

ITEM 606 - ANCHOR ASSEMBLY, MGS TYPE E, AS PER PLAN (MASH 2016):
THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY OF THE GUARDRAIL END TERMINALS FOR TYPE MGS GUARDRAIL 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.

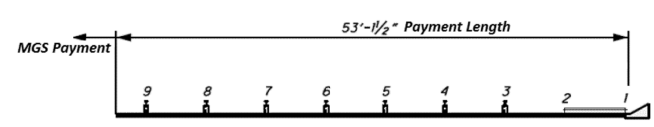
WHEN THE FACE OF THE ADJACENT (ATTACHED) GUARDRAIL IS LESS THAN 4' OFFSET FROM THE PROPOSED EDGE LINE, THE PROPOSED TYPE E ANCHOR ASSEMBLY SHALL BE INSTALLED USING A 25:1 FLARE RATE (24" OFFSET DESIGN) AS DETAILED IN THE SHOP DRAWINGS AND AS DIRECTED BY THE ENGINEER.

THE FACE OF THE TYPE E IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19.

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.

THE PAYMENT LIMIT (LENGTH) FOR THE PROPOSED ANCHOR ASSEMBLY, (MGS) TYPE E, AS PER PLAN SHALL BE 53'-1/2" (TO THE STANDARD MGS CONNECTION) AS DETAILED BELOW.



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.

ITEM 606 - IMPACT ATTENUATOR, TYPE 1 (BIDIRECTIONAL):
THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY ONE OF THE TYPE 1 IMPACT ATTENUATORS AS LISTED ON THE OFFICE OF ROADWAY ENGINEERING'S WEB PAGE. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

THE FACE OF THE TYPE 1 IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19. PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, IMPACT ATTENUATOR, TYPE 1 (BIDIRECTIONAL), EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED TRANSITIONS, HARDWARE, REFLECTIVE SHEETING AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

ITEM 601 - CRUSHED AGGREGATE SLOPE PROTECTION:
THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER TO RESTORE DISTURBED AREAS AT THE ABUTMENT SLOPES DUE TO CONSTRUCTION ACTIVITIES:

ITEM 601 - CRUSHED AGGREGATE SLOPE PROTECTION = 180 CY

ITEM 601 - TIED CONCRETE BLOCK MAT, TYPE 2:
THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED TO CONSTRUCT FLUMES AS PER SCD DM-4.1 FOR EACH STRUCTURE, AS DETAILED ON SHEETS AND :

ITEM 601 - TIED CONCRETE BLOCK MAT, TYPE 2 = 150 SY

GRADING AND EROSION CONTROL:
AREAS DISTURBED BY GUARDRAIL ACTIVITIES AND AREAS WHERE EMBANKMENT HAS BEEN PLACED SHALL BE REPAIRED WITH THE FOLLOWING QUANTITIES, AS DIRECTED BY THE ENGINEER.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN PROVIDED AND CARRIED TO THE GENERAL SUMMARY:

ITEM	QUANTITY	UNIT	DESCRIPTION
659	788	CY	TOPSOIL
659	7128	SY	SEEDING AND MULCHING
659	356	SY	REPAIR SEEDING AND MULCHING
659	356	SY	INTER-SEEDING
659	0.96	TON	COMMERCIAL FERTILIZER
659	1.47	ACRE	LIME
659	39	MGAL	WATER

ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR (442):
THE BELOW PROVIDED QUANTITY IS TO BE USED AS DIRECTED BY THE ENGINEER TO REPAIR RAMPS A, C, AND D WITHIN THE US 23/SR 98 INTERCHANGE. SEE SHEET 5 FOR DETAILS.

THE FOLLOWING QUANTITY HAS BEEN PROVIDED AND CARRIED TO THE GENERAL SUMMARY:

ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR (442) = 880 SY

ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE:
THE CONTRACTOR SHALL BE TOTALLY RESPONSIBLE FOR ANY AND ALL DAMAGE TO THE CONTRACTORS EQUIPMENT THAT MAY RESULT FROM THE PLANING OPERATION, INCLUDING DAMAGE CAUSED BY CASTINGS AND LOOP DETECTORS. THE DEPTH OF PLANING CLOSE TO THE CASTINGS SHALL BE AS DIRECTED; TO ACHIEVE A SMOOTH RIDING FINISHED PAVEMENT.

BUTT JOINTS SHALL BE PROVIDED AT THE BEGINNING AND END OF PAVING LIMITS AND AT THE APPROACH SLABS OF ALL STRUCTURES NOT BEING PAVED.

THE CONTRACTOR SHALL LIMIT THE PLANING OPERATION TO ONE LANE AT A TIME AS TO ENSURE THAT THE PROPOSED SURFACE COURSE IS BUTTING UP TO EITHER PROPOSED OR EXISTING ASPHALT. AT NO TIME SHALL TRAFFIC BE EXPOSED TO PLANED PAVEMENT.

FAILURE TO COMPLY SHALL SUBJECT THE CONTRACTOR TO LIQUIDATED DAMAGES AS PER SECTION 108.07 OF CMS.

THE INTENT OF THE VARIABLE DEPTH PAVEMENT PLANING IS TO REMOVE THE PAVEMENT TAPERS UP TO THE 3.25" BRIDGE DECK OVERLAYS PAVED WITH RESURFACING PROJECT D06-PPM-FY17G, PID 101207, AS WELL AS PLAN AN ADDITIONAL 1.50" TO PROVIDE THE CORRECT PROFILE FOR RESURFACING.

ITEM 618 - RUMBLE STRIPS, SHOULDER (ASPHALT CONCRETE), AS PER PLAN:

THE CONTRACTOR SHALL MILL 2 INCHES BY 2 FEET WIDE OF THE EXISTING ASPHALT SHOULDER IN ORDER TO REMOVE THE EXISTING RUMBLE STRIPS IN THE AREA WHERE TRAFFIC IS SHIFTED. THE CONTRACTOR SHALL THEN COAT ALL MILLED SURFACES HORIZONTAL AND VERTICAL WITH APPROVED AC LIQUID. NEXT THE CONTRACTOR SHALL PLACE 2 INCHES OF ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (448).

ONCE THE PROJECT IS COMPLETE, THE CONTRACTOR SHALL INSTALL NEW RUMBLE STRIPS AS PER THE CONSTRUCTION AND MATERIAL SPECIFICATIONS SECTION 618.

ALL COST ASSOCIATED WITH THE REMOVAL OF EXISTING PAVEMENT, PLACEMENT OF THE SURFACE COURSE AND INSTALLATION OF THE RUMBLE STRIPS SHALL BE INCLUDED IN THE UNIT PRICE BID PER FOOT OF ITEM 618 - RUMBLE STRIPS, SHOULDER (ASPHALT CONCRETE), AS PER PLAN.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN PROVIDED AND CARRIED TO THE GENERAL SUMMARY:

ITEM 618 - RUMBLE STRIPS, SHOULDER (ASPHALT CONCRETE), AS PER PLAN = 8830 FT

ITEM 626 - BARRIER REFLECTOR, TYPE 1, ONE-WAY:
THIS ITEM SHALL BE USED ON THE BRIDGE PARAPET OF ALL FOUR STRUCTURES.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN PROVIDED AND CARRIED TO THE GENERAL SUMMARY:

ITEM 626 - BARRIER REFLECTOR, TYPE 1, ONE-WAY = 12 EACH

ITEM 644 - PAVEMENT MARKING

ITEM 646 - PAVEMENT MARKING:
IT IS THE INTENT OF THE PROPOSED PAVEMENT MARKINGS TO BE THE SAME AS EXISTING. ANY DEVIATION FROM EXISTING WILL BE IDENTIFIED WITHIN THIS PLAN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION, SIZE AND SHAPE OF THESE EXISTING PAVEMENT MARKINGS BEFORE THE RESURFACING WORK OBLITERATES THEM. ANY PAVEMENT MARKING WHICH IS PLACED AT THE WRONG LOCATION SHALL BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.

ITEM 623 - CONSTRUCTION LAYOUT STAKES AND SURVEYING, AS PER PLAN:

THE ITEM SHALL CONSIST OF STATION USING 3 FT LATH STAKES OR PAINT MARKINGS. THE STAKES OR PAINT MARKINGS SHALL BE SPACED EVERY 200' FOR THE ENTIRE LENGTH. PLACEMENT OF THE STAKES OR PAINT MARKINGS SHALL BE AS DIRECTED BY THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY DAMAGED, MISSING STAKES, OR PAINT MARKINGS. PAINT MARKINGS SHALL BE PLACED ON CURBS AND USED IN AREAS WERE THE PLACEMENT OF STAKES IS NOT POSSIBLE AND APPROVED BY THE PROJECT ENGINEER.

ITEM 304 - AGGREGATE BASE:

THIS ITEM HAS BEEN PROVIDED FOR THE INSTALLATION OF APPROACH SLABS AT THE FOLLOWING LOCATIONS. THE PROPOSED THICKNESS WILL BE 7 1/2". SEE STRUCTURE SHEETS AND STANDARD DRAWINGS AS-1-15 AND AS-2-15 FOR MORE DETAILS.

MAR-23-0185L	55 CY
MAR-23-0185R	55 CY
MAR-23-0204L	58 CY
MAR-23-0204R	46 CY

THE FOLLOWING TOTAL HAS BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 304 - AGGREGATE BASE 214 CY

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SHEET NUMBER										PARTICIPATION			ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
6-7	8-13	15	34	35	36					01/NHS/BR	02/SAF/OT							
										LS			201	11000	LS		ROADWAY	
		6682								6682			202	23010	6682	SY	CLEARING AND GRUBBING	
				10926.5						10926.5			202	38001	10926.5	FT	PAVEMENT REMOVED, ASPHALT	
				12						12			202	42001	12	EACH	GUARDRAIL REMOVED, AS PER PLAN	6
				8						8			202	42041	8	EACH	ANCHOR ASSEMBLY REMOVED, TYPE A, AS PER PLAN	6
																	ANCHOR ASSEMBLY REMOVED, TYPE T, AS PER PLAN	6
				6						6			202	47001	6	EACH	BRIDGE TERMINAL ASSEMBLY REMOVED, AS PER PLAN	6
				2376						2376			203	20001	2376	CY	EMBANKMENT, AS PER PLAN	6
				6676.5						6676.5			606	15050	6676.5	FT	GUARDRAIL, TYPE MGS	
				4162.5						4162.5			606	15100	4162.5	FT	GUARDRAIL, TYPE MGS WITH LONG POSTS	
				387.5						387.5			606	15550	387.5	FT	GUARDRAIL, BARRIER DESIGN, TYPE MGS	
				7						7			606	26151	7	EACH	ANCHOR ASSEMBLY, MGS TYPE E, AS PER PLAN (MASH 2016)	7
				9						9			606	26550	9	EACH	ANCHOR ASSEMBLY, MGS TYPE T	
				8						8			606	35002	8	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1	
				4						4			606	35102	4	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2	
				4						4			606	60012	4	EACH	IMPACT ATTENUATOR, TYPE 1 (BIDIRECTIONAL)	
										LS			878	25000	LS		INSPECTION AND COMPACTION TESTING OF UNBOUND MATERIALS	
																	EROSION CONTROL	
180										180			601	20010	180	CY	CRUSHED AGGREGATE SLOPE PROTECTION	
150										150			601	21060	150	SY	TIED CONCRETE BLOCK MAT, TYPE 2	
788										788			659	00300	788	CY	TOPSOIL	
7128										7128			659	10000	7128	SY	SEEDING AND MULCHING	
356										356			659	14000	356	SY	REPAIR SEEDING AND MULCHING	
356										356			659	15000	356	SY	INTER-SEEDING	
0.96										0.96			659	20000	0.96	TON	COMMERCIAL FERTILIZER	
1.47										1.47			659	31000	1.47	ACRE	LIME	
39										39			659	35000	39	MGAL	WATER	
										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	
										33000			832	30000	33000	EACH	EROSION CONTROL	
																	PAVEMENT	
880										880			251	01020	880	SY	PARTIAL DEPTH PAVEMENT REPAIR (442)	
				3668						3668			254	01000	3668	SY	PAVEMENT PLANING, ASPHALT CONCRETE, 1.5"	
				7177						7177			254	01000	7177	SY	PAVEMENT PLANING, ASPHALT CONCRETE, VARIABLE DEPTH (3.25" AVG.)	
214										214			304	20000	214	CY	AGGREGATE BASE	
				920						920			407	20000	920	GAL	NON-TRACKING TACK COAT	
				105						105			411	10000	105	CY	STABILIZED CRUSHED AGGREGATE	
				450						450			442	10000	450	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446)	
				168						168			609	24510	168	FT	CURB, TYPE 4-C	
				2389						2389			618	40100	2389	FT	RUMBLE STRIPS, SHOULDER (ASPHALT CONCRETE)	
8830										8830			618	40101	8830	FT	RUMBLE STRIPS, SHOULDER (ASPHALT CONCRETE), AS PER PLAN	7
				597						597			875	10000	597	LB	LONGITUDINAL JOINT ADHESIVE	
																	TRAFFIC CONTROL	
										112			621	00100	112	EACH	RPM	
										112			621	54000	112	EACH	RAISED PAVEMENT MARKER REMOVED	
12										12			626	00102	12	EACH	BARRIER REFLECTOR, TYPE 1, ONE-WAY	
				145						145			626	00110	145	EACH	BARRIER REFLECTOR, TYPE 2, ONE-WAY	
				9						9			626	00110	9	EACH	BARRIER REFLECTOR, TYPE 2, BIDIRECTIONAL	
										56			630	02100	56	FT	GROUND MOUNTED SUPPORT, NO. 2 POST	
										80			630	03100	80	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	
										24			630	80100	24	SF	SIGN, FLAT SHEET	
										8			630	84900	8	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
										8			630	86002	8	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	

GENERAL SUMMARY

MAR - 23 - 1.85 / 2.04

CALCULATED
KLM
CHECKED
MAK

32
112