EARTHWORK SCHEDULES

SCHEDULE OF EARTHWORK - STAGE 1A (TEMPORARY PAVEMENT)

LOCATION	END AREAS			TOPSOIL	EARTH WORK		
	TOPSOIL STRIPPING (TSS)	CUT (C)	FILL (F)	20201200 REMOVAL & DISPOSAL OF UNSUITABLE MATERIAL	20200100 EARTH EXCAVATION	EMBANKMENT	20400800 BALANCE WASTE (+) or SHORTAGE (-)
	(SQ FT)	(SQ FT)	(SQ FT)	(CU YD)	(CU YD)	(CU YD)	(CU YD)
431+29.00	1.7	6.2	0.8				
432+00.00	2.8	5.7	2.8	5.92	15.65	4.73	+8.57
433+00.00	1.6	5.6	0.5	8.15	20.93	6.11	+11.68
434+00.00	3.1	5.3	2.4	8.70	20.19	5.37	+11.79
435+00.00	3.4	4.8	18.2	12.04	18.70	38.15	-22.26
435+14.14	3.5	4.7	15.8	1.81	2.49	8.90	-6.78
436+00.00	4.6	4.6	20.8	12.88	14.79	58.19	-45.62
437+00.00	5.7	4.9	4.7	19.07	17.59	47.22	-32.27
438+00.00	7.5	4.5	6.5	24.44	17.41	20.74	-5.94
439+00.00	9.3	5.5	19.2	31.11	18.52	47.59	-31.85
440+00.00	1.7	6.9	0.2	20.37	22.96	35.93	-16.41
441+00.00	0.9	9.5	0.0	4.81	30.37	0.37	+25.44
441+10.33	4.6	5.8	0.0	1.05	2.93	0.00	+2.49
BRIDGE							
441+81.17	0.0	6.4	0.0				
442+00.00	0.4	7.8	0.0	0.14	4.95	0.00	+4.21
443+00.00	8.3	2.7	5.9	16.11	19.44	10.93	+5.59
443+90.00	7.4	3.3	4.0	26.17	10.00	16.50	-8.00
444+00.00	7.4	3.2	3.6	2.74	1.20	1.41	-0.39
445+00.00	5.7	3.5	2.3	24.26	12.41	10.93	-0.38
446+00.00	5.6	3.5	2.6	20.93	12.96	9.07	+1.95
447+00.00	5.3	3.2	3.4	20.19	12.41	11.11	-0.56
448+00.00	5.4	2.9	4.4	19.81	11.30	14.44	-4.84
449+00.00	4.6	2.9	2.5	18.52	10.74	12.78	-3.65
450+00.00	3.5	3.2	1.5	15.00	11.30	7.41	+2.20
450+50.00	3.5	3.6	1.3	6.48	6.30	2.59	+2.77
SHRINKAGE FACTOR		15%	TOTAL	320.7	315.5	370.5	-102.3

SCHEDULE OF EARTHWORK- STAGE 1 (NORTH SIDE)

LOCATION	END AREAS			TOPSOIL	EARTH WORK			SUBGRADE IMPROVEMENT		
	TOPSOIL STRIPPING (TSS)	CUT (C)	FILL (F)	20201200 REMOVAL & DISPOSAL OF UNSUITABLE MATERIAL	20200100 EARTH EXCAVATION	EMBANKMENT	20400800 BALANCE WASTE (+) or SHORTAGE (-)	20201200 REMOVAL & DISPOSAL OF UNSUITABLE MATERIAL	Z0042002 POROUS GRANULAR EMBANKMENT SUBGRADE	21001000 GEOTECHNICAL FABRIC FOR GROUND STABILIZATION
	(SQ FT)	(SQ FT)	(SQ FT)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(SQ YD)
431+50.00	2.3	5.3	1.7							
432+00.00	2.3	6.1	1.2	4.26	10.56	2.69	+6.29			
433+00.00	2.5	21.9	1.3	8.89	51.85	4.63	+39.44			
434+00.00	2.7	9.8	2.4	9.63	58.70	6.85	+43.05			
434+84.40	13.3	13.6	10.4	25.01	36.57	20.01	+11.07			
435+00.00	10.8	1.6	12.5	6.96	4.39	6.62	-2.89	72.22	72.22	216.67
435+14.14	0.0	12.1	7.2	2.83	3.59	5.16	-2.11	10.21	10.21	30.64
436+00.00	9.4	5.1	29.8	14.95	27.35	58.83	-35.58	62.01	62.01	186.03
437+00.00	8.0	1.0	31.1	32.22	11.30	112.78	-103.18	72.22	72.22	216.67
438+00.00	9.1	0.8	64.4	31.67	3.33	176.85	-174.02		74.07	222.22
439+00.00	8.8	0.8	82.8	33.15	2.96	272.59	-270.07		74.07	222.22
440+00.00	11.0	0.9	121.3	36.67	3.15	377.96	-375.28		74.07	222.22
440+56.18	12.1	2.3	121.6	24.03	3.33	252.71	-249.88		41.61	124.84
440+86.20	12.4	1.4	128.7	13.62	2.06	139.15	-137.40		22.09	66.27
BRIDGE									29.63	88.89
441+73.80	14.8	1.7	230.2						29.63	88.89
442+00.00	15.5	4.0	171.7	14.70	2.77	195.00	-192.65		42.70	128.09
442+03.82	16.0	6.2	168.2	2.23	0.72	24.04	-23.43		2.83	8.49
443+00.00	17.9	9.5	192.1	60.38	27.96	641.73	-617.96		71.24	213.73
443+90.00	18.8	22.5	161.7	61.17	53.33	589.67	-544.34	39.35	39.35	118.06
444+00.00	19.6	38.2	149.3	7.11	11.24	57.59	-48.04	39.35	39.35	118.06
445+00.00	12.1	6.8	24.0	58.70	83.33	320.93	-250.10	39.35	39.35	118.06
446+00.00	6.4	5.8	1.6	34.26	23.33	47.41	-27.58	39.35	39.35	118.06
447+00.00	7.9	19.4	0.0	26.48	46.67	2.96	+36.71	39.35	39.35	118.06
448+00.00	0.0	35.9	0.0	14.63	102.41	0.00	+87.05	39.35	39.35	118.06
449+00.00	11.9	19.9	0.0	22.04	103.33	0.00	+87.83	21.18	21.18	63.54
450+00.00	10.2	26.8	1.4	40.93	86.48	2.59	+70.92			
450+50.00	2.8	5.4	1.9	12.04	29.81	3.06	+22.28			
SHRINKAGE FACTOR		15%	TOTAL	598.6	790.5	3,321.8	-2,649.9	473.9	935.9	2,807.8

SUMMARY OF EARTHWORK

STAGE	20200100 EARTH EXCAVATION	20400800 FURNISHED EXCAVATION	20201200 REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL		Z0042002 POROUS GRANULAR EMBANKMENT SUBGRADE	21001000 GEOTECHNICAL FABRIC FOR GROUND STABILIZATION
			TOPSOIL	SUBGRADE		
	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(SQ YD)
STAGE 1A	315.5	102.3	320.7	0.0	0.0	0.0
STAGE 1	790.5	2,649.9	598.6	473.9	935.9	2,807.8
STAGE 2	1,841.7	2,388.2	907.4	452.8	972.6	2,917.9
TOTAL	2,950.0	5,140.0	1,830.0	930.0	1,910.0	5,730.0

SCHEDULE OF EARTHWORK- STAGE 2 (SOUTH SIDE)

LOCATION	END AREAS			TOPSOIL	EARTH WORK			SUBGRADE IMPROVEMENT		
	TOPSOIL STRIPPING (TSS)	CUT (C)	FILL (F)	20201200 REMOVAL & DISPOSAL OF UNSUITABLE MATERIAL	20200100 EARTH EXCAVATION	EMBANKMENT	20400800 BALANCE WASTE (+) or SHORTAGE (-)	20201200 REMOVAL & DISPOSAL OF UNSUITABLE MATERIAL	Z0042002 POROUS GRANULAR EMBANKMENT SUBGRADE	21001000 GEOTECHNICAL FABRIC FOR GROUND STABILIZATION
	(SQ FT)	(SQ FT)	(SQ FT)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(SQ YD)
431+50.00	3.4	8.5	0.8							
432+00.00	9.7	12.1	1.9	12.13	19.07	2.50	+13.71			
433+00.00	4.0	13.7	2.7	25.37	47.78	8.52	+32.09			
434+00.00	7.5	6.5	8.4	21.30	37.41	20.56	+11.24			
434+84.40	9.5	4.2	14.8	26.57	16.72	36.26	-22.05			
435+00.00	9.8	3.4	17.3	5.58	2.20	9.27	-7.40	72.22	72.22	216.67
435+14.14	10.1	2.9	19.9	5.21	1.65	9.74	-8.34	10.21	10.21	30.64
436+00.00	16.9	17.7	39.2	42.93	32.75	93.97	-66.13	62.01	62.01	186.03
437+00.00	17.0	7.6	50.8	62.78	46.85	166.67	-126.85	72.22	72.22	216.67
438+00.00	17.2	3.8	82.5	63.33	21.11	246.85	-228.91		74.07	222.22
439+00.00	19.4	3.9	124.0	67.78	14.26	382.41	-370.29		88.89	266.67
440+00.00	19.1	7.8	154.7	71.30	21.67	516.11	-497.69		88.89	266.67
440+56.18	19.6	13.0	144.0	40.26	21.64	310.76	-292.37		49.94	149.81
440+86.20	19.1	8.2	150.5	21.51	11.79	163.72	-153.70		26.51	79.52
BRIDGE									29.63	88.89
441+73.80	17.9	0.4	304.9						29.63	88.89
442+00.00	19.6	20.9	145.5	18.19	10.33	218.53	-209.75		58.22	174.67
442+03.82	19.4	21.2	142.3	2.76	2.98	20.36	-17.83		2.83	8.49
443+00.00	19.5	10.2	163.7	69.29	55.93	545.02	-497.48		71.24	213.73
443+90.00	0.0	2.3	223.5	32.50	20.83	645.33	-627.62	36.11	36.11	108.33
444+00.00	0.0	2.3	203.7	0.00	0.85	79.11	-78.39	36.11	36.11	108.33
445+00.00	18.3	74.2	23.3	33.89	141.67	420.37	-299.95	36.11	36.11	108.33
446+00.00	18.6	106.0	3.2	68.33	333.70	49.07	+234.58	36.11	36.11	108.33
447+00.00	18.9	92.7	0.3	69.44	367.96	6.48	+306.29	36.11	36.11	108.33
448+00.00	12.1	44.0	0.1	57.41	253.15	0.74	+214.44	36.11	36.11	108.33
449+00.00	10.5	35.3	0.0	41.85	146.85	0.19	+124.63	19.43	19.43	58.30
450+00.00	9.2	23.2	0.1	36.48	108.33	0.19	+91.89			
450+50.00	2.9	2.9	0.8	11.20	24.17	0.83	+19.71			
Ex. Ent. Rem 442+70.00					80.00	0.00	+68.00			
SHRINKAGE FACTOR		15%	TOTAL	907.4	1,841.7	3,953.6	-2,388.2	452.8	972.6	2,917.9

EARTHWORK GENERAL NOTES

ALL EARTHWORK QUANTITIES ARE CALCULATED BY THE METHOD OF AVERAGE END AREAS USING THE PLAN CROSS SECTIONS.

SHRINKAGE FACTOR, ASSUMED TO BE 15% FOR THIS PROJECT, ARE ESTIMATED FOR THE PURPOSE OF DETERMINING A BALANCE OF EARTHWORK. THE CONTRACTOR SHALL ESTIMATE HIS OWN SHRINKAGE FACTORS IN DETERMINING HIS EARTHWORK. NO PAYMENT WILL BE MADE ON EARTHWORK QUANTITIES DUE TO VARIATION IN THE SHRINKAGE FACTOR SINCE EARTHWORK IS MEASURED IN ITS FINAL POSITION.

RECOMMENDATIONS OUTLINED IN THE ROADWAY GEOTECHNICAL REPORT PREPARED BY WANG ENGINEERING, DATED SEPTEMBER 10, 2010 WERE USED IN PREPARATION OF THE ROADWAY PLANS AND RELATED QUANTITY CALCULATIONS.

AS OUTLINED IN THE ROADWAY GEOTECHNICAL REPORT, THE TOPSOIL THICKNESS WAS ESTIMATED AT 3-8 INCHES. SIX (6) INCHES WAS ASSUMED ON THIS PROJECT FOR THE PURPOSE OF CALCULATING TOPSOIL STRIPPING QUANTITIES.

UNDERCUTS HAVE BEEN ESTIMATED BASED ON IDOT MEMORANDUM TO WANG ENFGINEERING DATED NOVEMBER 24, 2010. UNDERCUTS WILL BE PAID FOR AS REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL. AFTER TOPSOIL STRIPPING AND VEGATATION CLEARING AND PRIOR TO UNDERCUTTING, THE SUBGRADE WILL BE TESTED WITH A STATIC OR DYNAMIC CONE PENETROMETER IN ACORDANCE WITH THE IDOT SUBGRADE STABILITY MANUAL TO DETERMINE REMEDIAL TREATMENT.

TESTING OF SUBGRADES AND EMBANKMENTS WILL BE REQUIRED. TESTING REQUIRMENTS WILL BE PER THE APPLICABLE SECTIONS OF THE STANDARD SPECIFICATIONS AND THE SUBGRADE STABILITY MANUAL. IF PROOF ROLLS ARE REQUIRED BY THE ENGINEER, THE COST SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.

EARTH EXCAVATION SHALL BE PAID FOR ONLY ONCE, REGARDLESS OF STAGING OR SEQUENCING OF CONTRACTORS OPERATIONS THAT REQUIRE STOCKPILING OF MATERIALS FOR LATER USE, REDISTRIBUTION AND RESPREADING IN SHOULDERS AND CONSTRUCTING OF EMBANKMENTS.