10.00	11.00	SS-5A	5	83	0.25 - 0.5			BROWN, SANDY SILT						17	A-6a(V)	
	11.00	11.50	SS-5B	5	83	3.25 - 4.5+			BROWN & GRAY, SILT & CLAY						19	A-6a(V)	

SUMMARY OF SOIL TEST DATA
N FRONTAGE RD

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	% N ₆₀	HP REC	HP tsf	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	OHIO CLASS	SO4 ppm
B-029-2-14	0.00	1.50	SS-1	23	61	4.5+	2	5	11	39	43	32	19	13	13	A-6a(9)	<100
STA. 38+30, 28' RT	2.50	4.00	SS-2	21	67	4.5+	6	5	11	38	40	30	18	12	14	A-6a(9)	
LATITUDE = 41.136512	5.00	6.50	SS-3	21	72	4.5+			SAME AS SS-2						16	A-6a(V)	
LONGITUDE = -81.809877	7.50	9.00	SS-4	18	89	4.5+			SAME AS SS-2						17	A-6a(V)	
	10.00	11.50	SS-5	14	89	2.25 - 3.9	4	5	12	42	37	26	16	10	15	A-4a(8)	
B-030-1-14	0.00	1.50	SS-1	14	22	4.5+			BROWN, SILT & CLAY						14	A-6a(V) *	
STA. 41+43, 14' RT	2.50	4.00	SS-2	18	83	4.5+	2	6	13	40	39	28	17	11	15	A-6a(8)	<100
LATITUDE = 41.136539	5.00	6.50	SS-3	19	83	4.5+			SAME AS SS-2						16	A-6a(V)	
LONGITUDE = -81.808739	7.50	9.00	SS-4	17	94	4.5+			SAME AS SS-2						15	A-6a(V)	
	10.00	11.50	SS-5	13	78	2.1 - 2.8	2	5	12	42	39	27	16	11	16	A-6a(8)	
B-031-2-14	2.50	4.00	SS-1	14	33	4.5+	4	5	10	38	43	32	18	14	15	A-6a(10)	240
STA. 45+53, 9' RT	5.00	6.50	SS-2	41	39	4.5+			SAME AS SS-1						14	A-6a(V)	
LATITUDE = 41.136538	7.50	9.00	SS-3	8	72	3.0 - 4.25	3	4	12	35	46	40	19	21	20	A-6a(12)	
LONGITUDE = -81.807253	10.00	11.50	SS-4	19	78	4.5+			SAME AS SS-3						17	A-6a(V)	



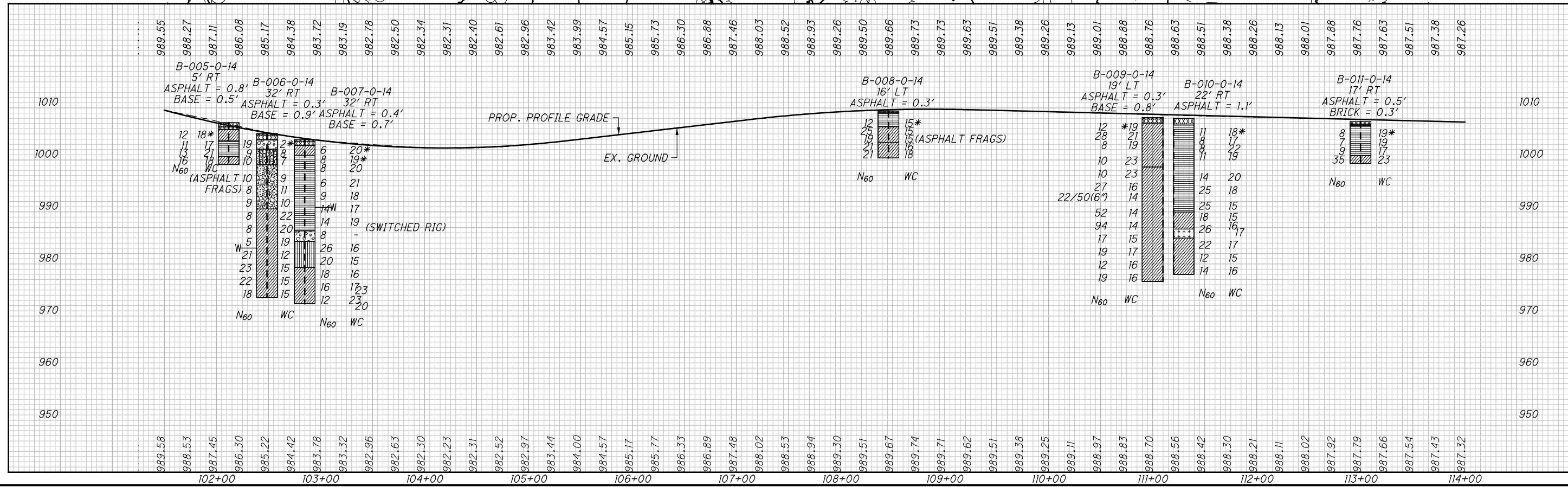
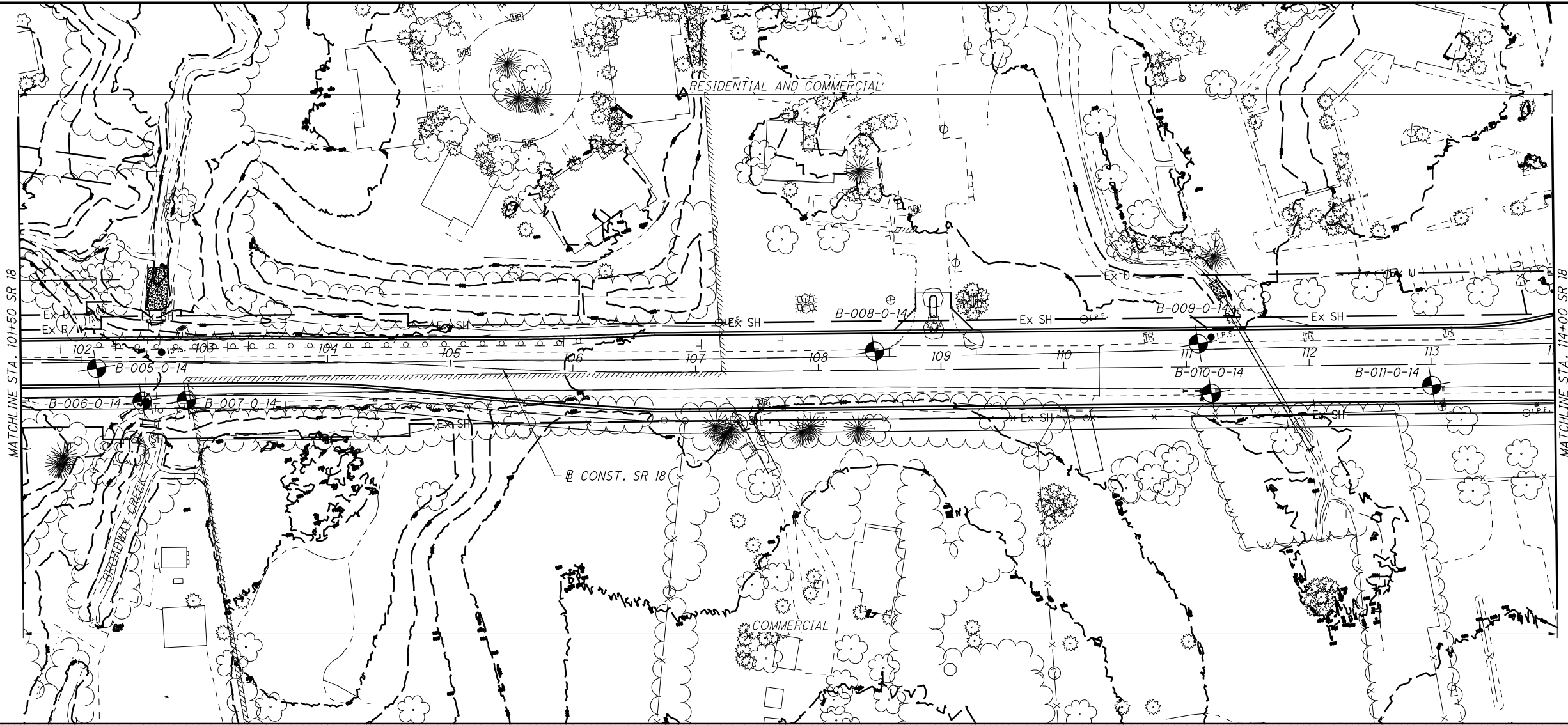


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SOIL PROFILE - SR 18
STA. 76+50 TO STA. 89+00

MED-18-12.99





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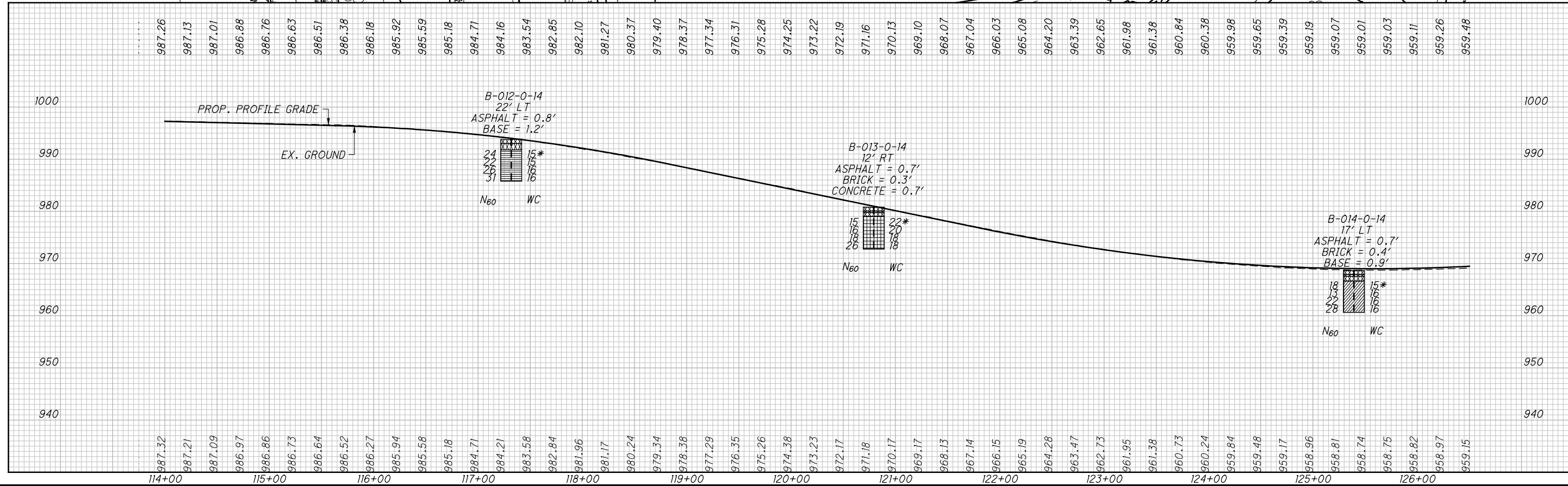
**SOIL PROFILE - SR 18
STA. 101+50 TO STA. 114+00**

MED-18-12.99





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STA. 114+00 TO STA. 126+50 SR 18	
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SCALE IN FEET

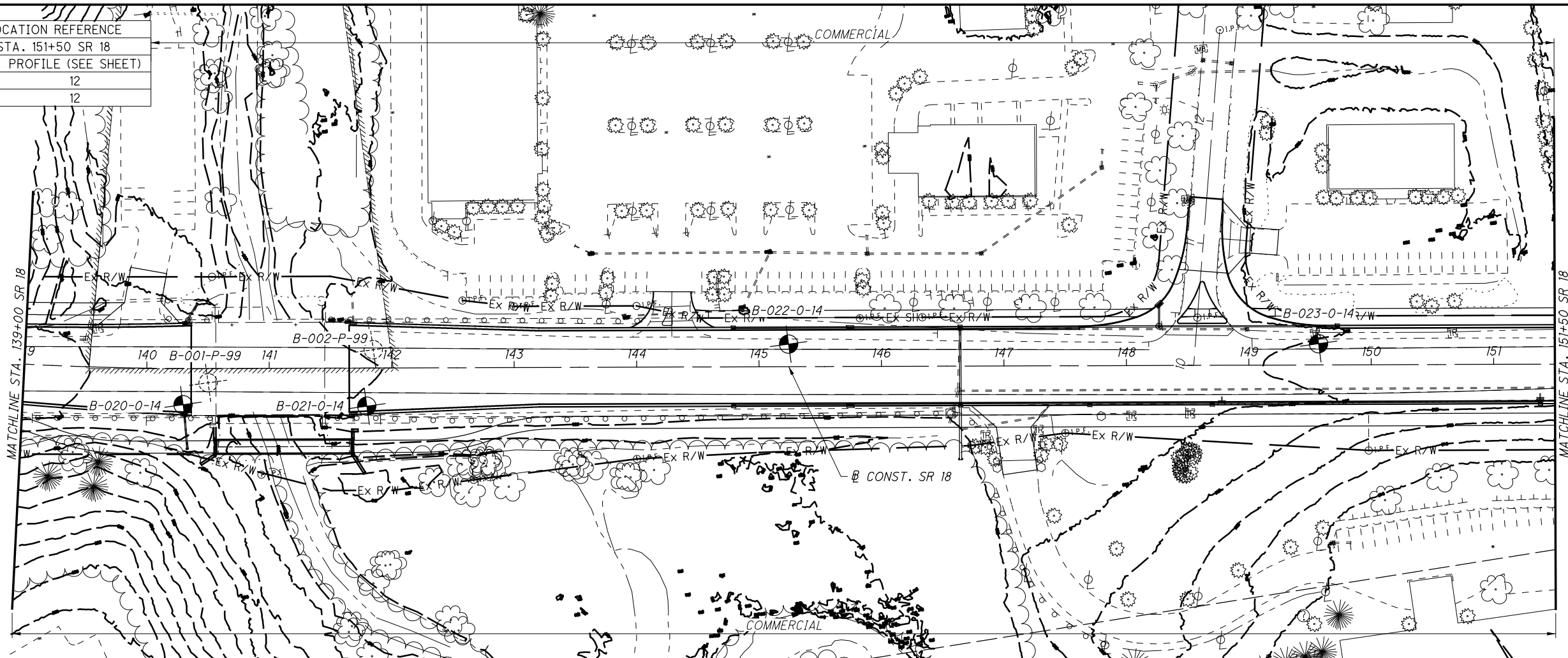
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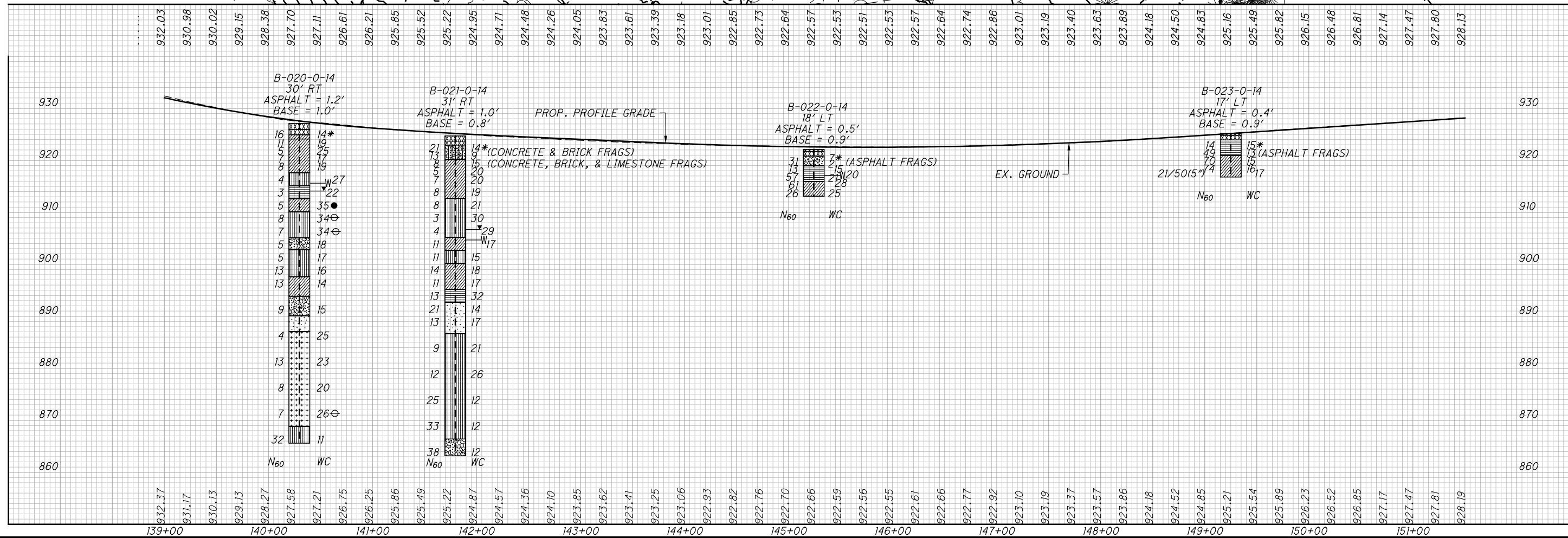
9 / 36

BORING PROFILE LOCATION REFERENCE	
STA. 139+00 TO STA. 151+50 SR 18	
BORING ID	PROFILE (SEE SHEET)
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B-002-P-99	12



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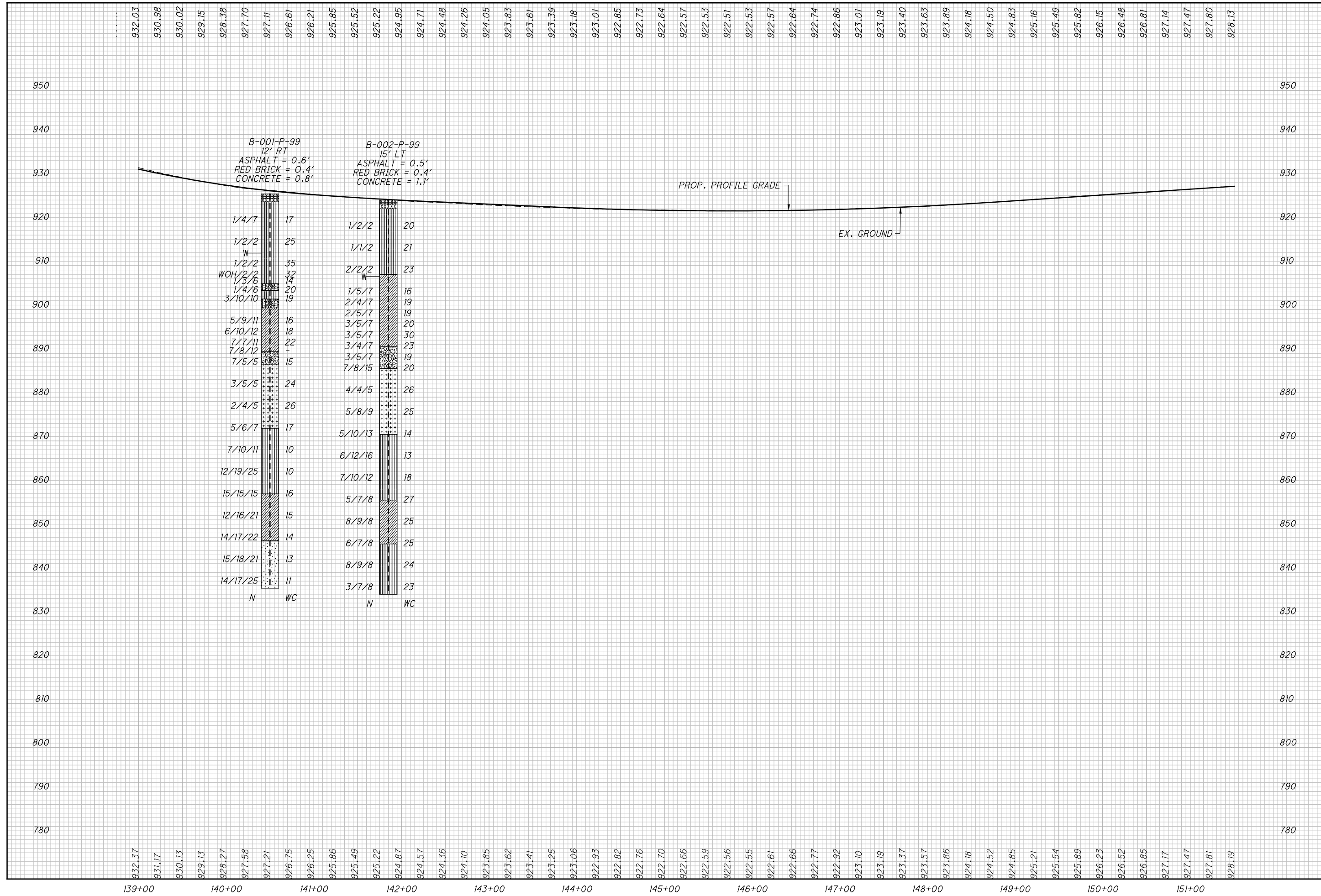
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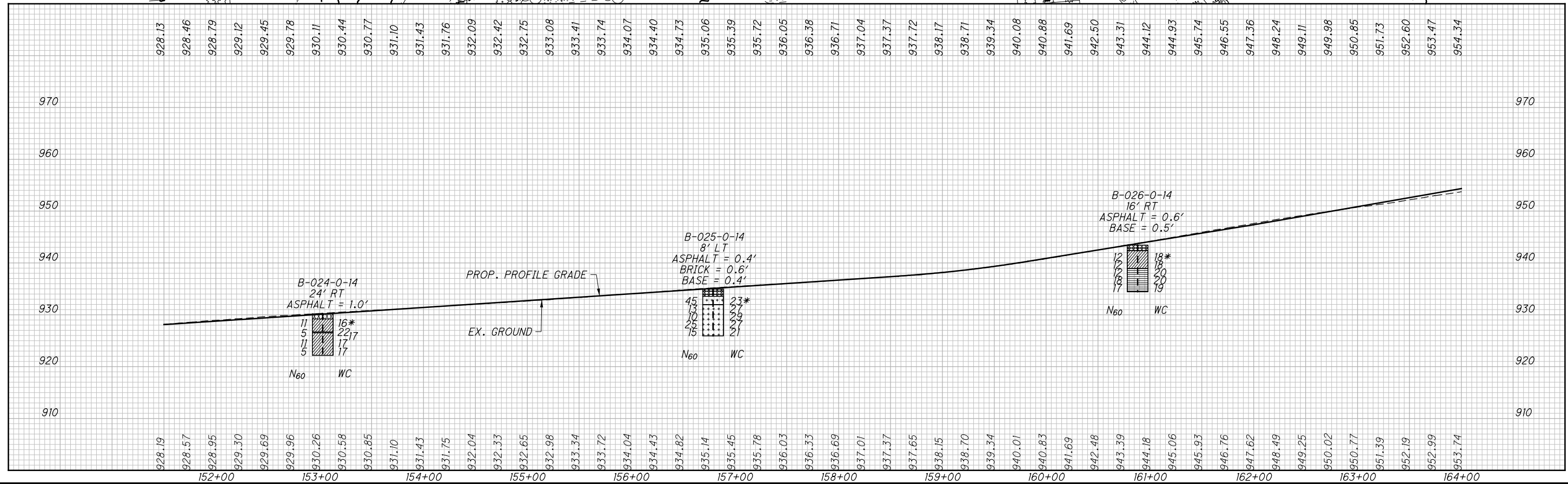
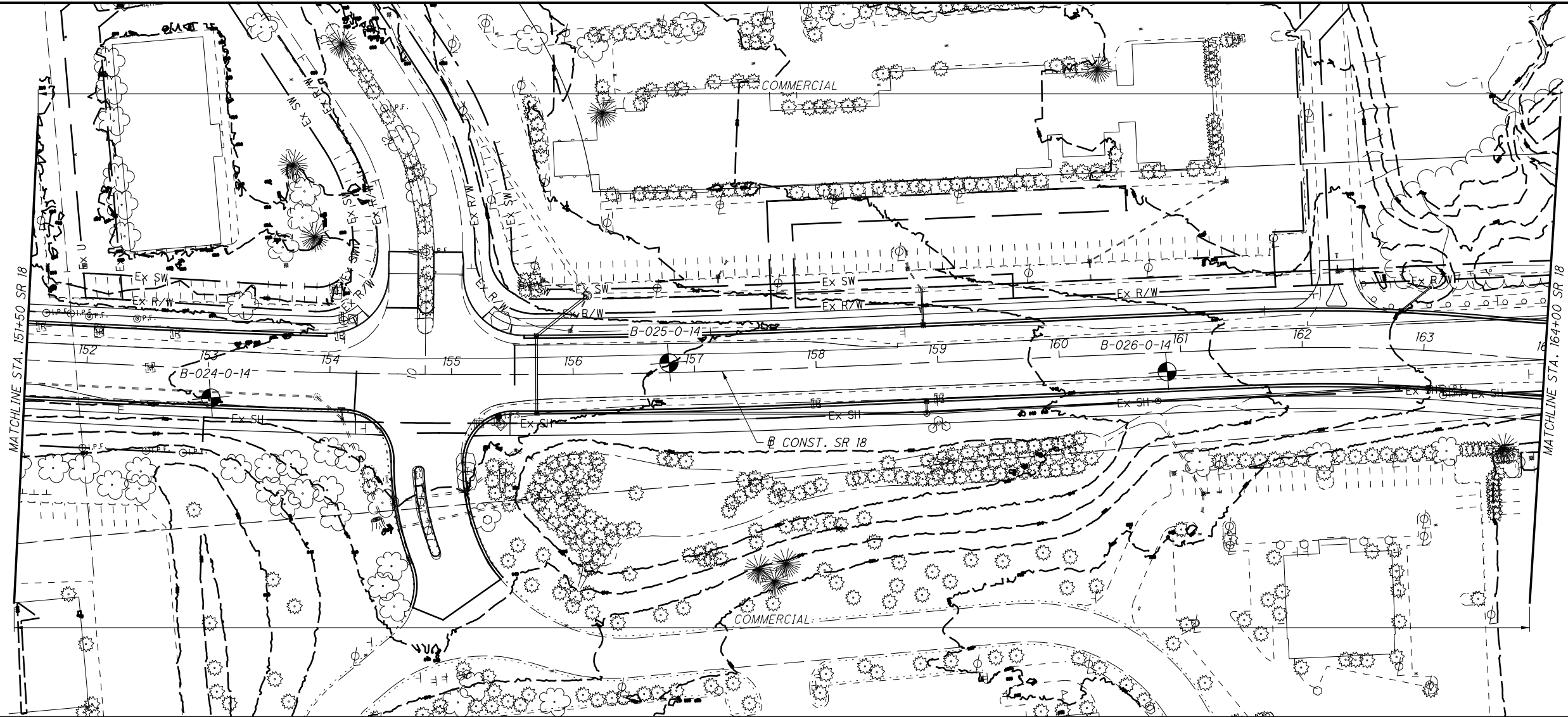


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SOIL PROFILE
STA. 139+00 TO STA. 151+50

MED-18-12.99





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STA. 151+50 TO STA. 164+00

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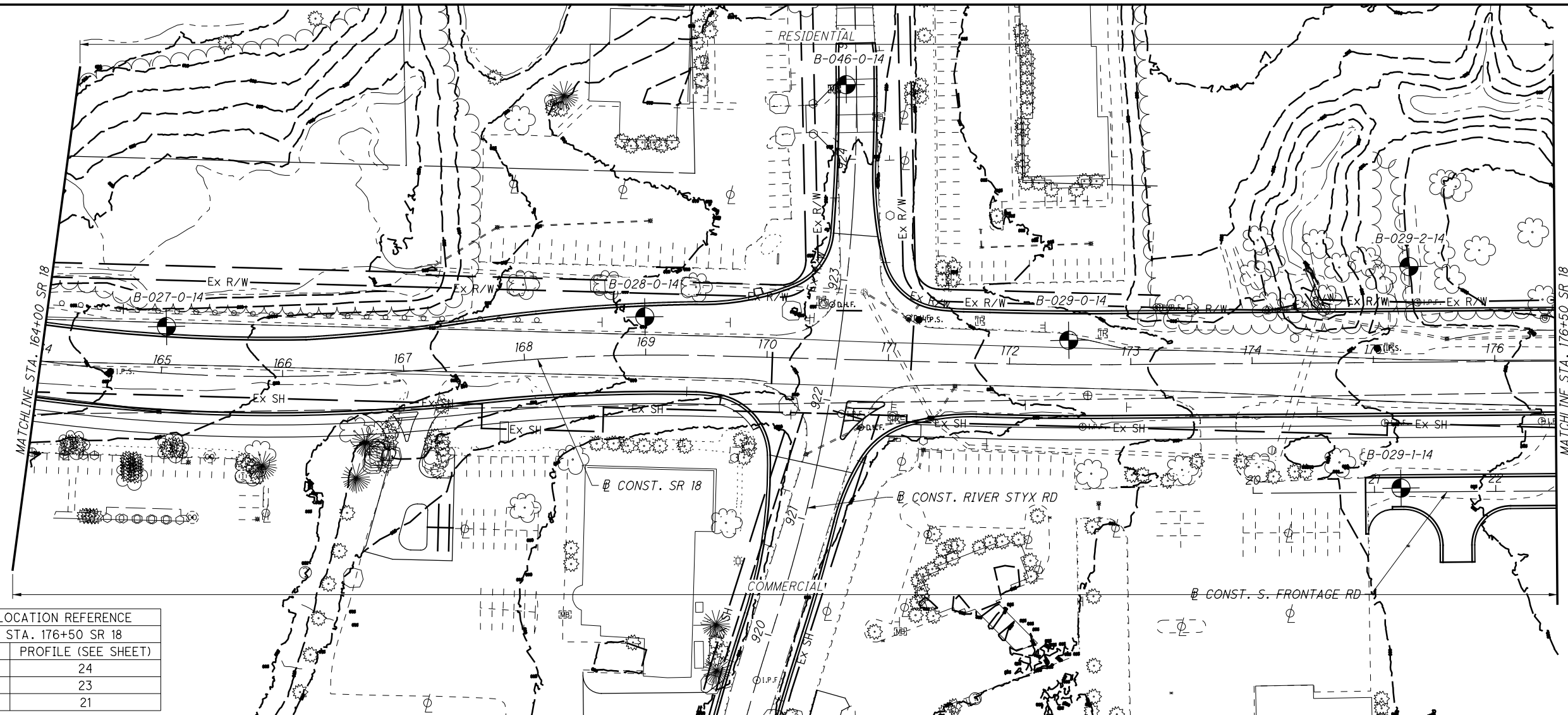




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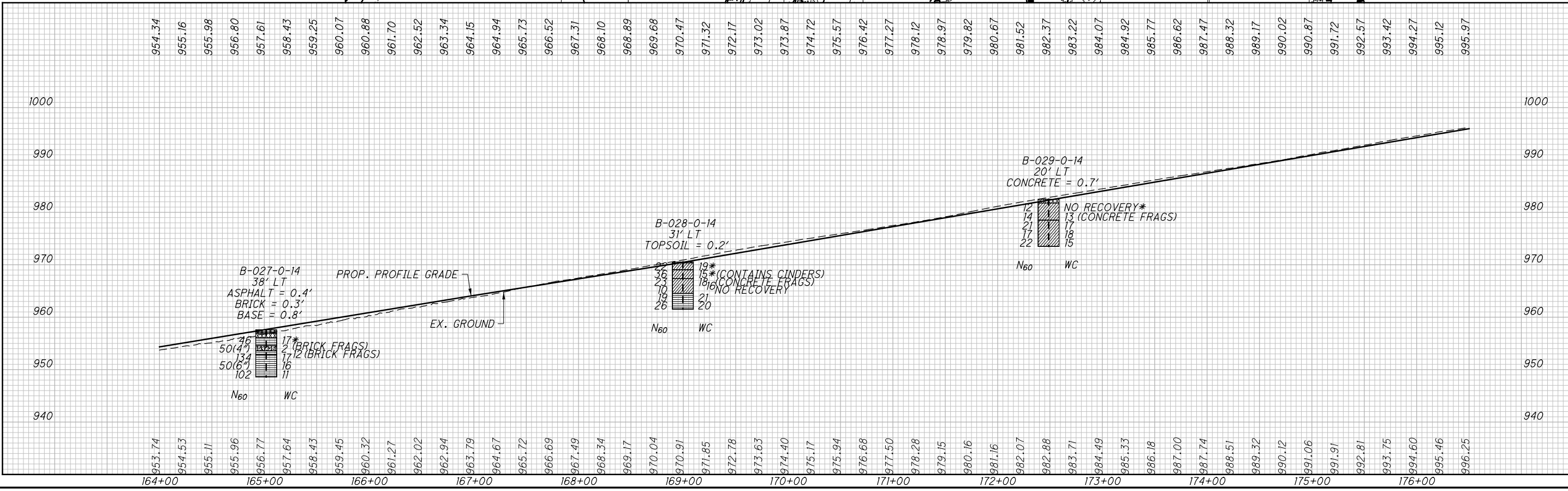
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STA. 164+00 TO STA. 176+50

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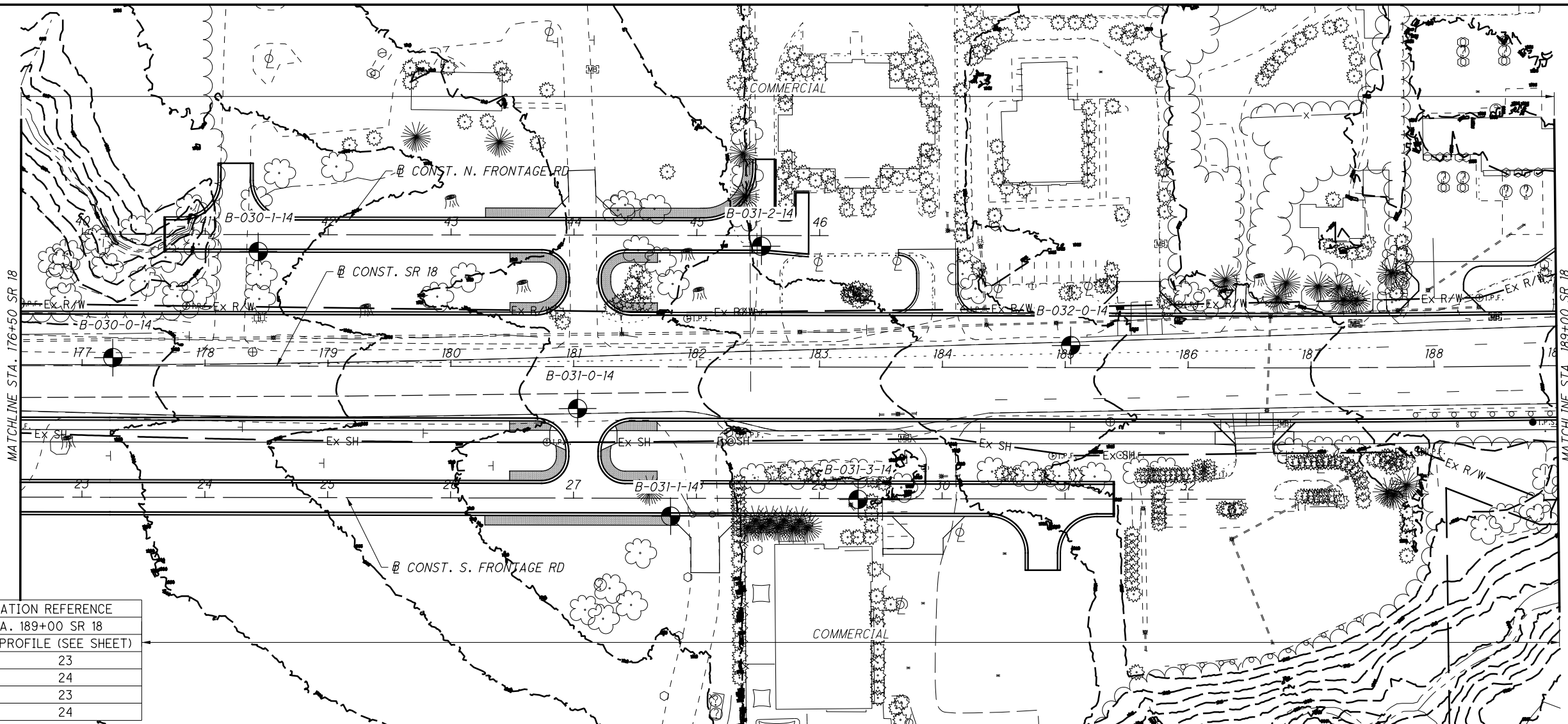


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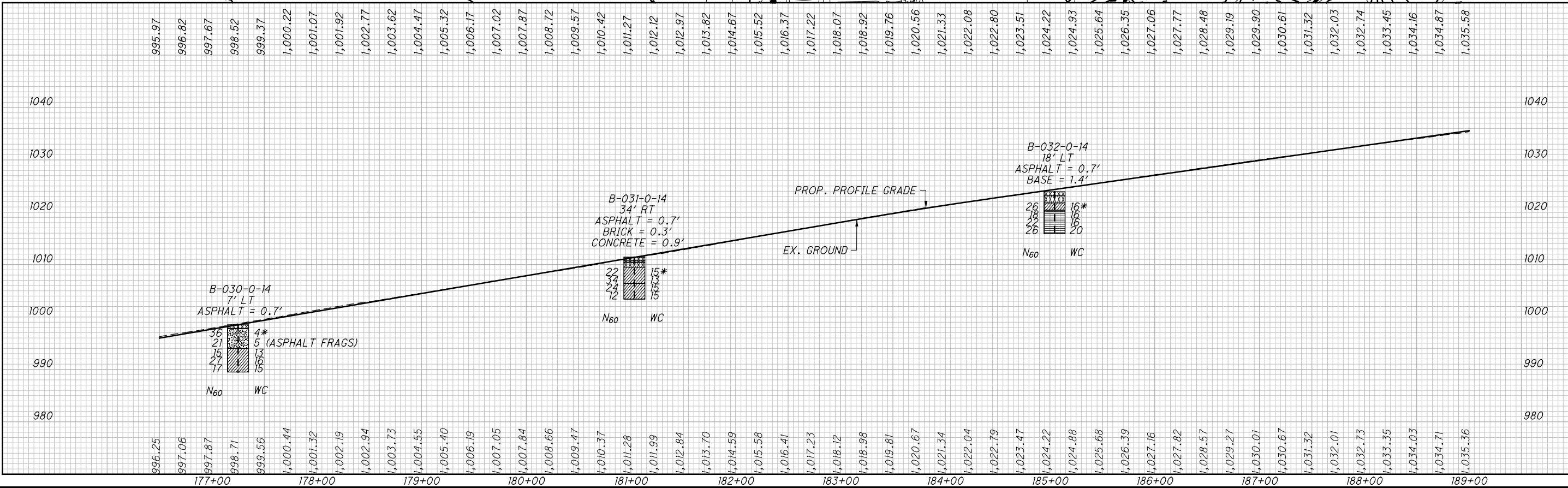
BORING ID	PROFILE (SEE SHEET)
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B-029-2-14	23
B-046-0-14	21



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BORING PROFILE LOCATION REFERENCE	
STA. 176+50 TO STA. 189+00 SR 18	
BORING ID	PROFILE (SEE SHEET)
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B-031-1-14	24
B-031-2-14	23
B-031-3-14	24

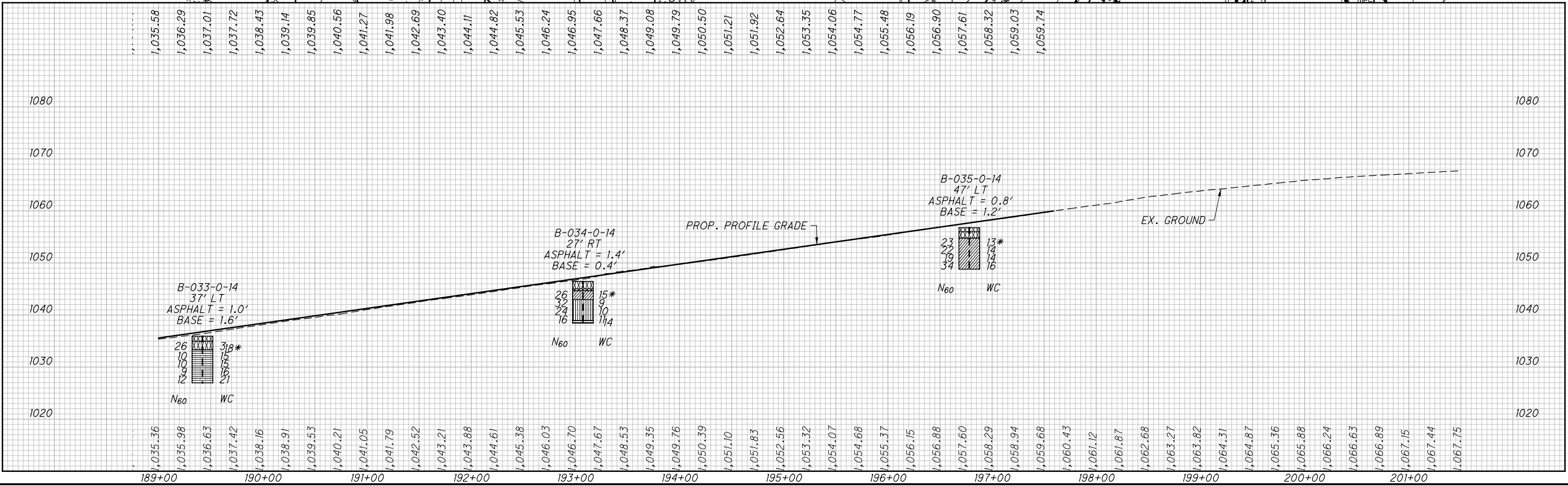
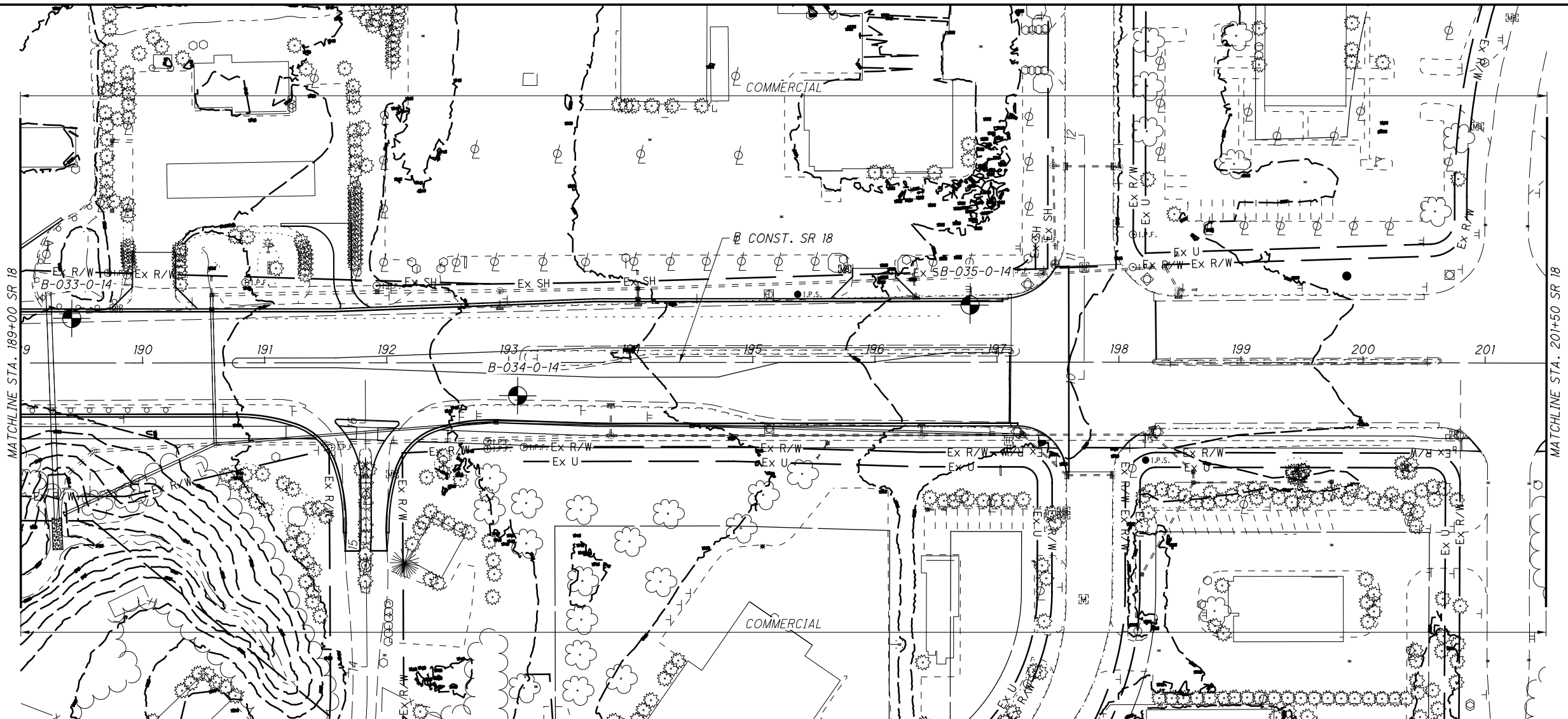


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SOIL PROFILE - SR 18
STA. 176+50 TO 189+00

MED-18-12.99



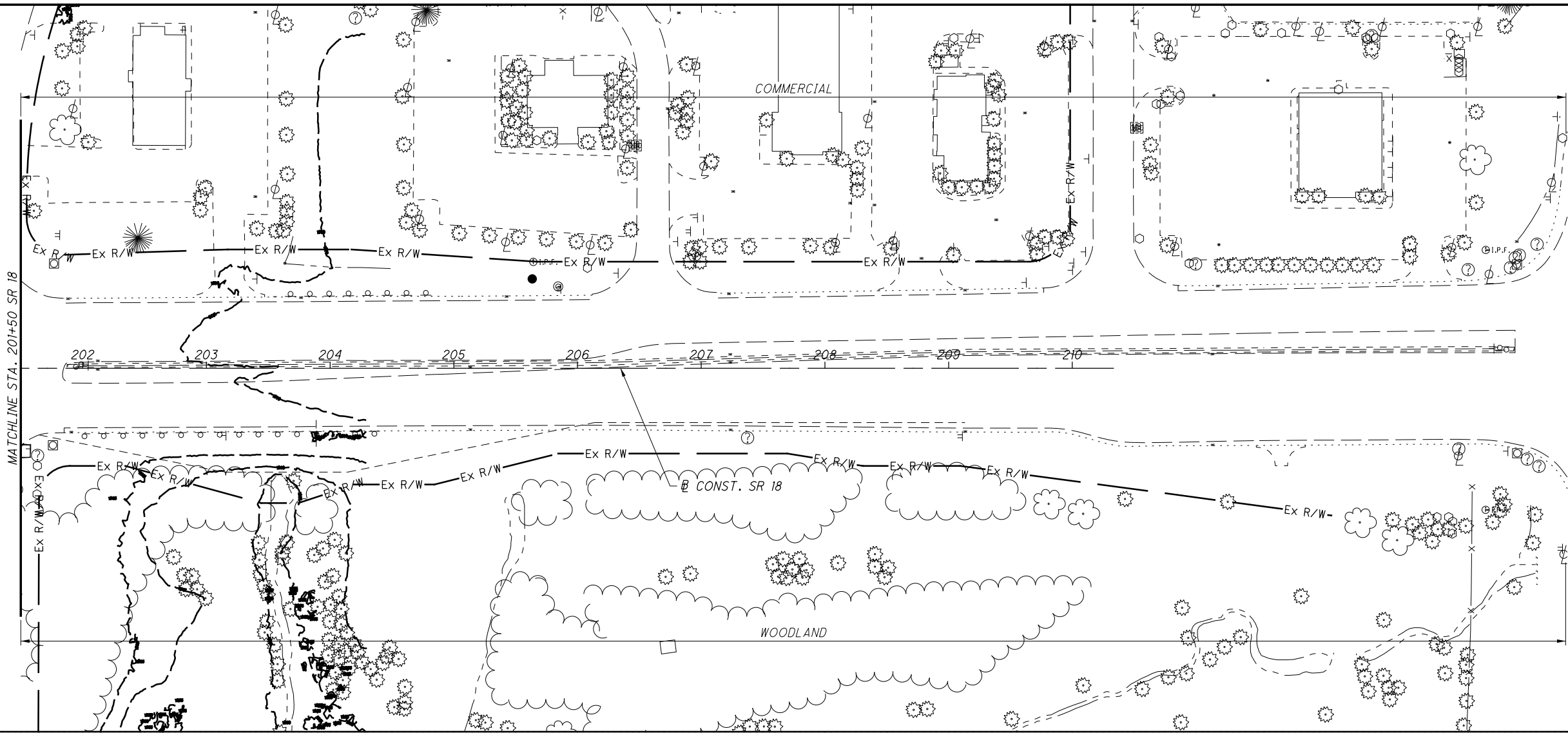


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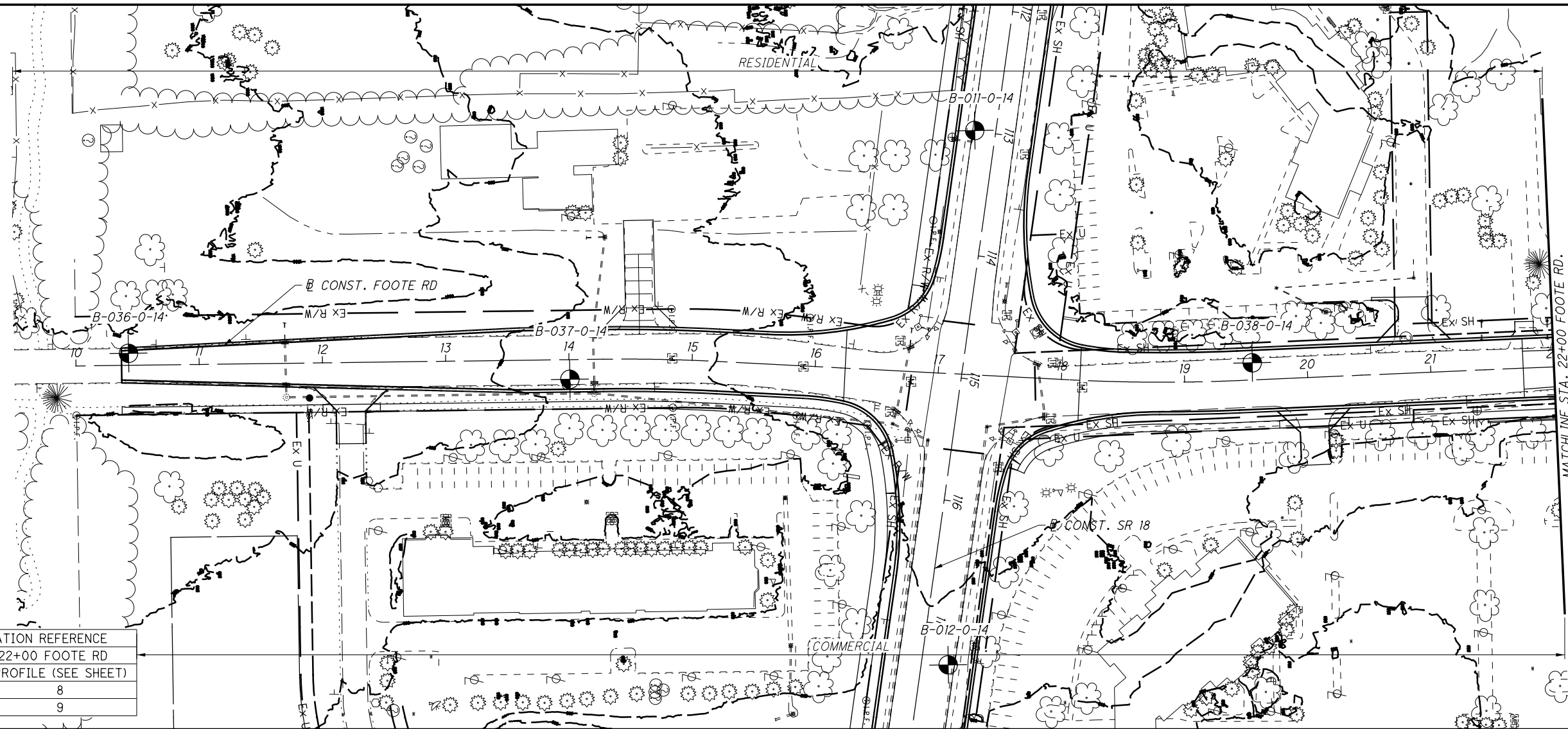


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25
HORIZONTAL
SCALE IN FEET

DRAWN: GL
CHECKED: CH

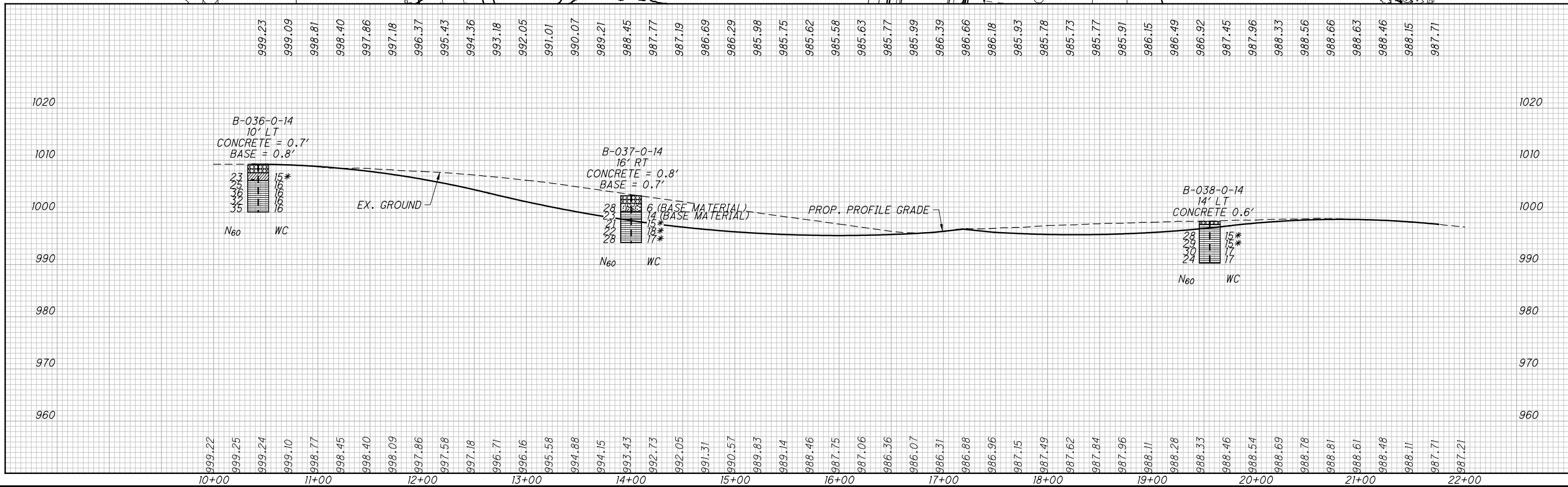
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STA. 201+50 TO STA. 210+33

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BORING PROFILE LOCATION REFERENCE
STA. 10+00 TO STA. 22+00 FOOTE RD

BORING ID	PROFILE (SEE SHEET)
B-011-0-14	8
B-012-0-14	9

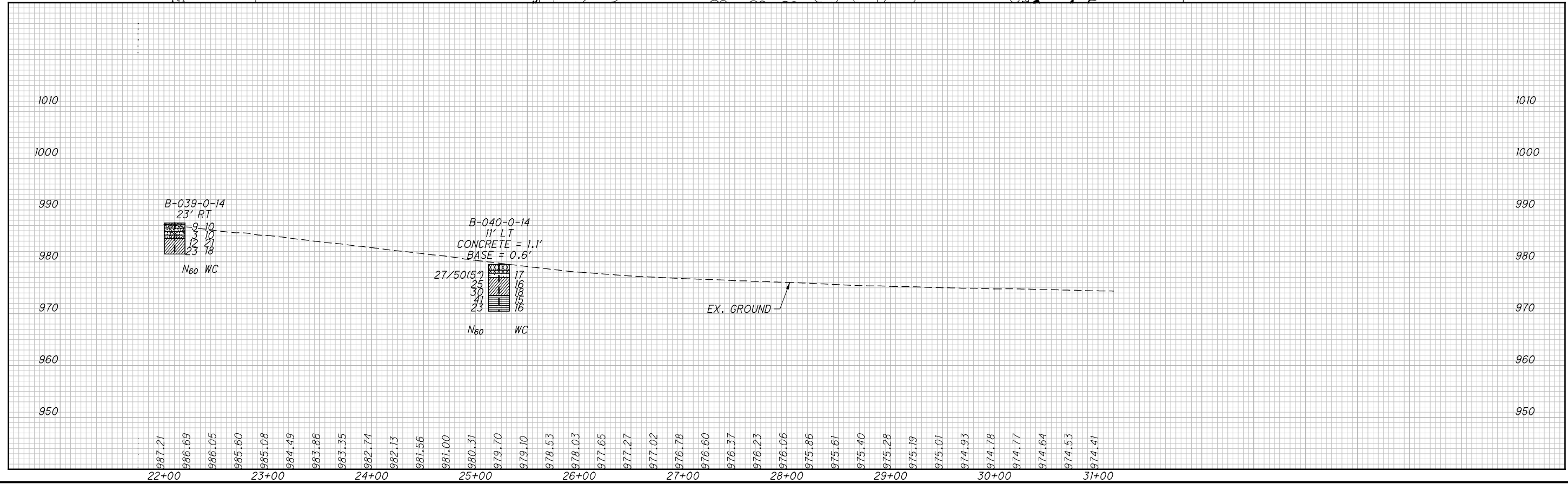
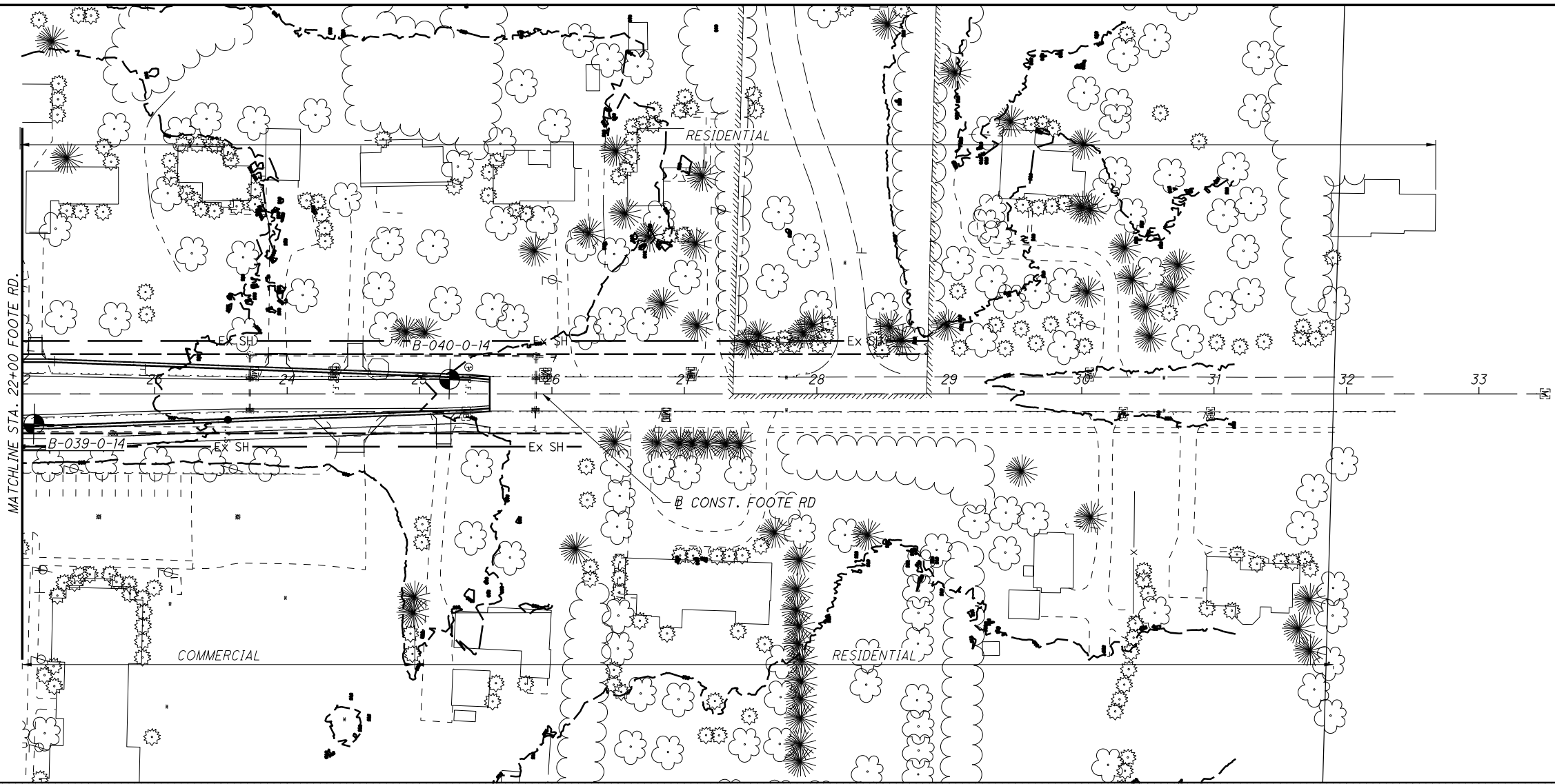


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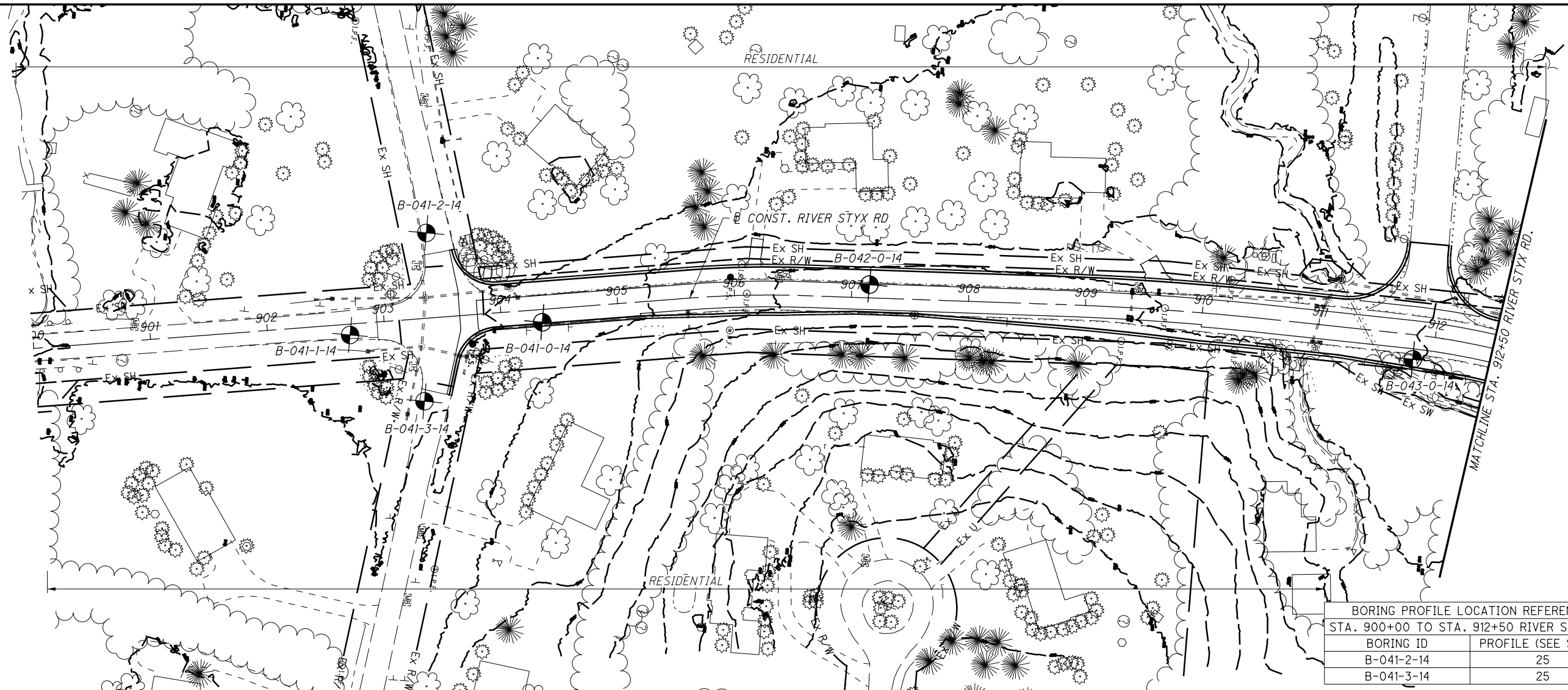
SOIL PROFILE - FOOTE RD
STA. 10+00 TO STA. 22+00

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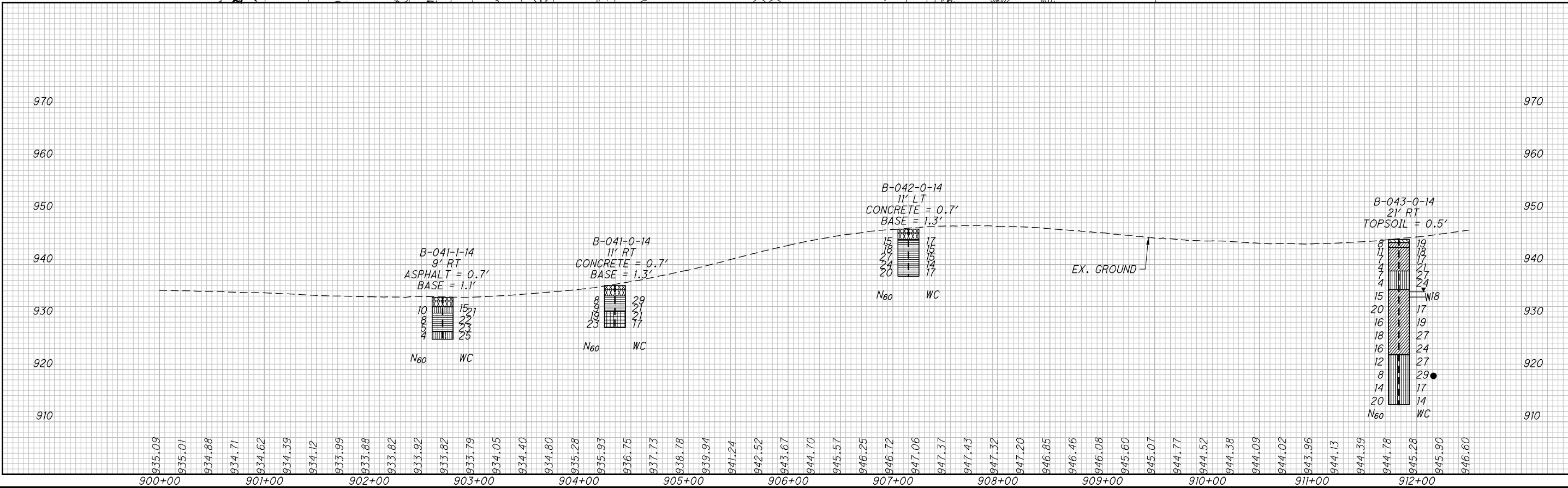


SOIL PROFILE - RIVER STYX RD
STA. 900+00 TO STA. 912+50

MED-18-12.99

20/36

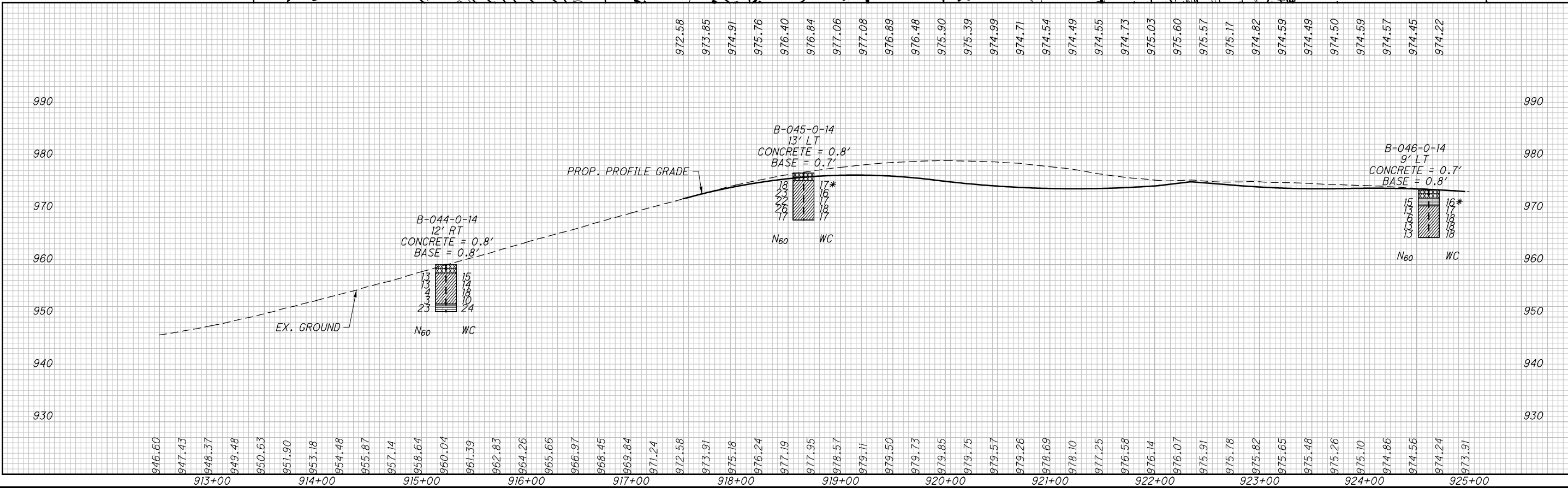
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B-041-3-14	25

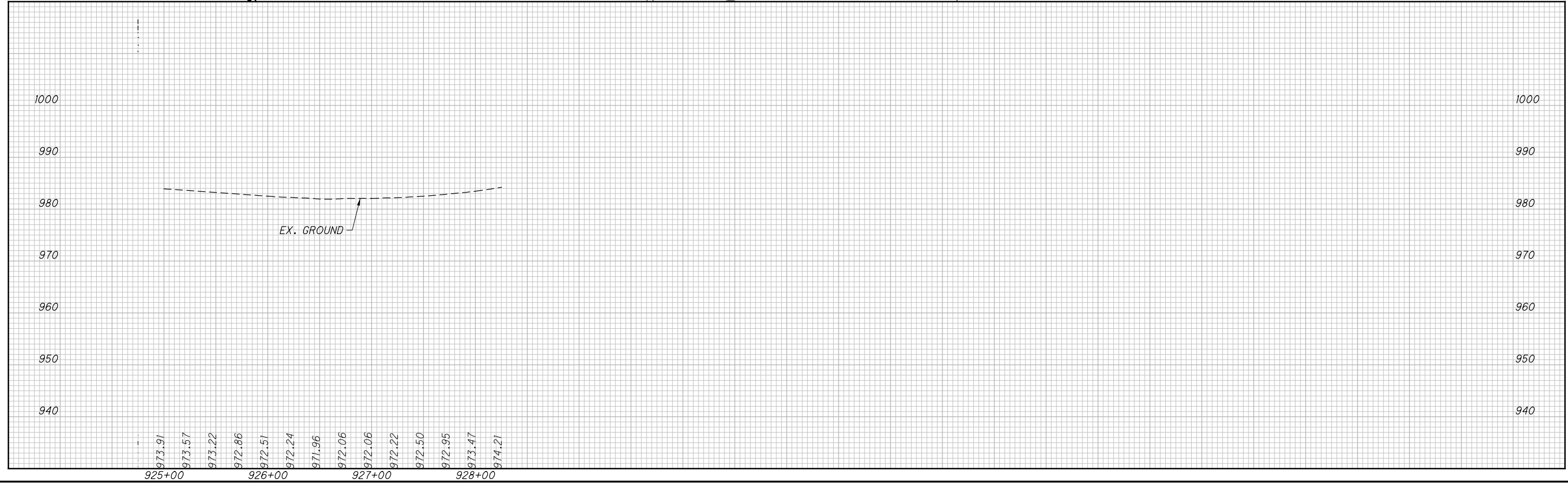
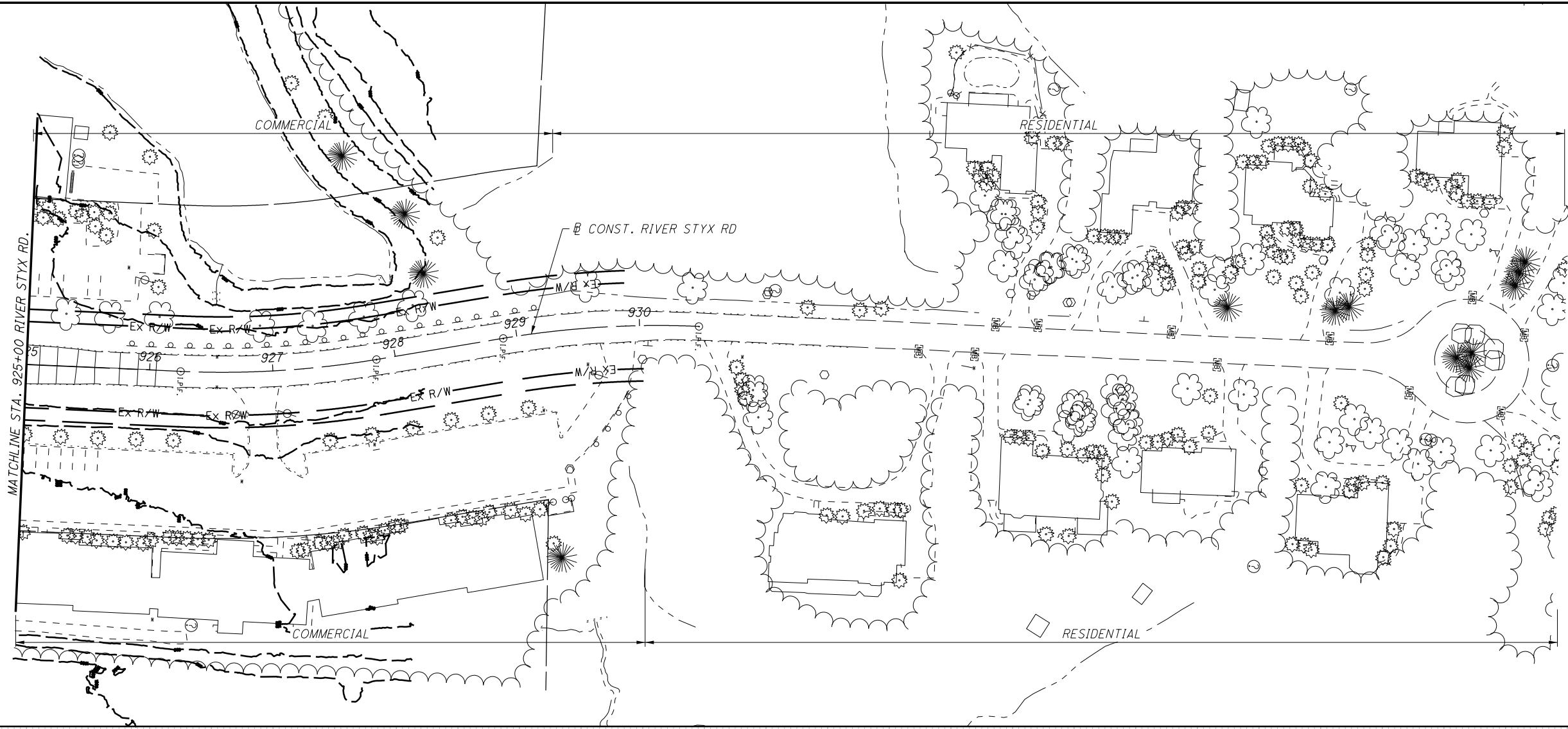


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BORING PROFILE LOCATION REFERENCE	
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BORING ID	PROFILE (SEE SHEET)
B-028-0-14	14
B-029-0-14	14





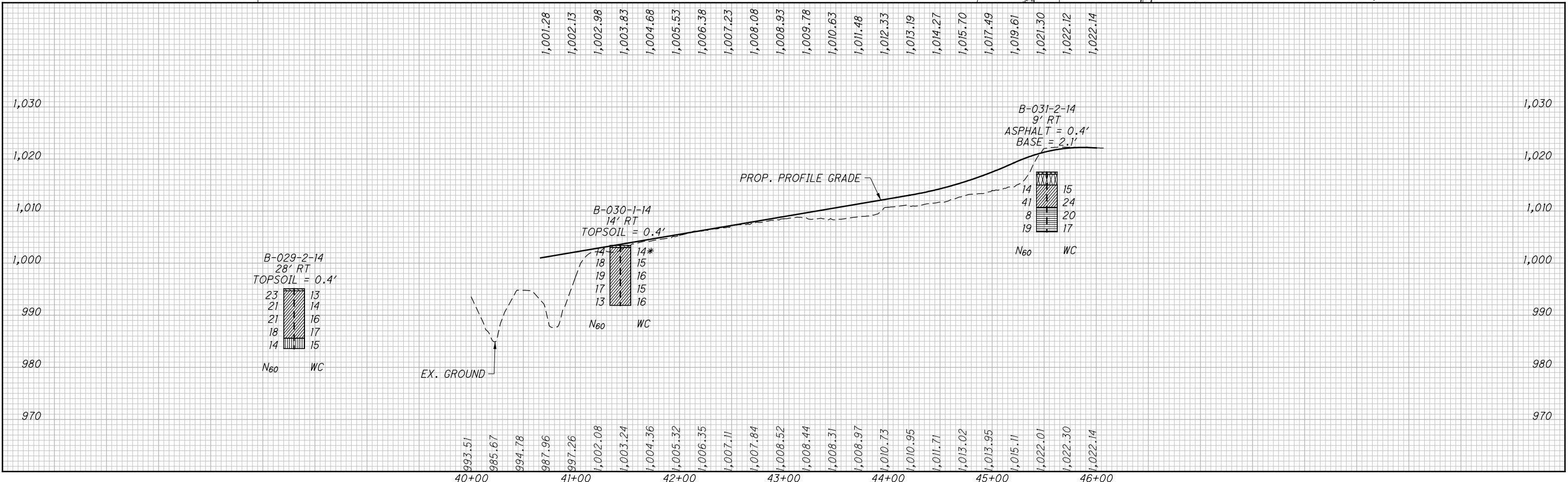
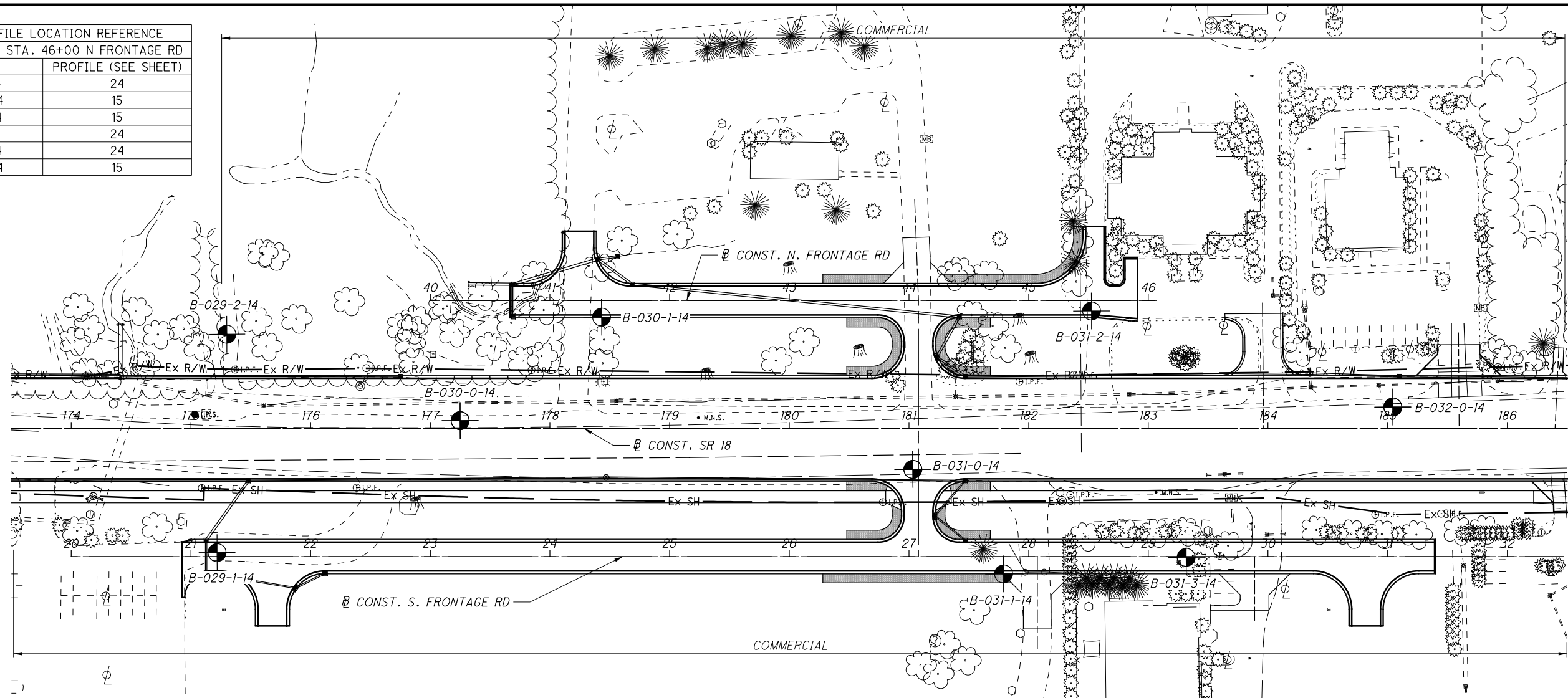
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SOIL PROFILE - RIVER STYX RD
STA. 925+00 TO STA. 930+48

MED-18-12.99



BORING PROFILE LOCATION REFERENCE	
STA. 40+00 TO STA. 46+00 N FRONTAGE RD	
BORING ID	PROFILE (SEE SHEET)
B-029-1-14	24
B-030-0-14	15
B-031-0-14	15
B-031-1-14	24
B-031-3-14	24
B-032-0-14	15



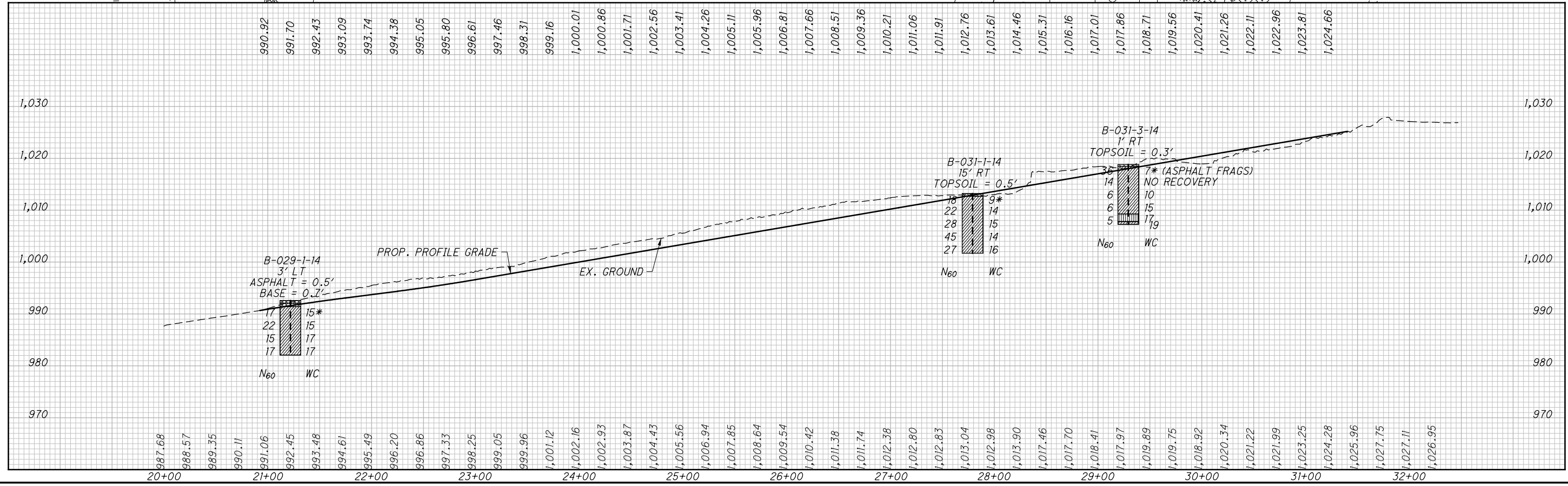
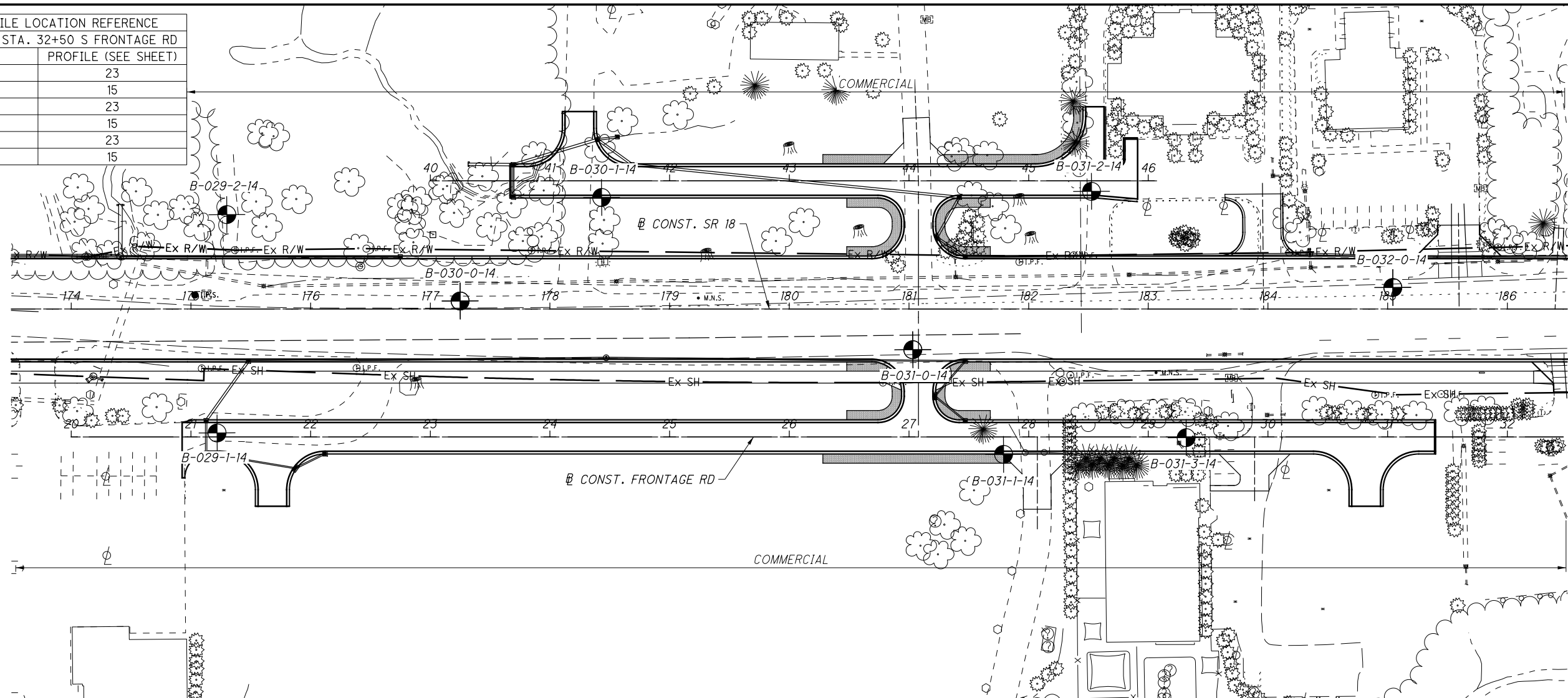
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SOIL PROFILE - N. FRONTAGE RD
STA. 40+00 TO STA. 46+00

MED-18-12.99



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BORING PROFILE LOCATION REFERENCE		
STA. 20+00 TO STA. 32+50 S FRONTAGE RD		
BORING ID	PROFILE	(SEE SHEET)
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B-030-0-14	15	
B-030-1-14	23	
B-031-0-14	15	
B-031-2-14	23	
B-032-0-14	15	



SOIL PROFILE - FRONTAGE RD

STA. 20+00 TO STA. 32+50

MED-18-12.99

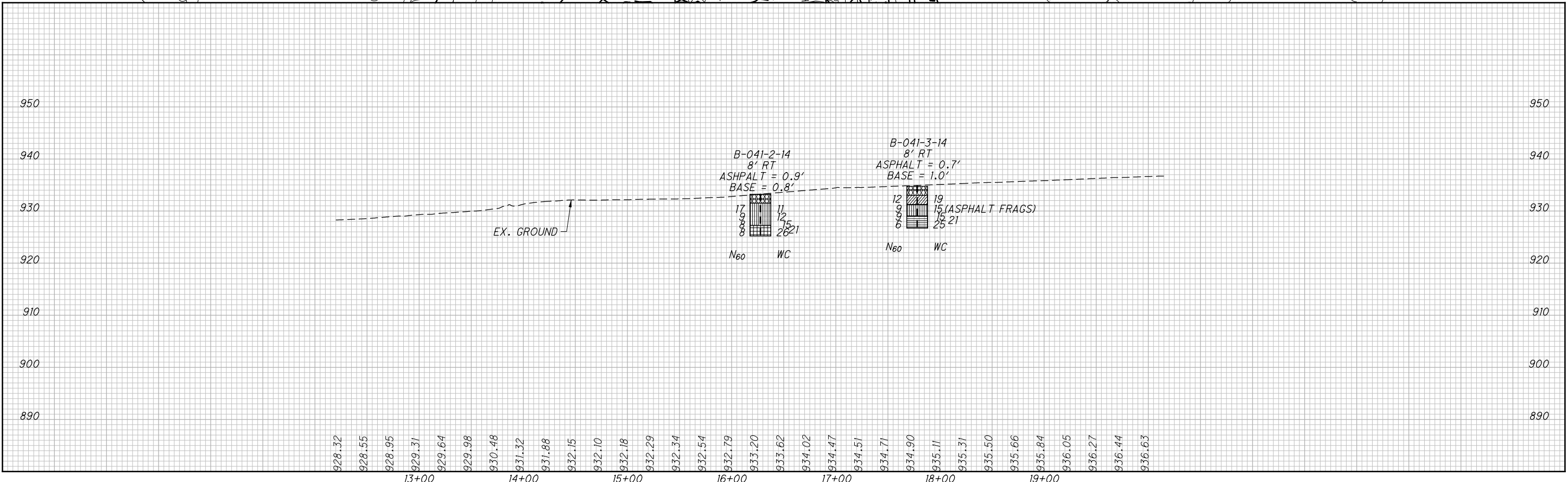
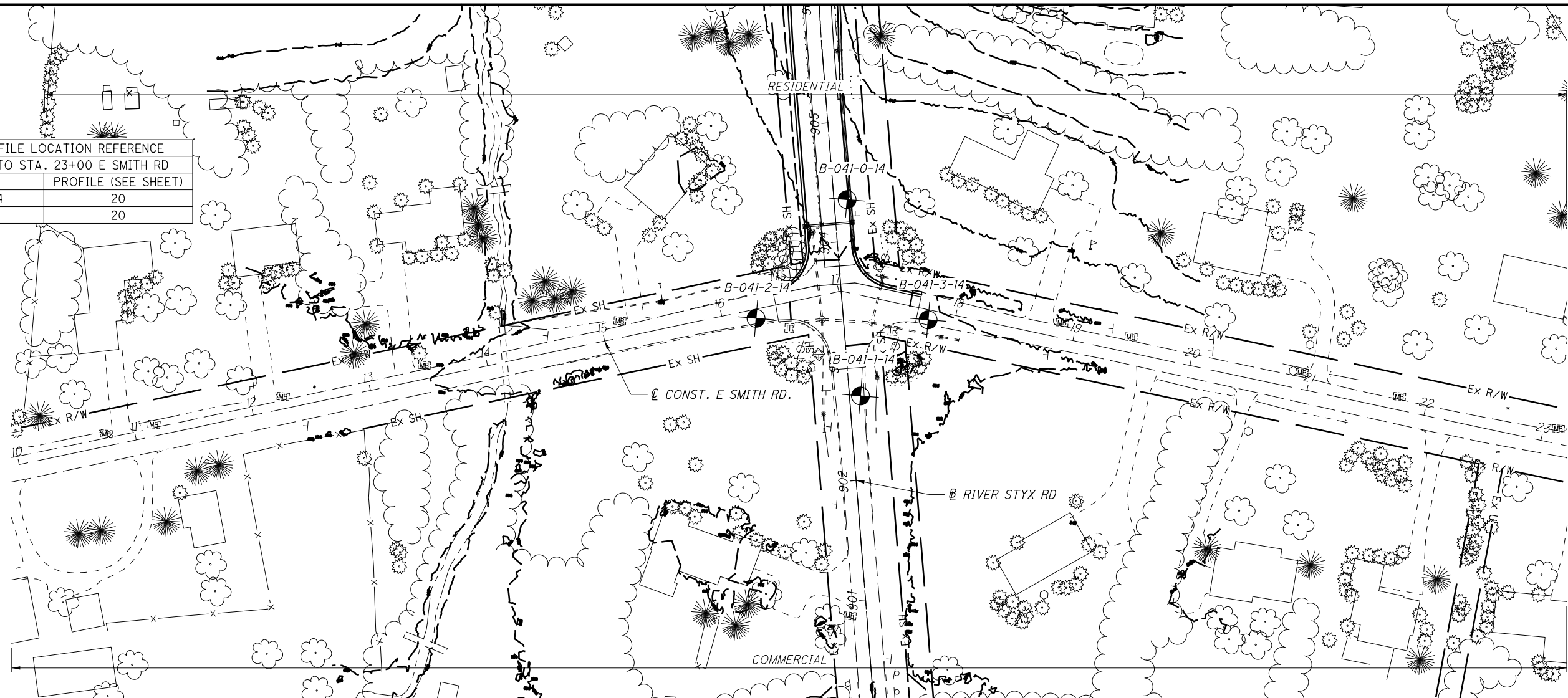
24/36

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HORIZONTAL SCALE IN FEET

DRAWN: SP
CHECKED: CH

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BORING PROFILE LOCATION REFERENCE	
STA. 10+00 TO STA. 23+00 E SMITH RD	
BORING ID	PROFILE (SEE SHEET)
B-041-0-14	20
B-041-1-14	20



DRAWN TS
CHECKED CH

**SOIL PROFILE - E. SMITH RD
STA. 10+00 TO STA. 23+00**

MED-18-12.99

PROJECT: MED-18-12.99 TYPE: RETAINING WALL		DRILLING FIRM / OPERATOR: BARR / ASHBAUGH		DRILL RIG: CME 45B		STATION / OFFSET: 102+49.32 RT		EXPLORATION ID										
PID: 92953 BR ID: 7/10/15		SAMPLING FIRM / LOGGER: BARR / ASHBAUGH		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-18		B-006-0-14										
START: 7/9/15 END: 7/10/15		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/26/14		ELEVATION: 985.1 (MSL) EOB: 31.5 ft.		PAGE										
SAMPLING METHOD: SPT		SPT		ENERGY RATIO (%): 77.4		COORD: 41.138723, -81.836074		1 OF 1										
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC SAMPLE (%)	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
4" ASPHALT	985.1	1																
11" GRANULAR BASE	984.8	2		6	19	6	SS-1											
MEDIUM DENSE, DARK BROWN AND GRAY GRAVEL TRACE SAND, TRACE SILT, TRACE CLAY, DRY (FILL)	983.9	3		7	8													
LOOSE, BROWN, GRAVEL WITH SAND AND SILT TRACE CLAY, DAMP (FILL)	982.1	4		6	9	56	SS-2	38	29	16	12	5	26	19	7			A-1-a (V)
LOOSE, BROWN, GRAVEL WITH SAND SS-4 CONTAINS ASPHALT, DAMP (FILL)	979.1	5		3	4	10	SS-3											
		6		4	4													
		7																
		8		5	4	10	SS-4											
		9		4	4													
		10																
		11		4	3	8	SS-5											
@10.0': SS-5 CONTAINS FEW ROOTS		12		3	3													
		13		4	3	9	SS-6											
		14		3	4													
		15		4	3	8	SS-7	1.5	2	5	12	43	38	34	19	15		
MEDIUM STIFF TO HARD, GRAY MOTTLED WITH BROWN, SILT AND CLAY LITTLE SAND, TRACE GRAVEL, MOIST TO DAMP	970.6	16		3	3	78	SS-7	3.2										
		17																
		18		3	3	8	SS-8	0.7	5	15	34	28	18	29	18	11		
@17.5': SS-8 BECOMES GRAY, "AND" SAND		19		3	3	100	SS-8	1.4										
		20		2	2	5	SS-9	0.5										
@20.0': SS-9 TO SS-10 BECOME GRAY MOTTLED WITH BROWN, LITTLE SAND		21		2	2	56	SS-9	1.3										
		22																
		23		7	9	21	SS-10	1.6										
		24		9	7	83	SS-10	3.1										
		25																
		26		5	8	23	SS-11	3.4	5	6	11	40	38	28	16	12		
@25.0': SS-11 TO SS-13 BECOME GRAYISH BROWN		27		8	10	100	SS-11	3.9										
		28		5	8	22	SS-12	2.6	4	7	12	40	37	28	17	11		
		29		8	9	100	SS-12	4.5										
		30		4	5	18	SS-13	2.2										
		31		5	9	100	SS-13	4.3										

EOB

NOTES: GROUNDWATER ENCOUNTERED AT 22.0' DURING DRILLING. CAVE DEPTH 20.0'.
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

PROJECT: MED-18-12.99		DRILLING FIRM / OPERATOR: BARR / ASHBAUGH		DRILL RIG: CME 45B		STATION / OFFSET: 102+85.32 RT		EXPLORATION ID										
TYPE: CULVERT		SAMPLING FIRM / LOGGER: BARR / ASHBAUGH		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-18		B-007-0-14										
PID: 92953 BR ID:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/26/14		ELEVATION: 983.9 (MSL) EOB: 31.5 ft.		PAGE										
START: 7/10/15 END: 7/10/15		SAMPLING METHOD: SPT		ENERGY RATIO (%): 77.4		COORD: 41.138708, -81.835945		1 OF 1										
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC SAMPLE (%)	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
5" ASPHALT		983.5	1															
8.5" GRANULAR BASE		982.8	2	3	6	72	1.4-2.2	15	8	12	29	36	32	17	15	20	A-6a (8)	
STIFF TO VERY STIFF, BROWN AND GRAY, SILT AND CLAY, LITTLE SAND, LITTLE GRAVEL, MOIST (FILL)			3	2														
STIFF TO VERY STIFF, BROWN AND GRAY, SILTY CLAY, LITTLE SAND, TRACE GRAVEL, DAMP TO MOIST (FILL)		980.9	4	2	8	61	2.0-3.4	-	-	-	-	-	-	-	-	19	A-6b (V)	
			5	WOH	8	56	1.4-1.9	-	-	-	-	-	-	-	-	20	A-6b (V)	
			6	4														
			7															
			8	2	6	78	1.2-2.8	-	-	-	-	-	-	-	-	21	A-6b (V)	
		974.4	9	2														
STIFF TO VERY STIFF, BROWN AND GRAY, SILTY CLAY, TRACE SAND, TRACE GRAVEL, DAMP (POSSIBLE FILL)			10	4	9	61	1.2-3.7	-	-	-	-	-	-	-	-	18	A-6b (V)	
		971.9	11	3														
			12	4														
			13	4	14	67	1.4-3.2	6	10	35	43	35	17	18	17	17	A-6b (11)	
			14	6														
			15	3	14	22	0.7-0.9	-	-	-	-	-	-	-	-	19	A-6b (V)	
@15.0': SS-7 BECOMES MOIST, BROWN AND DARK GRAY @ 16.6' SWITCHED RIG DUE TO BREAKDOWN CME 55X: CME Automatic Hammer Energy Ratio: 81.2% Drilled by: J. Hodges Logged By: D.Lyon		967.4	16	6														
LOOSE, BROWN, GRAVEL, TRACE SAND, TRACE SILT, TRACE CLAY, (POSSIBLE CUTTINGS), DAMP			17	5														
		964.4	18	3	8	28	-	-	-	-	-	-	-	-	-	-	A-1-a (V)	
			19	3														
			20	5	25	83	3.7-4.5+	-	-	-	-	-	-	-	-	16	A-4a (V)	
			21	8														
			22	11														
			23	5	19	100	2.4-4.5+	8	6	12	38	36	26	16	10	15	A-4a (8)	
		959.4	24	6														
@22.5': BECOMES GRAYISH BROWN			25	5	17	100	2.0-3.5	-	-	-	-	-	-	-	-	16	A-6a (V)	
MEDIUM STIFF TO VERY STIFF, GRAYISH BROWN, SILT AND CLAY, TRACE SAND, TRACE GRAVEL, DAMP TO MOIST			26	8														
			27	5														
			28	7	15	100	1.7-3.0	3	6	13	37	41	29	17	12	17	A-6a (9)	
			29	5												23	A-6a (V)	
			30	7														
			31	3	12	100	0.9-2.0	2	4	6	35	53	33	20	13	23	A-6a (9)	
		952.4	EOB	6												20	A-6a (V)	

NOTES: GROUNDWATER ENCOUNTERED AT 13.0' DURING DRILLING. CAVE DEPTH 9.5'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

PROJECT: MED-18-12.99 TYPE: CULVERT		DRILLING FIRM / OPERATOR: BARR / J.HODGES		DRILL RIG: CME 55		STATION / OFFSET: 111+20.22 RT		EXPLORATION ID	
PID: 92953 BR ID: 7/13/15		SAMPLING FIRM / LOGGER: BARR / C.PATRICK		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-18		B-010-0-14	
START: 7/13/15 END: 7/13/15		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/26/14		ELEVATION: 988.0 (MSL) EOB: 30.0 ft.		PAGE	
SAMPLING METHOD: SPT		SPT		ENERGY RATIO (%): 78.8		COORD: 41.138331, -81.832955		1 OF 1	
MATERIAL DESCRIPTION AND NOTES		ELEV.		REC SAMPLE ID		GRADATION (%)		ODOT CLASS (GI)	
		988.0		HP (tsf)		GR CS FS SI CL LL PL		WC	
		986.9		N ₆₀		SPT / RQD		ATTERBERG	
				DEPTH					
13.0" ASPHALT									
VERY STIFF TO HARD, BROWN MOTTLED WITH GRAY, SILTY CLAY, LITTLE SAND, TRACE GRAVEL, DAMP TO MOIST	1								
	2								
	3								
	4								
	5								
	6								
	7								
	8								
	9								
	10								
@6.5" SS-4 TO SS-6 BECOMES BROWN MOTTLED WITH GRAY AND DARK GRAY	11								
	12								
	13								
	14								
	15								
	16								
	17								
	18								
	19								
	20								
VERY STIFF TO HARD, GRAY MOTTLED WITH BROWN, SILT AND CLAY LITTLE SAND, TRACE GRAVEL, DAMP	21								
	22								
	23								
	24								
	25								
	26								
	27								
	28								
	29								
	30								
VERY STIFF, BROWN, SILT, SOME CLAY, TRACE SAND, DAMP	1								
	2								
	3								
	4								
	5								
	6								
	7								
	8								
	9								
	10								
STIFF TO VERY STIFF, GRAY MOTTLED WITH BROWN BECOMING GRAY, SILT AND CLAY LITTLE SAND, TRACE GRAVEL, DAMP	11								
	12								
	13								
	14								
	15								
	16								
	17								
	18								
	19								
	20								

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT GDT - 11/17/15 10:47 - \COLUMBUS\LAB\ACTIVE PROJECTS\MED-18-13\54 REVISED08182015.GPJ

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING - CAVE DEPTH 15.6'
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

PROJECT: MED-18-12.99 TYPE: RETAINING WALL		DRILLING FIRM / OPERATOR: BARR / ASHBAUGH		DRILL RIG: CME 45B		STATION / OFFSET: 127+12.23 LT		EXPLORATION ID							
PID: 92953 BR ID: 7/8/15		SAMPLING FIRM / LOGGER: BARR / ASHBAUGH		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-18		B-015-0-14							
START: 7/8/15 END: 7/8/15		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/26/14		ELEVATION: 959.6 (MSL) EOB: 31.5 ft.		PAGE							
SAMPLING METHOD: SPT		SPT		ENERGY RATIO (%): 77.4		COORD: 41.137745, -81.827227		1 OF 1							
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	REC SAMPLE (%)	HP (tsf)	GRADATION (%)			ATTERBERG			ODOT CLASS (G)	HOLE SEALED	
							GR	CS	FS	SI	CL	LL	PL	WC	
6" ASPHALT		959.6	1												
6" BRICK		959.1	2	4	21	1.7-2.1								21	A-6b (V)
SOFT TO VERY STIFF, BROWN CHANGING TO BROWN AND GRAY, SILTY CLAY, LITTLE SAND, TRACE GRAVEL, MOIST		958.6	3	3	10	0.4-0.5								24	A-6b (V)
(FILL)			4	4	6									24	A-6b (V)
			5	6	17	1.2-1.5									
			6	7	39										
			7												
@7.5'; CHANGES TO VERY STIFF TO HARD		950.1	8	16	53	2.0-4.5+	7	8	11	32	42	38	19	19	18
			9	25											
VERY STIFF TO HARD, BROWN, SILTY CLAY, LITTLE SAND, TRACE GRAVEL, DAMP			10	7	28	2.0-4.5+									18
			11	12	67										A-6b (V)
			12												
STIFF TO HARD, SILT AND CLAY, LITTLE SAND, TRACE GRAVEL DAMP		947.6	13	4	48	2.0-4.5+	5	6	12	34	43	33	18	15	18
			14	29											A-6a (10)
			15	5											
@16.4'; ENCOUNTERED COBBLE			16	18											16
			17	50/5'	88	1.7-4.5+									A-6a (V)
			18	36											
			19	50	83	4.5+									17
		940.3	20												
STIFF, BROWN MOTTLED WITH GRAY, SILTY CLAY, SOME SAND, LITTLE GRAVEL, MOIST		938.6	21	3	13	1.2-1.6	16	10	12	29	33	36	19	17	20
			22	5	100										A-6b (8)
			23	3	9	0									
@22.5'; SS-10 NO RECOVERY			24	4											
			25												
VERY SOFT TO MEDIUM STIFF, BROWN MOTTLED WITH GRAY, SANDY SILT, SOME CLAY, TRACE GRAVEL, MOIST			26	4	8	0.5-0.8									29
			27	3	22										A-4a (V)
			28	3	8	0.2-0.6	6	8	12	46	28	26	16	10	18
			29	3	100										A-4a (8)
			30	7	25	0									
@30.0'; SS-13 NO RECOVERY		928.1	31	10											

EOB

NOTES: GROUNDWATER ENCOUNTERED AT 23.5' DURING DRILLING. CAVE DEPTH 26.0'.
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 5 BAG ASPHALT PATCH; SOIL MIXED WITH BENTONITE PELLETS

PROJECT: MED-18-12.99 TYPE: RETAINING WALL		DRILLING FIRM / OPERATOR: BARR / J.HODGES		DRILL RIG: CME 45B		STATION / OFFSET: 127+42.19 RT		EXPLORATION ID										
PID: 92953 BR ID: 7/2/15		SAMPLING FIRM / LOGGER: BARR / C.PATRICK		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-18		B-016-0-14										
START: 7/2/15 END: 7/2/15		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/26/14		ELEVATION: 959.9 (MSL) EOB: 30.0 ft.		PAGE										
SAMPLING METHOD: SPT		SPT		ENERGY RATIO (%): 77.4		COORD: 41.137619, -81.827141		1 OF 1										
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC SAMPLE (%)	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
3" ASPHALT	959.9	1																
2" GRANULAR BASE	959.7 959.5	2																
HARD, BROWN WITH GRAY, SILT AND CLAY LITTLE SAND, TRACE GRAVEL, DAMP (FILL)	956.9	3		3	9	56	4.5+	-	-	-	-	-	-	-	-	18	A-6a (V)	
VERY STIFF TO HARD, BROWN WITH GRAY, CLAY, SOME SILT, LITTLE SAND, TRACE GRAVEL, CONTAINS FEW ROOT HAIRS, MOIST (FILL)		4		4	12	100	2.75-3.0	1	3	9	28	59	47	20	27		A-7-6 (16)	
@4.5'; SS-3 CONTAINS FIELD TILL FRAGMENTS		5		3	13	100	2.5-4.5+	-	-	-	-	-	-	-	-		A-7-6 (V)	
	952.6	6																
VERY STIFF BROWN WITH GRAY, SILTY CLAY, LITTLE SAND, TRACE GRAVEL, DAMP (POSSIBLE FILL)		7																
	948.6	8																
STIFF TO VERY STIFF, GRAYISH BROWN MOTTLED W/ GRAY BROWN AND DARK GRAY, CLAY "AND" SILT, LITTLE SAND, CONTAINS FEW FINE ROOTS, MOIST		9		4	12	100	2.6-4.0	-	-	-	-	-	-	-	-		A-6b (V)	
	944.6	10																
DENSE, GRAYISH BROWN, GRAVEL WITH SAND AND SILT, LITTLE CLAY, MOIST		11																
		12																
		13		3	10	100	1.4-3.2	0	4	9	36	51	49	21	28	24	A-7-6 (17)	
		14		3	10	100	1.4-3.2	0	4	9	36	51	49	21	28	24	A-7-6 (17)	
		15																
		16																
		17		7	46	78												
		18		23	46	78												
		19		13	46	78												
		20																
		21		6	49	78	1.4-1.7	-	-	-	-	-	-	-	-		A-6b (V)	
		22		11	49	78	1.4-1.7	-	-	-	-	-	-	-	-		A-6b (V)	
		23		27	49	78	1.4-1.7	-	-	-	-	-	-	-	-		A-6b (V)	
	936.6	24																
STIFF TO VERY STIFF, OLIVE GRAY MOTTLED WITH GRAY, SILT AND CLAY LITTLE SAND, TRACE GRAVEL, MOIST		25		3	9	100	1.25-4.0	-	-	-	-	-	-	-	-		A-6a (V)	
		26		3	9	100	1.25-4.0	-	-	-	-	-	-	-	-		A-6a (V)	
		27		4	9	100	1.25-4.0	-	-	-	-	-	-	-	-		A-6a (V)	
VERY STIFF, GRAY, SANDY SILT, LITTLE CLAY, TRACE GRAVEL, DAMP	932.6	28																
		29		4	8	25	2.75-3.25	8	15	16	42	19	22	16	6	13	A-4a (5)	
	929.9	30		8	25	100	2.75-3.25	8	15	16	42	19	22	16	6	13	A-4a (5)	
		EOB		11	25	100	2.75-3.25	8	15	16	42	19	22	16	6	13	A-4a (5)	

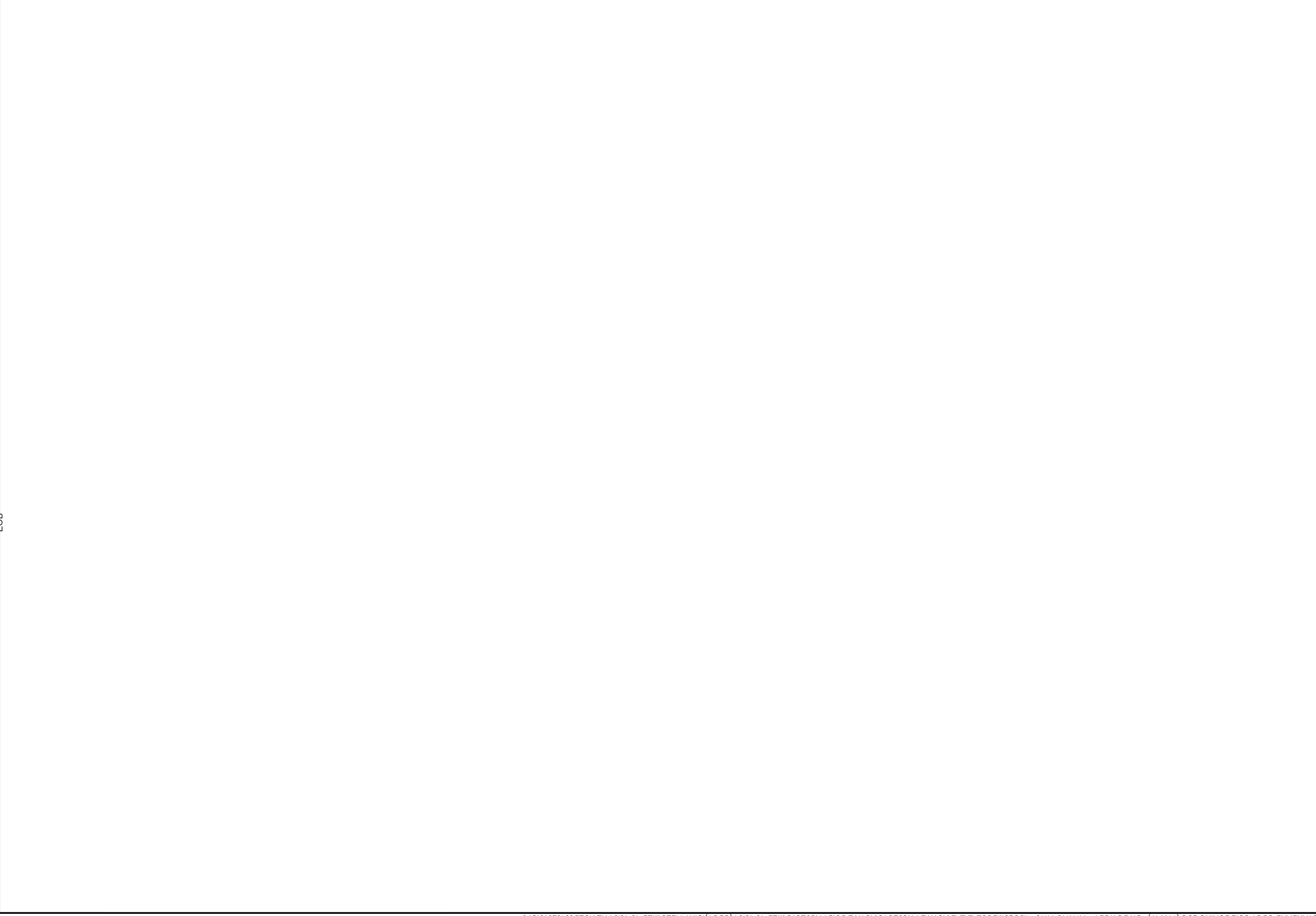
STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT GDT - 11/17/15 11:04 - W\COLUMBUS\LAB\ACTIVE PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13.54 REVISED08182015.GPJ

NOTES: GROUNDWATER ENCOUNTERED AT 15.0' DURING DRILLING. CAVE DEPTH 20.0'.
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

PROJECT: MED-18-12.99 TYPE: BRIDGE		DRILLING FIRM / OPERATOR: BARR / J.HODGES		DRILL RIG: CME 55		STATION / OFFSET: 140+30.30 RT		EXPLORATION ID								
PID: 92953 BR ID: MED-18-1403		SAMPLING FIRM / LOGGER: BARR / D.LYON		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-18		B-020-0-14								
START: 7/6/15 END: 7/6/15		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/26/14		ELEVATION: 927.1 (MSL) EOB: 61.5 ft.		PAGE								
SAMPLING METHOD: SPT		SAMPLING METHOD: SPT		ENERGY RATIO (%): 78.8		COORD: 41.137032, -81.822534		1 OF 2								
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	REC SAMPLE (%)	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	WC	ODOT CLASS (GI)	BACK FILL
14" ASPHALT	927.1	1														
12" GRANULAR BASE	925.9	2		6	61	4.5+	5	9	17	37	32	31	17	14	14	A-6a (8)
HARD, GRAYISH BROWN, SILT AND CLAY SOME SAND, TRACE GRAVEL, DAMP (FILL)	924.9	3		4	72	4.5+	1	5	15	43	36	33	19	14	19	A-6a (10)
HARD, GRAY AND BROWN, SILT AND CLAY LITTLE TO SOME SAND, TRACE GRAVEL, DAMP TO MOIST (FILL)	924.1	4		3	5	1.0-3.5	-	-	-	-	-	-	-	-	25	A-6a (V)
@4.5'; SS-3 TO SS-5 CHANGE TO MEDIUM STIFF TO VERY STIFF		5		2	2	0.75-2.2	-	-	-	-	-	-	-	-	17	A-6a (V)
		6		2	3	0.75-2.3	-	-	-	-	-	-	-	-	19	A-6a (V)
	917.6	7		2	3											
SOFT, DARK GRAY, SANDY SILT, TRACE CLAY, CONTAINS DECAYED VEGETATION, WET		8		3	8											
		9		3	3											
STIFF TO VERY STIFF, GRAY MOTTLED WITH BROWN, SILTY CLAY, LITTLE SAND, MOIST	915.1	10		WOH 1	4	0.25-0.5	-	-	-	-	-	-	-	-	27	A-4a (V)
		11		2												
		12		1	3	1.0-2.5	0	6	12	38	44	33	16	17	22	A-6b (11)
	912.6	13		2	1											
		14		1												
VERY SOFT TO SOFT, BLACK MOTTLED WITH BROWN, SILT AND CLAY TRACE SAND, SLIGHTLY ORGANIC, CONTAINS DECAYED VEGETATION, WET	910.1	15		WOH 2	5	0.2-0.5	0	4	58	38	37	23	14	35	A-6a (10)	
		16		2												
		17		2												
VERY SOFT TO VERY STIFF, DARK GRAY MOTTLED WITH BROWN, SANDY SILT, SOME CLAY, TRACE GRAVEL, CONTAINS DECAYED VEGETATION, WET		18		WOH 3	8	1.2-2.2	1	4	23	44	28	NP	NP	NP	34	A-4a (7)
		19		3												
		20		1	7	0.2-0.75	-	-	-	-	-	-	-	-	34	A-4a (V)
	905.1	21		4												
VERY LOOSE, GRAY, GRAVEL WITH SAND TRACE SILT, TRACE CLAY, MOIST		22		2	5											
		23		2	2											
		24		2												
MEDIUM STIFF TO VERY STIFF, GRAY TO GRAYISH BROWN, SANDY SILT, LITTLE CLAY, TRACE GRAVEL, CONTAINS FEW SILT LENSES, DAMP TO MOIST	902.8	25		3	5	0.5-1.9	5	11	19	48	17	20	16	4	17	A-4a (6)
		26		2												
		27		2												
		28		4	5	1.0-3.0	-	-	-	-	-	-	-	-	16	A-4a (V)
	897.6	29		5												
VERY STIFF TO HARD, GRAYISH BROWN, SILT AND CLAY, SOME SAND, TRACE GRAVEL, DAMP		30		4	13	2.5-4.3+	-	-	-	-	-	-	-	-	14	A-6a (V)
		31		4	6											
		32														
		33														
		34														
LOOSE, GRAY, GRAVEL WITH SAND LITTLE SAND, LITTLE SILT, TRACE CLAY, WET	893.8	35														
		36		2	9		21	38	23	14	4	NP	NP	NP	15	A-1-b (0)
		37		2	5											
GRAYISH BROWN, COARSE AND FINE SAND LITTLE SILT, LITTLE GRAVEL, TRACE CLAY	890.1	38														
		39														
		40														
VERY SOFT TO STIFF, GRAY, SILT, "AND" CLAY, TRACE SAND, MOIST TO WET @40.1'; 8' OF HEAVE	887.1	41		WOH 1	4	0.2-1.0	-	-	-	-	-	-	-	-	25	A-4b (V)
		42		2												
		43														
		44														
		45		4	4	0.5-1.5	0	1	2	51	46	29	19	10	23	A-4b (8)
		46		4	6											
		47														
		48														
		49														
		50		1	2	0.75-1.7	-	-	-	-	-	-	-	-	20	A-4b (V)
		51		4												
		52														
		53														
		54														
@55.0'; SS-19 BECOMES LOOSE, LITTLE CLAY		55		1	7	0.25-0.75	0	1	2	82	15	NP	NP	NP	26	A-4b (8)
		56		2												
		57		3												
	868.8	58														
		59														
VERY STIFF TO HARD, GRAYISH BROWN, SANDY SILT, LITTLE GRAVEL, LITTLE CLAY, DAMP																

STANDARD ODOT BORING LOG (11 X 17) - OH DOT GDT - 11/17/15 11:13 - \COLUMBUS\LAB\ACTIVE PROJECTS\MED-18-13-54 (ODOT)\GINT FILES\MED-18-13-54 REVISED08182015.GPJ

PID: 92953	BR ID: MED-18-1403	PROJECT: MED-18-12.99	STATION / OFFSET: 140+29.75, 30.0 RT	START: 7/6/15	END: 7/6/15	PG 2 OF 2	B-020-0-14	
MATERIAL DESCRIPTION AND NOTES		ELEV: 867.1	DEPTHS	HP (tsf)	GRADATION (%)			ODOT CLASS (GI)
VERY STIFF TO HARD, GRAYISH BROWN, SANDY SILT, LITTLE GRAVEL, LITTLE CLAY, DAMP (continued)		865.6	SPT/RQD	REC SAMPLE ID	GR	CS	FS	WC
			6	SS-20	-	-	-	11
			10	2.9	-	-	-	-
			14	4.9+	-	-	-	-
		EOB	- 61					



NOTES: GROUNDWATER ENCOUNTERED AT 11.5' DURING DRILLING, 13.0' UPON COMPLETION. CAVE DEPTH 31.7'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT BORING LOG (11 X 17) - OH DOT GDT - 11/17/15 11:13 - \COLUMBUS\LAB\ACTIVE PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13.54 REVISED08182015.GPJ



PROJECT: MED-18-12.99 TYPE: BRIDGE		DRILLING FIRM / OPERATOR: BARR / J.HODGES		DRILL RIG: CME 55		STATION / OFFSET: 141+80.31 RT		EXPLORATION ID										
PID: 92953 BR ID: MED-18-1403		SAMPLING FIRM / LOGGER: BARR / D.LYON		HAMMER: CME AUTOMATIC		ALIGNMENT: SR-18		B-021-0-14										
START: 7/6/15 END: 7/6/15		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/26/14		ELEVATION: 924.7 (MSL) EOB: 61.5 ft.		PAGE										
SAMPLING METHOD: SPT		SPT		ENERGY RATIO (%): 78.8		COORD: 41.136970, -81.821995		1 OF 2										
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC SAMPLE (%)	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
12" ASPHALT	924.7	1																
9" GRANULAR BASE	923.7	2																
MEDIUM DENSE, BROWN, GRAVEL WITH SAND AND SILT, LITTLE CLAY. CONTAINS CONCRETE AND BRICK FRAGMENTS, DAMP (FILL)	922.9	3		5	4	67	SS-1	-	-	-	-	-	-	-	-	-	14	A-2-4 (V)
MEDIUM STIFF TO STIFF, BROWN, GRAY, AND DARK GRAY, SILT AND CLAY SOME SAND, LITTLE TO SOME GRAVEL, CONTAINS CONCRETE, BRICK, AND LIMESTONE FRAGMENTS, DAMP TO MOIST (FILL)	920.2	4		5	6	56	SS-2	-	41	17	13	17	12	22	15	7	9	A-2-4 (O)
		5		2	3	8	SS-3	1.0-2.0	22	14	14	27	23	31	18	13	15	A-6a (4)
		6		2	1	5	SS-4	0.5-1.0	-	-	-	-	-	-	-	-	20	A-6a (V)
		7		WOH	2	7	SS-5	0.9-1.75	-	-	-	-	-	-	-	-	20	A-6a (V)
		8		2	2	8	SS-6	1.0-2.0	-	-	-	-	-	-	-	-	19	A-6a (V)
	912.7	9																
		10																
		11																
		12																
SOFT TO STIFF, GRAY BECOMING DARK GRAY, SANDY SILT, LITTLE CLAY, SS-7 CONTAINS FEW SAND LENSES, MOIST		13		3	3	8	SS-7	1.7-2.0	0	1	46	37	16	NP	NP	21	A-4a (4)	
		14																
@15.0'; SS-8 CONTAINS MANY DECAYED ROOTS		15		WOH	3	100	SS-8	0.25-0.6	-	-	-	-	-	-	-	-	30	A-4a (V)
@17.0'; SS-9 CONTAINS FEW SAND LENSES		16		WOH	2													
		17																
		18		2	1	4	SS-9	0.7-1.0	-	-	-	-	-	-	-	-	29	A-4a (V)
	905.2	19																
		20																
STIFF TO VERY STIFF, GRAYISH BROWN, SILT AND CLAY, LITTLE SAND, TRACE GRAVEL, MOIST		21		4	3	11	SS-10	1.5-3.5	3	7	13	39	38	28	16	12	17	A-6a (9)
		22																
VERY STIFF, GRAYISH BROWN, SANDY SILT, "AND" CLAY, TRACE GRAVEL, DAMP	902.7	23		3	3	11	SS-11	2.0-3.1	2	8	13	41	36	26	16	10	15	A-4a (8)
		24																
MEDIUM STIFF TO VERY STIFF, GRAYISH BROWN, SILT AND CLAY, LITTLE SAND, TRACE GRAVEL, DAMP TO MOIST	900.2	25		3	4	14	SS-12	1.2-2.2	1	7	12	37	43	28	17	11	18	A-6a (8)
		26																
		27																
		28		2	3	11	SS-13	0.75-1.5	-	-	-	-	-	-	-	-	17	A-6a (V)
	895.2	29																
		30		3	5	13	SS-14	0.9-1.25	-	-	-	-	-	-	-	-	32	A-6b (V)
		31																
	892.7	32																
MEDIUM STIFF TO STIFF, GRAYISH BROWN, SILTY CLAY, TRACE SAND, WET		33		7	8	21	SS-15	-	14	33	34	14	5	NP	NP	14	A-3a (0)	
		34																
		35		4	3	13	SS-16	-	-	-	-	-	-	-	-	-	17	A-3a (V)
		36																
		37																
		38																
	886.7	39																
MEDIUM STIFF TO HARD, GRAYISH BROWN, SANDY SILT, SOME TO "AND" CLAY, TRACE GRAVEL, DAMP TO MOIST		40		9	3	9	SS-17	1.2-2.25	1	5	4	46	44	29	20	9	21	A-4a (8)
		41																
		42																
		43																
		44																
		45		3	4	12	SS-18	0.5-1.75	-	-	-	-	-	-	-	-	26	A-4a (V)
		46																
		47																
		48																
		49																
		50		5	7	25	SS-19	3.0-4.5+	10	9	17	43	21	20	15	5	12	A-4a (6)
		51																
		52																
		53																
		54																
		55																
		56		7	12	33	SS-20	2.2-4.5	-	-	-	-	-	-	-	-	12	A-4a (V)
		57																
		58																
	866.4	59																
DENSE GRAY AND BROWN, GRAVEL WITH SAND TRACE SILT, TRACE CLAY, WET																		

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT GDT - 11/17/15 11:13 - \COLUMBUS\LAB\ACTIVE PROJECTS\MED-18-13-54 (ODOT)\GINT FILES\MED-18-13-54 REVISED08182015.GPJ

PID: 92953	BR ID: MED-18-1403	PROJECT: MED-18-12.99	STATION / OFFSET: 141+79.56, 31.0 RT	START: 7/6/15	END: 7/6/15	PG 2 OF 2	B-021-0-14					
MATERIAL DESCRIPTION AND NOTES		ELEV: 864.7	SPT/ RQD	GRADATION (%)		ODOT CLASS (GI)						
DENSE, GRAY AND BROWN, GRAVEL WITH SAND TRACE SILT, TRACE CLAY, WET (continued)		DEPTHS	N ₆₀	GR	CS	FS	SI	CL	LL	PL	PI	WC
			REC SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI
EOB		61	20	32	28	18	16	6	NP	NP	NP	12
			17									
			12									



NOTES: GROUNDWATER ENCOUNTERED AT 20.0' DURING DRILLING. 18.0' UPON COMPLETION. CAVE DEPTH 39.0'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SOIL CUTTINGS

STANDARD ODOT BORING LOG (11 X 17) - OH DOT GDT - 11/17/15 11:13 - \COLUMBUSLAB\ACTIVE PROJECTS\MED-18-13.54 (ODOT)\GINT FILES\MED-18-13.54 REVISED08182015.GPJ

PROJECT: MED-18-12.99 TYPE: CULVERT		DRILLING FIRM / OPERATOR: BARR / J.HODGES		DRILL RIG: CME 55X		STATION / OFFSET: 911+83.21 RT		EXPLORATION ID										
PID: 92953 BR ID: 7/8/15		SAMPLING FIRM / LOGGER: BARR / D. LYON		HAMMER: CME AUTOMATIC		ALIGNMENT: RIVER STYX RD		B-043-0-14										
START: 7/7/15 END: 7/8/15		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/26/14		ELEVATION: 944.8 (MSL) EOB: 31.5 ft.		PAGE										
SAMPLING METHOD: SPT		SPT		ENERGY RATIO (%): 81.2		COORD: 41.133550, -81.812528		1 OF 1										
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)	BACK FILL
6.5" TOPSOIL		944.2	1	3	8	SS-1	1.25-4.5+	-	-	-	-	-	-	-	-	19	A-6a (V)	CLAY
STIFF TO HARD, BROWN MOTTLED WITH BLACK, SILT AND CLAY, SOME SAND, TRACE GRAVEL, MOIST (FILL)		943.3	2	4	11	SS-2	1.75-4.0	7	20	32	28	33	18	15	-	18	A-6a (7)	CLAY
STIFF TO VERY STIFF, DARK GRAY MOTTLED WITH BROWN, SILT AND CLAY SOME SAND, LITTLE GRAVEL, DAMP TO MOIST			3	2	7	SS-3	2.5-4.0	-	-	-	-	-	-	-	-	-	A-6a (V)	CLAY
@4.5'; SS-4 BECOMES SOFT TO STIFF			4	3	7	SS-3	2.5-4.0	-	-	-	-	-	-	-	-	-	A-6a (V)	CLAY
			5	1	4	SS-4	0.25-1.5	11	12	19	30	28	17	12	-	21	A-6a (5)	CLAY
		938.8	6	2	7	SS-5	0.25-1.0	-	-	-	-	-	-	-	-	-	A-4a (V)	CLAY
SOFT TO STIFF, DARK GRAY TO DARK GRAYISH BROWN, SANDY SILT, LITTLE CLAY, TRACE GRAVEL, CONTAINS WOOD FRAGMENTS, MOIST			7	2	7	SS-5	0.25-1.0	-	-	-	-	-	-	-	-	-	A-4a (V)	CLAY
			8	1	4	SS-6	0.25-0.75	-	-	-	-	-	-	-	-	-	A-4a (V)	CLAY
		935.3	9	2	4	SS-6	0.25-0.75	-	-	-	-	-	-	-	-	-	A-4a (V)	CLAY
STIFF TO HARD, GRAY, SILT AND CLAY TRACE TO LITTLE SAND, TRACE GRAVEL, MOIST			10	3	15	SS-7	2.5-3.75	-	-	-	-	-	-	-	-	-	A-6a (V)	CLAY
			11	4	7	SS-7	2.5-3.75	-	-	-	-	-	-	-	-	-	A-6a (V)	CLAY
			12															CLAY
			13	4	20	SS-8	3.75-4.5+	1	0	1	64	34	27	16	11	17	A-6a (8)	CLAY
			14	6	9	SS-8	3.75-4.5+	-	-	-	-	-	-	-	-	-		CLAY
			15	4	16	SS-9	1.25-2.0	4	5	9	37	45	30	16	14	19	A-6a (10)	CLAY
			16	5	7	SS-9	1.25-2.0	-	-	-	-	-	-	-	-	-		CLAY
			17															CLAY
			18	4	18	SS-10	1.5-4.0	-	-	-	-	-	-	-	-	-	A-6a (V)	CLAY
			19	5	8	SS-10	1.5-4.0	-	-	-	-	-	-	-	-	-	A-6a (V)	CLAY
			20	4	16	SS-11	1.0-2.25	-	-	-	-	-	-	-	-	-	A-6a (V)	CLAY
		922.8	21	5	7	SS-11	1.0-2.25	-	-	-	-	-	-	-	-	-	A-6a (V)	CLAY
STIFF TO VERY STIFF, GRAY, SANDY SILT, SOME CLAY, DAMP TO MOIST			22															CLAY
			23	2	12	SS-12	1.5-3.5	-	-	-	-	-	-	-	-	-	A-4a (V)	CLAY
			24	2	7	SS-12	1.5-3.5	-	-	-	-	-	-	-	-	-	A-4a (V)	CLAY
			25	3	8	SS-13	1.0-2.25	0	2	19	46	33	27	21	6	29	A-4a (8)	CLAY
			26	3	3	SS-13	1.0-2.25	-	-	-	-	-	-	-	-	-		CLAY
			27															CLAY
			28	3	14	SS-14	1.0-2.25	-	-	-	-	-	-	-	-	-	A-4a (V)	CLAY
			29	4	6	SS-14	1.0-2.25	-	-	-	-	-	-	-	-	-	A-4a (V)	CLAY
			30															CLAY
		913.3	31	4	20	SS-15	3.25-4.5+	-	-	-	-	-	-	-	-	14	A-4a (V)	CLAY
			EOB	6	9	SS-15	3.25-4.5+	-	-	-	-	-	-	-	-	-	A-4a (V)	CLAY

NOTES: GROUNDWATER ENCOUNTERED AT 11.0' DURING DRILLING. 10.0" UPON COMPLETION. CAVE DEPTH 10.5'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 0.5 BAG BENTONITE GROUT. SHOVELED SOIL CUTTINGS