PROJECT DESCRIPTION

THE PROJECT CONSISTS OF THE RECONSTRUCTION OF 0.76 MILES OF I-70 AND 0.76 MILES OF I-71, EXCLUDING ROUTE OVERLAP, IN THE CITY OF COLUMBUS, OHIO. THE WORK INCLUDES RECONSTRUCTION OF A SYSTEM INTERCHANGE, COMMONLY KNOWN AS THE EAST INTERCHANGE, RECONFIGURATION OF LOCAL STREET ACCESS TO THE FREEWAY, CONSTRUCTION OF SIXTEEN BRIDGES, AS WELL AS RECONSTRUCTION OF THE TRUNK LINE STORM SEWERS.

HISTORIC RECORDS

SEVENTEEN HISTORIC BORINGS DRILLED ALONG THE PROJECT FROM THE ORIGINAL SUBSURFACE EXPLORATION IN 1959 THROUGH 1962 ARE PRESENTED ON THE SHEETS. HISTORIC BORING NUMBERS WERE REFORMATTED IN ACCORDANCE WITH THE SPECIFICATIONS.

EVERY EFFORT HAS BEEN MADE TO PRESENT THE HISTORIC INFORMATION ACCURATELY. HOWEVER, IN SOME CASES, INSUFFICIENT INFORMATION WAS AVAILABLE TO PRECISELY DETERMINE DEPTHS OF SAMPLE DRIVES, BLOW COUNTS, AND SOIL CLASSIFICATION. WATER LEVEL OBSERVATIONS AND THICKNESSES OF SURFACE MATERIAL WERE NOT REPORTED. WHEN INSUFFICIENT INFORMATION WAS PROVIDED, ENGINEERING JUDGEMENT WAS UTILIZED TO DEVELOP THE SUBSURFACE INFORMATION FOR HISTORIC BORINGS. REFER TO THE HISTORIC BORING LOGS FOR ADDITIONAL INFORMATION.

GEOLOGY

THE PROJECT AREA HAS NEARLY LEVEL TO SLIGHTLY HILLY NATURAL TERRAIN WHICH HAS BEEN ALTERED BY THE CONSTRUCTION OF THE EXISTING HIGHWAY. CUT SECTIONS OF APPROXIMATELY 20 TO 25 FEET ARE PRESENT.

GENERAL GEOLOGICAL REFERENCES REPORT THAT THE SITE WAS COVERED BY BOTH THE WISCONSIN AND ILLINOIAN GLACIERS. THE SCIOTO RIVER LIES APPROXIMATELY 1.2 MILES WEST OF THE PROJECT AREA.

THE OVERBURDEN IS APPROXIMATELY 100 TO 120 FEET THICK AND CONSISTS OF GLACIAL OUTWASH DEPOSITS, WHICH ARE TYPICALLY CHARACTERIZED AS A HETEROGENEOUS MIXTURE OF CLAY, SILT, SAND, GRAVEL, COBBLES, AND BOULDERS. THE UNDERLYING BEDROCK IS COMPOSED OF THE OLENTANGY SHALE OF DEVONIAN AGE.

RECONNAISSANCE

FIELD RECONNAISSANCE WAS PERFORMED ON VARIOUS DATES IN JULY 2008 AND JANUARY 2010. LAND USAGE AROUND THE EXISTING HIGHWAY IS GENERALLY RESIDENTIAL, COMMERCIAL AND INSTITUTIONAL. THE EXISTING PAVEMENT, STRUCTURES, AND EMBANKMENTS APPEARED TO BE IN GENERALLY GOOD CONDITION. THE AREA APPEARED TO BE GENERALLY FREE FROM GEOTECHNICAL HAZARDS.

SUBSURFACE EXPLORATION

THE GEOTECHNICAL EXPLORATION CONSISTED OF THREE DIFFERENT EXPLORATIONS, TOTALING 165 BORINGS. FIFTY-FOUR BORINGS WERE DRILLED FOR THE PRELIMINARY EXPLORATION BETWEEN THE DATES OF JUNE 23, 2008 AND AUGUST 13, 2008 AND ALSO BETWEEN JANUARY 22, 2009 AND MARCH 27, 2009, TO DEPTHS BETWEEN 7.0 AND 130.0 FEET.

THREE OF THE BORINGS DRILLED FOR A SEWER TUNNEL EXPLORATION, B-002-0 THROUGH B-004-0, ARE INCLUDED IN THE PLANS. THESE BORINGS WERE DRILLED TO DEPTHS BETWEEN 30.0 AND 51.0 FEET BETWEEN THE DATES OF JUNE 22 AND JULY 1, 2010.

FOR THE FINAL DESIGN PHASE OF THE EAST INTERCHANGE, 94 BORINGS WERE DRILLED BETWEEN THE DATES OF MAY 25, 2010 AND FEBRUARY 4, 2011 AND ALSO BETWEEN AUGUST 1 AND AUGUST 18, 2011. THESE BORINGS WERE ADVANCED TO DEPTHS BETWEEN 7.0 AND 100.0 FEET.

THE BORINGS DRILLED FOR PAVEMENT SUBGRADE ANALYSES WERE SPACED APPROXIMATELY 400 FEET APART AND THE BORINGS DRILLED FOR THE RETAINING WALL FOUNDATION ANALYSES WERE SPACED APPROXIMATELY 150 FEET APART NEAR THE WALL ALIGNMENTS. BORINGS WERE ALSO DRILLED FOR BRIDGE FOUNDATION ANALYSES.

THE BORINGS WERE ADVANCED USING EITHER TRUCK-MOUNTED OR ALL-TERRAIN-VEHICLE (ATV) MOUNTED, ROTARY-TYPE DRILL RIGS. SAMPLING WAS PERFORMED IN 1.5-FOOT INCREMENTS AT INTERVALS NOT EXCEEDING 5 FEET. WHERE THE SAMPLER ENCOUNTERED RESISTANCE TO PENETRATION OF 6 INCHES OR LESS AFTER 50 BLOWS OF THE DROP HAMMER, THE SAMPLING INCREMENT WAS DISCONTINUED.

THE BORING NUMBERS FOR THE THREE EXPLORATIONS RANGED FROM B-002-0 TO B-004-0, FROM B-035-0 TO B-062-0, FROM B-141-0 TO B-183-0, AND FROM B-278-0 TO B-302-0. ONE OF THE BORINGS DRILLED DURING THE PRELIMINARY EXPLORATION, B-183-0, WAS DRILLED BY REPRESENTATIVES OF RESOURCE INTERNATIONAL, INC.

(EXPLORATION FINDINGS ON FOLLOWING SHEET)

LEGEND

DESCRIPTION	ODOT CLASS	CLASSIFIED MECH./VISUAL	
GRAVEL AND/OR STONE FRAGMENTS	*A-1-a*	*35*	*23*
GRAVEL AND/OR STONE FRAGMENTS WITH SAND	*A-1-b*	*65*	*86*
FINE SAND	*A-3*	*9*	*0*
COARSE AND FINE SAND	*A-3a*	*9*	*44*
GRAVEL AND/OR ST. FRAGS. WITH SAND AND SILT	*A-2-4*	*7*	*1*
GRAVEL AND/OR ST. FRAGS. W/ SAND, SILT AND CLAY	*A-2-6*	*0*	*2*
SANDY SILT	*A-4a*	*118*	*133*
SILT	*A-4b*	*6*	*5*
SILT AND CLAY	*A-6a*	*43*	*59*
SILTY CLAY	*A-6b*	*16*	*15*
CLAY	*A-7-6*	*16*	*3*
	TOTAL	*324*	*371*
UNCONTROLLED FILL (UCF)	*VISUAL*		
SHALE	*VISUAL*		
PAVEMENT OR BASE = X = APPROXIMATE THICKNESS	*VISUAL*		
SOD AND TOPSOIL = X = APPROXIMATE THICKNESS	*VISUAL*		
PAVEMENT OR BASE = X = APPROXIMATE THICKNESS (ASPHALT, CONCRETE, BRICK, SANDSTONE OR GRANITE PAVERS, BERM)	*VISUAL*		
SOD AND TOPSOIL = X = APPROXIMATE THICKNESS	*VISUAL*		

BORING LOCATION - PLAN VIEW

HISTORIC BORING LOCATION

DRIVE SAMPLE AND/OR ROCK CORE BORING PLOTTED TO VERTICAL SCALE ONLY. HORIZONTAL BAR INDICATES A CHANGE IN STRATIGRAPHY.

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.
(ONLY Y/Z REPORTED FOR HISTORIC BORINGS)

50(n) — INDICATES NUMBER OF BLOWS(50) TO DRIVE A SPLIT-BARREL SAMPLER A DEPTH OF (n) INCHES OTHER THAN THE NORMAL 6-INCH INCREMENT.

WC — INDICATES WATER CONTENT IN PERCENT.

W— INDICATES FREE WATER ELEVATION.

INDICATES STATIC WATER ELEVATION.

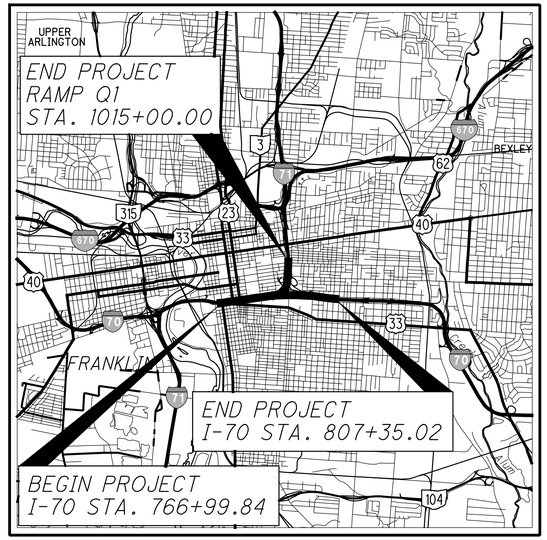
● INDICATES A PLASTIC MATERIAL WITH A MOISTURE CONTENT EQUAL TO OR GREATER THAN THE LIQUID LIMIT MINUS 3.

⊖ INDICATES A NON-PLASTIC MATERIAL WITH A MOISTURE CONTENT GREATER THAN 25 % OR GREATER THAN 19 % WITH A WET APPEARANCE.

—TR INDICATES TOP OF ROCK

NP INDICATES A NON-PLASTIC SAMPLE.

SS INDICATES A SPLIT SPOON SAMPLE, STANDARD PENETRATION TEST.



LOCATION MAP

SCALE IN MILES

0 1 2 3 4

N

PARTICLE SIZE DEFINITIONS

12″	3″	2.0 mm	0.42 mm	0.074 mm	0.005 mm
COBBLES	GRAVEL	COARSE SAND	FINE SAND	SILT	CLAY
		No. 10 SIEVE	No. 40 SIEVE	No. 200 SIEVE	

SPECIFICATIONS

THE GEOTECHNICAL EXPLORATION WAS PERFORMED IN ACCORDANCE WITH THE VERSION OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTAION, OFFICE OF GEOTECHNICAL ENGINEERING, SPECIFICATIONS FOR GEOTECHNICAL EXPLORATIONS IN EFFECT AT THE TIME VARIOUS PARTS OF THE PROJECT BEGAN. THE MOST RECENT VERSION OF THE SPECIFICATIONS USED IS DATED APRIL 2010.

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.

RECON. - VARIOUS 2008, 2011
DRILLING - VARIOUS (DLZ, RII, CTL) 2008, 2011
DRAWN - VARIOUS 2013, 2015
REVIEWED - VARIOUS 2013, 2015

DLZ
6121 HUNTLEY ROAD • COLUMBUS, OHIO 43229

PID NO. 77370

SOIL PROFILE

FRA-70-14.48

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EXPLORATION FINDINGS

AT THE ROAD SURFACE, THE BORINGS GENERALLY ENCOUNTERED TWO TO 22.0 INCHES OF ASPHALT CONCRETE OVER THREE TO 15.5 INCHES OF PORTLAND CEMENT CONCRETE OVER ZERO TO 31.0 INCHES OF AGGREGATE BASE. BORINGS DRILLED OFF THE ROAD GENERALLY ENCOUNTERED BETWEEN ONE TO TEN INCHES OF TOPSOIL AT THE GROUND SURFACE.

BELOW THE PAVEMENT AND TOPSOIL LAYERS, THE BORINGS DRILLED WEST OF I-70 STATION 780+00, GENERALLY WEST OF WASHINGTON AVENUE, ENCOUNTERED PRIMARILY VERY STIFF TO HARD COHESIVE SOILS CONSISTING OF SANDY SILT (A-4a), SILT AND CLAY (A-6a), AND SILTY CLAY (A-6b). VERY DENSE GRANULAR SOILS, CONSISTING PRIMARILY OF GRAVEL (A-1-a), GRAVEL WITH SAND (A-1-b), AND COARSE AND FINE SAND (A-3a) WERE COMMONLY ENCOUNTERED BELOW DEPTHS OF 30.0 TO 40.0 FEET.

THE BORINGS WERE EXTENDED TO BEDROCK IN EIGHT BORINGS, B-034-0-08, B-036-0-08, B-037-0-08, B-041-0-08, B-043-0-08, B-044-0-08, B-046-0-08, AND B-048-0-08, WHICH WERE ALL WEST OF I-70 STATION 778+00. THE TOP OF BEDROCK WAS ENCOUNTERED BETWEEN DEPTHS OF 93.5 AND 115.0, WHERE A SEVERELY WEATHERED GRAY SHALE WAS ENCOUNTERED. APPROXIMATELY TWENTY FEET OF BEDROCK WAS CORED IN EACH OF THESE BORINGS. THE CORED BEDROCK GENERALLY CONSISTED OF BLUISH-GRAY TO DARK GRAY VERY WEAK TO WEAK SHALE THAT WAS MODERATELY FRACTURED TO FRACTURED. LAMINATIONS OF LIMESTONE WERE ALSO OBSERVED IN THE BEDROCK.

THE BORINGS DRILLED EAST OF I-70 STATION 780+00 GENERALLY ENCOUNTERED PREDOMINANTLY MEDIUM DENSE TO VERY DENSE SAND AND GRAVEL CONSISTING OF GRAVEL (A-1-a), GRAVEL WITH SAND (A-1-b), AND COARSE AND FINE SAND (A-3a) WITH LESSER AMOUNTS OF GRAVEL WITH SAND AND SILT (A-2-4) AND GRAVEL WITH SAND, SILT, AND CLAY (A-2-6). HEAVING SANDS WERE ALSO ENCOUNTERED GENERALLY BELOW DEPTHS OF 15.0 FEET. COBBLES AND BOULDERS WERE ALSO OCCASIONALLY ENCOUNTERED.

A LAYER OF PRIMARILY STIFF TO HARD COHESIVE SOIL WAS ALSO ENCOUNTERED IN SOME BORINGS OVER THE GRANULAR SOILS. THIS LAYER GENERALLY VARIED BETWEEN ZERO AND 30 FEET THICK AND CONSISTED PRIMARILY OF SANDY SILT (A-4a), SILT AND CLAY (A-6a), AND SILTY CLAY (A-6b). OCCASIONAL LAYERS OF SILT (A-4b) AND CLAY (A-7-6) WERE ALSO ENCOUNTERED.

AN ORGANIC CLAY WAS ENCOUNTERED IN ONLY ONE BORING, B-288-0-10, BETWEEN DEPTHS OF 1.5 AND 3.0 FEET.

SEEPAGE WAS GENERALLY FIRST OBSERVED IN THE BORINGS AT DEPTHS GENERALLY BETWEEN 3.5 AND 53.5 FEET. FINAL WATER LEVELS GENERALY RANGED BETWEEN DEPTHS OF 1.0 AND 92.3 FEET. HOWEVER, MOST OF THE BORINGS DRILLED TO DEPTHS OF FIFTEEN FEET OR LESS DID NOT ENCOUNTER SEEPAGE OR FINAL WATER LEVELS. MOST OF THE FINAL WATER LEVELS IN THE BORINGS DRILLED DEEPER THAN 25.0 FEET INCLUDED WATER ADDED DURING DRILLING TO REMOVE AND COUNTERACT HEAVING SANDS.

INDEX OF SHEETS

ALIGNMENT	PROFILE STATIONING FROM STA.	PROFILE STATIONING TO STA.	PLAN VIEW SHEET	PROFILE SHEET
MOUND ST.	11+00	23+00	19	19
	23+00	35+00	20	20
I-70	742+00	754+00	10	23
	754+00	766+00	11	24,25
	766+00	778+00	12	26,27
	778+00	790+00	13	28,29
	790+00	802+00	14	30,31
	802+00	814+00	15	32
RAMP N4	770+42.52	782+00	12	33
	782+00	794+00	13	34,35
	794+00	806+00	16	36
	806+00	812+38.50	17	37
RAMP N1	860+68.50	872+00	11	38
	872+00	884+00	12	39
	884+00	888+03.31	13	40
RAMP N3	867+36.92	879+00	12	41
	879+00	891+00	13	42
	891+00	895+21.23	14	43
RAMP N2	782+36.92	791+86.37	12,13,14	44
RAMP P1	788+41.86	794+24.08	14,22	45
	788+41.86	794+24.08	14,22	46
RAMP P2	891+44	901+00	14	47
	901+00	912+88.91	14,15	48
RAMP P4	869+28.41	877+00	17	49
	877+00	889+00	16	50
	889+00	901+00	13	51
	901+00	911+98.97	14	52
RAMP P5	973+20.44	986+00	16	53
	986+00	993+35.07	13	54
RAMP P6	785+73.63	796+15.14	21	55
	798+00	800+82.25	16	56
RAMP Q3	873+96.66	885+00	16,17	57
	885+00	897+00	13	58,59
	897+00	909+54.86	14	60
RAMP Q1	991+46.81	1003+00	12	61
	1003+00	1015+00	16	62
	1015+00	1023+00	17	63
RAMP Q2	903+92.25	915+00	18	64
	915+00	926+30	17,18	65
RAMP Q4	875+06.62	879+00	12	66,67
	879+00	891+10.56	18	68,69
PARSONS AVE.	179+67.62	191+00	16	70
	191+00	203+00	16,17	71
	203+00	206+01.86	17	72
MAIN ST.	25+00	37+00	18	73
	37+00	45+00	16	74
LESTER DR.	100+00	112+00	17,18	75
MOOBERRY ST.	887+83.37	899+00	13	76
	899+00	904+66.69	14	77
GRANT AVE.	150+00	162+00	11	78
FULTON ST.	19+00	31+00	9	79
	31+00	43+00	10	80
	43+00 BK	81+07.69 AH	11	81
	60+00	72+00	12	82
NOISE WALL	100+00	109+00	21	83
	109+00	114+60.69	22	84

STRUCTURES	PLAN VIEW SHEETS	PROFILE SHEETS
FRA-70-1456C	11	78
FRA-70-1461P	11,12	41
FRA-70-1476	12	28,29,34
FRA-70-1491A	13,16	70
FRA-70-1493L&R	13	28,29
FRA-70-1496P	16	45,46
FRA-70-1498	13	30,31,58
FRA-71-1704R	16	36
FRA-71-1707B	16	45,56
FRA-71-1716	16,18	73
Wall 6W5	10,11	24,26
Wall 6W6	11,12	38,39
Wall 7W5	10,11	25,27
Wall I-1	17,18	64,65
Wall I-2	16,17	71,72
Wall I-2A	16	53
Wall I-5	12,16	68
Wall I-6A-2	18	68,69
Wall I-6B-2	11,12,16	26,66,67,69
Wall I-7	12	26,28
Wall I-8A	12	44
Wall I-9A-1	12	41
Wall I-9A-2	12,13	42
Wall I-11	13	47
Wall I-12A	16,21	45
Wall I-12B	16,21	46
Wall I-13-2	14	59,60
Wall I-13A	13	58
Wall I-13B	13	28
Wall I-13C	16	58
Wall I-13D	13,14	30
Wall I-13E	13	42
Wall I-22	16	36
Wall I-25	13	31
Wall I-27	16,17,18	49,50

DRAWN AMJ
CHECKED VBP

SOIL PROFILE

FRA-70-14.48

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SUMMARY OF SOIL TEST DATA

I-70

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	% REC	% AGG	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	OHIO CLASS
B-033-0-08	01.00	02.50	SS-1	28										A-4a (VISUAL)
STA. 749+82.20 43.39' LT.	03.50	05.00	SS-2	67				SAME AS SS-2					5	A-1-b (VISUAL)
NORTHING = 711911.2666	05.00	06.50	SS-3	78	36	36	17	--11--		NP	NP	NP	4	A-1-b (0)
EASTING = 1829507.2440	06.50	08.00	SS-4	67	29	35	22	--13--		NP	NP	NP	10	A-1-b (0)
	08.00	09.50	SS-5	89	36	34	20	--11--		NP	NP	NP	12	A-1-b (0)
	09.50	11.00	SS-6	100	29	37	22	--13--		NP	NP	NP	13	A-1-b (0)
	11.00	12.50	SS-7	100				SAME AS SS-6					12	A-1-b (VISUAL)
	13.50	15.00	SS-8	100				SAME AS SS-6					13	A-1-b (VISUAL)
B-035-0-08	01.50	03.00	SS-1	83									5	A-3 (VISUAL)
STA. 752+66.77, 72.74' RT.	03.00	04.50	SS-2	83				SAME AS SS-3					4	A-1-b (VISUAL)
NORTHING = 711844.5938	04.50	06.00	SS-3	83	37	36	17	--10--		NP	NP	NP	4	A-1-b (0) *
EASTING = 1829807.2770	06.00	07.50	SS-4	72	12	20	60	--8--					5	A-3 (VISUAL)
	07.50	09.00	SS-5	72	49	28	15	--9--		NP	NP	NP	4	A-1-b (0)
	09.00	10.50	SS-6	72	34	36	20	--10--		NP	NP	NP	9	A-1-b (0)
	11.00	12.50	SS-7	83				SAME AS SS-6					10	A-1-b (VISUAL)
	13.50	15.00	SS-8	72				SAME AS SS-6					10	A-1-b (VISUAL)
B-039-0-08	01.50	02.50	SS-1A	72				SAME AS SS-3						A-4a (VISUAL) *
STA. 760+57.45, 102.65' RT.	02.50	03.00	SS-1B					SAME AS SS-3						A-4a (VISUAL)
NORTHING = 711938.9304	03.50	05.00	SS-2	94				SAME AS SS-3					10	A-4a (VISUAL)
EASTING = 1830589.2840	06.00	07.50	SS-3	83	20	15	19	30	16	21	20	1	9	A-4a (2)
	07.50	09.00	SS-4	100	17	15	25	28	15	20	13	7	8	A-4a (1)
	09.00	10.50	SS-5	100	14	15	25	31	15	22	13	9	8	A-4a (2)
	10.50	12.00	SS-6	100	14	16	25	29	16	20	13	7	8	A-4a (2)
	12.00	13.00	SS-7A	72										A-3a (VISUAL)
	13.00	13.50	SS-7B										9	A-3a (VISUAL)
	13.50	15.00	SS-8	83									10	A-4a (VISUAL)
	16.00	17.50	SS-9	89									8	A-4a (VISUAL)
B-042-0-08	01.00	02.50	SS-1	100				SAME AS SS-2					9	A-4a (VISUAL) *
STA. 764+57.07, 41.06' LT.	03.50	05.00	SS-2	100	8	14	24	35	19	22	13	9	9	A-4a (4)
NORTHING = 712130.6804	06.00	07.50	SS-3	100	8	14	21	36	22	22	13	9	9	A-4a (5)
EASTING = 1830967.3980	07.50	08.42	SS-4	100	8	15	20	36	21	23	14	9	8	A-4a (4)
	09.00	10.50	SS-5	100				SAME AS SS-4					8	A-4a (VISUAL)
	10.50	10.92	SS-6	60				SAME AS SS-4					9	A-4a (VISUAL)
	12.00	13.50	SS-7	100				SAME AS SS-4					8	A-4a (VISUAL)
	13.50	15.00	SS-8	100				SAME AS SS-4					8	A-4a (VISUAL)
B-045-0-08	01.50	03.00	SS-1	78				SAME AS SS-3					8	A-4a (VISUAL)
STA. 768+75.91, 91.18' RT.	03.00	05.00	SS-2	56				SAME AS SS-3					8	A-4a (VISUAL) *
NORTHING = 712051.0616	05.00	06.50	SS-3	67	12	14	22	32	20	22	14	8	11	A-4a (4)
EASTING = 1831399.9820	06.50	08.00	SS-4	100	9	24	21	30	16	23	14	9	9	A-4a (2)
	08.00	09.50	SS-5	100	7	15	20	37	21	25	14	11	8	A-6a (5)
	09.50	11.00	SS-6	78				SAME AS SS-5					10	A-6a (VISUAL)
	11.50	13.00	SS-7	33				SAME AS SS-5					9	A-6a (VISUAL)
	13.50	15.00	SS-8	67				SAME AS SS-5					7	A-6a (VISUAL)
B-050-0-08	01.0	02.50	SS-1	100				SAME AS SS-2						A-4a (VISUAL)
STA. 787+27.11, 10.18' LT.	03.50	05.00	SS-2	83	15	12	20	33	19	23	15	8	10	A-4a (3)
NORTHING = 712275.3810	06.00	07.50	SS-3	100				SAME AS SS-2						A-4a (VISUAL)
EASTING = 1832579.836	08.50	10.00	SS-4	72	32	18	19	--31--		NP	NP	NP	6	A-2-4 (0)
	11.00	12.50	SS-5	22	19	17	18	26	19	20	17	3	1	A-4a (2)
	13.50	15.00	SS-6	78	12	9	19	39	20	18	13	5	9	A-4a (5)
B-051-0-09	01.00	02.50	SS-1	100	39	19	12	17	12	28	18	10	9	A-2-4 (0)
STA. 785+95.79, 2.05' LT.	02.50	04.00	SS-2	100	36	23	14	17	10	26	18	8	11	A-2-4 (0)
NORTHING = 712389.8097	04.00	05.50	SS-3	56	24	17	17	31	11	29	18	11	11	A-6a (2)
EASTING = 1833089.5920	05.50	05.75	SS-4	33				SAME AS SS-3						A-6a (VISUAL)
	07.00	08.50	SS-5	56				BLACK CINDERS					4	(VISUAL)
	08.50	08.92	SS-6	60									9	A-3a (VISUAL)

SUMMARY OF SOIL TEST DATA

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	% REC	% AGG	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	OHIO CLASS
B-051-1-09	01.00	02.50	SS-1	89	31	26	20	14	9	NP	NP	NP	7	A-1-b (0)
STA. 789+57.40, 14.11' RT.	03.50	05.00	SS-2	83				SAME AS SS-1					6	A-1-b (VISUAL)
NORTHING = 712378.2169	06.00	07.25	SS-3	87									7	A-2-6 (VISUAL)
EASTING = 1833450.6830	08.50	10.00	SS-4	56	27	17	17	24	15	31	20	11	20	A-6a (1)
	11.00	12.08	SS-5	77				SAME AS SS-4					11	A-6a (VISUAL)
	13.50	15.00	SS-6	0				SAME AS SS-4						A-6a (VISUAL)
	16.00	17.50	SS-7	100	5	10	16	41	27	28	17	11	14	A-6a (7)
	18.50	20.00	SS-8	44				SAME AS SS-7					17	A-6a (VISUAL)
	21.00	22.50	SS-9	100				SAME AS SS-7					10	A-6a (VISUAL)
	23.50	25.00	SS-10	100				SAME AS SS-7					10	A-6a (VISUAL)
B-052-0-09	01.00	02.50	SS-1	89										A-4a (VISUAL)
STA. 892+58.22, 19.61' LT.	03.50	05.00	SS-2	100										A-4a (VISUAL)
NORTHING = 712321.2521	06.00	07.50	SS-3	72	2	7	14	30	47	41	18	23	20	A-7-6 (13)
EASTING = 1833743.8505	08.50	10.00	SS-4	78				SAME AS SS-3						A-7-6 (VISUAL)
	11.00	12.50	SS-5	67				SAME AS SS-9						A-4a (VISUAL)
	13.50	15.00	SS-6	94				SAME AS SS-9						A-4a (VISUAL)
	16.00	17.50	SS-7	50				SAME AS SS-9						A-4a (VISUAL)
	18.50	20.00	SS-8	89				SAME AS SS-9						A-4a (VISUAL)*
	21.00	22.50	SS-9	100	16	14	18	35	17	20	14	6	10	A-4a (4)
	23.50	25.00	SS-10	78				SAME AS SS-9						A-4a (VISUAL)
	26.00	27.50	SS-11	72										A-3a (VISUAL)
	28.50	30.00	SS-12A	100										A-3a (VISUAL)
	29.00	29.00	SS-12B											A-4a (VISUAL)
	29.50	29.50	SS-12C		4	11	68	--17--		NP	NP	NP	5	A-3a (0)
	31.00	32.50	SS-13A	67	4	9	67	--19--		NP	NP	NP	6	A-3a (0)
	31.50	31.50	SS-13B		15	15	22	32	16	20	14	6	9	A-4a (3)
	32.50	34.00	SS-14	100	26	13	17	28	17	20	14	6	10	A-4a (2)
	34.00	35.50	SS-15	100	50	25	16	--8--		NP	NP	NP	3	A-1-a (0)
	35.50	37.00	SS-16A	100				SAME AS SS-15					2	A-1-a (VISUAL)
	36.20	36.20	SS-16B					SAME AS SS-15					4	A-1-a (VISUAL)
	37.00	38.50	SS-17	89				SAME AS SS-15					4	A-1-a (VISUAL)
	38.50	40.00	SS-18	100				SAME AS SS-15					3	A-1-a (VISUAL)
B-053-0-08	01.50	03.00	SS-1	100	10	19	27	28	15	20	14	6	8	A-4a (2)
Sta 796+59.37, 5.44' LT.	03.50	05.00	SS-2	100										A-1-b (VISUAL)
NORTHING = 712324.4604	06.00	07.50	SS-3	100	44	27	15	--14--		NP	NP	NP	6	A-1-a (0)
EASTING = 1834149.651	08.50	10.00	SS-4	100										A-4a (VISUAL)
B-054-0-08	01.00	02.50	SS-1	100						27	16	11	10	A-6a (VISUAL)
STA. 800+54.43, 16.73' RT.	03.50	05.00	SS-2	67	12	16	20	33	19	24	16	8	9	A-4a (3)
NORTHING = 712250.1424	06.00	07.50	SS-3	100				SAME AS SS-4					4	A-1-a (VISUAL)
EASTING = 1834538.1340	07.50	09.00	SS-4	100	56	21	12	--11--		NP	NP	NP	4	A-1-a (0)
	09.00	10.50	SS-5	100	52	25	16	--7--		NP	NP	NP	4	A-1-a (0)
	10.50	12.00	SS-6	100	57	22	11	--10--		NP	NP	NP	4	A-1-a (0)
	12.00	13.50	SS-7	0										A-4a (VISUAL)
	13.50	15.00	SS-8	100									11	A-3a (VISUAL)
	16.00	17.50	SS-9	100									11	A-3a (VISUAL)
B-055-0-08	01.50	03.00	SS-1	83				SAME AS SS-2					10	A-4a (VISUAL)
STA. 904+24.76, 2.78' LT.	03.00	04.42	SS-2	94	22	17	20	27	14	20	15	5	7	A-4a (1)
NORTHING = 712137.5834	04.50	04.67	SS-3	0	29	16	15	25	15	NP	NP	NP	5	A-4a (1)
EASTING = 1834896.7080	06.00	06.33	SS-4	0	19	14	18	30	19	23	13	10	6	A-4a (3)
	07.50	08.50	SS-5	8	10	12	20	34	24	22	13	9	8	A-4a (5)
	09.00	09.50	SS-6	50				SAME AS SS-5					9	A-4a (VISUAL)
	10.50	12.00	SS-7	100				SAME AS SS-5						A-4a (VISUAL)
	12.00	12.75	SS-8	0				SAME AS SS-5						A-4a (VISUAL)
B-056-0-08	02.00	03.50	SS-1	44	24	20	19	25	12	20	15	5	10	A-4a (0) *
STA. 808+73.28, 62.57' LT.	03.50	05.00	SS-2	100	9	10	23	37	20	21	13	8	9	A-4a (5)
NORTHING = 712201.6285	05.00	06.50	SS-3	100	7	14	28	35	16	NP	NP	NP	9	A-4a (3)
EASTING = 1835358.0080	06.50	08.00	SS-4	100	19	13	25	30	12	NP	NP	NP	7	A-4a (1)
	08.00	09.50	SS-5	100				SAME AS SS-4					8	A-4a (VISUAL)
	09.50	11.00	SS-6	100				SAME AS SS-4					9	A-4a (VISUAL)

DRAWN RKL CHECKED DAA

SOIL PROFILE

SUMMARY OF SOIL TEST DATA

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SUMMARY OF SOIL TEST DATA

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	% REC	% AGG	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	OHIO CLASS
B-059-0-08	01.00	02.50	SS-1	100	18	13	19	30	20	25	15	10	11	A-4a (3) *
STA. 812+61.34, 78' RT.	02.50	04.00	SS-2	17	26	15	14	29	16	24	15	9	9	A-4a (2)
NORTHING = 712011.1473	04.00	05.50	SS-3	100	12	15	20	36	17	21	14	7	9	A-4a (4)
EASTING = 1835723.8490	05.50	07.00	SS-4	100	16	11	18	36	20	24	15	9	9	A-4a (4)
	07.00	08.50	SS-5	100				SAME AS SS-4					10	A-4a (VISUAL)
	08.50	10.00	SS-6	100				SAME AS SS-4					10	A-4a (VISUAL)
B-062-0-08	01.00	02.50	SS-1	100										A-4a (VISUAL) *
STA. 816+49.66, 70.25' LT.	03.50	05.00	SS-2	100	35	31	24	--10--		NP	NP	NP	9	A-1-b (0)
NORTHING = 712107.1534	05.00	06.50	SS-3	100	27	29	33	--11--		NP	NP	NP	13	A-1-b (0)
EASTING = 1836128.2640	06.50	08.00	SS-4	67	30	27	31	--12--		NP	NP	NP	12	A-1-b (0)
	08.00	09.50	SS-5	100	17	25	42	--15--		NP	NP	NP	14	A-3a (0)
	10.50	12.00	SS-6	67									10	A-4a (VISUAL)
RAMP N1														
B-141-0-09	01.00	02.50	SS-1	78	2	5	13	33	47	44	19	25	23	A-7-6 (15)
STA. 878+84.03, 38.8' RT.	02.50	04.00	SS-2	89	1	8	25	29	36	42	17	25	23	A-7-6 (12) *
NORTHING = 712007.4000	04.00	05.50	SS-3	100	1	5	14	31	49	46	18	28	25	A-7-6 (16)
EASTING = 1832421.6870	05.50	07.00	SS-4	100	7	10	20	39	23	24	16	8	14	A-4a (6)
	07.00	08.50	SS-5	100				SAME AS SS-4					13	A-4a (VISUAL)
	08.50	10.00	SS-6	100				SAME AS SS-4					9	A-4a (VISUAL)
	11.00	12.50	SS-7	100				SAME AS SS-4					10	A-4a (VISUAL)
B-142-0-09	01.00	02.50	SS-1	50										A-6b (VISUAL)
STA. 883+07.09, 17.05' RT.	03.50	05.00	SS-2	78										A-6b (VISUAL)
NORTHING = 712116.3000	05.00	06.50	SS-3	67	10	6	15	36	33	33	18	15	16	A-6a (9) *
EASTING = 1832813.6180	06.50	08.00	SS-4	72	20	9	18	31	22	30	18	12	19	A-6a (4)
	08.00	09.50	SS-5	100	7	12	17	35	29	28	18	10	14	A-4a (6)
	09.50	11.00	SS-6	100	6	14	21	37	22	23	16	7	11	A-4a (5)
	11.00	12.50	SS-7	100				SAME AS SS-6					11	A-4a (VISUAL)
	13.50	15.00	SS-8	100				SAME AS SS-6					10	A-4a (VISUAL)
B-144-0-09	01.00	02.50	SS-1	56										A-1-b (VISUAL)
STA. 887+05.33, 82.2' RT.	03.50	05.00	SS-2	78				SAME AS SS-4						A-6a (VISUAL)
NORTHING = 712156.1000	06.00	07.50	SS-3	83				SAME AS SS-4						A-6a (VISUAL)
EASTING = 1833188.1260	07.50	09.00	SS-4	61	10	12	18	32	27	29	17	12	16	A-6a (6) *
	09.00	10.50	SS-5	89	5	13	17	32	32	34	18	16	22	A-6b (8)
	10.50	12.00	SS-6	100	10	15	18	32	24	35	22	13	28	A-6a (5)
	12.00	13.50	SS-7	78	17	17	18	26	22	29	17	12	17	A-6a (3)
	13.50	15.00	SS-8	56				SAME AS SS-7					15	A-6a (VISUAL)
	16.00	17.50	SS-9	100				SAME AS SS-7					16	A-6a (VISUAL)
	18.50	20.00	SS-10	39				SAME AS SS-7					15	A-6a (VISUAL)
	21.00	22.50	SS-11	33				SAME AS SS-7						A-6a (VISUAL)
	23.50	24.50	SS-12A	100				SAME AS SS-7						A-6a (VISUAL)
	24.50	25.00	SS-12B											A-3a (VISUAL)
RAMP N2														
B-150-0-09	01.50	03.00	SS-1	22				SAME AS SS-2						A-6b (VISUAL)
STA. 786+94.20, 55.38' RT.	03.00	04.50	SS-2	83	10	11	17	29	33	36	17	19	22	A-6b (9)
NORTHING = 712201.8057	04.50	06.00	SS-3	100	11	15	18	34	21	23	15	8	10	A-4a (4)
EASTING = 1832577.1550	06.00	07.50	SS-4	100	18	18	20	28	16	22	15	7	8	A-4a (2)
	07.50	09.00	SS-5	100	14	15	15	34	22	22	14	8	12	A-4a (4)
	09.00	10.50	SS-6	56									5	A-3a (VISUAL) *
	11.00	12.50	SS-7	56									10	A-3a (VISUAL)
RAMP N4														
B-047-0-08	01.00	02.50	SS-1	100	14	5	32	38	11	NP	NP	NP	12	A-4a (3) *
STA. 779+00.45, 20.6' RT.	02.50	04.00	SS-2	83	1	3	34	52	10	NP	NP	NP	16	A-4b (5)
NORTHING = 712090.9321	04.00	05.50	SS-3	100	5	8	32	44	11	NP	NP	NP	12	A-4a (4)
EASTING = 1831779.6050	05.50	07.00	SS-4A	100				SAME AS SS-3		NP	NP	NP	7	A-4a (VISUAL)
	06.20	06.20	SS-4B		68	13	9	--11--		NP	NP	NP	6	A-1-a (0)
	07.00	08.50	SS-5	83				SAME AS SS-4B					4	A-1-a (VISUAL)
	08.50	10.00	SS-6	67									4	A-3a (VISUAL)

SUMMARY OF SOIL TEST DATA

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	% REC	% AGG	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	OHIO CLASS
B-150-1-09	01.00	02.50	SS-1	100	11	14	20	32	23	25	15	10	11	A-4a (4)
STA. 790+95.52, 9.47' LT.	02.50	04.00	SS-2	100	19	12	18	30	21	25	16	9	11	A-4a (3)
NORTHING = 712480.2959	04.00	05.50	SS-3	100	13	13	19	36	19	23	14	9	9	A-4a (4)
EASTING = 1832880.7880	05.50	07.00	SS-4	100	14	11	18	35	23	24	13	11	7	A-6a (5)
	07.00	08.50	SS-5	100				SAME AS SS-4					9	A-6a (VISUAL)
	08.50	10.00	SS-6	100				SAME AS SS-4					11	A-6a (VISUAL)
B-151-0-09	01.00	02.50	SS-1	67	34	27	18	--21--		NP	NP	NP	10	A-1-b (0)
STA. 795+37.15, 16.48' LT.	02.50	04.00	SS-2	67	12	12	19	34	23	24	16	8	12	A-4a (4)
NORTHING = 712832.7049	04.00	05.50	SS-3	100	11	10	18	36	25	23	14	9	10	A-4a (5)
EASTING = 1833135.2370	06.00	06.50	SS-4A	100	12	19	27	25	17	22	14	8	15	A-4a (1)
	06.50	07.50	SS-4B					SAME AS SS-4A					12	A-4a (VISUAL)
	08.50	10.00	SS-5	28				SAME AS SS-4A					11	A-4a (VISUAL)
B-178-0-08	01.00	02.50	SS-1	67				SAME AS SS-2						A-1-b (VISUAL)
STA. 875+87.13, 51.39' LT.	02.50	04.00	SS-2	100	37	34	15	--13--		NP	NP	NP	4	A-1-b (0) *
NORTHING = 713982.1315	04.00	05.50	SS-3	100	30	40	18	--13--		NP	NP	NP	5	A-1-b (0)
EASTING = 1833263.4680	05.50	07.00	SS-4	100	38	32	19	--10--		NP	NP	NP	3	A-1-b (0)
	07.00	07.92	SS-5	100	49	27	15	--8--		NP	NP	NP	5	A-1-b (0)
	08.50	10.00	SS-6	100				SAME AS SS-5					4	A-1-b (VISUAL)
	11.00	12.50	SS-7	100				SAME AS SS-5					4	A-1-b (VISUAL)
	13.50	15.00	SS-8	100				SAME AS SS-5					4	A-1-b (VISUAL)
B-184-0-08	01.00	02.50	SS-1	67										A-3a (VISUAL)
STA. 315+36.78, 43.54' RT.	03.50	05.00	SS-2	100	7	12	24	38	19	22	13	9	8	A-4a (4)
NORTHING = 714805.6	05.00	06.50	SS-3	100	8	14	23	35	21	22	12	10	8	A-4a (4)
EASTING = 1833289	06.50	08.00	SS-4	100	11	11	23	37	18	22	13	9	8	A-4a (4)
	08.00	09.50	SS-5	100	9	12	23	36	20	23	13	10	9	A-4a (4)
	09.50	11.00	SS-6	100	8	12	23	40	17	22	13	9	9	A-4a (4)
	11.00	12.50	SS-7	100									3	A-1-b (VISUAL)
	13.50	15.00	SS-8	100									4	A-1-b (VISUAL)
RAMP P2														
B-161-0-09	01.50	03.00	SS-1	100				SAME AS SS-2					9	A-4a (VISUAL)
STA. 897+50.12 23.0' LT.	03.50	05.00	SS-2	100	14	17	21	30	18	23	15	8	8.6	A-4a (3)
NORTHING = 712510.7	06.00	07.50	SS-3	100				SAME AS SS-2					6.4	A-4a (VISUAL)
EASTING = 1834275	08.50	10.00	SS-4	100	22	20	21	25	12	NP	NP	NP	6	A-4a (0)
B-162-0-09	01.00	02.50	SS-1	100				SAME AS SS-2						A-6a (VISUAL)
STA. 901+47.20, 33.08' LT.	03.50	05.00	SS-2	100	4	4	13	37	41	36	21	15	20	A-6a (10)
NORTHING = 712424.5089	06.00	07.50	SS-3	100				SAME AS SS-2						A-6a (VISUAL)
EASTING = 1834661.5630	08.50	10.00	SS-4	100										A-3a (VISUAL)
	11.00	12.50	SS-5	100				SAME AS SS-6						A-4a (VISUAL)
	13.50	15.00	SS-6	100	14	13	19	37	17	22	17	5	9	A-4a (4)
	16.00	17.50	SS-7	100				SAME AS SS-6						A-4a (VISUAL) *
	18.50	20.00	SS-8	28				SAME AS SS-6						A-4a (VISUAL)
	21.00	22.50	SS-9	56	37	17	18	22	6	20	15	5	7	A-2-4 (0)
	22.50	24.00	SS-10	100	33	27	24	--16--		NP	NP	NP	6	A-1-b (0)
	24.00	25.50	SS-11	100	49	22	19	--11--		NP	NP	NP	5	A-1-b (0)
	25.50	27.00	SS-12	39	17	35	35	--12--		NP	NP	NP	13	A-1-b (0)
	27.00	28.50	SS-13	100				SAME AS SS-12					13	A-1-b (VISUAL)
	28.50	30.00	SS-14	100				SAME AS SS-12					13	A-1-b (VISUAL)

DRAWN RKL CHECKED DAA

SOIL PROFILE

SUMMARY OF SOIL TEST DATA

FRA-70-14.48

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SUMMARY OF SOIL TEST DATA

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	% REC	% AGG	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	OHIO CLASS
B-163-0-09	01.00	02.50	SS-1	83										A-6a (VISUAL)
STA. 905+32.19, 42.76' LT.	03.50	05.00	SS-2	67				SAME AS SS-2						A-1-b (VISUAL)
NORTHING = 712346.8000	06.00	07.50	SS-3	39	30	32	13	17	8	21	19	2	8	A-1-b (0)
EASTING = 1835038.7560	08.50	10.00	SS-4	0										
	11.00	12.50	SS-5	89										A-2-6 (VISUAL)
	13.50	15.00	SS-6	50										A-3a (VISUAL)
	16.00	17.50	SS-7	100				SAME AS SS-8						A-4a (VISUAL)
	18.50	20.00	SS-8	100	4	14	22	37	23	22	17	5	11	A-4a (5)
	21.00	22.50	SS-9	100				SAME AS SS-8						A-4a (VISUAL)
	23.50	25.00	SS-10	100				SAME AS SS-8						A-4a (VISUAL)
	26.00	27.50	SS-11	100				SAME AS SS-8						A-4a (VISUAL) *
	28.50	29.42	SS-12	91	42	25	14	13	6	NP	NP	NP	9	A-1-b (0)
	30.00	30.92	SS-13	73	70	15	6	--9--		NP	NP	NP	10	A-1-a (0)
	31.50	33.00	SS-14	89	57	23	11	--8--		NP	NP	NP	8	A-1-a (0)
	33.00	34.50	SS-15	89	56	26	11	--7--		NP	NP	NP	10	A-1-a (0)
	34.50	36.00	SS-16	100				SAME AS SS-15					11	A-1-a (VISUAL)
	36.00	37.50	SS-17	78				SAME AS SS-15					8	A-1-a (VISUAL)
	38.50	40.00	SS-18	89				SAME AS SS-15					13	A-1-a (VISUAL)
RAMP P4														
B-160-0-09	01.00	02.50	SS-1	100				SAME AS SS-2						A-4a (VISUAL) *
STA. 896+27.81, 26.45' LT.	03.50	05.00	SS-2	100	11	13	19	34	23	26	16	10	13	A-4a (4)
NORTHING = 712432.8124	06.00	07.50	SS-3	100				SAME AS SS-2						A-4a (VISUAL)
EASTING = 1834136.7970	08.50	10.00	SS-4	100				SAME AS SS-2						A-4a (VISUAL)
	11.00	12.50	SS-5	89	3	9	16	41	31	28	17	11	15	A-6a (8)
	12.50	14.00	SS-6	72	33	35	15	--17--		NP	NP	NP	6	A-1-b (0)
	14.00	15.50	SS-7	0										
	15.50	17.00	SS-8	100	30	39	14	--17--		NP	NP	NP	6	A-1-b (0)
	17.00	18.50	SS-9	100				SAME AS SS-8					7	A-1-b (VISUAL)
	18.50	20.00	SS-10	100				SAME AS SS-8					9	A-1-b (VISUAL)
RAMP P5														
B-156-0-09	01.50	03.00	SS-1	78				SAME AS SS-3						A-4a (VISUAL)
STA. 799+47.38, 42.45' LT.	03.50	05.00	SS-2	72				SAME AS SS-3						A-4a (VISUAL)
NORTHING = 713391.2000	06.00	07.50	SS-3	100	14	11	19	34	22	23	15	8	12	A-4a (4)
EASTING = 1833344.8580	08.50	10.00	SS-4	33				SAME AS SS-3						A-4a (VISUAL)
	11.00	12.50	SS-5	100				SAME AS SS-3						A-4a (VISUAL)
	13.50	15.00	SS-6	100				SAME AS SS-3						A-4a (VISUAL)
	16.00	17.42	SS-7	65	14	23	21	28	14	26	16	10	12	A-4a (1)
	18.50	20.00	SS-8	100				SAME AS SS-7						A-4a (VISUAL)
	21.00	22.50	SS-9	100				SAME AS SS-7						A-4a (VISUAL)
	23.50	25.00	SS-10	100				SAME AS SS-7						A-4a (VISUAL) *
	25.00	26.50	SS-11	100	32	31	18	--19--		NP	NP	NP	7	A-1-b (0)
	26.50	28.00	SS-12	89	20	46	23	--11--		NP	NP	NP	6	A-1-b (0)
	28.00	29.50	SS-13	83	25	49	19	--7--		NP	NP	NP	5	A-1-b (0)
	29.50	31.00	SS-14	78	17	38	32	--12--		NP	NP	NP	5	A-1-b (0)
	31.00	32.50	SS-15	100				SAME AS SS-14					5	A-1-b (VISUAL)
	33.50	35.00	SS-16	94				SAME AS SS-14					6	A-1-b (VISUAL)
B-157-0-09	01.00	02.50	SS-1	100				SAME AS SS-4						A-1-b (VISUAL) *
STA. 987+81.15, 20.35' LT.	03.50	05.00	SS-2	89				SAME AS SS-4						A-1-b (VISUAL)
NORTHING = 712952.6542	06.00	07.50	SS-3	78				SAME AS SS-4						A-1-b (VISUAL)
EASTING = 1833504.8200	08.50	10.00	SS-4	100	31	41	19	--9--		NP	NP	NP	5	A-1-b (0)
	11.00	12.50	SS-5	94	54	25	11	--9--		NP	NP	NP	4	A-1-a (0)
	12.50	14.00	SS-6	100	31	35	26	--8--		NP	NP	NP	5	A-1-b (0)
	14.00	15.50	SS-7	100	49	28	14	--9--		NP	NP	NP	4	A-1-b (0)
	15.50	17.00	SS-8	100				SAME AS SS-7					5	A-1-b (VISUAL)
	17.00	18.50	SS-9	100				SAME AS SS-7					10	A-1-b (VISUAL)
	18.50	20.00	SS-10	89				SAME AS SS-7					12	A-1-b (VISUAL)

SUMMARY OF SOIL TEST DATA

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	% REC	% AGG	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	OHIO CLASS
B-158-0-09	01.00	02.50	SS-1	67				SAME AS SS-4						A-4a (VISUAL)
STA. 992+31.93, 0.52' RT.	03.50	05.00	SS-2	72				SAME AS SS-4						A-4a (VISUAL)
NORTHING = 712606.3989	06.00	07.50	SS-3	56				SAME AS SS-4						A-4a (VISUAL)
EASTING = 1833782.4700	08.50	10.00	SS-4	78	5	12	21	37	25	24	15	9	13	A-4a (5)
	11.00	12.50	SS-5	72				SAME AS SS-4						A-4a (VISUAL)
	13.50	15.00	SS-6	100				SAME AS SS-4						A-4a (VISUAL)
	16.00	17.50	SS-7	100				SAME AS SS-4						A-4a (VISUAL)
	18.50	20.00	SS-8	100	49	27	11	--13--		NP	NP	NP	4	A-1-b (0)
	21.00	22.50	SS-9	89										A-3a (VISUAL) *
	23.50	25.00	SS-10	100										A-3a (VISUAL)
	26.00	27.50	SS-11	100										A-3a (VISUAL)
	28.50	29.60	SS-12A	100	15	18	20	32	16	21	13	8	7	A-4a (2)
	29.60	30.00	SS-12B		42	33	16	--9--		NP	NP	NP	4	A-1-b (0)
	30.00	30.92	SS-13	82	46	26	15	--13--		NP	NP	NP	4	A-1-b (0)
	31.50	33.00	SS-14	83	26	41	26	--7--		NP	NP	NP	3	A-1-b (0)
	33.00	34.50	SS-15	89	47	32	14	--7--		NP	NP	NP	4	A-1-b (0)
	34.50	36.00	SS-16	83				SAME AS SS-15					4	A-1-b (VISUAL)
	36.00	37.50	SS-17	94				SAME AS SS-15					4	A-1-b (VISUAL)
	38.50	39.42	SS-18	82				SAME AS SS-15					4	A-1-b (VISUAL)
RAMP P6														
B-154-0-09	02.00	03.50	SS-1	67	33	10	16	22	19	25	15	10	10	A-4a (1)
STA. 787+73.38, 10.93' RT.	03.50	05.00	SS-2	61	79	9	4	--8--		NP	NP	NP	3	A-1-a (0)
NORTHING = 713339.9687	05.00	06.50	SS-3	100	7	13	25	37	18	20	14	6	10	A-4a (4)
EASTING = 1833734.0510	06.50	07.42	SS-4	82	12	13	18	36	21	23	15	8	10	A-4a (4)
	08.00	09.50	SS-5	100				SAME AS SS-4					6	A-4a (VISUAL)
	09.50	11.00	SS-6	100				SAME AS SS-4					8	A-4a (VISUAL)
	11.00	12.50	SS-7	100				SAME AS SS-4					7	A-4a (VISUAL)
B-155-0-09	01.00	02.50	SS-1	100				SAME AS SS-2						A-4a (VISUAL)
STA. 791+51.50, 22.11' LT.	03.50	05.00	SS-2	100	9	11	21	38	21	22	13	9	9	A-4a (5) *
NORTHING = 712990.9340	05.00	05.75	SS-3	89				SAME AS SS-2						A-4a (VISUAL)
EASTING = 1833846.9370	06.50	08.00	SS-4	89	56	28	7	--8--		NP	NP	NP	4	A-1-a (0)
	08.00	09.50	SS-5	89	46	30	15	--9--		NP	NP	NP	4	A-1-b (0)
	09.50	10.42	SS-6	82	49	25	15	--11--		NP	NP	NP	4	A-1-b (0)
	11.00	12.50	SS-7	83	48	33	11	--8--		NP	NP	NP	4	A-1-b (0)
	13.50	15.00	SS-8	89	64	22	8	--6--		NP	NP	NP	3	A-1-a (0)
RAMP Q1														
B-049-0-08	01.50	02.50	SS-1	67	5	11	17	35	33	27	16	11	10	A-6a (7)
STA. 996+06.23, 5.48' RT.	03.50	05.00	SS-2	78	8	19	19	32	22	27	17	10	11	A-4a (4)
NORTHING = 712315.0269	06.00	07.50	SS-3	78				SAME AS SS-2					10	A-4a (VISUAL)
EASTING = 1832147.761	08.50	10.00	SS-4	56				SAME AS SS-2					12	A-4a (VISUAL)
B-165-0-09	01.50	02.50	SS-1A	100										A-3a (VISUAL) *
STA. 879+09.49, 6.97' RT.	02.50	03.00	SS-1B											A-4a (VISUAL)
NORTHING = 712457.9786	03.00	04.50	SS-2	100	1	2	8	37	52	47	19	28	24	A-7-6 (17)
EASTING = 1832383.3450	04.50	06.00	SS-3	78	3	2	8	37	50	47	18	29	21	A-7-6 (17)
	06.00	07.50	SS-4	100	2	4	7	39	48	46	20	26	21	A-7-6 (16)
	07.50	09.00	SS-5	100	4	6	13	34	44	40	19	21	19	A-6b (12)
	09.00	10.50	SS-6	100				SAME AS SS-5					16	A-6b (VISUAL)
	11.00	12.50	SS-7	100									12	A-4a (VISUAL)
B-170-0-09	01.50	03.00	SS-1	100				SAME AS SS-2						A-4a (VISUAL) *
STA. 1001+33.17, 19.93' LT.	03.50	05.00	SS-2	100	7	14	19	37	23	23	16	7	11	A-4a (5)
NORTHING = 712537.5427	05.00	06.50	SS-3	100	6	13	21	37	23	23	16	7	11	A-4a (5)
EASTING = 1832616.7280	06.50	08.00	SS-4	100	9	15	20	36	21	21	13	8	9	A-4a (4)
	08.00	09.50	SS-5	100	13	15	19	33	20	21	17	4	8	A-4a (4)
	09.50	11.00	SS-6	100				SAME AS SS-6					9	A-4a (VISUAL)
	11.00	12.50	SS-7	39				SAME AS SS-6					9	A-4a (VISUAL)
	13.50	15.00	SS-8	100				SAME AS SS-6					10	A-4a (VISUAL)

DRAWN RKL CHECKED DAA

SOIL PROFILE

SUMMARY OF SOIL TEST DATA

FRA-70-14.48

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SUMMARY OF SOIL TEST DATA

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	% REC	% AGG	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	OHIO CLASS
B-170-1-09	01.50	02.50	SS-1	100										A-3a (VISUAL)
STA. 1004+09.36, 22.26' RT.	03.50	05.00	SS-2	100	13	10	25	38	14	18	13	5	11	A-4a (3)
NORTHING = 712699.8	06.00	07.50	SS-3	100				SAME AS SS-2						A-4a (VISUAL)
EASTING = 1832843	08.50	10.00	SS-4	100				SAME AS SS-2					13	A-4a (VISUAL)
	11.00	12.50	SS-5	11	60	14	10	--16--		NP	NP	NP	5	A-1-b (0)
	13.50	15.00	SS-6	6				SAME AS SS-5						A-1-b (VISUAL)
	16.00	17.50	SS-7	6				SAME AS SS-5						A-1-b (VISUAL)
	18.50	20.00	SS-8	17				SAME AS SS-5					3	A-1-b (VISUAL)
B-171-0-09	02.00	03.50	SS-1	67	18	40	23	--19--		NP	NP	NP	7	A-1-b (0)
STA. 1008+98.89, 14.15' LT.	03.50	05.00	SS-2	78				SAME AS SS-1						A-1-b (VISUAL)
NORTHING = 713156.9763	06.00	07.50	SS-3	39	35	36	15	--14--		NP	NP	NP	8	A-1-b (0)
EASTING = 1833015.5720	08.50	10.00	SS-4	56				SAME AS SS-3						A-1-b (VISUAL)
	11.00	12.50	SS-5	44				SAME AS SS-3						A-1-b (VISUAL)
	13.50	15.00	SS-6	33				SAME AS SS-3						A-1-b (VISUAL)
	16.00	17.25	SS-7	60				SAME AS SS-3						A-1-b (VISUAL)
B-172-0-09	01.50	03.00	SS-1	100										A-4a (VISUAL)
STA. 911+34.94, 8.83' LT.	03.50	05.00	SS-2	100									4	A-3a (VISUAL)
NORTHING = 713396.2418	05.00	06.50	SS-3	100	67	14	8	--11--		NP	NP	NP	3	A-1-a (0)
EASTING = 1832995.4980	06.50	08.00	SS-4	100	62	20	10	--8--		NP	NP	NP	4	A-1-a (0)
	08.00	09.50	SS-5	100	53	22	12	--13--		NP	NP	NP	4	A-1-a (0)
	09.50	11.00	SS-6	100	36	34	15	--14--		NP	NP	NP	5	A-1-b (0) *
	11.00	12.50	SS-7	100	52	22	14	--12--		NP	NP	NP	5	A-1-a (0)
	13.50	15.00	SS-8	100									5	A-3a (VISUAL)
B-174-0-08	01.00	02.50	SS-1	89				SAME AS SS-2						A-1-a (VISUAL) *
STA. 1013+30.44, 28.85' LT.	03.50	05.00	SS-2	83	62	22	9	--7--		NP	NP	NP	6	A-1-a (0)
NORTHING = 713584.6937	05.00	06.50	SS-3	94	38	41	14	--7--		NP	NP	NP	5	A-1-b (0)
EASTING = 1833062.3190	06.50	08.00	SS-4	89	56	21	15	--8--		NP	NP	NP	5	A-1-a (0)
	08.00	09.50	SS-5	100	47	29	16	--8--		NP	NP	NP	6	A-1-b (0)
	09.50	11.00	SS-6	100				SAME AS SS-5					4	A-1-b (VISUAL)
	11.00	12.50	SS-7	89				SAME AS SS-5					6	A-1-b (VISUAL)
	13.50	15.00	SS-8	83				SAME AS SS-5					13	A-1-b (VISUAL)
B-181-0-08	01.50	03.00	SS-1	100				SAME AS SS-2						A-1-a (VISUAL) *
STA. 1021+18.51, 27.07' LT.	03.50	05.00	SS-2	100	52	26	12	--10--		NP	NP	NP	3	A-1-a (0)
NORTHING = 714365.5401	05.00	06.50	SS-3	100	56	20	15	--9--		NP	NP	NP	4	A-1-a (0)
EASTING = 1833145.0800	06.50	08.00	SS-4	100	48	26	14	--12--		NP	NP	NP	5	A-1-b (0)
	08.00	08.92	SS-5	100	65	19	8	--8--		NP	NP	NP	2	A-1-a (0)
	09.50	11.00	SS-6	100				SAME AS SS-5					8	A-3a (VISUAL)
	11.00	12.50	SS-7	100				SAME AS SS-5					3	A-3a (VISUAL)
	13.50	15.00	SS-8	100				SAME AS SS-5					5	A-3a (VISUAL)
RAMP Q2														
B-169-0-09	01.00	02.50	SS-1	89				SAME AS SS-3						A-4a (VISUAL)
STA. 907+39.62, 13.22' LT.	03.50	05.00	SS-2	50				SAME AS SS-3						A-4a (VISUAL)
NORTHING = 713185.0514	06.00	07.50	SS-3	100	11	12	19	34	23	25	16	9	14	A-4a (4)
EASTING = 1832742.3170	08.50	10.00	SS-4	100				SAME AS SS-3						A-4a (VISUAL)
	11.00	12.50	SS-5	89				SAME AS SS-3						A-4a (VISUAL)
	13.50	15.00	SS-6	100	14	10	18	37	21	23	16	7	15	A-4a (5)
	15.00	16.50	SS-7	100	10	13	21	34	22	22	15	7	10	A-4a (4) *
	16.50	18.00	SS-8	100	14	12	19	35	20	21	14	7	9	A-4a (4)
	18.00	19.50	SS-9	50	16	11	20	33	20	NP	NP	NP	11	A-4a (4)
	19.50	21.00	SS-10	89									8	A-3 (VISUAL)
	21.00	22.50	SS-11	100									13	A-3 (VISUAL)
	23.50	25.00	SS-12	100									13	A-3 (VISUAL)
RAMP Q3														
B-053-1-09	01.50	03.00	SS-1	61	10	19	27	28	15	20	14	6	8	A-4a (2)
STA. 896+60.53, 16.53' LT.	03.50	05.00	SS-2	100	44	27	15	--14--		NP	NP	NP	6	A-1-b (0)
NORTHING = 712211.2386	05.00	06.50	SS-3	56	50	28	12	--11--		NP	NP	NP	6	A-1-a (0)
EASTING = 1834136.0170	06.50	08.00	SS-4	100	58	20	13	--10--		NP	NP	NP	5	A-1-a (0)
	08.00	09.50	SS-5	100	42	26	10	--21--		NP	NP	NP	7	A-1-b (0)
	09.50	11.00	SS-6	56	14	14	21	34	17	22	14	8	9	A-4a (3)
	11.00	12.50	SS-7	100				SAME AS SS-6					9	A-4a (VISUAL)
	13.50	15.00	SS-8	100				SAME AS SS-6					10	A-4a (VISUAL)

SUMMARY OF SOIL TEST DATA

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	% REC	% AGG	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	OHIO CLASS
B-152-0-09	01.00	02.50	SS-1	78	43	35	16	--6--		NP	NP	NP	4	A-1-b (0)
STA. 881+02.15, 5.04' RT.	02.50	04.00	SS-2	89	4	1	90	--5--		NP	NP	NP	16	A-3 (0)
NORTHING = 713190.3299	04.00	05.50	SS-3	72	43	35	16	--6--		NP	NP	NP	12	A-1-b (0)
EASTING = 1833119.1820	06.00	07.50	SS-4	94				SAME AS SS-3					13	A-1-b (VISUAL)
	08.50	10.00	SS-5	89				SAME AS SS-3					8	A-1-b (VISUAL)
B-153-0-09	01.00	02.50	SS-1	100										A-4a (VISUAL)
STA. 888+44.41, 0.26' LT.	03.50	05.00	SS-2	83										A-4a (VISUAL)
NORTHING = 712522.1569	06.00	07.50	SS-3	89	4	9	16	33	38	36	19	17	20	A-6b (10)
EASTING = 1833409.0750	08.50	10.00	SS-4	89				SAME AS SS-3						A-6b (VISUAL)
	11.00	12.50	SS-5	72				SAME AS SS-3						A-6b (VISUAL)
	13.50	15.00	SS-6	33				COBBLES						
	16.00	17.50	SS-7	100				SAME AS SS-8						A-4a (VISUAL)
	18.50	20.00	SS-8	100	8	11	19	40	22	21	14	7	11	A-4a (5)
	21.00	22.50	SS-9	100				SAME AS SS-8						A-4a (VISUAL)
	23.50	25.00	SS-10	100				SAME AS SS-8						A-4a (VISUAL)
	26.00	27.50	SS-11	89										A-4b (VISUAL)
	28.50	30.00	SS-12	33										A-4a (VISUAL)
	31.00	31.50	SS-13A	100	65	15	11	--9--		NP	NP	NP	4	A-1-a (0) *
	31.50	32.50	SS-13B					SAME AS SS-16B						A-4a (VISUAL)
	33.50	35.00	SS-14	100				SAME AS SS-16B						A-4a (VISUAL)
	36.00	37.50	SS-15	89				SAME AS SS-16B						A-4a (VISUAL)
	38.50	39.00	SS-16A	100				SAME AS SS-16B						A-4a (VISUAL)
	39.00	40.00	SS-16B		11	9	44	--36--		NP	NP	NP	14	A-4a (0)
	40.00	40.50	SS-17	100	20	16	20	28	16	20	13	7	11	A-4a (2)
	41.50	43.00	SS-18	100	36	18	17	20	9	NP	NP	NP	8	A-2-4 (0)
	43.00	44.50	SS-19	67	44	20	19	--18--		NP	NP	NP	9	A-1-b (0)
	44.50	46.00	SS-20	72									11	A-3a (VISUAL)
	46.00	47.50	SS-21	100									11	A-3a (VISUAL)
	48.50	50.00	SS-22	78									12	A-1-b (VISUAL)
RAMP Q4														
B-166-0-09	01.00	-02.50	SS-1	83				SAME AS SS-2						A-6b (VISUAL)
STA. 883+08.32, 21.01' RT.	03.50	-05.00	SS-2	67	7	5	18	34	36	40	18	22	23	A-6b (12)
NORTHING = 712685.8000	06.00	-07.50	SS-3	89				SAME AS SS-2						A-6b (VISUAL)
EASTING = 1832712.4080	08.50	-10.00	SS-4	100	12	12	20	35	21	22	15	7	11	A-4a (4)
	11.00	-12.50	SS-5	100				SAME AS SS-4						A-4a (VISUAL)
	13.50	-15.00	SS-6	100				SAME AS SS-4						A-4a (VISUAL)
	16.00	-17.33	SS-7	75	14	11	20	36	19	20	13	7	8	A-4a (4)
	17.50	-18.75	SS-8	67	12	12	23	36	18	21	14	7	8	A-4a (4)
	19.00	-20.50	SS-9	100	13	11	21	45	10	NP	NP	NP	8	A-4a (4)
	20.50	-22.00	SS-10	83	0	5	54	34	7	NP	NP	NP	6	A-4a (1)
	22.00	-23.50	SS-11	100				SAME AS SS-10					10	A-4a (VISUAL)
	23.50	-25.00	SS-12	100				SAME AS SS-10					6	A-4a (VISUAL)
	26.00	-27.50	SS-13	100				SAME AS SS-10					13	A-4a (VISUAL)
B-167-0-09	01.00	-02.50	SS-1	100										A-1-b (VISUAL)
STA. 887+20.47, 1.01' RT.	03.50	-04.83	SS-2	100	14	11	19	37	19	21	14	7	9	A-4a (4)
NORTHING = 713086.9321	06.00	-07.50	SS-3	100				SAME AS SS-2						A-4a (VISUAL)
EASTING = 1832669.0360	08.50	-10.00	SS-4	11				SAME AS SS-2						A-4a (VISUAL) *
	10.00	-11.50	SS-5	100				SAME AS SS-2						A-4a (VISUAL)
	11.50	-13.00	SS-6	100	11	12	20	36	21	21	14	7	10	A-4a (4)
	13.00	-14.50	SS-7	39	20	11	18	32	19	22	13	9	10	A-4a (3)
	14.50	-16.00	SS-8	100	8	12	22	40	18	NP	NP	NP	11	A-4a (5)
	16.00	-17.50	SS-9	56	0	1	49	45	5	NP	NP	NP	6	A-4a (3)
	18.50	-20.00	SS-10	0										
	21.00	-22.50	SS-11	100				SAME AS SS-9					9	A-4a (VISUAL)
	23.50	-25.00	SS-12	100	40	24	27	--9--		NP	NP	NP	3	A-1-b (0)
	26.00	-27.50	SS-13	100				SAME AS SS-12					4	A-1-b (VISUAL)
B-168-0-09	01.50	-03.00	SS-1	100	3	10	21	38	27	24	15	9	13	A-4a (6)
STA. 890+72.67, 5.17' RT.	03.00	-04.50	SS-2	100	7	14	22	35	22	22	16	6	13	A-4a (4)
NORTHING = 713396.9797	04.50	-06.00	SS-3	100	26	11	16	28	18	23	16	7	12	A-4a (2)
EASTING = 1832515.3000	06.00	-07.50	SS-4	100	10	14	20	33	23	23	15	8	13	A-4a (4)

DRAWN RKL CHECKED DAA

SOIL PROFILE

SUMMARY OF SOIL TEST DATA

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SUMMARY OF SOIL TEST DATA

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	% REC	% AGG	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	OHIO CLASS
						MAIN								
B-286-0-10	01.50-	03.00	SS-1	100	5	10	18	39	28	28	17	11	14	A-6a (7) *
STA. 27+50.80, 20.27' LT.	03.00-	04.50	SS-2	100	3	11	16	36	33	34	17	17	17	A-6b (10)
NORTHING = 713437.7600	04.50-	06.00	SS-3	100	9	15	19	38	20	24	16	8	13	A-4a (4)
EASTING = 1832382.4700	06.00-	07.50	SS-4	100	15	13	19	35	18	22	16	6	12	A-4a (4)
B-287-0-10	01.50-	03.00	SS-1	100	1	4	10	48	38	32	18	14	20	A-6a (10) *
STA. 30+84.23, 8.49' LT.	03.00-	04.50	SS-2	100	0	3	8	38	51	48	18	30	20	A-7-6 (18)
NORTHING = 713470.2000	04.50-	06.00	SS-3	100	2	4	12	32	50	45	20	25	21	A-7-6 (15)
EASTING = 1832714.5200	06.00-	07.50	SS-4	56	7	7	14	36	35	37	17	20	17	A-6b (11)
B-288-0-10	01.50-	03.00	SS-1	67	3	4	16	40	36	63	24	39	35	A-8b (20) *
STA. 39+87.27, 7.17' LT.	03.00-	04.50	SS-2	100	1	3	11	34	51	41	17	24	22	A-7-6 (14)
NORTHING = 713541.3900	04.50-	06.00	SS-3	100	1	3	12	38	47	41	16	25	20	A-7-6 (14)
EASTING = 1833614.7900	06.00-	07.50	SS-4	100	4	8	14	45	30	30	17	13	15	A-6a (9)
B-288-1-10	01.50-	03.00	SS-1	67	9	12	17	36	26	28	18	10	14	A-4a (5) *
STA. 43+32.14, 6.65' LT.	03.00-	04.50	SS-2	100	7	11	17	38	27	26	15	11	14	A-6a (6)
NORTHING = 713531.4000	04.50-	06.00	SS-3	100	9	14	19	36	21	23	16	7	12	A-4a (5)
EASTING = 1833959.6000	06.00-	07.50	SS-4	100	5	13	18	36	28	24	15	9	13	A-4a (6)
						FULTON								
B-278-0-10	01.50	03.00	SS-1	89	9	11	14	27	39	27	16	11	22.5	A-6a(7)
STA.	03.00	04.50	SS-2	17	19	21	14	26	20	22	16	6	15.2	A-4a(2)
NORTHING = 711819.02	04.50	06.00	SS-3	100	17	15	17	31	19	23	16	7	13.4	A-4a(3)
EASTING = 1828187.93	06.00	07.50	SS-4	83	13	18	19	30	19	23	16	7	16.4	A-4a(3)
	07.50	09.00	SS-5	22				SAME AS SS-4					15.2	A-4a (VISUAL)
	09.00	10.50	SS-6	39				SAME AS SS-4					12.9	A-4a (VISUAL)
	11.00	12.50	SS-7	61									7.5	A-1-b (VISUAL)
	13.50	15.00	SS-8	89									7.4	A-1-b (VISUAL)
B-279-0-10	01.00	01.25	SS-1	100	41	32	14	--13--		NP	NP	NP	14.2	A-1-b(0)
STA.	02.50	04.00	SS-2	100	11	10	16	24	39	41	18	23	23.8	A-7-6(11)
NORTHING = 711867.57	04.00	05.50	SS-3	78	9	14	17	34	27	29	16	13	18.2	A-6a(6)
EASTING = 1828520.49	05.50	07.00	SS-4	100	21	14	16	30	19	25	15	10	13.3	A-4a(3)
	07.00	08.50	SS-5	100				SAME AS SS-4					18.9	A-4a (VISUAL)
	08.50	10.00	SS-6	89				SAME AS SS-4					12.2	A-4a (VISUAL)
	10.00	11.50	SS-7	78				SAME AS SS-4					15	A-4a (VISUAL)
B-280-0-10	01.50-	03.00	SS-1	78	11	13	17	32	27	29	18	11	15	A-6a (5) *
STA. 27+21.48, 3.94' RT.	03.00-	04.50	SS-2	100	0	1	6	55	37	29	18	11	22	A-6a (8)
NORTHING = 711920.3500	04.50-	06.00	SS-3	100	3	9	14	32	42	37	17	20	21	A-6b (12)
EASTING = 1828944.4700	06.00-	07.50	SS-4	100	20	12	16	31	21	24	16	8	13	A-4a (3)
B-281-0-10	01.50-	03.00	SS-1	67	46	36	12	--6--		NP	NP	NP	5	A-1-b (0) *
STA. 30+31.50, 6.45' LT.	03.00-	04.50	SS-2	67	28	40	18	--15--		NP	NP	NP	6	A-1-b (0)
NORTHING = 711974.5500	04.50-	04.92	SS-3	60				CONCRETE FRAGMENTS						(VISUAL)
EASTING = 1829249.8900	06.00-	07.50	SS-4	72	28	25	14	21	12	30	20	10	12	A-2-4 (0)
	07.50-	09.00	SS-5	100									19	A-6a (VISUAL)
B-282-0-10	01.00-	02.50	SS-1	83	21	13	14	30	21	28	16	12	15	A-6a (4) *
STA. 34+69.26, 7.55' RT.	02.50-	04.00	SS-2	100	12	27	21	29	11	NP	NP	NP	21	A-4a (1)
NORTHING = 712022.4900	04.00-	05.50	SS-3	56	15	20	21	31	13	24	20	4	21	A-4a (2)
EASTING = 1829685.2400	05.50-	07.00	SS-4	100	5	5	16	42	32	34	20	14	31	A-6a (9)
	07.00-	08.50	SS-5	100				SAME AS SS-4					19	A-6a (VISUAL)
	08.50-	10.00	SS-6	100									9	A-6b (VISUAL)
	10.00-	11.50	SS-7	67									14	A-6b (VISUAL)
B-283-0-10	01.00-	02.50	SS-1	44	26	34	26	--14--		NP	NP	NP	6	A-1-b (0) *
STA. 38+62.76, 17.12' LT.	02.50-	04.00	SS-2	44	51	22	12	--16--		NP	NP	NP	7	A-1-b (0)
NORTHING = 712102.1500	04.00-	05.50	SS-3	100	4	4	12	32	48	39	20	19	20	A-6b (12)
EASTING = 1830071.3900	05.50-	07.00	SS-4	100	9	12	20	34	25	25	15	10	13	A-4a (5)
	07.00-	08.50	SS-5	100				SAME AS SS-4					12	A-4a (VISUAL)
B-038-0-10	01.00-	02.50	SS-1	67	4	6	14	33	43	23	17	6	22	A-4a (8) *
STA. 42+13.18, 17.93' LT.	02.50-	04.00	SS-2	61	7	9	16	37	31	29	17	12	18	A-6a (7)
NORTHING = 711844.5938	04.00-	05.50	SS-3	100				SAME AS SS-4		23	15	8	12	A-4a (VISUAL)
EASTING = 1830418.0300	05.50-	07.00	SS-4	100	17	12	18	30	23	23	15	8	11	A-4a (4)

SUMMARY OF SOIL TEST DATA

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	% REC	% AGG	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	OHIO CLASS
B-284-0-10	01.00-	02.50	SS-1	50	25	13	9	32	21	30	18	12	15	A-6a (4) *
STA. 48+33.59, 1.38' LT.	02.50-	04.00	SS-2	89	9	9	17	36	28	28	17	11	17	A-6a (6)
NORTHING = 712227.3000	04.00-	05.50	SS-3	100	12	10	20	35	24	24	15	9	12	A-4a (5)
EASTING = 1831034.1500	05.50-	07.00	SS-4	94	11	12	19	35	24	24	15	9	12	A-4a (5)
B-285-0-10	01.00-	02.50	SS-1	22	11	9	12	24	45	56	25	31	30	A-7-6 (18) *
STA. 63+20.45, 18.61' RT.	02.50-	04.00	SS-2	94	6	13	16	38	28	26	16	10	16	A-4a (6)
NORTHING = 712307.6700	04.00-	05.50	SS-3	100	9	27	15	25	23	33	18	15	21	A-6a (5)
EASTING = 1831623.2900	05.50-	06.50	SS-4A	33	6	34	16	23	21	31	17	14	21	A-6a (3)
	06.50-	07.00	SS-4B										11	A-6b (VISUAL)
						LESTER								
B-173-0-08	01.00-	02.50	SS-1	100	10	12	19	32	26	25	16	9	11	A-4a (5) *
STA. 100+56.44, 6.94' RT.	02.50-	04.00	SS-2	100	6	18	21	32	23	20	15	5	11	A-4a (4)
NORTHING = 713551.8317	04.00-	05.50	SS-3	22				SAME AS SS-2						A-4a (VISUAL)
EASTING = 1832963.4780	05.50-	07.00	SS-4	28	53	21	14	--12--		NP	NP	NP	6	A-1-a (0)
B-176-0-08	01.00-	02.50	SS-1	11	25	37	26	--12--		NP	NP	NP	6	A-1-b (0)
STA. 103+60.26, 12.06' RT.	02.50-	04.00	SS-2	22	23	19	21	20	16	25	16	9	12	A-4a (0)
NORTHING = 713850.7833	04.00-	05.50	SS-3	83	48	21	10	--22--		NP	NP	NP	9	A-1-b (0)
EASTING = 1832957.93	05.50-	07.00	SS-4	100	41	28	14	--17--		NP	NP	NP	7	A-1-b (0)
B-180-0-08	01.00-	02.50	SS-1	100	9	11	20	30	30	31	17	14	17	A-6a (7)
STA. 106+77.04, 0.70' LT.	02.50-	04.00	SS-2	100	4	11	19	47	19	26	18	8	19	A-4a (6)
NORTHING = 714152.9332	04.00-	05.50	SS-3	100	6	17	30	31	16	22	15	7	13	A-4a (2)
EASTING = 1833045.927	05.50-	07.00	SS-4	56				SAME AS SS-3						A-4a (VISUAL)
						PARSONS								
B-145-0-09	01.00-	02.50	SS-1	39	44	31	15	--10--		NP	NP	NP	18	A-1-b (0) *
STA. 179+62.87, 5.62' LT.	02.50-	04.00	SS-2	78	3	7	12	45	33	27	18	9	22	A-4a (8)
NORTHING = 711896.8000	04.00-	05.50	SS-3	67	1	2	9	35	53	53	20	33	33	A-7-6 (19)
EASTING = 1833258.1760	05.50-	07.00	SS-4	56	7	8	16	36	34	35	17	18	22	A-6b (10)
	07.00-	08.50	SS-5	89				SAME AS SS-4					19	A-4a (VISUAL)
	08.50-	10.00	SS-6	72	13	15	20	31	21	24	16	8	14	A-4a (3)
	10.00-	11.50	SS-7	61				SAME AS SS-4					13	A-4a (VISUAL)
	11.50-	13.00	SS-8	56				SAME AS SS-4					11	A-4a (VISUAL)
B-175-0-08	01.00-	02.50	SS-1	100	2	8	15	37	38	32	19	13	19	A-6a (9) *
STA. 38+05.20, 61.77' LT.	02.50-	04.00	SS-2	100	3	7	17	32	41	35	18	17	13	A-6b (10)
NORTHING = 713594.9460	04.00-	04.25	SS-3	67						41	17	24	16	A-7-6 (VISUAL)
EASTING = 1833430.9690	05.50-	07.00	SS-4	100	5	8	15	37	34	28	17	11	12	A-6a (8)
	07.00-	08.50	SS-5	100				SAME AS SS-4						A-6a (VISUAL)
	08.50-	10.00	SS-6	100				SAME AS SS-4						A-6a (VISUAL)
B-179-0-08	01.00-	02.50	SS-1	72	9	8	18	37	28	26	16	10	13	A-4a (6) *
STA. 200+87.93, 18.63' RT.	02.50-	04.00	SS-2	100	2	11	21	39	26	26	15	11	15	A-6a (6)
NORTHING = 713986.0854	04.00-	05.50	SS-3	22	10	7	18	34	30	28	17	11	16	A-6a (6)
EASTING = 1833413.6260	05.50-	07.00	SS-4	100	3	9	16	42	31	27	17	10	13	A-4a (8)
B-182-0-08	01.00-	02.50	SS-1	100	9	10	18	33	30	31	17	14	13	A-6a (7) *
STA. 204+88.03, 15.15' RT.	02.50-	04.00	SS-2	100	5	9	19	36	31	29	17	12	11	A-6a (7)
NORTHING = 714384.9538	04.00-	05.50	SS-3	100	3	10	18	39	30	27	16	11	13	A-6a (7)
EASTING = 1833398.141	05.50-	07.00	SS-4	100	7	9	15	38	31	29	16	13	12	A-6a (8)
	07.00-	08.50	SS-5	100				SAME AS SS-4						A-6a (VISUAL)
						MOOBERRY								
B-146-0-09	01.50-	03.00	SS-1	33										A-3a (VISUAL)
STA. 890+75.40, 16.69' RT.	03.50-	05.00	SS-2	11				SAME AS SS-3						A-1a (VISUAL)
NORTHING = 712220.2144	06.00-	07.50	SS-3	28	63	13	11	--13--		NP	NP	NP	6	A-1-a (0)
EASTING = 1833572.5906	08.50-	10.00	SS-4	100	2	2	9	79	8	NP	NP	NP	19	A-4b (8)
	11.00-	12.50	SS-5	67	63	17	10	--11--		NP	NP	NP	3	A-1-a (0)
	13.50-	15.00	SS-6	100				SAME AS SS-5					3	A-1-a (VISUAL)
	16.00-	17.50	SS-7	100									6	A-4b (VISUAL)
B-147-0-09	01.00-	02.50	SS-1	89	18	24	20	23	16	25	15	10	9	A-4a (1) *
STA. 894+84.57, 8' LT.	02.50-	04.00	SS-2	89	21	20	18	25	16	25	15	10	11	A-4a (1)
NORTHING = 712145.9000	04.00-	05.50	SS-3	100	15	11	18	33	23	26	16	10	11	A-4a (4)
EASTING = 1833973.5500	05.50-	07.00	SS-4	100	10	14	21	34	21	23	15	8	12	A-4a (4)

DRAWN RKL CHECKED DAA

SOIL PROFILE

SUMMARY OF SOIL TEST DATA

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SUMMARY OF SOIL TEST DATA

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	% REC	% AGG	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	OHIO CLASS
B-149-0-09	01.00	02.50	SS-1	72	1	4	12	40	43	38	25	13	22	A-6a (9) *
STA. 902+41.45, 11.06' LT.	02.50	04.00	SS-2	100	3	8	16	35	39	37	18	19	20	A-6b (11)
NORTHING = 712082.3000	04.00	05.50	SS-3	100	5	6	13	31	45	43	19	24	26	A-7-6 (14)
EASTING = 1834727.5970	05.50	07.00	SS-4	89	9	16	22	34	20	23	16	7	16	A-4a (4)
	07.00	08.50	SS-5	100				SAME AS SS-4					15	A-4a (VISUAL)
	08.50	10.00	SS-6	100				SAME AS SS-4					13	A-4a (VISUAL)
	10.00	11.50	SS-7	100				SAME AS SS-4					12	A-4a (VISUAL)
	11.50	13.00	SS-8	100				SAME AS SS-4					11	A-4a (VISUAL)
	13.00	14.50	SS-9	78				SAME AS SS-4					13	A-4a (VISUAL)
							MOUND							
B-292-0-10	01.00	02.50	SS-1	67	45	23	15	--17--		NP	NP	NP	6	A-1-b (0) *
STA. 18+34 24.9' LT.	02.50	04.00	SS-2	89	52	21	11	--16--		NP	NP	NP	8	A-1-b (0)
NORTHING = 712415.8	04.00	05.50	SS-3	78	43	25	14	--17--		NP	NP	NP	7	A-1-b (0)
EASTING = 1828679.08	05.50	07.00	SS-4	89	36	39	11	--14--		NP	NP	NP	6	A-1-b (0)
B-294-0-10	01.00	02.50	SS-1	50	11	10	18	33	28	33	17	16	21	A-6b (8) *
STA. 26+65 2.0' LT.	02.50	04.00	SS-2	72	6	7	10	36	41	33	19	14	17	A-6a (10)
NORTHING = 712508.04	04.00	05.50	SS-3	100	0	1	2	54	43	31	19	12	19	A-6a (9)
EASTING = 1829506.19	05.50	07.00	SS-4	100	8	20	21	33	18	22	16	6	11	A-4a (3)

DRAWN RKL CHECKED DAA

SOIL PROFILE

SUMMARY OF SOIL TEST DATA

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BORING PROFILE LOCATION REFERENCE I-70 STA. 747+50 TO STA. 760+00	
BORING ID	PROFILE/SECTION SHEET NO.
B-002-F-59	PROJECT 4A, FRA-70-12.68
B-027-0-08	PROJECT 4A, FRA-70-12.68
B-278-0-10	79
B-005-F-59	PROJECT 4A, FRA-70-12.68
B-001-C-59	79
B-279-0-10	79
B-028-0-08	PROJECT 4A, FRA-70-12.68
B-029-0-08	PROJECT 4A, FRA-70-12.68
B-011-0-59	79
B-007-0-59	PROJECT 4A, FRA-70-12.68
B-001-0-59	PROJECT 4A, FRA-70-12.68
B-030-0-08	23
B-280-0-10	79
B-031-0-08	23
B-032-0-08	PROJECT 4B, FRA-70-14.00

HORIZONTAL SCALE IN FEET
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DRAWN RKL
CHECKED VBP

SOIL PROFILE
I-70 STA. 734+00 TO STA. 747+00

FRA-70-14.48

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9
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BORING PROFILE LOCATION REFERENCE I-70 STA. 747+50 TO STA. 760+00	
BORING ID	PROFILE/SECTION SHEET NO.
B-033-0-08	23
B-034-0-08	80
B-035-0-08	23
B-035-1-10	80
B-036-0-08	24, 25
B-037-0-08	24, 25, 80
B-037-1-10	80
B-038-0-10	80
B-038-1-10	24, 25, 80, 81

BORING PROFILE LOCATION REFERENCE I-70 STA. 747+50 TO STA. 760+00	
BORING ID	PROFILE/SECTION SHEET NO.
B-281-0-10	79
B-282-0-10	80
B-283-0-10	80
B-001-3-59	PROJECT 4B, FRA-70-14.00
B-010-3-59	23
B-001-4-59	PROJECT 4B, FRA-70-14.00
B-008-4-59	23
B-012-4-59	PROJECT 4B, FRA-70-14.00
B-001-D-59	PROJECT 2A, AFRICENTRIC WALL

HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN RKL CHECKED VBP

SOIL PROFILE
I-70 STA. 747+00 TO STA. 760+00
FRA-70-14.48

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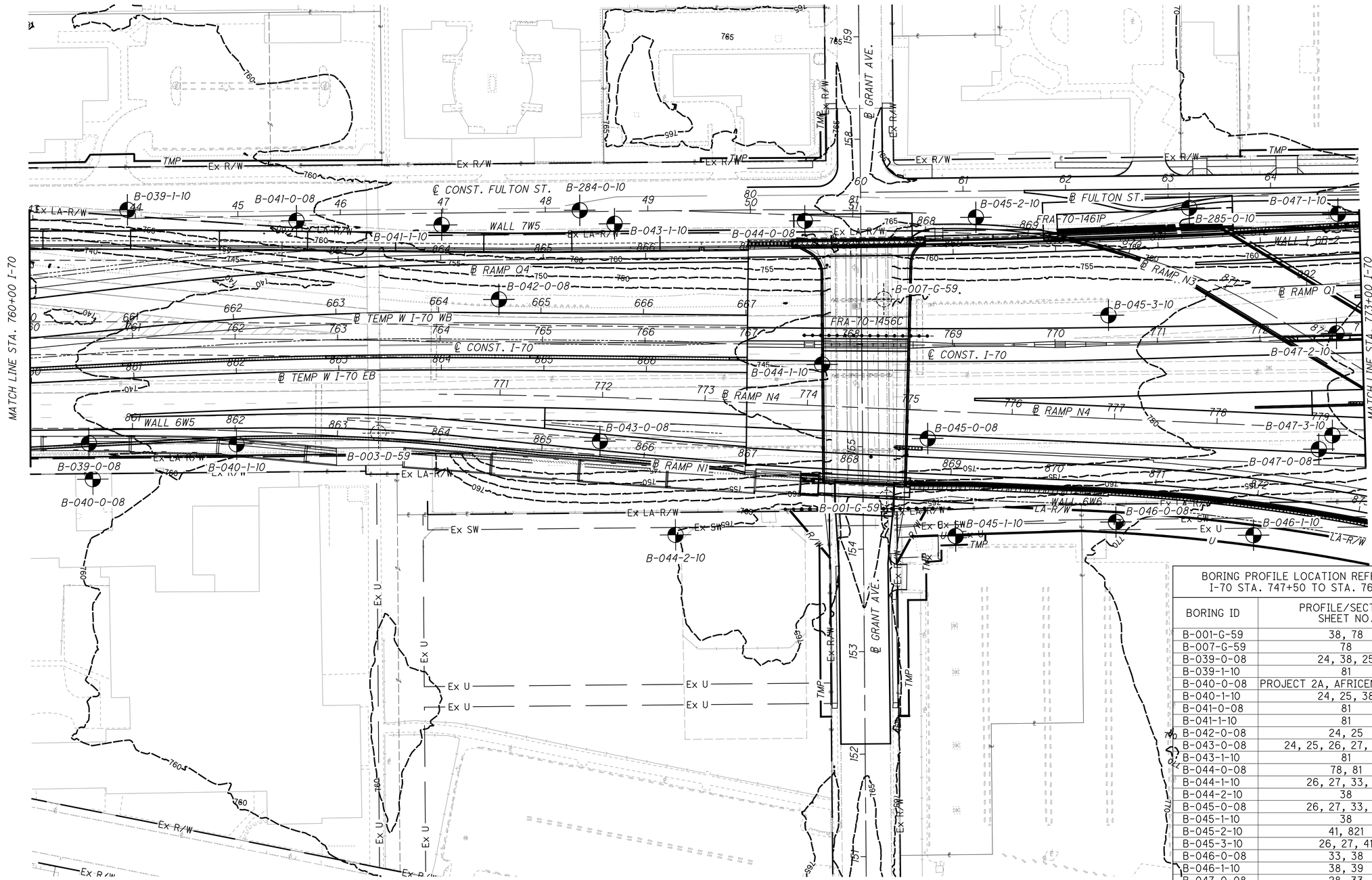

BORING PROFILE LOCATION REFERENCE I-70 STA. 747+50 TO STA. 760+00	
BORING ID	PROFILE/SECTION SHEET NO.
B-001-G-59	38, 78
B-007-G-59	78
B-039-0-08	24, 38, 25
B-039-1-10	81
B-040-0-08	PROJECT 2A, AFRICENTRIC WALL
B-040-1-10	24, 25, 38
B-041-0-08	81
B-041-1-10	81
B-042-0-08	24, 25
B-043-0-08	24, 25, 26, 27, 33, 38
B-043-1-10	81
B-044-0-08	78, 81
B-044-1-10	26, 27, 33, 78
B-044-2-10	38
B-045-0-08	26, 27, 33, 38
B-045-1-10	38
B-045-2-10	41, 821
B-045-3-10	26, 27, 41
B-046-0-08	33, 38
B-046-1-10	38, 39
B-047-0-08	28, 33
B-047-1-10	66, 82
B-047-2-10	26, 27, 41, 61
B-047-3-10	33
B-284-0-10	81
B-285-0-10	82
B-003-D-59	24, 25

HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN RKL CHECKED VBP

SOIL PROFILE
I-70 STA. 760+00 TO STA. 773+00
FRA=70-14.48

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BORING PROFILE LOCATION REFERENCE I-70 STA. 747+50 TO STA. 760+00	
BORING ID	PROFILE/SECTION SHEET NO.
B-001-W-61	61
B-001-W-62	67
B-006-W-61	PROJECT 2C, FRA-70-15.25
B-007-W-62	61, 66, 82
B-011-W-61	34, 44
B-047-4-10	39
B-047-5-10	26, 27, 28, 33, 41
B-047-6-10	39
B-047-7-10	26, 27, 61
B-048-0-08	33, 35, 41
B-048-1-10	34
B-048-2-10	39, 41

BORING PROFILE LOCATION REFERENCE I-70 STA. 747+50 TO STA. 760+00	
BORING ID	PROFILE/SECTION SHEET NO.
B-049-0-08	26, 27, 61, 67
B-049-1-10	35, 41, 44
B-049-2-10	39
B-049-3-10	26, 27, 28, 34
B-049-4-10	35, 44
B-049-5-10	29, 35
B-049-6-10	34, 44
B-049-7-10	28
B-050-0-08	29, 34
B-050-1-10	29, 35, 44
B-050-2-10	28, 34
B-050-3-10	28, 35, 44

BORING PROFILE LOCATION REFERENCE I-70 STA. 747+50 TO STA. 760+00	
BORING ID	PROFILE/SECTION SHEET NO.
B-050-4-10	29, 35, 44
B-050-5-10	28
B-051-0-09	28
B-141-0-09	39, 41, 42
B-141-1-10	39, 42
B-141-2-10	39, 40, 42
B-141-3-10	42
B-142-0-09	39
B-142-1-10	39
B-143-0-09	40, 42
B-143-1-10	40, 42
B-150-0-09	44

BORING PROFILE LOCATION REFERENCE I-70 STA. 747+50 TO STA. 760+00	
BORING ID	PROFILE/SECTION SHEET NO.
B-150-1-09	34
B-164-0-09	66, 82
B-164-1-10	66, 82
B-164-2-10	66, 82
B-164-3-10	67, 82
B-165-0-09	66, 68, 69
B-165-1-10	61, 67, 68, 69
B-165-2-10	68, 69
B-165-3-10	68, 69
B-166-0-09	61, 62, 68, 69
B-170-0-09	61
B-170-1-09	62

CONSTRUCTION DEBRIS

HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN RKL
CHECKED VBP

SOIL PROFILE
I-70 STA. 773+00 TO STA. 786+00
FRA-70-14.48

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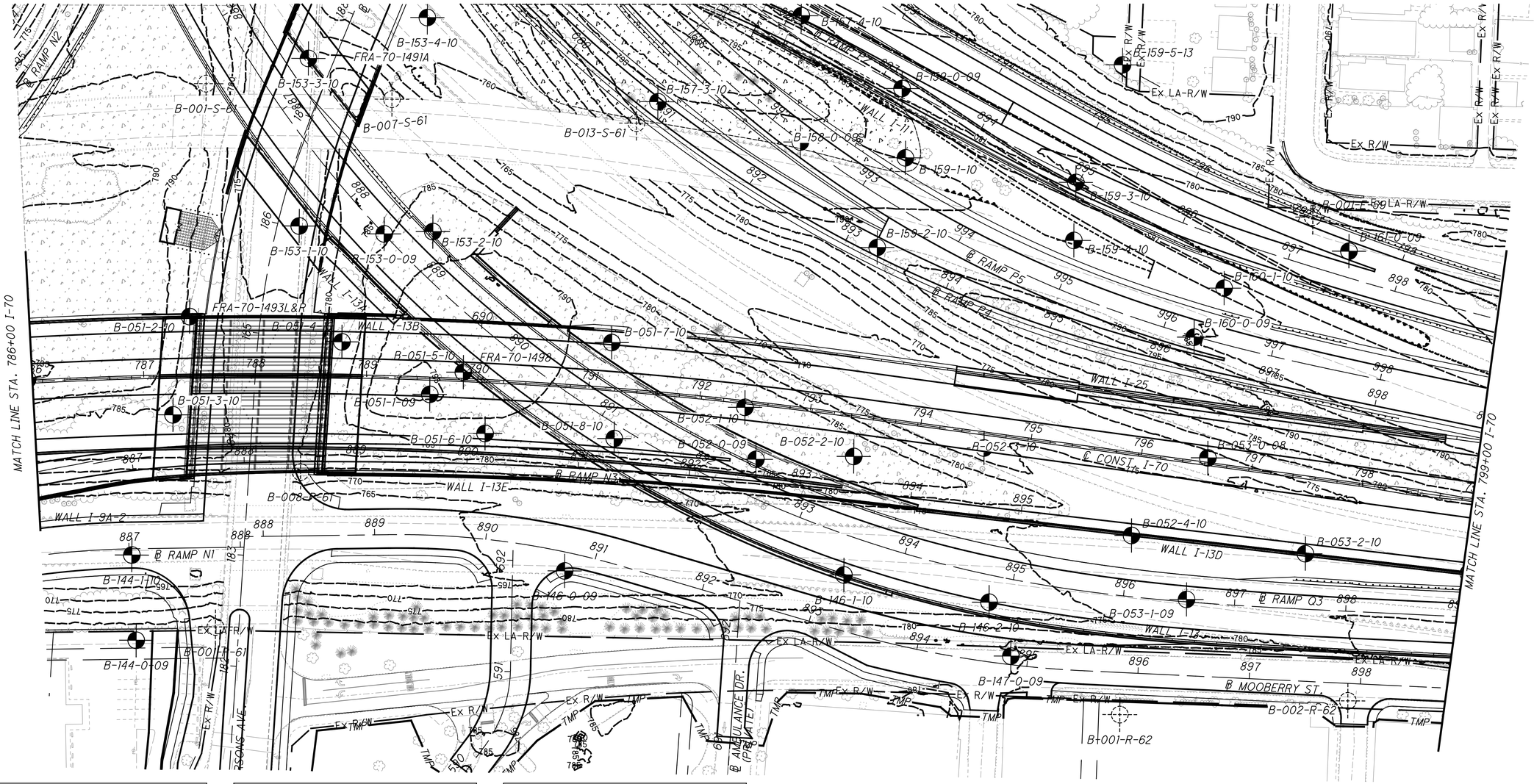

BORING PROFILE LOCATION REFERENCE I-70 STA. 747+50 TO STA. 760+00	
BORING ID	PROFILE/SECTION SHEET NO.
B-001-P-61	70
B-001-R-62	76
B-001-S-61	58
B-002-R-62	76
B-008-P-61	42, 70, 76
B-051-2-10	29
B-051-3-10	28, 42
B-051-4-10	28, 36, 50
B-051-5-10	28, 58
B-051-6-10	30, 31, 42
B-051-7-10	30, 31, 59
B-051-8-10	42, 43, 58
B-052-0-09	30, 31, 43, 57, 58
B-052-1-10	30, 31, 36, 50, 59
B-052-2-10	30, 31, 43
B-052-3-10	30, 31, 43
B-052-4-10	30, 31, 58
B-053-0-08	30, 31

BORING PROFILE LOCATION REFERENCE I-70 STA. 747+50 TO STA. 760+00	
BORING ID	PROFILE/SECTION SHEET NO.
B-053-1-09	30, 31, 59, 60
B-053-2-10	30, 31, 58, 60
B-144-0-09	40
B-144-1-10	40, 76
B-146-0-09	76
B-146-1-10	59, 76
B-146-2-10	76
B-147-0-09	76
B-153-0-09	59
B-153-1-10	58, 70
B-153-2-10	58
B-153-3-10	59, 70
B-153-4-10	70
B-157-3-10	51, 54
B-157-4-10	45, 46, 47
B-158-0-09	51, 54
B-159-0-09	45, 46, 47
B-159-1-10	54

BORING PROFILE LOCATION REFERENCE I-70 STA. 747+50 TO STA. 760+00	
BORING ID	PROFILE/SECTION SHEET NO.
B-159-2-10	51
B-159-3-10	47
B-159-4-10	51
B-159-5-13	83
B-160-0-09	51
B-160-1-10	47
B-161-0-09	47
B-001-E-59	83
B-007-S-61	59
B-013-S-61	51

CONSTRUCTION DEBRIS

HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN RKL
CHECKED DAA

SOIL PROFILE
I-70 STA. 786+00 TO STA. 799+00
FRA-70-14.48

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386

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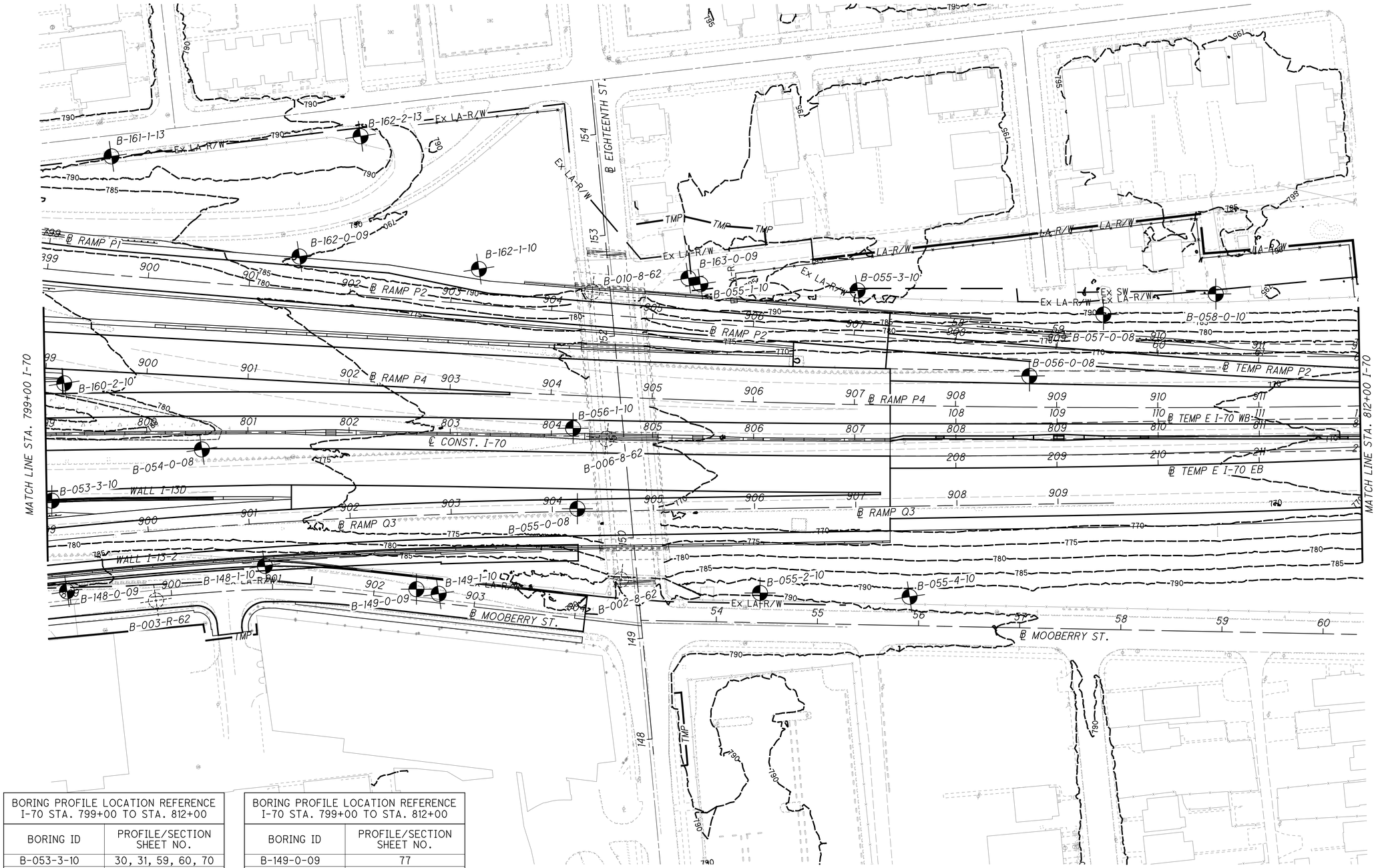

BORING PROFILE LOCATION REFERENCE I-70 STA. 799+00 TO STA. 812+00	
BORING ID	PROFILE/SECTION SHEET NO.
B-053-3-10	30, 31, 59, 60, 70
B-054-0-08	30, 31, 51, 52, 60
B-055-0-08	32, 60
B-055-1-10	48
B-055-2-10	60
B-055-3-10	48
B-055-4-10	60
B-056-0-08	32, 48, 52, 60
B-056-1-10	31, 52, 53, 56, 71
B-057-0-08	48
B-058-0-10	48
B-148-1-10	60, 77

BORING PROFILE LOCATION REFERENCE I-70 STA. 799+00 TO STA. 812+00	
BORING ID	PROFILE/SECTION SHEET NO.
B-149-0-09	77
B-149-1-10	60, 77
B-160-2-10	51
B-161-1-13	84
B-162-0-09	48
B-162-1-10	48
B-162-2-13	84
B-163-0-09	48
B-002-8-62	77
B-003-R-62	77
B-006-8-62	32
B-010-8-62	48

N

0 25 50 100
HORIZONTAL SCALE IN FEET

DRAWN RKL
CHECKED DAA

SOIL PROFILE
I-70 STA. 799+00 TO STA. 812+00
FRA-70-14.48

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BORING PROFILE LOCATION REFERENCE I-70 STA. 812+00 TO STA. 825+00	
BORING ID	PROFILE/SECTION SHEET NO.
B-058-1-10	48
B-059-0-08	32
B-060-0-08	PROJECT 5, FRA-70-15.29
B-062-0-08	PROJECT 5, FRA-70-15.29
B-063-0-08	PROJECT 5, FRA-70-15.29
B-064-0-08	PROJECT 5, FRA-70-15.29
B-001-0-61	PROJECT 5, FRA-70-15.29
B-003-0-61	PROJECT 5, FRA-70-15.29
B-005-0-61	PROJECT 5, FRA-70-15.29
B-009-0-61	PROJECT 5, FRA-70-15.29

BORING PROFILE LOCATION REFERENCE I-70 STA. 812+00 TO STA. 825+00	
BORING ID	PROFILE/SECTION SHEET NO.
B-002-C-61	PROJECT 5, FRA-70-15.29
B-005-C-61	PROJECT 5, FRA-70-15.29
B-010-C-61	PROJECT 5, FRA-70-15.29

HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN RKL
CHECKED DAA

SOIL PROFILE
I-70 STA. 812+00 TO STA. 825+00
FRA-70-14.48

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BORING PROFILE LOCATION REFERENCE RAMP N4 STA. 793+00 TO STA. 805+00	
BORING ID	PROFILE/SECTION SHEET NO.
B-156-3-10	53, 55, 71
B-157-0-09	54
B-157-1-10	55, 70, 71
B-157-2-10	45, 46, 54, 55
B-166-3-10	62
B-166-4-10	PROJECT 2C, FRA-70-15.25
B-171-0-09	62
B-175-0-08	71
B-175-1-10	36, 53
B-175-3-10	36, 53, 71
B-287-1-10	50, 57
B-287-2-10	53, 56, 74
B-288-0-10	55, 74

BORING PROFILE LOCATION REFERENCE RAMP N4 STA. 793+00 TO STA. 805+00	
BORING ID	PROFILE/SECTION SHEET NO.
B-001-0-10	57
B-001-S-61	58
B-002-0-10	57, 62
B-007-M-59	50, 73
B-008-N-59	36, 57
B-012-M-59	73, 74
B-051-4-10	28, 36, 50
B-151-0-09	36
B-151-1-10	36, 57, 58
B-151-2-10	PROJECT 4C, FRA-70-15.25
B-151-3-10	36
B-151-4-10	36, 50
B-152-0-09	57
B-152-1-10	50
B-153-0-09	59
B-153-1-10	58, 70
B-153-2-10	58
B-153-3-10	59, 70
B-153-4-10	70
B-153-5-10	50
B-153-6-10	50, 70
B-154-0-09	55
B-154-1-13	83
B-156-0-09	36, 53
B-156-1-10	53, 56, 71
B-156-2-10	53, 71

CONSTRUCTION DEBRIS

HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN RKL
CHECKED DAA

SOIL PROFILE
RAMP N4 STA. 792+00 TO STA. 805+00

FRA-70-14.48

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BORING PROFILE LOCATION REFERENCE RAMP N4 STA 805+00 TO STA 812+38.51	
BORING ID	PROFILE/SECTION SHEET NO.
B-001-T-59	65
B-003-0-10	50, 57, 63
B-003-G-59	65
B-004-0-10	37, 49, 63
B-004-G-59	PROJECT 3, FRA-71-17.14
B-005-T-59	PROJECT 3, FRA-71-17.14
B-175-4-10	65
B-176-1-10	37, 53
B-177-0-08	63, 65
B-178-0-08	37, 49, 53
B-179-0-08	71
B-179-1-10	53, 71
B-180-0-08	75
B-180-2-10	65, 75
B-180-3-09	65
B-180-4-10	37, 53, 72
B-181-0-08	49, 63, 65
B-182-0-08	72
B-182-1-09	37, 49, 63
B-183-0-08	65, 75
B-183-1-09	65
B-183-2-09	49
B-183-3-09	75
B-183-4-09	49
B-183-5-09	65
B-184-0-08	49
B-184-1-09	PROJECT 3, FRA-71-17.14

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N

0 25 50 100 HORIZONTAL SCALE IN FEET

DRAWN RKL CHECKED DAA

SOIL PROFILE

RAMP N4 STA. 805+00 TO STA. 812+38.51

FRA-70-14.48

17 386

17 386

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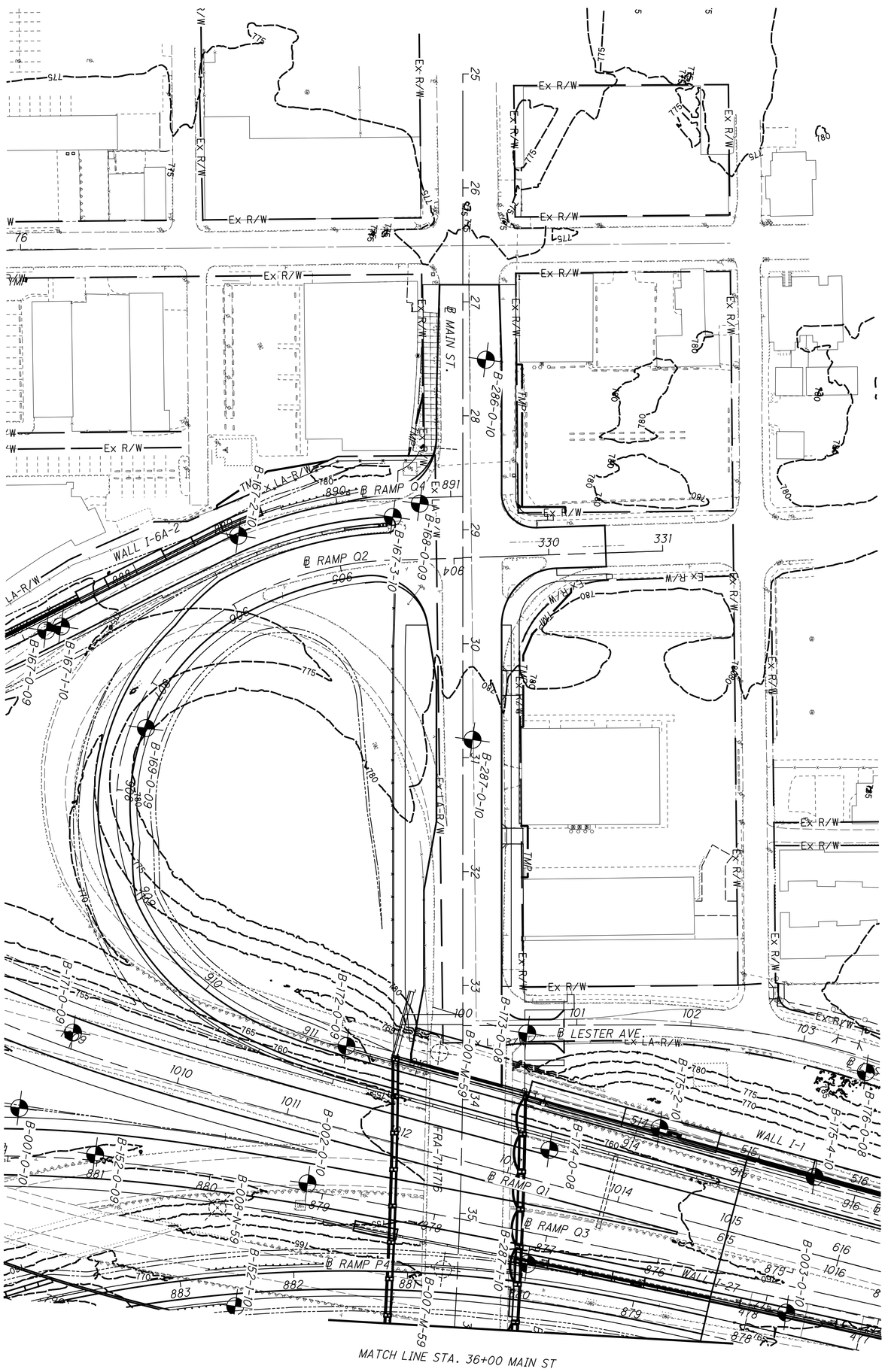
BORING PROFILE LOCATION REFERENCE MAIN ST STA. 25+00 TO STA. 36+00	
BORING ID	PROFILE/SECTION SHEET NO.
B-001-0-10	57
B-001-M-59	64, 73
B-002-0-10	57, 62
B-003-0-10	50, 57, 63
B-007-M-59	50, 73
B-008-N-59	36, 57
B-152-0-09	57
B-152-1-10	50
B-167-0-09	68, 69
B-167-1-10	68, 69
B-167-2-10	64, 68, 69
B-167-3-10	64, 68, 69
B-168-0-09	68, 69, 73
B-169-0-09	64
B-171-0-09	62
B-173-0-08	75
B-174-0-08	62, 64
B-175-2-10	62, 64
B-175-4-10	65
B-176-0-08	75
B-286-0-10	73
B-287-0-10	73
B-287-1-10	50, 57



386 / 18	18 / 386	FRA-70-14.48	SOIL PROFILE MAIN ST STA. 25+00 TO STA. 36+00	DRAWN RKL CHECKED VBP	0 50 25 100 HORIZONTAL SCALE IN FEET

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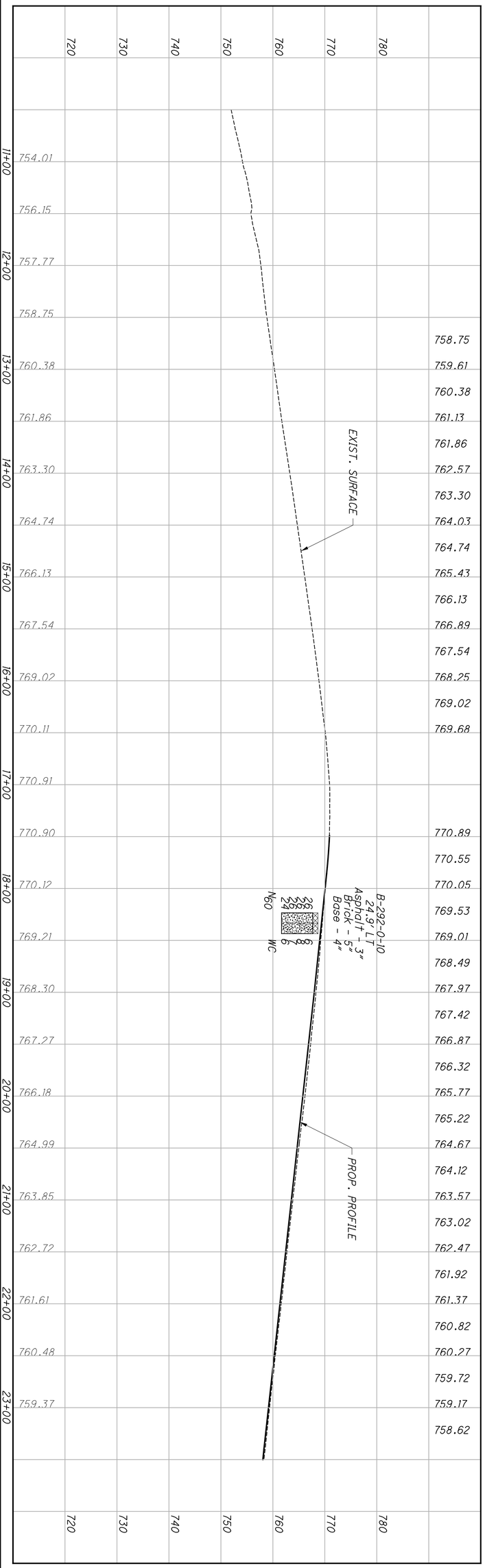

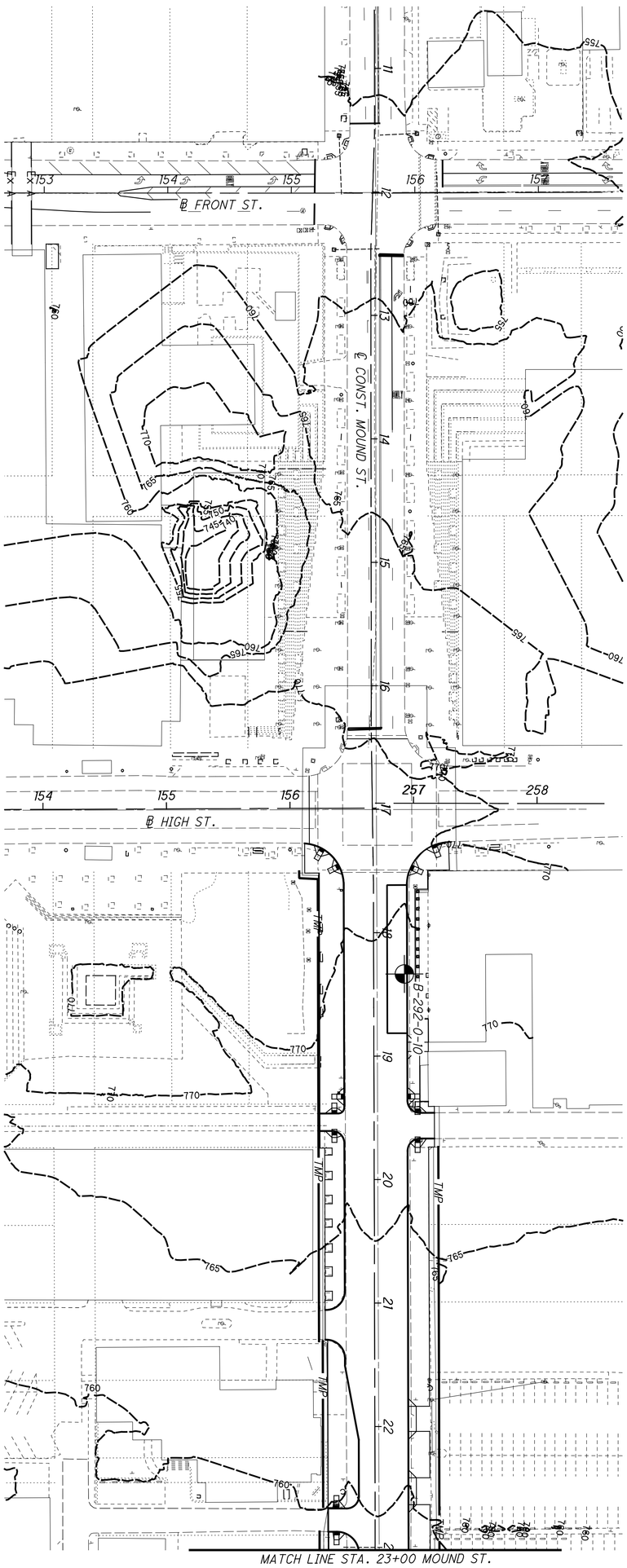

19/386	19/386	FRA-70-14.48	SOIL PROFILE MOUND ST. STA. 11+00 TO STA. 23+00	DRAWN PAT CHECKED VBP	0 50 25 100 HORIZONTAL SCALE IN FEET

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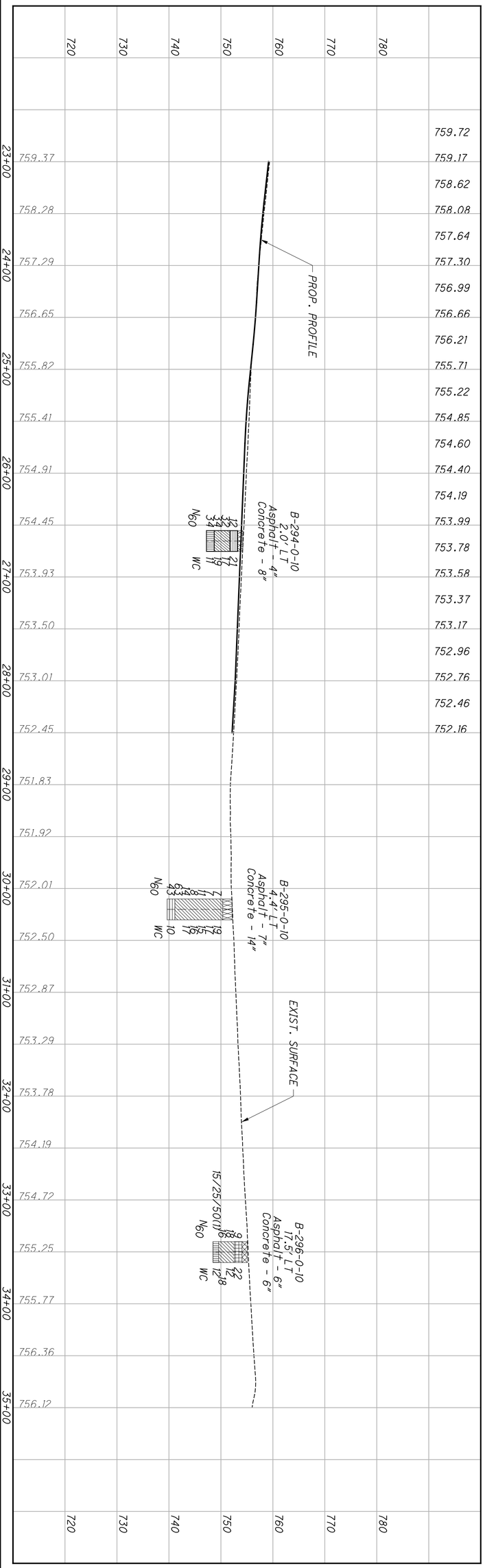
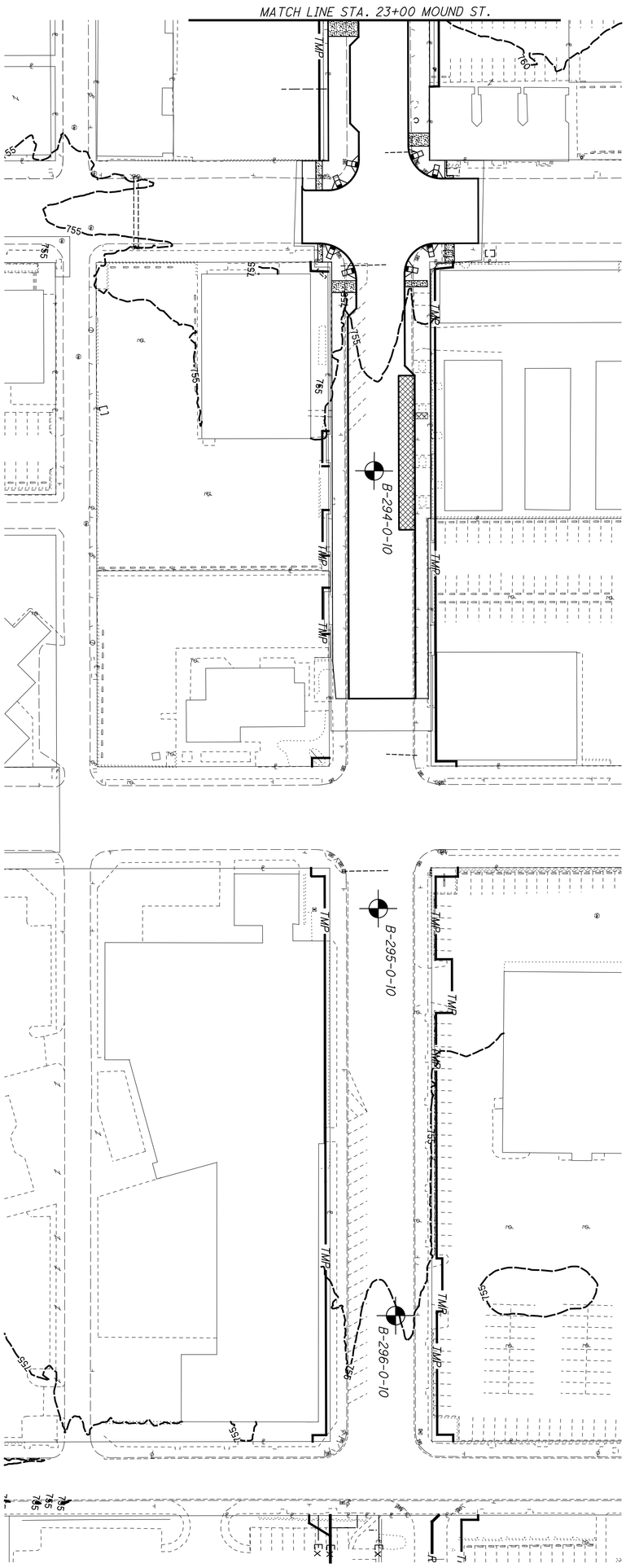
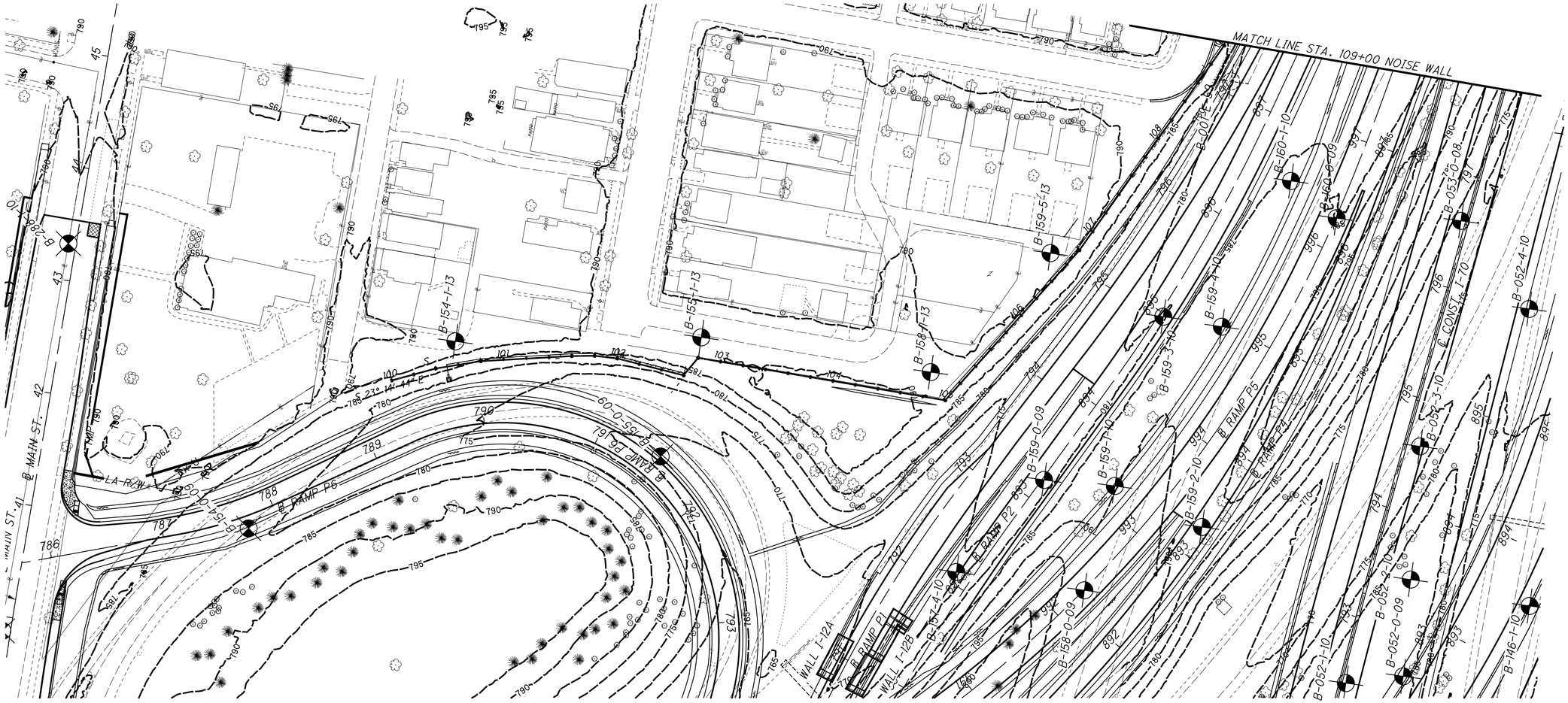




20/386	20/386	FRA-70-14.48	SOIL PROFILE MOUND ST. STA. 23+00 TO STA. 35+00	DRAWN PAT CHECKED VBP	0 50 25 100 HORIZONTAL SCALE IN FEET	N



BORING PROFILE LOCATION REFERENCE NOISE WALL STA. 100+00 TO STA. 109+00	
BORING ID	PROFILE/SECTION SHEET NO.
B-288-1-10	74
B-155-0-09	55
B-157-4-10	45,46,47
B-158-0-09	51,54
B-052-1-10	30,31,36,50,59
B-052-0-09	30,31,43,57,58
B-052-2-10	30,31,43
B-146-1-10	59,76

BORING PROFILE LOCATION REFERENCE NOISE WALL STA. 100+00 TO STA. 109+00	
BORING ID	PROFILE/SECTION SHEET NO.
B-052-3-10	30,31,43
B-052-4-10	30,31,58
B-053-0-08	30,31
B-154-0-09	55
B-154-1-13	83
B-155-1-13	83
B-158-1-13	83
B-159-0-09	45,46,47
B-159-1-10	54
B-159-2-10	51
B-159-3-10	47
B-159-4-10	51
B-159-5-13	83
B-160-0-09	51
B-160-1-10	47
B-001-E-59	83

HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN EMW
CHECKED MDK

SOIL PROFILE
NOISE WALL STA. 100+00 TO STA. 109+00

FRA-70-14.48

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386

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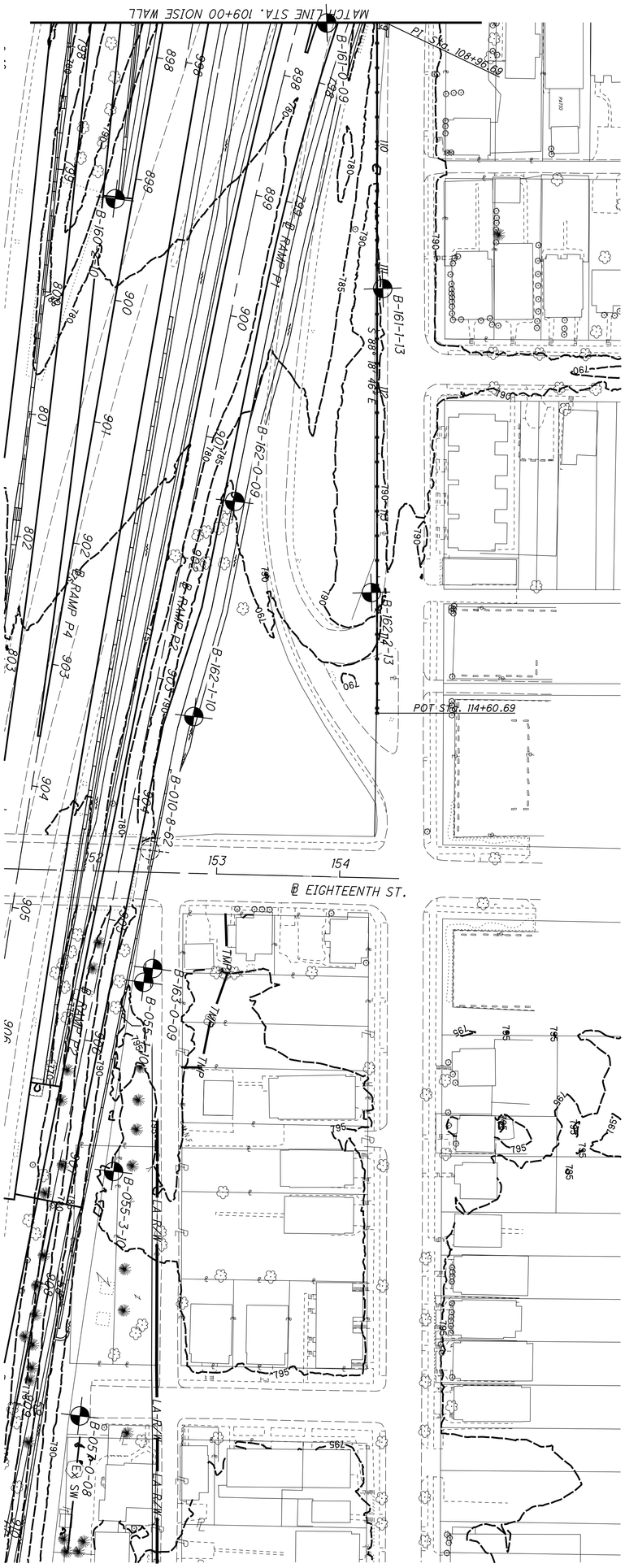


BORING PROFILE LOCATION REFERENCE
NOISE WALL STA. 109+00 TO STA. 114+60.69

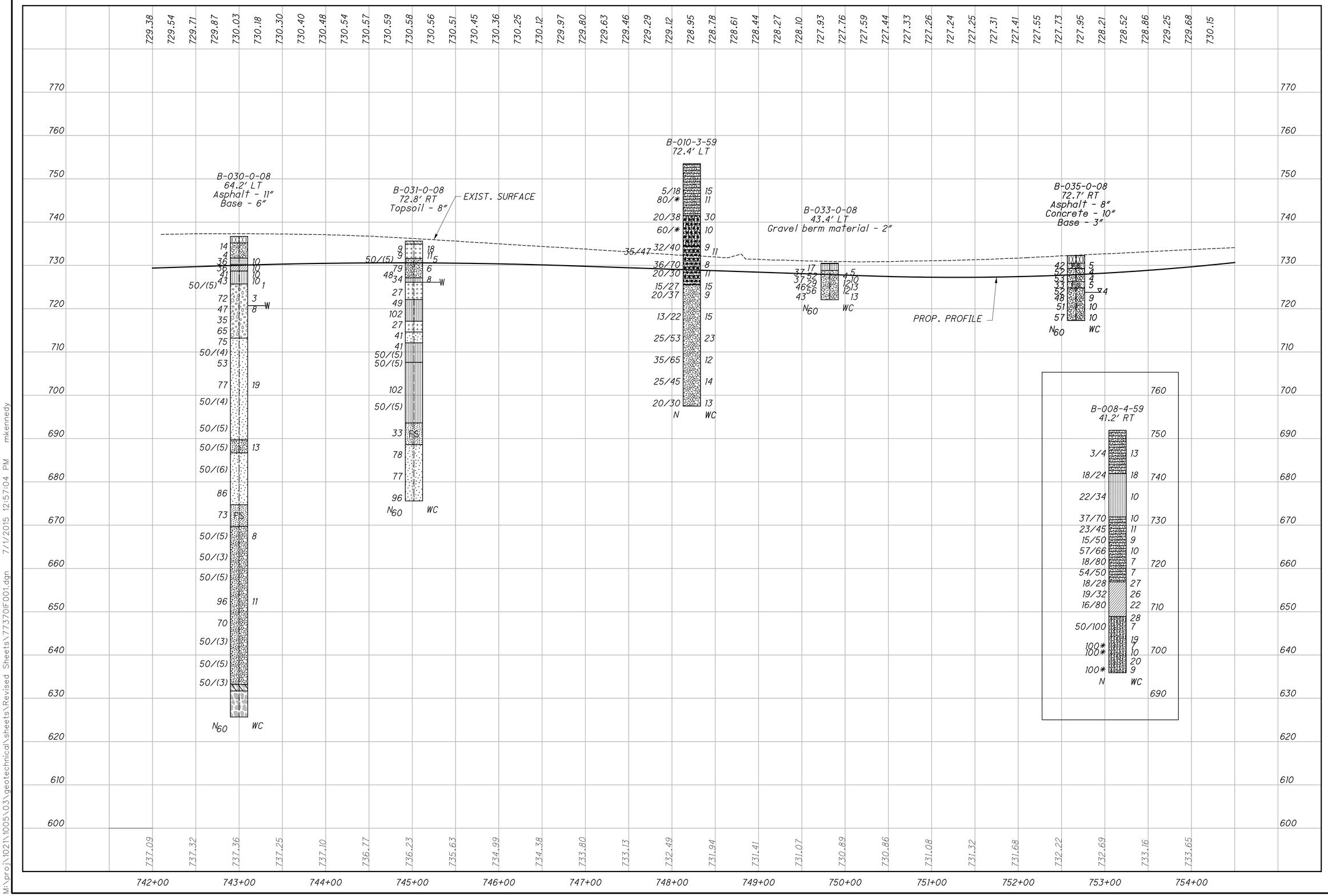
BORING ID	PROFILE/SECTION SHEET NO.
B-010-8-62	48
B-055-1-10	48
B-055-3-10	48
B-057-0-08	48
B-160-2-10	51
B-161-1-13	84
B-162-1-10	48
B-162-2-13	84
B-163-0-09	48
B-161-0-09	47
B-162-0-09	48

FRA-70-14.48

SOIL PROFILE
NOISE WALL STA. 109+00 TO STA. 114+60.69

DRAWN EMW
CHECKED MDK

0 25 50 100
HORIZONTAL SCALE IN FEET



HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN PAT
CHECKED VBP

SOIL PROFILE
I-70 STA. 742+00 TO STA. 754+00

FRA-70-14.48

23 386

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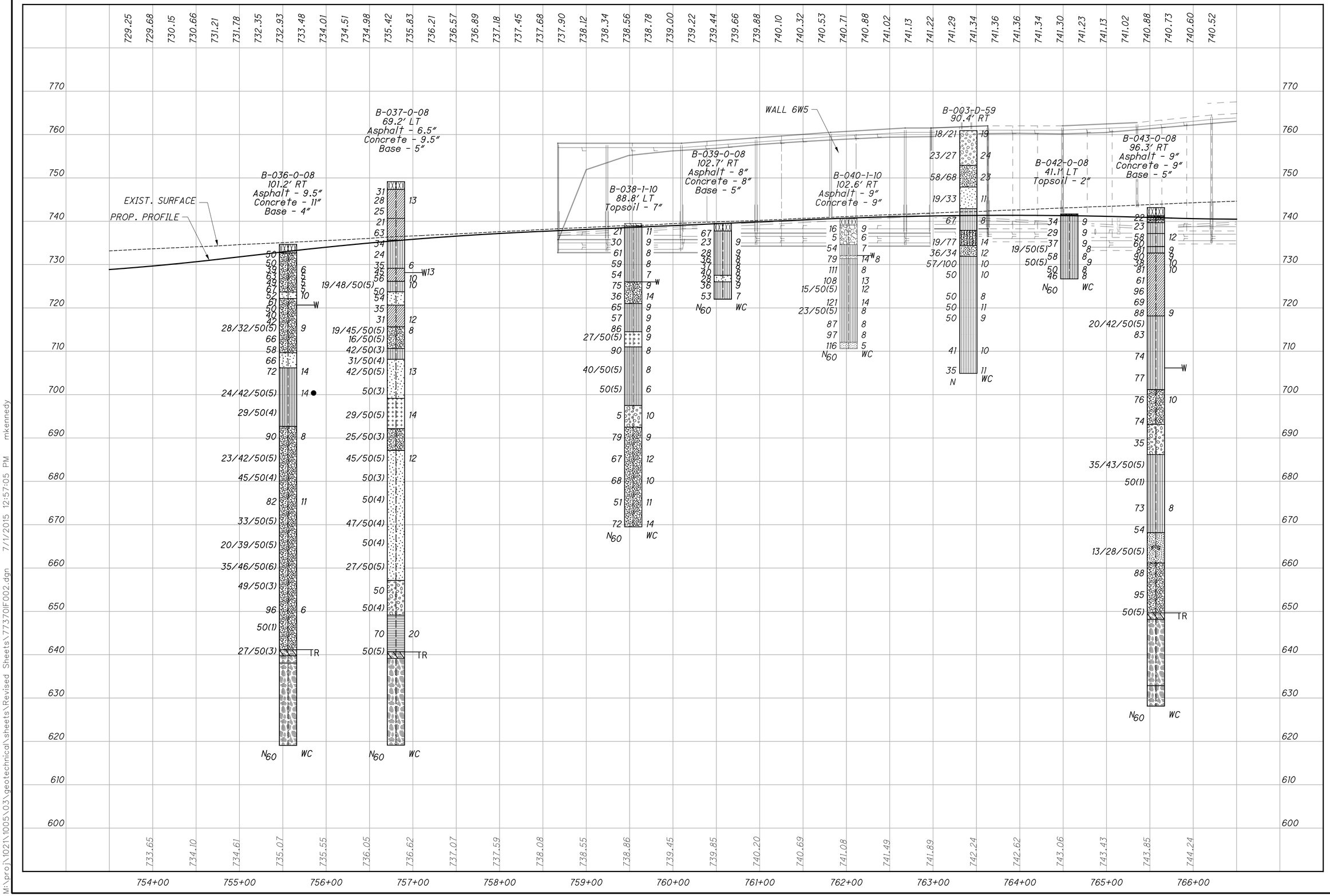

HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN PAT
CHECKED VBP

SOIL PROFILE
I-70 STA. 754+00 TO STA. 766+00

FRA-70-14.48

24/386

24
386

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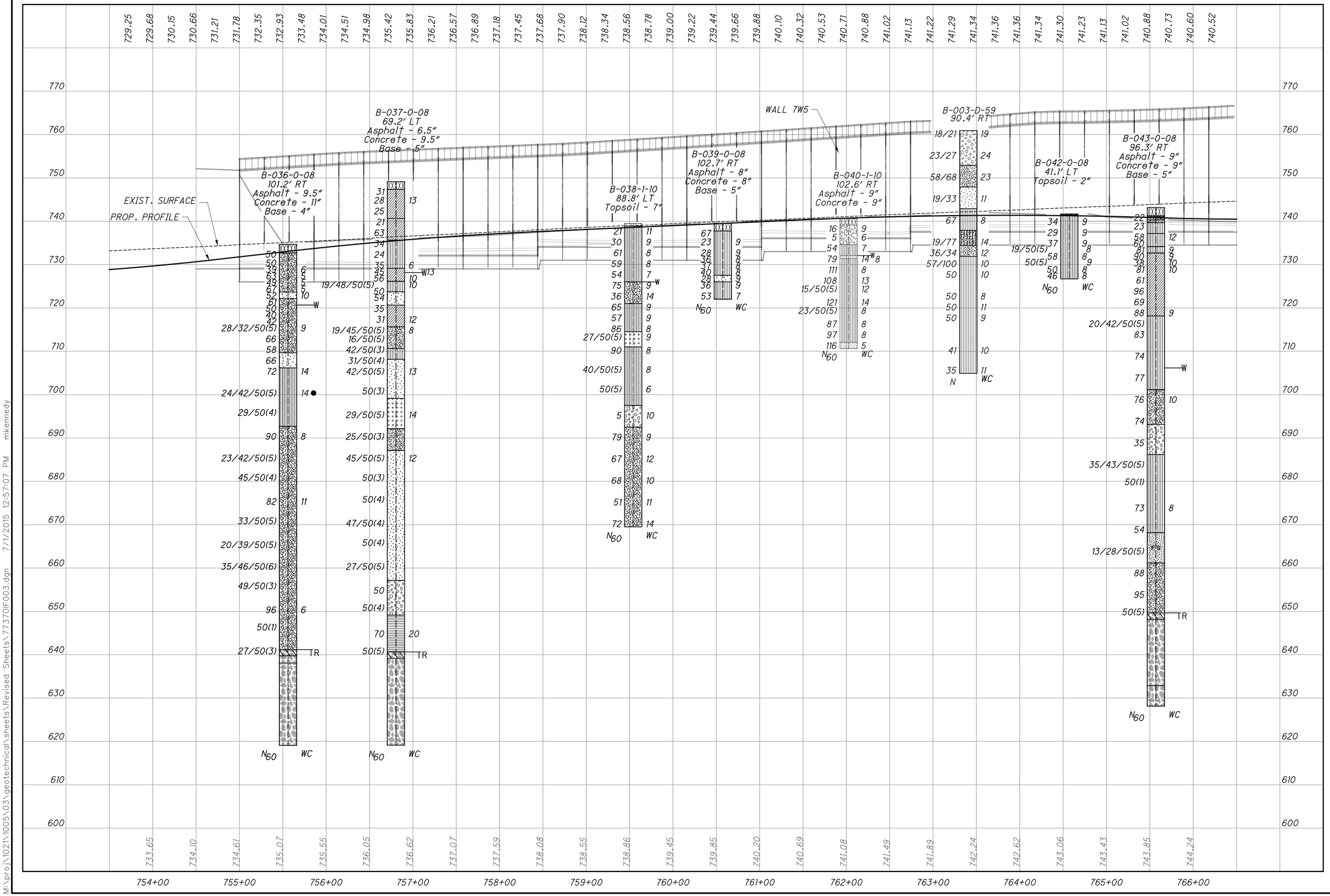

0 25 50 100
HORIZONTAL SCALE IN FEET

DRAWN PAT
CHECKED VBP

SOIL PROFILE
I-70 STA. 754+00 TO STA. 766+00

FRA-70-14.48

25/386

25/386

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SOIL PROFILE

I-70 STA. 766+00 TO STA. 778+00

FRA-70-14.48

DRAWN PAT

CHECKED VBP

HORIZONTAL SCALE IN FEET

0 25 50 100

26 / 386

26 386

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WALL 6W5

WALL I-6B-2

WALL I-7

EXIST. SURFACE

PROP. PROFILE

B-043-0-08
96.3' RT
Asphalt - 9"
Concrete - 9"
Base - 5"

B-044-1-10
19.4' RT
Asphalt - 8"
Concrete - 10"
Base - 5"

B-045-3-10
27.9' LT
Asphalt- 9"
Concrete- 9"
Base- 6"

B-047-2-10
17.1' LT
Asphalt- 9.5"
Base- 2.5"

B-047-5-10
58.0' RT
Asphalt- 8"
Concrete- 9"
Base - 1"

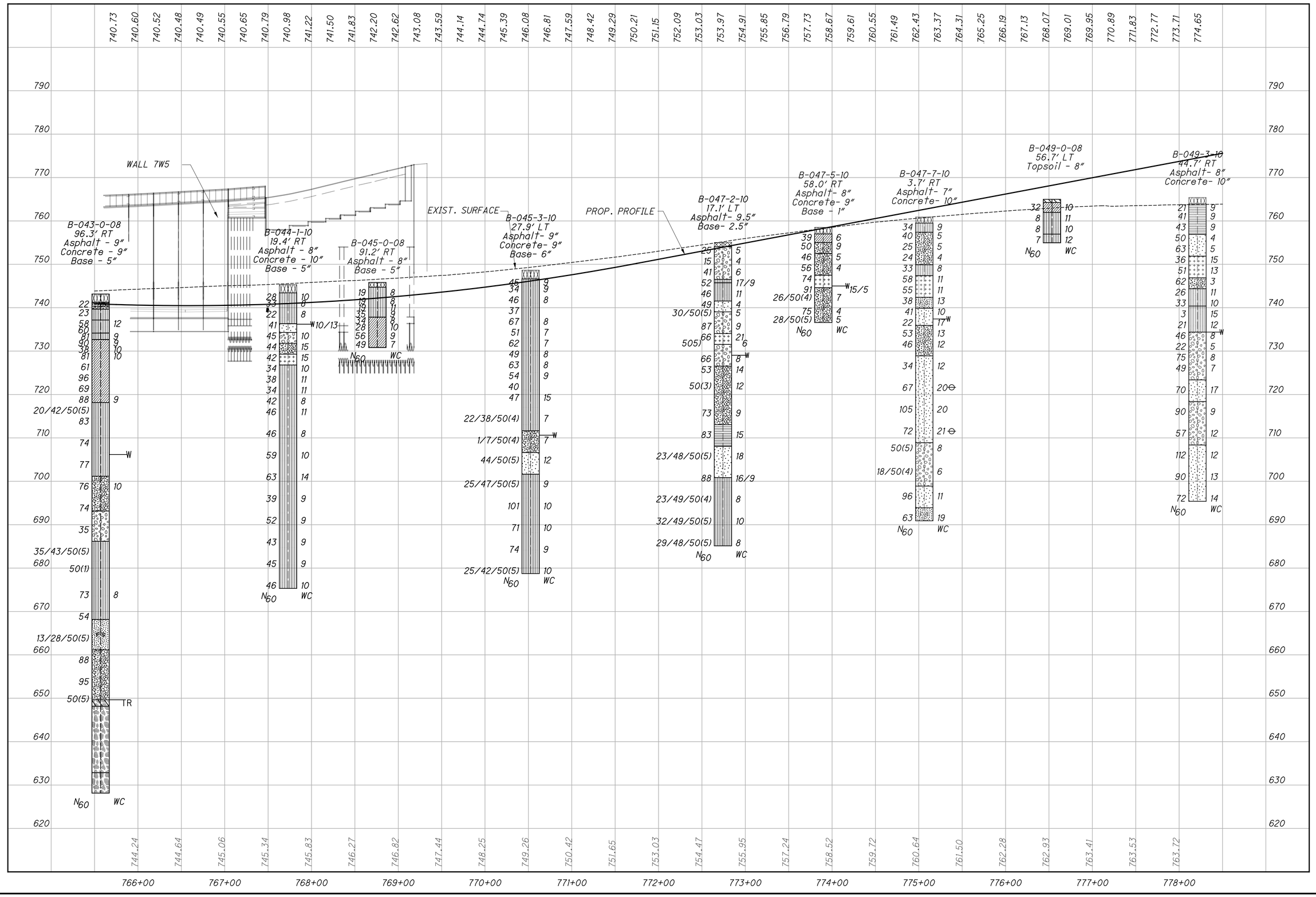
B-047-7-10
3.7' RT
Asphalt- 7"
Concrete- 10"

B-049-0-08
56.7' LT
Topsoil - 8"

B-049-3-10
44.7' RT
Asphalt- 8"
Concrete- 10"

B-045-0-08
91.2' RT
Asphalt - 8"
Base - 5"

N_{60} WC



HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN PAT
CHECKED VBP

SOIL PROFILE
I-70 STA. 766+00 TO STA. 778+00

FRA-70-14.48

27 / 386

27
386

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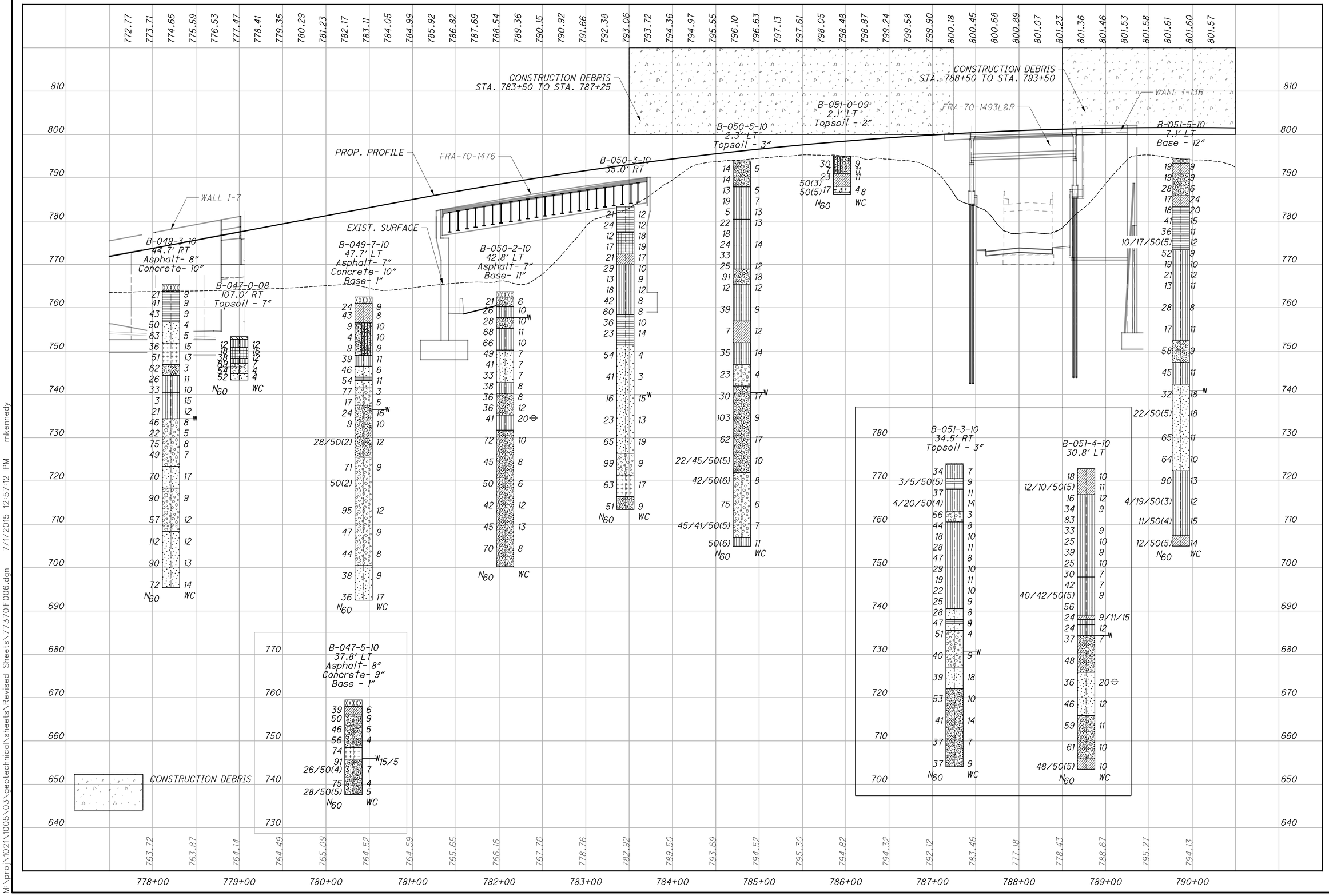

HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN PAT
CHECKED VBP

SOIL PROFILE
I-70 STA. 778+00 TO STA. 790+00
FRA-70-14.48

28/386

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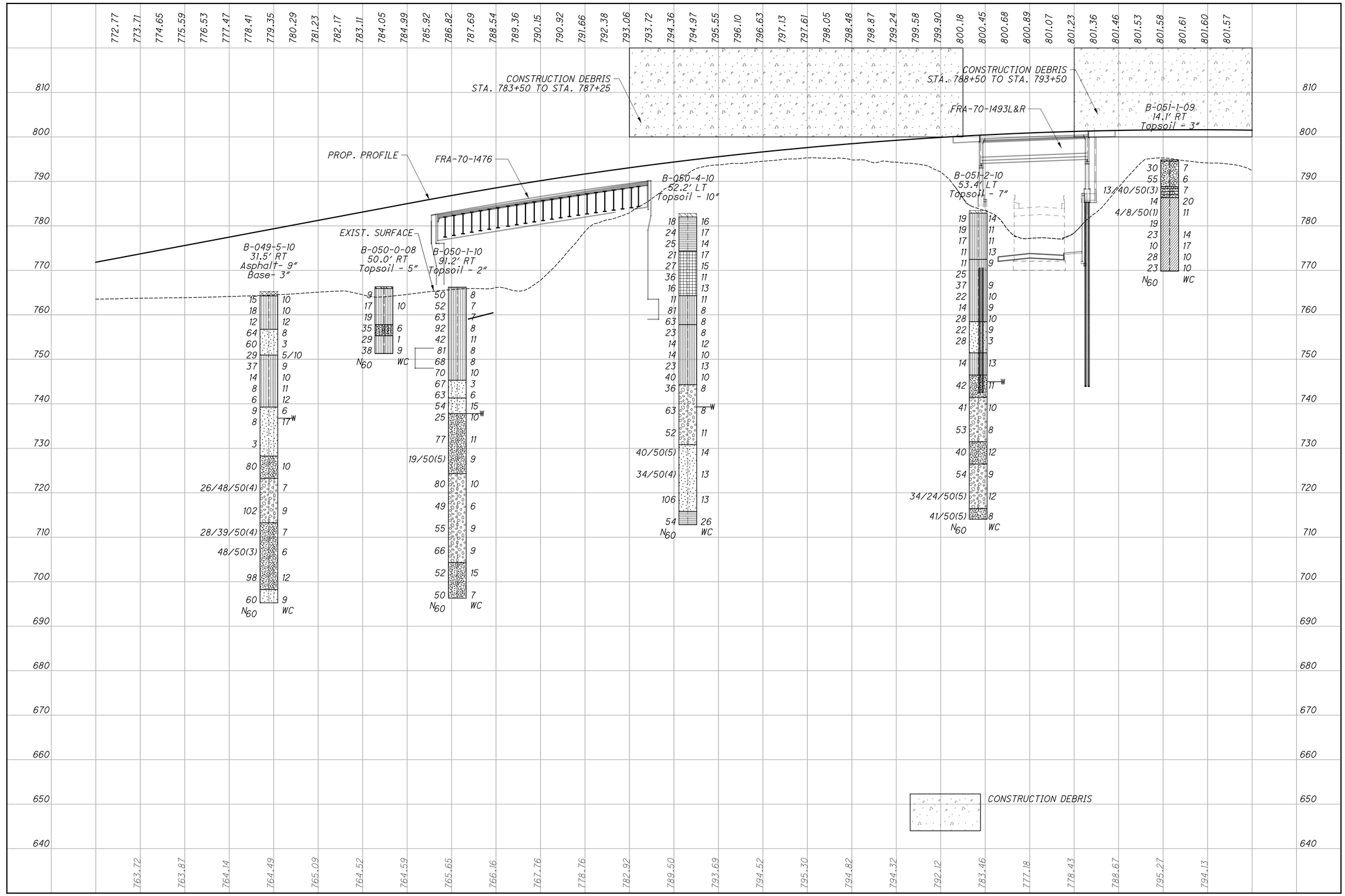

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HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN | CHECKED

SOIL PROFILE
I-70 STA. 778+00 TO STA. 790+00

FRA-70-14.48

29 / 386

29 / 386

SOIL PROFILE

I-70 STA. 790+00 TO STA. 802+00

FRA-70-14.48

HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN PAT
CHECKED VBP

30/386

30
386

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CONSTRUCTION DEBRIS
STA. 788+50 TO STA. 793+50

CONSTRUCTION DEBRIS
STA. 799+00 TO STA. 800+75

PROP. PROFILE

EXIST. SURFACE

FRA-70-1498

WALL I-13D

B-051-6-10
46.9' RT
Topsoil- 2"

B-051-7-10
42.0' LT
Base- 12"

B-052-1-10
4.6' RT
Asphalt - 3"
Concrete - 9"
Base - 4"

B-052-2-10
36.3' RT
Topsoil-5"

B-052-3-10
13.0' RT
Topsoil - 3"

B-052-4-10
72.9' RT
Topsoil- 4"

B-053-0-08
5.4' LT
Topsoil - 2"

B-053 2-10
68.0' RT
Asphalt- 22"
Base- 20"

B-053-3-10
65.8' RT
Asphalt- 19"
Base- 11"

B-054-0-08
16.7' RT
Topsoil - 3"

B-052-0-09
49.9' RT
Topsoil - 4"

B-053-1-09
123.1' RT
Asphalt - 2"
Concrete - 12"
Base - 4"

CONSTRUCTION DEBRIS

790+00 791+00 792+00 793+00 794+00 795+00 796+00 797+00 798+00 799+00 800+00 801+00 802+00

SOIL PROFILE

I-70 STA. 790+00 TO STA. 802+00

FRA-70-14.48

HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN PAT
CHECKED VBP

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CONSTRUCTION DEBRIS
STA. 788+50 TO STA. 793+50

PROP. PROFILE

FRA-70-1498

WALL I-25

CONSTRUCTION DEBRIS
STA. 799+00 TO STA. 800+75

EXIST. SURFACE

B-051-6-10
46.9' RT
Topsoil- 2"

B-051-7-10
42.0' LT
Base- 12"

B-052-1-10
4.6' RT
Asphalt - 3"
Concrete - 9"
Base - 4"

B-052-2-10
36.3' RT
Topsoil-5"

B-052-3-10
13.0' RT
Topsoil - 3"

B-052-4-10
72.9' RT
Topsoil- 4"

B-053-0-08
5.4' LT
Topsoil - 2"

B-053-2-10
68.0' RT
Asphalt- 22"
Base- 20"

B-053-3-10
65.8' RT
Asphalt- 19"
Base- 11"

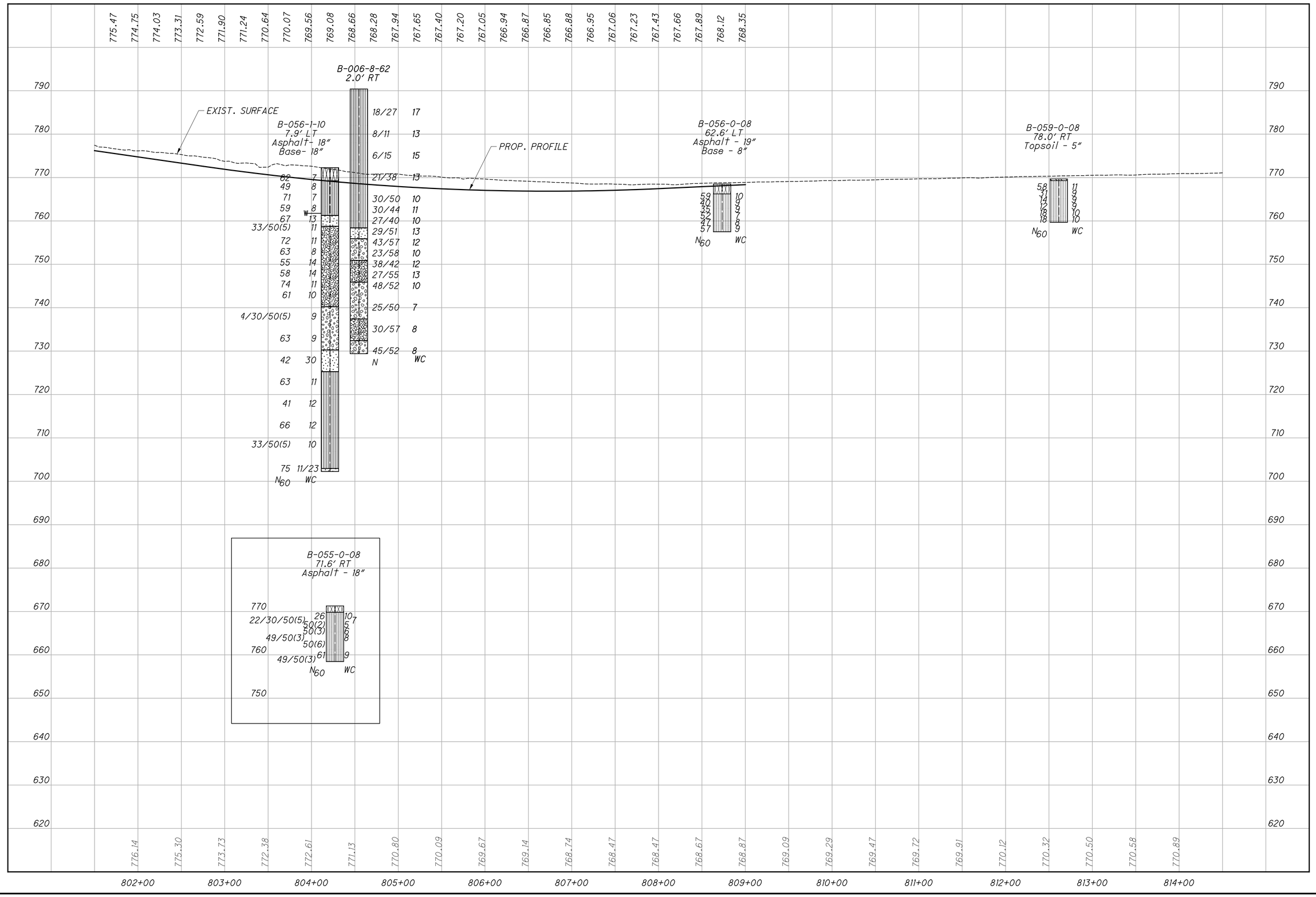
B-054-0-08
16.7' RT
Topsoil - 3"

B-052-0-09
49.9' RT
Topsoil - 4"

B-053-1-09
123.1' RT
Asphalt - 2"
Concrete - 12"
Base - 4"

CONSTRUCTION DEBRIS

790+00 791+00 792+00 793+00 794+00 795+00 796+00 797+00 798+00 799+00 800+00 801+00 802+00



0 25 50 100
HORIZONTAL SCALE IN FEET

DRAWN PAT
CHECKED VBP

SOIL PROFILE

I-70 STA. 802+00 TO STA. 814+00

FRA-70-14.48

32 386

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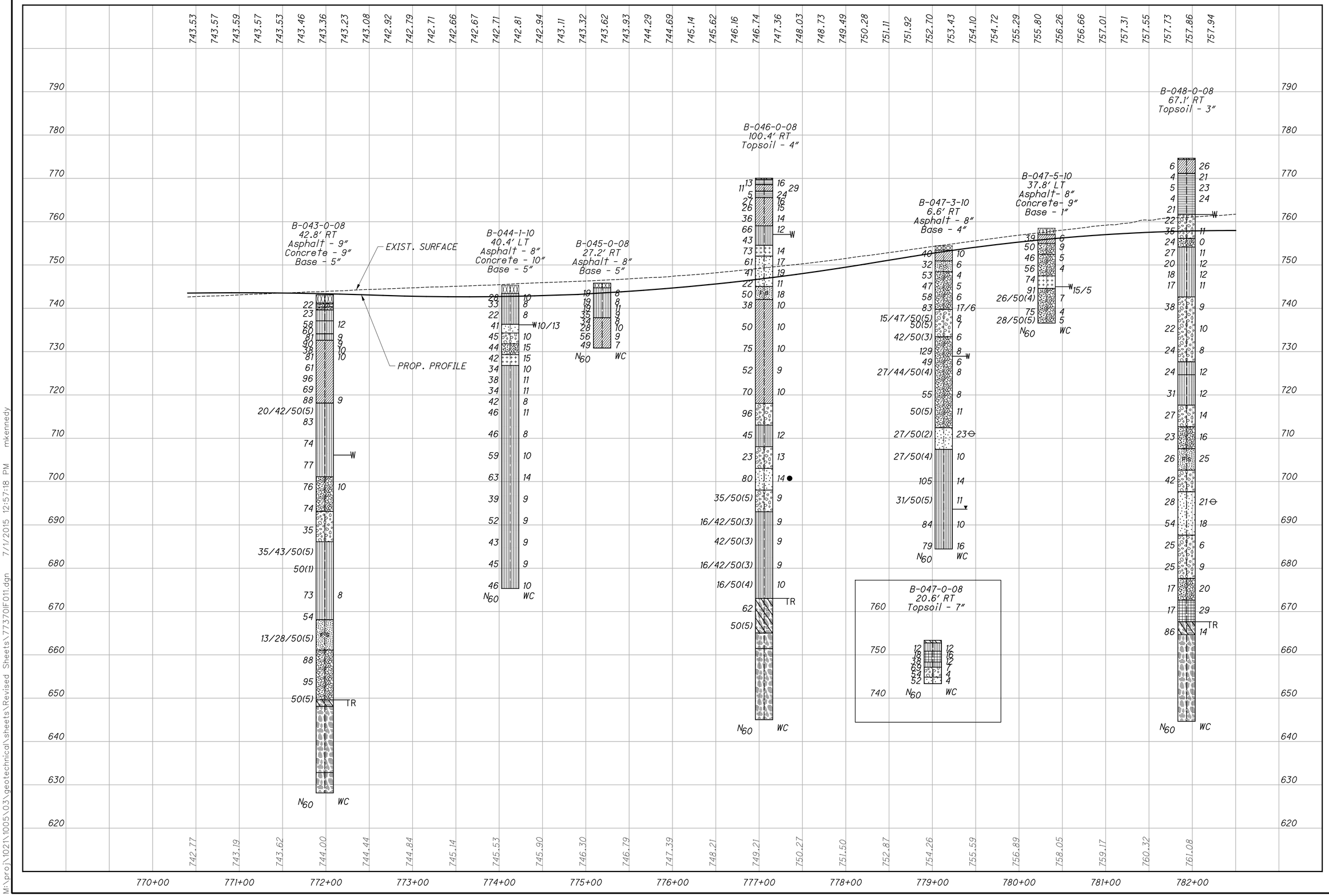

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HORIZONTAL SCALE IN FEET
0 25 50 100

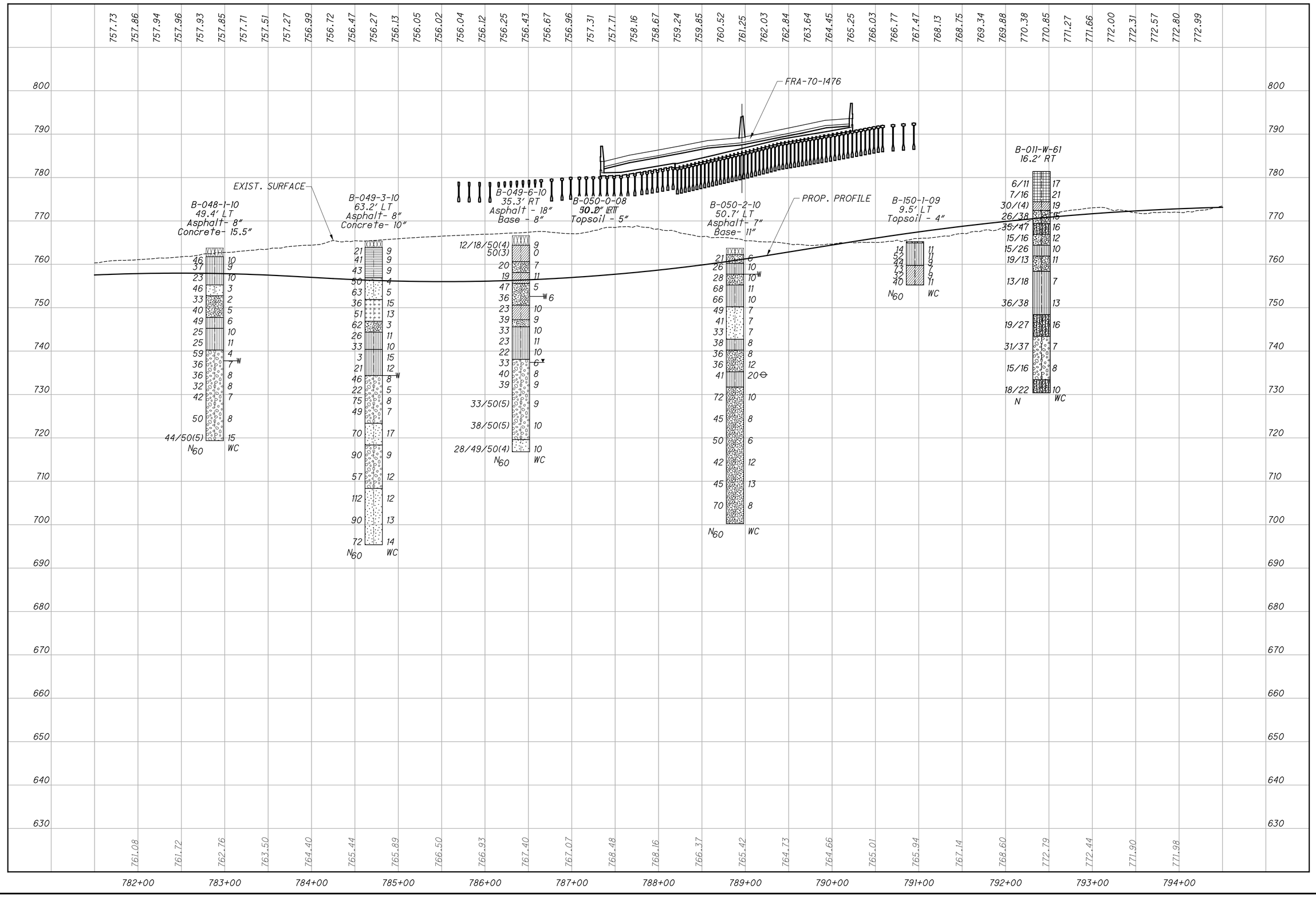
DRAWN PAT
CHECKED VBP

SOIL PROFILE
STA. 770+42.52 TO STA. 782+00
RAMP N4 STA.

FRA-70-14.48

33/386

33
386



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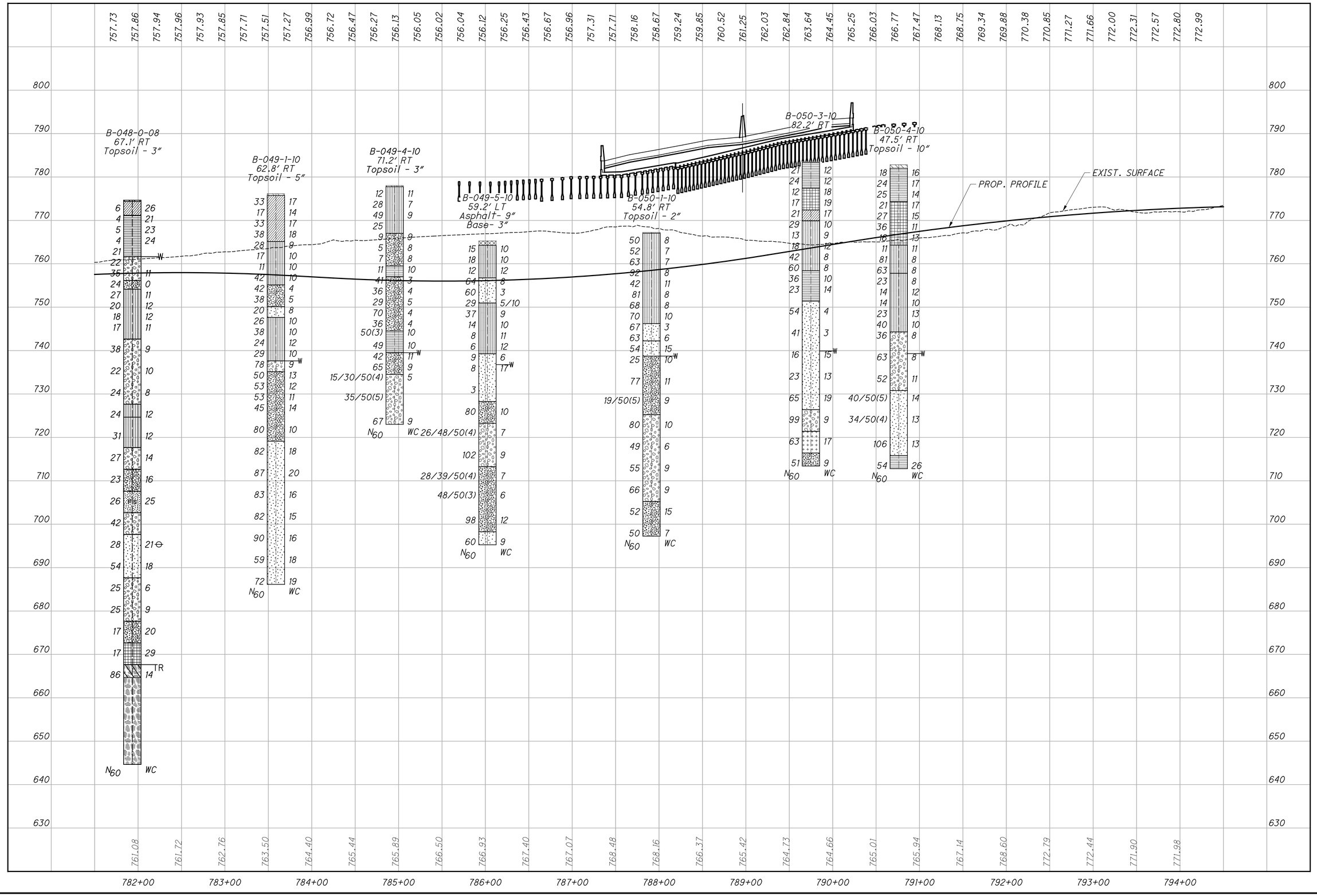
HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN PAT
CHECKED VBP

SOIL PROFILE
RAMP N4 STA. 782+00 TO STA. 794+00

FRA-70-14.48

34 386



SOIL PROFILE
STA. 782+00 TO STA. 794+00
RAMP N4

DRAWN PAT
CHECKED VBP

HORIZONTAL SCALE IN FEET
0 25 50 100

FRA-70-14.48

35/386

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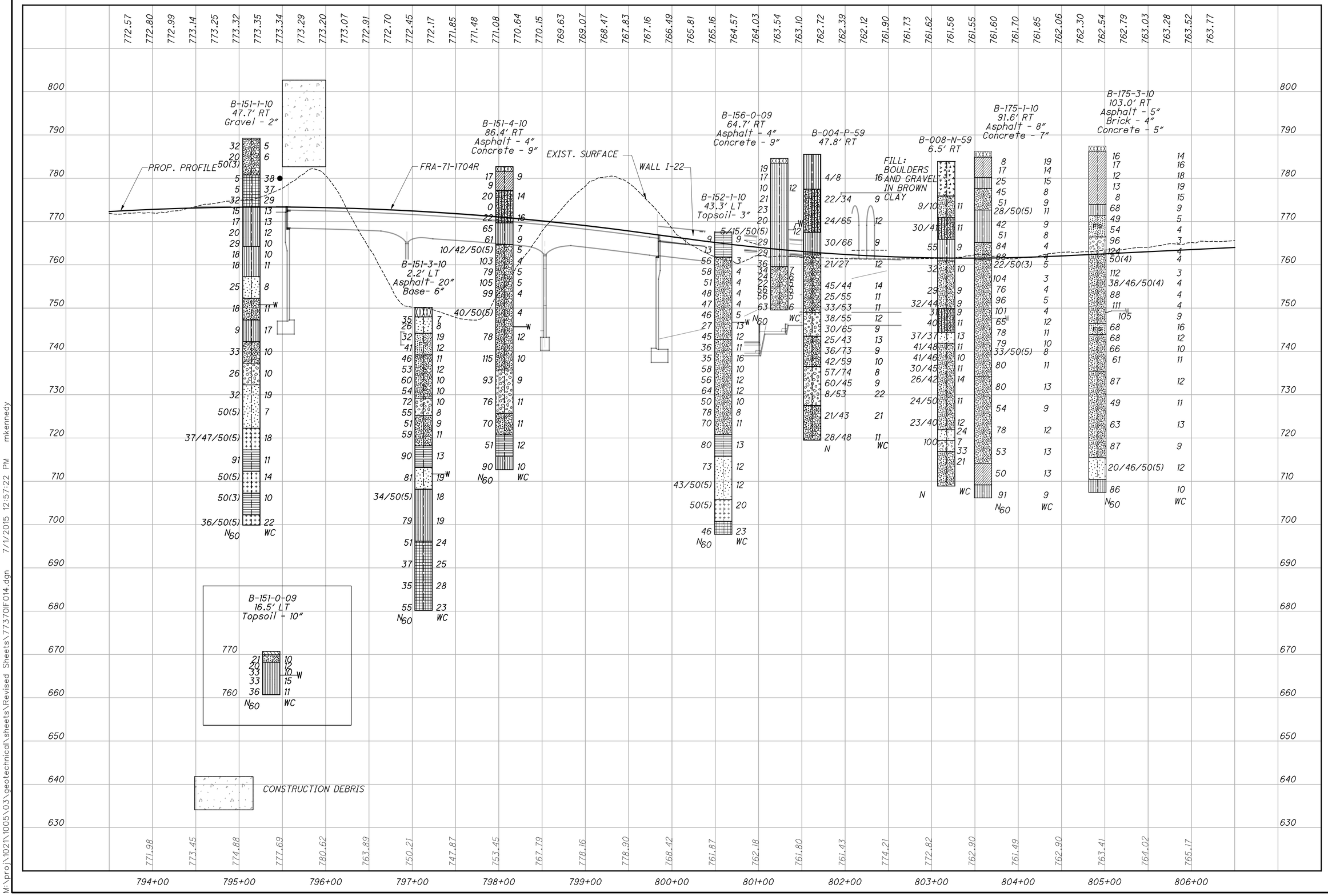

HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN PAT
CHECKED VBP

SOIL PROFILE

RAMP N4 STA. 794+00 TO STA. 806+00

FRA-70-14.48

36/386

36
386

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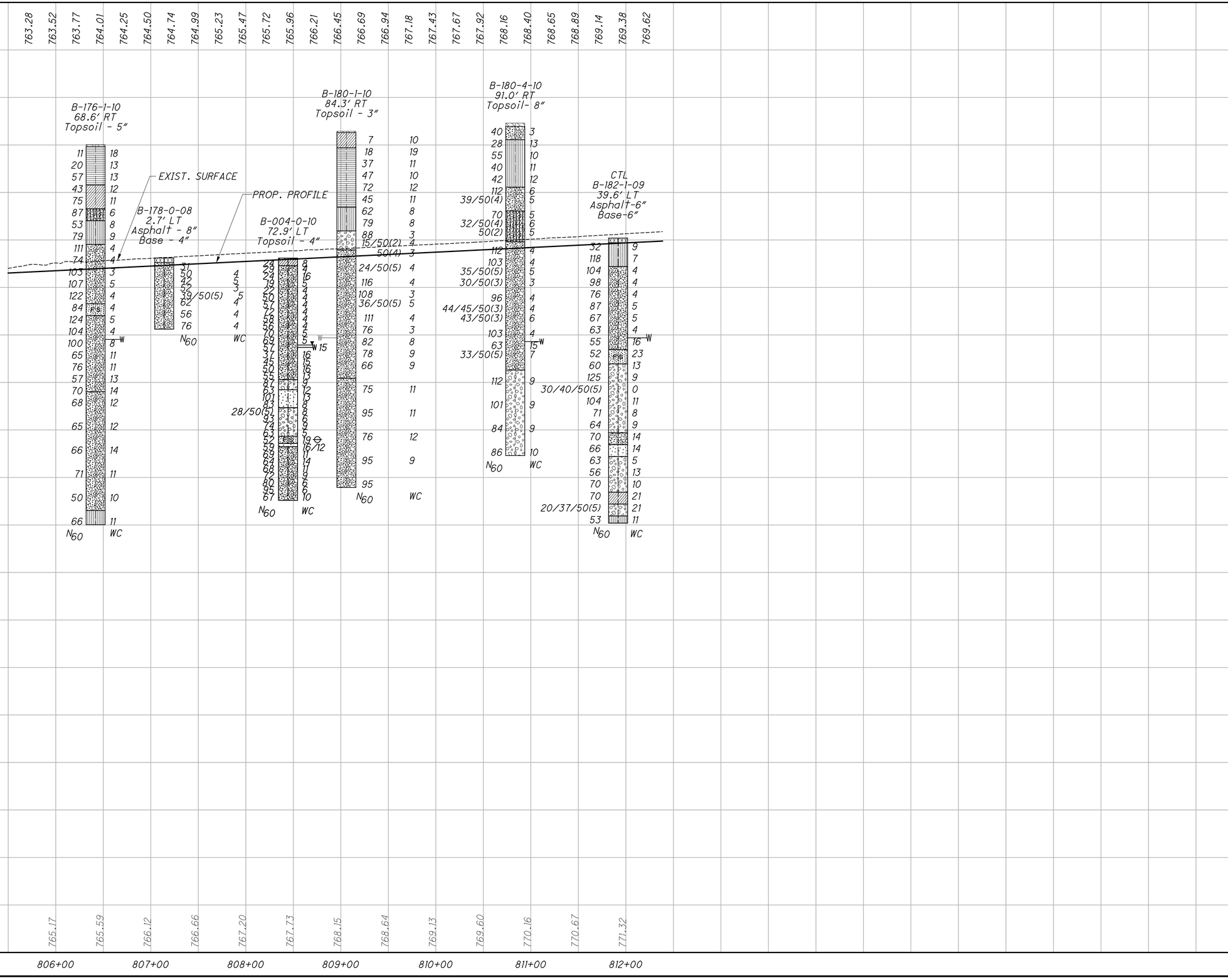

HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN PAT
CHECKED VBP

SOIL PROFILE
STA. 806+00 TO STA. 812+38.50

RAMP N4 STA. 806+00 TO STA. 812+38.50

FRA-70-14.48

37 / 386

37
386

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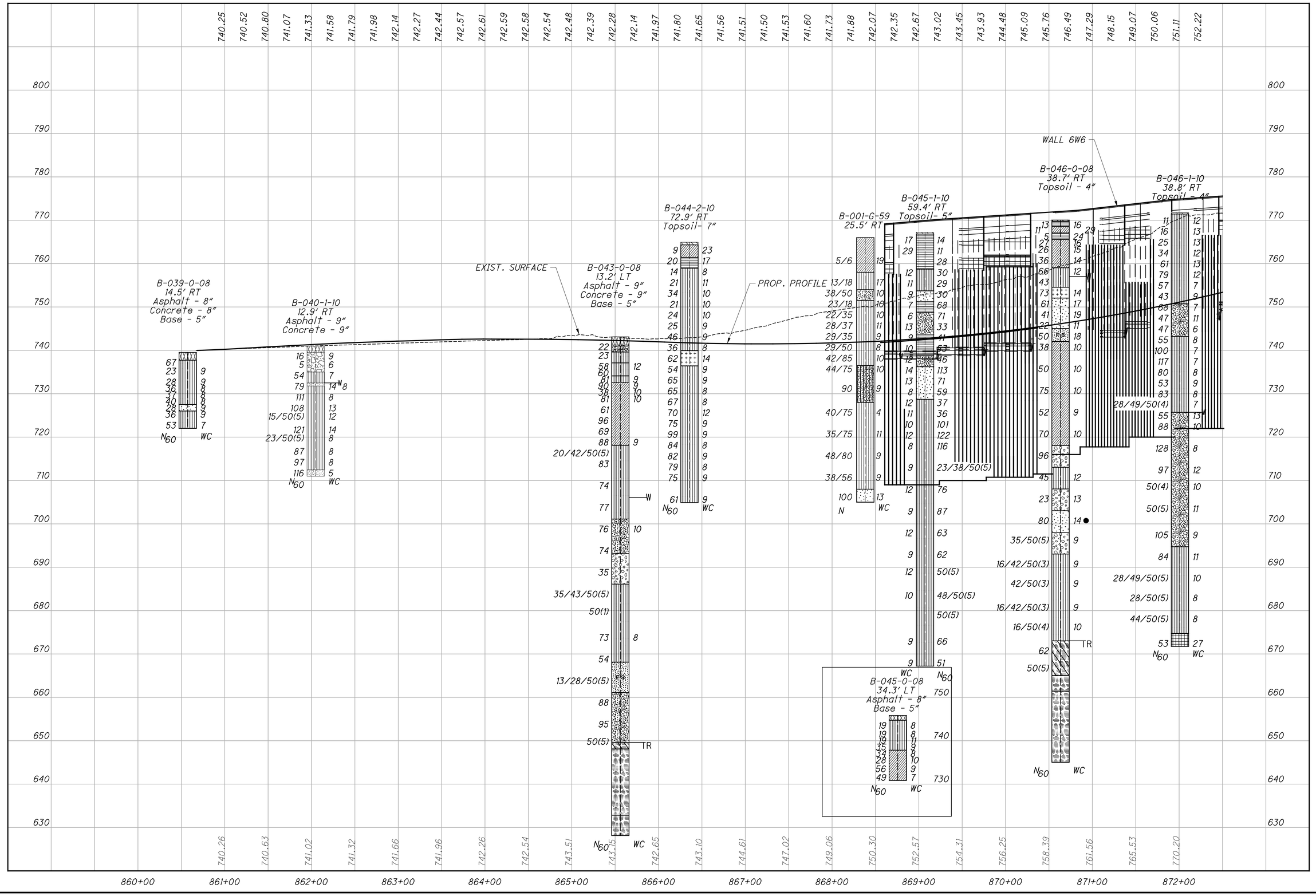

HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN PAT
CHECKED VBP

SOIL PROFILE
STA. 860+68.50 TO STA. 872+00

RAMP N1 STA

FRA-70-14.48

38/386

38
386

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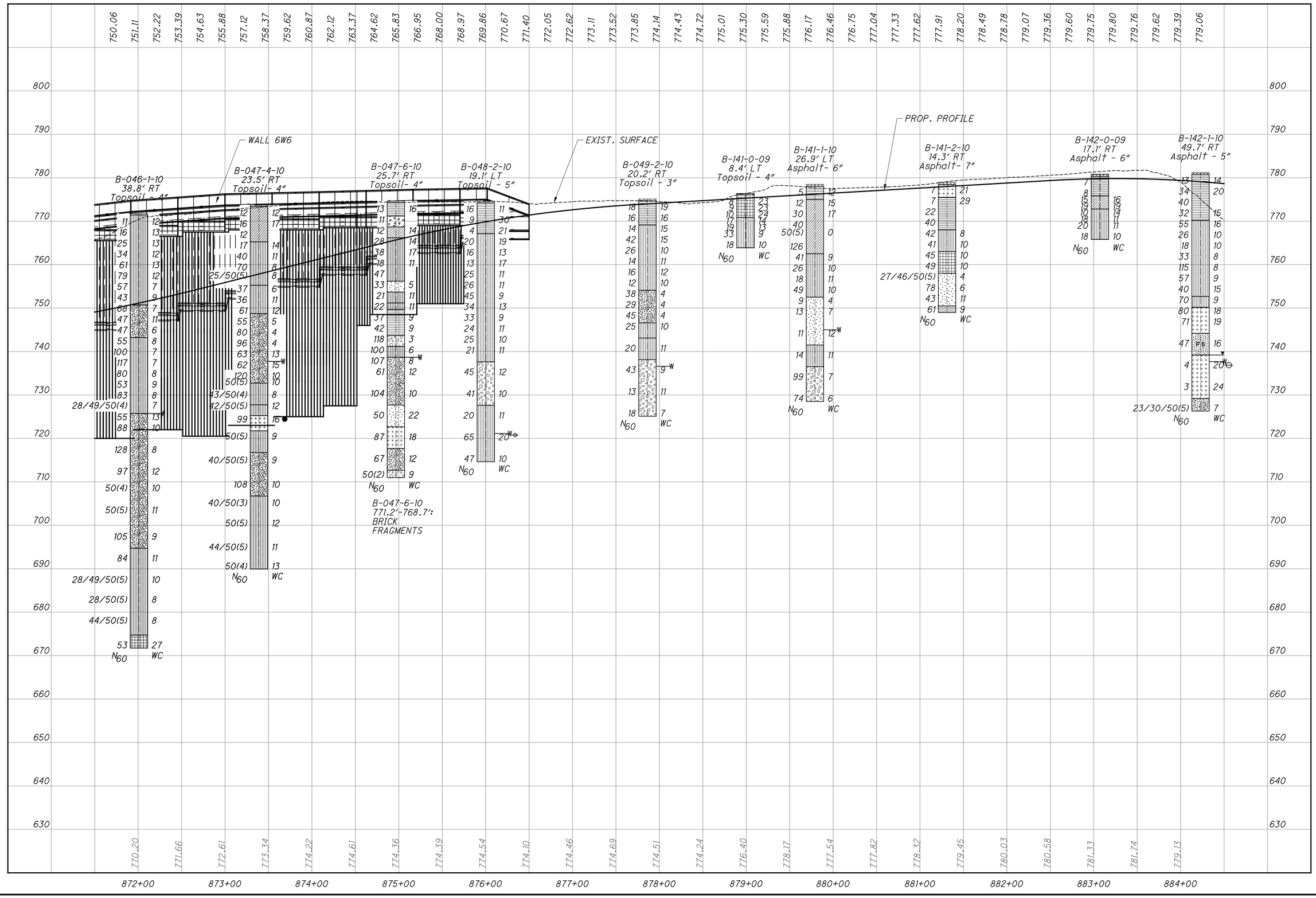

HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN PAT
CHECKED VBP

SOIL PROFILE
STA. 872+00 TO STA. 884+00
RAMP N1

FRA-70-14.48

39 386

39 386

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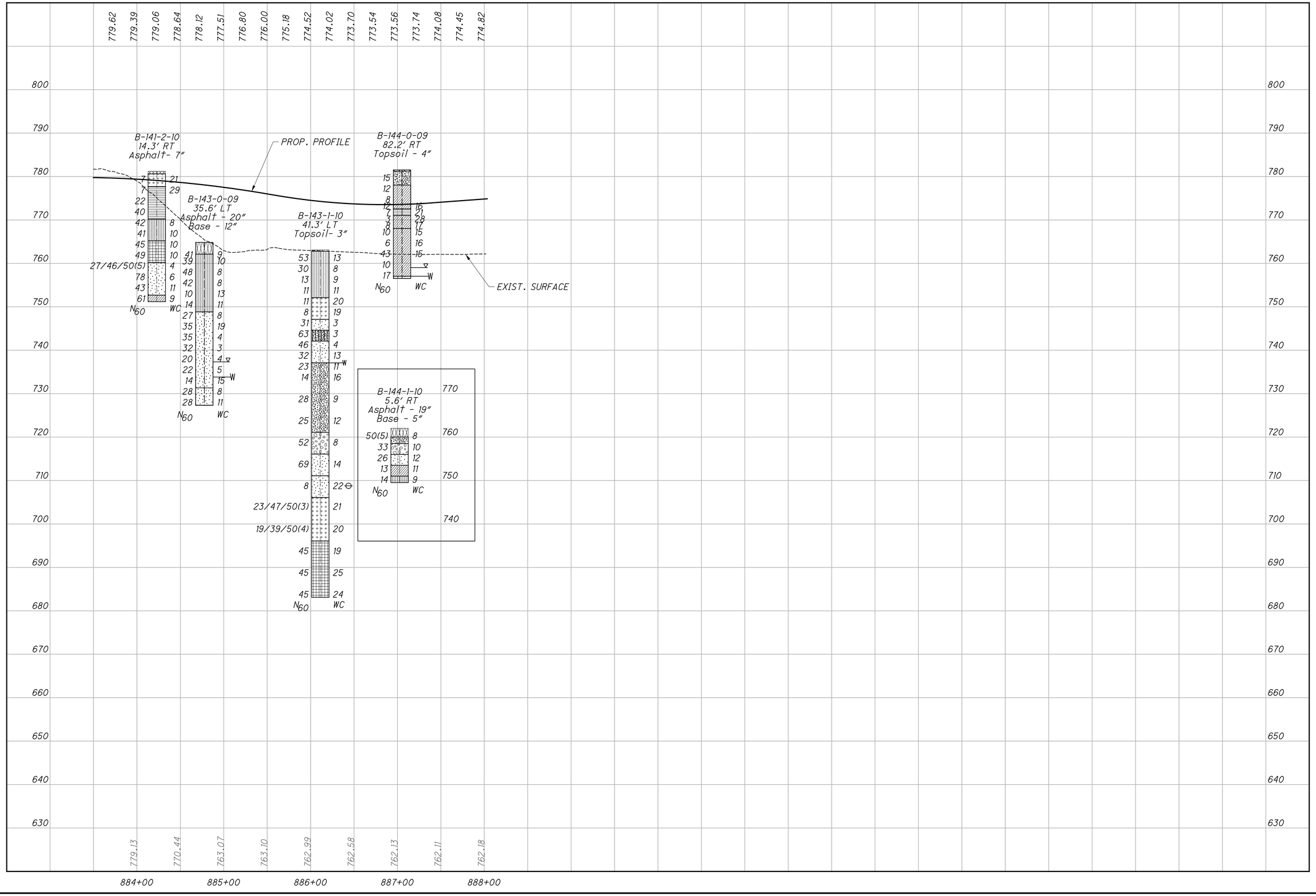

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0 25 50 100
HORIZONTAL SCALE IN FEET

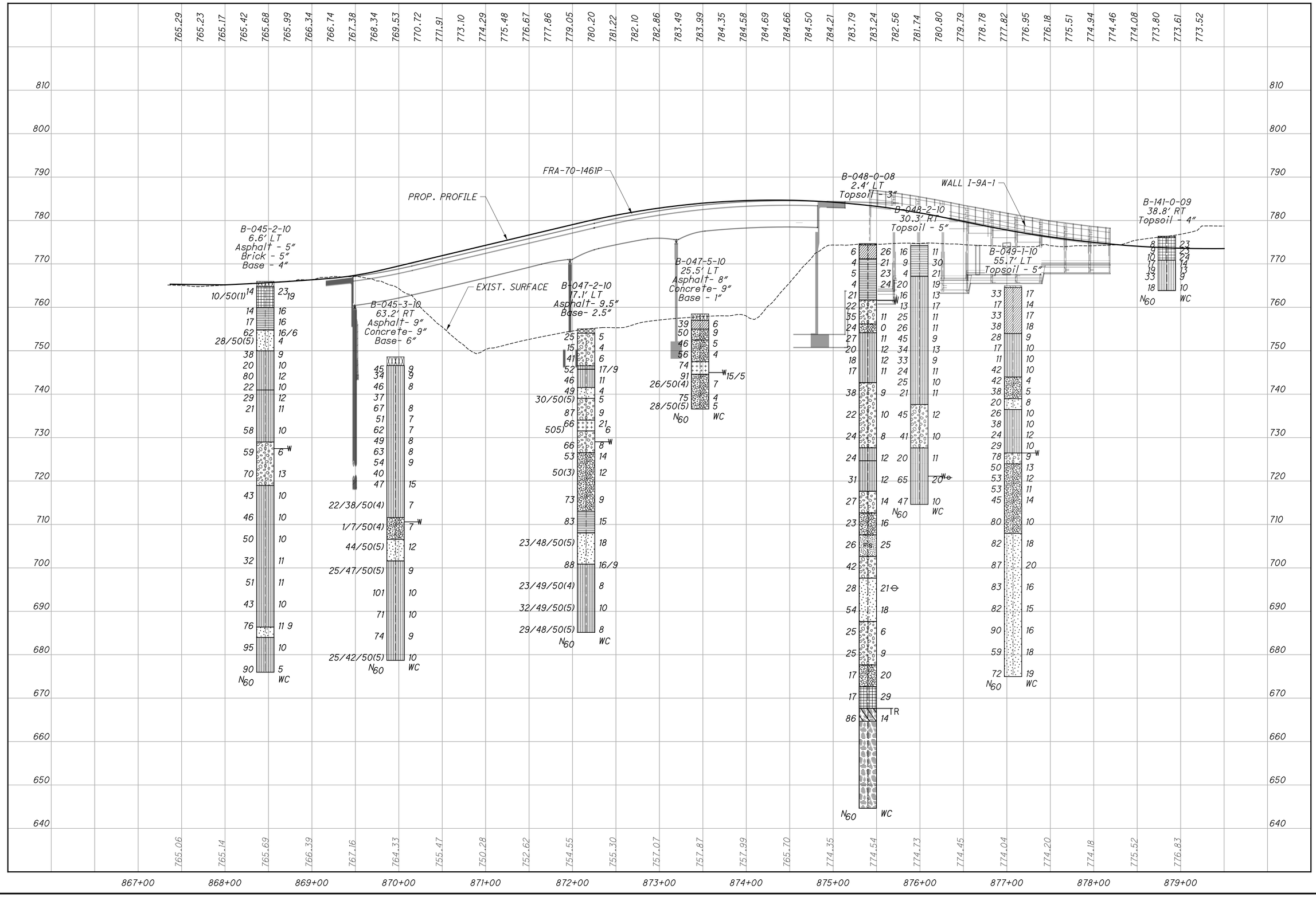
DRAWN PAT
CHECKED VBP

SOIL PROFILE
RAMP N1 STA. 884+00 TO STA. 888+03.31

FRA-70-14.48

40 / 386

40 386



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HORIZONTAL SCALE IN FEET
0 25 50 100

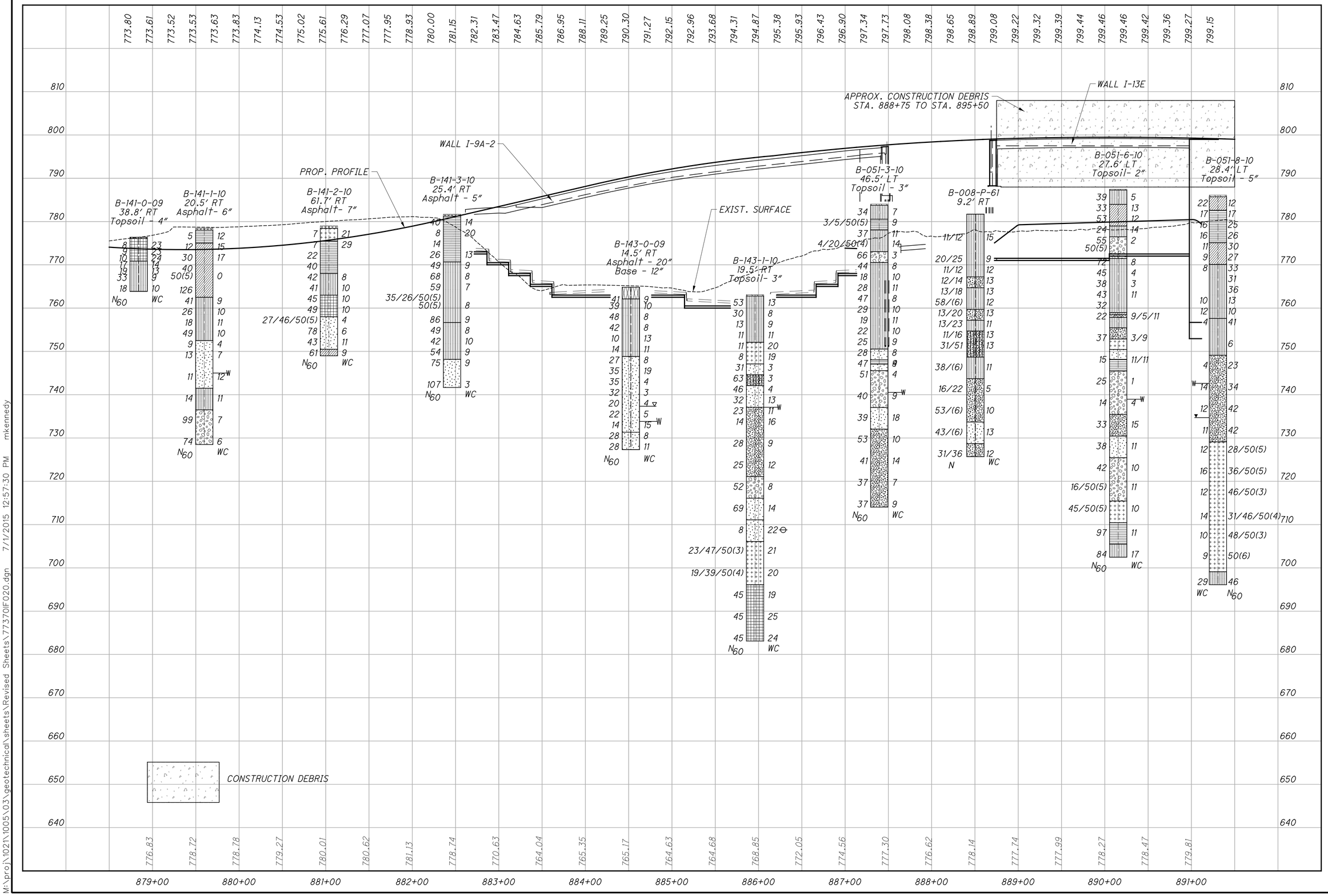
DRAWN PAT
CHECKED VBP

SOIL PROFILE
RAMP N3 STA. 867+36.92 TO STA. 879+00

FRA-70-14.48

41 386

41
386


HORIZONTAL SCALE IN FEET
0
25
50
100
DRAWN PAT
CHECKED VBP
SOIL PROFILE
RAMP N3 STA. 879+00 TO STA. 891+00
FRA-70-14.48
42/386
42
386
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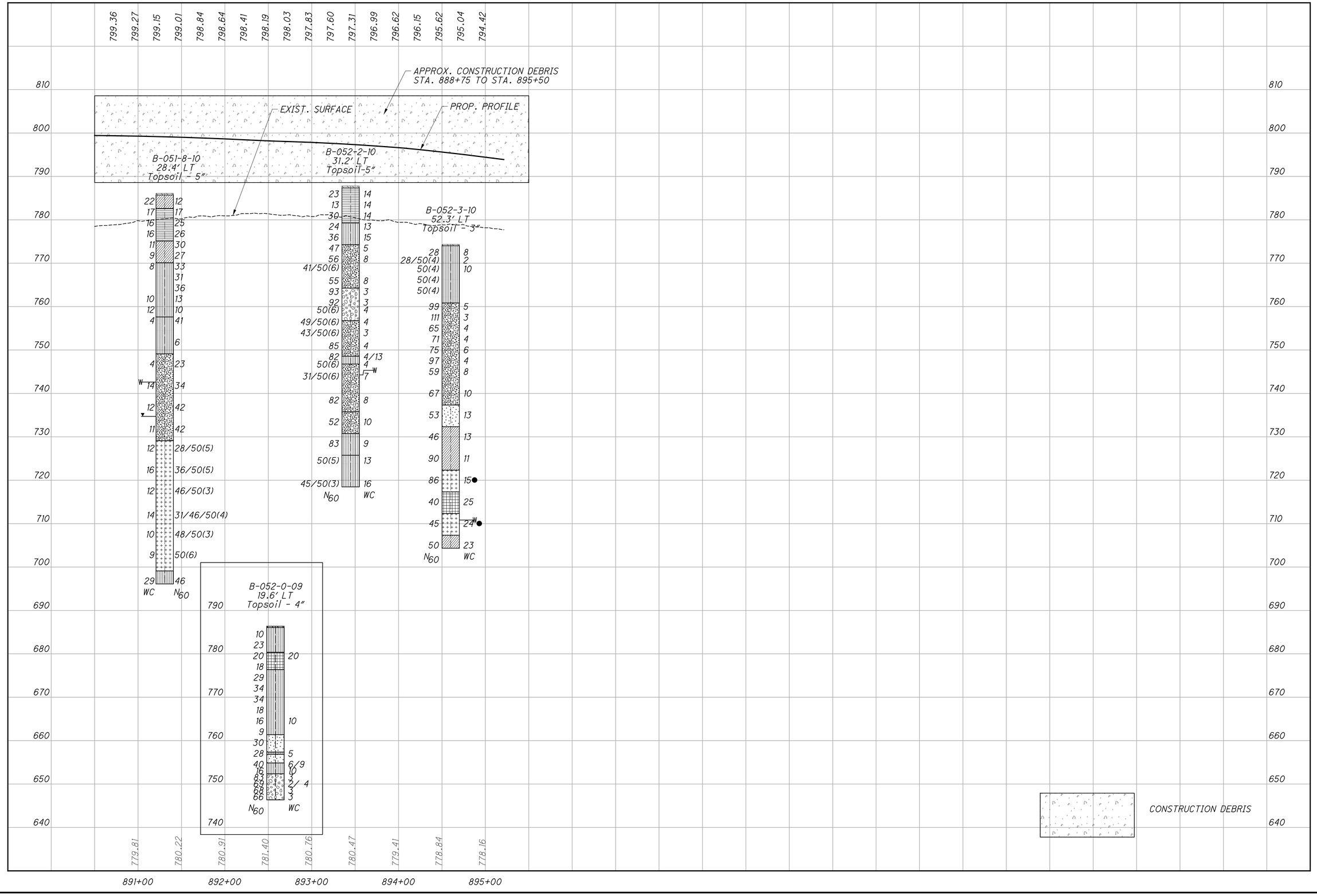
B-141-0-09
38.8' RT
Topsoil - 4"
B-141-1-10
20.5' RT
Asphalt- 6"
B-141-2-10
61.7' RT
Asphalt- 7"
B-141-3-10
25.4' RT
Asphalt - 5"
B-143-0-09
14.5' RT
Asphalt - 20"
Base - 12"
B-143-1-10
19.5' RT
Topsoil- 3"
B-051-3-10
46.5' LT
Topsoil - 3"
B-008-P-61
9.2' RT
B-051-6-10
27.6' LT
Topsoil- 2"
B-051-8-10
28.4' LT
Topsoil - 5"
PROP. PROFILE
WALL I-9A-2
EXIST. SURFACE
APPROX. CONSTRUCTION DEBRIS
STA. 888+75 TO STA. 895+50
WALL I-13E
CONSTRUCTION DEBRIS
N60
WC
N
W
773.80 773.61 773.52 773.53 773.63 773.83 774.13 774.53 775.02 775.61 776.29 777.07 777.95 778.93 780.00 781.15 782.31 783.47 784.63 785.79 786.95 788.11 789.25 790.30 791.27 792.15 792.96 793.68 794.31 794.87 795.38 795.93 796.43 796.90 797.34 797.73 798.08 798.38 798.65 798.89 799.08 799.22 799.32 799.39 799.44 799.46 799.46 799.42 799.36 799.27 799.15
776.83 778.72 778.78 779.27 780.01 780.62 781.13 778.74 770.63 764.04 765.35 765.17 764.63 764.68 768.85 772.05 774.56 777.30 776.62 778.14 777.74 777.99 778.27 778.47 779.81
810 800 790 780 770 760 750 740 730 720 710 700 690 680 670 660 650 640
879+00 880+00 881+00 882+00 883+00 884+00 885+00 886+00 887+00 888+00 889+00 890+00 891+00



HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN PAT
CHECKED VBP

SOIL PROFILE
STA. 891+00 TO STA. 895+21.23
RAMP N3 STA. 891+00

FRA-70-14.48

43/386

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781.75 781.09 780.28 779.25 778.04 776.86 775.68 774.56 773.54 772.60 771.71 770.67 769.63 768.59 767.56 766.60 765.75 764.99 764.32 763.75 763.28 762.91 762.63 762.44 762.36 762.37 762.47 762.67 762.97 763.37 763.86 764.44 765.13 765.89 766.67 767.47 768.19

WALL I-8A

PROP. PROFILE

EXIST. SURFACE

APPROX. CONSTRUCTION DEBRIS
STA. 793+50 TO STA.795+75

B-049-1-10
8.1' LT
Topsoil - 5"

33	17	
17	14	
33	17	
38	18	
28	9	
17	10	
11	10	
42	10	
42	4	
38	5	
20	8	
26	10	
38	10	
24	12	
29	10	
78	9	W
50	13	
53	12	
53	11	
45	14	
80	10	
82	18	
87	20	
83	16	
82	15	
90	16	
59	18	
72	19	WC
N_{60}		

B-049-4-10
2.8' LT
Topsoil - 3"

12	11	
28	7	
49	9	
25		
9	9	
5	8	
7	8	
11	10	
41	3	
36	4	
29	5	
70	4	
36	4	
50(3)	10	
49	10	
42	11	W
65	9	
15/30/50(4)	5	
35/50(5)		
67	9	
N_{60}		WC

B-049-6-10
30.3' LT
Asphalt - 18"
Base - 8"

12/18/50(4)	9	
50(3)	0	
20	7	
19	11	
47	5	
36	6	W
23	10	
39	9	
33	10	
23	11	
22	10	
33	6	
40	8	
39	9	
33/50(5)	9	
38/50(5)	10	
28/49/50(4)	10	
N_{60}		WC

B-150-0-09
6.2' LT
Asphalt - 14"
Base - 4"

8	22	
5	10	
20	8	
28	11	
24	5	
50	10	
38		
N_{60}		WC

B-050-1-10
2.2' RT
Topsoil - 2"

50	8	
52	7	
63	7	
92	8	
42	11	
81	8	
68	8	
70	10	
67	3	
63	6	
54	15	
25	10	W
77	11	
19/50(5)	9	
80	10	
49	6	
55	9	
66	9	
52	15	
50	7	
N_{60}		WC

B-050-3-10
44.5' RT

21	12	
24	12	
12	18	
17	19	
21	17	
29	10	
13	9	
18	12	
42	8	
60	8	
36	10	
23	14	
54	4	
41	3	
16	15	W
23	13	
65	19	
99	9	
63	17	
51	9	
N_{60}		WC

B-050-4-10
14.8' RT
Topsoil - 10"

18	16	
24	17	
25	14	
21	17	
27	15	
36	11	
16	13	
11	11	
81	8	
63	8	
23	8	
14	12	
14	10	
23	13	
40	10	
36	8	
63	8	W
52	11	
40/50(5)	14	
34/50(4)	13	
106	13	
54	26	
N_{60}		WC

B-011-W-61
12.5' LT

6/11	17	
7/16	21	
30/(4)	19	
26/38	15	
35/47	16	
15/16	12	
15/26	10	
19/13	11	
13/18	7	
36/38	13	
19/27	16	
31/37	7	
15/16	8	
18/22	10	
N		WC

CONSTRUCTION DEBRIS

773.10 775.32 775.84 775.32 775.99 776.96 777.81 777.69 776.30 768.28 766.48 767.03 767.09 774.01 781.32 781.82 780.36 780.55 780.33 779.92 780.44 781.82 785.14

810 800 790 780 770 760 750 740 730 720 710 700 690 680 670 660 650 640

782+00 783+00 784+00 785+00 786+00 787+00 788+00 789+00 790+00 791+00 792+00 793+00 794+00

HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN PAT
CHECKED VBP

SOIL PROFILE
RAMP N2 STA. 782+36.92 TO STA. 791+86.37
FRA-70-14.48

44 386

44 386

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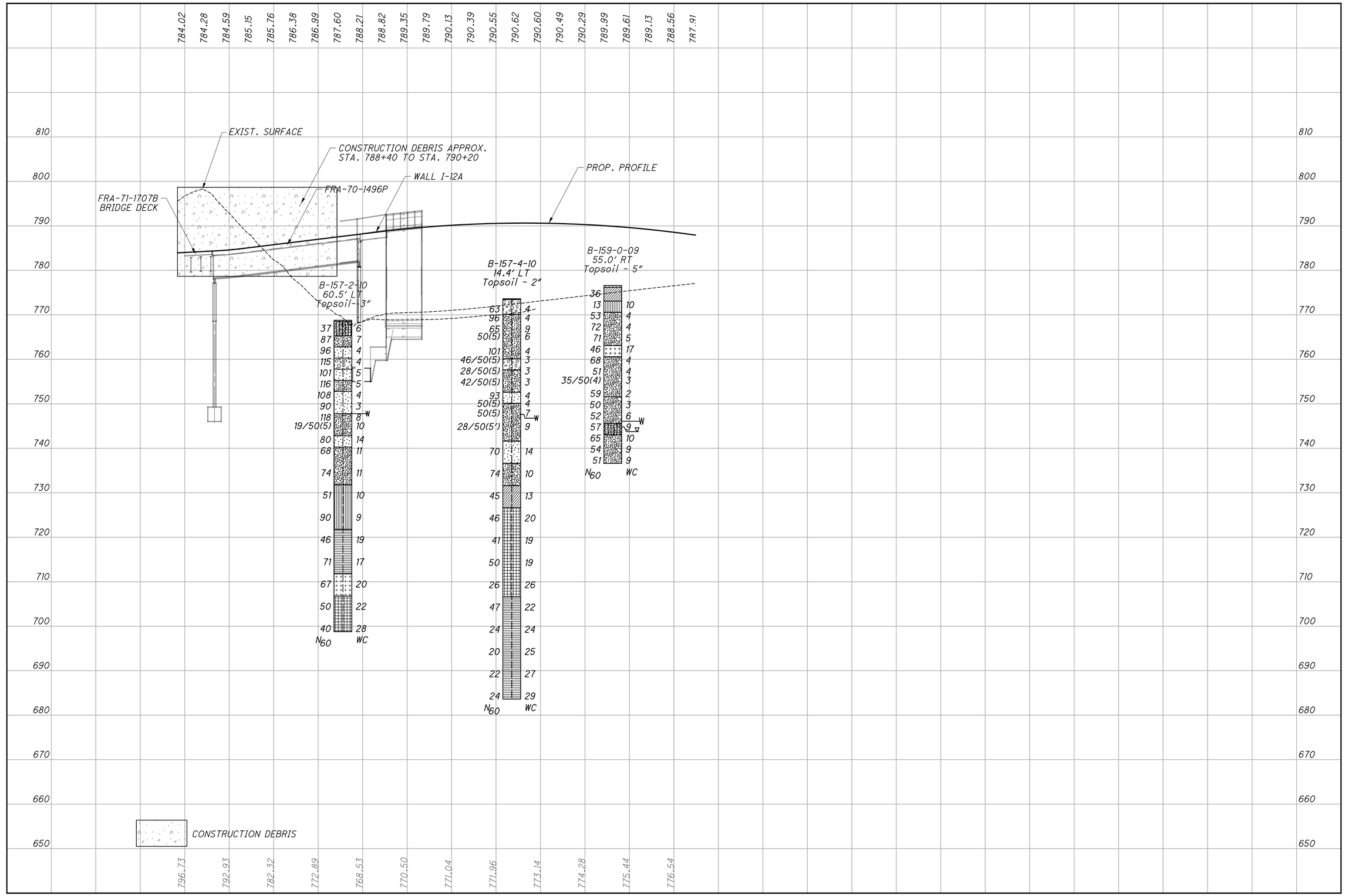

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0 25 50 100
HORIZONTAL SCALE IN FEET

DRAWN PAT
CHECKED VBP

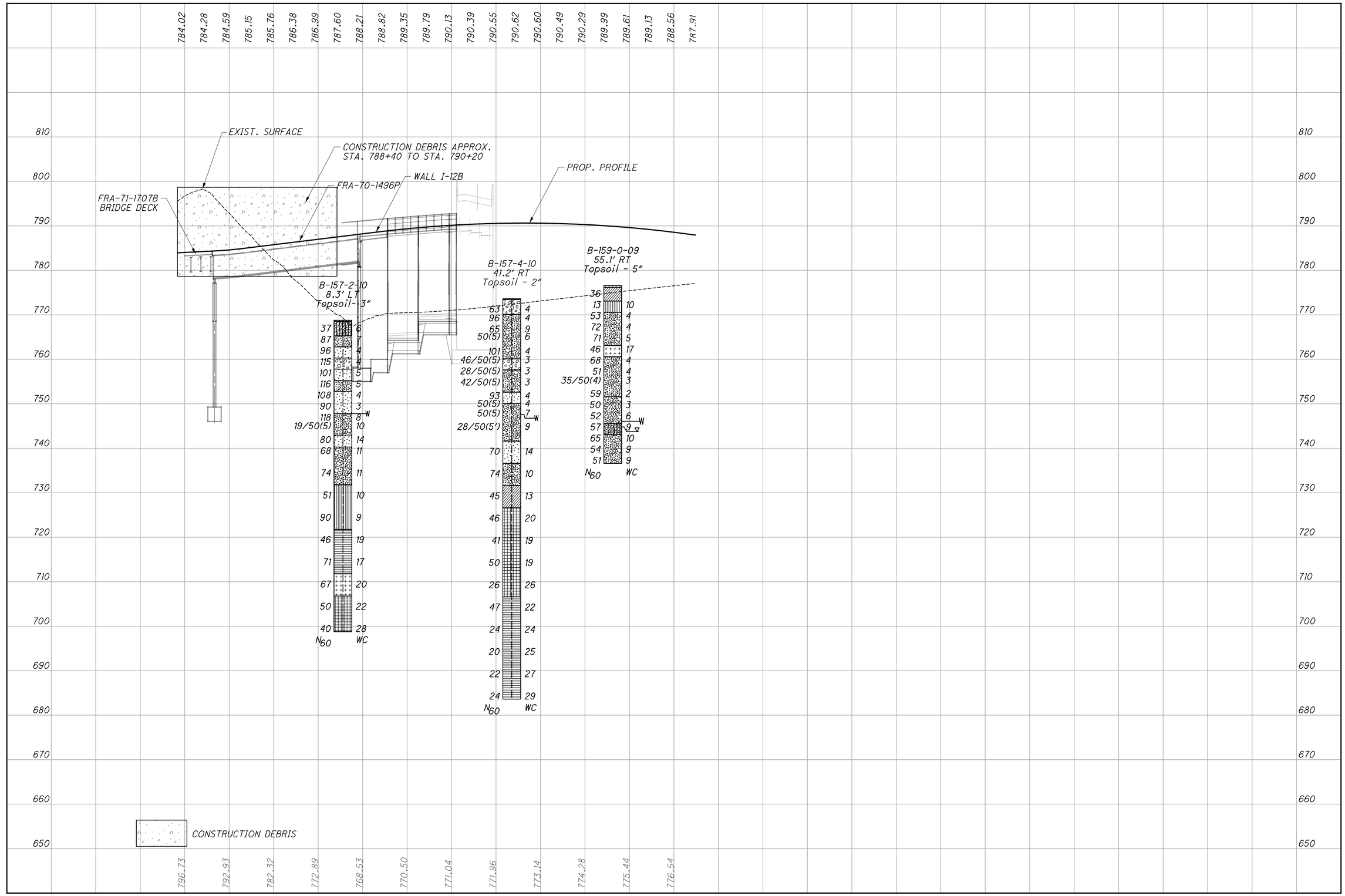
SOIL PROFILE
STA. 788+41.86 TO STA. 794+24.08

RAMP P1 STA. 788+41.86 TO STA. 794+24.08

FRA-70-14.48

45/386

45
386



HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN PAT
CHECKED VBP

SOIL PROFILE
STA. 788+41.86 TO STA. 794+24.08
RAMP P1 STA. 788+41.86 TO STA. 794+24.08

FRA-70-14.48

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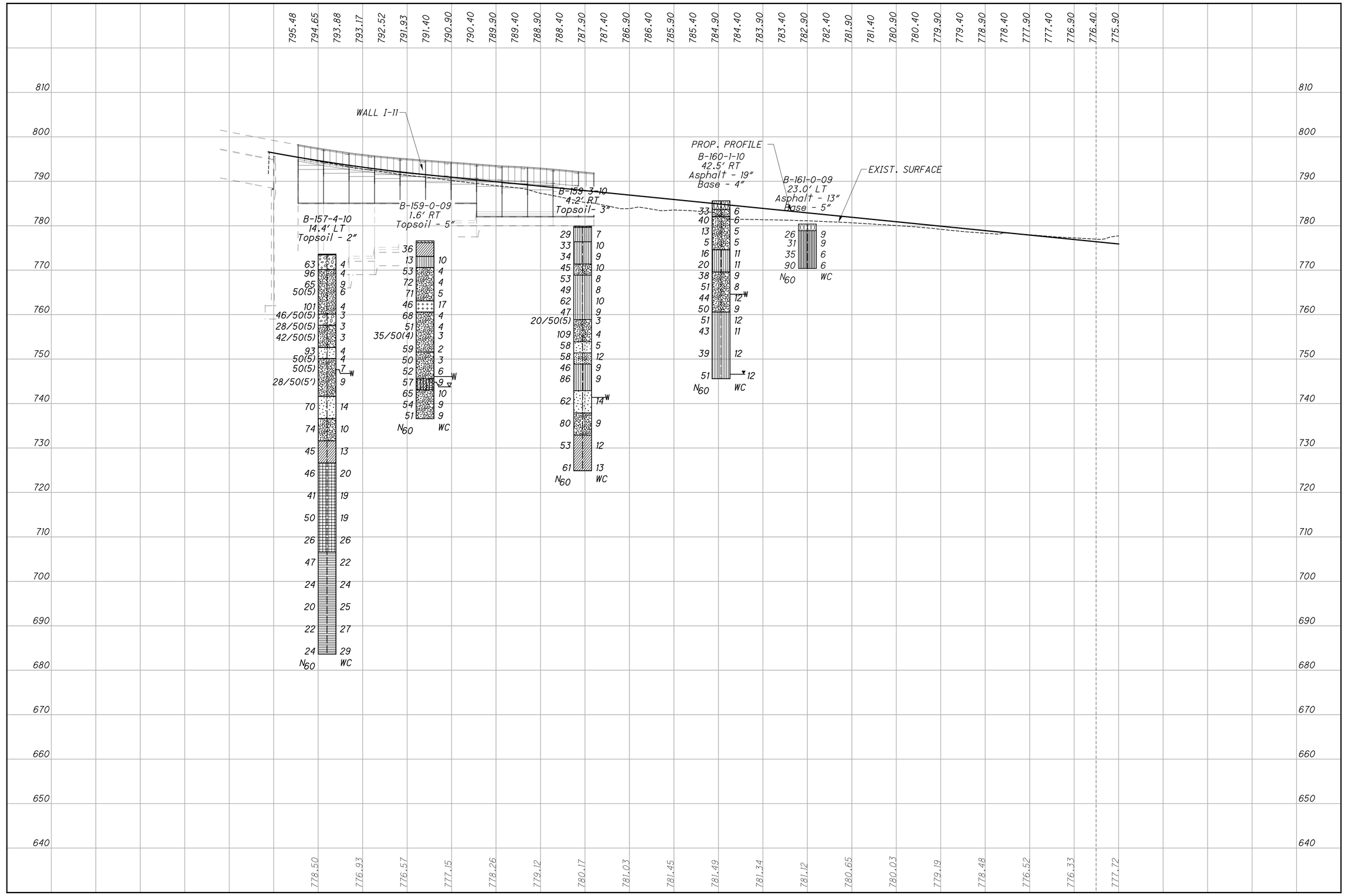

HORIZONTAL SCALE IN FEET

DRAWN PAT

CHECKED VBP

SOIL PROFILE

RAMP P2 STA. 891+00 TO STA. 901+00

FRA-70-14.48

47/386

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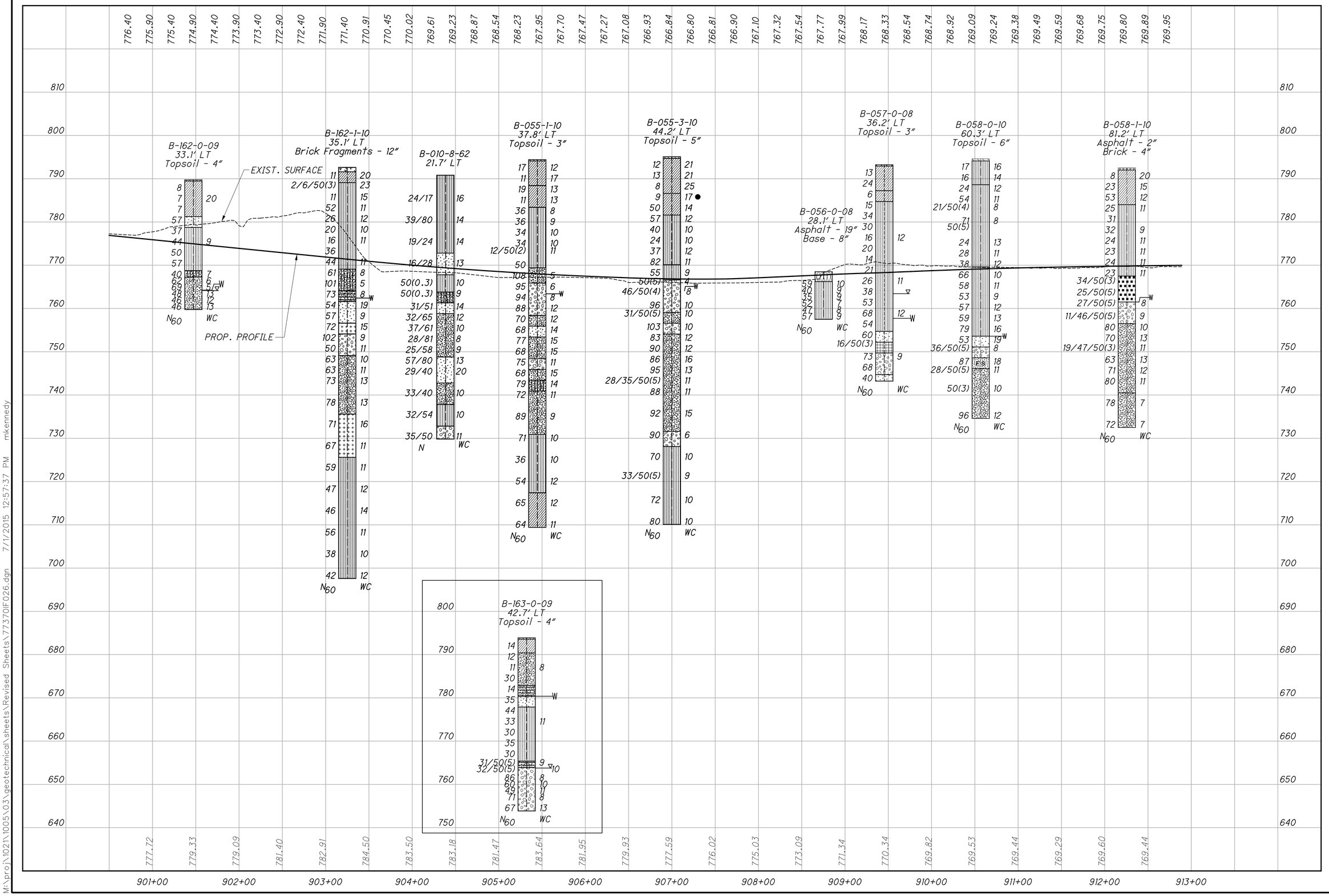

HORIZONTAL SCALE IN FEET

DRAWN PAT

CHECKED VBP

SOIL PROFILE

RAMP P2 STA. 901+00 TO STA. 912+88.91

FRA-70-14.48

48/386

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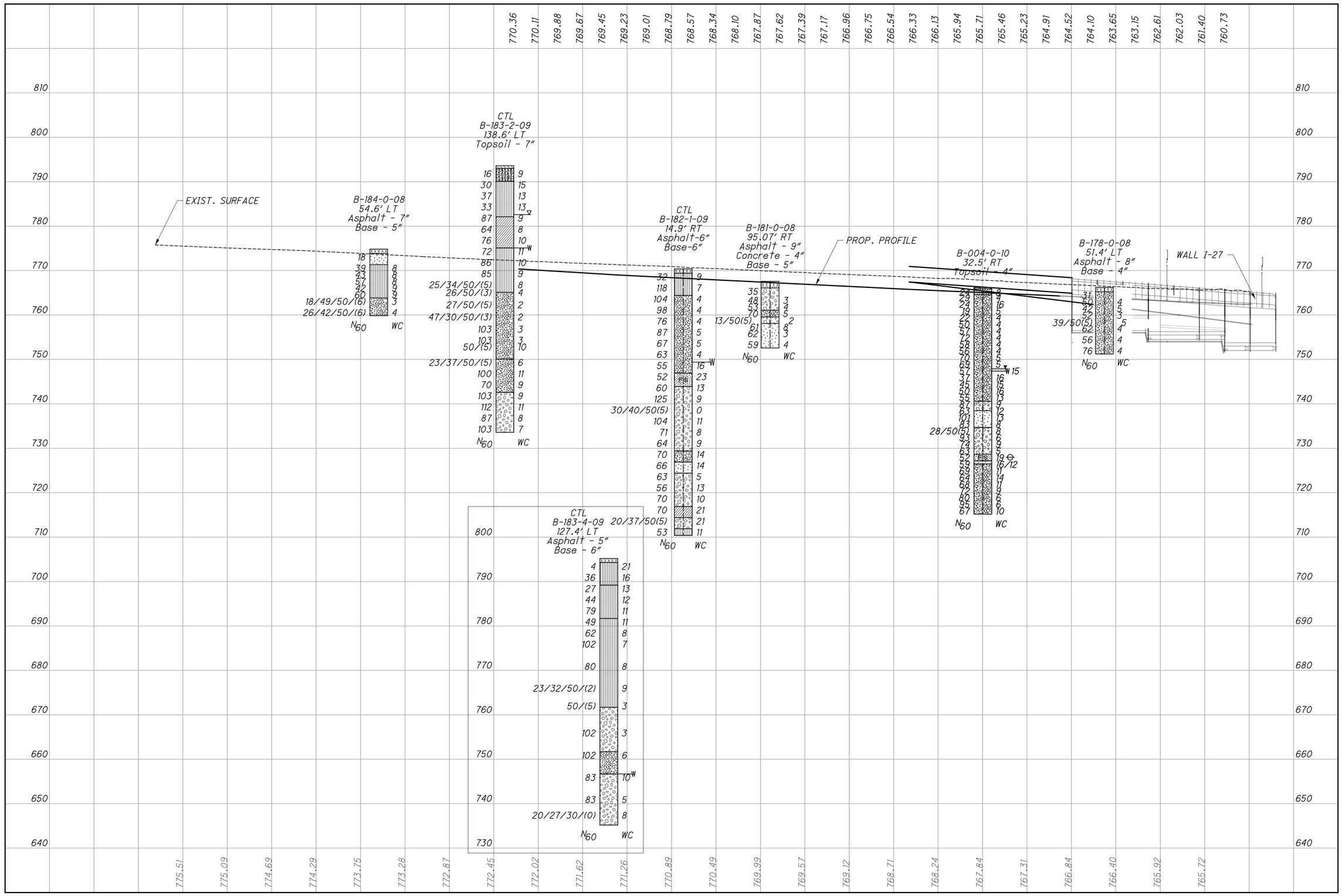

HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN PAT
CHECKED VBP

SOIL PROFILE
RAMP P4 STA. 869+28.41 TO STA. 877+00

FRA-70-14.48

49 / 386

49 / 386

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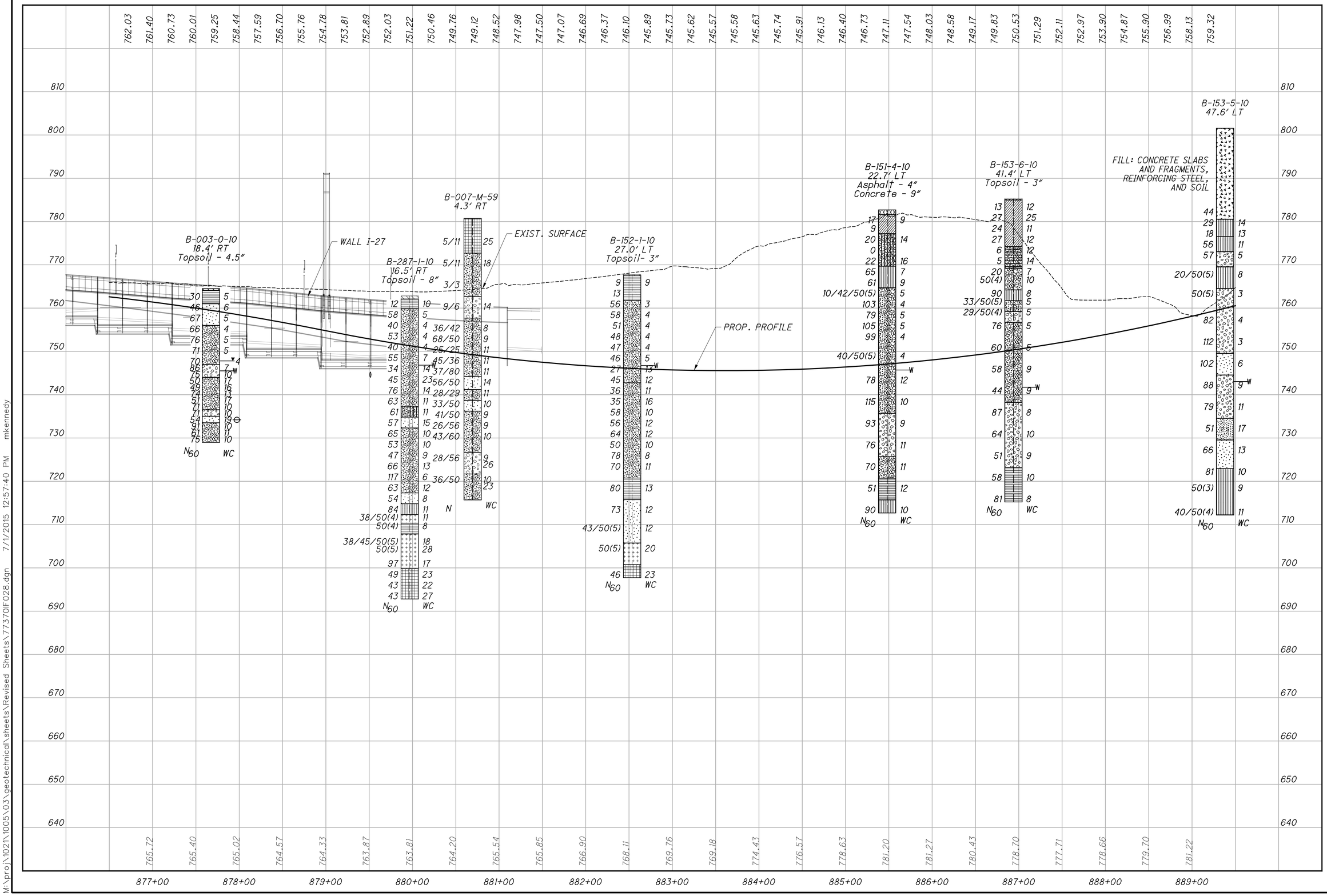

HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN PAT
CHECKED VBP

SOIL PROFILE
RAMP P4 STA. 877+00 TO STA. 889+00

FRA-70-14.48

50/386

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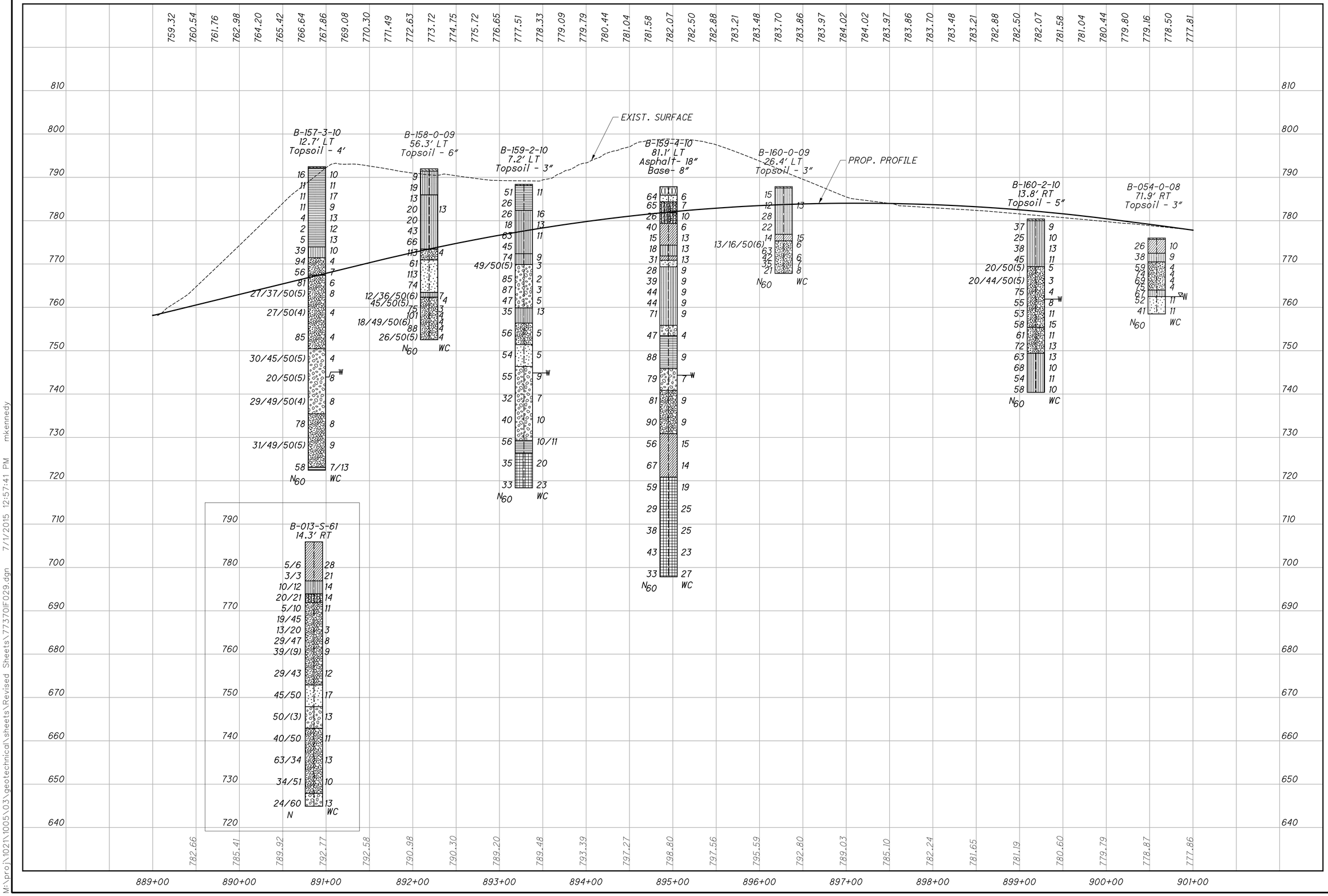
SOIL PROFILE

RAMP P4 STA. 889+00 TO STA. 901+00

FRA-70-14.48

HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN PAT
CHECKED VBP



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B-054-0-08
71.4' RT
Topsoil - 3"

B-056-1-10
32.4' RT
Asphalt- 18"
Base- 18"

B-056-0-08
30.8' LT
Asphalt - 19"
Base - 8"

PROP. PROFILE

EXIST. SURFACE

778.50 777.81 777.11 776.42 775.72 775.02 774.32 773.62 772.94 772.29 771.67 771.07 770.50 769.97 769.49 769.05 768.66 768.32 768.01 767.76 767.55 767.38 767.26 767.19 767.16 767.18 767.24 767.35 767.50 767.70 767.93 768.15 768.37 768.61 768.83 769.05 769.25 769.43 769.60 769.75 769.89 770.01 770.12 770.21 770.29

810 800 790 780 770 760 750 740 730 720 710 700 690 680 670 660 650 640

777.86 776.83 775.75 774.66 773.61 772.58 771.60 770.58 769.53 768.94 768.45 768.27 768.34 768.36 768.71 769.09 769.27 769.49 769.73 769.95 770.19 770.40

901+00 902+00 903+00 904+00 905+00 906+00 907+00 908+00 909+00 910+00 911+00 912+00

HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN PAT
CHECKED VBP

SOIL PROFILE
STA. 901+00 TO STA. 911+98.97
RAMP P4

FRA-70-14.48

52 386

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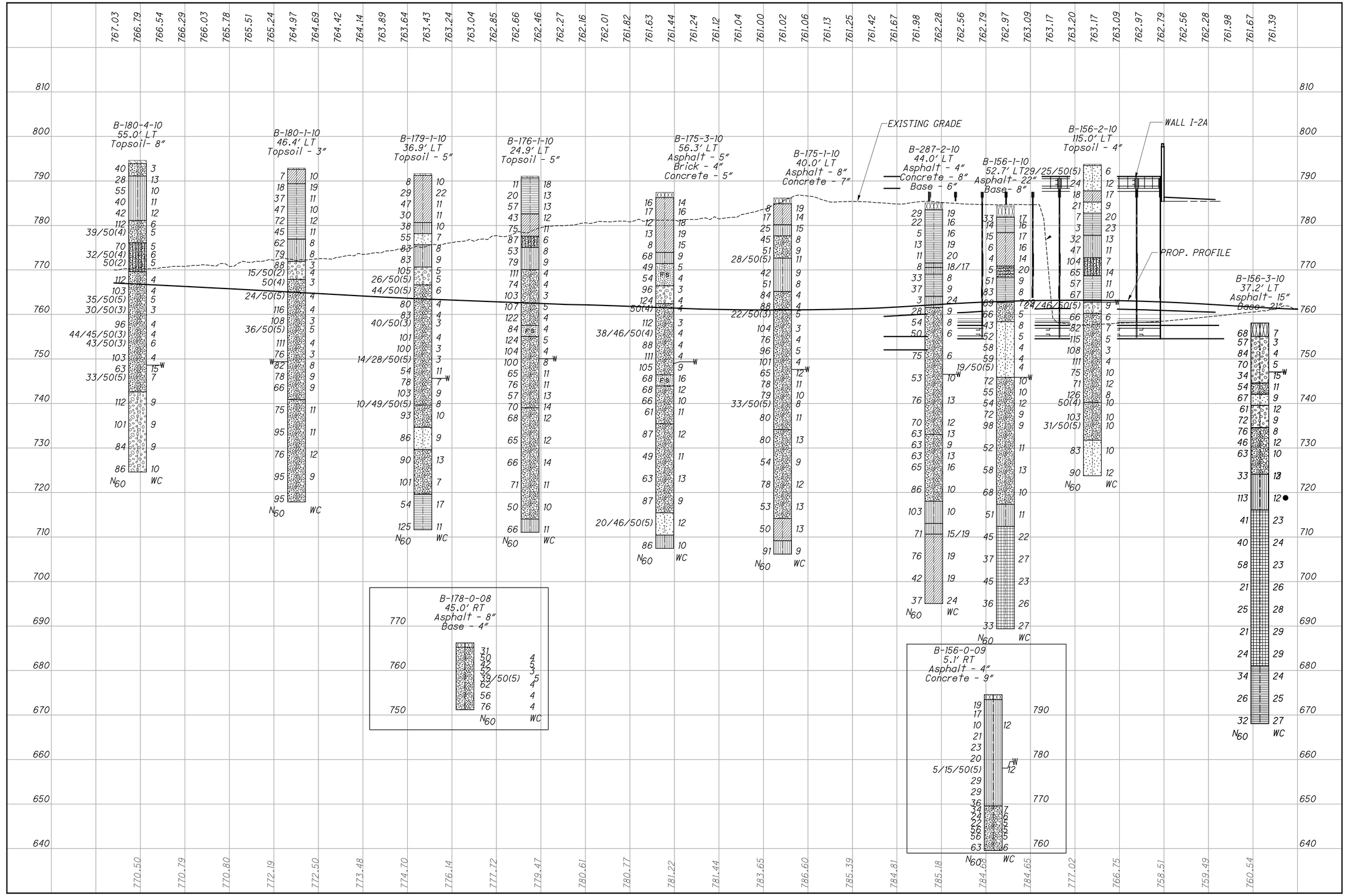

HORIZONTAL SCALE IN FEET
0 20 50 100

DRAWN PAT
CHECKED VBP

SOIL PROFILE
RAMP P5 STA. 973+20.44 TO STA. 986+00

FRA-70-14.48

53/386

53/386

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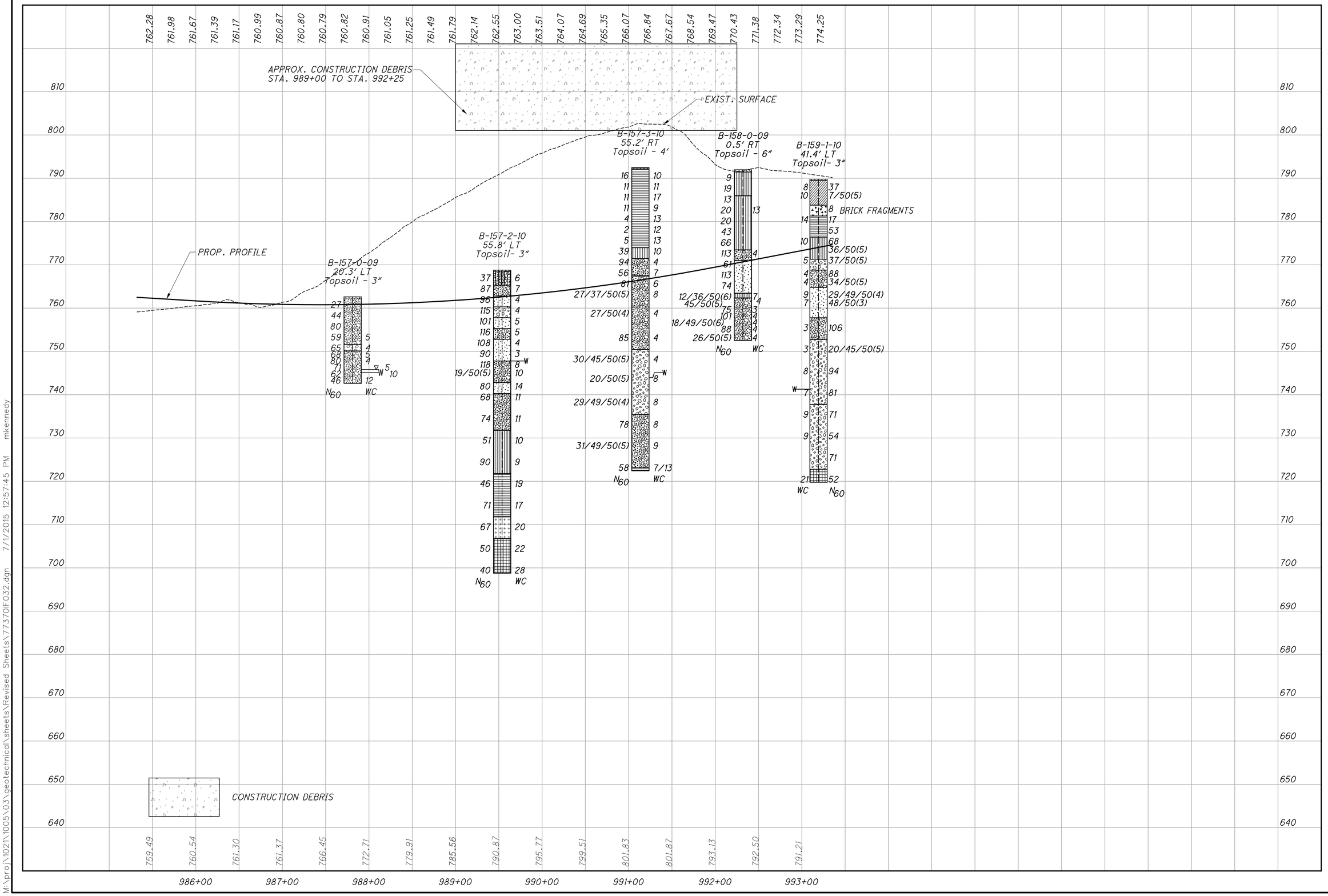

HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN PAT
CHECKED VBP

SOIL PROFILE
STA. 986+00 TO STA. 993+35.07

RAMP P5 STA

FRA-70-14.48

54 / 386

54
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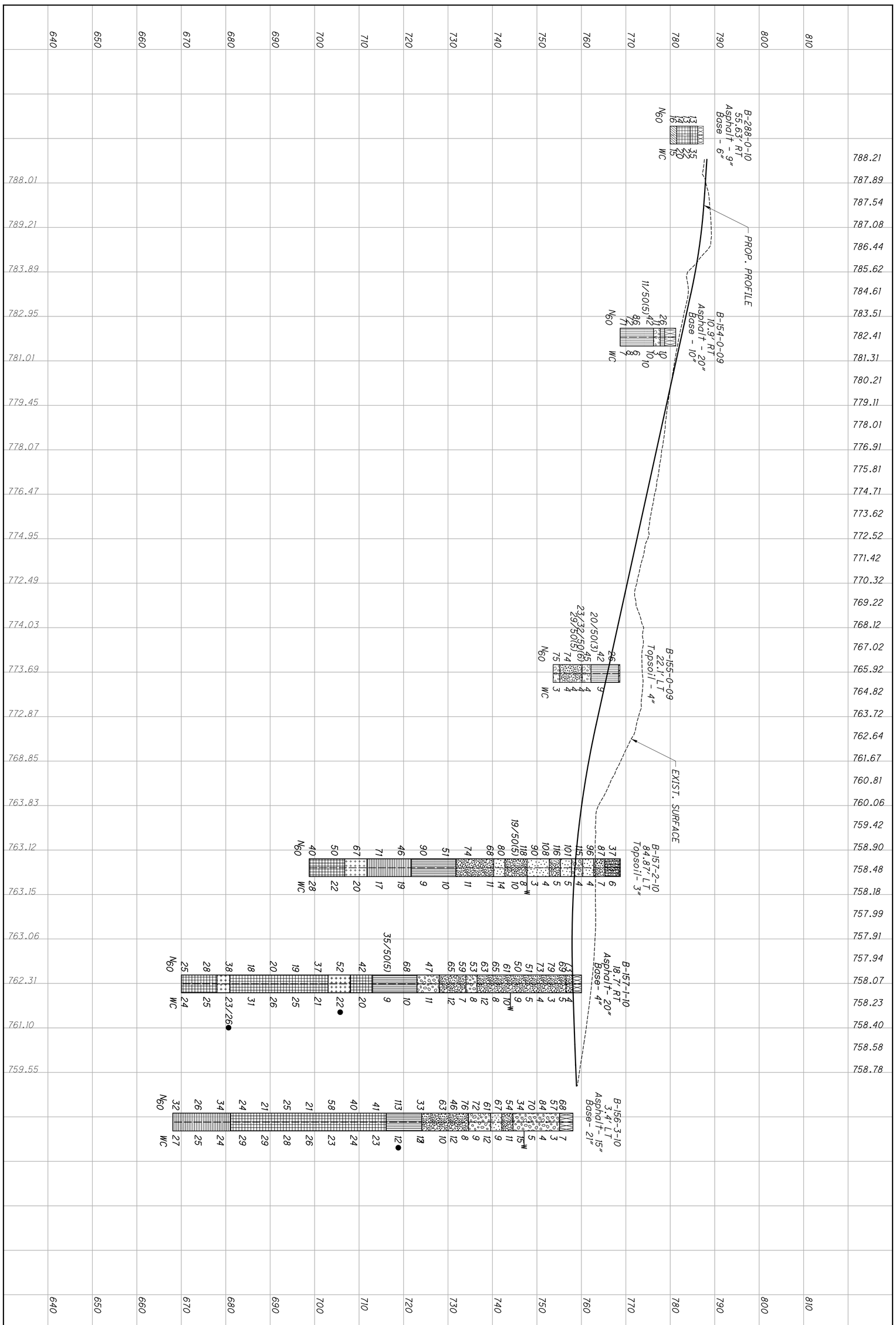
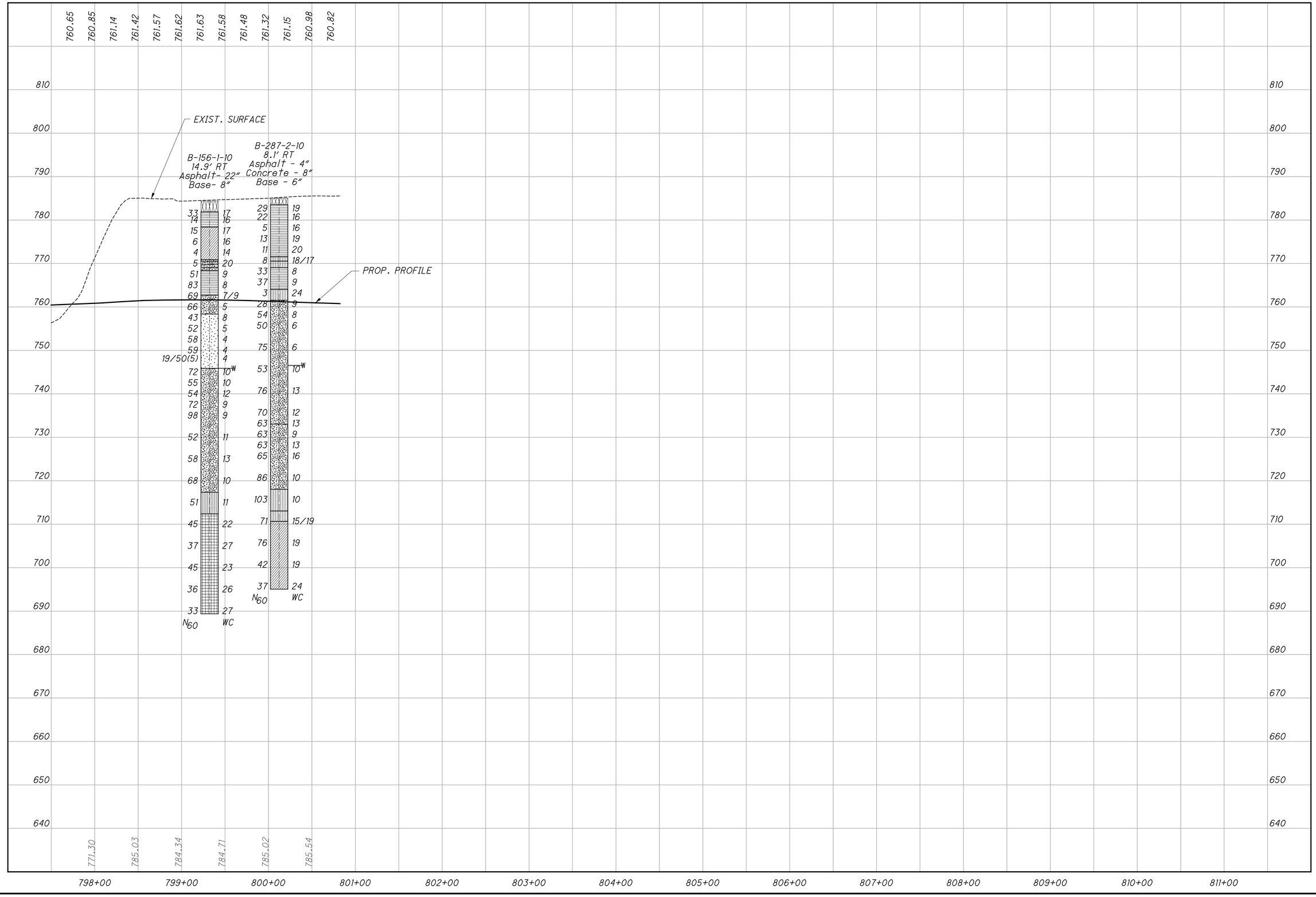


55/386	55/386	FRA-70-14.48	SOIL PROFILE RAMP P6 STA. 785+73.63 TO STA. 796+15.14	DRAWN PAT CHECKED VBP	0 50 25 100 HORIZONTAL SCALE IN FEET



0 25 50 100
HORIZONTAL SCALE IN FEET

DRAWN PAT
CHECKED VBP

SOIL PROFILE
STA. 798+00 TO STA. 800+82.25
RAMP P6

FRA-70-14.48

56/386

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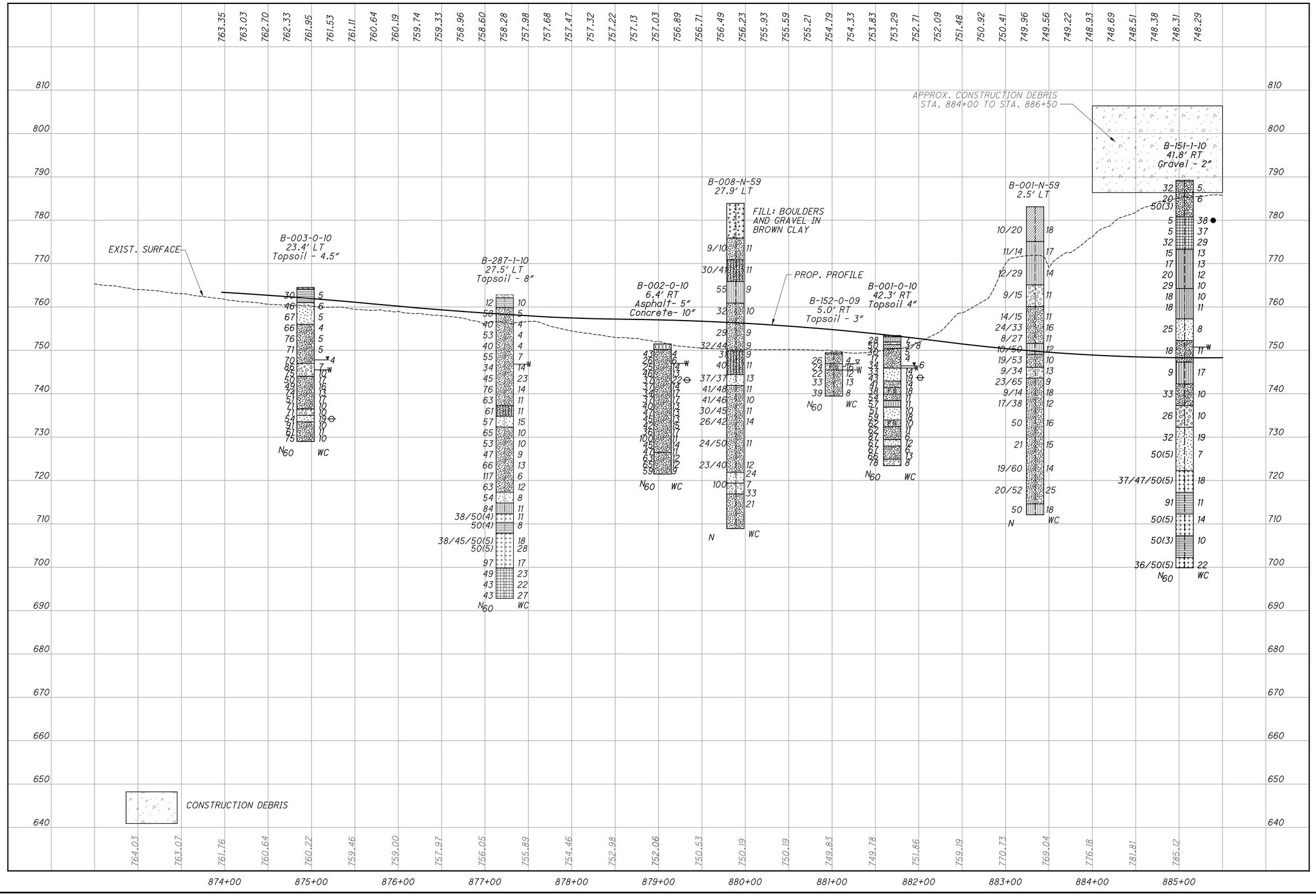

HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN PAT
CHECKED VBP

SOIL PROFILE
STA. 873+96.66 TO STA. 885+00
RAMP Q3 STA

FRA-70-14.48

57 386

57 386

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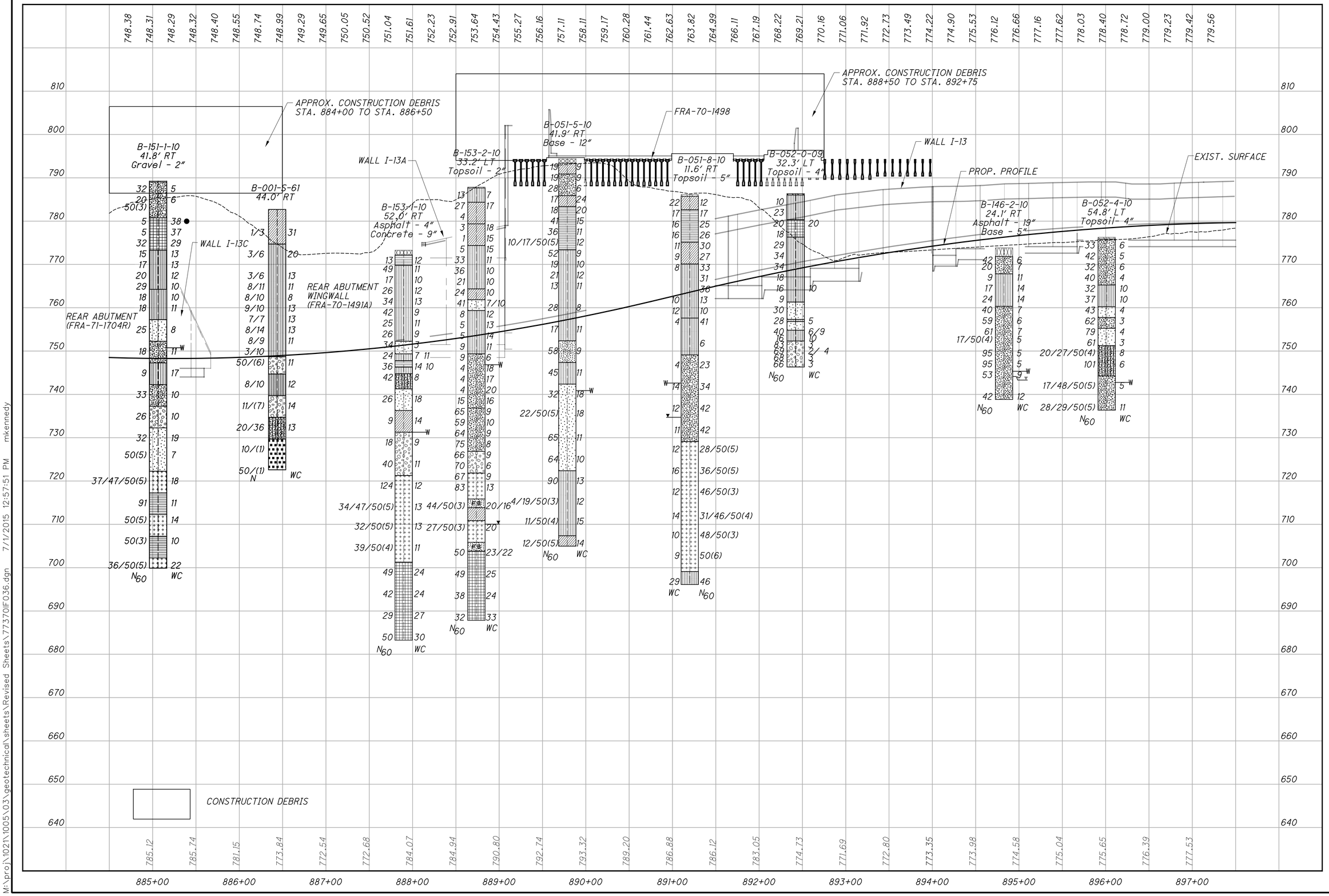

HORIZONTAL SCALE IN FEET

DRAWN PAT

CHECKED VBP

SOIL PROFILE

RAMP Q3 STA. 885+00 TO STA. 897+00

FRA-70-14.48

58/386

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SOIL PROFILE

RAMP Q3 STA. 885+00 TO STA. 897+00

APPROX. CONSTRUCTION DEBRIS
STA. 884+00 TO STA. 886+50

APPROX. CONSTRUCTION DEBRIS
STA. 888+50 TO STA. 892+75

EXIST. SURFACE

PROP. PROFILE

WALL I-13-2

B-153-3-10
45.4' LT
Asphalt - 4"
Concrete - 14"

B-007-S-61
84.5' LT

B-153-0-09
0.3' LT
Topsoil - 4"

B-051-7-10
59.5' LT
Base- 12"

B-052-1-10
70.1' LT
Asphalt - 3"
Concrete - 9"
Base - 4"

B-146-1-10
34.7' RT
Asphalt - 18"
Base - 18"

B-053-1-09
2.2' LT
Asphalt - 2"
Concrete - 12"
Base - 4"

EXIST. SURFACE

PROP. PROFILE

HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN PAT
CHECKED VBP

FRA-70-14.48

59/386

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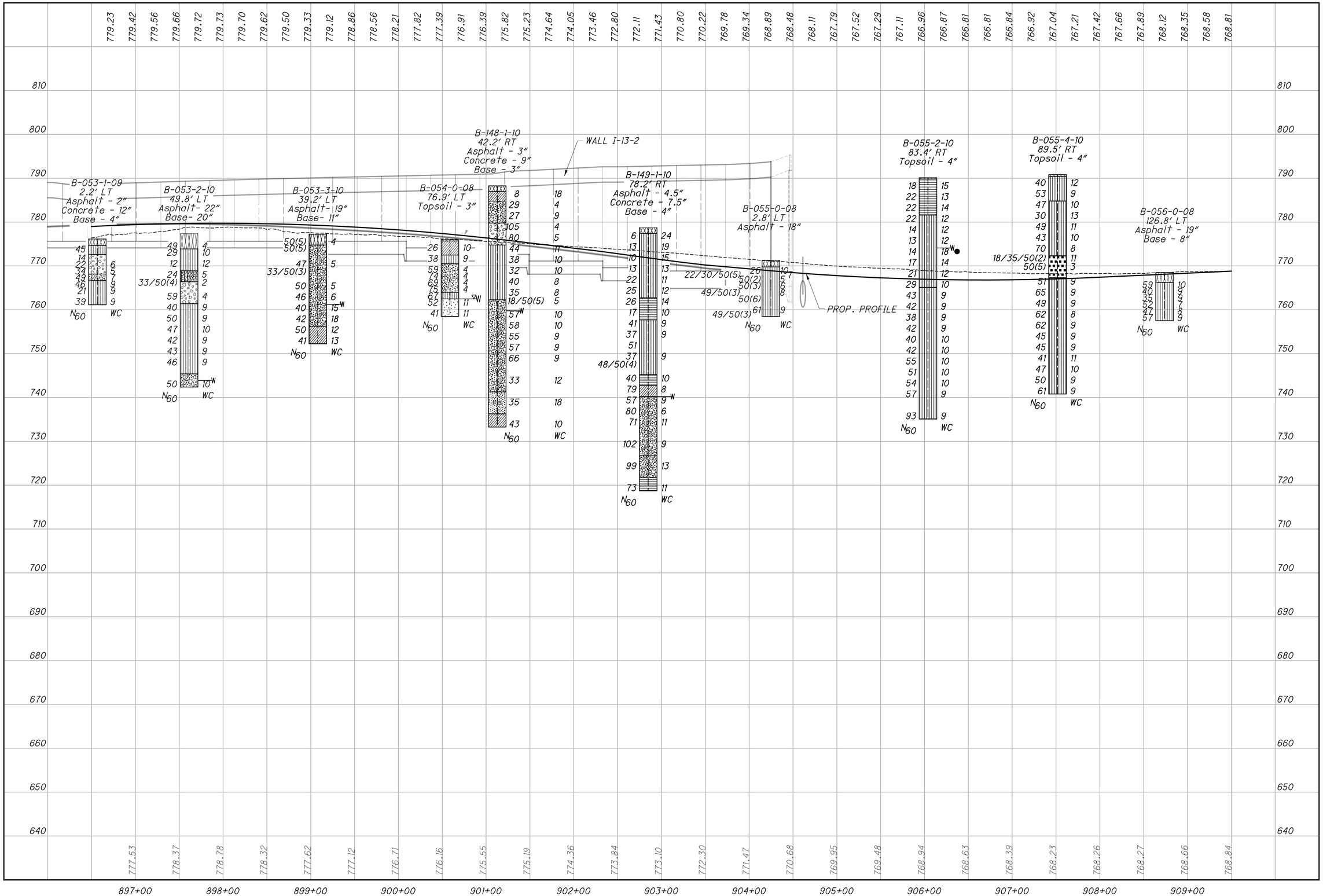

HORIZONTAL SCALE IN FEET

DRAWN PAT

CHECKED VBP

SOIL PROFILE

RAMP Q3 STA. 897+00 TO STA. 909+54.86

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60/386

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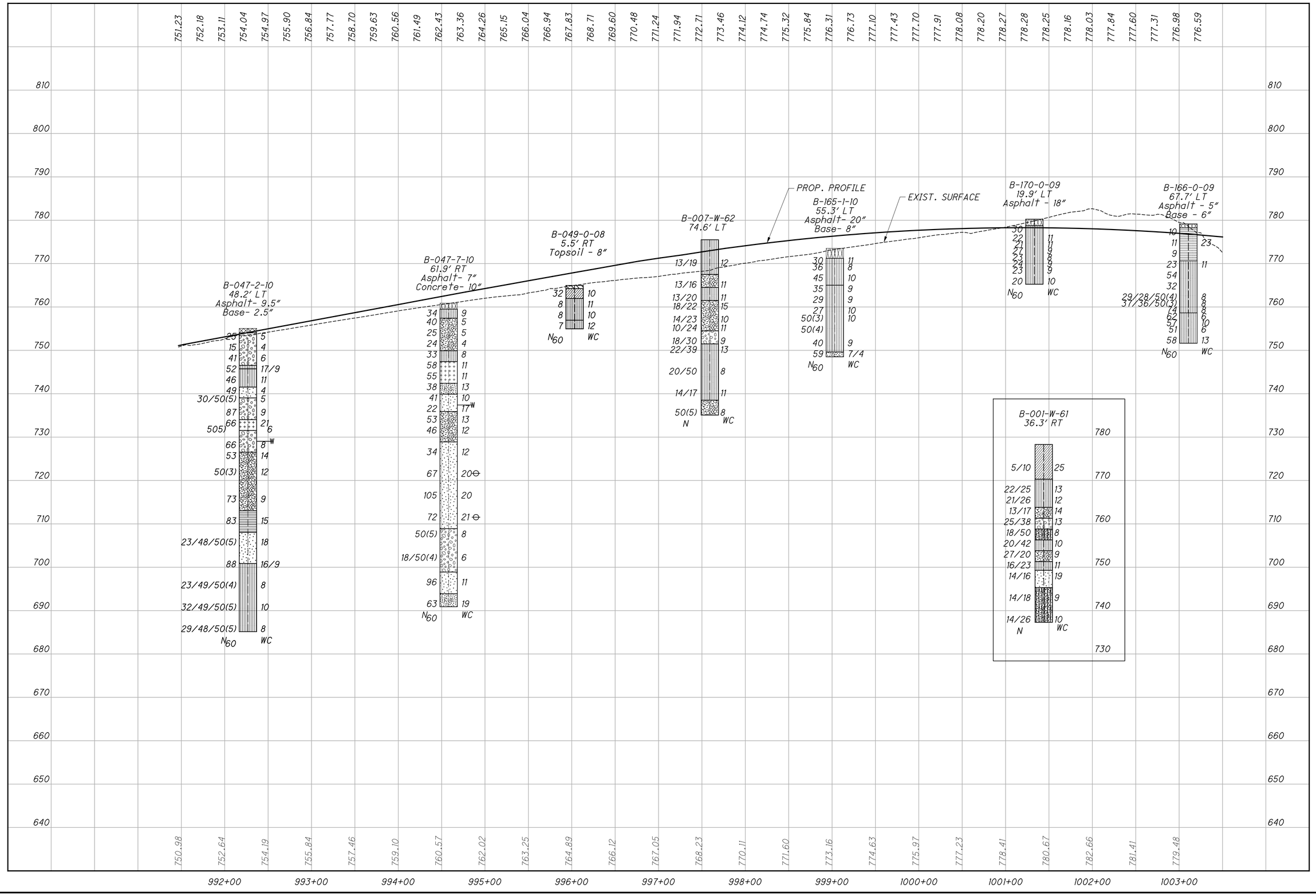

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0 25 50 100
HORIZONTAL SCALE IN FEET

DRAWN PAT
CHECKED VBP

SOIL PROFILE
RAMP Q1 STA. 991+46.81 TO STA. 1003+00

FRA-70-14.48

61 / 386

61
386

B-166-0-09
67.7' LT
Asphalt - 5"
Base - 6"

B-170-1-09
22.3' RT
Asphalt - 5"
Concrete - 6"
Base - 1"

B-166-3-10
103.1' LT
Topsoil - 2"

B-171-0-09
14.1' LT
Asphalt - 9"
Concrete - 15"

B-002-0-10
54.0' RT
Asphalt- 5"
Concrete- 10"

B-174-0-08
28.8' LT
Asphalt - 8"
Base - 4"

B-175-2-10
71.9' LT
Asphalt - 8"
Concrete - 10"

PROP. PROFILE

EXIST. SURFACE

FUT

HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN PAT
CHECKED VBP

SOIL PROFILE
STA. 1003+00 TO STA. 1015+00
RAMP Q1 STA

FRA-70-14.48

62 386

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760.41 760.84 761.26 761.65 762.02 762.36 762.68 762.97 763.23 763.48 763.72 763.97 764.22 764.46 764.71 764.96 765.20 765.45 765.70 765.94 766.19 766.44 766.68 766.93 767.18 767.42 767.67 767.91 768.16 768.41 768.65 768.90 769.15 769.39

FUTURE PART 3

PROP. PROFILE

EXIST. SURFACE

B-003-0-10
55.9' RT
Topsoil - 4.5"

RII
B-177-0-08
39.4' LT
Asphalt - 8"

B-004-0-10
35.5' RT
Topsoil - 4"

B-181-0-08
27.1' LT
Asphalt - 9"
Concrete - 4"
Base - 5"

CTL
B-182-1-09
53.1' RT
Asphalt-6"
Base-6"

30 46 67 66 76 71 70 86 75 50 49 72 71 71 54 61 75 — N_{60}
5 6 5 4 5 5 4 7 10 17 16 13 17 10 10 19 10 11 10 — WC

11/50(11) 45 47 40 93 55 80 57 52 55 23/50(4) 39 — N_{60}
1 1 4 4 5 5 9 5 12 13 12 18 — WC

24 29 23 32 50 57 72 55 70 69 37 45 50 55 84 93 101 93 74 52 59 52 45 — N_{60}
9 4 16 4 4 4 4 5 5 15 16 16 13 9 12 3 8 5 5 19/12 11 14 9 6 10 — WC

35 48 53 70 13/50(5) 61 62 59 — N_{60}
3 4 5 2 8 3 4 — WC

32 118 104 98 76 87 67 63 55 52 60 125 30/40/50(5) 104 71 64 70 66 63 56 70 70 20/37/50(5) 53 — N_{60}
9 7 4 4 4 5 5 4 16 23 13 9 0 11 8 9 14 14 5 13 10 21 21 11 — WC

760.72 761.62 762.46 763.31 764.14 764.85 765.57 766.27 766.85 767.34 767.81 768.17 768.50 768.76 769.10 769.69 769.78

1015+00 1016+00 1017+00 1018+00 1019+00 1020+00 1021+00 1022+00 1023+00

810 800 790 780 770 760 750 740 730 720 710 700 690 680 670 660 650 640

HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN PAT
CHECKED VBP

SOIL PROFILE
STA. 1015+00 TO STA. 1023+00
RAMP Q1 STA. 1023+00

FRA-70-14.48

63 386

63 386

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778.63 778.17 777.40 776.31 775.11 773.91 772.71 771.51 770.31 769.16 768.05 766.99 765.99 765.03 764.13 763.27 762.46 761.70 761.00 760.34 759.73 759.17 758.66 758.20 757.79 757.43 757.12 756.86 756.65 756.49 756.38 756.32 756.30 756.34 756.43 756.56 756.75 756.99 757.27 757.61 757.99 758.42 758.82 759.21 759.58 759.93

B-167-3-10
37.8' RT
Asphalt- 6"
Concrete- 10"
Base- 2"

B-167-2-10
52.0' RT
Asphalt - 9"
Base - 6"

B-169-0-09
13.2' LT
Topsoil - 5"

EXIST. SURFACE

PROP. PROFILE

B-172-0-08
8.8' LT
Asphalt - 7"
Concrete - 9"
Base - 2"

B-001-M-59
24.9' LT

WALL I-1

B-174-0-08
31.9' RT
Asphalt - 8"
Base - 4"

B-175-2-10
11.7' LT
Asphalt - 8"
Concrete - 10"

N_{60} WC

778.55 777.61 776.89 776.37 775.39 773.14 772.63 771.02 771.08 771.08 767.88 767.46 767.45 766.92 766.16 765.12 764.29 760.38 763.19 762.68 762.58 762.61 762.70

904+00 905+00 906+00 907+00 908+00 909+00 910+00 911+00 912+00 913+00 914+00 915+00

HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN PAT
CHECKED VBP

SOIL PROFILE
STA. 903+92.25 TO STA. 915+00
RAMP Q2 STA.

FRA-70-14.48

64 386

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SOIL PROFILE

RAMP Q2 STA. 915+00 TO STA. 926+30

HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN PAT
CHECKED VBP

WALL I-1
EXIST. SURFACE
PROP. PROFILE

B-175-4-10
6.3' LT
Asphalt - 8"
Concrete - 10"

RII
B-177-0-08
19.1' RT
Asphalt - 8"

B-003-G-59
0.1' RT

B-180-2-10
27.7' LT
Asphalt- 11"
Concrete- 3"

CTL
B-180-3-09
26.5' RT
Asphalt - 8"
Base - 8"

B-001-T-59
3.8' LT

CTL
B-183-5-09
46.8' RT
Asphalt - 9"
Base - 5"

CTL
B-185-1-09
24.93' LT
Topsoil - 2"

RII
B-183-0-08
21.4' LT
Asphalt - 5"
Concrete - 6"
Base - 2"

CTL
B-183-1-09
12.4' RT
Topsoil - 4"

B-181-0-08
31.4' RT
Asphalt - 9"
Concrete - 4"
Base - 5"

FRA-70-14.48

65/386

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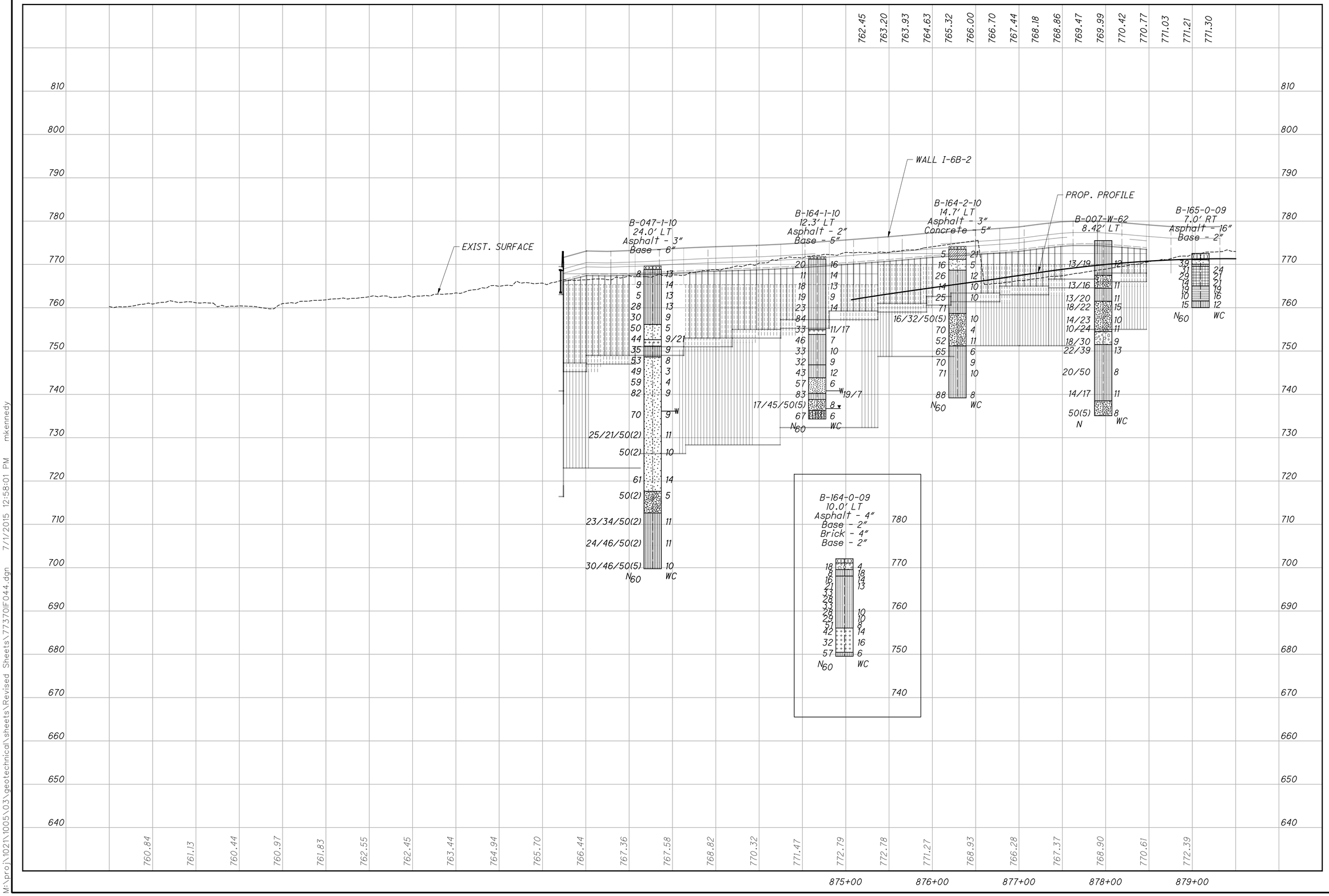

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0 25 50 100 HORIZONTAL SCALE IN FEET

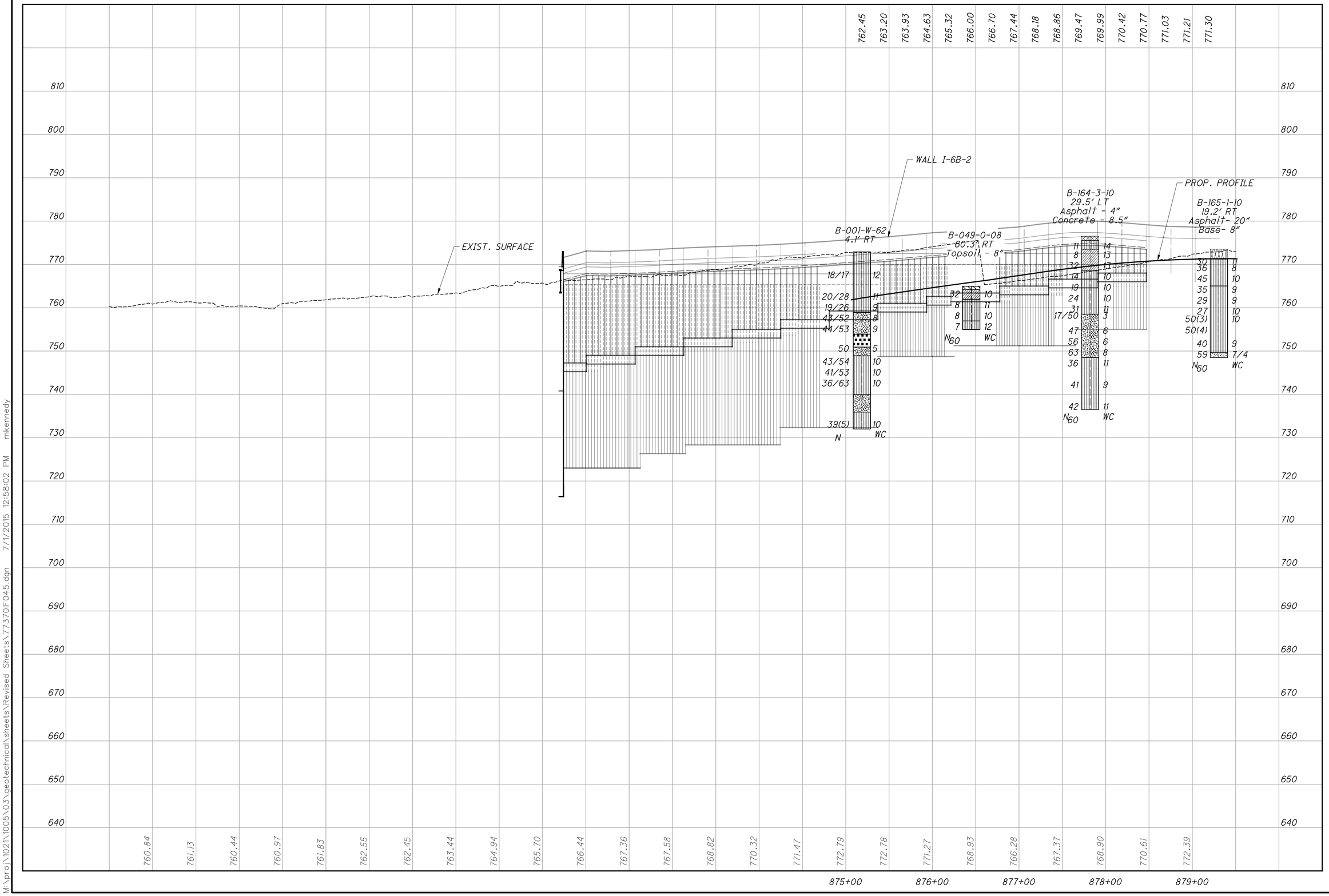
DRAWN PAT | CHECKED VBP

SOIL PROFILE STA. 875+06.62 TO STA. 879+00

RAMP Q4 STA. 875+06.62 TO STA. 879+00

FRA-70-14.48

66 / 386



HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN PAT
CHECKED VBP

SOIL PROFILE
RAMP Q4 STA. 875+06.62 TO STA. 879+00

FRA-70-14.48

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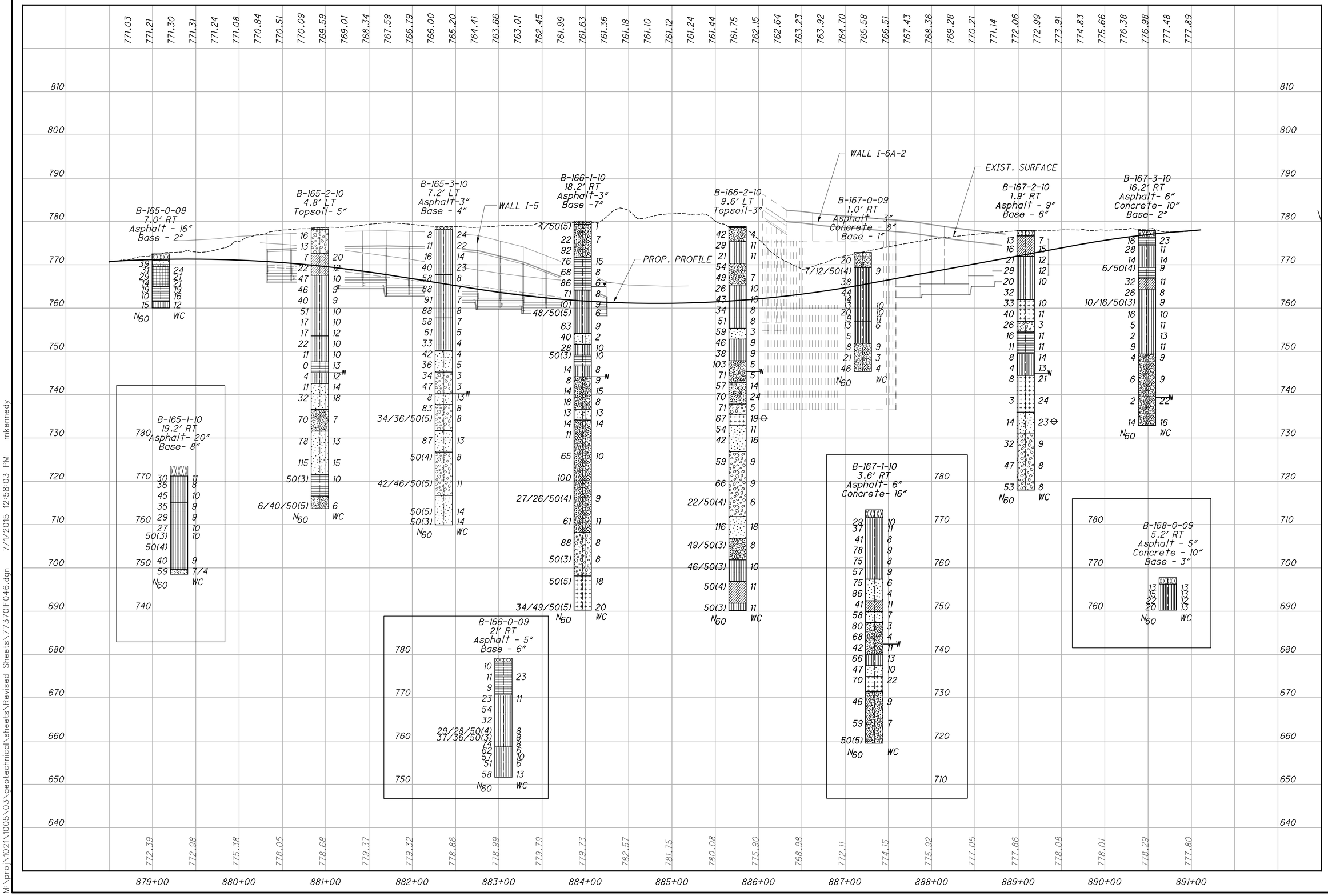

HORIZONTAL SCALE IN FEET

DRAWN PAT

CHECKED VBP

SOIL PROFILE

RAMP Q4 STA. 879+00 TO STA. 891+10.56

FRA-70-14.48

68/386

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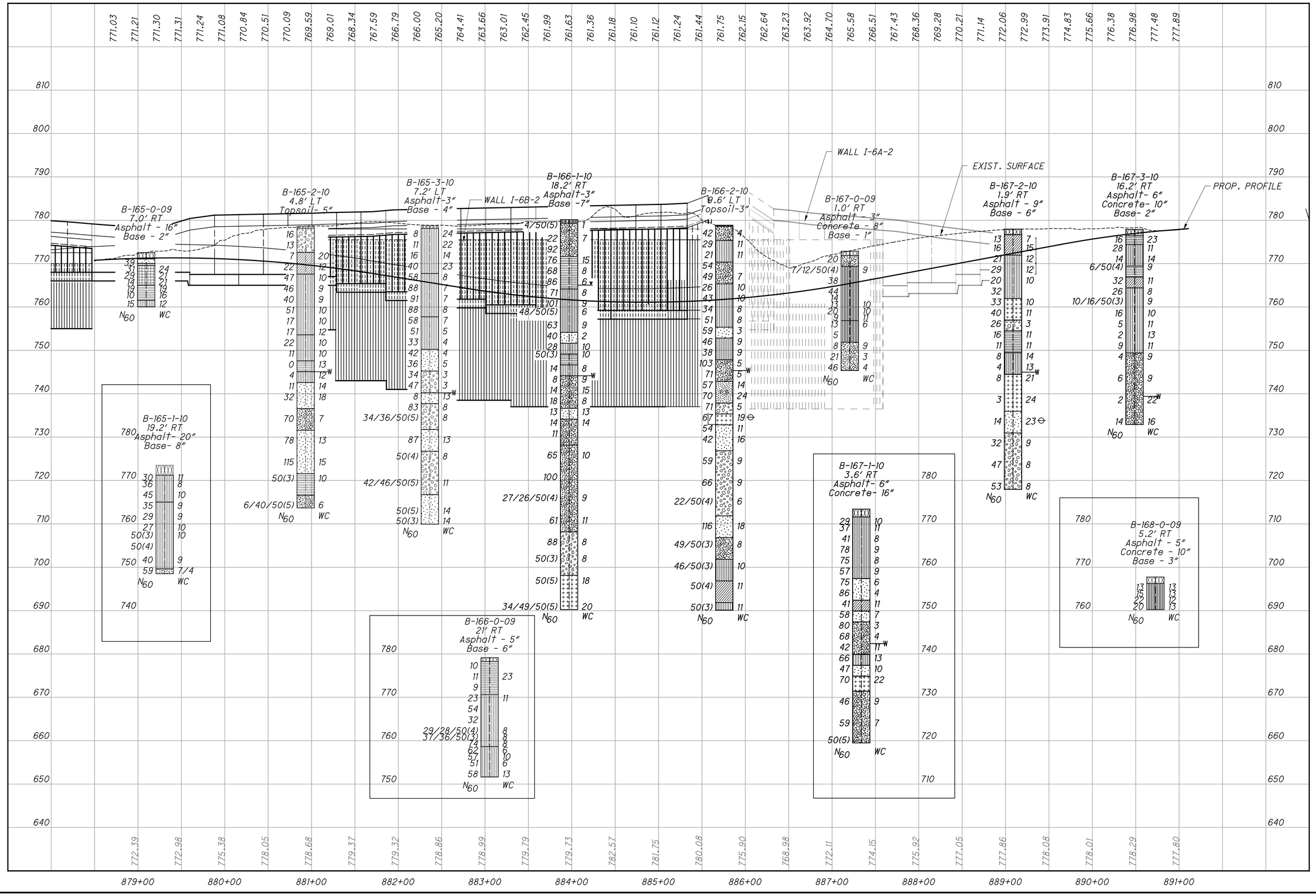

HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN PAT
CHECKED VBP

SOIL PROFILE
RAMP Q4 STA. 879+00 TO STA. 891+10.56

FRA-70-14.48

69/386

69
386

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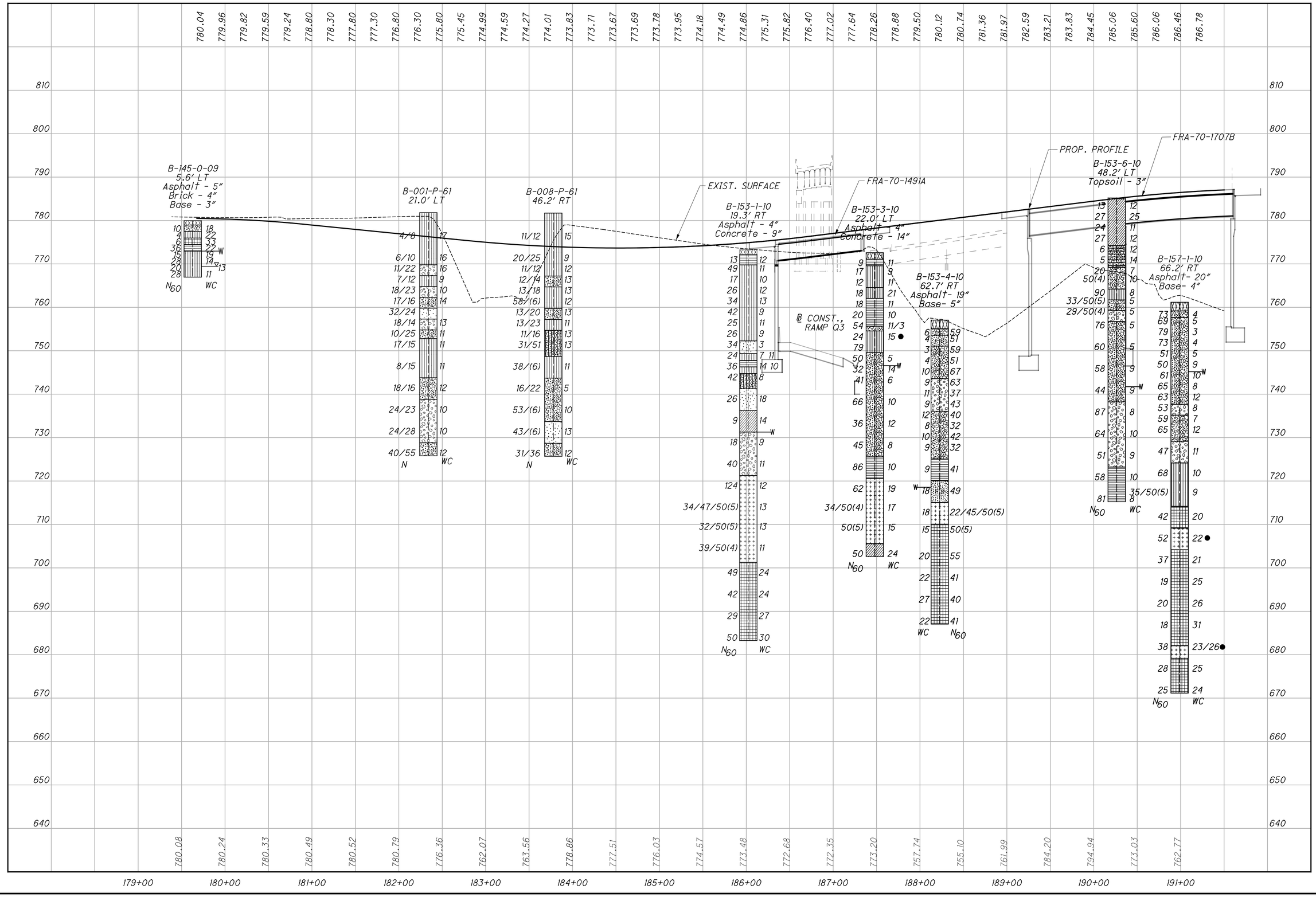

HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN PAT
CHECKED VBP

SOIL PROFILE

PARSONS AVE. STA. 179+67.62 TO STA. 191+00

FRA-70-14.48

70 / 386

70
386

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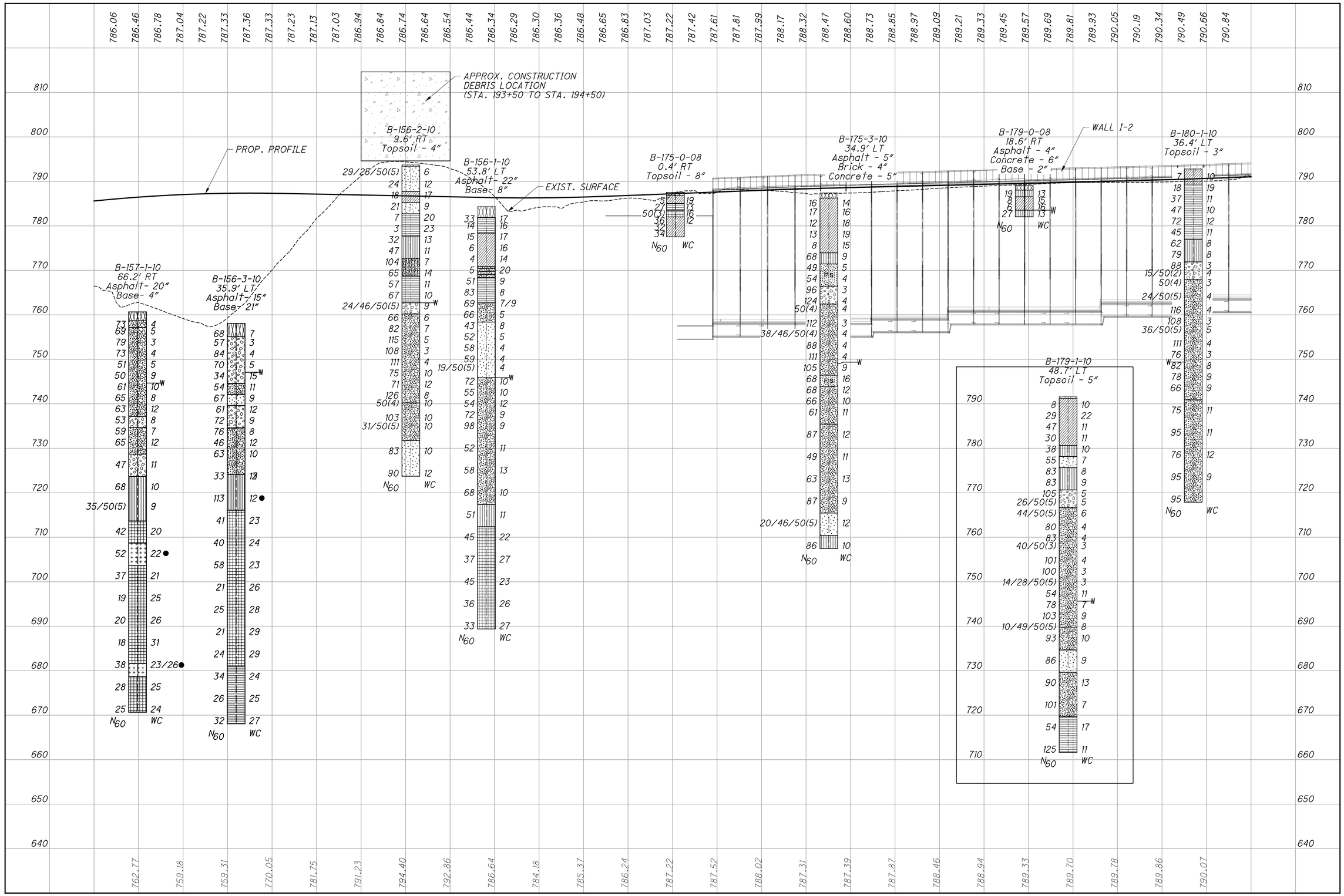

HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN PAT
CHECKED VBP

SOIL PROFILE
PARSONS AVE. STA. 191+00 TO STA. 203+00

FRA-70-14.48

71 / 386

71
386

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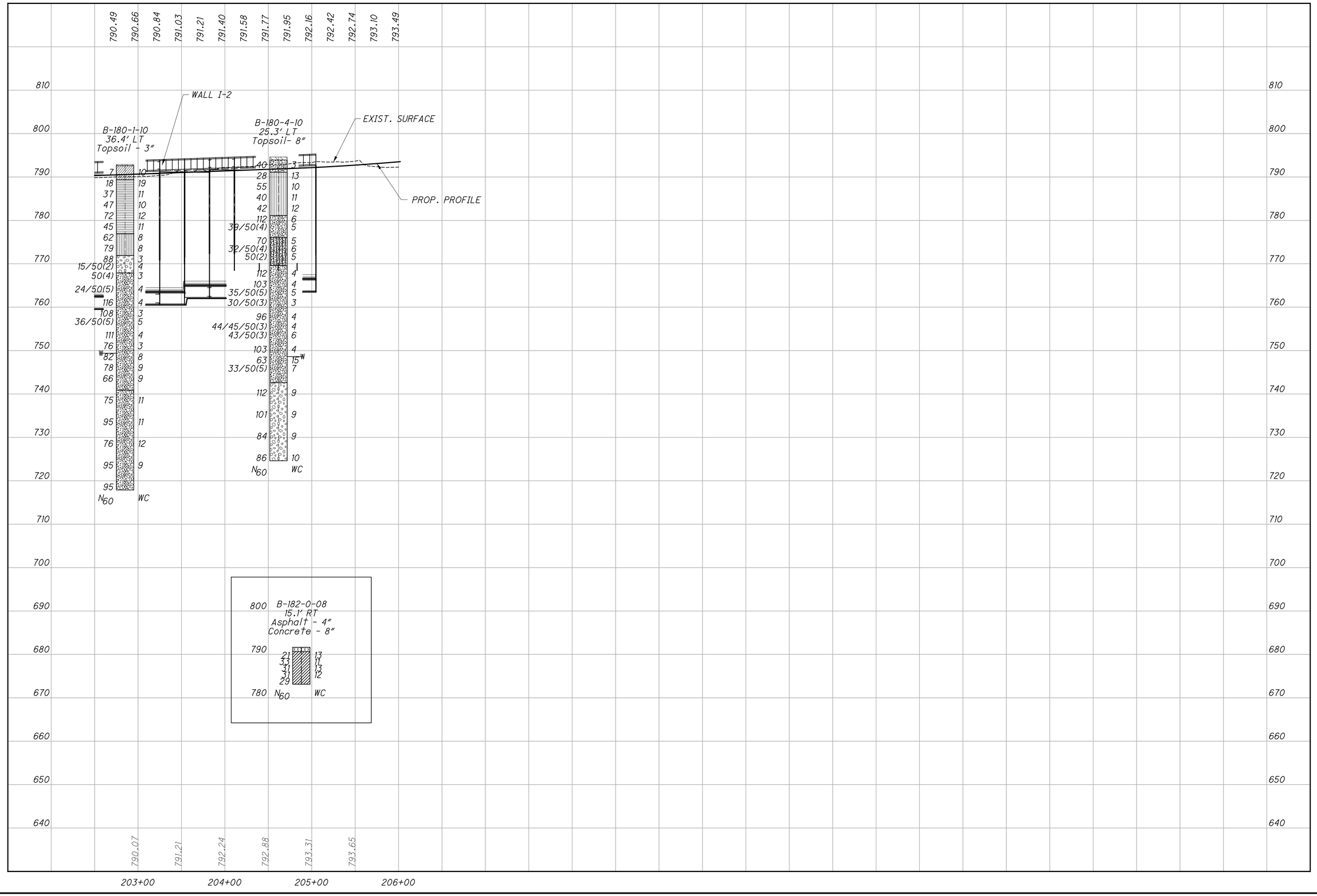

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HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN PAT
CHECKED VBP

SOIL PROFILE

PARSONS AVE. STA. 203+00 TO STA. 206+01.86

FRA-70-14.48

72/386

72
386

SOIL PROFILE

MAIN ST. STA. 25+00 TO STA. 37+00

FRA-70-14.48

73 / 386

HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN PAT
CHECKED VBP

EXIST. SURFACE

PROP. PROFILE

FRA-70-1716

B-286-0-10
20.3' LT
Asphalt - 2"
Concrete - 7"
Base - 5"
N60 WC
17 14
25 17
13 13
20 12

B-168-0-09
37.7' RT
Asphalt - 5"
Concrete - 10"
Base - 3"
N60 WC
13 13
25 13
25 13
20 13

B-287-0-10
8.5' LT
Asphalt - 11"
Base - 7"
N60 WC
14 20
17 20
19 21
32 17

B-001-M-59
20.5' RT
9/10 21
8/7 10
19/22 11
28/40 10
30/60 7
19/50 8
17/25 8
20/29 10
20/43 9
19/38 10
10/32 10
13/29 11
27/55 14
29/45 20
15/35 10
25/52 6
18/34 16
N WC

B-007-M-59
12.9' RT
5/11 25
5/11 18
3/3 11
9/6 14
36/42 8
68/50 9
25/25 11
45/36 11
37/80 11
56/50 14
28/29 11
33/50 10
41/50 9
26/56 9
43/60 10
28/56 9
36/50 26
10
23
N WC

B-012-M-59
59.0' LT
8/8 20
15/19 14
33/36 10
29/47 7
20/36 12
40/50 10
23/45 14
26/55 10
22/50 8
50 12
21/47 11
22/56 17
20/59 17
50 9
10 14
22 16
N WC

775.56 775.89 776.21 776.52 776.84 777.16 777.48 777.80 778.12 778.44 778.75 779.07 779.39 779.69 779.99 780.29 780.57 780.85 781.12 781.38 781.64 781.89 782.13 782.36 782.59 782.82 783.05 783.28 783.51 783.73 783.96 784.19 784.42 784.63 784.84 785.04 785.23 785.40 785.57 785.74 785.89 786.05 786.20

773.79 774.28 774.81 775.28 775.89 776.52 777.12 777.75 778.39 779.03 779.67 780.24 780.86 781.51 782.00 782.38 782.74 783.16 758.99 756.50 755.07 764.02 765.32 775.15 785.12

810 800 790 780 770 760 750 740 730 720 710 700 690 680 670 660 650 640

25+00 26+00 27+00 28+00 29+00 30+00 31+00 32+00 33+00 34+00 35+00 36+00 37+00

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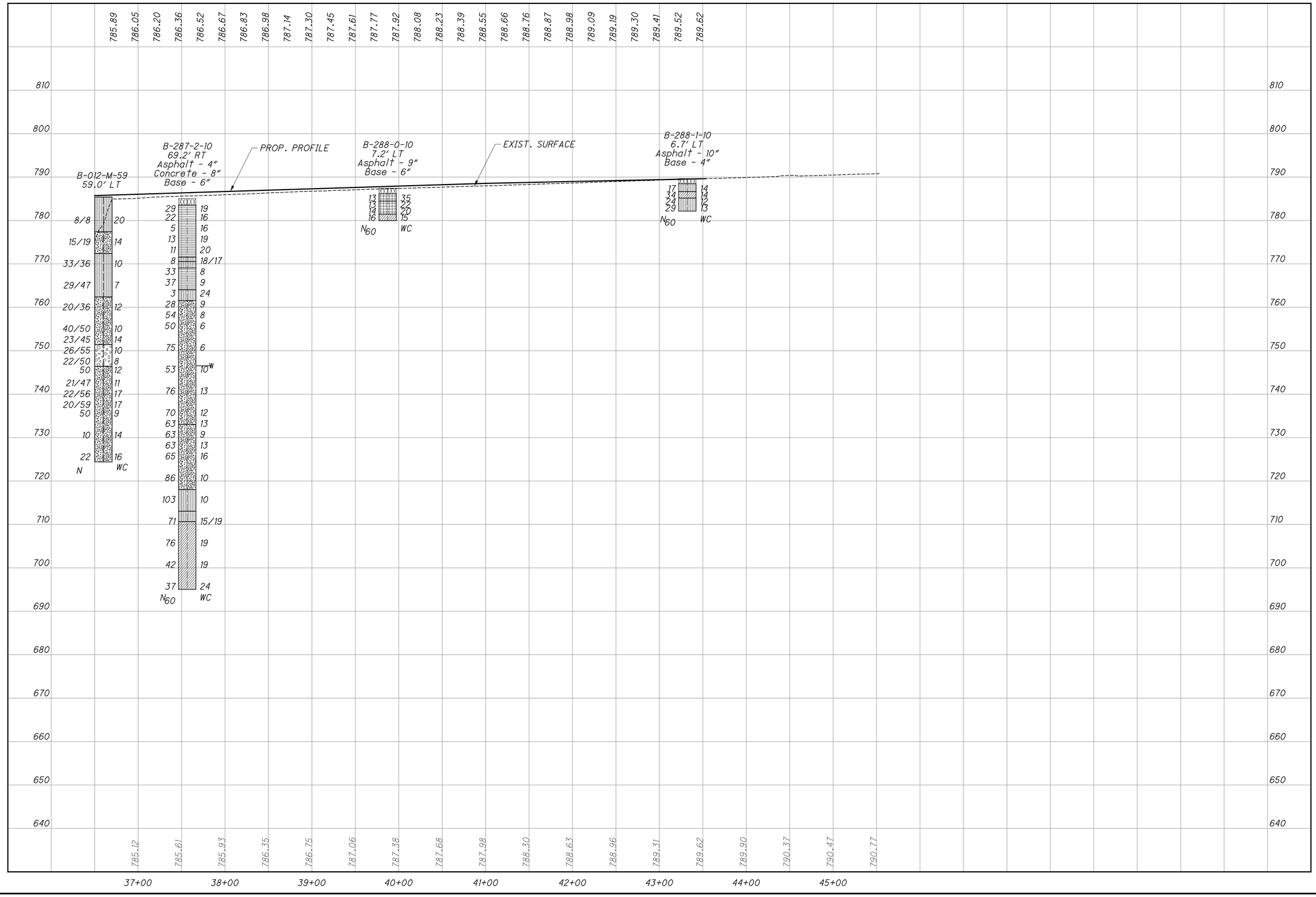

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HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN PAT
CHECKED VBP

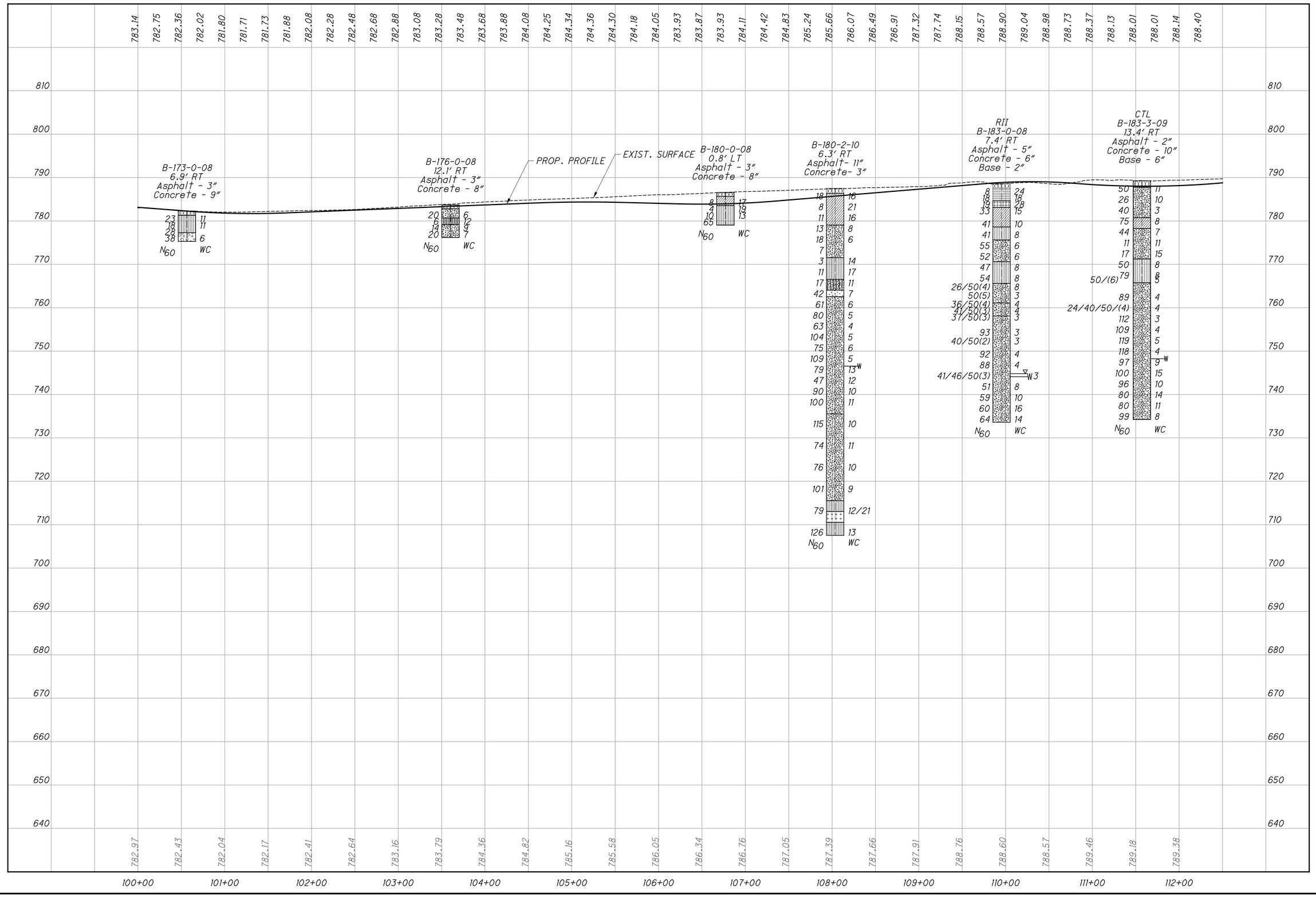
SOIL PROFILE

MAIN ST. STA. 37+00 TO STA. 45+00

FRA-70-14.48

74
386

74
386



0 25 50 100
HORIZONTAL SCALE IN FEET

DRAWN PAT
CHECKED VBP

SOIL PROFILE
LESTER DR. STA. 100+00 TO STA. 112+00

FRA-70-14.48

75 386

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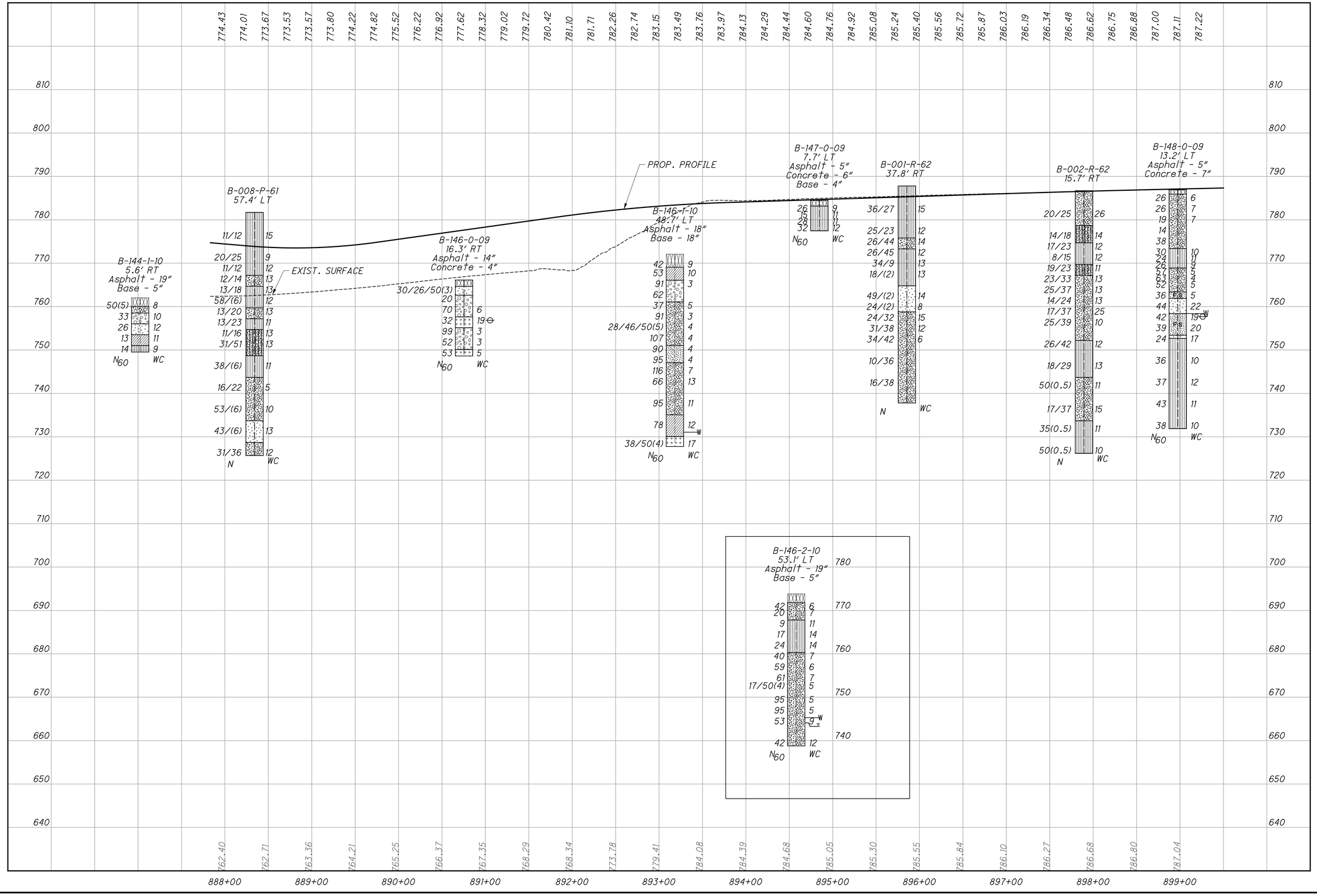

0 25 50 100
HORIZONTAL SCALE IN FEET

DRAWN PAT
CHECKED VBP

SOIL PROFILE
MOOBERRY ST. STA. 887+83.37 TO STA. 899+00

FRA-70-14.48

76 / 386

76
386

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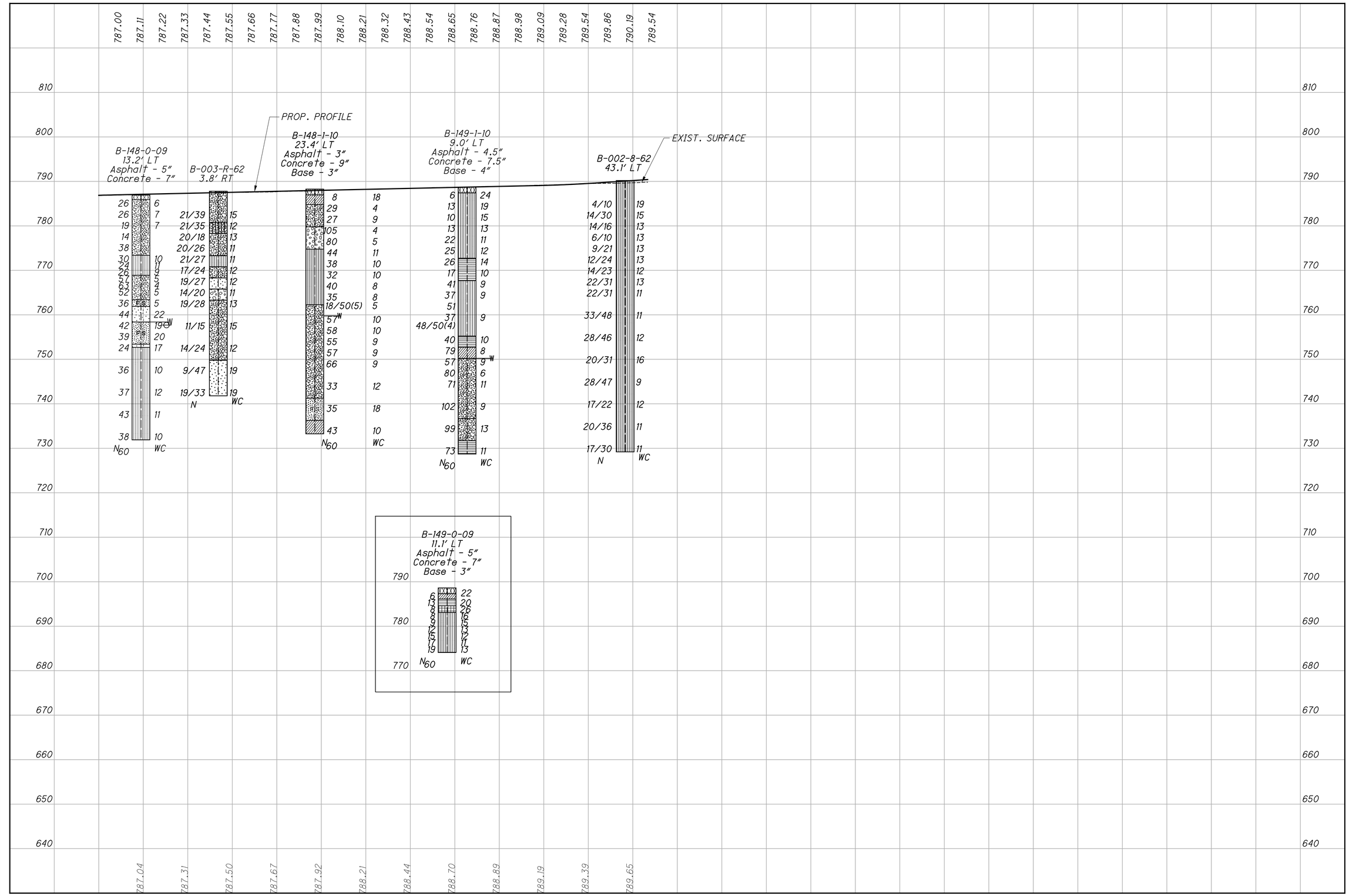

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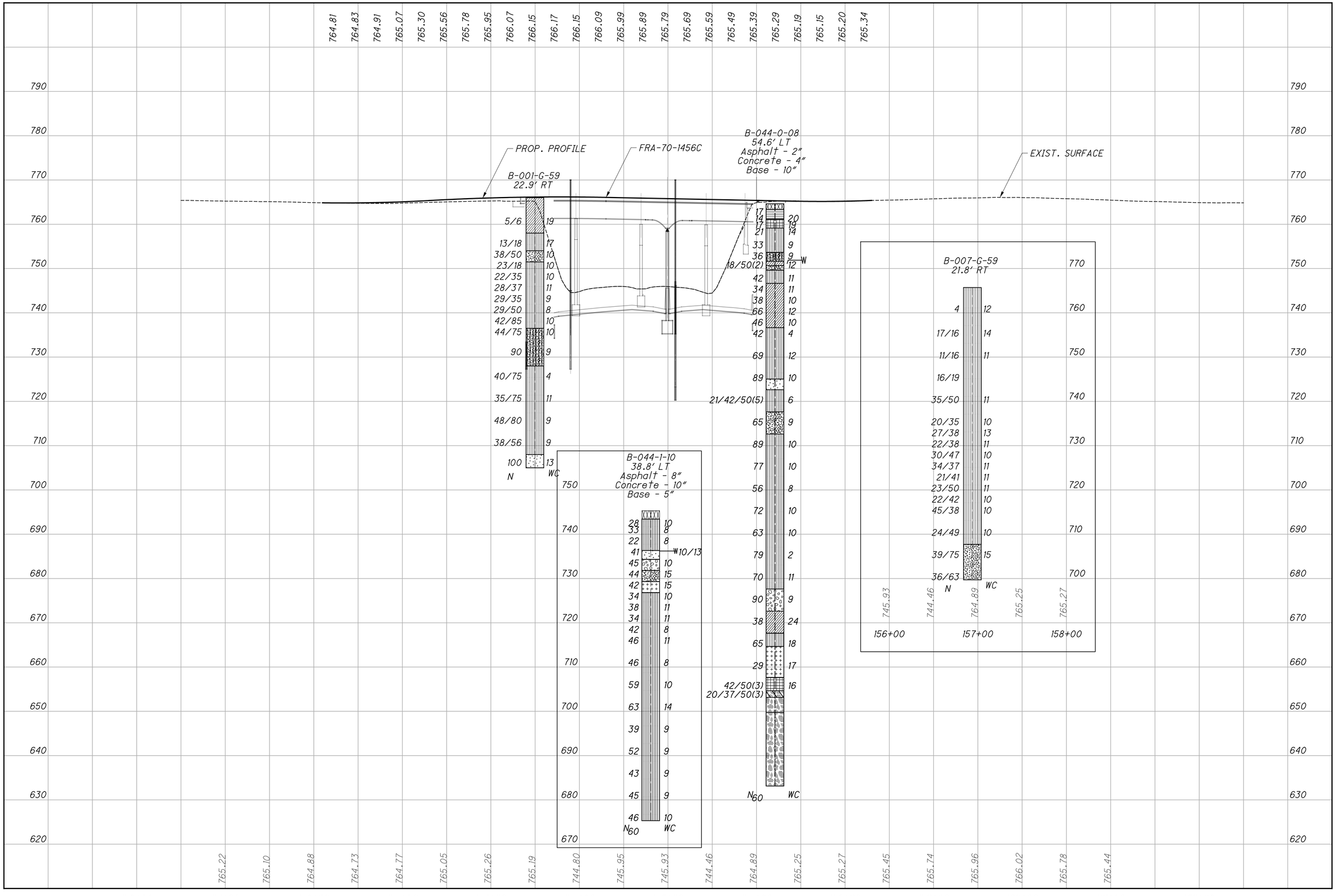
HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN PAT
CHECKED VBP

SOIL PROFILE
MOOBERRY ST. STA. 899+00 TO STA. 904+66.69
FRA-70-14.48

77
386



HORIZONTAL SCALE IN FEET

DRAWN PAT

CHECKED VBP

SOIL PROFILE

GRANT AVE. STA. 150+00 TO STA. 162+00

FRA-70-14.48

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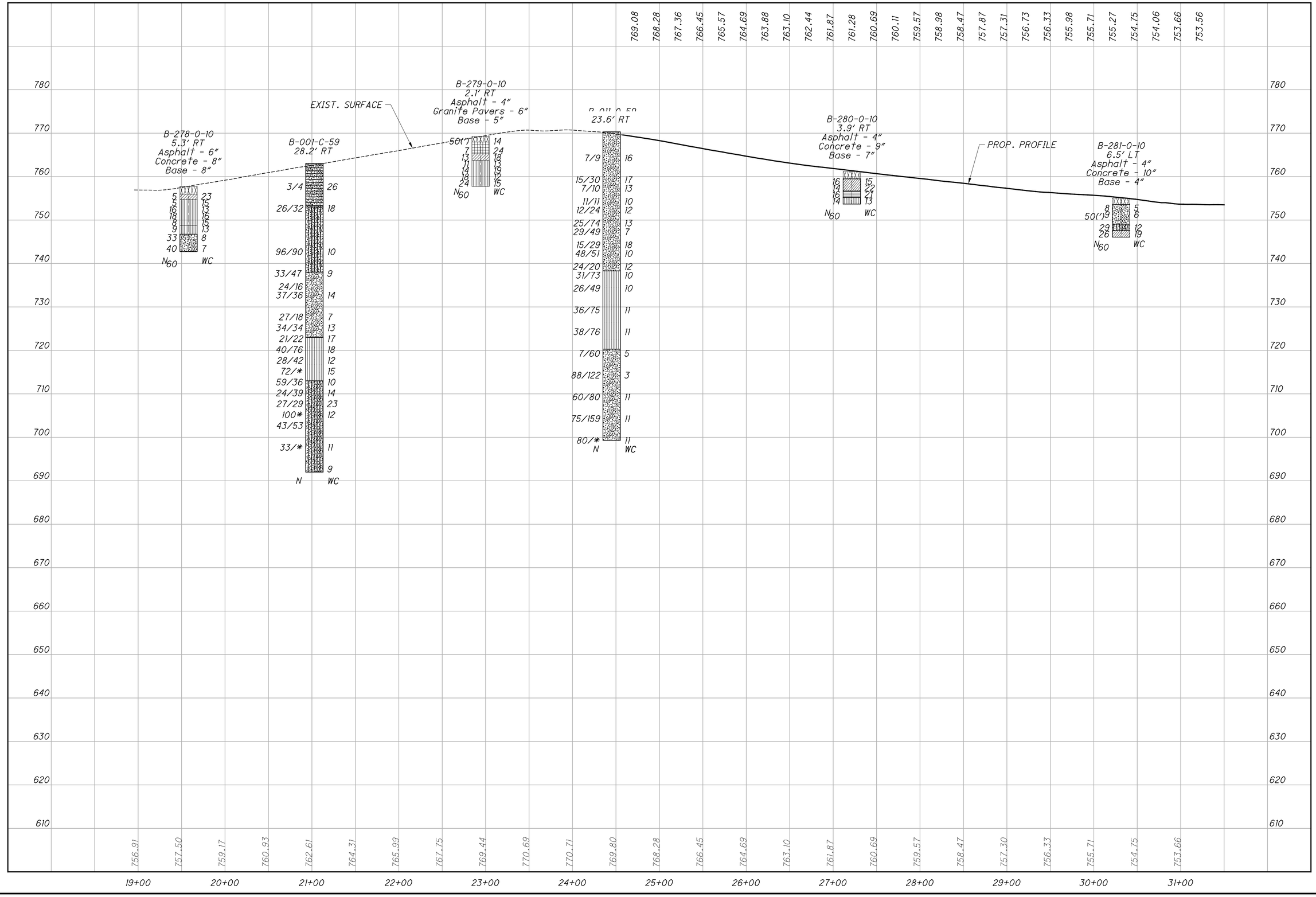

0 25 50 100
HORIZONTAL SCALE IN FEET

DRAWN PAT
CHECKED VBP

SOIL PROFILE
ST. STA. 19+00 TO STA. 31+00

FULTON ST.

FRA-70-14.48

79/386

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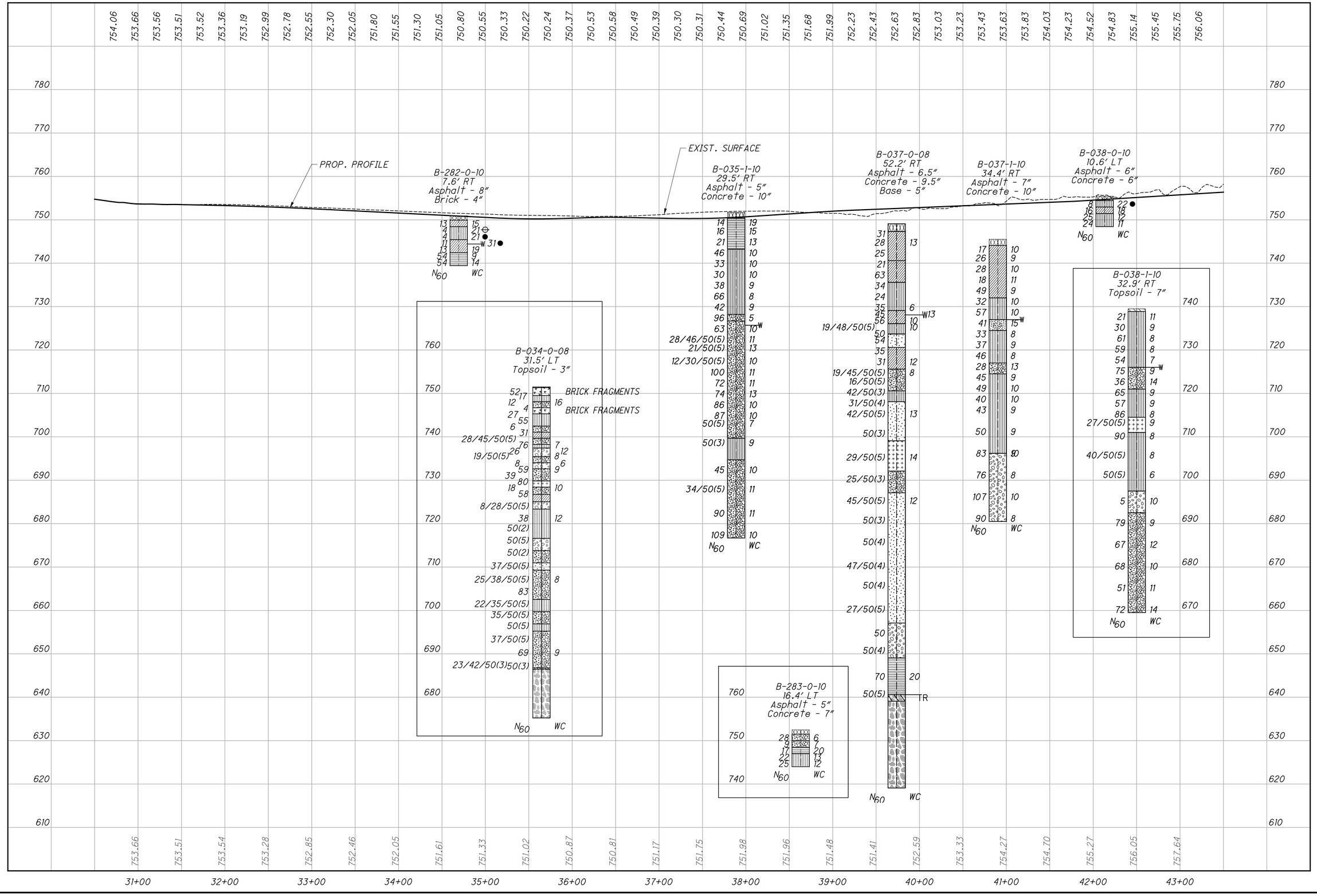

HORIZONTAL SCALE IN FEET

DRAWN PAT

CHECKED VBP

SOIL PROFILE

FULTON ST. STA. 31+00 TO STA. 43+00

FRA-70-14.48

80/386

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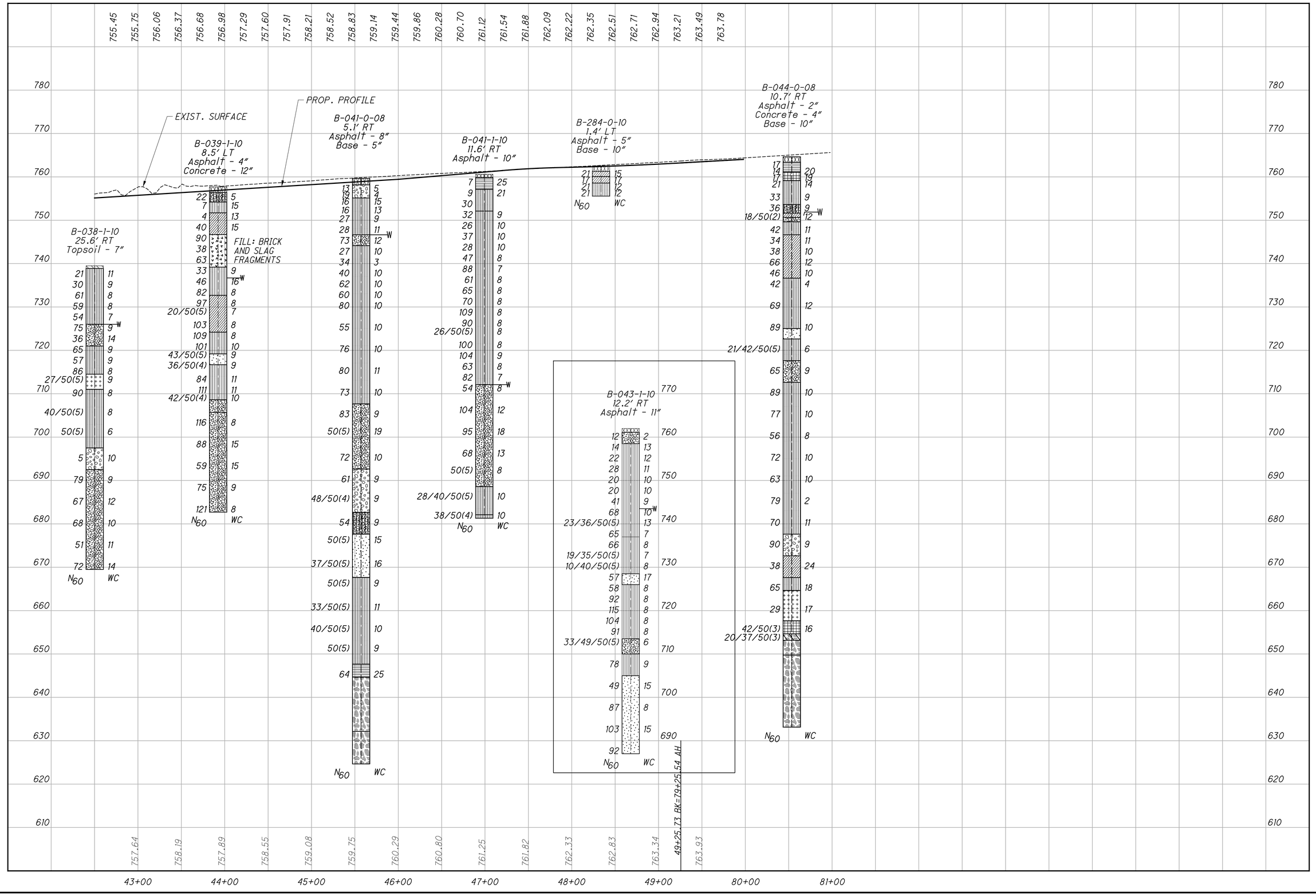

HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN PAT
CHECKED VBP

SOIL PROFILE
FULTON ST. STA. 43+00 BK TO STA. 81+07.69 AH

FRA-70-14.48

81 / 386

81
386

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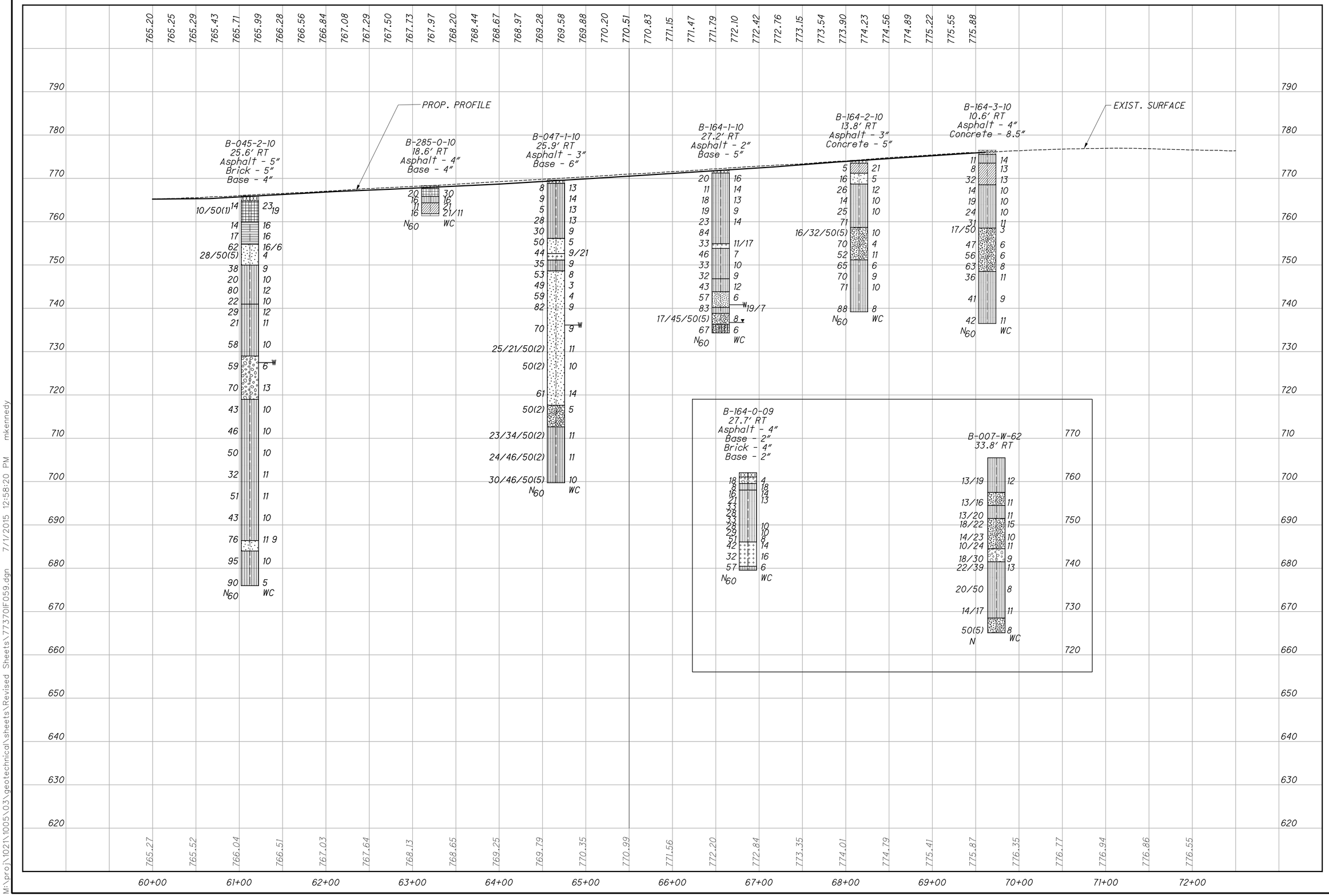

0 25 50 100
HORIZONTAL SCALE IN FEET

DRAWN PAT
CHECKED VBP

SOIL PROFILE
FULTON ST. STA. 60+00 TO STA. 72+00

FRA-70-14.48

82/386

82
386

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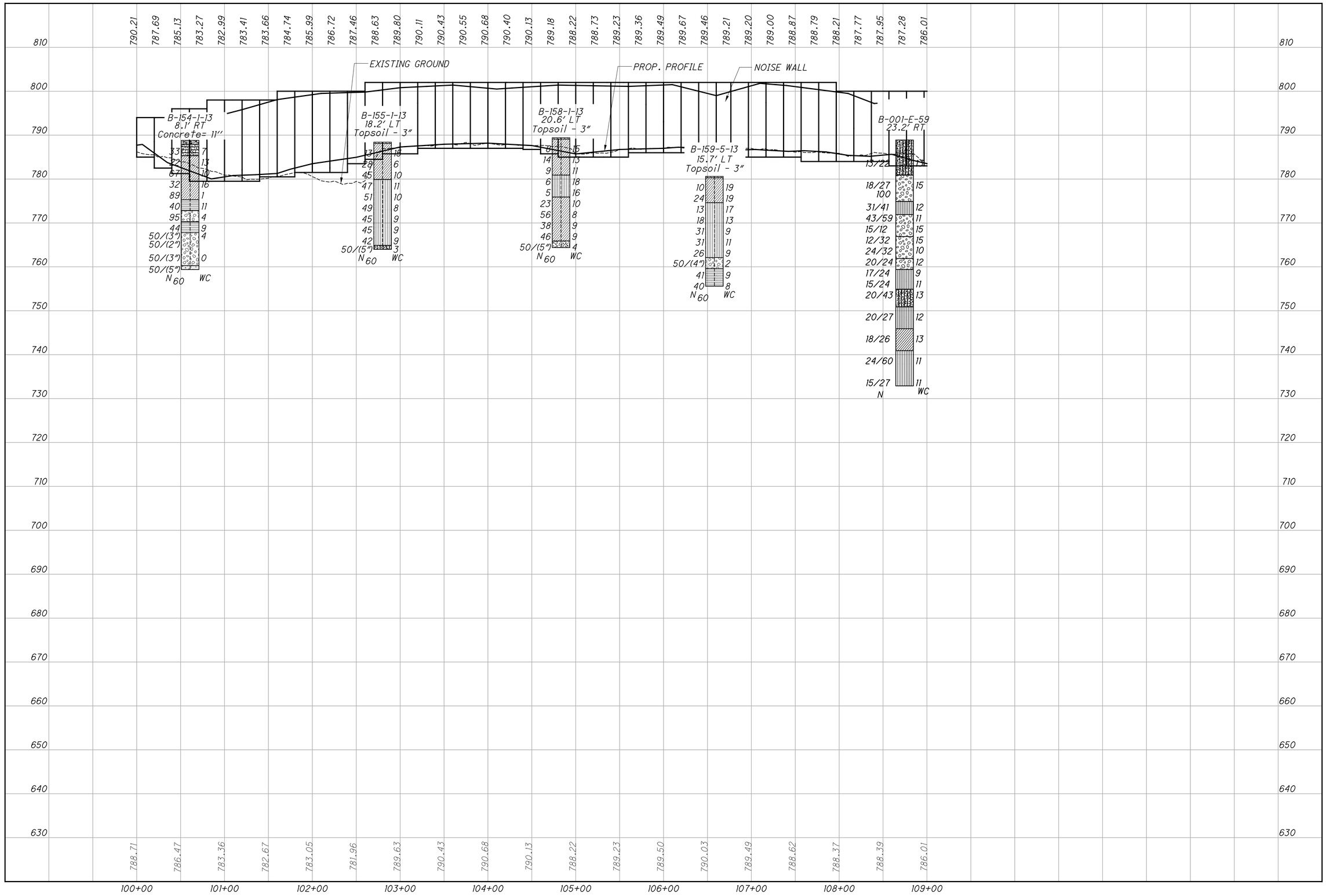

HORIZONTAL SCALE IN FEET
0 25 50 100

DRAWN EMW
CHECKED MDK

SOIL PROFILE
NOISE WALL STA. 100+00 TO STA. 109+00

FRA-70-14.48

83/386

83
386

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0 25 50 100
HORIZONTAL SCALE IN FEET

DRAWN EMW
CHECKED MDK

SOIL PROFILE
STA. 109+00 TO STA. 114+60.69
NOISE WALL STA. 114+60.69

FRA-70-14.48

84/386

84
386

PROJECT: I-71 MICROTUNNEL	DRILLING FIRM / OPERATOR: DLZ / J. NELSON	DRILL RIG: CME 75 TRUCK	STATION / OFFSET: 881+69.28, 42.26 RT	EXPLORATION ID B-001-0-10
TYPE: STRUCTURE	SAMPLING FIRM / LOGGER: DLZ / S. LARIMER	HAMMER: CME AUTOMATIC	ALIGNMENT: RAMP Q3	
PID: 77369 BR ID:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 1/7/10	ELEVATION: 753.4 (MSL) EOB: 30.0 ft.	PAGE 1 OF 2
START: 6/29/10 END: 6/29/10	SAMPLING METHOD:	ENERGY RATIO (%): 79	COORD: 713118.990 N, 1833087.500 E	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	PIEZ.
Topsoil 4"	753.1																	
Hard brown SANDY SILT (A-4a), "and" fine to coarse sand, little gravel; damp. (CL)	751.9	1	4 6 15	28	83	SS-1	4.5+	-	-	-	-	-	-	-	-	7	A-4a (V)	
Dense to very dense brown COARSE AND FINE SAND (A-3a), some silt, little gravel; damp. (SM)	751.3	2	25 22 16	50	100	SS-2A	-	-	-	-	-	-	-	-	-	3	A-3a (V)	
Hard brown SILT AND CLAY (A-6a), some fine to coarse sand, some gravel; damp. (CL)	750.4	3	-	-	-	SS-2B	4.5+	-	-	-	-	-	-	-	-	8	A-6a (V)	
Medium dense to dense brown GRAVEL WITH SAND (A-1-b), some to "and" fine to coarse sand, little silt; damp. (SW-SM)		4	10 13 10	30	61	SS-3	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
		5	6 8 5	17	83	SS-4	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		6	6 11 15	34	78	SS-5	-	48	26	14	12	-	NP	NP	NP	6	A-1-b (0)	
	745.9	7																
Dense brown COARSE AND FINE SAND (A-3a), little gravel, trace silt; wet. (SP-SM)		8	9 10 15	33	89	SS-6	-	-	-	-	-	-	-	-	-	14	A-3a (V)	
@ 7.5'-22.5', PID = 0.1 to 2.1 ppm.		9																
	742.9	10	10 18 15	43	89	SS-7	-	-	-	-	-	-	-	-	-	19	A-3a (V)	
Dense brown GRAVEL WITH SAND (A-1-b), some to "and" fine to coarse sand, trace silt; wet. (SP-SM)	741.4	11	5 14 17	41	89	SS-8	-	-	-	-	-	-	-	-	-	14	A-1-b (V)	
Dense brown FINE SAND (A-3), some coarse sand, little gravel, trace to little silt; wet. (SP-SM) Specific gravity = 2.71	739.9	12 13	7 8 21	38	100	SS-9	-	14	26	50	10	-	NP	NP	NP	18	A-3 (0)	
Very dense brown GRAVEL WITH SAND (A-1-b), some to "and" fine to coarse sand, trace silt; wet. (SP-SM)	738.4	14	13 21 20	54	89	SS-10	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
Very dense brown SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp. (CL)	736.9	15 16	11 21 22	57	83	SS-11	-	-	-	-	-	-	-	-	-	11	A-4a (V)	
Very dense brown COARSE AND FINE SAND (A-3a), some gravel, little silt; wet. (SP-SM)		17	10 18 21	51	94	SS-12	-	-	-	-	-	-	-	-	-	10	A-3a (V)	
@ 13.5'-24.0', 0.6 to 2.8 feet sand heave; washed out with tricone.	733.9	18 19	8 23 22	59	72	SS-13	-	-	-	-	-	-	-	-	-	18	A-3a (V)	
Very dense brown FINE SAND (A-3), little gravel, trace silt; wet. (SP)	732.4	20	9 19 28	62	78	SS-14	-	-	-	-	-	-	-	-	-	10	A-3 (V)	
Very dense brown and gray GRAVEL WITH SAND (A-1-b), little silt; wet. (SM)		21 22	8 20 27	62	67	SS-15	-	34	28	24	14	-	NP	NP	NP	11	A-1-b (0)	
	729.4	23	12 27 39	87	56	SS-16	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
Very dense gray COARSE AND FINE SAND (A-3a), some gravel, trace silt; wet. (SP-SM)		24	16 24	67	89	SS-17	-	-	-	-	-	-	-	-	-	12	A-3a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-71 Microtunnel - 11/9/11 17:39

PID: 77369	BR ID:	PROJECT: I-71 MICROTUNNEL	STATION / OFFSET: 881+69.28, 42.26 RT	START: 6/29/10	END: 6/29/10	PG 2 OF 2	B-001-0-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	PIEZ.
	728.4		27															
	727.9																	
Very dense gray GRAVEL WITH SAND (A-1-b), some to "and" fine to coarse sand, trace silt; wet. (SP-SM)		26	10 23 28	67	78	SS-18	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
@ 25.5'-30.0', 1.2 to 1.8 feet sand heave; washed out with tricone.	724.9	27 28	14 23 27	66	83	SS-19	-	-	-	-	-	-	-	-	-	13	A-1-b (V)	
Very dense gray GRAVEL (A-1-a), some fine to coarse sand, trace silt; wet. (GP-GM)	723.4	29	16 30 29	78	78	SS-20	-	-	-	-	-	-	-	-	-	8	A-1-a (V)	
	EOB	30																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-71 Microtunnel - 11/9/11 17:39

NOTES: SEEPAGE AT 7.4 FEET; WATER LEVEL PRIOR TO WASHING OUT = 7.0 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 7.0 FEET

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG BENTONITE CHIPS; 1 BUCKET BENTONITE PELLETS; 8 BAGS SAND

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PROJECT: I-71 MICROTUNNEL
TYPE: STRUCTURE
PID: 94271 BR ID:
START: 6/22/10 END: 6/22/10

DRILLING FIRM / OPERATOR: DLZ / K. CONRAD
SAMPLING FIRM / LOGGER: DLZ / M. EVENER
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD:

DRILL RIG: CME 75 TRUCK
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 1/7/10
ENERGY RATIO (%): 79

STATION / OFFSET: 879+14.66, 6.43 RT
ALIGNMENT: RAMP Q3
ELEVATION: 751.5 (MSL) EOB: 30.0 ft.
COORD: 713378.260 N, 1833119.520 E

EXPLORATION ID B-002-0-10
PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Asphalt- 5" Concrete- 10"	750.2	1																
Medium dense to dense brown GRAVEL WITH SAND (A-1-b), little silt; damp to moist. @ 1.5'-4.5',19.5'-21.0', SP-SM.		2	13 10 23	43	44	SS-1	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		3	12 9 11	26	83	SS-2	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
	W	4																
@ 4.5'-6.0',7.5'-9.0', SP.		5	11 9 10	25	67	SS-3	-	-	-	-	-	-	-	-	-	14	A-1-b (V)	
@ 6.0', becomes wet.		6																
@ 6.0'-7.5',9.0'-19.5', SM.		7	10 16 19	46	67	SS-4	-	37	25	23	-	15 -	NP	NP	NP	13	A-1-b (0)	
		8	6 11 17	37	100	SS-5	-	-	-	-	-	-	-	-	-	22	A-1-b (V)	
@ 9.0', 1.5 feet sand heave; washed out with tricone.		9																
		10	7 13 15	37	67	SS-6	-	-	-	-	-	-	-	-	-	14	A-1-b (V)	
@ 10.5'-12.0', Specific Gravity = 2.70.		11	7 12 14	34	100	SS-7	-	28	39	19	-	14 -	NP	NP	NP	17	A-1-b (0)	
		12	4 15 13	37	78	SS-8	-	-	-	-	-	-	-	-	-	17	A-1-b (V)	
		13																
		14	8 15 15	40	72	SS-9	-	-	-	-	-	-	-	-	-	13	A-1-b (V)	
		15																
		16	9 18 18	47	56	SS-10	-	-	-	-	-	-	-	-	-	13	A-1-b (V)	
		17	8 18 16	45	100	SS-11	-	-	-	-	-	-	-	-	-	13	A-1-b (V)	
		18																
		19	10 17 15	42	100	SS-12	-	-	-	-	-	-	-	-	-	15	A-1-b (V)	
		20	3 13 14	36	67	SS-13	-	-	-	-	-	-	-	-	-	17	A-1-b (V)	
@ 21.0'-22.5', very dense.		21																
@ 21.0'-30.0', SM.		22	16 28 48	100	100	SS-14	-	31	31	21	-	17 -	NP	NP	NP	11	A-1-b (0)	
		23																
@ 24.0'-25.0', some silt.		24	8 16 18	45	100	SS-15	-	-	-	-	-	-	-	-	-	14	A-1-b (V)	
	726.5	25	18 17 19	47	100	SS-16	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
Very dense brown GRAVEL WITH SAND (A-1-b), some silt; wet.		26	14 24 24	63	56	SS-17	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
		27																
		28	20 26 23	65	50	SS-18	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
		29																
	721.5	EOB	14 25 20	59	83	SS-19	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	

NOTES: SEEPAGE AT 4.5 FEET; WATER LEVEL PRIOR TO WASHING OUT = 6.0 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 4.8 FEET

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 3 BAGS BENTONITE CHIPS; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-71 Microtunnel - 9/17/12 14:10

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PROJECT: I-71 MICROTUNNEL	DRILLING FIRM / OPERATOR: DLZ / K. CONRAD	DRILL RIG: CME 75 TRUCK	STATION / OFFSET: 877+67.36, 18.77 RT	EXPLORATION ID B-003-0-10
TYPE: STRUCTURE	SAMPLING FIRM / LOGGER: ODOT / M. EVENER	HAMMER: CME AUTOMATIC	ALIGNMENT: RAMP P4	
PID: 94271 BR ID:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 1/7/10	ELEVATION: 764.5 (MSL) EOB: 35.5 ft.	PAGE 1 OF 1
START: 6/29/10 END: 6/30/10	SAMPLING METHOD:	ENERGY RATIO (%): 79	COORD: 713809.410 N, 1833176.460 E	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil - 4.5"	764.1																	
FILL: Hard brown SILTY CLAY (A-6b), "and" fine to coarse sand, little gravel; damp. (CL)	761.0	1	9 10 13	30	83	SS-1	4.50	-	-	-	-	-	-	-	-	5	A-6b (V)	
FILL: Dense to very dense brown COARSE AND FINE SAND (A-3a), little to some gravel, trace silt; contains brick fragments; damp. (SP-SM)		4	17 18 17	46	89	SS-2	-	-	-	-	-	-	-	-	-	6	A-3a (V)	
		7	14 24 27	67	83	SS-3	-	-	-	-	-	-	-	-	-	5	A-3a (V)	
Very dense brown GRAVEL WITH SAND (A-1-b), trace silt; damp. (SP-SM)	756.0	9	14 21 29	66	94	SS-4	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		12	16 25 33	76	89	SS-5	-	33	36	24	-	7 -	NP	NP	NP	5	A-1-b (0)	
		14	10 24 30	71	83	SS-6	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
	747.0	17	7 18 35	70	89	SS-7	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
Very dense brown GRAVEL (A-1-a), "and" fine to coarse sand, trace silt; moist to wet. (SW-SM)		W 19	14 31 34	86	89	SS-8	-	-	-	-	-	-	-	-	-	7	A-1-a (V)	
	744.0	20	12 26 31	75	83	SS-9	-	-	-	-	-	-	-	-	-	10	A-1-a (V)	
Dense to very dense brown GRAVEL WITH SAND (A-1-b), trace silt; wet. (SW-SM)		21	8 17 21	50	100	SS-10	-	-	-	-	-	-	-	-	-	17	A-1-b (V)	
@ 22.0'-23.5', Specific Gravity = 2.69.		23	5 16 21	49	89	SS-11	-	23	39	32	-	6 -	NP	NP	NP	16	A-1-b (0)	
		24	12 24 32	74	94	SS-12	-	-	-	-	-	-	-	-	-	13	A-1-b (V)	
		26	11 14 25	51	100	SS-13	-	-	-	-	-	-	-	-	-	17	A-1-b (V)	
@ 26.5'-34.0', 0.8 to 1.2 feet sand heave; washed out with tricone.	736.5	27	16 25 29	71	67	SS-14	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
Very dense brown GRAVEL (A-1-a), "and" fine to coarse sand, trace silt; wet. (SP-SM)	735.0	29	12 25 29	71	83	SS-15	-	56	21	17	-	6 -	NP	NP	NP	10	A-1-a (0)	
Very dense gray COARSE AND FINE SAND (A-3a), some gravel, trace silt; wet. (SP-SM)	733.5	30	14 18 23	54	72	SS-16	-	-	-	-	-	-	-	-	-	19	A-3a (V)	
Very dense gray GRAVEL WITH SAND (A-1-b), some to "and" fine to coarse sand, trace silt; wet. (SW-SM)		32	13 34 35	91	78	SS-17	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		33	17 21 25	61	89	SS-18	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
	729.0	35	15 29 28	75	78	SS-19	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		EOB																

NOTES: SEEPAGE AT 19 FEET; WATER LEVEL PRIOR TO WASHING OUT = 20.1 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 16.7 FEET

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG BENTONITE CHIPS; BENTONITE GROUT

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT GDT - 9/17/12 14:08 - E:\1021100501 FRA-70\LOGS\0221-1004-01 MICROTUNNEL FOR EAST INT.GPJ

PROJECT: I-71 MICROTUNNEL	DRILLING FIRM / OPERATOR: DLZ / J. NELSON	DRILL RIG: CME 75 TRUCK	STATION / OFFSET: 874+50.24, 32.54 RT	EXPLORATION ID B-004-0-10
TYPE: STRUCTURE	SAMPLING FIRM / LOGGER: DLZ / S. LARIMER	HAMMER: CME AUTOMATIC	ALIGNMENT: RAMP P4	
PID: 94271 BR ID:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 1/7/10	ELEVATION: 766.2 (MSL) EOB: 51.0 ft.	PAGE 1 OF 1
START: 7/1/10 END: 7/1/10	SAMPLING METHOD:	ENERGY RATIO (%): 64.7	COORD: 714126.170 N, 1833192.820 E	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	PIEZ.
Topsoil - 4"	765.9																	
Hard brown SILT AND CLAY (A-6a), some fine to coarse sand, some gravel; damp. (CL)	764.6		4 7 15	24	78	SS-1	4.5+	-	-	-	-	-	-	-	-	8	A-6a (V)	
Medium dense to dense brown GRAVEL WITH SAND (A-1-b), trace to little silt; damp to moist. (SW-SM)			15 12 15	29	100	SS-2	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
			5 11 11	24	67	SS-3	-	-	-	-	-	-	-	-	-	16	A-1-b (V)	
			6 8 10	19	67	SS-4	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
			6 9 11	22	72	SS-5	-	39	38	17	- 6 -		NP	NP	NP	4	A-1-b (0)	
			11 19 27	50	83	SS-6	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
@ 9.0'-25.5', dense to very dense.			11 23 30	57	89	SS-7	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
			18 31 36	72	100	SS-8	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
			6 20 34	58	83	SS-9	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
			7 23 29	56	89	SS-10	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
@ 15.0'-36.0', PID = 0.1 to 3.0 ppm.			6 27 38	70	89	SS-11	-	36	26	26	- 12 -		NP	NP	NP	5	A-1-b (0)	
			19 27 37	69	89	SS-12	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
		W	21 24 29	57	83	SS-13	-	-	-	-	-	-	-	-	-	15	A-1-b (V)	
@ 19.5', becomes gray.			8 13 21	37	78	SS-14	-	-	-	-	-	-	-	-	-	16	A-1-b (V)	
			11 21 21	45	100	SS-15	-	-	-	-	-	-	-	-	-	15	A-1-b (V)	
@ 24.0', 1.3 feet sand heave; washed out with tricone.			6 17 29	50	89	SS-16	-	-	-	-	-	-	-	-	-	16	A-1-b (V)	
@ 24.0'-25.5', Specific Gravity = 2.72.			9 24 27	55	67	SS-17	-	41	36	15	- 8 -		NP	NP	NP	13	A-1-b (0)	
	740.6																	
Very dense gray GRAVEL (A-1-a), some fine to coarse sand, trace silt; wet. (GW-GM)			15 40 41	87	78	SS-18	-	-	-	-	-	-	-	-	-	9	A-1-a (V)	
	738.5																	
Very dense gray COARSE AND FINE SAND (A-3a), little to some gravel, trace silt; wet. (SW-SM)			15 26 32	63	89	SS-19	-	-	-	-	-	-	-	-	-	12	A-3a (V)	
			18 47 47	101	100	SS-20	-	-	-	-	-	-	-	-	-	13	A-3a (V)	
@ 30.0'-51.0', 0.4 to 3.9 feet sand heave; washed out with tricone.			9 35 42	83	94	SS-21	-	-	-	-	-	-	-	-	-	8	A-3a (V)	
	734.7		28 50/5"	-	91	SS-22	-	-	-	-	-	-	-	-	-	8	A-1-a (V)	
Very dense gray GRAVEL (A-1-a), some fine to coarse sand, trace silt; wet. (SW-SM)																		
			20 40 46	93	78	SS-23	-	-	-	-	-	-	-	-	-	6	A-1-a (V)	
			18 34 35	74	89	SS-24	-	57	25	10	- 8 -		NP	NP	NP	9	A-1-a (0)	
			11 23 35	63	78	SS-25	-	-	-	-	-	-	-	-	-	5	A-1-a (V)	
	728.7																	
Very dense gray FINE SAND (A-3), trace silt; wet. (SP-SM)		FS	15 23 25	52	78	SS-26	-	-	-	-	-	-	-	-	-	19	A-3 (V)	
	727.2																	
Very dense gray COARSE AND FINE SAND (A-3a), little gravel, trace silt; wet. (SP-SM)	726.5		10 27 28	59	100	SS-27A SS-27B	-	-	-	-	-	-	-	-	-	16 12	A-3a (V) A-1-b (V)	
Very dense gray GRAVEL WITH SAND (A-1-b), some to "and" fine to coarse sand, trace silt; wet. (SP-SM)			10 29 35	69	83	SS-28	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
			15 28 31	64	89	SS-29	-	-	-	-	-	-	-	-	-	14	A-1-b (V)	
			12 25 38	68	83	SS-30	-	44	29	20	- 7 -		NP	NP	NP	11	A-1-b (0)	
			23 31 36	72	100	SS-31	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
			21 37 37	80	89	SS-32	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
			18 42 46	95	94	SS-33	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
	715.2	EOB	21 29 33	67	89	SS-34	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	

NOTES: SEEPAGE AT 18.8 FEET; WATER LEVEL PRIOR TO WASHING OUT = 18.6 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 17.9 FEET

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 2 BAGS BENTONITE CHIPS; 1 BUCKET BENTONITE PELLETS; 17 BAGS SAND

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT GDT - 9/17/12 14:08 - E:\1021\100501 FRA-70\LOGS\0221-1004-01 MICROTUNNEL FOR EAST INT.GPJ

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-034-0-08 | *Location:* | *Date Drilled:* 8/7/2008 to 8/14/2008

WATER OBSERVATIONS: Water seepage at: 5.5', 10.5', 20.5', 25.5', 62.0'
Water level at completion:
FIELD NOTES: Advanced boring using 4.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL; Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	751.5														
0.3	751.2						Topsoil - 3"								
		19 35 14	8	1			Brick Fragments								52
3.5	748.0														
5		5 7 9	3	2		1.5	FILL: Stiff brown SANDY SILT (A-4a), little fine to coarse sand, little gravel; contains numerous 1/8"-1/4" size brick fragments; moist.								
6.0	745.5														
		2 5 6	16	3			FILL: Medium dense brown GRAVEL WITH SAND (A-1-b), little silt; contains numerous 1/8"-1/4" size brick fragments; wet.		41	32	---	12	--15--		
8.5	743.0														
10		2 4 WOH	8	4			Brick Fragments								
11.0	740.5														
		4 6 20	10	5		1.75	FILL: Stiff brown and gray SANDY SILT (A-4a), some fine to coarse sand, some gravel; contains brick and rock fragments; moist.								
		15 25 27	18	6		--									55
15															
16.0	735.5														
		6 2 4	6	7			FILL: Loose brown GRAVEL WITH SAND (A-1-b), little silt; contains few 1/8'-1/2' size brick fragments; wet.								
18.5	733.0														
		11 13 16	13	8		4.5+	Hard gray SILT AND CLAY (A-6a), some fine to coarse sand, trace gravel; contains few 1/8'-1/2' size brick fragments; damp.								
20															
21.0	730.5														
		28 45 50/5	2	9			Very dense gray GRAVEL WITH SAND (A-1-b), trace silt; possible cobbles; wet.								50+
23.5	728.0														
		13 23 49	2	10		4.5+	Hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.								76
25	726.5														

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-034-0-08 | *Location:* | *Date Drilled:* 8/7/2008 to 8/14/2008

WATER OBSERVATIONS: Water seepage at: 5.5', 10.5', 20.5', 25.5', 62.0'
Water level at completion:
FIELD NOTES: Advanced boring using 4.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL; Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	726.5														
		6 11 14	12	11			Medium dense gray GRAVEL (A-1-a), little to some fine to coarse sand, trace silt; contains few brick fragments (likely picked up at higher elevation); wet.		74	15	---	6	--5--		
28.5	723.0														
		19 50/5	6	12			Very dense gray GRAVEL WITH SAND (A-1-b), little silt; wet.		36	34	---	15	--15--		50+
30															
31.0	720.5														
		6 4 4	18	13			Very loose to loose gray GRAVEL (A-1-a), little fine to coarse sand, trace silt; contains few brick fragments (likely picked up at higher elevation); wet.		81	12	---	4	--3--		
33.5	718.0														
		19 30 26	18	14			Very dense gray GRAVEL WITH SAND (A-1-b), trace to little silt; wet.		33	30	---	21	--16--		59
35															
		8 11 26	14	15			@ 36.0'-37.5', contains 3/4"x1-1/2" steel fragment - possible conduit fragment (likely picked up at higher elevation); wet.								
38.5	713.0														
		16 35 41	18	16			Very dense gray SILT (A-4b), trace silt, trace clay; contains occasional sand seams; wet.								80
40															
41.0	710.5														
		8 8 9	18	17			Medium dense gray GRAVEL (A-1-a), little fine to coarse sand; wet.		87	9	---	3	--1--		
44.0	707.5						@ 43.5'-44.0', fine sand seam.								
		18 25 30	18	18		<0.25	Very soft gray SILT AND CLAY (A-6a), some fine to coarse sand, trace gravel; wet.								58
45															
47.0	704.5														
		8 28 50/5	8	19			Very dense gray GRAVEL (A-1-a), some fine to coarse sand; wet.								50+
50	701.5														

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DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-034-0-08 | *Location:* | *Date Drilled:* 8/7/2008 to 8/14/2008

WATER OBSERVATIONS: Water seepage at: 5.5', 10.5', 20.5', 25.5', 62.0'
Water level at completion:
FIELD NOTES: Advanced boring using 4.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL; Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	701.5						Very stiff to hard gray SANDY SILT (A-4a), some to "and" fine to coarse sand, trace gravel; damp.								
55		20 18 18	8	20		3.75			5	14	---	21	46	14	
60		50/2	2	21		4.5+	@ 58.5'-62.0', possible cobbles.								50+
62.0	689.5														
							Boulder/cobble fragments.								
65		50/5	3	22											50+
67.0	684.5														
							Very dense gray GRAVEL WITH SAND (A-1-b), some fine to coarse sand, little silt; possible cobbles; wet.								
70		50/2	2	23											50+
72.0	679.5														
							Very dense gray COARSE AND FINE SAND (A-3a), little gravel, trace silt; possible cobbles; wet.								
75	676.5	37 50/5	9	24											50+

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-034-0-08 | *Location:* | *Date Drilled:* 8/7/2008 to 8/14/2008

WATER OBSERVATIONS: Water seepage at: 5.5', 10.5', 20.5', 25.5', 62.0'
Water level at completion:
FIELD NOTES: Advanced boring using 4.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL; Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	676.5						Very dense gray GRAVEL WITH SAND (A-1-b), some silt; moist.								
80		25 38 50/5	15	25					28	31	---	9	--32--		50+
85		21 32 47	18	26											88
87.0	664.5														
							Very dense gray SANDY SILT (A-4a), some gravel; moist.								
90		22 35 50/5	17	27											50+
92.0	659.5														
							Very dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, little silt; wet.								
95		35 50/5	9	28											50+
97.0	654.5														
							Very stiff gray SANDY SILT (A-4a), some fine to coarse sand, some gravel; possible cobbles; moist.								
100	651.5	50/5	5	29		3.25									50+

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DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | Project: FRA-70-8.93 | Job No. 0221-1004.01

LOG OF: Boring B-034-0-08 | Location: | Date Drilled: 8/7/2008 to 8/14/2008

WATER OBSERVATIONS: Water seepage at: 5.5', 10.5', 20.5', 25.5', 62.0'
Water level at completion:
FIELD NOTES: Advanced boring using 4.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL; Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	651.5						Very dense gray GRAVEL WITH SAND (A-1-b), little to some silt; wet.								
							@ 100.0'-105.0', possible cobbles.								
105		37 50/5	6	30											50+ ○
110		30 33 33	18	31					25	47	---	16	--12--		● 69 ○
115.0 115	636.5	23 42 50/3	12	32											50+ ○
115.5	636.0	50/3	3	33			Severely weathered gray SHALE.								50+ ○
		Core 60"	Rec 39"	RQD 55%	R-1		Shale, dark gray, highly to severely weathered, weak, thinly laminated, fissile, calcareous, pyritic, jointed, fractured, tight, slightly rough, RQD 69%, Loss 12%. Contains occasional large (up to 1" diameter) pyritic inclusion. @ 116.6'-117.0', encountered thin limestone bed. @ 117.5'-119.2', 121.1'-121.7', possible lost recovery.								
120		Core 60"	Rec 53"	RQD 77%	R-2		@ 121.7', moderately fractured, highly weathered.								
125	626.5														

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | Project: FRA-70-8.93 | Job No. 0221-1004.01

LOG OF: Boring B-034-0-08 | Location: | Date Drilled: 8/7/2008 to 8/14/2008

WATER OBSERVATIONS: Water seepage at: 5.5', 10.5', 20.5', 25.5', 62.0'
Water level at completion:
FIELD NOTES: Advanced boring using 4.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL; Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	626.5						Shale, dark gray, highly to severely weathered, weak, thinly laminated, fissile, calcareous, pyritic, jointed, fractured, tight, slightly rough, RQD 69%, Loss 12%. Contains occasional large (up to 1" diameter) pyritic inclusion.								
		Core 60"	Rec 60"	RQD 57%	R-3		@ 126.7'-127.2', 129.8'-130.4', 131.1'-131.5', high angle fractures.								
130							@ 130.0' -130.3', qu = 3978 psi								
		Core 60"	Rec 60"	RQD 85%	R-4		@ 133.5'-133.7', encountered thin limestone bed.								
135.5 135	616.0						Bottom of Boring - 135.5'								
140															
145															
150															

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 754+95.15, 92.28 LT | EXPLORATION ID B-035-1-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: I-70
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 751.7 (MSL) EOB: 75.0 ft. | PAGE 1 OF 3
START: 8/2/11 END: 8/3/11 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712045.650 N, 1830004.680 E

MATERIAL DESCRIPTION AND NOTES	ELEV. 751.7	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Asphalt - 5" Concrete - 10"	750.4	1																
FILL: Very stiff to hard brown SILTY CLAY (A-6b), little fine to coarse sand, trace gravel; damp.		2	4 5 6	14	56	SS-1	4.50	-	-	-	-	-	-	-	-	19	A-6b (V)	
@ 3.5'-7.5', contains occasional rust stains.		4	4 5 7	16	100	SS-2	4.5+	-	-	-	-	-	-	-	-	15	A-6b (V)	
@ 6.0'-7.5', contains occasional brick fragments.		6	7 7 9	21	17	SS-3	3.25	-	-	-	-	-	-	-	-	13	A-6b (V)	
	743.2	8																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp.		9	13 15 20	46	83	SS-4	4.5+	12	11	20	33	24	24	15	9	10	A-4a (4)	
		11	10 12 13	33	100	SS-5	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
		13	6 11 12	30	100	SS-6	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
		15	8 14 15	38	100	SS-7	4.5+	9	12	21	36	22	22	14	8	9	A-4a (5)	
		17	10 24 26	66	83	SS-8	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
		19	8 13 19	42	100	SS-9	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
	728.2	21																
Very dense brown GRAVEL WITH SAND (A-1-b), trace to little silt; damp.	726.7	23	14 33 40	96	100	SS-10	-	44	29	17	-	10 -	NP	NP	NP	5	A-1-b (0)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:03

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 754+95.15, 92.28 LT | START: 8/2/11 | END: 8/3/11 | PG 2 OF 3 | B-035-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 726.7	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense brown GRAVEL WITH SAND (A-1-b), trace to little silt; wet.		W 26	20 23 25	63	100	SS-11	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		28	28 46 50/5"	-	100	SS-12	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
		30	21 50/5"	-	100	SS-13	-	28	33	30	-	9 -	NP	NP	NP	13	A-1-b (0)	
		32	12 30 50/5"	-	100	SS-14	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
@ 36.0', 3.0 feet sand heave; washed out with tricone.		34	32 43 33	100	78	SS-15	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
		36	24 32 23	72	100	SS-16	-	29	41	17	-	13 -	NP	NP	NP	11	A-1-b (0)	
NOTE: Hole caved to 40.0' when augers removed.		38	17 28 28	74	56	SS-17	-	-	-	-	-	-	-	-	-	13	A-1-b (V)	
		40	19 34 31	86	78	SS-18	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		42	25 35 31	87	89	SS-19	-	49	26	15	-	10 -	NP	NP	NP	10	A-1-b (0)	
@ 48.5', poor recovery; possible cobble/boulder.		44	50/5"	-	100	SS-20	-	-	-	-	-	-	-	-	-	7		
		46																
		48																
		50																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:03

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PID: 77370	BR ID:	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 754+95.15, 92.28 LT	START: 8/2/11	END: 8/3/11	PG 3 OF 3	B-035-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Hard gray SANDY SILT (A-4a), little fine to coarse sand, trace gravel; damp.	699.7	52																
		53																
@ 53.5', poor recovery; possible cobble/boulder.		54	50/3"	-	100	SS-21	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		55																
		56																
	694.7	57																
Dense to very dense gray GRAVEL WITH SAND (A-1-b), trace silt; wet.		58																
		W 59	13 13 21	45	44	SS-22	-	41	33	19	-	7 -	NP	NP	NP	10	A-1-b (0)	
		60																
		61																
		62																
		63																
		64	34 50/5"	-	100	SS-23	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
		65																
		66																
		67																
		68																
		69	25 37 31	90	28	SS-24	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
		70																
		71																
		72																
		73																
		74	25 35 48	109	100	SS-25	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
	676.7	EOB 75																

NOTES: SEEPAGE AT 26.0 FEET AND 58.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 29.4 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 27.2 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 3 BAGS BENTONITE CHIPS; 1 BAG QUICKCRETE

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:03

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-036-0-08 | *Location:* Sta. 755+56.04, 101.17 ft Rt of I-70 CL | *Date Drilled:* 7/14/2008 to 7/16/2008

WATER OBSERVATIONS: Water seepage at: 14.0' Water level at completion:

FIELD NOTES: Advanced boring using 3.25" diameter hollowstem augers.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	734.7						Asphalt - 9.5" Concrete - 11" Base - 4"								
2.0	732.7	16 22 27	13	1			Dense to very dense brown GRAVEL WITH SAND (A-1b), trace to little silt; damp to moist.								
5		20 24 25	13	2											
		12 15 23	14	3					17	43	---	23	--17--		
		14 24 38	14	4					22	44	---	21	--13--		63
		16 23 25	14	5					32	36	---	20	--12--		
10		19 32 34	15	6					36	34	---	17	--13--		67
11.0	723.7	10 25 26	15	7			Very dense brown COARSE AND FINE SAND (A-3a), little silt, trace gravel; moist.		1	41	---	44	--14--		52
12.5	722.2	17 29 31	16	8			Dense to very dense brown GRAVEL WITH SAND (A-1b), little silt; moist to wet. @ 14.0', becomes wet.								61
15		4 22 27	14	9											
		6 18 21	15	10											
		9 20 21	13	11											
		28 32 50/5	14	12					37	31	---	16	--16--		50+
20		17 30 35	12	13											66
		18 28 29	13	14											58
25	709.7														

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-036-0-08 | *Location:* Sta. 755+56.04, 101.17 ft Rt of I-70 CL | *Date Drilled:* 7/14/2008 to 7/16/2008

WATER OBSERVATIONS: Water seepage at: 14.0' Water level at completion:

FIELD NOTES: Advanced boring using 3.25" diameter hollowstem augers.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	709.7						Very dense brown COARSE AND FINE SAND (A-3a), little silt, trace to little gravel; wet.								
		19 32 33	18	15											66
28.5	706.2														
		14 30 41	14	16		2.5	Stiff to very stiff gray SANDY SILT (A-4a), some to "and" fine to coarse sand, trace to little gravel; moist. @ 29.0'-29.5', sandy silt seam.		5	12	---	38	42	3	72
30															
		24 42 50/5	14	17		--	@ 33.5'-34.9', contains sand seams.		10	23	---	25	35	7	50+
35															
		29 50/4	10	18		1.0	@ 39.0'-39.3', silt seam.								50+
40															
42.0	692.7														
							Very dense gray GRAVEL WITH SAND (A-1b), trace to little silt; wet.								
		17 49 39	14	19					43	33	---	14	--10--		90
45							@ 45.0'-55.0', difficult drilling.								
		23 42 50/5	12	20			@ 48.5', 2.3 feet sand heave.								50+
50	684.7														

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DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-036-0-08 | *Location:* Sta. 755+56.04, 101.17 ft Rt of I-70 CL | *Date Drilled:* 7/14/2008 to 7/16/2008

WATER OBSERVATIONS: Water seepage at: 14.0' | Water level at completion:

FIELD NOTES: Advanced boring using 3.25" diameter hollowstem augers.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	684.7						Very dense gray GRAVEL WITH SAND (A-1-b), trace to little silt; wet.								
55		45 50/4	9	21			@ 53.5'-54.3', contains silty clay seams.								50+
60		19 35 45	12	22					30	38	---	21	--11--		● 82
65		33 50/5	11	23			@ 63.5', 1.9 feet sand heave. @ 63.5'-64.4', brown.								50+
70		20 39 50/5	13	24											50+
75	659.7	35 46 50/6	13	25											50+

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-036-0-08 | *Location:* Sta. 755+56.04, 101.17 ft Rt of I-70 CL | *Date Drilled:* 7/14/2008 to 7/16/2008

WATER OBSERVATIONS: Water seepage at: 14.0' | Water level at completion:

FIELD NOTES: Advanced boring using 3.25" diameter hollowstem augers.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	659.7						Very dense gray GRAVEL WITH SAND (A-1-b), trace to little silt; wet.								
80		49 50/3	8	26			@ 78.5', 0.9 feet sand heave.								50+
85		28 46 48	11	27					42	35	---	11	--12--		● 96
90		50/1	0	28			@ 88.5'-93.5', encountered boulders.								50+
93.5	641.2														
94.9	639.8	27 50/3	8	29			Severely weathered gray SHALE.								50+
96.6	638.1	Core 68"	Rec 68"	RQD 93%	R1		Shale, blue-gray, highly weathered, very weak to weak, laminated, friable, fissile, pyritic, jointed, moderately fractured to fractured, tight, slightly rough, RQD 100%, Loss 0%. Contains dark gray, well cemented shale zones [thin, dark bands]. Dark shale zones are typically 1-2 inches thick, spaced at intervals of 12 to 18 inches.								
100	634.7						Interbedded Shale (90%) and Limestone (10%)								

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-036-0-08 | *Location:* Sta. 755+56.04, 101.17 ft Rt of I-70 CL | *Date Drilled:* 7/14/2008 to 7/16/2008

WATER OBSERVATIONS: Water seepage at: 14.0' Water level at completion:

FIELD NOTES: Advanced boring using 3.25" diameter hollowstem augers.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL ⊢ Blows per foot - ○ / Non-Plastic - NP ⊣ LL (10 20 30 40)
	634.7	c:68"	r:68"	q:93%	R1		Interbedded Shale (90%) and Limestone (10%) RQD 74% Loss 0%; Shale, dark gray, highly weathered, weak, laminated, friable, fissile, pyritic, jointed, moderately fractured to fractured, tight, slightly rough; Limestone, gray, moderately weathered, strong, thinly bedded, pyritic, slightly rough. @ 103.7' - 104.2', qu = 1442 psi								
105		Core 60"	Rec 60"	RQD 83%	R2										
110		Core 60"	Rec 60"	RQD 60%	R3										
115		Core 60"	Rec 60"	RQD 68%	R4										
115.6	619.1						Bottom of Boring - 115.6'								
120															
125															

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-037-0-08 | *Location:* Sta. 756+80.52, 69.18 ft Lt of I-70 CL | *Date Drilled:* 7/21/2008 to 7/24/2008

WATER OBSERVATIONS: Water seepage at: 21.0', 25.4', 33.0', 40.5'
Water level at completion:

FIELD NOTES: Advanced boring using 3.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	749.1						Asphalt - 6.5" Concrete - 9.5" Base - 5"								
1.8	747.3	5 13 16	0	1		--	Stiff brown and gray SILT AND CLAY (A-6a), some fine to coarse sand, some gravel; increased moisture content due to pavement coring; damp to moist.								
5		9 13 14	5	2		1.75			29	15	---	17	24	15	
8.5	740.6	6 10 14	1	3		--									
		3 8 12	2	4		--	Very stiff gray SILT AND CLAY (A-6a), little to some fine to coarse sand, little gravel; damp to moist.								
10		4 35 25	18	5		3.75									63
13.5	735.6	10 16 16	2	6		4.25	Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.								
15		10 11 12	1	7		--									
20.0	729.1	7 12 21	18	8		4.5+			8	11	---	22	40	19	
20		10 21 22	5	9		0.75	Hard gray SILT AND CLAY (A-6a), some fine to coarse sand, little gravel; damp.		18	14	---	20	32	16	
23.0	726.1	12 24 29	18	10		4.5+	@ 20.0'-21.5', stiff, wet; possible sand and gravel seam.		13	12	---	21	36	18	56
25	724.1	19 48 50/5 16	2	11		4.5+	Hard gray SANDY SILT (A-4a), trace to little gravel; contains sand seams; damp.		10	15	---	28	32	15	50+

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-037-0-08 | *Location:* Sta. 756+80.52, 69.18 ft Lt of I-70 CL | *Date Drilled:* 7/21/2008 to 7/24/2008

WATER OBSERVATIONS: Water seepage at: 21.0', 25.4', 33.0', 40.5'
Water level at completion:

FIELD NOTES: Advanced boring using 3.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	724.1														
25.4	723.7	24 24	18	12A 12B		4.0	Hard gray SANDY SILT (A-4a), trace to little gravel; damp.								
		16 24 27	1	13			Very dense gray COARSE AND FINE SAND (A-3a), some silt, little gravel; wet.								54
28.5	720.6	14 16 17	18	14		2.5	Very stiff gray SILT AND CLAY (A-6a), some fine to coarse sand, trace to little gravel; damp.								
30		5 12 17	18	15		4.0			6	10	---	18	41	25	
33.5	715.6	19 45 50/5	12	16			Very dense gray GRAVEL WITH SAND (A-1-b), little silt; wet.		36	36	---	12	--16--		50+
35		16 50/5	5	17			@ 36.0'-36.9', contains cobble fragments.								50+
38.5	710.6	42 50/3	5	18		4.5+	Hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.								50+
40															
41.0	708.1	31 50/4	10	19			Very dense gray COARSE AND FINE SAND (A-3a), trace to little silt; wet.								50+
		42 50/5	10	20					0	8	---	75	--17--		50+
45															
		50/3	3	21			@ 48.5'-48.8', possible cobbles.								50+
50	699.1														

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | Project: FRA-70-8.93 | Job No. 0221-1004.01

LOG OF: Boring B-037-0-08 | Location: Sta. 756+80.52, 69.18 ft Lt of I-70 CL | Date Drilled: 7/21/2008 to 7/24/2008

WATER OBSERVATIONS: Water seepage at: 21.0', 25.4', 33.0', 40.5'
Water level at completion:
FIELD NOTES: Advanced boring using 3.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	699.1														
55		29 50/5	11	22		4.5+	Hard gray SILT (A-4b), little fine to coarse sand, trace gravel; damp.		3	3	---	10	63	21	50+
57.0	692.1														
60		25 50/3	3	23			Very dense gray GRAVEL WITH SAND (A-1-b), some fine to coarse sand, trace silt; wet. @ 59.0'-75.0', encountered cobbles and boulders.								50+
62.0	687.1														
65		45 50/5	4	24			Very dense gray COARSE AND FINE SAND (A-3a), little to some silt, little gravel; wet.		17	24	---	39	--20--		50+
70		50/3	3	25											50+
75	674.1	50/4	1	26			@ 73.5'-73.8', drove sampler on gravel; poor recovery.								50+

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | Project: FRA-70-8.93 | Job No. 0221-1004.01

LOG OF: Boring B-037-0-08 | Location: Sta. 756+80.52, 69.18 ft Lt of I-70 CL | Date Drilled: 7/21/2008 to 7/24/2008

WATER OBSERVATIONS: Water seepage at: 21.0', 25.4', 33.0', 40.5'
Water level at completion:
FIELD NOTES: Advanced boring using 3.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	674.1														
80		47 50/4	5	27			Very dense gray COARSE AND FINE SAND (A-3a), little gravel, trace silt; wet. @ 75.0'-100.0', difficult advancement of casing due to gravel and boulders.								50+
85		50/4	1	28											50+
90		27 50/5	5	29											50+
92.0	657.1														
95		14 14 34	3	30			Very dense gray GRAVEL (A-1-a); wet.								
100	649.1	50/4	1	31											50+

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-037-0-08 | *Location:* Sta. 756+80.52, 69.18 ft Lt of I-70 CL | *Date Drilled:* 7/21/2008 to 7/24/2008

WATER OBSERVATIONS: Water seepage at: 21.0', 25.4', 33.0', 40.5'
Water level at completion:
FIELD NOTES: Advanced boring using 3.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	649.1						Very stiff to hard gray SILTY CLAY (A-6b), trace fine to coarse sand; moist.								
105		23 32 35	18	32		2.75			0	1	--	3	49	47	70 ○
108.5	640.6	50/5	5	33		4.5+	Severely weathered gray SHALE.								50+ ○
110.0 110	639.1						Interbedded Shale (92%) and Limestone (8%) RQD 76% LOSS 0%; Shale, dark gray, highly weathered, weak, laminated, calcareous, moderately fractured to fractured; Limestone, light gray, moderately weathered, moderately strong to strong, thinly bedded.								
		Core 60"	Rec 60"	RQD 60%	R1										
115							@ 110.8'-111.2', 111.7'-111.8', 113.2'-113.5', 119.6'-120.0', 122.9'-123.0', high angle fractures.								
		Core 60"	Rec 60"	RQD 83%	R2										
120															
		Core 60"	Rec 60"	RQD 77%	R3		@ 121.2' - 121.7', qu = 1546 psi								
125	624.1						@ 122.1'-125.4', highly to severely weathered.								

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Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-037-0-08 | *Location:* Sta. 756+80.52, 69.18 ft Lt of I-70 CL | *Date Drilled:* 7/21/2008 to 7/24/2008

WATER OBSERVATIONS: Water seepage at: 21.0', 25.4', 33.0', 40.5'
Water level at completion:
FIELD NOTES: Advanced boring using 3.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	624.1						Interbedded Shale (92%) and Limestone (8%) RQD 76% LOSS 0%; Shale, dark gray, highly weathered, weak, laminated, calcareous, moderately fractured to fractured; Limestone, light gray, moderately weathered, moderately strong to strong, thinly bedded.								
		Core 60"	Rec 60"	RQD 82%	R4		@ 125.9'-126.0', high angle fracture.								
130.0 130	619.1						Bottom of Boring - 130.0'								
135															
140															
145															
150															

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 40+90.41, 27.91 RT | EXPLORATION ID B-037-1-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: FULTON STREET
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 745.5 (MSL) EOB: 65.0 ft. | PAGE 1 OF 3
START: 8/1/11 END: 8/2/11 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712089.400 N, 1830303.100 E

MATERIAL DESCRIPTION AND NOTES	ELEV. 745.5	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Asphalt - 7" Concrete = 10"	744.1	1																
Hard gray SILT AND CLAY (A-6a), some fine to coarse sand, trace gravel; damp.		2	4 7 6	17	56	SS-1	4.5+	-	-	-	-	-	-	-	-	10	A-6a (V)	
		3																
		4	12 8 12	26	100	SS-2	4.5+	-	-	-	-	-	-	-	-	9	A-6a (V)	
		5																
		6	8 11 10	28	44	SS-3	4.5+	7	11	20	33	29	25	14	11	10	A-6a (6)	
		7																
		8																
		9	6 5 9	18	78	SS-4	4.5+	-	-	-	-	-	-	-	-	11	A-6a (V)	
		10																
		11																
		12	16 18 19	49	11	SS-5	4.5+	-	-	-	-	-	-	-	-	9	A-6a (V)	
	732.0	13																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		14	10 10 14	32	100	SS-6	4.5+	11	10	21	35	23	22	14	8	10	A-4a (5)	
		15																
		16																
		17	10 23 20	57	100	SS-7	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
	727.0 W	18																
Dense gray FINE SAND (A-3), trace silt; wet.	F S	19	9 14 17	41	56	SS-8	-	-	-	-	-	-	-	-	-	15	A-3 (V)	
	724.5	20																
Hard gray SANDY SILT (A-4a), "and" fine to coarse sand, little gravel; damp.		21																
		22	5 15 10	33	100	SS-9	4.5+	18	16	23	26	17	20	13	7	8	A-4a (2)	
		23																
		24	4 12 16	37	100	SS-10	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:04

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 40+90.41, 27.91 RT | START: 8/1/11 | END: 8/2/11 | PG 2 OF 3 | B-037-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 720.5	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Hard gray SANDY SILT (A-4a), "and" fine to coarse sand, little gravel; damp. *(continued)*		26																
		27	10 19 16	46	78	SS-11	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
	717.0 W	28																
Medium dense gray GRAVEL WITH SAND (A-1-b), trace silt; wet.		29	3 8 13	28	72	SS-12	-	38	29	26	-	7 -	NP	NP	NP	13	A-1-b (0)	
	714.5	30																
Hard gray SANDY SILT (A-4a), some to "and" fine to coarse sand, little gravel; damp.		31																
		32	10 16 18	45	78	SS-13	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		33																
		34	10 16 21	49	100	SS-14	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
		35																
		36																
		37	8 14 16	40	100	SS-15	4.5+	12	14	23	30	21	20	14	6	10	A-4a (3)	
		38																
		39	10 14 19	43	100	SS-16	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		40																
		41																
		42																
		43																
		44	10 17 21	50	100	SS-17	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		45																
		46																
		47																
		48																
	696.2	49	12 32 31	83	100 -	SS-18A SS-18B	4.5+ -	- 56	- 28	- 13	- -	- 3 -	- NP	- NP	- NP	9 10	A-4a (V) A-1-a (0)	
Very dense gray GRAVEL (A-1-a), "and" fine to coarse sand, trace silt; wet.		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:04

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PID: 77370	BR ID: _____	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 40+90.41, 27.91 RT	START: 8/1/11	END: 8/2/11	PG 3 OF 3	B-037-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense gray GRAVEL (A-1-a), "and" fine to coarse sand, trace silt; wet. *(continued)*	693.7	52																
		53																
@ 53.5', 3.0 feet sand heave; washed out with tricone.		54	26 32 26	76	100	SS-19	-	-	-	-	-	-	-	-	-	8	A-1-a (V)	
		55																
		56																
		57																
		58																
		59	21 43 38	107	100	SS-20	-	-	-	-	-	-	-	-	-	10	A-1-a (V)	
		60																
		61																
		62																
		63																
		64	37 37 31	90	56	SS-21	-	-	-	-	-	-	-	-	-	8	A-1-a (V)	
	680.5	EOB 65																

NOTES: SEEPAGE AT 18.5 FEET AND 28.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 13.2 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 13.8 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 1 BAG BENTONITE CHIPS; 2 BAGS BENTONITE GROUT; 1 BAG QUICKCRETE

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:04

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PROJECT: I-70/I-71 EAST INTERCHANGE	DRILLING FIRM / OPERATOR: DLZ / K. CONRAD	DRILL RIG: CME 75 TRUCK	STATION / OFFSET: 759+54.18, 88.85 LT	EXPLORATION ID B-038-1-10
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: DLZ / M. EVENER	HAMMER: CME AUTOMATIC	ALIGNMENT: I-70	
PID: 77370 BR ID:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 1/7/10	ELEVATION: 739.5 (MSL) EOB: 70.0 ft.	PAGE 1 OF 3
START: 8/5/11 END: 8/5/11	SAMPLING METHOD: SPT	ENERGY RATIO (%): 79	COORD: 712114.710 N, 1830461.120 E	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil - 7"	739.5 / 738.9																	
Hard brownish gray SANDY SILT (A-4a), some to "and" fine to coarse sand, little gravel; damp.		1	22 7 9	21	67	SS-1	4.5+	-	-	-	-	-	-	-	-	11	A-4a (V)	
@ 3.5', becomes gray.		4	7 11 12	30	100	SS-2	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		7	13 22 24	61	100	SS-3	4.5+	18	11	23	30	18	21	13	8	8	A-4a (3)	
		9	10 23 22	59	0	SS-4	-	-	-	-	-	-	-	-	-	8	A-4a (V)	
		12	12 20 21	54	100	SS-5	4.5+	18	19	24	25	14	19	13	6	7	A-4a (1)	
Dense to very dense gray GRAVEL WITH SAM (A-1-b), trace to little silt; moist.	726.0 W	14	7 23 34	75	100	SS-6	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
		17	7 13 14	36	100	SS-7	-	31	23	36	-	10 -	NP	NP	NP	14	A-1-b (0)	
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.	721.0	19	12 26 23	65	78	SS-8	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		22	15 18 25	57	100	SS-9	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
	714.5	24	16 31 34	86	100	SS-10	4.5+	9	12	20	37	22	22	14	8	8	A-4a (5)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:04

PID: 77370	BR ID:	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 759+54.18, 88.85 LT	START: 8/5/11	END: 8/5/11	PG 2 OF 3	B-038-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Hard gray SILT (A-4b), little fine to coarse sand, trace gravel; damp.	714.5																	
		26	27 50/5"	-	100	SS-11	4.5+	-	-	-	-	-	-	-	-	9	A-4b (V)	
@ 26.0',33.5',38.5', poor recovery; possible cobble/boulder.	711.0																	
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.		29	25 34 34	90	100	SS-12	4.5+	8	14	19	36	23	22	14	8	8	A-4a (5)	
		34	40 50/5"	-	18	SS-13	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
@ 38.5', becomes grayish brown.		39	50/5"	-	80	SS-14	4.5+	-	-	-	-	-	-	-	-	6	A-4a (V)	
	697.5																	
Loose gray GRAVEL (A-1-a), little fine to coarse sand; wet. @ 43.5', 10.0 feet sand heave; washed out with tricone.	W																	
		44	0 0 4	5	11	SS-15	-	-	-	-	-	-	-	-	-	10	A-1-a (V)	
	692.5																	
Very dense gray GRAVEL WITH SAND (A-1-b), trace to little silt; wet.		49	33 35 25	79	100	SS-16	-	38	28	24	-	10 -	NP	NP	NP	9	A-1-b (0)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:04

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PID: 77370	BR ID:	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 759+54.18, 88.85 LT	START: 8/5/11	END: 8/5/11	PG 3 OF 3	B-038-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense gray GRAVEL WITH SAND (A-1-b), trace to little silt; wet. *(continued)*	687.7	52																
		53																
		54	6 23 28	67	28	SS-17	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
		55																
		56																
		57																
		58																
		59	5 25 27	68	56	SS-18	-	41	40	10	-	9 -	NP	NP	NP	10	A-1-b (0)	
		60																
		61																
		62																
		63																
		64	12 19 20	51	100	SS-19	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
		65																
		66																
		67																
		68																
		69	24 26 29	72	56	SS-20	-	-	-	-	-	-	-	-	-	14	A-1-b (V)	
	669.5	EOB 70																

NOTES: SEEPAGE AT 13.5 FEET AND 43.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 29.2 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 13.9 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 2 BAGS BENTONITE GROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:04

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 43+92.39, 8.5 LT | EXPLORATION ID B-039-1-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: FULTON STREET
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 757.7 (MSL) EOB: 75.0 ft. | PAGE 1 OF 3
START: 8/10/11 END: 8/10/11 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712169.690 N, 1830596.640 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Asphalt - 4" Concrete - 12"	757.7																	
	756.4	1																
FILL: Medium dense gray GRAVEL WITH SAND AND SILT (A-2-4), trace clay; damp.		2	12 8 9	22	44	SS-1	-	-	-	-	-	-	-	-	-	5	A-2-4 (V)	
	754.2	3																
FILL: Very stiff brown SANDY SILT (A-4a), "and" fine to coarse sand, little gravel; damp.		4	4 2 3	7	56	SS-2	3.50	-	-	-	-	-	-	-	-	15	A-4a (V)	
	751.7	5																
FILL: Very stiff brown SILT AND CLAY (A-6a), some fine to coarse sand, trace to little gravel; damp.		6	2 1 2	4	100	SS-3	2.25	-	-	-	-	-	-	-	-	13	A-6a (V)	
		7																
@ 8.5'-10.0', contains occasional 1-inch brick fragments.		8																
		9	2 6 24	40	100	SS-4	2.00	10	11	20	34	25	27	16	11	15	A-6a (5)	
	746.7	10																
FILL: Brick and slag fragments.		11																
		12	12 45 23	90	56	SS-5	-	-	-	-	-	-	-	-	-	-		
@ 13.5'-17.5', cuttings contain large, angular gravel fragments with trace to little silty clay.		13																
		14	15 14 15	38	0	SS-6	-	-	-	-	-	-	-	-	-	-		
		15																
		16																
		17	24 25 23	63	0	SS-7	-	-	-	-	-	-	-	-	-	-		
	739.2	18																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp.		19	13 12 13	33	100	SS-8	4.5+	16	11	20	31	22	23	14	9	9	A-4a (4)	
		20																
	W	21																
@ 21.0'-22.5', wet silty sand seam.		22	28 22 13	46	6	SS-9	-	-	-	-	-	-	-	-	-	16	A-4a (V)	
		23																
		24	18 28 34	82	100	SS-10	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
	732.7																	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:04

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 43+92.39, 8.5 LT | START: 8/10/11 | END: 8/10/11 | PG 2 OF 3 | B-039-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Hard gray SILT AND CLAY (A-6a), some fine to coarse sand, trace gravel; damp.	732.7																	
		26																
		27	33 33 41	97	61	SS-11	4.5+	5	14	20	38	23	26	15	11	8	A-6a (6)	
		28																
		29	20 50/5"	-	100	SS-12	4.5+	-	-	-	-	-	-	-	-	7	A-6a (V)	
		30																
		31																
		32	23 35 43	103	100	SS-13	4.5+	-	-	-	-	-	-	-	-	8	A-6a (V)	
	724.2	33																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.		34	28 43 40	109	100	SS-14	4.5+	7	15	15	39	24	23	14	9	8	A-4a (6)	
		35																
		36																
		37	31 35 42	101	100	SS-15	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
	719.2	38																
Hard gray COARSE AND FINE SAND (A-3a), little silty clay, little gravel; wet.	W	39	43 50/5"	-	100	SS-16	-	-	-	-	-	-	-	-	-	9	A-3a (V)	
	716.7	40																
Very stiff to hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.		41	36 50/4"	-	100	SS-17	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		42																
		43																
		44	24 29 35	84	100	SS-18	3.50	5	10	22	38	25	22	14	8	11	A-4a (6)	
		45																
		46																
		47	23 40 44	111	100	SS-19	4.5+	-	-	-	-	-	-	-	-	11	A-4a (V)	
@ 48.5'-49.1', some gravel; moist.		48																
	708.6	49	42 50/4"	-	100 -	SS-20A SS-20B	3.00 -	-	-	-	-	-	-	-	-	10 10	A-4a (V) A-1-b (V)	
Very dense gray GRAVEL WITH SAND (A-1-b), some silt; wet.	W	50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:04

PID: 77370	BR ID:	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 43+92.39, 8.5 LT	START: 8/10/11	END: 8/10/11	PG 3 OF 3	B-039-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense gray GRAVEL WITH SAND (A-1-b), trace to little silt; wet.	705.9	52																
	705.7	53																
@ 53.5', 4.0 feet sand heave; washed out with tricone.		54	40 49 39	116	100	SS-21	-	41	25	23	-	11 -	NP	NP	NP	8	A-1-b (0)	
		55																
		56																
		57																
		58																
		59	23 35 32	88	89	SS-22	-	-	-	-	-	-	-	-	-	15	A-1-b (V)	
		60																
		61																
		62																
		63																
		64	20 23 22	59	100	SS-23	-	24	44	26	-	6 -	NP	NP	NP	15	A-1-b (0)	
		65																
		66																
		67																
		68																
		69	23 28 29	75	100	SS-24	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
		70																
		71																
		72																
		73																
		74	27 48 44	121	100	SS-25	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
	682.7	75 EOB																

NOTES: SEEPAGE AT 21.0 FEET AND 38.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 40.3 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 31.7 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; 3 BAGS BENTONITE CHIPS; 3 BAGS BENTONITE GROUT; 2 BAGS QUICKCRETE

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:04

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-040-0-08 | *Location:* Sta. 760+61.33, 137.60 ft Rt. of I-70 CL | *Date Drilled:* 8/15/2008 to 8/19/2008

WATER OBSERVATIONS:
Water seepage at: 10.5', 23.0', 47.0'
Water level at completion: 29.7' (beginning of shift, 8/18/08) 29.3' (includes drilling water)
FIELD NOTES:
Advanced boring using 4.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	758.9														
		5 4 4	10	1		0.75	POSSIBLE FILL: Medium stiff brownish gray SILT AND CLAY (A-6a), little fine to coarse sand, trace gravel; brick fragments coating sample; moist.								
3.5	755.4														
5		4 3 4	1	2		--	Medium stiff brown SILT AND CLAY (A-6a), some fine to coarse sand, trace gravel; moist.								
		9 11 11	14	3		3.0	@ 6.0'-7.5', very stiff.		8	11	---	18	37	26	
10		6 13 8	4	4		<0.25	@ 8.5'-10.0', very soft, some gravel.								
11.0	747.9														
		8 12 15	2	5			Medium dense gray GRAVEL (A-1-a); wet.								
13.5	745.4														
15		6 12 10	18	6		3.0	Very stiff gray SILT AND CLAY (A-6a), some fine to coarse sand, trace gravel; damp to moist.								
							@ 13.5'-15.0', contains silt and sand seams.								
		8 12 18	18	7		4.0									
20		10 14 20	3	8		2.75									
21.0	737.9														
		12 14 14	15	9		2.0	Stiff to very stiff gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; moist.		12	10	---	20	36	22	
23.5	735.4														
25	733.9	14 18 25	2	10			Dense gray GRAVEL WITH SAND, SILT, AND CLAY (A-2-6); possible cobbles; wet.								

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-040-0-08 | *Location:* Sta. 760+61.33, 137.60 ft Rt. of I-70 CL | *Date Drilled:* 8/15/2008 to 8/19/2008

WATER OBSERVATIONS:
Water seepage at: 10.5', 23.0', 47.0'
Water level at completion: 29.7' (beginning of shift, 8/18/08) 29.3' (includes drilling water)
FIELD NOTES:
Advanced boring using 4.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	733.9														
		10 15 29	2	11			Dense to very dense gray GRAVEL (A-1-a), some fine to coarse sand; possible cobbles; wet.								
30		14 24 32	2	12			@ 28.5'-30.0', trace fine to coarse sand.								59
31.0	727.9														
		11 17 22	18	13		4.5+	Hard gray SANDY SILT (A-4a), some to "and" fine to coarse sand, trace to little gravel; damp.		9	13	---	32	33	13	
							@ 32.0'-32.5', soft, wet (HP < 0.25).								
		29 31 34	18	14		4.5+	@ 33.5'-35.0', contains occasional silt seams								68
35		29 30 50/5	17	15		4.5+									50+
		18 50/3	2	16		4.5+	@ 38.5'-47.0', possible cobbles.								50+
40		16 50/5	5	17		4.5+									50+
		19 50/5	5	18		4.5+			6	9	---	29	37	19	50+
45															
47.0	711.9														
		50/4	4	19			Very dense gray COARSE AND FINE SAND (A-3a), some silt, little gravel; contains occasional silty clay seams, possible cobbles; wet.								50+
50	708.9														

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | Project: FRA-70-8.93 | Job No. 0221-1004.01

LOG OF: Boring B-040-0-08 | Location: Sta. 760+61.33, 137.60 ft Rt. of I-70 CL | Date Drilled: 8/15/2008 to 8/19/2008

WATER OBSERVATIONS:
Water seepage at: 10.5', 23.0', 47.0'
Water level at completion: 29.7' (beginning of shift, 8/18/08) 29.3' (includes drilling water)
FIELD NOTES:
Advanced boring using 4.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	708.9						Very dense gray GRAVEL (A-1-a), trace silt; contains cobble fragments; wet.								
		50/5	3	20											50+
55															
57.0	701.9						Very dense gray COARSE AND FINE SAND (A-3a), little silt, trace to little gravel; wet.								
		45 50/5	11	21											50+
60															
		30 35 33	12	22					9	23	---	54	--14--		72
65															
		50/3	0	23			@ 68.5'-72.0', possible cobbles.								50+
70															
		34 48 48	13	24											101
75	683.9														

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | Project: FRA-70-8.93 | Job No. 0221-1004.01

LOG OF: Boring B-040-0-08 | Location: Sta. 760+61.33, 137.60 ft Rt. of I-70 CL | Date Drilled: 8/15/2008 to 8/19/2008

WATER OBSERVATIONS:
Water seepage at: 10.5', 23.0', 47.0'
Water level at completion: 29.7' (beginning of shift, 8/18/08) 29.3' (includes drilling water)
FIELD NOTES:
Advanced boring using 4.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	683.9						Very dense gray GRAVEL WITH SAND (A-1-b), some to "and" coarse sand, little to some fine sand, little to some silt; wet.								
		45 50/4	10	25					48	25	---	12	--15--		50+
80															
		50/4	1	26			@ 83.5'-85.0', drove on cobble.								50+
85															
		40 50/5	11	27											50+
90															
		35 50/5	7	28											50+
95															
		37 41 50/5	17	29					15	39	---	29	--17--		50+
100	658.9														

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-040-0-08 | *Location:* Sta. 760+61.33, 137.60 ft Rt. of I-70 CL | *Date Drilled:* 8/15/2008 to 8/19/2008

WATER OBSERVATIONS:
Water seepage at: 10.5', 23.0', 47.0'
Water level at completion: 29.7' (beginning of shift, 8/18/08) 29.3' (includes drilling water)
FIELD NOTES:
Advanced boring using 4.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N) Natural Moisture Content, % - ● PL ⊢ LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	658.9						Very dense gray COARSE AND FINE SAND (A-3a), some silt, little gravel; possible cobbles; wet.								
105		40 50/5	4	30											50+
107.0	651.9						Hard brown CLAY (A-7-6), some fine to coarse sand, trace gravel; contains rust stains; damp. (POSSIBLE DECOMPOSED SHALE)		1	18	---	10	29	42
		50/5	5	31		4.5									50+
110															
113.5	645.4														
		38 42 50/5	7	32			Severely weathered brownish gray SHALE.								50+
115															
116.5	642.4						@ 116.1'-116.5', encountered granite cobble/boulder (cored through).								
		Core 60"	Rec 60"	RQD 73%	R1		Shale, blue-gray, highly weathered, weak, laminated, friable, fissile, jointed, fractured to moderately fractured, tight, slightly rough, RQD 77%, Loss 0%. Contains dark gray, well cemented shale zones [thin, dark bands]. Dark shale zones are typically 1-2 inches thick, spaced at intervals of 12 to 18 inches.								
120															
120.8	638.1						Interbedded Shale (92%) and Limestone (8%), RQD 86%, Loss 1%; Shale, dark gray, highly weathered, weak, thinly laminated, calcareous, fissile, pyritic, jointed, slightly rough, tight; Limestone, gray, moderately weathered, strong, thinly bedded.								
		Core 60"	Rec 58"	RQD 53%	R2										
125	633.9														

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-040-0-08 | *Location:* Sta. 760+61.33, 137.60 ft Rt. of I-70 CL | *Date Drilled:* 8/15/2008 to 8/19/2008

WATER OBSERVATIONS:
Water seepage at: 10.5', 23.0', 47.0'
Water level at completion: 29.7' (beginning of shift, 8/18/08) 29.3' (includes drilling water)
FIELD NOTES:
Advanced boring using 4.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N) Natural Moisture Content, % - ● PL ⊢ LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	633.9						Interbedded Shale (92%) and Limestone (8%), RQD 86%, Loss 1%; Shale, dark gray, highly weathered, weak, thinly laminated, calcareous, fissile, pyritic, jointed, slightly rough, tight; Limestone, gray, moderately weathered, strong, thinly bedded.								
		Core 60"	Rec 60"	RQD 90%	R3										
130															
		Core 60"	Rec 60"	RQD 100%	R4		@ 133.8' - 134.3', qu = 3589 psi								
135.0	135 623.9														
							Bottom of Boring - 135.0'								
140															
145															
150															

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 762+02.49, 102.58 RT | EXPLORATION ID B-040-1-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: I-70
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 740.6 (MSL) EOB: 30.0 ft. | PAGE 1 OF 2
START: 1/24/11 END: 1/24/11 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 711957.080 N, 1830732.220 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Asphalt - 9" Concrete - 9"	740.6 / 739.1	1																
Loose to medium dense brown GRAVEL WITH SAND (A-1-b), some fine to coarse sand, trace silt; damp.		2	9 6 6	16	22	SS-1	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
		3																
		4	3 2 2	5	28	SS-2	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
	734.6	5																
Very stiff to hard gray SANDY SILT (A-4a), "and" fine to coarse sand, some gravel; damp.		6	17 23 18	54	100	SS-3	4.50	24	14	22	28	12	20	14	6	7	A-4a (1)	
	732.1	7																
Very dense brown COARSE AND FINE SAND (A-3a), some silt, trace gravel; wet.	731.4	8 W																
		9	29 24 36	79	100	SS-4A / SS-4B	- / 4.5+	-	-	-	-	-	-	-	-	14 / 8	A-3a (V) / A-4a (V)	
Very stiff to hard gray SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp to moist.		10																
		11																
		12	29 44 40	111	100	SS-5	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
		13																
		14	14 44 38	108	100	SS-6	2.75	11	12	20	37	20	24	14	10	13	A-4a (4)	
		15																
		16	15 50/5"	-	100	SS-7	1.75	-	-	-	-	-	-	-	-	12	A-4a (V)	
		17																
		18																
		19	22 44 48	121	100	SS-8	-	-	-	-	-	-	-	-	-	14	A-4a (V)	
		20																
		21	23 50/5"	-	100	SS-9	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
		22																
		23																
		24	19 31 35	87	100	SS-10	4.5+	8	11	21	39	21	24	14	10	8	A-4a (5)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 8/30/11 16:05

PID: 77370 BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 762+02.49, 102.58 RT | START: 1/24/11 | END: 1/24/11 | PG 2 OF 2 | B-040-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very stiff to hard gray SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp to moist. *(continued)*	715.6	25																
		26																
@ 28.5'-30.0', encountered gas pressure.		27	15 30 44	97	100	SS-11	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
	712.1	28																
Very dense gray COARSE AND FINE SAND (A-3a), little gravel, trace silt; damp.	710.6	29	27 48 40	116	100	SS-12	-	-	-	-	-	-	-	-	-	5	A-3a (V)	
	EOB	30																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 8/30/11 16:05

NOTES: SEEPAGE AT 8.5 FEET; FINAL WATER LEVEL = 12.8 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG QUICKGROUT

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | Project: FRA-70-8.93 | Job No. 0221-1004.01

LOG OF: Boring B-041-0-08 | Location: Sta. 45+57.14, 5.08 ft Rt of Fulton CL | Date Drilled: 6/23/2008 to 6/25/2008

WATER OBSERVATIONS: Water seepage at: 13.0', 52.0' Water level at completion:

FIELD NOTES: Advanced boring using 4.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	759.7						Asphalt - 8" Base - 5"								
1.5	758.2	10 8 4	6	1			Medium dense brown GRAVEL (A-1-a), trace to little fine to coarse sand, trace to little silty clay; damp to moist.		71	11	---	7	--11--		●
		1 4 14	2	2			@ 3.2', encountered large rock fragments.		98	1	---	1	--0--		●
4.5	755.2														
5		5 7 8	18	3		3.0	Very stiff to hard brown SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		13	14	---	16	31	26	●
		5 6 9	14	4		3.0									
		4 11 15	13	5		4.5+	@ 8.5', becomes gray.								
10		7 12 15	18	6		4.5+			12	11	---	20	37	20	●
13.0	746.7														
		17 38 31	18	7			Very dense brown and gray GRAVEL WITH SAND (A-1-b), some silt; wet.		21	32	---	24	--23--		● 73
15															
15.5	744.2						Hard gray SANDY SILT (A-4a), little gravel; damp to moist.								
		7 10 16	18	8		4.5+									
		8 12 20	18	9		4.5+			12	13	---	22	33	20	●
20															
		9 15 23	18	10		4.5+									
		8 25 34	6	11		4.5+									● 62
25	734.7														

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | Project: FRA-70-8.93 | Job No. 0221-1004.01

LOG OF: Boring B-041-0-08 | Location: Sta. 45+57.14, 5.08 ft Rt of Fulton CL | Date Drilled: 6/23/2008 to 6/25/2008

WATER OBSERVATIONS: Water seepage at: 13.0', 52.0' Water level at completion:

FIELD NOTES: Advanced boring using 4.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	734.7						Hard gray SANDY SILT (A-4a), little gravel; damp to moist.								
		7 23 34	18	12		4.5+									● 60
		15 34 42	18	13		4.5+									● 80
30															
		10 22 30	18	14		4.5+			12	14	---	19	36	19	●
35															● 55
		12 30 42	18	15		4.5+									● 76
40															
		15 45 31	10	16		4.5+									● 80
45															
		12 28 41	18	17		4.5+									● 73
50	709.7														

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Client: ms consultants | Project: FRA-70-8.93 | Job No. 0221-1004.01

LOG OF: Boring B-041-0-08 | Location: Sta. 45+57.14, 5.08 ft Rt of Fulton CL | Date Drilled: 6/23/2008 to 6/25/2008

WATER OBSERVATIONS: Water seepage at: 13.0', 52.0' | Water level at completion:

FIELD NOTES: Advanced boring using 4.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	% Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	709.7														
52.0	707.7						Hard gray SANDY SILT (A-4a), little gravel; damp to moist.								
55		18 30 49	18	18			Very dense brown and gray GRAVEL WITH SAND (A-1-b), little gravel, trace to little silty clay; wet. @ 52.0'-58.5', cobbles and boulders.		38	30	---	21	--11--		83
60		50/5	5	19											50+
65		6 30 38	18	20											72
67.0	692.7														
70		11 18 40	8	21			Very dense black, brown, and gray GRAVEL (A-1-a), little fine to coarse sand, trace silty clay; wet.		78	13	---	5	--4--		61
75	684.7	48 50/4	7	22											50+

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Client: ms consultants | Project: FRA-70-8.93 | Job No. 0221-1004.01

LOG OF: Boring B-041-0-08 | Location: Sta. 45+57.14, 5.08 ft Rt of Fulton CL | Date Drilled: 6/23/2008 to 6/25/2008

WATER OBSERVATIONS: Water seepage at: 13.0', 52.0' | Water level at completion:

FIELD NOTES: Advanced boring using 4.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	% Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	684.7														
77.0	682.7						Very dense black, brown, and gray GRAVEL (A-1-a), little fine to coarse sand, trace silty clay; wet.								
80		6 18 33	4	23			Very dense brown and gray GRAVEL WITH SAND AND SILT (A-2-4); wet.								54
82.0	677.7														
85		50/5	3	24			Very dense gray COARSE AND FINE SAND (A-3a), some silty clay, trace gravel; possible cobbles; wet.								50+
90		37 50/5	11	25					5	17	---	44	--34--		50+
92.0	667.7														
95		50/5	5	26			Very dense brownish gray SANDY SILT (A-4a), trace gravel; damp.								50+
100	659.7	33 50/5	11	27					9	8	---	21	42	20	50+

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Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-041-0-08 | *Location:* Sta. 45+57.14, 5.08 ft Rt of Fulton CL | *Date Drilled:* 6/23/2008 to 6/25/2008

WATER OBSERVATIONS: Water seepage at: 13.0', 52.0'; Water level at completion:

FIELD NOTES: Advanced boring using 4.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL; Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	659.7						Very dense brownish gray SANDY SILT (A-4a), some gravel; damp.								
		40 50/5	5	28											50+
105															
		50/5	5	29					21	17	---	21	27	14	50+
110															
112.0	647.7						Stiff to very stiff brown and gray SILTY CLAY (A-6b), trace fine to coarse sand, trace gravel; moist.								
		17 27 34	3	30					2	3	---	2	55	38	64
115.0 115	644.7						Shale, blue-gray, weak, highly weathered, thinly laminated, slightly calcareous, jointed, moderately to highly fractured, tight, with typical narrow fractures, slightly rough; RQD 42%, Loss 0%. Contains dark gray, well cemented shale zones [thin, dark bands]. Dark shale zones are typically 1-2 inches thick, spaced at intervals of 12 to 18 inches.								
		Core 60"	Rec 60"	RQD 80%	R1										
120															
		Core 60"	Rec 60"	RQD 25%	R2										
125	634.7														

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Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-041-0-08 | *Location:* Sta. 45+57.14, 5.08 ft Rt of Fulton CL | *Date Drilled:* 6/23/2008 to 6/25/2008

WATER OBSERVATIONS: Water seepage at: 13.0', 52.0'; Water level at completion:

FIELD NOTES: Advanced boring using 4.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL; Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	634.7														
127.5	632.2						Shale, blue-gray, weak, highly weathered, thinly laminated, slightly calcareous, jointed, moderately to highly fractured, tight, with typical narrow fractures, slightly rough; RQD 42%, Loss 0%. Contains dark gray, well cemented shale zones [thin, dark bands]. Dark shale zones are typically 1-2 inches thick, spaced at intervals of 12 to 18 inches.										
130		Core 120"	Rec 120"	RQD 58%	R3		Interbedded Shale [93%] and Limestone [7%], RQD 78%, Loss 0%; Shale, dark gray, weak, highly weathered, thinly laminated, calcareous, jointed, highly fractured with typical, tight, slightly rough shear fractures; Limestone, light gray, strong, slightly weathered, pyritic, unfractured. @ 133.5' - 134.0', qu = 1695 psi										
135.0 135	624.7						Bottom of Boring - 135.0'								
140															
145															
150															

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 46+98.68, 11.6 RT | EXPLORATION ID B-041-1-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: FULTON STREET
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 760.6 (MSL) EOB: 79.3 ft. | PAGE 1 OF 4
START: 8/9/11 END: 8/9/11 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712195.340 N, 1830902.440 E

MATERIAL DESCRIPTION AND NOTES	ELEV. 760.6	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Asphalt - 10"	759.8																	
POSSIBLE FILL: Very stiff brown SILTY CLAY (A-6b), little fine to coarse sand, trace gravel; damp.	757.1	1	8 2 3	7	56	SS-1	3.00	-	-	-	-	-	-	-	-	25	A-6b (V)	
POSSIBLE FILL: Very soft brown SANDY SILT (A-4a), "and" fine to coarse sand, trace gravel; moist.		4	5 3 4	9	33	SS-2	0.25	-	-	-	-	-	-	-	-	21	A-4a (V)	
@ 6.0'-7.5', contains occasional 1-inch gravel pieces.	752.1	7	12 11 12	30	6	SS-3	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp.		9	9 12 12	32	100	SS-4	4.5+	13	11	20	32	24	23	14	9	9	A-4a (4)	
		12	10 9 11	26	100	SS-5	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
		14	12 13 15	37	28	SS-6	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
		17	7 10 11	28	100	SS-7	4.5+	10	10	21	36	23	22	14	8	10	A-4a (5)	
		19	14 18 18	47	100	SS-8	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
		22	14 28 39	88	100	SS-9	4.5+	-	-	-	-	-	-	-	-	7	A-4a (V)	
		24	14 20 26	61	100	SS-10	4.5+	14	12	18	37	19	22	14	8	8	A-4a (4)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:24

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 46+98.68, 11.6 RT | START: 8/9/11 | END: 8/9/11 | PG 2 OF 4 | B-041-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 735.6	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp. *(continued)*		26	10 23 26	65	100	SS-11	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
		29	14 29 24	70	100	SS-12	4.5+	13	13	18	35	21	22	13	9	8	A-4a (4)	
		32	46 40 43	109	100	SS-13	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
		34	20 25 43	90	100	SS-14	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
		36	26 50/5"	-	100	SS-15	4.5+	9	13	20	35	23	23	13	10	8	A-4a (5)	
		39	24 40 36	100	100	SS-16	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
		42	30 38 41	104	100	SS-17	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
@ 48.5', encountered natural gas pocket, LEL = 5% in augers.		44	17 23 25	63	100	SS-18	4.5+	10	11	22	35	22	22	14	8	8	A-4a (4)	
@ 50.0', sand and water blew up through augers to height of 10 to 15 feet, LEL = 1%. Added water to suppress gas.		47	18 25 37	82	100	SS-19	4.5+	-	-	-	-	-	-	-	-	7	A-4a (V)	
	712.1 W																	
Very dense gray GRAVEL WITH SAND (A-1-b), trace silt; wet.		49	14 19 22	54	100	SS-20	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:24

PID: 77370	BR ID:	PROJECT: I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 46+98.68, 11.6 RT	START: 8/9/11	END: 8/9/11	PG 3 OF 4	B-041-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 708.8	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense gray GRAVEL WITH SAND (A-1-b), trace silt; wet. *(continued)*		52																
		53																
		54	25 36 43	104	56	SS-21	-	24	34	33	-	9 -	NP	NP	NP	12	A-1-b (0)	
		55																
		56																
		57																
		58																
		59	30 34 38	95	28	SS-22	-	-	-	-	-	-	-	-	-	18	A-1-b (V)	
		60																
		61																
		62																
		63																
		64	22 27 25	68	61	SS-23	-	6	59	27	-	8 -	NP	NP	NP	13	A-1-b (0)	
		65																
		66																
		67																
		68																
		69	50/5"	-	60	SS-24	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
		70																
		71																
	688.6	72																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.		73																
		74	28 40 50/5"	-	100	SS-25	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
		75																
		76																
@ 79.0'-79.1', sand and gravel seam.		77																
	682.1	78																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:24

PID: 77370	BR ID:	PROJECT: I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 46+98.68, 11.6 RT	START: 8/9/11	END: 8/9/11	PG 4 OF 4	B-041-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 682.1	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp. *(continued)*	681.3	79 EOB	38 50/4"	-	60	SS-26	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:24

NOTES: SEEPAGE AT 3.5 FEET AND 48.5 FEET; NO WATER LEVEL DETECTED PRIOR TO ADDING WATER; FINAL WATER LEVEL INCLUDING DRILLING WATER = 35.8 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; 2 BAGS BENTONITE GROUT

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-043-0-08 | *Location:* Sta. 765+56.96, 96.30 ft Rt of I-70 CL | *Date Drilled:* 7/16/2008 to 7/20/2008

WATER OBSERVATIONS: Water seepage at: 37.0', 77.0'; Water level at completion:

FIELD NOTES: Advanced boring using 3.25" diameter hollowstem augers.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL; Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	743.1						Asphalt - 9" Concrete - 9" Base - 5"								
1.9	741.2	3 8 13	13	1			Medium dense brown GRAVEL WITH SAND, SILT, AND CLAY (A-2-6), some silty clay; damp.								
3.5	739.6	7 7 15	10	2		4.5+	Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.								
6.0	737.1	7 25 30	18	3			Very dense grayish brown SANDY SILT (A-4a), some fine to coarse sand, trace gravel; moist.		13	13	---	26	38	10	58
9.0	734.1	7 12 45	1	4			@ 7.5'-9.0', rock blocking sampler.								60
10.5	732.6	10 31 46	18	5		4.5+	Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.		9	13	---	19	37	22	81
		12 40 46	18	6		4.5+	Hard gray SILT AND CLAY (A-6a), some to "and" fine to coarse sand, trace to little gravel; damp.		7	21	---	19	33	20	90
		7 12 24	18	7		4.5+									
		12 28 49	10	8		4.5+	@ 13.5'-15.0', contains sand seams.								81
		7 19 39	18	9		4.5+									61
		39 49 42	18	10		4.5+									96
		12 24 42	18	11		4.5+									69
25	718.1	17 42 42	18	12		4.5+			17	12	---	18	33	20	88

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Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-043-0-08 | *Location:* Sta. 765+56.96, 96.30 ft Rt of I-70 CL | *Date Drilled:* 7/16/2008 to 7/20/2008

WATER OBSERVATIONS: Water seepage at: 37.0', 77.0'; Water level at completion:

FIELD NOTES: Advanced boring using 3.25" diameter hollowstem augers.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL; Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	718.1						Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.								
		20 42 50/5	17	13		4.5+									50+
30		24 34 45	18	14		4.5+									83
35		11 30 40	18	15		4.5+									74
40		13 28 45	10	16		--	@ 38.5', becomes wet.								77
42.0	701.1						Very dense gray GRAVEL WITH SAND (A-1-b), trace silt; wet.								
45		17 34 38	18	17					22	42	---	27	--9--		76
50	693.1	13 31 39	18	18											74

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DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-043-0-08 | *Location:* Sta. 765+56.96, 96.30 ft Rt of I-70 CL | *Date Drilled:* 7/16/2008 to 7/20/2008

WATER OBSERVATIONS: Water seepage at: 37.0', 77.0'; Water level at completion:

FIELD NOTES: Advanced boring using 3.25" diameter hollowstem augers.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL; Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	693.1						Dense gray GRAVEL (A-1-a), some fine to coarse sand, trace silt; wet. (GEOLOGIST'S DESCRIPTION - sample lost)								
55		12 12 21	18	19			@ 50.0'-60.0', difficult drilling, possible boulders. @ 55.0'-60.0', encountered gas pockets.								
57.0	686.1						Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.								
60		35 43 50/5	8	20		4.5+									50+
		50/1	1	21		--	@ 63.5', rock blocking sampler.								
65							@ 63.5'-70.0', possible cobbles.								50+
70		14 33 36	4	22		4.5+			17	19	---	26	28	10	73
75	668.1	17 23 28	18	23		4.5									54

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-043-0-08 | *Location:* Sta. 765+56.96, 96.30 ft Rt of I-70 CL | *Date Drilled:* 7/16/2008 to 7/20/2008

WATER OBSERVATIONS: Water seepage at: 37.0', 77.0'; Water level at completion:

FIELD NOTES: Advanced boring using 3.25" diameter hollowstem augers.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL; Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	668.1						Very dense gray FINE SAND (A-3), trace gravel; wet.	FS							
80		13 28 50/5	17	24			@ 78.5', 2.0 feet sand heave.								50+
82.0	661.1						Very dense gray GRAVEL WITH SAND (A-1-b), some fine to coarse sand, little silt; wet.								
85		40 42 42	18	25											88
90		34 42 48	10	26											95
93.5	649.6														
		50/5	3	27			Severely weathered gray SHALE.								50+
95.0	95 648.1														
		Core 60"	Rec 60"	RQD 85%	R1		Shale, blue-gray, weak, highly weathered, thinly laminated, slightly calcareous, pyritic, jointed, moderately to fractured, tight, slightly rough; RQD 88%, Loss 0%. Contains dark gray, well cemented shale zones [thin, dark bands]. Dark shale zones are typically 1-2 inches thick, spaced at intervals of 12 to 18 inches.								
100	643.1														

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DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-043-0-08 | *Location:* Sta. 765+56.96, 96.30 ft Rt of I-70 CL | *Date Drilled:* 7/16/2008 to 7/20/2008

WATER OBSERVATIONS:
Water seepage at: 37.0', 77.0'
Water level at completion:

FIELD NOTES:
Advanced boring using 3.25" diameter hollowstem augers.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL ⊢ Blows per foot - ○ / Non-Plastic - NP ⊣ LL (10 20 30 40)
	643.1														
105		Core 60"	Rec 60"	RQD 82%	R2		Shale, blue-gray, weak, highly weathered, thinly laminated, slightly calcareous, pyritic, jointed, moderately to fractured, tight, slightly rough; RQD 88%, Loss 0%. Contains dark gray, well cemented shale zones [thin, dark bands]. Dark shale zones are typically 1-2 inches thick, spaced at intervals of 12 to 18 inches. @ 104.3' - 104.7', qu = 1612 psi								
		Core 60"	Rec 60"	RQD 97%	R3										
110.3 110	632.8														
		Core 60"	Rec 60"	RQD 87%	R4		Shale, dark gray, moderately to highly weathered, weak, thinly laminated, fissile, friable, pyritic, calcareous, jointed, fractured to moderately fractured, tight, slightly rough; RQD 87%, Loss 0%.								
115.0 115	628.1														
							Bottom of Boring - 115.0'								
120															
125															

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 48+67.44, 12.2 RT | EXPLORATION ID B-043-1-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: FULTON STREET
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 762.5 (MSL) EOB: 75.0 ft. | PAGE 1 OF 3
START: 8/8/11 END: 8/8/11 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712218.660 N, 1831069.580 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Asphalt - 11"	762.5																	
	761.6																	
FILL: Medium dense gray GRAVEL WITH SAND (A-1-b), little fine to coarse sand, trace silt; damp. (ROAD BASE)		1	13 6 3	12	17	SS-1	-	-	-	-	-	-	-	-	-	2	A-1-b (V)	
	759.0	2																
Hard brown SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp.		3																
		4	6 5 6	14	0	SS-2	-	-	-	-	-	-	-	-	-	13	A-4a (V)	
		5																
		6																
		7	4 7 10	22	100	SS-3	4.5+	8	11	21	35	25	23	15	8	12	A-4a (5)	
		8																
@ 8.5'-10.0', contains occasional rust stains.		9	5 10 11	28	100	SS-4	4.5+	-	-	-	-	-	-	-	-	11	A-4a (V)	
		10																
		11																
@ 11.0', becomes gray.		12	5 7 8	20	100	SS-5	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
		13																
		14	4 7 8	20	100	SS-6	4.5+	9	11	21	36	23	22	14	8	10	A-4a (5)	
		15																
		16																
		17	12 15 16	41	100	SS-7	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		18	W															
@ 18.5'-19.0', wet gravel seam.		19	22 29 23	68	17	SS-8	-	-	-	-	-	-	-	-	-	10	A-4a (V)	
		20																
		21																
		22	23 36 50/5"	-	6	SS-9	-	-	-	-	-	-	-	-	-	13	A-4a (V)	
		23																
		24	11 25 24	65	100	SS-10	4.5+	19	11	18	32	20	23	14	9	7	A-4a (3)	
	737.5																	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:24

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 48+67.44, 12.2 RT | START: 8/8/11 | END: 8/8/11 | PG 2 OF 3 | B-043-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp.	737.5																	
		26	14 23 27	66	100	SS-11	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
		27																
		28																
		29	19 35 50/5"	-	100	SS-12	4.5+	-	-	-	-	-	-	-	-	7	A-4a (V)	
		30																
		31																
		32	10 40 50/5"	-	100	SS-13	4.5+	12	12	19	31	26	23	14	9	8	A-4a (4)	
	729.0	33																
Very dense gray COARSE AND FINE SAND (A-3a), trace gravel; wet.		34	13 20 23	57	67	SS-14	-	-	-	-	-	-	-	-	-	17	A-3a (V)	
	726.5	35																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		36																
		37	9 16 28	58	100	SS-15	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
		38																
		39	22 33 37	92	100	SS-16	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
		40																
		41																
		42	35 41 46	115	100	SS-17	4.5+	13	11	21	33	22	23	13	10	8	A-4a (4)	
		43																
		44	26 36 43	104	100	SS-18	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
		45																
		46																
@ 46.0'-47.5', contains occasional sand seams.		47	20 31 38	91	100	SS-19	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
	714.0	48																
Very dense gray GRAVEL WITH SAND (A-1-b), some silt; wet.		49	33 49 50/5"	-	100	SS-20	-	32	29	17	-	22 -	NP	NP	NP	6	A-1-b (0)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:24

PID: 77370	BR ID:	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 48+67.44, 12.2 RT	START: 8/8/11	END: 8/8/11	PG 3 OF 3	B-043-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.	710.5	52																
		53																
@ 50.0'-53.5', difficult augering; possible cobble/boulder.		54	13 28 31	78	100	SS-21	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		55																
		56																
	705.5	57																
Dense to very dense gray COARSE AND FINE SAND (A-3a), little gravel, trace to little silt; wet.		58																
		W																
		59	6 21 16	49	33	SS-22	-	12	27	45	-	16 -	NP	NP	NP	15	A-3a (0)	
		60																
		61																
		62																
		63																
@ 63.5', 2.5 feet sand heave; washed out with tricone.		64	30 33 33	87	72	SS-23	-	-	-	-	-	-	-	-	-	8	A-3a (V)	
		65																
		66																
		67																
		68																
@ 68.5'-70.0', contains occasional silt seams.		69	29 40 38	103	78	SS-24	-	-	-	-	-	-	-	-	-	15	A-3a (V)	
		70																
		71																
		72																
		73																
		74	38 39 31	92	6	SS-25	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
	687.5	EOB 75																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:24

NOTES: SEEPAGE AT 18.5 FEET AND 58.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 42.5 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 10.6 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; 2 BAGS BENTONITE GROUT

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DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-044-0-08 | *Location:* Sta. 50+53.48, 5.45 ft Rt of Fulton CL | *Date Drilled:* 6/16/2008 to 6/19/2008

WATER OBSERVATIONS: Water seepage at: 13.5', 23.5' | Water level at completion:

FIELD NOTES: Advanced boring using 4.25" diameter hollowstem augers to 47.0'; 4.0" casing from 47.0' to 115.5'.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	764.6														
1.3	763.3	10 9 7	8	1		--	Asphalt - 2" Concrete - 4" Base - 10"								
3.5	761.1	9 8 5	8	2		--	POSSIBLE FILL: Stiff to very stiff brown SILTY CLAY (A-6b), little to some fine to coarse sand, trace gravel; moist.		2	7	---	16	33	42	
5.5	759.1	4 5 11	18	3		2.5	POSSIBLE FILL: Very stiff mottled olive-brown and gray CLAY (A-7-6), little fine to coarse sand, trace gravel; moist.		2	5	---	10	43	40	
		5 8 12	18	4		4.0	Very stiff brown SANDY SILT (A-4a), trace gravel, some clay; damp.		8	8	---	13	40	31	
11.0	753.6	7 15 16	18	5		2.0	@ 11.0'-16.0', encountered very difficult drilling, dense till, possible cobbles. Recovered rock fragments in split spoon.		1	5	---	10	--84--		
13.0	751.6	12 13 21	17	6			Dense brown GRAVEL WITH SAND AND SILT (A-2-4); damp.		44	15	---	9	24	8	
14.0	750.6	18 50/2	8	7A 7B		--	Stiff gray SILT AND CLAY (A-6a), some fine to coarse sand, little to some gravel; damp to moist.		21	14	---	18	28	19	
15.0	749.6						Very dense brown GRAVEL WITH SAND (A-1-b), little silty clay; moist to wet. @ 14.2', refusal of splitspoon.		46	25	---	14	--15--		50+
18.0	746.6	21 20 20	16	8		4.0	Very stiff to hard gray SANDY SILT (A-4a), little to some clay, trace to little gravel; damp.		10	11	---	20	38	21	
		9 14 18	16	9		3.5	Very stiff to hard gray SILT AND CLAY (A-6a), little to some clay, little gravel; damp to moist.		13	11	---	20	36	20	
		14 17 19	18	10		2.75	@ 20.5', moist to wet.								
25	739.6	17 28 35	18	11		--									66

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-044-0-08 | *Location:* Sta. 50+53.48, 5.45 ft Rt of Fulton CL | *Date Drilled:* 6/16/2008 to 6/19/2008

WATER OBSERVATIONS: Water seepage at: 13.5', 23.5' | Water level at completion:

FIELD NOTES: Advanced boring using 4.25" diameter hollowstem augers to 47.0'; 4.0" casing from 47.0' to 115.5'.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	739.6														
28.0	736.6	12 20 24	17	12		3.0	Very stiff to hard gray SILT AND CLAY (A-6a), little to some clay, little gravel; damp. @ 26.0', contains few thin (less than 1") fine to medium grained sand seams.								
		13 15 25	18	13		4.0	Very stiff to hard gray SANDY SILT (A-4a), little to some clay, little gravel; damp.		18	12	---	20	27	23	
		35 34 32	4	14		--	@ 33.9', encountered possible cobble or boulder.								69
39.6	725.0	14 37 48	18	15A 15B		3.5 --	@36.0', pulled augers to change lead. Lead auger bit destroyed. Could not advance further with 500-600 psi down pressure. Changed tools to drill with casing.								89
42.0	722.6						Very dense gray COARSE AND FINE SAND (A-3a), little silty clay, trace gravel; wet.								
		21 42 50/5	17	16		4.5+	Hard gray SANDY SILT (A-4a), "and" fine to coarse sand, trace gravel; damp.		8	13	---	21	35	23	50+
47.0	717.6						Very dense gray GRAVEL WITH SAND (A-1-b), some silty clay; wet.								
50	714.6	10 20 42	6	17					46	20	---	12	--22--		66

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DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | Project: FRA-70-8.93 | Job No. 0221-1004.01

LOG OF: Boring B-044-0-08 | Location: Sta. 50+53.48, 5.45 ft Rt of Fulton CL | Date Drilled: 6/16/2008 to 6/19/2008

WATER OBSERVATIONS: Water seepage at: 13.5', 23.5' | Water level at completion:

FIELD NOTES: Advanced boring using 4.25" diameter hollowstem augers to 47.0'; 4.0" casing from 47.0' to 115.5'.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)	
	714.6															
52.0	712.6						Very dense gray GRAVEL WITH SAND (A-1-b), some silty clay; wet.									
							Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp.									
55		14 42 43	6	18		4.5+									●	89
60		20 35 38	18	19		4.5+			10	12	---	22	32	24	●——	77
							@ 62.0 to 67.0', very stiff.									
65		14 22 31	18	20		2.5									●	56
70		15 26 42	18	21		4.5+									●	72
75	689.6	22 26 34	18	22		4.5+									●	63

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | Project: FRA-70-8.93 | Job No. 0221-1004.01

LOG OF: Boring B-044-0-08 | Location: Sta. 50+53.48, 5.45 ft Rt of Fulton CL | Date Drilled: 6/16/2008 to 6/19/2008

WATER OBSERVATIONS: Water seepage at: 13.5', 23.5' | Water level at completion:

FIELD NOTES: Advanced boring using 4.25" diameter hollowstem augers to 47.0'; 4.0" casing from 47.0' to 115.5'.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)	
	689.6															
							Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp.									
80		19 33 42	18	23		4.5+			7	11	---	20	40	22	●——	79
85		10 29 38	3	24		--	@ 84.0'-90.0', encountered possible cobbles.								●	70
87.0	677.6															
							Very dense gray GRAVEL (A-1-a), some fine to coarse sand, little silty clay; wet.									
90		19 38 48	4	25					67	13	---	8	--12--		●	90
92.0	672.6															
							Very stiff gray SILT AND CLAY (A-6a); moist.									
95		10 13 23	18	26		3.25			0	0	---	0	53	47	●——	
97.0	667.6															
							Hard gray SANDY SILT (A-4a), trace fine to coarse sand, trace gravel; moist.									
100	664.6	15 20 42	18	27		4.5+									●	65

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DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | Project: FRA-70-8.93 | Job No. 0221-1004.01

LOG OF: Boring B-044-0-08 | Location: Sta. 50+53.48, 5.45 ft Rt of Fulton CL | Date Drilled: 6/16/2008 to 6/19/2008

WATER OBSERVATIONS: Water seepage at: 13.5', 23.5' Water level at completion:

FIELD NOTES: Advanced boring using 4.25" diameter hollowstem augers to 47.0'; 4.0" casing from 47.0' to 115.5'.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	664.6						Hard gray SILT (A-4b), trace fine to coarse sand, trace gravel; moist.								
105		13 14 14	18	28		2.5	@ 102', very stiff, grayish brown.		2	1	--	6	59	32	
107.0	657.6						Hard brown and gray CLAY (A-7-6), varved; damp.								
110.0 110	654.6	42 50/3	9	29		4.5+									50+
111.5	653.1	20 37 50/3		30			Shale, grayish brown, very weak, severely weathered, thinly laminated.								50+
114.9 115	649.7	Core 60"	Rec 60"	RQD 73%	R1		Shale [90%] interbedded and Siltstone [10%], RQD 76%, Loss 0%; Shale, blue-gray, very weak to weak, severely weathered, laminated, slightly calcareous, jointed, moderately fractured, tight, slightly rough, typical clay-filled fractures; Siltstone, gray to dark gray, strong, slightly weathered, laminated, argillaceous. @ 112.0', high angle fracture, clay filled with fine and coarse grained sand.								
120		Core 60"	Rec 60"	RQD 77%	R2		Shale, blue-gray, weak, moderately to highly weathered, laminated, slightly calcareous, jointed, slightly fractured, tight, slightly rough, clay filled fractures; RQD 77%, Loss 0%. Contains dark gray, well cemented shale zones [thin, dark bands]. Dark shale zones are typically 1-2 inches thick, spaced at intervals of 12 to 18 inches. @ 114.4', 115.3', 116.7', 118.4', and 119.4', high angle fractures. @ 117.6' - 118.0', qu = 1202 psi								
125	639.6	Core 120"	Rec 120"	RQD 79%	R3										

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | Project: FRA-70-8.93 | Job No. 0221-1004.01

LOG OF: Boring B-044-0-08 | Location: Sta. 50+53.48, 5.45 ft Rt of Fulton CL | Date Drilled: 6/16/2008 to 6/19/2008

WATER OBSERVATIONS: Water seepage at: 13.5', 23.5' Water level at completion:

FIELD NOTES: Advanced boring using 4.25" diameter hollowstem augers to 47.0'; 4.0" casing from 47.0' to 115.5'.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	639.6						Shale, blue-gray, weak, moderately to highly weathered, laminated, slightly calcareous, jointed, slightly fractured, tight, slightly rough, clay filled fractures; RQD 77%, Loss 0%. Contains dark gray, well cemented shale zones [thin, dark bands]. Dark shale zones are typically 1-2 inches thick, spaced at intervals of 12 to 18 inches.								
130		Core 120"	Rec 120"	RQD 79%	R3										
131.5	633.1						Bottom of Boring - 131.5'								
135															
140															
145															
150															

PROJECT: I-70/I-71 EAST INTERCHANGE
TYPE: ROADWAY
PID: 77370 BR ID:
START: 6/28/10 END: 6/29/10

DRILLING FIRM / OPERATOR: DLZ / K. CONRAD
SAMPLING FIRM / LOGGER: DLZ / M. EVENER
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 75 TRUCK
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 2/15/08
ENERGY RATIO (%): 62

STATION / OFFSET: 767+73.02, 19.38 RT
ALIGNMENT: I-70
ELEVATION: 745.3 (MSL) EOB: 70.0 ft.
COORD: 712109.200 N, 1831288.370 E

EXPLORATION ID B-044-1-10
PAGE 1 OF 3

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Asphalt - 8" Concrete - 10" Base - 5"	745.3 743.4																	
Very stiff to hard gray SANDY SILT (A-4a), some to "and" fine to coarse sand, little to some gravel; damp.		1 2 3 4 5 6 7 8	6 13 14	28	100	SS-1	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
			8 16 16	33	100	SS-2	3.00	-	-	-	-	-	-	-	-	8	A-4a (V)	
			7 9 12	22	100	SS-3	4.00	20	15	22	27	16	21	14	7	8	A-4a (2)	
	736.3	W	14 18 22	41	100	SS-4A SS-4B	2.50 -	- -	- -	- -	- -	- -	- -	- -	- -	10 13	A-4a (V) A-3a (V)	
Dense gray COARSE AND FINE SAND (A-3a), some gravel, trace silt; wet.	734.3	9 10																
Dense gray GRAVEL (A-1-a), some fine to coarse sand, trace silt; wet.	731.8	11 12 13	7 20 24	45	100	SS-5	-	-	-	-	-	-	-	-	-	10	A-1-a (V)	
Dense gray GRAVEL WITH SAND (A-1-b), little silt; wet.	729.3	14 15	6 17 26	44	100	SS-6	-	28	24	31	-	17 -	NP	NP	NP	15	A-1-b (0)	
Dense gray SILT (A-4b), little fine sand, trace clay; wet. @ 16.0', 1.5 feet sand heave; washed out with tricone.	726.8	16 17 18	17 21 20	42	61	SS-7	-	-	-	-	-	-	-	-	-	15	A-4b (V)	
Very stiff to hard gray SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp.		19 20	13 13 20	34	100	SS-8	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
		21 22	10 16 21	38	100	SS-9	4.5+	13	13	17	37	20	22	14	8	11	A-4a (4)	
		23 24	7 13 20	34	33	SS-10	3.50	-	-	-	-	-	-	-	-	11	A-4a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:24

PID: 77370 BR ID: PROJECT I-70/I-71 EAST INTERCHANGE STATION / OFFSET: 767+73.02, 19.38 RT START: 6/28/10 END: 6/29/10 PG 2 OF 3 B-044-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very stiff to hard gray SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp. *(continued)*	720.3	26 27 28	12 20 21	42	100	SS-11	4.5+	13	15	20	31	21	22	14	8	8	A-4a (3)	
		29 30 31 32 33	13 21 24	46	100	SS-12	2.50	-	-	-	-	-	-	-	-	11	A-4a (V)	
		34 35 36 37 38	15 21 24	46	100	SS-13	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
		39 40 41 42 43	25 30 27	59	100	SS-14	4.5+	6	11	16	42	25	23	15	8	10	A-4a (6)	
		44 45 46 47 48	15 26 35	63	100	SS-15	3.50	-	-	-	-	-	-	-	-	14	A-4a (V)	
		49 50 51	10 18 20	39	100	SS-16	4.5+	12	12	20	33	23	22	14	8	9	A-4a (4)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:24

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PID: 77370	BR ID: _____	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 767+73.02, 19.38 RT	START: 6/28/10	END: 6/29/10	PG 3 OF 3	B-044-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very stiff to hard gray SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp. *(continued)*	693.5	52																
		53																
		54	16 22 28	52	100	SS-17	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		55																
		56																
		57																
		58																
		59	14 17 25	43	100	SS-18	4.5+	10	11	20	37	22	22	14	8	9	A-4a (5)	
		60																
		61																
		62																
		63																
		64	13 21 23	45	61	SS-19	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		65																
		66																
		67																
		68																
		69	14 22 23	46	100	SS-20	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
	675.3	EOB 70																

NOTES: SEEPAGE AT 9.1 FEET; WATER LEVEL PRIOR TO ADDING WATER = 10.5 FEET; NO FINAL WATER LEVEL.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 1 BAG BENTONITE CHIPS; 2 BAGS QUIKGROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:24

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PROJECT: I-70/I-71 EAST INTERCHANGE
TYPE: ROADWAY
PID: 77370 BR ID:
START: 1/31/11 END: 1/31/11

DRILLING FIRM / OPERATOR: DLZ / K. CONRAD
SAMPLING FIRM / LOGGER: DLZ / M. EVENER
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 75 TRUCK
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 1/7/10
ENERGY RATIO (%): 79

STATION / OFFSET: 766+31.57, 186.99 RT
ALIGNMENT: I-70
ELEVATION: 764.9 (MSL) EOB: 60.0 ft.
COORD: 711925.590 N, 1831168.390 E

EXPLORATION ID: B-044-2-10
PAGE: 1 OF 3

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Topsoil- 7"	764.3																	
FILL: Very stiff dark gray to black SILT AND CLAY (A-6a), some fine to coarse sand, trace gravel; contains numerous tiny brick fragments and cinders; moist.	761.4	1	3 4 3	9	56	SS-1	3.50	-	-	-	-	-	-	-	-	23	A-6a (V)	
Hard brown SILTY CLAY (A-6b), little fine to coarse sand, trace gravel; damp.	758.9	4	6 7 8	20	100	SS-2	4.5+	-	-	-	-	-	-	-	-	17	A-6b (V)	
Very stiff to hard brown SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		6	6 5 6	14	100	SS-3	3.00	11	12	19	37	21	23	14	9	8	A-4a (5)	
@ 8.5'-10.0', contains shale fragments.		9	7 8 8	21	100	SS-4	4.5+	-	-	-	-	-	-	-	-	11	A-4a (V)	
@ 11.0', becomes gray.		12	13 15 11	34	100	SS-5	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
@ 11.0'-12.5', contains rust stains. NOTE: Hole caved to 14.8' when augers removed.		14	6 8 8	21	100	SS-6	4.5+	14	10	20	34	22	22	13	9	10	A-4a (4)	
		17	5 8 10	24	100	SS-7	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
		19	6 8 11	25	100	SS-8	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		22	10 14 21	46	100	SS-9	4.5+	13	12	22	35	18	20	14	6	9	A-4a (4)	
	739.9	24	12 14 13	36	100	SS-10	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:25

PID: 77370 BR ID: PROJECT I-70/I-71 EAST INTERCHANGE STATION / OFFSET: 766+31.57, 186.99 RT START: 1/31/11 END: 1/31/11 PG 2 OF 3 B-044-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense gray SILT (A-4b), some fine sand; damp.	739.9																	
@ 28.5', wet sand seam; possible seepage zone 27.5'-28.5'.	736.4	26	13 23 24	62	83	SS-11	-	-	-	-	-	-	-	-	-	14	A-4b (V)	
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp.		29	13 20 21	54	100	SS-12	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		31	26 21 28	65	100	SS-13	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		34	16 23 26	65	100	SS-14	4.5+	11	12	19	35	23	22	14	8	8	A-4a (5)	
		36	16 26 25	67	83	SS-15	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
@ 38.5'-40.0', outside of sample wet; possible seepage zone 37.5'-38.5'.		39	18 24 29	70	100	SS-16	4.50	-	-	-	-	-	-	-	-	12	A-4a (V)	
		41	20 27 30	75	100	SS-17	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		44	45 40 35	99	100	SS-18	4.5+	8	14	19	37	22	22	15	7	9	A-4a (5)	
		47	22 30 34	84	100	SS-19	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
		49	24 28 34	82	100	SS-20	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		51	25															

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:25

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PID: 77370	BR ID:	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 766+31.57, 186.99 RT	START: 1/31/11	END: 1/31/11	PG 3 OF 3	B-044-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp. *(continued)*	713.1	52	25 35	79	100	SS-21	4.5+	10	11	21	38	20	21	14	7	8	A-4a (5)	
@ 53.5'-60.0', little gravel.		53																
		54	25 26 31	75	100	SS-22	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		55																
		56																
		57																
		58																
		59	21 21 25	61	100	SS-23	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
	704.9	EOB 60																

NOTES: NO SEEPAGE OR FINAL WATER LEVELS DETECTED.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 3 BAGS BENTONITE CHIPS; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:25

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 869+07.19, 59.45 RT | EXPLORATION ID B-045-1-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP N1
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 767.2 (MSL) EOB: 100.0 ft. | PAGE 1 OF 4
START: 7/14/10 END: 7/15/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 711960.370 N, 1831439.450 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil- 5"	766.8																	
FILL: Very stiff to hard brown SILTY CLAY (A-6b), some fine to coarse sand, little gravel; damp.		1	3 7 4	14	44	SS-1	4.5+	-	-	-	-	-	-	-	-	17	A-6b (V)	
		2																
		3																
		4	4 4 4	11	17	SS-2	2.00	-	-	-	-	-	-	-	-	29	A-6b (V)	
		5																
@ 6.0'-7.5', gravel piece blocked spoon.		6																
		7	10 9 12	28	11	SS-3	--	-	-	-	-	-	-	-	-	-		
	758.7	8																
Hard brown SANDY SILT (A-4a), little to some fine to coarse sand, trace to little gravel; damp.		9	6 10 13	30	78	SS-4	4.5+	10	8	12	42	28	25	16	9	12	A-4a (7)	
		10																
@ 11.0'-12.5', gray.		11																
		12	5 10 12	29	100	SS-5	4.5+	-	-	-	-	-	-	-	-	11	A-4a (V)	
	753.7	13																
Medium dense to dense brownish gray COARSE AND FINE SAND (A-3a), little silt, trace to little gravel; damp.		14	6 11 12	30	56	SS-6	-	10	20	52	-	18 -	NP	NP	NP	9	A-3a (0)	
	751.2	15																
Hard gray SILTY CLAY (A-6b), some fine to coarse sand, little gravel; damp.		16																
		17	18 19 33	68	44	SS-7	4.5+	-	-	-	-	-	-	-	-	7	A-6b (V)	
	748.7	18																
Dense to very dense gray GRAVEL WITH SAND (A-1-b), trace silt; damp.		19	22 33 21	71	17	SS-8	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
		20																
@ 21.0', becomes wet.	W	21																
		22	10 11 14	33	33	SS-9	-	40	44	10	-	6 -	NP	NP	NP	13	A-1-b (0)	
	743.7	23																
Very stiff gray SILTY CLAY (A-6b), some fine to coarse sand, little gravel; moist.		24	14 15 16	41	100	SS-10	3.00	-	-	-	-	-	-	-	-	9	A-6b (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:25

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 869+07.19, 59.45 RT | START: 7/14/10 | END: 7/15/10 | PG 2 OF 4 | B-045-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very stiff gray SILTY CLAY (A-6b), some fine to coarse sand, little gravel; moist. *(continued)*		26																
		27	4 22 18	53	100	SS-11	2.50	-	-	-	-	-	-	-	-	10	A-6b (V)	
	738.7	28																
Dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, little silt; wet.	W	29	4 15 20	46	56	SS-12	-	41	27	18	-	14 -	NP	NP	NP	12	A-1-b (0)	
	736.2	30																
Very dense gray COARSE AND FINE SAND (A-3a), little to some gravel, trace silt; wet.		31	30 39 47	113	17	SS-13	-	-	-	-	-	-	-	-	-	14	A-3a (V)	
		32																
		33																
		34	47 25 29	71	67	SS-14	-	-	-	-	-	-	-	-	-	13	A-3a (V)	
		35																
		36																
		37	17 23 22	59	56	SS-15	-	-	-	-	-	-	-	-	-	8	A-3a (V)	
	728.7	38																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		39	16 14 14	37	100	SS-16	4.5+	16	14	19	32	19	23	13	10	12	A-4a (3)	
		40																
		41																
		42	8 10 17	36	100	SS-17	4.5+	-	-	-	-	-	-	-	-	11	A-4a (V)	
		43																
		44	24 32 45	101	100	SS-18	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
		45																
		46																
		47	21 45 48	122	100	SS-19	4.5+	13	12	19	35	21	22	13	9	12	A-4a (4)	
		48																
		49	19 39 49	116	67	SS-20	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:25

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 869+07.19, 59.45 RT | START: 7/14/10 | END: 7/15/10 | PG 3 OF 4 | B-045-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp. *(continued)*	715.4	52																
		53																
		54	23 38 50/5"	-	71	SS-21	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		55																
		56																
		57																
		58																
		59	22 25 33	76	100	SS-22	4.50	10	13	21	34	22	21	13	8	12	A-4a (4)	
		60																
		61																
		62																
		63																
		64	24 27 39	87	100	SS-23	4.50	-	-	-	-	-	-	-	-	9	A-4a (V)	
		65																
		66																
		67																
		68																
		69	22 26 22	63	100	SS-24	4.50	18	12	19	31	20	22	13	9	12	A-4a (3)	
		70																
		71																
		72																
		73																
		74	15 23 24	62	100	SS-25	4.50	-	-	-	-	-	-	-	-	9	A-4a (V)	
		75																
		76																
		77																
		78																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:25

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 869+07.19, 59.45 RT | START: 7/14/10 | END: 7/15/10 | PG 4 OF 4 | B-045-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp. *(continued)*	688.7	79	50/5"	-	60	SS-26	3.50	-	-	-	-	-	-	-	-	12	A-4a (V)	
		80																
@ 78.5'-78.9', very stiff; contains wet sand seams.		81																
		82																
		83																
		84	48 50/5"	-	27	SS-27	4.5+	11	11	21	35	22	22	14	8	10	A-4a (4)	
		85																
		86																
		87																
		88																
		89	50/5"	-	0	SS-28	--	-	-	-	-	-	-	-	-	-		
		90																
		91																
		92																
		93																
		94	17 22 28	66	100	SS-29	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		95																
		96																
		97																
		98																
		99	12 14 25	51	100	SS-30	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
	667.2	EOB 100																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:25

NOTES: SEEPAGE AT 21.0 AND 28.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 25.9 FEET; NO FINAL WATER LEVEL DETECTED.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 2 BAGS BENTONITE CHIPS; 3 BAGS QUIKGROUT

PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 868+48.65, 15.79 LT | EXPLORATION ID B-045-2-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP N3
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 766.0 (MSL) EOB: 90.0 ft. | PAGE 1 OF 4
START: 5/24/10 END: 5/24/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712271.190 N, 1831418.200 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Asphalt - 5" Brick - 5" Base - 4"	766.0																	
	764.8																	
POSSIBLE FILL: Very stiff mottled brown and gray CLAY (A-7-6), trace to little fine to coarse sand, trace gravel; moist.		1	11 4 7	14	56	SS-1	2.50	1	4	8	41	46	44	18	26	23	A-7-6 (15)	
@3.5'-4.1', contains rock fragments.		2	10 50/1"	-	57	SS-2	3.00	-	-	-	-	-	-	-	-	19	A-7-6 (V)	
	760.0	3																
Stiff to very stiff brown SILTY CLAY (A-6b), trace to little fine to coarse sand, trace gravel; damp to moist.		4	8 6 5	14	11	SS-3	1.50	-	-	-	-	-	-	-	-	16	A-6b (V)	
@8.5'-11.2', grayish brown.		5	3 6 7	17	100	SS-4	3.00	-	-	-	-	-	-	-	-	16	A-6b (V)	
	754.8	6					2.00	-	-	-	-	-	-	-	-	16	A-6b (V)	
Very dense brown COARSE AND FINE SAND (A-3a), trace to little silt, trace to little gravel; damp.		7	19 19 28	62	100 -	SS-5A SS-5B	-	-	-	-	-	-	-	-	-	6	A-3a (V)	
		8	28 50/5"	-	82	SS-6	-	-	-	-	-	-	-	-	-	4	A-3a (V)	
	750.0	9																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.		10	13 14 15	38	33	SS-7	4.5+	8	12	20	38	22	22	14	8	9	A-4a (5)	
		11	6 7 8	20	89	SS-8	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
@ 21.0'-22.5', possible boulder.		12	9 34 27	80	17	SS-9	-	-	-	-	-	-	-	-	-	12	A-4a (V)	
@ 23.5'-25.0', stiff, contains shale fragments.		13	5 7 10	22	72	SS-10	1.50	-	-	-	-	-	-	-	-	10	A-4a (V)	
	741.0																	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:25

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 868+48.65, 15.79 LT | START: 5/24/10 | END: 5/24/10 | PG 2 OF 4 | B-045-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very stiff gray SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; contains shale fragments; damp.	741.0																	
		14	6 10 12	29	100	SS-11	3.00	-	-	-	-	-	-	-	-	12	A-4a (V)	
		15	3 7 9	21	78	SS-12	4.00	11	14	19	37	19	22	14	8	11	A-4a (4)	
		16	18 20 24	58	100	SS-13	2.00	-	-	-	-	-	-	-	-	10	A-4a (V)	
	729.0																	
Very dense gray GRAVEL (A-1-a), some fine to coarse sand, trace to little silt; wet.		W																
		17	12 21 24	59	78	SS-14	-	66	15	10	-	9 -	NP	NP	NP	6	A-1-a (0)	
@43.5'-45.0', contains petroleum odor.		18	32 26 27	70	6	SS-15	-	-	-	-	-	-	-	-	-	13	A-1-a (V)	
	719.0																	
Very stiff to hard gray SANDY SILT (A-4a), some to "and" fine to coarse sand, trace to little gravel; damp.		19	9 17 16	43	67	SS-16	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:25

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PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 868+48.65, 15.79 LT | START: 5/24/10 | END: 5/24/10 | PG 3 OF 4 | B-045-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very stiff to hard gray SANDY SILT (A-4a), some to "and" fine to coarse sand, trace to little gravel; damp. *(continued)*	714.2	52																
		53																
		54	18 17 18	46	78	SS-17	2.50	13	11	24	33	19	21	13	8	10	A-4a (3)	
		55																
		56																
		57																
		58																
		59	12 17 21	50	100	SS-18	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
		60																
		61																
		62																
		63																
		64	13 11 13	32	100	SS-19	4.00	-	-	-	-	-	-	-	-	11	A-4a (V)	
		65																
		66																
		67																
		68																
		69	11 17 22	51	100	SS-20	4.00	7	12	19	37	25	23	14	9	11	A-4a (5)	
		70																
		71																
		72																
		73																
		74	7 15 18	43	100	SS-21	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
		75																
		76																
		77																
		78																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:25

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 868+48.65, 15.79 LT | START: 5/24/10 | END: 5/24/10 | PG 4 OF 4 | B-045-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
@78.5', moist to wet.	687.4	79	8 18 40	76	100	SS-22A	3.00	-	-	-	-	-	-	-	-	9	A-4a (V)	
	686.4				-	SS-22B	-	-	-	-	-	-	-	-	-	11	A-3a (V)	
Very dense gray COARSE AND FINE SAND (A-3a), little gravel, trace to little silt; wet.		80																
		81																
	684.0	82																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp.		83																
		84	27 33 39	95	100	SS-23	4.5+	12	9	23	38	18	21	13	8	10	A-4a (4)	
		85																
		86																
		87																
		88																
	676.0	89	30 30 38	90	100	SS-24	4.5+	-	-	-	-	-	-	-	-	5	A-4a (V)	
		EOB 90																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:25

NOTES: SEEPAGE AT 38.5 FEET AND 79.6 FEET; WATER LEVEL PRIOR TO ADDING WATER = 77.5 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 77.5 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 2 BAGS BENTONITE CHIPS; 1 BAG QUICKCRETE; 4 BAGS QUIKGROUT

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PROJECT: I-70/I-71 EAST INTERCHANGE
TYPE: ROADWAY
PID: 77370 BR ID:
START: 6/10/10 END: 6/11/10

DRILLING FIRM / OPERATOR: DLZ / L. BARTLETT
SAMPLING FIRM / LOGGER: DLZ / M. EVENER
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 75 TRUCK
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 1/7/10
ENERGY RATIO (%): 79

STATION / OFFSET: 770+52.56, 27.93 LT
ALIGNMENT: I-70
ELEVATION: 748.6 (MSL) EOB: 69.9 ft.
COORD: 712193.460 N, 1831558.970 E

EXPLORATION ID B-045-3-10
PAGE 1 OF 3

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Asphalt- 9" Concrete- 9" Base- 6"	748.6																	
	746.6																	
Hard gray SANDY SILT (A-4a), some to "and" fine to coarse sand, trace to little gravel; damp.		1																
		2	11 16 18	45	100	SS-1	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		3																
		4	6 9 17	34	56	SS-2	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		5																
		6																
		7	10 14 21	46	100	SS-3	4.5+	15	13	19	32	21	22	14	8	8	A-4a (4)	
		8																
		9	7 11 17	37	100	SS-4	4.5+	-	-	-	-	-	-	-	-	-	A-4a (V)	
		10																
		11																
		12	11 20 31	67	11	SS-5	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
		13																
		14	12 12 27	51	100	SS-6	4.5+	7	13	21	37	22	21	14	7	7	A-4a (5)	
		15																
		16																
		17	10 18 29	62	67	SS-7	4.5+	-	-	-	-	-	-	-	-	7	A-4a (V)	
		18																
		19	13 14 23	49	100	SS-8	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
		20																
		21																
		22	8 26 22	63	100	SS-9	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
		23																
		24	10 17 24	54	100	SS-10	4.5+	13	11	21	34	21	21	14	7	9	A-4a (4)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:26

PID: 77370 BR ID: PROJECT I-70/I-71 EAST INTERCHANGE STATION / OFFSET: 770+52.56, 27.93 LT START: 6/10/10 END: 6/11/10 PG 2 OF 3 B-045-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Hard gray SANDY SILT (A-4a), some to "and" fine to coarse sand, trace to little gravel; damp. *(continued)*	723.6																	
@ 26.0', drove on large gravel.		26																
		27	8 15 15	40	100	SS-11	4.5+	-	-	-	-	-	-	-	-	-	A-4a (V)	
		28																
		29	9 20 16	47	100	SS-12	4.5+	-	-	-	-	-	-	-	-	15	A-4a (V)	
		30																
		31																
		32																
		33																
@ 33.5'-34.8', some gravel.		34	22 38 50/4"	-	100	SS-13	4.5+	22	17	19	28	14	20	14	6	7	A-4a (1)	
		35																
		36																
	711.6	37																
Very dense gray GRAVEL WITH SAND (A-1-b), some to "and" fine to coarse sand, trace silt; wet.		38 W																
		39	1 7 50/4"	-	19	SS-14	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
		40																
		41																
	706.6	42																
Very dense gray COARSE AND FINE SAND (A-3a), little silt; wet.		43																
		44	44 50/5"	-	100	SS-15	-	16	30	36	-	18	-	NP	NP	NP	12	A-3a (0)
	701.6	45																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.		46																
		47																
		48																
		49	25 47 50/5"	-	100	SS-16	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:26

PID: 77370	BR ID:	PROJECT: I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 770+52.56, 27.93 LT	START: 6/10/10	END: 6/11/10	PG 3 OF 3	B-045-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp. *(continued)*	696.9	52																
		53																
		54	20 32 45	101	100	SS-17	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
		55																
		56																
		57																
		58																
		59	10 24 30	71	100	SS-18	4.5+	7	10	23	38	22	23	13	10	10	A-4a (5)	
		60																
		61																
		62																
		63																
		64	29 32 24	74	100	SS-19	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		65																
		66																
		67																
		68																
@ 68.5'-69.9', moist.		69	25 42 50/5"	-	100	SS-20	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
	678.7	EOB																

NOTES: SEEPAGE AT 38.0 FEET; WATER LEVEL PRIOR TO ADDING WATER = 25.1 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 69.0 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 0.5 BAG ASPHALT PATCH; 1 BAG BENTONITE CHIPS; 3 BAGS QUIKGROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:26

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DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-046-0-08 | *Location:* Sta. 870+63.35, 38.68 ft Rt of Ramp N1 BL | *Date Drilled:* 6/26/2008 to 6/27/2008

WATER OBSERVATIONS:
Water seepage at: 13.0', 18.0', 52.0', 62.0'
Water level at completion: 32.1' (beginning of shift, 6/21/08) 4.6' (includes drilling water)
FIELD NOTES:
Advanced boring using 4.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL ⟷ LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	770.1														
0.3	769.8	3 4 8	18	1		--	Topsoil - 4"		10	9	---	16	35	30	
1.5	768.6						POSSIBLE FILL: Stiff to very stiff mottled brown and gray SILTY CLAY (A-6b), some fine to coarse sand, trace gravel; trace organic debris (roots and wood chips); damp.								
3.0	767.1	4 5 5	18	2		--			7	13	---	16	42	22	
4.5	765.6	3 2 3	18	3		--	Stiff dark brown SILT AND CLAY (A-6a), some fine to coarse sand, trace gravel; contains roots; moist.		4	9	---	16	32	39	
5		7 13 13	12	4		3.0	Very stiff brown SILTY CLAY (A-6b), some fine to coarse sand, trace gravel; moist.		8	13	---	17	36	26	
		18 16 9	3	5		3.0	Very stiff brown SILT AND CLAY (A-6a), little to some fine to coarse sand, trace gravel; damp to moist.								
		10 15 19	18	6		3.5	@ 8.0', little gravel.								
10															
11.0	759.1	15 23 40	18	7		4.0	Very stiff to hard brown SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.		7	10	---	17	43	23	66
		12 17 24	2	8		--	@ 13.5', encountered possible sandstone cobble / boulder, wet.								
15															
15.5	754.6	9 29 40	8	9		--	Hard gray SILT (A-4b), little fine to coarse sand, little clay, trace gravel; damp to moist.		3	5	---	13	60	19	73
18.0	752.1														
		18 26 32	18	10			Dense to very dense brown and gray COARSE AND FINE SAND (A-3a), little to some silty clay; wet.								61
20															
		9 19 20	16	11					3	6	---	64	--27--		
		8 9 12	18	12											
25	745.1														

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Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-046-0-08 | *Location:* Sta. 870+63.35, 38.68 ft Rt of Ramp N1 BL | *Date Drilled:* 6/26/2008 to 6/27/2008

WATER OBSERVATIONS:
Water seepage at: 13.0', 18.0', 52.0', 62.0'
Water level at completion: 32.1' (beginning of shift, 6/21/08) 4.6' (includes drilling water)
FIELD NOTES:
Advanced boring using 4.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL ⟷ LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	745.1														
		14 21 27	12	13			Dense to very dense gray FINE SAND (A-3), trace to little silty clay; moist to wet.	FS							
28.0	742.1														
		14 16 20	18	14		4.5+	Hard gray SILT AND CLAY (A-6a), some to "and" fine to coarse sand, little gravel; damp.								
30															
		10 21 27	18	15		4.5+			11	20	---	21	--48--		
35															
		10 33 38	18	16		4.5+									75
40															
		14 20 29	18	17		4.5+									52
45															
		19 26 41	18	18		4.5+									70
50	720.1														

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Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-046-0-08 | *Location:* Sta. 870+63.35, 38.68 ft Rt of Ramp N1 BL | *Date Drilled:* 6/26/2008 to 6/27/2008

WATER OBSERVATIONS:
Water seepage at: 13.0', 18.0', 52.0', 62.0'
Water level at completion: 32.1' (beginning of shift, 6/21/08) 4.6' (includes drilling water)
FIELD NOTES:
Advanced boring using 4.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	720.1														
52.0	718.1						Hard gray SILT AND CLAY (A-6a), little fine to coarse sand, little gravel; damp.								
55		27 42 49	1	19			Very dense brown and gray GRAVEL (A-1-a), trace fine to coarse sand, trace silty clay; possible cobbles; wet.								96
57.0	713.1														
60		11 17 26	18	20		4.5+	Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.		7	11	---	18	40	24	
62.0	708.1														
65		15 13 9	18	21			Medium dense brown and gray GRAVEL (A-1-a), some fine to coarse sand, trace silty clay; wet.		76	16	---	5	--3--		
67.0	703.1														
70		21 35 41	16	22			Very dense gray COARSE AND FINE SAND (A-3a), some silty clay, little gravel; moist to wet.		15	17	---	35	26	7	80
72.0	698.1														
75	695.1	35 50/5	8	23			Very dense brown and gray GRAVEL (A-1-a), some fine to coarse sand, trace silty clay; wet.		70	13	---	10	--7--		50+

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-046-0-08 | *Location:* Sta. 870+63.35, 38.68 ft Rt of Ramp N1 BL | *Date Drilled:* 6/26/2008 to 6/27/2008

WATER OBSERVATIONS:
Water seepage at: 13.0', 18.0', 52.0', 62.0'
Water level at completion: 32.1' (beginning of shift, 6/21/08) 4.6' (includes drilling water)
FIELD NOTES:
Advanced boring using 4.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	695.1														
77.0	693.1						Very dense brown and gray GRAVEL (A-1-a), some fine to coarse sand, trace silty clay; wet.								
80		16 42 50/3	8	24		4.5+	Hard brownish gray SANDY SILT (A-4a), some to "and" fine to coarse sand, trace gravel; damp. @ 73.5'-94.3', possible boulders.								50+
85		42 50/3	9	25		4.5+			8	12	---	27	39	14	50+
90		16 42 50/3	15	26		4.5+									50+
95		16 50/4	8	27		4.5+									50+
97.0	673.1														
100	670.1	10 21 38	18	28			Shale, gray and brownish gray, very weak, severely weathered to decomposed, thinly laminated.								62

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DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-046-0-08 | *Location:* Sta. 870+63.35, 38.68 ft Rt of Ramp N1 BL | *Date Drilled:* 6/26/2008 to 6/27/2008

WATER OBSERVATIONS:
Water seepage at: 13.0', 18.0', 52.0', 62.0'
Water level at completion: 32.1' (beginning of shift, 6/21/08) 4.6' (includes drilling water)
FIELD NOTES: Advanced boring using 4.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL ⊢ ○ / Non-Plastic - NP ⊣ LL Blows per foot - 10 20 30 40
	670.1														
105.0	665.1	50/5	2	29			Shale, gray and brownish gray, very weak, severely weathered to decomposed, thinly laminated.								50+ ○
108.6	661.5	Core 60"	Rec 41"	RQD 10%	R1		Shale, brownish gray, weak to very weak, severely weathered, thinly laminated, jointed, highly fractured, tight, slighly rough shear fractures; RQD 0%, Loss 42%. @ 105.0' to 106.5', possible lost recovery [washed out].								
110		Core 60"	Rec 60"	RQD 88%	R2		Shale, blue-gray, weak, moderately to highly weathered, thinly laminated, slightly calcareous, jointed, moderately fractured, tight, slighly rough fractures; RQD 79%, LOSS 0%. Contains dark gray, well cemented shale zones [thin, dark bands]. Dark shale zones are typically 1-4 inches thick, spaced at intervals of 4 to 12 inches. @ 108.6' - 109.1', qu = 1641 psi								
115															
120		Core 120"	Rec 120"	RQD 83%	R3		@ 121.8' to 123.0' calcareous.								
125.0	645.1						Bottom of Boring - 125.0'								

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 872+00.97, 38.83 RT | EXPLORATION ID B-046-1-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP N1
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 771.7 (MSL) EOB: 100.0 ft. | PAGE 1 OF 4
START: 7/19/10 END: 7/19/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 711999.330 N, 1831727.400 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil - 4"	771.4																	
Very stiff to hard brown SANDY SILT (A-4a), some to "and" fine to coarse sand, trace gravel; damp.		1	5 4 4	11	11	SS-1	4.5+	-	-	-	-	-	-	-	-	12	A-4a (V)	
		2																
		3																
		4	10 7 5	16	17	SS-2	2.00	-	-	-	-	-	-	-	-	13	A-4a (V)	
		5																
		6																
		7	10 9 10	25	83	SS-3	4.5+	3	11	16	46	24	23	17	6	13	A-4a (7)	
		8																
		9	9 11 15	34	100	SS-4	4.5+	-	-	-	-	-	-	-	-	12	A-4a (V)	
		10																
		11																
		12	24 26 20	61	17	SS-5	4.5+	-	-	-	-	-	-	-	-	13	A-4a (V)	
		13																
@ 13.5', becomes gray.		14	12 18 42	79	78	SS-6	4.5+	8	9	15	42	26	23	15	8	12	A-4a (7)	
		15																
		16																
		17	9 22 21	57	100	SS-7	4.5+	-	-	-	-	-	-	-	-	7	A-4a (V)	
		18																
		19	11 14 19	43	100	SS-8	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		20																
	750.7																	
Dense to very dense brown GRAVEL WITH SAND (A-1-b), some silt; damp.		21																
		22	15 27 25	68	100	SS-9	-	32	20	27	-	21 -	NP	NP	NP	7	A-1-b (0)	
		23																
		24	16 20 16	47	100	SS-10	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:33

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 872+00.97, 38.83 RT | START: 7/19/10 | END: 7/19/10 | PG 2 OF 4 | B-046-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Dense to very dense brown GRAVEL WITH SAND (A-1-b), some silt; damp. *(continued)*	746.7																	
		26																
		27	24 19 17	47	17	SS-11	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
	743.2	28																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		29	34 20 22	55	89	SS-12	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
		30																
		31																
		32	30 35 41	100	100	SS-13	4.5+	19	18	18	27	18	22	14	8	7	A-4a (2)	
		33																
		34	47 48 41	117	28	SS-14	4.5+	-	-	-	-	-	-	-	-	7	A-4a (V)	
		35																
		36																
		37	22 28 33	80	100	SS-15	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
		38																
		39	18 20 20	53	100	SS-16	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		40																
		41																
		42	22 27 36	83	100	SS-17	4.5+	12	15	20	32	21	23	14	9	8	A-4a (4)	
		43																
		44	28 49 50/4"	-	100	SS-18	4.5+	-	-	-	-	-	-	-	-	7	A-4a (V)	
	725.7 W	45																
Dense to very dense brown GRAVEL WITH SAND (A-1-b), trace to little silt; wet.		46																
		47	13 17 25	55	28	SS-19	-	-	-	-	-	-	-	-	-	13	A-1-b (V)	
		48																
@ 48.5', 1.5 feet sand heave; washed out with tricone.		49	28 30 37	88	100	SS-20	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:33

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PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 872+00.97, 38.83 RT | START: 7/19/10 | END: 7/19/10 | PG 3 OF 4 | B-046-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Dense to very dense brown GRAVEL WITH SAND (A-1-b), trace to little silt; wet. *(continued)*	720.0	52																
		53																
@ 53.5', becomes gray.		54	44 48 49	128	56	SS-21	-	39	25	20	16	-	NP	NP	NP	8	A-1-b (0)	
		55																
		56																
		57																
		58																
		59	26 36 38	97	56	SS-22	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
		60																
		61																
		62																
		63																
		64	50/4"	-	75	SS-23	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		65																
		66																
		67																
		68																
		69	50/5"	-	60	SS-24	-	36	33	23	8	-	NP	NP	NP	11	A-1-b (0)	
		70																
		71																
		72																
		73																
		74	40 48 32	105	67	SS-25	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
		75																
		76																
	694.7	77																
Hard gray SANDY SILT (A-4a), some to "and" fine to coarse sand, trace gravel; damp.		78																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:33

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 872+00.97, 38.83 RT | START: 7/19/10 | END: 7/19/10 | PG 4 OF 4 | B-046-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Hard gray SANDY SILT (A-4a), some to "and" fine to coarse sand, trace gravel; damp. *(continued)*	693.2	79	30 31 33	84	100	SS-26	4.5+	6	10	21	42	21	23	13	10	11	A-4a (6)	
		80																
		81																
		82																
		83																
		84	28 49 50/5"	-	100	SS-27	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
		85																
		86																
		87																
		88																
		89	28 50	-	92	SS-28	4.5+	7	11	25	37	20	21	13	8	8	A-4a (4)	
		90																
		91																
		92																
		93																
		94	44 50/4"	-	110	SS-29	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
		95																
		96																
		97																
		98																
	674.7	99	15 20 20	53	100	SS-30	2.50	-	-	-	-	-	-	-	-	27	A-7-6 (V)	
Very stiff gray CLAY (A-7-6), little fine sand; moist.	671.7	EOB 100																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:33

NOTES: SEEPAGE AT 46.0 FEET; WATER LEVEL PRIOR TO ADDING WATER = 34.1 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 98.1 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 2 BAGS BENTONITE CHIPS; 3 BAGS QUIKGROUT

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / J. POILLUCCI | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 992+33.52, 68.32 LT | EXPLORATION ID B-047-1-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / D. WILLIARD | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP Q1
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 769.6 (MSL) EOB: 69.9 ft. | PAGE 1 OF 3
START: 5/25/10 END: 5/26/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 64.7 | COORD: 712321.020 N, 1831767.930 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Asphalt - 3" Base - 6"	769.6																	
	768.8																	
POSSIBLE FILL: Stiff to very stiff brown to dark brown SANDY SILT (A-4a), some fine to coarse sand, little gravel; contains trace brick fragments; damp to moist.		1	2 4 3	8	89	SS-1	2.00	-	-	-	-	-	-	-	-	13	A-4a (V)	
		2																
		3																
		4	3 4 4	9	83	SS-2	1.00	-	-	-	-	-	-	-	-	14	A-4a (V)	
		5																
@6.0' - 7.5', contains organic odor and rock fragments.		6																
		7	2 3 2	5	44	SS-3	1.00	-	-	-	-	-	-	-	-	13	A-4a (V)	
		8																
		9	2 8 18	28	72	SS-4	3.50	-	-	-	-	-	-	-	-	13	A-4a (V)	
		10																
@11.0' - 12.5', hard, gray.		11																
		12	10 14 14	30	100	SS-5	4.5+	14	10	17	38	21	20	13	7	9	A-4a (5)	
	756.1	13																
Dense to very dense brown COARSE AND FINE SAND (A-3a), trace silt, trace gravel; damp.		14	9 21 25	50	78	SS-6	-	-	-	-	-	-	-	-	-	5	A-3a (V)	
		15																
		16																
	752.6	17	12 23 18	44	100 -	SS-7A SS-7B	- -	- -	- -	- -	- -	- -	- -	- -	- -	9 21	A-3a (V) A-4b (V)	
Dense brown and gray SILT (A-4b), some fine to coarse sand, trace gravel; damp.	751.1	18																
Dense gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		19	6 17 15	35	94	SS-8	-	12	8	25	40	15	18	14	4	9	A-4a (4)	
	748.6	20																
Dense to very dense gray COARSE AND FINE SAND (A-3a), little to some silt, little to some gravel; damp.		21	6 20 29	53	94	SS-9	-	-	-	-	-	-	-	-	-	8	A-3a (V)	
		22																
		23																
		24	18 21 24	49	78	SS-10	-	-	-	-	-	-	-	-	-	3	A-3a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:34

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 992+33.52, 68.32 LT | START: 5/25/10 | END: 5/26/10 | PG 2 OF 3 | B-047-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Dense to very dense gray COARSE AND FINE SAND (A-3a), little to some silt, little to some gravel; damp. *(continued)*	744.6																	
		26																
		27	20 25 30	59	100	SS-11	-	-	-	-	-	-	-	-	-	4	A-3a (V)	
		28																
		29	16 26 50	82	78	SS-12	-	26	3	48	- 23 -		NP	NP	NP	9	A-3a (0)	
		30																
		31																
		32																
		33	W															
@ 33.5', becomes wet.		34	17 29 36	70	89	SS-13	-	-	-	-	-	-	-	-	-	9	A-3a (V)	
		35																
		36																
		37																
@38.5', 43.5', 2.5' of sand heave; washed out with tricone.		38																
		39	25 21 50/2"	-	79	SS-14	-	-	-	-	-	-	-	-	-	11	A-3a (V)	
		40																
		41																
		42																
		43																
		44	50/2"	-	100	SS-15	-	-	-	-	-	-	-	-	-	10	A-3a (V)	
		45																
		46																
		47																
		48																
		49	23 21 36	61	72	SS-16	-	16	26	37	- 21 -		NP	NP	NP	14	A-3a (0)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:34

PID: 77370	BR ID:	PROJECT: I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 992+33.52, 68.32 LT	START: 5/25/10	END: 5/26/10	PG 3 OF 3	B-047-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 717.9	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense gray GRAVEL WITH SAND (A-1-b), little to some fine to coarse sand, little silt; wet.	717.6	52																
		53																
		54	50/2"	-	100	SS-17	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
		55																
@56.0', encountered possible cobbles or boulders.		56																
	712.6	57																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp to moist.		58																
		59	23 34 50/2"	-	100	SS-18	4.5+	4	9	18	47	22	23	15	8	11	A-4a (7)	
		60																
		61																
		62																
		63																
		64	24 46 50/2"	-	100	SS-19	4.5+	-	-	-	-	-	-	-	-	11	A-4a (V)	
		65																
		66																
		67																
		68																
		69	30 46 50/5"	-	100	SS-20	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
	699.7	EOB																

NOTES: SEEPAGE AT 33.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 37.1 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 28.0 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 2.5 BAGS BENTONITE CHIPS; 2.5 BAGS QUIKGROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:34

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / J. NELSON | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 872+15.67, 17.11 LT | EXPLORATION ID B-047-2-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / S. LARIMER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP N3
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 755.0 (MSL) EOB: 69.9 ft. | PAGE 1 OF 3
START: 6/15/10 END: 6/15/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 64.7 | COORD: 712205.160 N, 1831781.780 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Asphalt- 9.5" Base- 2.5"	755.0																	
	754.0																	
Medium dense to dense brown GRAVEL (A-1-a), little fine to coarse sand, trace silt; damp.		1	13 13 10	25	67	SS-1	-	-	-	-	-	-	-	-	-	5	A-1-a (V)	
		2																
		3																
		4	6 8 6	15	100	SS-2	-	70	13	6	11	-	NP	NP	NP	4	A-1-a (0)	
		5																
		6																
		7	11 17 21	41	89	SS-3	-	-	-	-	-	-	-	-	-	6	A-1-a (V)	
	746.5	8																
Very dense brown SANDY SILT (A-4a), some fine to coarse sand; damp.	745.7	9	18 21 27	52	100	SS-4A	-	-	-	-	-	-	-	-	-	17	A-4a (V)	
Very stiff gray SANDY SILT (A-4a), "and" fine to coarse sand, trace gravel; damp.				-	-	SS-4B	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		10																
		11	12 18 25	46	100	SS-5	3.25	7	11	25	40	17	19	15	4	11	A-4a (4)	
	741.5	12																
Dense brown COARSE AND FINE SAND (A-3a), trace silt, trace gravel; damp.		13																
	739.0	14	16 22 23	49	100	SS-6	-	-	-	-	-	-	-	-	-	4	A-3a (V)	
Very dense gray GRAVEL (A-1-a), some fine to coarse sand, little silt; moist.		15																
		16	30 50/5"	-	73	SS-7	-	-	-	-	-	-	-	-	-	5	A-1-a (V)	
		17																
		18																
@ 18.5', becomes wet.		19	20 43 38	87	78	SS-8	-	53	22	11	14	-	NP	NP	NP	9	A-1-a (0)	
	734.0	20																
Very dense gray SILT (A-4b), trace clay; wet.		21																
		22	22 28 33	66	89	SS-9	-	-	-	-	-	-	-	-	-	21	A-4b (V)	
	731.5	23																
Very dense gray GRAVEL (A-1-a), some fine to coarse sand, trace silt; moist.		24	50/5"	-	80	SS-10	-	-	-	-	-	-	-	-	-	6	A-1-a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:34

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 872+15.67, 17.11 LT | START: 6/15/10 | END: 6/15/10 | PG 2 OF 3 | B-047-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense gray GRAVEL (A-1-a), some fine to coarse sand, trace silt; moist. *(continued)*	730.0																	
		26	32 28 33	66	83	SS-11	-	71	17	5	7	-	NP	NP	NP	8	A-1-a (0)	
	726.5	27																
Very dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, little silt; wet.		28																
		29	13 19 30	53	78	SS-12	-	-	-	-	-	-	-	-	-	14	A-1-b (V)	
		30																
		31																
		32																
		33																
@ 33.5', drove on large cobble or boulder; low recovery.		34	50/3"	-	67	SS-13	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
		35																
		36																
		37																
		38																
		39	11 23 45	73	56	SS-14	-	41	29	12	10	8	19	16	3	9	A-1-b (0)	
	713.0	40																
Hard gray SILTY CLAY (A-6b), trace fine to coarse sand; moist.		41																
		42																
		43																
		44	13 37 40	83	83	SS-15	4.5+	-	-	-	-	-	-	-	-	15	A-6b (V)	
	708.0	45																
Very dense gray COARSE AND FINE SAND (A-3a), some silt; wet.		46																
		47																
		48																
		49	23 48 50/5"	-	88	SS-16	-	0	2	63	26	9	NP	NP	NP	18	A-3a (0)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:34

PID: 77370	BR ID:	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 872+15.67, 17.11 LT	START: 6/15/10	END: 6/15/10	PG 3 OF 3	B-047-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense gray COARSE AND FINE SAND (A-3a), some silt; wet. *(continued)*	703.3	52																
		53																
	700.8	54	18 32 50	88	100 -	SS-17A SS-17B	- 4.5+	- -	- -	- -	- -	- -	- -	- -	- -	16 9	A-3a (V) A-4a (V)	
Hard gray SANDY SILT (A-4a), "and" fine to coarse sand, trace to little gravel; damp to moist.		55																
		56																
		57																
		58																
		59	23 49 50/4"	-	88	SS-18	4.5+	7	11	26	37	19	22	12	10	8	A-4a (4)	
		60																
		61																
		62																
		63																
		64	32 49 50/5"	-	76	SS-19	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
		65																
		66																
		67																
		68																
	685.1	69 EOB	29 48 50/5"	-	82	SS-20	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	

NOTES: SEEPAGE AT 18.5 AND 26.0 FEET; WATER LEVEL PRIOR TO ADDING WATER = 48.5 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 59.0 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 3.25 BAGS BENTONITE CHIPS; 1 BAG QUICKCRETE; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:34

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / L. BARTLETT | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 779+13.11, 6.55 RT | EXPLORATION ID B-047-3-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP N4
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 754.4 (MSL) EOB: 70.0 ft. | PAGE 1 OF 3
START: 6/7/10 END: 6/7/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712106.030 N, 1831790.990 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Asphalt - 8" Base - 4"	754.4																	
	753.4																	
Hard brown and gray SILT AND CLAY (A-6a), little fine to coarse sand, trace gravel; damp.		1	9 13 17	40	28	SS-1	4.5+	-	-	-	-	-	-	-	-	10	A-6a (V)	
	750.9	2																
Medium dense brown FINE SAND (A-3), trace silt; damp.		3																
F.S.		4	12 10 14	32	67	SS-2	-	-	-	-	-	-	-	-	-	6	A-3 (V)	
	748.4	5																
Dense to very dense brown and gray GRAVEL WITH SAND (A-1-b), little silt; damp.		6																
		7	3 19 21	53	89	SS-3	-	29	39	18	- 14 -		NP	NP	NP	4	A-1-b (0)	
		8																
		9	14 16 20	47	100	SS-4	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
		10																
		11																
		12	8 25 19	58	83	SS-5	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
		13																
@ 13.5'-14.7', brownish gray.		14	13 22 41	83	100	SS-6A	-	-	-	-	-	-	-	-	-	17	A-1-b (V)	
	739.7	15		-	-	SS-6B	-	-	-	-	-	-	-	-	-	6	A-1-a (V)	
Very dense brownish gray GRAVEL (A-1-a), some fine to coarse sand, little silt; moist to wet.			W															
@ 16.0', becomes wet.		16	15 47 50/5"	-	59	SS-7	-	58	19	10	- 13 -		NP	NP	NP	8	A-1-a (0)	
		17																
		18																
@ 18.5'-20.0', drove on large gravel or possible boulder.		19	50/5"	-	40	SS-8	-	-	-	-	-	-	-	-	-	7	A-1-a (V)	
		20																
	733.4	21																
Dense to very dense brownish gray GRAVEL WITH SAND (A-1-b), some to "and" fine to coarse sand, little to some silt; wet.			42 50/3"	-	78	SS-9	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
		22																
		23																
		24	21 48 50	129	94	SS-10	-	46	19	10	- 25 -		NP	NP	NP	8	A-1-b (0)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:34

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 779+13.11, 6.55 RT | START: 6/7/10 | END: 6/7/10 | PG 2 OF 3 | B-047-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Dense to very dense brownish gray GRAVEL WITH SAND (A-1-b), some to "and" fine to coarse sand, little to some silt; wet. *(continued)*	729.4	W																
		26	4 7 30	49	17	SS-11	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
		27																
		28																
		29	27 44 50/4"	-	50	SS-12	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
		30																
		31																
		32																
		33																
		34	3 6 36	55	67	SS-13	-	44	34	12	- 10 -		NP	NP	NP	8	A-1-b (0)	
		35																
		36																
		37																
		38																
		39	50/5"	-	20	SS-14	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
	712.4	40																
Very dense gray COARSE AND FINE SAND (A-3a), some silt, trace gravel; wet.		41																
		42																
		43																
		44	27 50/2"	-	38	SS-15	-	4	9	61	- 26 -		NP	NP	NP	23	A-3a (0)	
	707.4	45																
Very stiff to hard gray SANDY SILT (A-4a), some to "and" fine to coarse sand, trace to little gravel; moist.		46																
		47																
		48																
		49	27 50/4"	-	100	SS-16	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:34

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PID: 77370	BR ID:	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 779+13.11, 6.55 RT	START: 6/7/10	END: 6/7/10	PG 3 OF 3	B-047-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very stiff to hard gray SANDY SILT (A-4a), some to "and" fine to coarse sand, trace to little gravel; moist. *(continued)*	702.7	52																
		53																
		54	22 38 42	105	100	SS-17	3.00	6	11	25	36	22	22	12	10	14	A-4a (5)	
		55																
		56																
		57																
		58																
		59	31 50/5"	-	100	SS-18	4.5+	-	-	-	-	-	-	-	-	11	A-4a (V)	
		60																
		61																
		62																
		63																
		64	15 31 33	84	100	SS-19	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
		65																
		66																
		67																
		68																
		69	16 34 26	79	100	SS-20	4.5+	-	-	-	-	-	-	-	-	16	A-4a (V)	
	684.4	EOB 70																

NOTES: SEEPAGE AT 16.0 AND 25.5 FEET; FINAL WATER LEVEL = 60.8 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 3 BAG BENTONITE CHIPS; 1 BAGS QUIKGROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:34

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PROJECT: I-70/I-71 EAST INTERCHANGE
TYPE: ROADWAY
PID: 77370 BR ID:
START: 7/16/10 END: 7/16/10

DRILLING FIRM / OPERATOR: DLZ / K. CONRAD
SAMPLING FIRM / LOGGER: DLZ / M. EVENER
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 75 TRUCK
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 1/7/10
ENERGY RATIO (%): 79

STATION / OFFSET: 873+39.07, 23.54 RT
ALIGNMENT: RAMP N1
ELEVATION: 773.7 (MSL) EOB: 83.8 ft.
COORD: 712009.880 N, 1831863.670 E

EXPLORATION ID B-047-4-10
PAGE 1 OF 4

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil- 4"	773.4																	
POSSIBLE FILL: Stiff to very stiff brown SILT AND CLAY (A-6a), some fine to coarse sand, little gravel; damp.		1	13 8 1	12	11	SS-1	2.00	-	-	-	-	-	-	-	-	12	A-6a (V)	
		2																
		3																
		4	6 6 6	16	6	SS-2	1.75	-	-	-	-	-	-	-	-	17	A-6a (V)	
		5																
		6																
		7	5 5 4	12	6	SS-3	--	-	-	-	-	-	-	-	-	-	A-6a (V)	
	765.2	8																
Very stiff to hard brown SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.		9	3 6 7	17	100	SS-4	3.00	9	12	18	38	23	25	16	9	14	A-4a (5)	
		10																
		11																
		12	3 11 19	40	100	SS-5	4.5+	-	-	-	-	-	-	-	-	11	A-4a (V)	
@ 11.0'-12.5', brown and gray mottled.		13																
@ 13.5'-15.0', gray, some gravel.		14	21 30 23	70	67	SS-6	4.5+	22	10	12	35	21	21	14	7	8	A-4a (4)	
		15																
		16	25 50/5"	-	18	SS-7	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
	755.2	17																
Dense to very dense brown SANDY SILT (A-4a), trace gravel; damp.		18																
		19	10 16 12	37	83	SS-8	-	-	-	-	-	-	-	-	-	6	A-4a (V)	
		20																
		21	20 13 14	36	67	SS-9	-	1	2	54	-	43 -	NP	NP	NP	11	A-4a (2)	
		22																
		23																
		24	14 25 21	61	100	SS-10	-	-	-	-	-	-	-	-	-	12	A-4a (V)	
	748.7																	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:34

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense brownish gray GRAVEL WITH SAND (A-1-b), trace to little silt; damp to moist.		26	15 22 20	55	100	SS-11	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
		27																
		28																
		29	38 32 29	80	100	SS-12	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		30																
		31																
		32	26 38 35	96	100	SS-13	-	4	54	26	-	16 -	NP	NP	NP	4	A-1-b (0)	
		33																
		34	28 22 26	63	100	SS-14	-	-	-	-	-	-	-	-	-	13	A-1-b (V)	
		35																
		36	20 23 24	62	100	SS-15	-	-	-	-	-	-	-	-	-	15	A-1-b (V)	
@ 36.0', becomes wet.	W	37																
		38																
		39	24 42 49	120	100	SS-16	-	46	35	10	-	9 -	NP	NP	NP	10	A-1-b (0)	
	732.7	40																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, some gravel; damp to moist.		41	50/5"	-	60	SS-17	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
		42																
		43																
@ 41.0', 1.5 feet sand heave; washed out with tricone.		44	43 50/4"	-	100	SS-18	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
	727.7	45																
Very dense gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; moist.		46	42 50/5"	-	100	SS-19	-	-	-	-	-	-	-	-	-	12	A-4a (V)	
	725.2	47																
Very dense gray SILT (A-4b), little fine to coarse sand, trace clay, trace gravel; wet.		48																
		49	17 44 31	99	22	SS-20	-	9	2	11	66	12	19	18	1	16	A-4b (8)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:34

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PID: 77370	BR ID:	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 873+39.07, 23.54 RT	START: 7/16/10	END: 7/16/10	PG 3 OF 4	B-047-4-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Hard gray SANDY SILT (A-4a), "and" fine to coarse sand, little gravel; damp.	722.0 / 721.7	52																
		53																
		54	50/5"	-	100	SS-21	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		55																
		56																
	716.7	57																
Very dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, little silt; wet.		58																
		59	40 50/5"	-	100	SS-22	-	42	24	17	-	17 -	NP	NP	NP	9	A-1-b (0)	
		60																
		61																
		62																
		63																
		64	40 49 33	108	17	SS-23	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		65																
	706.7	66																
Hard gray SANDY SILT (A-4a), "and" fine to coarse sand, trace to little gravel; damp.		67																
		68																
		69	40 50/3"	-	100	SS-24	4.5+	7	10	24	38	21	21	13	8	10	A-4a (5)	
		70																
		71																
		72																
		73																
@ 73.5'-73.9', stiff.		74	50/5"	-	20	SS-25	1.50	-	-	-	-	-	-	-	-	12	A-4a (V)	
		75																
		76																
		77																
		78																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:34

PID: 77370	BR ID:	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 873+39.07, 23.54 RT	START: 7/16/10	END: 7/16/10	PG 4 OF 4	B-047-4-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Hard gray SANDY SILT (A-4a), "and" fine to coarse sand, trace to little gravel; damp. *(continued)*	695.2	79	44 50/5"	-	100	SS-26	4.5+	-	-	-	-	-	-	-	-	11	A-4a (V)	
		80																
		81																
		82																
@ 83.5'-83.8', very stiff.		83																
	689.9	EOB	50/4"	-	50	SS-27	3.00	-	-	-	-	-	-	-	-	13	A-4a (V)	

NOTES: SEEPAGE AT 36.0, 46.0 AND 58.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 39.1 FEET; NO FINAL WATER LEVEL DETECTED.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 2 BAGS BENTONITE CHIPS; 2 BAGS QUIKGROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:34

PROJECT: I-70/I-71 EAST INTERCHANGE
TYPE: ROADWAY
PID: 77370 BR ID:
START: 6/16/10 END: 6/16/10

DRILLING FIRM / OPERATOR: DLZ / J. NELSON
SAMPLING FIRM / LOGGER: DLZ / S. LARIMER
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 75 TRUCK
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 1/7/10
ENERGY RATIO (%): 64.7

STATION / OFFSET: 780+31.82, 37.77 LT
ALIGNMENT: RAMP N4
ELEVATION: 758.5 (MSL) EOB: 21.9 ft.
COORD: 712160.530 N, 1831905.390 E

EXPLORATION ID B-047-5-10
PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 758.5	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Asphalt- 8" Concrete- 9" Base - 1"	757.0																	
FILL: Hard brown SILT AND CLAY (A-6a), some fine to coarse gravel, some fine to coarse sand; damp.	755.0		13 19 17	39	67	SS-1	4.5+	-	-	-	-	-	-	-	-	6	A-6a (V)	
POSSIBLE FILL: Dense to very dense brown GRAVEL WITH SAND (A-1-b), some fine to coarse sand, little silty clay; damp.	752.5		16 22 24	50	22	SS-2	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
POSSIBLE FILL: Dense to very dense brown GRAVEL WITH SAND (A-1-b), little silt; damp.	747.5		12 16 27	46	78	SS-3	-	35	31	18	-	16 -	NP	NP	NP	5	A-1-b (0)	
			17 28 24	56	89	SS-4	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
Very dense gray SILT (A-4b), trace fine sand, trace clay; damp. @ 13.5'-13.9', wet.	744.6	W	21 30 39	74	94	SS-5	-	-	-	-	-	-	NP	NP	NP	-	A-4b (V)	
							-	-	-	-	-	-	-	-	-	15	A-4b (V)	
Very dense gray GRAVEL WITH SAND (A-1-b), some fine to coarse sand, trace to little silt; damp.			22 35 49	91	89 -	SS-6A SS-6B	-	50	20	11	-	19 -	NP	NP	NP	5	A-1-b (0)	
			26 50/4"	-	80	SS-7	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
			23 32 38	75	89	SS-8	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
	736.6	EOB	28 50/5"	-	82	SS-9	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	

NOTES: SEEPAGE AT 13.5 FEET; NO FINAL WATER LEVEL DETECTED.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 0.25 BAGS BENTONITE CHIPS; 1 BAG QUICKCRETE; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:35

PROJECT: I-70/I-71 EAST INTERCHANGE	DRILLING FIRM / OPERATOR: DLZ / K. CONRAD	DRILL RIG: CME 75 TRUCK	STATION / OFFSET: 874+96.68, 25.7 RT	EXPLORATION ID B-047-6-10
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: DLZ / M. EVENER	HAMMER: CME AUTOMATIC	ALIGNMENT: RAMP N1	
PID: 77370 BR ID:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 1/7/10	ELEVATION: 774.7 (MSL) EOB: 63.7 ft.	PAGE 1 OF 3
START: 7/15/10 END: 7/15/10	SAMPLING METHOD: SPT	ENERGY RATIO (%): 79	COORD: 711991.820 N, 1832019.250 E	

MATERIAL DESCRIPTION AND NOTES	ELEV. 774.7	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil- 4"	774.3																	
FILL: Very stiff brown SILTY CLAY (A-6b), some fine to coarse sand, little gravel; damp.	771.2	1	4 6 4	13	67	SS-1	3.50	-	-	-	-	-	-	-	-	16	A-6b (V)	
FILL: Brick fragments	768.7	4	6 4 4	11	11	SS-2	--	-	-	-	-	-	-	-	-	-		
POSSIBLE FILL: Stiff brown SILT AND CLAY (A-6a), little fine to coarse sand, trace gravel; damp.	766.2	7	3 4 5	12	100	SS-3	1.50	8	4	11	52	25	26	15	11	14	A-6a (8)	
Very stiff brown SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		9	11 13 8	28	28	SS-4	2.50	-	-	-	-	-	-	-	-	14	A-4a (V)	
		12	12 15 14	38	22	SS-5	2.50	-	-	-	-	-	-	-	-	17	A-4a (V)	
		14	2 8 6	18	100	SS-6	2.25	11	13	19	36	21	23	16	7	11	A-4a (4)	
@ 16.0'-17.5', gravel blocking spoon; low recovery.	756.2	17	6 5 31	47	6	SS-7	--	-	-	-	-	-	-	-	-	-		
Dense brown COARSE AND FINE SAND (A-3a), little to some silt, trace to little gravel; damp.	753.7	19	5 11 14	33	67	SS-8	-	-	-	-	-	-	-	-	-	5	A-3a (V)	
Medium dense brown SANDY SILT (A-4a), "and" fine to coarse sand, trace gravel; damp.	751.2	22	8 9 7	21	56	SS-9	-	9	14	29	-	48 -	NP	NP	NP	11	A-4a (3)	
Stiff to very stiff gray SANDY SILT (A-4a), "and" fine to coarse sand, little gravel; damp.	749.7	24	12 9 8	22	67	SS-10	2.00	-	-	-	-	-	-	-	-	11	A-4a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:35

PID: 77370	BR ID:	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 874+96.68, 25.7 RT	START: 7/15/10	END: 7/15/10	PG 2 OF 3	B-047-6-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 749.7	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very stiff to hard gray SILTY CLAY (A-6b), some to "and" fine to coarse sand, little gravel; damp.		26	10 13 15	37	83	SS-11	2.50	-	-	-	-	-	-	-	-	9	A-6b (V)	
		29	19 17 15	42	78	SS-12	4.5+	-	-	-	-	-	-	-	-	9	A-6b (V)	
Very dense gray GRAVEL (A-1-a), "and" fine to coarse sand, little silt; damp.	743.7	32	23 43 47	118	67	SS-13	-	52	24	12	-	12 -	NP	NP	NP	3	A-1-a (0)	
Hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.	741.2	34	33 34 42	100	56	SS-14	4.5+	-	-	-	-	-	-	-	-	6	A-4a (V)	
Very dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, little silt; wet.	738.7 W	37	25 40 41	107	56	SS-15	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
		39	18 19 27	61	100	SS-16	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
@ 43.5', 2.0 feet sand heave; washed out with tricone.	727.7	44	38 45 34	104	56	SS-17	-	35	21	27	-	17 -	NP	NP	NP	10	A-1-b (0)	
Dense to very dense gray COARSE AND FINE SAND (A-3a), little silt, little gravel; wet.		49	15 20 18	50	83	SS-18	-	-	-	-	-	-	-	-	-	22	A-3a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:35

PID: 77370	BR ID:	PROJECT: I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 874+96.68, 25.7 RT	START: 7/15/10	END: 7/15/10	PG 3 OF 3	B-047-6-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 722.9	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense gray SILT (A-4b), some fine sand; wet.	722.7	52 53 54 55	23 26 40	87	78	SS-19	-	0	1	21	68	10	NP	NP	NP	18	A-4b (8)	
Very dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace silt; wet.	717.7	56 57 58 59 60	16 21 30	67	100	SS-20	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
Very dense gray GRAVEL (A-1-a), some fine to coarse sand, trace silt; wet.	712.7	61 62 63																
	711.0	EOB	50/2"	-	100	SS-21	-	-	-	-	-	-	-	-	-	9	A-1-a (V)	

NOTES: SEEPAGE AT 36.0 FEET; WATER LEVEL PRIOR TO ADDING WATER = 38.2 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 30.3 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 2 BAG BENTONITE CHIPS; 2 BAGS QUIKGROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:35

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / L. BARTLETT | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 775+06.33, 3.67 RT | EXPLORATION ID B-047-7-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: I-70
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 760.9 (MSL) EOB: 70.0 ft.
START: 6/16/10 END: 6/16/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712232.380 N, 1832011.900 E
PAGE 1 OF 3

MATERIAL DESCRIPTION AND NOTES	ELEV. 760.9	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Asphalt- 7" Concrete- 10"	759.5																	
Hard brown SILTY CLAY (A-6b), little fine to coarse sand, little gravel; damp.	757.4		5 13 13	34	56	SS-1	4.5+	-	-	-	-	-	-	-	-	9	A-6b (V)	
Medium dense to dense brown GRAVEL WITH SAND (A-1-b), some fine to coarse sand, trace silt; damp.	749.9		7 16 14	40	33	SS-2	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
			7 8 11	25	67	SS-3	-	17	47	27	-	9 -	NP	NP	NP	5	A-1-b (0)	
			4 9 9	24	56	SS-4	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
Very stiff gray SANDY SILT (A-4a), some gravel, trace fine to coarse sand; damp.	747.4		11 12 13	33	56	SS-5	--	-	-	-	-	-	-	-	-	8	A-4a (V)	
Hard gray SILT (A-4b), some fine to coarse sand, little clay, trace gravel; damp.	742.4		13 20 24	58	100	SS-6	4.5+	4	8	21	54	13	18	14	4	11	A-4b (6)	
			25 22 20	55	100	SS-7	4.5+	-	-	-	-	-	-	-	-	11	A-4b (V)	
Medium dense gray FINE SAND (A-3), trace silt; damp.	739.9		9 14 15	38	100	SS-8	-	-	-	-	-	-	-	-	-	13	A-3 (V)	
Medium dense to dense gray COARSE AND FINE SAND (A-3a), some silt, little gravel; moist to wet.	735.9	W	8 15 16	41	100	SS-9	-	18	40	10	21	11	20	14	6	10	A-3a (0)	
			10 7 10	22	83	SS-10	-	-	-	-	-	-	-	-	-	17	A-3a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:35

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 775+06.33, 3.67 RT | START: 6/16/10 | END: 6/16/10 | PG 2 OF 3 | B-047-7-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 735.9	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Dense to very dense gray GRAVEL WITH SAND (A-1-b), trace to little silt; wet.	728.9		11 16 24	53	100	SS-11	-	28	40	22	-	10 -	NP	NP	NP	13	A-1-b (0)	
			1 11 24	46	56	SS-12	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
Dense to very dense gray COARSE AND FINE SAND (A-3a), little to some silt; wet. @ 33.5', 2.0 feet sand heave; washed out with tricone.			4 8 18	34	78	SS-13	-	-	-	-	-	-	-	-	-	12	A-3a (V)	
			14 25 26	67	78	SS-14	-	0	16	69	-	15 -	NP	NP	NP	20	A-3a (0)	
			23 38 42	105	100	SS-15	-	-	-	-	-	-	-	-	-	20	A-3a (V)	
			13 26 29	72	100	SS-16	-	0	0	69	-	31 -	NP	NP	NP	21	A-3a (0)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:35

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PID: 77370	BR ID:	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 775+06.33, 3.67 RT	START: 6/16/10	END: 6/16/10	PG 3 OF 3	B-047-7-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 709.1	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense gray GRAVEL (A-1-a), some fine to coarse sand, trace to little silt; wet.	708.9	52																
		53																
		54	50/5"	-	60	SS-17	-	-	-	-	-	-	-	-	-	8	A-1-a (V)	
		55																
		56																
		57																
		58																
		59	18 50/4"	-	100	SS-18	-	69	14	11	-	6 -	NP	NP	NP	6	A-1-a (0)	
	698.9	60																
Very dense gray COARSE AND FINE SAND (A-3a), some silt, little gravel; wet.		61																
		62																
		63																
		64	30 35 38	96	67	SS-19	-	-	-	-	-	-	-	-	-	11	A-3a (V)	
	693.9	65																
Very dense gray FINE SAND (A-3); wet.		66																
		67																
		68																
F S		69	11 16 32	63	78	SS-20	-	-	-	-	-	-	-	-	-	19	A-3 (V)	
	690.9	EOB 70																

NOTES: SEEPAGE AT 23.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 29.2 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 25.0 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 9 BAG BENTONITE CHIPS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:35

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-048-0-08 | *Location:* Sta. 875+39.94, 2.36 ft Lt of Ramp N3 BL | *Date Drilled:* 7/1/2008 to 7/2/2008

WATER OBSERVATIONS: Water seepage at: 13.0',32.0',56.0' | Water level at completion:

FIELD NOTES: Advanced boring using 4.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP
	774.7														
0.3	774.4	2 3 3	3	1		--	Topsoil - 3" Soft to medium stiff brown SILT AND CLAY (A-6a), little fine to coarse sand, trace to little gravel; moist.								
3.5	771.2	2 2 2	10	2		1.0	Soft to medium stiff brown and gray SILTY CLAY (A-6b), some fine to coarse sand, trace gravel; moist.		4	9	---	16	33	38	
5		woh 2 3	11	3		1.0									
		3 2 2	6	4		1.0	@ 9.0', gray.								
10		11 10 10	1	5		--									
13.0	761.7	6 9 12	2	6			Medium dense to dense gray GRAVEL (A-1-a), some fine to coarse sand, trace silty clay; wet.								
15		10 14 19	2	7			@ 12.5'-20.0', encountered cobbles and boulders.		66	14	---	9	--11--		
18.5	756.2	8 8 15	1	8			Medium dense gray GRAVEL WITH SAND (A-1-b), some silt; used tricone bit to remove possible cobbles; wet.		34	28	---	17	--21--		
20		12 12 14	5	9		3.5	Very stiff to hard gray SANDY SILT (A-4a), little to some fine to coarse sand, trace gravel; damp.								
20.5	754.2	3 8 11	12	10		4.5+									
25	749.7														

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-048-0-08 | *Location:* Sta. 875+39.94, 2.36 ft Lt of Ramp N3 BL | *Date Drilled:* 7/1/2008 to 7/2/2008

WATER OBSERVATIONS: Water seepage at: 13.0',32.0',56.0' | Water level at completion:

FIELD NOTES: Advanced boring using 4.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP
	749.7														
		6 7 10	15	11		4.5+	Very stiff to hard gray SANDY SILT (A-4a), little to some fine to coarse sand, trace gravel; damp.		8	14	---	20	36	22	
		4 6 10	14	12		2.0									
30															
32.0	742.7														
		14 12 24	5	13			Medium dense to dense brown, black, and gray GRAVEL (A-1-a), some fine to coarse sand, trace silty clay; wet.								
35															
		9 11 10	8	14					77	19	---	3	--1--		
40															
		9 13 10	6	15			@ 43.5'-45.0', trace fine to coarse sand.		90	6	---	3	--1--		
45															
47.0	727.7														
		8 9 14	16	16			Medium dense gray SANDY SILT (A-4a), trace clay, trace gravel; damp to moist.								
50	724.7														

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-048-0-08 | *Location:* Sta. 875+39.94, 2.36 ft Lt of Ramp N3 BL | *Date Drilled:* 7/1/2008 to 7/2/2008

WATER OBSERVATIONS: Water seepage at: 13.0',32.0',56.0' | Water level at completion:

FIELD NOTES: Advanced boring using 4.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay
	724.7						Very stiff gray SANDY SILT (A-4a), little clay, trace gravel; damp to moist.							
55		10 14 15	12	17		3.5			8	10	---	19	44	19
57.0	717.7						Medium dense brown, black, and gray GRAVEL (A-1-a), little fine to coarse sand; wet.							
60		10 10 16	8	18					80	16	---	3	--1--	
62.0	712.7						Medium dense brown and gray GRAVEL WITH SAND (A-1-b), little silty clay; wet.							
65		3 12 10	10	19					15	52	---	18	--15--	
67.0	707.7						Medium dense brown and gray FINE SAND (A-3), trace silty clay, trace gravel; wet.	F S						
70		10 11 14	18	20										
72.0	702.7						Dense gray GRAVEL (A-1-a); possible cobbles; wet.							
75	699.7	11 24 16	1	21										

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-048-0-08 | *Location:* Sta. 875+39.94, 2.36 ft Lt of Ramp N3 BL | *Date Drilled:* 7/1/2008 to 7/2/2008

WATER OBSERVATIONS: Water seepage at: 13.0',32.0',56.0' | Water level at completion:

FIELD NOTES: Advanced boring using 4.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay
	699.7						Dense gray GRAVEL (A-1-a); possible cobbles; wet.							
77.0	697.7						Medium dense brownish gray COARSE AND FINE SAND (A-3a), some silty clay; moist to wet.							
80		9 10 17	18	22					0	0	---	73	--27--	
85		6 25 26	18	23			@ 83.5'-85.0', very dense.							
87.0	687.7						Medium dense brown and gray GRAVEL (A-1-a), trace fine sand; possible cobbles; wet.							
90		6 10 14	2	24			@ 90.0'-95.0', difficult advancement of casing; possible cobbles and boulders.							
95		9 10 14	5	25					65	22	---	7	--6--	
97.0	677.7						Medium dense brown GRAVEL WITH SAND (A-1-b), trace silt; wet.							
100	674.7	10 8 8	18	26					6	60	---	27	--7--	

STANDARD PENETRATION (N60) Natural Moisture Content, % - ●
PL —— LL
Blows per foot - ○ / Non-Plastic - NP
10 20 30 40

54

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DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | Project: FRA-70-8.93 | Job No. 0221-1004.01

LOG OF: Boring B-048-0-08 | Location: Sta. 875+39.94, 2.36 ft Lt of Ramp N3 BL | Date Drilled: 7/1/2008 to 7/2/2008

WATER OBSERVATIONS: Water seepage at: 13.0',32.0',56.0' | Water level at completion:

FIELD NOTES: Advanced boring using 4.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	674.7														
102.0	672.7						Medium dense brown GRAVEL WITH SAND (A-1-b), trace silt; wet.								
		7 7 9	18	27			Medium stiff gray CLAY (A-7-6), little silt; varved; moist.		0	0	---	0	17	83	
107.0	667.7														
110.0	664.7	38 46 36	7	28			Shale, blue-gray, severely weathered, weak to very weak.		10	9	---	18	44	19	86
		Core 60"	Rec 49"	RQD 75%	R1		Shale, light gray to blue-gray, highly weathered, weak, thinly laminated, friable, fissile, pyritic, jointed, moderately fractured, tight, slightly rough; RQD 78%, Loss 5%.								
		Core 60"	Rec 60"	RQD 77%	R2		@ 116.4', contains dark gray, well cemented shale zones [thin, dark bands]. Dark shale zones are typically 1-4 inches thick, spaced at intervals of 12 to 24 inches.								
		Core 120"	Rec 120"	RQD 79%	R3										
125	649.7														

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | Project: FRA-70-8.93 | Job No. 0221-1004.01

LOG OF: Boring B-048-0-08 | Location: Sta. 875+39.94, 2.36 ft Lt of Ramp N3 BL | Date Drilled: 7/1/2008 to 7/2/2008

WATER OBSERVATIONS: Water seepage at: 13.0',32.0',56.0' | Water level at completion:

FIELD NOTES: Advanced boring using 4.0" diameter flush joint casing.

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	649.7														
		Core 120"	Rec 120"	RQD 79%	R3		Shale, light gray to blue-gray, highly weathered, weak, thinly laminated, friable, fissile, pyritic, jointed, moderately fractured, tight, slightly rough; RQD 78%, Loss 5%. @ 126.4', 127.8', encountered thin (1") sandstone/siltstone beds.								
130.0	644.7						Bottom of Boring - 130.0'								
135															
140															
145															
150															

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PROJECT: I-70/I-71 EAST INTERCHANGE
TYPE: ROADWAY
PID: 77370 BR ID:
START: 6/16/10 END: 6/16/10

DRILLING FIRM / OPERATOR: DLZ / J. NELSON
SAMPLING FIRM / LOGGER: DLZ / S. LARIMER
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 75 TRUCK
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 1/7/10
ENERGY RATIO (%): 64.7

STATION / OFFSET: 776+44.97, 61.9 RT
ALIGNMENT: I-70
ELEVATION: 763.8 (MSL) EOB: 44.4 ft.
COORD: 712196.560 N, 1832157.940 E

EXPLORATION ID B-048-1-10
PAGE 1 OF 2

MATERIAL DESCRIPTION AND NOTES	ELEV. 763.8	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Asphalt- 8" Concrete- 15.5"	761.8	1																
POSSIBLE FILL: Hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		2	5 16 27	46	89	SS-1	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
		3																
		4	15 16 18	37	72	SS-2	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		5																
		6																
		7	12 10 11	23	100	SS-3	4.5+	18	10	19	34	19	21	14	7	10	A-4a (4)	
	755.3	8																
Dense brown COARSE AND FINE SAND (A-3a), little fine to coarse gravel, trace silty clay; damp.		9	12 20 23	46	78	SS-4	-	-	-	-	-	-	-	-	-	3	A-3a (V)	
	752.8	10																
Dense gray GRAVEL WITH SAND (A-1-b), some fine to coarse sand, some silt; damp.		11																
		12	12 18 13	33	72	SS-5	-	-	-	-	-	-	-	-	-	2	A-1-b (V)	
		13																
		14	14 17 20	40	100	SS-6	-	45	22	12	13	8	19	15	4	5	A-1-b (0)	
	747.8	15																
Dense gray SANDY SILT (A-4a), "and" gravel; damp. @ 16.6'-16.8', gray clay seam.		16																
		17	20 26 19	49	100	SS-7	-	-	-	-	-	-	-	-	-	6	A-4a (V)	
	745.3	18																
Very stiff gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp to moist.		19	10 13 10	25	94	SS-8	3.50	-	-	-	-	-	-	-	-	10	A-4a (V)	
		20																
		21																
		22	7 10 13	25	83	SS-9	2.25	8	9	23	44	16	18	14	4	11	A-4a (5)	
	740.3	23																
Dense to very dense gray GRAVEL (A-1-a), little to some fine to coarse sand, trace to little silt; damp.		24	22 30 25	59	78	SS-10	-	-	-	-	-	-	-	-	-	4	A-1-a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:35

PID: 77370 BR ID: PROJECT I-70/I-71 EAST INTERCHANGE STATION / OFFSET: 776+44.97, 61.9 RT START: 6/16/10 END: 6/16/10 PG 2 OF 2 B-048-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 738.8	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Dense to very dense gray GRAVEL (A-1-a), little to some fine to coarse sand, trace to little silt; damp. *(continued)*		W																
		26																
		27	9 15 18	36	67	SS-11	-	-	-	-	-	-	-	-	-	7	A-1-a (V)	
@ 26.0', becomes wet.		28																
		29	5 15 18	36	72	SS-12	-	57	27	7	-	9 -	NP	NP	NP	8	A-1-a (0)	
		30																
@ 31.0'-40.0', 0.8 to 1.1 feet sand heave; washed out with tricone.		31																
		32	6 12 18	32	33	SS-13	-	-	-	-	-	-	-	-	-	8	A-1-a (V)	
		33																
		34	13 17 22	42	61	SS-14	-	-	-	-	-	-	-	-	-	7	A-1-a (V)	
		35																
		36																
		37																
		38																
		39	19 24 22	50	67	SS-15	-	-	-	-	-	-	-	-	-	8	A-1-a (V)	
		40																
		41																
		42																
		43																
@ 43.5'-44.4', low recovery; drove on gravel.	719.4	44 EOB	44 50/5"	-	27	SS-16	-	-	-	-	-	-	-	-	-	15	A-1-a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:35

NOTES: SEEPAGE AT 26.0 FEET; WATER LEVEL PRIOR TO ADDING WATER = 26.3 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 26.7 FEET.
ABANDONMENT METHODS, MATERIALS, QUANTITIES: 2 BAGS BENTONITE CHIPS; 1 BAG QUICKCRETE; SOIL CUTTINGS

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PROJECT: I-70/I-71 EAST INTERCHANGE
TYPE: ROADWAY
PID: 77370 BR ID:
START: 7/21/10 END: 7/21/10

DRILLING FIRM / OPERATOR: DLZ / K. CONRAD
SAMPLING FIRM / LOGGER: DLZ / M. EVENER
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 75 TRUCK
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 1/7/10
ENERGY RATIO (%): 79

STATION / OFFSET: 876+00.16, 19.06 LT
ALIGNMENT: RAMP N1
ELEVATION: 774.6 (MSL) EOB: 60.0 ft.
COORD: 712024.750 N, 1832127.080 E

EXPLORATION ID B-048-2-10
PAGE 1 OF 3

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil - 5"	774.2																	
FILL: Very stiff to hard brown SILTY CLAY (A-6b), some fine to coarse sand, trace to little gravel; contains brick fragments and cinders; damp to moist.	774.6	1	6 7 5	16	22	SS-1	4.50	-	-	-	-	-	-	-	-	11	A-6b (V)	
		2																
		3																
		4	3 3 4	9	100	SS-2	2.00	-	-	-	-	-	-	-	-	30	A-6b (V)	
		5																
		6																
		7	3 2 1	4	6	SS-3	--	-	-	-	-	-	-	-	-	21	A-6b (V)	
	767.1	8																
Very stiff to hard brown SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp to moist.		9	2 2 13	20	56	SS-4	4.5+	10	12	22	37	19	25	19	6	19	A-4a (4)	
		10																
		11																
		12	2 6 6	16	100	SS-5	2.50	-	-	-	-	-	-	-	-	13	A-4a (V)	
		13																
@ 13.5'-15.0', very soft to soft.		14	3 4 6	13	17	SS-6	0.25	-	-	-	-	-	-	-	-	17	A-4a (V)	
		15																
		16																
		17	6 8 11	25	100	SS-7	3.00	8	12	17	42	21	22	15	7	11	A-4a (6)	
		18																
		19	5 8 12	26	100	SS-8	2.50	-	-	-	-	-	-	-	-	11	A-4a (V)	
		20																
		21																
		22	11 17 17	45	100	SS-9	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		23																
		24	10 13 13	34	100	SS-10	4.5+	8	14	18	35	25	24	15	9	13	A-4a (5)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:35

PID: 77370 BR ID: PROJECT I-70/I-71 EAST INTERCHANGE STATION / OFFSET: 876+00.16, 19.06 LT START: 7/21/10 END: 7/21/10 PG 2 OF 3 B-048-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very stiff to hard brown SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp to moist. *(continued)*	749.6	26																
		27	15 13 12	33	100	SS-11	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		28																
		29	7 9 9	24	100	SS-12	3.50	-	-	-	-	-	-	-	-	11	A-4a (V)	
		30																
		31																
		32	5 8 11	25	100	SS-13	4.5+	13	13	18	35	21	22	14	8	10	A-4a (4)	
		33																
		34	6 8 8	21	100	SS-14	3.00	-	-	-	-	-	-	-	-	11	A-4a (V)	
		35																
	737.6	36																
Dense gray GRAVEL (A-1-a), "and" fine to coarse sand, trace silt; wet.		37																
		38	W															
		39	9 18 16	45	100	SS-15	-	-	-	-	-	-	-	-	-	12	A-1-a (V)	
		40																
		41																
		42																
		43																
		44	8 14 17	41	100	SS-16	-	55	24	13	-	8 -	NP	NP	NP	10	A-1-a (0)	
		45																
		46																
	727.6	47																
Very stiff to hard gray SANDY SILT (A-4a), "and" fine to coarse sand, trace gravel; damp.		48																
@ 48.5', 2.0 feet sand heave; washed out with tricone.		49	8 6 9	20	67	SS-17	3.50	-	-	-	-	-	-	-	-	11	A-4a (V)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:35

PID: 77370	BR ID: _____	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 876+00.16, 19.06 LT	START: 7/21/10	END: 7/21/10	PG 3 OF 3	B-048-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very stiff to hard gray SANDY SILT (A-4a), "and" fine to coarse sand, trace gravel; damp. *(continued)*	722.8	52																
		W 53																
		54	7 24 25	65	67	SS-18	-	2	1	43	48	6	NP	NP	NP	20	A-4a (4)	
		55																
		56																
		57																
		58																
		59	12 15 21	47	50	SS-19	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
	714.6	EOB 60																

NOTES: SEEPAGE AT 38.5 AND 53.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 39.5 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 40.4 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAGS BENTONITE CHIPS; 2 BAGS QUIKGROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:35

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 784+43.12, 8.13 LT | EXPLORATION ID B-049-1-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP N2
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 776.1 (MSL) EOB: 90.0 ft. | PAGE 1 OF 4
START: 7/20/10 END: 7/21/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712095.560 N, 1832243.780 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil - 5"	776.1 / 775.7																	
POSSIBLE FILL: Stiff to very stiff brown SILT AND CLAY (A-6a), some fine to coarse sand, trace gravel; damp.		1	12 17 8	33	11	SS-1	2.00	-	-	-	-	-	-	-	-	17	A-6a (V)	
		2																
		3																
		4	7 7 6	17	100	SS-2	3.50	6	9	16	38	31	31	18	13	14	A-6a (8)	
		5																
		6																
		7	12 13 12	33	11	SS-3	1.50	-	-	-	-	-	-	-	-	17	A-6a (V)	
		8																
		9	10 14 15	38	11	SS-4	2.00	-	-	-	-	-	-	-	-	18	A-6a (V)	
		10																
	765.1																	
Very stiff to hard brown SANDY SILT (A-4a), some to "and" fine to coarse sand, little gravel; damp.		11																
		12	13 11 10	28	100	SS-5	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		13																
		14	6 7 6	17	100	SS-6	2.75	14	12	18	37	19	21	14	7	10	A-4a (4)	
		15																
@ 16.0', becomes gray.		16																
		17	5 3 5	11	100	SS-7	3.00	-	-	-	-	-	-	-	-	10	A-4a (V)	
		18																
@ 18.5'-20.0', stiff.		19	5 14 18	42	17	SS-8	1.50	-	-	-	-	-	-	-	-	10	A-4a (V)	
		20																
	755.1																	
Medium dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, little silt; damp.		21																
		22	15 17 15	42	89	SS-9	-	40	34	14	-	12 -	NP	NP	NP	4	A-1-b (0)	
		23																
		24	13 16 13	38	100	SS-10	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:36

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 784+43.12, 8.13 LT | START: 7/20/10 | END: 7/21/10 | PG 2 OF 4 | B-049-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
	751.1 / 750.1																	
Medium dense brownish gray COARSE AND FINE SAND (A-3a), little gravel, trace silt; damp.		26	7 9 6	20	17	SS-11	-	-	-	-	-	-	-	-	-	8	A-3a (V)	
	747.6	27																
Very stiff to hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.		28																
		29	11 10 10	26	67	SS-12	4.00	10	10	22	39	19	20	14	6	10	A-4a (5)	
		30																
		31																
		32	17 17 12	38	100	SS-13	4.50	-	-	-	-	-	-	-	-	10	A-4a (V)	
		33																
		34	13 8 10	24	100	SS-14	3.00	-	-	-	-	-	-	-	-	12	A-4a (V)	
		35																
		36																
		37	8 9 13	29	100	SS-15	2.00	6	8	23	45	18	19	12	7	10	A-4a (6)	
	737.6 W	38																
Very dense gray GRAVEL (A-1-a), some fine to coarse sand, trace silt; wet.		39	25 38 21	78	56	SS-16	-	-	-	-	-	-	-	-	-	9	A-1-a (V)	
	735.1	40																
Dense to very dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace silt; wet.		41																
		42	12 17 21	50	100	SS-17	-	-	-	-	-	-	-	-	-	13	A-1-b (V)	
		43																
		44	13 18 22	53	100	SS-18	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
		45																
		46																
		47	7 19 21	53	78	SS-19	-	46	34	13	-	7 -	NP	NP	NP	11	A-1-b (0)	
		48																
		49	39 19 15	45	56	SS-20	-	-	-	-	-	-	-	-	-	14	A-1-b (V)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:36

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 784+43.12, 8.13 LT | START: 7/20/10 | END: 7/21/10 | PG 3 OF 4 | B-049-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Dense to very dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace silt; wet. *(continued)*	724.4	52																
		53																
		54	28 30 31	80	67	SS-21	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		55																
		56																
	719.1	57																
Very dense gray COARSE AND FINE SAND (A-3a), little to some silt, trace to little gravel; wet.		58																
		59	22 33 29	82	33	SS-22	-	15	3	61	-	21 -	NP	NP	NP	18	A-3a (0)	
		60																
		61																
		62																
		63																
		64	23 30 36	87	67	SS-23	-	-	-	-	-	-	-	-	-	20	A-3a (V)	
		65																
		66																
		67																
		68																
		69	27 32 31	83	72	SS-24	-	0	33	49	-	18 -	NP	NP	NP	16	A-3a (0)	
		70																
		71																
		72																
		73																
		74	25 30 32	82	72	SS-25	-	-	-	-	-	-	-	-	-	15	A-3a (V)	
		75																
		76																
		77																
		78																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:36

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 784+43.12, 8.13 LT | START: 7/20/10 | END: 7/21/10 | PG 4 OF 4 | B-049-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense gray COARSE AND FINE SAND (A-3a), little to some silt, trace to little gravel; wet. *(continued)*	697.6	79	23 37 31	90	56	SS-26	-	1	38	45	-	16 -	NP	NP	NP	16	A-3a (0)	
		80																
		81																
		82																
		83																
		84	23 25 20	59	56	SS-27	-	-	-	-	-	-	-	-	-	18	A-3a (V)	
		85																
		86																
		87																
		88																
		89	23 30 25	72	67	SS-28	-	-	-	-	-	-	-	-	-	19	A-3a (V)	
	686.1	EOB 90																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:36

NOTES: SEEPAGE AT 38.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 36.1 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 27.4 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 3 BAGS BENTONITE CHIPS; 2 BAGS QUIKGROUT

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 877+86.27, 20.21 RT | EXPLORATION ID B-049-2-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP N1
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 775.1 (MSL) EOB: 50.0 ft. | PAGE 1 OF 2
START: 7/20/10 END: 7/20/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 711970.970 N, 1832310.470 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil - 3"	774.8																	
POSSIBLE FILL: Hard brown SILTY CLAY (A-6b), "and" fine to coarse sand, little gravel; damp.		1	4 6 8	18	67	SS-1	4.5+	-	-	-	-	-	-	-	-	19	A-6b (V)	
		2																
		3	8 7 5	16	100	SS-2	4.5+	-	-	-	-	-	-	-	-	16	A-6b (V)	
		4																
	769.1	5																
Very stiff to hard brown SANDY SILT (A-4a), some to "and" fine to coarse sand, little gravel; damp to moist.		6	2 4 7	14	100	SS-3	3.25	13	12	19	36	20	24	16	8	15	A-4a (4)	
		7																
		8																
		9	6 15 17	42	61	SS-4	2.00	-	-	-	-	-	-	-	-	15	A-4a (V)	
		10																
@ 11.0', becomes gray.		11	9 9 11	26	100	SS-5	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
		12																
		13	5 5 6	14	72	SS-6	2.00	14	13	19	35	19	21	14	7	11	A-4a (4)	
		14																
		15																
		16	4 6 6	16	100	SS-7	2.25	-	-	-	-	-	-	-	-	12	A-4a (V)	
		17																
		18																
		19	4 3 6	12	50	SS-8	2.00	-	-	-	-	-	-	-	-	10	A-4a (V)	
		20																
	754.1	21																
Medium dense to dense brownish gray GRAVEL WITH SAND (A-1-b), trace to little silt; damp.		22	11 14 15	38	100	SS-9	-	26	25	39	-	10 -	NP	NP	NP	4	A-1-b (0)	
		23																
		24	9 11 11	29	56	SS-10	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:36

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 877+86.27, 20.21 RT | START: 7/20/10 | END: 7/20/10 | PG 2 OF 2 | B-049-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Medium dense to dense brownish gray GRAVEL WITH SAND (A-1-b), trace to little silt; damp. *(continued)*	750.1																	
		26																
		27	15 15 19	45	100	SS-11	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
	746.6	28																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		29	10 8 11	25	100	SS-12	4.5+	15	10	17	39	19	19	14	5	10	A-4a (5)	
	743.1	30																
Medium dense gray SANDY SILT (A-4a), "and" fine to coarse sand, trace gravel; damp.		31																
		32																
		33																
		34	11 3 12	20	67	SS-13	-	-	-	-	-	-	-	-	-	11	A-4a (V)	
		35																
	738.1	36																
Medium dense to dense gray GRAVEL (A-1-a), some to "and" fine to coarse sand, little silt; wet.		37																
		38	W															
		39	13 14 19	43	100	SS-14	-	59	20	10	-	11 -	NP	NP	NP	9	A-1-a (0)	
		40																
		41																
		42																
		43																
@ 43.5', 1.5 feet sand heave; washed out with tricome.		44	11 6 4	13	22	SS-15	-	-	-	-	-	-	-	-	-	11	A-1-a (V)	
		45																
		46																
		47																
		48																
		49	7 6 8	18	11	SS-16	-	-	-	-	-	-	-	-	-	7	A-1-a (V)	
	725.1	50	EOB															

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:36

NOTES: SEEPAGE AT 38.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 37.9 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 36.2 FEET.
ABANDONMENT METHODS, MATERIALS, QUANTITIES: 4 BAGS BENTONITE CHIPS; 1 BAG QUIKGROUT

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / L. BARTLETT | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 778+21.15, 44.66 RT | EXPLORATION ID B-049-3-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: I-70
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 765.4 (MSL) EOB: 70.0 ft. | PAGE 1 OF 3
START: 6/17/10 END: 6/17/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712241.150 N, 1832329.260 E

MATERIAL DESCRIPTION AND NOTES	ELEV. 765.4	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Asphalt- 8" Concrete- 10"	763.9	1																
Hard gray SILTY CLAY (A-6b), some fine to coarse sand, trace gravel; damp.		2	5 6 10	21	44	SS-1	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		3																
		4	7 15 16	41	100	SS-2	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		5																
		6																
		7	9 14 19	43	100	SS-3	4.5+	9	12	19	37	23	22	14	8	9	A-4a (5)	
	756.9	8																
Medium dense to dense brown COARSE AND FINE SAND (A-3a), some fine to coarse gravel; damp.		9	8 19 19	50	89	SS-4	-	-	-	-	-	-	-	-	-	4	A-3a (V)	
		10																
		11																
		12	14 25 23	63	100	SS-5	-	-	-	-	-	-	-	-	-	5	A-3a (V)	
	751.9	13																
Medium dense to dense brown SILT (A-4b), some clay, little fine sand; damp to moist.		14	8 11 16	36	56	SS-6	-	0	0	12	66	22	22	16	6	15	A-4b (8)	
		15																
		16																
		17	6 17 22	51	100	SS-7	-	-	-	-	-	-	-	-	-	13	A-4b (V)	
	746.9	18																
Dense grayish brown GRAVEL WITH SAND (A-1-b), some fine to coarse sand, trace silty clay; damp.		19	20 26 21	62	67	SS-8	-	-	-	-	-	-	-	-	-	3	A-1-b (V)	
	744.4	20																
Very stiff gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp to moist.		21																
		22	6 10 10	26	100	SS-9	3.25	8	9	22	42	19	19	14	5	11	A-4a (5)	
		23																
		24	6 13 12	33	100	SS-10	1.50	-	-	-	-	-	-	-	-	10	A-4a (V)	
	740.4																	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:36

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 778+21.15, 44.66 RT | START: 6/17/10 | END: 6/17/10 | PG 2 OF 3 | B-049-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 740.4	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Medium stiff gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp to moist.		W 26																
		27	1 1 1	3	28	SS-11	0.75	-	-	-	-	-	-	-	-	15	A-4a (V)	
		28																
		29	4 7 9	21	100	SS-12	1.00	12	10	24	36	18	18	13	5	12	A-4a (4)	
	734.4	W 30																
Medium dense to dense gray GRAVEL (A-1-a), some fine to coarse sand, trace silt; wet.		31	12 17 18	46	100	SS-13	-	-	-	-	-	-	-	-	-	8	A-1-a (V)	
		32																
		33																
		34	3 8 9	22	6	SS-14	-	-	-	-	-	-	-	-	-	5	A-1-a (V)	
		35																
@ 36.0'-37.5', very dense.		36																
		37	17 25 32	75	67	SS-15	-	63	21	8	-	8 -	NP	NP	NP	8	A-1-a (0)	
		38																
		39	4 16 21	49	56	SS-16	-	-	-	-	-	-	-	-	-	7	A-1-a (V)	
	723.4	40																
Very dense gray COARSE AND FINE SAND (A-3a), some silt; wet.		41																
		42																
@ 43.5', 3.0 feet sand heave; washed out with tricone.		43																
		44	18 25 28	70	67	SS-17	-	0	40	40	-	20 -	NP	NP	NP	17	A-3a (0)	
	718.4	45																
Very dense gray GRAVEL (A-1-a), some fine to coarse sand, trace silt; wet.		46																
		47																
		48																
		49	9 30 38	90	67	SS-18	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:36

PID: 77370	BR ID:	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 778+21.15, 44.66 RT	START: 6/17/10	END: 6/17/10	PG 3 OF 3	B-049-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense gray GRAVEL (A-1-a), some fine to coarse sand, trace silt; wet. *(continued)*	713.6	52																
		53																
		54	8 15 28	57	44	SS-19	-	65	23	6	-	6 -	NP	NP	NP	12	A-1-a (0)	
		55																
		56																
	708.4	57																
Very dense gray COARSE AND FINE SAND (A-3a), trace fine gravel, trace silty clay; wet.		58																
		59	20 41 44	112	100	SS-20	-	-	-	-	-	-	-	-	-	12	A-3a (V)	
		60																
		61																
		62																
		63																
		64	20 30 38	90	67	SS-21	-	-	-	-	-	-	-	-	-	13	A-3a (V)	
		65																
		66																
		67																
		68																
		69	14 27 28	72	56	SS-22	-	-	-	-	-	-	-	-	-	14	A-3a (V)	
	695.4	EOB 70																

NOTES: SEEPAGE AT 26.0 AND 31.0 FEET; WATER LEVEL PRIOR TO ADDING WATER = 32.6 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 22.5 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 0.5 BAG ASPHALT PATCH; 10 BAGS BENTONITE CHIPS; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:36

PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 785+88.49, 2.79 LT | EXPLORATION ID B-049-4-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP N2
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 778.0 (MSL) EOB: 55.0 ft. | PAGE 1 OF 3
START: 7/20/10 END: 7/20/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712116.960 N, 1832385.830 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil - 3"	777.8																	
POSSIBLE FILL: Very stiff brown SANDY SILT (A-4a), some to "and" fine to coarse sand, little gravel; damp.		1	4 4 5	12	100	SS-1	3.00	-	-	-	-	-	-	-	-	11	A-4a (V)	
@ 3.5'-5.0', contains brick fragments.		4	14 10 11	28	17	SS-2	-	-	-	-	-	-	-	-	-	7	A-4a (V)	
@ 6.0'-7.5', hard.		7	25 18 19	49	39	SS-3	4.5+	14	18	20	27	21	26	16	10	9	A-4a (3)	
@ 8.5'-10.0', no recovery.		9	11 10 9	25	0	SS-4	-	-	-	-	-	-	-	-	-	-		
	767.0																	
Loose brown GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, some silt; moist.		12	2 4 3	9	67	SS-5	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
		14	2 2 2	5	39	SS-6	-	36	23	17	17	7	19	15	4	8	A-1-b (0)	
		17	3 2 3	7	17	SS-7	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
	759.5																	
Very stiff gray SILTY CLAY (A-6b), some fine to coarse sand, some gravel; damp.		19	3 4 4	11	100	SS-8	3.00	-	-	-	-	-	-	-	-	10	A-6b (V)	
	757.0																	
Dense to very dense gray GRAVEL WITH SAND (A-1-b), little to some gravel, trace to little silt; damp.		22	13 14 17	41	67	SS-9	-	19	42	30	-	9 -	NP	NP	NP	3	A-1-b (0)	
		24	10 12 15	36	100	SS-10	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:36

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 785+88.49, 2.79 LT | START: 7/20/10 | END: 7/20/10 | PG 2 OF 3 | B-049-4-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Dense to very dense gray GRAVEL WITH SAND (A-1-b), little to some gravel, trace to little silt; damp. *(continued)*	753.0																	
@ 26.0'-27.5', medium dense.		27	16 12 10	29	100	SS-11	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
		29	20 38 15	70	17	SS-12	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		32	13 15 12	36	28	SS-13	-	51	15	22	-	12 -	NP	NP	NP	4	A-1-b (0)	
	744.5																	
Very stiff to hard gray SILTY CLAY (A-6b), some fine to coarse sand, some gravel; damp to moist.		34	50/3"	-	67	SS-14	3.50	-	-	-	-	-	-	-	-	10	A-6b (V)	
		37	12 19 18	49	100	SS-15	4.5+	-	-	-	-	-	-	-	-	10	A-6b (V)	
	739.5	W																
Dense to very dense gray GRAVEL WITH SAND (A-1-b), some to "and" fine to coarse sand, little silt; wet.		40	15 14 18	42	100	SS-16	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
		42	13 22 27	65	67	SS-17	-	43	30	12	-	15 -	NP	NP	NP	9	A-1-b (0)	
	734.5																	
Very dense gray GRAVEL (A-1-a), little to some fine to coarse sand, trace silt; wet.		44	15 30 50/4"	-	19	SS-18	-	-	-	-	-	-	-	-	-	5	A-1-a (V)	
@ 48.5'-50.0', no recovery.		49	35 50/5"	-	0	SS-19	-	-	-	-	-	-	-	-	-	-		

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:36

PID: 77370	BR ID: _____	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 785+88.49, 2.79 LT	START: 7/20/10	END: 7/20/10	PG 3 OF 3	B-049-4-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 726.2	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense gray GRAVEL (A-1-a), little to some fine to coarse sand, trace silt; wet. *(continued)*		52																
		53																
		54	26 26 25	67	56	SS-20	-	-	-	-	-	-	-	-	-	9	A-1-a (V)	
	723.0	EOB 55																

NOTES: SEEPAGE AT 38.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 40.4 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 25.3 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 2 BAGS BENTONITE CHIPS; 2 BAGS QUIKGROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:36

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PROJECT: I-70/I-71 EAST INTERCHANGE
TYPE: ROADWAY
PID: 77370 BR ID:
START: 6/16/10 END: 6/17/10

DRILLING FIRM / OPERATOR: DLZ / J. NELSON
SAMPLING FIRM / LOGGER: DLZ / S. LARIMER
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 75 TRUCK
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 1/7/10
ENERGY RATIO (%): 64.7

STATION / OFFSET: 779+44.62, 31.48 RT
ALIGNMENT: I-70
ELEVATION: 765.3 (MSL) EOB: 70.0 ft.
COORD: 712273.480 N, 1832449.150 E

EXPLORATION ID B-049-5-10
PAGE 1 OF 3

MATERIAL DESCRIPTION AND NOTES	ELEV. 765.3	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Asphalt- 9" Base- 3"	764.3																	
Hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp to moist.		1	7 9 5	15	67	SS-1	4.50	-	-	-	-	-	-	-	-	10	A-4a (V)	
		2																
		3																
		4	9 8 9	18	100	SS-2	4.50	-	-	-	-	-	-	-	-	10	A-4a (V)	
		5																
		6																
		7	8 6 5	12	89	SS-3	4.00	15	13	18	31	23	23	14	9	12	A-4a (4)	
	756.8	8																
Very dense brown COARSE AND FINE SAND (A-3a), trace to little gravel, trace silt; damp.		9	16 30 29	64	94	SS-4	-	-	-	-	-	-	-	-	-	8	A-3a (V)	
		10																
		11																
		12	24 28 28	60	78	SS-5	-	-	-	-	-	-	-	-	-	3	A-3a (V)	
		13																
	751.0	14	16 15 12	29	100 -	SS-6A SS-6B	- 4.5+	-	-	-	-	-	-	-	-	5 10	A-3a (V) A-4a (V)	
Very stiff to hard gray SANDY SILT (A-4a),"and" fine to coarse sand, little gravel; damp.		15																
		16																
		17	12 16 18	37	100	SS-7	4.5+	8	7	19	45	21	19	14	5	9	A-4a (6)	
		18																
		19	7 6 7	14	100	SS-8	4.00	-	-	-	-	-	-	-	-	10	A-4a (V)	
		20																
		21																
		22	4 4 3	8	83	SS-9	2.00	-	-	-	-	-	-	-	-	11	A-4a (V)	
		23																
@ 23.5'-25.0', stiff.		24	4 4 2	6	67	SS-10	1.00	12	10	32	34	12	NP	NP	NP	12	A-4a (2)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:37

PID: 77370 BR ID: PROJECT I-70/I-71 EAST INTERCHANGE STATION / OFFSET: 779+44.62, 31.48 RT START: 6/16/10 END: 6/17/10 PG 2 OF 3 B-049-5-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 740.3	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
	739.3																	
Very loose to loose gray COARSE AND FINE SAND (A-3a), little gravel, little silt; moist.		26	4 4 4	9	39	SS-11	-	-	-	-	-	-	-	-	-	6	A-3a (V)	
		27																
		28																
@ 28.5', becomes wet.	W	29	5 4 3	8	61	SS-12	-	15	31	36	-	18 -	NP	NP	NP	17	A-3a (0)	
		30																
		31																
		32																
		33																
		34	1 2 1	3	0	SS-13	-	-	-	-	-	-	-	-	-	-		
		35																
		36																
	728.3	37																
Very dense brown GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, little silt; wet.		38																
		39	17 24 50	80	89	SS-14	-	37	31	18	-	14 -	NP	NP	NP	10	A-1-b (0)	
		40																
		41																
	723.3	42																
Very dense gray GRAVEL (A-1-a), some fine to coarse sand, little silt; wet.		43																
		44	26 48 50/4"	-	75	SS-15	-	-	-	-	-	-	-	-	-	7	A-1-a (V)	
		45																
@ 43.5', 3.6 feet sand heave; washed out with tricone.		46																
		47																
		48																
		49	35 45 50	102	83	SS-16	-	54	20	13	-	13 -	NP	NP	NP	9	A-1-a (0)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:37

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PID: 77370	BR ID:	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 779+44.62, 31.48 RT	START: 6/16/10	END: 6/17/10	PG 3 OF 3	B-049-5-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 713.5	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense gray GRAVEL WITH SAND (A-1-b), some fine to coarse sand, little silt; wet.	713.3	52																
		53																
		54	28 39 50/4"	-	88	SS-17	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
		55																
		56																
		57																
		58																
		59	48 50/3"	-	78	SS-18	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
		60																
		61																
		62																
		63																
		64	33 48 43	98	89	SS-19	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
		65																
		66																
		67																
		68																
Very dense gray COARSE AND FINE SAND (A-3a), little silty clay, trace gravel; wet.	698.3																	
@ 68.5', 0.7 feet sand heave; washed out with tricone.		69	20 27 29	60	72	SS-20	-	-	-	-	-	-	-	-	-	9	A-3a (V)	
	695.3	EOB 70																

NOTES: SEEPAGE AT 28.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 29.0 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 26.4 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 8.5 BAGS BENTONITE CHIPS; 1 BAG QUICKCRETE; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:37

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / J. NELSON | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 787+44.93, 30.35 LT | EXPLORATION ID B-049-6-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / S. LARIMER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP N2 | PAGE 1 OF 2
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 766.6 (MSL) EOB: 49.8 ft.
START: 6/8/10 END: 6/8/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 64.7 | COORD: 712198.890 N, 1832518.870 E

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)	HOLE SEALED
Asphalt - 18" Base - 8"	766.6																	
	764.4	1																
Hard brown SILT AND CLAY (A-6a), some fine to coarse sand, some gravel; damp.		2	12 18 50/4"	-	69	SS-1	-	-	-	-	-	-	-	-	-	9	A-6a (V)	
@ 3.5', drove on large gravel; low recovery .		3																
		4	50/3"	-	67	SS-2	-	-	-	-	-	-	-	-	-	0		
	760.6	5																
Medium dense brown GRAVEL WITH SAND (A-1-b), little silt; damp.		6	14 8 11	20	67	SS-3	-	48	27	9	16	-	NP	NP	NP	7	A-1-b (0)	
	758.1	7																
Stiff to very stiff brown SILT AND CLAY (A-6a), some fine to coarse sand, some gravel; contains large gravel fragments; damp.		8	7 7 11	19	61	SS-4	2.00	-	-	-	-	-	-	-	-	11	A-6a (V)	
	755.6	9																
Dense brown GRAVEL WITH SAND (A-1-b), little silt; damp.		10	15 22 22	47	89	SS-5	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
		11																
@ 14.0'-14.1', wet sand seam.		12 W	13 16 17	36	89	SS-6	-	32	34	19	15	-	NP	NP	NP	6	A-1-b (0)	
	750.6	13																
Very stiff to hard gray SILT AND CLAY (A-6a), some fine to coarse sand, little gravel; damp.		14	8 9 12	23	100	SS-7	3.00	-	-	-	-	-	-	-	-	10	A-6a (V)	
	747.2	15																
Dense brown FINE SAND (A-3), trace silt; damp.		16	7 15 21	39	100	SS-8	4.5+	-	-	-	-	-	-	-	-	9	A-6a (V)	
	745.6	17					-	-	-	-	-	-	-	-	-	8	A-3 (V)	
Very stiff to hard brown SANDY SILT (A-4a), some to "and" fine to coarse sand, trace gravel; damp.		18	10 14 17	33	100	SS-9	4.5+	8	10	22	42	18	20	14	6	10	A-4a (5)	
		19																
		20	5 10 11	23	100	SS-10	2.50	-	-	-	-	-	-	-	-	11	A-4a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:37

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 787+44.93, 30.35 LT | START: 6/8/10 | END: 6/8/10 | PG 2 OF 2 | B-049-6-10

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)	HOLE SEALED
Very stiff to hard brown SANDY SILT (A-4a), some to "and" fine to coarse sand, trace gravel; damp. *(continued)*	741.6																	
		21																
		22	6 7 13	22	100	SS-11	2.50	-	-	-	-	-	-	-	-	10	A-4a (V)	
	738.1	23 W																
Dense to very dense brown GRAVEL (A-1-a), some fine to coarse sand, little silt; wet.		24	16 16 15	33	56	SS-12	-	-	-	-	-	-	-	-	-	6	A-1-a (V)	
		25																
		26	8 15 22	40	50	SS-13	-	59	18	11	12	-	NP	NP	NP	8	A-1-a (0)	
		27																
		28	12 19 17	39	78	SS-14	-	-	-	-	-	-	-	-	-	9	A-1-a (V)	
		29																
		30																
		31																
		32																
@ 38.5', becomes gray.		33	33 50/5"	-	73	SS-15	-	-	-	-	-	-	-	-	-	9	A-1-a (V)	
		34																
		35																
		36																
		37																
		38																
@ 43.5'-44.4', contains broken gravel and stone fragments.		39	38 50/5"	-	82	SS-16	-	60	19	8	9	4	NP	NP	NP	10	A-1-a (0)	
	719.6	40																
		41																
		42																
		43																
		44																
		45																
		46																
		47																
Very dense gray COARSE AND FINE SAND (A-3a), some gravel, little silt; wet.		48																
	716.8	49	28 49 50/4"	-	100	SS-17	-	-	-	-	-	-	-	-	-	10	A-3a (V)	
		EOB																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:37

NOTES: SEEPAGE AT 14.0 FEET AND 28.5 FEET; FINAL WATER LEVEL = 29.2 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 0.5 BAG BENTONITE CHIPS; 1 BAG QUICKCRETE; 1.5 BAGS QUIKGROUT

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / J. NELSON | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 780+43.46, 47.74 LT | EXPLORATION ID B-049-7-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / S. LARIMER | HAMMER: CME AUTOMATIC | ALIGNMENT: I-70
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 762.5 (MSL) EOB: 70.0 ft. | PAGE 1 OF 3
START: 6/14/10 END: 6/14/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 64.7 | COORD: 712367.190 N, 1832534.370 E

MATERIAL DESCRIPTION AND NOTES	ELEV. 762.5	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Asphalt- 7" Concrete- 10" Base- 1"	761.0	1																
FILL: Hard brown SILT AND CLAY (A-6a), little fine to coarse sand, little gravel; contains brick fragments; damp.		2	4 11 11	24	83	SS-1	4.50	-	-	-	-	-	-	-	-	9	A-6a (V)	
		3																
		4	11 20 20	43	100	SS-2	4.50	-	-	-	-	-	-	-	-	8	A-6a (V)	
	756.5	5																
Loose brown GRAVEL WITH SAND AND SILT (A-2-4); damp.		6																
		7	8 5 3	9	78	SS-3	-	29	22	21	28	-	NP	NP	NP	10	A-2-4 (0)	
		8																
		9	1 1 3	4	33	SS-4	-	-	-	-	-	-	-	-	-	10	A-2-4 (V)	
		10																
		11																
		12	4 4 4	9	89	SS-5	-	-	-	-	-	-	-	-	-	9	A-2-4 (V)	
	749.0	13																
Dense brown SANDY SILT (A-4a), trace gravel; damp.		14	17 20 16	39	89	SS-6	-	2	3	43	42	10	NP	NP	NP	11	A-4a (3)	
	746.5	15																
Dense brown COARSE AND FINE SAND (A-3a), little silt, trace gravel; damp.		16																
		17	13 21 22	46	83	SS-7	-	-	-	-	-	-	-	-	-	6	A-3a (V)	
	744.0	18																
Very stiff gray SILTY CLAY (A-6b), little fine to coarse sand; moist.	743.2	19	10 17 33	54	100	SS-8	2.50	-	-	-	-	-	-	-	-	11	A-6b (V)	
								-	-	-	-	-	-	-	-	7	A-3a (V)	
Very dense gray COARSE AND FINE SAND (A-3a), little silt, trace gravel; damp.	741.5	20																
Very dense gray GRAVEL (A-1-a), some fine to coarse sand, trace silt; damp.		21																
		22	22 38 33	77	72	SS-9	-	72	17	5	6	-	NP	NP	NP	3	A-1-a (0)	
		23																
@ 23.5'-25.0', medium dense.		24	14 9 7	17	28	SS-10	-	-	-	-	-	-	-	-	-	5	A-1-a (V)	
	737.5																	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:37

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 780+43.46, 47.74 LT | START: 6/14/10 | END: 6/14/10 | PG 2 OF 3 | B-049-7-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 737.5	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense gray GRAVEL WITH SAND (A-1-b), trace to little silt; wet.		W																
		26																
		27	5 11 11	24	39	SS-11	-	41	40	14	5	-	NP	NP	NP	16	A-1-b (0)	
		28																
		29	6 4 4	9	17	SS-12	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		30																
		31																
		32																
		33																
@ 33.5'-34.2', very dense.		34	28 50/2"	-	100	SS-13	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
	725.5	35																
Very dense gray GRAVEL (A-1-a), some fine to coarse sand, little silt; wet.		36																
		37																
		38																
		39	49 28 38	71	89	SS-14	-	54	24	9	13	-	NP	NP	NP	9	A-1-a (0)	
@ 40.0', 2.1 feet sand heave; washed out with tricone.		40																
		41																
		42																
		43																
@ 43.5', drove on boulder or cobble; no recovery.		44	50/2"	-	0	SS-15	-	-	-	-	-	-	-	-	-	-		
		45																
		46																
		47																
		48																
		49	47 41 47	95	67	SS-16	-	-	-	-	-	-	-	-	-	12	A-1-a (V)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:37

PID: 77370	BR ID:	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 780+43.46, 47.74 LT	START: 6/14/10	END: 6/14/10	PG 3 OF 3	B-049-7-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense gray GRAVEL (A-1-a), some fine to coarse sand, little silt; wet. *(continued)*	710.7	52																
		53																
@ 53.5'-65.0', 0.6 to 3.1 feet sand heave; washed out with tricone.		54	6 21 23	47	50	SS-17	-	55	25	9	-	11 -	NP	NP	NP	9	A-1-a (0)	
		55																
		56																
		57																
		58																
		59	17 19 22	44	56	SS-18	-	-	-	-	-	-	-	-	-	8	A-1-a (V)	
		60																
		61																
	700.5	62																
Dense gray COARSE AND FINE SAND (A-3a), trace fine to coarse gravel, trace silt; wet.		63																
		64	13 18 17	38	67	SS-19	-	-	-	-	-	-	-	-	-	9	A-3a (V)	
		65																
		66																
		67																
		68																
		69	17 16 17	36	44	SS-20	-	-	-	-	-	-	-	-	-	17	A-3a (V)	
	692.5	EOB 70																

NOTES: SEEPAGE AT 26.0 FEET; WATER LEVEL PRIOR TO ADDING WATER = 24.5 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 22.1 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 6.5 BAGS BENTONITE CHIPS; 1 BAG QUICKCRETE; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:37

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / J. NELSON | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 789+00.38, 2.19 RT | EXPLORATION ID B-050-1-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / S. LARIMER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP N2
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 767.2 (MSL) EOB: 70.0 ft. | PAGE 1 OF 3
START: 6/9/10 END: 6/9/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 64.7 | COORD: 712247.580 N, 1832667.710 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil - 2"	767.0																	
Very stiff to hard brown SANDY SILT (A-4a), some fine to coarse sand, little to some gravel; damp.		1	10 21 25	50	100	SS-1	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
@ 3.5', becomes gray.		4	14 16 32	52	100	SS-2	4.5+	-	-	-	-	-	-	-	-	7	A-4a (V)	
		7	10 25 33	63	100	SS-3	4.5+	23	17	14	27	19	22	14	8	7	A-4a (2)	
		9	16 42 43	92	100	SS-4	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
		12	15 17 22	42	100	SS-5	4.25	-	-	-	-	-	-	-	-	11	A-4a (V)	
		14	17 30 45	81	100	SS-6	4.5+	16	14	17	33	20	21	14	7	8	A-4a (4)	
		17	13 25 38	68	100	SS-7	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
		19	19 31 34	70	100	SS-8	3.50	-	-	-	-	-	-	-	-	10	A-4a (V)	
	746.2																	
Very dense brown COARSE AND FINE SAND (A-3a), some silt, trace gravel; damp.		21	12 22 40	67	83	SS-9	-	-	-	-	-	-	-	-	-	3	A-3a (V)	
@ 22.2'-22.3', gray silt seam.																		
@ 23.5', becomes gray.		24	15 29 29	63	67	SS-10	-	3	11	57	-	29 -	NP	NP	NP	6	A-3a (0)	
	742.2																	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:51

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 789+00.38, 2.19 RT | START: 6/9/10 | END: 6/9/10 | PG 2 OF 3 | B-050-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense gray COARSE AND FINE SAND (A-3a), some silt, trace gravel; damp.		26	17 25 25	54	89	SS-11	-	-	-	-	-	-	-	-	-	15	A-3a (V)	
	738.7 W																	
Medium dense gray GRAVEL WITH SAND (A-1-b), little silt; wet.		29	21 14 9	25	72	SS-12	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
@ 33.5'-35.0', contains silty sand stringers.		34	21 40 31	77	83	SS-13	-	41	23	25	-	11 -	NP	NP	NP	11	A-1-b (0)	
@ 33.5'-39.4', very dense.																		
		39	19 50/5"	-	82	SS-14	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
	725.2																	
Dense to very dense gray GRAVEL (A-1-a), some fine to coarse sand, little silt; contains broken gravel and stone fragments; wet.																		
@ 43.5', 1.8 feet sand heave; washed out with tricone.		44	10 37 37	80	44	SS-15	-	53	25	9	-	13 -	NP	NP	NP	10	A-1-a (0)	
@ 48.5', 1.1 feet sand heave; washed out with tricone.		49	13 20 25	49	78	SS-16	-	-	-	-	-	-	-	-	-	6	A-1-a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:51

PID: 77370	BR ID: _____	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 789+00.38, 2.19 RT	START: 6/9/10	END: 6/9/10	PG 3 OF 3	B-050-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Dense to very dense gray GRAVEL (A-1-a), some fine to coarse sand, little silt; contains broken gravel and stone fragments; wet. *(continued)*	715.5	52																
		53																
		54	26 25 26	55	56	SS-17	-	62	18	9	-	11 -	NP	NP	NP	9	A-1-a (0)	
		55																
		56																
		57																
		58																
@ 58.5', 2.4 feet sand heave; washed out with tricone.		59	20 35 26	66	50	SS-18	-	-	-	-	-	-	-	-	-	9	A-1-a (V)	
		60																
		61																
	705.2	62																
Very dense gray GRAVEL WITH SAND (A-1-b), little silt; wet.		63																
		64	23 23 25	52	61	SS-19	-	15	49	18	-	18 -	NP	NP	NP	15	A-1-b (0)	
@ 65.0', 4.7 feet sand heave; washed out with tricone.		65																
		66																
		67																
		68																
@ 68.5', 0.9 feet sand heave; washed out with tricone.		69	18 22 24	50	56	SS-20	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
	697.2	EOB 70																

NOTES: SEEPAGE AT 28.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 28.8 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 27.4 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG BENTONITE CHIPS; 1 BAG QUIKGROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:51

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / L. BARTLETT | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 788+88.13, 50.67 LT | EXPLORATION ID B-050-2-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP N4
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 763.7 (MSL) EOB: 63.5 ft. | PAGE 1 OF 3
START: 6/17/10 END: 6/18/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712387.860 N, 1832696.470 E

MATERIAL DESCRIPTION AND NOTES	ELEV. 763.7	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Asphalt- 7" Base- 11"	762.2	1																
FILL: Medium dense gray GRAVEL WITH SAND (A-1-b), some fine to coarse sand, trace silt; damp.	760.2	2	5 10 6	21	17	SS-1	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
FILL: Very stiff brown SANDY SILT (A-4a), some fine to coarse sand, trace fine to coarse gravel; contains brick fragments; damp.	757.7	4	5 4 16	26	56	SS-2	2.50	-	-	-	-	-	-	-	-	10	A-4a (V)	
Medium dense brown GRAVEL WITH SAND (A-1-b), some fine to coarse sand, trace silt; wet.	755.2	W 6	5 4 17	28	28	SS-3	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
Very stiff to hard gray SANDY SILT (A-4a), "and" fine to coarse sand, little gravel; damp.	750.2	9	16 25 27	68	100	SS-4	4.5+	13	14	23	30	20	22	14	8	11	A-4a (3)	
		12	19 26 24	66	33	SS-5	2.50	-	-	-	-	-	-	-	-	10	A-4a (V)	
Dense gray COARSE AND FINE SAND (A-3a), little silt, trace gravel; wet.	742.7	14	9 17 20	49	67	SS-6	-	-	-	-	-	-	-	-	-	7	A-3a (V)	
		17	11 12 19	41	56	SS-7	-	8	22	56	- 14 -		NP	NP	NP	7	A-3a (0)	
		19	12 14 11	33	56	SS-8	-	-	-	-	-	-	-	-	-	7	A-3a (V)	
Dense gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; moist.	740.2	22	12 14 15	38	56	SS-9	-	-	-	-	-	-	-	-	-	8	A-4a (V)	
Medium dense gray GRAVEL WITH SAND (A-1-b), some fine to coarse sand, trace silt; wet.		24	6 13 14	36	50	SS-10	-	43	37	10	- 10 -		NP	NP	NP	8	A-1-b (0)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:51

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 788+88.13, 50.67 LT | START: 6/17/10 | END: 6/18/10 | PG 2 OF 3 | B-050-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 738.7	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Medium dense gray GRAVEL WITH SAND (A-1-b), some fine to coarse sand, trace silt; wet. *(continued)*	735.2	27	7 12 15	36	72	SS-11	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
Dense gray SANDY SILT (A-4a); wet.	731.7	29	9 15 16	41	56	SS-12	-	0	1	60	- 39 -		NP	NP	NP	20	A-4a (1)	
Dense to very dense gray GRAVEL WITH SAND (A-1-b), some to "and" fine to coarse sand, little silt; wet.		34	8 32 23	72	44	SS-13	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
@ 33.5', 3.0 feet sand heave; washed out with tricone.		39	7 16 18	45	17	SS-14	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
		44	16 19 19	50	17	SS-15	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
		49	4 13 19	42	56	SS-16	-	38	31	14	- 17 -		NP	NP	NP	12	A-1-b (0)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:51

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PID: 77370	BR ID: _____	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 788+88.13, 50.67 LT	START: 6/17/10	END: 6/18/10	PG 3 OF 3	B-050-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Dense to very dense gray GRAVEL WITH SAND (A-1-b), some to "and" fine to coarse sand, little silt; wet. *(continued)*	712.0	52																
		53																
		54	5 14 20	45	39	SS-17	-	-	-	-	-	-	-	-	-	13	A-1-b (V)	
		55																
		56																
		57																
		58																
		59	16 28 25	70	56	SS-18	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
		60																
		61																
		62																
@ 63.5', 5.0 feet sand heave; unable to wash out; boring terminated.	700.2	63 EOB																

NOTES: SEEPAGE AT 6.0 AND 21.0 FEET; WATER LEVEL PRIOR TO ADDING WATER = 25.4 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 23.1 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 0.5 BAG ASPHALT PATCH; 10 BAGS BENTONITE CHIPS; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:51

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / J. POILLUCCI | DRILL RIG: CME 850 TRACK | STATION / OFFSET: 790+88.88, 44.54 RT | EXPLORATION ID B-050-3-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / D. WILLIARD | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP N2
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 783.4 (MSL) EOB: 70.0 ft. | PAGE 1 OF 3
START: 7/14/10 END: 7/15/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 72.5 | COORD: 712330.290 N, 1832844.910 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
FILL: Very stiff brown SILTY CLAY (A-6b), some fine to coarse sand, some gravel; moist.	783.4	1	2 4 13	21	100	SS-1	2.50	-	-	-	-	-	-	-	-	12	A-6b (V)	
@ 3.5'-5.0', contains asphalt and concrete fragments and cinders.		2 3 4	12 11 9	24	67	SS-2	3.50	-	-	-	-	-	-	-	-	12	A-6b (V)	
	777.4	5 6																
Hard brown CLAY (A-7-6), little fine to coarse sand, trace gravel; damp to moist.		7	3 5 5	12	89	SS-3	4.5+	2	4	11	39	44	44	18	26	18	A-7-6 (15)	
		8 9 10	4 6 8	17	78	SS-4	4.5+	-	-	-	-	-	-	-	-	19	A-7-6 (V)	
	772.4	11																
Stiff to very stiff brown SILT AND CLAY (A-6a), "and" fine to coarse sand, little gravel; damp.		12	5 9 8	21	33	SS-5	2.00	-	-	-	-	-	-	-	-	17	A-6a (V)	
	769.9	13																
Very stiff to hard brown SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		14 15	6 11 13	29	100	SS-6	3.50	13	13	19	35	20	22	15	7	10	A-4a (4)	
@ 16.0', becomes gray.		16 17	4 5 6	13	100	SS-7	3.00	-	-	-	-	-	-	-	-	9	A-4a (V)	
		18 19 20	6 7 8	18	100	SS-8	3.25	-	-	-	-	-	-	-	-	12	A-4a (V)	
		21 22 23	12 17 18	42	50	SS-9	-	-	-	-	-	-	-	-	-	8	A-4a (V)	
	758.4	24	14 22 28	60	100	SS-10	4.5+	12	13	18	38	19	21	14	7	8	A-4a (4)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:51

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 790+88.88, 44.54 RT | START: 7/14/10 | END: 7/15/10 | PG 2 OF 3 | B-050-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very stiff to hard gray SILTY CLAY (A-6b), some to "and" fine to coarse sand, little gravel; moist.	758.4	26	4 17 13	36	100	SS-11	4.5+	-	-	-	-	-	-	-	-	10	A-6b (V)	
@ 26.0'-27.5', contains sand seams.		27 28 29	7 8 11	23	100	SS-12	3.75	-	-	-	-	-	-	-	-	14	A-6b (V)	
	751.4	30 31 32																
Dense to very dense gray COARSE AND FINE SAND (A-3a), trace to little silt, trace gravel; damp.		33																
		34	15 20 25	54	89	SS-13	-	0	2	79	-	19 -	NP	NP	NP	4	A-3a (0)	
		35 36 37 38																
		39 40 41 42 43	11 17 17	41	100	SS-14	-	-	-	-	-	-	-	-	-	3	A-3a (V)	
W																		
@ 43.5', becomes wet. @ 43.5'-45.0', some gravel. @ 43.5'-48.5', 2.0 to 3.0 feet sand heave; washed out with tricone.		44 45 46 47 48	2 4 9	16	61	SS-15	-	24	12	51	-	13 -	NP	NP	NP	15	A-3a (0)	
		49 50 51	2 5 14	23	67	SS-16	-	-	-	-	-	-	-	-	-	13	A-3a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:51

PID: 77370	BR ID:	PROJECT: I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 790+88.88, 44.54 RT	START: 7/14/10	END: 7/15/10	PG 3 OF 3	B-050-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Dense to very dense gray COARSE AND FINE SAND (A-3a), trace to little silt, trace gravel; damp. *(continued)*	731.6	52																
		53																
		54	23 27 27	65	67	SS-17	-	1	29	54	-	16 -	NP	NP	NP	19	A-3a (0)	
		55																
	726.4	56																
Very dense gray GRAVEL (A-1-a), some fine to coarse sand, trace silt; wet.		57																
		58																
		59	44 41 41	99	33	SS-18	-	-	-	-	-	-	-	-	-	9	A-1-a (V)	
@ 58.5'-68.5', 1.0 to 4.0 feet sand heave; washed out with tricone.		60																
	721.4	61																
Hard gray SILT (A-4b), little fine to coarse sand, little clay, little gravel; moist.		62																
		63																
		64	17 22 30	63	56	SS-19	4.5+	16	8	10	50	16	21	15	6	17	A-4b (6)	
		65																
	716.4	66																
Very dense gray GRAVEL WITH SAND (A-1-b), some fine to coarse sand, trace silt; wet.		67																
		68																
		69	15 21 21	51	83	SS-20	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
	713.4	EOB 70																

NOTES: SEEPAGE AT 43.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 43.5 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 23.1 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG BENTONITE CHIPS; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:51

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / J. POILLUCCI | DRILL RIG: CME 850 TRACK | STATION / OFFSET: 791+95.04, 14.82 RT | EXPLORATION ID B-050-4-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / D. WILLIARD | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP N2
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 782.8 (MSL) EOB: 70.0 ft. | PAGE 1 OF 3
START: 7/19/10 END: 7/20/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 72.5 | COORD: 712424.950 N, 1832904.700 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Topsoil - 10"	782.0																	
FILL: Stiff to very stiff brown SILTY CLAY (A-6b), some fine to coarse sand, some gravel; contains brick and rock fragments; damp.		1	3 4 11	18	94	SS-1	3.50	-	-	-	-	-	-	-	-	16	A-6b (V)	
		2																
		3																
		4	12 11 9	24	28	SS-2	1.75	-	-	-	-	-	-	-	-	17	A-6b (V)	
		5																
		6																
		7	13 11 10	25	28	SS-3	-	-	-	-	-	-	-	-	-	14	A-6b (V)	
@ 8.0', auger refusal - possible boulder; offset boring 5 feet east.	774.3	8																
Hard brown CLAY (A-7-6), little to some fine to coarse sand, trace gravel; damp.		9	4 7 10	21	100	SS-4	4.5+	0	5	15	40	40	41	18	23	17	A-7-6 (13)	
		10																
		11																
		12	5 6 16	27	94	SS-5	4.00	-	-	-	-	-	-	-	-	15	A-7-6 (V)	
		13																
		14	8 13 17	36	100	SS-6	4.5+	-	-	-	-	-	-	-	-	11	A-7-6 (V)	
		15																
@ 16.0'-17.5', stiff.		16																
		17	5 5 8	16	22	SS-7	1.50	-	-	-	-	-	-	-	-	13	A-7-6 (V)	
	764.3	18																
Very stiff to hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		19	2 4 5	11	100	SS-8	3.75	19	12	16	32	21	23	14	9	11	A-4a (4)	
		20																
		21																
		22	21 21 46	81	67	SS-9	3.50	-	-	-	-	-	-	-	-	8	A-4a (V)	
		23																
		24	20 25 27	63	100	SS-10	4.5+	13	12	18	36	21	22	13	9	8	A-4a (4)	
	757.8																	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:52

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 791+95.04, 14.82 RT | START: 7/19/10 | END: 7/20/10 | PG 2 OF 3 | B-050-4-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very stiff gray SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp.	757.8	26	7 10 9	23	100	SS-11	3.25	-	-	-	-	-	-	-	-	8	A-4a (V)	
		27																
		28																
		29	5 5 7	14	100	SS-12	3.25	10	9	17	45	19	20	13	7	12	A-4a (6)	
		30																
		31																
		32	4 5 7	14	100	SS-13	3.00	-	-	-	-	-	-	-	-	10	A-4a (V)	
		33																
		34	9 9 10	23	100	SS-14	2.50	-	-	-	-	-	-	-	-	13	A-4a (V)	
		35																
		36																
		37	7 14 19	40	78	SS-15	3.00	17	13	21	32	17	19	13	6	10	A-4a (3)	
	744.3	38																
Dense to very dense gray GRAVEL (A-1-a), some to "and" fine to coarse sand, little silt; wet.		39	14 17 13	36	78	SS-16	-	-	-	-	-	-	-	-	-	8	A-1-a (V)	
		40																
		41																
		42																
		43																
W		44	15 25 27	63	94	SS-17	-	-	-	-	-	-	-	-	-	8	A-1-a (V)	
		45																
		46																
		47																
		48																
@ 48.5'-53.5', 4.0 to 5.0 feet sand heave; washed out with tricone.		49	16 20 23	52	56	SS-18	-	51	26	11	-	12 -	NP	NP	NP	11	A-1-a (0)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:52

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PID: 77370	BR ID:	PROJECT: I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 791+95.04, 14.82 RT	START: 7/19/10	END: 7/20/10	PG 3 OF 3	B-050-4-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 731.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense gray COARSE AND FINE SAND (A-3a), little silt, trace gravel; wet.	730.8	52																
		53																
		54	40 50/5"	-	100	SS-19	-	-	-	-	-	-	-	-	-	14	A-3a (V)	
		55																
		56																
		57																
		58																
		59	34 50/4"	-	100	SS-20	-	4	21	56	-	19 -	NP	NP	NP	13	A-3a (0)	
		60																
		61																
		62																
		63																
		64	33 38 50	106	50	SS-21	-	-	-	-	-	-	-	-	-	13	A-3a (V)	
		65																
		66																
	715.8	67																
Hard gray SILTY CLAY (A-6b), little fine sand; damp.		68																
		69	21 18 27	54	100	SS-22	4.5+	-	-	-	-	-	-	-	-	26	A-6b (V)	
	712.8	EOB 70																

NOTES: SEEPAGE AT 43.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 43.1 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 20.9 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 2 BAG BENTONITE CHIPS; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:52

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / J. POILLUCCI | DRILL RIG: CME 850 TRACK | STATION / OFFSET: 784+80, 2.28 LT | EXPLORATION ID B-050-5-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / D. WILLIARD | HAMMER: CME AUTOMATIC | ALIGNMENT: I-70
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 793.9 (MSL) EOB: 89.0 ft. | PAGE 1 OF 4
START: 7/12/10 END: 7/13/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 72.5 | COORD: 712381.500 N, 1832974.040 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Topsoil - 3"	793.6																	
FILL: Medium dense brown GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace silt; contains brick fragments; damp.		1	5 8 4	14	83	SS-1	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
		2																
		3																
		4	5 8 4	14	0	SS-2	-	-	-	-	-	-	-	-	-	-		
		5																
	787.9																	
FILL: Stiff to very stiff brown SANDY SILT (A-4a), "and" fine to coarse sand, some gravel; damp.		6	9 6 5	13	50	SS-3	-	23	21	17	23	16	24	16	8	5	A-4a (1)	
		7																
		8																
		9	3 4 12	19	22	SS-4	-	-	-	-	-	-	-	-	-	7	A-4a (V)	
		10																
		11																
		12	0 1 3	5	61	SS-5	2.50	-	-	-	-	-	-	-	-	13	A-4a (V)	
	780.4	13																
POSSIBLE FILL: Very stiff brown SANDY SILT (A-4a), some fine to coarse sand, little to some gravel; damp to moist.		14	8 8 10	22	72	SS-6	3.00	16	11	15	29	29	22	16	6	13	A-4a (5)	
		15																
		16																
		17	6 7 8	18	0	SS-7	-	-	-	-	-	-	-	-	-	-		
		18																
@ 18.5'-20.0', contains petroleum odor.		19	3 9 11	24	83	SS-8	3.25	-	-	-	-	-	-	-	-	14	A-4a (V)	
		20																
@ 21.0'-22.5', concrete fragments.		21																
		22	12 14 13	33	0	SS-9	-	-	-	-	-	-	-	-	-	-		
		23																
	768.9	24	5 12 9	25	89	SS-10	3.00	25	11	14	30	20	23	14	9	12	A-4a (3)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:52

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 784+80, 2.28 LT | START: 7/12/10 | END: 7/13/10 | PG 2 OF 4 | B-050-5-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense brown GRAVEL WITH SAND (A-1-b), some fine to coarse sand, trace silt; contains petroleum odor; wet.	768.9																	
		26																
		27	24 41 34	91	0	SS-11	-	-	-	-	-	-	-	-	-	18	A-1-b (V)	
		28																
Very stiff to hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		29	4 4 6	12	83	SS-12	2.75	-	-	-	-	-	-	-	-	12	A-4a (V)	
		30																
		31																
		32																
		33																
		34	10 16 16	39	100	SS-13	4.5+	16	11	18	34	21	22	18	4	9	A-4a (4)	
		35																
	756.9	36																
Very stiff gray SILT AND CLAY (A-6a), some fine to coarse sand, little gravel; damp.		37																
		38																
		39	3 3 3	7	67	SS-14	2.50	-	-	-	-	-	-	-	-	12	A-6a (V)	
	751.9	40																
Dense gray SANDY SILT (A-4a); contains clay seams; damp.		41																
		42																
		43																
		44	11 12 17	35	100	SS-15	-	0	1	51	- 48 -		NP	NP	NP	14	A-4a (3)	
		45																
	746.9	46																
Medium dense gray GRAVEL (A-1-a), some fine to coarse sand, trace silt; damp.		47																
		48																
		49	11 10 9	23	44	SS-16	-	-	-	-	-	-	-	-	-	4	A-1-a (V)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:52

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 784+80, 2.28 LT | START: 7/12/10 | END: 7/13/10 | PG 3 OF 4 | B-050-5-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Dense to very dense gray GRAVEL WITH SAND (A-1-b), little silt; wet.	741.9	W																
@ 53.5'-65.0', contains petroleum odor.		52–54	7 9 16	30	22	SS-17	-	-	-	-	-	-	-	-	-	17	A-1-b (V)	
		55–59	8 35 50	103	100	SS-18	-	26	49	15	-	10 -	NP	NP	NP	9	A-1-b (0)	
@ 60.0'-63.5', 1.0 foot sand heave; washed out with tricone.		60–64	14 24 27	62	67	SS-19	-	-	-	-	-	-	-	-	-	17	A-3a (V)	
@ 68.5', 0.8 feet sand heave; washed out with tricone.		65–69	22 45 50/5"	-	82	SS-20	-	38	32	15	-	15 -	NP	NP	NP	10	A-1-b (0)	
	721.9	70–74																
Very dense gray GRAVEL (A-1-a), some fine to coarse sand, trace silt; wet.																		
@ 73.5', 1.0 foot sand heave; washed out with tricone.			42 50/6"	-	84	SS-21	-	-	-	-	-	-	-	-	-	8	A-1-a (V)	
		75–78																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:52

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 784+80, 2.28 LT | START: 7/12/10 | END: 7/13/10 | PG 4 OF 4 | B-050-5-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense gray GRAVEL (A-1-a), some fine to coarse sand, trace silt; wet. *(continued)*	715.4	79–83	44 34 28	75	50	SS-22	-	72	14	6	-	8 -	NP	NP	NP	6	A-1-a (0)	
@ 83.5', 88.5', 1.0 foot sand heave; washed out with tricone.		84–88	45 41 50/5"	-	59	SS-23	-	-	-	-	-	-	-	-	-	7	A-1-a (V)	
	706.9																	
Hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.	704.9	EOB 89	50/6"	-	100	SS-24	4.5+	-	-	-	-	-	-	-	-	11	A-4a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:52

NOTES: SEEPAGE AT 53.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 54.2 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 21.6 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG BENTONITE CHIPS; SOIL CUTTINGS

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PROJECT: I-70/I-71 EAST INTERCHANGE
TYPE: ROADWAY
PID: 77370 BR ID:
START: 7/26/10 END: 7/27/10

DRILLING FIRM / OPERATOR: DLZ / K. CONRAD
SAMPLING FIRM / LOGGER: DLZ / M. EVENER
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 850 TRACK
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 1/7/10
ENERGY RATIO (%): 72.5

STATION / OFFSET: 185+07.5, 63.29 LT
ALIGNMENT: PARSONS
ELEVATION: 783.5 (MSL) EOB: 69.4 ft.
COORD: 712447.060 N, 1833234.740 E

EXPLORATION ID B-051-2-10
PAGE 1 OF 3

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Topsoil - 7"	782.9																	
POSSIBLE FILL: Stiff to very stiff brown SANDY SILT (A-4a), some to "and" fine to coarse sand, little gravel; damp to moist.		1	5 7 9	19	100	SS-1	2.50	-	-	-	-	-	-	-	-	14	A-4a (V)	
		2																
		3																
		4	5 8 8	19	100	SS-2	1.25	-	-	-	-	-	-	-	-	11	A-4a (V)	
		5																
		6																
		7	4 6 8	17	100	SS-3	3.50	13	13	18	35	21	23	15	8	11	A-4a (4)	
		8																
		9	2 3 6	11	100	SS-4	2.00	-	-	-	-	-	-	-	-	13	A-4a (V)	
		10																
	772.5	11																
Very stiff to hard gray SANDY SILT (A-4a), some to "and" fine to coarse sand, little gravel; damp.		12	1 3 6	11	67	SS-5	2.50	-	-	-	-	-	-	-	-	9	A-4a (V)	
		13																
@ 13.5'-15.0', large gravel blocking spoon.		14	2 15 6	25	6	SS-6	-	-	-	-	-	-	-	-	-	-		
		15																
		16																
		17	4 15 16	37	67	SS-7	4.5+	14	11	19	37	19	20	14	6	9	A-4a (4)	
		18																
		19	7 8 10	22	100	SS-8	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
		20																
		21																
		22	4 5 7	14	100	SS-9	3.50	-	-	-	-	-	-	-	-	9	A-4a (V)	
		23																
		24	8 13 10	28	100	SS-10	4.5+	12	11	20	38	19	20	14	6	10	A-4a (4)	
	758.5																	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:52

PID: 77370 BR ID: PROJECT I-70/I-71 EAST INTERCHANGE STATION / OFFSET: 185+07.5, 63.29 LT START: 7/26/10 END: 7/27/10 PG 2 OF 3 B-051-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Medium dense gray COARSE AND FINE SAND (A-3a), little silt; damp.	758.5	26																
		27	4 8 10	22	39	SS-11	-	-	-	-	-	-	-	-	-	9	A-3a (V)	
		28																
		29	7 11 12	28	28	SS-12	-	-	-	-	-	-	-	-	-	3	A-3a (V)	
		30																
	751.5	31																
Very stiff gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp to moist.		32																
		33																
		34	2 4 8	14	78	SS-13	3.50	11	10	18	40	21	20	13	7	13	A-4a (5)	
		35																
	746.5	36																
Dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, little silt; wet.		37																
		38																
W		39	16 17 18	42	56	SS-14	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
		40																
	741.5	41																
Dense to very dense gray GRAVEL (A-1-a), some fine to coarse sand, trace silt; wet.		42																
		43																
		44	7 16 18	41	56	SS-15	-	63	22	7	-	8 -	NP	NP	NP	10	A-1-a (0)	
		45																
		46																
		47																
		48																
		49	13 9 35	53	67	SS-16	-	-	-	-	-	-	-	-	-	8	A-1-a (V)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:52

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PID: 77370	BR ID:	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 185+07.5, 63.29 LT	START: 7/26/10	END: 7/27/10	PG 3 OF 3	B-051-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 731.7	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace silt; wet.	731.5	52																
		53																
@ 53.5', 1.5 feet sand heave; washed out with tricone.		54	18 15 18	40	89	SS-17	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
		55																
		56																
	726.5	57																
Very dense gray GRAVEL (A-1-a), some fine to coarse sand, trace silt; wet.		58																
		59	26 25 20	54	56	SS-18	-	66	18	7	-	9 -	NP	NP	NP	9	A-1-a (0)	
		60																
		61																
		62																
		63																
		64	34 24 50/5"	-	100	SS-19	-	-	-	-	-	-	-	-	-	12	A-1-a (V)	
		65																
		66																
	716.5	67																
Very dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace silt; wet.		68																
	714.1	69	41 50/5"	-	45	SS-20	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
		EOB																

NOTES: SEEPAGE AT 38.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 40.9 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 41.1 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 3 BAGS BENTONITE CHIPS; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:52

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / J. POILLUCCI | DRILL RIG: CME 850 TRACK | STATION / OFFSET: 787+25.53, 34.5 RT | EXPLORATION ID B-051-3-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / D. WILLIARD | HAMMER: CME AUTOMATIC | ALIGNMENT: I-70
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 784.0 (MSL) EOB: 70.0 ft. | PAGE 1 OF 3
START: 7/20/10 END: 7/26/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 72.5 | COORD: 712358.760 N, 1833220.210 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Topsoil - 3"	783.7																	
FILL: Very stiff to hard brown SANDY SILT (A-4a), some to "and" fine to coarse sand, some gravel; contains concrete and brick fragments; damp.	780.5	1	4 11 17	34	94	SS-1	4.00	-	-	-	-	-	-	-	-	7	A-4a (V)	
POSSIBLE FILL: Hard light brown SILTY CLAY (A-6b), some fine to coarse sand, little gravel; contains concrete and brick fragments; damp.	778.0	4	3 5 50/5"	-	82	SS-2	4.5+	-	-	-	-	-	-	-	-	9	A-6b (V)	
POSSIBLE FILL: Hard brown SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.	773.0	7	9 13 18	37	100	SS-3	4.5+	2	7	14	49	28	20	16	4	11	A-4a (8)	
		9	4 20 50/4"	-	94	SS-4	4.5+	-	-	-	-	-	-	-	-	14	A-4a (V)	
POSSIBLE FILL: Very dense light gray GRAVEL (A-1-a), little fine to coarse sand, trace silt; damp.	770.5	12	23 30 25	66	50	SS-5	-	-	-	-	-	-	-	-	-	3	A-1-a (V)	
Very stiff to hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		14	13 17 19	44	100	SS-6	4.5+	20	13	16	32	19	22	14	8	8	A-4a (3)	
		17	7 7 8	18	100	SS-7	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
		19	11 13 10	28	78	SS-8	3.25	-	-	-	-	-	-	-	-	11	A-4a (V)	
		22	8 17 22	47	100	SS-9	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
		24	6 15 9	29	83	SS-10	3.25	11	11	19	40	19	22	14	8	10	A-4a (5)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:53

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 787+25.53, 34.5 RT | START: 7/20/10 | END: 7/26/10 | PG 2 OF 3 | B-051-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very stiff to hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp. *(continued)*	759.0																	
		27	2 6 10	19	89	SS-11	2.75	-	-	-	-	-	-	-	-	11	A-4a (V)	
@ 26.0'-27.5',31.0'-32.5', contains fine sand lenses.		29	5 8 10	22	100	SS-12	2.75	-	-	-	-	-	-	-	-	10	A-4a (V)	
	750.5	32	3 9 12	25	100	SS-13	2.00	11	11	23	40	15	18	14	4	9	A-4a (4)	
Medium dense gray COARSE AND FINE SAND (A-3a), little silt, little gravel; damp.	748.0	34	10 13 10	28	100	SS-14	-	-	-	-	-	-	-	-	-	8	A-3a (V)	
Very stiff gray SILTY CLAY (A-6b), some fine to coarse sand, some gravel; damp.	747.0	37	7 14 25	47	100	SS-15A	3.00	-	-	-	-	-	-	-	-	9	A-6b (V)	
Dense gray COARSE AND FINE SAND (A-3a), little silt, little gravel; damp.	745.5				-	SS-15B	-	-	-	-	-	-	-	-	-	4	A-3a (V)	
Dense to very dense gray GRAVEL (A-1-a), some fine to coarse sand, little silt; damp.		39	15 20 22	51	83	SS-16	-	55	26	8	-	11 -	NP	NP	NP	4	A-1-a (0)	
@ 43.5', becomes wet.		W 44	7 17 16	40	89	SS-17	-	-	-	-	-	-	-	-	-	9	A-1-a (V)	
@ 45.0', 1.0 foot sand heave; washed out with tricone.	737.0																	
Dense gray COARSE AND FINE SAND (A-3a), little silt, trace gravel; damp.																		
@ 48.5', changed to K. Conrad driller, M. Evener logger.		49	10 18 14	39	56	SS-18	-	7	16	59	-	18 -	NP	NP	NP	18	A-3a (0)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:53

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PID: 77370	BR ID:	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 787+25.53, 34.5 RT	START: 7/20/10	END: 7/26/10	PG 3 OF 3	B-051-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 732.3	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Dense to very dense gray GRAVEL WITH SAND (A-1-b), little silt; wet.	732.0	52																
		53																
		54	12 23 21	53	56	SS-19	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		55																
		56																
		57																
		58																
		59	16 18 16	41	56	SS-20	-	23	38	26	-	13 -	NP	NP	NP	14	A-1-b (0)	
		60																
		61																
		62																
		63																
		64	10 15 16	37	6	SS-21	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
		65																
		66																
		67																
		68																
		69	6 14 17	37	11	SS-22	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
	714.0	EOB 70																

NOTES: SEEPAGE AT 43.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 41.4 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 41.5 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 4 BAGS BENTONITE CHIPS; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:53

PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / J. POILLUCCI | DRILL RIG: CME 750X ATV | STATION / OFFSET: 788+77.42, 30.81 LT | EXPLORATION ID B-051-4-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / D. WILLIARD | HAMMER: CME AUTOMATIC | ALIGNMENT: I-70
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 782.9 (MSL) EOB: 69.4 ft. | PAGE 1 OF 3
START: 6/15/10 END: 6/17/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 58.5 | COORD: 712425.000 N, 1833371.610 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
FILL: Very stiff brown SILT AND CLAY (A-6a), little to some fine to coarse sand; contains brick fragments; damp.	782.9	1	6 7 11	18	89	SS-1	2.25	-	-	-	-	-	-	-	-	10	A-6a (V)	
@ 3.5'-4.9', dark gray.	776.9	4	12 10 50/5"	-	24	SS-2	-	-	-	-	-	-	-	-	-	11	A-6a (V)	
Very stiff to hard dark gray SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp.		6	5 7 9	16	100	SS-3	4.00	8	12	19	36	25	23	14	9	12	A-4a (5)	
		9	21 18 17	34	100	SS-4	3.00	-	-	-	-	-	-	-	-	9	A-4a (V)	
@ 11.0-12.5', rock fragments; low revovery.		11 12	24 41 44	83	11	SS-5	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
		14	21 17 17	33	89	SS-6	4.50	13	12	21	34	20	22	14	8	9	A-4a (4)	
		17	9 14 12	25	100	SS-7	4.25	-	-	-	-	-	-	-	-	10	A-4a (V)	
@ 18.5'-20.0', drove on cobble or coarse gravel; low revovery.		19 20	11 20 20	39	11	SS-8	-	-	-	-	-	-	-	-	-	9	A-4a (V)	
		22	9 12 14	25	100	SS-9	3.75	11	11	19	37	22	22	14	8	10	A-4a (5)	
@ 23.5'-25.0', "and" gravel.	757.9	24	7 13 18	30	100	SS-10	4.50	-	-	-	-	-	-	-	-	7	A-4a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:53

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 788+77.42, 30.81 LT | START: 6/15/10 | END: 6/17/10 | PG 2 OF 3 | B-051-4-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Dense to very dense gray SANDY SILT (A-4a), trace gravel; damp.	757.9	26	21 21 22	42	44	SS-11	-	8	6	46	-	40 -	NP	NP	NP	7	A-4a (1)	
@ 28.5'-29.9', drove on cobble or coarse gravel; low revovery.		29	40 42 50/5"	-	12	SS-12	2.50	-	-	-	-	-	-	-	-	9	A-4a (V)	
@ 31.0'-32.5', drove on cobble or coarse gravel; no revovery.		31 32	24 26 31	56	0	SS-13	-	-	-	-	-	-	-	-	-	-		
@ 33.5'-34.0', medium dense.	748.9	34	5 9 16	24	100	SS-14A SS-14B SS-14C	- 3.75 -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	9 11 15	A-4a (V) A-6a (V) A-4a (V)	
Very stiff gray SILT AND CLAY (A-6a), little fine gravel; damp.	748.1																	
Medium dense gray SANDY SILT (A-4a), trace gravel; moist.	746.9																	
Hard gray SANDY SILT (A-4a), "and" fine to coarse sand, trace to little gravel; damp.	744.4 W	37	5 11 14	24	100	SS-15	4.5+	10	11	25	39	15	18	15	3	12	A-4a (4)	
Dense gray GRAVEL WITH SAND (A-1-b), trace fine to coarse sand, trace silt; wet.		39	9 12 26	37	78	SS-16	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
@ 43.5'-45.0', drove on cobble or coarse gravel; no revovery.	735.9	44	18 22 27	48	0	SS-17	-	-	-	-	-	-	-	-	-	-		
Dense gray COARSE AND FINE SAND (A-3a), little silt, trace gravel; wet.		49	14 16 21	36	78	SS-18	-	1	40	45	-	14 -	NP	NP	NP	20	A-3a (0)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:53

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PID: 77370	BR ID:	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 788+77.42, 30.81 LT	START: 6/15/10	END: 6/17/10	PG 3 OF 3	B-051-4-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Dense gray COARSE AND FINE SAND (A-3a), little silt, trace gravel; wet. *(continued)*	731.1	52																
		53																
@ 53.5'-55.0', some gravel.		54	17 22 25	46	72	SS-19	-	-	-	-	-	-	-	-	-	12	A-3a (V)	
		55																
	725.9	56																
Very dense gray GRAVEL WITH SAND (A-1-b), little silt; wet.		57																
		58																
		59	14 30 31	59	78	SS-20	-	27	38	20	-	15 -	NP	NP	NP	11	A-1-b (0)	
		60																
		61																
		62																
		63																
		64	31 34 29	61	72	SS-21	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		65																
		66																
	715.9	67																
Hard gray SILT AND CLAY (A-6a), little fine to coarse sand; damp.		68																
	713.5	69 EOB	48 50/5"	-	82	SS-22	4.5+	-	-	-	-	-	-	-	-	10	A-6a (V)	

NOTES: SEEPAGE AT 38.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 40.0 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 4.1 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG BENTONITE CHIPS; 1 BAG QUIKGROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:53

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PROJECT: I-70/I-71 EAST INTERCHANGE	DRILLING FIRM / OPERATOR: DLZ / J. POILLUCCI	DRILL RIG: CME 750X ATV	STATION / OFFSET: 889+78.62, 41.91 RT	EXPLORATION ID B-051-5-10
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: DLZ / D. WILLIARD	HAMMER: CME AUTOMATIC	ALIGNMENT: RAMP Q3	
PID: 77370 BR ID:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 1/7/10	ELEVATION: 794.4 (MSL) EOB: 89.4 ft.	PAGE 1 OF 4
START: 6/14/10 END: 6/15/10	SAMPLING METHOD: SPT	ENERGY RATIO (%): 58.5	COORD: 712398.280 N, 1833480.770 E	

MATERIAL DESCRIPTION AND NOTES	ELEV. 794.4	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Base - 12"	793.4																	
FILL: Very stiff brown SILT AND CLAY (A-6a), little fine to coarse sand, trace gravel; damp.	790.9	1	11 10 9	19	100	SS-1	3.25	-	-	-	-	-	-	-	-	9	A-6a (V)	
FILL: Medium dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, some silt; contains brick and asphalt fragments; damp.	785.9	4	11 10 9	19	100	SS-2	-	37	23	15	-	25 -	NP	NP	NP	9	A-1-b (0)	
		7	13 14 15	28	50	SS-3	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
FILL: Stiff brown SILT AND CLAY (A-6a), little fine to coarse sand, trace gravel; contains brick and asphalt fragments; damp.	783.4	9	11 11 6	17	67	SS-4	1.50	-	-	-	-	-	-	-	-	24	A-6a (V)	
Very stiff to hard brown SILTY CLAY (A-6b), some fine to coarse sand, little gravel; damp.	773.4	12	4 8 10	18	83	SS-5	4.50	-	-	-	-	-	-	-	-	20	A-6b (V)	
		14	6 14 28	41	100	SS-6	3.25	13	9	13	27	38	36	17	19	15	A-6b (10)	
		17	9 13 24	36	100	SS-7	4.25	-	-	-	-	-	-	-	-	11	A-6b (V)	
		20	10 17 50/5"	-	76	SS-8	3.50	-	-	-	-	-	-	-	-	12	A-6b (V)	
Very stiff to hard gray SANDY SILT (A-4a), some fine to coarse sand, little to some gravel; damp.		22	7 19 34	52	100	SS-9	2.50	27	10	19	27	17	21	15	6	9	A-4a (2)	
		24	14 10 9	19	100	SS-10	2.75	-	-	-	-	-	-	-	-	10	A-4a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:53

PID: 77370	BR ID:	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 889+78.62, 41.91 RT	START: 6/14/10	END: 6/15/10	PG 2 OF 4	B-051-5-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 769.4	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very stiff to hard gray SANDY SILT (A-4a), some fine to coarse sand, little to some gravel; damp. *(continued)*		27	9 10 12	21	100	SS-11	4.25	-	-	-	-	-	-	-	-	12	A-4a (V)	
		29	4 5 8	13	100	SS-12	2.25	16	16	19	30	19	21	14	7	11	A-4a (3)	
@ 33.5'-35.0', stiff.		34	16 14 15	28	83	SS-13	1.25	-	-	-	-	-	-	-	-	8	A-4a (V)	
	752.4	39	11 7 10	17	100	SS-14	3.00	23	11	18	31	17	21	14	7	11	A-4a (3)	
Very dense gray FINE SAND (A-3), trace silt; damp.	747.4	44	20 23 37	58	100	SS-15	-	-	-	-	-	-	-	-	-	9	A-3 (V)	
Hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		49	13 17 29	45	100	SS-16	4.50	14	12	19	30	25	22	14	8	11	A-4a (4)	
@ 50.0'-53.5', encountered possible cobbles/boulders while augering.																		

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:53

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 889+78.62, 41.91 RT | START: 6/14/10 | END: 6/15/10 | PG 3 OF 4 | B-051-5-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Dense to very dense gray COARSE AND FINE SAND (A-3a), some silt, trace gravel; wet.	742.6 / 742.4	W	7 16 17	32	100	SS-17	-	-	-	-	-	-	-	-	-	18	A-3a (V)	
@ 53.5', 1.0 foot sand heave.			22 50/5"	-	100	SS-18	-	0	4	69	20	7	NP	NP	NP	18	A-3a (0)	
			44 35 32	65	67	SS-19	-	-	-	-	-	-	-	-	-	11	A-3a (V)	
			26 39 27	64	83	SS-20	-	-	-	-	-	-	-	-	-	10	A-3a (V)	
Very stiff gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.	722.4		32 42 50	90	83	SS-21	3.25	2	5	30	49	14	18	15	3	13	A-4a (6)	

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 889+78.62, 41.91 RT | START: 6/14/10 | END: 6/15/10 | PG 4 OF 4 | B-051-5-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very stiff gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp. *(continued)*	715.8							-	-	-	-	-	-	-	-	12	A-3a (V)	
@ 78.5'-79.0', wet sand seam.			4 19 50/3"	-	100 -	SS-22A SS-22B	2.50	-	-	-	-	-	-	-	-	-	A-4a (V)	
@ 84.3'-88.5', sediment binding rods; washed out.			11 50/4"	-	60	SS-23	2.50	-	-	-	-	-	-	-	-	15	A-4a (V)	
Hard gray SILT AND CLAY (A-6a), trace fine to coarse gravel; moist.	707.4																	
	705.0	EOB	12 50/5"	-	64	SS-24	4.5+	-	-	-	-	-	-	-	-	14	A-6a (V)	

NOTES: SEEPAGE AT 53.5 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 1.0 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG BENTONITE CHIPS; 1 BAG QUIKGROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:53

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / J. NELSON | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 790+09.03, 46.91 RT | EXPLORATION ID: B-051-6-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / S. LARIMER | HAMMER: CME AUTOMATIC | ALIGNMENT: I-70
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 787.5 (MSL) EOB: 85.0 ft. | PAGE: 1 OF 4
START: 7/6/10 END: 7/6/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 64.7 | COORD: 712343.382 N, 1833500.549 E

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)	HOLE SEALED
Topsoil- 2"	787.3																	
FILL: Hard brown SANDY SILT (A-4a), some gravel; contains concrete fragments; damp.	784.0	1-3	4 17 19	39	72	SS-1	4.5+	-	-	-	-	-	-	-	-	5	A-4a (V)	
FILL: Hard brown SILT AND CLAY (A-6a), some fine to coarse sand, trace to little gravel; damp.	779.0	4-5	15 17 14	33	44	SS-2	4.5+	-	-	-	-	-	-	-	-	13	A-6a (V)	
		6-8	12 15 34	53	78	SS-3	4.5+	10	13	14	31	32	32	18	14	12	A-6a (7)	
POSSIBLE FILL: Hard brown SANDY SILT (A-4a), some gravel; damp.	776.5	9-10	8 10 12	24	89	SS-4	4.5+	-	-	-	-	-	-	-	-	14	A-4a (V)	
Very dense brown GRAVEL (A-1-a), little fine to coarse sand, trace silt; damp.		11-12	19 21 30	55	28	SS-5	-	-	-	-	-	-	-	-	-	2	A-1-a (V)	
@ 12.5'-13.9', encountered possible cobbles/boulders.	771.5	14	50/5"	-	0	SS-6	-	-	-	-	-	-	-	-	-	-		
Very stiff to hard gray SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp.		16-17	43 37 30	72	78	SS-7	4.5+	11	13	20	37	19	21	13	8	8	A-4a (4)	
		19-20	19 22 20	45	56	SS-8	3.00	-	-	-	-	-	-	-	-	4	A-4a (V)	
@ 21.0'-22.5', encountered possible cobbles/boulders.		21-22	16 16 19	38	17	SS-9	-	-	-	-	-	-	-	-	-	3	A-4a (V)	
		24	15 18 22	43	78	SS-10	3.50	8	11	19	38	24	24	16	8	11	A-4a (5)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:53

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 790+09.03, 46.91 RT | START: 7/6/10 | END: 7/6/10 | PG 2 OF 4 | B-051-6-10

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)	HOLE SEALED
Very stiff to hard gray SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp. *(continued)* @ 26.0'-27.5', encountered possible cobbles/boulders.	759.0	26-27	12 14 16	32	0	SS-11	-	-	-	-	-	-	-	-	-	-		
Very stiff gray SILT AND CLAY (A-6a), "and" fine to coarse sand, little gravel; contains fine sand seams; damp.	758.5 / FS 757.9	29	7 12 8	22	100 - -	SS-12A SS-12B SS-12C	3.50 - 2.50	- - 13	- - 10	- - 19	- - 38	- - 20	- - 21	- - 14	- - 7	9 5 11	A-6a (V) A-3 (V) A-4a (5)	
Dense gray FINE SAND (A-3), trace silt; damp.																		
Very stiff gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.	755.5																	
Dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace silt; damp.	752.9	34	13 19 15	37	100 -	SS-13A SS-13B	- 4.00	- -	- -	- -	- -	- -	- -	- -	- -	3 9	A-1-b (V) A-4b (V)	
Dense gray SILT (A-4b), "and" fine sand, trace to little clay; damp.	750.5																	
Medium dense gray COARSE AND FINE SAND (A-3a), little to some silt; damp.	748.2	39	7 8 6	15	100 -	SS-14A SS-14B	- 3.75	- -	- -	- -	- -	- -	- -	- -	- -	11 11	A-3a (V) A-6b (V)	
Very stiff gray SILTY CLAY (A-6b), some fine to coarse sand, little gravel; moist.	745.5																	
Medium dense gray GRAVEL (A-1-a), little fine to coarse sand, trace silt; damp.		44	10 9 14	25	72	SS-15	-	79	11	4	-	6 -	NP	NP	NP	1	A-1-a (0)	
@ 40.0'-43.5', difficult augering; possible cobble/boulder.																		
@ 48.5', becomes wet; 1.0 foot sand heave; washed out with tricone.		W 49	6 7 6	14	44	SS-16	-	-	-	-	-	-	-	-	-	4	A-1-a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:53

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 790+09.03, 46.91 RT | START: 7/6/10 | END: 7/6/10 | PG 3 OF 4 | B-051-6-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace silt; wet.	735.5	52																
@ 53.5'-68.5', 0.5 to 1.8 feet sand heave; washed out with tricone.		53																
		54	19 12 19	33	94	SS-17	-	29	54	11	-	6 -	NP	NP	NP	15	A-1-b (0)	
		55																
	730.5	56																
Dense gray COARSE AND FINE SAND (A-3a), some gravel, trace silt; wet.		57																
		58																
		59	9 16 19	38	78	SS-18	-	-	-	-	-	-	-	-	-	11	A-3a (V)	
		60																
	725.5	61																
Dense to very dense gray GRAVEL (A-1-a), some fine to coarse sand, trace silt; wet.		62																
		63																
		64	11 18 21	42	83	SS-19	-	57	27	8	-	8 -	NP	NP	NP	10	A-1-a (0)	
		65																
		66																
		67																
		68																
		69	16 50/5"	-	82	SS-20	-	-	-	-	-	-	-	-	-	11	A-1-a (V)	
	715.5	70																
Hard gray SILT (A-4b), some fine to coarse sand, trace gravel; damp.		71																
		72																
		73																
		74	45 50/5"	-	73	SS-21	4.5+	4	6	16	54	20	22	15	7	10	A-4b (8)	
	710.5	75																
Hard gray SILTY CLAY (A-6b), little fine to coarse sand; damp.		76																
		77																
		78																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:53

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 790+09.03, 46.91 RT | START: 7/6/10 | END: 7/6/10 | PG 4 OF 4 | B-051-6-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Hard gray SILTY CLAY (A-6b), little fine to coarse sand; damp. *(continued)*	708.9	79	29 40 50	97	83	SS-22	4.5+	-	-	-	-	-	-	-	-	11	A-6b (V)	
	705.5	80																
Hard gray SANDY SILT (A-4a), some fine to coarse sand; damp.		81																
		82																
W		83																
		84	27 37 41	84	89	SS-23	-	-	-	-	-	-	-	-	-	17	A-4a (V)	
EOB	702.5	85																

NOTES: SEEPAGE AT 48.5 AND 83.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 44.5 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 77.4 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG BENTONITE CHIPS; 3 BAGS QUIKGROUT

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PROJECT: I-70/I-71 EAST INTERCHANGE
TYPE: ROADWAY
PID: 77370 BR ID:
START: 6/11/10 END: 6/14/10

DRILLING FIRM / OPERATOR: DLZ / J. POILLUCCI
SAMPLING FIRM / LOGGER: DLZ / D. WILLIARD
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 75 TRUCK
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 1/7/10
ENERGY RATIO (%): 64.7

STATION / OFFSET: 890+69.97, 59.49 LT
ALIGNMENT: RAMP Q3
ELEVATION: 788.1 (MSL) EOB: 70.0 ft.
COORD: 712425.530 N, 1833613.880 E

EXPLORATION ID B-051-7-10
PAGE 1 OF 3

MATERIAL DESCRIPTION AND NOTES	ELEV. 788.1	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Base- 12"	787.1																	
FILL: Very stiff brown SILT AND CLAY (A-6a), trace fine to coarse sand; slightly organic, contains brick fragments; damp.		1	2 3 5	9	94	SS-1	3.00	-	-	-	-	-	-	-	-	22	A-6a (V)	
		2																
		3	2 3 4	8	83	SS-2	2.50	-	-	-	-	-	-	-	-	25	A-6a (V)	
	782.1	4																
Very stiff to hard brown SILT AND CLAY (A-6a), some fine to coarse sand, trace to little gravel; damp.		5	5 10 12	24	72	SS-3	4.50	8	11	13	35	33	30	18	12	15	A-6a (7)	
		6																
		7	5 7 9	17	78	SS-4	3.25	-	-	-	-	-	-	-	-	15	A-6a (V)	
@ 11.0'-12.5', drove large gravel or cobble; no recovery.		8																
		9	17 14 16	32	0	SS-5	-	-	-	-	-	-	-	-	-	-		
	774.6	10																
Hard brown SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		11	18 21 25	50	72	SS-6	4.50	18	9	13	36	24	24	15	9	9	A-4a (5)	
		12																
		13	18 30 16	50	78	SS-7	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		14																
		15	12 21 50/6"	-	91	SS-8	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		16																
		17	15 26 50/5"	-	71	SS-9	4.50	17	13	16	32	22	23	14	9	8	A-4a (4)	
		18																
		19	19 24 18	45	78	SS-10	4.50	-	-	-	-	-	-	-	-	8	A-4a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:54

PID: 77370 BR ID: PROJECT I-70/I-71 EAST INTERCHANGE STATION / OFFSET: 890+69.97, 59.49 LT START: 6/11/10 END: 6/14/10 PG 2 OF 3 B-051-7-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 763.1	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Hard brown SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp. *(continued)*		26	17 16 18	37	89	SS-11	4.50	-	-	-	-	-	-	-	-	10	A-4a (V)	
	759.6	27																
Very dense gray GRAVEL WITH SAND (A-1-b), some fine to coarse sand, some silt; damp.		28	27 50/6"	-	119	SS-12	-	43	25	7	-	25 -	NP	NP	NP	3	A-1-b (0)	
	756.1	29																
Dense gray FINE SAND (A-3), little gravel; damp.		30																
		31																
		32	13 17 26	46	83	SS-13	-	-	-	-	-	-	-	-	-	4	A-3 (V)	
		33																
	751.1	34																
Dense gray GRAVEL (A-1-a), "and" fine to coarse sand, trace silt; damp.		35																
		36																
		37																
		38																
		39	19 22 28	54	67	SS-14	-	50	25	16	-	9 -	NP	NP	NP	3	A-1-a (0)	
		40																
		41																
		42																
		43	W															
@ 44.0', becomes wet.		44	10 15 15	32	67	SS-15	-	-	-	-	-	-	-	-	-	7	A-1-a (V)	
	741.1	45																
Medium dense gray GRAVEL WITH SAND (A-1-b), trace silt; wet.		46																
		47																
@ 48.5', washed out.		48																
		49	5 5 6	12	33	SS-16	-	-	-	-	-	-	-	-	-	13	A-1-b (V)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:54

PID: 77370	BR ID:	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 890+69.97, 59.49 LT	START: 6/11/10	END: 6/14/10	PG 3 OF 3	B-051-7-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Medium dense gray GRAVEL WITH SAND (A-1-b), trace silt; wet. *(continued)*	736.3	52																
		53																
		54	10 12 15	29	72	SS-17	-	35	30	26	-	9 -	NP	NP	NP	12	A-1-b (0)	
		55																
		56																
		57																
		58																
		59	7 12 16	30	83	SS-18	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
		60																
		61																
		62																
		63																
@ 63.5'-64.9', very dense.		64	13 21 50/5"	-	65	SS-19	-	-	-	-	-	-	-	-	-	14	A-1-b (V)	
		65																
		66																
	721.1	67																
Very stiff gray SILT (A-4b), trace clay; damp.		68																
		69	18 22 23	49	78	SS-20	3.50	-	-	-	-	-	-	-	-	14	A-4b (V)	
	718.1	EOB 70																

NOTES: SEEPAGE AT 43.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 42.3 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 43.15 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG BENTONITE CHIPS; 1 BAG QUIKGROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:54

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PROJECT: I-70/I-71 EAST INTERCHANGE	DRILLING FIRM / OPERATOR: DLZ / J. POILLUCCI	DRILL RIG: CME 750X ATV	STATION / OFFSET: 891+19.97, 11.62 RT	EXPLORATION ID B-051-8-10
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: DLZ / D. WILLIARD	HAMMER: CME AUTOMATIC	ALIGNMENT: RAMP Q3	
PID: 77370 BR ID:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 1/7/10	ELEVATION: 786.1 (MSL) EOB: 90.0 ft.	PAGE 1 OF 4
START: 6/10/10 END: 6/11/10	SAMPLING METHOD: SPT	ENERGY RATIO (%): 58.5	COORD: 712339.310 N, 1833616.500 E	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil - 5"	785.7																	
FILL: Very stiff brown SILT AND CLAY (A-6a), trace fine to coarse gravel, trace fine to coarse sand; contains brick fragments; damp.	782.6	1	5 6 6	12	100	SS-1	3.25	-	-	-	-	-	-	-	-	22	A-6a (V)	
Very stiff to hard light brown SILTY CLAY (A-6b), little to some fine to coarse sand, trace gravel; damp.		4	4 7 10	17	72	SS-2	4.25	4	9	16	29	42	37	19	18	17	A-6b (10)	
		7	7 10 16	25	656	SS-3	3.25	-	-	-	-	-	-	-	-	16	A-6b (V)	
@ 8.5'-10.0', brown.	775.1	9	14 16 11	26	11	SS-4	2.50	-	-	-	-	-	-	-	-	16	A-6b (V)	
Very stiff to hard brown to dark brown SILT AND CLAY (A-6a), some fine to coarse sand, little gravel; damp.		12	4 13 18	30	100	SS-5	2.50	12	12	19	34	23	28	15	13	11	A-6a (6)	
@ 13.5', dark brown.	770.1	14	11 13 15	27	100	SS-6	4.5+	14	13	18	33	22	-	-	-	9	A-6a (V)	
Hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		17	14 18 16	33	56	SS-7	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
@ 18.5'-20.0', drove on large gravel or cobble; low recovery.		19	23 19 13	31	6	SS-8	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
@ 21.0'-22.5', drove on large gravel or cobble; no recovery.		22	11 15 22	36	0	SS-9	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
@ 23.5'-25.0', grayish brown.		24	4 7 6	13	78	SS-10	4.00	20	13	17	32	18	21	14	7	10	A-4a (3)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:54

PID: 77370	BR ID:	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 891+19.97, 11.62 RT	START: 6/10/10	END: 6/11/10	PG 2 OF 4	B-051-8-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp. *(continued)*	761.1																	
@ 26.0'-27.5', grayish brown.	757.6	27	4 4 6	10	100	SS-11	4.00	-	-	-	-	-	-	-	-	12	A-4a (V)	
Dense gray SANDY SILT (A-4a), "and" fine to coarse sand, little to some gravel; damp.		29	16 31 11	41	83	SS-12	-	20	2	41	32	5	NP	NP	NP	4	A-4a (0)	
@ 33.5'-35.0', no recovery.	749.1	34	2 3 3	6	0	SS-13	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
Medium dense to dense gray GRAVEL WITH SAND (A-1-b), trace silt; damp.		39	8 11 13	23	94	SS-14	-	4	58	29	-	9 -	NP	NP	NP	4	A-1-b (0)	
		W																
@ 43.5'-45.0', sand heave; washed out with tricone.		44	11 16 19	34	67	SS-15	-	-	-	-	-	-	-	-	-	14	A-1-b (V)	
		49	17 19 24	42	67	SS-16	-	30	44	18	-	8 -	NP	NP	NP	12	A-1-b (0)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:54

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PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 891+19.97, 11.62 RT | START: 6/10/10 | END: 6/11/10 | PG 3 OF 4 | B-051-8-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Medium dense to dense gray GRAVEL WITH SAND (A-1-b), trace silt; damp. *(continued)*	734.3	52																
		53																
@ 53.5', becomes wet.		54	16 23 20	42	67	SS-17	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
		55																
		56																
	729.1	57																
Very stiff to hard gray SILT (A-4b), some fine to coarse sand, trace gravel; damp to moist.		58																
		59	28 50/5"	-	100	SS-18	4.5+	4	6	19	52	19	17	15	2	12	A-4b (7)	
		60																
		61																
		62																
		63																
		64	36 50/5"	-	100	SS-19	4.5+	-	-	-	-	-	-	-	-	16	A-4b (V)	
		65																
		66																
		67																
		68																
		69	46 50/3"	-	100	SS-20	3.75	7	7	17	54	15	19	16	3	12	A-4b (7)	
		70																
		71																
		72																
		73																
		74	31 46 50/4"	-	100	SS-21	4.5+	-	-	-	-	-	-	-	-	14	A-4b (V)	
		75																
		76																
		77																
		78																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:54

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 891+19.97, 11.62 RT | START: 6/10/10 | END: 6/11/10 | PG 4 OF 4 | B-051-8-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very stiff to hard gray SILT (A-4b), some fine to coarse sand, trace gravel; damp to moist. *(continued)*	707.6	79	48 50/3"	-	100	SS-22	4.5+	-	-	-	-	-	-	-	-	10	A-4b (V)	
		80																
		81																
		82																
		83																
		84	50	-	100	SS-23	4.5+	-	-	-	-	-	-	-	-	9	A-4b (V)	
		85																
		86																
	699.1	87																
Hard gray CLAY (A-7-6); moist.		88																
		89	12 21 26	46	100	SS-24	4.00	-	-	-	-	-	-	-	-	29	A-7-6 (V)	
	696.1	EOB 90																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 09:54

NOTES: SEEPAGE AT 43.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 40.8 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 51.4 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 2 BAGS BENTONITE CHIPS; 3 BAGS QUIKGROUT; SOIL CUTTINGS

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / J. POILLUCCI | DRILL RIG: CME 750X ATV | STATION / OFFSET: 792+41.26, 4.6 RT | EXPLORATION ID B-052-1-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / D. WILLIARD | HAMMER: CME AUTOMATIC | ALIGNMENT: I-70
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 787.5 (MSL) EOB: 65.0 ft. | PAGE 1 OF 3
START: 6/8/10 END: 6/8/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 58.5 | COORD: 712367.900 N, 1833733.780 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Asphalt - 3" Concrete - 9" Base - 4"	787.5 / 786.2	1	3 10 11	20	94	SS-1	4.5+	-	-	-	-	-	-	-	-	15	A-6a (V)	
Hard brown SILT AND CLAY (A-6a), some fine to coarse sand, little gravel; damp.	784.0	2																
Stiff to very stiff brown SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		3	4 5 5	10	89	SS-2	3.00	-	-	-	-	-	-	-	-	22	A-4a (V)	
		4																
		5																
		6	4 8 9	17	89	SS-3	1.50	16	9	19	34	22	25	18	7	15	A-4a (4)	
		7																
		8																
		9	7 33 50/5"	-	12	SS-4	1.25	-	-	-	-	-	-	-	-	-	A-4a (V)	
		10																
@ 11.0'-12.5', drove on large gravel.		11	10 20 22	41	6	SS-5	-	-	-	-	-	-	-	-	-	-		
		12																
@ 13.5'-15.0', hard.		13																
@ 13.5'-17.5', gray.		14	10 19 37	55	100	SS-6	4.5+	-	-	-	-	-	-	-	-	12	A-4a (V)	
		15																
		16																
		17	4 6 50/4"	-	94	SS-7	2.75	14	12	15	34	25	23	14	9	10	A-4a (5)	
	769.0	18																
Medium dense to dense gray GRAVEL WITH SAND (A-1-b), some fine to coarse sand, little silt; contains petroleum odor; damp.		19	19 17 25	41	89	SS-8	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
		20																
		21																
		22	7 10 14	23	6	SS-9	-	-	-	-	-	-	-	-	-	-	A-1-b (V)	
	764.0	23																
Very stiff gray SANDY SILT (A-4a), some fine to coarse sand, some gravel; damp.		24	4 5 6	11	100	SS-10	4.5+	21	14	18	29	18	21	14	7	11	A-4a (2)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:05

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 792+41.26, 4.6 RT | START: 6/8/10 | END: 6/8/10 | PG 2 OF 3 | B-052-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
	762.5 / 761.5	26																
Medium dense gray GRAVEL WITH SAND, SILT, AND CLAY (A-2-6); moist.	759.0	27	4 8 10	18	100	SS-11	-	-	-	-	-	-	-	-	-	11	A-2-6 (V)	
		28																
Medium dense gray COARSE AND FINE SAND (A-3a), little silt, little gravel; moist.	756.5	29	7 9 11	20	100	SS-12	-	-	-	-	-	-	-	-	-	11	A-3a (V)	
		30																
Medium dense gray FINE SAND (A-3), trace silt, trace gravel; moist.	754.0	31	7 11 11	21	100	SS-13	-	3	14	73	-	10 -	NP	NP	NP	6	A-3 (0)	
		32																
		33																
Very stiff gray SILT AND CLAY (A-6a), some fine to coarse sand, little gravel; moist.	750.5	34	6 6 8	14	78	SS-14	3.00	-	-	-	-	-	-	-	-	12	A-6a (V)	
		35																
		36																
		37																
Medium dense gray GRAVEL WITH SAND, SILT, AND CLAY (A-2-6); moist.	748.5	38																
		39	8 9 16	24	94	SS-15	-	-	-	-	-	-	-	-	-	10	A-2-6 (V)	
Medium dense gray COARSE AND FINE SAND (A-3a), little gravel, little silt, trace clay; damp.		40					-	17	24	41	12	6	NP	NP	NP	9	A-3a (0)	
		41																
		42																
		43																
		44	4 5 4	9	6	SS-16	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
@ 45.0', 6.0 feet sand heave; washed out with tricone.		45																
		46																
	740.5	47																
Medium dense brownish gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, little silt; wet.		48																
		49	12 7 3	10	33	SS-17	-	45	23	21	-	11 -	NP	NP	NP	13	A-1-b (0)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:05

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PID: 77370	BR ID: _____	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 792+41.26, 4.6 RT	START: 6/8/10	END: 6/8/10	PG 3 OF 3	B-052-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 735.7	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Medium dense gray COARSE AND FINE SAND (A-3a), "and" gravel, trace silt; wet.	735.5	52																
	733.5	53																
Very stiff gray SILT AND CLAY (A-6a), some fine to coarse sand, little gravel; damp.		54	10 7 7	14	56	SS-18	-	-	-	-	-	-	-	-	-	12	A-3a (V)	
							2.25	-	-	-	-	-	-	-	-	13	A-6a (V)	
		55																
		56																
		57																
		58																
	728.0	59	17 27 34	59	67	SS-19	-	-	-	-	-	-	-	-	-	10	A-6a (V)	
Very dense gray FINE SAND (A-3), trace silt; wet.							-	-	-	-	-	-	-	-	-	17	A-3 (V)	
F S		60																
	725.5	61																
Hard gray SILT AND CLAY (A-6a), some fine to coarse sand, trace gravel; moist.		62																
		63																
		64	21 32 46	76	100	SS-20	4.5+	-	-	-	-	-	-	-	-	15	A-6a (V)	
	722.5	EOB 65																

NOTES: SEEPAGE AT 48.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 50 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 17.3 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1.5 BAGS BENTONITE CHIPS; 1.5 BAGS QUIKGROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:05

PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / J. POILLUCCI | DRILL RIG: CME 750X ATV | STATION / OFFSET: 793+44.17, 36.29 RT | EXPLORATION ID: B-052-2-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / D. WILLIARD | HAMMER: CME AUTOMATIC | ALIGNMENT: I-70
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 787.8 (MSL) EOB: 69.3 ft. | PAGE: 1 OF 3
START: 6/7/10 END: 6/8/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 58.5 | COORD: 712324.230 N, 1833831.700 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil-5"	787.4																	
FILL: Hard brown SILTY CLAY (A-6b), some fine to coarse sand, little gravel; contains brick fragments; damp.		1	7															
		2	10 14	23	61	SS-1	4.5+	-	-	-	-	-	-	-	-	14	A-6b (V)	
		3																
		4	6															
		5	6 7	13	61	SS-2	4.5+	-	-	-	-	-	-	-	-	14	A-6b (V)	
		6																
@6.0'-7.5', low recovery, drove possible gravels or cobbles.		7	17															
		8	19 12	30	6	SS-3	-	-	-	-	-	-	-	-	-	14	A-6b (V)	
	779.3																	
POSSIBLE FILL: Hard brown SANDY SILT (A-4a), some fine to coarse sand, some gravel; damp.		9	5															
		10	10 15	24	61	SS-4	4.25	25	12	15	29	19	25	16	9	13	A-4a (3)	
		11																
		12	16															
		13	17 20	36	6	SS-5	-	-	-	-	-	-	-	-	-	15	A-4a (V)	
	774.3																	
Dense to very dense brown GRAVEL WITH SAND (A-1-b), some fine to coarse sand, some silt; damp.		14	5															
		15	20 28	47	56	SS-6	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
		16																
		17	21															
		18	29 28	56	67	SS-7	-	52	11	13	-	24 -	NP	NP	NP	8	A-1-b (0)	
		19																
@18.5'-20.0', no recovery; possible large gravel or cobble blocking sampler.		20	41															
		21	50	-	0	SS-8	-	-	-	-	-	-	-	-	-	-	A-1-b (V)	
		22																
		23	14															
		24	27 29	55	72	SS-9	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
	764.3																	
Very dense brown GRAVEL (A-1-a), some fine to coarse sand, trace silt; damp.		25	35															
		26	45 50	93	94	SS-10	-	57	26	8	-	9 -	NP	NP	NP	3	A-1-a (0)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:05

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 793+44.17, 36.29 RT | START: 6/7/10 | END: 6/8/10 | PG 2 OF 3 | B-052-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense brown GRAVEL (A-1-a), some fine to coarse sand, trace silt; damp. *(continued)*	762.8																	
		27	32															
		28	44 50	92	83	SS-11	-	-	-	-	-	-	-	-	-	3	A-1-a (V)	
		29																
		30	50	-	100	SS-12	-	-	-	-	-	-	-	-	-	4	A-1-a (V)	
	756.8																	
Very dense brown GRAVEL WITH SAND (A-1-b), trace to little silt; damp.		31	49															
		32	50	-	83	SS-13	-	39	36	15	-	10 -	NP	NP	NP	4	A-1-b (0)	
		33																
		34	43															
		35	50	-	75	SS-14	-	-	-	-	-	-	-	-	-	3	A-1-b (V)	
		36																
		37	38															
		38	47 40	85	100	SS-15	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		39																
	748.6		48															
Very dense brown SANDY SILT (A-4a); contains clay seams; damp.		40	34 50	82	100 / -	SS-16A / SS-16B	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 13	A-1-b (V) / A-4a (V)	
	746.8																	
Very dense brown GRAVEL WITH SAND (A-3a), "and" fine to coarse sand, little silt; damp.		41	50	-	100	SS-17	-	48	25	13	-	14 -	NP	NP	NP	4	A-1-b (0)	
		42																
		43																
	W																	
@43.5'-45.0', weak mineral spirts, aromatic odor like naphthalene; moist to wet.		44	31 50	-	100	SS-18	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
@45.0', 2.0 feet sand heave.		45																
		46																
		47																
		48																
@48.5', gray, becomes wet.		49	29															
		50	34 50	82	56	SS-19	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
@50.0', 2.0 feet sand heave.		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:05

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PID: 77370	BR ID:	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 793+44.17, 36.29 RT	START: 6/7/10	END: 6/8/10	PG 3 OF 3	B-052-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense brown GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, little silt; wet.	736.0 735.8	52																
		53																
		54	20 24 29	52	67	SS-20	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
@55.0', 8.0 feet sand heave.		55																
		56																
	730.8	57																
Hard gray SANDY SILT (A-4a), "and" fine to coarse sand, trace gravel; damp.		58																
		59	23 35 50	83	78	SS-21	4.5+	8	14	34	30	14	16	13	3	9	A-4a (2)	
@ 60.0'-63.5', rods binding inside augers, possible sand heave.		60																
	725.8	61																
Very dense gray SANDY SILT (A-4a); damp to moist.		62																
		63																
		64	50/5"	-	120	SS-22	-	-	-	-	-	-	-	-	-	13	A-4a (V)	
		65																
@66.0'-67.0', augers dropped during drilling.		66																
		67																
		68																
@68.5'-69.3', contains wet sand stringers and clay stringers.	718.5	69 EOB	45 50/3"	-	100	SS-23	-	-	-	-	-	-	-	-	-	16	A-4a (V)	

NOTES: SEEPAGE AT 43.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 45.2 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 44.8 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1.5 BAGS BENTONITE CHIPS; 1.5 BAGS QUIKGROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:05

PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 794+59.03, 12.95 RT | EXPLORATION ID: B-052-3-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: I-70
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 774.3 (MSL) EOB: 70.0 ft. | PAGE: 1 OF 3
START: 7/8/10 END: 7/9/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712332.375 N, 1833948.623 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil - 3"	774.0																	
POSSIBLE FILL: Hard brown SANDY SILT (A-4a), some to "and" fine to coarse sand, some gravel; damp.	774.3	1	8 11 10	28	100	SS-1	4.5+	22	19	17	26	16	25	15	10	8	A-4a (1)	
		2																
@ 3.5'-11.3', encountered possible cobbles/boulders.		3																
		4	28 50/4"	-	10	SS-2	-	-	-	-	-	-	-	-	-	2		
		5																
		6	50/4"	-	25	SS-3	--	-	-	-	-	-	-	-	-	10	A-4a (V)	
		7																
		8																
		9	50/4"	-	0	SS-4	-	-	-	-	-	-	-	-	-	-		
		10																
		11	50/4"	-	0	SS-5	-	-	-	-	-	-	-	-	-	-		
		12																
		13																
Very dense brown GRAVEL WITH SAND (A-1-b), little silt; damp.	760.8	14	18 40 35	99	100	SS-6	-	47	23	14	16	-	NP	NP	NP	5	A-1-b (0)	
		15																
		16																
		17	33 44 40	111	100	SS-7	-	-	-	-	-	-	-	-	-	3	A-1-b (V)	
		18																
		19	15 22 27	65	100	SS-8	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		20																
		21	21 28 26	71	78	SS-9	-	28	39	17	16	-	NP	NP	NP	4	A-1-b (0)	
		22																
		23																
		24	22 26 31	75	100	SS-10	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:06

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 794+59.03, 12.95 RT | START: 7/8/10 | END: 7/9/10 | PG 2 OF 3 | B-052-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense brown GRAVEL WITH SAND (A-1-b), little silt; damp. *(continued)*	749.3	26																
		27	25 38 36	97	100	SS-11	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		28																
@ 28.5', becomes wet.	W	29	20 22 23	59	100	SS-12	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
		30																
		31																
		32																
		33																
@ 33.5'-35.0', 2.0 feet sand heave; washed out with tricone.		34	15 23 28	67	67	SS-13	-	36	33	19	12	-	NP	NP	NP	10	A-1-b (0)	
		35																
		36																
	737.3	37																
Very dense gray COARSE AND FINE SAND (A-3a), little gravel, trace silt; wet.		38																
		39	19 22 18	53	67	SS-14	-	-	-	-	-	-	-	-	-	13	A-3a (V)	
		40																
	732.3	41																
Hard gray SILT AND CLAY (A-6a), some to "and" fine to coarse sand, trace to little gravel; damp to moist.		42																
		43																
		44	16 12 23	46	56	SS-15	4.5+	11	7	18	40	24	25	13	12	13	A-6a (7)	
		45																
		46																
		47																
		48																
		49	28 30 38	90	100	SS-16	4.5+	-	-	-	-	-	-	-	-	11	A-6a (V)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:06

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PID: 77370	BR ID: _____	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 794+59.03, 12.95 RT	START: 7/8/10	END: 7/9/10	PG 3 OF 3	B-052-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 722.6	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very stiff gray SILT (A-4b), little fine to coarse sand, little clay; damp to moist.	722.3	52																
		53																
		54	24 34 31	86	100	SS-17	3.75	0	1	15	68	16	18	17	1	15	A-4b (8)	
		55																
		56																
	717.3	57																
Very stiff gray CLAY (A-7-6), trace fine to coarse sand; damp.		58																
		59	5 14 16	40	100	SS-18	3.50	-	-	-	-	-	-	-	-	25	A-7-6 (V)	
		60																
		61																
	712.3	62																
Dense gray SILT (A-4b), trace fine sand, little clay; wet.		63 W																
		64	8 17 17	45	100	SS-19	--	0	0	8	75	17	21	18	3	24	A-4b (8)	
		65																
		66																
	707.3	67																
Very stiff gray SILT AND CLAY (A-6a), little fine to coarse sand; damp.		68																
		69	16 17 21	50	100	SS-20	2.50	-	-	-	-	-	-	-	-	23	A-6a (V)	
	704.3	70 EOB																

NOTES: SEEPAGE AT 28.5 AND 63.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 31.1 FEET; NO FREE WATER OBSERVED AT COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 3 BAGS BENTONITE CHIPS; 2 BAGS QUIKGROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:06

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / L. BARTLETT | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 796+00.89, 72.86 RT | EXPLORATION ID B-052-4-10

TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: I-70

PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 776.3 (MSL) EOB: 39.9 ft.

START: 6/8/10 END: 6/8/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712254.460 N, 1834081.450 E

PAGE 1 OF 2

MATERIAL DESCRIPTION AND NOTES	ELEV. 776.3	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Topsoil- 4"	775.9																	
Medium dense to dense brown GRAVEL WITH SAND (A-1-b), little silt; damp.		1	7															
		2	7 18	33	56	SS-1	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
		3																
		4	5															
		5	14 18	42	56	SS-2	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
		6																
		7	13															
			14 10	32	56	SS-3	-	23	44	20	-	13 -	NP	NP	NP	6	A-1-b (0)	
		8																
		9	6															
		10	18 12	40	67	SS-4	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
	765.3	11																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp.		12	7															
			12 12	32	44	SS-5	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
		13																
		14	5															
		15	13 15	37	100	SS-6	4.5+	10	11	19	39	21	24	15	9	10	A-4a (5)	
	760.3	16																
Dense brown COARSE AND FINE SAND (A-3a), some to "and" gravel, trace silt; damp.		17	4															
			16 17	43	56	SS-7	-	-	-	-	-	-	-	-	-	4	A-3a (V)	
	757.8	18																
Very dense brown GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace silt; damp.		19	4															
		20	20 27	62	44	SS-8	-	47	35	11	-	7 -	NP	NP	NP	3	A-1-b (0)	
	755.3	21																
Very dense brown COARSE AND FINE SAND (A-3a), some gravel, trace silt; damp.		22	12															
			31 29	79	56	SS-9	-	-	-	-	-	-	-	-	-	4	A-3a (V)	
		23																
		24	8															
	751.3		22 24	61	61	SS-10	-	-	-	-	-	-	-	-	-	3	A-3a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:06

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 796+00.89, 72.86 RT | START: 6/8/10 | END: 6/8/10 | PG 2 OF 2 | B-052-4-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 751.3	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense gray GRAVEL WITH SAND AND SILT (A-2-4), little clay; damp.		26																
		27	20 27 50/4"	-	100	SS-11	4.5+	-	-	-	-	-	-	-	-	8	A-2-4 (V)	
		28																
		29	21 33 44	101	72	SS-12	4.5+	26	23	18	21	12	20	13	7	6	A-2-4 (0)	
	744.3	30																
Very dense brownish gray GRAVEL WITH SAND (A-1-b), trace silt; wet.		31																
		32																
		33																
@ 33.5' , 4.0 feet sand heave; washed out with tricone.		W																
		34	17 48 50/5"	-	88	SS-13	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
		35																
		36																
		37																
		38																
		39	28															
	736.4		29 50/5"	-	88	SS-14	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
			EOB															

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:06

NOTES: SEEPAGE AT 33.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 33.0 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 32.6 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG BENTONITE CHIPS; SOIL CUTTINGS

PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / L. BARTLETT | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 797+57.79, 67.97 RT | EXPLORATION ID B-053-2-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: I-70
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 777.4 (MSL) EOB: 35.0 ft. | PAGE 1 OF 2
START: 6/9/10 END: 6/9/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712238.830 N, 1834237.650 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Asphalt- 22" Base- 20"	777.4																	
	773.9	1	13 23 14	49	33	SS-1	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
Stiff gray SANDY SILT (A-4a), some to "and" fine to coarse sand, little gravel; damp.		4	5 15 7	29	100	SS-2	2.00	-	-	-	-	-	-	-	-	10	A-4a (V)	
		7	2 3 6	12	100	SS-3	1.00	16	14	20	32	18	20	13	7	12	A-4a (3)	
	768.9																	
Medium dense gray GRAVEL WITH SAND AND SILT (A-2-4), trace clay; moist.	766.4	9	4 9 9	24	83	SS-4	-	-	-	-	-	-	-	-	-	5	A-2-4 (V)	
Very dense gray GRAVEL (A-1-a), little fine to coarse sand, trace to little silt; contains broken rock fragments; damp.		11	33 50/4"	-	30	SS-5	-	-	-	-	-	-	-	-	-	2	A-1-a (V)	
		14	29 25 20	59	56	SS-6	-	74	10	6	-	10 -	NP	NP	NP	4	A-1-a (0)	
	761.4																	
Hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		17	6 12 18	40	100	SS-7	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		19	9 18 20	50	83	SS-8	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		22	7 16 20	47	100	SS-9	4.5+	13	11	19	35	22	23	14	9	10	A-4a (4)	
		24	8 13 19	42	100	SS-10	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:06

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 797+57.79, 67.97 RT | START: 6/9/10 | END: 6/9/10 | PG 2 OF 2 | B-053-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp. *(continued)*	752.4																	
		27	7 16 17	43	100	SS-11	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		29	8 19 16	46	100	SS-12	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
	745.4																	
Dense to very dense gray GRAVEL WITH SAND (A-1-b), some fine to coarse sand, trace gravel; wet.		W																
	742.4	34	11 18 20	50	100	SS-13	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		EOB 35																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:06

NOTES: SEEPAGE AT 33.5 FEET; FINAL WATER LEVEL = 32.5 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 1 BAG BENTONITE CHIPS; 3 BAGS QUIKGROUT

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PROJECT: I-70/I-71 EAST INTERCHANGE
TYPE: ROADWAY
PID: 77370 BR ID:
START: 6/9/10 END: 6/9/10

DRILLING FIRM / OPERATOR: DLZ / L. BARTLETT
SAMPLING FIRM / LOGGER: DLZ / M. EVENER
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 75 TRUCK
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 1/7/10
ENERGY RATIO (%): 79

STATION / OFFSET: 799+05.05, 65.75 RT
ALIGNMENT: I-70
ELEVATION: 777.3 (MSL) EOB: 25.0 ft.
COORD: 712221.810 N, 1834383.940 E

EXPLORATION ID B-053-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 777.3	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Asphalt- 19" Base- 11"																		
	774.8	2	50/5"	-	60	SS-1	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
Dense to very dense gray GRAVEL WITH SAND (A-1-b), trace to little silt; damp.		3	50/5"	-	0	SS-2	-	-	-	-	-	-	-	-	-	-	A-1-b (V)	
		6	36 21 15	47	39	SS-3	-	33	32	18	- 17 -		NP	NP	NP	5	A-1-b (0)	
@ 8.5'-9.3', low recovery; drove on gravel. Obtained auger sample.		9	33 50/3"	-	0	SS-4	-	-	-	-	-	-	-	-	-	-		
		12	13 19 19	50	67	SS-5	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
		14	11 15 20	46	61	SS-6	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
	W																	
@ 16.0', becomes wet.		17	5 15 15	40	56	SS-7	-	-	-	-	-	-	-	-	-	15	A-1-b (V)	
@ 21.0', 3.0 feet sand heave; washed out with tricone.		19	4 15 17	42	100	SS-8	-	6	48	38	- 8 -		NP	NP	NP	18	A-1-b (0)	
	756.3																	
Hard gray SILT AND CLAY (A-6a), some fine to coarse sand, little gravel; damp to moist.		22	11 20 18	50	72	SS-9	4.50	-	-	-	-	-	-	-	-	12	A-6a (V)	
	752.3	24	9 15 16	41	89	SS-10	4.50	-	-	-	-	-	-	-	-	13	A-6a (V)	
		EOB																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:52

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / C. ASHBAUGH | DRILL RIG: CME 850 TRACK | STATION / OFFSET: 905+44.55, 37.83 LT | EXPLORATION ID B-055-1-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / S. LARIMER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP P2
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 794.4 (MSL) EOB: 85.0 ft. | PAGE 1 OF 4
START: 8/5/11 END: 8/9/11 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 72.5 | COORD: 712339.200 N, 1835049.680 E

MATERIAL DESCRIPTION AND NOTES	ELEV. 794.4	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil - 3"	794.1																	
FILL: Very stiff brown SILT AND CLAY (A-6a), some fine to coarse sand, little to some gravel; few brick fragments; trace organics; damp.		1	5 6 8	17	72	SS-1	3.00	-	-	-	-	-	-	-	-	12	A-6a (V)	
		2																
		3																
		4	2 4 5	11	89	SS-2	2.75	-	-	-	-	-	-	-	-	17	A-6a (V)	
	788.4	5																
POSSIBLE FILL: Very stiff brown SILT AND CLAY (A-6a), little fine to coarse sand, little to some gravel; damp.		6																
		7	4 7 9	19	72	SS-3	3.50	19	7	12	33	29	28	17	11	13	A-6a (6)	
		8																
		9	2 4 5	11	100	SS-4	3.00	-	-	-	-	-	-	-	-	13	A-6a (V)	
	783.4	10																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.		11																
		12	8 19 11	36	100	SS-5	4.50	-	-	-	-	-	-	-	-	8	A-4a (V)	
@ 13.5'-15.0', brown.		13																
		14	5 13 17	36	100	SS-6	4.50	7	10	20	38	25	22	14	8	9	A-4a (6)	
		15																
		16	5 12 16	34	89	SS-7	4.50	-	-	-	-	-	-	-	-	10	A-4a (V)	
		17																
		18	7 13 15	34	89	SS-8	4.50	-	-	-	-	-	-	-	-	10	A-4a (V)	
@ 20.5', 21.5', possible cobbles/boulders.		19																
		20	12 50/2"	-	100	SS-9	4.50	8	10	18	39	25	25	16	9	11	A-4a (6)	
@ 21.0'-21.7', grayish brown.		21																
		22																
		23																
	769.4	24	19 23 18	50	0	SS-10	-	-	-	-	-	-	-	-	-	-		

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:52

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 905+44.55, 37.83 LT | START: 8/5/11 | END: 8/9/11 | PG 2 OF 4 | B-055-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 769.4	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense brown GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace silt; damp.	765.9	26																
		27	25 48 41	108	39	SS-11	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
		28																
Very dense brown GRAVEL (A-1-a), "and" fine to coarse sand, trace to little silt; damp.		29	31 42 37	95	100	SS-12	-	51	29	10	- 10 -		NP	NP	NP	6	A-1-a (0)	
		30																
@ 31.0', becomes wet.		31 W																
		32	8 30 48	94	89	SS-13	-	-	-	-	-	-	-	-	-	8	A-1-a (V)	
		33																
@ 33.5'-36.0', 1.5 to 5.0 feet sand heave; washed out with tricone.		34	19 38 35	88	78	SS-14	-	-	-	-	-	-	-	-	-	12	A-1-a (V)	
	758.4	35																
Very dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, little silt; wet.		36																
		37	20 31 27	70	83	SS-15	-	45	30	12	- 13 -		NP	NP	NP	12	A-1-b (0)	
	755.9	38																
Very dense gray COARSE AND FINE SAND (A-3a), little silt; wet.		39	15 32 24	68	100	SS-16	-	-	-	-	-	-	-	-	-	14	A-3a (V)	
	753.4	40																
Very dense gray GRAVEL WITH SAND (A-1-b), little silt; wet.		41																
		42	11 34 30	77	78	SS-17	-	-	-	-	-	-	-	-	-	15	A-1-b (V)	
		43																
		44	16 28 28	68	94	SS-18	-	30	28	31	- 11 -		NP	NP	NP	15	A-1-b (0)	
	748.4	45																
Very dense gray GRAVEL (A-1-a), "and" fine to coarse sand, little silt; wet.		46																
		47	17 28 34	75	89	SS-19	-	-	-	-	-	-	-	-	-	11	A-1-a (V)	
	745.9	48																
Very dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace to little silt; wet.		49																
		50	20 25 31	68	83	SS-20	-	-	-	-	-	-	-	-	-	15	A-1-b (V)	
	743.4	51																
			14															

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:52

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 905+44.55, 37.83 LT | START: 8/5/11 | END: 8/9/11 | PG 3 OF 4 | B-055-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense gray GRAVEL WITH SAND AND SILT (A-2-4), "and" fine to coarse sand, little clayey silt; wet. *(continued)*	742.6	52	30 35	79	89	SS-21	-	-	-	-	-	-	-	-	-	14	A-2-4 (V)	
	740.9	53																
Very dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, little silt; wet.		54	14 36 24	72	72	SS-22	-	46	25	18	-	11 -	NP	NP	NP	11	A-1-b (0)	
		55																
		56																
		57																
		58																
@ 58.5', 5.0 feet sand heave; washed out with tricone.		59	27 41 33	89	67	SS-23	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
		60																
		61																
		62																
	730.9	63																
Hard gray SANDY SILT (A-4a), some to "and" fine to coarse sand, little to some gravel; damp.		64	13 29 30	71	89	SS-24	4.50	-	-	-	-	-	-	-	-	10	A-4a (V)	
		65																
		66																
		67																
		68																
		69	14 14 16	36	100	SS-25	4.50	14	12	24	31	19	21	14	7	10	A-4a (3)	
		70																
		71																
		72																
		73																
		74	10 20 25	54	100	SS-26	4.50	-	-	-	-	-	-	-	-	12	A-4a (V)	
		75																
		76																
	717.4	77																
Hard gray SILT AND CLAY (A-6a), some to "and" fine to coarse sand, little to some gravel; damp to moist.		78																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:52

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 905+44.55, 37.83 LT | START: 8/5/11 | END: 8/9/11 | PG 4 OF 4 | B-055-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Hard gray SILT AND CLAY (A-6a), some to "and" fine to coarse sand, little to some gravel; damp to moist. *(continued)*	715.9	79	17 27 27	65	100	SS-27	4.50	-	-	-	-	-	-	-	-	12	A-6a (V)	
		80																
		81																
		82																
		83																
	709.4	84	13 23 30	64	100	SS-28	4.50	-	-	-	-	-	-	-	-	11	A-6a (V)	
	EOB	85																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:52

NOTES: SEEPAGE AT 31.0 FEET; WATER LEVEL PRIOR TO ADDING WATER = 17.4 FEET; NO FREE WATER OBSERVED AT COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BENTONITE GROUT

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 54+42.7, 29.37 LT | EXPLORATION ID B-055-2-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: MOOBERRY
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 790.1 (MSL) EOB: 55.0 ft. | PAGE 1 OF 3
START: 8/17/11 END: 8/17/11 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712028.640 N, 1835063.050 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Topsoil - 4"	789.8																	
POSSIBLE FILL: Very stiff to hard brown SILTY CLAY (A-6b), little fine to coarse sand, trace gravel; trace organics; damp.		1	4 6 8	18	100	SS-1	2.50	-	-	-	-	-	-	-	-	15	A-6b (V)	
		2																
		3																
		4	11 8 9	22	100	SS-2	3.00	-	-	-	-	-	-	-	-	13	A-6b (V)	
		5																
		6																
		7	2 7 10	22	100	SS-3	4.50	2	5	15	35	43	34	17	17	14	A-6b (11)	
	781.6	8																
Very stiff to hard mottled brown and gray SANDY SILT (A-4a), some to "and" fine to coarse sand, little to some gravel; damp.		9	8 8 9	22	100	SS-4	4.25	-	-	-	-	-	-	-	-	12	A-4a (V)	
		10																
@ 11.0', gray.		11																
		12	3 5 6	14	100	SS-5	3.00	-	-	-	-	-	-	-	-	12	A-4a (V)	
		13																
		14	4 5 5	13	22	SS-6	3.50	-	-	-	-	-	-	-	-	12	A-4a (V)	
		15																
W		16																
@16.0'-18.5', "and" fine sand, trace fine gravel; moist to wet		17	2 6 5	14	44	SS-7	-	0	1	47	43	9	18	17	1	18	A-4a (3)	
		18																
		19	4 5 8	17	100	SS-8	3.50	-	-	-	-	-	-	-	-	14	A-4a (V)	
		20																
		21																
		22	2 6 10	21	100	SS-9	4.50	-	-	-	-	-	-	-	-	12	A-4a (V)	
		23																
		24	5 10 12	29	100	SS-10	4.50	9	13	15	41	22	22	14	8	10	A-4a (6)	
	765.1																	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:52

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 54+42.7, 29.37 LT | START: 8/17/11 | END: 8/17/11 | PG 2 OF 3 | B-055-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Hard gray SANDY SILT (A-4a), some to "and" fine to coarse sand, little to some gravel; damp.	765.1	26																
		27	12 15 18	43	100	SS-11	4.50	-	-	-	-	-	-	-	-	9	A-4a (V)	
		28																
		29	11 16 16	42	100	SS-12	4.50	-	-	-	-	-	-	-	-	9	A-4a (V)	
		30																
		31																
		32	10 14 15	38	100	SS-13	4.50	-	-	-	-	-	-	-	-	9	A-4a (V)	
		33																
		34	15 14 18	42	100	SS-14	4.50	12	10	30	26	22	23	14	9	9	A-4a (3)	
		35																
		36																
		37	8 16 14	40	100	SS-15	4.50	-	-	-	-	-	-	-	-	10	A-4a (V)	
		38																
		39	11 14 18	42	100	SS-16	4.50	-	-	-	-	-	-	-	-	10	A-4a (V)	
		40																
		41																
		42	16 19 23	55	100	SS-17	4.50	-	-	-	-	-	-	-	-	10	A-4a (V)	
		43																
		44	14 18 21	51	100	SS-18	4.50	7	11	23	36	23	23	14	9	10	A-4a (5)	
		45																
		46																
		47	10 18 23	54	100	SS-19	4.50	-	-	-	-	-	-	-	-	10	A-4a (V)	
		48																
		49	13 19 24	57	100	SS-20	4.50	-	-	-	-	-	-	-	-	9	A-4a (V)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:52

PID: 77370	BR ID:	PROJECT: I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 54+42.7, 29.37 LT	START: 8/17/11	END: 8/17/11	PG 3 OF 3	B-055-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Hard gray SANDY SILT (A-4a), some to "and" fine to coarse sand, little to some gravel; damp. *(continued)*	738.3	52																
		53																
		54	18 29 42	93	100	SS-21	4.50	-	-	-	-	-	-	-	-	9	A-4a (V)	
	735.1	EOB 55																

NOTES: SEEPAGE AT 16.0 FEET; NO FREE WATER OBSERVED AT COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: AUGER CUTTINGS; 1 BAG BENTONITE CHIPS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:52

PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 906+99.96, 44.17 LT | EXPLORATION ID B-055-3-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP P2
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 795.1 (MSL) EOB: 85.0 ft. | PAGE 1 OF 4
START: 8/10/11 END: 8/11/11 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712310.210 N, 1835202.490 E

MATERIAL DESCRIPTION AND NOTES	ELEV. 795.1	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil - 5"	794.7																	
FILL: Stiff to very stiff brown SILT AND CLAY (A-6a), some fine to coarse sand, little to some gravel; occasional brick fragments; trace to little organics; damp.		1	2 5 4	12	44	SS-1	1.25	-	-	-	-	-	-	-	-	21	A-6a (V)	
		2	2 4 6	13	67	SS-2	3.00	-	-	-	-	-	-	-	-	21	A-6a (V)	
		3	2 4 2	8	0	SS-3	-	-	-	-	-	-	-	-	-	25	A-6a (V)	
	786.6	4																
POSSIBLE FILL: Stiff brown SILT AND CLAY (A-6a), some to "and" fine to coarse sand, little fine to coarse gravel; trace organics; moist.		5	2 4 3	9	83	SS-4	1.00	9	13	18	36	24	13	17	NP	17	A-4a (5)	
@ 11.0'-12.5', large gravel fragments.		6	13 13 25	50	56	SS-5	-	-	-	-	-	-	-	-	-	14	A-4a (V)	
	781.6	7																
Very stiff to hard brown SANDY SILT (A-4a), some to "and" fine to coarse sand, little gravel; damp. @ 13.5'-15.0', poor recovery due to cobble blocking spoon.		8	13 15 28	57	28	SS-6	-	-	-	-	-	-	-	-	-	12	A-4a (V)	
NOTE: Used CME 850 from 0.0' to 20.0'; drill rig energy ratio = 72.5%.		9	8 15 15	40	100	SS-7	4.50	12	10	17	34	27	25	15	10	10	A-4a (5)	
@ 18.5', becomes gray.		10	5 8 10	24	100	SS-8	4.50	-	-	-	-	-	-	-	-	10	A-4a (V)	
		11	9 6 22	37	44	SS-9	2.00	-	-	-	-	-	-	-	-	12	A-4a (V)	
@ 23.5', no recovery; possible cobble or boulder.	770.1	12	35 32 30	82	0	SS-10	-	-	-	-	-	-	-	-	-	11	A-4a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:52

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 906+99.96, 44.17 LT | START: 8/10/11 | END: 8/11/11 | PG 2 OF 4 | B-055-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 770.1	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Hard brown SANDY SILT (A-4a), some fine to coarse sand, some gravel; damp. NOTE: Hole caved to 27.0 ' when augers removed.	766.6	13	43 21 21	55	28	SS-11	4.5+	23	15	21	26	15	20	13	7	9	A-4a (1)	
Very dense brown GRAVEL (A-1-a), some to "and" fine to coarse sand, trace to little silt; damp.		14	50/5"	-	100	SS-12	-	-	-	-	-	-	-	-	-	4	A-1-a (V)	
@ 31.0', becomes wet.		W 15	46 50/4"	-	100	SS-13	-	-	-	-	-	-	-	-	-	8	A-1-a (V)	
@ 33.5', 1.5 feet sand heave; washed out with tricone.	759.1	16	23 43 30	96	100	SS-14	-	63	22	8	-	7 -	NP	NP	NP	10	A-1-a (0)	
Very dense brown GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace silt; wet.	756.6	17	31 50/5"	-	27	SS-15	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
Very dense grayish brown GRAVEL (A-1-a), some to "and" fine to coarse sand, trace silt; wet.	754.1	18	33 44 34	103	100	SS-16	-	-	-	-	-	-	-	-	-	10	A-1-a (V)	
Very dense grayish brown GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace silt; wet.		19	28 33 30	83	100	SS-17	-	33	37	18	-	12 -	NP	NP	NP	12	A-1-b (0)	
		20	31 35 33	90	100	SS-18	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
		21	28 35 30	86	100	SS-19	-	-	-	-	-	-	-	-	-	16	A-1-b (V)	
		22	22 35 37	95	67	SS-20	-	31	33	21	-	15 -	NP	NP	NP	13	A-1-b (0)	
		23	28															

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:52

206/386

FRA-70-14.48

SOIL PROFILE
BORING LOGS

DRAWN BTA
CHECKED VBP

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 906+99.96, 44.17 LT | START: 8/10/11 | END: 8/11/11 | PG 3 OF 4 | B-055-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense grayish brown GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace silt; wet. *(continued)*	743.3	52	35 50/5"	-	100	SS-21	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
		53																
		54	28 36 31	88	78	SS-22	-	32	34	19	15	-	NP	NP	NP	11	A-1-b (0)	
		55																
		56																
		57																
		58																
		59	28 32 38	92	100	SS-23	-	-	-	-	-	-	-	-	-	15	A-1-b (V)	
		60																
		61																
		62																
		63																
Very dense gray GRAVEL (A-1-a), some to "and" fine to coarse sand, trace silt; wet.	731.6	64	25 35 33	90	56	SS-24	-	-	-	-	-	-	-	-	-	6	A-1-a (V)	
		65																
		66																
	728.1	67																
Hard gray SANDY SILT (A-4a), some to "and" fine to coarse sand, some gravel; damp.		68																
		69	19 23 30	70	100	SS-25	4.50	8	13	22	33	24	22	14	8	10	A-4a (4)	
		70																
		71																
		72																
		73																
		74	33 50/5"	-	100	SS-26	4.50	-	-	-	-	-	-	-	-	9	A-4a (V)	
		75																
		76																
		77																
		78																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:52

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 906+99.96, 44.17 LT | START: 8/10/11 | END: 8/11/11 | PG 4 OF 4 | B-055-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Hard gray SANDY SILT (A-4a), some to "and" fine to coarse sand, some gravel; damp. *(continued)*	716.6	79	18 26 29	72	100	SS-27	4.50	-	-	-	-	-	-	-	-	10	A-4a (V)	
		80																
		81																
		82																
		83																
		84	28 31 30	80	72	SS-28	4.50	-	-	-	-	-	-	-	-	10	A-4a (V)	
	710.1 EOB	85																

NOTES: SEEPAGE AT 31.0 FEET; WATER LEVEL PRIOR TO ADDING WATER = 31.1 FEET; NO FREE WATER OBSERVED AT COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG BENTONITE CHIPS; 2 BAGS BENTONITE GROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:52

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 55+90.6, 28.51 LT | EXPLORATION ID B-055-4-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: MOOBERRY
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 790.8 (MSL) EOB: 50.0 ft. | PAGE 1 OF 2
START: 8/17/11 END: 8/17/11 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712003.170 N, 1835208.750 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Topsoil - 4"	790.4																	
POSSIBLE FILL: Stiff to very stiff brown SANDY SILT (A-4a), some to "and" fine to coarse sand, some to "and" gravel; trace organics; damp.		1	14 15 15	40	0	SS-1	-	-	-	-	-	-	-	-	-	12	A-4a (V)	
		2																
		3																
		4	11 18 22	53	39	SS-2	2.00	-	-	-	-	-	-	-	-	9	A-4a (V)	
		5																
	784.8	6																
Very stiff to hard brown SANDY SILT (A-4a), some to "and" fine to coarse sand, little gravel; damp.		7	4 15 21	47	100	SS-3	4.50	14	10	16	34	26	25	16	9	10	A-4a (5)	
		8																
		9	5 10 13	30	100	SS-4	3.50	-	-	-	-	-	-	-	-	13	A-4a (V)	
		10																
		11	10 15 22	49	100	SS-5	4.50	-	-	-	-	-	-	-	-	11	A-4a (V)	
		12																
		13																
@ 13.5', brownish gray.		14	15 16 17	43	100	SS-6	3.00	11	12	18	34	25	24	16	8	10	A-4a (5)	
		15																
@ 16.0', gray.		16	9 23 30	70	100	SS-7	4.50	-	-	-	-	-	-	-	-	8	A-4a (V)	
	772.3	17																
Cobbles/Boulders Zone		18																
		19	18 35 50/2"	-	71	SS-8	4.50	-	-	-	-	-	-	-	-	11		
		20																
		21	50/5"	-	40	SS-9	-	-	-	-	-	-	-	-	-	3		
	767.3	22																
		23																
Hard brown SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.		24	19 17 22	51	100	SS-10	4.50	4	9	15	44	28	24	15	9	9	A-4a (7)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17.52

PID: 77370 BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 55+90.6, 28.51 LT | START: 8/17/11 | END: 8/17/11 | PG 2 OF 2 | B-055-4-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Hard brown SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp. *(continued)*	765.8																	
		26																
		27	11 20 29	65	100	SS-11	4.50	-	-	-	-	-	-	-	-	9	A-4a (V)	
		28																
		29	15 18 19	49	100	SS-12	4.50	-	-	-	-	-	-	-	-	9	A-4a (V)	
		30																
		31	15 18 29	62	100	SS-13	4.50	9	10	23	36	22	22	14	8	8	A-4a (5)	
		32																
		33																
		34	21 22 25	62	100	SS-14	4.50	-	-	-	-	-	-	-	-	9	A-4a (V)	
		35																
		36																
		37	10 15 19	45	100	SS-15	4.50	-	-	-	-	-	-	-	-	9	A-4a (V)	
		38																
		39	11 14 20	45	100	SS-16	4.50	-	-	-	-	-	-	-	-	9	A-4a (V)	
		40																
		41																
		42	7 14 17	41	100	SS-17	4.50	9	10	22	35	24	23	14	9	11	A-4a (5)	
		43																
		44	13 16 20	47	100	SS-18	4.50	-	-	-	-	-	-	-	-	10	A-4a (V)	
		45																
		46																
		47	10 18 20	50	100	SS-19	4.50	-	-	-	-	-	-	-	-	9	A-4a (V)	
		48																
		49																
	740.8		15 20 26	61	100	SS-20	4.50	-	-	-	-	-	-	-	-	9	A-4a (V)	
	EOB	50																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17.52

NOTES: NO SEEPAGE OBSERVED; NO FREE WATER OBSERVED AT COMPLETION.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: AUGER CUTTINGS; 1 BAGS BENTONITE CHIPS

PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / L. BARTLETT | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 804+21.35, 7.86 LT | EXPLORATION ID B-056-1-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: I-70
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 772.3 (MSL) EOB: 70.0 ft. | PAGE 1 OF 3
START: 6/10/10 END: 6/10/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712216.880 N, 1834904.170 E

MATERIAL DESCRIPTION AND NOTES	ELEV. 772.3	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Asphalt- 18" Base- 18"		1																
	769.3	2	29 25 22	62	89	SS-1	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
Very stiff to hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		3																
		4	5 18 19	49	100	SS-2	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
		5																
		6	9 28 26	71	100	SS-3	2.00	19	17	18	29	17	21	15	6	7	A-4a (2)	
		7																
		8	14 20 25	59	100	SS-4	2.50	-	-	-	-	-	-	-	-	8	A-4a (V)	
	761.3	9																
		10																
Very dense gray COARSE AND FINE SAND (A-3a), trace silt; wet.		11	4 20 31	67	56	SS-5	-	-	-	-	-	-	-	-	-	13	A-3a (V)	
	758.8	12																
Very dense gray GRAVEL WITH SAND (A-1-b), little silt, trace clay; wet.		13																
		14	33 50/5"	-	73	SS-6	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
		15																
@ 16.0', 1.5 feet sand heave; washed out with tricone.		16																
		17	10 20 35	72	100	SS-7	-	46	29	12	-	13 -	NP	NP	NP	11	A-1-b (0)	
		18																
		19	6 22 26	63	56	SS-8	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
		20																
		21	6 20 22	55	67	SS-9	-	-	-	-	-	-	-	-	-	14	A-1-b (V)	
		22																
		23																
		24	6 24 20	58	56	SS-10	-	31	33	20	11	5	NP	NP	NP	14	A-1-b (0)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:53

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 804+21.35, 7.86 LT | START: 6/10/10 | END: 6/10/10 | PG 2 OF 3 | B-056-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 747.3	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense gray GRAVEL WITH SAND (A-1-b), little silt, trace clay; wet. *(continued)*		26																
		27	16 28 28	74	61	SS-11	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
		28																
		29	16 23 23	61	33	SS-12	-	42	27	18	-	13 -	NP	NP	NP	10	A-1-b (0)	
	740.3	30																
		31																
Very dense gray GRAVEL (A-1-a), "and" fine to coarse sand, little silt; wet.		32																
		33																
		34	24 30 50/5"	-	53	SS-13	-	-	-	-	-	-	-	-	-	9	A-1-a (V)	
		35																
		36																
		37																
		38																
		39	14 23 25	63	67	SS-14	-	51	28	10	-	11 -	NP	NP	NP	9	A-1-a (0)	
	730.3	40																
		41																
Dense gray COARSE AND FINE SAND (A-3a), trace silt, trace gravel; wet.		42																
		43																
		44	7 17 15	42	17	SS-15	-	-	-	-	-	-	-	-	-	30	A-3a (V)	
	725.3	45																
		46																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.		47																
		48																
		49	13 20 28	63	100	SS-16	4.5+	9	12	23	36	20	21	14	7	11	A-4a (4)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:53

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PID: 77370	BR ID:	PROJECT: I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 804+21.35, 7.86 LT	START: 6/10/10	END: 6/10/10	PG 3 OF 3	B-056-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp. *(continued)*	720.5	52																
		53																
		54	7 13 18	41	100	SS-17	4.5+	-	-	-	-	-	-	-	-	12	A-4a (V)	
		55																
		56																
		57																
		58																
		59	11 23 27	66	100	SS-18	4.5+	6	12	20	36	26	24	14	10	12	A-4a (5)	
		60																
		61																
		62																
		63																
		64	33 50/5"	-	100	SS-19	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
		65																
		66																
		67																
		68																
	703.0	69	15 28	75	100	SS-20A	4.5+	-	-	-	-	-	-	-	-	11	A-4a (V)	
Very dense gray COARSE AND FINE SAND (A-3a), little silt; wet.	702.3	EOB 70	29		-	SS-20B	-	-	-	-	-	-	-	-	-	23	A-3a (V)	

NOTES: SEEPAGE AT 10.5 FEET AND 69.3 FEET; WATER LEVEL PRIOR TO ADDING WATER = 13.8 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 43.8 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 1 BAG BENTONITE CHIPS; 3 BAGS QUIKGROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:53

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DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-057-0-08 | *Location:* Sta. 909+01.60, 54.07 ft Lt of Ramp P2 BL | *Date Drilled:* 2/3/2009

WATER OBSERVATIONS: Water seepage at: 35.5', 43.0' | Water level at completion: 30.5

FIELD NOTES:

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	% Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP
0.3	792.9						Topsoil - 3"								
		2 5 5	18	1		4.0	FILL: Very stiff to hard brown SILT AND CLAY (A-6a), some fine to coarse sand, little gravel; contains trace brick fragments and cinders; damp.								
		2 6 13	12	2		3.75									
5															
6.0	787.2														
		2 2 3	18	3		3.75	Very stiff brown SILT AND CLAY (A-6a), some fine to coarse sand, trace gravel; damp.								
8.5	784.7														
		1 3 9	10	4		1.5	Hard brown SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp.								
10							@ 8.5'-10.0',18.5'-20.0', stiff.								
		3 10 17	17	5		4.5+									
		6 12 12	18	6		4.5+									
15															
		5 6 7	18	7		4.5+	@ 16.0'-20.0', gray.		9	13	---	19	35	24	
		2 10 6	18	8		1.0									
20															
		2 3 8	18	9		4.5+									
		3 7 10	18	10		4.5+									
25	768.2														

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-057-0-08 | *Location:* Sta. 909+01.60, 54.07 ft Lt of Ramp P2 BL | *Date Drilled:* 2/3/2009

WATER OBSERVATIONS: Water seepage at: 35.5', 43.0' | Water level at completion: 30.5

FIELD NOTES:

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	% Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP
	768.2														
		7 13 8	18	11		4.25	Very stiff to hard gray SANDY SILT (A-4a), some to "and" fine to coarse sand, trace gravel; damp.		10	13	---	23	35	19	
							@ 25.0'-30.0', difficult augering; possible boulder.								
		14 15 15	18	12		4.5+									
30															
		12 19 23	18	13		4.5+									53
		15 25 29	18	14		3.0			9	10	---	28	37	16	68
35															
		12 21 22	18	15		2.25	@ 36.0'-37.5', interbedded sand seams.								54
38.5	754.7														
		12 26 22	18	16			Dense gray COARSE AND FINE SAND (A-3a), some silt; wet.								60
40															
41.0	752.2														
		16 50/3	9	17		3.75	Very stiff gray CLAY (A-7-6), little fine sand; moist.								50+
43.5	749.7														
		17 31 27	18	18			Very dense gray GRAVEL (A-1-a), "and" fine to coarse sand, trace silt; wet.		57	26	---	11	--6--		73
45															
		5 14 40	18	19											68
48.5	744.7														
		5 11 21	18	20			Dense gray COARSE AND FINE SAND (A-3a), little silt, little gravel; wet.								
50.0	743.2														

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DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-057-0-08 | *Location:* Sta. 909+01.60, 54.07 ft Lt of Ramp P2 BL | *Date Drilled:* 2/3/2009

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetro-meter (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL ⊢ Blows per foot - ○ / Non-Plastic - NP ⊣ LL (10 20 30 40)
	743.2						WATER OBSERVATIONS: Water seepage at: 35.5', 43.0' Water level at completion: 30.5 FIELD NOTES:								
							Bottom of Boring - 50.0'								
55															
60															
65															
70															
75															

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 910+56.71, 60.3 LT | EXPLORATION ID B-058-0-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP P2
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 794.6 (MSL) EOB: 60.0 ft. | PAGE 1 OF 3
START: 8/16/11 END: 8/16/11 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712254.730 N, 1835552.200 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil - 6"	794.1																	
FILL: Hard brown SANDY SILT (A-4a), some fine to coarse sand, little gravel; trace brick and slag fragments; trace organics; damp.	794.6	1	8 8 5	17	78	SS-1	4.50	-	-	-	-	-	-	-	-	16	A-4a (V)	
		2																
		3																
		4	7 6 6	16	83	SS-2	4.50	-	-	-	-	-	-	-	-	14	A-4a (V)	
		5																
	788.6	6																
Hard brown SANDY SILT (A-4a), some to "and" fine to coarse sand, trace gravel; damp.		7	7 10 8	24	100	SS-3	4.50	-	-	-	-	-	-	-	-	12	A-4a (V)	
		8																
		9	7 19 22	54	100	SS-4	4.50	9	13	18	35	25	25	17	8	11	A-4a (5)	
		10																
@ 11.0'-18.5', some fine to coarse gravel.		11	21 50/4"	-	100	SS-5	4.50	-	-	-	-	-	-	-	-	8	A-4a (V)	
		12																
		13																
@ 13.5, brownish gray.		14	22 30 24	71	100	SS-6	4.50	-	-	-	-	-	-	-	-	8	A-4a (V)	
		15																
@ 16.0'-17.5', low recovery; drove on possible cobble or boulder.		16	50/5"	-	40	SS-7	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
		17																
		18																
@ 18.5', becomes gray.		19	5 9 9	24	100	SS-8	4.50	6	9	15	39	31	26	17	9	13	A-4a (7)	
		20																
		21																
		22	6 10 11	28	100	SS-9	4.50	-	-	-	-	-	-	-	-	11	A-4a (V)	
		23																
		24	9 14 15	38	100	SS-10	4.50	-	-	-	-	-	-	-	-	12	A-4a (V)	
	769.6																	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:06

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 910+56.71, 60.3 LT | START: 8/16/11 | END: 8/16/11 | PG 2 OF 3 | B-058-0-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Hard gray SANDY SILT (A-4a), some to "and" fine to coarse sand, trace to little gravel; damp.	769.6	26	30 24 26	66	100	SS-11	4.50	5	9	15	44	27	26	17	9	10	A-4a (7)	
		27																
		28																
@ 28.5'-30.0'; mottled gray and brown.		29	15 18 26	58	100	SS-12	4.50	-	-	-	-	-	-	-	-	11	A-4a (V)	
		30																
		31																
		32	16 20 20	53	100	SS-13	4.50	11	11	20	36	22	22	15	7	9	A-4a (5)	
		33																
		34	17 20 23	57	100	SS-14	4.50	-	-	-	-	-	-	-	-	12	A-4a (V)	
		35																
		36																
		37	14 19 26	59	100	SS-15	4.50	-	-	-	-	-	-	-	-	13	A-4a (V)	
@ 37.4'-37.5', sand seam.		38																
@ 38.5'-40.0', little fine to coarse sand, varved with fine sand.		39	33 32 28	79	100	SS-16	4.50	0	1	14	45	40	26	16	10	16	A-4a (8)	
	753.6 W	40																
Very dense gray COARSE AND FINE SAND (A-3a), trace gravel, trace silt; wet.		41	9 19 21	53	100	SS-17	-	-	-	-	-	-	-	-	-	19	A-3a (V)	
	751.1	42																
Very dense gray GRAVEL (A-1-a), some to "and" fine to coarse sand, trace silt; wet.		43																
	748.6	44	36 50/5"	-	45	SS-18	-	-	-	-	-	-	-	-	-	8	A-1-a (V)	
Very dense gray FINE SAND (A-3), little coarse sand, trace silt, trace gravel; wet.	F S	45																
	746.1	46																
Very dense gray GRAVEL WITH SAND (A-1-b), some fine to coarse sand, little silt; wet.		47	5 17 49	87	100	SS-19	-	9	18	69	-	4 -	NP	NP	NP	18	A-3 (0)	
		48																
		49	28 50/5"	-	100	SS-20	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
@ 48.5', 4.0' of sand heave; washed out with tricone.		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:06

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PID: 77370	BR ID:	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 910+56.71, 60.3 LT	START: 8/16/11	END: 8/16/11	PG 3 OF 3	B-058-0-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense gray GRAVEL WITH SAND (A-1-b), some fine to coarse sand, little silt; wet. *(continued)*	742.8	52																
		53																
		54	50/3"	-	67	SS-21	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		55																
		56																
		57																
		58																
		59	28 35 38	96	83	SS-22	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
	734.6	EOB 60																

NOTES: SEEPAGE AT 41.0 FEET; WATER LEVEL PRIOR TO ADDING WATER = 37.8 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 13.3 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 2 BAGS BENTONITE GROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:06

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PROJECT: I-70/I-71 EAST INTERCHANGE
TYPE: ROADWAY
PID: 77370 BR ID:
START: 8/15/11 END: 8/16/11

DRILLING FIRM / OPERATOR: DLZ / L. BARTLETT
SAMPLING FIRM / LOGGER: DLZ / S. LARIMER
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 750X ATV
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 1/7/10
ENERGY RATIO (%): 58.5

STATION / OFFSET: 912+25.58, 81.21 LT
ALIGNMENT: RAMP P2
ELEVATION: 792.5 (MSL) EOB: 60.0 ft.
COORD: 712249.240 N, 1835720.200 E

EXPLORATION ID B-058-1-10
PAGE 1 OF 3

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Asphalt - 2" Brick - 4"	792.0																	
FILL: Very stiff to hard brown SANDY SILT (A-4a), some to "and" fine to coarse sand, trace gravel; damp to moist. @ 1.0'-2.5', contains few small (<1/8 inch) brick fragments. @ 3.5'-7.5', contains occasional rust stains.		1	5 3 5	8	67	SS-1	2.50	-	-	-	-	-	-	-	-	20	A-4a (V)	
		2																
		3																
		4	7 8 16	23	39	SS-2	-	-	-	-	-	-	-	-	-	15	A-4a (V)	
		5																
		6																
		7	19 27 27	53	22	SS-3	4.5+	4	20	18	31	27	26	17	9	12	A-4a (5)	
	784.0	8																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp. @ 8.5'-12.5', possible cobbles or boulders.		9	19 14 12	25	0	SS-4	-	-	-	-	-	-	-	-	-	11	A-4a (V)	
		10																
		11																
		12	18 17 15	31	11	SS-5	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
		13																
		14	12 16 17	32	50	SS-6	4.5+	11	14	19	33	23	22	14	8	9	A-4a (4)	
		15																
		16																
		17	8 10 15	24	78	SS-7	4.5+	-	-	-	-	-	-	-	-	11	A-4a (V)	
		18																
		19	7 11 13	23	89	SS-8	4.5+	-	-	-	-	-	-	-	-	11	A-4a (V)	
		20																
		21																
		22	6 10 15	24	83	SS-9	4.5+	14	10	19	35	22	22	15	7	11	A-4a (4)	
		23																
		24	8 11 13	23	100	SS-10	4.5+	-	-	-	-	-	-	-	-	11	A-4a (V)	
	767.5																	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:06

PID: 77370 BR ID: PROJECT I-70/I-71 EAST INTERCHANGE STATION / OFFSET: 912+25.58, 81.21 LT START: 8/15/11 END: 8/16/11 PG 2 OF 3 B-058-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Cobbles/Boulder Zone	767.5																	
		26	34 50/3"	-	0	SS-11	-	-	-	-	-	-	-	-	-	-		
		27																
		28																
		29	25 50/5"	-	27	SS-12	-	-	-	-	-	-	-	-	-	-		
	761.5	30																
Very dense brown GRAVEL (A-1-a), some fine to coarse sand, little silt; wet.		31 W	27 50/5"	-	91	SS-13	-	55	22	11	-	12 -	NP	NP	NP	8	A-1-a (0)	
		32																
		33																
		34	11 46 50/5"	-	88	SS-14	-	-	-	-	-	-	-	-	-	9	A-1-a (V)	
	756.5	35																
Very dense gray GRAVEL WITH SAND (A-1-b), trace to little silt; wet. @ 35.0'-48.5', 1.0 to 2.5 feet sand heave; washed out with tricone.		36																
		37	28 40 42	80	89	SS-15	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		38																
		39	18 33 39	70	100	SS-16	-	31	38	21	-	10 -	NP	NP	NP	13	A-1-b (0)	
		40																
		41																
		42	19 47 50/3"	-	87	SS-17	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
		43																
		44	23 30 35	63	83	SS-18	-	-	-	-	-	-	-	-	-	13	A-1-b (V)	
		45																
		46																
		47	24 30 43	71	89	SS-19	-	33	29	30	-	8 -	NP	NP	NP	12	A-1-b (0)	
		48																
		49	24 32 50	80	78	SS-20	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:06

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PID: 77370	BR ID:	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 912+25.58, 81.21 LT	START: 8/15/11	END: 8/16/11	PG 3 OF 3	B-058-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense gray GRAVEL WITH SAND (A-1-b), some fine to coarse sand, little silt; wet.	740.7	52																
	740.5	53																
		54	26 39 41	78	78	SS-21	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
		55																
		56																
		57																
@ 58.5', 2.6 feet sand heave; washed out with tricone.		58																
		59	10 37 37	72	89	SS-22	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
	732.5	EOB 60																

NOTES: SEEPAGE AT 31.0 FEET; WATER LEVEL PRIOR TO ADDING WATER = 27.7 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 27.6 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; AUGER CUTTINGS; 5 BAGS BENTONITE CHIPS; QUICKCRETE

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:06

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 813+44.68, 155.17 LT | EXPLORATION ID: B-059-1-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: I-70
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 795.4 (MSL) EOB: 55.0 ft. | PAGE: 1 OF 3
START: 8/18/11 END: 8/18/11 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712231.370 N, 1835837.070 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Topsoil - 5"	795.0																	
FILL: Hard brown SANDY SILT (A-4a), some fine to coarse sand, little gravel; contains trace glass and asphalt fragments; trace organics; damp.	791.9	1–3	7 6 5	14	56	SS-1	4.50	-	-	-	-	-	-	-	-	11	A-4a (V)	
POSSIBLE FILL: Loose brown GRAVEL (A-1-a), "and" fine to coarse sand, trace silt; damp.	789.4	4–5	2 3 3	8	78	SS-2	-	-	-	-	-	-	-	-	-	3	A-1-a (V)	
POSSIBLE FILL: Very stiff brown SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp to moist.	784.4	6–7	7 12 10	29	56	SS-3	3.50	7	14	21	34	24	23	16	7	13	A-4a (5)	
		8–10	5 12 14	34	0	SS-4	-	-	-	-	-	-	-	-	-	10	A-4a (V)	
Cobbles/Boulders Zone	771.9	11–12	19 21 15	47	17	SS-5	-	-	-	-	-	-	-	-	-	4		
		14–15	17 35 36	93	22	SS-6	-	26	37	18	-	19 -	NP	NP	NP	4	A-1-b (0)	
		16–17	21 24 18	55	22	SS-7	-	-	-	-	-	-	-	-	-	2		
		19–20	15 17 8	33	39	SS-8	-	-	-	-	-	-	-	-	-	6		
		21–22	14 16 17	43	11	SS-9	-	-	-	-	-	-	-	-	-	6		
Dense to very dense gray SANDY SILT (A-4a), "and" fine to coarse sand, little gravel; damp.		24	2 16 17	43	56	SS-10	-	13	16	26	30	15	15	14	1	9	A-4a (2)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:17

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 813+44.68, 155.17 LT | START: 8/18/11 | END: 8/18/11 | PG 2 OF 3 | B-059-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Dense to very dense gray SANDY SILT (A-4a), "and" fine to coarse sand, little gravel; damp. *(continued)*	770.4																	
		26–27	20 25 18	57	6	SS-11	-	-	-	-	-	-	-	-	-	9	A-4a (V)	
Medium dense gray COARSE AND FINE SAND (A-3a), some gravel, some silt; moist to wet.	766.9	W 28–29	6 6 9	20	100	SS-12	-	27	18	33	13	9	NP	NP	NP	12	A-3a (0)	
		30–31	7 10 9	25	17	SS-13	-	-	-	-	-	-	-	-	-	9	A-3a (V)	
Hard gray SANDY SILT (A-4a), some to "and" fine to coarse sand, little to some gravel; damp.	761.9	33–34	12 13 18	41	94	SS-14	4.50	-	-	-	-	-	-	-	-	10	A-4a (V)	
Dense gray GRAVEL WITH SAND (A-1-b), trace silt; wet.	759.4	W 35–36	12 14 19	43	83	SS-15	-	33	28	30	-	9 -	NP	NP	NP	13	A-1-b (0)	
Dense to very dense gray GRAVEL (A-1-a), some to "and" fine to coarse sand, little silt; wet.	756.9	38–39	6 17 14	41	39	SS-16	-	-	-	-	-	-	-	-	-	8	A-1-a (V)	
@ 38.5', 5.0 feet sand heave; washed out with tricone.		41–42	16 18 22	53	72	SS-17	-	-	-	-	-	-	-	-	-	10	A-1-a (V)	
		43–45	13 27 21	63	61	SS-18	-	62	18	7	-	13 -	NP	NP	NP	7	A-1-a (0)	
	748.9	46–47	26 32 37	91	61 -	SS-19A SS-19B	4.50	-	-	-	-	-	-	-	-	7 11	A-1-a (V) A-4a (V)	
Hard gray SANDY SILT (A-4a), some fine to coarse sand, little to some gravel; damp to moist.	746.9	48–49	21 29 24	70	100	SS-20	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
Very dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace silt; wet.		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:17

FRA-70-14.48

SOIL PROFILE
BORING LOGS

DRAWN BTA
CHECKED VBP

PID: 77370	BR ID:	PROJECT: I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 813+44.68, 155.17 LT	START: 8/18/11	END: 8/18/11	PG 3 OF 3	B-059-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace silt; wet. *(continued)*	743.6	52																
		53																
		54	28 40 48	116	56	SS-21	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
	740.4	EOB 55																

NOTES: SEEPAGE AT 28.5 FEET AND 36.0 FEET; WATER LEVEL PRIOR TO ADDING WATER = 31.7 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 6.5 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: AUGER CUTTINGS; 5 BAGS BENTONITE CHIPS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:17

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DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-060-0-08 | *Location:* Sta. 814+69.20, 156.33 ft Lt of I-70 CL | *Date Drilled:* 2/5/2009

WATER OBSERVATIONS: Water seepage at: 28.0', 38.0' | Water level at completion: 34.5'

FIELD NOTES:

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	795.3														
0.1	795.2						Topsoil - 1"								
		3 2 5	12	1		3.75	FILL: Very stiff to hard brown SILT AND CLAY (A-6a), some fine to coarse sand, trace gravel; damp. @ 1.0'-2.5', contains trace brick fragments.								
5		2 4 8	18	2		4.5+									
		5 10 8	18	3		4.5+									
10		13 18 10	6	4		4.5	@ 8.5'-10.0', contains gravel fragments - possible buried roadbase.								
11.0	784.3														
		18 16 11	18	5		4.5+	Hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.								
15		2 4 12	18	6		4.5+									
16.0	779.3														
18.5	776.8	10 28 43	18	7			Very dense gray SILT (A-4b), little fine to coarse sand, trace gravel; moist.		1	1	---	18	73	7	89
		3 16 13	18	8		2.25	Very stiff to hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.								
20		9 9 21	18	9		4.25									
25	770.3	21 22 30	18	10		4.5+	@ 23.5'-25.0', contains numerous fine sand seams.								65

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-060-0-08 | *Location:* Sta. 814+69.20, 156.33 ft Lt of I-70 CL | *Date Drilled:* 2/5/2009

WATER OBSERVATIONS: Water seepage at: 28.0', 38.0' | Water level at completion: 34.5'

FIELD NOTES:

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	770.3														
		13 20 22	18	11			Dense to very dense gray GRAVEL WITH SAND (A-1-b), trace silt; damp.								53
30		17 27 32	18	12			@ 28.5', becomes wet.		34	27	---	28	--11--		74
31.0	764.3														
		10 22 27	10	13		4.5+	Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp to moist.								61
35		10 14 17	18	14		4.5+									
		8 14 18	18	15		4.5+			14	11	---	24	37	14	
38.5	756.8														
		20 20 20	18	16			Dense to very dense gray GRAVEL (A-1-a), "and" fine to coarse sand, trace silt; wet.								
40		5 50/2	7	17					53	35	---	6	--6--		50+
43.5	751.8														
		10 27 33	18	18			Very dense gray COARSE AND FINE SAND (A-3a), little to some silt, trace to little gravel; wet.								75
45		25 34 41	18	19											94
50.0	745.3	15 30 39	18	20			Bottom of Boring - 50.0'								86

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 879+79.03, 26.89 LT | EXPLORATION ID B-141-1-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP N1
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 778.5 (MSL) EOB: 50.0 ft. | PAGE 1 OF 2
START: 7/13/10 END: 7/13/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712039.590 N, 1832495.440 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Pavement- 6"	778.0																	
POSSIBLE FILL: Stiff brown SILTY CLAY (A-6b), little fine to coarse sand, little gravel; damp.		1	2 2 2	5	11	SS-1	1.00	-	-	-	-	-	-	-	-	12	A-6b (V)	
	775.0	2																
Stiff to very stiff brown SILT AND CLAY (A-6a), some fine to coarse sand, little gravel; damp.		3																
		4	8 6 3	12	17	SS-2	1.50	-	-	-	-	-	-	-	-	15	A-6a (V)	
		5																
		6																
		7	9 12 11	30	28	SS-3	1.00	16	16	15	28	25	31	19	12	17	A-6a (4)	
		8																
@ 8.5'-15.0', low recovery; drove on gravel; possible boulder zone.		9	4 16 14	40	6	SS-4	-	-	-	-	-	-	-	-	-	-		
		10																
		11	50/5"	-	20	SS-5	-	-	-	-	-	-	-	-	-	0		
		12																
		13																
		14	25 49 47	126	6	SS-6	-	-	-	-	-	-	-	-	-	-		
	762.5	15																
Hard brown SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		16																
		17	18 16 15	41	78	SS-7	4.5+	12	12	19	36	21	22	14	8	9	A-4a (4)	
		18																
		19	11 10 10	26	100	SS-8	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
		20																
@ 21.0'-23.5', medium stiff to stiff.		21																
		22	5 7 7	18	28	SS-9	1.00	-	-	-	-	-	-	-	-	11	A-4a (V)	
		23																
		24	25 22 15	49	17	SS-10	4.5+	17	13	18	37	15	21	14	7	10	A-4a (3)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:17

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 879+79.03, 26.89 LT | START: 7/13/10 | END: 7/13/10 | PG 2 OF 2 | B-141-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
	753.5																	
	752.5																	
Loose to medium dense brown COARSE AND FINE SAND (A-3a), little silt, trace gravel; damp.		26																
		27	3 3 4	9	67	SS-11	-	-	-	-	-	-	-	-	-	4	A-3a (V)	
		28																
		29	5 4 6	13	28	SS-12	-	1	11	67	-	21 -	NP	NP	NP	7	A-3a (0)	
		30																
		31																
		32																
		33	W															
		34	3 4 4	11	22	SS-13	-	-	-	-	-	-	-	-	-	12	A-3a (V)	
		35																
		36																
	741.5	37																
Stiff gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		38																
		39	9 5 6	14	56	SS-14	2.50	17	9	21	39	14	19	14	5	11	A-4a (4)	
	736.5	40																
Very dense gray GRAVEL (A-1-a), little fine to coarse sand, trace silt; wet.		41																
		42																
		43																
		44	27 36 39	99	67	SS-15	-	-	-	-	-	-	-	-	-	7	A-1-a (V)	
		45																
		46																
		47																
		48																
		49	9 24 32	74	56	SS-16	-	-	-	-	-	-	-	-	-	6	A-1-a (V)	
	728.5	50	EOB															

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:17

NOTES: SEEPAGE AT 33.5 FEET AND 43.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 40.2 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 40.2 FEET.
ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 1 BAG BENTONITE CHIPS; 2 BAGS QUIKGROUT

PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 881+31.11, 14.34 RT | EXPLORATION ID: B-141-2-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP N1 | PAGE: 1 OF 2
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 779.0 (MSL) EOB: 30.0 ft.
START: 7/13/10 END: 7/13/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712046.670 N, 1832651.580 E

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)	HOLE SEALED
Asphalt- 7"	778.4																	
Very stiff brown SILT (A-4b), little fine to coarse sand, trace gravel; damp.	775.5	1–3	2 2 3	7	100	SS-1	3.00	-	-	-	-	-	-	-	-	21	A-4b (V)	
Stiff to very stiff brown SILTY CLAY (A-6b), little fine to coarse sand, little gravel; damp.		4–5	3 2 3	7	56	SS-2	1.25	-	-	-	-	-	-	-	-	29	A-6b (V)	
@ 6.0'-7.5', low recovery; drove on gravel.		6–7	7 8 9	22	11	SS-3	-	-	-	-	-	-	-	-	-	-		
@ 8.5'-10.0', low recovery; drove on gravel.	768.0	8–10	15 15 15	40	6	SS-4	-	-	-	-	-	-	-	-	-	-		
Hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		11–12	16 16 16	42	100	SS-5	4.5+	14	13	18	36	19	20	14	6	8	A-4a (4)	
		13–15	11 15 16	41	100	SS-6	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
Hard gray CLAY (A-7-6), some fine to coarse sand, little gravel; damp.	763.0	16–17	14 21 13	45	100	SS-7	4.5+	-	-	-	-	-	-	-	-	10	A-7-6 (V)	
		18–20	21 21 16	49	33	SS-8	4.5+	14	12	19	34	21	46	14	32	10	A-7-6 (13)	
Very dense gray COARSE AND FINE SAND (A-3a), some silt, little gravel; damp.	758.0	21–22	27 46 50/5"	-	59	SS-9	-	-	-	-	-	-	-	-	-	4	A-3a (V)	
@ 23.5', becomes brown.		23–24	13 28 31	78	56	SS-10	-	-	-	-	-	-	-	-	-	6	A-3a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:17

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 881+31.11, 14.34 RT | START: 7/13/10 | END: 7/13/10 | PG 2 OF 2 | B-141-2-10

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)	HOLE SEALED
Very dense gray COARSE AND FINE SAND (A-3a), some silt, little gravel; damp. *(continued)*	754.0	26–27	13 15 18	43	28	SS-11	-	12	23	33	- 32 -		NP	NP	NP	11	A-3a (0)	
Hard gray SILT AND CLAY (A-6a), trace gravel, trace fine to coarse sand; damp to moist.	750.5	29	28 15 31	61	56	SS-12	4.5+	-	-	-	-	-	-	-	-	9	A-6a (V)	
	749.0	EOB 30																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:17

NOTES: NO SEEPAGE OR FINAL WATER LEVELS DETECTED.
ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 7 BAGS BENTONITE CHIPS; 2 BAGS QUIKGROUT

PROJECT: I-70/I-71 EAST INTERCHANGE	DRILLING FIRM / OPERATOR: DLZ / K. CONRAD	DRILL RIG: CME 75 TRUCK	STATION / OFFSET: 882+46.01, 25.37 RT	EXPLORATION ID B-141-3-10
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: DLZ / M. EVENER	HAMMER: CME AUTOMATIC	ALIGNMENT: RAMP N3	
PID: 77370 BR ID:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 1/7/10	ELEVATION: 781.7 (MSL) EOB: 40.0 ft.	PAGE 1 OF 2
START: 7/14/10 END: 7/14/10	SAMPLING METHOD: SPT	ENERGY RATIO (%): 79	COORD: 712138.560 N, 1832768.000 E	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Asphalt - 5"	781.3																	
Very stiff brown SILTY CLAY (A-6b), little fine to coarse sand, trace to little gravel; damp.		1	6 20 10	40	17	SS-1	2.50	-	-	-	-	-	-	-	-	14	A-6b (V)	
		2																
		3																
		4	3 3 3	8	44	SS-2	2.50	5	6	12	42	35	37	19	18	20	A-6b (11)	
		5																
@ 6.0'-7.5', low recovery; drove on gravel.		6	4 5 6	14	11	SS-3	-	-	-	-	-	-	-	-	-	-		
		7																
		8																
@ 8.5'-10.0', low recovery; drove on gravel.		9	5 8 12	26	11	SS-4	1.50	-	-	-	-	-	-	-	-	13	A-6b (V)	
		10																
	770.7	11																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		12	15 16 21	49	100	SS-5	4.5+	11	13	19	36	21	23	16	7	9	A-4a (4)	
		13																
		14	10 25 27	68	56	SS-6	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
		15																
		16																
		17	17 24 21	59	100	SS-7	4.5+	-	-	-	-	-	-	-	-	7	A-4a (V)	
		18																
@ 18.5', becomes brown		19	35 26 50/5"	-	0	SS-8	-	-	-	-	-	-	-	-	-	-		
		20																
		21	50/5"	-	40	SS-9	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
		22																
		23																
		24	17 25 40	86	100	SS-10	4.5+	10	12	20	36	22	23	15	8	9	A-4a (5)	
	756.7																	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:17

PID: 77370	BR ID:	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 882+46.01, 25.37 RT	START: 7/14/10	END: 7/14/10	PG 2 OF 2	B-141-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Hard brown SANDY SILT (A-4a), some to "and" fine to coarse sand, little gravel; damp.	756.7																	
		26																
		27	19 21 16	49	100	SS-11	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
		28																
		29	11 15 17	42	100	SS-12	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
		30																
		31																
		32	13 18 23	54	100	SS-13	4.5+	12	13	25	36	14	17	15	2	9	A-4a (3)	
		33																
	748.2																	
Very dense gray COARSE AND FINE SAND (A-3a), little to some silt, trace to little gravel; damp.		34	22 27 30	75	100	SS-14	-	-	-	-	-	-	-	-	-	9	A-3a (V)	
		35																
		36																
		37																
		38																
		39	47 44 37	107	100	SS-15	-	-	-	-	-	-	-	-	-	3	A-3a (V)	
	741.7	EOB 40																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:17

NOTES: NO SEEPAGE OR FINAL WATER LEVELS DETECTED.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 3 BAGS BENTONITE CHIPS

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PROJECT: I-70/I-71 EAST INTERCHANGE
TYPE: ROADWAY
PID: 77370 BR ID:
START: 7/13/10 END: 7/14/10

DRILLING FIRM / OPERATOR: DLZ / K. CONRAD
SAMPLING FIRM / LOGGER: DLZ / M. EVENER
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 75 TRUCK
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 1/7/10
ENERGY RATIO (%): 79

STATION / OFFSET: 884+22.86, 49.72 RT
ALIGNMENT: RAMP N1
ELEVATION: 781.2 (MSL) EOB: 54.9 ft.
COORD: 712133.680 N, 1832931.990 E

EXPLORATION ID: B-142-1-10
PAGE 1 OF 3

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Asphalt - 5"	780.8																	
POSSIBLE FILL: Stiff to very stiff brown to dark gray SILTY CLAY (A-6b), some fine to coarse sand, trace gravel; damp.		1	4 4 6	13	100	SS-1	2.00	-	-	-	-	-	-	-	-	14	A-6b (V)	
		2																
		3	11 12 14	34	28	SS-2	1.00	-	-	-	-	-	-	-	-	20	A-6b (V)	
		4																
		5																
@ 6.0'-7.5', low recovery; on drove gravel.		6	17 21 9	40	17	SS-3	-	-	-	-	-	-	-	-	-	-		
		7																
		8																
		9	14 12 12	32	6	SS-4	3.00	-	-	-	-	-	-	-	-	15	A-6b (V)	
	770.2	10																
Very stiff to hard gray SANDY SILT (A-4a), some to "and" fine to coarse sand, trace to little gravel; damp.		11																
		12	15 21 21	55	11	SS-5	2.00	-	-	-	-	-	-	-	-	16	A-4a (V)	
		13																
		14	8 10 10	26	28	SS-6	2.00	20	10	20	31	19	20	14	6	10	A-4a (3)	
		15																
@ 16.0-17.5', stiff.		16																
		17	3 7 7	18	83	SS-7	1.50	-	-	-	-	-	-	-	-	10	A-4a (V)	
		18																
		19	11 8 17	33	56	SS-8	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
		20																
		21																
		22	23 43 44	115	83	SS-9	3.50	8	13	23	38	18	20	14	6	8	A-4a (4)	
		23																
		24	22 23 20	57	11	SS-10	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:17

PID: 77370 BR ID: PROJECT I-70/I-71 EAST INTERCHANGE STATION / OFFSET: 884+22.86, 49.72 RT START: 7/13/10 END: 7/14/10 PG 2 OF 3 B-142-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very stiff to hard gray SANDY SILT (A-4a), some to "and" fine to coarse sand, trace to little gravel; damp. *(continued)*	756.2																	
		26																
		27	10 11 19	40	100	SS-11	4.5+	-	-	-	-	-	-	-	-	15	A-4a (V)	
	752.7	28																
Very dense gray SANDY SILT (A-4a), trace gravel; damp.		29	13 26 27	70	100	SS-12	-	1	10	48	37	4	NP	NP	NP	9	A-4a (1)	
	750.2	30																
Very dense gray SILT (A-4b), little to some fine sand; moist to wet.		W 31	18 29 32	80	100	SS-13	-	-	-	-	-	-	-	-	-	18	A-4b (V)	
		32																
		33																
@ 33.5', becomes wet.		34	18 25 29	71	67	SS-14	-	0	0	35	59	6	NP	NP	NP	19	A-4b (6)	
		35																
		36																
	744.2	37																
Dense brown FINE SAND (A-3), trace silt; damp.		38																
F S		39	16 21 15	47	61	SS-15	-	-	-	-	-	-	-	-	-	16	A-3 (V)	
		40																
	739.2 ▼	41																
Very loose gray SILT (A-4b), "and" fine sand, trace coarse sand; wet.		42																
		W 43																
		44	1 2 1	4	28	SS-16	-	0	1	37	54	8	NP	NP	NP	20	A-4b (5)	
		45																
		46																
		47																
		48																
		49	1 1 1	3	6	SS-17	-	-	-	-	-	-	-	-	-	24	A-4b (V)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:17

PID: 77370	BR ID:	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 884+22.86, 49.72 RT	START: 7/13/10	END: 7/14/10	PG 3 OF 3	B-142-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 729.4	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense gray GRAVEL WITH SAND (A-1-b), little fine to coarse sand, trace silt; wet.	729.2	52																
		53																
		54	23 30 50/5"	-	29	SS-18	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
	726.3	EOB																

NOTES: SEEPAGE AT 31.0 FEET AND 43.5 FEET; FINAL WATER LEVEL = 42.0 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 7 BAGS BENTONITE CHIPS; 2 BAGS QUIKGROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:17

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-143-0-09 | *Location:* Sta. 884+52.52, 14.53 ft Rt of Ramp N3 BL | *Date Drilled:* 3/9/2009

WATER OBSERVATIONS: Water seepage at: 31.0' Water level at completion: 28.2'

FIELD NOTES:

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	764.8						Asphalt - 20" Base - 12"								
2.7	762.1	24 15 25	16	1		4.5+	Hard gray to grayish brown SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.								
5		14 25 13	18	2		4.5+									
		10 22 25	18	3		4.5+			12	13	---	20	35	20	
		14 21 20	18	4		4.5+									
10		3 4 6	17	5		0.75	@ 11.0'-12.5', medium stiff, moist.		11	11	---	19	38	21	
		4 5 9	18	6		4.0									
15															
16.0	748.8														
		7 12 14	15	7			Medium dense to dense brown COARSE AND FINE SAND (A-3a), some silt, little to some gravel; damp to moist.								
		8 14 20	12	8A 8B					21	9	---	41	--29--		
20		15 19 15	16	9											
		8 15 16	16	10											
25	739.8														

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-143-0-09 | *Location:* Sta. 884+52.52, 14.53 ft Rt of Ramp N3 BL | *Date Drilled:* 3/9/2009

WATER OBSERVATIONS: Water seepage at: 31.0' Water level at completion: 28.2'

FIELD NOTES:

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	739.8						Medium dense brown FINE SAND (A-3), some coarse sand, trace silt; damp to moist.								
		7 11 9	17	11											
		7 10 12	18	12					1	24	---	66	--9--		
30		7 6 8	14	13											
33.5	731.3														
		5 10 17	18	14			Medium dense gray COARSE AND FINE SAND (A-3a), little silt, trace gravel; wet.								
35															
		9 15 12	3	15											
37.5	727.3						Bottom of Boring - 37.5'								
40															
45															
50															

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / J. NELSON | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 885+95.98, 19.45 RT | EXPLORATION ID: B-143-1-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / S. LARIMER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP N3
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 763.1 (MSL) EOB: 80.0 ft. | PAGE: 1 OF 4
START: 6/9/10 END: 6/10/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 64.7 | COORD: 712271.580 N, 1833086.790 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil- 3"	763.1																	
Stiff to very stiff brown SANDY SILT (A-4a), some fine to coarse sand, some gravel, trace organics; damp.	762.8	1	13 22 27	53	17	SS-1	-	-	-	-	-	-	-	-	-	13	A-4a (V)	
		2																
		3																
		4	10 16 12	30	100	SS-2	2.00	-	-	-	-	-	-	-	-	8	A-4a (V)	
		5																
		6																
		7	4 5 7	13	100	SS-3	2.00	25	9	18	35	13	17	13	4	9	A-4a (3)	
		8																
		9	5 5 5	11	89	SS-4	2.00	-	-	-	-	-	-	-	-	11	A-4a (V)	
		10																
	752.1																	
Loose to medium dense gray SILT (A-4b), trace fine to coarse sand, trace clay; moist.		11																
		12	3 5 5	11	83	SS-5	-	-	-	-	-	-	-	-	-	20	A-4b (V)	
		13																
		14	5 4 3	8	50	SS-6	-	4	1	31	59	5	NP	NP	NP	19	A-4b (6)	
		15																
	747.1																	
Dense brown COARSE AND FINE SAND (A-3a), some gravel, little silt; damp.		16																
		17	5 10 19	31	67	SS-7	-	-	-	-	-	-	-	-	-	3	A-3a (V)	
	744.6	18																
Very dense gray GRAVEL WITH SAND (A-1-b), some fine to coarse sand, little to some silt; damp.		19	18 31 27	63	78	SS-8	-	49	22	9	- 20 -		NP	NP	NP	3	A-1-b (0)	
	742.1	20																
Medium dense to dense gray COARSE AND FINE SAND (A-3a), some gravel, trace silt; damp to moist.		21																
		22	14 23 20	46	89	SS-9	-	-	-	-	-	-	-	-	-	4	A-3a (V)	
		23																
		24	3 9 21	32	39	SS-10	-	-	-	-	-	-	-	-	-	13	A-3a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:17

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 885+95.98, 19.45 RT | START: 6/9/10 | END: 6/10/10 | PG 2 OF 4 | B-143-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
	738.1																	
	737.1	W																
Medium dense gray GRAVEL WITH SAND (A-1-b), trace silt; wet.		26																
		27	8 12 9	23	78	SS-11	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
		28																
		29	4 4 9	14	44	SS-12	-	17	57	23	- 3 -		NP	NP	NP	16	A-1-b (0)	
		30																
		31																
		32																
		33																
		34	8 11 15	28	56	SS-13	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
		35																
		36																
		37																
		38																
@ 38.5'-40.0', little fine to coarse sand.		39	7 12 11	25	22	SS-14	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
	721.1	40																
Very dense gray GRAVEL (A-1-a), "and" fine to coarse sand, little silt; wet.		41																
		42																
		43																
		44	32 24 24	52	78	SS-15	-	53	26	10	- 11 -		NP	NP	NP	8	A-1-a (0)	
		45																
		46																
	716.1	47																
Very dense gray COARSE AND FINE SAND (A-3a), some silt, trace gravel; wet.		48																
		49	19 26 38	69	78	SS-16	-	-	-	-	-	-	-	-	-	14	A-3a (V)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:17

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 885+95.98, 19.45 RT | START: 6/9/10 | END: 6/10/10 | PG 3 OF 4 | B-143-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
	711.3																	
Loose gray COARSE AND FINE SAND (A-3a), some silt, trace gravel; wet.	711.1	52																
		53																
		54	0 1 6	8	61	SS-17	-	1	1	64	- 34 -		NP	NP	NP	22	A-3a (0)	
		55																
		56																
	706.1	57																
Very dense gray SILT (A-4b), trace fine to coarse sand, trace gravel; moist.		58																
		59	23 47 50/3"	-	87	SS-18	-	-	-	-	-	-	-	-	-	21	A-4b (V)	
		60																
		61																
		62																
		63																
		64	19 39 50/5"	-	82	SS-19	-	0	0	5	69	26	24	19	5	20	A-4b (8)	
		65																
		66																
	696.1	67																
Very stiff gray CLAY (A-7-6); moist.		68																
		69	9 18 24	45	100	SS-20	3.75	-	-	-	-	-	-	-	-	19	A-7-6 (V)	
		70																
		71																
		72																
		73																
		74	9 17 25	45	100	SS-21	3.50	0	0	0	8	92	56	24	32	25	A-7-6 (19)	
		75																
		76																
		77																
		78																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:18

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 885+95.98, 19.45 RT | START: 6/9/10 | END: 6/10/10 | PG 4 OF 4 | B-143-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
	684.6																	
Very stiff gray CLAY (A-7-6); moist. *(continued)*		79	11 19 23	45	100	SS-22	4.00	-	-	-	-	-	-	-	-	24	A-7-6 (V)	
	683.1	EOB 80																

NOTES: SEEPAGE AT 26.0 FEET; WATER LEVEL PRIOR TO ADDING WATER = 21.9; FINAL WATER LEVEL INCLUDING DRILLING WATER = 78.6 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG BENTONITE CHIPS; 1 BAG QUICKCRETE; 2 BAGS QUIKGROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:18

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PROJECT: I-70/I-71 EAST INTERCHANGE
TYPE: ROADWAY
PID: 77370 BR ID:
START: 6/8/10 END: 6/8/10

DRILLING FIRM / OPERATOR: DLZ / L. BARTLETT
SAMPLING FIRM / LOGGER: DLZ / M. EVENER
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 75 TRUCK
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 1/7/10
ENERGY RATIO (%): 79

STATION / OFFSET: 887+02.48, 5.61 RT
ALIGNMENT: RAMP N1
ELEVATION: 762.0 (MSL) EOB: 12.5 ft.
COORD: 712232.630 N, 1833183.850 E

EXPLORATION ID B-144-1-10

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Asphalt - 19" Base - 5"	762.0																	
	760.0																	
Very dense gray GRAVEL WITH SAND (A-1-b), trace silt; possible road base; moist.	758.5	2	50/5"	-	40	SS-1	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
Dense brown GRAVEL (A-1-a), little fine to coarse sand, little silt; damp.	756.0	4	7 13 12	33	6	SS-2	-	-	-	-	-	-	-	-	-	10	A-1-a (V)	
Medium dense brown COARSE AND FINE SAND (A-3a), some gravel, little silt; damp.	753.5	7	8 12 8	26	56	SS-3	-	23	24	39	-	14 -	NP	NP	NP	12	A-3a (0)	
Stiff brownish gray SILT AND CLAY (A-6a), some fine to coarse sand, little gravel; damp to moist.	751.0	9	1 4 6	13	100	SS-4	1.50	-	-	-	-	-	-	-	-	11	A-6a (V)	
Medium dense brown SANDY SILT (A-4a), some fine to coarse sand, trace gravel; wet.	749.5	12	2 2 9	14	28	SS-5	--	-	-	-	-	-	-	-	-	9	A-4a (V)	
		EOB																

NOTES: NO SEEPAGE OR FINAL WATER LEVELS DETECTED.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 1 BAG BENTONITE CHIPS; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:18

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / L. BARTLETT | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 893+54.07, 34.73 RT | EXPLORATION ID: B-146-1-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP Q3
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 772.1 (MSL) EOB: 44.3 ft.
START: 6/6/10 END: 6/6/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712217.780 N, 1833823.340 E | PAGE 1 OF 2

MATERIAL DESCRIPTION AND NOTES	ELEV. 772.1	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Asphalt - 18" Base - 18"																		
@ 1.5'-3.0', grout-treated subbase.	769.1	2	21 22 10	42	56	SS-1	-	-	-	-	-	-	-	-	-	9	A-2-6 (V)	
Hard gray SILT AND CLAY (A-6a), some fine to coarse sand, little gravel; damp.	766.1	4	3 11 29	53	78	SS-2	4.5+	-	-	-	-	-	-	-	-	10	A-6a (V)	
Very dense gray GRAVEL (A-1-a), little fine to coarse sand, trace silt; damp.		7	6 36 33	91	28	SS-3	-	75	11	6	-	8 -	NP	NP	NP	3	A-1-a (0)	
@ 8.5'-10.0', drove on gravel.	761.1	9	14 23 24	62	6	SS-4	-	-	-	-	-	-	-	-	-	-	A-1-a (V)	
Dense to very dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, little to some silt; damp.		12	14 15 13	37	67	SS-5	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
		14	26 46 23	91	83	SS-6	-	46	28	13	-	13 -	NP	NP	NP	3	A-1-b (0)	
		17	28 46 50/5"	-	71	SS-7	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		19	20 39 42	107	89	SS-8	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
	751.1																	
Very dense brownish gray COARSE AND FINE SAND (A-3a), some silt, trace gravel; damp.		22	8 32 36	90	100	SS-9	-	6	14	59	-	21 -	NP	NP	NP	4	A-3a (0)	
	747.1	24	20 31 41	95	56	SS-10	-	-	-	-	-	-	-	-	-	4	A-3a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:18

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 893+54.07, 34.73 RT | START: 6/6/10 | END: 6/6/10 | PG 2 OF 2 | B-146-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 747.1	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, little silt; damp.		27	24 39 49	116	56	SS-11	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
@ 28.5', becomes wet.		W 29	18 24 26	66	67	SS-12	-	-	-	-	-	-	-	-	-	13	A-1-b (V)	
@ 33.5', 3.0 feet sand heave; washed out with tricone.	735.1	34	13 30 42	95	94	SS-13	-	41	29	19	-	11 -	NP	NP	NP	11	A-1-b (0)	
Hard gray SILT AND CLAY (A-6a), little fine to coarse sand, little gravel; damp.		39	20 33 26	78	17	SS-14	4.5+	-	-	-	-	-	-	-	-	12	A-6a (V)	
	730.1																	
Very dense gray SILT (A-4b), little fine sand; wet.	727.8	EOB 44	38 50/4"	-	100	SS-15	-	-	-	-	-	-	-	-	-	17	A-4b (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:18

NOTES: SEEPAGE AT 28.5 FEET AND 41.0 FEET; WATER LEVEL PRIOR TO ADDING WATER = 28.6 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 26.9 FEET.
ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 2.5 BAGS BENTONITE CHIPS; 1 BAG QUICKCRETE; 3 BAGS QUIKGROUT

PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / L. BARTLETT | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 894+82.7, 24.11 RT | EXPLORATION ID B-146-2-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP Q3
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 773.8 (MSL) EOB: 35.0 ft. | PAGE 1 OF 2
START: 6/7/10 END: 6/7/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712193.880 N, 1833953.770 E

MATERIAL DESCRIPTION AND NOTES	ELEV. 773.8	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Asphalt - 19" Base - 5"	771.8	1																
Medium dense to dense gray GRAVEL WITH SAND (A-1-b), little to some fine to coarse sand, trace silt; damp.		2	8 18 14	42	44	SS-1	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
		3																
		4	8 8 7	20	44	SS-2	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
	767.8	5																
Stiff to very stiff brownish gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp to moist.		6	3 3 4	9	50	SS-3	3.50	16	12	18	32	22	21	14	7	11	A-4a (V)	
		7																
		8																
		9	6 6 7	17	67	SS-4	1.50	-	-	-	-	-	-	-	-	14	A-4a (V)	
		10																
		11																
		12	4 8 10	24	67	SS-5	1.00	-	-	-	-	-	-	-	-	14	A-4a (V)	
	760.3	13																
Dense to very dense brown GRAVEL WITH SAND (A-1-b), trace to little silt; damp.		14	13 14 16	40	17	SS-6	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
		15																
		16																
		17	19 23 22	59	72	SS-7	-	38	29	14	-	19 -	NP	NP	NP	6	A-1-b (0)	
		18																
		19	19 24 22	61	33	SS-8	-	30	27	24	-	19 -	NP	NP	NP	7	A-1-b (0)	
		20																
		21	17 50/4"	-	30	SS-9	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
		22																
		23																
		24	20 45 27	95	33	SS-10	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:18

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 894+82.7, 24.11 RT | START: 6/7/10 | END: 6/7/10 | PG 2 OF 2 | B-146-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 748.8	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Dense to very dense brown GRAVEL WITH SAND (A-1-b), trace to little silt; damp. *(continued)*		26																
		27	12 28 44	95	33	SS-11	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
		28																
@ 28.5', becomes wet.	W	29	17 21 19	53	100	SS-12	-	36	38	19	-	7 -	NP	NP	NP	9	A-1-b (0)	
		30																
		31																
		32																
		33																
		34	4 11 21	42	89	SS-13	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
	738.8 EOB	35																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:18

NOTES: SEEPAGE AT 28.5 FEET; FINAL WATER LEVEL = 29.7 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 2.5 BAG BENTONITE CHIPS; 3 BAGS QUICKCRETE

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DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | Project: FRA-70-8.93 | Job No. 0221-1004.01

LOG OF: Boring B-148-0-09 | Location: Sta. 898+98.90, 2.77 ft Rt of Mooberry BL | Date Drilled: 3/25/2009

WATER OBSERVATIONS: Water seepage at: 28.5' Water level at completion: None

FIELD NOTES:

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP
	786.9														
1.0	785.9						Asphalt - 5" Concrete - 7"								
		4 9 16	11	1			Medium dense to dense brown GRAVEL WITH SAND (A-1-b), some to "and" fine to coarse sand, little to some silt; damp.		46	25	---	9	--20--		
		9 12 13	13	2					41	26	---	10	--23--		
5		6 7 12	8	3					46	27	---	10	--17--		
		5 8 6	8	4											
10		21 23 14	0	5											
13.5	773.4														
		9 13 16	18	6		4.5+	Hard grayish brown SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.		8	12	---	19	38	23	
15		9 12 12	18	7		4.5+			13	15	---	20	37	15	
18.0	768.9	7 9 16	18	8		4.5+			28	15	---	18	26	13	
		14 25 31	14	9			Very dense brown GRAVEL WITH SAND (A-1-b), trace to little silt; damp.		37	39	---	13	--11--		57
20		14 31 31	15	10											63
		17 24 27	18	11					44	30	---	17	--9--		52
23.5	763.4														
25	761.9	14 16 19	16	12			Dense gray FINE SAND (A-3); damp.	F.S.							

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | Project: FRA-70-8.93 | Job No. 0221-1004.01

LOG OF: Boring B-148-0-09 | Location: Sta. 898+98.90, 2.77 ft Rt of Mooberry BL | Date Drilled: 3/25/2009

WATER OBSERVATIONS: Water seepage at: 28.5' Water level at completion: None

FIELD NOTES:

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP
	761.9														
		11 20 23	16	13			Dense gray COARSE AND FINE SAND (A-3a), little gravel, trace silt; moist.								
28.5	758.4														
		13 18 23	18	14			Dense gray FINE SAND (A-3), some coarse sand; wet.		0	22	---	68	--10--		
30		12 16 22	17	15				F.S.							
33.5	753.4														
34.2	752.7	7 10 14	18	16A 16B		4.5+	Medium dense gray COARSE AND FINE SAND (A-3a), trace gravel, trace silt; wet.								
35							Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.								
		10 15 20	12	17		4.5+			7	11	---	23	38	21	
40															
		10 16 20	18	18		4.5+									
45															
50	736.9	9 17 25	18	19		4.5+									

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DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-148-0-09 | *Location:* Sta. 898+98.90, 2.77 ft Rt of Mooberry BL | *Date Drilled:* 3/25/2009

WATER OBSERVATIONS:
Water seepage at: 28.5'
Water level at completion: None
FIELD NOTES:

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL ⊢ Blows per foot - ○ / Non-Plastic - NP ⊣ LL (10 20 30 40)
	736.9						Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.								
55.0 55	731.9	13 15 22	18	20		4.5+									
							Bottom of Boring - 55.0'								
60															
65															
70															
75															

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / J. POILLUCCI | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 900+92.74, 23.36 LT | EXPLORATION ID B-148-1-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / D. WILLIARD | HAMMER: CME AUTOMATIC | ALIGNMENT: MOOBERRY
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 788.3 (MSL) EOB: 55.0 ft. | PAGE 1 OF 3
START: 6/8/10 END: 6/8/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 64.7 | COORD: 712127.110 N, 1834582.770 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Asphalt - 3" Concrete - 9" Base - 3"	788.3 / 787.0	1																
Hard brown SILT AND CLAY (A-6a), little fine to coarse sand, trace gravel; slightly organic; damp.	784.8	2	2 3 4	8	72	SS-1	4.5+	-	-	-	-	-	-	-	-	18	A-6a (V)	
Dense brown GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, little silt; damp.	779.8	4	26 14 13	29	22	SS-2	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		7	10 12 13	27	28	SS-3	1.50	-	-	-	-	-	-	-	-	9	A-1-b (V)	
Very dense brown GRAVEL (A-1-a), some fine to coarse sand, little silt; damp.	774.8	9	28 47 50	105	89	SS-4	-	52	22	12	14	-	NP	NP	NP	4	A-1-a (0)	
		12	18 36 38	80	83	SS-5	-	-	-	-	-	-	-	-	-	5	A-1-a (V)	
Very stiff to hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.		14	11 13 28	44	100	SS-6	4.5+	9	13	19	35	24	25	16	9	11	A-4a (5)	
		17	17 18 17	38	100	SS-7	2.75	-	-	-	-	-	-	-	-	10	A-4a (V)	
		19	7 15 15	32	94	SS-8	4.00	-	-	-	-	-	-	-	-	10	A-4a (V)	
		22	10 17 20	40	100	SS-9	4.5+	9	12	24	35	20	21	13	8	8	A-4a (4)	
		24	12 15 17	35	100	SS-10	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:54

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 900+92.74, 23.36 LT | START: 6/8/10 | END: 6/8/10 | PG 2 OF 3 | B-148-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
	763.3 / 762.3	26																
Very dense gray GRAVEL WITH SAND (A-1-b), little silt; damp.		26	18 50/5"	-	82	SS-11	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
@ 28.5', becomes wet.		W 29	15 25 28	57	83	SS-12	-	38	33	15	14	-	NP	NP	NP	10	A-1-b (0)	
		32	8 25 29	58	78	SS-13	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		34	13 23 28	55	56	SS-14	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
		37	15 27 26	57	72	SS-15	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
		39	16 28 33	66	28	SS-16	-	49	25	16	10	-	NP	NP	NP	9	A-1-b (0)	
		44	19 13 18	33	56	SS-17	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
Dense gray FINE SAND (A-3); wet.	741.3	49	10 15 17	35	83	SS-18	-	-	-	-	-	-	-	-	-	18	A-1-b (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:54

PID: 77370	BR ID:	PROJECT: I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 900+92.74, 23.36 LT	START: 6/8/10	END: 6/8/10	PG 3 OF 3	B-148-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 736.5	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Hard gray SILT AND CLAY (A-6a), little fine to coarse sand, trace gravel; damp.	736.3	52																
		53																
		54	13 17 23	43	72	SS-19	4.5+	-	-	-	-	-	-	-	-	10	A-6a (V)	
	733.3	EOB 55																

NOTES: SEEPAGE AT 28.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 28.1 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER 25.5 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 2 BAGS BENTONITE CHIPS; 2 BAGS QUICKCRETE; 1 BAG QUIKGROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:54

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / J. NELSON | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 902+84.89, 78.19 RT | EXPLORATION ID B-149-1-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / S. LARIMER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP Q3 | PAGE 1 OF 3
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 788.7 (MSL) EOB: 60.0 ft.
START: 6/7/10 END: 6/7/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 64.7 | COORD: 712074.570 N, 1834748.700 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Asphalt - 4.5" Concrete - 7.5" Base - 4"	788.7																	
	787.4																	
Stiff to very stiff brown SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp to moist.		1	2 2 4	6	83	SS-1	2.50	-	-	-	-	-	-	-	-	24	A-4a (V)	
		2																
		3	3 6 6	13	89	SS-2	2.00	-	-	-	-	-	-	-	-	19	A-4a (V)	
		4																
		5																
@ 6.5'-6.6', sand seam.		6	5 4 5	10	100	SS-3	1.50	11	13	18	36	22	22	15	7	15	A-4a (5)	
		7																
		8																
		9	3 5 7	13	100	SS-4	1.50	-	-	-	-	-	-	-	-	13	A-4a (V)	
		10																
@ 11.0'-15.0', hard.		11																
		12	6 9 11	22	100	SS-5	4.5+	-	-	-	-	-	-	-	-	11	A-4a (V)	
		13																
		14	9 11 12	25	89	SS-6	4.5+	7	11	19	38	25	24	15	9	12	A-4a (6)	
	772.7	15																
Very stiff to hard gray SILTY CLAY (A-6b), some fine to coarse sand, little gravel; moist.		16																
		17	9 11 13	26	100	SS-7	4.5+	-	-	-	-	-	-	-	-	14	A-6b (V)	
		18																
		19	3 7 9	17	83	SS-8	2.50	-	-	-	-	-	-	-	-	10	A-6b (V)	
	767.7	20																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp.		21 W																
		22	20 19 19	41	100	SS-9	4.50	-	-	-	-	-	-	-	-	9	A-4a (V)	
		23																
		24	10 14 20	37	100	SS-10	4.5+	6	14	26	42	12	21	13	8	9	A-4a (4)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:55

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 902+84.89, 78.19 RT | START: 6/7/10 | END: 6/7/10 | PG 2 OF 3 | B-149-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp. *(continued)*	763.7																	
		26																
		27	15 22 25	51	100	SS-11	4.5+	-	-	-	-	-	-	-	-	-	A-4a (V)	
		28																
		29	9 14 20	37	100	SS-12	4.5+	8	10	22	36	24	22	14	8	9	A-4a (5)	
		30																
@ 31.0', drove on large gravel; no recovery.		31	48 50/4"	-	0	SS-13	-	-	-	-	-	-	-	-	-	-		
	755.2	32																
Hard gray SILTY CLAY (A-6b), some fine to coarse sand, trace gravel; damp.		33																
		34	11 15 22	40	100	SS-14	4.5+	-	-	-	-	-	-	-	-	10	A-6b (V)	
	752.7	35																
Hard gray SILT AND CLAY (A-6a), some to "and" fine to coarse sand, little gravel; damp.		36																
		37	15 25 48	79	94	SS-15	4.5+	-	-	-	-	-	-	-	-	8	A-6a (V)	
	750.2	38 W																
Very dense gray GRAVEL WITH SAND (A-1-b), trace silt; wet.		39	3 17 36	57	72	SS-16	-	48	30	14	- 8 -		NP	NP	NP	9	A-1-b (0)	
		40																
		41																
		42	10 25 49	80	67	SS-17	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
		43																
@ 43.5'-50.0', little to some silt.		44	21 30 36	71	78	SS-18	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
		45																
		46																
		47																
		48																
		49	27 45 50	102	83	SS-19	-	41	26	13	- 20 -		NP	NP	NP	9	A-1-b (0)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:55

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PID: 77370	BR ID:	PROJECT: I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 902+84.89, 78.19 RT	START: 6/7/10	END: 6/7/10	PG 3 OF 3	B-149-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 736.9	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense gray GRAVEL WITH SAND (A-1-b), little to some silt; wet.	736.7	52																
		53																
		54	25 43 49	99	89	SS-20	-	-	-	-	-	-	-	-	-	13	A-1-b (V)	
		55																
	731.7	56																
Hard gray SILTY CLAY (A-6b), some fine to coarse sand, little gravel; damp.		57																
		58																
		59	17 30 38	73	100	SS-21	4.5+	-	-	-	-	-	-	-	-	11	A-6b (V)	
	728.7	EOB 60																

NOTES: SEEPAGE AT 21.6 FEET AND 38.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 26.7 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 49.6 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG BENTONITE CHIPS; 1 BAG QUICKCRETE; 1 BAG QUIKGROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:55

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 750X ATV | STATION / OFFSET: 885+06.32, 41.83 RT | EXPLORATION ID B-151-1-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP Q3
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 789.3 (MSL) EOB: 89.4 ft.
START: 7/28/10 END: 7/28/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 58.5 | COORD: 712782.870 N, 1833181.860 E | PAGE 1 OF 4

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Gravel - 2"	789.1																	
FILL: Dense to very dense grayish brown GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace to little silt; contains glass fragments; damp.	789.3	1	12 15 18	32	78	SS-1	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
		2																
		3																
		4	11 14 7	20	17	SS-2	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
		5																
		6	50/3"	-	33	SS-3	-	-	-	-	-	-	-	-	-	-		
		7																
	780.8	8																
Soft to medium stiff dark gray to gray CLAY (A-7-6), little to some fine to coarse sand, trace gravel; damp to moist.		9	1 2 3	5	89	SS-4	0.50	0	3	11	50	36	41	28	13	38	A-7-6 (9)	
@ 8.5'-15.0', slightly organic.		10																
		11																
		12	1 3 2	5	17	SS-5	1.00	-	-	-	-	-	-	-	-	37	A-7-6 (V)	
		13																
		14	3 14 19	32	28	SS-6	0.25	-	-	-	-	-	-	-	-	29	A-7-6 (V)	
	773.3	15																
Stiff brown SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		16	6 9 6	15	33	SS-7	0.50	13	12	19	34	22	24	15	9	13	A-4a (4)	
@ 16.0'-17.5', soft to medium stiff.		17																
		18																
		19	4 8 9	17	17	SS-8	1.50	-	-	-	-	-	-	-	-	13	A-4a (V)	
		20																
		21																
		22	14 12 8	20	11	SS-9	1.25	-	-	-	-	-	-	-	-	12	A-4a (V)	
		23																
	764.3	24	7 14 16	29	6	SS-10	--	-	-	-	-	-	-	-	-	10	A-4a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:55

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 885+06.32, 41.83 RT | START: 7/28/10 | END: 7/28/10 | PG 2 OF 4 | B-151-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very stiff gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.	764.3	26	9 8 10	18	17	SS-11	4.00	15	11	18	35	21	21	13	8	10	A-4a (4)	
		27																
		28																
		29	5 6 12	18	100	SS-12	3.00	-	-	-	-	-	-	-	-	11	A-4a (V)	
		30																
	757.3	31																
Medium dense gray COARSE AND FINE SAND (A-3a), little silt, trace gravel; moist.		32																
		33																
		34	14 14 12	25	100	SS-13	-	4	9	75	- 12 -		NP	NP	NP	8	A-3a (0)	
		35																
	752.3	36																
Medium dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace to little silt; contains clay stringers; wet.		37																
		38	W															
		39	4 8 10	18	67	SS-14	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
		40																
	747.3	41																
Loose gray SANDY SILT (A-4a), trace gravel; wet.		42																
		43																
		44	2 4 5	9	56	SS-15	-	8	8	40	- 44 -		NP	NP	NP	17	A-4a (2)	
		45																
	742.3	46																
Dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, little silt; wet.		47																
		48																
@ 48.5', 1.5 feet sand heave; washed out with tricone.		49	10 15 19	33	50	SS-16	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:55

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 885+06.32, 41.83 RT | START: 7/28/10 | END: 7/28/10 | PG 3 OF 4 | B-151-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Medium dense gray GRAVEL (A-1-a), trace fine to coarse sand, trace silt; wet.	737.3	52																
		53																
		54	17 11 16	26	61	SS-17	-	88	6	3	-	3 -	NP	NP	NP	10	A-1-a (0)	
		55																
	732.3	56																
Dense to very dense gray COARSE AND FINE SAND (A-3a), trace to little silt; wet.		57																
		58																
		59	5 15 18	32	100	SS-18	-	-	-	-	-	-	-	-	-	19	A-3a (V)	
		60																
		61																
		62																
		63																
		64	50/5"	-	40	SS-19	-	-	-	-	-	-	-	-	-	7	A-3a (V)	
	722.3	65																
Very dense gray SILT (A-4b), some fine to coarse sand, little clay, trace gravel; wet.		66																
		67																
		68																
		69	37 47 50/5"	-	100	SS-20	-	4	5	17	59	15	NP	NP	NP	18	A-4b (8)	
		70																
		71																
	717.3	72																
Hard gray SILTY CLAY (A-6b), some fine to coarse sand, trace gravel; damp.		73																
		74	41 45 48	91	67	SS-21	4.5+	-	-	-	-	-	-	-	-	11	A-6b (V)	
		75																
		76																
	712.3	77																
Very dense gray SILT (A-4b), little fine to coarse sand, little clay; wet.		78																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:55

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 885+06.32, 41.83 RT | START: 7/28/10 | END: 7/28/10 | PG 4 OF 4 | B-151-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense gray SILT (A-4b), little fine to coarse sand, little clay; wet. *(continued)*	710.7	79	50/5"	-	100	SS-22	-	0	1	15	71	13	NP	NP	NP	14	A-4b (8)	
		80																
		81																
	707.3	82																
Hard gray SILTY CLAY (A-6b), some fine to coarse sand, little gravel; damp.		83																
		84	50/3"	-	100	SS-23	4.5+	-	-	-	-	-	-	-	-	10	A-6b (V)	
		85																
		86																
	702.3	87																
Very dense gray SILT (A-4b), little fine sand, little clay; wet.		88																
	699.9	89 EOB	36 50/5"	-	100	SS-24	-	-	-	-	-	-	-	-	-	22	A-4b (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:55

NOTES: SEEPAGE AT 38.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 43.5 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 55.1 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 3 BAGS BENTONITE CHIPS; SOIL CUTTINGS

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 886+77.1, 2.57 RT | EXPLORATION ID B-151-2-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP P2
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 752.2 (MSL) EOB: 90.0 ft. | PAGE 1 OF 4
START: 6/23/10 END: 6/23/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712885.520 N, 1833274.820 E

MATERIAL DESCRIPTION AND NOTES	ELEV. 752.2	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Asphalt- 18" Base-24"		1 2 3	23 26 17	57	67	SS-1	-	-	-	-	-	-	-	-	-	5	A-1-a (V)	
Stiff brown SANDY SILT (A-4a), "and" fine to coarse sand, trace gravel; moist.	748.7	4 5	8 14 21	46	83	SS-2	1.75	-	-	-	-	-	-	-	-	9	A-4a (V)	
@ 6.0', drove on gravel; low recovery.		6 7	16 10 5	20	11	SS-3	-	-	-	-	-	-	-	-	-	-		
Dense brown GRAVEL (A-1-a), some to "and" fine to coarse sand, trace silt; wet.	743.7 W	8 9 10	2 11 16	36	22	SS-4	-	57	22	12	- 9 -		NP	NP	NP	10	A-1-a (0)	
@ 11.0', becomes very dense.		11 12 13	11 22 29	67	100	SS-5	-	-	-	-	-	-	-	-	-	11	A-1-a (V)	
@ 13.5', 1.5 feet sand heave; washed out with tricone.		14 15 16	21 29 20	65	56	SS-6	-	52	25	13	- 10 -		NP	NP	NP	10	A-1-a (0)	
		17 18	14 44 40	111	11	SS-7	-	-	-	-	-	-	-	-	-	12	A-1-a (V)	
Very dense brown COARSE AND FINE SAND (A-3a), little gravel, trace silt; wet.	733.7	19 20	5 19 23	55	56	SS-8	-	-	-	-	-	-	-	-	-	13	A-3a (V)	
Very dense grayish brown GRAVEL (A-1-a), some to "and" fine to coarse sand, trace to little silt; wet.	731.2	21 22 23 24	25 26 26	68	83	SS-9	-	52	27	11	- 10 -		NP	NP	NP	9	A-1-a (0)	
			14 28 29	75	83	SS-10	-	-	-	-	-	-	-	-	-	10	A-1-a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:55

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 886+77.1, 2.57 RT | START: 6/23/10 | END: 6/23/10 | PG 2 OF 4 | B-151-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 727.2	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
	726.2	26																
Very dense brownish gray GRAVEL WITH SAND (A-1-b), trace silt; wet.	723.7	27 28	22 22 18	53	94	SS-11	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
Hard gray SANDY SILT (A-4a), some to "and" fine to coarse sand, trace to little gravel; moist.		29 30 31 32 33	28 19 20	51	78	SS-12	4.5+	7	9	23	36	25	22	12	10	13	A-4a (5)	
		34 35 36 37 38	22 36 38	97	100	SS-13	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
Very dense gray SILT (A-4b), "and" fine sand, trace coarse sand; wet.	713.5 W	39 40 41 42	36 50/4"	-	100	SS-14	1.50 -	-	-	-	-	-	-	-	-	12 20	A-4a (V) A-4b (5)	
Very stiff to hard gray CLAY (A-7-6), trace fine to coarse sand, trace gravel; damp to moist.	710.2	43 44 45 46 47 48	34 33 16	65	56	SS-15	4.5+	-	-	-	-	-	-	-	-	11	A-7-6 (V)	
		49 50 51	11 15 18	43	100	SS-16	3.50	0	1	0	28	71	46	22	24	24	A-7-6 (15)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:55

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PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 886+77.1, 2.57 RT | START: 6/23/10 | END: 6/23/10 | PG 3 OF 4 | B-151-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very stiff to hard gray CLAY (A-7-6), trace fine to coarse sand, trace gravel; damp to moist. *(continued)*	700.4	52																
		53																
		54	8 11 15	34	100	SS-17	4.5+	-	-	-	-	-	-	-	-	25	A-7-6 (V)	
		55																
		56																
		57																
		58																
		59	7 6 12	24	100	SS-18	4.5+	0	0	0	17	83	54	23	31	28	A-7-6 (19)	
		60																
		61																
		62																
		63																
		64	5 8 12	26	100	SS-19	4.5+	-	-	-	-	-	-	-	-	24	A-7-6 (V)	
		65																
		66																
		67																
		68																
		69	8 17 19	47	100	SS-20	4.5+	0	0	0	24	76	44	23	21	21	A-7-6 (13)	
		70																
		71																
		72																
		73																
		74	8 12 16	37	100	SS-21	2.00	-	-	-	-	-	-	-	-	24	A-7-6 (V)	
@ 73.5'-75.0', moist.		75																
		76																
		77																
	673.7	78																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:55

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 886+77.1, 2.57 RT | START: 6/23/10 | END: 6/23/10 | PG 4 OF 4 | B-151-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very stiff gray CLAY (A-7-6), trace to little fine sand; moist. *(continued)*	673.7	79	7 11 12	30	100	SS-22	3.50	0	0	0	30	70	48	21	27	24	A-7-6 (16)	
		80																
		81																
		82																
		83																
		84	6 10 11	28	100	SS-23	3.50	-	-	-	-	-	-	-	-	26	A-7-6 (V)	
		85																
		86																
		87																
	665.2	88																
Very stiff yellowish gray SILTY CLAY (A-6b), trace fine sand, trace gravel; contains shale and rock fragments; damp.		89	13 16 19	46	100	SS-24	3.50	-	-	-	-	-	-	-	-	10	A-6b (V)	
	662.2	EOB 90																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:55

NOTES: SEEPAGE AT 8.5 FEET AND 38.7 FEET; WATER LEVEL PRIOR TO ADDING WATER = 8.3 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 88.9 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 6 BAGS BENTONITE CHIPS; 2 BAGS QUIKGROUT

PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / J. NELSON | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 797+13.09, 2.24 LT | EXPLORATION ID B-151-3-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / S. LARIMER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP N4
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 750.2 (MSL) EOB: 70.0 ft.
START: 6/22/10 END: 6/22/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 64.7 | COORD: 712988.680 N, 1833214.650 E | PAGE 1 OF 3

MATERIAL DESCRIPTION AND NOTES	ELEV. 750.2	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Asphalt- 20" Base- 6"	748.0	1																
FILL: Medium dense to dense brown COARSE AND FINE SAND (A-3a), some gravel, trace to little silt; contains brick fragments; damp.	744.2	2	11 24 8	35	72	SS-1	-	-	-	-	-	-	-	-	-	7	A-3a (V)	
		3	12 12 12	26	78	SS-2	-	-	-	-	-	-	-	-	-	8	A-3a (V)	
		4																
		5																
Dense brown FINE SAND (A-3), little coarse sand, little gravel, trace silt; wet.		6 W	9 13 17	32	72	SS-3	-	11	13	67	- 9 -		NP	NP	NP	19	A-3 (0)	
@ 8.5'-10.0', 1.3 feet sand heave; washed out with tricone.	739.2	7																
		8																
		9	11 20 18	41	89	SS-4	-	-	-	-	-	-	-	-	-	12	A-3 (V)	
		10																
Dense to very dense brown GRAVEL WITH SAND (A-1-b), trace silt; wet.		11																
		12	17 22 21	46	83	SS-5	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
@ 13.5'-20.0', 0.6 to 1.5 feet sand heave; washed out with tricone.		13																
		14	14 20 29	53	83	SS-6	-	35	30	26	- 9 -		NP	NP	NP	12	A-1-b (0)	
		15																
		16																
		17	22 23 33	60	94	SS-7	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		18																
		19	20 27 23	54	89	SS-8	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
	729.2	20																
Very dense gray GRAVEL (A-1-a), "and" fine to coarse sand, trace silt; wet.		21																
		22	26 36 31	72	67	SS-9	-	56	28	10	- 6 -		NP	NP	NP	10	A-1-a (0)	
@ 22.5'-25.0', 1.8 to 2.0 feet sand heave; washed out with tricone.		23																
		24	22 25 26	55	78	SS-10	-	-	-	-	-	-	-	-	-	8	A-1-a (V)	
	725.2																	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:55

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 797+13.09, 2.24 LT | START: 6/22/10 | END: 6/22/10 | PG 2 OF 3 | B-151-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 725.2	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense gray GRAVEL WITH SAND (A-1-b), trace silt; wet.		26																
		27	18 25 22	51	89	SS-11	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
@ 27.5'-30.0', 0.5 to 2.7 feet sand heave; washed out with tricone.		28																
		29	16 26 29	59	72	SS-12	-	43	35	15	- 7 -		NP	NP	NP	11	A-1-b (0)	
	718.2	30																
Hard gray SILTY CLAY (A-6b), trace fine to coarse sand; moist.		31																
		32																
		33																
		34	21 33 50	90	83	SS-13	4.5+	-	-	-	-	-	-	-	-	13	A-6b (V)	
	713.2	35																
Very dense gray COARSE AND FINE SAND (A-3a), some silt; wet.		36																
		37																
		38 W																
		39	39 33 42	81	100	SS-14	-	0	0	65	- 35 -		NP	NP	NP	19	A-3a (0)	
	708.2	40																
Very dense gray SANDY SILT (A-4a), trace clay; moist.		41																
		42																
		43																
		44	34 50/5"	-	82	SS-15	-	-	-	-	-	-	-	-	-	18	A-4a (V)	
		45																
		46																
		47																
		48																
		49	23 23 50	79	100	SS-16	-	0	1	49	45	5	NP	NP	NP	19	A-4a (3)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:55

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PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 797+13.09, 2.24 LT | START: 6/22/10 | END: 6/22/10 | PG 3 OF 3 | B-151-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense gray SANDY SILT (A-4a), trace clay; moist. *(continued)*	698.4	52																
		53																
	696.2	54	11 20 27	51	100	SS-17	-	-	-	-	-	-	-	-	-	24	A-4a (V)	
Very stiff to hard gray CLAY (A-7-6), trace fine to coarse sand; moist.		54					4.50	-	-	-	-	-	-	-	-	20	A-7-6 (V)	
		55																
		56																
		57																
		58																
		59	7 15 19	37	100	SS-18	4.25	0	0	2	19	79	49	23	26	25	A-7-6 (16)	
		60																
		61																
		62																
		63																
		64	6 13 19	35	100	SS-19	3.75	-	-	-	-	-	-	-	-	28	A-7-6 (V)	
		65																
		66																
		67																
		68																
		69	12 20 31	55	100	SS-20	4.25	-	-	-	-	-	-	-	-	23	A-7-6 (V)	
	680.2	EOB 70																

NOTES: SEEPAGE AT 6.0 AND 38.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 5.0; NO FINAL WATER LEVEL REPORTED.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 4 BAGS BENTONITE CHIPS; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:55

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 885+48.06, 22.69 LT | EXPLORATION ID B-151-4-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP P4
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 782.7 (MSL) EOB: 70.0 ft. | PAGE 1 OF 3
START: 5/27/10 END: 6/1/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 713057.030 N, 1833326.420 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Asphalt - 4" Concrete - 9"	781.6	1																
FILL: Stiff to very stiff brown SILT AND CLAY (A-6a), some to "and" fine to coarse sand, trace gravel; contains brick and rock fragments; damp to moist.		2	4 5 8	17	56	SS-1	2.00	-	-	-	-	-	-	-	-	9	A-6a (V)	
		3																
		4	5 4 3	9	0	SS-2	--	-	-	-	-	-	-	-	-	-		
	777.2	5																
FILL: Medium dense brown GRAVEL WITH SAND AND SILT (A-2-4); contains brick and rock fragments, slight organic odor; damp to moist.		6																
		7	2 3 12	20	67	SS-3	-	32	21	19	15	13	25	15	10	14	A-2-4 (0)	
		8																
@8.5'-10.0', void, possible abandoned utilities.		9	0 0 0	0	0	SS-4	-	-	-	-	-	-	-	-	-	-		
		10																
		11	11 11 6	22	17	SS-5	-	-	-	-	-	-	-	-	-	16	A-2-4 (V)	
	769.7	12																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.		13																
		14	11 23 26	65	100	SS-6	4.5+	-	-	-	-	-	-	-	-	7	A-4a (V)	
		15																
		16	7 20 26	61	89	SS-7	4.5+	4	10	22	46	18	20	13	7	9	A-4a (6)	
	764.7	17																
Very dense brown and gray GRAVEL WITH SAND (A-1-b), trace to little silt; damp.		18																
		19	10 42 50/5"	-	71	SS-8	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
		20																
		21	23 40 38	103	89	SS-9	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		22																
		23																
		24	23 23 37	79	83	SS-10	-	22	32	33	-	13 -	NP	NP	NP	5	A-1-b (0)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:55

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 885+48.06, 22.69 LT | START: 5/27/10 | END: 6/1/10 | PG 2 OF 3 | B-151-4-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense brown and gray GRAVEL WITH SAND (A-1-b), trace to little silt; damp. *(continued)*	757.7	26																
		27	28 32 48	105	100	SS-11	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
		28																
		29	23 35 40	99	100	SS-12	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		30																
		31																
		32																
		33																
		34	40 50/5"	-	100	SS-13	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		35																
		36																
		37	W															
		38																
@38.5'-45.0', gray, wet.		39	19 25 34	78	100	SS-14	-	26	41	23	-	10 -	NP	NP	NP	12	A-1-b (0)	
		40																
		41																
		42																
		43																
		44	17 38 49	115	100	SS-15	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		45																
		46																
	735.7	47																
Very dense gray GRAVEL (A-1-a), some to "and" fine to coarse sand, trace silt; wet.		48																
@48.5', 1.5 feet sand heave; washed out with tricone.		49	30 37 34	93	67	SS-16	-	56	27	10	-	7 -	NP	NP	NP	9	A-1-a (0)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:55

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 885+48.06, 22.69 LT | START: 5/27/10 | END: 6/1/10 | PG 3 OF 3 | B-151-4-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense gray GRAVEL (A-1-a), some to "and" fine to coarse sand, trace silt; wet. *(continued)*	730.9	52																
		53																
		54	23 30 28	76	56	SS-17	-	-	-	-	-	-	-	-	-	11	A-1-a (V)	
		55																
		56																
	725.7	57																
Very dense gray GRAVEL WITH SAND (A-1-b), trace silt; wet.		58																
		59	28 36 17	70	33	SS-18	-	42	34	16	-	8 -	NP	NP	NP	11	A-1-b (0)	
	720.7	60																
Hard gray SILTY CLAY (A-6b), some fine to coarse sand, trace gravel; moist.		61																
		62																
		63																
		64	18 18 21	51	44	SS-19	4.5+	-	-	-	-	-	-	-	-	12	A-6b (V)	
	715.7	65																
Very dense gray SANDY SILT (A-4a), "and" fine to coarse sand, trace gravel; moist.		66																
		67																
		68																
		69	32 33 35	90	61	SS-20	-	-	-	-	-	-	-	-	-	10	A-4a (V)	
	712.7	EOB 70																

NOTES: SEEPAGE AT 37.0 FEET; WATER LEVEL PRIOR TO ADDING WATER = 36.6 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 41.8 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 28 BAGS BENTONITE CHIPS; 10 BAGS QUIKCRETE; 4 BAGS QUIKGROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:55

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 750X ATV | STATION / OFFSET: 882+53.61, 26.97 LT | EXPLORATION ID B-152-1-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP P4
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 767.8 (MSL) EOB: 70.0 ft. | PAGE 1 OF 3
START: 7/29/10 END: 7/29/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 58.5 | COORD: 713329.730 N, 1833234.830 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Topsoil- 3"	767.5																	
POSSIBLE FILL: Hard gray SILTY CLAY (A-6b), some fine to coarse sand, some gravel; damp.		1	7 2 7	9	78	SS-1	4.5+	-	-	-	-	-	-	-	-	9	A-6b (V)	
@ 3.5', low recovery; drove on gravel.		4	7 6 7	13	6	SS-2	-	-	-	-	-	-	-	-	-	-		
	761.8	6	16 29 28	56	78	SS-3	-	33	38	20	- 9 -		NP	NP	NP	3	A-1-b (0)	
Dense to very dense brown GRAVEL WITH SAND (A-1-b), trace silt; damp.		9	15 31 28	58	100	SS-4	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		12	23 28 24	51	100	SS-5	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		14	15 25 24	48	100	SS-6	-	24	47	21	- 8 -		NP	NP	NP	4	A-1-b (0)	
		17	18 23 25	47	100	SS-7	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		19	23 25 22	46	100	SS-8	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
@ 21.0', becomes wet.	W																	
@ 21.0'-22.5', medium dense.		22	19 14 14	27	100	SS-9	-	35	35	22	- 8 -		NP	NP	NP	13	A-1-b (0)	
	742.8	24	15 19 27	45	100	SS-10	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:32

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 882+53.61, 26.97 LT | START: 7/29/10 | END: 7/29/10 | PG 2 OF 3 | B-152-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Dense to very dense brown GRAVEL WITH SAND (A-1-b), little silt; wet.	742.8																	
@26.0', 1.5 feet sand heave; washed out with tricone.		27	14 19 18	36	78	SS-11	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
		29	24 18 18	35	72	SS-12	-	16	59	14	- 11 -		NP	NP	NP	16	A-1-b (0)	
		32	32 27 32	58	100	SS-13	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		34	32 27 30	56	67	SS-14	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
		37	29 34 32	64	67	SS-15	-	41	29	20	- 10 -		NP	NP	NP	12	A-1-b (0)	
		39	30 29 22	50	67	SS-16	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		42	38 38 42	78	56	SS-17	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
@ 43.5'-45.0', gray.		44	27 36 36	70	78	SS-18	-	29	41	19	- 11 -		NP	NP	NP	11	A-1-b (0)	
	720.8																	
Hard gray SILTY CLAY (A-6b), some fine to coarse sand, some gravel; damp.		49	31 39 43	80	78	SS-19	4.5+	-	-	-	-	-	-	-	-	13	A-6b (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:32

PID: 77370	BR ID: _____	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 882+53.61, 26.97 LT	START: 7/29/10	END: 7/29/10	PG 3 OF 3	B-152-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 716.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense gray COARSE AND FINE SAND (A-3a), some silty clay, trace gravel; moist.	715.8	52																
		53																
		54	31 36 39	73	100	SS-20	-	9	12	45	29	5	NP	NP	NP	12	A-3a (0)	
		55																
		56																
		57																
		58																
		59	43 50/3"	-	78	SS-21	-	-	-	-	-	-	-	-	-	12	A-3a (V)	
	705.8	60																
Very dense gray SILT (A-4b), some fine sand; wet.		61																
		62																
		63																
		64	50/5"	-	60	SS-22	-	-	-	-	-	-	-	-	-	20	A-4b (V)	
	700.8	65																
Hard gray CLAY (A-7-6), little fine sand; moist.		66																
		67																
		68																
		69	12 20 27	46	100	SS-23	4.5+	-	-	-	-	-	-	-	-	23	A-7-6 (V)	
	697.8	EOB 70																

NOTES: SEEPAGE AT 21.0 FEET, 53.5 FEET AND 63.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 24.1 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 55.8 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 4 BAGS BENTONITE CHIPS; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:32

PROJECT: I-70/I-71 EAST INTERCHANGE
TYPE: ROADWAY
PID: 77370 BR ID:
START: 5/25/10 END: 5/25/10

DRILLING FIRM / OPERATOR: DLZ / K. CONRAD
SAMPLING FIRM / LOGGER: DLZ / M. EVENER
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 75 TRUCK
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 1/7/10
ENERGY RATIO (%): 79

STATION / OFFSET: 186+02.35, 19.3 RT
ALIGNMENT: PARSONS
ELEVATION: 773.3 (MSL) EOB: 90.0 ft.
COORD: 712528.890 N, 1833332.760 E

EXPLORATION ID B-153-1-10
PAGE 1 OF 4

MATERIAL DESCRIPTION AND NOTES	ELEV. 773.3	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Asphalt - 4" Concrete - 9"	772.2	1																
FILL: Hard brown and gray SILTY CLAY (A-6b), little fine to coarse sand, trace to little gravel; contains trace concrete fragments; damp.	769.8	2	5 4 6	13	100	SS-1	4.5+	-	-	-	-	-	-	-	-	12	A-6b (V)	
Hard gray SANDY SILT (A-4a), some fine to coarse sand, little to some gravel; damp.		4	6 12 25	49	83	SS-2	4.5+	-	-	-	-	-	-	-	-	11	A-4a (V)	
		7	6 6 7	17	100	SS-3	4.00	22	11	17	31	19	21	13	8	10	A-4a (3)	
		9	10 11 9	26	100	SS-4	4.5+	-	-	-	-	-	-	-	-	12	A-4a (V)	
@11.0'-12.5', brown and gray.		12	18 13 13	34	67	SS-5	4.00	-	-	-	-	-	-	-	-	13	A-4a (V)	
		14	18 14 18	42	100	SS-6	4.50	-	-	-	-	-	-	-	-	9	A-4a (V)	
		17	8 10 9	25	100	SS-7	4.00	12	11	19	36	22	22	13	9	11	A-4a (5)	
		19	4 9 11	26	100	SS-8	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
Dense gray COARSE AND FINE SAND (A-3a), trace to little silt, trace gravel; contains rock fragments; damp.	752.3	22	10 10 16	34	78	SS-9	-	-	-	-	-	-	-	-	-	3	A-3a (V)	
	749.4	24	8 8 10	24	100 -	SS-10A SS-10B	-	-	-	-	-	-	-	-	-	11	A-4a (V)	
Medium dense gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp to moist.																		

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:33

PID: 77370 BR ID: PROJECT I-70/I-71 EAST INTERCHANGE STATION / OFFSET: 186+02.35, 19.3 RT START: 5/25/10 END: 5/25/10 PG 2 OF 4 B-153-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 748.3	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
	747.8																	
Very stiff gray SILTY CLAY (A-6b), little fine to coarse sand, trace gravel; moist.	746.3	W	12 10 17	36	100 -	SS-11A SS-11B	3.50 -	-	-	-	-	-	-	-	-	10 14	A-6b (V) A-4a (V)	
Dense gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; moist.	744.8																	
Dense gray GRAVEL WITH SAND AND SILT (A-2-4), some fine to coarse sand, trace to little silt; wet.	741.3	29	11 11 21	42	83	SS-12	-	-	-	-	-	-	-	-	-	8	A-2-4 (V)	
Medium dense gray COARSE AND FINE SAND (A-3a), little silt, little gravel; wet.	736.3	34	8 8 12	26	67	SS-13	-	13	18	57	-	12 -	NP	NP	NP	18	A-3a (0)	
Medium stiff to stiff gray SILT AND CLAY (A-6a), some fine to coarse sand, trace gravel; moist to wet.		39	3 3 4	9	89	SS-14	1.00	-	-	-	-	-	-	-	-	14	A-6a (V)	
Medium dense to dense gray GRAVEL (A-1-a), some fine to coarse sand, trace silt; wet.	731.3	W 42																
		44	3 5 9	18	100	SS-15	-	62	24	6	-	8 -	NP	NP	NP	9	A-1-a (0)	
@48.5', 1.5 feet sand heave; washed out with tricone.		49	16 18 12	40	56	SS-16	-	-	-	-	-	-	-	-	-	11	A-1-a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:33

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 186+02.35, 19.3 RT | START: 5/25/10 | END: 5/25/10 | PG 3 OF 4 | B-153-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Hard gray SILT (A-4b), some fine to coarse sand, little to some clay, trace gravel; damp.	721.5	52																
	721.3	53																
		54	36 46 48	124	100	SS-17	4.5+	7	7	18	54	14	NP	NP	NP	12	A-4b (7)	
		55																
		56																
		57																
		58																
		59	34 47 50/5"	-	100	SS-18	4.5+	-	-	-	-	-	-	-	-	13	A-4b (V)	
		60																
		61																
		62																
		63																
@ 63.5'-65.0', trace fine to coarse sand.		64	32 50/5"	-	100	SS-19	4.5+	0	1	6	66	27	22	14	8	13	A-4b (8)	
		65																
		66																
		67																
		68																
		69	39 50/4"	-	100	SS-20	-	-	-	-	-	-	-	-	-	11	A-4b (V)	
		70																
		71																
	701.3	72																
Very stiff gray CLAY (A-7-6), trace gravel, trace fine to coarse sand; moist.		73																
		74	14 19 18	49	100	SS-21	3.00	-	-	-	-	-	-	-	-	24	A-7-6 (V)	
		75																
		76																
		77																
		78																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:33

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 186+02.35, 19.3 RT | START: 5/25/10 | END: 5/25/10 | PG 4 OF 4 | B-153-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very stiff gray CLAY (A-7-6), trace gravel, trace fine to coarse sand; moist. *(continued)*	694.7	79	8 14 18	42	100	SS-22	3.00	0	0	0	25	75	45	20	25	24	A-7-6 (15)	
		80																
		81																
		82																
		83																
		84	9 11 11	29	100	SS-23	3.00	-	-	-	-	-	-	-	-	27	A-7-6 (V)	
		85																
		86																
		87																
		88																
		89	13 18 20	50	100	SS-24	4.00	-	-	-	-	-	-	-	-	30	A-7-6 (V)	
	683.3	EOB 90																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:33

NOTES: SEEPAGE AT 27.0 FEET AND 42.0 FEET; WATER LEVEL PRIOR TO ADDING WATER = 35.6 FEET; NO FINAL WATER LEVEL.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 2 BAGS BENTONITE CHIPS; 4 BAGS QUIKGROUT

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PROJECT: I-70/I-71 EAST INTERCHANGE	DRILLING FIRM / OPERATOR: DLZ / J. NELSON	DRILL RIG: CME 750X ATV	STATION / OFFSET: 888+73.72, 33.16 LT	EXPLORATION ID B-153-2-10
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: DLZ / D. WILLIARD	HAMMER: CME AUTOMATIC	ALIGNMENT: RAMP Q3	
PID: 77370 BR ID:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 1/7/10	ELEVATION: 787.9 (MSL) EOB: 100.0 ft.	PAGE 1 OF 4
START: 6/17/10 END: 6/18/10	SAMPLING METHOD: SPT	ENERGY RATIO (%): 58.5	COORD: 712524.470 N, 1833452.760 E	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil - 2"	787.7																	
FILL: Stiff brown SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.	784.4	1	8 5 8	13	33	SS-1	1.25	-	-	-	-	-	-	-	-	7	A-4a (V)	
FILL: Very stiff to hard brown SILT AND CLAY (A-6a), little fine to coarse sand, trace gravel; contains cinders, coal, and brick fragments; damp.		4	15 13 15	27	100	SS-2	4.00	-	-	-	-	-	-	-	-	17	A-6a (V)	
@ 6.0', drove on gravel; low recovery.	779.4	7	3 1 3	4	11	SS-3	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
Stiff brown SILT AND CLAY (A-6a), some fine to coarse sand, some gravel; damp to moist.		9	1 1 2	3	33	SS-4	1.25	21	10	14	31	24	30	18	12	18	A-6a (5)	
		12	0 0 1	1	100	SS-5	1.00	-	-	-	-	-	-	-	-	15	A-6a (V)	
Very stiff brown SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.	774.4	14	1 2 3	5	72	SS-6	0.50	11	14	20	36	19	24	17	7	15	A-4a (4)	
		17	14 19 15	33	72	SS-7	3.25	-	-	-	-	-	-	-	-	11	A-4a (V)	
		20	11 15 22	36	100	SS-8	3.25	16	11	17	34	22	24	16	8	10	A-4a (4)	
		22	8 9 13	21	83	SS-9	3.25	-	-	-	-	-	-	-	-	10	A-4a (V)	
Stiff gray SILT AND CLAY (A-6a), little fine to coarse sand, little gravel; ; damp.	764.4	24	8 12 13	24	11	SS-10	1.25	-	-	-	-	-	-	-	-	10	A-6a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:33

PID: 77370	BR ID:	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 888+73.72, 33.16 LT	START: 6/17/10	END: 6/18/10	PG 2 OF 4	B-153-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
	762.9																	
	761.9																	
Dense reddish brown COARSE AND FINE SAND (A-3a), little gravel, little silt; damp.		26	18 18 24	41	56	SS-11A	-	-	-	-	-	-	-	-	-	7	A-3a (V)	
@ 26.8 '- 27.5'; brown.	759.4					SS-11B	-	-	-	-	-	-	-	-	-	10	A-3a (V)	
Stiff to very stiff brown SANDY SILT (A-4a), some fine to coarse sand, little to some gravel; damp.		29	2 3 5	8	100	SS-12	1.50	21	13	16	32	18	23	14	9	12	A-4a (3)	
		32	2 2 3	5	39	SS-13	1.00	-	-	-	-	-	-	-	-	13	A-4a (V)	
		34	2 2 3	5	100	SS-14	-	-	-	-	-	-	-	-	-	14	A-4a (V)	
		37	1 3 6	9	72	SS-15	3.00	15	11	21	34	19	21	14	7	11	A-4a (4)	
	749.4																	
Loose to medium dense gray GRAVEL WITH SAND (A-1-b), little silt; damp.		39	5 5 4	9	78	SS-16	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
@ 41.0', becomes wet.		W 41	1 2 2	4	83	SS-17	-	-	-	-	-	-	-	-	-	18	A-1-b (V)	
		44	3 3 1	4	67	SS-18	-	11	42	32	-	15 -	NP	NP	NP	17	A-1-b (0)	
		47	7 3 1	4	83	SS-19	-	-	-	-	-	-	-	-	-	20	A-1-b (V)	
		49	3 4 11	15	67	SS-20	-	-	-	-	-	-	-	-	-	16	A-1-b (V)	
	736.9	51	30															

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:33

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 888+73.72, 33.16 LT | START: 6/17/10 | END: 6/18/10 | PG 3 OF 4 | B-153-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense gray to brownish gray GRAVEL WITH SAND (A-1-b), trace silt; wet. *(continued)*	736.1	52	33 34	65	72	SS-21	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
		54	20 30 31	59	56	SS-22	-	49	26	17	8	-	NP	NP	NP	10	A-1-b (0)	
		56	19 34 32	64	61	SS-23	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
		58	17 35 42	75	56	SS-24	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
Very dense gray GRAVEL (A-1-a), "and" fine to coarse sand, little silt; wet.	726.9	60	38 35 33	66	67	SS-25	-	51	26	12	11	-	NP	NP	NP	9	A-1-a (0)	
		62	9 36 36	70	67	SS-26	-	-	-	-	-	-	-	-	-	6	A-1-a (V)	
Hard gray SILT (A-4b), some fine to coarse sand, little clay, trace gravel; damp.	721.9	64	18 31 38	67	100	SS-27	4.5+	-	-	-	-	-	-	-	-	9	A-4b (V)	
		66	19 35 50	83	94	SS-28	4.25	2	4	20	56	18	19	15	4	13	A-4b (8)	
Very dense gray FINE SAND (A-3); wet.	715.9	68																
	713.9	70	44 50/3"	-	33 -	SS-29A SS-29B	- 2.50	- -	- -	- -	- -	- -	- -	- -	- -	20 16	A-3 (V) A-6a (V)	
Very stiff gray SILT AND CLAY (A-6a), trace fine to coarse sand; moist.	710.9	72																
Very dense gray SILT (A-4b), trace clay; moist.		74																
		76																
		78																

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 888+73.72, 33.16 LT | START: 6/17/10 | END: 6/18/10 | PG 4 OF 4 | B-153-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense gray SILT (A-4b), trace clay; moist. *(continued)*	709.3	78	27 50/3"	-	100	SS-30	4.5+	-	-	-	-	-	-	-	-	20	A-4b (V)	
	705.9	80																
Very dense gray FINE SAND (A-3), trace silty clay; wet.	703.9	82					-	-	-	-	-	-	-	-	-	23	A-3 (V)	
Very stiff to hard gray CLAY (A-7-6), trace fine sand; damp to moist.		84	14 22 29	50	100 -	SS-31A SS-31B	4.5+	0	0	2	14	84	51	24	27	22	A-7-6 (17)	
		86																
		88	10 21 29	49	100	SS-32	4.25	-	-	-	-	-	-	-	-	25	A-7-6 (V)	
		90																
		92	12 18 21	38	100	SS-33	4.5+	-	-	-	-	-	-	-	-	24	A-7-6 (V)	
		94																
	687.9	96	9 15 18	32	100	SS-34	2.75	-	-	-	-	-	-	-	-	33	A-7-6 (V)	
		EOB 100																

NOTES: SEEPAGE AT 41.0 FEET; FINAL WATER LEVEL = 77.8 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 5 BAGS BENTONITE CHIPS; 2 BAGS QUIKGROUT; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:33

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 187+47.98, 22.01 LT | EXPLORATION ID B-153-3-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: PARSONS
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 772.6 (MSL) EOB: 70.0 ft. | PAGE 1 OF 3
START: 5/25/10 END: 5/26/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712679.450 N, 1833340.310 E

MATERIAL DESCRIPTION AND NOTES	ELEV. 772.6	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Asphalt - 4" Concrete - 14"	771.1	1																
FILL: Stiff brown and gray SILTY CLAY (A-6b), little fine to coarse sand, trace gravel; contains trace brick fragments; damp.	769.6	2	3 4 3	9	100	SS-1	1.50	-	-	-	-	-	-	-	-	11	A-6b (V)	
Very stiff to hard brown and gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		3																
		4	8 6 7	17	100	SS-2	4.50	-	-	-	-	-	-	-	-	9	A-4a (V)	
		5																
		6																
		7	4 4 5	12	100	SS-3	3.75	13	11	19	35	22	20	12	8	11	A-4a (4)	
	764.6	W 8																
Medium dense brown and gray SANDY SILT (A-4a), some to "and" fine sand; moist to wet.		9	3 6 8	18	78	SS-4	-	-	-	-	-	-	-	-	-	21	A-4a (V)	
	762.1	10																
Very stiff to hard gray SILTY CLAY (A-6b), little to some fine to coarse sand, little gravel; damp to moist.		11																
		12	8 8 6	18	17	SS-5	2.00	-	-	-	-	-	-	-	-	11	A-6b (V)	
		13																
		14	8 9 6	20	100	SS-6	4.5+	-	-	-	-	-	-	-	-	10	A-6b (V)	
		15																
	755.7	16	9 18 23	54	100	SS-7A	4.50	-	-	-	-	-	-	-	-	11	A-6b (V)	
Dense gray GRAVEL WITH SAND (A-1-b), some fine to coarse sand, trace silt; damp.	754.6	17			-	SS-7B	-	-	-	-	-	-	-	-	-	3	A-1-b (V)	
Medium dense gray SANDY SILT (A-4a), "and" fine to coarse sand, trace gravel; damp to moist.		W 18																
		19	6 6 12	24	22	SS-8	-	3	3	44	39	11	18	15	3	15	A-4a (3)	
@21.0 22.5', drove on possible cobbles or boulders; low recovery.		20																
		21	19 27 33	79	6	SS-9	-	-	-	-	-	-	-	-	-	-		
	749.6	22																
Dense to very dense gray GRAVEL WITH SAND (A-1-b), trace to little silt; damp.		23																
		24	20 20 18	50	56	SS-10	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:56

PID: 77370 BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 187+47.98, 22.01 LT | START: 5/25/10 | END: 5/26/10 | PG 2 OF 3 | B-153-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 747.6	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Dense to very dense gray GRAVEL WITH SAND (A-1-b), trace to little silt; damp. *(continued)*		W 26																
		27	12 10 14	32	56	SS-11	-	25	46	18	-	11 -	NP	NP	NP	14	A-1-b (0)	
@ 26.0', becomes wet.		28																
		29	8 15 16	41	100	SS-12	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
		30																
		31																
		32																
		33																
		34	21 26 24	66	100	SS-13	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		35																
		36																
		37																
		38																
@38.5', 1.5 feet sand heave; washed out with tricone.		39	14 12 15	36	100	SS-14	-	39	37	17	-	7 -	NP	NP	NP	12	A-1-b (0)	
		40																
		41																
		42																
		43																
		44	15 18 16	45	100	SS-15	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
		45																
		46																
	725.6	47																
Very stiff gray SILTY CLAY (A-6b), little to some fine to coarse sand, trace gravel; contains rock fragments; moist.		48																
		49	12 30 35	86	100	SS-16	3.50	-	-	-	-	-	-	-	-	10	A-6b (V)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:56

PID: 77370	BR ID:	PROJECT: I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 187+47.98, 22.01 LT	START: 5/25/10	END: 5/26/10	PG 3 OF 3	B-153-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 720.8	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Dense to very dense gray SILT (A-4b), some to "and" fine to coarse sand, trace gravel; wet.	720.6	52																
		53																
		54	8 21 26	62	72	SS-17	-	1	2	24	66	7	NP	NP	NP	19	A-4b (8)	
		55																
		56																
		57																
		58																
		59	34 50/4"	-	100	SS-18	-	-	-	-	-	-	-	-	-	17	A-4b (V)	
		60																
		61																
		62																
		63																
		64	50/5"	-	60	SS-19	-	-	-	-	-	-	-	-	-	15	A-4b (V)	
		65																
		66																
	705.6	67																
Very stiff gray SILT AND CLAY (A-6a), little fine sand, trace gravel; damp.		68																
		69	17 17 21	50	78	SS-20	4.00	-	-	-	-	-	-	-	-	24	A-6a (V)	
	702.6	EOB 70																

NOTES: SEEPAGE AT 8.0 FEET, 18.5 FEET, AND 26.0 FEET; WATER LEVEL PRIOR TO ADDING WATER = 31.1 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 35.5 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 2 BAGS BENTONITE CHIPS; 3 BAGS QUIKGROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:56

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 188+22.66, 62.7 RT | EXPLORATION ID B-153-4-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: PARSONS
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 757.1 (MSL) EOB: 70.0 ft. | PAGE 1 OF 3
START: 6/25/10 END: 6/25/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712716.650 N, 1833446.940 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Asphalt- 19" Base- 5"	757.1	1																
	755.1	2																
Dense brown GRAVEL WITH SAND (A-1-b), some fine to coarse sand, trace silty clay; damp.		3	15 19 26	59	56	SS-1	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
	753.6	4																
Dense brown FINE SAND (A-3), trace gravel, trace silty clay; damp.		4	19 15 24	51	67	SS-2	-	-	-	-	-	-	-	-	-	4	A-3 (V)	
	751.1	5																
Very dense brown GRAVEL WITH SAND (A-1-b), some to "and" fine to coarse sand, trace silt; wet.		6																
		7	17 23 22	59	78	SS-3	-	41	36	14	-	9 -	NP	NP	NP	3	A-1-b (0)	
		8																
		9	5 18 21	51	61	SS-4	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		10																
@ 11.0', becomes wet.	W	11																
		12	16 25 26	67	100	SS-5	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
	743.6	13																
Dense to very dense brown GRAVEL (A-1-a), some fine to coarse sand, little silt; wet.		14	5 20 28	63	100	SS-6	-	62	19	8	-	11 -	NP	NP	NP	9	A-1-a (0)	
		15																
@ 16.0', 1.5 feet sand heave; washed out with tricone.		16																
		17	10 12 16	37	67	SS-7	-	-	-	-	-	-	-	-	-	11	A-1-a (V)	
		18																
		19	22 15 18	43	56	SS-8	-	-	-	-	-	-	-	-	-	9	A-1-a (V)	
	736.1	20																
Dense gray GRAVEL WITH SAND (A-1-b), trace silt; wet.		21																
		22	8 13 17	40	61	SS-9	-	25	35	31	-	9 -	NP	NP	NP	12	A-1-b (0)	
		23																
		24	8 9 15	32	17	SS-10	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:57

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 188+22.66, 62.7 RT | START: 6/25/10 | END: 6/25/10 | PG 2 OF 3 | B-153-4-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Dense gray GRAVEL WITH SAND (A-1-b), trace silt; wet. *(continued)*	732.1	26																
		27	9 14 18	42	78	SS-11	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		28																
@ 28.5'-30.0', auger sample.		29	25 13 11	32	0	SS-12	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
	725.1	30																
Hard gray SANDY SILT (A-4a), "and" fine to coarse sand, trace gravel; damp.		31																
		32																
		33																
		34	6 13 18	41	67	SS-13	4.5+	9	12	31	29	19	20	12	8	9	A-4a (3)	
	720.1	35																
Dense gray FINE SAND (A-3), trace silt; wet.		36																
		37																
	W	38																
		39	10 16 21	49	67	SS-14	-	-	-	-	-	-	-	-	-	18	A-3 (V)	
	715.1	40																
Very dense gray SILT (A-4b), little fine sand, little clay; wet.		41																
		42																
		43																
		44	22 45 50/5"	-	100	SS-15	-	0	0	11	78	11	NP	NP	NP	18	A-4b (8)	
	710.1	45																
Hard gray CLAY (A-7-6), trace to little fine sand; damp.		46																
		47																
		48																
		49	50/5"	-	100	SS-16	4.5+	-	-	-	-	-	-	-	-	15	A-7-6 (V)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:57

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 188+22.66, 62.7 RT | START: 6/25/10 | END: 6/25/10 | PG 3 OF 3 | B-153-4-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Hard gray CLAY (A-7-6), trace to little fine sand; damp. *(continued)*	705.3	52																
		53																
		54	14 16 26	55	100	SS-17	4.5+	0	0	2	21	77	46	21	25	20	A-7-6 (15)	
		55																
		56																
		57																
		58																
		59	8 13 18	41	100	SS-18	4.5+	-	-	-	-	-	-	-	-	22	A-7-6 (V)	
		60																
		61																
		62																
		63																
		64	6 12 18	40	100	SS-19	4.5+	0	0	0	16	84	51	23	28	27	A-7-6 (17)	
		65																
		66																
		67																
		68																
		69	5 11 20	41	100	SS-20	4.5+	-	-	-	-	-	-	-	-	22	A-7-6 (V)	
	687.1	EOB 70																

NOTES: SEEPAGE AT 11.0 FEET AND 38.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 11.2 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 3 BAGS BENTONITE CHIPS; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:57

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 850 TRACK | STATION / OFFSET: 889+38.09, 4.53 LT | EXPLORATION ID B-153-5-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP P2
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 801.5 (MSL) EOB: 89.3 ft. | PAGE 1 OF 4
START: 11/11/10 END: 11/11/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 72.5 | COORD: 712809.710 N, 1833524.650 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
FILL: Concrete slabs and fragments, reinforcing steel, and soil. Material removed prior to sampling.	801.5																	
@ 18.5'-20.0', drove on concrete fragment; poor recovery.			13 19 17	44	11	SS-1	-	-	-	-	-	-	-	-	-	-		
Very stiff brown SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp.	780.5		18 12 12	29	83	SS-2	2.50	-	-	-	-	-	-	-	-	14	A-4a (V)	
NOTE: Boring caved to 23.0 feet when augers removed.	776.5		4 7 8	18	100	SS-3	3.50	2	8	18	44	28	25	17	8	13	A-4a (7)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:57

PID: 77370 BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 889+38.09, 4.53 LT | START: 11/11/10 | END: 11/11/10 | PG 2 OF 4 | B-153-5-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Hard brown SANDY SILT (A-4a), some fine to coarse sand, little gravel; contains slight rust stains; damp.	776.5																	
Very dense brown GRAVEL (A-1-a), "and" fine to coarse sand, little silt; damp.	773.0		10 20 26	56	100	SS-4	4.5+	-	-	-	-	-	-	-	-	11	A-4a (V)	
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.	769.5		22 22 25	57	100	SS-5	-	50	28	9	-	13	NP	NP	NP	5	A-1-a (0)	
Very dense gray GRAVEL (A-1-a), "and" fine to coarse sand, trace to little silt; damp.	764.5		20 50/5"	-	91	SS-6	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
@ 48.5', little gravel.			50/5"	-	80	SS-7	-	54	23	12	-	11	NP	NP	NP	3	A-1-a (0)	
			23 30 38	82	100	SS-8	-	-	-	-	-	-	-	-	-	4	A-1-a (V)	
			19 45 48	112	100	SS-9	-	54	22	15	-	9	NP	NP	NP	3	A-1-a (0)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:57

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 889+38.09, 4.53 LT | START: 11/11/10 | END: 11/11/10 | PG 3 OF 4 | B-153-5-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense gray COARSE AND FINE SAND (A-3a), little gravel, trace silt; moist.	749.5	52																
		53																
		54	27 42 42	102	100	SS-10	-	-	-	-	-	-	-	-	-	6	A-3a (V)	
		55																
		56																
	744.5	57																
Very dense gray GRAVEL (A-1-a), some fine to coarse sand, trace silt; wet.		58																
		59	10 26 47	88	100	SS-11	-	67	10	16	-	7 -	NP	NP	NP	9	A-1-a (0)	
		60																
		61																
		62																
		63																
@ 63.5', 3.0 feet sand heave; washed out with tricone.		64	23 35 30	79	61	SS-12	-	-	-	-	-	-	-	-	-	11	A-1-a (V)	
		65																
		66																
	734.5	67																
Very dense gray FINE SAND (A-3), some coarse sand, trace gravel; wet.		68																
		69	21 22 20	51	28	SS-13	-	7	41	44	-	8 -	NP	NP	NP	17	A-3 (0)	
		70																
		71																
		72																
	729.5	73																
Very dense gray COARSE AND FINE SAND (A-3a), trace gravel; wet.		74	28 26 29	66	28	SS-14	-	-	-	-	-	-	-	-	-	13	A-3a (V)	
		75																
		76																
		77																
		78																

W

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:57

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 889+38.09, 4.53 LT | START: 11/11/10 | END: 11/11/10 | PG 4 OF 4 | B-153-5-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Hard gray SANDY SILT (A-4a), "and" fine to coarse sand, trace gravel; damp.	723.0																	
	722.9	79	25 27 40	81	56	SS-15	4.00	7	12	32	32	17	20	14	6	10	A-4a (3)	
		80																
		81																
		82																
		83																
		84	50/3"	-	67	SS-16	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		85																
		86																
		87																
		88																
	712.2	89	40 50/4"	-	100	SS-17	4.50	-	-	-	-	-	-	-	-	11	A-4a (V)	
		EOB																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:57

NOTES: SEEPAGE AT 58.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 58.1 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 80.1 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 5 BAGS BENTONITE CHIPS; SOIL CUTTINGS

PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / J. NELSON | DRILL RIG: CME 750X ATV | STATION / OFFSET: 190+26.4, 48.22 LT | EXPLORATION ID B-153-6-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / S. LARIMER | HAMMER: CME AUTOMATIC | ALIGNMENT: PARSONS
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 785.2 (MSL) EOB: 70.0 ft. | PAGE 1 OF 3
START: 7/21/10 END: 7/22/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 58.5 | COORD: 712943.460 N, 1833413.370 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil - 3"	785.0																	
FILL: Very stiff to hard brown SILT AND CLAY (A-6a), some fine to coarse sand, trace gravel; contains concrete and brick fragments; damp.			4 5 8	13	83	SS-1	3.50	-	-	-	-	-	-	-	-	12	A-6a (V)	
			11 12 16	27	89	SS-2	4.5+	-	-	-	-	-	-	-	-	25	A-6a (V)	
			15 12 13	24	78	SS-3	4.5+	4	8	17	37	34	29	16	13	11	A-6a (8)	
			13 13 15	27	100	SS-4	4.5+	-	-	-	-	-	-	-	-	12	A-6a (V)	
	774.2																	
Loose brown GRAVEL WITH SAND, SILT, AND CLAY (A-2-6); damp to moist.			6 3 3	6	83	SS-5	2.00	-	-	-	-	-	-	-	-	12	A-2-6 (V)	
			5 2 3	5	50	SS-6	1.25	38	22	19	9	12	30	14	16	14	A-2-6 (0)	
	769.2																	
Medium dense brown GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace silt; damp.			6 7 13	20	89	SS-7	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
@ 18.5'-20.0', very dense; low recovery, drove on cobble or boulder.			50/4"	-	75	SS-8	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
	764.2																	
Hard brown SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.			24 42 50	90	100	SS-9	4.5+	12	12	20	37	19	22	14	8	8	A-4a (4)	
	761.7																	
Very dense brown GRAVEL WITH SAND (A-1-b), trace silt; damp.			33 50/5"	-	82	SS-10	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:57

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 190+26.4, 48.22 LT | START: 7/21/10 | END: 7/22/10 | PG 2 OF 3 | B-153-6-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense brown GRAVEL WITH SAND (A-1-b), trace silt; damp. *(continued)*	760.2																	
Very dense brown GRAVEL (A-1-a), some fine to coarse sand, trace silty clay; damp.	759.2		29 50/4"	-	80	SS-11	-	-	-	-	-	-	-	-	-	5	A-1-a (V)	
	756.7																	
Very dense brown GRAVEL WITH SAND (A-1-b), trace silt; damp.			37 37 41	76	94	SS-12	-	40	33	19	8	-	NP	NP	NP	5	A-1-b (0)	
			24 30 32	60	89	SS-13	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
			23 28 31	58	89	SS-14	-	36	32	26	6	-	NP	NP	NP	9	A-1-b (0)	
@ 43.5'-45.0', dense, wet.		W	9 20 25	44	89	SS-15	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
@ 45.0', 0.5 feet sand heave, washed out with tricone.	738.2																	
Very dense brown GRAVEL (A-1-a), "and" fine to coarse sand, trace to little silt; wet.			30 44 45	87	89	SS-16	-	51	23	14	12	-	NP	NP	NP	8	A-1-a (0)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:57

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 190+26.4, 48.22 LT | START: 7/21/10 | END: 7/22/10 | PG 3 OF 3 | B-153-6-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense brown GRAVEL (A-1-a), "and" fine to coarse sand, trace to little silt; wet. *(continued)*	733.4	52																
		53																
		54	16 25 41	64	83	SS-17	-	-	-	-	-	-	-	-	-	10	A-1-a (V)	
		55																
		56																
		57																
		58																
@ 58.5'-60.0', 0.8 to 4.3 feet sand heave, washed out with tricone.		59	24 26 26	51	72	SS-18	-	49	28	16	-	7 -	NP	NP	NP	9	A-1-a (0)	
		60																
		61																
	723.2	62																
Hard gray SILTY CLAY (A-6b), some to "and" fine to coarse sand, some gravel; damp.		63																
		64	17 30 30	58	78	SS-19	4.5+	-	-	-	-	-	-	-	-	10	A-6b (V)	
		65																
		66																
		67																
		68																
		69	17 36 47	81	100	SS-20	4.5+	-	-	-	-	-	-	-	-	8	A-6b (V)	
	715.2	EOB 70																

NOTES: SEEPAGE AT 43.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 39.4 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 58.6 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG BENTONITE CHIPS; 1.5 BAGS QUIKGROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:57

PROJECT: FRA-70-14.48
TYPE: NOISE WALL
PID: 77370 BR ID:
START: 10/8/13 END: 10/8/13

DRILLING FIRM / OPERATOR: DLZ / K. CONRAD
SAMPLING FIRM / LOGGER: DLZ / K. REINHART
DRILLING METHOD: 3.25" HSA / NQ2
SAMPLING METHOD: SPT / NQ2

DRILL RIG: CME 75 TRUCK (SN 237127)
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 1/27/12
ENERGY RATIO (%): 77

STATION / OFFSET: 100+80, 8.1 RT
ALIGNMENT: NOISE BARRIER CENTERLINE
ELEVATION: 791.3 (MSL) EOB: 29.4 ft.
COORD: 713183.270 N, 1833921.910 E

EXPLORATION ID: B-154-1-13
PAGE: 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 791.3	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Concrete= 11"	790.4																	
FILL: Medium dense brown GRAVEL WITH SAND, SILT, AND CLAY (A-2-6), some fine to coarse sand; contains glass and brick fragments; damp.	787.8	1	11 13 13	33	44	SS-1	-	-	-	-	-	-	-	-	-	7	A-2-6 (V)	
POSSIBLE FILL: Hard brown and gray SILT AND CLAY (A-6a), some to "and" fine to coarse sand, trace gravel; contains cobbles; damp.		4	6 8 9	22	61	SS-2	4.50	-	-	-	-	-	-	-	-	13	A-6a (V)	
		7	11 20 32	67	56	SS-3	4.50	7	12	16	34	31	26	15	11	10	A-6a (6)	
		9	10 12 13	32	44	SS-4	4.50	-	-	-	-	-	-	-	-	16	A-6a (V)	
@ 11.0'-12.5', drove possible cobble/boulder.		12	21 32 37	89	6	SS-5	-	-	-	-	-	-	-	-	-	1		
Hard gray SILTY CLAY (A-6b), some fine to coarse sand, trace gravel; damp.	777.8	14	8 14 17	40	100	SS-6	4.50	-	-	-	-	-	-	-	-	11	A-6b (V)	
Very dense gray GRAVEL (A-1-a), some fine to coarse sand, little silty clay; damp.	775.3	17	13 27 47	95	78	SS-7	-	52	23	11	-	14	-	-	-	4	A-1-a (V)	
Hard gray SILTY CLAY (A-6b), some fine to coarse sand, trace gravel; damp.	772.8	19	16 15 19	44	94	SS-8	4.50	-	-	-	-	-	-	-	-	9	A-6b (V)	
Very dense gray GRAVEL (A-1-a), little fine to coarse sand, trace silty clay; contains cobbles; damp.	770.3	22	32 50/3"	-	78	SS-9	-	-	-	-	-	-	-	-	-	4	A-1-a (V)	
		24	50/2"	-	100	SS-10	-	-	-	-	-	-	-	-	-	-	A-1-a (V)	
		27	29 50/3"	-	11	SS-11	-	-	-	-	-	-	-	-	-	0	A-1-a (V)	
Very dense gray COARSE AND FINE SAND (A-3a), trace gravel, trace silty clay; contains cobbles; moist.	762.8 761.9	29	27 50/5"	-	100	SS-12	-	-	-	-	-	-	-	-	-	8	A-3a (V)	
	EOB																	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG BENTONITE CHIPS; 1 BAG QUICKCRETE; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - FRA-70-14.48 - 11/15/13 12:53

PROJECT: FRA-70-14.48
TYPE: NOISE WALL
PID: 77370 BR ID:
START: 10/8/13 END: 10/8/13

DRILLING FIRM / OPERATOR: DLZ / K. CONRAD
SAMPLING FIRM / LOGGER: DLZ / K. REINHART
DRILLING METHOD: 3.25" HSA / NQ2
SAMPLING METHOD: SPT / NQ2

DRILL RIG: CME 75 TRUCK (SN 237127)
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 1/27/12
ENERGY RATIO (%): 77

STATION / OFFSET: 102+80, 18.2 LT
ALIGNMENT: NOISE BARRIER CENTERLINE
ELEVATION: 788.4 (MSL) EOB: 24.4 ft.
COORD: 712970.120 N, 1833955.470 E

EXPLORATION ID: B-155-1-13
PAGE: 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 788.4	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil - 3"	788.1																	
POSSIBLE FILL: Hard brown SILT AND CLAY (A-6a), some fine to coarse sand, little gravel; contains roots and cobbles; damp.		2	4 4 6	13	61	SS-1	4.50	11	10	16	34	29	30	18	12	15	A-6a (6)	
		4	3 10 12	28	56	SS-2	4.25	-	-	-	-	-	-	-	-	6	A-6a (V)	
		7	8 13 22	45	100	SS-3	4.50	-	-	-	-	-	-	-	-	10	A-6a (V)	
Hard gray SANDY SILT (A-4a), trace gravel; damp.	779.9	9	9 13 24	47	89	SS-4	4.50	-	-	-	-	-	-	-	-	11	A-4a (V)	
		12	9 18 22	51	100	SS-5	4.50	-	-	-	-	-	-	-	-	10	A-4a (V)	
		14	15 18 20	49	100	SS-6	4.50	-	-	-	-	-	-	-	-	8	A-4a (V)	
		17	11 16 19	45	100	SS-7	4.50	-	-	-	-	-	-	-	-	9	A-4a (V)	
		19	12 19 16	45	94	SS-8	4.50	24	13	17	28	18	22	14	8	9	A-4a (2)	
		22	9 16 17	42	100	SS-9	4.50	-	-	-	-	-	-	-	-	9	A-4a (V)	
Very dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace silty clay; damp.	764.9 764.0	24	20 50/5"	-	91	SS-10	-	-	-	-	-	-	-	-	-	3	A-1-b (V)	
	EOB																	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG BENTONITE CHIPS; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - FRA-70-14.48 - 11/15/13 12:53

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PROJECT: I-70/I-71 EAST INTERCHANGE
TYPE: ROADWAY
PID: 77370 BR ID:
START: 6/23/10 END: 6/23/10

DRILLING FIRM / OPERATOR: DLZ / J. NELSON
SAMPLING FIRM / LOGGER: DLZ / S. LARIMER
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 75 TRUCK
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 1/7/10
ENERGY RATIO (%): 64.7

STATION / OFFSET: 983+21.85, 52.73 LT
ALIGNMENT: RAMP P5
ELEVATION: 784.4 (MSL) EOB: 95.0 ft.
COORD: 713384.430 N, 1833403.840 E

EXPLORATION ID B-156-1-10
PAGE 1 OF 4

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)	HOLE SEALED
Asphalt- 22" Base- 8"	784.4																	
	781.9		21 19 12	33	83	SS-1	2.75	-	-	-	-	-	-	-	-	17	A-6b (V)	
POSSIBLE FILL: Very stiff yellowish brown SILTY CLAY (A-6b), some fine to coarse sand, little to some gravel; damp.			6 6 7	14	50	SS-2	2.50	-	-	-	-	-	-	-	-	16	A-6b (V)	
	778.4																	
Stiff to very stiff brown SILT AND CLAY (A-6a), some to "and" fine to coarse sand, trace gravel; damp to moist.			5 6 8	15	89	SS-3	3.00	2	10	19	41	28	29	16	13	17	A-6a (8)	
			3 3 3	6	89	SS-4	1.50	-	-	-	-	-	-	-	-	16	A-6a (V)	
			3 2 2	4	22	SS-5	-	-	-	-	-	-	-	-	-	14	A-6a (V)	
	770.9																	
Loose brown GRAVEL WITH SAND, SILT, AND CLAY (A-2-6); moist.			1 1 4	5	78	SS-6	0.50	12	53	11	8	16	35	17	18	20	A-2-6 (1)	
	768.4																	
Hard mottled brown and gray SILTY CLAY (A-6b), some to "and" fine to coarse sand, some gravel; damp.			8 20 27	51	100	SS-7	4.5+	-	-	-	-	-	-	-	-	9	A-6b (V)	
			22 37 40	83	100	SS-8	4.5+	-	-	-	-	-	-	-	-	8	A-6b (V)	
	762.7		19 30 34	69	100	SS-9A SS-9B	4.5+ -	-	-	-	-	-	-	-	-	9 7	A-6b (V) A-1-b (V)	
Very dense brown GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, little silt; damp.					-													
			8 25 36	66	89	SS-10	-	41	32	14	- 13 -		NP	NP	NP	5	A-1-b (0)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:33

PID: 77370 BR ID: PROJECT I-70/I-71 EAST INTERCHANGE STATION / OFFSET: 983+21.85, 52.73 LT START: 6/23/10 END: 6/23/10 PG 2 OF 4 B-156-1-10

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)	HOLE SEALED
	759.4																	
	758.4																	
Dense to very dense brown COARSE AND FINE SAND (A-3a), little gravel, little silt; damp.			6 18 22	43	72	SS-11	-	-	-	-	-	-	-	-	-	8	A-3a (V)	
			9 20 28	52	89	SS-12	-	13	33	40	- 14 -		NP	NP	NP	5	A-3a (0)	
			20 22 32	58	100	SS-13	-	-	-	-	-	-	-	-	-	4	A-3a (V)	
			19 28 27	59	94	SS-14	-	-	-	-	-	-	-	-	-	4	A-3a (V)	
			19 50/5"	-	82	SS-15	-	-	-	-	-	-	-	-	-	4	A-3a (V)	
	745.9	W																
Very dense brown GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace to little silt; wet.			18 26 41	72	78	SS-16	-	48	30	14	- 8 -		NP	NP	NP	10	A-1-b (0)	
			8 22 29	55	89	SS-17	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
@ 43.5'-50.0', 0.8 to 1.8 feet sand heave; washed out with tricone. @ 43.5', becomes gray.			16 25 25	54	83	SS-18	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
			13 33 34	72	67	SS-19	-	42	30	17	- 11 -		NP	NP	NP	9	A-1-b (0)	
			16 41 50	98	78	SS-20	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:33

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 983+21.85, 52.73 LT | START: 6/23/10 | END: 6/23/10 | PG 3 OF 4 | B-156-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense gray GRAVEL WITH SAND (A-1-b), trace silt; wet.	732.4	52																
		53																
		54	22 21 27	52	89	SS-21	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
@ 53.5'-65.0', 0.9 to 6.0 feet sand heave; washed out with tricone.		55																
		56																
		57																
		58																
		59	20 24 30	58	94	SS-22	-	28	53	14	-	5 -	NP	NP	NP	13	A-1-b (0)	
		60																
		61																
		62																
		63																
		64	15 27 36	68	56	SS-23	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		65																
		66																
	717.4	67																
Hard gray SANDY SILT (A-4a), trace gravel; damp.		68																
		69	11 19 28	51	83	SS-24	4.5+	8	12	24	34	22	21	13	8	11	A-4a (4)	
		70																
		71																
	712.4	72																
Very stiff to hard gray CLAY (A-7-6), trace to little fine sand; damp to moist.		73																
		74	10 17 25	45	100	SS-25	4.25	-	-	-	-	-	-	-	-	22	A-7-6 (V)	
		75																
		76																
		77																
		78																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:33

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 983+21.85, 52.73 LT | START: 6/23/10 | END: 6/23/10 | PG 4 OF 4 | B-156-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very stiff to hard gray CLAY (A-7-6), trace to little fine sand; damp to moist. *(continued)*	705.8	79	9 14 20	37	83	SS-26	2.75	0	0	1	25	74	45	22	23	27	A-7-6 (14)	
		80																
		81																
		82																
		83																
		84	14 17 25	45	89	SS-27	2.50	-	-	-	-	-	-	-	-	23	A-7-6 (V)	
		85																
		86																
		87																
		88																
		89	11 13 20	36	100	SS-28	3.50	-	-	-	-	-	-	-	-	26	A-7-6 (V)	
		90																
		91																
		92																
		93																
		94	8 15 16	33	100	SS-29	3.00	-	-	-	-	-	-	-	-	27	A-7-6 (V)	
	689.4	EOB 95																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:33

NOTES: SEEPAGE AT 38.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 39.2 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 92.3 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG BENTONITE CHIPS; 1 BAG QUICKCRETE; 1.5 BAGS QUIKGROUT

PROJECT: I-70/I-71 EAST INTERCHANGE	DRILLING FIRM / OPERATOR: DLZ / K. CONRAD	DRILL RIG: CME 75 TRUCK	STATION / OFFSET: 193+99.05, 9.61 RT	EXPLORATION ID B-156-2-10
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: DLZ / M. EVENER	HAMMER: CME AUTOMATIC	ALIGNMENT: PARSONS	
PID: 77370 BR ID:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 1/7/10	ELEVATION: 793.8 (MSL) EOB: 70.0 ft.	PAGE 1 OF 3
START: 6/2/10 END: 6/3/10	SAMPLING METHOD: SPT	ENERGY RATIO (%): 79	COORD: 713301.810 N, 1833478.830 E	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil - 4"	793.5																	
FILL: Very dense brown COARSE AND FINE SAND (A-3a), little silt, little gravel; damp.		1	29 25 50/3"	-	100	SS-1	-	-	-	-	-	-	-	-	-	6	A-3a (V)	
		2																
		3																
@ 3.5'-5.0', medium dense; wet.		4	11 8 10	24	17	SS-2	-	-	-	-	-	-	-	-	-	12	A-3a (V)	
	787.8	5																
FILL: Very stiff brown SILT AND CLAY (A-6a), some fine to coarse sand, trace gravel; damp to moist.		6	6 7 7	18	56	SS-3	3.00	4	10	16	37	33	32	17	15	17	A-6a (9)	
	785.3	7																
FILL: Medium dense brown COARSE AND FINE SAND (A-3a), little silt, trace gravel; moist.		8	4 7 9	21	17	SS-4	-	-	-	-	-	-	-	-	-	9	A-3a (V)	
	782.8	9																
FILL: Stiff to very stiff brown SILTY CLAY (A-6b), some fine to coarse sand, trace gravel; contains trace brick fragments; moist.		10	4 2 3	7	17	SS-5	2.75	-	-	-	-	-	-	-	-	20	A-6b (V)	
		11																
		12	0 0 2	3	17	SS-6	1.50	-	-	-	-	-	-	-	-	23	A-6b (V)	
	777.8	13																
POSSIBLE FILL: Dense brown SANDY SILT (A-4a), "and" fine to coarse sand, little gravel; damp.		14	7 13 11	32	100	SS-7	-	14	19	24	- 43 -		NP	NP	NP	13	A-4a (2)	
		15																
		16																
		17	11 18 18	47	100	SS-8	-	-	-	-	-	-	-	-	-	11	A-4a (V)	
	772.8	18																
Very dense brown and gray GRAVEL WITH SAND AND SILT (A-2-4), some fine to coarse sand, some silt; damp.		19	20 37 42	104	22	SS-9	-	-	-	-	-	-	-	-	-	7	A-2-4 (V)	
		20																
		21																
	W	22																
@ 23.5', becomes wet.		23	17 24 25	65	33	SS-10	-	38	22	12	- 28 -		NP	NP	NP	14	A-2-4 (0)	
	768.8	24																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:34

PID: 77370	BR ID:	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 193+99.05, 9.61 RT	START: 6/2/10	END: 6/3/10	PG 2 OF 3	B-156-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very stiff to hard gray SILTY CLAY (A-6b), some fine to coarse sand, little gravel; moist.		26	17 21 22	57	100	SS-11	4.50	-	-	-	-	-	-	-	-	11	A-6b (V)	
		27																
		28																
		29	18 18 33	67	83	SS-12	3.00	-	-	-	-	-	-	-	-	10	A-6b (V)	
	762.8	30																
Very dense brown GRAVEL (A-1-a), some fine to coarse sand, little silt; wet.	W	31	24 46 50/5"	-	88	SS-13	-	51	22	13	- 14 -		NP	NP	NP	9	A-1-a (0)	
	760.3	32																
Very dense brownish gray GRAVEL WITH SAND (A-1-b), trace to little silt; damp.		33																
		34	27 27 23	66	83	SS-14	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
		35																
		36																
		37	15 29 33	82	83	SS-15	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
		38																
		39	39 44 43	115	89	SS-16	-	38	27	22	- 13 -		NP	NP	NP	5	A-1-b (0)	
		40																
		41	40 44 38	108	56	SS-17	-	-	-	-	-	-	-	-	-	3	A-1-b (V)	
		42																
		43																
		44	39 44 40	111	78	SS-18	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		45																
		46																
@ 46.0'-47.5', wet.		47	17 21 36	75	67	SS-19	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		48																
		49	17 26 28	71	100	SS-20	-	39	33	19	- 9 -		NP	NP	NP	12	A-1-b (0)	
		50																
		51	41															

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:34

PID: 77370	BR ID:	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 193+99.05, 9.61 RT	START: 6/2/10	END: 6/3/10	PG 3 OF 3	B-156-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
	742.0																	
Very dense brownish gray GRAVEL WITH SAND (A-1-b), trace to little silt; damp. *(continued)*		52	48 48	126	100	SS-21	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
	740.3	53																
Very dense gray GRAVEL WITH SAND (A-1-b), some fine to coarse sand, trace silt; wet.		54	50/4"	-	100	SS-22	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
@ 53.5', 1.5 feet sand heave; washed out with tricone.		55																
		56																
		57	23 38 40	103	44	SS-23	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		58																
		59	31 50/5"	-	36	SS-24	-	49	27	16	-	8	NP	NP	NP	10	A-1-b (0)	
	731.8	60																
Very dense brownish gray COARSE AND FINE SAND (A-3a), some gravel, trace silt; wet.		61																
		62																
		63																
		64	27 27 36	83	67	SS-25	-	-	-	-	-	-	-	-	-	10	A-3a (V)	
		65																
		66																
		67																
		68																
		69	25 30 38	90	94	SS-26	-	-	-	-	-	-	-	-	-	12	A-3a (V)	
	723.8	EOB 70																

NOTES: SEEPAGE AT 23.5 AND 31.0 FEET; WATER LEVEL PRIOR TO ADDING WATER = 45.2 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 46.9 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 8 BAGS BENTONITE CHIPS; 5 BAGS QUIKGROUT; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:34

PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 192+09.67, 35.93 LT | EXPLORATION ID B-156-3-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: PARSONS
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 758.1 (MSL) EOB: 90.0 ft. | PAGE 1 OF 4
START: 6/24/10 END: 6/24/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 713112.820 N, 1833449.570 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Asphalt- 15" Base- 21"	758.1	1																
@ 1.5'-3.0', treated subbase.	755.1	2	8 31 21	68	56	SS-1	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
Dense to very dense brown GRAVEL (A-1-a), trace to little silt; damp.		3																
		4	18 21 22	57	83	SS-2	-	-	-	-	-	-	-	-	-	3	A-1-a (V)	
		5																
		6																
		7	16 32 32	84	100	SS-3	-	49	25	16	-	10 -	NP	NP	NP	4	A-1-a (0)	
		8																
		9	13 23 30	70	67	SS-4	-	-	-	-	-	-	-	-	-	5	A-1-a (V)	
		10																
@ 11.0', becomes wet.		W 11	7 13 13	34	100	SS-5	-	-	-	-	-	-	-	-	-	15	A-1-a (V)	
	744.6	12																
Very dense brown GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace silt; wet.		13																
	742.1	14	18 19 22	54	100	SS-6	-	49	28	15	-	8 -	NP	NP	NP	11	A-1-b (0)	
Very dense brown COARSE AND FINE SAND (A-3a), some gravel, trace silt; wet. @ 16.0', 1.0 foot sand heave; washed out with tricone.		15																
		16	19 25 26	67	61	SS-7	-	-	-	-	-	-	-	-	-	9	A-3a (V)	
	739.6	17																
Very dense brown GRAVEL (A-1-a), some to "and" fine to coarse sand, trace silt; wet.		18																
		19	16 24 22	61	78	SS-8	-	-	-	-	-	-	-	-	-	12	A-1-a (V)	
		20																
		21																
		22	16 27 28	72	67	SS-9	-	59	24	11	-	6 -	NP	NP	NP	9	A-1-a (0)	
	734.6	23																
Dense to very dense brown GRAVEL WITH SAND (A-1-b), trace silt; wet.		24	19 25 33	76	17	SS-10	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:58

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 192+09.67, 35.93 LT | START: 6/24/10 | END: 6/24/10 | PG 2 OF 4 | B-156-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Dense to very dense brown GRAVEL WITH SAND (A-1-b), trace silt; wet. *(continued)*	733.1	26																
		27	17 18 17	46	33	SS-11	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
		28																
		29	19 24 24	63	61	SS-12	-	39	37	15	-	9 -	NP	NP	NP	10	A-1-b (0)	
		30																
		31																
		32																
		33																
	724.1	34	13 13 12	33	50 -	SS-13A SS-13B	- 1.00	-	-	-	-	-	-	-	-	12 13	A-1-b (V) A-4a (V)	
Stiff to very stiff gray SANDY SILT (A-4a), little gravel; moist.		35																
		36																
		37																
		38																
		39	30 37 49	113	56	SS-14	3.50	12	12	33	30	13	15	13	2	12	A-4a (2)	
		40																
		41																
		42																
	716.1	43																
Very stiff to hard gray CLAY (A-7-6), trace fine sand; moist.		44	5 13 18	41	100	SS-15	4.5+	-	-	-	-	-	-	-	-	23	A-7-6 (V)	
		45																
		46																
		47																
		48																
		49	6 12 18	40	100	SS-16	4.5+	0	0	0	29	71	48	21	27	24	A-7-6 (16)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:58

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 192+09.67, 35.93 LT | START: 6/24/10 | END: 6/24/10 | PG 3 OF 4 | B-156-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very stiff to hard gray CLAY (A-7-6), trace fine sand; moist. *(continued)*	706.3	52																
		53																
		54	14 21 23	58	100	SS-17	4.5+	-	-	-	-	-	-	-	-	23	A-7-6 (V)	
		55																
		56																
		57																
		58																
		59	5 7 9	21	100	SS-18	4.5+	0	0	0	29	71	45	20	25	26	A-7-6 (15)	
		60																
		61																
		62																
		63																
		64	4 9 10	25	100	SS-19	3.50	-	-	-	-	-	-	-	-	28	A-7-6 (V)	
		65																
		66																
		67																
		68																
		69	6 7 9	21	100	SS-20	4.00	0	0	0	21	79	54	24	30	29	A-7-6 (19)	
		70																
		71																
		72																
		73																
		74	6 9 9	24	100	SS-21	3.50	-	-	-	-	-	-	-	-	29	A-7-6 (V)	
		75																
		76																
	681.1	77																
Very stiff to hard gray SILTY CLAY (A-6b), trace fine sand, trace gravel; moist.		78																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:58

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 192+09.67, 35.93 LT | START: 6/24/10 | END: 6/24/10 | PG 4 OF 4 | B-156-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very stiff to hard gray SILTY CLAY (A-6b), trace fine sand, trace gravel; moist. *(continued)*	679.5	79	12 12 14	34	100	SS-22	4.5+	0	0	0	41	59	39	20	19	24	A-6b (12)	
		80																
		81																
		82																
		83																
		84	7 10 10	26	100	SS-23	3.00	-	-	-	-	-	-	-	-	25	A-6b (V)	
		85																
		86																
		87																
		88																
		89	10 12 12	32	100	SS-24	3.00	-	-	-	-	-	-	-	-	27	A-6b (V)	
	668.1	EOB 90																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:58

NOTES: SEEPAGE AT 11.0 FEET; WATER LEVEL PRIOR TO ADDING WATER = 13.6 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 40.1 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 4 BAGS BENTONITE CHIPS; 2 BAGS QUIKGROUT

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / J. NELSON | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 795+00.47, 18.72 RT | EXPLORATION ID B-157-1-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / S. LARIMER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP P6 | PAGE 1 OF 4
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 760.7 (MSL) EOB: 90.0 ft.
START: 6/24/10 END: 6/24/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 64.7 | COORD: 712991.790 N, 1833540.730 E

MATERIAL DESCRIPTION AND NOTES	ELEV. 760.7	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Asphalt- 20" Base- 4"	758.7	1																
FILL: Very dense brownish gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace silty clay, contains geotextile; damp.	757.2	2	37 35 33	73	78	SS-1	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
Very dense grayish brown GRAVEL WITH SAND (A-1-b), trace silt; damp to moist.		3	12 34 30	69	78	SS-2	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
		4																
		5	24 33 40	79	94	SS-3	-	42	31	19	8	-	NP	NP	NP	3	A-1-b (0)	
		6																
		7	26 29 39	73	100	SS-4	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		8																
		9	17 24 23	51	89	SS-5	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
		10																
		11	15 23 23	50	100	SS-6	-	26	37	30	7	-	NP	NP	NP	9	A-1-b (0)	
		12																
@ 16.0', becomes wet.		13 W	10 22 35	61	100	SS-7	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		14																
		15	8 28 32	65	89	SS-8	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
@ 20.0'-23.5', 1.0 to 1.1 feet sand heave; washed out with tricone. @ 21.0', becomes gray.		16																
		17	15 24 34	63	83	SS-9	-	31	40	21	8	-	NP	NP	NP	12	A-1-b (0)	
	737.2	18																
Very dense gray GRAVEL (A-1-a), little to some fine to coarse sand, trace silt; wet.		19	16 23 26	53	72	SS-10	-	-	-	-	-	-	-	-	-	8	A-1-a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:58

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 795+00.47, 18.72 RT | START: 6/24/10 | END: 6/24/10 | PG 2 OF 4 | B-157-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 735.7	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
	734.7	20																
Very dense gray GRAVEL WITH SAND (A-1-b), trace silt; wet. @ 26.0'-27.5', 2.0 to 2.2 feet sand heave; washed out with tricone.		21	10 27 28	59	83	SS-11	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
		22																
		23	33 30 30	65	89	SS-12	-	38	39	17	6	-	NP	NP	NP	12	A-1-b (0)	
	728.7	24																
Dense gray GRAVEL (A-1-a), some fine to coarse sand, trace silt; wet.		25	15 22 22	47	89	SS-13	-	-	-	-	-	-	-	-	-	11	A-1-a (V)	
	723.7	26																
Hard gray SANDY SILT (A-4a), some to "and" fine to coarse sand, trace gravel; damp to moist. @ 39.1'-39.2', silty fine sand seam.		27	17 25 38	68	100	SS-14	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
		28																
		29	35 50/5"	-	91	SS-15	4.5+	7	12	26	37	18	20	13	7	9	A-4a (4)	
	713.7	30																
Hard gray CLAY (A-7-6), trace to little fine sand; damp.		31	11 16 23	42	100	SS-16	4.25	-	-	-	-	-	-	-	-	20	A-7-6 (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:58

PID: 77370	BR ID:	PROJECT: I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 795+00.47, 18.72 RT	START: 6/24/10	END: 6/24/10	PG 3 OF 4	B-157-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Dense gray SILT (A-4b), some fine sand, some clay; wet.	708.9 / 708.7	52–54	14 21 27	52	100	SS-17	-	0	0	22	54	24	20	16	4	22	A-4b (8)	
Very stiff to hard gray CLAY (A-7-6); moist.	703.7	59–60	8 14 20	37	100	SS-18	4.5+	-	-	-	-	-	-	-	-	21	A-7-6 (V)	
		64–65	3 7 11	19	100	SS-19	2.25	0	0	0	32	68	41	21	20	25	A-7-6 (12)	
		69–70	5 8 11	20	100	SS-20	2.25	-	-	-	-	-	-	-	-	26	A-7-6 (V)	
		74–75	2 7 10	18	100	SS-21	2.00	0	0	0	15	85	55	25	30	31	A-7-6 (19)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:58

PID: 77370	BR ID:	PROJECT: I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 795+00.47, 18.72 RT	START: 6/24/10	END: 6/24/10	PG 4 OF 4	B-157-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
	682.1 / 681.6	79–80	6 15 20	38	100 / -	SS-22A / SS-22B	1.75 / -	- / 0	- / 0	- / 0	- / 84	- / 16	- / 27	- / 23	- / 4	23 / 26	A-7-6 (V) / A-4b (8)	
Dense gray SILT (A-4b), little clay; moist.	678.7																	
Very stiff gray CLAY (A-7-6), little to some silt, trace to little fine sand; damp to moist.		84–85	6 11 15	28	100	SS-23	3.25	-	-	-	-	-	-	-	-	25	A-7-6 (V)	
		89–90	4 9 14	25	100	SS-24	3.25	-	-	-	-	-	-	-	-	24	A-7-6 (V)	
	670.7	EOB																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:58

NOTES: SEEPAGE AT 16.0 FEET; WATER LEVEL PRIOR TO ADDING WATER = 14.9; FINAL WATER LEVEL INCLUDING DRILLING WATER = 89.0 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 4 BAGS BENTONITE CHIPS; 2 BAGS QUIKGROUT

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 790+27.87, 8.35 LT | EXPLORATION ID B-157-2-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP P1
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 768.8 (MSL) EOB: 70.0 ft. | PAGE 1 OF 3
START: 7/7/10 END: 7/7/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712834.400 N, 1833627.050 E

MATERIAL DESCRIPTION AND NOTES	ELEV. 768.8	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil- 3"	768.5																	
Dense brown GRAVEL WITH SAND AND SILT (A-2-4); damp.	765.3		7 10 18	37	33	SS-1	-	-	-	-	-	-	-	-	-	6	A-2-4 (V)	
Very dense brown GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace silty clay; damp.	762.8		8 39 27	87	33	SS-2	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
Very dense brown COARSE AND FINE SAND (A-3a), little gravel, little silt; damp.	760.3		15 25 48	96	67	SS-3	-	16	26	41	-	17 -	NP	NP	NP	4	A-3a (0)	
Very dense brown GRAVEL (A-1-a), "and" fine to coarse sand, trace silt; damp.	757.8		19 42 45	115	67	SS-4	-	-	-	-	-	-	-	-	-	4	A-1-a (V)	
Very dense brown COARSE AND FINE SAND (A-3a), some gravel, trace silt; damp.	755.3		33 40 37	101	78	SS-5	-	-	-	-	-	-	-	-	-	5	A-3a (V)	
Very dense brown GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace silt; damp.	752.8		28 40 48	116	100	SS-6	-	50	22	19	-	9 -	NP	NP	NP	5	A-1-b (0)	
Very dense brown COARSE AND FINE SAND (A-3a), some gravel, trace silt; damp.	747.8		40 42 40	108	78	SS-7	-	-	-	-	-	-	-	-	-	4	A-3a (V)	
			41 39 29	90	100	SS-8	-	-	-	-	-	-	-	-	-	3	A-3a (V)	
Very dense brown GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, little silt; wet.		W	37 41 49	118	83	SS-9	-	44	27	15	-	14 -	NP	NP	NP	8	A-1-b (0)	
			19 50/5"	-	100	SS-10	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:58

PID: 77370 BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 790+27.87, 8.35 LT | START: 7/7/10 | END: 7/7/10 | PG 2 OF 3 | B-157-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 743.8	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
	742.8																	
Very dense brownish gray COARSE AND FINE SAND (A-3a), some gravel, trace silt; wet. @ 26.0', 1.5 sand heave; washed out with tricone.	740.3		28 35 26	80	100	SS-11	-	-	-	-	-	-	-	-	-	14	A-3a (V)	
Very dense brownish gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace silt; wet.	731.8		25 29 23	68	100	SS-12	-	44	33	16	-	7 -	NP	NP	NP	11	A-1-b (0)	
			34 31 25	74	67	SS-13	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
Hard gray SANDY SILT (A-4a), some to "and" fine to coarse sand, trace gravel; damp.	721.8		20 18 21	51	67	SS-14	4.5+	7	12	24	38	19	22	14	8	10	A-4a (4)	
			30 29 39	90	100	SS-15	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
Very stiff to hard gray SILTY CLAY (A-6b), trace fine to coarse sand; damp.			8 13 22	46	100	SS-16	4.5+	0	1	1	32	66	40	21	19	19	A-6b (12)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:58

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 790+27.87, 8.35 LT | START: 7/7/10 | END: 7/7/10 | PG 3 OF 3 | B-157-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very stiff to hard gray SILTY CLAY (A-6b), trace fine to coarse sand; damp. *(continued)*	717.0	52																
		53																
		54	14 22 32	71	100	SS-17	2.75	-	-	-	-	-	-	-	-	17	A-6b (V)	
		55																
	711.8	56																
Hard gray SILT (A-4b), trace fine sand; moist.		57																
		58																
		59	16 21 30	67	100	SS-18	4.5+	0	0	2	76	22	25	18	7	20	A-4b (8)	
		60																
	706.8	61																
Very stiff to hard gray CLAY (A-7-6), trace fine to coarse sand; moist.		62																
		63																
		64	11 16 22	50	100	SS-19	4.5+	-	-	-	-	-	-	-	-	22	A-7-6 (V)	
		65																
		66																
		67																
		68																
		69	5 15 15	40	100	SS-20	2.50	-	-	-	-	-	-	-	-	28	A-7-6 (V)	
	698.8	EOB 70																

NOTES: SEEPAGE AT 21.0 FEET; WATER LEVEL PRIOR TO ADDING WATER = 22.8 FEET; NO FINAL WATER LEVEL DETECTED.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 2 BAGS BENTONITE CHIPS; 2 BAGS QUIKGROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:58

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / J. NELSON | DRILL RIG: CME 750X ATV | STATION / OFFSET: 890+89.35, 12.71 LT | EXPLORATION ID B-157-3-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / S. LARIMER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP P4
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 792.5 (MSL) EOB: 70.0 ft. | PAGE 1 OF 3
START: 7/23/10 END: 7/23/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 58.5 | COORD: 712642.030 N, 1833654.280 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil - 4'	792.5																	
FILL: Very stiff to hard brown SILTY CLAY (A-6b), some fine to coarse sand, trace to little gravel; damp.	792.2	1	4 7 9	16	78	SS-1	4.00	-	-	-	-	-	-	-	-	10	A-6b (V)	
		2																
		3																
		4	6 6 5	11	89	SS-2	4.25	-	-	-	-	-	-	-	-	11	A-6b (V)	
		5																
		6																
		7	5 5 6	11	100	SS-3	4.00	9	10	16	30	35	35	18	17	17	A-6b (9)	
		8																
		9	8 6 5	11	28	SS-4	4.00	-	-	-	-	-	-	-	-	9	A-6b (V)	
		10																
@ 11.0'-12.5', medium stiff to stiff.		11																
		12	3 2 2	4	78	SS-5	1.00	-	-	-	-	-	-	-	-	13	A-6b (V)	
		13																
@ 13.5'-15.0', encountered rocks.		14	2 1 1	2	11	SS-6	-	-	-	-	-	-	-	-	-	12		
		15																
@ 15.0'-16.0', void.		16																
@ 16.0'-17.5', contains drain tile fragments.		17	0 0 5	5	28	SS-7	2.00	-	-	-	-	-	-	-	-	13	A-6b (V)	
	774.0	18																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.		19	11 13 27	39	100	SS-8	4.5+	7	13	19	39	22	23	15	8	10	A-4a (5)	
	771.5	20																
Very dense brown GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, little silt; damp.		21																
		22	35 46 50	94	100	SS-9	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		23																
@ 23.5'-25.0', gray.		24	31 28 29	56	100	SS-10	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
	767.5																	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:58

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 890+89.35, 12.71 LT | START: 7/23/10 | END: 7/23/10 | PG 2 OF 3 | B-157-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense gray GRAVEL WITH SAND (A-1-b), some to "and" fine to coarse sand, trace to little silt; damp.	767.5	26																
		27	34 33 50	81	94	SS-11	-	47	27	12	- 14 -		NP	NP	NP	6	A-1-b (0)	
		28																
@ 28.5'-30.0', contains clay stringers.		29	27 37 50/5"	-	88	SS-12	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
		30																
		31																
		32																
		33																
		34	27 50/4"	-	80	SS-13	-	45	30	16	- 9 -		NP	NP	NP	4	A-1-b (0)	
		35																
		36																
		37																
		38																
		39	35 41 46	85	89	SS-14	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
	750.5	40																
Very dense gray GRAVEL (A-1-a), "and" fine to coarse sand, trace silt; damp.		41																
		42																
		43																
		44	30 45 50/5"	-	88	SS-15	-	52	27	16	- 5 -		NP	NP	NP	4	A-1-a (0)	
		45																
		46																
		47																
		48																
@ 48.5', becomes wet.		W																
		49	20 50/5"	-	73	SS-16	-	-	-	-	-	-	-	-	-	8	A-1-a (V)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:58

PID: 77370	BR ID:	PROJECT: I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 890+89.35, 12.71 LT	START: 7/23/10	END: 7/23/10	PG 3 OF 3	B-157-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense gray GRAVEL (A-1-a), "and" fine to coarse sand, trace silt; damp. *(continued)*	740.7	52																
		53																
@ 53.5'-65.0', 1.2 to 1.5 feet sand heave; washed out with tricone.		54	29 49 50/4"	-	88	SS-17	-	61	22	9	-	8 -	NP	NP	NP	8	A-1-a (0)	
		55																
		56																
	735.5	57																
Very dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace silt; wet.		58																
		59	17 31 49	78	67	SS-18	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
		60																
		61																
		62																
		63																
		64	31 49 50/5"	-	82	SS-19	-	47	31	14	-	8 -	NP	NP	NP	9	A-1-b (0)	
		65																
		66																
		67																
		68																
	723.2	69	34 26	58	100	SS-20A	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
Hard gray SILTY CLAY (A-6b), some fine to coarse sand, little gravel; moist.	722.5	EOB 70	33		-	SS-20B	4.5+	-	-	-	-	-	-	-	-	13	A-6b (V)	

NOTES: SEEPAGE AT 48.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 46.3 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 47.3 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 5.5 BAGS BENTONITE CHIPS; 2.5 BAGS QUIKGROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:58

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 892+10.02, 14.36 LT | EXPLORATION ID B-157-4-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP P2
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 773.6 (MSL) EOB: 90.0 ft. | PAGE 1 OF 4
START: 7/7/10 END: 7/7/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712719.900 N, 1833782.680 E

MATERIAL DESCRIPTION AND NOTES	ELEV. 773.6	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil - 2"	773.4	1																
Dense brown GRAVEL (A-1-a), some fine to coarse sand, trace silt; damp.	770.1	2	10 17 31	63	33	SS-1	-	-	-	-	-	-	-	-	-	4	A-1-a (V)	
Very dense brown GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, little to some silt; damp.		4	14 35 38	96	61	SS-2	-	43	23	14	- 20 -		NP	NP	NP	4	A-1-b (0)	
		7	12 23 26	65	11	SS-3	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
		9	50/5"	-	20	SS-4	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
		12	26 40 37	101	78	SS-5	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
	760.1																	
Very dense brown GRAVEL (A-1-a), little fine to coarse sand, trace silt; damp.	757.6	14	46 50/5"	-	18	SS-6	-	-	-	-	-	-	-	-	-	3	A-1-a (V)	
Very dense brown GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, little silt; damp.		17	28 50/5"	-	45	SS-7	-	41	28	15	- 16 -		NP	NP	NP	3	A-1-b (0)	
		19	42 50/5"	-	100	SS-8	-	-	-	-	-	-	-	-	-	3	A-1-b (V)	
	752.6																	
Very dense brown COARSE AND FINE SAND (A-3a), some gravel, trace silt; damp.	750.1	22	26 31 40	93	100	SS-9	-	-	-	-	-	-	-	-	-	4	A-3a (V)	
Very dense brown GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace to little silt; damp.		24	50/5"	-	60	SS-10	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:59

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 892+10.02, 14.36 LT | START: 7/7/10 | END: 7/7/10 | PG 2 OF 4 | B-157-4-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 748.6	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense brown GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace to little silt; damp. *(continued)* @ 26.0', becomes wet.		W 26	50/5"	-	60	SS-11	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
		29	28 50/5"	-	73	SS-12	-	37	21	27	- 15 -		NP	NP	NP	9	A-1-b (0)	
	741.6																	
Very dense brown COARSE AND FINE SAND (A-3a), little gravel, trace silt; wet. @ 33.5', 1.5 feet sand heave; washed out with tricone.		34	18 23 30	70	89	SS-13	-	-	-	-	-	-	-	-	-	14	A-3a (V)	
	736.6																	
Very dense gray GRAVEL WITH SAND (A-1-b), little silt; wet.		39	25 26 30	74	56	SS-14	-	36	34	17	- 13 -		NP	NP	NP	10	A-1-b (0)	
	731.6																	
Hard gray SILT AND CLAY (A-6a), "and" fine to coarse sand, some gravel; damp.		44	14 16 18	45	100	SS-15	4.5+	-	-	-	-	-	-	-	-	13	A-6a (V)	
	726.6																	
Very stiff to hard gray CLAY (A-7-6), trace fine to coarse sand; damp to moist.		49	11 15 20	46	100	SS-16	4.5+	0	0	3	31	66	43	20	23	20	A-7-6 (14)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:59

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 892+10.02, 14.36 LT | START: 7/7/10 | END: 7/7/10 | PG 3 OF 4 | B-157-4-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very stiff to hard gray CLAY (A-7-6), trace fine to coarse sand; damp to moist. *(continued)*	721.8	52																
		53																
		54	13 15 16	41	67	SS-17	4.5+	-	-	-	-	-	-	-	-	19	A-7-6 (V)	
		55																
		56																
		57																
		58																
		59	9 16 22	50	100	SS-18	4.5+	0	1	0	26	73	44	23	21	19	A-7-6 (13)	
		60																
		61																
		62																
		63																
		64	7 8 12	26	100	SS-19	3.50	-	-	-	-	-	-	-	-	26	A-7-6 (V)	
		65																
		66																
	706.6	67																
Very stiff gray SILTY CLAY (A-6b); moist.		68																
		69	13 16 20	47	83	SS-20	3.50	0	0	0	36	64	40	21	19	22	A-6b (12)	
		70																
		71																
		72																
		73																
		74	6 8 10	24	100	SS-21	3.00	-	-	-	-	-	-	-	-	24	A-6b (V)	
		75																
		76																
		77																
		78																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:59

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 892+10.02, 14.36 LT | START: 7/7/10 | END: 7/7/10 | PG 4 OF 4 | B-157-4-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very stiff gray SILTY CLAY (A-6b); moist. *(continued)*	695.1	79	6 6 9	20	100	SS-22	3.00	0	0	0	35	65	40	21	19	25	A-6b (12)	
		80																
		81																
		82																
		83																
		84	6 6 11	22	100	SS-23	2.75	-	-	-	-	-	-	-	-	27	A-6b (V)	
		85																
		86																
		87																
		88																
	683.6	89	6 8 10	24	100	SS-24	3.00	-	-	-	-	-	-	-	-	29	A-6b (V)	
	EOB	90																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:59

NOTES: SEEPAGE AT 26.0 FEET; WATER LEVEL PRIOR TO ADDING WATER = 27.4 FEET; NO FINAL WATER LEVEL DETECTED .

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 4 BAGS BENTONITE CHIPS; 2 BAGS QUIKGROUT

PROJECT: FRA-70-14.48	DRILLING FIRM / OPERATOR: DLZ / K. CONRAD	DRILL RIG: CME 75 TRUCK (SN 237127)	STATION / OFFSET: 105+00, 20.6 LT	EXPLORATION ID B-158-1-13
TYPE: NOISE WALL	SAMPLING FIRM / LOGGER: DLZ / K. REINHART	HAMMER: CME AUTOMATIC	ALIGNMENT: NOISE BARRIER CENTERLINE	
PID: 77370 BR ID:	DRILLING METHOD: 3.25" HSA / NQ2	CALIBRATION DATE: 1/27/12	ELEVATION: 789.4 (MSL) EOB: 25.0 ft.	PAGE 1 OF 1
START: 10/8/13 END: 10/8/13	SAMPLING METHOD: SPT / NQ2	ENERGY RATIO (%): 77	COORD: 712766.550 N, 1833953.320 E	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil - 3"	789.1																	
Stiff to very stiff brown and gray SILT AND CLAY (A-6a), some to "and" fine to coarse sand, little gravel; contains cobbles; moist.			6 3 3	8	28	SS-1	2.00	-	-	-	-	-	-	-	-	15	A-6a (V)	
			5 6 5	14	33	SS-2	2.75	18	13	16	29	24	29	17	12	13	A-6a (4)	
@ 6.0'-7.5', hard.			2 4 3	9	56	SS-3	4.25	-	-	-	-	-	-	-	-	11	A-6a (V)	
	780.9																	
Stiff brown SANDY SILT (A-4a), some clay, some gravel; damp.			2 2 3	6	56	SS-4	1.50	-	-	-	-	-	-	-	-	18	A-4a (V)	
			1 2 2	5	44	SS-5	1.75	22	10	15	28	25	24	16	8	16	A-4a (4)	
	775.9																	
Hard gray SILT AND CLAY (A-6a), some to "and" fine to coarse sand, trace gravel; contains cobbles; damp.			3 7 11	23	44	SS-6	4.50	-	-	-	-	-	-	-	-	10	A-6a (V)	
			19 22 22	56	22	SS-7	-	-	-	-	-	-	-	-	-	8	A-6a (V)	
			10 14 16	38	89	SS-8	4.50	-	-	-	-	-	-	-	-	9	A-6a (V)	
			11 19 17	46	100	SS-9	4.50	-	-	-	-	-	-	-	-	9	A-6a (V)	
	765.9																	
Very dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace silty clay; damp.	764.4	EOB	10 32 50/5"	-	47	SS-10	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG BENTONITE CHIPS; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - FRA-70-14.48 - 11/15/13 12:53

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DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | Project: FRA-70-8.93 | Job No. 0221-1004.01

LOG OF: Boring B-159-0-09 | Location: Sta. 793+31.16, 55.06 ft Rt of Ramp P1 BL | Date Drilled: 3/12/2009

WATER OBSERVATIONS: Water seepage at: 30.5' Water level at completion: 32.5'
FIELD NOTES:

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	776.6														
0.4	776.2						Topsoil - 5"								
		5 13 22	3	1		3.0	Very stiff gray SILT AND CLAY (A-6a), little fine to coarse sand, trace gravel; contains few root and little rust staining, slight organic odor; moist.								
3.5	773.1														
		8 7 6	12	2		4.25	Hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		14	12	---	19	37	19	
5															
6.0	770.6														
		15 25 26	12	3			Very dense brown GRAVEL WITH SAND (A-1-b), little silt; damp.								53
		27 33 37	18	4					40	33	---	12	--15--		72
10															
		26 48 21	15	5											71
13.5	763.1														
		15 22 23	18	6		4.5+	Hard gray SILT (A-4b), some fine sand; damp.	+ + + + + +							
15															
16.0	760.6														
		28 35 31	18	7			Dense to very dense gray GRAVEL WITH SAND (A-1-b), trace to little silt; damp.								68
		18 26 23	18	8					27	31	---	32	--10--		51
20															
		35 50/4	10	9											50+
		29 32 25	18	10											59
25	751.6														

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | Project: FRA-70-8.93 | Job No. 0221-1004.01

LOG OF: Boring B-159-0-09 | Location: Sta. 793+31.16, 55.06 ft Rt of Ramp P1 BL | Date Drilled: 3/12/2009

WATER OBSERVATIONS: Water seepage at: 30.5' Water level at completion: 32.5'
FIELD NOTES:

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	751.6														
		28 22 26	18	11			Dense to very dense brown GRAVEL WITH SAND (A-1-b), trace silt; damp.		27	45	---	22	--6--		
		21 24 26	18	12											52
30															
31.0	745.6														
		24 29 26	18	13			Very dense brown GRAVEL WITH SAND AND SILT (A-2-4), trace clay; moist.								57
33.5	743.1														
		26 30 33	18	14			Very dense brown GRAVEL WITH SAND (A-1-b), trace to little silt; wet.		29	37	---	21	--13--		65
35															
		17 19 33	18	15											54
		9 21 28	18	16											51
40.0	736.6														
40							Bottom of Boring - 40.0'								
45															
50															

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / J. NELSON | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 993+19.26, 41.38 LT | EXPLORATION ID B-159-1-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / S. LARIMER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP P5 | PAGE 1 OF 3
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 789.8 (MSL) EOB: 70.0 ft.
START: 7/15/10 END: 7/15/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 64.7 | COORD: 712592.720 N, 1833876.820 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil- 3"	789.5																	
FILL: Hard brown SILT AND CLAY (A-6a), some fine to coarse sand, little gravel; damp.		1	13 16 18	37	100	SS-1	4.5+	-	-	-	-	-	-	-	-	8	A-6a (V)	
		2																
		3																
		4	7 50/5"	-	82	SS-2	4.5+	15	15	17	30	23	27	16	11	10	A-6a (4)	
	783.8	5																
FILL: BRICK FRAGMENTS		6	15 4 3	8	28	SS-3	-	-	-	-	-	-	-	-	-	-		
	781.3	7																
FILL: Very stiff brown SILTY CLAY (A-6b), some fine to coarse sand, trace gravel; damp.		8																
		9	3 7 9	17	100	SS-4	3.00	-	-	-	-	-	-	-	-	14	A-6b (V)	
@ 11.0'-12.5', brick fragment blocking spoon; low recovery.		10																
		11																
		12	20 21 28	53	11	SS-5	-	-	-	-	-	-	-	-	-	-		
	776.3	13																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp.		14	22 29 34	68	100	SS-6	4.5+	10	9	15	39	27	25	16	9	10	A-4a (6)	
		15																
@ 16.0'-16.9', cobble blocking spoon.		16	36 50/5"	-	0	SS-7	-	-	-	-	-	-	-	-	-	-		
	771.3	17																
Very dense grayish brown GRAVEL (A-1-a), some fine to coarse sand, trace silt; damp.		18																
	768.8	19	37 50/5"	-	73	SS-8	-	-	-	-	-	-	-	-	-	5	A-1-a (V)	
Very dense grayish brown GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, little silt; damp.		20																
		21	21 44 38	88	89	SS-9	-	44	31	11	-	14 -	NP	NP	NP	4	A-1-b (0)	
		22																
		23																
		24	34 50/5"	-	-	SS-10	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
	764.8																	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:59

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 993+19.26, 41.38 LT | START: 7/15/10 | END: 7/15/10 | PG 2 OF 3 | B-159-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense brown COARSE AND FINE SAND (A-3a), little gravel, trace silt; damp.	764.8																	
		26																
		27	29 49 50/4"	-	100	SS-11	-	-	-	-	-	-	-	-	-	9	A-3a (V)	
		28																
		29	48 50/3"	-	78	SS-12	-	-	-	-	-	-	-	-	-	7	A-3a (V)	
	757.8	30																
Very dense grayish brown GRAVEL WITH SAND (A-1-b), trace silt; damp.		31																
		32																
		33																
		34	22 48 50	106	94	SS-13	-	31	33	30	-	6 -	NP	NP	NP	3	A-1-b (0)	
@ 33.0'-35.0', difficult augering; offset boring 5.0' south and continued sampling at 38.5'.		35																
		36																
	752.8	37																
Very dense brownish gray GRAVEL (A-1-a), some to "and" fine to coarse sand, trace silt; moist.		38																
		39	20 45 50/5"	-	88	SS-14	-	-	-	-	-	-	-	-	-	3	A-1-a (V)	
		40																
		41																
		42																
		43																
		44	28 42 45	94	89	SS-15	-	57	24	11	-	8 -	NP	NP	NP	8	A-1-a (0)	
		45																
		46																
		47																
		48	W															
@ 48.5', becomes wet.		49	7 28 47	81	94	SS-16	-	-	-	-	-	-	-	-	-	7	A-1-a (V)	
@ 48.5'-60.0', 0.5 to 2.5 feet sand heave; washed out with tricone.		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:59

PID: 77370	BR ID:	PROJECT: I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 993+19.26, 41.38 LT	START: 7/15/10	END: 7/15/10	PG 3 OF 3	B-159-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense brownish gray GRAVEL (A-1-a), some to "and" fine to coarse sand, trace silt; wet.	738.0 / 737.8	52																
		53																
		54	23 32 34	71	61	SS-17	-	55	28	11	- 6	-	NP	NP	NP	9	A-1-a (0)	
		55																
		56																
		57																
		58																
		59	16 20 30	54	78	SS-18	-	-	-	-	-	-	-	-	-	9	A-1-a (V)	
		60																
		61																
		62																
		63																
@ 63.5'-65.0', drove on cobble; no recovery.		64	32 32 34	71	0	SS-19	-	-	-	-	-	-	-	-	-	-	A-1-a (V)	
		65																
	722.8	66																
Hard gray CLAY (A-7-6), trace fine sand; damp.		67																
		68																
		69	11 20 28	52	100	SS-20	4.5+	-	-	-	-	-	-	-	-	21	A-7-6 (V)	
	719.8	EOB 70																

NOTES: SEEPAGE AT 48.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 44.1 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 52.0 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 5 BAGS BENTONITE CHIPS; 1.5 BAGS QUIKGROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:59

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / J. NELSON | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 893+28.16, 7.21 LT | EXPLORATION ID B-159-2-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / S. LARIMER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP P4 | PAGE 1 OF 3
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 788.4 (MSL) EOB: 70.0 ft.
START: 7/13/10 END: 7/14/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 64.7 | COORD: 712512.050 N, 1833851.860 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil - 3"	788.1																	
FILL: Hard brown SILTY CLAY (A-6b), "and" fine to coarse sand, little gravel; damp.		1	8 20 27	51	89	SS-1	4.5+	-	-	-	-	-	-	-	-	11	A-6b (V)	
		2																
		3																
@ 3.5'-5.0', drove on brick fragment; no recovery.		4	12 12 12	26	0	SS-2	-	-	-	-	-	-	-	-	-	-		
	782.4	5																
POSSIBLE FILL: Very stiff brown SANDY SILT (A-4a), some fine to coarse sand, little to some gravel; damp.		6	11 11 13	26	17	SS-3	2.50	-	-	-	-	-	-	-	-	16	A-4a (V)	
		7																
		8																
		9	5 7 10	18	83	SS-4	2.25	17	10	17	35	21	22	15	7	13	A-4a (4)	
		10																
		11																
		12	12 20 38	63	28	SS-5	-	-	-	-	-	-	-	-	-	11	A-4a (V)	
		13																
@ 13.5'-15.0', drove on cobble; no recovery.		14	19 19 23	45	0	SS-6	-	-	-	-	-	-	-	-	-	-		
	772.4	15																
Hard brown SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		16	11 19 50	74	89	SS-7	4.5+	19	13	18	32	18	19	15	4	9	A-4a (3)	
	769.9	17																
Dense to very dense gray GRAVEL (A-1-a), some fine to coarse sand, trace silt; damp.		18																
		19	49 50/5"	-	91	SS-8	-	-	-	-	-	-	-	-	-	3	A-1-a (V)	
		20																
		21	36 39 40	85	100	SS-9	-	-	-	-	-	-	-	-	-	2	A-1-a (V)	
		22																
		23																
		24	24 38 43	87	89	SS-10	-	62	23	8	- 7 -		NP	NP	NP	3	A-1-a (0)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:59

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 893+28.16, 7.21 LT | START: 7/13/10 | END: 7/14/10 | PG 2 OF 3 | B-159-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Dense to very dense gray GRAVEL (A-1-a), some fine to coarse sand, trace silt; damp. *(continued)*	763.4																	
		26																
		27	11 18 26	47	78	SS-11	-	-	-	-	-	-	-	-	-	5	A-1-a (V)	
	759.9	28																
Very stiff brown SANDY SILT (A-4a), "and" fine to coarse sand, little gravel; damp.		29	17 16 16	35	78	SS-12	2.25	-	-	-	-	-	-	-	-	13	A-4a (V)	
	756.4	30																
Very dense brown GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, little silt; damp.		31																
		32																
		33																
		34	21 28 24	56	100	SS-13	-	44	32	13	- 11 -		NP	NP	NP	5	A-1-b (0)	
	751.4	35																
Very dense brownish gray COARSE AND FINE SAND (A-3a), some gravel, trace silt; damp.		36																
		37																
		38																
		39	10 22 28	54	94	SS-14	-	-	-	-	-	-	-	-	-	5	A-3a (V)	
	746.4	40																
Dense to very dense gray GRAVEL (A-1-a), "and" fine to coarse sand, trace to little silt; moist to wet.		41																
		42																
		43	W															
		44	13 23 28	55	83	SS-15	-	50	25	10	- 15 -		NP	NP	NP	9	A-1-a (0)	
		45																
		46																
		47																
		48																
@ 48.5', becomes wet.		49	5 13 17	32	56	SS-16	-	-	-	-	-	-	-	-	-	7	A-1-a (V)	
@ 48.5'-58.5', 0.3 to 1.2 feet sand heave; washed out with tricone.		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:59

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 893+28.16, 7.21 LT | START: 7/13/10 | END: 7/14/10 | PG 3 OF 3 | B-159-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Dense to very dense gray GRAVEL (A-1-a), "and" fine to coarse sand, trace to little silt; moist to wet. *(continued)*	736.6	52																
		53																
		54	18 18 19	40	83	SS-17	-	57	21	16	-	6 -	NP	NP	NP	10	A-1-a (0)	
		55																
		56																
		57																
		58																
	729.3	59	21 23 29	56	100/ -	SS-18A SS-18B	4.5+	-	-	-	-	-	-	-	-	10	A-1-a (V)	
Hard gray SILTY CLAY (A-6b), some fine to coarse sand, some gravel; damp.								-	-	-	-	-	-	-	-	11	A-6b (V)	
	726.4	60																
Very stiff gray CLAY (A-7-6), little fine sand; damp.		61																
		62																
		63																
		64	10 15 17	35	67	SS-19	3.50	0	0	0	31	69	45	22	23	20	A-7-6 (14)	
		65																
		66																
		67																
		68																
		69	7 12 19	33	89	SS-20	3.00	-	-	-	-	-	-	-	-	23	A-7-6 (V)	
	718.4	EOB 70																

NOTES: SEEPAGE AT 43.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 43.0 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 55.6 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 2 BAGS BENTONITE CHIPS; 1.5 BAGS QUIKGROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:59

PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 894+97.33, 4.22 RT | EXPLORATION ID B-159-3-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP P2
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 779.9 (MSL) EOB: 55.0 ft. | PAGE 1 OF 3
START: 7/6/10 END: 7/6/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712571.330 N, 1834029.931 E

MATERIAL DESCRIPTION AND NOTES	ELEV. 779.9	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil- 3"	779.6	1																
FILL: Hard brown SANDY SILT (A-4a), "and" fine to coarse sand, some gravel; damp.		2	13 13 9	29	56	SS-1	4.5+	-	-	-	-	-	-	-	-	7	A-4a (V)	
	776.4	3																
Very stiff brown SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		4	14 16 9	33	17	SS-2	2.50	-	-	-	-	-	-	-	-	10	A-4a (V)	
		5																
		6																
		7	14 12 14	34	33	SS-3	3.50	16	11	18	32	23	26	16	10	9	A-4a (4)	
	771.4	8																
Medium dense brown GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace silty clay; damp.		9	10 18 16	45	67	SS-4	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
	768.9	10																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.		11																
		12	8 18 22	53	67	SS-5	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
		13																
		14	8 16 21	49	78	SS-6	4.5+	9	11	21	38	21	24	15	9	8	A-4a (5)	
		15																
		16																
		17	18 22 25	62	78	SS-7	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
		18																
		19	10 16 20	47	100	SS-8	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
	758.9	20																
Very dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace silt; damp.		21	20 50/5"	-	91	SS-9	-	44	34	14	- 8 -		NP	NP	NP	3	A-1-b (0)	
		22																
		23																
		24	28 43 40	109	56	SS-10	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:59

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 894+97.33, 4.22 RT | START: 7/6/10 | END: 7/6/10 | PG 2 OF 3 | B-159-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 754.9	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
	753.9	26																
Dense gray COARSE AND FINE SAND (A-3a), some gravel, trace silty clay; damp.		27	25 24 20	58	100	SS-11	-	-	-	-	-	-	-	-	-	5	A-3a (V)	
	751.4	28																
Dense gray FINE SAND (A-3), little silt, trace clay; moist.		29	24 24 20	58	56	SS-12	-	-	-	-	-	-	-	-	-	12	A-3 (V)	
	748.9	30																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.		31	20 17 18	46	100	SS-13	4.5+	7	11	21	41	20	23	15	8	9	A-4a (5)	
		32																
		33																
		34	35 32 33	86	100	SS-14	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
	742.9	35																
Dense gray COARSE AND FINE SAND (A-3a), little gravel, trace silty clay; moist.		36																
		37																
	W	38																
		39	13 22 25	62	100	SS-15	-	-	-	-	-	-	-	-	-	14	A-3a (V)	
	737.9	40																
Very dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, little silt; damp.		41																
		42																
@ 43.5', 2.0 feet sand heave; washed out with tricone.		43																
		44	23 33 28	80	28	SS-16	-	46	26	11	- 17 -		NP	NP	NP	9	A-1-b (0)	
	732.9	45																
Hard gray SILT AND CLAY (A-6a), "and" fine to coarse sand, little gravel; moist.		46																
		47																
		48																
		49	12 19 21	53	100	SS-17	4.5+	-	-	-	-	-	-	-	-	12	A-6a (V)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:59

PID: 77370	BR ID:	PROJECT: I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 894+97.33, 4.22 RT	START: 7/6/10	END: 7/6/10	PG 3 OF 3	B-159-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Hard gray SILT AND CLAY (A-6a), "and" fine to coarse sand, little gravel; moist. *(continued)*	728.1	52																
		53																
		54	20 23 23	61	83	SS-18	4.5+	-	-	-	-	-	-	-	-	13	A-6a (V)	
	724.9	EOB 55																

NOTES: SEEPAGE AT 38.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 37.8 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 19.3 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG BENTONITE CHIPS; 1.5 BAGS QUIKGROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:59

PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / J. NELSON | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 894+95, 81.1 LT | EXPLORATION ID B-159-4-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / S. LARIMER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP P4
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 787.9 (MSL) EOB: 90.0 ft.
START: 6/10/10 END: 6/13/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 64.7 | COORD: 712519.230 N, 1834028.400 E | PAGE 1 OF 4

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Asphalt- 18" Base- 8"	787.9	1																
	785.9	2	37 29 30	64	89	SS-1	-	-	-	-	-	-	-	-	-	6	A-3a (V)	
FILL: Very dense light gray COARSE AND FINE SAND (A-3a), little gravel, little silt; damp.	784.4	3																
POSSIBLE FILL: Very dense light brown GRAVEL WITH SAND AND SILT (A-2-4); damp.	781.9	4	22 36 24	65	78	SS-2	-	33	26	15	26	-	NP	NP	NP	7	A-2-4 (0)	
Medium dense light brown GRAVEL WITH SAND AND SILT (A-2-4); damp to moist.	779.4	7	12 12 12	26	22	SS-3	-	-	-	-	-	-	-	-	-	10	A-2-4 (V)	
Hard brown SILT AND CLAY (A-6a), some fine to coarse sand, some gravel; damp to moist.	774.4	9	12 16 21	40	33	SS-4	4.00	-	-	-	-	-	-	-	-	6	A-6a (V)	
		12	10 7 7	15	72	SS-5	4.5+	-	-	-	-	-	-	-	-	13	A-6a (V)	
Very stiff to hard brown SANDY SILT (A-4a), some fine to coarse sand, little gravel; moist.	771.9	14	6 8 9	18	89	SS-6	4.00	11	12	17	37	23	25	17	8	13	A-4a (5)	
Stiff brown SILT AND CLAY (A-6a), some fine to coarse sand, some gravel; moist.	770.9	16	4 8 21	31	89	SS-7A	1.50	-	-	-	-	-	-	-	-	13	A-6a (V)	
Dense brown COARSE AND FINE SAND (A-3a), some gravel, trace silt; damp.	769.4	17			-	SS-7B	-	-	-	-	-	-	-	-	-	7	A-3a (V)	
Hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		19	10 13 13	28	89	SS-8	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		22	11 17 19	39	100	SS-9	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		24	11 18 23	44	83	SS-10	4.5+	11	10	20	37	22	23	15	8	9	A-4a (5)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:59

PID: 77370 BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 894+95, 81.1 LT | START: 6/10/10 | END: 6/13/10 | PG 2 OF 4 | B-159-4-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp. *(continued)*	762.9	26	14 17 24	44	89	SS-11	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		29	14 21 45	71	94	SS-12	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
Dense gray GRAVEL (A-1-a), "and" fine to coarse sand, trace silt; damp.	755.9	34	14 20 24	47	100	SS-13	-	55	28	8	9	-	NP	NP	NP	4	A-1-a (0)	
Hard gray SILTY CLAY (A-6b), little fine to coarse sand, little gravel; damp.	753.5						4.5+	-	-	-	-	-	-	-	-	13	A-6b (V)	
@ 35.0'-43.5', difficult augering.	745.9	39	20 44 38	88	89	SS-14	4.00	-	-	-	-	-	-	-	-	9	A-6b (V)	
Very dense gray GRAVEL (A-1-a), some fine to coarse sand, trace silt; wet.	740.9	W 44	22 38 35	79	89	SS-15	-	59	25	9	7	-	NP	NP	NP	7	A-1-a (0)	
Very dense gray GRAVEL WITH SAND (A-1-b), little to some gravel, trace silt; wet.		49	14 25 50	81	72	SS-16	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
@ 48.5', 3.0 feet sand heave; washed out with tricone.		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:59

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PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 894+95, 81.1 LT | START: 6/10/10 | END: 6/13/10 | PG 3 OF 4 | B-159-4-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense gray GRAVEL WITH SAND (A-1-b), little to some gravel, trace silt; wet. *(continued)*	736.1	52																
		53																
		54	22 38 45	90	83	SS-17	-	35	34	22	9	-	NP	NP	NP	9	A-1-b (0)	
		55																
		56																
	730.9	57																
Hard gray SILT AND CLAY (A-6a), little fine to coarse sand; damp.		58																
		59	14 21 31	56	72	SS-18	4.5+	-	-	-	-	-	-	-	-	15	A-6a (V)	
		60																
		61																
		62																
		63																
		64	23 35 27	67	100	SS-19	4.5+	0	3	10	43	44	30	16	14	14	A-6a (10)	
		65																
		66																
	720.9	67																
Hard gray CLAY (A-7-6), trace to little fine to coarse sand; moist.		68																
		69	14 22 33	59	89	SS-20	4.5+	-	-	-	-	-	-	-	-	19	A-7-6 (V)	
		70																
		71																
		72																
		73																
		74	12 14 13	29	100	SS-21	4.5+	0	0	0	26	74	46	22	24	25	A-7-6 (15)	
		75																
		76																
		77																
	709.4	78																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:59

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 894+95, 81.1 LT | START: 6/10/10 | END: 6/13/10 | PG 4 OF 4 | B-159-4-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very stiff gray CLAY (A-7-6), trace fine sand; moist. *(continued)*	709.3	79	9 14 21	38	100	SS-22	4.00	-	-	-	-	-	-	-	-	25	A-7-6 (V)	
		80																
		81																
		82																
		83																
		84	9 17 23	43	100	SS-23	2.50	-	-	-	-	-	-	-	-	23	A-7-6 (V)	
		85																
		86																
		87																
		88																
		89	6 13 18	33	100	SS-24	2.50	-	-	-	-	-	-	-	-	27	A-7-6 (V)	
	697.9	EOB 90																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 17:59

NOTES: SEEPAGE AT 43.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 43.9 FEET; FINAL WATER LEVEL AFTER 89 HOURS = 81.4 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 3 BAGS BENTONITE CHIPS; 0.5 BAGS QUICKCRETE; 1 BAGS QUIKGROUT

PROJECT: FRA-70-14.48	DRILLING FIRM / OPERATOR: DLZ / K. CONRAD	DRILL RIG: CME 75 TRUCK (SN 237127)	STATION / OFFSET: 106+80, 15.7 LT	EXPLORATION ID B-159-5-13
TYPE: NOISE WALL	SAMPLING FIRM / LOGGER: DLZ / K. REINHART	HAMMER: CME AUTOMATIC	ALIGNMENT: NOISE BARRIER CENTERLINE	
PID: 77370 BR ID:	DRILLING METHOD: 3.25" HSA / NQ2	CALIBRATION DATE: 1/27/12	ELEVATION: 790.6 (MSL) EOB: 25.0 ft.	PAGE 1 OF 1
START: 10/8/13 END: 10/8/13	SAMPLING METHOD: SPT / NQ2	ENERGY RATIO (%): 77	COORD: 712677.090 N, 1834071.420 E	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil - 3"	790.3																	
Very stiff to hard brown SILT AND CLAY (A-6a), some to "and" fine to coarse sand, trace gravel; damp to moist.		1 2	5 4 4	10	44	SS-1	4.50	-	-	-	-	-	-	-	-	19	A-6a (V)	
		3 4 5	3 10 9	24	56	SS-2	3.00	-	-	-	-	-	-	-	-	19	A-6a (V)	
	784.6																	
Very stiff to hard brown SANDY SILT (A-4a), little to some clay, trace to little gravel; damp to moist.		6 7 8	5 5 5	13	78	SS-3	3.50	6	13	20	39	22	26	17	9	17	A-4a (5)	
		9 10	4 5 9	18	78	SS-4	4.50	-	-	-	-	-	-	-	-	13	A-4a (V)	
@ 11.0', becomes gray		11 12 13	9 13 11	31	89	SS-5	4.25	-	-	-	-	-	-	-	-	9	A-4a (V)	
		14 15	15 13 11	31	100	SS-6	4.50	-	-	-	-	-	-	-	-	11	A-4a (V)	
		16 17 18	4 10 10	26	94	SS-7	4.50	12	15	27	29	17	22	15	7	9	A-4a (2)	
	772.1																	
Very dense gray GRAVEL (A-1-a), some fine to coarse sand, trace silty clay; damp.		19 20	8 48 50/4"	-	81	SS-8	-	-	-	-	-	-	-	-	-	2	A-1-a (V)	
	769.6																	
Hard gray SILTY CLAY (A-6b), some fine to coarse sand, trace fine to coarse gravel; damp.		21 22 23	15 14 18	41	100	SS-9	4.50	-	-	-	-	-	-	-	-	9	A-6b (V)	
		24	12 14 17	40	94	SS-10	4.50	-	-	-	-	-	-	-	-	8	A-6b (V)	
	765.6	EOB 25																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - FRA-70-14.48 - 11/15/13 12:53

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG BENTONITE CHIPS; SOIL CUTTINGS

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / J. NELSON | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 896+44.56, 75.43 LT | EXPLORATION ID B-160-1-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / S. LARIMER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP P4 | PAGE 1 OF 2
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 785.6 (MSL) EOB: 40.0 ft.
START: 6/10/10 END: 6/10/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 64.7 | COORD: 712476.980 N, 1834163.570 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Asphalt - 19" Base - 4"	785.6																	
	783.7																	
FILL: Dense light gray GRAVEL WITH SAND (A-1-b), trace silt; damp.		1	12 14 17	33	78	SS-1	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
	782.1	2																
Medium dense to dense brown GRAVEL WITH SAND (A-1-b), little silt; damp.		3																
		4	19 20 17	40	89	SS-2	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
		5																
		6	7 6 6	13	78	SS-3	-	26	36	26	12	-	NP	NP	NP	5	A-1-b (0)	
@ 8.5'-10.0', loose.		7																
		8																
		9	5 3 2	5	39	SS-4	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
	774.6	10																
Very stiff brown SANDY SILT (A-4a), some to "and" fine to coarse sand, little gravel; damp.		11																
		12	4 7 8	16	22	SS-5	-	-	-	-	-	-	-	-	-	11	A-4a (V)	
		13																
		14	10 8 11	20	100	SS-6	2.50	13	16	22	36	13	20	16	4	11	A-4a (3)	
	769.6	15																
Dense to very dense brown GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, little silt; damp to moist.		16																
		17	13 15 20	38	100	SS-7	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
		18																
		19	14 21 26	51	89	SS-8	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
		20																
@ 21.0', becomes wet.		21 W																
		22	11 17 24	44	83	SS-9	-	40	33	13	14	-	NP	NP	NP	12	A-1-b (0)	
		23																
	760.6	24	14 25 21	50	89	SS-10	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 18:00

PID: 77370 BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 896+44.56, 75.43 LT | START: 6/10/10 | END: 6/10/10 | PG 2 OF 2 | B-160-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.	760.6																	
		26																
		27	12 20 27	51	100	SS-11	4.5+	-	-	-	-	-	-	-	-	12	A-4a (V)	
		28																
		29	13 18 22	43	100	SS-12	4.5+	7	12	23	35	23	22	13	9	11	A-4a (5)	
		30																
		31																
		32																
		33																
		34	12 15 21	39	100	SS-13	4.5+	-	-	-	-	-	-	-	-	12	A-4a (V)	
		35																
		36																
		37																
		38																
	745.6	39	11 19 28	51	78	SS-14	4.5+	-	-	-	-	-	-	-	-	12	A-4a (V)	
EOB		40																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 18:00

NOTES: SEEPAGE AT 21.0 FEET; FINAL WATER LEVEL = 39.0 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 4 BAGS BENTONITE CHIPS; 1 BAG QUICKCRETE; SOIL CUTTINGS

PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 899+18.78, 13.82 RT | EXPLORATION ID B-160-2-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP P4
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 780.4 (MSL) EOB: 40.0 ft. | PAGE 1 OF 2
START: 8/15/11 END: 8/15/11 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712334.760 N, 1834413.100 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil - 5"	780.0																	
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp.			11 14 14	37	100	SS-1	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
@ 1.0'-2.5', contains occasional rust stains.			8 9 10	25	100	SS-2	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
			17 16 13	38	11	SS-3	4.5+	-	-	-	-	-	-	-	-	13	A-4a (V)	
			8 14 20	45	78	SS-4	4.5+	11	12	22	34	21	23	16	7	11	A-4a (4)	
	769.4																	
Very dense gray GRAVEL WITH SAND (A-1-b), little silt; damp.			20 50/5"	-	55	SS-5	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
@ 11.0'-15.0', contains possible cobbles.			20 44 50/5"	-	59	SS-6	-	-	-	-	-	-	-	-	-	3	A-1-b (V)	
NOTE: Hole caved to 15.0 feet when augers removed.			19 28 29	75	100	SS-7	-	50	26	14	-	10 -	NP	NP	NP	4	A-1-b (0)	
		W																
@ 18.5', becomes wet.			11 22 20	55	78	SS-8	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
@ 23.5', becomes gray, 2.0 feet sand heave; washed out with tricone.			11 19 21	53	56	SS-9	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
	755.4		21 22 22	58	100	SS-10	-	29	28	31	-	12 -	NP	NP	NP	15	A-1-b (0)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 18.00

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 899+18.78, 13.82 RT | START: 8/15/11 | END: 8/15/11 | PG 2 OF 2 | B-160-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense gray GRAVEL WITH SAND (A-1-b), little silt; wet.	755.4																	
@ 26.0'-27.5', contains occasional silt seams.			24 24 22	61	100	SS-11	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
			15 20 35	72	83	SS-12	-	-	-	-	-	-	-	-	-	13	A-1-b (V)	
	749.4																	
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.			19 22 26	63	100	SS-13	4.5+	5	12	20	36	27	23	15	8	13	A-4a (6)	
			17 26 26	68	100	SS-14	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
			11 20 21	54	100	SS-15	4.5+	-	-	-	-	-	-	-	-	11	A-4a (V)	
		W																
	740.4	EOB	10 21 23	58	89	SS-16	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 18.00

NOTES: SEEPAGE AT 18.5 AND 38.7 FEET; WATER LEVEL PRIOR TO ADDING WATER = 20.9 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 22.7 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG BENTONITE CHIPS

PROJECT: FRA-70-14.48	DRILLING FIRM / OPERATOR: DLZ / K. CONRAD	DRILL RIG: CME 75 TRUCK (SN 237127)	STATION / OFFSET: 111+20, 7.2 LT	EXPLORATION ID B-161-1-13
TYPE: NOISE WALL	SAMPLING FIRM / LOGGER: DLZ / K. REINHART	HAMMER: CME AUTOMATIC	ALIGNMENT: NOISE BARRIER CENTERLINE	
PID: 77370 BR ID:	DRILLING METHOD: 3.25" HSA / NQ2	CALIBRATION DATE: 1/27/12	ELEVATION: 789.9 (MSL) EOB: 25.0 ft.	PAGE 1 OF 1
START: 10/9/13 END: 10/9/13	SAMPLING METHOD: SPT / NQ2	ENERGY RATIO (%): 77	COORD: 712549.760 N, 1834492.320 E	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil - 4"	789.6																	
FILL: Hard brown SILT AND CLAY (A-6a), "and" fine to coarse sand, little fine to coarse gravel; contains cobbles; damp.	786.4	1	4 6 43	63	100	SS-1	4.50	-	-	-	-	-	-	-	-	14	A-6a (V)	
FILL: Hard brown and gray SILTY CLAY (A-6b), some to "and" fine to coarse sand, trace fine to coarse gravel; damp to moist.	783.9	4	5 7 7	18	100	SS-2	4.50	-	-	-	-	-	-	-	-	14	A-6a (V)	
FILL: Very stiff to hard brown SANDY SILT (A-4a), some clay, little gravel; damp.		6	5 6 12	23	100	SS-3	2.75	10	8	17	36	29	26	16	10	14	A-4a (6)	
@ 8.5', gray, slightly organic.	778.9	9	7 8 8	21	78	SS-4	4.25	-	-	-	-	-	-	-	-	9	A-4a (V)	
Hard gray SANDY SILT (A-4a), trace to little gravel; contains cobbles; damp.		11	13 25 9	44	78	SS-5	4.25	-	-	-	-	-	-	-	-	10	A-4a (V)	
		14	8 11 9	26	78	SS-6	4.50	16	12	22	32	18	21	15	6	11	A-4a (3)	
		17	24 32 47	101	11	SS-7	4.50	-	-	-	-	-	-	-	-	13	A-4a (V)	
Dense gray SANDY SILT (A-4a), "and" clay, trace fine to coarse gravel; damp.	771.4	19	10 17 20	47	100	SS-8	4.00	-	-	-	-	-	-	-	-	8	A-4a (V)	
Very dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace silty clay; damp.	768.9	22	19 43 27	90	39	SS-9	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
	764.9	EOB 25	19 36 41	99	78	SS-10	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG BENTONITE GROUT; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - FRA-70-14.48 - 11/15/13 12:53

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PROJECT: I-70/I-71 EAST INTERCHANGE
TYPE: ROADWAY
PID: 77370 BR ID:
START: 6/1/10 END: 6/3/10

DRILLING FIRM / OPERATOR: DLZ / J. POILLUCCI
SAMPLING FIRM / LOGGER: DLZ / D. WILLIARD
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 75 TRUCK
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 1/7/10
ENERGY RATIO (%): 64.7

STATION / OFFSET: 903+25.03, 35.07 LT
ALIGNMENT: RAMP P2
ELEVATION: 792.6 (MSL) EOB: 95.0 ft.
COORD: 712386.200 N, 1834835.230 E

EXPLORATION ID B-162-1-10
PAGE 1 OF 4

MATERIAL DESCRIPTION AND NOTES	ELEV. 792.6	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
FILL: Brick Fragments	791.6	1																
FILL: Hard brown SILT AND CLAY (A-6a), some fine to coarse sand, little to some gravel; damp.	789.1	2	3 5 5	11	67	SS-1	4.25	-	-	-	-	-	-	-	-	20	A-6a (V)	
Very stiff to hard brown SANDY SILT (A-4a), some to "and" fine to coarse sand, little gravel; damp.		3																
		4	2 6 50/3"	-	67	SS-2	3.50	-	-	-	-	-	-	-	-	23	A-4a (V)	
		5																
		6																
		7	1 4 6	11	100	SS-3	4.50	-	-	-	-	-	-	-	-	15	A-4a (V)	
		8																
		9	2 7 41	52	100	SS-4	3.75	16	13	20	33	18	20	14	6	11	A-4a (3)	
		10																
		11																
		12	10 13 11	26	78	SS-5	4.50	-	-	-	-	-	-	-	-	12	A-4a (V)	
		13																
		14	3 8 11	20	100	SS-6	4.25	-	-	-	-	-	-	-	-	10	A-4a (V)	
		15																
		16																
		17	2 6 9	16	100	SS-7	4.50	13	15	21	30	21	22	15	7	11	A-4a (3)	
		18																
		19	7 11 22	36	0	SS-8	-	-	-	-	-	-	-	-	-	-		
		20																
		21																
		22	4 10 31	44	100	SS-9	3.25	-	-	-	-	-	-	-	-	11	A-4a (V)	
		23																
	769.1	24																
Very dense grayish brown GRAVEL WITH SAND AND SILT (A-2-4), trace clay; damp.			18 31 26	61	100	SS-10	-	26	22	20	23	9	18	15	3	8	A-2-4 (0)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 18:00

PID: 77370 BR ID: PROJECT: I-70/I-71 EAST INTERCHANGE STATION / OFFSET: 903+25.03, 35.07 LT START: 6/1/10 END: 6/3/10 PG 2 OF 4 B-162-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 767.6	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense grayish brown GRAVEL WITH SAND AND SILT (A-2-4), trace clay; damp. *(continued)*	764.1	26	33 45 49	101	83	SS-11	-	-	-	-	-	-	-	-	-	5	A-2-4 (V)	
Very dense grayish brown GRAVEL WITH SAND, SILT, AND CLAY (A-2-6); moist.	761.6	27	28 30 38	73	83	SS-12	-	-	-	-	-	-	-	-	-	8	A-2-6 (V)	
Very dense gray COARSE AND FINE SAND (A-3a), little silt, trace gravel; wet.		28																
		29	17 21 29	54	67	SS-13	-	5	19	59	-	17 -	NP	NP	NP	19	A-3a (0)	
@ 33.5'-35.0', contains clay stringers.		30																
@ 30.0'-48.5', 1.0 to 3.0 feet sand heave; washed out with tricone.		31																
		32																
		33																
		34	13 20 33	57	67	SS-14	-	-	-	-	-	-	-	-	-	9	A-3a (V)	
	756.6	35																
Very dense gray SILT (A-4b), little fine sand, little clay; wet.	754.1	36																
		37	16 30 37	72	83	SS-15	-	-	-	-	-	-	-	-	-	15	A-4b (V)	
Very dense gray GRAVEL (A-1-a), some fine to coarse sand, little silt; wet.		38																
		39	42 45 50	102	72	SS-16	-	51	21	14	-	14 -	NP	NP	NP	9	A-1-a (0)	
		40																
		41																
		42	20 24 22	50	72	SS-17	-	-	-	-	-	-	-	-	-	11	A-1-a (V)	
	749.1	43																
Very dense gray GRAVEL WITH SAND (A-1-b), little silt; wet.		44	17 28 30	63	83	SS-18	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		45																
		46																
		47	21 31 27	63	67	SS-19	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
		48																
		49	33 31 37	73	100	SS-20	-	23	29	37	-	11 -	NP	NP	NP	13	A-1-b (0)	
		50																
		51																

W

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 18:00

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PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 903+25.03, 35.07 LT | START: 6/1/10 | END: 6/3/10 | PG 3 OF 4 | B-162-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense gray GRAVEL WITH SAND (A-1-b), little silt; wet. *(continued)*		52																
		53																
		54	18 28 44	78	83	SS-21	-	-	-	-	-	-	-	-	-	13	A-1-b (V)	
@ 50.0', 55.0', 1.0 feet sand heave; washed out with tricone.		55																
		56																
	735.6	57																
Hard gray SILT (A-4b), little to some fine to coarse sand, trace to little gravel; damp to moist.		58																
		59	20 30 36	71	89	SS-22	4.5+	5	7	11	53	24	25	17	8	16	A-4b (8)	
		60																
		61																
		62																
		63																
		64	16 26 36	67	83	SS-23	4.5+	-	-	-	-	-	-	-	-	11	A-4b (V)	
		65																
		66																
	725.6	67																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp.		68																
		69	16 23 32	59	89	SS-24	4.5+	10	11	21	36	22	22	14	8	11	A-4a (5)	
		70																
		71																
		72																
		73																
		74	12 21 23	47	100	SS-25	4.5+	-	-	-	-	-	-	-	-	12	A-4a (V)	
		75																
		76																
		77																
		78																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 18:00

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 903+25.03, 35.07 LT | START: 6/1/10 | END: 6/3/10 | PG 4 OF 4 | B-162-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp. *(continued)*	714.1	79	10 20 23	46	100	SS-26	4.5+	11	11	19	37	22	24	14	10	14	A-4a (5)	
		80																
		81																
		82																
		83																
		84	19 23 29	56	100	SS-27	4.5+	-	-	-	-	-	-	-	-	11	A-4a (V)	
		85																
		86																
		87																
		88																
		89	15 17 18	38	0	SS-28	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
		90																
		91																
		92																
		93																
	697.6	94	17 18 21	42	100	SS-29	4.5+	-	-	-	-	-	-	-	-	12	A-4a (V)	
	EOB	95																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 18:00

NOTES: SEEPAGE AT 30.2 FEET; FINAL WATER LEVEL NOT REPORTED.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 2 BAGS BENTONITE CHIPS; 4 BAGS QUIKGROUT; SOIL CUTTINGS

PROJECT: FRA-70-14.48	DRILLING FIRM / OPERATOR: DLZ / K. CONRAD	DRILL RIG: CME 75 TRUCK (SN 237127)	STATION / OFFSET: 113+50, 0.9 LT
TYPE: NOISE WALL	SAMPLING FIRM / LOGGER: DLZ / K. REINHART	HAMMER: CME AUTOMATIC	ALIGNMENT: NOISE BARRIER CENTERLINE
PID: 77370 BR ID:	DRILLING METHOD: 3.25" HSA / NQ2	CALIBRATION DATE: 1/27/12	ELEVATION: 790.7 (MSL) EOB: 25.0 ft.
START: 10/9/13 END: 10/9/13	SAMPLING METHOD: SPT / NQ2	ENERGY RATIO (%): 77	COORD: 712533.230 N, 1834738.830 E

EXPLORATION ID: B-162-2-13

PAGE: 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
FILL: Stiff gray CLAY (A-7-6), some silt, some fine to coarse sand, some gravel; contains brick fragments and fine roots; moist.	790.7	1	2 4 6	13	56	SS-1	2.00	32	6	11	26	25	42	27	15	20	A-7-6 (5)	
	787.2	2																
FILL: Hard brown SILT AND CLAY (A-6a), some to "and" fine to coarse sand, trace fine to coarse gravel; contains cobbles; damp.		3																
		4	5 7 6	17	83	SS-2	4.50	-	-	-	-	-	-	-	-	15	A-6a (V)	
		5																
		6	6 8 12	26	89	SS-3	4.50	-	-	-	-	-	-	-	-	12	A-6a (V)	
	782.2	7																
Hard brown SILT AND CLAY (A-6a), some to "and" fine to coarse sand, trace gravel; damp.		8																
		9	9 10 17	35	83	SS-4	4.50	-	-	-	-	-	-	-	-	12	A-6a (V)	
	779.7	10																
Dense to very dense brown SANDY SILT (A-4a), little clay, trace to little gravel; damp.		11																
		12	13 15 14	37	78	SS-5	-	-	-	-	-	-	-	-	-	8	A-4a (V)	
		13																
		14	13 13 13	33	89	SS-6	-	-	-	-	-	-	-	-	-	5	A-4a (V)	
		15																
		16																
		17	10 11 14	32	100	SS-7	-	-	-	-	-	-	-	-	-	12	A-4a (V)	
		18																
		19	9 14 13	35	100	SS-8	-	-	-	-	-	-	-	-	-	10	A-4a (V)	
		20																
		21																
		22	10 20 28	62	94	SS-9	-	15	19	18	38	10	NP	NP	NP	9	A-4a (3)	
	767.2	23																
Very dense brown and gray GRAVEL WITH SAND (A-1-b), some silty clay; damp.		24	17 32 42	95	100	SS-10	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
	765.7	EOB 25																

NOTES: ENCOUNTERED ABANDONED ELECTRIC CONDUIT @ 8'. TERMINATED HOLE. OFFSET 7' SE, BLANK DRILLED TO 8.5' BEFORE SAMPLING.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG BENTONITE GROUT; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - FRA-70-14.48 - 11/15/13 12:53

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DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-164-0-09 | *Location:* Sta. 66+87.13, 27.71 ft Rt of Fulton CL | *Date Drilled:* 3/24/2009

WATER OBSERVATIONS: Water seepage at: None; Water level at completion: None

FIELD NOTES:

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay
	772.1													
1.0	771.1						Asphalt - 4" Base - 2" Brick - 4" Base - 2"							
2.5	769.6	18 10 8	4	1					56	21	---	10	13	--
		8 4 4	12	2		1.5	FILL: Medium dense gray GRAVEL (A-1-a), some fine to coarse sand, little silt; damp.		15	13	---	19	30	23
4.0	768.1	7 7 9	16	3		4.5	FILL: Stiff brown SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; contains layers of brick fragments; damp.		5	15	---	20	37	23
5		4 8 13	18	4		4.5+	Hard brown SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp.		8	15	---	20	34	23
		11 16 16	18	5		4.5+								
		10 13 14	18	6		4.5+								
10		5 13 19	18	7		4.5+								
		8 11 16	18	8		4.5+			12	13	---	20	34	21
		8 11 17	18	9		4.5+			13	15	---	19	33	20
15		18 25 25	18	10		4.5+			11	10	---	21	38	20
16.0	756.1	10 17 24	18	11			Dense gray SILT (A-4b), little clay, trace fine to coarse sand; damp.		1	2	---	7	76	14
		6 13 18	18	12			@ 21.0'-21.6', fine sand seam.							
20														
21.6	750.5	8 29 27	18	13A 13B		4.5	Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.							
22.5	749.6						Bottom of Boring - 22.5'							
25														

STANDARD PENETRATION (N60)
Natural Moisture Content, % - ●
PL ⊢ ○ / Non-Plastic - NP ⊣ LL
Blows per foot - 10 20 30 40

51

57

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / J. POILLUCCI | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 994+23.48, 60.4 LT | EXPLORATION ID B-164-1-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / D. WILLIARD | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP Q1
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 771.8 (MSL) EOB: 37.5 ft. | PAGE 1 OF 2
START: 5/25/10 END: 5/26/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 64.7 | COORD: 712346.690 N, 1831956.320 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Asphalt - 2" Base - 5"	771.8																	
	771.2																	
FILL: Stiff to very stiff mottled brown and gray SANDY SILT (A-4a), little to some fine to coarse sand, trace to little gravel; damp to moist.		1	4 6 13	20	78	SS-1	3.00	-	-	-	-	-	-	-	-	16	A-4a (V)	
		2																
@3.5' - 8.5', brown; contains rock fragments.		3	2 4 6	11	94	SS-2	3.00	-	-	-	-	-	-	-	-	14	A-4a (V)	
		4																
		5																
		6	4 7 10	18	100	SS-3	4.00	-	-	-	-	-	-	-	-	13	A-4a (V)	
		7																
@8.5' - 10.0', gray; contains rock fragments.		8	5 8 10	19	100	SS-4	4.00	-	-	-	-	-	-	-	-	9	A-4a (V)	
		9																
@11.0' - 12.5', gray.		10	3 5 16	23	78	SS-5	1.25	9	13	18	34	26	24	14	10	14	A-4a (5)	
		11																
@13.5', grayish brown.		12	6 33 45	84	0	SS-6	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
		13																
	754.9	14	16 17 14	33	100	SS-7A	-	-	-	-	-	-	-	-	-	11	A-4a (V)	
Dense gray SILT (A-4b), little fine sand, trace clay; damp.	753.8				-	SS-7B	-	-	-	-	-	-	-	-	-	17	A-4b (V)	
Dense gray SANDY SILT (A-4a), little to some fine to coarse sand, little to some gravel; damp to moist.		15	10 20 23	46	94	SS-8	-	22	20	22	- 36 -		NP	NP	NP	7	A-4a (0)	
		16																
		17	10 15 16	33	100	SS-9	-	-	-	-	-	-	-	-	-	10	A-4a (V)	
		18																
		19	7 14 16	32	100	SS-10	-	-	-	-	-	-	-	-	-	9	A-4a (V)	
	746.8																	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:34

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 994+23.48, 60.4 LT | START: 5/25/10 | END: 5/26/10 | PG 2 OF 2 | B-164-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Dense gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; moist.	746.8																	
	743.8	20	13 20 20	43	89	SS-11	-	5	8	25	44	18	17	8	9	12	A-4a (5)	
Very dense gray FINE SAND (A-3), little fine sand, trace silt; damp to moist.	F.S																	
		21	9 23 30	57	100	SS-12	-	-	-	-	-	-	-	-	-	6	A-3 (V)	
	740.2	W																
		22	14 39 38	83	78 -	SS-13A SS-13B	-	-	-	-	-	-	-	-	-	19	A-3 (V)	
Very dense gray SANDY SILT (A-4a), some to "and" fine sand, trace gravel; contains rock fragments; damp.	738.8															7	A-4a (V)	
Very dense gray GRAVEL WITH SAND (A-1-b), little silt; moist to wet.	736.3	23	17 45 50/5"	-	82	SS-14	-	39	28	17	- 16 -		NP	NP	NP	8	A-1-b (0)	
Very dense gray GRAVEL WITH SAND AND SILT (A-2-4), trace clay; wet.	734.3	EOB																
		24	28 35 27	67	56	SS-15	-	-	-	-	-	-	-	-	-	6	A-2-4 (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:34

NOTES: SEEPAGE AT 31.0 FEET; FINAL WATER LEVEL = 35.1 FEET.
ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 1.5 BAGS BENTONITE CHIPS; 1.5 BAGS QUIKGROUT

PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / J. POILLUCCI | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 68+15.35, 13.84 RT | EXPLORATION ID B-164-2-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / D. WILLIARD | HAMMER: CME AUTOMATIC | ALIGNMENT: FULTON STREET
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 774.2 (MSL) EOB: 35.0 ft. | PAGE 1 OF 2
START: 5/26/10 END: 5/27/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 64.7 | COORD: 712383.510 N, 1832113.210 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Asphalt - 3" Concrete - 5"	774.2																	
FILL: Stiff brown SILT AND CLAY (A-6a), little fine to coarse sand, trace to little gravel; contains trace brick and rock fragments; moist.	773.5	1	3 3 2	5	56	SS-1	1.50	-	-	-	-	-	-	-	-	21	A-6a (V)	
POSSIBLE FILL: Medium dense brown COARSE AND FINE SAND (A-3a), little gravel, trace silt; damp.	771.2	2																
Very stiff to hard brown and gray SANDY SILT (A-4a), little to some fine to coarse sand, trace to little gravel; damp to moist.	768.7	3	4 7 8	16	61	SS-2	-	-	-	-	-	-	-	-	-	5	A-3a (V)	
		4																
		5	11 12 12	26	39	SS-3	4.00	-	-	-	-	-	-	-	-	12	A-4a (V)	
		6																
		7																
		8	5 7 6	14	100	SS-4	4.5+	13	13	18	32	24	23	14	9	10	A-4a (4)	
		9																
		10																
		11	5 11 12	25	100	SS-5	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
@13.5', drove on possible cobbles or boulders, no recovery.	758.7	12																
		13																
		14	9 26 40	71	0	SS-6	-	-	-	-	-	-	-	-	-	-		
Dense to very dense gray GRAVEL WITH SAND (A-1-b), trace to little silt; damp.		15																
		16																
		17	16 32 50/5"	-	71	SS-7	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		18																
		19	13 28 37	70	83	SS-8	-	40	27	20	-	13 -	NP	NP	NP	4	A-1-b (0)	
		20																
		21																
		22	15 22 26	52	100	SS-9	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
	751.2	23																
Very dense gray SANDY SILT (A-4a), some to "and" fine to coarse sand, little gravel; contains rock fragments; damp.		24	13 24 36	65	100	SS-10	-	-	-	-	-	-	-	-	-	6	A-4a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:34

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 68+15.35, 13.84 RT | START: 5/26/10 | END: 5/27/10 | PG 2 OF 2 | B-164-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense gray SANDY SILT (A-4a), some to "and" fine to coarse sand, little gravel; contains rock fragments; damp. *(continued)*	749.2	26																
		27	17 33 32	70	100	SS-11	-	16	16	23	32	13	16	14	2	9	A-4a (2)	
		28																
		29	23 31 35	71	100	SS-12	-	-	-	-	-	-	-	-	-	10	A-4a (V)	
		30																
		31																
		32																
		33																
		34	24 32 50	88	100	SS-13	-	-	-	-	-	-	-	-	-	8	A-4a (V)	
	739.2 EOB	35																

NOTES: NO SEEPAGE OR FINAL WATER LEVELS DETECTED.
ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 2 BAGS BENTONITE CHIPS; 2 BAGS QUIKGROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:34

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PROJECT: I-70/I-71 EAST INTERCHANGE
TYPE: ROADWAY
PID: 77370 BR ID:
START: 5/27/10 END: 6/1/10

DRILLING FIRM / OPERATOR: DLZ / J. POILLUCCI
SAMPLING FIRM / LOGGER: DLZ / D. WILLIARD
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 75 TRUCK
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 1/7/10
ENERGY RATIO (%): 64.7

STATION / OFFSET: 877+81.99, 29.51 LT
ALIGNMENT: RAMP Q4
ELEVATION: 776.5 (MSL) EOB: 40.0 ft.
COORD: 712442.390 N, 1832252.670 E

EXPLORATION ID B-164-3-10
PAGE 1 OF 2

MATERIAL DESCRIPTION AND NOTES	ELEV. 776.5	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Asphalt - 4" Concrete - 8.5"	775.5	1																
FILL: Stiff mottled brown, gray and orange SANDY SILT (A-4a), some fine to coarse sand, some silt; trace gravel; damp.	773.5	2	2 5 5	11	100	SS-1	1.50	7	14	20	36	23	23	16	7	14	A-4a (5)	
POSSIBLE FILL: Stiff to very stiff brown SILT AND CLAY (A-6a), some fine to coarse sand, little silt; trace gravel; contains trace orange nodules; damp to moist.		3	3 3 4	8	100	SS-2	1.50	-	-	-	-	-	-	-	-	13	A-6a (V)	
		4																
		5																
		6	5 12 18	32	11	SS-3	3.00	-	-	-	-	-	-	-	-	13	A-6a (V)	
	768.5	7																
Very stiff to hard dark brown SANDY SILT (A-4a), little to some fine to coarse sand, trace to little gravel; damp to moist.		8																
		9	3 6 7	14	100	SS-4	2.00	-	-	-	-	-	-	-	-	10	A-4a (V)	
		10																
		11																
		12	3 9 9	19	100	SS-5	4.00	15	13	19	32	21	20	17	3	10	A-4a (4)	
		13																
		14	3 10 12	24	100	SS-6	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
		15																
		16																
		17	5 10 19	31	100	SS-7	4.00	-	-	-	-	-	-	-	-	11	A-4a (V)	
	758.5	18																
Very dense brown GRAVEL WITH SAND (A-1-b), trace to little silt; damp.		19	17 50/0"	-	100	SS-8	-	-	-	-	-	-	-	-	-	3	A-1-b (V)	
		20																
		21																
		22	17 22 22	47	100	SS-9	-	22	39	25	-	14 -	NP	NP	NP	6	A-1-b (0)	
		23																
		24	17 22 30	56	100	SS-10	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:34

PID: 77370 BR ID: PROJECT I-70/I-71 EAST INTERCHANGE STATION / OFFSET: 877+81.99, 29.51 LT START: 5/27/10 END: 6/1/10 PG 2 OF 2 B-164-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 751.5	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense brown GRAVEL WITH SAND (A-1-b), trace to little silt; damp. *(continued)*		26																
		27	19 27 31	63	78	SS-11	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
	748.5	28																
Very stiff gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.		29	15 13 20	36	100	SS-12	4.00	9	11	20	41	19	20	15	5	11	A-4a (5)	
		30																
		31																
		32																
		33																
@33.5' - 40.0', contains rock fragments		34	10 16 22	41	100	SS-13	4.00	-	-	-	-	-	-	-	-	9	A-4a (V)	
		35																
		36																
		37																
		38																
@38.5' - 40.0', "and" fine to coarse sand.		39	14 19 20	42	100	SS-14	4.00	-	-	-	-	-	-	-	-	11	A-4a (V)	
	736.5 EOB	40																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:34

NOTES: NO SEEPAGE OR FINAL WATER LEVELS DETECTED.
ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 3 BAGS QUIKGROUT

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PROJECT: I-70/I-71 EAST INTERCHANGE
TYPE: ROADWAY
PID: 77370 BR ID:
START: 6/13/10 END: 6/13/10

DRILLING FIRM / OPERATOR: DLZ / J. NELSON
SAMPLING FIRM / LOGGER: DLZ / S. LARIMER
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 75 TRUCK
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 1/7/10
ENERGY RATIO (%): 64.7

STATION / OFFSET: 999+03.19, 55.3 LT
ALIGNMENT: RAMP Q1
ELEVATION: 773.5 (MSL) EOB: 25.0 ft.
COORD: 712456.320 N, 1832407.970 E

EXPLORATION ID B-165-1-10
PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Asphalt- 20" Base- 8"	773.5																	
	771.2	2																
POSSIBLE FILL: Hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		3	20 17 11	30	89	SS-1	4.5+	-	-	-	-	-	-	-	-	11	A-4a (V)	
		4	12 16 17	36	11	SS-2	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
		5																
@ 6.0'-7.5', occasional rust stains.		6																
		7	15 17 25	45	100	SS-3	4.5+	13	12	19	35	21	23	16	7	10	A-4a (4)	
	765.0	8																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		9	9 14 18	35	100	SS-4	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		10																
		11																
		12	10 12 15	29	100	SS-5	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		13																
		14	8 10 15	27	100	SS-6	4.00	11	13	18	35	23	22	14	8	10	A-4a (5)	
		15																
		16	50/3"	-	100	SS-7	3.50	-	-	-	-	-	-	-	-	10	A-4a (V)	
		17																
		18																
@ 18.5', low recovery; drove on cobble.		19	50/4"	-	25	SS-8	-	-	-	-	-	-	-	-	-	-		
		20																
		21																
		22	13 19 18	40	89	SS-9	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
	749.6	23																
		24	20		-	SS-10B	4.5+	-	-	-	-	-	-	-	-	7	A-4a (V)	
Dense gray FINE SAND (A-3), trace silty clay; damp.	748.5		20 35	59	100	SS-10A	-	-	-	-	-	-	-	-	-	4	A-3 (V)	
			EOB															

NOTES: NO SEEPAGE OR FINAL WATER LEVELS DETECTED.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG BENTONITE CHIPS; 0.5 BAG QUICKCRETE; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:34

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PROJECT: I-70/I-71 EAST INTERCHANGE
TYPE: ROADWAY
PID: 77370 BR ID:
START: 7/12/10 END: 7/12/10

DRILLING FIRM / OPERATOR: DLZ / K. CONRAD
SAMPLING FIRM / LOGGER: DLZ / M. EVENER
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 75 TRUCK
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 1/7/10
ENERGY RATIO (%): 79

STATION / OFFSET: 880+93.28, 4.77 LT
ALIGNMENT: RAMP Q4
ELEVATION: 778.6 (MSL) EOB: 64.9 ft.
COORD: 712557.610 N, 1832538.240 E

EXPLORATION ID B-165-2-10
PAGE 1 OF 3

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil- 5"	778.2																	
FILL: Medium dense gray GRAVEL (A-1-a), trace fine to coarse sand; damp.		1	12 8 4	16	17	SS-1	-	-	-	-	-	-	-	-	-	-	A-1-a (V)	
@ 3.5'-5.0', drove on gravel.		4	7 5 5	13	11	SS-2	-	-	-	-	-	-	-	-	-	-	A-1-a (V)	
	772.6	6	3 2 3	7	44	SS-3	2.50	5	7	18	36	34	30	18	12	20	A-6a (8)	
POSSIBLE FILL: Very stiff brown SILT AND CLAY (A-6a), some fine to coarse sand, trace to little gravel; moist.		9	3 6 11	22	100	SS-4	3.50	-	-	-	-	-	-	-	-	12	A-6a (V)	
	767.6	11	9 15 21	47	100	SS-5	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
Very stiff to hard brown SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.																		
@ 13.5', becomes gray.		14	13 18 17	46	33	SS-6	4.5+	14	14	19	33	20	20	14	6	9	A-4a (4)	
		16	20 13 17	40	78	SS-7	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		19	13 19 20	51	28	SS-8	4.5+	13	14	19	31	23	24	15	9	10	A-4a (4)	
		21	12 6 7	17	17	SS-9	2.50	-	-	-	-	-	-	-	-	10	A-4a (V)	
	753.6	24	4 7 6	17	100	SS-10	2.00	-	-	-	-	-	-	-	-	12	A-4a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:34

PID: 77370 BR ID: PROJECT I-70/I-71 EAST INTERCHANGE STATION / OFFSET: 880+93.28, 4.77 LT START: 7/12/10 END: 7/12/10 PG 2 OF 3 B-165-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very stiff to hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.																		
		26	12 8 9	22	17	SS-11	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
	747.6	29	2 3 5	11	100	SS-12	2.50	18	10	20	37	15	19	14	5	10	A-4a (3)	
Very soft to soft gray SILTY CLAY (A-6b), "and" fine to coarse sand, little gravel; wet.		31	0 0 0	0	67	SS-13	0.25	-	-	-	-	-	-	-	-	13	A-6b (V)	
	745.1 W																	
Very loose to loose gray SANDY SILT (A-4a), "and" fine to coarse sand, some silt; moist.		34	1 2 1	4	100	SS-14	-	-	-	-	-	-	-	-	-	12	A-4a (V)	
	742.6																	
Medium dense to dense gray COARSE AND FINE SAND (A-3a), little to some silt, trace to little gravel; wet.		37	4 3 5	11	56	SS-15	-	-	-	-	-	-	-	-	-	14	A-3a (V)	
		39	7 11 13	32	100	SS-16	-	16	9	62	-	13	- NP	NP	NP	18	A-3a (0)	
	736.6																	
Very dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace silt; wet.		44	9 23 30	70	33	SS-17	-	-	-	-	-	-	-	-	-	7	A-1-a (V)	
	731.6																	
Very dense gray COARSE AND FINE SAND (A-3a), little to some silt; wet.																		
@ 48.5', 2.0 feet sand heave; washed out with tricone.		49	12 26 33	78	83	SS-18	-	-	-	-	-	-	-	-	-	13	A-3a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:34

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PID: 77370	BR ID:	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 880+93.28, 4.77 LT	START: 7/12/10	END: 7/12/10	PG 3 OF 3	B-165-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense gray COARSE AND FINE SAND (A-3a), little to some silt; wet. *(continued)*	726.8	52																
		53																
		54	36 45 42	115	100	SS-19	-	0	20	53	- 27 -		NP	NP	NP	15	A-3a (0)	
		55																
	721.6	56																
Hard gray SILTY CLAY (A-6b), "and" fine to coarse sand, little gravel; moist.		57																
		58																
		59	50/3"	-	67	SS-20	4.5+	-	-	-	-	-	-	-	-	10	A-6b (V)	
	716.6	60																
		61																
Very dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace silt; wet.		62																
		63																
	713.7	64	6 40 50/5"	-	100	SS-21	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
		EOB																

NOTES: SEEPAGE AT 33.5 AND 63.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 39.2 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 34.0 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 2 BAGS BENTONITE CHIPS; 2 BAGS QUIKGROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:34

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PROJECT: I-70/I-71 EAST INTERCHANGE
TYPE: ROADWAY
PID: 77370 BR ID:
START: 7/2/10 END: 7/2/10

DRILLING FIRM / OPERATOR: DLZ / K. CONRAD
SAMPLING FIRM / LOGGER: DLZ / M. EVENER
DRILLING METHOD: 3.25" HSA
SAMPLING METHOD: SPT

DRILL RIG: CME 75 TRUCK
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 1/7/10
ENERGY RATIO (%): 79

STATION / OFFSET: 882+36.45, 7.25 LT
ALIGNMENT: RAMP Q4
ELEVATION: 778.7 (MSL) EOB: 68.8 ft.
COORD: 712646.220 N, 1832648.040 E

EXPLORATION ID B-165-3-10
PAGE 1 OF 3

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Asphalt-3" Base - 4"	778.1																	
FILL: Stiff to very stiff brown SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp to moist.		1	2 3 3	8	56	SS-1	1.25	-	-	-	-	-	-	-	-	24	A-4a (V)	
@ 3.5'-5.0', orangish brown; drove on large gravel; low recovery.		4	7 2 6	11	6	SS-2	1.00	-	-	-	-	-	-	-	-	22	A-4a (V)	
		6	4 5 7	16	100	SS-3	3.50	7	11	20	40	22	22	16	6	14	A-4a (5)	
@ 8.5'-10.0', medium stiff.		9	6 12 18	40	56	SS-4	0.75	-	-	-	-	-	-	-	-	23	A-4a (V)	
	767.7																	
Very stiff to hard gray SANDY SILT (A-4a), some to "and" fine to coarse sand, trace gravel; damp.		12	17 19 25	58	56	SS-5	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
		14	24 36 31	88	11	SS-6	3.50	-	-	-	-	-	-	-	-	7	A-4a (V)	
		17	20 28 41	91	100	SS-7	4.5+	9	12	20	37	22	22	14	8	7	A-4a (5)	
		19	16 29 38	88	100	SS-8	2.00	-	-	-	-	-	-	-	-	8	A-4a (V)	
	757.7																	
Dense to very dense gray SANDY SILT (A-4a); damp.		22	16 23 21	58	50	SS-9	-	0	0	49	45	6	NP	NP	NP	7	A-4a (3)	
		24	22 20 19	51	100	SS-10	-	-	-	-	-	-	-	-	-	5	A-4a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:35

PID: 77370 BR ID: PROJECT I-70/I-71 EAST INTERCHANGE STATION / OFFSET: 882+36.45, 7.25 LT START: 7/2/10 END: 7/2/10 PG 2 OF 3 B-165-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Dense to very dense gray SANDY SILT (A-4a); damp. *(continued)*	753.7																	
		27	11 12 13	33	100	SS-11	-	-	-	-	-	-	-	-	-	4	A-4a (V)	
	750.2																	
Dense gray COARSE AND FINE SAND (A-3a), little silt, trace gravel; damp.		29	10 13 19	42	100	SS-12	-	0	1	86	-	13 -	NP	NP	NP	4	A-3a (0)	
		32	11 12 15	36	56	SS-13	-	-	-	-	-	-	-	-	-	5	A-3a (V)	
	745.2																	
Dense gray GRAVEL (A-1-a), some fine to coarse sand, trace silt; damp.		34	6 12 14	34	56	SS-14	-	-	-	-	-	-	-	-	-	3	A-1-a (V)	
		37	20 23 13	47	67	SS-15	-	64	16	11	-	9 -	NP	NP	NP	3	A-1-a (0)	
	740.2	W																
Loose gray COARSE AND FINE SAND (A-3a), some fine gravel, trace silt; wet.		39	9 4 2	8	11	SS-16	-	-	-	-	-	-	-	-	-	13	A-3a (V)	
	737.7																	
Very dense gray GRAVEL (A-1-a), some fine to coarse sand, little silt; wet.		42	16 28 35	83	56	SS-17	-	-	-	-	-	-	-	-	-	8	A-1-a (V)	
		44	34 36 50/5"	-	100	SS-18	-	55	23	10	-	12 -	NP	NP	NP	8	A-1-a (0)	
	731.7																	
Very dense gray COARSE AND FINE SAND (A-3a), some silt, trace gravel; wet.																		
@ 48.5', 1.5 feet sand heave; washed out with tricone.		49	17 23 43	87	56	SS-19	-	-	-	-	-	-	-	-	-	13	A-3a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:35

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PID: 77370	BR ID:	PROJECT: I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 882+36.45, 7.25 LT	START: 7/2/10	END: 7/2/10	PG 3 OF 3	B-165-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense gray GRAVEL (A-1-a), some fine to coarse sand, trace silt; wet.	727.0 / 726.7	52																
		53																
		54	50/4"	-	75	SS-20	-	-	-	-	-	-	-	-	-	8	A-1-a (V)	
		55																
		56																
		57																
		58																
		59	42 46 50/5"	-	71	SS-21	-	55	22	10	-	13 -	NP	NP	NP	11	A-1-a (0)	
		60																
		61																
Very dense gray COARSE AND FINE SAND (A-3a), little gravel, trace silt; damp.	716.7	62																
		63																
		64																
		65																
		66	50/5"	-	100	SS-22	-	-	-	-	-	-	-	-	-	14	A-3a (V)	
		67																
		68																
	709.9	EOB	50/3"	-	100	SS-23	-	-	-	-	-	-	-	-	-	14	A-3a (V)	

NOTES: SEEPAGE AT 38.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 41.7 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 38.6 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 9 BAGS BENTONITE CHIPS; 2 BAGS QUIKGROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:35

PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 883+96.9, 18.19 RT | EXPLORATION ID B-166-1-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP Q4
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 780.2 (MSL) EOB: 89.9 ft. | PAGE 1 OF 4
START: 7/1/10 END: 7/1/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712775.680 N, 1832747.770 E

MATERIAL DESCRIPTION AND NOTES	ELEV. 780.2	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Asphalt-3" Base -7"	779.4	1																
FILL: Very dense brown GRAVEL WITH SAND (A-1b), "and" fine to coarse sand, trace silt; damp.		2	4 50/5"	-	9	SS-1	-	-	-	-	-	-	-	-	-	1	A-1-b (V)	
@ 3.5'-6.0', medium dense.		3 4 5	9 8 9	22	6	SS-2	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
@ 6.0'-7.5', drove on large gravel; low recovery.	771.7	6 7 8	35 37 33	92	6	SS-3	-	-	-	-	-	-	-	-	-	-		
Stiff brown SILTY CLAY (A-6b), some fine to coarse sand, little gravel; damp to moist.		9 10 11	20 28 30	76	100	SS-4	1.50	17	10	15	27	31	34	18	16	15	A-6b (7)	
@ 13.5'-15.0', hard.		12 13 14 15	27 25 27	68	44	SS-5	2.00	-	-	-	-	-	-	-	-	8	A-6b (V)	
	764.2		3 27 38	86	67	SS-6	4.5+	-	-	-	-	-	-	-	-	6	A-6b (V)	
Hard brown SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		16 17 18	16 22 32	71	56	SS-7	4.5+	11	13	18	37	21	23	15	8	8	A-4a (5)	
		19 20 21 22	24 33 44	101	100	SS-8	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
			48 50/5"	-	18	SS-9	-	-	-	-	-	-	-	-	-	6	A-4a (V)	
		23 24	20 25 23	63	44	SS-10	4.5+	12	10	18	40	20	22	14	8	9	A-4a (5)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 18:01

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 883+96.9, 18.19 RT | START: 7/1/10 | END: 7/1/10 | PG 2 OF 4 | B-166-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 755.2	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
	754.2	26																
Dense brownish gray COARSE AND FINE SAND (A-3a), "and" fine to coarse gravel, trace silty clay; damp.	751.7	27 28	15 16 14	40	44	SS-11	-	-	-	-	-	-	-	-	-	2	A-3a (V)	
Medium dense gray SANDY SILT (A-4a), "and" fine to coarse sand, trace gravel, trace clay; damp.	749.2	29 30	10 10 11	28	28	SS-12	-	4	4	39	44	9	NP	NP	NP	10	A-4a (4)	
Very stiff gray SILTY CLAY (A-6b), "and" fine to coarse sand, some fine gravel; damp.	746.7	31 32 33	50/3"	-	33	SS-13	3.00	-	-	-	-	-	-	-	-	10	A-6b (V)	
Medium dense gray SANDY SILT (A-4a), some silt, trace to little clay; damp.	744.2	34 35	8 6 5	14	67	SS-14	-	-	-	-	-	-	-	-	-	8	A-4a (V)	
Loose to medium dense gray GRAVEL WITH SAND (A-1-b), some silt, little fine to coarse sand; wet.		W 36 37 38	5 4 2	8	28	SS-15	-	65	9	2	24	-	NP	NP	NP	9	A-1-b (0)	
		39 40	5 5 6	14	11	SS-16	-	-	-	-	-	-	-	-	-	15	A-1-b (V)	
	736.7	41 42 43	4 6 8	18	17	SS-17	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
Medium dense gray COARSE AND FINE SAND (A-3a), little to some fine gravel, trace silty clay; wet.	734.2	44 45	5 4 6	13	56	SS-18	-	-	-	-	-	-	-	-	-	13	A-3a (V)	
Medium dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace silty clay; wet.		46 47	10 6 5	14	100	SS-19	-	40	46	8	6	-	NP	NP	NP	14	A-1-b (0)	
@ 48.5'-50.0', drove on large gravel; low recovery.		48 49 50 51	7 5 3	11	6	SS-20	-	-	-	-	-	-	-	-	-	-		

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 18:01

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 883+96.9, 18.19 RT | START: 7/1/10 | END: 7/1/10 | PG 3 OF 4 | B-166-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense gray GRAVEL WITH SAND (A-1-b), some fine to coarse sand, trace to little silt; wet.	728.4	52																
	728.2	53																
		54	17 27 22	65	17	SS-21	-	-	-	-	-	-	-	-	-	10	A-1-a (V)	
		55																
		56																
		57																
		58																
@ 58.5'-60.0', drove on large gravel; low recovery.		59	37 38 38	100	6	SS-22	-	-	-	-	-	-	-	-	-	-		
		60																
		61																
		62																
		63																
		64	27 26 50/4"	-	100	SS-23	-	49	22	12	-	17 -	NP	NP	NP	9	A-1-b (0)	
		65																
		66																
		67																
		68																
		69	26 20 26	61	17	SS-24	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
		70																
		71																
	708.2	72																
Very dense gray GRAVEL (A-1-a), some fine to coarse sand, little silt; wet.		73																
		74	28 29 38	88	22	SS-25	-	65	17	6	-	12 -	NP	NP	NP	8	A-1-a (0)	
		75																
		76																
		77																
		78																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 18:01

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 883+96.9, 18.19 RT | START: 7/1/10 | END: 7/1/10 | PG 4 OF 4 | B-166-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense gray GRAVEL (A-1-a), some fine to coarse sand, little silt; wet. *(continued)*	701.6	79	50/4"	-	50	SS-26	-	-	-	-	-	-	-	-	-	8	A-1-a (V)	
		80																
		81																
	698.2	82																
Very dense gray SILT (A-4b), some to "and" fine sand, trace clay; wet.		83																
		84	50/5"	-	80	SS-27	-	-	-	-	-	-	-	-	-	18	A-4b (V)	
		85																
		86																
		87																
		88																
	690.3	89	34 49 50/5"	-	100	SS-28	-	-	-	-	-	-	-	-	-	20	A-4b (V)	
	EOB																	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 18:01

NOTES: SEEPAGE AT 36.0 FEET; WATER LEVEL PRIOR TO ADDING WATER = 37 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 15.1 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 10 BAGS BENTONITE CHIPS; 3 BAGS QUIKGROUT

PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 881+15.99, 1.23 RT | EXPLORATION ID B-166-2-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP P2
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 778.9 (MSL) EOB: 88.8 ft. | PAGE 1 OF 4
START: 6/30/10 END: 7/1/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712954.910 N, 1832722.380 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil-3"	778.6																	
FILL: Dense brown GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace to little silt; damp.	775.4	1	7 16 16	42	33	SS-1	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
POSSIBLE FILL: Hard brown SANDY SILT (A-4a), some to "and" fine to coarse sand, trace gravel; damp.		4	22 12 10	29	100	SS-2	4.5+	8	15	18	37	22	24	17	7	11	A-4a (5)	
		7	12 8 8	21	11	SS-3	4.5+	-	-	-	-	-	-	-	-	11	A-4a (V)	
	770.4																	
POSSIBLE FILL: Dense to very dense brown GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, little silt; damp.		9	28 25 16	54	6	SS-4	-	-	-	-	-	-	-	-	-	-		
		12	25 20 17	49	56	SS-5	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
	765.4																	
Hard brown SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		14	6 9 11	26	100	SS-6	4.5+	14	13	18	34	21	23	15	8	10	A-4a (4)	
		17	15 22 11	43	17	SS-7	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
		19	8 16 10	34	100	SS-8	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
		22	10 22 17	51	100	SS-9	4.5+	20	10	18	33	19	22	13	9	8	A-4a (3)	
	755.4																	
Very dense brownish gray COARSE AND FINE SAND (A-3a), little gravel, trace silt; damp.		24	10 20 25	59	56	SS-10	-	-	-	-	-	-	-	-	-	3	A-3a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 18.01

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 881+15.99, 1.23 RT | START: 6/30/10 | END: 7/1/10 | PG 2 OF 4 | B-166-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
	753.9																	
	752.9																	
Hard gray SANDY SILT (A-4a), some to "and" fine to coarse sand, little gravel; damp.		27	16 16 19	46	11	SS-11	4.00	-	-	-	-	-	-	-	-	9	A-4a (V)	
		29	9 12 17	38	100	SS-12	-	15	12	19	38	16	19	14	5	9	A-4a (4)	
	747.9																	
Very dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace silt; damp.		32	30 37 41	103	72	SS-13	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
@ 33.5', becomes wet.		W																
		34	31 32 22	71	100	SS-14	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
	742.9																	
Very dense gray FINE SAND (A-3), some coarse sand, some gravel; wet.		37	17 19 24	57	100	SS-15	-	21	23	56	-	0 -	NP	NP	NP	14	A-3 (0)	
		39	13 22 31	70	100	SS-16	-	-	-	-	-	-	-	-	-	24	A-3 (V)	
	737.9																	
Very dense gray GRAVEL (A-1-a), some fine to coarse sand, trace silt; wet.		42	47 32 22	71	33	SS-17	-	-	-	-	-	-	-	-	-	5	A-1-a (V)	
	735.4																	
Very dense gray SILT (A-4b), little fine sand, little clay; wet.		44	13 21 30	67	67	SS-18	-	0	0	18	70	12	NP	NP	NP	19	A-4b (8)	
	732.9																	
Dense to very dense gray COARSE AND FINE SAND (A-3a), some to "and" gravel, trace silt; wet.		47	16 19 22	54	44	SS-19	-	-	-	-	-	-	-	-	-	11	A-3a (V)	
		49	13 15 17	42	56	SS-20	-	-	-	-	-	-	-	-	-	16	A-3a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 18.01

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PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 881+15.99, 1.23 RT | START: 6/30/10 | END: 7/1/10 | PG 3 OF 4 | B-166-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense gray GRAVEL (A-1-a), some to "and" fine to coarse sand, little silt; wet.	726.9	52																
		53																
		54	27 25 20	59	56	SS-21	-	51	25	11	- 13 -		NP	NP	NP	9	A-1-a (0)	
		55																
		56																
		57																
		58																
		59	27 28 22	66	22	SS-22	-	-	-	-	-	-	-	-	-	9	A-1-a (V)	
		60																
		61																
		62																
		63																
		64	22 50/4"	-	40	SS-23	-	-	-	-	-	-	-	-	-	6	A-1-a (V)	
	711.9	65																
Very dense gray COARSE AND FINE SAND (A-3a), some silt; wet.		66																
		67																
		68																
		69	42 44 44	116	56	SS-24	-	0	6	64	- 30 -		NP	NP	NP	18	A-3a (0)	
	706.9	70																
Very dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace silt; wet.		71																
		72																
		73																
		74	49 50/3"	-	44	SS-25	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
	701.9	75																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp.		76																
		77																
		78																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 18.01

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 881+15.99, 1.23 RT | START: 6/30/10 | END: 7/1/10 | PG 4 OF 4 | B-166-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp. *(continued)*	700.3	79	46 50/3"	-	100	SS-26	4.5+	10	9	14	46	21	23	14	9	10	A-4a (6)	
	696.9	80																
Hard gray SILT AND CLAY (A-6a), "and" fine sand; damp.		81																
		82																
		83																
		84	50/4"	-	100	SS-27	--	-	-	-	-	-	-	-	-	11	A-6a (V)	
	691.9	85																
Very dense gray SANDY SILT (A-4a), little gravel; wet.		86																
		87																
	690.1	88																
EOB			50/3"	-	100	SS-28	--	-	-	-	-	-	-	-	-	11	A-4a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 18.01

NOTES: SEEPAGE AT 33.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 37.6 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 24.7 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 9 BAGS BENTONITE CHIPS; 1 BAG QUIKGROUT

PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 882+50.65, 1.07 RT | EXPLORATION ID B-166-3-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP P2
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 768.1 (MSL) EOB: 68.8 ft. | PAGE 1 OF 3
START: 6/3/10 END: 6/3/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712958.610 N, 1832856.830 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil - 2"	767.9																	
Very stiff brown SILT AND CLAY (A-6a), some fine to coarse sand, little gravel; damp.		1	4 2 2	5	56	SS-1	2.00	-	-	-	-	-	-	-	-	10	A-6a (V)	
		2																
		3																
@ 3.5'-5.0', drove on large gravel.		4	22 15 14	38	6	SS-2	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
	762.1	5																
Very stiff brown SANDY SILT (A-4a), "and" fine to coarse sand, little gravel; damp.		6	8 13 14	36	78	SS-3	2.50	14	15	21	32	18	20	13	7	10	A-4a (3)	
	759.6	7																
Very dense brown COARSE AND FINE SAND (A-3a), trace silt; damp.		8																
	757.1	9	16 19 23	55	56	SS-4	-	-	-	-	-	-	-	-	-	4	A-3a (V)	
Very stiff gray SANDY SILT (A-4a), some fine to coarse sand, little to some gravel; damp.		10																
		11	5 6 6	16	39	SS-5	2.50	-	-	-	-	-	-	-	-	11	A-4a (V)	
		12																
		13																
		14	7 7 6	17	100	SS-6	2.00	20	10	19	35	16	20	13	7	10	A-4a (3)	
	752.1	15																
Medium dense gray FINE SAND (A-3); damp.		16																
		17	4 7 9	21	83	SS-7	-	-	-	-	-	-	-	-	-	5	A-3 (V)	
		18																
		19	6 9 5	18	83	SS-8	-	-	-	-	-	-	-	-	-	6	A-3 (V)	
	747.1	20																
Very stiff gray SANDY SILT (A-4a), little gravel; damp.		21																
		22	4 4 8	16	100	SS-9	2.50	16	11	19	36	18	20	14	6	11	A-4a (4)	
	744.6	23																
Very dense gray COARSE AND FINE SAND (A-3a), trace silt; moist.		24	32 30 26	74	33	SS-10	-	-	-	-	-	-	-	-	-	7	A-3a (V)	
	743.1																	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 18:01

PID: 77370 BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 882+50.65, 1.07 RT | START: 6/3/10 | END: 6/3/10 | PG 2 OF 3 | B-166-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Dense to very dense gray GRAVEL (A-1-a), little fine to coarse sand, trace silt; wet.		W																
		26																
		27	32 20 21	54	56	SS-11	-	-	-	-	-	-	-	-	-	8	A-1-a (V)	
		28																
		29	9 18 31	65	17	SS-12	-	73	14	5	-	8 -	NP	NP	NP	7	A-1-a (0)	
	736.1	30																
Medium dense gray COARSE AND FINE SAND (A-3a); wet.		31																
		32																
		33																
		34	8 9 11	26	28	SS-13	-	-	-	-	-	-	-	-	-	14	A-3a (V)	
	731.1	35																
Dense to very dense gray GRAVEL WITH SAND (A-1-b), little silt; wet.		36																
		37																
		38																
		39	13 18 20	50	39	SS-14	-	48	21	17	-	14 -	NP	NP	NP	9	A-1-b (0)	
		40																
		41																
		42																
		43																
		44	15 22 16	50	67	SS-15	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
	721.1	45																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		46																
		47																
		48																
		49	19 17 20	49	83	SS-16	4.5+	19	14	20	30	17	19	13	6	10	A-4a (2)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 18:01

PID: 77370	BR ID:	PROJECT: I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 882+50.65, 1.07 RT	START: 6/3/10	END: 6/3/10	PG 3 OF 3	B-166-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 716.3	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Dense gray COARSE AND FINE SAND (A-3a), little gravel; wet.	716.1	52																
		53																
		54	25 17 15	42	100	SS-17	-	-	-	-	-	-	-	-	-	17	A-3a (V)	
		55																
	711.1	56																
Very dense gray GRAVEL WITH SAND (A-1-b), little silt; contains broken gravel and clay stringers; wet.		57																
		58																
		59	25 28 22	66	56	SS-18	-	29	37	23	-	11 -	NP	NP	NP	12	A-1-b (0)	
		60																
		61																
		62																
		63																
		64	26 36 39	99	17	SS-19	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		65																
		66																
	701.1	67																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.		68																
	699.3	EOB	50/4"	-	75	SS-20	4.00	-	-	-	-	-	-	-	-	12	A-4a (V)	

NOTES: SEEPAGE AT 26.0 AND 52.0 FEET; WATER LEVEL PRIOR TO ADDING WATER = 24.5 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 33.3 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG BENTONITE CHIPS; 3 BAGS QUIKGROUT; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 18:01

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 884+75.25, 12.83 LT | EXPLORATION ID B-166-4-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP P2
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 768.9 (MSL) EOB: 70.0 ft. | PAGE 1 OF 3
START: 6/4/10 END: 6/4/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 712950.100 N, 1833082.380 E

MATERIAL DESCRIPTION AND NOTES	ELEV. 768.9	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil - 4"	768.6																	
Hard brown SILTY CLAY (A-6b), some fine to coarse sand, little gravel; damp.	765.4		15 10 9	25	11	SS-1	4.5+	-	-	-	-	-	-	-	-	9	A-6b (V)	
Medium dense to dense brown COARSE AND FINE SAND (A-3a), little silt, trace gravel; damp.	762.9		12 12 11	30	100	SS-2	-	-	-	-	-	-	-	-	-	8	A-3a (V)	
Medium dense brownish gray GRAVEL WITH SAND (A-1-b), little silt; damp.	760.4		7 11 9	26	56	SS-3	-	47	25	12	- 16 -		NP	NP	NP	4	A-1-b (0)	
Medium dense brownish gray COARSE AND FINE SAND (A-3a), little to some silt, trace gravel; moist.			7 7 6	17	100	SS-4	-	-	-	-	-	-	-	-	-	6	A-3a (V)	
			3 5 4	12	83	SS-5	-	-	-	-	-	-	-	-	-	7	A-3a (V)	
@ 13.5'-15.0', very loose to loose; wet.	752.9	W	3 2 1	4	100	SS-6	-	1	3	76	- 20 -		NP	NP	NP	23	A-3a (0)	
Medium dense brownish gray GRAVEL WITH SAND (A-1-b), some to "and" fine to coarse sand, trace silt; wet.			3 5 6	14	17	SS-7	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
			8 8 7	20	83	SS-8	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
Medium dense gray COARSE AND FINE SAND (A-3a), some silt, trace gravel; wet.	747.9		3 5 7	16	44	SS-9	-	2	11	66	- 21 -		NP	NP	NP	19	A-3a (0)	
Very stiff brownish gray SILTY CLAY (A-6b), some fine to coarse sand, little gravel; damp.	745.4		4 13 15	37	67	SS-10	2.50	-	-	-	-	-	-	-	-	9	A-6b (V)	
	743.9																	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 18.02

PID: 77370 BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 884+75.25, 12.83 LT | START: 6/4/10 | END: 6/4/10 | PG 2 OF 3 | B-166-4-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 743.9	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Dense brown GRAVEL WITH SAND (A-1-b), little silt; wet.		W	13 16 20	47	33	SS-11	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
	736.9		16 14 14	37	100	SS-12	-	19	50	15	- 16 -		NP	NP	NP	18	A-1-b (0)	
Dense gray FINE SAND (A-3), trace silt; wet.	731.9		6 9 15	32	100	SS-13	-	-	-	-	-	-	-	-	-	31	A-3 (V)	
Very dense brown COARSE AND FINE SAND (A-3a), some gravel, trace silt; wet.			11 27 19	61	28	SS-14	-	-	-	-	-	-	-	-	-	16	A-3a (V)	
	721.9		16 19 22	54	67	SS-15	-	-	-	-	-	-	-	-	-	12	A-3a (V)	
Hard gray SANDY SILT (A-4a), "and" fine to coarse sand, trace gravel; damp.			23 27 32	78	56	SS-16	4.50	6	11	32	35	16	18	13	5	11	A-4a (3)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 18.02

PID: 77370	BR ID:	PROJECT: I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 884+75.25, 12.83 LT	START: 6/4/10	END: 6/4/10	PG 3 OF 3	B-166-4-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 717.1	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense gray GRAVEL WITH SAND (A-1-b), some fine to coarse sand, trace silt; wet.	716.9	W 52–53																
		54	6 28 50/5"	-	71	SS-17	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
	711.9	55–58																
Hard gray SILTY CLAY (A-6b), some fine to coarse sand, trace fine gravel; damp.		59	45 50/3"	-	100	SS-18	4.5+	-	-	-	-	-	-	-	-	11	A-6b (V)	
	706.9	60–63																
Hard gray SILT (A-4b), little clay, trace fine sand; damp.		64	23 24 35	78	100	SS-19	4.5+	0	0	2	79	19	26	21	5	19	A-4b (8)	
		65–68																
	698.9	EOB 69	15 18 21	51	83	SS-20	4.25	-	-	-	-	-	-	-	-	22	A-4b (V)	
		70																

NOTES: SEEPAGE AT 13.5, 21.0, 25.5, AND 53.0 FEET; WATER LEVEL PRIOR TO ADDING WATER = 30.7 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 53.0 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG BENTONITE CHIPS; 2 BAGS QUIKGROUT; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 18:02

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / L. BARTLETT | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 887+33.72, 3.63 RT | EXPLORATION ID B-167-1-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP Q4
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 773.4 (MSL) EOB: 53.9 ft. | PAGE 1 OF 3
START: 6/14/10 END: 6/15/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 713099.350 N, 1832663.740 E

MATERIAL DESCRIPTION AND NOTES	ELEV. 773.4	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Asphalt- 6" Concrete- 16"	771.6	1																
Very stiff to hard brown SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp.		2	9 10 12	29	28	SS-1	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
		4	5 10 18	37	100	SS-2	3.50	-	-	-	-	-	-	-	-	11	A-4a (V)	
		6	9 17 14	41	100	SS-3	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
		8	14 32 27	78	100	SS-4	4.5+	8	14	21	35	22	23	15	8	9	A-4a (4)	
		10	16 34 23	75	28	SS-5	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
	757.4	12	8 20 23	57	100	SS-6	4.5+	12	12	21	35	20	20	14	6	9	A-4a (4)	
Very dense gray COARSE AND FINE SAND (A-3a), little to some silt, trace to little gravel; damp.		14	10 28 29	75	56	SS-7	-	-	-	-	-	-	-	-	-	6	A-3a (V)	
	752.4	16	16 37 28	86	83	SS-8	-	-	-	-	-	-	-	-	-	4	A-3a (V)	
Very stiff gray SILT AND CLAY (A-6a), some fine to coarse sand, trace gravel; moist.	749.9	18	10 15 16	41	83	SS-9	3.50	8	12	20	41	19	28	13	15	11	A-6a (7)	
Very dense gray COARSE AND FINE SAND (A-3a), little silt; damp.		20	7 21 23	58	67	SS-10	-	-	-	-	-	-	-	-	-	7	A-3a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 18.02

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 887+33.72, 3.63 RT | START: 6/14/10 | END: 6/15/10 | PG 2 OF 3 | B-167-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 748.4	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
	747.4	26																
Dense to very dense gray GRAVEL WITH SAND (A-1-b), trace silt; damp.		27	17 27 34	80	56	SS-11	-	41	23	31	- 5 -		NP	NP	NP	3	A-1-b (0)	
		28																
		29	15 28 24	68	78	SS-12	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
@ 31.0', becomes wet.		W 30																
		31	10 15 17	42	100	SS-13	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
	739.9	32																
Very dense gray SANDY SILT (A-4a), little gravel, little fine to coarse sand; wet. @ 33.5', 2.5 feet sand heave; washed out with tricone.		33																
		34	5 35 15	66	39	SS-14	-	-	-	-	-	-	-	-	-	13	A-4a (V)	
	737.4	35																
Dense gray COARSE AND FINE SAND (A-3a), some silt; wet.		36	4 16 20	47	67	SS-15	-	0	4	75	- 21 -		NP	NP	NP	10	A-3a (0)	
	734.9	37																
Very dense gray SILT (A-4b), little fine sand; wet.		38																
		39	15 26 27	70	83	SS-16	-	-	-	-	-	-	-	-	-	22	A-4a (V)	
	731.4	40																
Dense to very dense gray GRAVEL WITH SAND (A-1-b), little fine to coarse sand, trace silt; wet.		41																
		42																
		43																
		44	14 17 18	46	56	SS-17	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
		45																
		46																
		47																
		48																
@ 48.5', moist.		49	14 23 22	59	61	SS-18	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 18.02

PID: 77370	BR ID:	PROJECT: I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 887+33.72, 3.63 RT	START: 6/14/10	END: 6/15/10	PG 3 OF 3	B-167-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Dense to very dense gray GRAVEL WITH SAND (A-1-b), little fine to coarse sand, trace silt; wet. *(continued)*	721.6	52																
@ 53.5'-53.8', little recovery.	719.5	53 EOB	50/5"	-	20	SS-19	-	-	-	-	-	-	-	-	-	-	A-1-b (V)	

NOTES: SEEPAGE AT 31.0 FEET; WATER LEVEL PRIOR TO ADDING WATER = 28.6 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 19.4 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 1 BAG BENTONITE CHIPS; 1.5 BAGS QUIKGROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 18:02

PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / L. BARTLETT | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 889+08.52, 1.91 RT | EXPLORATION ID B-167-2-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP Q4
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 778.0 (MSL) EOB: 60.0 ft. | PAGE 1 OF 3
START: 6/13/10 END: 6/14/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 713242.930 N, 1832564.190 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Asphalt - 9" Base - 6"	778.0	1																
	776.7																	
FILL: Stiff brown SILT AND CLAY (A-6a), some fine to coarse sand, little gravel; damp.		2	4 5 5	13	11	SS-1	1.75	-	-	-	-	-	-	-	-	7	A-6a (V)	
		3																
@ 4.0', trace gravel, trace brick fragments.		4	2 6 6	16	56	SS-2	2.50	-	-	-	-	-	-	-	-	15	A-6a (V)	
	772.0	5																
Very stiff to hard brown SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp.		6	3 8 8	21	100	SS-3	4.5+	12	14	19	34	21	22	16	6	12	A-4a (4)	
		7																
		8	5 9 13	29	100	SS-4	4.5+	-	-	-	-	-	-	-	-	12	A-4a (V)	
		9																
@ 11.0', becomes gray.		10																
		11	6 8 7	20	100	SS-5	2.50	24	9	17	33	17	21	13	8	10	A-4a (3)	
@ 13.5'-15.0', low recovery; cobbles encountered.		12																
		13	8 12 12	32	6	SS-6	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
	762.0	14																
Dense gray SILT (A-4b), little to some fine to coarse sand, trace clay, trace gravel; moist.		15																
		16	8 13 12	33	67	SS-7	-	-	-	-	-	-	-	-	-	10	A-4b (V)	
		17																
		18	7 12 18	40	83	SS-8	-	-	-	-	-	-	-	-	-	11	A-4b (V)	
	757.0	19																
Medium dense brown GRAVEL (A-1-a), "and" fine to coarse sand, trace silt; damp.		20																
		21	8 12 8	26	39	SS-9	-	50	31	11	8	-	NP	NP	NP	3	A-1-a (0)	
	754.5	22																
Very stiff gray SILTY CLAY (A-6b), trace fine sand, trace gravel; moist.		23																
		24	4 6 6	16	100	SS-10	2.00	-	-	-	-	-	-	-	-	11	A-6b (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 18.02

PID: 77370 BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 889+08.52, 1.91 RT | START: 6/13/10 | END: 6/14/10 | PG 2 OF 3 | B-167-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very stiff gray SILTY CLAY (A-6b), trace fine sand, trace gravel; moist. *(continued)*	753.0	26																
		27	3 4 4	11	100	SS-11	2.00	-	-	-	-	-	-	-	-	11	A-6b (V)	
	749.5	28																
Stiff to very stiff gray SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; wet.		29	1 2 4	8	100	SS-12	2.50	10	10	21	42	17	21	14	7	14	A-4a (5)	
		30																
		31	0 1 2	4	28	SS-13	1.00	-	-	-	-	-	-	-	-	13	A-4a (V)	
	744.5	32																
Very loose to loose gray SILT (A-4b), some fine sand; wet.		33	W															
		34	2 3 3	8	11	SS-14	-	-	-	-	-	-	-	-	-	21	A-4b (V)	
		35																
		36																
		37																
		38																
@ 38.5', 5.0 feet sand heave; washed out with tricone.		39	1 1 1	3	11	SS-15	-	-	-	-	-	-	-	-	-	24	A-4b (V)	
	736.0	40																
Loose gray COARSE AND FINE SAND (A-3a), little silt, trace gravel; wet.		41																
		42																
		43																
		44	2 5 6	14	100	SS-16	-	1	4	76	19	-	NP	NP	NP	23	A-3a (0)	
	731.0	45																
Dense to very dense gray GRAVEL (A-1-a), some fine to coarse sand, trace silt; wet.		46																
		47																
		48																
		49	8 12 12	32	28	SS-17	-	-	-	-	-	-	-	-	-	9	A-1-a (V)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 18.02

PID: 77370	BR ID:	PROJECT: I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 889+08.52, 1.91 RT	START: 6/13/10	END: 6/14/10	PG 3 OF 3	B-167-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Dense to very dense gray GRAVEL (A-1-a), some fine to coarse sand, trace silt; wet. *(continued)*	726.2	52																
		53																
		54	8 18 18	47	67	SS-18	-	59	24	9	- 8	-	NP	NP	NP	8	A-1-a (0)	
		55																
		56																
		57																
		58																
		59	6 15 25	53	28	SS-19	-	-	-	-	-	-	-	-	-	8	A-1-a (V)	
	718.0	EOB 60																

NOTES: SEEPAGE AT 33.0 FEET; WATER LEVEL PRIOR TO ADDING WATER = 32.3 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 32.0 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 0.5 BAG ASPHALT PATCH; 0.5 BAGS BENTONITE CHIPS; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 18:02

PROJECT: I-70/I-71 EAST INTERCHANGE	DRILLING FIRM / OPERATOR: DLZ / J. NELSON	DRILL RIG: CME 75 TRUCK	STATION / OFFSET: 890+48.64, 16.22 RT	EXPLORATION ID B-167-3-10
TYPE: ROADWAY	SAMPLING FIRM / LOGGER: DLZ / S. LARIMER	HAMMER: CME AUTOMATIC	ALIGNMENT: RAMP Q4	
PID: 77370 BR ID:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 1/7/10	ELEVATION: 777.9 (MSL) EOB: 45.0 ft.	PAGE 1 OF 2
START: 6/13/10 END: 6/13/10	SAMPLING METHOD: SPT	ENERGY RATIO (%): 64.7	COORD: 713375.030 N, 1832530.060 E	

MATERIAL DESCRIPTION AND NOTES	ELEV. 777.9	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Asphalt- 6" Concrete- 10" Base- 2"	776.4	1																
Very stiff brown SILTY CLAY (A-6b), some fine to coarse sand, little to some gravel; moist.	774.4	2	4 7 8	16	78	SS-1	2.25	-	-	-	-	-	-	-	-	23	A-6b (V)	
Stiff to very stiff brown SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		3 4	7 9 17	28	89	SS-2	3.00	-	-	-	-	-	-	-	-	11	A-4a (V)	
		5 6 7	14	100	SS-3	1.50	12	12	18	35	23	23	15	8	14	A-4a (5)	
	769.4	8																
Medium stiff to stiff brown SILTY CLAY (A-6b), some fine to coarse sand, some gravel; moist.	766.9	9	6 50/4"	-	80	SS-4	1.00	-	-	-	-	-	-	-	-	9	A-6b (V)	
Hard gray SILT AND CLAY (A-6a), some fine to coarse sand, some gravel; damp.	764.4	10 11 12	10 14 16	32	33	SS-5	-	-	-	-	-	-	-	-	-	11	A-6a (V)	
Very stiff to hard gray SANDY SILT (A-4a), some fine to coarse sand, little to some gravel; damp.		13 14	6 11 13	26	100	SS-6	3.00	31	9	15	27	18	20	14	6	8	A-4a (2)	
		15 16 17	10 16 50/3"	-	87	SS-7	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
		18 19	14 8 7	16	83	SS-8	3.00	-	-	-	-	-	-	-	-	10	A-4a (V)	
		20 21 22	3 4 1	5	83	SS-9	2.00	20	10	17	33	20	22	13	9	11	A-4a (4)	
@ 23.5'-25.0', stiff.		23 24	1 1 1	2	61	SS-10	1.75	-	-	-	-	-	-	-	-	13	A-4a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 18.02

PID: 77370	BR ID:	PROJECT: I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 890+48.64, 16.22 RT	START: 6/13/10	END: 6/13/10	PG 2 OF 2	B-167-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 752.9	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very stiff to hard gray SANDY SILT (A-4a), some fine to coarse sand, little to some gravel; damp. *(continued)*		26																
		27 2 3 5	9	83	SS-11	2.00	-	-	-	-	-	-	-	-	11	A-4a (V)		
	749.4	28																
Very loose to loose gray GRAVEL WITH SAND (A-1-b), trace silt; damp to moist.		29 0 1 3	4	44	SS-12	-	-	-	-	-	-	-	-	-	9	A-1-b (V)		
		30 31 32 33																
		34 7 4 2	6	44	SS-13	-	36	34	25	-	5	-	NP	NP	NP	9	A-1-b (0)	
		35 36 37 38																
@ 38.5', becomes wet.		W 39 0 0 2	2	28	SS-14	-	-	-	-	-	-	-	-	-	22	A-1-b (V)		
		40 41 42 43																
@ 43.5'-45.0', medium dense.	732.9	EOB 44 8 3 10	14	89	SS-15	-	-	-	-	-	-	-	-	-	16	A-1-b (V)		
		45																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 11/9/11 18.02

NOTES: SEEPAGE AT 38.5 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 37.0 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG BENTONITE CHIPS; 0.5 BAG QUICKCRETE; 1 BAG QUIKGROUT

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 197+39.55, 57.0 LT | EXPLORATION ID B-175-1-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: PARSONS
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 786.2 (MSL) EOB: 80.0 ft. | PAGE 1 OF 4
START: 2/3/11 END: 2/4/11 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 713630.480 N, 1833367.660 E

MATERIAL DESCRIPTION AND NOTES	ELEV. 786.2	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Asphalt - 8" Concrete - 7"	784.9	1																
FILL: Very stiff to hard gray SILT AND CLAY (A-6a), little fine to coarse sand, little gravel; contains small tile fragments; damp.		2	4 3 3	8	56	SS-1	2.00	-	-	-	-	-	-	-	-	19	A-6a (V)	
		3																
		4	6 6 7	17	100	SS-2	4.5+	-	-	-	-	-	-	-	-	14	A-6a (V)	
		5																
	780.2	6																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.		7	6 8 11	25	100	SS-3	4.5+	3	8	18	42	29	26	17	9	15	A-4a (7)	
	777.7	8																
Dense to very dense brown GRAVEL WITH SAND (A-1-b), some fine to coarse sand, some silt; contains rust stains and silty clay pieces; damp.		9	13 18 16	45	67	SS-4	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
		10																
		11																
		12	12 16 23	51	100	SS-5	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
	772.7	13																
Hard brown SANDY SILT (A-4a), some fine to coarse sand, trace to little gravel; damp.		14	28 50/5"	-	36	SS-6	-	-	-	-	-	-	-	-	-	11	A-4a (V)	
		15																
		16																
		17	12 15 17	42	100	SS-7	4.5+	10	10	21	35	24	24	14	10	9	A-4a (5)	
		18																
		19	11 19 20	51	100	SS-8	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
NOTE: Hole caved to 21.8 feet when augers removed.	765.2	20																
Very dense gray GRAVEL WITH SAND (A-1-b), little silt; damp.		21																
		22	10 33 31	84	100	SS-9	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		23																
	761.2	24	14 33 34	88	100	SS-10	-	30	34	24	-	12 -	NP	NP	NP	4	A-1-b (0)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:54

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 197+39.55, 57.0 LT | START: 2/3/11 | END: 2/4/11 | PG 2 OF 4 | B-175-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 761.2	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense brown GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, little silt; damp.		26	22 50/3"	-	100	SS-11	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
@ 26.0', possible cobble or boulder.		27																
		28																
		29	25 40 39	104	100	SS-12	-	-	-	-	-	-	-	-	-	3	A-1-b (V)	
		30																
		31																
		32	22 30 28	76	100	SS-13	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		33																
		34	30 36 37	96	100	SS-14	-	37	19	30	-	14 -	NP	NP	NP	5	A-1-b (0)	
		35																
		36																
		37	36 38 39	101	100	SS-15	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		38																
@ 38.5', becomes wet.	W	39	18 19 30	65	100	SS-16	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
		40																
		41																
		42	8 29 30	78	100	SS-17	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
		43																
@ 43.5', 1.5 feet sand heave; washed out with tricone.		44	30 27 33	79	100	SS-18	-	37	27	18	-	18 -	NP	NP	NP	10	A-1-b (0)	
		45																
		46																
@ 46.0', possible cobble or boulder.		47	33 50/5"	-	100	SS-19	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
		48																
		49	28 30 31	80	100	SS-20	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:54

FRA-70-14.48

SOIL PROFILE
BORING LOGS

DRAWN BTA
CHECKED VBP

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 197+39.55, 57.0 LT | START: 2/3/11 | END: 2/4/11 | PG 3 OF 4 | B-175-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense gray GRAVEL WITH SAND (A-1-b), trace to little silt; wet.	734.4	52																
		53																
		54	34 29 32	80	100	SS-21	-	27	40	22	11	-	NP	NP	NP	13	A-1-b (0)	
		55																
		56																
		57																
		58																
		59	21 19 22	54	67	SS-22	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
		60																
		61																
		62																
		63																
		64	19 30 29	78	100	SS-23	-	40	37	15	8	-	NP	NP	NP	12	A-1-b (0)	
		65																
		66																
		67																
		68																
		69	22 18 22	53	100	SS-24	-	-	-	-	-	-	-	-	-	13	A-1-b (V)	
		70																
	714.2	71																
Very stiff gray SILT AND CLAY (A-6a), some fine to coarse sand, trace gravel; damp.		72																
		73																
		74	14 19 19	50	100	SS-25	3.00	4	9	22	37	28	25	14	11	13	A-6a (6)	
		75																
		76																
	709.2	77																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		78																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:54

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 197+39.55, 57.0 LT | START: 2/3/11 | END: 2/4/11 | PG 4 OF 4 | B-175-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp. *(continued)*	707.6	79	40 37 32	91	100	SS-26	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
	706.2	EOB 80																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:54

NOTES: SEEPAGE AT 38.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 40.8 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 39.6 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 11 BAGS BENTONITE CHIPS; SOIL CUTTINGS

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 914+19.06, 11.66 LT | EXPLORATION ID B-175-2-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP Q2
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 762.3 (MSL) EOB: 70.0 ft. | PAGE 1 OF 3
START: 1/25/11 END: 1/26/11 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 713677.920 N, 1833030.840 E

MATERIAL DESCRIPTION AND NOTES	ELEV. 762.3	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Asphalt - 8" Concrete - 10"	760.8																	
Very dense brown GRAVEL WITH SAND (A-1-b), little silt; damp.		2	23 24 19	57	100	SS-1	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		4	14 20 25	59	100	SS-2	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		7	14 22 24	61	100	SS-3	-	42	27	20	-	11 -	NP	NP	NP	4	A-1-b (0)	
		9	8 27 24	67	100	SS-4	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		12	18 24 28	68	100	SS-5	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
NOTE: Hole caved to 14.7 feet when augers removed.		14	20 22 31	70	100	SS-6	-	38	33	19	-	10 -	NP	NP	NP	6	A-1-b (0)	
@ 16.0', becomes wet.		W 16	19 23 21	58	100	SS-7	-	-	-	-	-	-	-	-	-	14	A-1-b (V)	
		19	20 35 37	95	100	SS-8	-	-	-	-	-	-	-	-	-	13	A-1-b (V)	
@ 21.0', 1 foot sand heave; washed out with tricone.		22	23 25 21	61	67	SS-9	-	28	39	21	-	12 -	NP	NP	NP	13	A-1-b (0)	
	737.3	24	34 26 25	67	100	SS-10	-	-	-	-	-	-	-	-	-	14	A-1-b (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:54

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 914+19.06, 11.66 LT | START: 1/25/11 | END: 1/26/11 | PG 2 OF 3 | B-175-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 737.3	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense brown GRAVEL WITH SAND (A-1-b), trace to little silt; wet.		27	24 28 28	74	100	SS-11	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
@ 28.5', becomes gray.		29	48 44 47	120	100	SS-12	-	42	29	17	-	12 -	NP	NP	NP	11	A-1-b (0)	
		34	31 28 25	70	100	SS-13	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		39	28 35 28	83	100	SS-14	-	36	42	15	-	7 -	NP	NP	NP	11	A-1-b (0)	
		44	37 37 34	93	100	SS-15	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
	715.3																	
Very dense gray GRAVEL (A-1-a), "and" fine to coarse sand, trace silt; wet.		49	24 36 29	86	100	SS-16	-	55	24	12	-	9 -	NP	NP	NP	9	A-1-a (0)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:54

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PID: 77370	BR ID:	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 914+19.06, 11.66 LT	START: 1/25/11	END: 1/26/11	PG 3 OF 3	B-175-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 710.5	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Hard gray SILT (A-4b), little fine to coarse sand, little clay, trace gravel; damp to moist.	710.3	52																
		53																
@ 53.5'-55.0', stiff, contains occasional interbedded sand seams, wet.		54	30 40 44	111	44	SS-17	1.75	-	-	-	-	-	-	-	-	17	A-4b (V)	
		55																
		56																
		57																
		58																
		59	49 50/4"	-	100	SS-18	4.25	7	3	9	62	19	22	16	6	16	A-4b (8)	
		60																
		61																
		62																
		63																
		64	16 40 50/5"	-	100	SS-19	-	-	-	-	-	-	-	-	-	18	A-4b (V)	
		65																
		66																
	695.3	67																
Hard gray CLAY (A-7-6), little fine sand; damp.		68																
		69	15 18 20	50	100	SS-20	4.50	-	-	-	-	-	-	-	-	25	A-7-6 (V)	
	692.3	EOB 70																

NOTES: SEEPAGE AT 16.0 FEET; WATER LEVEL PRIOR TO ADDING WATER = 19.3 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 47.4 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 4 BAGS BENTONITE CHIPS; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:54

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 198+68.4, 34.94 LT | EXPLORATION ID B-175-3-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: PARSONS
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 787.4 (MSL) EOB: 80.0 ft. | PAGE 1 OF 4
START: 1/28/11 END: 1/28/11 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 713762.900 N, 1833374.860 E

MATERIAL DESCRIPTION AND NOTES	ELEV. 787.4	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Asphalt - 5" Brick - 4" Concrete - 5"	786.2	1																
Stiff brown SILT AND CLAY (A-6a), some to "and" fine to coarse sand, trace gravel; moist.		2	9 6 6	16	6	SS-1	1.50	-	-	-	-	-	-	-	-	14	A-6a (V)	
		3																
		4	9 7 6	17	17	SS-2	1.50	-	-	-	-	-	-	-	-	16	A-6a (V)	
		5																
		6																
		7	4 4 5	12	100	SS-3	1.50	1	4	44	27	24	26	14	12	18	A-6a (4)	
		8																
		9	4 4 6	13	100	SS-4	1.50	-	-	-	-	-	-	-	-	19	A-6a (V)	
		10																
		11																
		12	1 4 2	8	6	SS-5	2.00	-	-	-	-	-	-	-	-	15	A-6a (V)	
	773.9	13																
Hard gray SANDY SILT (A-4a), "and" fine to coarse sand, trace gravel; damp.		14	23 24 28	68	100	SS-6	4.5+	8	12	26	44	10	22	14	8	9	A-4a (4)	
	771.4	15																
Dense to very dense brown FINE SAND (A-3), trace silt, trace gravel; damp.		16																
		17	15 20 17	49	100	SS-7	-	-	-	-	-	-	-	-	-	5	A-3 (V)	
F.S.		18																
		19	4 17 24	54	100	SS-8	-	-	-	-	-	-	-	-	-	4	A-3 (V)	
	766.4	20																
Very dense gray GRAVEL (A-1-a), some fine to coarse sand, trace silt; damp.		21																
		22	13 30 43	96	100	SS-9	-	56	22	13	-	9 -	NP	NP	NP	3	A-1-a (0)	
		23																
		24	49 48 46	124	100	SS-10	-	-	-	-	-	-	-	-	-	4	A-1-a (V)	
	762.4																	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:54

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 198+68.4, 34.94 LT | START: 1/28/11 | END: 1/28/11 | PG 2 OF 4 | B-175-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 762.4	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense brown GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace to litttle silt; damp.		26	50/4"	-	100	SS-11	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		27																
		28																
		29	31 46 39	112	100	SS-12	-	-	-	-	-	-	-	-	-	3	A-1-b (V)	
		30																
		31																
		32	38 46 50/4"	-	100	SS-13	-	38	31	19	-	12 -	NP	NP	NP	4	A-1-b (0)	
NOTE: Hole caved to 32.7' after pulling augers.		33																
		34	49 29 38	88	100	SS-14	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		35																
		36																
		37	21 35 49	111	100	SS-15	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		38																
W		39	21 31 49	105	100	SS-16	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
@ 38.5', becomes wet.	746.4	40																
Very dense gray FINE SAND (A-3), some coarse sand, little gravel, trace silt; damp.		41																
F.S.		42	19 26 26	68	100	SS-17	-	17	24	50	-	9 -	NP	NP	NP	16	A-3 (0)	
	743.9	43																
Very dense gray GRAVEL WITH SAND (A-1-b), some to "and" fine to coarse sand, trace to little silt; wet.		44	18 24 28	68	100	SS-18	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
		45																
		46																
@ 46.0', 1.5 feet sand heave; washed out with tricone.		47	18 23 27	66	100	SS-19	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		48																
		49	16 24 22	61	100	SS-20	-	46	30	14	-	10 -	NP	NP	NP	11	A-1-b (0)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:54

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PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 198+68.4, 34.94 LT | START: 1/28/11 | END: 1/28/11 | PG 3 OF 4 | B-175-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense gray GRAVEL WITH SAND (A-1-b), trace to little silt; wet.	735.7 / 735.4	52																
		53																
		54	26 34 32	87	100	SS-21	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
		55																
		56																
		57																
		58																
		59	19 19 18	49	100	SS-22	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
		60																
		61																
		62																
		63																
		64	17 23 25	63	100	SS-23	-	29	49	14	-	8 -	NP	NP	NP	13	A-1-b (0)	
		65																
		66																
		67																
		68																
		69	28 32 34	87	100	SS-24	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
		70																
		71																
	715.4	72																
Very dense gray COARSE AND FINE SAND (A-3a), little gravel, little silt; wet.		73																
		74	20 46 50/5"	-	100	SS-25	-	-	-	-	-	-	-	-	-	12	A-3a (V)	
		75																
		76																
	710.4	77																
Very stiff gray SANDY SILT (A-4a), "and" fine to coarse sand, little gravel; moist.		78																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:54

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 198+68.4, 34.94 LT | START: 1/28/11 | END: 1/28/11 | PG 4 OF 4 | B-175-3-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very stiff gray SANDY SILT (A-4a), "and" fine to coarse sand, little gravel; moist. *(continued)*	708.9 / 707.4	79	23 26 39	86	100	SS-26	2.50	12	15	32	28	13	16	13	3	10	A-4a (1)	
		EOB 80																

NOTES: SEEPAGE AT 38.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 42.3 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 39.9 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 7 BAGS BENTONITE CHIPS; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:54

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 1015+61.3, 65.67 LT | EXPLORATION ID B-175-4-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP Q1
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 762.8 (MSL) EOB: 70.0 ft. | PAGE 1 OF 3
START: 1/25/11 END: 1/25/11 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 713818.350 N, 1833055.040 E

MATERIAL DESCRIPTION AND NOTES	ELEV. 762.8	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Asphalt - 8" Concrete - 10"	761.3	1																
Very dense brown GRAVEL WITH SAND (A-1-b), little silt; damp.		2	12 18 26	58	100	SS-1	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		3																
		4	13 25 19	58	100	SS-2	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		5																
		6	16 24 25	65	100	SS-3	-	19	47	22	-	12 -	NP	NP	NP	4	A-1-b (0)	
		7																
		8	11 34 28	82	100	SS-4	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		9																
		10	14 27 26	70	100	SS-5	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		11																
		12	32 28 25	70	100	SS-6	-	25	47	16	-	12 -	NP	NP	NP	4	A-1-b (0)	
		13																
	W	14																
@ 16.0', becomes wet.		15	15 26 35	80	100	SS-7	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
		16																
NOTE: Hole caved to 18.3 feet when augers removed.		17	13 24 26	66	100	SS-8	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
		18																
		19	25 25 31	74	100	SS-9	-	33	30	25	-	12 -	NP	NP	NP	14	A-1-b (0)	
		20																
@ 23.8', 1.5 feet sand heave; washed out with tricone.	737.8	21	20 26 29	72	100	SS-10	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:54

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 1015+61.3, 65.67 LT | START: 1/25/11 | END: 1/25/11 | PG 2 OF 3 | B-175-4-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 737.8	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense brown GRAVEL WITH SAND (A-1-b), little silt; wet.		22																
		23																
		24																
		25																
		26	24 26 25	67	100	SS-11	-	-	-	-	-	-	-	-	-	15	A-1-b (V)	
		27																
		28																
		29	25 27 20	62	100	SS-12	-	23	38	26	-	13 -	NP	NP	NP	14	A-1-b (0)	
		30																
	730.8	31																
Very dense gray GRAVEL (A-1-a), "and" fine to coarse sand, trace silt; wet.		32																
		33																
@ 33.5'-34.4', contains gravel fragments; possible boulder.		34	32 50/5"	-	55	SS-13	-	-	-	-	-	-	-	-	-	9	A-1-a (V)	
		35																
		36																
		37																
		38																
@ 38.5'-40.0', poor recovery; possible boulder.		39	29 44 44	116	17	SS-14	-	-	-	-	-	-	-	-	-	9	A-1-a (V)	
		40																
		41																
		42																
		43																
		44	17 20 27	62	100	SS-15	-	53	26	12	-	9 -	NP	NP	NP	11	A-1-a (0)	
		45																
		46																
		47																
		48																
		49	15 23 23	61	33	SS-16	-	-	-	-	-	-	-	-	-	13	A-1-a (V)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:54

PID: 77370	BR ID: _____	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 1015+61.3, 65.67 LT	START: 1/25/11	END: 1/25/11	PG 3 OF 3	B-175-4-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 711.1	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.	710.8	52																
		53																
		54	33 29 29	76	39	SS-17	4.5+	5	7	21	44	23	21	12	9	12	A-4a (6)	
		55																
		56																
		57																
		58																
		59	24 48 50/4"	-	100	SS-18	4.5+	-	-	-	-	-	-	-	-	11	A-4a (V)	
		60																
		61																
	700.8	62																
Very dense gray SILT (A-4b), little fine to coarse sand; damp.		63																
		64	49 50/1"	-	100	SS-19	-	0	2	13	73	12	19	17	2	16	A-4b (8)	
	695.8	65																
		66																
		67																
Very stiff gray CLAY (A-7-6), little fine sand; damp.		68																
		69	17 19 20	51	67	SS-20	2.75	-	-	-	-	-	-	-	-	23	A-7-6 (V)	
	692.8	EOB 70																

NOTES: SEEPAGE AT 16.0 FEET; WATER LEVEL PRIOR TO ADDING WATER = 19.6 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 35.7 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 5 BAGS BENTONITE CHIPS; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:54

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 200+18.11, 63.16 LT | EXPLORATION ID B-176-1-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: PARSONS
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 791.1 (MSL) EOB: 80.0 ft. | PAGE 1 OF 4
START: 1/27/11 END: 1/27/11 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 713911.540 N, 1833335.980 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Topsoil - 5"	790.7																	
FILL: Hard brown SILTY CLAY (A-6b), some fine to coarse sand, trace gravel; contains few brick fragments; damp.		1	4 4 4	11	83	SS-1	4.25	-	-	-	-	-	-	-	-	18	A-6b (V)	
@ 3.5'-5.0', contains roots.		2																
		3																
		4	6 7 8	20	67	SS-2	4.5+	7	7	15	31	40	39	20	19	13	A-6b (11)	
		5																
		6																
		7	22 23 20	57	11	SS-3	4.5+	-	-	-	-	-	-	-	-	13	A-6b (V)	
	782.6	8																
Hard brown SILT AND CLAY (A-6a), some fine to coarse sand, trace gravel; contains occasional rust stains; damp.		9	13 15 18	43	100	SS-4	4.5+	-	-	-	-	-	-	-	-	12	A-6a (V)	
		10																
		11																
		12	13 22 35	75	83	SS-5	4.5+	-	-	-	-	-	-	-	-	11	A-6a (V)	
	777.6	13																
Very dense brown GRAVEL WITH SAND AND SILT (A-2-4), trace clay; damp.		14	27 35 31	87	78	SS-6	-	-	-	-	-	-	-	-	-	6	A-2-4 (V)	
	775.1	15																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.		16	15 18 22	53	100	SS-7	4.5+	6	11	26	37	20	21	14	7	8	A-4a (4)	
		17																
		18																
		19	21 25 35	79	83	SS-8	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
	770.1	20																
Very dense brown GRAVEL WITH SAND (A-1-b), little silt; damp.		21																
		22	20 44 40	111	100	SS-9	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		23																
		24	20 25 31	74	100	SS-10	-	38	12	38	-	12 -	NP	NP	NP	4	A-1-b (0)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:55

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 200+18.11, 63.16 LT | START: 1/27/11 | END: 1/27/11 | PG 2 OF 4 | B-176-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense brown GRAVEL WITH SAND (A-1-b), little silt; damp. *(continued)*	766.1																	
		26																
		27	31 45 33	103	100	SS-11	-	-	-	-	-	-	-	-	-	3	A-1-b (V)	
@ 28.5'-30.0', contains silty clay pieces.		28																
		29	15 40 41	107	100	SS-12	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
		30																
@ 31.0'-32.5', contains sandstone fragments.		31																
		32	25 48 45	122	100	SS-13	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
	757.6	33																
Very dense brown FINE SAND (A-3), trace gravel, trace silt; damp.		34	25 31 33	84	100	SS-14	-	-	-	-	-	-	-	-	-	4	A-3 (V)	
NOTE: Hole caved to 34.8' when augers removed.	755.1	35																
Very dense brown GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace to little silt; damp.		36																
		37	33 45 49	124	100	SS-15	-	37	26	23	-	14 -	NP	NP	NP	5	A-1-b (0)	
		38																
		39	26 33 46	104	100	SS-16	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		40																
@ 41.0', becomes wet.	W	41																
		42	40 40 36	100	100	SS-17	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
		43																
		44	18 29 20	65	100	SS-18	-	43	34	15	-	8 -	NP	NP	NP	11	A-1-b (0)	
		45																
		46																
@ 46.0', becomes gray. Encountered 2.0 feet sand heave; washed out with tricone		47	18 30 28	76	100	SS-19	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
		48																
		49	20 21 22	57	100	SS-20	-	-	-	-	-	-	-	-	-	13	A-1-b (V)	
		50																
		51	21															

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:55

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 200+18.11, 63.16 LT | START: 1/27/11 | END: 1/27/11 | PG 3 OF 4 | B-176-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
	739.3																	
Very dense gray GRAVEL WITH SAND (A-1-b), trace to little silt; wet.	739.1	52	28 25	70	67	SS-21	-	-	-	-	-	-	-	-	-	14	A-1-b (V)	
		53																
		54	23 25 27	68	56	SS-22	-	31	46	14	-	9 -	NP	NP	NP	12	A-1-b (0)	
		55																
		56																
		57																
		58																
		59	28 26 23	65	44	SS-23	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
		60																
		61																
		62																
		63																
		64	23 25 25	66	56	SS-24	-	24	47	21	-	8 -	NP	NP	NP	14	A-1-b (0)	
		65																
		66																
		67																
		68																
		69	20 28 26	71	100	SS-25	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
		70																
		71																
		72																
		73																
		74	15 24 14	50	56	SS-26	-	46	33	14	-	7 -	NP	NP	NP	10	A-1-b (0)	
		75																
		76																
		77																
	714.1	78																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp.																		

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:55

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 200+18.11, 63.16 LT | START: 1/27/11 | END: 1/27/11 | PG 4 OF 4 | B-176-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
	712.5																	
Hard gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; damp. *(continued)*		79	21 25 25	66	100	SS-27	4.5+	-	-	-	-	-	-	-	-	11	A-4a (V)	
	711.1	EOB 80																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:55

NOTES: SEEPAGE AT 41.0 FEET; WATER LEVEL PRIOR TO ADDING WATER = 42.3 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 44.2 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 8 BAGS BENTONITE CHIPS; SOIL CUTTINGS

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-177-0-08 | *Location:* Sta. 1017+28.15, 39.38 ft Lt of Ramp Q1 BL | *Date Drilled:* 3/15/2009

WATER OBSERVATIONS: Water seepage at: 18.8'; Water level at completion: 18.8'

FIELD NOTES:

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	% Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60)
0.7	764.4 / 763.7						Asphalt - 8"								
		17 50/1	7	1			Dense to very dense brown GRAVEL WITH SAND (A-1-b), trace to little silt, trace clay; dry to moist.		49	30	---	11	--10--		50+
5		10 16 21	15	2											
		14 17 22	10	3					50	26	---	13	--11--		
10		14 15 18	10	4											
		23 41 36	15	5					25	39	---	18	11	7	93
15		15 20 26	17	6					38	32	---	16	--14--		55
		18 29 37	12	7					19	35	---	21	17	8	80
20		15 21 26	16	8			@ 18.8', becomes wet.								57
		16 20 23	4	9											52
25	739.4	17 21 25	15	10					35	29	---	16	--20--		55

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-177-0-08 | *Location:* Sta. 1017+28.15, 39.38 ft Lt of Ramp Q1 BL | *Date Drilled:* 3/15/2009

WATER OBSERVATIONS: Water seepage at: 18.8'; Water level at completion: 18.8'

FIELD NOTES:

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	% Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60)
	739.4	23 50/4	10	11			Dense to very dense brown GRAVEL WITH SAND (A-1-b), trace to little silt, trace clay; dry to moist.								50+
28.0	736.4														
30.0	734.4	12 15 17	16	12			Dense brown FINE SAND (A-3), little gravel, trace silt; wet.	FS	12	54	---	26	--8--		
							Bottom of Boring - 30.0'								

323/386 | FRA-70-14.48 | SOIL PROFILE BORING LOGS | DRAWN BTA | CHECKED VBP

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 201+37.19, 48.74 LT | EXPLORATION ID B-179-1-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: PARSONS
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 791.6 (MSL) EOB: 80.0 ft. | PAGE 1 OF 4
START: 1/20/11 END: 1/25/11 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 714031.910 N, 1833343.820 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Topsoil - 5"	791.2																	
Hard brown SILT AND CLAY (A-6a), some fine to coarse sand, trace gravel; damp to moist. @ 1.0'-2.5', stiff.		1	2 3 3	8	11	SS-1	1.50	-	-	-	-	-	-	-	-	10	A-6a (V)	
		2																
		3																
		4	4 8 14	29	50	SS-2	4.5+	-	-	-	-	-	-	-	-	22	A-6a (V)	
		5																
		6																
		7	8 19 17	47	100	SS-3	4.5+	9	7	16	33	35	32	17	15	11	A-6a (9)	
		8																
		9	8 11 12	30	100	SS-4	4.5+	-	-	-	-	-	-	-	-	11	A-6a (V)	
		10																
	780.6	11																
Hard brown SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.		12	7 10 19	38	100	SS-5	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
	778.1	13																
Very dense brown COARSE AND FINE SAND (A-3a), some silt, little gravel; contains rock fragments; damp.		14	10 20 22	55	100	SS-6	-	-	-	-	-	-	-	-	-	7	A-3a (V)	
	775.6	15																
Very stiff to hard gray SANDY SILT (A-4a), "and" fine to coarse sand, trace gravel; damp.		16	18 30 33	83	33	SS-7	4.5+	7	12	24	35	22	23	14	9	8	A-4a (4)	
		17																
@ 18.5'-20.0', occasional rust stains.		18																
		19	13 25 38	83	100	SS-8	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
	770.6	20																
Very dense brown GRAVEL (A-1-a), "and" fine to coarse sand, little silt; damp.		21	11 31 49	105	100	SS-9	-	-	-	-	-	-	-	-	-	5	A-1-a (V)	
		22																
		23																
	766.6	24	26 50/5"	-	100	SS-10	-	52	19	15	-	14 -	NP	NP	NP	5	A-1-a (0)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:55

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 201+37.19, 48.74 LT | START: 1/20/11 | END: 1/25/11 | PG 2 OF 4 | B-179-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Dense to very dense brown GRAVEL WITH SAND (A-1-b), trace to little silt; damp.	766.6																	
		26	44 50/5"	-	64	SS-11	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
		27																
@ 28.5', becomes gray.		28																
		29	10 28 33	80	89	SS-12	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
@ 25.0', switched to CME 75 (1992) drill rig. Energy Ratio = 64.7%. Corrected N60 values for S-11 to S-20 = --, 66, 68, --, 83, 82, --, 44,64, and 84, respectively.		30																
		31	12 32 31	83	83	SS-13	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		32																
		33																
		34	40 50/3"	-	78	SS-14	-	-	-	-	-	-	-	-	-	3	A-1-b (V)	
		35																
@ 36.0'-42.4', trace silt.		36																
		37	20 35 42	101	94	SS-15	-	48	29	17	-	6 -	NP	NP	NP	4	A-1-b (0)	
		38																
		39	17 37 39	100	100	SS-16	-	-	-	-	-	-	-	-	-	3	A-1-b (V)	
		40																
		41	14 28 50/5"	-	82	SS-17	-	-	-	-	-	-	-	-	-	3	A-1-b (V)	
		42																
		43																
@ 43.5'-45.0', moist.		44	16 20 21	54	83	SS-18	-	26	50	17	-	7 -	NP	NP	NP	11	A-1-b (0)	
		45																
W		46																
@ 46.0', becomes wet.		47	15 30 29	78	100	SS-19	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
		48																
@ 48.5', 2.0 feet sand heave; washed out with tricone.		49	16 39 39	103	72	SS-20	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
		50																
		51	10															

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:55

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 201+37.19, 48.74 LT | START: 1/20/11 | END: 1/25/11 | PG 3 OF 4 | B-179-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace to little silt; wet. @ 53.5'-73.5', 0.5 to 2.5 feet sand heave; washed out with tricone.	739.6	52	49 50/5"	-	76	SS-21	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
		53																
		54	17 36 35	93	56	SS-22	-	44	35	11	-	10 -	NP	NP	NP	10	A-1-b (0)	
		55																
	734.6	56																
Very dense gray COARSE AND FINE SAND (A-3a), little gravel, trace silt; wet.		57																
		58																
		59	10 27 38	86	78	SS-23	-	-	-	-	-	-	-	-	-	9	A-3a (V)	
		60																
	729.6	61																
Very dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, trace silt; wet.		62																
		63																
		64	25 33 35	90	61	SS-24	-	49	34	13	-	4 -	NP	NP	NP	13	A-1-b (0)	
		65																
		66																
		67																
		68																
		69	4 32 45	101	44	SS-25	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
	719.6	70																
Hard gray SILTY CLAY (A-6b), some fine to coarse sand, trace gravel; damp to moist.		71																
		72																
		73																
		74	4 18 23	54	100	SS-26	4.5+	3	6	15	35	41	33	17	16	17	A-6b (10)	
		75																
NOTE: Corrected N60 values for S-21 to S-27 = --, 77, 70, 73, 83, 44, and 102, respectively.		76																
		77																
		78																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:55

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 201+37.19, 48.74 LT | START: 1/20/11 | END: 1/25/11 | PG 4 OF 4 | B-179-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Hard gray SILTY CLAY (A-6b), some fine to coarse sand, trace gravel; damp to moist. *(continued)*	713.1	79	27 45 50	125	67	SS-27	4.25	-	-	-	-	-	-	-	-	11	A-6b (V)	
	711.6	EOB 80																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:55

NOTES: SEEPAGE AT 46.0 FEET; WATER LEVEL PRIOR TO ADDING WATER = 44.6 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 44.3 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BENTONITE CHIPS; SOIL CUTTINGS

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 202+77.79, 36.41 LT | EXPLORATION ID B-180-1-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: PARSONS
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 792.9 (MSL) EOB: 75.0 ft. | PAGE 1 OF 3
START: 1/19/11 END: 1/19/11 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 714173.500 N, 1833350.270 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Topsoil - 3"	792.6																	
Stiff brown SILT AND CLAY (A-6a), some fine to coarse sand, little gravel; contains few rust stains; damp.	789.4	1	4 2 3	7	28	SS-1	2.00	-	-	-	-	-	-	-	-	10	A-6a (V)	
Hard brown SILTY CLAY (A-6b), little to some fine to coarse sand, trace gravel; contains rust stains; damp.		4	5 7 7	18	67	SS-2	4.5+	-	-	-	-	-	-	-	-	19	A-6b (V)	
		7	9 12 16	37	67	SS-3	4.5+	7	6	15	35	37	33	17	16	11	A-6b (10)	
		9	15 18 18	47	100	SS-4	4.5+	-	-	-	-	-	-	-	-	10	A-6b (V)	
		12	20 28 27	72	11	SS-5	4.5+	-	-	-	-	-	-	-	-	12	A-6b (V)	
@ 13.5'-15.0', gray.		14	12 19 15	45	56	SS-6	4.5+	-	-	-	-	-	-	-	-	11	A-6b (V)	
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.	776.9	17	21 24 23	62	56	SS-7	4.5+	6	10	20	42	22	23	14	9	8	A-4a (6)	
		19	20 35 25	79	100	SS-8	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
Very dense brown GRAVEL (A-1-a), some fine to coarse sand, trace to little silt; damp.	771.9	22	15 34 33	88	89	SS-9	-	57	23	10	-	10 -	NP	NP	NP	3	A-1-a (0)	
		24	15 50/2"	-	50	SS-10	-	-	-	-	-	-	-	-	-	4	A-1-a (V)	
	767.9																	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:55

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 202+77.79, 36.41 LT | START: 1/19/11 | END: 1/19/11 | PG 2 OF 3 | B-180-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense gray GRAVEL WITH SAND (A-1-b), trace to little silt; damp.	767.9	26	50/4"	-	75	SS-11	-	-	-	-	-	-	-	-	-	3	A-1-b (V)	
@ 28.5', becomes brown.		29	24 50/5"	-	100	SS-12	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
@ 31.0'-32.5', contains large gravel fragments.		31	25 46 42	116	100	SS-13	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		34	37 48 34	108	100	SS-14	-	33	39	18	-	10 -	NP	NP	NP	3	A-1-b (0)	
@ 35.7', NOTE: Hole caved to 35.7 feet when augers removed.		36	36 50/5"	-	100	SS-15	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
		39	36 38 46	111	100	SS-16	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		42	27 27 31	76	100	SS-17	-	-	-	-	-	-	-	-	-	3	A-1-b (V)	
@ 43.5', becomes wet.		W 44	27 34 28	82	100	SS-18	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
@ 46.0', becomes gray.		47	16 28 31	78	100	SS-19	-	37	29	24	-	10 -	NP	NP	NP	9	A-1-b (0)	
		49	12 24 26	66	72	SS-20	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:55

PID: 77370	BR ID:	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 202+77.79, 36.41 LT	START: 1/19/11	END: 1/19/11	PG 3 OF 3	B-180-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense gray GRAVEL WITH SAND (A-1-b), little silt; wet.	741.1	740.9																
@ 53.5', 1.5 feet sand heave; washed out with tricone.		52	26 33 24	75	100	SS-21	-	34	39	15	-	12 -	NP	NP	NP	11	A-1-b (0)	
		53																
		54																
		55																
		56																
		57																
		58																
		59	29 43 29	95	100	SS-22	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
		60																
		61																
		62																
		63																
		64	29 31 27	76	56	SS-23	-	35	35	20	-	10 -	NP	NP	NP	12	A-1-b (0)	
		65																
		66																
		67																
		68																
		69	18 36 36	95	56	SS-24	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
		70																
		71																
		72																
		73																
@ 73.5'-75.0', no recovery; possible cobble or boulder.		74	25 34 38	95	0	SS-25	-	-	-	-	-	-	-	-	-	-		
	717.9	EOB 75																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:55

NOTES: SEEPAGE AT 43.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 49.3 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 45.1 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 8 BAGS BENTONITE CHIPS; SOIL CUTTINGS

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 1020+20.7, 86.21 LT | EXPLORATION ID B-180-2-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP Q1
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 787.5 (MSL) EOB: 80.0 ft. | PAGE 1 OF 4
START: 1/19/11 END: 1/20/11 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 714271.870 N, 1833081.490 E

MATERIAL DESCRIPTION AND NOTES	ELEV. 787.5	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Asphalt- 11" Concrete- 3"	786.3	1																
Very stiff to hard brown SILT AND CLAY (A-6a), some to "and" fine to coarse sand, trace to little gravel; damp.		2	8 6 8	18	39	SS-1	4.50	-	-	-	-	-	-	-	-	16	A-6a (V)	
		3																
		4	2 3 3	8	50	SS-2	2.75	-	-	-	-	-	-	-	-	21	A-6a (V)	
		5																
@ 6.0'-7.5', occasional rust stains.		6	2 3 5	11	72	SS-3	3.00	10	22	23	22	23	30	17	13	16	A-6a (3)	
	779.0	7																
Loose to medium dense brown GRAVEL WITH SAND (A-1-b), little to some silt; damp.		8																
		9	4 5 5	13	33	SS-4	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
		10																
		11	5 7 7	18	56	SS-5	-	31	32	24	-	13 -	NP	NP	NP	6	A-1-b (0)	
		12																
		13	3 2 3	7	0	SS-6	-	-	-	-	-	-	-	-	-	-		
	771.5	14																
Stiff to very stiff brown SANDY SILT (A-4a), some fine to coarse sand, little gravel; moist.		15																
		16	1 1 1	3	22	SS-7	1.50	-	-	-	-	-	-	-	-	14	A-4a (V)	
		17																
		18	1 6 2	11	39	SS-8	2.50	-	-	-	-	-	-	-	-	17	A-4a (V)	
	766.5	19																
Medium dense brown GRAVEL WITH SAND AND SILT (A-2-4), trace clay; moist.		20																
		21	3 5 8	17	56	SS-9	-	29	23	15	25	8	NP	NP	NP	11	A-2-4 (0)	
	764.0	22																
Dense brown COARSE AND FINE SAND (A-3a), little silt, trace gravel; damp.		23																
	762.5	24	11 14 18	42	83	SS-10	-	-	-	-	-	-	-	-	-	7	A-3a (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:56

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 1020+20.7, 86.21 LT | START: 1/19/11 | END: 1/20/11 | PG 2 OF 4 | B-180-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 762.5	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense brown GRAVEL WITH SAND (A-1-b), trace to little silt; damp.		26																
		27	9 22 24	61	78	SS-11	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
		28																
		29	12 26 35	80	67	SS-12	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
		30																
		31	9 21 27	63	89	SS-13	-	27	42	20	-	11 -	NP	NP	NP	4	A-1-b (0)	
		32																
		33																
		34	14 34 45	104	83	SS-14	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
		35																
		36																
		37	13 30 27	75	89	SS-15	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
		38																
		39	18 43 40	109	94	SS-16	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
		40																
@ 41.0', becomes wet.	W	41																
		42	22 28 32	79	83	SS-17	-	27	27	35	-	11 -	NP	NP	NP	13	A-1-b (0)	
		43																
		44	6 9 27	47	89	SS-18	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
@ 43.5'-48.5', 0.3 to 1.0 feet sand heave; washed out with tricone.		45																
		46																
		47	28 26 42	90	72	SS-19	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		48																
@ 48.5', becomes gray.		49	18 36 40	100	83	SS-20	-	48	33	12	-	7 -	NP	NP	NP	11	A-1-b (0)	
		50																
		51																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:56

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 1020+20.7, 86.21 LT | START: 1/19/11 | END: 1/20/11 | PG 3 OF 4 | B-180-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense gray GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, little silt; wet.	735.8 / 735.5	52																
		53																
@ 53.5'-58.5', 1.0 to 1.0 feet sand heave; washed out with tricone2.		54	39 42 45	115	67	SS-21	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		55																
		56																
		57																
		58																
@ 58.5', changed to rig CME 75/ER = 79%.		59	20 25 31	74	56	SS-22	-	49	27	13	-	11 -	NP	NP	NP	11	A-1-b (0)	
		60																
		61																
		62																
		63																
		64	29 34 24	76	83	SS-23	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		65																
		66																
		67																
		68																
		69	31 42 35	101	67	SS-24	-	39	34	16	-	11 -	NP	NP	NP	9	A-1-b (0)	
		70																
		71																
Hard gray SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.	715.5	72																
		73																
	713.0	74	15 25 35	79	100	SS-25A	4.5+	-	-	-	-	-	-	-	-	12	A-4a (V)	
Very dense gray SILT (A-4b), some fine sand, trace clay; wet.		75			-	SS-25B	-	-	-	-	-	-	-	-	-	21	A-4b (V)	
	710.5	76																
		77																
Very dense gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; moist.		78																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:56

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 1020+20.7, 86.21 LT | START: 1/19/11 | END: 1/20/11 | PG 4 OF 4 | B-180-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense gray SANDY SILT (A-4a), some fine to coarse sand, little gravel; moist. *(continued)*	709.0	79	34 48 48	126	67	SS-26	-	-	-	-	-	-	-	-	-	13	A-4a (V)	
	707.5 EOB	80																

NOTES: SEEPAGE AT 41.0 AND 74.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 41.7 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 40.1 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 13 BAGS BENTONITE CHIPS; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:56

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PROJECT: FRA-71-17.14	DRILLING FIRM / OPERATOR: CTL / MF	DRILL RIG: 03050TKR349-09	STATION / OFFSET: 109+37.03, 32.04 LT	EXPLORATION ID B-180-3-09
TYPE: STRUCTURE	SAMPLING FIRM / LOGGER: CTL / MF	HAMMER: CME AUTOMATIC	ALIGNMENT: 71 SB	
PID: BR ID:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 10/13/09	ELEVATION: 767.3 (MSL) EOB: 60.0 ft.	PAGE 1 OF 2
START: 6/7/10 END: 6/8/10	SAMPLING METHOD: SPT	ENERGY RATIO (%): 86	COORD: 714373.725 N, 1833140.402 E	

MATERIAL DESCRIPTION AND NOTES	ELEV. 767.3	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	INST.
Asphatl (8")	766.7																	
Base courese (8")	766.0																	
DENSE, BROWN, **GRAVEL AND/OR STONE FRAGMENTS**, SOME SAND, TRACE SILT, TRACE CLAY, DAMP		1	6 8 20	40	72	SS-1	-	-	-	-	-	-	-	-	-	5	A-1-a (V)	
@3.5'; VERY DENSE		4	20 25 23	69	78	SS-2	-	-	-	-	-	-	-	-	-	6	A-1-a (V)	
@6.0'; COBBLES		7	28 35 50/5"	-	76	SS-3	-	-	-	-	-	-	-	-	-	4	A-1-a (V)	
		9	20 29 41	100	83	SS-4	-	61	22	8	8	1	NP	NP	NP	3	A-1-a (0)	
		12	34 35 31	95	78	SS-5	-	-	-	-	-	-	-	-	-	4	A-1-a (V)	
		14	20 21 29	72	89	SS-6	-	-	-	-	-	-	-	-	-	4	A-1-a (V)	
		17	19 22 28	72	78	SS-7	-	-	-	-	-	-	-	-	-	4	A-1-a (V)	
	748.8 W																	
VERY DENSE, BROWN, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND**, TRACE SILT, TRACE CLAY, WITH COBBLES, WET		19	18 22 22	63	89	SS-8	-	38	33	21	7	1	NP	NP	NP	13	A-1-b (0)	
		22	22 29 40	99	72	SS-9	-	-	-	-	-	-	-	-	-	15	A-1-b (V)	
		24	16 22 24	66	100	SS-10	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
@25.0'; PUMPED DRILLING MUD INTO AUGERS																		
		29	21 23 23	66	78	SS-11	-	19	45	25	10	1	NP	NP	NP	18	A-1-b (0)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/14/14 12:28 - M:\PROJ\1021\1005\03\GEOTECHNICAL\BASEMAPS\RECEIVED IN 2142014\10050038COL.GPJ

PID:	BR ID:	PROJECT: FRA-71-17.14	STATION / OFFSET: 109+37.03, 32.04 LT	START: 6/7/10	END: 6/8/10	PG 2 OF 2	B-180-3-09

MATERIAL DESCRIPTION AND NOTES	ELEV. 737.3	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	INST.
VERY DENSE, BROWN, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND**, TRACE SILT, TRACE CLAY, WITH COBBLES, WET *(continued)*		34	26 28 26	77	72	SS-12	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
@38.5'; COBBLES		39	50/2"	-	100	SS-13	-	-	-	-	-	-	-	-	-	40	A-1-b (V)	
@43.5'; COBBLES		44	50/4"	-	100	SS-14	-	48	32	14	6	0	NP	NP	NP	10	A-1-b (0)	
	718.8																	
DENSE, BROWN, **GRAVEL AND/OR STONE FRAGMENTS**, AND SAND, TRACE SILT, TRACE CLAY, WET		49	29 35 37	103	89	SS-15	-	54	21	16	8	1	NP	NP	NP	11	A-1-a (0)	
	714.8																	
HARD, GRAY, **SILT**, LITTLE CLAY, TRACE SAND, TRACE GRAVEL, TILL, DAMP		54	22 50	-	83	SS-16	4.50	-	-	-	-	-	-	-	-	11	A-4b (V)	
	708.8																	
DENSE, BROWN, **SANDY SILT**, TRACE GRAVEL, TRACE CLAY, DAMP	707.3	59	50	-	100	SS-17	-	5	4	45	40	6	NP	NP	NP	6	A-4a (2)	
		EOB 60																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/14/14 12:28 - M:\PROJ\1021\1005\03\GEOTECHNICAL\BASEMAPS\RECEIVED IN 2142014\10050038COL.GPJ

NOTES: CAVED AT 20'

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 50 LB. BENTONITE POWDER; 94 LB. CEMENT

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 204+54.45, 25.29 LT | EXPLORATION ID B-180-4-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: PARSONS
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 794.6 (MSL) EOB: 70.0 ft. | PAGE 1 OF 3
START: 1/17/11 END: 1/17/11 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 714351.250 N, 1833357.780 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Topsoil- 8"	793.9																	
POSSIBLE FILL: Medium dense light brown GRAVEL WITH SAND (A-1-b), little silt; damp.	791.1	1-2	2 21 9	40	22	SS-1	-	-	-	-	-	-	-	-	-	3	A-1-b (V)	
Hard brown SANDY SILT (A-4a), some fine to coarse sand, trace gravel; damp.		4-5	13 9 12	28	100	SS-2	4.5+	-	-	-	-	-	-	-	-	13	A-4a (V)	
		6-7	14 21 21	55	100	SS-3	4.5+	6	11	18	34	31	27	17	10	10	A-4a (6)	
		9-10	12 14 16	40	100	SS-3	4.5+	-	-	-	-	-	-	-	-	11	A-4a (V)	
		11-12	11 15 17	42	100	SS-5	4.5+	-	-	-	-	-	-	-	-	12	A-4a (V)	
Very dense brown GRAVEL WITH SAND (A-1-b), "and" fine to coarse sand, some silt; damp.	781.1	14-15	21 37 48	112	100	SS-6	-	28	31	18	- 23 -		NP	NP	NP	6	A-1-b (0)	
		16-17	39 50/4"	-	100	SS-7	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
Very dense brown GRAVEL WITH SAND AND SILT (A-2-4); damp.	776.1	19-20	44 28 25	70	39	SS-8	-	-	-	-	-	-	-	-	-	5	A-2-4 (V)	
@ 21.0', becomes gray.		21-22	32 50/4"	-	100	SS-9	-	33	16	26	- 25 -		NP	NP	NP	6	A-2-4 (0)	
		24	50/2"	-	100	SS-10	-	-	-	-	-	-	-	-	-	5	A-2-4 (V)	
	769.6																	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:56

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 204+54.45, 25.29 LT | START: 1/17/11 | END: 1/17/11 | PG 2 OF 3 | B-180-4-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense gray GRAVEL WITH SAND (A-1-b), trace to little silt; damp.	769.6	26-27	22 43 42	112	100	SS-11	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		29-30	25 36 42	103	100	SS-12	-	44	34	13	- 9 -		NP	NP	NP	4	A-1-b (0)	
@ 31.0'-37.5', brown.		31-32	35 50/5"	-	100	SS-13	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
		34	30 50/3"	-	67	SS-14	-	-	-	-	-	-	-	-	-	3	A-1-b (V)	
NOTE: Hole caved to 36.7 feet after augers removed.		36-37	24 31 42	96	100	SS-15	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
@ 38.5'-47.5', brownish gray.		39-40	44 45 50/3"	-	100	SS-16	-	21	33	32	- 14 -		NP	NP	NP	4	A-1-b (0)	
		41-42	43 50/3"	-	100	SS-17	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
		44-45	27 43 35	103	100	SS-18	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
@ 46.0', becomes wet.		W																
@ 48.5', 1.5 feet sand heave; washed out with tricone.		46-47	14 20 28	63	100	SS-19	-	11	58	20	- 11 -		NP	NP	NP	15	A-1-b (0)	
		49-50	33 50/5"	-	27	SS-20	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
@ 48.5'-49.4', contains cobble fragments.																		

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:56

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PID: 77370	BR ID:	PROJECT: I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 204+54.45, 25.29 LT	START: 1/17/11	END: 1/17/11	PG 3 OF 3	B-180-4-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 742.8	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
Very dense gray GRAVEL (A-1-a), some fine to coarse sand, little silt; wet.	742.6	52																
		53																
		54	34 43 42	112	50	SS-21	-	-	-	-	-	-	-	-	-	9	A-1-a (V)	
		55																
		56																
		57																
		58																
		59	30 37 40	101	56	SS-22	-	55	24	10	-	11 -	NP	NP	NP	9	A-1-a (0)	
		60																
		61																
		62																
		63																
		64	26 37 27	84	83	SS-23	-	-	-	-	-	-	-	-	-	9	A-1-a (V)	
		65																
		66																
		67																
		68																
		69	31 37 28	86	100	SS-24	-	-	-	-	-	-	-	-	-	10	A-1-a (V)	
	724.6	EOB 70																

NOTES: SEEPAGE AT 46.0 FEET; WATER LEVEL PRIOR TO ADDING WATER = 46.6 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 47.0 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 7 BAGS BENTONITE CHIPS; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 10:56

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DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ODOT | *Project:* Microtunnel CTL borings | *Job No.* 02211004-01

LOG OF: Boring B-182-1-09 | *Location:* As per plan | *Date Drilled:* 6/8/2010

WATER OBSERVATIONS: Water seepage at: 21.0 | Water level at completion:

FIELD NOTES:

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	770.4						Asphalt - 6" Base - 6"								
		2 7 16	16	1		4.5	(A-4a)								
		23 34 50	18	2		4.5									118
5		35 36 38	18	3			(A-1-b)								104
		20 31 39	18	4											93
10		16 28 26	18	5											76
		19 32 30	18	6											87
15		20 22 26	18	7											67
		16 20 25	18	8											63
20		16 21 18	18	9											55
		24 17 20	18	10			(A-3)	F S							52
25	745.4														

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ODOT | *Project:* Microtunnel CTL borings | *Job No.* 02211004-01

LOG OF: Boring B-182-1-09 | *Location:* As per plan | *Date Drilled:* 6/8/2010

WATER OBSERVATIONS: Water seepage at: 21.0 | Water level at completion:

FIELD NOTES:

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL — LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	745.4							F S							
		23 18 25	18	11			(A-1-a)								60
		23 39 50	18	12											125
30		30 40 50/5	17	13											50+
		26 35 39	18	14											104
35		23 25 26	18	15											71
		23 22 24	18	16											64
40		24 27 23	18	17			(A-1-b)								70
		20 17 30	18	18			(A-3a)								66
45		26 17 28	18	19			(A-1-a)								63
		19 17 23	18	20											56
50	720.4														

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DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ODOT	*Project:* Microtunnel CTL borings	*Job No.* 02211004-01
LOG OF: Boring B-182-1-09	*Location:* As per plan	*Date Drilled:* 6/8/2010

WATER OBSERVATIONS: Water seepage at: 21.0; Water level at completion:

FIELD NOTES:

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL ⊢ LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	720.4														
		25 23 27	18	21											● 70 ○
55		30 24 26	18	22		4.5	(A-6a)								● 70 ○
		20 37 50/5	17	23			(A-1-a)								● 50+ ○
60.0 60	710.4	9 12 26	10	24			(A-4a)								● 53 ○
							Bottom of Boring - 60.0'								
65															
70															
75															

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RESOURCE INTERNATIONAL, INC.
6350 PRESIDENTIAL GATEWAY
COLUMBUS, OHIO 43231
(614) 823-4949

9885 ROCKSIDE ROAD
CLEVELAND, OHIO 44125
(216) 573-0963

4480 LAKE FOREST DRIVE, SUITE 308
CINCINNATI, OHIO 45242
(513) 769-6998

LOG OF BORING

Date Started 1/26/09 Date Completed 1/27/09 Method 3.75" HSA Water Elev. 744.1ft
Northing 714466.683 Easting 1833094.764 Hammer System Type: Automatic Calibration Date: 6/11/07
Sealing/Backfilling Type: AC Quantity: Drill Rod Energy Ratio (ER): 72.3
Boring No. B-183 Baseline, Station & Offset I-71 B; 110+20, 71' Lt. & Surface Elev. 788.6ft
Project Identification: W-07-109
FRA-70-8.93 - Phase 2

Elev. (ft)	Depth (ft)	Std. Pen.	N_{60}	Rec. (%)	Description	Sample No.	Physical Characteristics % Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.L.	P.I.	W.C.	ODOT Class
788.6	0															
788.2					0.4' - Asphalt											
787.7					0.5' - Concrete											
787.5		10/5/2	8	67	0.2' - Aggregate Base	SS-1	3.1	18.2	10.5	29.3	38.8	37	20	17	24	A-6b
786.1					Medium stiff, mottled brown and gray SILTY CLAY, some fine to coarse sand, trace fine gravel, moist.											
		5/6/9	18	89	-qh = 3.0 tsf Very stiff, mottled brown and gray SILTY CLAY, some fine to coarse sand, trace fine gravel, moist.	SS-2	2.2	12.6	10.8	26.9	47.4	37	20	17	18	A-6b
784.6					-qh = 3.25 tsf											
		4/7/9	19	100	Very stiff, mottled brown and gray CLAY, little coarse to fine sand, trace fine gravel, moist.	SS-3	1.7	7.5	7.5	28.4	54.9	41	21	20	28	A-7-6
783.1	5				-qh = 3.0 tsf											
		11/15/12	33	89	Hard, brown SILT and CLAY, some fine to coarse sand, trace fine gravel, damp.	SS-4	4.9	15.3	10.4	28.7	40.8	33	19	14	15	A-6a
					-qh = 3.25 tsf											
		13/16/18	41	94	-qh = 4.5+ tsf	SS-5									10	A-6a Visual
778.6	10			58	Hard, brown fine to coarse SANDY SILT, little coarse to fine gravel, dry.	ST-6	9.6	12.5	20.6	34.8	22.6	24	17	7	10	A-4a
					-qh = 3.5 tsf											
		10/16/18	41	67	-qh = 3.5 tsf	SS-7	13	30.7	16.3	18.3	21.6	21	16	5	8	A-4a
775.6																
		11/19/27	55	67	Very dense, brownish gray fine to coarse SAND and fine GRAVEL, little silt.	SS-8	45.9	27.2	10.1	11.4	5.3				6	A-1-b
	15															
		15/18/25	52	89		SS-9									6	A-1-b Visual
770.6																
		10/18/21	47	83	Dense to very dense, gray fine to coarse SANDY SILT, little fine gravel, dry. -qh = 4.5+ tsf	SS-10	12	19.6	14.3	27.5	26.6	23	15	8	8	A-4a
	20															

Boring No. B-183 Baseline, Station & Offset I-71 B; 110+20, 71' Lt. & Surface Elev. 788.6ft Project: W-07-109

Elev. (ft)	Depth (ft)	Std. Pen.	N_{60}	Rec. (%)	Description	Sample No.	Physical Characteristics % Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.L.	P.I.	W.C.	ODOT Class
	20															
					same as above											
		14/19/26	54	100	-qh = 4.5+ tsf	SS-11									8	A-4a Visual
765.6																
		26/50/4"	50/4"	67	Very dense, gray fine to coarse SAND and fine GRAVEL, little silt, dry.	SS-12									8	A-1-b Visual
	25															
		50/5"	50/5"	80		SS-13	35.7	34.3	15.0	8.0	7.1				3	A-1-b
761.1																
		36/50/4"	50/4"	100	Very dense, gray coarse to fine GRAVEL, some fine to coarse sand, trace to little silt, dry.	SS-14	49.5	26.3	14.7	6.3	3.2				4	A-1-a
		41/50/3"	50/3"	89		SS-15	51.1	24.7	11.7	8.0	4.6				4	A-1-a
758.1	30															
		37/50/3"	50/3"	67	Very dense, gray fine to coarse SAND and fine GRAVEL, little silt, dry to moist.	SS-16	49.4	28.3	9.9	4.6	7.8				3	A-1-b
		22/30/47	93	56		SS-17									3	A-1-b Visual
	35															
		40/50/2"	50/2"	88		SS-18	46	30.0	10.7	6.0	7.2				3	A-1-b
		31/36/40	92	89		SS-19									4	A-1-b Visual
	40															
		30/34/39	88	39		SS-20	46	29.8	11.5	7.1	5.6				4	A-1-b
		41/46/50/3"		93		SS-21									3	A-1-b

5/51

Boring No. B-183 Baseline, Station & Offset I-71 B; 110+20, 71' Lt. & Surface Elev. 788.6ft Project: W-07-109

Elev. (ft)	Depth (ft)	Std. Pen.	N_{60}	Rec. (%)	Description	Sample No.	Physical Characteristics % Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.L.	P.I.	W.C.	ODOT Class
			50/3"		same as above											Visual
	45															
		27/20/22	51	89		SS-22	44.4	29.9	11.7	8.2	5.8				8	A-1-b
		12/20/29	59	89		SS-23									10	A-1-b Visual
	50															
		14/21/29	60	83		SS-24									16	A-1-b Visual
		17/24/29	64	83		SS-25									14	A-1-b Visual
733.6	55															

Bottom of Boring = 55.0 feet

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DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ODOT | Project: Microtunnel CTL borings | Job No. 02211004-01

LOG OF: Boring B-183-1-09 | Location: As per plan | Date Drilled: 5/20/2010

WATER OBSERVATIONS: Water seepage at: 41.0 Water level at completion: 12.0

FIELD NOTES:

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL ⟷ LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	789.6						Topsoil - 4"								
		3 4 5	8	1			(A-4a)								
5		7 9 9	0	2											
		4 4 5	13	3		2.5	(A-6a)								
		2 2 3	10	4		2.5									
10		3 3 2	12	5		0.75									
		3 2 3	8	6		1.25									
15		1 6 17	11	7		4.5	(A-4a)								
		10 15 30	12	8		4.5									64
20		21 26 26	18	9		4.5									75
		16 36 50/5	17	10		4.5									50+
25	764.6														

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ODOT | Project: Microtunnel CTL borings | Job No. 02211004-01

LOG OF: Boring B-183-1-09 | Location: As per plan | Date Drilled: 5/20/2010

WATER OBSERVATIONS: Water seepage at: 41.0 Water level at completion: 12.0

FIELD NOTES:

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL ⟷ LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	764.6														
		14 19 20	10	11			(A-3)	F.S.							56
		14 50/5	6	12			(A-1-b)								50+
30		26 32 25	18	13											82
		19 37 27	0	14											92
35		26 26 40	18	15											95
		20 27 30	18	16											82
40		33 34 30	15	17											92
		25 31 27	16	18			(A-1-a)								83
45		29 45 50/4	8	19											50+
		32 37 50/5	10	20											50+
50	739.6														

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DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ODOT	*Project:* Microtunnel CTL borings	*Job No.* 02211004-01
LOG OF: Boring B-183-1-09	*Location:* As per plan	*Date Drilled:* 5/20/2010

WATER OBSERVATIONS:
Water seepage at: 41.0
Water level at completion: 12.0
FIELD NOTES:

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL ⊢ LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
	739.6														
55		31 36 76	12	21											● 160 ○
		31 26 29	16	22											● 79 ○
		26 31 34	12	23											● 93 ○
60.0 60	729.6	25 27 30	11	24											● 82 ○
							Bottom of Boring - 60.0'								
65															
70															
75															

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PROJECT: FRA-71-17.14 | DRILLING FIRM / OPERATOR: CTL / MF | DRILL RIG: 03050TKR349-09 | STATION / OFFSET: 110+97.55, 114.14 RT | EXPLORATION ID: B-183-2-09
TYPE: STRUCTURE | SAMPLING FIRM / LOGGER: CTL / MF | HAMMER: CME AUTOMATIC | ALIGNMENT: 71 NB
PID: | BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 10/13/09 | ELEVATION: 793.6 (MSL) EOB: 60.0 ft. | PAGE: 1 OF 2
START: 6/3/10 END: 6/3/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 86 | COORD: 714544.065 N, 1833381.671 E

MATERIAL DESCRIPTION AND NOTES	ELEV. 793.6	DEPTHS	SPT/RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	INST.
Topsoil (7")	793.0																	
MEDIUM DENSE, BROWN, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT**, WITH COBBLES, MOIST	790.1	1	8 7 4	16	44	SS-1	-	-	-	-	-	-	-	-	-	9	A-2-4 (V)	
VERY STIFF, BROWN, **SANDY SILT**, SOME GRAVEL, LITTLE CLAY, WITH ORGANICS AND TREE ROOTS, MOIST		4	24 9 12	30	78	SS-2	-	-	-	-	-	-	-	-	-	15	A-4a (V)	
@6.0'; HARD		7	26 12 14	37	67	SS-3	-	23	11	15	31	20	25	17	8	13	A-4a (3)	
		9	9 11 12	33	78	SS-4	-	-	-	-	-	-	-	-	-	13	A-4a (V)	
HARD, DARK BROWN, **SILT AND CLAY**, SOME SAND, LITTLE GRAVEL, TILL, DAMP	782.1	12	19 29 32	87	78	SS-5	4.50	-	-	-	-	-	-	-	-	9	A-6a (V)	
		14	17 21 24	64	83	SS-6	4.50	-	-	-	-	-	-	-	-	8	A-6a (V)	
		17	20 30 23	76	100	SS-7	4.50	13	9	18	46	14	26	14	12	10	A-6a (6)	
HARD, BROWN, **SANDY SILT**, LITTLE CLAY, TRACE GRAVEL, DAMP	775.1 W	19	14 20 30	72	72	SS-8	4.50	-	-	-	-	-	-	-	-	11	A-4a (V)	
		22	29 26 34	86	78	SS-9	4.50	-	-	-	-	-	-	-	-	10	A-4a (V)	
		24	19 26 33	85	94	SS-10	4.50	-	-	-	-	-	-	-	-	9	A-4a (V)	
		27	25 34 50/5"	-	94	SS-11	4.00	9	13	23	39	16	23	13	10	8	A-4a (4)	
VERY DENSE, GRAY, **GRAVEL AND/OR STONE FRAGMENTS**, TRACE SILT, DAMP	765.1	29	26 50/3"	-	78	SS-12	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	

MATERIAL DESCRIPTION AND NOTES	ELEV. 763.6	DEPTHS	SPT/RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	INST.
VERY DENSE, GRAY, **GRAVEL AND/OR STONE FRAGMENTS**, TRACE SILT, DAMP *(continued)*		31	27 50/5"	-	82	SS-13	-	-	-	-	-	-	-	-	-	2	A-1-b (V)	
@33.5'; COBBLES		34	47 30 50/3"	-	73	SS-14	-	26	55	13	6	0	NP	NP	NP	2	A-1-b (0)	
		37	30 32 40	103	89	SS-15	-	-	-	-	-	-	-	-	-	3	A-1-b (V)	
@40.0'; PUMPED DRILLING MUD INTO AUGERS		40	35 32 40	103	-	SS-16	-	-	-	-	-	-	-	-	-	3	A-1-b (V)	
		41	50/5"	-	100	SS-17	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
VERY DENSE, GRAY, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND**, LITTLE SILT, TRACE CLAY, WET	750.1	44	23 37 50/5"	-	82	SS-18	-	41	29	18	10	2	NP	NP	NP	6	A-1-b (0)	
		47	28 32 38	100	89	SS-19	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
		50	22 28 21	70	83	SS-20	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
VERY DENSE, GRAY, **GRAVEL AND/OR STONE FRAGMENTS**, SOME SAND, TRACE SILT, TRACE CLAY, WET	742.6	52	46 42 30	103	72	SS-21	-	-	-	-	-	-	-	-	-	9	A-1-a (V)	
		54	42 41 37	112	78	SS-22	-	64	17	11	7	1	NP	NP	NP	11	A-1-a (0)	
		57	27 31 30	87	72	SS-23	-	-	-	-	-	-	-	-	-	8	A-1-a (V)	
	733.6 EOB	60	23 36 36	103	89	SS-24	-	-	-	-	-	-	-	-	-	7	A-1-a (V)	

NOTES: CAVED AT 29'

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 50 LB. BENTONITE POWDER; 94 LB. CEMENT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/14/14 12:28 - M:\PROJ\1021\1005\03\GEOTECHNICAL\BASEMAPS\RECEIVED IN 2142014\10050038COL.GPJ

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PROJECT: FRA-71-17.14 | DRILLING FIRM / OPERATOR: CTL / MF | DRILL RIG: 03050TKR349-09 | STATION / OFFSET: 111+94.89, 69.96 LT | EXPLORATION ID B-183-3-09
TYPE: STRUCTURE | SAMPLING FIRM / LOGGER: CTL / MF | HAMMER: CME AUTOMATIC | ALIGNMENT: 71 SB
PID: BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 10/13/09 | ELEVATION: 789.2 (MSL) EOB: 55.0 ft. | PAGE 1 OF 2
START: 5/28/10 END: 5/28/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 86 | COORD: 714628.870 N, 1833104.000 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	INST.
Asphalt (2")	789.1																	
Concrete (10")	788.2																	
Base course (6")	787.7																	
DENSE, BROWN, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND**, LITTLE SILT, TRACE CLAY, FILL, DAMP	789.2	1	3 5 30	50	67	SS-1	3.25	62	5	10	15	8	NP	NP	NP	11	A-1-b (0)	
@3.5'; MEDIUM DENSE, BRICK FRAGMENTS		4	8 8 10	26	28	SS-2	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
@6.0'; COBBLES		7	18 13 15	40	11	SS-3	-	-	-	-	-	-	-	-	-	3	A-1-b (V)	
	780.7																	
HARD, BROWN, **SILT AND CLAY**, LITTLE SAND, TRACE GRAVEL, DAMP		9	14 21 31	75	89	SS-4	4.50	-	-	-	-	-	-	-	-	8	A-6a (V)	
	778.2																	
DENSE, BROWN, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND**, LITTLE SILT, TRACE CLAY, WET		12	21 18 13	44	56	SS-5	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
@13.5'; MEDIUM DENSE		15	5 4 4	11	67	SS-6	-	53	20	8	15	4	-	-	-	11	A-1-b (V)	
@16.0'; COBBLES		17	3 6 6	17	44	SS-7	-	-	-	-	-	-	-	-	-	15	A-1-b (V)	
	771.2																	
HARD, GRAY, **SANDY SILT**, LITTLE CLAY, TRACE GRAVEL, TILL, DRY		19	7 14 21	50	-	SS-8	4.50	-	-	-	-	-	-	-	-	8	A-4a (V)	
		22	20 21 34	79	78	SS-9	4.50	5	12	23	45	15	24	14	10	8	A-4a (5)	
	765.7																	
VERY DENSE, BROWN, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND**, TRACE SILT, TRACE CLAY, WITH COBBLES, DRY		24	50	-	83	SS-10	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
		27	18 30 32	89	56	SS-11	-	24	43	22	9	2	NP	NP	NP	4	A-1-b (0)	
		29	24 40 50/4"	-	75	SS-12	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	

PID: BR ID: | PROJECT: FRA-71-17.14 | STATION / OFFSET: 111+94.89, 69.96 LT | START: 5/28/10 | END: 5/28/10 | PG 2 OF 2 | B-183-3-09

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	INST.
VERY DENSE, BROWN, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND**, TRACE SILT, TRACE CLAY, WITH COBBLES, DRY *(continued)*	759.2	32	32 36 42	112	67	SS-13	-	-	-	-	-	-	-	-	-	3	A-1-b (V)	
		34	22 39 37	109	72	SS-14	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		36	29 39 44	119	67	SS-15	-	22	51	18	8	1	NP	NP	NP	5	A-1-b (0)	
		39	39 40 42	118	78	SS-16	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
@40.0'; PUMPED DRILLING MUD INTO AUGERS		W																
		42	25 32 36	97	67	SS-17	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
		44	29 33 37	100	67	SS-18	-	-	-	-	-	-	-	-	-	15	A-1-b (V)	
		47	34 34 33	96	78	SS-19	-	39	30	20	10	1	NP	NP	NP	10	A-1-b (0)	
		49	14 23 33	80	72	SS-20	-	-	-	-	-	-	-	-	-	14	A-1-b (V)	
		52	14 24 32	80	67	SS-21	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	
@53.5'; COBBLES		54	27 37 32	99	56	SS-22	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
	734.2 EOB	55																

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 25 LB. BENTONITE POWDER; 94 LB. CEMENT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/14/14 12:29 - M:\PROJ\1021\1005\03\GEOTECHNICAL\BASEMAPS\RECEIVED IN 2142014\10050038COL.GPJ

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/14/14 12:29 - M:\PROJ\1021\1005\03\GEOTECHNICAL\BASEMAPS\RECEIVED IN 2142014\10050038COL.GPJ

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PROJECT: FRA-71-17.14 | DRILLING FIRM / OPERATOR: CTL / MF | DRILL RIG: 03050TKR349-09 | STATION / OFFSET: 112+18.19, 102.56 RT | EXPLORATION ID: B-183-4-09
TYPE: STRUCTURE | SAMPLING FIRM / LOGGER: CTL / MF | HAMMER: CME AUTOMATIC | ALIGNMENT: 71 NB
PID: BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 10/13/09 | ELEVATION: 795.2 (MSL) EOB: 60.0 ft. | PAGE: 1 OF 2
START: 5/18/10 END: 5/18/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 86 | COORD: 714664.296 N, 1833368.548 E

MATERIAL DESCRIPTION AND NOTES	ELEV. 795.2	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	INST.
Asphalt (5")	794.8																	
Base course (6")	794.3																	
SOFT, BROWN, **SANDY SILT**, SOME CLAY, TRACE GRAVEL, BRICK FRAGMENTS AND BLACK SLAG, FILL, DAMP		1	2 2 1	4	39	SS-1	2.00	-	-	-	-	-	-	-	-	21	A-4a (V)	
@3.5'; HARD, WITH COBBLES		2 3 4 5	9 11 14	36	33	SS-2	2.50	-	-	-	-	-	-	-	-	16	A-4a (V)	
VERY STIFF, BROWN, **SANDY SILT**, LITTLE CLAY, TRACE GRAVEL, TILL, DAMP	789.2	6	8 9 10	27	67	SS-3	2.00	10	9	20	41	20	25	15	10	13	A-4a (5)	
@8.5'; HARD		7 8 9 10	11 13 18	44	61	SS-4	3.50	-	-	-	-	-	-	-	-	12	A-4a (V)	
		11 12 13	16 26 29	79	72	SS-5	4.50	-	-	-	-	-	-	-	-	11	A-4a (V)	
HARD, GRAY, **SANDY SILT**, LITTLE CLAY, TRACE GRAVEL, TILL, DAMP	781.7	14 15	16 16 18	49	72	SS-6	4.50	8	12	21	42	17	23	15	8	11	A-4a (5)	
		16 17 18	19 20 23	62	78	SS-7	4.50	-	-	-	-	-	-	-	-	8	A-4a (V)	
		19 20 21 22 23	25 30 41	102	78	SS-8	4.50	-	-	-	-	-	-	-	-	7	A-4a (V)	
		24 25 26 27 28	16 26 30	80	78	SS-9	-	8	11	22	47	12	23	13	10	8	A-4a (5)	
@28.5'; COBBLES		29	23 32 50/2"	-	86	SS-10	4.50	-	-	-	-	-	-	-	-	9	A-4a (V)	

PID: BR ID: | PROJECT: FRA-71-17.14 | STATION / OFFSET: 112+18.19, 102.56 RT | START: 5/18/10 | END: 5/18/10 | PG 2 OF 2 | B-183-4-09

MATERIAL DESCRIPTION AND NOTES	ELEV. 765.2	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	INST.
HARD, GRAY, **SANDY SILT**, LITTLE CLAY, TRACE GRAVEL, TILL, DAMP *(continued)*	761.7	31 32 33																
VERY DENSE, GRAY, **GRAVEL AND/OR STONE FRAGMENTS**, SOME SAND, TRACE SILT, TRACE CLAY, WITH COBBLES, DRY		34	50/5"	-	100	SS-11	-	61	19	12	6	2	NP	NP	NP	3	A-1-a (0)	
		35 36 37 38 39	20 26 45	102	67	SS-12	-	-	-	-	-	-	-	-	-	3	A-1-a (V)	
	751.7	40 41 42 43																
VERY DENSE, GRAY, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND**, TRACE SILT, TRACE CLAY, DRY		44 45 46 47 48	15 26 45	102	67	SS-13	-	37	28	27	7	1	NP	NP	NP	6	A-1-b (0)	
	746.7 W	49 50 51 52 53	14 20 38	83	67	SS-14	-	-	-	-	-	-	-	-	-	10	A-1-a (V)	
VERY DENSE, GRAY, **GRAVEL AND/OR STONE FRAGMENTS**, AND SAND, TRACE SILT, WET		54 55 56 57 58	14 20 38	83	67	SS-15	-	54	37	6	3	0	NP	NP	NP	5	A-1-a (0)	
@58.5'; HEAVING SANDS IN AUGER (2')	735.2	59 EOB 60	20 27 30/0"	-	-	SS-16	-	-	-	-	-	-	-	-	-	8	A-1-a (V)	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 50 LB. BENTONITE POWDER; 184 LB. CEMENT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/14/14 12:32 - M:\PROJ\1021\1005\03\GEOTECHNICAL\BASEMAPS\RECEIVED IN 2142014\10050038COL.GPJ

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 2/14/14 12:32 - M:\PROJ\1021\1005\03\GEOTECHNICAL\BASEMAPS\RECEIVED IN 2142014\10050038COL.GPJ

PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 879+96.81, 16.5 RT | EXPLORATION ID B-287-1-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP P4
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 762.8 (MSL) EOB: 70.0 ft. | PAGE 1 OF 3
START: 6/2/10 END: 6/2/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 713578.700 N, 1833164.080 E

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Topsoil - 8"	762.1																	
POSSIBLE FILL: Hard brown SILTY CLAY (A-6b), some fine to coarse sand, little gravel; contains trace roots and rock fragments; moist. (CL)	759.8	1	4 5 4	12	56	SS-1	4.5+	-	-	-	-	-	-	-	-	10	A-6b (V)	
Dense to very dense brown GRAVEL WITH SAND (A-1-b), trace to little silt; damp.		4	14 23 21	58	56	SS-2	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
@ 3.5'-5.0', (SP-SM).																		
@ 6.0'-10.0', (SP).		7	11 16 14	40	67	SS-3	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
		9	6 18 22	53	72	SS-4	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
@ 11.0'-20.0', (SP-SM).		12	14 15 15	40	100	SS-5	-	18	51	20	-	11 -	NP	NP	NP	4	A-1-b (0)	
		14	13 20 22	55	100	SS-6	-	-	-	-	-	-	-	-	-	7	A-1-b (V)	
@ 16.0', becomes wet.		W 16	17 11 15	34	83	SS-7	-	-	-	-	-	-	-	-	-	14	A-1-b (V)	
		19	18 17 17	45	100	SS-8	-	-	-	-	-	-	-	-	-	23	A-1-b (V)	
@ 21.0'-22.5', (SM).		22	8 19 39	76	56	SS-9	-	21	30	34	-	15 -	NP	NP	NP	14	A-1-b (0)	
@ 23.5'-25.0', 1.5 feet sand heave; washed out with tricone. (SP-SM)		24	19 26 22	63	56	SS-10	-	-	-	-	-	-	-	-	-	11	A-1-b (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 11:13

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 879+96.81, 16.5 RT | START: 6/2/10 | END: 6/2/10 | PG 2 OF 3 | B-287-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
	737.3																	
Very dense brown GRAVEL WITH SAND AND SILT (A-2-4), some to "and" fine to coarse sand, little silt, little clay; wet. (SM)	734.8	27	23 25 21	61	61	SS-11	-	-	-	-	-	-	-	-	-	11	A-2-4 (V)	
Very dense brown COARSE AND FINE SAND (A-3a), little gravel, trace to little silt; wet. (SP-SM)	732.3	29	15 18 25	57	50	SS-12	-	-	-	-	-	-	-	-	-	15	A-3a (V)	
Dense to very dense brown GRAVEL WITH SAND (A-1-b), trace to little silt; wet.		32	25 26 23	65	78	SS-13	-	49	23	15	-	13 -	NP	NP	NP	10	A-1-b (0)	
@ 31.0'-35.0', SM.		34	23 22 18	53	83	SS-14	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
@ 36.0'-37.5', 41.0'-45.0', SP-SM.		37	24 18 18	47	100	SS-15	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
@ 38.5'-40.0', SW-SM.		39	18 26 24	66	100	SS-16	-	32	36	23	-	9 -	NP	NP	NP	13	A-1-b (0)	
@ 41.0'-42.5', gray.		42	25 46 43	117	100	SS-17	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
	717.3	44	19 26 22	63	56	SS-18	-	38	38	15	-	9 -	NP	NP	NP	12	A-1-b (0)	
Very dense gray COARSE AND FINE SAND (A-3a), little gravel, trace silt; ; wet. (SP)	714.8	47	10 15 26	54	56	SS-19	-	-	-	-	-	-	-	-	-	8	A-3a (V)	
Very dense gray SANDY SILT (A-4a), "and" fine sand, trace to little coarse sand, trace gravel; wet. (SM)	712.3	49	19 31 33	84	44	SS-20	-	-	-	-	-	-	-	-	-	11	A-4a (V)	
Very dense gray SILT (A-4b), some fine sand, trace clay, trace gravel; damp. (CL-ML)		51	38 50/4"	-	100	SS-21	-	-	-	-	-	-	-	-	-	11	A-4b (V)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 11:13

PID: 77370	BR ID:	PROJECT I-70/I-71 EAST INTERCHANGE	STATION / OFFSET: 879+96.81, 16.5 RT	START: 6/2/10	END: 6/2/10	PG 3 OF 3	B-287-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
	711.0																	
	710.3	52																
Hard gray SILTY CLAY (A-6b), little fine sand, trace gravel; damp. (CL-ML)		53																
		54	50/4"	-	50	SS-22	4.5+	-	-	-	-	-	-	-	-	8	A-6b (V)	
	707.8	55																
Very dense gray SILT (A-4b), little to some fine sand, little clay, trace gravel; wet. (ML)		56																
		57	38 45 50/5"	-	100	SS-23	-	1	0	22	64	13	NP	NP	NP	18	A-4b (8)	
		58																
		59	50/5"	-	80	SS-24	-	-	-	-	-	-	-	-	-	28	A-4b (V)	
		60																
		61																
		62	38 42 32	97	100	SS-25	-	-	-	-	-	-	-	-	-	17	A-4b (V)	
	699.8	63																
Very stiff gray CLAY (A-7-6), trace to little fine sand, trace gravel; damp to moist. (CH)		64	11 18 19	49	78	SS-26	3.00	0	0	1	22	77	45	21	24	23	A-7-6 (15)	
		65																
		66																
		67	11 15 18	43	100	SS-27	3.00	-	-	-	-	-	-	-	-	22	A-7-6 (V)	
		68																
		69	16 16 17	43	100	SS-28	3.00	-	-	-	-	-	-	-	-	27	A-7-6 (V)	
	692.8	EOB 70																

NOTES: SEEPAGE AT 16.0 AND 55.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 19.7 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 53.7 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG BENTONITE CHIPS; 3 BAGS QUIKGROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 11:13

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PROJECT: I-70/I-71 EAST INTERCHANGE | DRILLING FIRM / OPERATOR: DLZ / K. CONRAD | DRILL RIG: CME 75 TRUCK | STATION / OFFSET: 800+12.28, 8.11 RT | EXPLORATION ID B-287-2-10
TYPE: ROADWAY | SAMPLING FIRM / LOGGER: DLZ / M. EVENER | HAMMER: CME AUTOMATIC | ALIGNMENT: RAMP P6
PID: 77370 BR ID: | DRILLING METHOD: 3.25" HSA | CALIBRATION DATE: 1/7/10 | ELEVATION: 785.1 (MSL) EOB: 90.0 ft.
START: 5/26/10 END: 5/27/10 | SAMPLING METHOD: SPT | ENERGY RATIO (%): 79 | COORD: 713462.500 N, 1833386.600 E | PAGE 1 OF 4

MATERIAL DESCRIPTION AND NOTES	ELEV. 785.1	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Asphalt - 4" Concrete - 8" Base - 6"	783.6	1																
POSSIBLE FILL: Stiff to very stiff brown SILTY CLAY (A-6b), little fine to coarse sand, trace to little gravel; contains trace brick and rock fragments; damp to moist.		2	3 10 12	29	100	SS-1	2.50	19	10	14	26	31	39	19	20	19	A-6b (8)	
@3.5' - 5.0', hard.		3																
		4	6 9 8	22	100	SS-2	4.5+	-	-	-	-	-	-	-	-	16	A-6b (V)	
		5																
		6	1 2 2	5	100	SS-3	1.75	-	-	-	-	-	-	-	-	16	A-6b (V)	
		7																
		8																
		9	3 5 5	13	100	SS-4	1.50	-	-	-	-	-	-	-	-	19	A-6b (V)	
		10																
		11																
		12	2 4 4	11	11	SS-5	1.00	-	-	-	-	-	-	-	-	20	A-6b (V)	
	771.6	13																
POSSIBLE FILL: Medium stiff to stiff brown SANDY SILT (A-4a), "and' fine to coarse sand, little gravel; moist.	770.6	14	1 2 4	8	100	SS-6A	1.00	15	15	24	30	16	23	16	7	18	A-4a (2)	
Loose brown SANDY SILT (A-4a), some to "and" fine to coarse sand, trace to little gravel; wet.		15			-	SS-6B	-	-	-	-	-	-	-	-	-	17	A-4a (V)	
	769.1	16																
Hard gray SILTY CLAY (A-6b), little fine to coarse sand, little silt, trace gravel; damp.		17	6 11 14	33	100	SS-7	4.5+	-	-	-	-	-	-	-	-	8	A-6b (V)	
		18																
		19	10 10 18	37	100	SS-8	4.5+	-	-	-	-	-	-	-	-	9	A-6b (V)	
	764.1	20																
Very loose brown SANDY SILT (A-4a), some to "and" fine to coarse sand, little clay, little gravel; wet.		21	1 1 1	3	44	SS-9	-	-	-	-	-	-	-	-	-	24	A-4a (V)	
	761.6	22																
Very dense brown GRAVEL WITH SAND (A-1-b), little to some silt; damp.		23																
@23.5'-25.0', medium dense.		24	6 10 11	28	67	SS-10	-	28	35	16	-	21 -	NP	NP	NP	9	A-1-b (0)	

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 11:13

PID: 77370 | BR ID: | PROJECT I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 800+12.28, 8.11 RT | START: 5/26/10 | END: 5/27/10 | PG 2 OF 4 | B-287-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 760.1	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense brown GRAVEL WITH SAND (A-1-b), little to some silt; damp. *(continued)*		26																
		27	21 25 16	54	100	SS-11	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
		28																
		29	20 22 16	50	100	SS-12	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
		30																
		31																
		32																
		33																
		34	20 31 26	75	100	SS-13	-	43	24	19	-	14 -	NP	NP	NP	6	A-1-b (0)	
		35																
		36																
		37																
		38																
@38.5', becomes wet.		39	19 20 20	53	100	SS-14	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		40																
		41																
		42																
		43																
@43.5', 1.5 feet sand heave; washed out with tricone.		44	26 27 31	76	100	SS-15	-	-	-	-	-	-	-	-	-	13	A-1-b (V)	
		45																
		46																
		47																
		48																
		49	32 25 28	70	61	SS-16	-	41	33	15	-	11 -	NP	NP	NP	12	A-1-b (0)	
		50																
		51	27															

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 11:13

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 800+12.28, 8.11 RT | START: 5/26/10 | END: 5/27/10 | PG 3 OF 4 | B-287-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very dense brown GRAVEL WITH SAND (A-1-b), little to some silt; wet.	733.1	52	25 23	63	56	SS-17	-	-	-	-	-	-	-	-	-	13	A-1-b (V)	
		53																
		54	20 23 25	63	83	SS-18	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
		55																
@56.0' - 67.0', gray.		56																
		57	27 26 22	63	72	SS-19	-	28	41	20	-	11 -	NP	NP	NP	13	A-1-b (0)	
		58																
		59	20 27 22	65	28	SS-20	-	-	-	-	-	-	-	-	-	16	A-1-b (V)	
		60																
		61																
		62																
		63																
		64	36 36 29	86	72	SS-21	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
		65																
		66																
	718.1	67																
Hard gray SANDY SILT (A-4a), "and" fine to coarse sand, little gravel; damp.		68																
		69	22 41 37	103	67	SS-22	4.5+	12	14	30	30	14	17	13	4	10	A-4a (2)	
		70																
		71																
	713.1	72																
Very dense gray SANDY SILT (A-4a), some to "and" fine to coarse sand, trace gravel; wet.		73																
	710.7	74	43 29 25	71	83 -	SS-23A SS-23B	- 3.75	-	-	-	-	-	-	-	-	15 19	A-4a (V) A-6a (V)	
Very stiff to hard gray SILT AND CLAY (A-6a), trace to little fine to coarse sand, trace gravel; damp to moist.		75																
		76																
		77																
		78																

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 11:13

PID: 77370 | BR ID: | PROJECT: I-70/I-71 EAST INTERCHANGE | STATION / OFFSET: 800+12.28, 8.11 RT | START: 5/26/10 | END: 5/27/10 | PG 4 OF 4 | B-287-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
Very stiff to hard gray SILT AND CLAY (A-6a), trace to little fine to coarse sand, trace gravel; damp to moist. *(continued)*	706.5	79	17 28 30	76	100	SS-24	4.5+	0	1	1	47	51	35	21	14	19	A-6a (10)	
		80																
		81																
		82																
		83																
		84	12 13 19	42	100	SS-25	4.5+	-	-	-	-	-	-	-	-	19	A-6a (V)	
		85																
		86																
		87																
		88																
	695.1	89	18 15 13	37	100	SS-26	4.5+	-	-	-	-	-	-	-	-	24	A-6a (V)	
	EOB	90																

NOTES: SEEPAGE AT 14.5, 20.5, AND 38.5 FEET; WATER LEVEL PRIOR TO ADDING WATER = 40.2 FEET; FINAL WATER LEVEL INCLUDING DRILLING WATER = 39.7 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG ASPHALT PATCH; 2 BAGS BENTONITE CHIPS; 3 BAGS QUIKGROUT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - I-70/I-71 East Interchange - 3/14/13 11:13

Current Designation:
B-001-E-59
Sta. 797+10.74, 8.30 ft Rt of
Ramp P1 BL

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
TESTING LABORATORY

LOG OF BORING

CO., RT. NO., SEC. FRA-40-13.83 BRIDGE NO. ———
RETAINING WALL-E

LOCATION: T.H. E-1-B STA. 122+80 OFFSET 35'LT. FED. NO. ———

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
788.9	0			
NGVD 29	2			
	4			
783.9	6	13/22	22736	Brown Silty Sandy Gravel w/Boulders
	8			
778.9	10	18/27	22737	Brown Silty Sandy Gravel w/Boulders
	12			
776.4	14	100/*	----	Brown Silty Sandy Gravel w/Boulders
773.9	16	31/41	22738	Brown Gravelly Sandy Silt w/Boulders
771.4	18	43/59	22739	Brown Silty Sandy Gravel w/Boulders
768.9	20	15/12	22740	Brown Silty Sandy Gravel w/Boulders
766.4	22			
	24	12/32	22741	Gray Sandy Gravel w/Boulders
763.9	26	24/32	22742	Gray Silty Sandy Gravel w/Boulders
761.4	28			
	30	20/24	22743	Gray Silty Sandy Gravel
758.9	32	17/24	22744	Gray Gravelly Sandy Silt
756.4	34	15/24	22745	Gray Gravelly Sandy Silt
753.9	36	20/43	22746	Gray Silty Sandy Gravel

*Refusal

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7.10.59

LOG OF BORING (CONTINUED)

BRIDGE NO. FRA-40- T.H. E-1

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION B-001-E-59
	38			
748.9	40			
	42	20/27	22747	Gray Gravelly Sandy Silt
	44			
743.9	46	18/26	22748	Gray Gravelly Sandy Clay W/Shale Fragts
	48			
738.9	50			
	52	24/60	22749	Gray Gravelly Sandy Silt W/Shale Fragts
	54			
733.9				
732.9	56	15/27	22750	Gray Sandy Silt W/Shale Fragments
				BOTTOM OF BORING
	58			
	60			
	62			
	64			
	66			
	68			
	70			
	72			
	74			
	76			
	78			
	80			
	82			

DRAWN BTA CHECKED VBP

SOIL PROFILE
BORING LOGS

FRA-70-14.48

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B-001-E-59

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
TESTING LABORATORY

SUMMARY OF SOIL TEST DATA

CO., RT. NO., SEC. FRANKLIN
FRA-40-13.83
RETAINING WALL-E
SHEET NO. 1 OF 6 SHEETS

SAMPLE NUMBER	LABORATORY NUMBER SO-	PHYSICAL CHARACTERISTICS							WATER CONTENT	DESCRIPTION
		% AGGREGATE RET. #10	% COARSE SAND 2.0MM - 0.42MM	% FINE SAND 0.42MM-0.074MM	% SILT 0.074MM-0.005MM	% CLAY <0.005MM	LIQUID LIMIT	PLASTICITY INDEX		
										DRIVE-SAMPLES
1	22736	51	11	10	18	10	23	8	13	BROWN SILTY SANDY GRAVEL
2	22737	65	11	6	10	8	21	7	15	BROWN SILTY SANDY GRAVEL
3	22738	25	11	17	29	18	22	8	12	BROWN GRAVELLY SANDY SILT
4	22739	52	14	13	14	7	NP	NP	11	BROWN SILTY SANDY GRAVEL
5	22740	64	10	8	11	7	22	10	15	BROWN SILTY SANDY GRAVEL
6	22741	71	21	5	-3	-	NP	NP	15	GRAY SANDY GRAVEL
7	22742	59	19	8	9	5	NP	NP	10	GRAY SILTY SANDY GRAVEL
8	22743	57	8	10	14	11	19	6	12	GRAY SILTY SANDY GRAVEL
9	22744	17	15	20	28	20	21	8	9	GRAY GRAVELLY SANDY SILT
10	22745	24	13	18	28	17	21	9	11	GRAY GRAVELLY SANDY SILT
11	22746	56	7	11	14	12	21	8	13	GRAY SILTY SANDY GRAVEL
12	22747	27	12	17	26	18	22	9	12	GRAY GRAVELLY SANDY SILT
13	22748	19	11	16	32	22	23	11	13	GRAY GRAVELLY SANDY CLAY W/SH FRAGTS
14	22749	21	11	18	30	20	21	8	11	GRAY GRAVELLY SANDY SILT W/SH FRAGTS
15	22750	12	12	20	35	21	21	7	11	GRAY SANDY SILT W/SH FRAGTS

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DRAWN BTA
CHECKED VBP

SOIL PROFILE
BORING LOGS

FRA-70-14.48

347/386

347
386

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Current Designation:
B-001-G-59
Sta. 868+38.30, 25.46 ft Rt of Ramp N1 BL

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
TESTING LABORATORY

LOG OF BORING

CO., RT. NO., SEC. FRA-40-12.82 BRIDGE NO. FRA-40-1361
REAR ABUTMENT SOUTH INNERBELT UNDER GRANT AVENUE
LOCATION: T.H. 1B STA. 54+50 OFFSET 23'RT FED. NO.

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
766.6	0			
NGVD 29	2			
	4			
762.6	6	5/6	20111	Brown and Gray Sandy Clay
	8			
756.6	10			
	12	13/18	20112	Gray Sandy Silt
754.1	14	38/50	20113	Gray Silty Sandy Gravel
751.6	16	23/18	20114	Gray Sandy Silt
749.1	18	22/35	20115	Gray Gravelly Sandy Silt
746.6	20	28/37	20116	Gray Gravelly Sandy Silt
744.1	22			
	24	29/35	20117	Gray Gravelly Sandy Silt
741.6	26	29/50	20118	Gray Gravelly Sandy Silt
739.1	28	42/85	20119	Gray Gravelly Sandy Silt
736.6	30			
	32	44/75	20120	Gray Silty Sandy Gravel
	34			
731.6	36	90/*	20121	Gray Silty Sandy Gravel

*Refusal

BM 6-24-59

LOG OF BORING (CONTINUED)
BRIDGE NO. FRA-40-1361 T.H. 1B

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
	38			
726.6	40	40/75	20122	Gray Silty Sandy Gravel
	42			
	44			
721.6	46	35/75	20123	Gray Sandy Silt
	48			
716.6	50	48/80	20124	Gray Gravelly Sandy Silt
	52			
	54			
711.6	56	38/56	20125	Gray Gravelly Sandy Silt
	58			
706.6	60			
705.6		100/*	20126	Gray Silty Gravelly Sand
	62			BOTTOM OF BORING
	64			
	66			*Refusal
	68			
	70			
	72			
	74			
	76			
	78			
	80			
	82			

DRAWN BTA CHECKED VBP

SOIL PROFILE
BORING LOGS

FRA-70-14.48

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SHEET 4

Current Designation:
B-001-M-59
Sta. 1012+15.30, 86.44 ft Lt
of Ramp Q1 BL

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
TESTING LABORATORY

LOG OF BORING

CO., RT. NO., SEC. FRA-40- 13.83 BRIDGE NO. FRA-40
REAR ABUTMENT E. INNERBELT UNDER MAIN STREET

LOCATION: T.H. 1B STA. 45+78 OFFSET 30' RT FED. NO.

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
784.7	0			
NGVD 29	2			
	4			
779.7	6	9/10	23882	Brown Silty Sandy Gravel
	8			
774.7	10			
	12	8/7	23883	Brown Silty Gravelly Sand
	14			
769.9	16	19/22	23884	Brown Silty Sandy Gravel
	18			
764.7	20			
	22	28/40	23885	Brown and Gray Silty Gravelly Sand
	24			
759.7	26	30/60	23886	Light-Brown Silty Sandy Gravel
757.2	28	19/50	23887	Brown Silty Sandy Gravel
754.7	30			
	32	17/25	23888	Brown Silty Gravelly Sand
752.2	34	20/29	23889	Brown Silty Gravelly Sand
749.7	36	20/43	23890	Brown Silty Sandy Gravel

MB
7-22-59

LOG OF BORING (CONTINUED) SHEET 5

BRIDGE NO. FRA-40- T.H. 1B

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION B-001-M-59
747.2	38	19/38	23891	Brown Silty Gravelly Sand
744.7	40			
	42	10/32	23892	Brown Sandy Gravel
742.2	44	13/29	23893	Brown Silty Sand
739.7	46	27/55	23894	Brown Gravelly Sand
	48			
734.7	50			
	52	29/45	23895	Brown Sand
	54			
729.7	56	15/35	23896	Brown Silty Sand
	58			
724.7	60			
	62	25/52	23897	Brown and Gray Silty Sandy Gravel
	64			
719.7				
718.7	66	18/34	23898	Brown Silty Sand
				BOTTOM OF BORING
	68			
	70			
	72			
	74			
	76			
	78			
	80			
	82			

DRAWN BTA CHECKED VBP

SOIL PROFILE
BORING LOGS

FRA-70-14.48

349/386

349
386

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B-001-M-59

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
TESTING LABORATORY

SUMMARY OF SOIL TEST DATA

CO., RT. NO., SEC FRANKLIN
FRA-40-13.83
FRA-40-
E. INNERBELT UNDER MAIN STREET
SHEET NO. 2 OF 12 SHEETS

SAMPLE NUMBER	LABORATORY NUMBER SO-	PHYSICAL CHARACTERISTICS							WATER CONTENT	DESCRIPTION
		% AGGREGATE RET. # 10	% COARSE SAND 2.0MM - 0.42 MM	% FINE SAND 0.42MM - 0.074MM	% SILT 0.074MM - 0.005MM	% CLAY <0.005 MM	LIQUID LIMIT	PLASTICITY INDEX		
										DRIVE SAMPLES
1	23882	37	17	16	15	15	25	6	21	BROWN SILTY SANDY GRAVEL
2	23883	37	34	11	13	5	NP	NP	10	BROWN SILTY GRAVELLY SAND
3	23884	60	16	8	11	5	NP	NP	11	BROWN SILTY SANDY GRAVEL
4	23885	38	24	18	14	6	NP	NP	10	BROWN And GRAY SILTY GRAVELLY SAND
5	23886	60	16	8	12	4	NP	NP	7	LIGHT BROWN SILTY SANDY GRAVEL
6	23887	43	31	10	16	0	NP	NP	8	BROWN SILTY SANDY GRAVEL
7	23888	30	42	13	-1	4-	NP	NP	8	BROWN SILTY GRAVELLY SAND
8	23889	34	41	11	-14	--	NP	NP	10	BROWN SILTY GRAVELLY SAND
9	23890	42	34	12	-13	--	NP	NP	9	BROWN SILTY SANDY GRAVEL
10	23891	24	43	15	-18	--	NP	NP	10	BROWN SILTY GRAVELLY SAND
11	23892	48	36	8	--	8-	NP	NP	10	BROWN SANDY GRAVEL
12	23893	7	62	14	-17	4-	NP	NP	11	BROWN SILTY SAND
13	23894	40	51	5	--	4-	NP	NP	14	BROWN GRAVELLY SAND
14	23895	0	74	20	-6	--	NP	NP	20	BROWN SAND
15	23896	6	58	15	-12	--	NP	NP	10	BROWN SILTY SAND
16	23897	48	25	11	-16	--	NP	NP	6	BROWN & GRAY SILTY SANDY GRAVEL
17	23898	0	35	50	-15	--	NP	NP	16	BROWN SILTY SAND

7-2

DRAWN BTA
CHECKED VBP

SOIL PROFILE
BORING LOGS

FRA-70-14.48

350/386

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386

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Current Designation:
B-001-N-59
Sta. 883+34.00, 2.51 ft Lt of
Ramp Q3 BL

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
TESTING LABORATORY

LOG OF BORING

CO., RT. NO., SEC. FRA-40-13.83 BRIDGE NO. FRA-40-1404
REAR ABUTMENT NB EAST INNERBELT OVER SB EAST FREEWAY
LOCATION: T.H. 1B STA. 114+66 OFFSET 18'RT FED. NO.

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
783.7 NGVD 29	0			
	2			
	4			
778.7	6	10/20	23222	Brown Sandy Clay
	8			
773.7	10			
	12	11/14	23223	Brown Gravelly Sandy Silt
	14			
768.7	16	12/29	23224	Brown Gravelly Sandy Silt
	18			
763.7	20			
	22	9/15	23225	Brown Silty Sandy Gravel
	24			
758.7	26	14/15	23226	Brown Silty Sandy Gravel
756.2	28	24/33	23227	Brown Gravelly Sand
753.7	30			
	32	8/27	23228	Brown Silty Sandy Gravel
751.2	34	10/50	23229	Gray Silty Gravelly Sand
748.7	36	19/53	23230	Brown Silty Sandy Gravel

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B-5-59

LOG OF BORING (CONTINUED)
BRIDGE NO. FRA-40-1404 T.H. 1B

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION B-001-N-59
746.2	38			
		9/34	23231	Brown Silty Sandy Gravel
743.7	40			
	42	23/65	23232	Brown Silty Sandy Gravelly Sand
741.2	44	9/14	23233	Gray Sand
738.7	46	17/38	23234	Gray Gravelly Sand
	48			
733.7	50			
	52	50/*	23235	Gray Sand
	54			
728.7	56	21/*	23236	Gray Silty Sand
	58			
723.7	60			
	62	19/60	23237	Gray Silty Sand
	64			
718.7	66	20/52	23238	Gray Sand
	68			
713.7	70			
712.7	72	50/*	23239	Gray Sandy Gravelly Silt
	74			BOTTOM OF BORING
	76			*Refusal
	78			
	80			
	82			

DRAWN BTA CHECKED VBP

SOIL PROFILE
BORING LOGS

FRA-70-14.48

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B-001-N-59

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
TESTING LABORATORY

SUMMARY OF SOIL TEST DATA

CO., RT. NO., SEC. FRANKLIN
FRA-40-13.83
FRA-40-1404
N.B. EAST INNERBELT OVER SB EAST FREEWAY
SHEET NO. 2 OF 19 SHEETS

SAMPLE NUMBER	LABORATORY NUMBER SO-	PHYSICAL CHARACTERISTICS							WATER CONTENT	DESCRIPTION
		% AGGREGATE RET. # 10	% COARSE SAND 2.0MM - 0.42MM	% FINE SAND 0.42MM - 0.074MM	% SILT 0.074MM - 0.005MM	% CLAY <0.005MM	LIQUID LIMIT	PLASTICITY INDEX		
										DRIVE-SAMPLES
1	23222	1	8	16	43	32	29	13	18	Brown Sandy Clay
2	23223	18	14	13	32	23	22	5	17	Brown Gravelly Sandy Silt
3	23224	23	26	11	27	13	21	6	14	Brown Gravelly Sandy Silt
4	23225	58	23	8	7	4	NP	NP	11	Brown Silty Sandy Gravel
5	23226	61	15	5	16	3	NP	NP	11	Brown Silty Sandy Gravel
6	23227	30	65	2	-3-		NP	NP	16	Brown Gravelly Sand
7	23228	66	20	0	-4-		NP	NP	11	Brown Silty Sandy Gravel
8	23229	27	17	18	26	12	NP	NP	12	Gray Silty Gravelly Sand
9	23230	51	21	9	13	6	NP	NP	10	Brown Silty Sandy Gravel
10	23231	62	16	10	10	2	NP	NP	13	Brown Silty Sandy Gravel
11	23232	34	28	13	24	1	NP	NP	9	Brown Silty Gravelly Sand
12	23233	15	68	10	-7-		NP	NP	18	Gray Sand
13	23234	37	45	13	-5-		NP	NP	12	Gray Gravelly Sand
14	23235	10	86	3	-1-		NP	NP	16	Gray Sand
15	23236	4	69	17	-10-		NP	NP	15	Gray Silty Sand
16	23237	7	66	14	-13-		NP	NP	14	Gray Silty Sand
17	23238	0	64	34	-2-		NP	NP	25	Gray Sand
18	23239	28	13	8	38	13	NP	NP	18	Gray Sandy Gravelly Silt

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DRAWN BTA CHECKED VBP

SOIL PROFILE
BORING LOGS

FRA-70-14.48

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386

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Current Designation:
B-001-P-59
Sta. 985+75.74, 36.99 ft Rt
of Ramp P5 BL

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
TESTING LABORATORY

LOG OF BORING

CO., RT. NO., SEC. FRA-40-13.83 BRIDGE NO. FRA-40-
SOUTH ABUTMENT N.B. EAST FREEWAY UNDER PARSONS AVE.

LOCATION: T.H. 1B STA. 54+86 OFFSET 20'RT FED. NO.

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
784.8	0			
NGVD 29	2			
	4			
779.8	6	6/10	23244	Brown Sandy Clay
	8			
774.8	10			
	12	6/6	23245	Brown Clayey Sandy Gravel
	14			
769.8	16	37/100	23246	Gray Sandy Silt
	18			
764.8	20			
	22	50/97	23247	Gray Silty Sandy Gravel
	24			
759.8	26	93/152	23248	Gray Silty Gravelly Sand
757.3	28	42/58	23249	Gray Gravel
754.8	30			
	32	75/72	23250	Gray Sandy Gravel
752.3	34	93/125	23251	Gray Silty Gravelly Sand
749.8	36	39/68	23252	Gray Gravelly Sand

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LOG OF BORING (CONTINUED)

BRIDGE NO. FRA-40- T.H. 1B

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
747.3	38	45/92	23253	Gray Gravel
744.8	40			
	42	55/100	23254	Gray Sandy Gravel
742.3				
	44	43/62	23255	Gray Sandy Gravel
739.8				
	46	32/48	23256	Gray Sandy Gravel
737.3	48	32/48	23257	Gray Sandy Gravel
734.8	50			
	52	48/65	23258	Gray Sandy Gravel
	54			
729.8				
	56	30/61	23259	Gray Gravelly Sand
	58			
724.8	60			
723.8		32/65	23260	Gray Sand
	62			BOTTOM OF BORING
	64			
	66			
	68			
	70			
	72			
	74			
	76			
	78			
	80			
	82			

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B-001-P-59

DRAWN BTA CHECKED VBP

SOIL PROFILE
BORING LOGS

FRA-70-14.48

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B-001-P-59

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
TESTING LABORATORY

SUMMARY OF SOIL TEST DATA

CO., RT. NO., SEC. FRANKLIN
FRA-40-13.83
FRA-40-
N.B. EAST FREEWAY UNDER PARSONS AVE.
SHEET NO. 1 OF 2 SHEETS

SAMPLE NUMBER	LABORATORY NUMBER SO-	PHYSICAL CHARACTERISTICS							WATER CONTENT	DESCRIPTION
		% AGGREGATE RET. # 10	% COARSE SAND 2.0MM - 0.42MM	% FINE SAND 0.42MM - 0.074MM	% SILT 0.074MM - 0.005MM	% CLAY <0.005MM	LIQUID LIMIT	PLASTICITY INDEX		
										DRIVE-SAMPLES
1	23244	14	9	14	34	29	29	12	20	Brown Sandy Clay
2	23245	40	22	13	14	11	27	12	21	Brown Clayey Sandy Gravel
3	23246	12	10	19	39	20	20	6	10	Gray Sandy Silt
4	23247	38	25	13	16	8	NP	NP	14	Gray Silty Sandy Gravel
5	23248	40	32	16	9	3	NP	NP	9	Gray Silty Gravelly Sand
6	23249	94	4	2	0	0	NP	NP	1	Gray Gravel
7	23250	47	24	20	-9-	--	NP	NP	12	Gray Sandy Gravel
8	23251	41	25	22	-1	2-	NP	NP	12	Gray Silty Gravelly Sand
9	23252	41	37	12	-1	0-	NP	NP	10	Gray Gravelly Sand
10	23253	88	11	0	-1	--	NP	NP	7	Gray Gravel
11	23254	67	20	5	-8	--	NP	NP	10	Gray Sandy Gravel
12	23255	63	20	8	7	2	NP	NP	9	Gray Sandy Gravel
13	23256	59	24	9	-8	--	NP	NP	10	Gray Sandy Gravel
14	23257	57	25	10	-8	--	NP	NP	10	Gray Sandy Gravel
15	23258	57	26	10	-7	--	NP	NP	10	Gray Sandy Gravel
16	23259	16	71	9	-4	--	NP	NP	22	Gray Gravelly Sand
17	23260	5	48	40	-7	--	NP	NP	21	Gray Sand

MB 7-29-

SOIL PROFILE
BORING LOGS

DRAWN BTA
CHECKED VBP

FRA-70-14.48

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Current Designation:
B-001-P-61
Sta. 182+34.04, 21.00 ft Lt of Parsons Ave. BL

State of Ohio
Department of Highways
Testing Laboratory

LOG OF BORING

Date Started 9-5-61 Sampler: Type SS Dia. 1 3/8" Water Elev: Immediate
Date Completed 9-7-61 Casing: Length 55' Dia. 3 1/2" After Hours

Project Identification: FRANKLIN
FRA-40-13.83
FRA-40-EB EAST FREEWAY
UNDER PARSONS AVE.

Boring No. B-1 Station & Offset 45+32, 36' LT. (REAR ABUTMENT) Surface Elev. 782.4

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos. So.	Physical Characteristics % Agg.	% C.S.	% F.S.	% Silt	% Clay	LL.	PI.	W.C.	SHTL. Class.
782.4 NGVD 29	0													
	2													
	4													
777.4	6	4/8	Br.& Gr.Sandy Gravelly Silt & St. Fragts.	1	27671	23	6	11	48	12	29	10	17	
	8													
772.4	10	6/10	Brown Sandy Gravelly Silt	2	27672		V	I S	U A	L			16	
769.9	12	11/22	Brown Clayey Sandy Gravel & Stone Fragts.	3	27673	68	12	6	11	3	29	12	16	
767.4	14	7/12	Gray Sandy Gravelly Silt	4	27674	36	11	13	32	8	21	6	9	
764.9	16	18/23	Gray Silty Sandy Gravel & Stone Fragts.	5	27675	62	16	9	11	2	23	9	10	
762.4	18	17/16	Brown & Gray Silty Gravelly Sand	6	27676	41	32	12	13	2	NP	NP	14	
759.9	20	32/24	Brown Silty Sand	7	27677	0	49	36	-15-		NP	NP	-	
757.4	22	18/14	Gray Sandy Gravel & Stone Fragments	8	27678	70	15	7	6	2	NP	NP	13	
754.9	24	10/25	Gray Silty Gravel	9	27679	64	7	6	18	5	24	5	11	
752.4	26	17/15	Gray Gravelly Sandy Silt	10	27680	24	10	18	40	18	19	5	11	
	28													
	30													
	32													
	34													
747.4	36	8/15	Gray & Brown Sandy Gravelly Silt	11	27681	26	7	14	43	10	20	5	11	

Particle Sizes: Agg. = >2.00mm , Coarse Sand= 2.00 - 0.42mm , Fine Sand=0.42-0.074mm, Silt=0.074 - 0.005mm , Clay = <0.005 mm

SHEET 6 of 15 Sheets

Boring No. B-1 Station & Offset 45+32, 36' LT. Surface Elev 782.4 Project FRA-40-EB EAST FREEWAY

B-001-P-61

Elev	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos. So.	Physical Characteristics % Agg.	% C.S.	% F.S.	% Silt	% Clay	LL.	PI	W.C	SHTL. Class.
	38													
742.4	40	18/16	Gray Silty Sandy Gravel	12	27682	63	7	9	17	4	17	2	12	
	42													
737.4	44													
	46	24/23	Gray Silty Sandy Gravel	13	27683	54	24	10	9	3	18	2	10	
	48													
732.4	50	24/28	Gray Silty Sandy Gravel & Stone Fragts.	14	27684	57	23	10	8	2	NP	NP	10	
	52													
727.4	54													
726.4	56	40/55	Gray Silty Sandy Gravel	15	27685	44	28	13	13	2	NP	NP	12	
	58		BOTTOM OF BORING											
	60		*REFUSAL											
	62													
	64													
	66													
	68													
	70													
	72													
	74													
	76													
	78													
	80													

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SHEET 7 of 15 Sheets

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Current Designation:
B-001-R-62
Sta. 896+07.88, 106.33 ft Rt
of Ramp Q3 BL

State of Ohio
Department of Highways
Testing Laboratory

LOG OF BORING

Date Started 11-30-61 Sampler: Type SS Dia 1 3/8" Water Elev.
Date Completed 12-4-61 Casing: Length 45' Dia 3 1/2"

Project Identification: FRANKLIN
FRA-40-13.70
FRA-40-RETAINING WALL
(DONALDSON STREET) STREET

Boring No. B-1 Station & Offset 120+64, 140' RT. Surface Elev. 788.4

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos.	Physical Characteristics % Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	Pl.	W.C.	SHTL Class
788.4 NGVD 29	0													
	2													
	4													
783.4	6	36/27	Brown & Gray Gravelly Sandy Silt	1	39794	25	21	14	24	16	19	1	15	
	8													
778.4	10	25/23	Brown Gravelly Sandy Silt	2	39795	24	16	14	24	22	PL=	19	12	
775.9	12													
	14	26/44	Brown Silty Sandy Gravel	3	39796		V	I	S	U	A	L	14	
773.4	16	26/45	Brown Gravelly Sandy Silt	4	39797		V	I	S	U	A	L	12	
770.9	18	34/9	Brown Silty Gravelly Sand	5	39798		V	I	S	U	A	L	13	
768.4	20	18/* (2")	Brown Silty Gravelly Sand	6	39799	21	23	17	20	19	23	4	13	
	22													
	24													
763.4	26	49/* (2")	Brown Silty Sand	7	39800		V	I	S	U	A	L	14	
760.9	28	24/* (2")	Brown Silty Gravelly Sand	8	39801		V	I	S	U	A	L	8	
758.4	30	24/32	Brown & Gray Sandy Gravel	9	39802		V	I	S	U	A	L	15	
755.9	32													
	34	31/38	Brown & Gray Sandy Gravel	10	39803		V	I	S	U	A	L	12	
753.4	36	34/42	Brown Silty Sandy Gravel	11	39804		V	I	S	U	A	L	6	

Particle Sizes. Agg. = >2.00mm, Coarse Sand=2.00 - 0.42mm, Fine Sand=0.42-0.074mm, Silt=0.074-0.005mm, Clay= <0.005mm
*Refusal

SHEET 5 of 10 sheets

Boring No. B-1 Station & Offset 120+64, 140' RT. Surface Elev. 788.4 Project: FRA-40-RETAINING WALL

B-001-R-62

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos.	Physical Characteristics % Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	Pl.	W.C.	SHTL Class
	38													
748.4	40	10/36	Brown & Gray Gravel	12	39805		V	I	S	U	A	L		
	42													
	44													
743.4	46	16/38	Brown & Gray Gravel	13	39806		V	I	S	U	A	L		
	48													
738.4	50		No Sample Attempted - Material heaved 10' in casing. Auger plugged											
			BOTTOM OF BORING											
	52													
	54													
	56													
	58													
	60													
	62													
	64													
	66													
	68													
	70													
	72													
	74													
	76													
	78													
	80													

SHEET 6 of 10 sheets

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Current Designation:
B-001-S-61
Sta. 886+43.73, 44.03 ft Rt of Ramp Q3 BL

State of Ohio
Department of Highways
Testing Laboratory

LOG OF BORING

Date Started 8-30-61 Sampler: Type SS Dia. 1 3/8" Water Elev: Immediate
Date Completed 9-6-61 Casing: Length 60' Dia. 3 1/2" After Hours

Project Identification: FRANKLIN (2)
FRA-40-13.83
FRA-40-WB EAST FREEWAY OVER
PARSONS AVE & SB EAST FREEWAY

Boring No. B-1 Station & Offset 112+95, 34' LT. (REAR ABUTMENT) Surface Elev. 783.3

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos. So.	Physical Characteristics % Agg.	% C.S.	% F.S.	% Silt	% Clay	LL.	Pl.	W.C.	SHTL Class.
783.3 NGVD 29	0													
	2													
	4													
778.3	6	1/3	Brown & Gray Silt & Clay, Organic	1	27375	6	1	2	46	45	38	15	31	
	8													
773.3	10	3/6	Brown & Gray Sandy Gravelly Silt	2	27376	29	15	11	21	24	30	9	20	
	12													
	14													
768.3	16	3/6	Gray Sandy Gravelly Silt & Stone Fragts.	3	27377	25	11	14	28	22	22	7	13	
765.8	18	8/11	Gray Sandy Gravelly Silt & Stone Fragts.	4	27378	31	12	14	24	19	21	5	11	
763.3	20	8/10	Gray Sandy Gravelly Silt & Stone Fragts.	5	27379	33	13	13	23	18	22	7	8	
	22													
760.8	24	9/10	Gray Silty Gravel & Stone Fragments	6	27380		V	I	S	U	A	L	13	
758.3	26	7/7	Gray Gravelly Sandy Silt & Stone Fragts.	7	27381	21	13	13	33	20	23	6	13	
755.8	28	8/14	Gray Gravelly Sandy Silt & Stone Fragts.	8	27382	16	11	22	27	24	21	7	13	
753.3	30	8/9	Gray Gravelly Sandy Silt & Stone Fragts.	9	27383	22	9	20	31	18	19	4	11	
750.8	32													
	34	3/10												
748.3	36	50*6"	Brown Sandy Gravel & Stone Fragments	11	27384	70	8	14	-8-		NP	NP	11	

Particle Sizes: Agg. = >2.00mm, Coarse Sand = 2.00 - 0.42mm, Fine Sand = 0.42-0.074mm, Silt = 0.074-0.005mm, Clay = <0.005 mm
*REFUSAL

SHEET 6 of 24 Sheets

Boring No. B-1 Station & Offset 112+95, 34' LT. Surface Elev. 783.3 Project FRA-40-EAST FREEWAY

B-001-S-61

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos. So.	Physical Characteristics % Agg.	% C.S.	% F.S.	% Silt	% Clay	LL.	Pl.	W.C.	SHTL Class.
	38													
743.3	40	8/10	Gray Sandy Gravelly Silt & Stone Fragts.	12	27385	31	11	14	26	18	23	6	12	
	42													
	44													
738.3	46	11*7"	Gray Sandy Gravel & Stone Fragments	13	27386	71	17	8	-4-		NP	NP	14	
	48													
733.3	50	20/36	Gray Silty Gravelly Sand & Stone Fragts.	14	27387	32	21	15	24	8	21	3	13	
	52													
	54													
728.3	56	10*1"	No Samples recovered-Sandy gravel, Gravel and Boulders and Boulders											
	58													
723.3	60	50*1"	BOTTOM OF BORING											
	62		*REFUSAL											
	64													
	66													
	68													
	70													
	72													
	74													
	76													
	78													
	80													

SHEET 7 of 24 Sheets

Form FE-2g

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Current Designation:
B-002-8-62
Sta. 904+41.65, 43.09 ft Lt of Mooberry BL

State of Ohio
Department of Highways
Testing Laboratory

LOG OF BORING

Date Started 11-29-61 Sampler Type SS Dia 1 3/8" Water Elev. ———
Date Completed 12-1-61 Casing Length 50' Dia 3 1/2"

Project Identification: FRANKLIN
FRA-40-13.83
FRA-40-
UNDER 18th STREET

Boring No B-2 Station & Offset 49+60, 16' LT. (REAR ABUTMENT) Surface Elev. 790.8

Elev	Depth	Std. Pen (N)	Description	Field No.	Lab. Nos. So	Physical Characteristics % Agg	% CS	% FS	% Silt	% Clay	L.L.	PI	W.C.	SHTL Class
790.8	0													
NGVD 29	2													
785.8	4													
	6	4/10	Brown Silty Sandy Gravel	1	38640	38	12	12	18	20	25	8	19	
783.3	8	14/30	Brown & Gray Gravelly Sandy Silt	2	38641	18	24	16	23	19	22	4	15	
780.8	10	14/16	Gray Gravelly Sandy Silt	3	38642	23	11	15	28	23	23	6	13	
778.3	12	6/10	Gray Gravelly Sandy Silt	4	38643	17	14	15	29	25	24	6	13	
775.8	14	9/21	Gray Sandy Silt	5	38644	9	10	14	39	28	21	3	13	
773.3	18	12/24	Gray Silty Sandy Gravel	6	38645	40	10	12	21	17	24	6	13	
770.8	20	14/23	Brown & Gray Sandy Silt	7	38646	7	8	18	43	24	22	4	12	
768.3	22	22/31	Brown & Gray Gravelly Sandy Silt	8	38647	18	11	12	35	24	24	5	13	
765.8	24	22/31	Gray Sandy Silt	9	38648	9	12	21	30	28	25	10	11	
	26													
760.8	28													
	30	33/48	Gray Gravelly Sandy Silt	10	38649	20	15	16	26	23	25	9	11	
	32													
755.8	34													
	36	28/46	Gray Sandy Silt	11	38650	13	13	20	24	30	24	9	12	

Particle Sizes: Agg = >2.00mm, Coarse Sand = 2.00 - 0.42mm, Fine Sand = 0.42-0.074mm, Silt = 0.074-0.005mm, Clay = <0.005mm

SHEET 6 of 13 sheets

Boring No. B-2 Station & Offset 49+60, 16' LT. Surface Elev. 790.8 Project: FRA-40-UNDER 18th ST.

B-002-8-62

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos. So	Physical Characteristics % Agg	% CS	% FS	% Silt	% Clay	L.L.	PI.	W.C.	SHTL Class.
	38													
750.8	40	20/31	Gray Gravelly Sandy Silt	12	38651	21	10	16	28	25	23	7	16	
	42													
745.8	44													
	46	28/47	Gray Sandy Gravelly Silt	13	38652	38	11	11	22	18	24	6	9	
	48													
740.8	50													
	52	17/22	Gray Sandy Silt	14	38653	12	12	19	32	25	21	4	12	
	54													
735.8	56	20/36	Gray Gravelly Sandy Silt	15	38654	21	14	16	26	23	24	7	11	
	58													
730.8	60													
729.8		17/30	Gray Sandy Silt	16	38655	12	10	20	32	26	22	5	11	
	62		▼BOTTOM OF BORING											
	64													
	66													
	68													
	70													
	72													
	74													
	76													
	78													
	80													

SHEET 7 of 13 sheets

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Current Designation:
B-002-R-62
Sta. 898+05.75, 80.37 ft Rt of Ramp Q3 BL

State of Ohio
Department of Highways
Testing Laboratory

LOG OF BORING

Date Started 11-30-61 Sampler Type SS Dia. 1 3/8" Water Elev.
Date Completed 12-1-61 Casing Length 30' Dia. 3 1/2"

Project Identification: FRANKLIN
FRA-40-13.70
FRA-40-RETAINING WALL
(DONALDSON STREET) STREET

Boring No. B-2 Station & Offset 122+66, 112' RT. Surface Elev. 787.3

Elev	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos. So	Physical Characteristics % Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class
787.3 NGVD 29	0													
	2													
	4													
782.3	6	20/25	Brown Silty Sand	1	38717		V	I	S	U	A	L	26	
	8													
777.3	10	14/18	Brown Silty Sandy Gravel	2	38718	34	22	11	23	10	NP	NP	14	
774.8	12	17/23	Gray Sandy Silt	3	38719	11	11	18	36	24	24	8	12	
772.3	14	8/15	Brown Sandy Silt	4	38720	11	14	18	34	23	21	4	12	
769.8	16	19/23	Brown Silty Gravelly Sand	5	38721	26	25	20	19	10	NP	NP	11	
767.3	18	23/33	Brown Silty Sandy Gravel	6	38722	47	28	11		14	NP	NP	13	
764.8	20	25/37	Brown Silty Sandy Gravel	7	38723	44	24	12	13	7	NP	NP	13	
762.3	22	14/24	Gray Silty Sand	8	38724		V	I	S	U	A	L	13	
759.8	24	17/37	Gray & Brown Silty Sand	9	38725		V	I	S	U	A	L	25	
757.3	26	25/39	Gray Silty Gravelly Sand	10	38726		V	I	S	U	A	L	10	
754.8	28		Gray Silty Sand (Wash Sample)	11			V	I	S	U	A	L		
752.3	30	26/42	Gray Sandy Gravelly Silt	12	38727	31	10	15	21	23	27	8	12	
	32													
	34													
	36													

Particle Sizes. Agg = >2.00mm, Coarse Sand = 2.00 - 0.42mm, Fine Sand = 0.42 - 0.074mm, Silt = 0.074 - 0.005mm, Clay = < 0.005mm

SHEET 2 of 10 sheets

Boring No. B-2 Station & Offset 122+66, 112' RT. Surface Elev. 787.3 Project: FRA-40- (RETAINING WALL) (WALL)

B-002-R-62

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos. So	Physical Characteristics % Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
	38													
747.3	40	18/29	Gray Sandy Silt	13	38728	14	11	19	32	24	21	5	13	
	42													
742.3	44													
	46	50 * (6")	Gray Silty Sandy Gravel	14	38729	54	11	10	15	10	PL=	15	11	
	48													
737.3	50	17/37	Gray Silty Sandy Gravel	15	38730	58	9	9	12	12	PL=	15	15	
	52													
	54													
732.3	56	35 * (6")	Gray Sandy Silt	16	38731	12	13	18	32	25	PL=	13	11	
	58													
727.3 726.8	60	50*(6")	Gray Gravelly Sandy Silt	17	38232	17	10	19	29	25	PL=	15	10	
	62		BOTTOM OF BORING											
	64		*REFUSAL											
	66													
	68													
	70													
	72													
	74													
	76													
	78													
	80													

SHEET 3 of 10 sheets

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DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ODOT | Project: FRA-70-14.48 | Job No. 1021-1005.01

LOG OF: Boring B-003-D-59 | Location: | Date Drilled:

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N) Natural Moisture Content, % - ● PL / LL Blows per foot - ○ / Non-Plastic - NP
	760.9						WATER OBSERVATIONS: Water seepage at: Water level at completion: FIELD NOTES:								
		18 21		1			GRAVEL (A-1-a)								
8.0	752.9														
		23 27		2			GRAVEL WITH SAND (A-1-b)								
13.0	747.9														
		58 68		3			COARSE AND FINE SAND (A-3a)								
18.0	742.9														
		19 33		4			SANDY SILT (A-4a)								
23.0	737.9														
							GRAVEL WITH SAND AND SILT (A-2-4)								
	735.9														

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ODOT | Project: FRA-70-14.48 | Job No. 1021-1005.01

LOG OF: Boring B-003-D-59 | Location: | Date Drilled:

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N) Natural Moisture Content, % - ● PL / LL Blows per foot - ○ / Non-Plastic - NP
	735.9	67		5											
26.5	734.4						GRAVEL WITH SAND (A-1-b)								
		19 77		6											
29.0	731.9						SANDY SILT (A-4a)								
		36 34		7											
		57 100		8											
		50		9											
		50		10											
		50		11											
		50		12											
	710.9														

DLZ Ohio, Inc. * 6121 Huntley Road, Columbus, Ohio 43229 * (614) 888-0040

Client: ODOT	Project: FRA-70-14.48	Job No. 1021-1005.01
LOG OF: Boring B-003-D-59	Location:	Date Drilled:

Depth (ft)	Elev. (ft)	Blows per 6"	Recovery (in)	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N) Natural Moisture Content, % - ● PL ⊢ LL Blows per foot - ○ / Non-Plastic - NP 10 20 30 40
	710.9	41		13			WATER OBSERVATIONS: Water seepage at: Water level at completion: FIELD NOTES:								
55		35		14											
56.0	704.9						Bottom of Boring - 56.0'								
60															
65															
70															
75															

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
TESTING LABORATORY

Current Designation:
B-003-G-59
Sta. 1018+86.90, 58.40 ft Lt
of Ramp Q1 BL

LOG OF BORING

CO., RT. NO., SEC. FRA-40-13.83 BRIDGE NO. ———
RETAINING WALL-G

LOCATION: T.H. 3-G-B STA. 126+35 OFFSET 131'LT FED. NO. ———

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
788.7	0			
NGVD 29	2			
	4			
783.7	6	8/11	24561	Brown Sandy Silt
	8			
778.7	10			
	12	4/7	24562	Brown Gravelly Sandy Silt
	14			
773.7	16	7/10	24563	Brown Sandy Gravel
	18			
768.7	20			
	22	90/90	24564	Brown Gravel
	24			
763.7	26	14/20	24565	Brown Silty Sandy Gravel
761.2	28			
		6/17	24566	Brown Gravelly Sand
758.7	30			
	32	70/100	24567	Brown Gravelly Sand
756.2	34	60/90	24568	Brown Silty Sandy Gravel
753.7	36	61/110	24569	Brown Silty Gravelly Sand

Glacial Boulders and Gravel

MB
7-29-59

LOG OF BORING (CONTINUED)

BRIDGE NO. RETAINING WALL-G T.H. 3-G-B

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
	38			
748.7	40	57/82	24570	Gravel
746.2	42			
	44	67/138	24571	Gray Silty Gravelly Sand
743.7	46	100/8"	24572	Gray Gravelly Sand
741.2	48			
		87/142	24573	Gray Gravelly Sand
738.7	50			
	52	82/88	24574	Gray Silty Gravelly Sand
	54			
733.7	56	77/88	24575	Gray Gravelly Sand
	58			
728.7	60			
727.7	62	15/68	24576	Gray Gravelly Sand BOTTOM OF BORING
	64			
	66			
	68			
	70			
	72			
	74			
	76			
	78			
	80			
	82			

B-003-G-59

DRAWN BTA CHECKED VBP

SOIL PROFILE
BORING LOGS

FRA-70-14.48

362/386

362
386

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STATE OF OHIO
DEPARTMENT OF HIGHWAYS
TESTING LABORATORY

SUMMARY OF SOIL TEST DATA

CO., RT. NO., SEC. FRANKLIN
FRA-40-13.83
RETAINING WALL -G

SHEET NO. 1 OF 13 SHEETS

SAMPLE NUMBER	LABORATORY NUMBER SQ-	PHYSICAL CHARACTERISTICS							WATER CONTENT	DESCRIPTION
		% AGGREGATE RET. # 10	% COARSE SAND 2.0MM - 0.42MM	% FINE SAND 0.42MM - 0.074MM	% SILT 0.074MM - 0.005MM	% CLAY <0.005MM	LIQUID LIMIT	PLASTICITY INDEX		
										DRIVE SAMPLES
1	24122	14	12	21	34	19	21	4	9	Brown Sandy Silt
2	24123	20	12	19	31	18	21	6	9	Gray Gravelly Sandy Silt w/Stone Fragments
3	24124	60	16	11	10	3	NP	NP	9	Brown Silty Sandy Gravel
4	24125	71	14	7	5	3	NP	NP	6	Gray Sandy Gravel
5	24126		V	I	S	U	A	L	19	Gray Sand & Gravel
6	24127	33	39	13	8	7	NP	NP	7	Gray Silty Gravelly Sand
7	24128	52	16	24	4	4	NP	NP	8	Gray Sandy Gravel
8	24129	36	19	29	-16-		NP	NP	9	Gray Silty Gravelly Sand
9	24130	28	36	21	12	3	NP	NP	13	Brown & Gray Silty Sandy Gravel
10	24131	56	24	11	-9-		NP	NP	10	Gray Silty Sandy Gravel
11	24132	75	12	6	-7-		NP	NP	8	Gray Sandy Gravel
12	24133	53	18	11	13	5	NP	NP	8	Gray Silty Sandy Gravel
13	24134		V	I	S	U	A	L	24	Gray Sand & Gravel
										DRIVE SAMPLES B-003-G-59
1	24561	10	9	16	32	33	27	10	14	Brown Sandy Silt
2	24562	19	19	12	30	20	25	8	16	Brown Gravelly Sandy Silt
3	24563	53	43	2	-2-		NP	NP	23	Brown Sandy Gravel
4	24564	82	10	3	-5-		NP	NP	10	Brown Gravel
5	24565	60	16	12	7	2	NP	NP	10	Brown Silty Sandy Gravel
6	24566	60	29	7	-4-		NP	NP	15	Brown Sandy Gravel
7	24567	36	40	15	-9-		NP	NP	11	Brown Gravelly Sand
8	24568	64	17	8	7	4	NP	NP	9	Brown Silty Sandy Gravel
9	24569	43	26	21	-10-		NP	NP	9	Brown Silty Gravelly Sand
10	24570			V	I	S	U	A	L	0 Gravel
11	24571	34	36	20	-10-		NP	NP	13	Gray Silty Gravelly Sand
12	24572	41	38	16	-5-		NP	NP	11	Gray Gravelly Sand
13	24573	46	29	18	-7-		NP	NP	12	Gray Gravelly Sand

MB 7-29-59

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
TESTING LABORATORY

SUMMARY OF SOIL TEST DATA

CO., RT. NO., SEC. FRANKLIN
FRA-40-13.83
RETAINING WALL-G

SHEET NO. 2 OF 13 SHEETS

SAMPLE NUMBER	LABORATORY NUMBER SQ-	PHYSICAL CHARACTERISTICS							WATER CONTENT	DESCRIPTION
		% AGGREGATE RET. # 10	% COARSE SAND 2.0MM - 0.42MM	% FINE SAND 0.42MM - 0.074MM	% SILT 0.074MM - 0.005MM	% CLAY <0.005MM	LIQUID LIMIT	PLASTICITY INDEX		
										DRIVE SAMPLES B-003-G-59
14	24574	39	39	22	-10-		NP	NP	14	Gray Silty Gravelly Sand
15	24575	42	31	17	-10-		NP	NP	10	Gray Gravelly Sand
16	24576	29	67	3	-1-		NP	NP	15	Gray Gravelly Sand

MB 7-29-59

SOIL PROFILE
BORING LOGS

FRA-70-14.48

363/386

363
386

DRAWN BTA
CHECKED VBP

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Current Designation:
B-003-R-62
Sta. 900+01.89, 68.48 ft Rt of Ramp Q3-BL

State of Ohio
Department of Highways
Testing Laboratory

LOG OF BORING

Date Started 12-4-61 Sampler: Type SS Dia. 1 3/8" Water Elev. ____
Date Completed 12-6-61 Casing: Length 45' Dia. 3 1/2"

Project Identification: FRANKLIN
FRA-40-13.70
FRA-40-RETAINING WALL
(DONALDSON STREET)

Boring No. B-3 Station & Offset 124+60, 93' RT. Surface Elev. 788.4

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos. So.	Physical Characteristics % Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	Pl.	W.C.	SHTL Class.
788.4 NGVD 29	0													
	2													
783.4	4													
	6	21/39	Brown Silty Sandy Gravel	1	39752		V	I	S	U	A	L	15	
780.9	8	21/35	Brown Silty Gravelly Sand	2	39753	28	30	13	19	10	NP	NP	12	
778.4	10	20/18	Brown & Gray Sandy Gravel	3	39754	49	31	13	2	5	22	5	13	
775.9	12	20/26	Brown & Gray Silty Gravelly Sand	4	39755		V	I	S	U	A	L	11	
773.4	14	21/27	Gray Sandy Gravelly Silt	5	39756	28	11	12	42	7	NP	NP	11	
770.9	16	17/24	Gray Silty Sandy Gravel	6	39757		V	I	S	U	A	L	12	
768.4	18	19/27	Gray Silty Gravelly Sand	7	39758	25	19	32	10	14	NP	NP	12	
765.9	20	14/20	Gray Silty Sandy Gravel	8	39759	66	19	5	4	6	NP	NP	11	
763.4	22	19/28	Gray Silty Gravelly Sand	9	39760	38	26	20	-16-		NP	NP	13	
	24													
	26													
758.4	28	11/15	Gray Gravelly Sand	10	39761	26	36	33	-5-		NP	NP	15	
	30													
	32													
753.4	34	14/24	Gray Gravelly Sand	11	39762	38	35	21	-6-		NP	NP	12	
	36													

Particle Sizes: Agg = >2.00mm, Coarse Sand = 2.00 - 0.42mm, Fine Sand = 042 - 0.074mm, Silt = 0.074 - 0.005mm, Clay = <0.005mm

SHEET 9 of 10 sheets

Boring No. B-3 Station & Offset 124+60, 93' RT. Surface Elev. 788.4 Project: FRA-40-RETAINING WALL

B-003-R-62

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos. So.	Physical Characteristics % Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	Pl.	W.C.	SHTL Class.
	38													
748.4	40													
	42	9/47	Gray Silty Sand	12	39763	0	30	54	-16-		NP	NP	19	
	44													
743.4														
742.4	46	19/33	Gray Silty Sand	13	39764		V	I	S	U	A	L	19	
			BOTTOM OF BORING											
	48													
	50													
	52													
	54													
	56													
	58													
	60													
	62													
	64													
	66													
	68													
	70													
	72													
	74													
	76													
	78													
	80													

SHEET 10 of 10 sheets

Current Designation:
B-004-P-59
Sta. 801+61.91, 47.77 ft Rt
of Ramp N4 BL

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
TESTING LABORATORY

LOG OF BORING

CO.,RT.NO.,SEC. FRA-40-13.83 BRIDGE NO. FRA-40-
NORTH ABUTMENT. N.B. EAST FREEWAY UNDER PARSONS AVE.

LOCATION: T.H. 4B STA. 57+95 OFFSET 32'LT FED.NO.

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
786.1	0			
NGVD 29	2			
	4			
781.1	6	4/8	23864	Brown Sandy Gravelly Silt
	8			
776.1	10			
	12	22/34	23865	Brown Silty Gravelly Sand
	14			
771.1	16	24/65	23866	Brown Silty Gravelly Sand
	18			
766.1	20			
	22	30/66	23867	Gray Gravelly Sandy Silt
	24			
761.1	26	21/27	23868	Brown Silty Gravelly Sand
	28			
756.1	30			
	32	45/44	23869	Brown Gravelly Sand
753.6	34	25/55	23870	Brown Silty Sandy Gravel
751.1	36	33/53	23871	Brown Silty Gravelly Sand

MB
7·29·59

LOG OF BORING (CONTINUED)

BRIDGE NO. FRA-40- T.H. 4B

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION B-004-P-59
749.6	38	38/55	23872	Brown Sandy Gravel
746.1	40			
	42	30/65	23873	Brown Sandy Gravel
743.6	44	25/43	23874	Brown Gravelly Sand
741.1	46	36/73	23875	Brown Silty Gravelly Sand
739.8	48	42/59	23876	Brown Gravelly Sand
736.1	50			
	52	57/74	23877	Brown Sandy Gravel
733.6	54	60/45	23878	Brown Sandy Gravel
731.1	56	8/53	23879	Brown Sandy Gravel
	58			
726.1	60	21/43	23880	Brown Silty Gravelly Sand
	62			
	64			
721.1				
720.1	66	28/48	23881	Gray Silty Gravelly Sand
	68			BOTTOM OF BORING
	70			
	72			
	74			
	76			
	78			
	80			
	82			

DRAWN BTA CHECKED VBP

SOIL PROFILE
BORING LOGS

FRA-70-14.48

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B-004-P-59

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
TESTING LABORATORY

SUMMARY OF SOIL TEST DATA

CO., RT. NO., SEC. FRANKLIN
FRA-40-T3.83
FRA-40-
N.B. EAST FREEWAY UNDER PARSONS AVE.
SHEET NO. 2 OF 12 SHEETS

SAMPLE NUMBER	LABORATORY NUMBER SO-	PHYSICAL CHARACTERISTICS: % AGGREGATE RET. # 10	% COARSE SAND 2.0MM - 0.42 MM	% FINE SAND 0.42MM - 0.074MM	% SILT 0.074 MM - 0.005MM	% CLAY <0.005 MM	LIQUID LIMIT	PLASTICITY INDEX	WATER CONTENT	DESCRIPTION
										DRIVE SAMPLES
1	23864	26	7	11	32	24	26	8	16	Brown Sandy Gravelly silt
2	23865	31	28	10	21	10	NP	NP	9	Brown Silty Gravelly Sand
3	23866	32	19	16	22	11	NP	NP	12	Brown Silty Gravelly Sand
4	23867	27	11	18	26	18	20	4	9	Gray Gravelly Sandy Silt
5	23868	30	43	15	-1	2-	NP	NP	12	Brown Silty Gravelly Sand
6	23869	44	37	14	--	5-	NP	NP	14	Brown Gravelly Sand
7	23870	46	25	12	12	5	NP	NP	11	Brown Silty Sandy Gravel
8	23871	24	36	21	13	6	NP	NP	11	Brown Silty Gravelly Sand
9	23872	70	16	9	--	5-	NP	NP	12	Brown Sandy Gravel
10	23873	55	31	8	--	6-	NP	NP	9	Brown Sandy Gravel
11	23874	32	45	16	--	7-	NP	NP	13	Brown Gravelly Sand
12	23875	43	28	16	-1	3-	NP	NP	9	Brown Silty Gravelly Sand
13	23876	43	35	14	--	8-	NP	NP	10	Brown Gravelly Sand
14	23877	66	16	9	--	9-	NP	NP	8	Brown Sandy Gravel
15	23878	66	17	8	--	9-	NP	NP	9	Brown Sandy Gravel
16	23879	53	37	8	--	2-	NP	NP	22	Brown Sandy Gravel
17	23880	38	23	26	-1	3-	NP	NP	21	Brown Silty Gravelly Sand
18	23881	38	14	35	-1	3-	NP	NP	11	Gray Silty Gravelly Sand

MB
7.29.59

SOIL PROFILE
BORING LOGS

DRAWN BTA
CHECKED VBP

FRA-70-14.48

366/386

366
386

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Current Designation:
B-004-P-61
Sta. 886+71.89, 63.28 ft Lt of Ramp P2 BL

State of Ohio
Department of Highways
Testing Laboratory

LOG OF BORING

Date Started 9-6-61 Sampler: Type SS Dia. 1 3/8" Water Elev: Immediate
Date Completed 9-11-61 Casing: Length 55' Dia. 3 1/2" After Hours

Project Identification: FRANKLIN
FRA-40-13.83
FRA-40-SB EAST FREEWAY
UNDER PARSONS AVE.

Boring No. B-4 Station & Offset 53+14, 48' LT. (FORWARD ABUTMENT) Surface Elev. 785.2

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos. So.	Physical Characteristics % Agg.	% C.S.	% F.S.	% Silt	% Clay	LL.	Pl.	W.C.	SHTL Class.
785.2 NGVD 29	0													
	2													
	4													
780.2	6	15/38	Brown Silty Sandy Gravel	1	28664	60	9	8	12	11	25	8	12	
	8													
775.2	10	29/25	Brown Gravel	2	28665	93	3	2	-2-		NP	NP	10	
	12													
	14													
770.2	16	16/30	Brown Silty Sandy Gravel	3	28666	48	20	14	11	7	NP	NP	11	
	18													
765.2	20	30/41	Gray Gravelly Sandy Silt, & Stone Fragts.	4	28667	20	11	20	25	24	21	5	9	
	22													
	24													
760.2	26	30/32	Brown Silty Gravelly Sand & Stone Fragts.	5	28668	40	23	22	10	5	NP	NP	13	
	28													
755.2	30	17/33	Brown Silty Gravelly Sand	6	28669	21	27	34	10	8	NP	NP	13	
	32													
	34													
750.2	36	39/43	Brown Silty Gravelly Sand	7	28670	27	33	24	9	7	NP	NP	11	

Particle Sizes: Agg. = >2.00mm , Coarse Sand= 2.00 - 0.42mm, Fine Sand=0.42-0.074mm, Silt=0.074 -0.005mm , Clay = <0.005 mm

SHEET 6 of 15 Sheets

Boring No. B-4 Station & Offset 53+14, 48' LT. Surface Elev 785.2 Project: FRA-40-SB EAST FREEWAY

B-004-P-61

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab Nos. So.	Physical Characteristics % Agg.	% C.S.	% F.S.	% Silt	% Clay	LL.	Pl.	W.C.	SHTL Class.
747.7	38	26/64	Brown Silty Gravelly Sand	8	28671	25	42	17	9	7	NP	NP	14	
745.2	40	37/47	Brown Silty Gravelly Sand	9	28672	34	31	22	7	6	NP	NP	11	
742.7	42	40/45	Brown Silty Gravelly Sand	10	28673	27	42	21	4	6	NP	NP	10	
740.2	44	50*3"	Brown Silty Gravelly Sand & Stone Fragts.	11	28674		V I S U A L						9	
737.7	46	16/46	Brown Sandy Gravel & Stone Fragments	12	28675	57	26	9	-8-		NP	NP	9	
735.2	48	42*9"	Brown Sandy Gravel	13	28676	56	28	9	-7-		NP	NP	11	
732.7	50	32/45	Brown & Gray Gravelly Sand & Stone Fragts.	14	28677	39	43	10	-8-		NP	NP	14	
730.2	52	34/75	Brown Silty Sandy Gravel	15	28678	45	26	17	-12-		NP	NP	9	
727.7	54	31/47	Brown Sandy Gravel & Stone Fragments	16	28679	49	31	13	-7-		NP	NP	10	
726.7	56		BOTTOM OF BORING											
	58		*REFUSAL											
	60													
	62													
	64													
	66													
	68													
	70													
	72													
	74													
	76													
	78													
	80													

SHEET 7 of 15 Sheets

Form FE-2g

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Current Designation:
B-001-W-61
Sta. 1001+43.93, 36.27 ft Rt of Ramp Q1 BL

State of Ohio
Department of Highways
Testing Laboratory

LOG OF BORING

Date Started 9-6-61 Sampler: Type SS Dia. 1 3/8" Water Elev: Immediate
Date Completed 9-6-61 Casing: Length 25' Dia. 3 1/2" After Hours
Boring No. B-1 Station & Offset 106+89.30 'RT REAR ABUTMENT' Surface Elev. 778.9

Project Identification: FRANKLIN
FRA-40-13.83
FRA-40-WB EAST FREEWAY
OVER EAST INNERBELT

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos. So.	Physical Characteristics % Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
778.9 NGVD 29	0													
773.9	6	5/10	Brown & Gray Sandy Clay	1	27448	5	5	13	56	21	37	15	25	
768.9	10	22/25	Br.& Gr.Sandy Gravelly Silt & St. Fragts.	2	27449	26	10	14	37	13	24	6	13	
766.4	14	21/26	Br.& Gr.Silty Sandy Gravel & Stone Fragts.	3	27450	40	11	12	30	7	19	4	12	
763.9	16	13/17	Brown & Gray Silty Sandy Gravel	4	27451	47	21	17	11	4	NP	NP	14	
761.4	18	25/38	Gray Silty Sandy Gravel, Trace Organic	5	27452	69	10	6	11	4	20	3	13	
758.9	20	18/50	Gray Silty Sandy Gravel & Stone Fragts.	6	27453	58	7	8	19	8	22	7	8	
756.4	24	20/42	Gray Sandy Gravelly Silt & Stone Fragts.	7	27454	30	10	14	36	10	18	2	10	
753.9	26	27/20	Brown Silty Gravel & Stone Fragments	8	27455	63	6	8	19	4	20	5	9	
751.4	28	16/23	Gr.& Br.Sandy Gravelly Silt & Stone Fragts.	9	27456	25	10	14	43	8	20	5	11	
748.9	30	14/16	Gray Silty Gravelly Sand	10	27457	18	16	38	26	2	NP	NP	19	
743.9	36	14/18	Brown Silty Sandy Gravel & Stone Fragts.	11	27458		V	I	S	U	A	L	9	

Particle Sizes: Agg. = >2.00mm , Coarse Sand = 2.00 - 0.42mm, Fine Sand=0.42-0.074mm, Silt=0.074-0.005mm , Clay = <0.005 mm

SHEET 6 of 23 Sheets

Boring No. B-1 Station & Offset 106+89.30 RT Surface Elev 778.9 Project FRA-40-WB EAST FREEWAY

B-001-W-61

Elev	Depth	Std. Pen. (N)	Description	Field No	Lab Nos So.	Physical Characteristics % Agg	% C.S	% F.S	% Silt	% Clay	L.L	P.I	W.C	SHTL Class.
738.9	40													
737.9		14/26	Brown Silty Sandy Gravel	12	27459		V	I	S	U	A	L	10	
			BOTTOM OF BORING											

SHEET 7 of 23 Sheets

Form FE-2g

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Current Designation:
B-001-W-62
Sta. 875+18.67, 4.06 ft Rt of Ramp Q4 BL

State of Ohio
Department of Highways
Testing Laboratory

LOG OF BORING

Date Started 9-21-62 Sampler: Type SS Dia. 1 3/8" Water Elev. ____
Date Completed 9-24-62 Casing: Length 40' Dia. 3 1/2"

Project Identification: FRANKLIN
FRA-40-13.83
FRA-40- RETAINING WALL

Boring No. B-1 Station & Offset 100+23, 35' Lt. (RETAINING WALL) Surface Elev. 773.5

Elev	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos. So.	Physical Characteristics % Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.	Pl.	W.C.	SHTL Class
773.5 NGVD 29	0													
	2													
	4													
768.5	6	18/17	Brown Gravelly Sandy Silt	1	87996	18	7	20	33	22	20	1	12	
	8													
763.5	10	20/28	Gray Gravelly Sandy Silt	2	87997	20	11	16	28	25	22	6	11	
761.0	12	19/26	Gray Gravelly Sandy Silt	3	87998	21	8	16	29	26	21	7	9	
758.5	14	43/52	Brown & Gray Silty Gravelly Sand	4	87999	41	21	21	9	8	NP	NP	8	
756.0	16	44/53	Brown Silty Gravelly Sand	5	88000	28	22	27	10	13	NP	NP	9	
753.5	18	*	Boulders (Driller's Description)											
751.0	20	50/*	Gray Silty Sandy Gravel	6	88001	47	23	7	12	11	NP	NP	5	
748.5	22	43/54	Gray Sandy Silt w/ Stone Fragments	7	88002	15	8	15	38	24	20	2	10	
746.0	24	41/53	Gray Sandy Silt w/ Stone Fragments	8	88003	24	8	14	37	17	17	2	10	
743.5	26	36/63	Gray Sandy Silt	9	88004	10	6	25	42	17	NP	NP	10	
	28													
	30													
	32													
	34													
738.5	36	*	Sand and Gravel (Driller's Description)					V	I	S	U	A	L	

Particle Sizes: Agg = >2.00mm, Coarse Sand = 2.00 - 0.42mm, Fine Sand = 042-0.074mm, Silt = 0.074-0.005mm, Clay = <0.005mm
* Refusal

SHEET 5 of 8 sheets

Boring No. B-1 Station & Offset 100+23, 35' Lt. Surface Elev. 773.5 Project: FRA-40-RETAINING WALL

B-001-W-62

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos. So.	Physical Characteristics % Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.	Pl.	W.C.	SHTL Class
	38													
733.5	40	39/*	Gray Silty Sand	10	88005	11	36	13	28	12	NP	NP	10	
732.6			BOTTOM OF BORING											
	42		* Refusal											
	44													
	46													
	48													
	50													
	52													
	54													
	56													
	58													
	60													
	62													
	64													
	66													
	68													
	70													
	72													
	74													
	76													
	78													
	80													

SHEET 6 of 8 sheets

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Current Designation:
B-006-8-62
Sta. 804+54.65, 2.01 ft Rt of I-70 CL

State of Ohio
Department of Highways
Testing Laboratory

LOG OF BORING

Date Started 12-4-61 Sampler: Type SS Dia. 1 3/8" Water Elev. ____
Date Completed 12-5-61 Casing: Length 60' Dia. 3 1/2"

Project Identification: FRANKLIN
FRA-40-13.83
FRA-40-
UNDER 18th Street

Boring No. B-6 Station & Offset 51+00, 17' LT. (CENTER PIER) Surface Elev. 791.0

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos. So.	Physical Characteristics % Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	Pl.	W.C.	SHTL Class
791.0 NGVD 29	0													
	2													
	4													
786.0	6	18/27	Brown Gravelly Sandy Silt	1	39594	17	8	18	26	31	23	5	17	
	8													
781.0	10	8/11	Brown & Gray Sandy Silt	2	39595	10	12	19	32	27	21	4	13	
	12													
	14													
776.0	16	6/15	Gray Sandy Silt	3	39596	13	10	12	35	30	NP	NP	15	
	18													
771.0	20	21/38	Gray Gravelly Sandy Silt	4	39597	17	13	18	31	21	26	6	13	
	22													
	24													
766.0	26	30/50	Gray Sandy Silt	5	39598	13	10	19	31	27	NP	NP	10	
763.5	28	30/44	Gray Sandy Silt	6	39599	11	8	21	30	30	24	8	11	
761.0	30	27/40	Gray Sandy Silt	7	39600	12	10	21	31	26	23	8	10	
758.5	32													
	34	29/51	Gray Silty Gravelly Sand	8	39601	15	5	48	25	7	NP	NP	13	
756.0	36	43/57	Brown & Gray Silty Sandy Gravel	9	39602	62	17	7	9	5	NP	NP	12	

Particle Sizes. Agg = >2.00mm, Coarse Sand = 2.00 - 0.42mm, Fine Sand = 0.42-0.074mm, Silt = 0.074-0.005mm, Clay = <0.005mm

SHEET 8 of 13 sheets

Boring No. B-6 Station & Offset 51+00, 17' LT. Surface Elev. 791.0 Project: FRA-40-Under 18th St.

B-006-8-62

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos. So.	Physical Characteristics % Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	Pl.	W.C.	SHTL Class.
753.5	38	23/58	Brown & Gray Silty Sandy Gravel	10	39603	68	15	7	5	5	NP	NP	10	
751.0	40	38/42	Brown & Gray Silty Gravelly Sand	11	39604	40	24	23	3	10	NP	NP	12	
748.5	42	27/55	Gray Silty Gravelly Sand	12	39605	30	26	27	8	9	NP	NP	13	
746.0	44	48/52	Gray Silty Sandy Gravel	13	39606	52	20	15	7	6	NP	NP	10	
	46													
741.0	48	25/50	Gray Silty Sandy Gravel	14	39607	61	17	8	9	5	NP	NP	7	
	50													
	52													
736.0	54	30/57	Gray Silty Sandy Gravel	15	39608	45	28	11	7	9	NP	NP	8	
	56													
	58													
731.0	60	45/52	Gray Silty Sandy Gravel	16	39609	62	17	7	8	6	NP	NP	8	
730.0			BOTTOM OF BORING											
	62													
	64													
	66													
	68													
	70													
	72													
	74													
	76													
	78													
	80													

SHEET 9 of 13 Sheets

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Current Designation:
B-006-W-61
Sta. 1003+90.66, 94.97 ft Rt of Ramp Q1 BL

State of Ohio
Department of Highways
Testing Laboratory

LOG OF BORING

Date Started 9-7-61 Sampler: Type SS Dia. 1 3/8" Water Elev: Immediate
Date Completed 9-11-61 Casing: Length 57' Dia. 3 1/2" After Hours
Boring No. B-6 Station & Offset 109+43. 53' LT. (SECOND PIER) Surface Elev. 783.0

Project Identification: FRANKLIN
FRA-40-13.83
FRA-40-WB EAST FREEWAY
OVER EAST INNERBELT

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos.	Physical Characteristics % Agg.	% C.S.	% F.S.	% Silt	% Clay	LL	PI	W.C.	SHTL Class.
783.0 NGVD 29	0													
780.5	2													
	4													
778.0	6	5/7	Brown & Gray Silt & Clay	1	28106	0	5	13	35	47	37	15	22	
	8													
773.0	10	30/30	Brown Sandy Gravelly Silt & Stone Fragts.	2	28107	34	11	12	28	15	24	7	11	
	12													
	14													
768.0	16	9/24	Gray Silty Sandy Gravel & Stone Fragments	3	28108	40	13	15	17	15	20	3	11	
	18													
763.0	20	10/23	Gray Sandy Gravelly Silt & Stone Fragts.	4	28109	26	10	13	38	13	22	2	14	
760.5	22	27/32	Gray Silty Sandy Gravel & Stone Fragts.	5	28110	43	9	15	22	11	21	5	12	
758.0	24	16/20	Gray Silty Sandy Gravel	6	28111	47	18	11	14	10	19	3	10	
755.5	26	13/22	Gray Sandy Gravelly Silt & Stone Fragts.	7	28112	27	11	15	28	19	20	6	8	
753.0	28	7/8	Gray Sandy Silt	8	28113	9	5	36	36	14	NP	NP	16	
750.5	30	5/9	Gray Sandy Silt	9	28114	13	8	19	41	19	NP	NP	13	
748.0	32	14/27	Gray Silty Sandy Gravel	10	28115	46	15	27	10	2	NP	NP	12	
	34													
	36													

Particle Sizes: Agg. = >2.00mm , Coarse Sand= 2.00 - 0.42mm, Fine Sand=0.42-0.074mm, Silt=0.074-0.005mm , Clay = <0.005 mm

SHEET 8 of 23 Sheets

109+43 53' LT.

Boring No. B-6 Station & Offset 109+43. 53' LT. Surface Elev 783.0 Project FRA-40-WB EAST FREEWAY

B-006-W-61

Elev	Depth	Std. Pen. (N)	Description	Field No	Lab Nos.	Physical Characteristics % Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	W.C.	SHTL Class.
745.5	38	27/31	Gray Silty Sandy Gravel	11	28116	20	12	48	15	5	NP	NP	16	
743.0	40	50* (5")	Gray Silty Sandy Gravel	12	28117	53	18	13	10	6	NP	NP	9	
	42													
	44													
738.0	46	23/40	Gray Silty Sandy Gravel	13	28118	42	8	27	17	6	NP	NP	10	
	48													
733.0	50	50* (5")	Gray Silty Sandy Gravel	14	28119	51	23	11	8	7	NP	NP	7	
	52													
	54													
728.0	56	35/58	Gray Silty Sandy Gravel	15	28120	45	27	14	9	5	NP	NP	10	
	58													
723.0	60													
722.0		40/60	Gray Silty Sandy Gravel	16	28121	68	13	7	8	4	NP	NP	8	
	62		BOTTOM OF BORING											
	64													
	66		*REFUSAL											
	68													
	70													
	72													
	74													
	76													
	78													
	80													

SHEET 9 of 23 Sheets

Current Designation:
B-007-G-59
Sta. 768+32.84, 44.69 ft Lt of
I-70 BL

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
TESTING LABORATORY

LOG OF BORING

CO., RT. NO., SEC. FRA-40-12.82 FORWARD PIER BRIDGE NO. FRA-40-1361 SOUTH INNERBELT UNDER GRANT AVENUE

LOCATION: T.H. 7B STA. 56+44 OFFSET 22'RT FED. NO.

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
766.3	0			
NGVD 29	2			
	4			
761.3	6	4	20127	Brown Gravelly Sandy Silt
	8			
756.3	10			
	12	17/16	20128	Gray Silty Gravelly Sand
	14			
751.3	16	11/16	20129	Gray Silty Gravelly Sand
	18			
746.3	20			
	22	16/19	-------	Gray Silty Gravelly Sand
	24			
741.3	26	35/50	20130	Gray Gravelly Sandy Silt
	28			
736.3	30			
733.8	32	20/35	20131	Gray Gravelly Sandy Silt
	34	27/38	20132	Gray Gravelly Sandy Silt
731.3	36	22/38	20133	Gray Gravelly Sandy Silt

BM
6.24.59

LOG OF BORING (CONTINUED)

BRIDGE NO. FRA-40-1361 T.H. 7B

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION B-007-G-59
728.8	38	30/47	20134	Gray Sandy Silt
726.3	40			
	42	34/37	20135	Gray Sandy Silt
723.8	44	21/41	20136	Gray Sandy Gravelly Silt
721.3	46	23/50	20137	Gray Gravelly Sandy Silt
718.8	48	22/42	20138	Gray Gravelly Sandy Silt
716.3	50	45/38	20139	Gray Gravelly Sandy Silt
	52			
	54			
711.3	56	24/49	20140	Gray Sandy Silt
	58			
706.3	60	39/75	20141	Gray Silty Gravelly Sand
	62			
	64			
701.3				
700.3	66	36/63	-----	Gray Silty Gravelly Sand
				BOTTOM OF BORING
	68			
	70			
	72			
	74			
	76			
	78			
	80			
	82			

DRAWN BTA CHECKED VBP

SOIL PROFILE
BORING LOGS

FRA-70-14.48

372/386

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B-007-G-59

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
TESTING LABORATORY

SUMMARY OF SOIL TEST DATA

CO., RT. NO., SEC. FRANKLIN
FRA-40-12.82
FRA-40-1361
SOUTH INNERBELT UNDER GRANT AVENUE
SHEET NO. 2 OF 13 SHEETS

SAMPLE NUMBER	LABORATORY NUMBER SO-	PHYSICAL CHARACTERISTICS							WATER CONTENT	DESCRIPTION
		% AGGREGATE RET. #10	% COARSE SAND 2.0MM - 0.42MM	% FINE SAND 0.42MM - 0.074MM	% SILT 0.074MM - 0.005MM	% CLAY <0.005MM	LIQUID LIMIT	PLASTICITY INDEX		
										DRIVE SAMPLES
1	20127	17	13	12	32	26	26	9	12	BROWN GRAVELLY SANDY SILT
2	20128	20	19	23	30	8	NP	NP	14	GRAY SILTY GRAVELLY SAND
3	20129	26	19	14	30	11	19	4	11	GRAY SILTY GRAVELLY SAND
4	20130	16	17	19	35	13	18	4	11	GRAY GRAVELLY SANDY SILT
5	20131	20	12	17	35	16	19	6	10	GRAY GRAVELLY SANDY SILT
6	20132	15	14	18	32	21	19	5	13	GRAY GRAVELLY SANDY SILT
7	20133	17	14	20	34	15	20	6	11	GRAY GRAVELLY SANDY SILT
8	20134	14	12	19	28	27	21	7	10	GRAY SANDY SILT
9	20135	12	14	19	33	22	20	7	11	GRAY SANDY SILT
10	20136	27	11	14	31	17	22	5	11	GRAY SANDY GRAVELLY SILT
11	20137	18	13	17	33	19	21	6	11	GRAY GRAVELLY SANDY SILT
12	20138	18	12	18	35	17	20	6	10	GRAY GRAVELLY SANDY SILT
13	20139	17	14	18	32	19	21	8	10	GRAY GRAVELLY SANDY SILT
14	20140	8	12	24	32	24	NP	NP	10	GRAY SANDY SILT
15	20141	33	25	28	7	7	NP	NP	15	GRAY SILTY GRAVELLY SAND

RM
6-24-50

DRAWN BTA
CHECKED VBP

SOIL PROFILE
BORING LOGS

FRA-70-14.48

373/386

373
386

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Current Designation:
B-007-M-59
Sta. 35+49.63, 12.87 ft Rt of
Main Street BL

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
TESTING LABORATORY

LOG OF BORING

CO., RT. NO., SEC. FRA-40- 13.83 BRIDGE NO. FRA-40-
THIRD PIER E. INNERBELT UNDER MAIN STREET

LOCATION: T.H. 7B STA. 47+68 OFFSET 24' RT FED. NO.

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
785.3	0			
NGVD 29	2			
	4			
780.3	6	5/11	23915	Brown Sandy Gravelly Silt
	8			
775.3	10			
	12	5/11	23916	Brown Silty Sandy Gravel
	14			
770.3	16	3/3	---	Brown Silty Sandy Gravel
	18			
765.3	20			
	22	9/6	23917	Brown Silty Sandy Gravel
	24			
760.3	26	36/42	23918	Brown Silty Sandy Gravel
757.8	28	68/50	23919	Brown Silty Sandy Gravel
755.3	30			
	32	25/25	23920	Brown Silty Gravelly Sand
752.8	34	45/36	23921	Brown Silty Sandy Gravel
750.3	36	37/80	23922	Brown Silty Sandy Gravel

mB
7-22-59

LOG OF BORING (CONTINUED)

BRIDGE NO. FRA-40- T.H. 7B

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
747.8	38	56/50	23923	Brown Silty Gravelly Sand
745.3	40			
	42	28/29	23924	Brown Silty Gravelly Sand
742.8	44	33/50	23925	Brown Silty Gravelly Sand
740.3	46	41/50	23926	Brown Silty Gravelly Sand
737.8	48	26/56	23927	Brown Silty Sandy Gravel
735.3	50			
	52	43/60	23928	Brown Silty Sandy Gravel
	54			
730.3	56	28/56	23929	Brown Silty Sandy Gravel
727.8	58	----	23930	Brown Gravel (Wash sample)
725.3	60			
	62	36/50	23931	Brown Silty Sandy Gravel
722.8	64	----	23932	Brown Sandy Gravel (Wash sample)
720.3	66	----	----	Brown Sandy Gravel
	68			BOTTOM OF BORING
	70			
	72			
	74			
	76			
	78			
	80			
	82			

B-007-M-59

DRAWN BTA CHECKED VBP

SOIL PROFILE
BORING LOGS

FRA-70-14.48

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B-007-M-59

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
TESTING LABORATORY

SUMMARY OF SOIL TEST DATA

CO., RT NO., SEC. FRANKLIN
FRA-40-13.83
FRA-40
E. INNERBELT UNDER MAIN STREET
SHEET NO. 3 OF 12 SHEETS

SAMPLE NUMBER	LABORATORY NUMBER SO-	PHYSICAL CHARACTERISTICS: % AGGREGATE RET. #10	% COARSE SAND 2.0MM-0.42MM	% FINE SAND 0.42MM-0.074MM	% SILT 0.074MM-0.005MM	% CLAY <0.005MM	LIQUID LIMIT	PLASTICITY INDEX	WATER CONTENT	DESCRIPTION
										DRIVE SAMPLES
1	23915	37	7	10	21	25	43	21	25	BROWN SANDY GRAVELLY SILT
2	23916	46	17	12	11	14	31	13	18	BROWN SILTY SANDY GRAVEL
3	23917	52	29	13	-6---		NP	NP	14	BROWN SILTY SANDY GRAVEL
4	23918	57	17	10	11	5	NP	NP	8	BROWN SILTY SANDY GRAVEL
5	23919	57	23	9	-11---		NP	NP	9	BROWN SILTY SANDY GRAVEL
6	23920	27	32	18	15	8	NP	NP	11	BROWN SILTY GRAVELLY SAND
7	23921	38	30	14	-18--		NP	NP	11	BROWN SILTY SANDY GRAVEL
8	23922	46	23	17	-14--		NP	NP	11	BROWN SILTY SANDY GRAVEL
9	23923	27	22	33	-18--		NP	NP	14	BROWN SILTY GRAVELLY SAND
10	23924	30	32	20	-18--		NP	NP	11	BROWN SILTY GRAVELLY SAND
11	23925	19	24	37	-20--		NP	NP	10	BROWN SILTY GRAVELLY SAND
12	23926	31	33	18	-18--		NP	NP	9	BROWN SILTY GRAVELLY SAND
13	23927	56	22	10	-12--		NP	NP	9	BROWN SILTY SANDY GRAVEL
14	23928	41	31	14	-14--		NP	NP	10	BROWN SILTY SANDY GRAVEL
15	23929	64	16	10	-10---		NP	NP	9	BROWN SILTY SANDY GRAVEL
16	23930		V I S U A L						26	BROWN GRAVEL
17	23931	54	23	10	7	6	NP	NP	10	BROWN SILTY SANDY GRAVEL
18	23932		V I S U A L						23	BROWN SANDY GRAVEL
	STA 47+95.37'LT (120+75.7'LT., SURF.EL. 785.5)									LOG OF WILLIAMSAUGER BORING
			V I S U A L							DEPTH
										0.0-0.5 SIDEWALK MATERIAL
42	18165	8	6	13	43	30	NP	NP	22	0.5-3.0 BROWN SANDY SILT
43	18166	33	12	12	19	24	33	15	16	3.0-10.0 BR. SANDY GRAVELLY CLAY
44	18167	47	19	10	13	11	34	17	19	10.0-15.0 BR. CLAYEY SANDY GRAVEL
45	18168	35	28	14	12	11	28	11	17	15.0-22.0 BR CLAYEY GRAVELLY SAND
46	18169	48	28	10	7	7	NP	NP	6	22.0-30.0 BR. SILTY SANDY GRAVEL

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7-22-59

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Current Designation:
B-007-S-61
Sta. 887+53.53, 84.50 ft Lt of Ramp Q3 BL

State of Ohio
Department of Highways
Testing Laboratory

LOG OF BORING

Date Started 9-12-61 Sampler: Type SS Dia. 1 3/8" Water Elev: Immediate
Date Completed 9-13-61 Casing: Length 40' Dia. 3 1/2" After Hours

Project Identification: FRANKLIN
FRA-40-13.83
FRA-40-WB EAST FREEWAY OVER
PARSONS AVE & SB EAST FREEWAY

Boring No. B-7 Station & Offset 114+60, 22'LT.(FIFTH PIER) Surface Elev. 784.7

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos. So.	Physical Characteristics % Agg.	% C.S.	% F.S.	% Silt	% Clay	LL.	Pl.	W.C.	SHTL Class.
784.7 NGVD 29	0													
	2													
779.7	4													
	6	16/13	Brown Sandy Gravelly Silt	1	28159	21	8	13	32	26	27	5	17	
	8													
774.7	10													
	12	20/25	Brown Silty Sandy Gravel	2	28160	39	20	14	17	10	NP	NP	13	
	14													
769.7	16	19/13	Brown & Gray Sandy Gravelly Silt	3	28161	26	10	13	30	21	24	7	12	
767.2	18	20/17	Gray Gravelly Sandy Silt	4	28162	16	11	16	33	24	21	5	12	
764.7	20	15/17	Brown Silty Sandy Gravel	5	28163	45	18	14	15	8	NP	NP	13	
762.2	22	23/31	Gray Silty Sandy Gravel	6	28164		V	I	S	U	A	L	12	
759.7	24	15/21	Brown & Gray Silty Sandy Gravel	7	28165	54	9	8	17	12	NP	NP	12	
757.2	26	15/44	Brown Silty Sandy Gravel	8	28166	66	12	7	9	6	NP	NP	11	
754.7	28	50* (4")	Brown & Gray Silty Sandy Gravel	9	28167	47	23	14	7	9	NP	NP	12	
752.2	30	46/55	Brown Silty Gravelly Sand	10	28168	16	19	39	15	11	NP	NP	13	
749.7	32	50*(3")	Brown Silty Sand	11	28169	7	31	43	9	10	NP	NP	12	
	34													
	36													

Particle Sizes: Agg. = >2.00mm , Coarse Sand= 2.00 - 0.42mm, Fine Sand=0.42-0.074mm, Silt=0.074-0.005mm , Clay = <0.005 mm
*REFUSAL

SHEET 8 of 24 Sheets

Boring No. B-7 Station & Offset 114+60, 22' LT. Surface Elev 784.7 Project: FRA-40-WB EAST FREEWAY

B-007-S-61

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos. So.	Physical Characteristics % Agg.	% C.S.	% F.S.	% Silt	% Clay	LL.	Pl.	W.C.	SHTL Class.
	38													
744.7	40													
	42	40* (2")	Brown Silty Gravelly Sand	12	28170	37	26	17	10	10	NP	NP	10	
	44													
739.7														
738.7	46	43/68	Brown Silty Sandy Gravel	13	28171	55	20	10	8	7	NP	NP	8	
	48		BOTTOM OF BORING											
	50		*REFUSAL											
	52													
	54													
	56													
	58													
	60													
	62													
	64													
	66													
	68													
	70													
	72													
	74													
	76													
	78													
	80													

Form FE-2g

SHEET 9 of 24 Sheets

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Current Designation:
B-007-W-62
Sta. 997+59.09, 74.58 ft Lt of Ramp Q1 BL

State of Ohio
Department of Highways
Testing Laboratory

LOG OF BORING

Date Started 9-25-62 Sampler: Type SS Dia. 1 3/8" Water Elev. ———
Date Completed 9-25-62 Casing: Length 35' Dia. 3 1/2"

Project Identification: FRANKLIN
FRA-40-13.83
FRA-40- RETAINING WALL

Boring No. B-7 Station & Offset 103+00, 27' Lt. (RETAINING WALL) Surface Elev. 776.1

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos. So.	Physical Characteristics % Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class
776.1 NGVD 29	0													
	2													
771.1	4	13/19	Brown Sandy Gravelly Silt	1	87985	39	9	11	19	22	21	3	12	
	6													
766.1	8	13/16	Gray Silty Sandy Gravel	2	87986	42	10	12	16	20	PL=	16	11	
	10													
763.6	12	13/20	Gray Sandy Gravelly Silt	3	87987	38	10	14	22	22	20	4	11	
	14													
761.1	16	18/22	Gray Sandy Silty Gravel	4	87988		V	I	S	U	A	L		15
	18													
758.6		14/23	Brown Silty Sandy Gravel	5	87989	47	25	8	12	8	NP	NP	10	
756.1	20	10/24	Brown Silty Sandy Gravel	6	87990	49	23	9	10	9	NP	NP	11	
	22													
753.6	24	18/30	Brown Silty Sandy Gravel	7	87991	64	20	4	5	5	NP	NP	9	
751.1	26	22/39	Brown & Gray Sandy Gravelly Silt	8	87992	31	9	15	22	23	21	2	13	
	28													
746.1	30	20/50	Gray Sandy Gravelly Silt	9	87993	34	6	16	28	16	NP	NP	8	
	32													
	34													
741.1	36	14/12	Gray Gravelly Sandy Silt	10	87994	23	9	20	30	18	NP	NP	11	

Particle Sizes: Agg = >2.00mm, Coarse Sand = 2.00 - 0.42mm, Fine Sand = 042 - 0.074mm, Silt = 0.074 - 0.005mm, Clay = <0.005mm

SHEET 7 of 8 sheets

Boring No. B-7 Station & Offset 103+00, 27' Lt. Surface Elev. 776.1 Project: FRA-40-RETAINING WALL

B-007-W-62

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos. So.	Physical Characteristics % Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class
	38													
736.1 735.7	40	50*	Brown & Gray Silty Sandy Gravel	11	87995	47	26	12	6	9	NP	NP	8	
	42		BOTTOM OF BORING											
	44		* Refusal											
	46													
	48													
	50													
	52													
	54													
	56													
	58													
	60													
	62													
	64													
	66													
	68													
	70													
	72													
	74													
	76													
	78													
	80													

SHEET 8 of 8 sheets

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
TESTING LABORATORY

Current Designation:
B-008-4-59
Sta. 753+14.85, 30 ft Lt
of I-70 CL

LOG OF BORING

CO.,RT.NO.,SEC. FRA-40-12.82 BRIDGE NO. FRA-40-1334
THIRD PIER S. INNERBELT UNDER FOURTH ST.
LOCATION: T.H. 8 B STA. 52+58 OFFSET 30' LT. FED.NO.

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
751.9	0			Sidewalk
	2			
	4			
746.9	6	3/4	22544	Brown Silty Gravel
	8			
741.9	10			
	12	18/24	22545	Brown Silty Sand
	14			
736.9	16	22/34	22546	Gray Sandy Silt
	18			
731.9	20			
	22	37/70	22547	Gray Gravelly Sand
729.4	24	23/45	22548	Gray Silty Gravelly Sand
726.9	26	15/50	22549	Gray Silty Gravelly Sand
724.4	28	57/66	22550	Gray Silty Gravelly Sand
721.9	30	18/80	22551	Gray Silty Gravelly Sand
	32			
719.4	34	54/50	22552	Gray Silty Gravelly Sand
716.9	36	18/28	22553	Gray Silt and Clay

BM
7.7.59

LOG OF BORING (CONTINUED)

BRIDGE NO. FRA-40-1334 T.H. 8B

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
714.4	38			
	40	19/32	22554	Gray Silt and Clay
711.9	42	16/80	22555	Gray Silty Clay
708.9	44		22556	Gray Sand (Wash Sample)
606.9	46	50/100	22557	Gray Silty Sandy Gravel
703.9	48		22558	Gray Sand (Wash Sample)
701.9	50	100*	22559	Gray Sandy Gravelly Silt
701.4	52	100*	22560	Gray Gravelly Sandy Silt
698.9	54		22561	Gray Sand
696.9				
695.9	56	100*	22562	Gray Sandy Gravelly Silt
	58			BOTTOM OF BORING
	60			* Refusal
	62			
	64			
	66			
	68			
	70			
	72			
	74			
	76			
	78			
	80			
	82			

DRAWN BTA CHECKED VBP

SOIL PROFILE
BORING LOGS

FRA-70-14.48

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Current Designation:
B-008-N-59
Sta. 879+89.17, 27.89 ft Lt of
Ramp Q3 BL

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
TESTING LABORATORY

LOG OF BORING

CO.,RT.NO.,SEC. FRA-40-13.83 BRIDGE NO. FRA-40-1404
FORWARD ABUTMENT NB EAST INNERBELT OVER SB EAST FREEWAY
LOCATION: T.H. 8B STA. 118+04 OFFSET 43' LT FED.NO.

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
784.5	0			
NGVD 29	2			
	4			
779.5	6	----	----	Fill Material--Boulders and Gravel in Brown Clay
	8			
774.5	10			
	12	9/10	23147	Brown Silty Gravelly Sand
	14			
769.5	16	30/41	23148	Brown Silty Gravelly Sand
	18			
764.5	20			
	22	55/*	23149	Gray Sandy Silt
	24			
759.5	26	32/*	23150	Brown Silty Gravelly Sand
	28			
754.5	30			
	32	29/*	23151	Brown Silty Gravelly Sand
752.0	34	32/44	23152	Brown Silty Gravelly Sand
749.5	36	31/*	23153	Brown Silty Gravelly Sand

*Refusal

MB
8.5.59

LOG OF BORING (CONTINUED)

BRIDGE NO. FRA-40-1404 T.H. 8B

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION B-008-N-59
747.0	38			
	40	40/*	23154	Brown Silty Gravelly Sand
744.5	42	37/37	23155	Brown Silty Sand
742.0	44	41/48	23156	Brown Silty Sand
739.5	46	41/46	23157	Brown Silty Gravelly Sand
737.0	48	30/45	23158	Brown Silty Gravelly Sand
734.5	50	26/42	23159	Brown Silty Gravelly Sand
	52			
	54			
729.5	56	24/50	23160	Brown Silty Sandy Gravel
	58			
724.5	60			
	62	23/40	23161	Brown Silty Sandy Gravel
721.5	64	----	23162	Brown Sand (Wash Sample)
719.5	66	100/*	23163	Brown Silty Sandy Gravel
717.0	68	----	23164	Gray Sand (Wash Sample)
714.5	70	----	23165	Gray Sandy Gravel (Wash Sample)
	72			
	74			
709.5	76	---	----	Gray Sandy Gravel (Wash Sample)
	78			BOTTOM OF BORING
	80			*Refusal
	82			

DRAWN BTA CHECKED VBP

SOIL PROFILE
BORING LOGS

FRA-70-14.48

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B-008-N-59

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
TESTING LABORATORY

SUMMARY OF SOIL TEST DATA

CO., RT. NO., SEC. FRANKLIN
FRA-40-13.83
FRA-40-1404
NB EAST INNERBELT OVER SB EAST FREEWAY
SHEET NO. 1 OF 12 SHEETS

SAMPLE NUMBER	LABORATORY NUMBER SO-	PHYSICAL CHARACTERISTICS							WATER CONTENT	DESCRIPTION
		% AGGREGATE RET. #10	% COARSE SAND 2.0MM - 0.42MM	% FINE SAND 0.42MM - 0.074MM	% SILT 0.074MM - 0.005MM	% CLAY <0.005MM	LIQUID LIMIT	PLASTICITY INDEX		
										DRIVE-SAMPLES
1	23147	32	33	12	16	7	NP	NP	11	Brown Silty Gravelly Sand
2	23148	32	28	14	6	20	NP	NP	11	Brown Silty Gravelly Sand
3	23149	11	13	20	46	10	19	9	9	Gray Sandy Silt
4	23150	32	26	22	14	6	NP	NP	10	Brown Silty Gravelly Sand
5	23151	32	22	24	15	7	NP	NP	9	Brown Silty Gravelly Sand
6	23152	24	34	18	18	6	NP	NP	9	Brown Silty Gravelly Sand
7	23153	35	25	14	19	7	NP	NP	9	Brown Silty Gravelly Sand
8	23154	23	21	30	18	8	NP	NP	11	Brown Silty Gravelly Sand
9	23155	7	34	30	20	9	NP	NP	13	Brown Silty Sand
10	23156	22	33	20	18	7	NP	NP	11	Brown Silty Gravelly Sand
11	23157	38	27	19	9	7	NP	NP	10	Brown Silty Gravelly Sand
12	23158	42	23	19	-16-		NP	NP	11	Brown Silty Gravelly Sand
13	23159	22	35	23	12	8	NP	NP	14	Brown Silty Gravelly Sand
14	23160	44	20	15	16	5	NP	NP	11	Brown Silty Sandy Gravel
15	23161	47	22	15	12	4	NP	NP	12	Brown Silty Sandy Gravel
16	23162			V I S U A L					24	Brown Sand
17	23163	59	18	9	10	4	NP	NP	7	Brown Silty Sandy Gravel
18	23164			V I S U A L					33	Gray Sand
19	23165			V I S U A L					21	Gray Sandy Gravel

RC
8-5-59

DRAWN BTA
CHECKED VBP

SOIL PROFILE
BORING LOGS

FRA-70-14.48

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Current Designation:
B-008-P-61
Sta. 183+77.88, 46.23 ft Rt of Parsons Ave. BL

State of Ohio
Department of Highways
Testing Laboratory

LOG OF BORING

Date Started 9-7-61 Sampler: Type SS Dia. 1 3/8" Water Elev: Immediate
Date Completed 9-11-61 Casing: Length 55' Dia. 3 1/2" After Hours

Project Identification: FRANKLIN
FRA-40-13.83
FRA-40-EB EAST FREEWAY
UNDER PARSONS AVE.

Boring No. B-8 Station & Offset 46+75, 33' RT. Surface Elev. 782.3

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos. So.	Physical Characteristics % Agg	% C.S.	% F.S.	% Silt	% Clay	LL.	PI.	W.C.	SHTL Class.
782.3 NGVD 29	0													
	2													
777.3	4													
	6	11/12	Brown Sandy Gravelly Silt	1	28091	28	8	14	27	23	21	3	15	
	8													
772.3	10													
		20/25	Brown & Gray Sandy Gravelly Silt	2	28092	34	10	14	23	19	19	4	9	
769.8	12													
	14	11/12	Gray Gravelly Sandy Silt	3	28093	21	13	14	31	21	20	5	12	
767.3	16	12/14	Gray Clayey Gravel	4	28094	70	5	4	12	9	26	12	13	
764.8	18	13/18	Brown & Gray Sandy Gravelly Silt	5	28095	38	7	12	33	10	23	6	13	
762.3	20	58* (6")	Gray Gravelly Sandy Silt	6	28096	20	11	15	29	25	20	6	12	
759.8	22	13/20	Gray Silty Sandy Gravel	7	28097	51	17	14	8	10	NP	NP	13	
757.3	24	13/23	Brown Sandy Gravelly Silt	8	28098	31	12	16	23	18	21	3	11	
754.8	26	11/16	Gray Silty Sandy Gravel	9	28099	38	17	12	18	15	20	3	13	
752.3	28	31/51	Gray Silty Sandy Gravel	10	28100	48	9	10	19	14	22	6	13	
	30													
	32													
	34													
747.3	36	38*(6")	Gray Gravelly Sandy Silt	11	28101	23	10	16	30	21	22	6	11	

Particle Sizes: Agg. = >2.00mm , Coarse Sand= 2.00 - 0.42mm, Fine Sand=0.42-0.074mm, Silt=0.074 - 0.005mm , Clay = <0.005 mm
*REFUSAL

SHEET 8 of 15 Sheets

Boring No. B-8 Station & Offset 46+75, 33' RT. Surface Elev 782.3 Project FRA-40-EB EAST FREEWAY

B-008-P-61

Elev	Depth	Std. Pen. (N)	Description	Field No	Lab Nos So.	Physical Characteristics % Agg	% C.S.	% F.S.	% Silt	% Clay	LL	PI	W.C	SHTL Class.
	38													
742.3	40													
	42	16/22	Gray Sandy Gravel	12	28102		V	I	S	U	A	L	5	
	44													
737.3	46	53* (6")	Gray Silty Gravelly Sand	13	28103	17	53	12	14	4	NP	NP	10	
	48													
732.3	50													
	52	43* (6")	Gray Silty Gravelly Sand	14	28104	26	14	43	11	6	NP	NP	13	
	54													
727.3														
726.3	56	31/36	Gray Silty Gravelly Sand	15	28105	21	36	18	18	7	NP	NP	12	
			BOTTOM OF BORING											
	58		*REFUSAL											
	60													
	62													
	64													
	66													
	68													
	70													
	72													
	74													
	76													
	78													
	80													

Form FE-2g

SHEET 9 of 15 Sheets

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Current Designation:
B-010-8-62
Sta. 904+38.54, 21.67 ft Lt of Ramp P2 BL

State of Ohio
Department of Highways
Testing Laboratory

LOG OF BORING

Date Started 12-6-61 Sampler: Type SS Dia. 1 3/8" Water Elev. ———
Date Completed 12-8-61 Casing: Length 60' Dia. 3 1/2"

Project Identification: FRANKLIN
FRA-40-13.83
FRA-40-
UNDER 18th STREET

Boring No. B-10 Station & Offset 52+46, 17' LT. (FORWARD ABUTMENT) Surface Elev. 791.4

Elev	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos. So.	Physical Characteristics % Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	Pl.	W.C.	SHTL Class
791.4 NGVD 29	0													
	2													
	4													
786.4	6	24/17	Brownish-Gray Sandy Silt	1	39765	12	13	23	22	30	25	7	16	
	8													
781.4	10	39/80	Brown Sandy Gravelly Silt	2	39766	V	I	S	U	A	L		14	
	12													
	14													
776.4	16	19/24	Gray Sandy Silt	3	39767	11	10	13	42	24	22	5	14	
	18													
771.4	20	16/28	Gray Silty Sand	4	39768	6	47	17	15	15	24	5	13	
	22													
	24													
766.4	26	50/* (3")	Brown Silty Gravel	5	39769	54	4	6	22	14	NP	NP	10	
763.9	28	50* (3")	Brown Silty Sandy Gravel	6	39770	44	19	10	18	9	NP	NP	9	
761.4	30	31/51	Brown Silty Gravelly Sand	7	39771	21	22	28	20	9	NP	NP	14	
758.9	32													
	34	32/65	Brown Silty Gravelly Sand	8	39772	35	25	21	12	7	NP	NP	12	
756.4	36	37/61	Brown Silty Gravelly Sand	9	39773	31	26	22	14	7	NP	NP	10	

Particle Sizes. Agg. = >2.00mm, Coarse Sand = 2.00 - 0.42mm, Fine Sand = 0.42 - 0.074mm, Silt = 0.074 - 0.005mm, Clay = < 0.005mm
*REFUSAL

SHEET 10 of 13 sheets

Boring No. B-10 Station & Offset 52+46, 17' LT. Surface Elev. 791.4 Project: FRA-40-Under 18th St.

B-010-8-62

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos. So.	Physical Characteristics % Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	Pl.	W.C.	SHTL Class.
753.9	38	28/81	Brown Silty Sandy Gravel	10	39774	44	26	15	9	6	NP	NP	8	
751.4	40	25/58	Brownish-Gray Silty Gravelly Sand	11	39775	27	24	29	14	6	NP	NP	9	
748.9	42													
746.4	44	57/80	Gray Silty Gravelly Sand	12	39776	19	23	37	13	8	NP	NP	13	
	46	29/40	Gray Sand	13	39777	6	40	46	8		NP	NP	20	
	48													
741.4	50	33/40	Gray Silty Sandy Gravel	14	39778	50	23	10	11	6	NP	NP	10	
	52													
	54													
736.4	56	32/54	Gray Silty Gravel	15	39779	50	4	7	32	7	NP	NP	10	
	58													
731.4	60													
730.4		35/50	Gray Sandy Gravel	16	39780	68	19	4	9		NP	NP	11	
	62		BOTTOM OF BORING											
	64													
	66													
	68													
	70													
	72													
	74													
	76													
	78													
	80													

SHEET 11 of 13 sheets

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Current Designation:
B-011-W-61
Sta. 792+41.42, 16.18 ft Rt of Ramp N4 BL

State of Ohio
Department of Highways
Testing Laboratory

LOG OF BORING

Date Started 8-31-61 Sampler: Type SS Dia. 1 3/8" Water Elev: Immediate
Date Completed 9-5-61 Casing: Length 45' Dia. 3 1/2" After Hours
110+43 34' Rt

Project Identification: FRANKLIN
FRA-40-13.83
FRA-40-WB EAST FREEWAY
OVER EAST INNERBELT

Boring No. B-11 Station & Offset 110+43, 34' RT (FORWARD ABUTMENT) Surface Elev. 782.0

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos. So.	Physical Characteristics % Agg.	% C.S.	% F.S.	% Silt	% Clay	LL.	Pl.	W.C.	SHTL Class.
782.0 NGVD 29	0													
779.5	4	6/11	Brown & Gray Silty Clay	1	27359	0	3	10	37	50	45	20	17	
777.0	6	7/16	Brown Silty Clay	2	27360	0	2	11	38	49	41	16	21	
774.5	8	30* (4")	Gray Sandy Clay	3	27361	13	9	13	26	39	35	12	19	
772.0	10	26/38	Gray Silty Gravelly Sand & Stone Fragments	4	27362	34	32	14	11	9	NP	NP	15	
769.5	14	35/47	Gray Silty Sandy Gravel & Stone Fragments	5	27363	44	18	9	17	12	20	2	16	
767.0	16	15/16	Gray Silty Sandy Gravel	6	27364	55	14	8	15	8	20	3	12	
764.5	18	15/26	Gray Silty Sandy Gravel & Stone Fragments	7	27365	34	15	12	24	15	26	10	10	
762.0	20	19/13	Gray Silty Sandy Gravel	8	27366	45	26	9	10	10	PL	=16	11	
757.0	26	13/18	Gray Silty Sandy Gravel & Stone Fragments	9	27367		V	I	S	U	A	L	7	
752.0	30	36/38	Gray Silty Sandy Gravel	10	27368	37	10	13	30	10	22	4	13	
747.0	36	19/27	Gray Silty Gravelly Sand	11	27369	30	28	12	19	11	NP	NP	16	

Particle Sizes: Agg. = >2.00mm, Coarse Sand = 2.00 - 0.42mm, Fine Sand = 0.42 - 0.074mm, Silt = 0.074 - 0.005mm, Clay = < 0.005 mm

SHEET 10 of 23 Sheets

110+43 34' Rt

Boring No. B-11 Station & Offset 110+43, 34' RT. Surface Elev. 782.0 Project: FRA-40-WB EAST FREEWAY

B-011-W-61

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos. So.	Physical Characteristics % Agg.	% C.S.	% F.S.	% Silt	% Clay	LL.	Pl.	W.C.	SHTL Class.
742.0	40	31/37	Gray Sandy Gravel	12	27370	84	12	3	-1-		NP	NP	7	
737.0	46	15/16	Gray Sandy Gravel	13	27371	73	15	8	-4-		NP	NP	8	
732.0	50	18/22	Gray Silty Gravelly Sand & Stone Fragts.	14	27372	36	24	14	18	8	NP	NP	10	
731.0			BOTTOM OF BORING											

SHEET 11 of 23 Sheets

Current Designation:
B-012-M-59
Sta. 803+17.35, 6.50 ft Rt of
Ramp N4 BL

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
TESTING LABORATORY

LOG OF BORING

CO., RT. NO., SEC. FRA-40-i 13.83 BRIDGE NO. FRA-40-
FORWARD ABUTMENT E. INNERBELT UNDER MAIN STREET

LOCATION: T.H. 12 B STA. 48+82 OFFSET 43 LT FED. NO.

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
786.0	0			
NGVD 29	2			
	4			
781.0	6	8/8	23899	Brown Sandy Gravelly Silt
	8			
776.0	10			
	12	15/19	23900	Brown Silty Sandy Gravel
	14			
771.0	16	33/36	23901	Gray Gravelly Sandy Silt
	18			
766.0	20			
	22	29/47	23902	Gray Gravelly Sandy Silt
	24			
761.0	26	20/36	23903	Brown Silty Gravelly Sand
	28			
756.0	30			
	32	40/50	23904	Brown Silty Gravelly Sand
753.5	34	23/45	23905	Brown Silty Gravelly Sand
751.0	36	26/5[illegible]	23906	Brown Silty Sandy Gravel

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LOG OF BORING (CONTINUED)

BRIDGE NO. FRA-40- T.H. 12 B

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION B-012-M-59
748.5	38	22/50	23907	Brown Sandy Gravel
746.0	40			
	42	50/*	23908	Brown Silty Gravelly Sand
743.5	44	21/47	23909	Brown Silty Gravelly Sand
741.0	46	22/56	23910	Brown Gravel
738.5	48	20/59	23911	Brown Gravel
736.0	50			
	52	50/*	23912	Brown Sandy Gravel
	54			
731.0	56	10/*	23913	Brown Silty Gravelly Sand
	58			
726.0	60			
725.0	62	22/*	23914	Gray Silty Sand
	64			BOTTOM OF BORING
	66			* Refusal
	68			
	70			
	72			
	74			
	76			
	78			
	80			
	82			

DRAWN BTA CHECKED VBP

SOIL PROFILE
BORING LOGS

FRA-70-14.48

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B-012-M-59

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
TESTING LABORATORY

SUMMARY OF SOIL TEST DATA

CO., RT. NO., SEC. FRANKLIN
FRA-40-13.83
FRA-40-
E INNERBELT UNDER MAIN STREET
SHEET NO. 2 OF 12 SHEETS

SAMPLE NUMBER	LABORATORY NUMBER SO-	PHYSICAL CHARACTERISTICS							WATER CONTENT	DESCRIPTION
		% AGGREGATE RET. # 10	% COARSE SAND 2.01MM - 0.42MM	% FINE SAND 0.42MM - 0.074MM	% SILT 0.074MM - 0.005MM	% CLAY <0.005MM	LIQUID LIMIT	PLASTICITY INDEX		
										DRIVE SAMPLES
1	23899	35	14	11	24	16	25	6	20	BROWN SANDY GRAVELLY SILT
2	23900	49	19	12	13	7	NP	NP	14	BROWN SILTY SANDY GRAVEL
3	23901	15	13	19	34	19	20	5	10	GRAY GRAVELLY SANDY SILT
4	23902	18	12	19	33	18	22	9	7	GRAY GRAVELLY SANDY SILT
5	23903	39	25	19	13	4	NP	NP	12	BROWN SILTY GRAVELLY SAND
6	23904	36	22	19	17	6	NP	NP	10	BROWN SILTY GRAVELLY SAND
7	23905	29	28	24	12	7	NP	NP	14	BROWN SILTY GRAVELLY SAND
8	23906	53	19	15	10	3	NP	NP	10	BROWN SILTY SANDY GRAVEL
9	23907	67	18	7	8	0	NP	NP	8	BROWN SANDY GRAVEL
10	23908	26	51	12	-11--		NP	NP	12	BROWN SILTY GRAVELLY SAND
11	23909	33	48	11	-8--		NP	NP	11	BROWN SILTY GRAVELLY SAND
12	23910		V	I	S	U	A	L	17	BROWN GRAVEL
13	23911		V	I	S	U	A	L	17	BROWN GRAVEL
14	23912	46	33	12	-9--		NP	NP	9	BROWN SANDY GRAVEL
15	23913	32	35	18	-15--		NP	NP	14	BROWN SILTY GRAVELLY SAND
16	23914	2	56	28	-14--		NP	NP	16	GRAY SILTY SAND

MB 7.22

DRAWN BTA CHECKED VBP

SOIL PROFILE
BORING LOGS

FRA-70-14.48

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Current Designation:
B-013-S-61
Sta. 890+86.09, 14.32 ft Rt of Ramp P4 BL

State of Ohio
Department of Highways
Testing Laboratory

LOG OF BORING

Date Started 9-13-61 Sampler: Type SS Dia. 1 3/8" Water Elev: Immediate
Date Completed 9-15-61 Casing: Length 60' Dia. 3 1/2" After Hours

Project Identification: FRANKLIN
FRA-40-13.83
FRA-40-WB EAST FREEWAY OVER
PARSONS AVE & SB EAST FREEWAY

Boring No. B-13 Station & Offset 116+79, 22' LT. (FORWARD ABUT.) Surface Elev. 785.9

Elev.	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos. So.	Physical Characteristics % Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	Pl.	W.C.	SHTL Class.
785.9 NGVD 29	0													
	2													
	4													
780.9	6	5/6	Brown Clayey Sand w/Stone Fragments	1	28782	15	35	14	12	24	31	12	28	
778.4	8	3/3	Brown & Gray Sandy Clay	2	28783	10	9	14	25	42	30	12	21	
775.9	10	10/12	Brown Sandy Gravelly Silt	3	28784	35	12	13	21	19	23	8	14	
773.4	12													
	14	20/21	Brown Silty Sandy Gravel	4	28785	47	15	9	18	11	26	9	14	
770.9	16	5/10	Brown Silty Sandy Gravel	5	28786	36	25	10	11	8	NP	NP	11	
768.4	18	19/45	Brown Silty Sandy Gravel	6	28787	52	19	10	15	4	20	5	3	
765.9	20	13/20	Brown Silty Sandy Gravel	7	28788	45	21	14	16	4	NP	NP	8	
763.4	22													
	24	29/47	Brown Silty Sandy Gravel	8	28789	46	23	10	20	1	19	5	9	
760.9	26	39* (9")	Brown Silty Sandy Gravel	9	28790	19	34	31	15	1	NP	NP	12	
	28													
755.9	30	29/43	Brown Silty Gravelly Sand	10	28791	31	14	39	15	1	NP	NP	17	
	32													
	34													
750.9	36	45/50	Brown Silty Gravelly Sand											

Particle Sizes: Agg. = >2.00mm, Coarse Sand = 2.00 - 0.42mm, Fine Sand = 0.42 - 0.074mm, Silt = 0.074 - 0.005mm, Clay = <0.005mm
*REFUSAL

SHEET 10 of 24 Sheets

Boring No. B-13 Station & Offset 116+79, 22' LT. Surface Elev. 785.9 Project: FRA-40-WB EAST FREEWAY

B-013-S-61

Elev	Depth	Std. Pen. (N)	Description	Field No.	Lab. Nos. So.	Physical Characteristics % Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	Pl.	W.C.	SHTL Class.
	38													
745.9	40	50* (3")	Brown Sandy Gravel	11	28792	51	27	15	7		NP	NP	13	
	42													
740.9	44													
	46	40/50	Gray Gravelly Sand	12	28793	43	34	13	10		NP	NP	11	
	48													
735.9	50	63/34	Gray Silty Gravelly Sand	13	28794	38	29	20	13		NP	NP	13	
	52													
	54													
730.9	56	34/51	Gray Silty Gravelly Sand	14	28795	26	41	21	10	2	NP	NP	10	
	58													
725.9	60													
724.9		24/60	Gray Silty Sandy Gravel & Stone Fragments	15	28796	59	18	12	5	6	NP	NP	13	
	62		BOTTOM OF BORING											
	64													
	66		*REFUSAL											
	68													
	70													
	72													
	74													
	76													
	78													
	80													

SHEET 11 of 24 Sheets

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