

PROJECT DESCRIPTION

THE PROJECT CONSISTS OF PLACING TWIN STRUCTURES FOR SR 823 OVER FAIRGROUND ROAD. THE STRUCTURES AS PLANNED, ARE ALL SINGLE SPAN STRUCTURES 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 SEVEN BORINGS. BORINGS TR-55, TR-55A, AND TR-56 WERE DRILLED ON MARCH 15 AND 16, 2005 AND JULY 8, 2004. BORINGS B-1143 THROUGH 1146 WERE DRILLED ON SEPTEMBER 22 AND OCTOBER 13, 2005. 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 VERY STIFF, COHESIVE SOILS RANGING FROM A-4A TO A-7-6 FROM THE GROUND SURFACE TO DEPTHS OF 8 TO 13 FEET. BENEATH THE COHESIVE LAYER, BORINGS GENERALLY ENCOUNTERED VERY LOOSE TO MEDIUM DENSE COHESIONLESS SOILS RANGING FROM A-3A TO A-1B TO THE TOP OF BEDROCK.

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 10.5 TO 16.0 FEET BELOW THE GROUND SURFACE. SEEPAGE WAS NOT OBSERVED IN BORING TR-56. NO GROUNDWATER WAS OBSERVED IN THE BORINGS PRIOR TO BEGINNING ROCK CORING OPERATIONS.

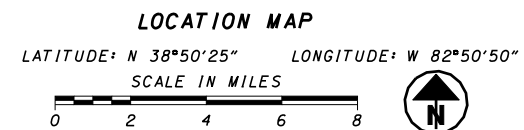
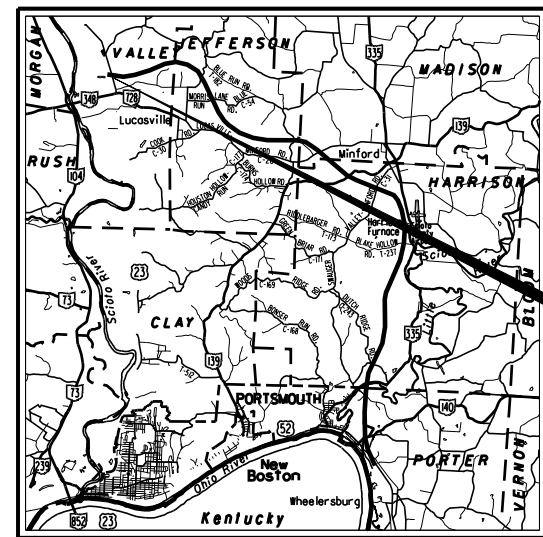
SPECIFICATIONS

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.

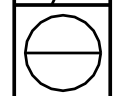
DESCRIPTION		ODOT CLASS	CLASSIFIED MECH./VISUAL	
	Gravel with Sand	A-1-b	3	7
	Gravel with Sand, Silt, and Clay	A-2-6	1	2
	Coarse and Fine Sand	A-3a	2	4
	Sandy Silt	A-4a	1	5
	Silt	A-4b	1	2
	Silt and Clay	A-6a	2	12
	Silty Clay	A-6b	2	6
TOTAL			12	38
	Sandstone	VISUAL		
	Shale	VISUAL		
	Weathered Sandstone	VISUAL		
	Weathered Shale	VISUAL		
	Weathered Siltstone	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.			

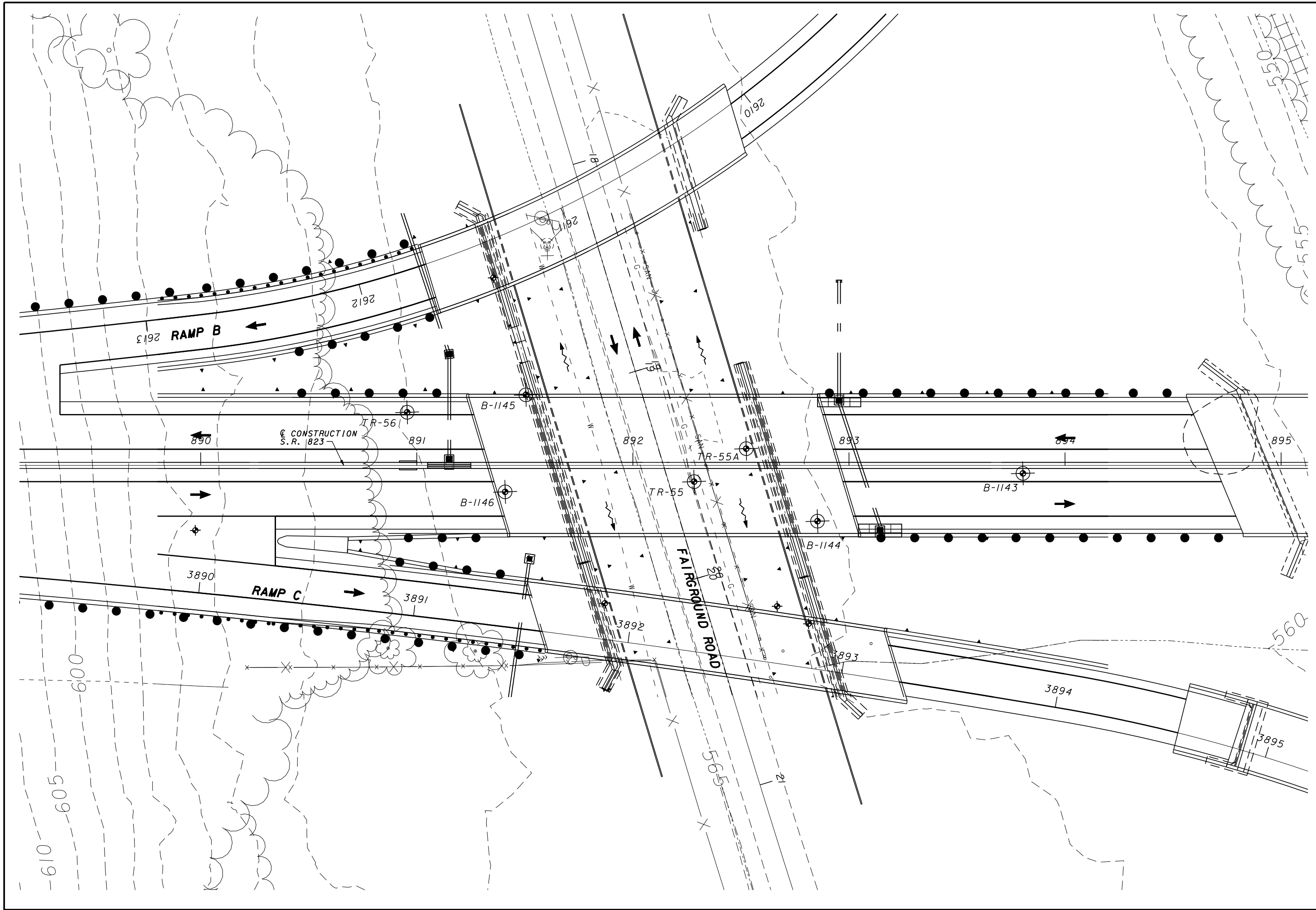


PARTICLE SIZE DEFINITIONS

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		

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





0 20 40
HORIZONTAL
SCALE IN FEET

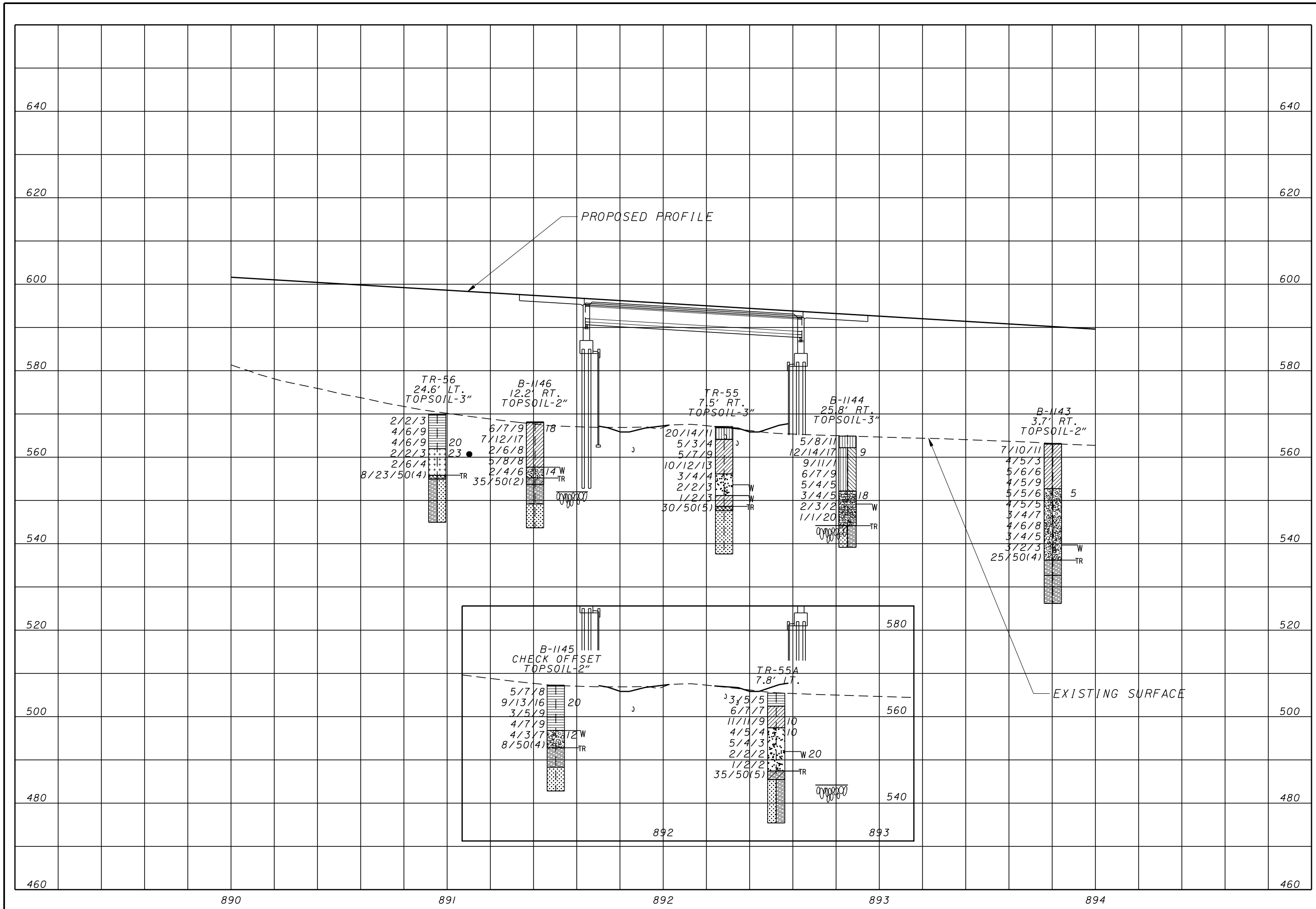
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STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. SCI-823-1594
SR 823 OVER FAIRGROUND ROAD

SCI-823-10.13

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890

891

892

893

894

460

460

500

500

540

540

580

580

620

620

640

640

Client: TranSystems, Inc.		Project: SCI-823-0.00		Job No. 0121-3070.03													
LOG OF: Boring TR-56		Location: Sta. 890+95.4, 24.6 ft. LT of SR 823 CL		Date Drilled: 3/16/05													
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) 7.5' (includes drilling water)	GRADATION					STANDARD PENETRATION (N)					
							% Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	Natural Moisture Content, % - PL ————— LL		Blows per foot -	LL	
DESCRIPTION																	
0.2	570.0																
2		2	15		2.5												
3		3	15														
4		6	17		4.5+												
5		9	17														
6		6	16		4.25												
8.0	562.0																
10		2	18														
12		6	9														
14.1	555.9	8	23														
15.0	555.0	50/4	15														
20																	
		Core 120"	Rec 120"														
28.5	545.0																
30																	

Client: TranSystems, Inc.		Project: SCI-823-0.00		Job No. 0121-3070.03													
LOG OF: Boring B-1146		Location: Sta. 891+40.7, 12.2 ft. RT of SR 823 CL		Date Drilled: 10/13/05													
Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No.	Hand Penetrometer (tsf)	WATER OBSERVATIONS: Water seepage at: 10.5'-13.0' Water level at completion: None (prior to coring) 3.3' (inside hollowstem augers)	GRADATION					STANDARD PENETRATION (N)					
							% Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	Natural Moisture Content, % - PL ————— LL		Blows per foot -	LL	
DESCRIPTION																	
0.2	567.5																
6		7	18		4.5+												
7		9	18														
12		12	18		4.5+												
17		17	18														
2		6	18		3.0												
8		8	18														
5		5	18		1.75												
8		8	18														
10		2	14														
10.5	557.2	4	14														
13.0	554.7	35	8														
14.5	553.2	50/2	8														
15																	
18.0	548.7																
20		Core 120"	Rec 120"														
24.5	543.2																
25																	
30																	

DRAWN: _____
 CHECKED: _____
STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. SCI-823-1594
SR 823 OVER FAIRGROUND ROAD
 SCI-823-10.13
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Client: TranSystems, Inc.				Project: SCI-823-0.00				Job No. 0121-3070.03				
LOG OF: Boring B-1145		Location: Sta. 891+50.3, 32.7 ft. LT of SR 823 CL				Date Drilled: 10/13/05						
Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No.	Hand Penetrometer (tsf)	GRADATION					STANDARD PENETRATION (N) Blows per foot - 10 20 30 40	
						% Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt		% Clay
WATER OBSERVATIONS: Water seepage at: 10.5'-13.0' Water level at completion: None (prior to coring) 3.5' (inside hollowstem augers)											Natural Moisture Content, % - ● PL ——— LL	
DESCRIPTION												
0.2	567.1											
5		7 8 18		1	4.5+							
9		13 16 18		2	4.0	0	1	-	2	58	39	
3		5 9 18		3	2.0							
4		7 9 18		4	2.5							
10	556.8											
10.5		3 7 18		5		4	47	-	33	16		Non-Plastic
14.5	552.8	50/4	10	6								
15												
19.0	548.3											
20												
24.5	542.8											
25												
30												

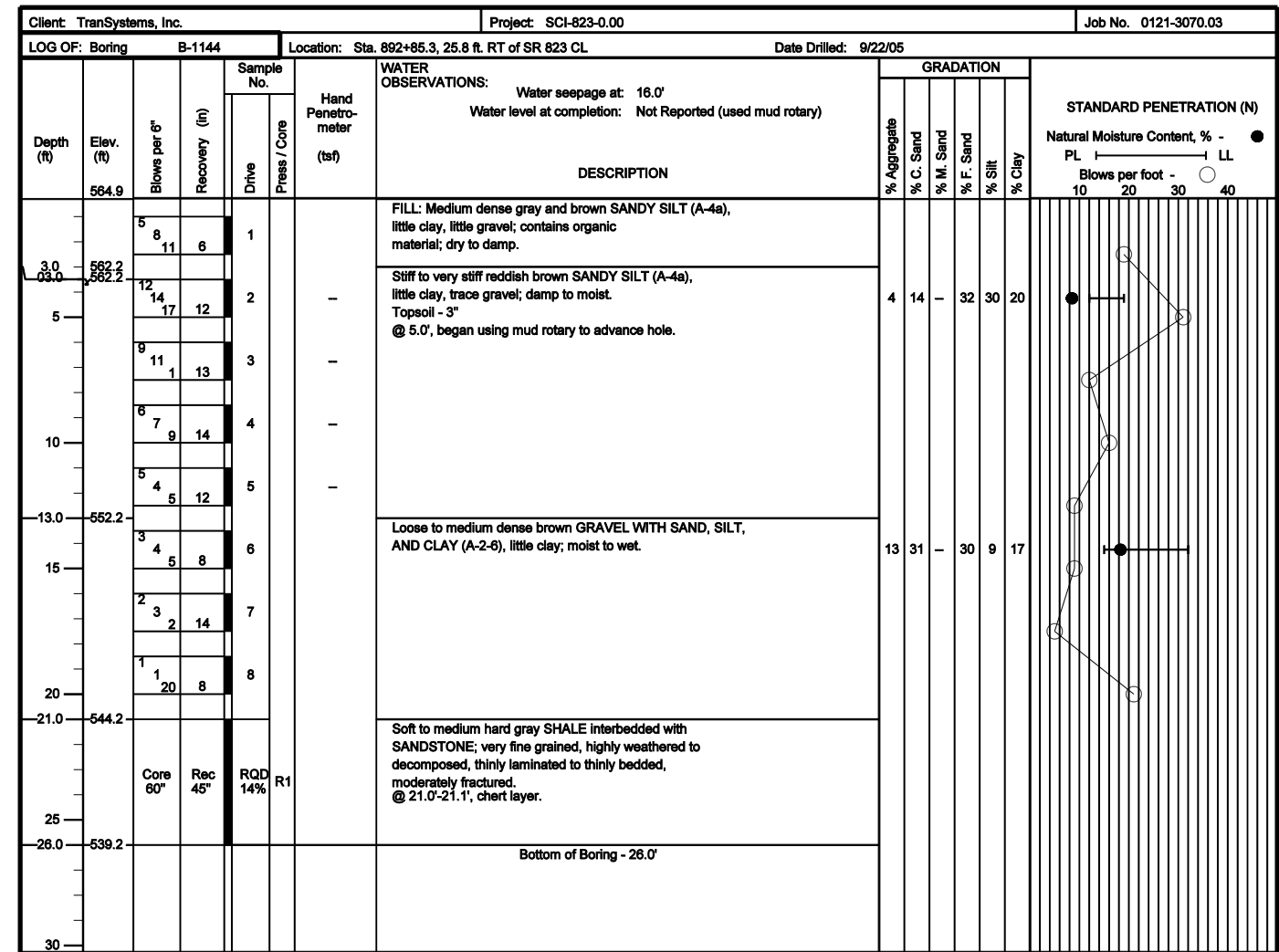
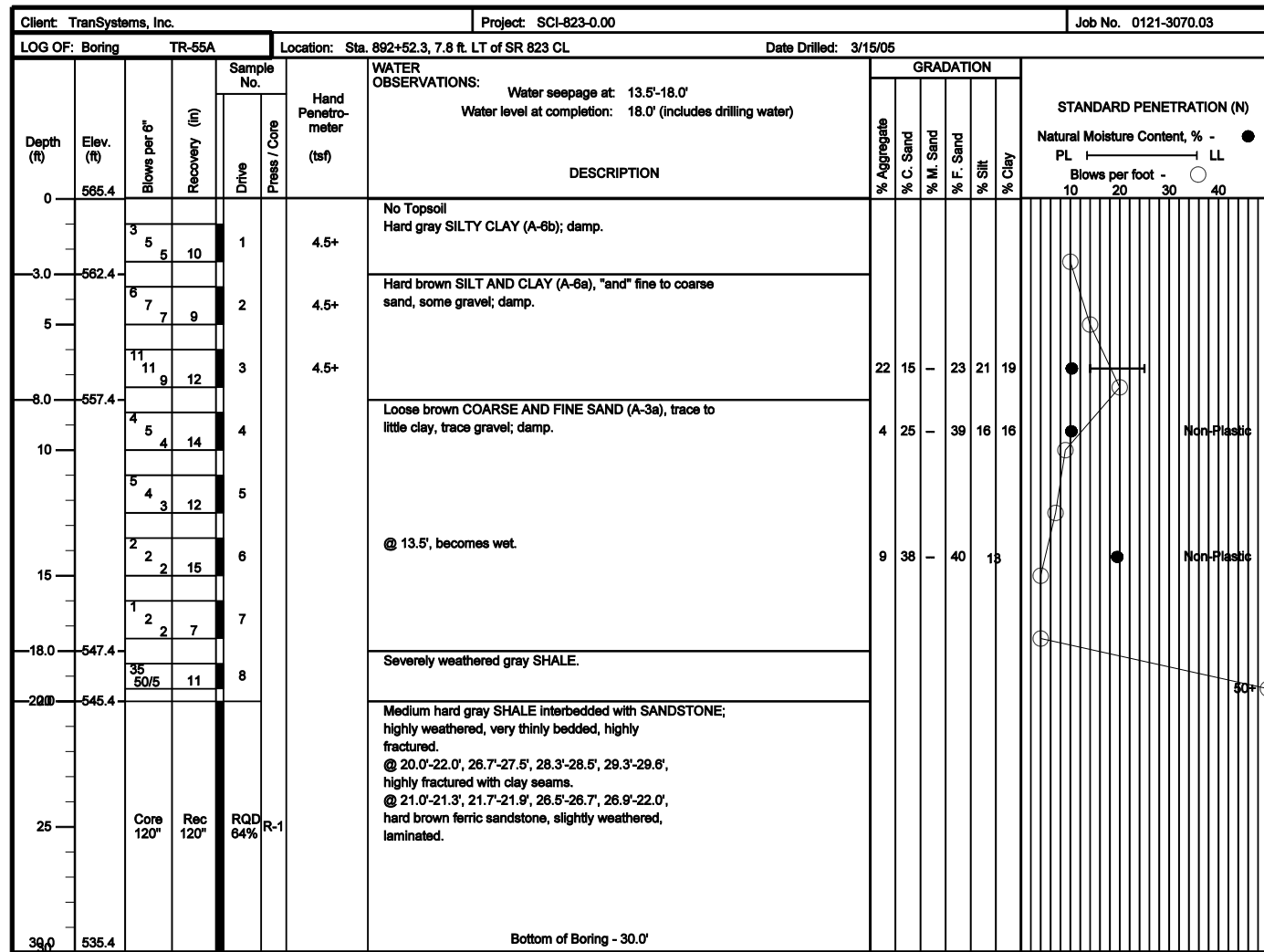
Client: TranSystems, Inc.				Project: SCI-823-0.00				Job No. 0121-3070.03				
LOG OF: Boring TR-55		Location: Sta. 892+28.2, 7.5 ft. RT of SR 823 CL				Date Drilled: 7/8/04						
Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No.	Hand Penetrometer (tsf)	GRADATION					STANDARD PENETRATION (N) Blows per foot - 10 20 30 40	
						% Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt		% Clay
WATER OBSERVATIONS: Water seepage at: 13.5', 16.0' Water level at completion: None (prior to coring) 16.0' (includes drilling water)											Natural Moisture Content, % - ● PL ——— LL	
DESCRIPTION												
0.3	567.1											
0.3	566.8											
20		14 11 15		1								
3.0	564.1											
5		5 3 4 13		2	2.0							
5		5 7 9 16		3	4.25							
10		10 12 13 18		4	4.5+							
10	556.1											
11.0		3 4 4 17		5								
15		2 2 3 13		6								
16.0	551.1											
18.5	548.6											
19.5	547.6											
20		30 50/5	11	8	<0.25							
25												
29.5	537.6											

DRAWN
CHECKED

STRUCTURE FOUNDATION INVESTIGATION
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SCI-823-10.13





DRAWN
 CHECKED
 STRUCTURE FOUNDATION INVESTIGATION
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 SR 823 OVER FAIRGROUND ROAD



Client: TranSystems, Inc.		Project: SCI-823-0.00		Job No. 0121-3070.03										
LOG OF: Boring B-1143		Location: Sta. 893+80.3, 3.7 ft. RT of SR 823 CL		Date Drilled: 10/13/05										
Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No.	Hand Penetrometer (tsf)	WATER OBSERVATIONS: Water seepage at: 23.5'-26.3' Water level at completion: None (prior to coring) 3.5' (inside hollowstem augers)	GRADATION					STANDARD PENETRATION (N)		
							% Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	Natural Moisture Content, % - ● PL ——— LL Blows per foot - ○	
0.2	563.2													
7		10	18	1	-	Topsoil - 2" FILL: Very stiff to hard brown SILT AND CLAY (A-6a), trace fine to coarse sand, trace gravel; damp.								
11		5	14	2	4.5+									
15		6	18	3	3.0									
19		5	9	4	3.0									
10.5	552.7					POSSIBLE FILL: Loose to medium dense brown GRAVEL WITH SAND (A-1-b), trace to little silt, trace to little clay; dry to damp.	21	44	19	16				
15		5	8	5										
19		5	9	6										
23		4	10	7										
27		6	14	8										
31		4	18	9										
25		3	3	10		@ 23.5', wet.								
27.0	536.2	25 50/4	8	11A 11B		Soft greenish gray SHALE; decomposed, micaceous, thinly laminated, highly fractured. @ 28.8'-29.3', loss of recovery from washed out clay. @ 29.3'-29.4', 29.6'-29.7', high angle fractures.								
30.5	532.7						Medium hard black SHALE; moderately weathered, carbonaceous, thinly laminated, moderately fractured. @ 30.5', 31.2', 31.7', 33.6', 34.7', 35.3', 36.7', low angle fractures.							
37.0	526.2					Bottom of Boring - 37.0'								

DRAWN
CHECKED

STRUCTURE FOUNDATION INVESTIGATION
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SCI-823-10.13

