

ITEM 606 - ANCHOR ASSEMBLY, MGS TYPE E (MASH 2016)

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY OF THE GUARDRAIL END TERMINALS FOR TYPE MGS GUARDRAIL MEETING MASH 2016 REQUIREMENTS AS LISTED ON ROADWAY ENGINEERING’S WEB PAGE UNDER ROADSIDE SAFETY DEVICES FOR APPROVED GUARDRAIL END TREATMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER’S SPECIFICATIONS.

THE FACE OF THE TYPE E IMPACT HEAD SHALL BE COVERED WITH REBOUNDABLE RETROREFLECTIVE SHEETING, PER CMS 730.191.

REFER TO THE MANUFACTURER’S INSTRUCTIONS REGARDING THE INSTALLATION OF, AND THE GRADING AROUND THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4 INCHES ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE IN ORDER TO MAINTAIN THE FINISHED GUARDRAIL HEIGHT OF 31 INCHES FROM THE EDGE OF THE SHOULDER.

ON-SITE GRADING IS REQUIRED IF THE TOP OF THE FOUNDATION TUBES OR TOP OF THE GROUND STRUT DOES PROJECT MORE THAN 4 INCHES ABOVE THE GROUND LINE.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, MGS TYPE E, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED TRANSITIONS, REFLECTIVE SHEETING, HARDWARE, GRADING, EMBANKMENT AND EXCAVATION NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

PAVEMENT RESTORATION FOR PIPE INSTALLATIONS AND/OR REMOVALS

THE FOLLOWING QUANTITY HAS BEEN PROVIDED FOR PAVEMENT RESTORATION FOLLOWING INSTALLATION AND/OR REMOVAL OF PIPES.

ITEM 301 - ASPHALT CONCRETE BASE, PG64-22, (449) 58 CU. YDS.

THE ABOVE QUANTITY IS BASED ON A 301 THICKNESS OF 18 INCHES AND A PAVEMENT RESTORATION WIDTH THAT INCLUDES THE TRENCH WIDTH PLUS TWO FEET ON EACH SIDE OF THE TRENCH.

PROVIDE ANY MATERIALS USED OUTSIDE THE LIMITS STATED ABOVE AT NO ADDITIONAL COST.

ITEM 605 - AGGREGATE DRAINS

AGGREGATE DRAINS SHALL BE INSTALLED PER C&MS 605.07.

A LIST OF THE LOCATIONS HAS BEEN INCLUDED WITH THE OFFICE CALCS. THE TOTAL HAS BEEN CARRIED TO THE GENERAL SUMMARY.

THE TOTAL QUANTITY IS TO BE USED AS DIRECTED BY THE ENGINEER. FINAL PAYMENT SHALL BE PER THE ACCEPTED QUANTITY COMPLETED IN PLACE.

ITEM 623 - MONUMENT ASSEMBLY ADJUSTED TO GRADE

THERE ARE MONUMENTS ASSEMBLIES LOCATED WITHIN THE PROJECT LIMITS THAT SHALL BE ADJUSTED TO GRADE. THE LOCATIONS HAVE BEEN PROVIDED ON THE MONUMENT ASSEMBLY INVENTORY TABLE, THIS SHEET.

ITEM SPECIAL - FILL AND PLUG EXISTING CONDUIT, 12"

THIS ITEM CONSISTS OF THE CONSTRUCTION OF BULKHEADS IN AN EXISTING 12 INCH DIAMETER CONDUIT AND FILLING THE AREA SEALED OFF WITH ITEM 613, SAND OR OTHER MATERIAL APPROVED BY THE ENGINEER.

LOCATE THE BULKHEADS AT THE LIMITS OF THE AREA TO BE FILLED, AS INDICATED ON THE PLANS. THE BULKHEADS CONSIST OF BRICK OR CONCRETE MASONRY WITH A MINIMUM THICKNESS OF 12 INCHES.

PUMP THE FILL MATERIAL INTO PLACE OR BY OTHER MEANS APPROVED BY THE ENGINEER, SO THAT AFTER SETTLEMENT, AT LEAST 90 PERCENT OF THE CROSS-SECTIONAL AREA OF THE CONDUIT, FOR ITS ENTIRE LENGTH IS FILLED. THE LENGTH OF FILLED AND PLUGGED CONDUIT TO BE PAID FOR IS THE ACTUAL NUMBER OF FEET MEASURED ALONG THE CENTERLINE OF EACH CONDUIT FROM OUTER FACE TO OUTER FACE OF BULKHEADS FILLED AND PLUGGED AS DESCRIBED ABOVE.

POST CONSTRUCTION STORM WATER TREATMENT

THIS PLAN UTILIZES STRUCTURAL BEST MANAGEMENT PRACTICES (BMP'S) FOR POST CONSTRUCTION STORM WATER TREATMENT.

VEGETATED FILTER STRIP

THIS PLAN UTILIZES VEGETATED FILTER STRIP(S) FOR POST CONSTRUCTION STORM WATER TREATMENT. PLACE EITHER ITEM 660 SODDING OR ITEM 659 SEEDING AND MULCHING WITH A 4-INCH LIFT OF TOPSOIL AND ITEM 670, SLOPE EROSION PROTECTION TO ALL DISTURBED AREAS DESIGNATED AS VEGETATED FILTER STRIPS, THE EDGE OF SHOULDER, AND THE FORESLOPE AS SPECIFIED IN THE PLANS.

ENDANGERED BAT HABITAT REMOVAL

THE PROJECT IS LOCATED WITHIN THE KNOWN HABITAT RANGES OF THE FEDERALLY LISTED AND PROTECTED INDIANA BAT AND NORTHERN LONG-EARED BAT. NO TREES SHALL BE REMOVED UNDER THIS PROJECT FROM APRIL 1 THROUGH SEPTEMBER 30. ALL NECESSARY TREE REMOVAL SHALL OCCUR FROM OCTOBER 1 THROUGH MARCH 31. THIS REQUIREMENT IS NECESSARY TO AVOID AND MINIMIZE IMPACTS TO THESE SPECIES AS REQUIRED BY THE ENDANGERED SPECIES ACT. FOR THE PURPOSES OF THIS NOTE, A TREE IS DEFINED AS A LIVE, DYING, OR DEAD WOODY PLANT, WITH A TRUNK THREE INCHES OR GREATER IN DIAMETER AT A HEIGHT OF 4.5 FEET ABOVE THE GROUND SURFACE, AND WITH A MINIMUM HEIGHT OF 13 FEET.

SEEDING AND MULCHING

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS:

ITEM 659 - SOIL ANALYSIS TEST
S.R. 43: 642 C.Y. x 1 TEST/10,000 C.Y. = 0.064 EACH
C.R. 43: 13 C.Y. x 1 TEST/10,000 C.Y. = 0.001 EACH
TOTAL = 0.065 EACH (USE 2 EACH) (MIN. 2 TESTS)

ITEM 659 - TOPSOIL
S.R. 43: 5,786 S.Y. x 111 C.Y./1,000 S.Y. = 642.25 C.Y.
C.R. 43: 120 S.Y. x 111 C.Y./1,000 S.Y. = 13.32 C.Y.
TOTAL = 655.57 C.Y. (USE 656 C.Y.)

ITEM 659 - REPAIR SEEDING AND MULCHING
S.R. 43: 5,786 S.Y. x 0.05 = 289.3 S.Y.
C.R. 43: 120 S.Y. x 0.05 = 6 S.Y.
TOTAL = 295.3 S.Y. (USE 295 S.Y.)

ITEM 659 - COMMERCIAL FERTILIZER
S.R. 43: 5,786 S.Y. x 9 x 30 LB/1,000 S.F. x 1/2,000 = 0.78 TON
C.R. 43: 120 S.Y. x 9 x 30 LB/1,000 S.F. x 1/2,000 = 0.02 TON
TOTAL = 0.80 TON

ITEM 659 - LIME
S.R. 43: 5,786 S.Y. x 9 x 1 Ac./43,560 S.F. = 1.20 ACRES
C.R. 43: 120 S.Y. x 9 x 1 Ac./43,560 S.F. = 0.02 ACRES
TOTAL = 1.22 ACRES

ITEM 659 - WATER
S.R. 43: 5,786 S.Y. x 9 x 300 Gal/1,000/1,000 x 2 app. = 31.24 M. GAL.
C.R. 43: 120 S.Y. x 9 x 300 Gal/1,000/1,000 x 2 app. = 1 M. GAL.
TOTAL = 32.24 M. GAL. (USE 35 M. GAL.)

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES, AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS.

MONUMENT ASSEMBLY INVENTORY: JEF-43-8.40							
POINT NAME	STATION	OFFSET (FT.) (NEG. = LT.)	NORTHING	EASTING	LATITUDE	LONGTITUDE	623
							MONUMENT ASSEMBLY ADJUSTED TO GRADE
							EACH
MN01	438+21.30	0.033	511184.254	127261.269	40.40319	80.73206	1
MN02	443+95.50	0	511719.281	127064.818	40.40466	80.73277	1
MN03	449+49.59	0.041	512253.737	126936.383	40.40612	80.73323	1
MN04	455+00.01	0.339	512726.919	126655.211	40.40742	80.73424	1
MN05	458+34.88	0.012	513014.547	126483.709	40.40821	80.73486	1
MN06	462+84.79	0.077	513290.814	126140.629	40.40897	80.73609	1
TOTAL (CARRIED TO GENERAL SUMMARY)							6

EARTHWORK AND SEEDING TABLE			
SHEET NO.	203		659
	EXCAVATION	EMBANKMENT	SEEDING AND MULCHING
	CY YD	CU YD	SQ YD
S.R. 43			
P.24	4	3	21
P.25	9	25	132
P.26	12	24	160
P.27	14	19	162
P.28	14	32	162
P.29	13	46	172
P.30	15	28	118
P.31	24	15	110
P.32	49	24	202
P.33	65	22	180
P.34	73	24	187
P.35	83	25	215
P.36	49	49	181
P.37	22	114	189
P.38	23	100	202
P.39	34	47	121
P.40	48	62	134
P.41	72	95	239
P.42	82	44	210
P.43	49	33	143
P.44	30	26	93
P.45	27	31	98
P.46	21	55	121
P.47	15	80	133
P.48	14	89	139
P.49	19	42	105
P.50	18	36	94
P.51	19	51	114
P.52	17	42	95
P.53	13	67	143
P.54	14	71	140
P.55	15	58	114
P.56	16	29	82
P.57	15	32	115
P.58	15	25	156
P.59	13	15	156
P.60	12	10	156
P.61	12	15	156
P.62	12	24	156
P.63	11	20	142
P.64	5	3	38
SUBTOTAL, S.R. 43	1,087	1,652	5,786
C.R. 43			
P.66	96	24	83
P.67	57	0	37
SUBTOTAL, C.R. 43	153	24	120
TOTALS CARRIED TO GENERAL SUMMARY	1,240	1,676	5,906

GENERAL NOTES

DESIGN AGENCY



DESIGNER

BSH

REVIEWER

SAH 10/25/23

PROJECT ID

117552

SHEET

P.07

TOTAL

81

SHEET NUM.												PART.	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.	
P.06	P.07					P.23	P.74	P.78	P.80		OFFICE CALCS	01/S50/21							
LS												LS	201	11000	LS		ROADWAY		
						1						1	202	20010	1	EACH	CLEARING AND GRUBBING HEADWALL REMOVED		
						65					1,561	1,561	202	23000	1,561	SY	PAVEMENT REMOVED		
						1,529						65	202	35100	65	FT	PIPE REMOVED, 24" DIAMETER AND UNDER		
												1,529	202	38000	1,529	FT	GUARDRAIL REMOVED		
						66						66	SPECIAL	20270000	66	FT	FILL AND PLUG EXISTING CONDUIT, 12"	P.07	
							3					3	202	98100	3	EACH	REMOVAL MISC.: PRIVATE SIGN REMOVED	P.06	
	1,240											1,240	203	10000	1,240	CY	EXCAVATION		
	1,676											1,676	203	20000	1,676	CY	EMBANKMENT		
											4,372	4,372	204	10000	4,372	SY	SUBGRADE COMPACTION		
						1,887.5						1,887.5	606	15050	1,887.5	FT	GUARDRAIL, TYPE MGS		
						1						1	606	26150	1	EACH	ANCHOR ASSEMBLY, MGS TYPE E (MASH 2016)		
	6											6	623	39500	6	EACH	MONUMENT ASSEMBLY ADJUSTED TO GRADE		
						1						1	601	32204	1	CY	EROSION CONTROL ROCK CHANNEL PROTECTION, TYPE C WITH GEOTEXTILE FABRIC		
	2											2	659	00100	2	EACH	SOIL ANALYSIS TEST		
	656					6						662	659	00300	662	CY	TOPSOIL		
	5,906											5,906	659	10000	5,906	SY	SEEDING AND MULCHING		
	295											295	659	14000	295	SY	REPAIR SEEDING AND MULCHING		
												0.8	659	20000	0.8	TON	COMMERCIAL FERTILIZER		
	1.22											1.22	659	31000	1.22	ACRE	LIME		
	35											35	659	35000	35	MGAL	WATER		
						50						50	670	00500	50	SY	SLOPE EROSION PROTECTION		
												LS	832	15000	LS		STORM WATER POLLUTION PREVENTION PLAN		
												LS	832	15002	LS		STORM WATER POLLUTION PREVENTION INSPECTIONS		
												LS	832	15010	LS		STORM WATER POLLUTION PREVENTION INSPECTION SOFTWARE		
												30,000	832	30000	30,000	EACH	EROSION CONTROL		
						0.2						0.2	602	20000	0.2	CY	DRAINAGE CONCRETE MASONRY		
											1,071	1,071	605	31100	1,071	FT	AGGREGATE DRAINS		
						98						98	611	04400	98	FT	12" CONDUIT, TYPE B		
						1						1	611	98470	1	EACH	CATCH BASIN, NO. 2-2B		
												2,282	2,282	254	01000	2,282	SY	PAVEMENT	
												1,160	1,160	254	01000	1,160	SY	PAVEMENT PLANING, ASPHALT CONCRETE, (3") PAVEMENT PLANING, ASPHALT CONCRETE, (VARIABLE DEPTH, 0"-10")	
	58											1,025	1,083	301	56000	1,083	CY	ASPHALT CONCRETE BASE, PG64-22, (449)	
												986	986	304	20000	986	CY	AGGREGATE BASE	
												1,136	1,136	407	10000	1,136	GAL	TACK COAT	
												478	478	408	10001	478	GAL	PRIME COAT, AS PER PLAN	P.06
												256	256	441	70100	256	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449), PG70-22M	
												358	358	441	70300	358	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (449)	
							0.94					0.94	618	41000	0.94	MILE	RUMBLE STRIPES, EDGE LINE (ASPHALT CONCRETE)		
							0.73					0.73	618	43000	0.73	MILE	RUMBLE STRIPES, CENTER LINE (ASPHALT CONCRETE)		
								60				60	611	00400	60	FT	LIGHTING 4" CONDUIT, TYPE E		
									6			6	625	00450	6	EACH	CONNECTION, FUSED PULL APART		
									12			12	625	00480	12	EACH	CONNECTION, UNFUSED PERMANENT		
									3			3	625	10490	3	EACH	LIGHT POLE, CONVENTIONAL, DESIGN AT25B35		
									3			3	625	14000	3	EACH	LIGHT POLE FOUNDATION, 24" X 6' DEEP		
									597			597	625	23200	597	FT	NO. 4 AWG 2400 VOLT DISTRIBUTION CABLE		
									390			390	625	23400	390	FT	NO. 10 AWG POLE AND BRACKET CABLE		
									111			111	625	24320	111	FT	1-1/2" DUCT CABLE WITH THREE NO. 4 AWG 2400 VOLT CABLES		
									179			179	625	25902	179	FT	CONDUIT, JACKED OR DRILLED, 725.04, 3"		
									3			3	625	26253	3	EACH	LUMINAIRE, CONVENTIONAL, SOLID STATE (LED), AS PER PLAN, IES-III-M, LED, 11420-12818 LUMENS	P.78	

GENERAL SUMMARY

DESIGN AGENCY

DESIGNER
LNW

REVIEWER
BSH 10/01/24

PROJECT ID
117552

SHEET
P.14

TOTAL
81