

PROJECT DESCRIPTION

THE PROJECT CONSISTS OF PLACING A STRUCTURE FOR SR 823 RAMP C OVER FAIRGROUND ROAD. THE STRUCTURE AS PLANNED IS A SINGLE SPAN STRUCTURE USING MSE WALLS TO HOLD BACK THE ROADWAY EMBANKMENTS AND CONTAIN THE ABUTMENTS.

HISTORIC RECORDS

HISTORIC BORING RECORDS FOR THE AREA WERE REQUESTED FROM THE ODOT OFFICE OF GEOTECHNICAL ENGINEERING AND THE DISTRICT, HOWEVER, NO SUCH RECORDS EXISTED.

GEOLOGY

GENERALIZED GEOLOGICAL REFERENCES REPORT THAT THE SITE LIES ON THE EAST SIDE OF THE FLOOD PLAIN OF THE TEAYS STAGE, PORTSMOUTH RIVER, WHICH IS CURRENTLY THE EAST SIDE OF THE SCIOTO RIVER VALLEY. THIS AREA IS UNGLACIATED, HOWEVER THE SCIOTO RIVER VALLEY IS FILLED WITH ILLINOIAN AND WISCONSIN GLACIAL OUTWASH TO DEPTHS OF UP TO 90 FEET.

THE AREA OF THESE STRUCTURES IS CHARACTERIZED BY GENTLY TO MODERATELY SLOPING TOPOGRAPHY RISING FROM OF THE FLOODPLAIN OF THE SCIOTO RIVER. THE PROJECT AREA IS LOCATED IN THE SHAWNEE-MISSISSIPPIAN PLATEAU OF THE UNGLACIATED PORTION OF THE APPALACHIAN PLATEAU PHYSIOGRAPHIC REGION. THE SHAWNEE-MISSISSIPPIAN PLATEAU IS CHARACTERIZED BY DEVONIAN AGED TO PENNSYLVANIAN AGED ROCKS AND CONTAINS RESIDUAL, COLLUVIAL, ALLUVIAL, AND LACUSTRINE SOILS.

RECONNAISSANCE

SEVERAL SITE RECONNAISSANCE VISITS WERE MADE BETWEEN JUNE 2004 AND SEPTEMBER 2007. THE SURROUNDING AREA IS UTILIZED FOR AGRICULTURAL PURPOSES AND COMMERCIAL STORAGE. GROUND COVER IN THE PROJECT AREA CONSISTS OF GRASS, BRUSH, AND OCCASIONAL SMALL TREES.

SUBSURFACE EXPLORATION

THE SUBSURFACE EXPLORATION CONSISTED OF DRILLING THREE BORINGS. BORINGS TR-54, AND B-1116 WERE DRILLED ON MARCH 16 AND SEPTEMBER 28, 2005 FOR A PRELIMINARY BRIDGE CONDIGURATION. BORINGS B-46 WAS DRILLED FOR THE CURRENTLY PROPOSED BRIDGE ON JUNE 15, 2007. THE BORINGS WERE DRILLED WITH BOTH TRUCK AND ATV MOUNTED ROTARY DRILL RIGS, USING 3 1/4 -INCH I.D. HOLLOW STEM AUGERS TO ADVANCE THE HOLES THROUGH SOIL. DISTURBED SOIL SAMPLES WERE OBTAINED IN ACCORDANCE WITH THE STANDARD PENETRATION TEST (AASHTO T206) AT 1.5 TO 5.0-FOOT INTERVALS FOR THE FULL DEPTH OF THE SOIL PORTION OF THE BORINGS. UNDISTURBED SOIL SAMPLES WERE OBTAINED AT THE DEPTHS SHOWN ON THE LOGS AND IN THE PROFILE, IN ACCORDANCE WITH AASHTO T207. WHERE BEDROCK WAS ENCOUNTERED, THE BORINGS WERE ADVANCED AND THE ROCK WAS SAMPLED USING A TYPE NO SERIES CORE BARREL, WATER METHOD.

EXPLORATION FINDINGS

TEST BORINGS DISCLOSED PREDOMINANTLY STIFF TO HARD, COHESIVE NEAR SURFACE SOILS CONSISTING OF SOILS RANGING FROM A-4B TO A-6B. BENEATH THE COHESIVE LAYER, BORINGS GENERALLY ENCOUNTERED LOOSE TO MEDIUM DENSE COHESIONLESS SOILS RANGING FROM A-3A TO A-2-6 TO THE TOP OF BEDROCK, AT DEPTHS RANGING FROM 13.6 TO 20.0 FEET.

BORINGS DRILLED NEAR THE STRUCTURE ENCOUNTERED BEDROCK CONSISTING OF SOFT TO MEDIUM HARD GRAY SHALE AND MEDIUM HARD GRAY, ARGILLACEOUS SANDSTONE OF THE CUYAHOGA FORMATION.

IN BORINGS WHERE SEEPAGE WAS OBSERVED, IT WAS FIRST OBSERVED AT DEPTHS RANGING FROM 15.5 TO 16.0 FEET BELOW THE GROUND SURFACE. SEEPAGE WAS NOT OBSERVED IN BORING TR-54. PRIOR TO CORING, WATER LEVELS WERE OBSERVED IN BORING B-1116 AT 16.0 FEET. FINAL WATER LEVELS INCLUDE WATER THAT WAS USED DURING ROCK CORING OPERATIONS AND CONSEQUENTLY MAY NOT BE REPRESENTATIVE OF ACTUAL GROUNDWATER CONDITIONS.

SPECIFICATIONS

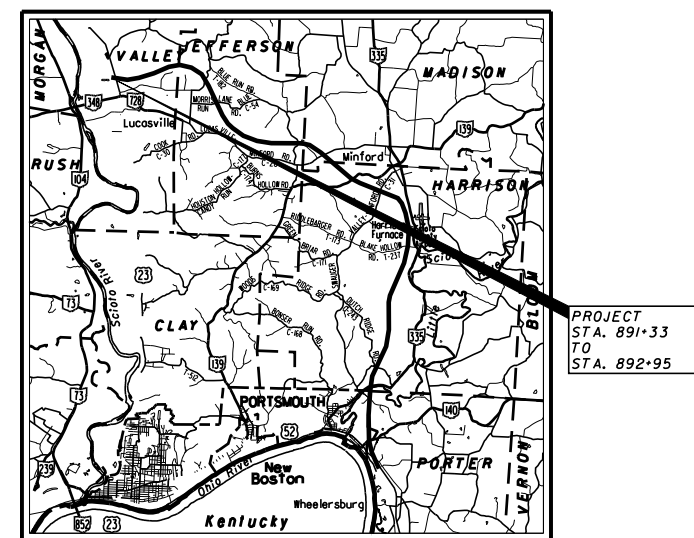
THIS GEOTECHNICAL EXPLORATION WAS PERFORMED IN ACCORDANCE WITH THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, OFFICE OF GEOTECHNICAL ENGINEERING, SPECIFICATIONS FOR GEOTECHNICAL EXPLORATIONS, DATED NOVEMBER 1995.

AVAILABLE INFORMATION

ALL AVAILABLE SOIL AND BEDROCK INFORMATION THAT CAN BE CONVENIENTLY SHOWN ON THE SOIL PROFILE SHEETS HAS BEEN SO REPORTED. ADDITIONAL SUBSURFACE 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.

DESCRIPTION		ODOT CLASS	CLASSIFIED MECH./VISUAL	
	Gravel with Sand	A-1-b	-	1
	Gravel with Sand, Silt, and Clay	A-2-6	3	4
	Coarse and Fine Sand	A-3a	2	5
	Sandy Silt	A-4a	1	1
	Silt	A-4b	2	1
	Silt and Clay	A-6a	2	1
	Silty Clay	A-6b	3	2
TOTAL			13	15
	Sandstone	VISUAL		
	Shale	VISUAL		
	Weathered Shale	VISUAL		
	Topsoil	VISUAL		

	BORING LOCATION - PLAN VIEW
	DRIVE SAMPLE AND/OR CORE BORING LOCATION PLOTTED TO VERTICAL SCALE ONLY
	INDICATES FREE WATER ELEVATION
	INDICATES STATIC WATER ELEVATION
	TOP OF ROCK
	WATER CONTENT NEARLY EQUAL TO OR GREATER THAN LIQUID LIMIT
	FIGURES BESIDE THE BORING IN PROFILE INDICATE THE NUMBER OF BLOWS FOR STANDARD PENETRATION TEST X = NUMBER OF BLOWS FOR FIRST 6 INCHES Y = NUMBER OF BLOWS FOR SECOND 6 INCHES Z = NUMBER OF BLOWS FOR THIRD 6 INCHES
	INDICATES NUMBER OF BLOWS (50) TO DRIVE A SPLIT-BARREL SAMPLER A DEPTH OF (n) INCHES OTHER THAN THE NORMAL 6 INCH INCREMENT.



LOCATION MAP



PARTICLE SIZE DEFINITIONS

12"	3"	2.0 mm	0.42 mm	0.074 mm	0.005 mm	
Boulders	Cobbles	Gravel	Coarse Sand	Fine Sand	Silt	Clay
		No. 10 SIEVE	No. 40 SIEVE	No. 200 SIEVE		

DLZ
660 HARTLEY ROAD • COLUMBUS, OHIO 43229

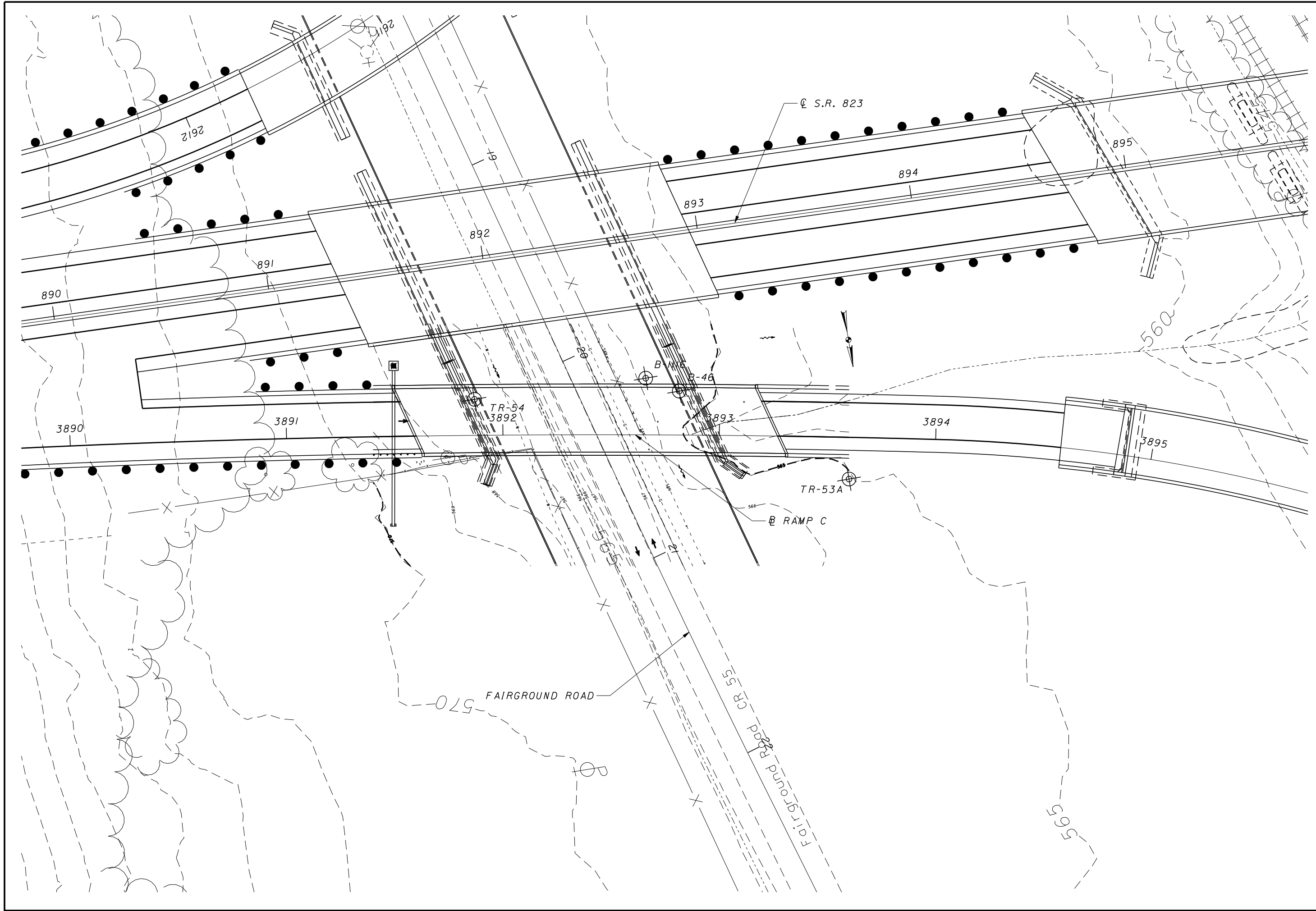
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STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. SCI-823-1595
RAMP C OVER FAIRGROUNDS ROAD

SCI-823-10.13

1 / 5

RECON. - AMJ & SJR 09/05 to 09/06
 DRILLING - DW 08/19 TO 08/19/04 & 06/13 TO 06/14/06
 DRAWN - RLS & AMJ 3/09 TO 4/09
 REVIEWED - AEN 4/20/09



CALCULATED
 CHECKED

HORIZONTAL
 SCALE IN FEET

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RAMP C OVER FAIRGROUNDS ROAD

SCI-823-10.13

Client: TranSystems, Inc.		Project: SCI-823-0.00		Job No. 0121-3070.03								
LOG OF: Boring TR-54		Location: Sta. 3891+87.0, 18.7 ft. LT of US 23 Ramp C BL		Date Drilled: 3/18/05								
Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No.	Hand Penetrometer (tsf)	WATER OBSERVATIONS: Water seepage at: None Water level at completion: None (prior to coring) 11.0' (includes drilling water)	GRADATION					STANDARD PENETRATION (N) Natural Moisture Content, % - ● PL ——— LL Blows per foot - ○ 10 20 30 40
						% Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	
0.2	566.9	2	14	1	1.0	Topsoil - 3" Stiff to very stiff brown SILTY CLAY (A-6b), trace fine sand; damp. @ 0.0'-2.5', contains roots.						
5	561.4	5	17	2	3.5	Very stiff brown SILT (A-4b), some clay, little fine sand; damp.	0	0	4	61	35	
5.5	561.4	6	18	3	2.25		0	0	12	67	21	
8.0	558.9	3	18	3	2.25	Loose dark brown COARSE AND FINE SAND (A-3a), trace to little clay, trace gravel; damp.						
10		1	11	4								
13.6	553.3	2	13	5		Severely weathered gray SHALE.	7	38	37	18		
15.0	551.9	35	14	6								
20		Core 120"	Rec 120"	RQD 83%	R-1	Medium hard gray SHALE; arenaceous, decomposed to highly weathered, laminated, moderately fractured. @ 15.0'-17.3', broken with high angles fractures and thin clay seams. @ 18.9'-19.0', 20.6'-20.9', high angle fractures.						
22.6	544.3					Hard gray SANDSTONE; very fine to fine grained, slightly weathered, argillaceous, medium bedded, slightly fractured. Hard gray SHALE; highly weathered, arenaceous, very thinly bedded, slightly fractured.						
23.5	543.4											
25.0	541.9					Bottom of Boring - 25.0'						

Client: TranSystems, Inc.		Project: SCI-823-0.00		Job No. 0121-3070.03								
LOG OF: Boring B-1116		Location: Sta. 3892+65.9, 26.2 ft. LT of US 23 Ramp C BL		Date Drilled: 9/27/05								
Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No.	Hand Penetrometer (tsf)	WATER OBSERVATIONS: Water seepage at: 16.0' Water level at completion: 17.5' (prior to coring) 17.5' (inside hollowstem augers)	GRADATION					STANDARD PENETRATION (N) Natural Moisture Content, % - ● PL ——— LL Blows per foot - ○ 10 20 30 40
						% Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	
0.3	565.5	18	9	1		Topsoil - 4" Dense grayish brown SANDY SILT (A-4a), trace clay; possible boulder; dry.						
3.0	562.8	8	8	2		Medium dense brown SILT (A-4b), some clay, trace fine to coarse sand; damp.	0	2	7	66	25	
5		6	13	3								
8.0	557.8	4	13	4		Loose to medium dense reddish brown GRAVEL WITH SAND, SILT, AND CLAY (A-2-6); damp to moist. @ 11.0', moist to wet. @ 13.5'-17.5', very loose, wet.	11	37	24	12	16	
10		3	13	5								
15		2	13	6		Severely weathered gray and black SHALE.						
18.0	547.8	1	13	7								
20.0	545.8	12	9	8		Hard gray SILTY CLAY (A-6b), trace fine to coarse sand, trace gravel; dry to damp.	1	5	3	53	38	
25		50/4	4	9								
30	535.8	50/4	4	10		Medium hard black SHALE; slightly to moderately weathered, laminated, slightly fractured.						
35		50/4	4	11								
40		50/4	4	12		Bottom of Boring - 48.0'						
45		50/4	4	13								
48.0	517.8	Core 120"	Rec 104"	RQD 21%	R1							

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