

LEGEND – BORING LOG TERMINOLOGY

Explanation of each column, progressing from left to right

1. Depth (in feet) – refers to distance below the ground surface.
2. Elevation (in feet) – is referenced to mean sea level, unless otherwise noted.
3. Standard Penetration (N) – the number of blows required to drive a 2-inch O.D., 1-3/8 inch I.D., split-barrel sampler, using a 140-pound hammer with a 30-inch free fall. The blows are recorded in 6-inch drive increments. Standard penetration resistance is determined from the total number of blows required for one foot of penetration by summing the second and third 6-inch increments of an 18-inch drive.

50/n – indicates number of blows (50) to drive a split-barrel sampler a certain number of inches (n) other than the normal 6-inch increment.
4. The length of the sampler drive is indicated graphically by horizontal lines across the “Standard Penetration” and “Recovery” columns.
5. Sample recovery from each drive is indicated numerically in the column headed “Recovery”.
6. The drive sample location is designated by the heavy vertical bar in the “Sample No., Drive” column.
7. The length of hydraulically pressed “Undisturbed” samples is indicated graphically by horizontal lines across the “Press” column.
8. Sample numbers are designated consecutively, increasing in depth.
9. Soil Description
 - a. The following terms are used to describe the relative compactness and consistency of soils:

Granular Soils – Compactness

<u>Term</u>	<u>Blows/Foot Standard Penetration</u>
Very Loose	less than 5
Loose	5 – 10
Medium Dense	11 – 30
Dense	31 – 50
Very Dense	over 50

Cohesive Soils – Consistency

<u>Term</u>	<u>Unconfined Compression tons/sq.ft.</u>	<u>Blows/Foot Standard Penetration</u>	<u>Hand Manipulation</u>
Very Soft	less than 0.25	less than 2	Easily penetrated 2-in. by fist
Soft	0.25 – 0.50	2 – 4	Easily penetrated 2-in. by thumb
Medium Stiff	0.50 – 1.0	5 – 8	Penetrated by thumb with moderate effort
Stiff	1.0 – 2.0	9 – 15	Readily indented by thumb but not penetrated
Very Stiff	2.0 – 4.0	16 – 30	Readily indented by thumbnail
Hard	over 4.0	over 30	Indented with difficulty by thumbnail

- b. Color – If a soil is a uniform color throughout, the term is single, modified by such adjective as light and dark. If the predominant color is shaded by a secondary color, the secondary color precedes the primary color. If two major and distinct colors are swirled throughout the soil, the colors are modified by the term “mottled”.
- c. Texture is based on the Ohio Department of Transportation Classification System. Soil particle size definitions are as follows:

<u>Description</u>	<u>Size</u>	<u>Description</u>	<u>Size</u>
Boulders	Larger than 12”	Sand – Coarse	2.0 mm to 0.42 mm
Cobbles	12” to 3”	– Fine	0.42 mm to 0.074 mm
Gravel – Coarse	3” to ¾”	Silt	0.074 mm to 0.005 mm
– Fine	¾” to 2.0 mm	Clay	smaller than 0.005 mm

- d. The main soil component is listed first. The minor components are listed in order of decreasing percentage of particle size.
- e. Modifiers to main soil descriptions are indicated as a percentage by weight of particle sizes.

trace	0 to 10%
little	10 to 20%
some	20 to 35%
"and"	35 to 50%

f. Moisture content of **cohesionless soils** (sands and gravels) is described as follows:

<u>Term</u>	<u>Relative Moisture or Appearance</u>
Dry	Soil leaves no moisture when pressed between fingers
Damp	Soil leaves very little moisture when pressed between fingers.
Moist	Soil leaves small amount of moisture when pressed between fingers.
Wet	The pore space is filled with water and water can be poured from sample with ease.

g. The moisture content of **cohesive soils** (silts and clays) is expressed relative to plastic properties.

<u>Term</u>	<u>Relative Moisture or Appearance</u>
Dry	Brittle to powdery; Moisture content well below plastic limit
Damp	Moisture content below plastic limit
Moist	Moisture content above plastic limit to -3% liquid limit
Wet	Moisture content near or above liquid limit

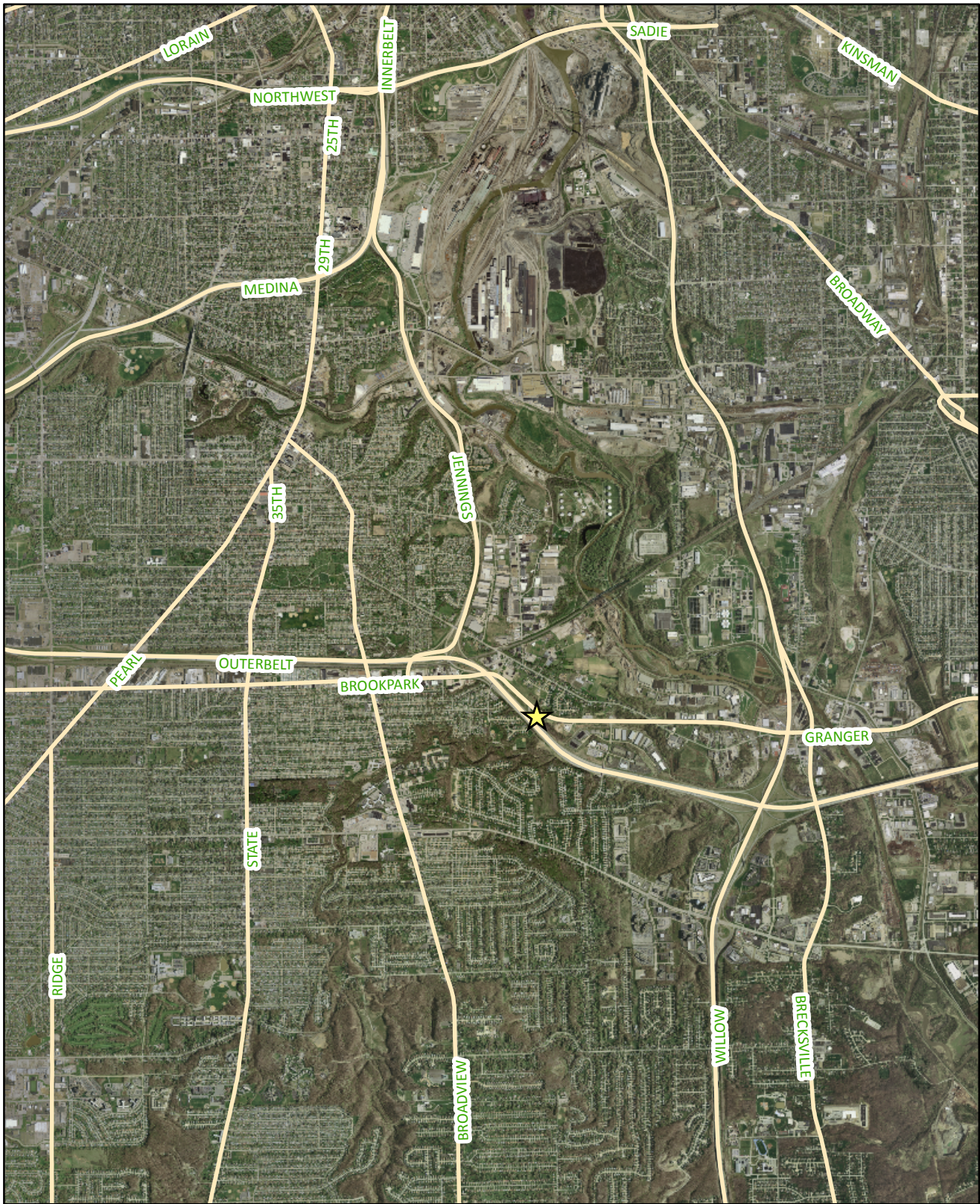
10. Rock Hardness and Rock Quality Designation

a. The following terms are used to describe the relative strength of the **bedrock**.

<u>Term</u>	<u>Description</u>
Very Weak	Core can be carved with a knife and scratched by fingernail. Can be excavated readily with a point of a pick. Pieces 1-inch or more in thickness can be broken by finger pressure.
Weak	Core can be grooved or gouged readily by a knife or pick. Can be excavated in small fragments by moderate blows of a pick point. Small, thin pieces can be broken by finger pressure.
Slightly Strong	Core can be grooved or gouged 0.05 inch deep by firm pressure of a knife or pick point. Can be excavated in small chips to pieces about 1-inch maximum size by hard blows of the point of a geologist's pick.
Moderately Strong	Core can be scratched with a knife or pick. Grooves or gouges to ¼" deep can be excavated by hand blows of a geologist's pick. Requires moderate hammer blows to detach hand specimen.
Strong	Core can be scratched with a knife or pick only with difficulty. Requires hard hammer blows to detach hand specimen. Sharp and resistant edges are present on hand specimen.
Very Strong	Core cannot be scratched by a knife or sharp pick. Breaking of hand specimens requires hard repeated blows of the geologist hammer.
Extremely Strong	Core cannot be scratched by a knife or sharp pick. Chipping of hand specimens requires hard repeated blows of the geologist hammer.

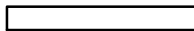
b. Rock Quality Designation, RQD – This value is expressed in percent and is an indirect measure of rock soundness. It is obtained by summing the total length of all core pieces which are at least four inches long, and then dividing this sum by the total length of the core run.

- 11. Gradation – when tests are performed, the percentage of each particle size is listed in the appropriate column (defined in Item 9c).
- 12. When a test is performed to determine the natural moisture content, liquid limit moisture content, or plastic limit moisture content, the moisture content is indicated in tabular form.
- 13. The corrected standard penetration (N_{60}) value in blows per foot is indicated in tabular form.



SCALE

0.9



Miles

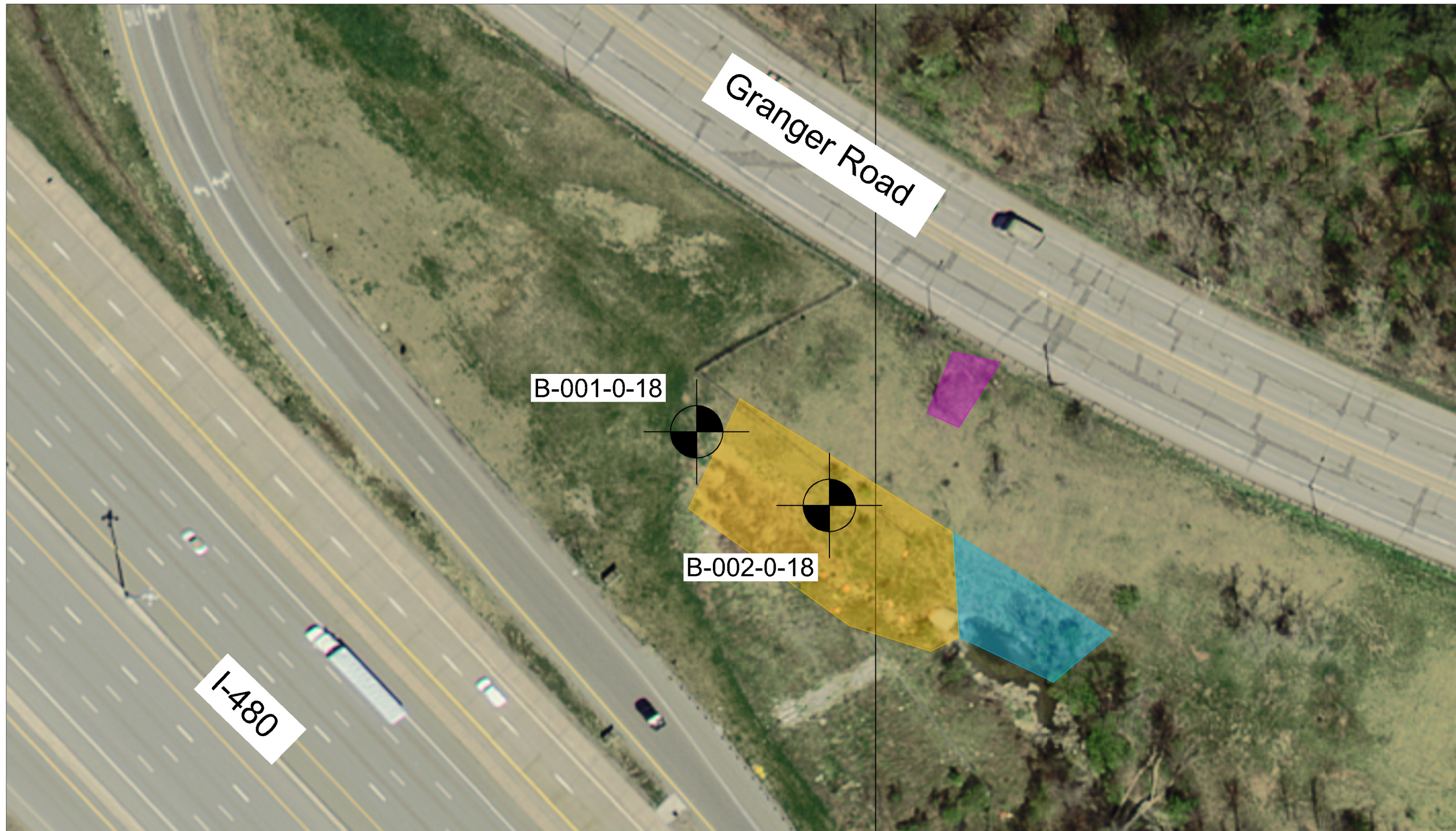


VICINITY MAP

CUY-90-18.22 VAR (CUY-480)

DLZ PROJECT NUMBER	1821-3010.01
DRAWN BY (DATE)	RJH (08-23-18)
CHECKED BY (DATE)	HJH (08-24-18)





Legend							
	Boring Location		Northeast Bank (Creek Slope)		Northwest Bank (Headwall)		Upper Slope



ODOT - District 12
CUY IR 090 18.22/VAR
CUY-480-1628 Boring Location Site Plan

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/13/20 13:58 - X:\SHARED\DISCIPLINE\GEOTECH\PROJECTS\1821\301001\1821-301001 CUY-90-1822-VAR.GPJ

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	BACK FILL		
								GR	CS	FS	SI	CL	LL	PL	PI					
POSSIBLE FILL: Very stiff gray SANDY SILT (A-4a), trace gravel; contains piece of wood; damp to moist. (continued) SS-13 and SS-14 contain roots.	687.2	31	3																	
		32	5	20	89	SS-13	3.25	-	-	-	-	-	-	-	19	A-4a (V)				
		33																		
		34	5	7	21	89	SS-14	-	1	4	15	43	37	26	17	9	19	A-4a (8)		
		35		9																
Hard brown SILTY CLAY (A-6b), trace to little fine to coarse sand; damp.	681.2	36	5	9	28	89	SS-15	-	-	-	-	-	-	-	-	-	13	A-6b (V)		
		37		12																
		38																		
		39	5	7	27	89	SS-16	4.5+	-	-	-	-	-	-	-	-	16	A-6b (V)		
		40		13																
SHALE, weathered, very weak, gray.	673.7	41	6	10	29	89	SS-17	4.5+	-	-	-	-	-	-	-	-	16	A-6b (V)		
		42		12																
		43																		
		44	49	50/0"	-	400	SS-18	-	-	-	-	-	-	-	-	-	-	-	Rock (V)	
		45																		
		46	50/4"	-	100	SS-19	-	-	-	-	-	-	-	-	-	-	-	-	Rock (V)	
		47																		
		48																		
		49	50/4"	-	100	SS-20	-	-	-	-	-	-	-	-	-	-	-	-	Rock (V)	
		50																		
51	50/5"	-	100	SS-21	-	-	-	-	-	-	-	-	-	-	-	-	Rock (V)			
52																				
53																				
54	50/3"	-	117	SS-22	-	-	-	-	-	-	-	-	-	-	-	-	Rock (V)			
55																				
56	50/3"	-	133	SS-23	-	-	-	-	-	-	-	-	-	-	-	-	Rock (V)			
57																				
58																				
59	50/3"	-	100	SS-24	-	-	-	-	-	-	-	-	-	-	-	-	Rock (V)			
60	50/2"	-	100	SS-25	-	-	-	-	-	-	-	-	-	-	-	-	Rock (V)			

687.2

681.2

673.7

657.0

TR

EOB

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: NOT RECORDED

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 11/13/20 13:58 - X:\SHARED\DISCIPLINE\GEOTECH\PROJECTS\1821\301001\1821-301001 CUY-90-1822-VAR.GPJ

PID: 92069		SFN:		PROJECT: CUY-90-18.22/VAR		STATION / OFFSET: 45+19, 61' LT.		START: 7/24/18		END: 7/24/18		PG 2 OF 2		B-002-0-18						
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	BACK FILL
										GR	CS	FS	SI	CL	LL	PL	PI			
Stiff brown and gray SANDY SILT (A-4a); damp. (continued)			678.4																	
Medium dense brown and reddish brown GRAVEL WITH SAND, SILT, AND CLAY (A-2-6); possible decomposed shale; damp.			677.4	31	2															
				32	4	11	89	SS-13	2.25	-	-	-	-	-	-	-	-	19	A-2-6 (V)	
			674.9	33																
SHALE, weathered, very weak, gray.				34	45	-	89	SS-14	-	-	-	-	-	-	-	-	-	-	Rock (V)	
				35	50/3"															
			671.6	36	43	-	89	SS-15	-	-	-	-	-	-	-	-	-	-	Rock (V)	
				EOB	50/3"															
NOTES: NONE																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: NOT RECORDED																				