SHEET NUM.												PART.	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
OFFICE CALCS						3	4	6	10	15	16	01/STR/OT						
																	ROADWAY	
												LS	201	11000	LS		CLEARING AND GRUBBING	
									2			2	202	20010	2	EACH	HEADWALL REMOVED	
194												194	202	23001	194	SY	PAVEMENT REMOVED, AS PER PLAN, ASPHALT	2
									10			10	202	35100	10	FT	PIPE REMOVED, 24" AND UNDER	
									165			165	202	38000	165	FT	GUARDRAIL REMOVED	
									1			1	202	42000	1	EACH	ANCHOR ASSEMBLY REMOVED, TYPE A	
										29		29	203	10000	29	CY	EXCAVATION	
										43		43	203	20000	43	CY	EMBANKMENT	
152												152	204	10000	152	SY	SUBGRADE COMPACTION	
						1						1	204	45000	1	HOUR	PROOF ROLLING	
									150			150	606	15050	150	FT	GUARDRAIL, TYPE MGS	
									1			1	606	20050	1	EACH	ROUNDED END SECTION	
									1			1	606	26150	1	EACH	ANCHOR ASSEMBLY, MGS TYPE E (NCHRP 350 OR MASH 2016)	
																	EROSION CONTROL	
									2			2	601	32204	2	CY	ROCK CHANNEL PROTECTION, TYPE C WITH GEOTEXTILE FABRIC	
						181						181	659	10000	181	SY	SEEDING AND MULCHING	
						9						9	659	14000	9	SY	REPAIR SEEDING AND MULCHING	
						0.02						0.02	659	20000	0.02	TON	COMMERCIAL FERTILIZER	
						0.04						0.04	659	31000	0.04	ACRE	LIME	
						1						1	659	35000	1	MGAL	WATER	
												1,000	832	30000	1,000	EACH	EROSION CONTROL	
																	DRAINAGE	
									10			10	611	07200	10	FT	18" CONDUIT, TYPE A, 707.01	
									0.7			0.7	602	20000	0.7	CY	CONCRETE MASONRY	
									100			100	899	10000	100	FT	CURED-IN-PLACE PIPE LINER (18" DIAMETER)	
																	PAVEMENT	
267												267	254	01000	267	SY	PAVEMENT PLANING, ASPHALT CONCRETE (3" DEPTH)	
29												29	301	56000	29	CY	ASPHALT CONCRETE BASE, PG64-22, (449)	
39												39	304	20000	39	CY	AGGREGATE BASE	
55												55	407	10000	55	GAL	TACK COAT	
33												33	441	70000	33	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449), PG64-22	
																	TRAFFIC CONTROL	
									2			2	621	00100	2	EACH	RPM	
									2			2	621	54000	2	EACH	RAISED PAVEMENT MARKER REMOVED	
									3			3	626	00112	3	EACH	BARRIER REFLECTOR, TYPE 3, BIDIRECTIONAL	
									0.06			0.06	642	00104	0.06	MILE	EDGE LINE, 6", TYPE 1	
									0.03			0.03	642	00300	0.03	MILE	CENTER LINE, TYPE 1	
																	RETAINING WALLS (001)	
											41	41	503	21100	41	CY	UNCLASSIFIED EXCAVATION	
											643	643	507	00400	~~643~~ 520	FT	STEEL PILES, MISC.: HP12X53	16
											41	41	518	21200	41	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
											122	122	518	40000	122	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	
											19	19	518	40012	19	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE	
											520	520	524	94701	520	FT	DRILLED SHAFTS, 36" DIAMETER, AS PER PLAN	16
											240	240	524	95000	240	FT	DRILLED SHAFTS, MISC.: 36" DIAMETER PLUG PILE - 10 FT	16
											2	2	601	21050	2	SY	TIED CONCRETE BLOCK MAT WITH TYPE 1 UNDERLAYMENT	
											1	1	611	99710	1	EACH	PRECAST REINFORCED CONCRETE OUTLET	
																	MAINTENANCE OF TRAFFIC	
							40					40	614	11110	40	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
								160				160	614	11630	160	FT	INCREASED BARRIER DELINEATION	
								2				2	614	12384	2	EACH	WORK ZONE IMPACT ATTENUATOR, 24" WIDE HAZARDS, (BIDIRECTIONAL)	
								6				6	614	13310	6	EACH	BARRIER REFLECTOR, TYPE 1, BIDIRECTIONAL	
								3				3	614	13314	3	EACH	BARRIER REFLECTOR, TYPE 3, BIDIRECTIONAL	
								12				12	614	13360	12	EACH	OBJECT MARKER, TWO WAY	
								0.18				0.18	614	21200	0.18	MILE	WORK ZONE CENTER LINE, CLASS I, 740.06, TYPE I	
								0.11				0.11	614	22210	0.11	MILE	WORK ZONE EDGE LINE, CLASS I, 6", 740.06, TYPE I	
								23				23	614	26400	23	FT	WORK ZONE STOP LINE, CLASS I, 740.06, TYPE I	
							1					1	616	10000	1	MGAL	WATER	

CALCULATED ADS
CHECKED CLP

GENERAL SUMMARY

SCI-335-9.38

ITEM 507, STEEL PILES, MISC.: HP12X53

THIS WORK CONSISTS OF FURNISHING AND PLACING STEEL PILES INTO DRILLED HOLES. FURNISH STRUCTURAL STEEL MEMBERS ACCORDING TO THE PLAN REQUIREMENTS AND CONFORMING TO ASTM A572, GRADE 50. THE PLANS INDICATE A HP12X53; HOWEVER, THE FOLLOWING STEEL SECTIONS ARE ALSO ACCEPTABLE: W14X43, W14X48, W14X53, W12X53, W12X58, W16X36, AND W16X40. DO NOT FIELD WELD OR SPLICE STRUCTURAL STEEL MEMBERS. PLACE THE STEEL MEMBER WITHIN THE HOLE SO IT IS VERTICAL AND NOT INCLINED MORE THAN 1 INCH BETWEEN TOP TO BOTTOM. CENTER THE STEEL MEMBER WITHIN THE HOLE. PLACE THE STEEL MEMBER SO THAT THE FLANGES ARE PARALLEL TO THE CENTERLINE OF THE ROW OF DRILLED SHAFTS. DO NOT ALLOW THE ORIENTATION OF THE FLANGES TO VARY BY MORE THAN 10 DEGREES. SUPPORT THE STEEL MEMBER SO THAT IT DOES NOT MOVE DURING CONCRETE PLACEMENT.

THE DEPARTMENT WILL MEASURE STEEL PILES ALONG THE AXIS OF THE PILE FROM THE TOP OF WALL ELEVATION TO THE BOTTOM OF THE DRILLED SHAFT, AS DETERMINED BY THE ENGINEER. THE DEPARTMENT WILL PAY FOR STEEL PILES AT THE CONTRACT UNIT PRICE PER FOOT FOR ITEM 507, STEEL PILES, MISC.: HP 12X53.

ITEM 524, DRILLED SHAFTS, 36" DIAMETER, AS PER PLAN

THIS WORK CONSISTS OF FURNISHING AND INSTALLING DRILLED SHAFTS FOR SLOPE STABILIZATION STRUCTURES. THE DRILLED SHAFTS ARE REINFORCED WITH STRUCTURAL STEEL MEMBERS INSTEAD OF REINFORCING STEEL CAGES. FURNISH AND INSTALL THE DRILLED SHAFTS IN ACCORDANCE WITH CMS 524 EXCEPT AS MODIFIED AND SUPPLEMENTED BELOW.

THESE SHAFTS WERE DESIGNED ACCORDING ODOT'S GEOTECHNICAL BULLETIN #7 WITH AN ASSUMED SLIDE PLAN DEPTH OF 7 FEET, AND A LATERAL SERVICE LOAD OF 18.5 KIPS AND A LATERAL STRENGTH LOAD OF 28 KIPS.

EXCAVATE THE HOLE FOR THE DRILLED SHAFT WITHIN 3 INCHES OF THE PLAN LOCATION.

USE CLASS QC 1 CONCRETE ACCORDING TO CMS 511. THE CONTRACTOR MAY PLACE CONCRETE USING THE FREE FALL METHOD PROVIDED THE DEPTH OF WATER IS LESS THAN 6 INCHES AND THE CONCRETE FALLS WITHOUT STRIKING THE SIDES OF THE HOLE. POURING CONCRETE ALONG THE WEB OF THE STRUCTURAL STEEL MEMBER IS ACCEPTABLE. CHECK THE POSITION, THE VERTICAL ALIGNMENT AND ORIENTATION OF THE STRUCTURAL STEEL MEMBER IMMEDIATELY AFTER CONCRETE PLACEMENT. MAKE CORRECTIONS AS NECESSARY TO MEET THE ABOVE TOLERANCES.

THE INSTALLATION SEQUENCE SHALL BE SUCH THAT NO DRILLED SHAFT IS INSTALLED ADJACENT TO EITHER AN OPEN DRILLED SHAFT EXCAVATION OR A DRILLED SHAFT IN WHICH THE CONCRETE HAS LESS THAN A 24 HOUR CURE. INSTALLING THE SHAFTS IN AN ALTERNATING SEQUENCE OR ANY OTHER SEQUENCE THAT MEETS THIS CRITERIA IS PERMISSIBLE.

PROTECTION OF UNATTENDED OPEN SHAFTS: CARE SHALL BE EXERCISED AS TO COVER UNATTENDED OPEN SHAFTS. TEMPORARY COVERS SHALL BE OF ADEQUATE STRENGTH TO PREVENT A PERSON OR ANIMAL FROM FALLING IN.

ACCESS: ANY TEMPORARY GRADING, AGGREGATE, DRAINAGE, SHEETING, ETC. NEEDED FOR ACCESS TO THE WORK AREA SHALL BE INCLUDED IN THE BID PRICE FOR THE DRILLED SHAFTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MEANS AND METHODS USED TO CONSTRUCT THE DRILLED SHAFTS, THE COST OF ANY EXCAVATION AND SUBSEQUENT REPLACEMENT OF EMBANKMENT NOT QUANTIFIED IN THE PLANS SHALL BE INCLUDED IN THE VARIOUS BID ITEMS FOR THE DRILLED SHAFTS AND CONCRETE PANELS. NO SEPARATE PAYMENT WILL BE MADE.

METHOD OF MEASUREMENT: THE DEPARTMENT WILL MEASURE DRILLED SHAFTS, AS PER PLAN, ALONG THE AXIS OF THE DRILLED SHAFT FROM THE EXISTING GROUND SURFACE TO THE SHAFT TIP, AS DETERMINED BY THE ENGINEER.

ITEM 524, DRILLED SHAFTS, MISC.: 36" DIAMETER PLUG PILE -10 FT

THESE SHAFTS ARE TO BE UNREINFORCED NON-STRUCTURAL "PLUG PILES" SERVING THE PURPOSE OF LAGGING. THIS ITEM CAN BE INSTALLED AS A DRILLED SHAFT.

THIS WORK SHALL BE AS PER ITEM 524, DRILLED SHAFTS, 36" DIAMETER EXCEPT THAT REINFORCEMENT WILL NOT BE USED IN THE SHAFT. USE CLASS QC 1 CONCRETE ACCORDING TO CMS 511. EACH PLUG PILE SHALL BE LOCATED AND DRILLED TO A CERTAIN DEPTH BELOW GRADE ACCORDING TO PAGE 16 TABLE 1.0 AND BACK FILLED WITH CONCRETE OR GROUT PER ITEM 524 BELOW.

SEQUENCE OF INSTALLATION:

THE INSTALLATION SEQUENCE SHALL BE SUCH THAT NO PLUG PILE IS INSTALLED ADJACENT TO A SHAFT IN WHICH THE CONCRETE HAS LESS THAN A 24-HOUR CURE TIME.

METHOD OF PAYMENT

THE DEPARTMENT WILL MEASURE THE NUMBER OF FEET, MEASURED ALONG THE AXIS OF THE SHAFT FROM THE REQUIRED BOTTOM ELEVATION SHOWN ON PROPOSED TOP PLAN ELEVATION. ANY WORK REQUIRED TO CONSTRUCT THE TOPS OF THE PLUG PILES SHALL BE INCLUDED IN PAYMENT FOR THIS ITEM.

BASIS OF PAYMENT

PAYMENT FOR LABOR, EQUIPMENT AND MATERIALS FOR THE ABOVE SHALL BE INCLUDED IN THE FOOT CONTRACT PRICE FOR ITEMS:

ITEM	*UNIT*	*DESCRIPTION*
524	*FT*	*DRILLED SHAFTS, MISC.: 36" DIAMETER PLUG PILE - 10 FT*

ESTIMATED QUANTITIES

ITEM	ITEM EXT.	SUB TOTAL	UNIT	DESCRIPTION	SHEET REF
503	21100	41	CY	UNCLASSIFIED EXCAVATION	
507	00400	~~643~~ 520	FT	STEEL PILES, MISC.: HP12X53	16
518	21200	41	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
518	40000	122	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	
518	40012	19	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE	
524	94701	520	FT	DRILLED SHAFTS, 36" DIAMETER, AS PER PLAN	16
524	95000	240	FT	DRILLED SHAFTS, MISC.: 36" DIAMETER PLUG PILE - 10 FT	16
601	21050	2	SY	TIED CONCRETE BLOCK MAT, TYPE 1	
611	99710	1	EACH	PRECAST REINFORCED CONCRETE OUTLET	

TABLE 1.0 DRILLED SHAFT SUMMARY FOR WALL A, B, & C

SHAFT NUMBER	WALL BASELINE STATION	OFFSET FROM WALL BASELINE	TOP OF SHAFT	TIP OF SHAFT	DRILLED SHAFT LENGTH (FT.)	PLUG PILE LENGTH (FT.)	STEEL MISC.: HP12X53
WALL A							
1	10+15.00	0.00	667.88	647.88	20		20.0
2	10+17.50	1.66	668.06	658.06		10	NONE
3	10+20.00	0.00	668.24	648.24	20		20.0
WALL B							
4	10+29.00	0.00	668.76	648.76	20		20.0
5	10+31.50	1.66	668.90	658.90		10	NONE
WALL C							
6	10+34.00	0.00	669.04	649.04	20		20.0
7	10+36.50	1.66	668.96	658.96		10	NONE
8	10+39.00	0.00	668.88	648.88	20		20.0
9	10+41.50	1.66	668.81	658.81		10	NONE
10	10+44.00	0.00	668.73	648.73	20		20.0
11	10+46.50	1.66	668.65	658.65		10	NONE
12	10+49.00	0.00	668.57	648.57	20		20.0
13	10+51.50	1.66	668.50	658.50		10	NONE
14	10+54.00	0.00	668.43	648.43	20		20.0
15	10+56.50	1.66	668.36	658.36		10	NONE
16	10+59.00	0.00	668.29	648.29	20		20.0
17	10+61.50	1.66	668.22	658.22		10	NONE
18	10+64.00	0.00	668.15	648.15	20		20.0
19	10+66.50	1.66	668.08	658.08		10	NONE
20	10+69.00	0.00	668.01	648.01	20		20.0
21	10+71.50	1.66	667.94	657.94		10	NONE
22	10+74.00	0.00	667.87	647.87	20		20.0
23	10+76.50	1.66	667.80	657.80		10	NONE
24	10+79.00	0.00	667.72	647.72	20		20.0
25	10+81.50	1.66	667.65	657.65		10	NONE
26	10+84.00	0.00	667.58	647.58	20		20.0
27	10+86.50	1.66	667.51	657.51		10	NONE
28	10+89.00	0.00	667.43	647.43	20		20.0
29	10+91.50	1.66	667.36	657.36		10	NONE
30	10+94.00	0.00	667.29	647.29	20		20.0
31	10+96.50	1.66	667.22	657.22		10	NONE
32	10+99.00	0.00	667.14	647.14	20		20.0
33	11+01.50	1.66	667.07	657.07		10	NONE
34	11+04.00	0.00	667.00	647.00	20		20.0
35	11+06.50	1.66	666.93	656.93		10	NONE
36	11+09.00	0.00	666.85	646.85	20		20.0
37	11+11.50	1.66	666.78	656.78		10	NONE
38	11+14.00	0.00	666.71	646.71	20		20.0
39	11+16.50	1.66	666.63	656.63		10	NONE
40	11+19.00	0.00	666.56	646.56	20		20.0
41	11+21.50	1.66	666.48	656.48		10	NONE
42	11+24.00	0.00	666.40	646.40	20		20.0
43	11+26.50	1.66	666.32	656.32		10	NONE
44	11+29.00	0.00	666.24	646.24	20		20.0
45	11+31.50	1.66	666.16	656.16		10	NONE
46	11+34.00	0.00	666.08	646.08	20		20.0
47	11+36.50	1.66	666.00	656.00		10	NONE
48	11+39.00	0.00	665.93	645.93	20		20.0
49	11+41.50	1.66	665.85	655.85		10	NONE
50	11+44.00	0.00	665.77	645.77	20		20.0

ITEM 524 DRILLED SHAFTS, 36" DIAMETER, AS PER PLAN = 520
ITEM 524 DRILLED SHAFT MISC.: 36" DIAMETER PLUG PILE - 10 FT = 240
ITEM 507 STEEL PILES, MISC.: HP12x53 = 520

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED YLZ | DRAWN YLZ | CHECKED TLM | REVIEWED | DATE 11/2021 | REVISED | STRUCTURE FILE NUMBER

RETAINING WALL GENERAL NOTES & ESTIMATED QUANTITY

SCI-335-9.38
PID No. 107272