

PROJECT: WAS-77-09.58				DRILLING FIRM / OPERATORCENTRAL STAR / T.S				DRILL RIG: DIEDRICH D-50				STATION / OFFSET: 504+48, 243' LT.										EXPLORATION I	
TYPE: RETAINING WALL				SAMPLING FIRM / LOGGER: HDR / A.K.B.				HAMMER: DIEDRICH AUTOMATIC				ALIGNMENT: I-77										B-005-0-23	
PID: 115420 SFN:				DRILLING METHOD: 3.25" HSA / NQ2				CALIBRATION DATE: 3/7/22				ELEVATION: 858.7 (MSL) EOB: 69.1 ft										PAGE	
START: 7/17/23 END: 7/17/23				SPT / ST / NQ2				ENERGY RATIO (%): 86.8				LAT / LONG: 39.532305, -81.445576										1 OF 2	
MATERIAL DESCRIPTION AND NOTES				ELEV.	DEPTHS	SPT/ RQD	N <sub>60</sub>	REC SAMPLE (%)	HP ID	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED			
TOPSOIL (2") MEDIUM STIFF TO STIFF, BROWN, CLAY, "AND" SILT, LITTLE SAND, TRACE STONE FRAGMENTS, DAMP (FILL)				858.7	1	3																	
					2	2	6	72	SS-1	1.50	6	7	10	38	39	41	21	20	17	A-7-6 (12)			
					3																		
					4	3	9	17	SS-2	-	-	-	-	-	-	-	-	-	-	24	A-7-6 (V)		
					5																		
				852.7	6	4	12	67	SS-3	1.00	5	8	12	35	40	38	21	17	21	A-6b (11)			
					7	4	4																
					8																		
				850.2	9	2	7	72	SS-4	0.50	4	8	11	40	37	38	21	17	21	A-6b (11)			
					10																		
@13.9' - 14.4": Qu = 2998 psf, γ = 138 pcf					11	2	1	6	83	SS-5	0.25	-	-	-	-	-	-	23	A-6b (V)				
					12	3																	
					13																		
					14																		
					15		58	ST-6	1.25	3	2	9	53	33	36	19	17	15	A-6b (11)				
				843.2	16	2	4	14	89	SS-7	0.75	12	7	6	29	46	50	22	28	21	A-7-6 (17)		
					17	6																	
					18																		
					19	3	12	94	SS-8	1.00	-	-	-	-	-	-	-	-	-	17	A-7-6 (V)		
					20	5																	
MEDIUM STIFF TO STIFF, RED-BROWN, CLAY, SOME SILT, LITTLE STONE FRAGMENTS, LITTLE SAND, DAMP (FILL)				835.2	21																		
					22																		
					23																		
					24	5	6	22	6	SS-9	-	1	6	11	36	46	-	-	-	19	A-6a (V)		
					25	9																	
					26																		
					27																		
					28																		
				830.2	29	8	10	30	94	SS-10	1.50	48	13	8	18	13	33	20	13	9	A-2-6 (0)		
					30	11																	
MEDIUM DENSE, RED-BROWN TO BROWN, STONE FRAGMENTS WITH SAND, SILT, AND CLAY, DAMP (FILL)					31																		
					32																		
					33																		
				825.2	34	5	6	20	94	SS-11	1.75	3	7	9	45	36	38	21	17	A-6b (11)			
					35	8																	
					36																		
					37																		
					38																		
				820.2	39	4	6	20	100	SS-12	2.50	0	2	21	36	41	42	23	19	20	A-7-6 (12)		
					40	8																	
VERY STIFF, RED-BROWN, TRACE GRAY, "AND" SILT, SOME SAND, DAMP					41																		
					42																		
					43																		
				815.2	44	7	16	84	100	SS-13	4.5+	2	4	6	41	47	43	23	20	23	A-7-6 (13)		
					45	42																	
					46																		
					47																		
					48																		
				810.2	49	50	3"	-	100	SS-14	-	1	4	7	46	42	30	18	12	10	Rock (V)		
				809.7																			
CLAYSTONE, PURPLE, BROWN, AND GRAY, SEVERELY WEATHERED, VERY WEAK. CLAYSTONE, RED-BROWN, SEVERELY TO HIGHLY WEATHERED, VERY WEAK, THICK BEDDED, JOINT DISCONTINUITIES, MODERATELY FRACTURED TO FRACTURED, OPEN APERTURE WIDTH, SLIGHTLY ROUGH SURFACE, BLOCKY STRUCTURE, POOR SURFACE; RQD 64%, REC 100%. CLAYSTONE, RED-BROWN, MODERATELY WEATHERED, WEAK, THICK TO VERY THICK BEDDED, JOINT DISCONTINUITIES, SLIGHTLY TO MODERATELY FRACTURED, OPEN APERTURE WIDTH, SLIGHTLY ROUGH SURFACE, BLOCKY STRUCTURE, FAIR SURFACE; RQD 100%, REC 100%. @45': added water to aid drilling				807.3	50																		
					51	84	100	NQ2-1															
					52																		
					53																		
					54																		
					55																		
					56																		
					57																		
				800.8	58	80	91	NQ2-2															
					59																		
CLAYSTONE, PURPLE, BROWN, AND GRAY, SEVERELY WEATHERED, VERY WEAK. CLAYSTONE, RED-BROWN, SEVERELY TO HIGHLY WEATHERED, VERY WEAK, THICK BEDDED, JOINT DISCONTINUITIES, MODERATELY FRACTURED TO FRACTURED, OPEN APERTURE WIDTH, SLIGHTLY ROUGH SURFACE, BLOCKY STRUCTURE, FAIR SURFACE; RQD 100%, REC 100%. @53.2' - 53.6': Qu = 1129 psf, γ = 158 pcf					60																		
					61																		
					62																		
					63																		
					64																		
					65																		
					66																		
					67																		
					68																		
					69																		

PID: 115420	SFN:	PROJECT:	WAS-77-09.58	STATION / OFFSET:	504+48, 243' LT.	START: 7/17/23	END: 7/17/23	PG 2 OF 2			B-005-0-23										
MATERIAL DESCRIPTION AND NOTES				ELEV.	DEPTHS	SPT/ RQD	N <sub>60</sub>	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)		ATTERBERG		WC	PI	ODOT CLASS (GI)	HOLE SEALED			
<b>INTERBEDDED SANDSTONE (80%) AND CLAYSTONE (20%)</b> , JOINT AND BEDDING DISCONTINUITIES, FRACTURED, NARROW TO OPEN APERTURE WIDTH, SLIGHTLY ROUGH SURFACE, BLOCKY/DISTURBED/SEAMY STRUCTURE, VERY POOR TO POOR SURFACE, RQD 91%, REC. 100%; <b>SANDSTONE</b> , GRAY TO BROWN, HIGHLY WEATHERED, SLIGHTLY STRONG, VERY THIN TO THIN BEDDED; <b>CLAYSTONE</b> , RED-BROWN TO GRAY, SEVERELY TO HIGHLY WEATHERED, VERY WEAK, LAMINATED TO VERY THIN BEDDED. <i>(continued)</i> <b>CLAYSTONE</b> , PURPLE, GREEN, AND BROWN, SEVERELY TO HIGHLY WEATHERED, VERY WEAK, VERY THIN BEDDED, JOINT AND BEDDING DISCONTINUITIES, FRACTURED TO HIGHLY FRACTURED, OPEN APERTURE WIDTH, SLICKENSIDED TO SLIGHTLY ROUGH SURFACE, BLOCKY/DISTURBED/SEAMY STRUCTURE, VERY POOR SURFACE; RQD 17%, REC 66%. <b>CLAYSTONE</b> , RED-BROWN, MODERATELY WEATHERED, VERY WEAK, THICK TO VERY THICK BEDDED, JOINT DISCONTINUITIES, MODERATELY FRACTURED TO FRACTURED, NARROW TO OPEN APERTURE WIDTH, SLIGHTLY ROUGH SURFACE, BLOCKY STRUCTURE, FAIR SURFACE; RQD 86%, REC 100%.				798.7	61																
					62																
					63																
				795.7	64																
					65																
					66	78	99	NQ2-3													CORE
					67																
					68																
				789.6	69																
					EOB																

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: TREMIED 25 LB. BENTONITE POWDER; 94 LB. CEMENT; 50 GAL. WATER

PROJECT: WAS-77-09.58			DRILLING FIRM / OPERATOR:CENTRAL STAR / T.S			DRILL RIG: DIEDRICH D-50			STATION / OFFSET: 504+40, 322' LT.										EXPLORATION ID													
TYPE: RETAINING WALL			SAMPLING FIRM / LOGGER: HDR / D.C.M.			HAMMER: DIEDRICH AUTOMATIC			ALIGNMENT: I-77										B-006-0-23													
PID: 115420 SFN:			DRILLING METHOD: 3.25" HSA			CALIBRATION DATE: 3/7/22			ELEVATION: 839.8 (MSL) EOB: 37.7 ft.										PAGE													
START: 7/12/23 END: 7/12/23			SPT / ST			ENERGY RATIO (%): 86.8			LAT / LONG: 39.532204, -81.445824										1 OF 1													
MATERIAL DESCRIPTION AND NOTES															SPT/ RQD	N <sub>60</sub>	REC SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			ODOT CLASS (g)	HOLE SEALED				
															1	2	7	100	SS-1	2.00	-	-	-	-	-	-	-	-	19	A-6b (V)		
MEDIUM STIFF TO STIFF, RED-BROWN, SILTY CLAY, SOME SAND, TRACE STONE FRAGMENTS, DAMP																																
																3	3	9	89	SS-2	2.50	3	10	12	38	37	40	21	19	18	A-6b (12)	
																3	3	10	89	SS-3	1.50	-	-	-	-	-	-	-	-	20	A-6b (V)	
																10	7	20	100	SS-4	2.00	2	7	12	44	35	38	21	17	16	A-6b (11)	
																11	10	26	89	SS-5	3.00	-	-	-	-	-	-	-	-	14	A-6b (V)	
STIFF TO VERY STIFF, RED-BROWN, TRACE GRAY AND LIGHT BROWN, SILTY CLAY, LITTLE SAND, TRACE STONE FRAGMENTS, DAMP																																
																5	3	10	89	SS-6	3.00	-	-	-	-	-	-	-	-	16	A-6b (V)	
																4	4	13	100	SS-7	0.50	5	9	13	39	34	38	21	17	19	A-6b (10)	
																4	4	13	100	SS-8	0.50	-	-	-	-	-	-	-	-	20	A-6b (V)	
MEDIUM STIFF TO STIFF, RED-BROWN, TRACE LIGHT BROWN, SILT AND CLAY, LITTLE STONE FRAGMENTS, LITTLE SAND, DAMP																																
STIFF TO VERY STIFF, RED-BROWN, SILT AND CLAY, LITTLE SAND, DAMP @25': 2" of black plastic/tar/rubber, 1" of rounded 1/4" gravel																																
HARD, RED-BROWN, SILT AND CLAY, LITTLE SAND, DAMP (RESIDUUM)																																
CLAYSTONE RED-BROWN, TRACE PURPLE, HIGHLY WEATHERED, VERY WEAK.																																

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 9/6/23 13:03 - C:\P\WORKING\EA\T01D3386644\WAS-77-9.58 BORING LOGS.GPJ

NOTES: NONE	
ABANDONMENT METHODS, MATERIALS, QUANTITIES: TREMIED 25 LB. BENTONITE POWDER; 94 LB. CEMENT; 50 GAL. WATER	



DESIGNER	AKB
REVIEWER	
PROJECT ID	115420
SHEET	P.31
TOTAL	33

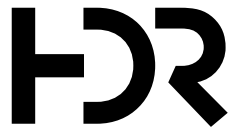
GEOTECHNICAL PROFILE - CULVERT  
BORING LOG B-006-0-23

PROJECT: WAS-77-09.58		DRILLING FIRM / OPERATORCENTRAL STAR / T.S		DRILL RIG: DIEDRICH D-50		STATION / OFFSET: 505+17, 280' L.T.										EXPLORATION ID					
TYPE: RETAINING WALL		SAMPLING FIRM / LOGGER: HDR / D.C.M./A.K.B.		HAMMER: DIEDRICH AUTOMATIC		ALIGNMENT: I-77										B-007-0-23					
PID: 115420 SFN:		DRILLING METHOD: 3.25" HSA / NQ2		CALIBRATION DATE: 3/7/22		ELEVATION: 849.7 (MSL) EOB: 56.5 ft.										PAGE					
START: 7/12/23 END: 7/13/23		SAMPLING METHOD: SPT / ST / NQ2		ENERGY RATIO (%): 86.8		LAT / LONG: 39.532416, -81.445785										1 OF 2					
MATERIAL DESCRIPTION AND NOTES				ELEV.	DEPTHS	SPT/ RQD	N <sub>60</sub>	REC SAMPLE (%)	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	WC	ODOT CLASS (g)	HOLE SEALED		
MEDIUM STIFF TO STIFF, RED-BROWN, SILT AND CLAY, SOME SAND, TRACE STONE FRAGMENTS, DAMP (FILL)				849.7		2 1	4	78	SS-1	1.50	-	-	-	-	-	-	-	17	A-6a (V)		
					1																
					2																
					3																
					4																
					5																
					6																
					7																
					8																
					9																
					10																
					11																
					12																
					13																
					14																
VERY STIFF TO HARD, RED-BROWN, SILTY CLAY, SOME SAND, TRACE GRAVEL, DAMP				839.7		2 2	6	100	SS-2	1.00	8	13	15	32	32	34	20	14	17	A-6a (7)	
					3																
					4																
					5																
					6																
					7																
					8																
					9																
					10																
					11																
					12																
					13																
					14																
					15																
					16																
STIFF TO VERY STIFF, RED-BROWN, SILT AND CLAY, SOME SAND, LITTLE GRAVEL AND STONE FRAGMENTS, DAMP				834.7		2 3 5	12	11	SS-3	-	-	-	-	-	-	-	18	A-6a (V)			
					4																
					5																
					6																
					7																
					8																
					9																
					10																
					11																
					12																
					13																
					14																
					15																
					16																
					17																
STIFF TO VERY STIFF, RED-BROWN, SILT AND CLAY, SOME SAND, TRACE GRAVEL AND STONE FRAGMENTS, DAMP				827.7		6 7 9	23	89	SS-8	0.50	-	-	-	-	-	-	19	A-6a (V)			
					18																
					19																
					20																
					21																
					22																
					23																
					24																
					25																
					26																
					27																
					28																
					29																
					30																
					31																
HARD, RED-BROWN, TRACE BROWN AND GREEN, SILTY CLAY, LITTLE STONE FRAGMENTS, LITTLE SAND, DAMP @31.5': added water to aid drilling				819.7		15 15 17	46	100	SS-11	4.50	15	6	8	31	40	38	21	17	18	A-6b (10)	
					32																
					33																
					34																
					35																
					36																
					37																
					38																
					39																
					40																
					41																
					42																
					43																
					44																
					45																
CLAYSTONE, PURPLE, LIGHT BROWN, AND RED-BROWN, HIGHLY WEATHERED, VERY WEAK.				814.7		27 48 50/3"	-	100	SS-12	-	-	-	-	-	-	-	20	Rock (V)			
					36																
					37																
					38																
					39																
					40																
					41																
					42																
					43																
					44																
					45																
					46																
					47																
					48																
					49																
CLAYSTONE, BROWN, MODERATELY WEATHERED, VERY WEAK, MEDIUM TO THICK BEDDED, CARBONACEOUS, JOINT DISCONTINUITIES, MODERATELY FRACTURED, NARROW APERTURE WIDTH, SLIGHTLY ROUGH SURFACE. BLOCKY STRUCTURE, FAIR SURFACE; RQD 88%, REC 100%. 38.8' - 39.6' : Limestone, gray to brownish-gray, highly weathered, moderately strong				813.2		77	100	NQ2-1										CORE			
					37																
					38																
					39																
					40																
					41																
					42																
					43																
					44																
					45																
					46																
					47																
					48																
					49																
					50																
CLAYSTONE, RED-BROWN, PURPLE, TRACE GREEN, MODERATELY WEATHERED, VERY WEAK, THIN BEDDED, CARBONACEOUS, JOINT AND BEDDING DISCONTINUITIES, MODERATELY FRACTURED TO FRACTURED, NARROW TO OPEN APERTURE WIDTH, SLIGHTLY ROUGH SURFACE, BLOCKY STRUCTURE, FAIR SURFACE; RQD 85%, REC 100%. 42.5' - 43.4' : Limestone, brown, moderately weathered, moderately strong				810.1		68	100	NQ2-2										CORE			
					37																
					38																
					39																
					40																
					41																
					42																
					43																
					44																
					45																
					46																
					47																
					48																
					49																
					50																
SILTSTONE, RED-BROWN, BROWN, SLIGHTLY WEATHERED, WEAK, THIN BEDDED, JOINT AND BEDDING DISCONTINUITIES, MODERATELY FRACTURED TO FRACTURED, OPEN APERTURE WIDTH, SLIGHTLY TO GOOD SURFACE; RQD 53%, REC 83%.				800.7		51	91	NQ2-3										CORE			
					37																
					38																
					39																
					40																
					41																
					42																
					43																
					44																
					45																
					46																
					47																
					48																
					49																
					50																
SILTSTONE, GRAY AND BROWN, SLIGHTLY TO MODERATELY WEATHERED, MODERATELY STRONG, THINLY LAMINATED, ARGILLACEOUS, JOINT DISCONTINUITIES, FRACTURED, NARROW TO OPEN APERTURE WIDTH, SLIGHTLY ROUGH SURFACE, BLOCKY/DISTURBED/SEAMY STRUCTURE, FAIR SURFACE; RQD 38%, REC 100%.				799.1														CORE			
					37																
					38																
					39																

STANDARD ODOT BORING LOG (11 X 17) - OH DOT.GDT - 9/6/23 13:03 - C:\P\WORKING\EA\ST10\338644\WAS-77-09.58 BORING LOGS.GPJ

GEOTECHNICAL PROFILE - CULVERT  
BORING LOG B-007-0-23

DESIGN AGENCY



DESIGNER

AKB

REVIEWER

DMV 09/08/23

PROJECT ID

115420

SHEET

P.32

TOTAL

33

PID: 115420	SFN:	PROJECT:	WAS-77-09.58	STATION / OFFSET:	505+17.280' LT.	START: 7/12/23	END: 7/13/23	PG 2 OF 2	B-007-0-23										
MATERIAL DESCRIPTION AND NOTES				ELEV.	DEPTHS	SPT/ RQD	N <sub>60</sub>	REC SAMPLE ID (%)	HP (tsf)	GRADATION (%)			ATTERBERG			WC	PI	ODOT CLASS (GI)	HOLE SEALED
				789.7															
DISCONTINUITIES, FRACTURED, NARROW TO OPEN APERTURE WIDTH, SLIGHTLY ROUGH SURFACE. BLOCKY STRUCTURE, FAIR SURFACE; RQD 71%, REC 100%.  CLAYSTONE, RED-BROWN, MODERATELY WEATHERED; VERY WEAK, THIN BEDDED; JOINT DISCONTINUITIES, FRACTURED, NARROW APERTURE WIDTH, SLIGHTLY ROUGH SURFACE. BLOCKY STRUCTURE, FAIR SURFACE; RQD 71%, REC 100%.																			

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 9/5/23 13:03 - C:\P\WORKING\EA\ST01\ID3386644\WAS-77-9.58 BORING LOGS.GPJ

NOTES: NONE
ABANDONMENT METHODS, MATERIALS, QUANTITIES: TREMIED 25 LB. BENTONITE POWDER: 94 LB. CEMENT: 50 GAL. WATER