

December 15, 2022

Ohio Department of Transportation District 2
317 East Poe Road
Bowling Green, Ohio 43402

Attention: Mr. Doug Rogers, P.E.
District Geotechnical Engineer

Reference: SAN-510-0.83 – Geotechnical Memo
PID: 94332
Sandusky County, Ohio
CTL Project No: 22050077COL

Dear Mr. Rogers,

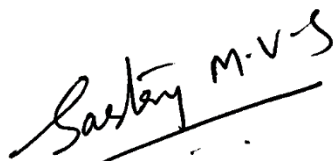
CTL Engineering, Inc. has completed the test borings and laboratory testing for the above referenced project.

An electronic copy of this memo, test boring records, project GINT file, laboratory test results and the subgrade analysis spreadsheet are being submitted. Ground surface elevations and coordinates at each boring location were provided by ODOT District 2 personnel.

Thank you for the opportunity to be of service to you on this project. If you have any questions, please contact our office.

Respectfully Submitted,

CTL ENGINEERING, INC.



Sastry Malladi, P.E.
Project Engineer



Evan Holcombe, P.E.
Senior Geotechnical Engineer

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:28 - J:\DEPT5\22 PROJECTS\2050077COL - ODOT DIST 2- SAN-510-0.83\REPORTS\IL OCS\2050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>42+75, 3' RT.</u>		EXPLORATION ID <u>B-001-0-22</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>														
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>656.6 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1												
START: <u>9/12/22</u> END: <u>9/12/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.318588, -82.974784</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
		656.6							GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT (8")		655.9																		
AGGREGATE BASE (6")		655.4																		
VERY STIFF, DARK BROWN, CLAY, "AND" SILT, LITTLE SAND, MOIST @2.5'; SOME SILT, SOME GRAVEL, TRACE SAND, DAMP			1	11	39	44	SS-1	2.50	0	3	9	41	47	48	25	23	30	A-7-6 (15)	<100	
			2	12 19																
			3	3 4 6	13	100	SS-2	3.25	21	2	7	30	40	50	23	27	20	A-7-6 (16)	-	
			4	6																
@4.0'; HARD, BROWN AND GRAY			5	4 8	15	100	SS-3	4.50	-	-	-	-	-	-	-	-	19	A-7-6 (V)	-	
			6	4 5 10	19	100	SS-4	2.50	-	-	-	-	-	-	-	-	23	A-7-6 (V)	-	
@5.5'; VERY STIFF		649.6	EOB	7																
NOTES: NONE																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:28 - J:\DEPT5\22 PROJECTS\2050077COL - ODOT DIST 2- SAN-510-0.83\REPORTS\L OCS\2050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>50+64, -8' LT.</u>		EXPLORATION ID <u>B-002-0-22</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>														
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>653.9 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1												
START: <u>9/12/22</u> END: <u>9/12/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.320752, -82.974818</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		653.9							GR	CS	FS	SI	CL	LL	PL	PI	WC			
ASPHALT (12")		652.9																		
AGGREGATE BASE (6")		652.4	1	16																
VERY STIFF, BROWN, SANDY SILT, SOME GRAVEL, LITTLE CLAY, (FILL), DAMP		651.4	2	10	17	22	SS-1	2.75	27	15	21	25	12	18	14	4	9	A-4a (0)	-	
VERY STIFF, BROWN AND GRAY, SILTY CLAY, SOME SAND, TRACE GRAVEL, MOIST			3	2	11	100	SS-2	2.50	1	5	20	33	41	35	19	16	28	A-6b (10)	-	
			4	5																
			5	3	13	100	SS-3	3.00	-	-	-	-	-	-	-	-	20	A-6b (V)	-	
@5.5'; STIFF			6	1																
		646.9	7	5	20	100	SS-4	1.25	-	-	-	-	-	-	-	-	20	A-6b (V)	-	
			EOB	11																
NOTES: NONE																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:28 - J:\DEPT5\22 PROJECTS\2050077COL - ODOT DIST 2- SAN-510-0.83\REPORTS\L OCS\2050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>58+81, 3' RT.</u>		EXPLORATION ID <u>B-003-0-22</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>														
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>650.2 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1												
START: <u>9/12/22</u> END: <u>9/12/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.322995, -82.974773</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		650.2							GR	CS	FS	SI	CL	LL	PL	PI	WC			
ASPHALT (14")		649.1	1	11																
AGGREGATE BASE (8")		648.4	2	5	11	56	SS-1	3.75	0	3	15	28	54	54	25	29	9	A-7-6 (18)	-	
VERY STIFF, BROWN, CLAY, SOME SILT, LITTLE SAND, (FILL), DAMP		647.7	3	4	13	67	SS-2	3.00	7	5	25	24	39	42	20	22	19	A-7-6 (11)	-	
VERY STIFF, BROWN AND GRAY, CLAY, SOME SAND, TRACE GRAVEL, DAMP @4.0'; HARD			4	6	14	100	SS-3	4.50	-	-	-	-	-	-	-	-	18	A-7-6 (V)	-	
			5	8																
			6	5	28	100	SS-4	4.50	-	-	-	-	-	-	-	-	16	A-7-6 (V)	-	
		643.2	7	14																
			EOB																	
NOTES: NONE																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:28 - J:\DEPT5\22 PROJECTS\22050077COL - ODOT DIST 2- SAN-510-0.83\REPORTS\LOGS\22050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>67+03, -13' LT.</u>		EXPLORATION ID <u>B-004-0-22</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>														
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>651.7 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1												
START: <u>9/12/22</u> END: <u>9/12/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.325249, -82.974823</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		651.7							GR	CS	FS	SI	CL	LL	PL	PI	WC			
ASPHALT (14")		650.5																		
AGGREGATE BASE (8")		650.0		1	5															
STIFF, BROWN, SILTY CLAY, SOME SAND, TRACE GRAVEL, DAMP				2	4	13	100	SS-1	1.50	3	7	19	34	37	37	20	17	13	A-6b (10)	-
@2.5'; VERY STIFF, LITTLE SAND, MOIST				3	3	14	100	SS-2	2.75	3	6	14	40	37	39	18	21	19	A-6b (12)	-
@4.0'; HARD				4	4															
@5.5'; DAMP				5	6	17	100	SS-3	4.50	-	-	-	-	-	-	-	20	A-6b (V)	-	
				6	6															
		644.7		6	12	34	100	SS-4	4.50	-	-	-	-	-	-	-	13	A-6b (V)	-	
			EOB	7	15															
NOTES: NONE																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:28 - J:\DEPT5\22 PROJECTS\22050077COL - ODOT DIST 2- SAN-510-0.83\REPORTS\L OGS\22050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>74+96, 3' RT.</u>		EXPLORATION ID <u>B-005-0-22</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>														
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>649.9 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1												
START: <u>9/12/22</u> END: <u>9/12/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.327427, -82.974759</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
		649.9							GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT (12")		648.9																		
AGGREGATE BASE (3")		648.6	1	7																
VERY STIFF, BROWN, CLAY , SOME SILT, LITTLE SAND, DAMP @2.5'; TRACE GRAVEL			2	5	14	67	SS-1	3.00	0	3	13	35	49	52	25	27	22	A-7-6 (17)	-	
			3	4	11	100	SS-2	3.00	2	3	13	32	50	53	25	28	23	A-7-6 (18)	-	
			4	6	18	89	SS-3	3.75	-	-	-	-	-	-	-	-	20	A-7-6 (V)	-	
			5	8																
			6	5	20	100	SS-4	3.25	-	-	-	-	-	-	-	-	22	A-7-6 (V)	-	
			7	10																
		642.9	EOB																	
NOTES: NONE																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:28 - J:\DEPT5\22 PROJECTS\22050077COL - J:\DEPT5\22 PROJECTS\22050077COL - ODOT DIST 2 - SAN-510-0.83\REPORTS\22050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>82+82, -9' LT.</u>		EXPLORATION ID <u>B-006-0-22</u>													
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>															
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>648.9 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1													
START: <u>9/12/22</u> END: <u>9/12/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.329584, -82.974791</u>															
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL	
		648.9							GR	CS	FS	SI	CL	LL	PL	PI					
ASPHALT (15")																					
AGGREGATE BASE (3")		647.7		1	6																
STIFF, GRAY, CLAY , SOME SILT, LITTLE SAND, TRACE GRAVEL, DAMP @2.5'; NO GRAVEL		647.4		2	3	9	56	SS-1	1.50	2	3	11	31	53	54	26	28	26	A-7-6 (18)	-	
@4.0'; VERY STIFF, GRAY AND BROWN				3	2	8	100	SS-2	1.50	0	3	11	32	54	56	26	30	22	A-7-6 (19)	-	
@5.5'; STIFF, MOIST				4	4																
				5	3	10	89	SS-3	2.50	-	-	-	-	-	-	-	-	24	A-7-6 (V)	-	
				6	2																
		641.9		7	3	13	100	SS-4	-	-	-	-	-	-	-	-	-	33	A-7-6 (V)	-	
			EOB																		
NOTES: CAVED AT 4"																					
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																					

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:28 - J:\DEPT5\22 PROJECTS\22050077COL - ODOT DIST 2- SAN-510-0.83\REPORTS\LOGS\22050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>90+60, RT.</u>		EXPLORATION ID <u>B-007-0-22</u>													
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>															
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>648.9 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1													
START: <u>9/12/22</u> END: <u>9/12/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.331720, -82.974746</u>															
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL	
		648.9							GR	CS	FS	SI	CL	LL	PL	PI	WC				
ASPHALT (16")		647.5		1	3	19	100	SS-1	2.75	2	2	12	32	52	55	25	30	23	A-7-6 (19)	-	
VERY STIFF, GRAY TO BROWN, CLAY , SOME SILT, LITTLE SAND, TRACE GRAVEL, DAMP				2	7																
				3	3																
				4	5																
				5	7																
				6	4																
		641.9	EOB	7	9	20	67	SS-4	-	-	-	-	-	-	-	19	A-7-6 (V)	-			
NOTES: NONE																					
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																					

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:28 - J:\DEPT5\22 PROJECTS\22050077COL - ODOT DIST 2- SAN-510-0.83\REPORTS\L OCS\22050077COL.GPJ

















PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>98+72, -8' LT.</u>		EXPLORATION ID <u>B-008-0-22</u>													
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>															
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>646.4 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1													
START: <u>9/12/22</u> END: <u>9/12/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.333948, -82.974761</u>															
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL	
		646.4							GR	CS	FS	SI	CL	LL	PL	PI	WC				
ASPHALT (12")		645.4																			
AGGREGATE BASE (9")		644.7	1	9																	
VERY STIFF, GRAY, CLAY , SOME SILT, LITTLE SAND, TRACE GRAVEL, DAMP @2.5'; STIFF, GRAY AND BROWN, NO GRAVEL, MOIST @4.0'; VERY STIFF, DAMP @5.5'; STIFF			2	4	11	56	SS-1	2.50	1	3	11	32	53	51	25	26	23	A-7-6 (17)	-		
			3	3	2	9	100	SS-2	1.75	0	3	11	33	53	54	23	31	24	A-7-6 (19)	-	
			4	2	3	11	28	SS-3	3.50	-	-	-	-	-	-	-	-	20	A-7-6 (V)	-	
			5	3	6																
			6	3	4	13	100	SS-4	-	-	-	-	-	-	-	-	-	16	A-7-6 (V)	-	
		639.4	EOB	7	6																
NOTES: NONE																					
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																					

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:28 - J:\DEPT5\22 PROJECTS\22050077COL - ODOT DIST 2- SAN-510-0.83\REPORTS\LOGS\22050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>106+68, 6' RT.</u>		EXPLORATION ID <u>B-009-0-22</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>														
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>645.6 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1												
START: <u>9/12/22</u> END: <u>9/12/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.336133, -82.974695</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		645.6							GR	CS	FS	SI	CL	LL	PL	PI	WC			
ASPHALT (18")																				
		644.1	1	3																
VERY STIFF, BROWN TO GRAY, CLAY , SOME SILT, LITTLE SAND, (FILL), MOIST		643.1	2	3 4	9	100	SS-1	2.75	0	3	14	35	48	52	26	26	27	A-7-6 (17)	-	
VERY STIFF, BROWN TO GRAY, CLAY , SOME SILT, LITTLE SAND, TRACE GRAVEL, MOIST @4.0'; DAMP			3	3 5 8	17	100	SS-2	3.00	2	3	12	33	50	50	21	29	22	A-7-6 (18)	-	
			4	5																
@5.5'; HARD			5	6 9	19	100	SS-3	3.50	-	-	-	-	-	-	-	-	18	A-7-6 (V)	-	
			6	6 9																
		638.6	6	9	23	100	SS-4	4.25	-	-	-	-	-	-	-	-	19	A-7-6 (V)	-	
			7	9																
			EOB																	
NOTES: CAVED AT 6"																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:28 - J:\DEPT5\22 PROJECTS\22050077COL - ODOT DIST 2- SAN-510-0.83\REPORTS\L OCS\22050077COL.GPJ





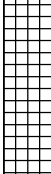





PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>114+30, -7' LT.</u>		EXPLORATION ID <u>B-010-0-22</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>														
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>643.7 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1												
START: <u>9/12/22</u> END: <u>9/12/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.338224, -82.974709</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		643.7							GR	CS	FS	SI	CL	LL	PL	PI	WC			
ASPHALT (11")		642.8																		
AGGREGATE BASE (9")		642.0	1	6																
VERY STIFF, DARK GRAY, CLAY , "AND" SILT, LITTLE SAND, TRACE GRAVEL, (FILL), MOIST		641.2	2	3	9	44	SS-1	3.50	1	2	17	39	41	44	21	23	27	A-7-6 (14)	-	
VERY STIFF, DARK GRAY, SILTY CLAY , SOME SAND, TRACE GRAVEL, MOIST			3	2	8	100	SS-2	2.00	1	5	17	35	42	37	20	17	29	A-6b (11)	-	
			4	3																
			5	2	11	100	SS-3	2.00	-	-	-	-	-	-	-	-	21	A-6b (V)	-	
		638.2	6	3																
HARD, BROWN, CLAY , TRACE SAND, TRACE GRAVEL, DAMP		636.7	6	6	24	100	SS-4	4.50	-	-	-	-	-	-	-	-	15	A-7-6 (V)	-	
			7	9																
			EOB	10																
NOTES: NONE																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																				

MATERIAL DESCRIPTION AND NOTES		ELEV. 643.0	DEPTHS		SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO ₄ ppm	BACK FILL
										GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT (14")			641.8																		
AGGREGATE BASE (5")			641.4	1	7																
VERY STIFF, DARK GRAY, CLAY , "AND" SILT, LITTLE SAND, (FILL), DAMP			640.5	2	4	10	100	SS-1	3.25	0	3	12	41	44	46	21	25	17	A-7-6 (15)	<100	
VERY STIFF, BROWN, SILTY CLAY , LITTLE SAND, TRACE GRAVEL, MOIST				3	2	10	100	SS-2	3.00	1	4	10	44	41	37	18	19	23	A-6b (12)	-	
@4.5'; STIFF				4	5																
			637.5	5	3	13	100	SS-3	-	-	-	-	-	-	-	-	-	24	A-6b (V)	-	
VERY STIFF, BROWN AND GRAY, SILT AND CLAY , DAMP			636.0	6	6	28	100	SS-4	-	-	-	-	-	-	-	-	-	15	A-6a (V)	-	
				7	9																
				13	13																

NOTES: CAVED AT 5.5"

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:29 - J:\DEPT5\22 PROJECTS\22050077COL - ODOT DIST 2- SAN-510-0.83\REPORTS\LOGS\22050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>130+63, 9' RT.</u>		EXPLORATION ID <u>B-012-0-22</u>														
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>																
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>641.1 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1														
START: <u>9/12/22</u> END: <u>9/12/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.342703, -82.974579</u>																
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL		
		641.1							GR	CS	FS	SI	CL	LL	PL	PI						
ASPHALT (16")			639.6	1	8																	
STIFF, DARK GRAY, SANDY SILT , LITTLE CLAY, TRACE GRAVEL, (FILL), DAMP			638.6	2	9	19	100	SS-1	1.75	3	13	29	41	14	19	16	3	14	A-4a (4)	-		
VERY STIFF, BROWN, CLAY , SOME SILT, LITTLE SAND, TRACE GRAVEL, DAMP				3	3	10	56	SS-2	3.00	1	4	12	32	51	41	22	19	20	A-7-6 (12)	-		
@4.0'; HARD				4	3	5																
				5	7	11	23	100	SS-3	4.25	-	-	-	-	-	-	-	-	19	A-7-6 (V)	-	
				6	4	9	11	25	100	SS-4	4.50	-	-	-	-	-	-	-	16	A-7-6 (V)	-	
		634.1	EOB	7	11																	
NOTES: NONE																						
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																						

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:29 - J:\DEPT5\22 PROJECTS\2050077COL - ODOT DIST 2- SAN-510-0.83\REPORTS\LOGS\2050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>147+06, -5' LT.</u>		EXPLORATION ID <u>B-014-0-22</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>														
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>630.2 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1												
START: <u>9/14/22</u> END: <u>9/14/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.347148, -82.974185</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
		630.2							GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT (14")		629.1	1	4																
AGGREGATE BASE (5")		628.7	2	4	13	67	SS-1	4.00	0	4	17	30	49	40	20	20	22	A-6b (12)	-	
VERY STIFF, DARK GRAY, SILTY CLAY, SOME SAND, (FILL), MOIST		627.7	3	3	15	100	SS-2	4.00	8	11	16	33	32	31	18	13	18	A-6a (7)	-	
VERY STIFF, BROWN, SILT AND CLAY, SOME SAND, TRACE GRAVEL, DAMP			4	5	24	100	SS-3	4.00	-	-	-	-	-	-	-	-	15	A-6a (V)	-	
@5.5'; HARD			5	8																
			6	4	22	100	SS-4	4.25	-	-	-	-	-	-	-	-	13	A-6a (V)	-	
		623.2	7	7	10															
			EOB																	
NOTES: NONE																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:29 - J:\DEPT5\22 PROJECTS\2050077COL - ODOT DIST 2- SAN-510-0.83\REPORTS\LOGS\2050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>154+92, 6' RT.</u>		EXPLORATION ID <u>B-015-0-22</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>														
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>626.7 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1												
START: <u>9/14/22</u> END: <u>9/14/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.349304, -82.974114</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
		626.7							GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT (15")		625.5	1	5																
AGGREGATE BASE (4")		625.1	2	3	11	67	SS-1	3.25	1	3	13	31	52	50	23	27	21	A-7-6 (17)	-	
VERY STIFF, DARK GRAY, CLAY, SOME SILT, LITTLE SAND, TRACE GRAVEL, (FILL), DAMP		624.2	3	3	17	100	SS-2	3.75	2	4	13	35	46	43	22	21	17	A-7-6 (13)	-	
VERY STIFF, DARK GRAY, CLAY, SOME SILT, LITTLE SAND, TRACE GRAVEL, DAMP @4.0'; HARD, BROWN			4	6	22	100	SS-3	4.50	-	-	-	-	-	-	-	-	15	A-7-6 (V)	-	
			5	7																
			6	5	25	100	SS-4	4.50	-	-	-	-	-	-	-	-	15	A-7-6 (V)	-	
		619.7	7	9																
			EOB	11																
NOTES: NONE																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:29 - J:\DEPT5\22 PROJECTS\22050077COL - ODOT DIST 2- SAN-510-0.83\REPORTS\L OCS\22050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>163+01, -12' LT.</u>		EXPLORATION ID <u>B-016-0-22</u>													
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>															
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>624.9 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1													
START: <u>9/14/22</u> END: <u>9/14/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.351524, -82.974136</u>															
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL	
		624.9							GR	CS	FS	SI	CL	LL	PL	PI	WC				
ASPHALT (12")		623.9																			
AGGREGATE BASE (7")		623.4	1	3																	
HARD, BROWN, SILTY CLAY , LITTLE SAND, TRACE GRAVEL, DAMP @2.5'; VERY STIFF @4.0'; HARD			2	3	10	56	SS-1	4.50	4	7	13	33	43	38	20	18	16	A-6b (11)	-		
			3	3	18	100	SS-2	2.75	5	6	12	34	43	40	20	20	17	A-6b (12)	-		
			4	5	28	100	SS-3	4.50	-	-	-	-	-	-	-	-	-	15	A-6b (V)	-	
			5	7	15																
			6	5	12	34	100	SS-4	4.50	-	-	-	-	-	-	-	-	15	A-6b (V)	-	
			7	15																	
		617.9	EOB																		
NOTES: CAVED AT 6"																					
																					ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:29 - J:\DEPT5\22 PROJECTS\2050077COL - ODOT DIST 2- SAN-510-0.83\REPORTS\LOGS\2050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>171+13, 4' RT.</u>		EXPLORATION ID <u>B-017-0-22</u>													
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>															
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>623.0 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1													
START: <u>9/14/22</u> END: <u>9/14/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.353752, -82.974027</u>															
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL	
		623.0							GR	CS	FS	SI	CL	LL	PL	PI	WC				
ASPHALT (15")		621.7	<div><div></div><div>1</div><div>2</div><div>3</div><div>4</div><div>5</div><div>6</div><div>7</div></div>																		
AGGREGATE BASE (9")		621.0		12																	
VERY STIFF, BROWN, SILT AND CLAY, "AND"				11	24	67	SS-1	-	13	12	26	29	20	27	14	13	13	A-6a (4)	-		
SAND, LITTLE GRAVEL, (FILL), DAMP				8																	
@2.5'; MEDIUM STIFF, TRACE GRAVEL		619.0		6	3	8	67	SS-2	-	8	11	29	31	21	28	17	11	13	A-6a (4)	-	
VERY STIFF, GRAY, SILTY CLAY, LITTLE SAND,				3																	
DAMP				7	10	44	SS-3	2.50	-	-	-	-	-	-	-	-	9	A-6b (V)	-		
@5.5'; MOIST			6	3	11	56	SS-4	3.75	-	-	-	-	-	-	-	21	A-6b (V)	-			
		616.0	EOB	6																	
NOTES: CAVED AT 4"																					
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																					

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:29 - J:\DEPT5\22 PROJECTS\22050077COL - ODOT DIST 2- SAN-510-0.83\REPORTS\L OCS\22050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>179+63, -3' LT.</u>		EXPLORATION ID <u>B-018-0-22</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>														
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>623.4 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1												
START: <u>9/14/22</u> END: <u>9/14/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.356086, -82.973999</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
		623.4							GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT (14")		622.2	1	3	8	56	SS-1	2.25	0	0	24	36	40	42	20	22	18	A-7-6 (13)	-	
AGGREGATE BASE (6")		621.7																		
VERY STIFF, GRAY, CLAY, "AND" SILT, SOME SAND, (FILL), DAMP		620.9																		
STIFF, BROWN, SILTY CLAY, "AND" SAND, MOIST																				
@5.5'; VERY STIFF																				
		616.4	EOB	7	12	27	100	SS-4	2.00	-	-	-	-	-	-	-	19	A-6b (V)	-	
NOTES: NONE																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:29 - J:\DEPT5\22 PROJECTS\2050077COL - ODOT DIST 2 - SAN-510-0.83\REPORTS\LOGS\2050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>186+94, 6' RT.</u>		EXPLORATION ID <u>B-019-0-22</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>														
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>617.8 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1												
START: <u>9/14/22</u> END: <u>9/14/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.358089, -82.973920</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
		617.8							GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT (14")		616.6																		
AGGREGATE BASE (6")		616.1	1	2																
HARD, DARK BROWN, SANDY SILT, SOME CLAY, TRACE GRAVEL, (FILL), MOIST		615.3	2	2	9	100	SS-1	4.50	1	3	36	35	25	24	15	9	17	A-4a (5)	-	
STIFF, DARK BROWN, SILT AND CLAY, "AND" SAND, MOIST @4.0'; VERY STIFF			3	5	14	100	SS-2	1.75	0	2	46	24	28	31	16	15	16	A-6a (5)	-	
			4	2	11	100	SS-3	2.50	-	-	-	-	-	-	-	-	17	A-6a (V)	-	
			5	3	6															
			6	1	6	14	100	SS-4	3.75	-	-	-	-	-	-	-	-	23	A-6a (V)	-
		610.8	EOB	7	5															
NOTES: NONE																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:29 - J:\DEPT5\22 PROJECTS\22050077COL - ODOT DIST 2 - SAN-510-0.83\REPORTS\LOGS\22050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>194+54, -7' LT.</u>		EXPLORATION ID <u>B-020-0-22</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>														
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>616.9 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1												
START: <u>9/14/22</u> END: <u>9/14/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.360175, -82.973927</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
		616.9							GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT (13")		615.8																		
AGGREGATE BASE (6")		615.4	1	2																
VERY STIFF, GRAY, CLAY , "AND" SILT, LITTLE SAND, (FILL), MOIST			2	2	10	100	SS-1	2.50	0	0	11	40	49	46	18	28	21	A-7-6 (16)	-	
@2.5'; MEDIUM STIFF, BROWN AND GRAY, TRACE SAND		612.9	3	3	11	89	SS-2	0.75	0	0	8	47	45	45	21	24	23	A-7-6 (15)	-	
VERY STIFF, BROWN, SILTY CLAY , LITTLE SAND, MOIST			4	3																
			5	5	15	100	SS-3	2.75	-	-	-	-	-	-	-	-	23	A-6b (V)	-	
			6	6																
		609.9	6	9	27	100	SS-4	2.50	-	-	-	-	-	-	-	-	24	A-6b (V)	-	
			7	12																
			EOB																	
NOTES: NONE																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:29 - J:\DEPT5\22 PROJECTS\2050077COL - ODOT DIST 2 - SAN-510-0.83\REPORTS\LOGS\2050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>202+02, 4' RT.</u>		EXPLORATION ID <u>B-021-0-22</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>														
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>615.5 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1												
START: <u>9/14/22</u> END: <u>9/14/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.362229, -82.973847</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO ₄ ppm	BACK FILL
		615.5							GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT (17")																				
AGGREGATE BASE (5")		614.1	1	8																
STIFF, GRAY, CLAY , "AND" SILT, TRACE SAND, (FILL), MOIST VERY STIFF, BROWN, CLAY , "AND" SILT, TRACE SAND, MOIST @4.0'; DAMP @5.5'; STIFF		613.7	2	3	8	100	SS-1	2.00	0	2	8	39	51	57	25	32	27	A-7-6 (19)	<100	
		613.0	3	3																
			4	4	13	89	SS-2	2.75	0	1	7	39	53	57	22	35	25	A-7-6 (19)	-	
			5	4	13	100	SS-3	2.75	-	-	-	-	-	-	-	-	22	A-7-6 (V)	-	
			6	3																
		608.5	6	4	11	100	SS-4	2.00	-	-	-	-	-	-	-	22	A-7-6 (V)	-		
			7	5																
			EOB																	
NOTES: CAVED AT 6"																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:29 - J:\DEPT5\22 PROJECTS\2050077COL - ODOT DIST 2- SAN-510-0.83\REPORTS\L OGS\2050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>210+42, -8' LT.</u>		EXPLORATION ID <u>B-022-0-22</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>														
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>614.3 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1												
START: <u>9/14/22</u> END: <u>9/14/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.364532, -82.973846</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		614.3							GR	CS	FS	SI	CL	LL	PL	PI	WC			
ASPHALT (12")		613.3																		
VERY STIFF, GRAY TO BROWN, CLAY , "AND" SILT, TRACE SAND, MOIST			1	4	10	67	SS-1	2.50	0	1	8	39	52	53	24	29	27	A-7-6 (18)	-	
@2.5'; STIFF, DAMP			2	3	11	100	SS-2	1.75	0	1	4	42	53	57	26	31	23	A-7-6 (19)	-	
@4.0'; VERY STIFF, MOIST			3	3	14	100	SS-3	2.50	-	-	-	-	-	-	-	-	28	A-7-6 (V)	-	
@5.5'; DAMP			4	3																
			5	4																
			6	5	18	100	SS-4	3.75	-	-	-	-	-	-	-	-	21	A-7-6 (V)	-	
		607.3	7	7																
			EOB																	
NOTES: NONE																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:29 - J:\DEPT5\22 PROJECTS\22050077COL - ODOT DIST 2 - SAN-510-0.83\REPORTS\LOGS\22050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>217+99, 8' RT.</u>		EXPLORATION ID <u>B-023-0-22</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>														
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>611.2 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1												
START: <u>9/14/22</u> END: <u>9/14/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.366611, -82.973746</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
		611.2							GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT (16")		609.9	1	3																
AGGREGATE BASE (4")		609.5	2	4	13	100	SS-1	4.00	1	3	16	48	32	33	17	16	13	A-6b (10)	-	
VERY STIFF, GRAY, SILTY CLAY , LITTLE SAND, TRACE GRAVEL, (FILL), DAMP		608.7	3	5	13	100	SS-2	2.00	0	0	8	46	46	44	19	25	18	A-7-6 (15)	-	
VERY STIFF, GRAY, CLAY , "AND" SILT, TRACE SAND, DAMP			4	2	18	100	SS-3	3.00	-	-	-	-	-	-	-	-	23	A-7-6 (V)	-	
@4.0'; BROWN, MOIST			5	6																
			6	5	14	100	SS-4	2.50	-	-	-	-	-	-	-	-	20	A-7-6 (V)	-	
		604.2	7	6																
			EOB																	
NOTES: CAVED AT 5.2"																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:29 - J:\DEPT5\22 PROJECTS\2050077COL - ODOT DIST 2- SAN-510-0.83\REPORTS\LOGS\2050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>224+73, -2' LT.</u>		EXPLORATION ID <u>B-024-0-22</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>														
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>609.6 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1												
START: <u>9/14/22</u> END: <u>9/14/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.368459, -82.973742</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		609.6							GR	CS	FS	SI	CL	LL	PL	PI	WC			
ASPHALT (16")																				
		608.3	1	13																
AGGREGATE BASE (6")		607.8	2	3	9	100	SS-1	3.00	0	2	10	43	45	44	22	22	24	A-7-6 (14)	-	
VERY STIFF, GRAY, CLAY , "AND" SILT, LITTLE SAND, MOIST			3	5																
@2.5'; SOME SILT, TRACE GRAVEL		605.6	4	6	20	100	SS-2	2.75	3	4	12	32	49	47	22	25	26	A-7-6 (15)	-	
STIFF, BROWN, CLAY , SOME SILT, TRACE GRAVEL, MOIST			5	2																
@5.5'; VERY STIFF, DAMP			6	3	10	78	SS-3	1.50	-	-	-	-	-	-	-	-	27	A-7-6 (V)	-	
		602.6	7	5	17	100	SS-4	2.50	-	-	-	-	-	-	-	-	20	A-7-6 (V)	-	
			EOB	8																
NOTES: CAVED AT 5.9"																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:29 - J:\DEPT5\22 PROJECTS\2050077COL - ODOT DIST 2- SAN-510-0.83\REPORTS\LOGS\2050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>233+64, 7' RT.</u>		EXPLORATION ID <u>B-025-0-22</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>														
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>605.9 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1												
START: <u>9/14/22</u> END: <u>9/14/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.370904, -82.973658</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		605.9							GR	CS	FS	SI	CL	LL	PL	PI	WC			
ASPHALT (15")		604.6	1	2																
VERY STIFF, DARK GRAY TO BROWN, CLAY , "AND" SILT, TRACE SAND, (FILL), DAMP		603.4	2	5	14	89	SS-1	3.50	0	1	5	48	46	49	18	31	15	A-7-6 (18)	-	
MEDIUM STIFF, DARK GRAY TO BROWN, SILT AND CLAY , TRACE SAND, MOIST			3	3	14	100	SS-2	0.75	0	0	7	69	24	34	19	15	23	A-6a (10)	-	
@4.0'; VERY STIFF, DAMP			4	2	14	78	SS-3	3.00	-	-	-	-	-	-	-	-	16	A-6a (V)	-	
			5	4																
			6	4																
		598.9	6	6	22	100	SS-4	3.00	-	-	-	-	-	-	-	-	17	A-6a (V)	-	
			7	11																
			EOB																	
NOTES: NONE																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:29 - J:\DEPT5\22 PROJECTS\2050077COL - ODOT DIST 2- SAN-510-0.83\REPORTS\LOGS\2050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>241+93, -6' LT.</u>		EXPLORATION ID <u>B-026-0-22</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>														
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>604.9 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1												
START: <u>9/14/22</u> END: <u>9/14/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.373179, -82.973660</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		604.9							GR	CS	FS	SI	CL	LL	PL	PI	WC			
ASPHALT (14")		603.7	1	1																
VERY STIFF, GRAY AND BROWN, CLAY , "AND" SILT, TRACE SAND, (FILL), DAMP		602.4	2	3	9	100	SS-1	3.75	0	1	1	42	56	58	26	32	18	A-7-6 (20)	-	
VERY STIFF, GRAY AND BROWN, CLAY , "AND" SILT, TRACE SAND, MOIST			3	3	17	100	SS-2	2.00	0	2	1	49	48	42	22	20	25	A-7-6 (12)	-	
			4	3																
			5	6	18	100	SS-3	3.50	-	-	-	-	-	-	-	-	24	A-7-6 (V)	-	
@5.5'; DAMP			6	6																
		597.9	6	4	18	100	SS-4	3.50	-	-	-	-	-	-	-	-	16	A-7-6 (V)	-	
			7	10																
			EOB																	
NOTES: NONE																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:29 - J:\DEPT5\22 PROJECTS\2050077COL - ODOT DIST 2- SAN-510-0.83\REPORTS\LOGS\2050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>249+61, 8' RT.</u>		EXPLORATION ID <u>B-027-0-22</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>														
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>603.5 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1												
START: <u>9/14/22</u> END: <u>9/14/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.375286, -82.973569</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		603.5							GR	CS	FS	SI	CL	LL	PL	PI	WC			
ASPHALT (17")																				
		602.1	1	4																
STIFF, BROWN, SANDY SILT , SOME CLAY, (FILL), MOIST		601.0	2	4	10	78	SS-1	1.00	0	0	42	37	21	28	19	9	25	A-4a (5)	-	
			3	3	11	100	SS-2	4.00	0	2	5	39	54	42	21	21	26	A-7-6 (13)	-	
VERY STIFF, BROWN, CLAY , "AND" SILT, TRACE SAND, MOIST			4	5	20	100	SS-3	2.25	-	-	-	-	-	-	-	-	25	A-7-6 (V)	-	
			5	6																
			6	10																
			6	4	17	100	SS-4	3.25	-	-	-	-	-	-	-	-	23	A-7-6 (V)	-	
		596.5	7	6																
			EOB	7																
NOTES: CAVED AT 6.2"																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:29 - J:\DEPT5\22 PROJECTS\2050077COL - ODOT DIST 2- SAN-510-0.83\REPORTS\L OCS\2050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>257+13, -6' LT.</u>		EXPLORATION ID <u>B-028-0-22</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>														
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>603.0 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1												
START: <u>9/14/22</u> END: <u>9/14/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.377350, -82.973583</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		603.0							GR	CS	FS	SI	CL	LL	PL	PI	WC			
ASPHALT (14")		601.8																		
AGGREGATE BASE (5")		601.4	1	3																
VERY STIFF, BROWN, CLAY , "AND" SILT, TRACE SAND, TRACE GRAVEL, (FILL), MOIST @2.5'; LITTLE SAND, NO GRAVEL			2	2	8	67	SS-1	3.00	4	4	6	37	49	58	25	33	26	A-7-6 (20)	-	
			3	3																
				4	10	78	SS-2	2.25	0	1	10	44	45	50	17	33	20	A-7-6 (18)	-	
		599.0	4	4																
VERY STIFF, BROWN, SILTY CLAY , TRACE SAND, MOIST @5.5'; STIFF			5	7	24	100	SS-3	-	-	-	-	-	-	-	-	-	24	A-6b (V)	-	
			6	7																
		596.0	7	7	19	100	SS-4	1.75	-	-	-	-	-	-	-	-	27	A-6b (V)	-	
			EOB	8																
NOTES: CAVED AT 5"																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:29 - J:\DEPT5\22 PROJECTS\2050077COL - ODOT DIST 2- SAN-510-0.83\REPORTS\LOGS\2050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>265+21, 6' RT.</u>		EXPLORATION ID <u>B-029-0-22</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>														
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>601.1 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1												
START: <u>9/15/22</u> END: <u>9/15/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.379569, -82.973500</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		601.1							GR	CS	FS	SI	CL	LL	PL	PI	WC			
ASPHALT (15")		599.9	1	4																
VERY STIFF, BROWN, CLAY , "AND" SILT, TRACE SAND, (FILL), DAMP @2.5'; SOME SILT, TRACE GRAVEL			2	5	15	100	SS-1	3.75	0	0	2	37	61	62	22	40	10	A-7-6 (20)	-	
			3	5	15	56	SS-2	4.00	3	2	4	35	56	56	24	32	19	A-7-6 (19)	-	
@4.0'; VERY SOFT			4	6																
		595.6	5	7	20	100	SS-3	0.25	-	-	-	-	-	-	-	-	23	A-7-6 (V)	-	
MEDIUM STIFF, BROWN, SILT AND CLAY , MOIST		594.1	6	8	22	100	SS-4	0.50	-	-	-	-	-	-	-	-	27	A-6a (V)	-	
			7	9																
			EOB																	
NOTES: NONE																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:29 - J:\DEPT5\22 PROJECTS\22050077COL - ODOT DIST 2- SAN-510-0.83\REPORTS\22050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>273+32, -2' LT.</u>		EXPLORATION ID <u>B-030-0-22</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>														
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>596.9 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1												
START: <u>9/15/22</u> END: <u>9/15/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.381794, -82.973497</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		596.9							GR	CS	FS	SI	CL	LL	PL	PI	WC			
ASPHALT (14")		595.7	1	10																
AGGREGATE BASE (4")		595.4	2	5	13	100	SS-1	2.00	1	0	4	50	45	47	19	28	22	A-7-6 (17)	-	
STIFF, GRAY, CLAY , "AND" SILT, TRACE SAND, TRACE GRAVEL, (FILL), MOIST @2.5'; NO GRAVEL			3	2	9	100	SS-2	2.00	0	1	4	49	46	47	20	27	24	A-7-6 (16)	-	
@4.0'; VERY STIFF			4	3																
		591.4	5	5	14	100	SS-3	3.50	-	-	-	-	-	-	-	-	24	A-7-6 (V)	-	
MEDIUM STIFF, BROWN, SILT AND CLAY , MOIST			6	4																
		589.9	7	4	15	100	SS-4	0.75	-	-	-	-	-	-	-	-	28	A-6a (V)	-	
			EOB	8																
NOTES: CAVED AT 6.5"																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:29 - J:\DEPT5\22 PROJECTS\2050077COL - ODOT DIST 2- SAN-510-0.83\REPORTS\LOGS\2050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>280+97, 9' RT.</u>		EXPLORATION ID <u>B-031-0-22</u>													
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>															
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>593.8 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1													
START: <u>9/15/22</u> END: <u>9/15/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.383893, -82.973429</u>															
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL	
		593.8							GR	CS	FS	SI	CL	LL	PL	PI	WC				
ASPHALT (15")		592.6																			
VERY STIFF, GRAY, CLAY , "AND" SILT, TRACE SAND, MOIST			1	2																	
@2.5'; HARD, BROWN			2	4	7	14	78	SS-1	3.00	0	0	2	47	51	55	21	34	26	A-7-6 (19)	<100	
@4.0'; STIFF			3	3	7	13	33	SS-2	4.25	0	1	2	45	52	56	23	33	24	A-7-6 (19)	-	
@5.5'; VERY STIFF			4	5																	
			5	6	10	20	100	SS-3	1.00	-	-	-	-	-	-	-	-	26	A-7-6 (V)	-	
		586.8																			
			EOB	7	6	4	13	100	SS-4	2.00	-	-	-	-	-	-	26	A-7-6 (V)	-		
NOTES: CAVED AT 6.9"																					
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																					

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:29 - J:\DEPT5\22 PROJECTS\2050077COL - ODOT DIST 2- SAN-510-0.83\REPORTS\L OCS\2050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>288+95, -3' LT.</u>		EXPLORATION ID <u>B-032-0-22</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>														
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>592.1 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1												
START: <u>9/15/22</u> END: <u>9/15/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.386083, -82.973442</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
		592.1							GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT (13")		591.0																		
AGGREGATE BASE (6")		590.5	1	3																
VERY STIFF, DARK GRAY, ELASTIC CLAY , "AND" SILT, TRACE SAND, TRACE GRAVEL, (FILL), DAMP		589.6	2	4	13	78	SS-1	2.75	1	0	1	41	57	62	34	28	33	A-7-5 (19)	-	
VERY STIFF, DARK GRAY, CLAY , "AND" SILT, TRACE SAND, DAMP			3	2	11	33	SS-2	2.75	0	0	1	48	51	66	28	38	26	A-7-6 (20)	-	
@4.0'; BROWN AND GRAY			4	4	15	100	SS-3	2.75	-	-	-	-	-	-	-	-	25	A-7-6 (V)	-	
@5.5'; STIFF, MOIST			5	5																
			6	5																
		585.1	6	6	13	100	SS-4	1.00	-	-	-	-	-	-	-	-	29	A-7-6 (V)	-	
			7	4																
			EOB																	
NOTES: NONE																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:29 - J:\DEPT5\22 PROJECTS\2050077COL - ODOT DIST 2- SAN-510-0.83\REPORTS\L OCS\2050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>296+66, 3' RT.</u>		EXPLORATION ID <u>B-033-0-22</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>														
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>591.5 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1												
START: <u>9/15/22</u> END: <u>9/15/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.388199, -82.973382</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		591.5							GR	CS	FS	SI	CL	LL	PL	PI	WC			
ASPHALT (12")		590.5																		
AGGREGATE BASE (7")		589.9	1	5																
HARD, DARK GRAY, CLAY , "AND" SILT, TRACE SAND, (FILL), DAMP		589.0	2	6	14	67	SS-1	4.25	0	1	2	42	55	47	23	24	6	A-7-6 (15)	-	
VERY STIFF, DARK GRAY, CLAY , "AND" SILT, TRACE SAND, TRACE GRAVEL, MOIST @4.0'; STIFF, BROWN			3	5	18	44	SS-2	4.00	1	0	1	36	62	66	23	43	25	A-7-6 (20)	-	
			4	6																
			5	7	23	100	SS-3	1.75	-	-	-	-	-	-	-	-	29	A-7-6 (V)	-	
			6	10																
@5.5'; HARD, DAMP			7	8																
		584.5	EOB	3	18	100	SS-4	4.25	-	-	-	-	-	-	-	-	20	A-7-6 (V)	-	
				7																
NOTES: CAVED AT 6"																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:29 - J:\DEPT5\22 PROJECTS\2050077COL - ODOT DIST 2- SAN-510-0.83\REPORTS\L OCS\2050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>304+78, -9' LT.</u>		EXPLORATION ID <u>B-034-0-22</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>														
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>588.2 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1												
START: <u>9/15/22</u> END: <u>9/15/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.390428, -82.973385</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		588.2							GR	CS	FS	SI	CL	LL	PL	PI	WC			
ASPHALT (12")		587.2																		
VERY STIFF, DARK GRAY, CLAY , "AND" SILT, TRACE SAND, DAMP			1	3	10	100	SS-1	3.00	0	0	2	37	61	67	24	43	23	A-7-6 (20)	-	
@2.5'; SOME SILT			2	5																
			3	2	9	100	SS-2	3.00	0	0	2	34	64	70	28	42	26	A-7-6 (20)	-	
@4.0'; STIFF, MOIST			4	3																
			5	4	17	100	SS-3	1.75	-	-	-	-	-	-	-	-	29	A-7-6 (V)	-	
@5.5'; VERY STIFF, BROWN AND GRAY			6	3																
		581.2	7	5	10	100	SS-4	2.50	-	-	-	-	-	-	-	-	26	A-7-6 (V)	-	
			EOB																	
NOTES: CAVED AT 5"																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:29 - J:\DEPT5\22 PROJECTS\22050077COL - ODOT DIST 2- SAN-510-0.83\REPORTS\22050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>312+84, 1' RT.</u>		EXPLORATION ID <u>B-035-0-22</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>														
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>587.0 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1												
START: <u>9/15/22</u> END: <u>9/15/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.392637, -82.973307</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
									GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT (15")		587.0																		
AGGREGATE BASE (5")		585.8	1	3																
VERY STIFF, DARK GRAY, CLAY, SOME SILT, TRACE SAND, (FILL), MOIST		585.3	2	5	11	100	SS-1	3.00	0	0	1	34	65	66	25	41	34	A-7-6 (20)	-	
VERY STIFF, DARK GRAY, CLAY, SOME SILT, TRACE SAND, MOIST		584.5	3	3	9	100	SS-2	3.00	0	0	1	34	65	69	23	46	28	A-7-6 (20)	-	
			4	2																
			5	6	15	100	SS-3	3.00	-	-	-	-	-	-	-	-	27	A-7-6 (V)	-	
@5.5'; STIFF, GRAY			6	5																
		580.0	7	3	9	100	SS-4	2.00	-	-	-	-	-	-	-	-	31	A-7-6 (V)	-	
			EOB	4																
NOTES: NONE																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:29 - J:\DEPT5\22 PROJECTS\2050077COL - ODOT DIST 2- SAN-510-0.83\REPORTS\LOGS\2050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>320+76, -10' LT.</u>		EXPLORATION ID <u>B-036-0-22</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>														
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>584.9 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1												
START: <u>9/15/22</u> END: <u>9/15/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.394812, -82.973305</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
									GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT (12")		584.9																		
VERY STIFF, DARK GRAY, ELASTIC CLAY , SOME SILT, TRACE SAND, (FILL), DAMP		583.9	1	3	6	44	SS-1	3.00	-	-	-	-	-	-	-	-	25	A-7-5 (V)	-	
			2	2																
			3	4	11	56	SS-2	3.25	0	1	2	32	65	72	31	41	28	A-7-5 (20)	-	
VERY STIFF, BROWN AND GRAY, CLAY , SOME SILT, TRACE SAND, MOIST @5.5'; STIFF, GRAY AND BROWN		580.9	4	5																
			5	6	14	100	SS-3	3.00	0	0	1	29	70	73	26	47	29	A-7-6 (20)	-	
			6	3	4	13	100	SS-4	2.00	-	-	-	-	-	-	-	-	34	A-7-6 (V)	
		577.9	EOB	7	6															
NOTES: NONE																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:29 - J:\DEPT5\22 PROJECTS\2050077COL - ODOT DIST 2- SAN-510-0.83\REPORTS\LOGS\2050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>328+75, 3' RT.</u>		EXPLORATION ID <u>B-037-0-22</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>														
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>584.8 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1												
START: <u>9/15/22</u> END: <u>9/15/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.397005, -82.973219</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		584.8							GR	CS	FS	SI	CL	LL	PL	PI	WC			
ASPHALT (12")		583.8																		
VERY STIFF, DARK GRAY, CLAY , "AND" SILT, TRACE SAND, TRACE GRAVEL, (FILL), DAMP @2.5'; NO GRAVEL, MOIST			1	3	8	44	SS-1	3.25	1	0	1	37	61	59	23	36	16	A-7-6 (20)	-	
			2	3																
			3	2	10	89	SS-2	2.75	0	0	1	40	59	57	22	35	23	A-7-6 (19)	-	
		580.8	4	4																
STIFF, BROWN AND GRAY, CLAY , "AND" SILT, TRACE SAND, MOIST @5.5'; VERY STIFF			5	6	17	100	SS-3	1.75	-	-	-	-	-	-	-	-	27	A-7-6 (V)	-	
			6	5																
		577.8	6	6	15	100	SS-4	2.50	-	-	-	-	-	-	-	-	30	A-7-6 (V)	-	
			7	6																
			EOB																	
NOTES: NONE																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:29 - J:\DEPT5\22 PROJECTS\22050077COL - ODOT DIST 2- SAN-510-0.83\REPORTS\L OCS\22050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>336+82, -4' LT.</u>		EXPLORATION ID <u>B-038-0-22</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>														
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>585.0 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1												
START: <u>9/15/22</u> END: <u>9/15/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.399218, -82.973202</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL
									GR	CS	FS	SI	CL	LL	PL	PI				
ASPHALT (12")		585.0																		
		584.0																		
AGGREGATE BASE (6")		583.5	1	12																
VERY STIFF, DARK GRAY, CLAY , SOME SILT, CONTAINS ASHPALT FRAGMENTS, (FILL), MOIST VERY STIFF, GRAY, CLAY , SOME SILT, TRACE SAND, TRACE GRAVEL, MOIST @4.0'; NO GRAVEL, DAMP		582.5	2	20 19	50	100	SS-1	4.00	-	-	-	-	-	-	-	-	26	A-7-6 (V)	-	
			3	5 6	18	100	SS-2	3.75	1	0	1	32	66	64	24	40	25	A-7-6 (20)	-	
			4	5 8	23	89	SS-3	3.50	0	1	1	30	68	68	28	40	26	A-7-6 (20)	-	
			5	10																
			6	4 7	18	100	SS-4	3.25	-	-	-	-	-	-	-	-	22	A-7-6 (V)	-	
			7	7																
		578.0	EOB																	
NOTES: CAVED AT 5.8"																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:29 - J:\DEPT5\22 PROJECTS\22050077COL - ODOT DIST 2- SAN-510-0.83\REPORTS\22050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>344+59, 9' RT.</u>		EXPLORATION ID <u>B-039-0-22</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>														
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>582.2 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1												
START: <u>9/15/22</u> END: <u>9/15/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.401349, -82.973116</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		582.2							GR	CS	FS	SI	CL	LL	PL	PI	WC			
ASPHALT (11")		581.2																		
VERY STIFF, BROWN TO DARK GRAY, CLAY , "AND" SILT, TRACE SAND, TRACE GRAVEL, (FILL), DAMP		579.7	1	3	9	67	SS-1	4.00	1	1	2	36	60	56	24	32	14	A-7-6 (19)	-	
			2	4																
			3	3	10	78	SS-2	2.75	0	0	1	31	68	67	23	44	29	A-7-6 (20)	-	
			4	5																
VERY STIFF, GRAY, CLAY , SOME SILT, TRACE SAND, MOIST @4.0'; STIFF			5	2	14	89	SS-3	1.75	-	-	-	-	-	-	-	-	27	A-7-6 (V)	-	
			6	6																
@5.5'; VERY STIFF			7	4	14	100	SS-4	3.00	-	-	-	-	-	-	-	-	32	A-7-6 (V)	-	
		575.2		7																
			EOB																	
NOTES: NONE																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:30 - J:\DEPT5\22 PROJECTS\2050077COL - ODOT DIST 2- SAN-510-0.83\REPORTS\LOGS\2050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>352+61</u>		EXPLORATION ID <u>B-040-0-22</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>														
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>581.6 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1												
START: <u>9/15/22</u> END: <u>9/15/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.403551, -82.973121</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		581.6							GR	CS	FS	SI	CL	LL	PL	PI	WC			
ASPHALT (14")		580.4	1	3																
VERY STIFF, DARK GRAY, CLAY , SOME SILT, TRACE SAND, (FILL), MOIST		579.1	2	3	9	67	SS-1	2.75	0	0	2	31	67	74	24	50	26	A-7-6 (20)	-	
VERY STIFF, DARK GRAY, CLAY , SOME SILT, TRACE SAND, DAMP			3	2	13	100	SS-2	3.50	0	1	2	27	70	70	28	42	27	A-7-6 (20)	-	
@4.0'; BROWN, MOIST			4	3																
			5	6	17	89	SS-3	2.75	-	-	-	-	-	-	-	-	33	A-7-6 (V)	-	
@5.5'; DAMP			6	3																
		574.6	6	6	14	100	SS-4	2.75	-	-	-	-	-	-	-	-	27	A-7-6 (V)	-	
			7	5																
			EOB																	
NOTES: NONE																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																				

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT GDT - 12/14/22 17:30 - J:\DEPT5\22 PROJECTS\22050077COL - ODOT DIST 2- SAN-510-0.83\REPORTS\L OCS\22050077COL.GPJ

PROJECT: <u>SAN-510-0.83</u>		DRILLING FIRM / OPERATOR: <u>CTL / B. VOGEL</u>		DRILL RIG: <u>CME 55 #292</u>		STATION / OFFSET: <u>360+79, 12' RT.</u>		EXPLORATION ID <u>B-041-0-22</u>												
TYPE: <u>ROADWAY</u>		SAMPLING FIRM / LOGGER: <u>CTL / B. VOGEL</u>		HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>SR 510</u>														
PID: <u>94332</u> SFN: <u></u>		DRILLING METHOD: <u>3.25" HSA</u>		CALIBRATION DATE: <u>10/13/22</u>		ELEVATION: <u>581.1 (MSL)</u> EOB: <u>7.0 ft.</u>		PAGE 1 OF 1												
START: <u>9/15/22</u> END: <u>9/15/22</u>		SAMPLING METHOD: <u>SPT</u>		ENERGY RATIO (%): <u>76.4</u>		LAT / LONG: <u>41.405795, -82.973049</u>														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
		581.1							GR	CS	FS	SI	CL	LL	PL	PI	WC			
ASPHALT (12")		580.1																		
AGGREGATE BASE (6")		579.6	1	3																
STIFF, GRAY, CLAY , SOME SILT, TRACE SAND, CONTAINS ASPHALT FRAGMENTS, (FILL), DAMP		578.6	2	3	9	33	SS-1	2.00	-	-	-	-	-	-	-	-	22	A-7-6 (V)	-	
VERY STIFF, GRAY TO BROWN, CLAY , SOME SILT, TRACE SAND, DAMP			3	2	11	89	SS-2	2.50	0	1	2	34	63	52	26	26	26	A-7-6 (17)	-	
@4.0'; "AND" SILT, MOIST			4	3																
			5	5	17	100	SS-3	3.25	0	0	1	44	55	42	20	22	25	A-7-6 (13)	-	
@5.5'; HARD			6	5																
		574.1	7	7	22	100	SS-4	4.50	-	-	-	-	-	-	-	-	27	A-7-6 (V)	-	
			EOB	10																
NOTES: NONE																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED ASPHALT PATCH; BACKFILLED WITH AUGER CUTTINGS																				



OHIO DEPARTMENT OF TRANSPORTATION

OFFICE OF GEOTECHNICAL ENGINEERING

PLAN SUBGRADES
Geotechnical Bulletin GB1

SAN-510-0.83
94332

**Pavement replacement of SR 510 from SLM 0.83 (North edge of Clyde) to SLM 7.03
(intersection with US 6) in Sandusky County, Ohio.**

CTL Engineering Inc.,

Prepared By: CTL Egnineering, Inc
Date prepared: Monday, December 5, 2022

CTL Engineering, Inc.
2860 Fisher Road
Columbus, Ohio
43204
614-276-8123
eholcombe@ctleng.com

NO. OF BORINGS: **42**



#	Boring ID	Alignment	Station	Offset	Dir	Drill Rig	ER	Boring EL	Proposed Subgrade EL	Cut Fill
1	B-001-0-22	SR 510	4275.4	3	Rt	CME 550 Track	80	656.6	655.1	1.5 C
2	B-002-0-22	SR 510	5063.7	-8	Lt	CME 550 Track	80	653.9	652.4	1.5 C
3	B-003-0-22	SR 510	5881	3	Rt	CME 550 Track	80	650.2	648.7	1.5 C
4	B-004-0-22	SR 510	6702.6	-13	Lt	CME 550 Track	80	651.7	650.2	1.5 C
5	B-005-0-22	SR 510	7496.1	3	Rt	CME 550 Track	80	649.9	648.4	1.5 C
6	B-006-0-22	SR 510	8282	-9	Lt	CME 550 Track	80	648.9	647.4	1.5 C
7	B-007-0-22	SR 510	9060.5	0	Rt	CME 550 Track	80	648.9	647.4	1.5 C
8	B-008-0-22	SR 510	9872	-8	Lt	CME 550 Track	80	646.4	644.9	1.5 C
9	B-009-0-22	SR 510	10668	6	Rt	CME 550 Track	80	645.6	644.1	1.5 C
10	B-010-0-22	SR 510	11430	-7	Lt	CME 550 Track	80	643.7	642.2	1.5 C
11	B-011-0-22	SR 510	12250	7	Rt	CME 550 Track	80	643.0	641.5	1.5 C
12	B-012-0-22	SR 510	13063	9	Rt	CME 550 Track	80	641.1	639.6	1.5 C
13	B-013-0-22	SR 510	13858	6	Rt	CME 550 Track	80	633.9	632.4	1.5 C
14	B-014-0-22	SR 510	14706	-5	Lt	CME 550 Track	80	630.2	628.7	1.5 C
15	B-015-0-22	SR 510	15492	6	Rt	CME 550 Track	80	626.7	625.2	1.5 C
16	B-016-0-22	SR 510	16301	-12	Lt	CME 550 Track	80	624.9	623.4	1.5 C
17	B-017-0-22	SR 510	17113	4	Rt	CME 550 Track	80	623.0	621.5	1.5 C
18	B-018-0-22	SR 510	17963	-3	Lt	CME 550 Track	80	623.4	621.9	1.5 C
19	B-019-0-22	SR 510	18694	6	Rt	CME 550 Track	80	617.8	616.3	1.5 C
20	B-020-0-22	SR 510	19454	-7	Lt	CME 550 Track	80	616.9	615.4	1.5 C
21	B-021-0-22	SR 510	20202	4	Rt	CME 550 Track	80	615.5	614.0	1.5 C
22	B-022-0-22	SR 510	21042	-8	Lt	CME 550 Track	80	614.3	612.8	1.5 C
23	B-023-0-22	SR 510	21799	8	Rt	CME 550 Track	80	611.2	609.7	1.5 C
24	B-024-0-22	SR 510	22473	-2	Lt	CME 550 Track	80	609.6	608.1	1.5 C
25	B-025-0-22	SR 510	23364	7	Rt	CME 550 Track	80	605.9	604.4	1.5 C
26	B-026-0-22	SR 510	24193	-6	Lt	CME 550 Track	80	604.9	603.4	1.5 C
27	B-027-0-22	SR 510	24961	8	Rt	CME 550 Track	80	603.5	602.0	1.5 C
28	B-028-0-22	SR 510	25713	-6	Lt	CME 550 Track	80	603.0	601.5	1.5 C
29	B-029-0-22	SR 510	26521	6	Rt	CME 550 Track	80	601.1	599.6	1.5 C
30	B-030-0-22	SR 510	27332	-2	Lt	CME 550 Track	80	596.9	595.4	1.5 C
31	B-031-0-22	SR 510	28097	9	Rt	CME 550 Track	80	593.8	592.3	1.5 C
32	B-032-0-22	SR 510	28895	-3	Lt	CME 550 Track	80	592.1	590.6	1.5 C
33	B-033-0-22	SR 510	29666	3	Rt	CME 550 Track	80	591.5	590.0	1.5 C
34	B-034-0-22	SR 510	30478	-9	Lt	CME 550 Track	80	588.2	586.7	1.5 C
35	B-035-0-22	SR 510	31284	1	Rt	CME 550 Track	80	587.0	585.5	1.5 C
36	B-036-0-22	SR 510	32076	-10	Lt	CME 550 Track	80	584.9	583.4	1.5 C
37	B-037-0-22	SR 510	32875	3	Rt	CME 550 Track	80	584.8	583.3	1.5 C
38	B-038-0-22	SR 510	33682	-4	Lt	CME 550 Track	80	585.0	583.5	1.5 C
39	B-039-0-22	SR 510	34459	9	Rt	CME 550 Track	80	582.2	580.7	1.5 C
40	B-040-0-22	SR 510	35261	0		CME 550 Track	80	581.6	580.1	1.5 C
41	B-041-0-22	SR 510	36079	12	Rt	CME 550 Track	80	581.1	579.6	1.5 C
42	B-042-0-22	SR 510	36727	-2	Lt	CME 550 Track	80	580.8	579.3	1.5 C

#	Boring	Sample	Sample Depth		Subgrade Depth		Standard Penetration		HP (tsf)	Physical Characteristics						Moisture		Ohio DOT		Sulfate Content (ppm)	Problem		Excavate and Replace (Item 204)		Recommendation (Enter depth in inches)
			From	To	From	To	N ₆₀	N _{60L}		LL	PL	PI	% Silt	% Clay	P200	M _C	M _{OPT}	Class	GI		Unsuitable	Unstable	Unsuitable	Unstable	
1	B 001-0 22	SS-1	1.0	2.5	-0.5	1.0	39		2.5	48	25	23	41	47	88	30	22	A-7-6	15			Mc			
		SS-2	2.5	4.0	1.0	2.5	13		3.25	50	23	27	30	40	70	20	20	A-7-6	16						
		SS-3	4.0	5.5	2.5	4.0	15		4.5							19	18	A-7-6	16						
		SS-4	5.5	7.0	4.0	5.5	19	13	2.5							23	18	A-7-6	16						
2	B 002-0 22	SS-1	1.0	2.5	-0.5	1.0	17		2.75	18	14	4	25	12	37	9	10	A-4a	0						
		SS-2	2.5	4.0	1.0	2.5	11		2.5	35	19	16	33	41	74	28	16	A-6b	10			N ₆₀ & Mc		12"	
		SS-3	4.0	5.5	2.5	4.0	13		3							20	16	A-6b	16						
		SS-4	5.5	7.0	4.0	5.5	20	11	1.25							20	16	A-6b	16						
3	B 003-0 22	SS-1	1.0	2.5	-0.5	1.0	11		3.75	54	25	29	28	54	82	9	22	A-7-6	18			N ₆₀		12"	
		SS-2	2.5	4.0	1.0	2.5	13		3	42	20	22	24	39	63	19	18	A-7-6	11						
		SS-3	4.0	5.5	2.5	4.0	14		4.5							18	18	A-7-6	16						
		SS-4	5.5	7.0	4.0	5.5	28	11	4.5							16	18	A-7-6	16						
4	B 004-0 22	SS-1	1.0	2.5	-0.5	1.0	13		1.5	37	20	17	34	37	71	13	16	A-6b	10			HP		12"	
		SS-2	2.5	4.0	1.0	2.5	14		2.75	39	18	21	40	37	77	19	16	A-6b	12			N ₆₀ & Mc		12"	
		SS-3	4.0	5.5	2.5	4.0	17		4.5							20	16	A-6b	16						
		SS-4	5.5	7.0	4.0	5.5	34	13	4.5							13	16	A-6b	16						
5	B 005-0 22	SS-1	1.0	2.5	-0.5	1.0	14		3	52	25	27	35	49	84	22	22	A-7-6	17						
		SS-2	2.5	4.0	1.0	2.5	11		3	53	25	28	32	50	82	23	22	A-7-6	18			N ₆₀		12"	
		SS-3	4.0	5.5	2.5	4.0	18		3.75							20	18	A-7-6	16						
		SS-4	5.5	7.0	4.0	5.5	20	11	3.25							22	18	A-7-6	16						
6	B 006-0 22	SS-1	1.0	2.5	-0.5	1.0	9		1.5	54	26	28	31	53	84	26	23	A-7-6	18			HP & Mc		12"	
		SS-2	2.5	4.0	1.0	2.5	8		1.5	56	26	30	32	54	86	22	23	A-7-6	19			HP		12"	
		SS-3	4.0	5.5	2.5	4.0	10		2.5							24	18	A-7-6	16						
		SS-4	5.5	7.0	4.0	5.5	13	8								33	18	A-7-6	16						
7	B 007-0 22	SS-1	1.0	2.5	-0.5	1.0	19		2.75	55	25	30	32	52	84	23	22	A-7-6	19						
		SS-2	2.5	4.0	1.0	2.5	18		4	50	23	27	32	50	82	22	20	A-7-6	17						
		SS-3	4.0	5.5	2.5	4.0	22		3.5							21	18	A-7-6	16						
		SS-4	5.5	7.0	4.0	5.5	20	18								19	18	A-7-6	16						
8	B 008-0 22	SS-1	1.0	2.5	-0.5	1.0	11		2.5	51	25	26	32	53	85	23	22	A-7-6	17			N ₆₀		12"	
		SS-2	2.5	4.0	1.0	2.5	9		1.75	54	23	31	33	53	86	24	20	A-7-6	19			HP & Mc		12"	
		SS-3	4.0	5.5	2.5	4.0	11		3.5							20	18	A-7-6	16						
		SS-4	5.5	7.0	4.0	5.5	13	9								16	18	A-7-6	16						
9	B 009-0 22	SS-1	1.0	2.5	-0.5	1.0	9		2.75	52	26	26	35	48	83	27	23	A-7-6	17			N ₆₀ & Mc		12"	
		SS-2	2.5	4.0	1.0	2.5	17		3	50	21	29	33	50	83	22	18	A-7-6	18			Mc			
		SS-3	4.0	5.5	2.5	4.0	19		3.5							18	18	A-7-6	16						

#	Boring	Sample	Sample Depth		Subgrade Depth		Standard Penetration		HP (tsf)	Physical Characteristics						Moisture		Ohio DOT		Sulfate Content (ppm)	Problem		Excavate and Replace (Item 204)		Recommendation (Enter depth in inches)	
			From	To	From	To	N ₆₀	N _{60L}		LL	PL	PI	% Silt	% Clay	P200	M _C	M _{OPT}	Class	GI		Unsuitable	Unstable	Unsuitable	Unstable		
		SS-4	5.5	7.0	4.0	5.5	23	9	4.25							19	18	A-7-6	16							
10	B 010-0 22	SS-1	1.0	2.5	-0.5	1.0	9	8	3.5	44	21	23	39	41	80	27	18	A-7-6	14			N ₆₀ & Mc		12"		
		SS-2	2.5	4.0	1.0	2.5	8		2	37	20	17	35	42	77	29	16	A-6b	11			N ₆₀ & Mc		12"		
		SS-3	4.0	5.5	2.5	4.0	11		2							21	16	A-6b	16							
		SS-4	5.5	7.0	4.0	5.5	24		4.5							15	18	A-7-6	16							
11	B 011-0 22	SS-1	1.0	2.5	-0.5	1.0	10	10	3.25	46	21	25	41	44	85	17	18	A-7-6	15	99			N ₆₀		12"	
		SS-2	2.5	4.0	1.0	2.5	10		3	37	18	19	44	41	85	23	16	A-6b	12			N ₆₀ & Mc		12"		
		SS-3	4.0	5.5	2.5	4.0	13									24	16	A-6b	16							
		SS-4	5.5	7.0	4.0	5.5	28									15	14	A-6a	10							
12	B 012-0 22	SS-1	1.0	2.5	-0.5	1.0	19	10	1.75	19	16	3	41	14	55	14	11	A-4a	4			HP & Mc		12"		
		SS-2	2.5	4.0	1.0	2.5	10		3	41	22	19	32	51	83	20	19	A-7-6	12			N ₆₀		12"		
		SS-3	4.0	5.5	2.5	4.0	23		4.25							19	18	A-7-6	16							
		SS-4	5.5	7.0	4.0	5.5	25		4.5							16	18	A-7-6	16							
13	B 013-0 22	SS-1	1.0	2.5	-0.5	1.0	11	11		28	16	12	21	19	40	19	14	A-6a	2			N ₆₀ & Mc		12"		
		SS-2	2.5	4.0	1.0	2.5	13		3.5	48	25	23	26	64	90	23	22	A-7-6	15							
		SS-3	4.0	5.5	2.5	4.0	22		2.25							19	18	A-7-6	16							
		SS-4	5.5	7.0	4.0	5.5	19		4.5							24	18	A-7-6	16							
14	B 014-0 22	SS-1	1.0	2.5	-0.5	1.0	13	13	4	40	20	20	30	49	79	22	16	A-6b	12			N ₆₀ & Mc		12"		
		SS-2	2.5	4.0	1.0	2.5	15		4	31	18	13	33	32	65	18	14	A-6a	7			Mc				
		SS-3	4.0	5.5	2.5	4.0	24		4							15	14	A-6a	10							
		SS-4	5.5	7.0	4.0	5.5	22		4.25							13	14	A-6a	10							
15	B 015-0 22	SS-1	1.0	2.5	-0.5	1.0	11	11	3.25	50	23	27	31	52	83	21	20	A-7-6	17			N ₆₀		12"		
		SS-2	2.5	4.0	1.0	2.5	17		3.75	43	22	21	35	46	81	17	19	A-7-6	13							
		SS-3	4.0	5.5	2.5	4.0	22		4.5							15	18	A-7-6	16							
		SS-4	5.5	7.0	4.0	5.5	25		4.5							15	18	A-7-6	16							
16	B 016-0 22	SS-1	1.0	2.5	-0.5	1.0	10	10	4.5	38	20	18	33	43	76	16	16	A-6b	11			N ₆₀		12"		
		SS-2	2.5	4.0	1.0	2.5	18		2.75	40	20	20	34	43	77	17	16	A-6b	12							
		SS-3	4.0	5.5	2.5	4.0	28		4.5							15	16	A-6b	16							
		SS-4	5.5	7.0	4.0	5.5	34		4.5							15	16	A-6b	16							
17	B 017-0 22	SS-1	1.0	2.5	-0.5	1.0	24	8		27	14	13	29	20	49	13	14	A-6a	4							
		SS-2	2.5	4.0	1.0	2.5	8			28	17	11	31	21	52	13	14	A-6a	4			N ₆₀		12"		
		SS-3	4.0	5.5	2.5	4.0	10		2.5							9	16	A-6b	16							
		SS-4	5.5	7.0	4.0	5.5	11		3.75							21	16	A-6b	16							
18	B 018-0	SS-1	1.0	2.5	-0.5	1.0	8		2.25	42	20	22	36	40	76	18	18	A-7-6	13			N ₆₀		12"		
		SS-2	2.5	4.0	1.0	2.5	10		1	32	15	17	21	29	50	24	16	A-6b	5			HP & Mc		12"		



#	Boring	Sample	Sample Depth		Subgrade Depth		Standard Penetration		HP (tsf)	Physical Characteristics						Moisture		Ohio DOT		Sulfate Content (ppm)	Problem		Excavate and Replace (Item 204)		Recommendation (Enter depth in inches)	
			From	To	From	To	N ₆₀	N _{60L}		LL	PL	PI	% Silt	% Clay	P200	M _C	M _{OPT}	Class	GI		Unsuitable	Unstable	Unsuitable	Unstable		
	22	SS-3	4.0	5.5	2.5	4.0	10	8								18	16	A-6b	16							
		SS-4	5.5	7.0	4.0	5.5	27		2								19	16	A-6b	16						
19	B 019-0 22	SS-1	1.0	2.5	-0.5	1.0	9	9	4.5	24	15	9	35	25	60	17	10	A-4a	5			N ₆₀ & Mc		12"		
		SS-2	2.5	4.0	1.0	2.5	14		1.75	31	16	15	24	28	52	16	14	A-6a	5							
		SS-3	4.0	5.5	2.5	4.0	11		2.5							17	14	A-6a	10							
		SS-4	5.5	7.0	4.0	5.5	14		3.75							23	14	A-6a	10							
20	B 020-0 22	SS-1	1.0	2.5	-0.5	1.0	10	10	2.5	46	18	28	40	49	89	21	18	A-7-6	16			N ₆₀ & Mc		12"		
		SS-2	2.5	4.0	1.0	2.5	11		0.75	45	21	24	47	45	92	23	18	A-7-6	15			HP & Mc		18"		
		SS-3	4.0	5.5	2.5	4.0	15		2.75							23	16	A-6b	16							
		SS-4	5.5	7.0	4.0	5.5	27		2.5							24	16	A-6b	16							
21	B 021-0 22	SS-1	1.0	2.5	-0.5	1.0	8	8	2	57	25	32	39	51	90	27	22	A-7-6	19	99			N ₆₀ & Mc		12"	
		SS-2	2.5	4.0	1.0	2.5	13		2.75	57	22	35	39	53	92	25	19	A-7-6	19			N ₆₀ & Mc		12"		
		SS-3	4.0	5.5	2.5	4.0	13		2.75							22	18	A-7-6	16							
		SS-4	5.5	7.0	4.0	5.5	11		2							22	18	A-7-6	16							
22	B 022-0 22	SS-1	1.0	2.5	-0.5	1.0	10	10	2.5	53	24	29	39	52	91	27	21	A-7-6	18			N ₆₀ & Mc		12"		
		SS-2	2.5	4.0	1.0	2.5	11		1.75	57	26	31	42	53	95	23	23	A-7-6	19			N ₆₀		12"		
		SS-3	4.0	5.5	2.5	4.0	14		2.5							28	18	A-7-6	16							
		SS-4	5.5	7.0	4.0	5.5	18		3.75							21	18	A-7-6	16							
23	B 023-0 22	SS-1	1.0	2.5	-0.5	1.0	13	13	4	33	17	16	48	32	80	13	16	A-6b	10							
		SS-2	2.5	4.0	1.0	2.5	13		2	44	19	25	46	46	92	18	18	A-7-6	15							
		SS-3	4.0	5.5	2.5	4.0	18		3							23	18	A-7-6	16							
		SS-4	5.5	7.0	4.0	5.5	14		2.5							20	18	A-7-6	16							
24	B 024-0 22	SS-1	1.0	2.5	-0.5	1.0	9	9	3	44	22	22	43	45	88	24	19	A-7-6	14			N ₆₀ & Mc		12"		
		SS-2	2.5	4.0	1.0	2.5	20		2.75	47	22	25	32	49	81	26	19	A-7-6	15			Mc				
		SS-3	4.0	5.5	2.5	4.0	10		1.5							27	18	A-7-6	16							
		SS-4	5.5	7.0	4.0	5.5	17		2.5							20	18	A-7-6	16							
25	B 025-0 22	SS-1	1.0	2.5	-0.5	1.0	14	14	3.5	49	18	31	48	46	94	15	18	A-7-6	18							
		SS-2	2.5	4.0	1.0	2.5	14		0.75	34	19	15	69	24	93	23	14	A-6a	10			HP & Mc		18"		
		SS-3	4.0	5.5	2.5	4.0	14		3							16	14	A-6a	10							
		SS-4	5.5	7.0	4.0	5.5	22		3							17	14	A-6a	10							
26	B 026-0 22	SS-1	1.0	2.5	-0.5	1.1	9	9	3.75	58	26	32	42	56	98	18	23	A-7-6	20			N ₆₀		12"		
		SS-2	2.5	4.0	1.1	2.6	17		2	42	22	20	49	48	97	25	19	A-7-6	12			Mc				
		SS-3	4.0	5.5	2.6	4.1	18		3.5							24	18	A-7-6	16							
		SS-4	5.5	7.0	4.1	5.6	18		3.5							16	18	A-7-6	16							
27	B	SS-1	1.0	2.5	-0.5	1.0	10		1	28	19	9	37	21	58	25	14	A-4a	5			HP & Mc		12"		



#	Boring	Sample	Sample Depth		Subgrade Depth		Standard Penetration		HP (tsf)	Physical Characteristics					Moisture		Ohio DOT		Sulfate Content (ppm)	Problem		Excavate and Replace (Item 204)		Recommendation (Enter depth in inches)
			From	To	From	To	N ₆₀	N _{60L}		LL	PL	PI	% Silt	% Clay	P200	M _C	M _{OPT}	Class		GI	Unsuitable	Unstable	Unsuitable	
	027-0	SS-2	2.5	4.0	1.0	2.5	11	10	4	42	21	21	39	54	93	26	18	A-7-6	13			N ₆₀ & Mc	12"	
	22	SS-3	4.0	5.5	2.5	4.0	20		2.25							25	18	A-7-6	16					
		SS-4	5.5	7.0	4.0	5.5	17		3.25							23	18	A-7-6	16					
28	B	SS-1	1.0	2.5	-0.5	1.0	8	8	3	58	25	33	37	49	86	26	22	A-7-6	20			N ₆₀ & Mc	12"	
	028-0	SS-2	2.5	4.0	1.0	2.5	10		2.25	50	17	33	44	45	89	20	18	A-7-6	18			N ₆₀	12"	
	22	SS-3	4.0	5.5	2.5	4.0	24									24	16	A-6b	16					
		SS-4	5.5	7.0	4.0	5.5	19		1.75							27	16	A-6b	16					
29	B	SS-1	1.0	2.5	-0.5	1.0	15	15	3.75	62	22	40	37	61	98	10	19	A-7-6	20					
	029-0	SS-2	2.5	4.0	1.0	2.5	15		4	56	24	32	35	56	91	19	21	A-7-6	19					
	22	SS-3	4.0	5.5	2.5	4.0	20		70.3							23	18	A-7-6	16					
		SS-4	5.5	7.0	4.0	5.5	22		0.5							27	14	A-6a	10					
30	B	SS-1	1.0	2.5	-0.5	1.0	13	9	2	47	19	28	50	45	95	22	18	A-7-6	17			N ₆₀ & Mc	12"	
	030-0	SS-2	2.5	4.0	1.0	2.5	9		2	47	20	27	49	46	95	24	18	A-7-6	16			N ₆₀ & Mc	12"	
	22	SS-3	4.0	5.5	2.5	4.0	14		3.5							24	18	A-7-6	16					
		SS-4	5.5	7.0	4.0	5.5	15		0.75							28	14	A-6a	10					
31	B	SS-1	1.0	2.5	-0.5	1.0	14	13	3	55	21	34	47	51	98	26	18	A-7-6	19	99		N ₆₀ & Mc	12"	
	031-0	SS-2	2.5	4.0	1.0	2.5	13		4.25	56	23	33	45	52	97	24	20	A-7-6	19			N ₆₀ & Mc	12"	
	22	SS-3	4.0	5.5	2.5	4.0	20		1							26	18	A-7-6	16					
		SS-4	5.5	7.0	4.0	5.5	13		2							26	18	A-7-6	16					
32	B	SS-1	1.0	2.5	-0.5	1.0	13	11	2.75	62	34	28	41	57	98	33		A-7-5	19		A-7-5			
	032-0	SS-2	2.5	4.0	1.0	2.5	11		2.75	66	28	38	48	51	99	26	25	A-7-6	20		High LL	N ₆₀	30"	12"
	22	SS-3	4.0	5.5	2.5	4.0	15		2.75							25	18	A-7-6	16					
		SS-4	5.5	7.0	4.0	5.5	13		1							29	18	A-7-6	16					
33	B	SS-1	1.0	2.5	-0.5	1.0	14	14	4.25	47	23	24	42	55	97	6	20	A-7-6	15					
	033-0	SS-2	2.5	4.0	1.0	2.5	18		4	66	23	43	36	62	98	25	20	A-7-6	20		High LL	Mc	30"	
	22	SS-3	4.0	5.5	2.5	4.0	23		1.75							29	18	A-7-6	16					
		SS-4	5.5	7.0	4.0	5.5	18		4.25							20	18	A-7-6	16					
34	B	SS-1	1.0	2.5	-0.5	1.0	10	9	3	67	24	43	37	61	98	23	21	A-7-6	20		High LL	N ₆₀		12"
	034-0	SS-2	2.5	4.0	1.0	2.5	9		3	70	28	42	34	64	98	26	25	A-7-6	20		High LL	N ₆₀	30"	12"
	22	SS-3	4.0	5.5	2.5	4.0	17		1.75							29	18	A-7-6	16					
		SS-4	5.5	7.0	4.0	5.5	10		2.5							26	18	A-7-6	16					
35	B	SS-1	1.0	2.5	-0.5	1.0	11	9	3	66	25	41	34	65	99	34	22	A-7-6	20		High LL	N ₆₀ & Mc		12"
	035-0	SS-2	2.5	4.0	1.0	2.5	9		3	69	23	46	34	65	99	28	20	A-7-6	20		High LL	N ₆₀ & Mc	30"	12"
	22	SS-3	4.0	5.5	2.5	4.0	15		3							27	18	A-7-6	16					
		SS-4	5.5	7.0	4.0	5.5	9		2							31	18	A-7-6	16					



#	Boring	Sample	Sample Depth		Subgrade Depth		Standard Penetration		HP (tsf)	Physical Characteristics						Moisture		Ohio DOT		Sulfate Content (ppm)	Problem		Excavate and Replace (Item 204)		Recommendation (Enter depth in inches)
			From	To	From	To	N ₆₀	N _{60L}		LL	PL	PI	% Silt	% Clay	P200	M _C	M _{OPT}	Class	GI		Unsuitable	Unstable	Unsuitable	Unstable	
36	B 036-0 22	SS-1	1.0	2.5	-0.5	1.0	6		3							25		A-7-5	16		A-7-5	N ₆₀		18"	
		SS-2	2.5	4.0	1.0	2.5	11		3.25	72	31	41	32	65	97	28		A-7-5	20		A-7-5 & High LL	N ₆₀	30"	12"	
		SS-3	4.0	5.5	2.5	4.0	14		3	73	26	47	29	70	99	29	23	A-7-6	20						
		SS-4	5.5	7.0	4.0	5.5	13	6	2							34	18	A-7-6	16						
37	B 037-0 22	SS-1	1.0	2.5	-0.5	1.0	8		3.25	59	23	36	37	61	98	16	20	A-7-6	20			N ₆₀		12"	
		SS-2	2.5	4.0	1.0	2.5	10		2.75	57	22	35	40	59	99	23	19	A-7-6	19			N ₆₀ & Mc		12"	
		SS-3	4.0	5.5	2.5	4.0	17		1.75							27	18	A-7-6	16						
		SS-4	5.5	7.0	4.0	5.5	15	8	2.5							30	18	A-7-6	16						
38	B 038-0 22	SS-1	1.0	2.5	-0.5	1.0	50		4							26	18	A-7-6	16			Mc			
		SS-2	2.5	4.0	1.0	2.5	18		3.75	64	24	40	32	66	98	25	21	A-7-6	20			Mc			
		SS-3	4.0	5.5	2.5	4.0	23		3.5	68	28	40	30	68	98	26	25	A-7-6	20						
		SS-4	5.5	7.0	4.0	5.5	18	18	3.25							22	18	A-7-6	16						
39	B 039-0 22	SS-1	1.0	2.5	-0.5	1.0	9		4	56	24	32	36	60	96	14	21	A-7-6	19			N ₆₀		12"	
		SS-2	2.5	4.0	1.0	2.5	10		2.75	67	23	44	31	68	99	29	20	A-7-6	20		High LL	N ₆₀ & Mc	30"	12"	
		SS-3	4.0	5.5	2.5	4.0	14		1.75							27	18	A-7-6	16						
		SS-4	5.5	7.0	4.0	5.5	14	9	3							32	18	A-7-6	16						
40	B 040-0 22	SS-1	1.0	2.5	-0.5	1.0	9		2.75	74	24	50	31	67	98	26	21	A-7-6	20		High LL	N ₆₀ & Mc		12"	
		SS-2	2.5	4.0	1.0	2.5	13		3.5	70	28	42	27	70	97	27	25	A-7-6	20		High LL		30"		
		SS-3	4.0	5.5	2.5	4.0	17		2.75							33	18	A-7-6	16						
		SS-4	5.5	7.0	4.0	5.5	14	9	2.75							27	18	A-7-6	16						
41	B 041-0 22	SS-1	1.0	2.5	-0.5	1.0	9		2							22	18	A-7-6	16			N ₆₀ & Mc		12"	
		SS-2	2.5	4.0	1.0	2.5	11		2.5	52	26	26	34	63	97	26	23	A-7-6	17			N ₆₀ & Mc		12"	
		SS-3	4.0	5.5	2.5	4.0	17		3.25	42	20	22	44	55	99	25	18	A-7-6	13						
		SS-4	5.5	7.0	4.0	5.5	22	9	4.5							27	18	A-7-6	16						
42	B 042-0 22	SS-1	1.0	2.5	-0.5	1.0	10		2.75	71	24	47	26	72	98	29	21	A-7-6	20	99	High LL	N ₆₀ & Mc		12"	
		SS-2	2.5	4.0	1.0	2.5	11		2.75	65	27	38	25	70	95	28	24	A-7-6	20		High LL	N ₆₀ & Mc	30"	12"	
		SS-3	4.0	5.5	2.5	4.0	17		3.75							26	18	A-7-6	16						
		SS-4	5.5	7.0	4.0	5.5	15	10	3.75							25	18	A-7-6	16						

PID: 94332

County-Route-Section: SAN-510-0.83

No. of Borings: 42

Geotechnical Consultant: CTL Engineering Inc.,

Prepared By: CTL Engineering, Inc

Date prepared: 12/5/2022

Chemical Stabilization Options		
320	Rubblize & Roll	No
206	Cement Stabilization	No
	Lime Stabilization	Option
206	Depth	14"

Excavate and Replace Stabilization Options	
Global Geotextile Override(N60L):	18"
Override(HP):	24"
Global Geogrid Override(N60L):	12"
Override(HP):	18"

Design CBR	4
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% Samples within 6 feet of subgrade			
N ₆₀ ≤ 5	0%	HP ≤ 0.5	1%
N ₆₀ < 12	35%	0.5 < HP ≤ 1	4%
12 ≤ N ₆₀ < 15	22%	1 < HP ≤ 2	16%
N ₆₀ ≥ 20	20%	HP > 2	73%
M+	26%		
Rock	0%		
Unsuitable	2%		

Excavate and Replace at Surface	
Average	0"
Maximum	0"
Minimum	0"

% Proposed Subgrade Surface	
Unstable & Unsuitable	63%
Unstable	52%
Unsuitable	11%

	N ₆₀	N _{60L}	HP	LL	PL	PI	Silt	Clay	P 200	M _c	M _{OPT}	GI
Average	15	11	3.37	49	22	27	36	49	85	22	18	15
Maximum	50	18	70.25	74	34	50	69	72	99	34	25	20
Minimum	6	6	0.50	18	14	3	21	12	37	6	10	0

Classification Counts by Sample																			Totals
ODOT Class	Rock	A-1-a	A-1-b	A-2-4	A-2-5	A-2-6	A-2-7	A-3	A-3a	A-4a	A-4b	A-5	A-6a	A-6b	A-7-5	A-7-6	A-8a	A-8b	
Count	0	0	0	0	0	0	0	0	0	4	0	0	15	26	3	120	0	0	168
Percent	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	9%	15%	2%	71%	0%	0%	100%
% Rock Granular Cohesive	0%	2%										98%							100%
Surface Class Count	0	0	0	0	0	0	0	0	0	4	0	0	9	19	3	91	0	0	126
Surface Class Percent	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	7%	15%	2%	72%	0%	0%	100%