### PROJECT DESCRIPTION

THE PROJECT CONSISTS IN PART OF PLACING TWIN STRUCTURES TO CARRY PROPOSED SR 823 OVER THE CSXT RAILROAD. THE TWO STRUCTURES, AS PLANNED, ARE THREE-SPAN STRUCTURES USING SPILL-THROUGH SLOPES AT 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.

#### GFOLOGY

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BEDROCK IS OF THE MISSISSIPPIAN LOGAN FORMATION. GENERALLY, THIS FORMATION CONSISTS OF PRIMARILY SANDSTONE OR SANDY SILTSTONE WITH OCCASIONAL AREAS OF INTERBEDDED SHALE. HOWEVER, THE LITHOLOGY OF THE SANDSTONES VARIES BOTH LATERALLY AND VERTICALLY. WITHIN THIS AREA THE LOGAN FORMATION TYPICALLY CONSISTS OF THICK, MASSIVE SANDSTONE UNITS.

# RECONNAISSANCE

SEVERAL SITE RECONNAISSANCE VISITS WERE MADE BETWEEN AUGUST 2004 AND SEPTEMBER 2006. THE SURROUNDING AREA IS DESCRIBED AS RURAL RESIDENTIAL. THE PROJECT AREA IS LOCATED IN THE LITTLE SCIOTO RIVER VALLEY AND AND IS BOUNDED ON EITHER END BY STEEP SLOPES. THE STEEP SLOPES ARE COVERED WITH TREES AND BRUSH WHILE THE RELATIVELY LEVEL VALLEY BOTTOM IS A RESIDENTIAL AREA.

# SUBSURFACE EXPLORATION

THE FIELD EXPLORATION CONSISTED OF DRILLING A TOTAL OF SIX BORINGS FOR THE PROPOSED STRUCTURE. STRUCTURE BORINGS TR-39 THROUGH TR-42 WERE DRILLED FOR A PREVIOUS DESIGN CONFIGURATION. THESE BORINGS WERE DRILLED BETWEEN FEBRUARY 2 AND 22, 2005. BORINGS B-37 AND B-38 WERE DRILLED FOR THE ABUTMENTS OF THE CURRENTLY PROPOSED STRUCTURE. THESE BORINGS WERE DRILLED BETWEEN MAY 3 AND 8, 2007 WITH AN ATV-MOUNTED ROTARY DRILL RIG, 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**

BORINGS DRILLED SOUTH OF THE RAILROAD TRACKS GENERALLY ENCOUNTERED 4 TO 9 INCHES OF TOPSOIL AT THE EXISTING GROUND SURFACE. BELOW THE SURFACE MATERIAL, BORINGS GENERALLY ENCOUNTERED COHESIVE SOILS RANGING FROM CLAY (A-7-6) TO SILT AND CLAY (A-6A) TO A DEPTH OF 20 FEET BELOW THE GROUND SURFACE. BELOW THIS LAYER, COHESIVE SILT (A-4B) WAS GENERALLY ENCOUNTERED TO A DEPTH OF 68 FEET BELOW THE GROUND SURFACE. BELOW THIS LAYER, BORINGS GENERALLY ENCOUNTERED SOILS RANGING FROM SILT AND CLAY (A-6A) TO GRAVEL WITH SAND (A-1-B) TO A DEPTH OF 84 TO 92 FEET BELOW THE GROUND SURFACE, AT THE TOP OF ROCK.

BORINGS DRILLED NORTH OF THE RAILROAD TRACKS GENERALLY ENCOUNTERED 4 TO 9 INCHES OF TOPSOIL AT THE EXISTING GROUND SURFACE. BELOW THE SURFACE MATERIAL, BORINGS GENERALLY ENCOUNTERED COHESIVE SOILS RANGING FROM CLAY (A-7-6) TO SILT AND CLAY (A-6A) TO A DEPTH OF 32 FEET BELOW THE GROUND SURFACE. BELOW THIS LAYER, COHESIVE SILT (A-4B) WAS GENERALLY ENCOUNTERED TO A DEPTH OF 46.5 FEET BELOW THE GROUND SURFACE. BELOW THIS LAYER, BORINGS GENERALLY ENCOUNTERED SOILS RANGING FROM SILT AND CLAY (A-6A) TO SANDY SILT (A-4A) TO A DEPTH OF 85 TO 95 FEET BELOW THE GROUND SURFACE, AT THE TOP OF ROCK.

IN THE AREA OF THE PROPOSED STRUCTURE, BEDROCK WAS CONFIRMED BY CORING IN ALL BORINGS. THE BEDROCK CONSISTED OF MEDIUM HARD, MODERATELY TO SLIGHTLY WEATHERED SANDSTONE. THE AMOUNT OF ROCK RECOVERED IN EACH CORE RUN VARIED BETWEEN 80 AND 100 PERCENT, WITH AN AVERAGE OF 95 PERCENT. THE ROCK QUALITY DESIGNATION (ROD) OF THE BEDROCK RANGED BETWEEN 50 AND 100 PERCENT WITH AN AVERAGE OF 80 PERCENT INDICATING "GOOD" QUALITY ROCK.

SEEPAGE WAS ENCOUNTERED IN ALL BORINGS DRILLED AT THIS SITE. WHERE SEEPAGE WAS ENCOUNTERED, IT WAS FIRST OBSERVED AT DEPTHS RANGING FROM 17 TO 30 FEET BELOW THE GROUND SURFACE. WATER WAS USED DURING ROCK CORING AND MASKED ANY SEEPAGE ZONES THAT MIGHT EXIST IN THE ROCK. A MEASURABLE WATER LEVEL IN THE BORINGS PRIOR TO ROCK CORING WAS ONLY ENCOUNTERED IN BORINGS B-37, B-38, TR-38, TR-41, AND TR-42. IN THESE BORINGS, WATER LEVELS PRIOR TO CORING ROCK WERE OBSERVED FROM APPROXIMATE DEPTHS OF 20.2 TO 60.5 FEET BELOW THE GROUND SURFACE.

LEGEND	ODOT	CLAS	SSIFIED
DESCRIPTION	CLASS		/VISUAL
GRAVEL AND/OR STONE FRAGS. WITH SAND	A-1-b	0	1
FINE SAND	A-3	0	3
COARSE AND FINE SAND	A-3a	0	1
SANDY SILT	A-4a	5	8
SILT	A-4b	16	25
SILT AND CLAY	A-6a	20	20
SILTY CLAY	A-6b	7	17
CLAY	A-7-6	4	22
	TOTAL	52	97
WEATHERED SANDSTONE	VISUAL		
SANDSTONE	VISUAL		
BORING LOCATION - PLAN VIEW			
DRIVE SAMPLE AND/OR CORE BORING PLOTTED TO VERTICAL SCALE ONLY	LOCATION		
W INDICATES FREE WATER ELEVATION			
lacksquare Indicates static water elevation			
TR INDICATES THE TOP OF ROCK ELEVAT	ION		
FIGURES BESIDE THE BORING IN PROFI INDICATE THE NUMBER OF BLOWS FOR PENETRATION TEST X = NUMBER OF BLOWS FOR FIRST Y = NUMBER OF BLOWS FOR SECONI Z = NUMBER OF BLOWS FOR THIRD	STANDARD 6 INCHES 0 6 INCHES		

# <u>SPECIFICATIONS</u>

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.

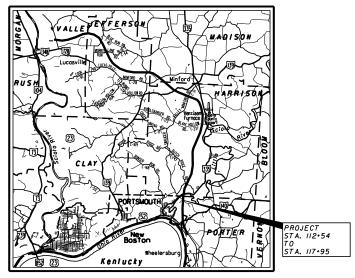
INDICATES NUMBER OF BLOWS (50) TO DRIVE A SPLIT-

BARREL SAMPLER A DEPTH OF (n) INCHES OTHER

THAN THE NORMAL 6 INCH INCREMENT.

#### 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.



# LOCATION MAP

LATITUDE: N 38°50'25" LONGITUDE: W 82°50'50"

SCALE IN MILES

O 2 4 6 8

#### PARTICLE SIZE DEFINITIONS

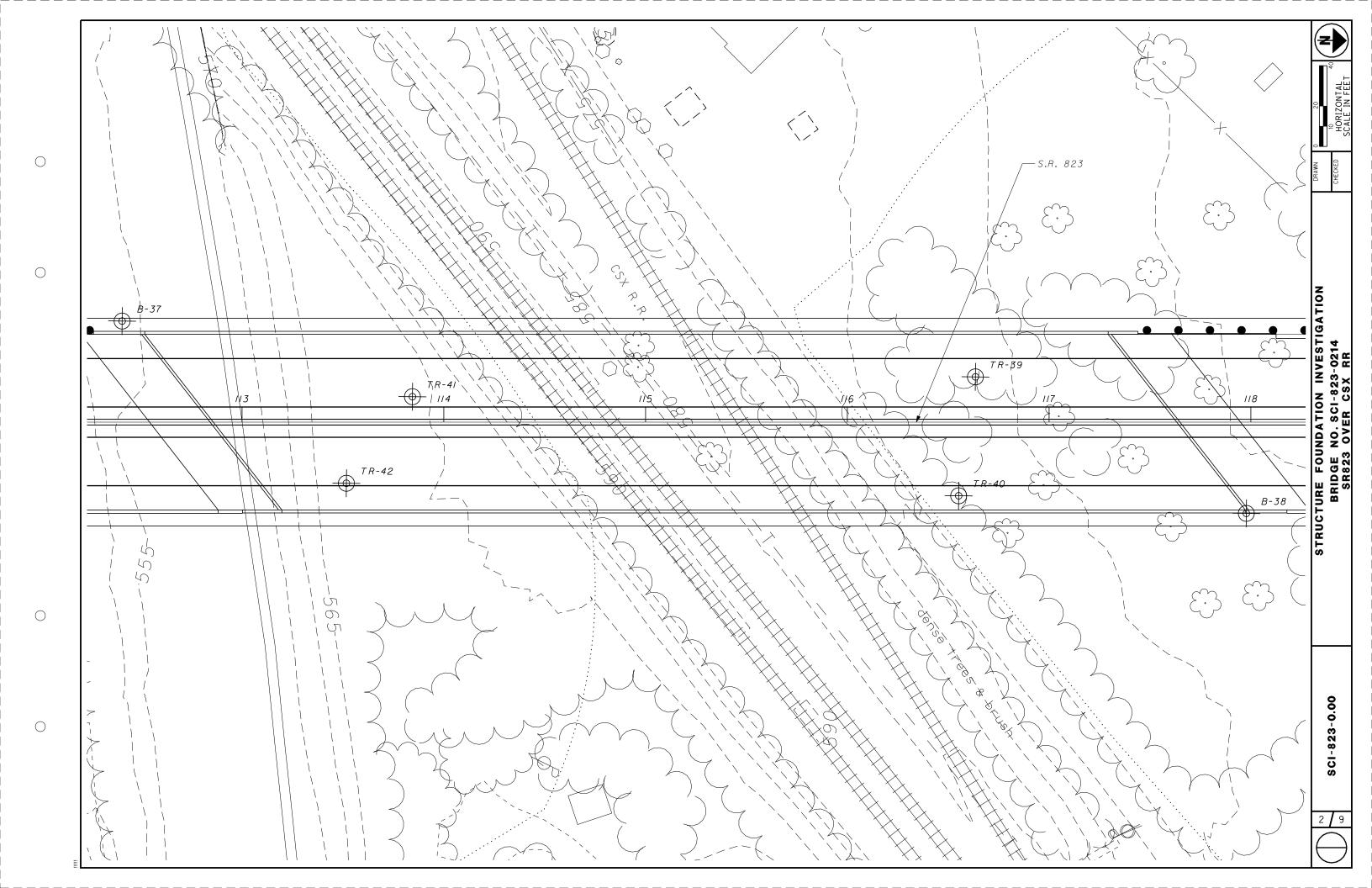
	12"		nm	m		mr	74 0. n r	nm
Boulders	Cobbles	Gravel	Coarse	Sand	Fine	Sand	Silt	Clay
		No. SIE	10 EVE	No. SIE	-	No. SIE		

RECON. - AMJ AND SJR 06/04 to 06/06

DRILLING - DW 02/02/05 TO 02/18/05, 05/03/09 TO 05/08/07

DRAWN - RLS & AMJ 8/09
REVIEWED - AEN 8/19/09

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ent: TranSystems, Inc.		DLZ OHIO INC. * 6121 HUNTLEY ROAD, COLUMBUS, OHIO 43229 * (61  Project: SCI-823-0.00	7/000-0040	Job No. 0121-3070.03	_ (	Client: TranSys	tems, Inc.		DLZ OHIO INC. * 6121 HUNTLEY ROAD, COLUMBUS, OHIO 43229 *  Project: SCI-823-0.00	(014)000-0040	ı.	lob No. 0121-3070.03	Z. N
G OF: Boring B-37	Location: S	ita. 112+40.5, 50.1 ft. LT of SR 823 CL Date Drilled	: 5/7/07 to	5/8/07		LOG OF: Boring		Location:	Sta. 112+40.5, 50.1 ft. LT of SR 823 CL Date Dri	lled: 5/7/07	to 5/8/07		DRAN
Samp No.		WATER	GRADATION		<b>一</b> [			Sample No.	WATER ORSERVATIONS:	GRADATIO			1 ⊦
	Hand	vvaler seepage at. 17.0, 59.0, 00.5		STANDARD PENETRAT	ON (N)			T Hand	vvater seepage at: 17.0, 59.0, 68.5		STA	ANDARD PENETRATION (N)	
[i]	Penetro- meter	Water level at completion: 55.9' (prior to coring) 32.9' (includes drilling water)	nd nd nd	Natural Moisture Content, %	``'		.9 E	Penetro e meter				Moisture Content, % -	Ή
) (ft)   <del>D</del>   9	ປັ  `m (tsf)		19 100 100 126 1			Depth Elev. (ft) (ft)	s per	O (tsf)		% Aggregate % C. Sand % M. Sand % F. Sand	_   ≥   Natural	I Moisture Content, 76 -	
	88	DESCRIPTION	% Aggr % C. S. % M. S % F. S. % Silt % Clay	Blows per foot - 0			Blows	Press	DESCRIPTION	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	등   공 B	lows per foot -	
.3 556.2 <u>m</u> <u>m</u> <u>m</u> .3	-	Topsoil - 4"		10 20 30 111111111111111	<del>'</del>	60 496.2	ш ш		Stiff gray SILT (A-4b), trace to little fine sand,	8 8 8 8	<u>*   *   10</u>	20 30 40	н І
- <del>  5    </del>		Medium dense brown SANDY SILT (A-4a), little gravel,	$\neg$			=			trace clay; moist.				
5 <sub>11</sub> 13		trace clay; damp.		HHHhhHHhHHHHHHHHHH		-			@ 62.0', trace to little clay, moist to wet.				
.0553.2		Stiff to very stiff brown SILT AND CLAY (A-6a), trace	$\dashv$ $\mid$ $\mid$ $\mid$ $\mid$ $\mid$	1111111/1111111111111111111111111111111		=	WOR						
-   3 <sub>3 18</sub>   2	1.0	fine to coarse sand; moist.	0 2 - 5 55 38	\$    <u> </u>  /     <del>       </del>			WOR 18	16 1.5					II I
5   10						65 —	J	1			1 1111911		
5 7 3	3.5												
10 8		@ 7.5'-9.5', torvane = 0.58-0. 80 tsf.				-07.0-1-469.2	1		Stiff to very stiff brown SANDY SILT (A-4a), trace to				II I
]         '	ST- 3.25		0 1 - 2 32 65				1		little clay; moist to wet.				
10	1 0.20			11111111111111111111111111111111111111		70—	9 18	17   -			-		
` <u>                                    </u>				111111/1111111111111		]					<i>H</i>		
3 4 <sub>7</sub>   18   4	1.5		0 0 - 1 52 47	<b>'</b> ┃┃┃┃┃ <u>∦</u> ┃┃┃┃ <del>    1    1    1    1    1    1    1</del>		_			@ 72.0', little gravel.			$\setminus ig  ig  ig  ig  ig  ig  ig  ig $	
				1111191111111111111111111111111111111		=			(2.5, nuo gravos.			$\lambda$	
3 4 5	2.0			11111/11111111111111		_	3 7	18 2.0				$\mathbb{N}$	II I
15 18						75 —	10 18						
- 3 · · · · · · · · · · · · · · · · · ·		@ 15.5', varved.				-							
_ 4 6 18 6	1.5					-			@ 77.0', wet.				II I
3.0—-538.2-	ет	Stiff brown SILT (A-4b), "and" clay, trace fine sand;		$\mathbb{H}$		-		1					
_          /	2 1.75	torvane = 0.30-0.40 tsf; moist.	0 0 - 1 61 38	3 <b> </b>              <del>      </del>		=	8 12 18	19 -				$ \cdot \cdot $	
20 —						80 —	12 10	1				1194111111111	
1.5 534.7 3 5 7	1.75	Stiff to very stiff brown SILT AND CLAY (A-6a), trace	── 0 0 0   <sub></sub>   1   56   43	,		1							
7 18		fine sand; moist.				1			@ 82.0', little to some fine to coarse sand, little to some gravel, wet.				ll I
]  4						84.0 472.2	13	204					II I
25 7 18 8	2.0					85.0 471.2	50/5 11	20g	Severely weathered SANDSTONE.		-	<b>\$</b> q+	·\d
~ <u>                                    </u>				III II I		30.0			Medium hard gray SANDSTONE; fine grained, moderately to highly weathered, broken.				č
- 5 10 18 9	2.5		0 0 - 2 44 54	┇┇┋┋		_			@ 86.6', highly fractured.				
_		@ 28.5'-30.0', brownish gray, contains silt and fine		111111111111111111111111111111111111111		-	Core Rec 63" 63"	RQD 52% R-1					
4 8 10	3.0	sand seams.	0 0 - 1 36 63	<u>,                                      </u>		_							
30 11 18		Stiff to very stiff brownish gray SILT AND CLAY (A-		`     #   <u> </u>		_90.3 <del></del> 465.9							H I
		6a), trace fine sand; contains silt and fine sand				- 1000			Bottom of Boring - 90.3'				
		seams; moist.				-							II I
						-							
7 <sub>10</sub>   18   11	3.0			[[]]		-							
35 — 10 18				1111111191111111111111111111111111111		95 —							
1						1							
]         '		@ 37.0', gray.											
4 1 4				.									
6 9 18 12	2.75		0 0 - 1 43 56	`IIIII∦II <del>∏¶</del>		100—							
						_							
				]]]]]]]]]]]]]]]]]]	<b>[</b>	-							
3.5—512.7—				]]]]]]]]]]]]]]]]]]	<b>[</b>	-							
~ -	ST- 1.75	Stiff to very stiff gray SANDY SILT (A-4a), "and"	0 0 - 3 47 50	,	<b>[</b>	-							
45 —	<u> </u> 3 3	clay; moist. @ 43.5'-45.5', torvane = 0.15-0.45 tsf.			<b>[</b>	105 —							
				]]]]]]]]]]]]]]]]]]	<b>[</b>	-							
		@ 47.0', contains trace organics.		]]]]]]]]]]]]]]]]]]	<b>[</b>	1							
] <del> 4    </del> '				]]]]]]]]]]]]]]]]]]	<b>[</b>	1							
6 9 18 13	2.5			$\  \  \  \  \  \  \  \  \  \  \  \  \  \  \  \  \  \  \  $		110							
· ]				111111111111111111111111111111111111111	<b>[</b>	''" ]							
2.0—504.2—		OWE THE OUT AND OLD WAS A STATE OF	_	11111111111111111111	<b>[</b>								
_		Stiff gray SILT AND CLAY (A-6a), trace fine sand; moist.		]]]]]]]]]]]]]]]]]		4							
4 5 14	1.25		0 0 - 3 58 39	,    <u>  </u>	<b>[</b>	4							
55 8 18					<b>[</b>	115—							
				111111/11111111111111111111111111111111	<b>[</b>	=							
7.0 <del></del>		Very loose brown FINE SAND (A-3), trace silty clay;	$\dashv$ $\mid$ $\mid$ $\mid$ $\mid$	11111/111111111111111111111111111111111	<b>[</b>	+							
'	1 1	moist to wet.		1111/1111111111111111111111111111111111	<b>[</b>	-							
VANOR I					1111				1	1 1 1 1	_		
9.5 496.7 WOR WOH 15A			_	<u> </u>		120 7							
WOR WOH 15A 15B	:				шш (	120							IJ
5 496.7- WOR WOH 15A	Ξ				Ш (	120							Ц

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ent: TranSystems, Inc.		DLZ OHIO INC. * 6121 HUNTLEY ROAD, COLUMBUS, OHIO 43229 * (614)88  Project: SCI-823-0.00		Job No. 0121-3070.03	Client: TranSyst	tems, Inc.	DLZ OHIO INC. * 6121 HUNTLEY ROAD, COLUMBUS, OHIO 43229 Project: SCI-823-0.00		Job No. 0121-3070.03	AWN
G OF: Boring TR-42		a. 113+51.7, 30.3 ft. RT of SR 823 CL Date Drilled: 2/	18/05 to 2	2/22/05	LOG OF: Boring			Drilled: 2/18/05 to 2/22/0	05	DR
Blows per 6* Recovery (in) Prive	Hand Penetro-meter	WATER OBSERVATIONS:  Water seepage at: 27.6', 33'-37', 50'-58', 67'-72', 84'-92'  Water level at completion: 25.5' (start of shift 2/22/05) 25.5' (Prior to coring) 25.3' (Includes drilling water)  DESCRIPTION	% Aggregate % C. Sand % M. Sand % F. Sand % Silt % Clay	STANDARD PENETRATION (N  Natural Moisture Content, % - PL  Blows per foot - 10 20 30 40	Depth Elev. (ft) (ft) 508.0	Blows per 6" Recovery (in) Drive Orive	Hand Penetrometer (tsf) Water seepage at: 27.6', 33'-37', 50'-58', 67'-72 Water seepage at: 27.6', 33'-37', 50'-58', 67'-72 Water seepage at: 27.6', 33'-37', 50'-58', 67'-72 25.5' (Start of shift 2/22/05) 25.5' (Prior to coring) 25.3' (Includes drilling water) DESCRIPTION	r', 84'-92'	STANDARD PENETRATION (N)  Natural Moisture Content, % -  PL  LL  Blows per foot -  10 20 30 40	
0. 300.0 = = = = = = = = = = = = = = = = = =	1.75	Topsoil - 5" Stiff dark brown SILT AND CLAY (A-6b), trace fine sand; damp to moist. @ 1.5', brown.	0 1 - 3 51 45		60 - 308.0	7 18	Very stiff to hard gray SILT (A-4b), some to "and" clay, trace fine to coarse sand; wet.			
5 564.5 4 5 8 18 3	3.5	Very stiff brown CLAY (A-7 6), trace fine to coarse sand; damp to moist.	0 0 - 1 44 55	•	65 —	4 7 8 18 20	2.0	0 0 - 0 74 26	<b>₩</b>	
2 4 6 18 4	3.5	@ 6.5', varved.		<i>(</i>			Medium dense brown SANDY SILT (A-4a), trace gravel, trace clay; wet.			
2 4 6 18	3.75			Q	70 <u> </u>	4 10 18 21		3 11 - 50 38 Non	1-Ptastic ●	
554.5- - - - - - - - - - - - - - - - - - -	3.25	Very stiff to hard brown SILTY CLAY (A-6b), trace fine sand; damp to moist.	_	<b>B</b>	-72.0 - 496.0- - - -	7 14 22	Very stiff brownish gray SILT AND CLAY (A-6a), trace fine sand; moist to wet.  2.25	0 0 - 8 57 35		
11 18 7 8 8 7 18 8	3 4.5+		0 0 - 1 35 64	<b>)</b>	75 — - 77.0 — 491.0-	14 20 18 22	Medium dense to dense brownish gray SILT (A-4b),			
4 5 9 18 9	4.5+				80 —	5 7 16 18 23	"and" clay, trace gravel; moist to wet.			
3 5 8 18	0 3.5			$\phi$						,
3 4 5 18	1 2.75			$\phi$	85 — -	8 6 9 18 24	@ 84.0', wet.			
4 5 18 12 4 5 18 13		@ 27.6', thin sandy silt seam; wet.		Φ		10 25	Dense brown GRAVEL WITH SAND (A-1-b), trace silt; wet.			
5 7 18	3 3.0				90 — - - - - 92.0 — 476.0-	14 23 18 25	Medium hard gray SANDSTONE; very fine to fine			
4 7 8 18 14	4 2.0				94.0 474.0- 95 —	Core Rec RQD R1	Haid gray SANDS FONE, very line to line grained,			
531.0-		Very stiff to hard gray SILT (A-4b), "and" clay, trace fine to coarse sand; moist.					slightly weathered, argillaceous, micaceous, massive, moderately to highly fractured.  @ 94.1',94.6',95.1',96.1', 97.4',97.8',100.8',101.4', fractured.  @ 104.0', high angle fracture.			
- 8 5 11 18	5 4.5+		0 0 - 0 53 47	ф <b></b>	100 —	Core Rec RQD 88% R2	@ 102.2',105.8',108.9' clay filled fractures.			
5 6 10 18	6 3.5			Φ	105—	Core Rec RQD R3	@ 104.3'-104.5', high angle fracture. @ 104.5'-105.1', broken.			
3 4 6 18	7 2.5	@ 49.0', stiff to very stiff; wet.			- - - 110	Core Rec RQD R4				
							Bottom of Boring - 112.0'			
3 3 18 18	8 1.5			φ	115 — -					
-										
4	9 325				120					

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Client: TranSystems, Inc.	DLZ OHIO INC. * 6121 HUNTLEY ROAD, COLUMBUS, OHIO 43229 * (614)8  Project: SCI-823-0.00	Job No. 0121-3070.03	Client: TranSystems, Inc.	DLZ OHIO INC. * 6121 HUNTLEY ROAD, COLUMBUS, OHIO 43229 * (614)  Project SCI-823-0.00	Job No. 0121-3070.03
OG OF: Boring TR-41 Location	on: Sta. 113+84.4, 12.6 ft. LT of SR 823 CL Date Drilled: 2	/15/05 to 2/16/05	LOG OF: Boring TR-41 Loca	ation: Sta. 113+84.4, 12.6 ft. LT of SR 823 CL Date Drilled:	2/15/05 to 2/16/05
Depth Elev. For Second Pen	WATER OBSERVATIONS: Water seepage at: 21.8'-29.5', 69.0'-71.0', 84.0'-93.0' Water level at completion: 20.2' (Start of Shift 2/16/05 @ 80') 23.5' (prior to coring)	GRADATION  STANDARD PENETRATION (N)  Natural Moisture Content, % -  PL		WATER OBSERVATIONS: Water seepage at: 21.8'-29.5', 69.0'-71.0', 84.0'-93.0' Water level at completion: 20.2' (Start of Shift 2/16/05 @ 80') 23.5' (prior to coring)	GRADATION  STANDARD PENETRATION (N)  Ref D D D D D D D D D D D D D D D D D D D
(ts	DESCRIPTION	B    B    B    B    B    B    B    B	80 209.4 B S	(tsf) DESCRIPTION	B
3 568.6 2 3 15 1 2 4 9 11 18 5 5 4 7 3 3 2 2	2.0 Topsoil - 9"  Very stiff brown CLAY (A-7-6), "and" silt, trace fine sand; moist.		65 — 7710 18 20	Stiff to very stiff gray SILT (A-4b), some to "and" clay, trace fine sand, moist.  2.0  @ 64.0'-65.5', trace organics.	φ 
- 5 18	.25 2.5	0 0 - 1 42 57	-68.0 - 501.4 - 10 7 8 18 21	Loose to medium dense brownish gray FINE SAND (A-3), little sitty clay; wet.  Stiff to very stiff gray SILT AND CLAY (A-6a), trace fine to coarse sand; damp to moist.	- -
9 18 3 4 7 18 - 2 3.	.25		75 — 5 9 14 18 22	3.0	0 1 - 4 55 40
8 18 2 6 10 18 9	Very stiff brown SILT (A-4b), "and" clay, trace fine sand; moist.		80 — 3 9 12 18 23	1.5	
8 18 11 2	2.5	0 1 - 4 55 40	85 — 10 9 14 18 24 — 87.0 — 482.4 —	Loose to medium dense gray SANDY SILT (A-4a), little clay, trace gravel; wet.  Severely weathered brown SANDSTONE.	7 7 – 27 48 11
30 — 539.4 — 5 <sub>7 18</sub> 13 2	2.5  Stiff to very stiff gray SILT (A-4b), some to "and" clay, trace fine sand, moist.		90 — 10 12 25 25 25 25 25 25 25 25 25 25 25 25 25	Medium hard to hard brown and gray SANDSTONE; very	36 9 — 35 16 4
3 6 g 18 14 2.	.25		95 — 473.8- Core Rec RQD R-1	fine to fine grained, moderately to highly weathered, argillaceous, micaceous, thinly to thickly bedded, highly fractured, with typically low angle rust stained fractures.  @ 95.1'-95.5', broken zone. @ 93.0'-93.7', lost recovery.  Medium hard to hard gray SANDSTONE; very fine to fine grained, slightly to moderately weathered,	_
40 — 5 6 7 18 15 2	2.5 @ 39.5', becomes gray.		100 — Core 60" Rec 85% R-2	argillaceous, micaceous, thinly to thickly bedded, moderately fractured, with typically low angle clay filled fractures.	
9 18			105— Core 60"	@ 103.0'-103.5', lost recovery. @ 103.5'-104.0',106.7'- 107.7', broken zones.	
7 18	2.5	0 0 - 2 63 35	110 — Core 60" Rec 60" RQD 80% R-4	Bottom of Boring - 113.0'	
55 — 57 18 18 2			115— - - -		

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Note		DLZ OHIO INC. * 6121 HUNTLEY ROAD, COLUMBUS, OHIO 43229 * (6			DLZ OHIO INC. * 6121 HUNTLEY ROAD, COLUMBUS, OHIO 43229 * (614	
Company   Comp	Client: TranSystems, Inc.  LOG OF: Boring TR-40 Lo	Project: SCI-823-0.00  ocation: Sta. 116+55.2, 36.5 ft. RT of SR 823 CL Date Drille	Job No. 0121-3070.03 d: 02/04/05 to 02/09/05	Client: TranSystems, Inc.  LOG OF: Boring TR-40 Location:	Project: SCI-823-0.00  Sta. 116+55.2. 36.5 ft. RT of SR 823 CL Date Drilled:	Job No. 0121-3070.03 02/04/05 to 02/09/05
The control of the		WATER			WATER ORSEDVATIONS:	
Second Content   Seco		Hand   vvaler seepage at. 30.0-46.5, 75.0-95.0	STANDARD PENETRATION (N)	Har	nd vvater seepage at: 30.0-46.5', 75.0-95.0'	STANDARD PENETRATION (N)
Second		meter	왕 및 및 및 Natural Moisture Content, % - ●	I I U II ISI MEN		B 및 및 및 Natural Moisture Content, % - ●
1			PL   Flows per foot -		DESCRIPTION	E   S   S   S   E   E   PL   III   III
The state of the	0 507.4 1	Tonosii C''	\$ \$ \$ \$ \$ \$ \$ 10 20 30 40	■ eo o   eozo  -   -    -  -	Vanuatiff to hard group CLAV (A.7.5), some silt	
The state of the		Stiff to very stiff brown SILTY CLAY (A-6b), trace	<u> </u>	_ 15 19 19 3.0		
1		·				
The state of the	6 16 2	3.5				
	5			65 - 5		
1	_ 5 8 18 3	1.5	0 0 - 1 48 51	_		
1	- <u> </u>		- $+$ $+$ $+$ $+$ $+$ $+$ $+$ $+$ $+$ $+$			
1   2   20   20   4.5   1   2   20   20   30   4.0   4.0   5   5   5   5   5   5   5   5   5	- 4 16 4   4	1.5				
1   2   20   20   4.5   1   2   20   20   30   4.0   4.0   5   5   5   5   5   5   5   5   5	10	@ 40.0' year etiff		70		
1   2   20   20   4.5   1   2   20   20   30   4.0   4.0   5   5   5   5   5   5   5   5   5	_   8 <sub>10</sub> 18   5	2.5		- 16 20 16 21 4.5·	•	
1   2   20   20   4.5   1   2   20   20   30   4.0   4.0   5   5   5   5   5   5   5   5   5						1
1   2   20   20   4.5   1.5   2.0   2.5   2.5	-   6   6	2.5				
1   2   20   20   4.5   1.5   2.0   2.5   2.5	15			75		
10   10   10   10   10   10   10   10	- <sup>2</sup> 5 <sub>7</sub> 18 7	2.5		■     7   ■ 22     3.5		
10   10   10   10   10   10   10   10	7.0—550.9-		<b> </b>			
1   2   2   2   2   2   2   2   2   2	- 8 <sub>10</sub> 18 8	4.0 fine sand; damp to moist.		78.0 489.9		─ <b>┤</b>
1   2   2   2   2   2   2   2   2   2	20			80	coarse sand, little clay, trace graver, wet.	
Section   Sect	_ 7 <sub>12</sub> 16 9	4.5+		- WOH 16 15 23		1 2 - 25 58 14 Non-Plastic
Section   Sect						
Section   Sect	7 10 18 10 1	4.0				
Section   Sect	25			85		
Section   Sect	<sup>7</sup> 6   <b>■</b> 11	4.5		<b>■</b>     <sup>8</sup> 11   <b>■</b> 24		
Modum hard to hard gray SANDSTONE; way the to fine grained, slightly to moderately vestelened, significance, arraneasing histories, histories	7.5 540.4					
Modum hard to hard gray SANCBTONE, way the to fitted grained, slightly to moderately vestified to massive, signify a moderately hard frequency, arrangement, signify a moderately hard frequency, signify and moderately hard frequency, signify and moderately hard frequency, signify and	8 8 18 12		0 0 - 2 56 42	88.0 479.9		$\dashv$ $\mid$
Modum hard to hard gray SANDSTONE; way the to fine grained, slightly to moderately vestelened, significance, arraneasing histories, histories	30	day, adde into to course saird, most to wet.	1	90	silty clay, trace fine gravel; wet.	
Modum hard to hard gray SANCBTONE, way the to fitted grained, slightly to moderately vestified to massive, signify a moderately hard frequency, arrangement, signify a moderately hard frequency, signify and moderately hard frequency, signify and moderately hard frequency, signify and	്5   <b>■</b> 13	2.0		50/5 5 25		
1.5	-					
Total   Tota						
** 7	35 —			95 0 472 9		
Com   Rec   ROCI,   Significant surprises only filled fractures.   Com   Roci,   Significant surprises only filled fractures.   Com   Roci,   Significant surprises only filled fractures.   Com   Significant surprises only filled fractures.   Com   Significant surprises only filled fractures.   Com   S	°7   <b>■</b> 14	1.5	0 2 - 2 74 22		grained, slightly to moderately weathered,	
S 8 69 15 2.0  4 5 18 15 2.0	-			Core Rec RQD R-1	argillaceous, arenaceous, thickly bedded to massive,	
100 — Core Rec ROCIR 2.0  4 5 18 17 1.5 © 50.0', more grevel.  1 1 - 4 56 38 19 10 3.5	1			- 60°   58°   67%   · · ·	ong my to measure, measures.	
S 0 10 16 2.0 Cov Rec BOX, Ro. 2 (\$ 50.0, trace gravel.	40 40			100	© OF FLOS OLOG CLICAL and a class filled fractures	
Com Rec RGC R2  105 - 1.5  WORT 18 17 1.5  @ 50.0; trace gravel.  1 1 - 4 56 38 18 18 18 3.5	_ T 5 8 18 15 15 15	2.0			@ 53.5,53.6,55.6, fow aligie day lilled flactures.	
4 s 18 16 1.5 Core Rec ROCI R-3 (9 10.9.10.2.7; 10.0.7; low angle clay filled fractures.	1		- $+$ $+$ $+$ $+$ $+$ $+$ $+$ $+$ $+$ $+$	Core Rec RQD		
4 4 5 18 16 1.5  WORT 1.5	]			_   60   60   93%		
4 5 18 16 1.5 Core Rec ROL R.s. (2) 100.7,112.5; low angle city filled fractures.	45 — 4 4 1			105	@ 100 8' 102 7' 103 0' low angle clay filled	
WORL WORL NOT 1.5 @ 50.0°, trace gravel.  1 1 - 4 56 38 3	- 4 5 18 16 16 I	1.5	1			
WWH 1 1.5 @ 50.0', trace gravel. 1 1 - 4 56 38	-			Core Rec RQD R-3		
WOR WOR 1 1.5 @ 50.0', trace gravel. 1 1 - 4 56 38	]			_		
WOH   3   18   17   1.5	50 — WOH — I	@ 50.0'. trace gravel.	1	110	@ 106 7' 112 5' low andle clay filled fractures	
Core Rec Rac Rac Rac Rac Rac Rac Rac Rac Rac Ra	- WOH 17 17	1.5	1   1   -   4   56   38		G rect primity for angle day miles insocied.	
4 8 8 18 18 3.5 Bottom of Boring - 115.0*	_   _     _     _			Core Rec RQD 60" 60" Q0%/R-4		
- 48 8 18 3.5 Bottom of Boring - 115.0* - 120	]					
	55 — 4			-115.0-452.9	Dollars of Position 445 O	-
	8 18 18	3.5			Bottom or Boring - 115.0	
				<b> </b>		
<u>                                     </u>	]					
	80		1	120		

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Project: SCI-823-0.00  It. LT of SR 823 CL  S: Water seepage at: 33.5'-50.0', 73.5'-80.0'  fater level at completion: 36.0' (includes drilling water)  DESCRIPTION  In SILTY CLAY (A-6b); damp.  Intains organics.  In SILTY CLAY (A-6b), trace sine sand;  In SILTY CLAY (A-6b), trace fine sand;	% Aggregate % C. Sand % M. Sand	DATION  Purs 4:5 % %  1 47 52  1 53 46	STANDAR Natural Moistu PL Blows pe 10 20	RD PENETRATI ure Content, % er foot - 0 30	ΠΟΝ (N) 5 - ● LL	Client: Trans LOG OF: Bo  Depth (ft) (ft) 60 500	12 15 23 11 18 24 14.2- 7 8 9	TR-39 S (u) Lawcood 16 16 16 16	Penemen me (tst	WATER OBSERY observation with the control of the control observation with the control observation of the control observation of the control observation of the control observation observation observation of the control observation observation observation of the control observation observation observation observation of the control observation observatio	RVATIONS: Water seepage at: 33.5'-50.0', 73.5'-80.0' Water level at completion: 36.0' (includes drilling water)  DESCRIPTION brownish gray CLAY (A-7-6), trace fine sand;	0 0 0 - 3  0 3 - 38	Na N	STANDARI iatural Moistur PL Blows pe 10 20	RD PENETRATION (Nure Content, % - LL er foot - 0 30 40	' I I
S: Water seepage at: 33.5'-50.0', 73.5'-80.0' (ater level at completion: 36.0' (includes drilling water)  DESCRIPTION  In SILTY CLAY (A-6b); damp. Intains organics.  Intains organics.  Intains organics.  Intains organics.		DATION  Purs 4:5 % %  1 47 52  1 53 46	STANDAR Natural Moistu PL   Blows pe 10 20	ure Content, %	6 - •	Depth (ft) Ele (ft)  60	12 15 23 11 11 18 24 44.2- 5 10 16 9.2-	16 15 16 16 16 16 16 16 16 16 16 16 16 16 16	9 4.5	WATER OBSERY observation with the control of the control observation with the control observation of the control observation of the control observation of the control observation observation observation of the control observation observation observation of the control observation observation observation observation of the control observation observatio	RYATIONS: Water seepage at: 33.5'-50.0', 73.5'-80.0' Water level at completion: 36.0' (includes drilling water)  DESCRIPTION brownish gray CLAY (A-7-6), trace fine sand; t.  stiff gray SILT (A-4b), trace fine sand; ty organic; damp.	O % Aggregate O % Aggregate O % C. Sand I % M. Sand O % F. Sand	Na N	STANDARI iatural Moistur PL H Blows pe 10 20	ure Content, % -	
vater seepage at: 33.5-30.0, 73.5-30.0 fater level at completion: 36.0' (includes drilling water)  DESCRIPTION  In SILTY CLAY (A-6b); damp. Intains organics.  Ind brown SILT AND CLAY (A-6a), trace sand; damp.	0 0 - 0 0 -	1 47 52 1 53 46 1 59 40	Natural Moistu PL	ure Content, %	6 - •	60	12 12 15 23 11 18 24 14.2 -	16 15 16 16 16 16 16 16 16 16 16 16 16 16 16	9 4.5	And elero- elero- elero- elero- elero- elero- elero- elero- elero- sif)  Hard b moist.  2.5  Very si slightly  Mediun	Water level at completion: 36.0' (includes drilling water)  DESCRIPTION  brownish gray CLAY (A-7-6), trace fine sand;  i.  stiff gray SILT (A-4b), trace fine sand; dy organic; damp.	0 0 - 3 WW % - 9	Na #85 00 % 32 65 60 31	latural Moistur PL HBlows pe 10 20	ure Content, % -	
n SILTY CLAY (A-6b); damp. Intains organics.  Intai	0 0 - 0 0 -	1 47 52 1 53 46 1 59 40	Natural Moistu PL	ure Content, %	6 - •	60	12 12 15 23 11 18 24 14.2 -	16 15 16 16 16 16 16 16 16 16 16 16 16 16 16	9 4.5	Hard b moist.  St. Very st slightly  Medium	DESCRIPTION brownish gray CLAY (A-7-6), trace fine sand; t. stiff gray SILT (A-4b), trace fine sand; dy organic; damp.	0 0 - 3 WW % - 9	Na #85 00 % 32 65 60 31	latural Moistur PL HBlows pe 10 20	ure Content, % -	
n SILTY CLAY (A-6b); damp.  ntains organics.  rd brown SILT AND CLAY (A-6a), trace sand; damp.	0 0 - 0 0 -	1 47 52 1 53 46 1 59 40	PL IBlows pe	i	ᄔ	60	6.2 8 a a a a a a a a a a a a a a a a a a	16	9 4.9	Hard b moist.  2.5  Very s' slightly  Medium	brownish gray CLAY (A-7-6), trace fine sand; t.  stiff gray SILT (A-4b), trace fine sand; ty organic; damp.	0 0 - 3 WW % - 9	32 65 60 31	PL Blows pe 10 20		
n SILTY CLAY (A-6b); damp.  ntains organics.  rd brown SILT AND CLAY (A-6a), trace sand; damp.	0 0 - 0 0 -	1 47 52 1 53 46 1 59 40	3	P	40	60	6.2 8 a a a a a a a a a a a a a a a a a a	16	9 4.9	Very si slightly  Medium	brownish gray CLAY (A-7-6), trace fine sand; t.  stiff gray SILT (A-4b), trace fine sand; ty organic; damp.	0 0 - 3 WW % - 9	32 65 60 31	H-	er foot - 0 40	
rd brown SILT AND CLAY (A-6a), trace sand; damp.	0 0 -	1 47 52 1 53 46 1 59 40	3			70 —	12 15 23 11 18 24 4.2- 5 10 16	16	9 4.9	Very si slightly  Medium	stiff gray SILT (A-4b), trace fine sand; dy organic; damp. um dense brown SANDY SILT (A-4a), trace gravel;	0 0 - 3	32 65 60 31	H-		
rd brown SILT AND CLAY (A-6a), trace sand; damp.	0 0 -	1 53 46				70 — 494 - 75 — - 77.0 — 481 - 80 — -	11 18 24 4.2- 5 10 16	15	0 2.	Very si slightly	stiff gray SILT (A-4b), trace fine sand; ly organic; damp. um dense brown SANDY SILT (A-4a), trace gravel;	0 0 - 9	60 31	-Plastic ⊕		
sand; damp.	0 0 -	1 53 46				70 — 494 - 75 — - 77.0 — 481 - 80 — -	11 18 24 4.2- 5 10 16	15	0 2.	Very si slightly  Mediur	dy organic; damp.  um dense brown SANDY SILT (A-4a), trace gravel;	0 0 - 9	60 31	-Plastic		
sand; damp.	0 0 -	1 53 46				70 — 494 - 75 — - 77.0 — 481 - 80 — -	11 18 24 4.2- 5 10 16	15	0 2.	Very si slightly  Mediur	dy organic; damp.  um dense brown SANDY SILT (A-4a), trace gravel;	0 0 - 9	60 31	-Plastic		
sand; damp.	0 0 -	1 53 46				70 — 494 - 75 — - 77.0 — 481 - 80 — -	11 18 24 4.2- 5 10 16	15	0 2.	Very si slightly  Mediur	dy organic; damp.  um dense brown SANDY SILT (A-4a), trace gravel;	0 0 - 9	60 31	-Plastic		
sand; damp.	0 0 -	1 59 40				75.0 481 - 77.0 481 - 77.0 481	5 10 16 9.2-	16	.1 3.	Very si slightly	dy organic; damp.  um dense brown SANDY SILT (A-4a), trace gravel;			-Plastic		
	0 0 -	1 59 40				75.0 481 - 77.0 481 - 77.0 481	5 10 16 9.2-	16	.1 3.	Very si slightly	dy organic; damp.  um dense brown SANDY SILT (A-4a), trace gravel;			-Plastic		
SILTY CLAY (A-6b), trace fine sand;	0 0 -	1 59 40				75.0 481 - 77.0 481 - 77.0 481	5 10 16 9.2-	16	.1 3.	Very si slightly	dy organic; damp.  um dense brown SANDY SILT (A-4a), trace gravel;			-Plastic	<b>P</b>	
SILTY CLAY (A-6b), trace fine sand;	0 0 -	1 59 40				75.0 481 - 77.0 481 - 77.0 481	5 10 16 9.2-	16	.1 3.	Very si slightly	dy organic; damp.  um dense brown SANDY SILT (A-4a), trace gravel;			-Plastic	•	
SILTY CLAY (A-6b), trace fine sand;	0 0 -	1 59 40		<b>₽</b>		75.0 481 - 77.0 481 - 77.0 481	5 10 16 9.2-			slightly	dy organic; damp.  um dense brown SANDY SILT (A-4a), trace gravel;			-Plastic	) 	
SILTY CLAY (A-6b), trace fine sand;	0 0 -	1 59 40		<b>₽</b>		75 — -77.0 — 489	5 10 16 9.2-			slightly	dy organic; damp.  um dense brown SANDY SILT (A-4a), trace gravel;			-Plastic	<b>P</b>	
SILTY CLAY (A-6b), trace fine sand;	0 0 -	1 59 40		<b>₽</b>		-77.0 -48! - - - 80 -	7 8 9			slightly	dy organic; damp.  um dense brown SANDY SILT (A-4a), trace gravel;			-Plastic	<b>P</b>	
SILTY CLAY (A-6b), trace fine sand;	0 0 -	1 59 40				-77.0 -48! - - - 80 -	7 8 9			Mediur				-Plastic	•	
SILTY CLAY (A-6b), trace fine sand;				<i>&gt;</i>		-77.0 -48! - - - 80 -	7 8 9		2			0 3 - 38	48 11 Non-	-Plastic	β	
SILTY CLAY (A-6b), trace fine sand;			\$	₽ <b></b>		80 —	7 8 9	18	2			0 3 - 38	48 11 Non	-Plastic	<b>/</b>	
SILTY CLAY (A-6b), trace fine sand;			\$	<b>P</b>		80 —	7 8 9	18	2			0 3 - 38	48 11 Non	ı-Plastic	<b>/</b>	
SILTY CLAY (A-6b), trace fine sand;			\$	/ 		-	9	18	2	angriuy	y organo, we.	0 3 - 38	48 11 Non	ı-Plastic	4	
SILTY CLAY (A-6b), trace fine sand;			\$	<b></b>		-	9	18								
SILTY CLAY (A-6b), trace fine sand;			Ø	<del></del>		- <b>82</b> .0 <b>48</b>	4.2-					-		11111111		
SILTY CLAY (A-6b), trace fine sand;			Ø    Q		<sup> </sup>	82.0 48	4.2-					<del> </del>       ,		CLICIAL	,	
SILTY CLAY (A-6b), trace fine sand;	0 0 -				¹     <b> </b>	1 -		1 11			um dense gray FINE SAND (A-3), trace gravel,	1 1 1 1 1	1 1 1117	1111111	.	
SILTY CLAY (A-6b), trace fine sand;	0 0 -						12			trace s	silt; moist.		1	[[[[]]	۱	
SILTY CLAY (A-6b), trace fine sand;	0 0 -				,	85 —	12 10 12	18	3			'	1	[[[[[[]]	$\chi_{[]][][][][]$	
SILTY CLAY (A-6b), trace fine sand;	0 0 - 1		111111111		,							_           '	1	11111111	.*\\\\\\\	
SILTY CLAY (A-6b), trace fine sand;		1 46 53		┃ <del>┃<b>┃</b></del>	,	<b>87.0 47</b> 9	9.2-			0	and the said beauty and start CANDOTONE	<i>─</i> ┤	1      ,		.11111111111111111111111111111111111111	
relet reserve (resp, ados into sana,			111111111111111111111111111111111111111	P1111111111	,					argillad	rely weathered brown and gray SANDSTONE, aceous.	_         '	1      ,		.11111/1111111	
			ШИШ		,	-	27 23 17	14	4			41 11 - 13	27 8	<mark> </mark>	Non-Plasti	de
			\\		,             <b> </b>	90	1/	14				'	1	111111		ic
			$\Pi\Pi\Pi\Pi\Pi\Pi$		,							'	1		.	
			$\Pi\Pi\Pi\Pi\Pi\Pi$		,	92.0 474	4.2				um hard to hard gray SANDSTONE; very fine to fine	$\neg$	1			
		1 80 19	111111111111111111111111111111111111		,		Core	Rec F	00		ed, moderately weathered, argillaceous, thinly ed to massive, slightly fractured, contains few	'	1		.	
	"  "   "				,	95 —	60"	60" 9	7% R-1	argillad @ 92.0	aceous laminations. .0'-92.2', 92.3'-92.5', filled fractures.	'	1		.	
			1111111/11		,	-						'	1		.	
_T (A-4b), trace fine sand; wet.			11111/1111		,	-						'	1		.	
			ШИШ		,					@ 97.7	7.7',97.8', low angle fractures.	'	1		.	
	0 0 -	1 81 18 N	on-Plastic	•	,	100	Core 60"	Rec F 56" 9	QD 3% R-2			'	1		.	
			$  \Upsilon     $		,	""				A 400	10.71.404.41 highly weathered and broken	'	1		.	
					,				_		0.7'-101.1', highly weathered and broken. 11.7'-101.9', decomposed shale layer.	'	1		.	
					,							'		[]]]]]]		
					,	-	Core	Rec F	QD <sub>R-3</sub>			'	1		.	
			ΙΨΙΙΙΙ		,	105—	60"	60° 10	10%			'	1		.	
					,	1 1						'	1		.	
stiff gray SILT AND CLAY (A-6a); damp					,							'	1		.	
		1 57 42		ШШШ	,		Core	Rec F	OD			'	1			
					,	110—	60"	60" 10	0% <sup>R-4</sup>			'	1			
					,      <b>  </b>					@ 111	1.0'-111.3', calcareous layer.	'				
			111/11111		,      <b>  </b>	112.0 45	4.2					'				
					,      <b>  </b>	1				- Januar	Bottom of Boring - 112.0'	<u> </u>				
					,      <b>  </b>	115_						'				
				[[]][][]	,      <b>  </b>	'"-						'				
	-				,      <b>  </b>							'				
gray CLAY (A-7-8) trace to little fine					,      <b> </b>	-						'			.	
gray CLAY (A-7-6), trace to little fine moist.			11111111		·				1 1			'				
					<u>'     </u>					l			للللسلسة			1   1
	gray CLAY (A-7-6), trace to little fine	gray CLAY (A-7-6), trace to little fine	0 0 - 1 57 42	0 0 — 1 57 42	0 0 - 1 57 42	0 0 - 1 57 42	0 0 - 1 57 42 110112.0 45 115 115 1	stiff gray SILT AND CLAY (A-6a); damp  0 0 - 1 57 42  110112.0 454.2115  gray CLAY (A-7-6), trace to little fine	stiff gray SILT AND CLAY (A-6a); damp  0 0 - 1 57 42  110 - 12.0 454.2 - 115 -	stiff gray SILT AND CLAY (A-6a); damp  0 0 - 1 57 42  110 - Core Rec 60" 60" 100% R-4 -112.0 454.2 1115 - 1	stiff gray SILT AND CLAY (A-6a); damp  0 0 - 1 57 42  110 - Core Rec RQD R-4 100% R-4  -112.0 - 454.2 - 115	stiff gray SILT AND CLAY (A-6a); damp  0 0 - 1 57 42  110 - 112.0 454.2 @ 111.0-111.3', calcareous layer. @ 111.0-111.3', calcareous layer. @ 111.3'-112.0', fine to medium grained clean sandstone.  Bottom of Boring - 112.0'  gray CLAY (A-7-8), trace to little fine	stiff gray SILT AND CLAY (A-6a); damp  0 0 - 1 57 42  110 - Core 80' 80' 80' 100%  2 111.0'-111.3', calcareous layer. 2 111.0'-112.0', fine to medium grained clean sandstone.  Bottom of Boring - 112.0'  115 - 1	stiff gray SILT AND CLAY (A-6a); damp  0 0 - 1 57 42  110 - Core Rec RQD R-4  -112.0 454.2  -115 - Bottom of Boring - 112.0'  gray CLAY (A-7-6), trace to little fine	stiff gray SILT AND CLAY (A-6a); damp  0 0 - 1 57 42  Core Rec RQD R-4	stiff gray SILT AND CLAY (A-6a); damp  0 0 - 1 57 42  110 - Core Rec RQD R-4 -112.0 - 454.2 - (2) 111.0'-111.3', calcareous layer. (2) 111.0'-111.3', calcareous layer. (3) 111.3'-112.0', fine to medium grained clean sandstone.  Bottom of Boring - 112.0'  115 - (3) 115 - (4) 1

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ient: TranSystems, Inc.	DLZ OHIO INC. * 6121 HUNTLEY ROAD, COLUMBUS, OHIO 43229 *  Project: SCI-823-0.00	Job No. 0121-3070.03	Client: TranSystems, Inc.	DLZ OHIO INC. * 6121 HUNTLEY ROAD, COLUMBUS, OHIO 43229 *  Project: SCI-823-0.00	Job No. 0121-3070.03	<b>7</b>
OG OF: Boring B-38		led: 05/03/07 to 05/04/07	LOG OF: Boring B-38		illed: 05/03/07 to 05/04/07	- NRA
Sample No.		GRADATION STANDARD PENETRATION (N)	Sample No.	,	GRADATION STANDARD PENETRATION (N)	` I I
Depth Elev. be Lie Lie Common	(tsf) DESCRIPTION	Teb   Pu   Pu   Pu   Pu   Pu   Pu   Pu   P	Depth Elev. a	(tsf) DESCRIPTION	Section   Sec	'
0.8 560.9 2 3 4 17 1	Topsoil - 9"  Very stiff brown CLAY (A-7-6), trace fine sand; damp to moist.		-	Stiff to very stiff gray SILT AND CLAY (A-6a), trace fine sand; moist.		
4 9 11 16 2	3.5	0 0 - 1 40 59	65 — 6 11 18 20	2.0	0 0 - 4 32 64	
5.5 — 656.2 — 4 4 6 18 3 8.0 — 553.7 —	Stiff brown SILT (A-4b), trace fine sand; moist.	0 0 - 1 52 47				
10 3 6 18 4A S	Stiff brown SILT AND CLAY (A-5a), trace fine sand; moist.  2:0 2:0 2:0 2:0 2:0 2:0 2:0 2:0 2:0 2:	0 0 - 8 35 57	70 — 3 5 9 18 21	1.75		
2.0 549.7 2 5 9 15 5	1.0-1.5  Medium stiff brown SILTY CLAY (A-6b), trace fine sand; contains thin fine sand seams; moist.	0 0 - 9 41 50 0 0 0 - 2 28 70	-72.0 <u>489.</u> 7-	Medium dense to dense gray SANDY SILT (A-4a), little clay; moist to wet.	<del> </del>	
15 - 2 4 7 18 6	3.0 @ 13.5'-15.0', very stiff.	0 0 - 2 39 59	75			
17.5 544.2 2 3 16 7 19.0 542.7 3 17 8	1.0  Medium stiff brown SILT (A-4b), trace fine sand; contains thin fine sand seams; moist.	0 0 - 1 54 45	- - W <sub>0</sub> 23		0 2 - 42 45 11 Nion-Plastic	
20 — 3 4 9	Stiff to very stiff brown SILT AND CLAY (A-6a), trace fine sand; contains thin fine sand seams; moist.  1.0-1.5  Stiff to very stiff brown SILT AND CLAY (A-6a), trace fine sand; contains thin fine sand seams; moist.  @ 21.0', torvane = 0.38 tsf	0 0 - 1 50 49	80 H 18 1	@ 80.0', 10.0' sand heave accumulated overnight; washed out.	0 2 - 32 11 INVITEDU	
7 18 3 4 19 10	1.0		11 13 23 18 24A 24B			
25 4 10 2 2 5 7 18 11	2.5		-85.5 - 476.2	Medium hard gray SANDSTONE; fine to medium grained, slightly to moderately weathered, moderately to highly fractured.  @ 85.6'-85.9', iron stained fractures.		
30 — 3 12 12	1.75	1 3 - 3 39 54	- Core 8c RQD 85% R	-1  @ පാ.6-පാ.৮', iron stained fractures.		
32.0—529.7-	Soft to medium stiff gray SILT (A-4b), little to some clay, trace fine sand; contains thin fine sand seams;			Bottom of Boring - 90.5'		
35 — 2 3 13 13 14 14 14 14 14 14 14 14 14 14 14 14 14	0.5 moist to wet.	0 0 - 1 69 30	95—			
_   5  18	0.5-0.75 @ 37.0'-39.0', torvane = 0.14 tsf.	0 0 - 2 73 25				
40 — 2 4 18 15	0.25-0.5		100—			
WOH 3 16	0.25-0.5					
45 - 515.2 - 515.2 -	Very stiff gray SILT AND CLAY (A-6a), trace fine sand; moist.		105—			
50 - 510 17	3.0		110—			
	@ 52.0', brownish-gray.					
55 11 18 18	3.0	0 0 - 1 30 69	115—			
- - - 540 40	20					
60 5 10 19 19 19 19 19 19 19 19 19 19 19 19 19	2.0		120			Ш

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