

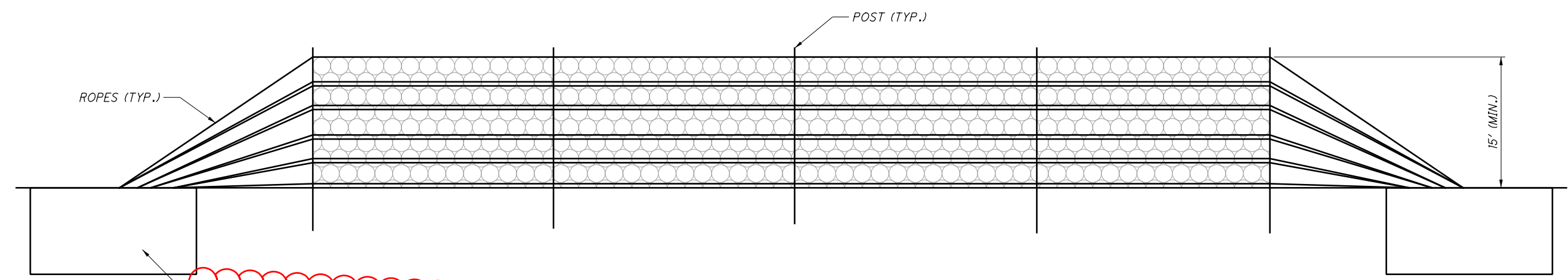
I:\Project+Data\LAW\09199_LAW_52_2209\Design\Roadway\Sheets\09199_GG001.dgn Sheet 4/7/2022 11:22:20 AM jgardnel

SHEET NUM.										PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.	
		4				8				01/NHS/O T		EXT	TOTAL				
																ROADWAY	
		LS								LS	201	11000	LS			CLEARING AND GRUBBING	
						890				890	202	30701	890	FT		CONCRETE BARRIER REMOVED, AS PER PLAN	4
						7				7	202	38000	7	FT		GUARDRAIL REMOVED	
						1				1	202	42010	1	EACH		ANCHOR ASSEMBLY REMOVED, TYPE E	
						224				224	204	10000	224	SY		SUBGRADE COMPACTION	
						6.25				6.25	606	15050	6.25	FT		GUARDRAIL, TYPE MGS	
						1				1	606	26150	1	EACH		ANCHOR ASSEMBLY, MGS TYPE ENCRP 350	
						1				1	606	35000	1	EACH		BRIDGE TERMINAL ASSEMBLY, TYPE 1	
						180				180	622	10160	180	FT		CONCRETE BARRIER, SINGLE SLOPE, TYPE D	
						670				670	622	10161	670	FT		CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN	4
						1				1	622	10201	1	EACH		BARRIER TRANSITION, AS PER PLAN	10
						1				1	622	25000	1	EACH		CONCRETE BARRIER END SECTION, TYPE D	
		40								LS	SPECIAL	69098100	LS			DESIGNER PLAN AND FIELD REVIEW	4
		1,800								40	862	00500	40	HOUR		SCALING	4
										1,800	862	00611	1,800	CY		EXCAVATION, AS PER PLAN	4
		480								480	862	99000	480	FT		ROCKFALL PROTECTION, MISC.:ROCK BOLTS	4, 10
										275	862	99000	275	FT		ROCKFALL PROTECTION, MISC.:ROCKFALL PROTECTION BARRIER	10
																EROSION CONTROL	
		2,250								2,250	659	10000	2,250	SY		SEEDING AND MULCHING	
		113								113	659	14000	113	SY		REPAIR SEEDING AND MULCHING	
		0.3								0.3	659	20000	0.3	TON		COMMERCIAL FERTILIZER	
		0.47								0.47	659	31000	0.47	ACRE		LIME	
		12								12	659	35000	12	MGAL		WATER	
										5,000	832	30000	5,000	EACH		EROSION CONTROL	
																PAVEMENT	
						38				38	304	20000	38	CY		AGGREGATE BASE	
						187				187	452	13010	187	SY		9" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P	
																MAINTENANCE OF TRAFFIC	
						48				48	614	11110	48	HOUR		LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
						1,020				1,020	614	11630	1,020	FT		INCREASED BARRIER DELINEATION	
						1				1	614	12380	1	EACH		WORK ZONE IMPACT ATTENUATOR, 24" WIDE HAZARDS, (UNIDIRECTIONAL)	
						20				20	614	13310	20	EACH		BARRIER REFLECTOR, TYPE 1, ONE WAY	
						20				20	614	13350	20	EACH		OBJECT MARKER, ONE WAY	
						0.36				0.36	614	22210	0.36	MILE		WORK ZONE EDGE LINE, CLASS I, 6", 740.06, TYPE I	
						1,020				1,020	622	41100	1,020	FT		PORTABLE BARRIER, UNANCHORED	
																INCIDENTALS	
										LS	614	11000	LS			MAINTAINING TRAFFIC	
										LS	623	10000	LS			CONSTRUCTION LAYOUT STAKES AND SURVEYING	
										LS	624	10000	LS			MOBILIZATION	

CALCULATED	JAG	CHECKED	XXX
GENERAL SUMMARY			
LAW - 52 - 22.09			
7 11			

REF NO.	SHEET NO.	STATION TO STATION				614	614	614	614	614		614		622
						LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	INCREASED BARRIER DELINEATION	WORK ZONE IMPACT ATTENUATOR, 24" WIDE HAZARDS, (UNIDIRECTIONAL)	BARRIER REFLECTOR, TYPE 1 (ONE WAY)	OBJECT MARKER, ONE WAY		WORK ZONE EDGE LINE, CLASS I, 6", 740.06, TYPE I		PORTABLE BARRIER, UNANCHORED
					HOUR	FT	EACH	EACH	EACH		MILE		FT	
PB-1	6	37+49	TO	47+39			1						1020	
WEL-1	6	30+58	TO	47+39							0.36			
	5				48	1020		20	20					
TOTALS CARRIED TO GENERAL SUMMARY					48.0	1020	1	21	21		0.36		1020	

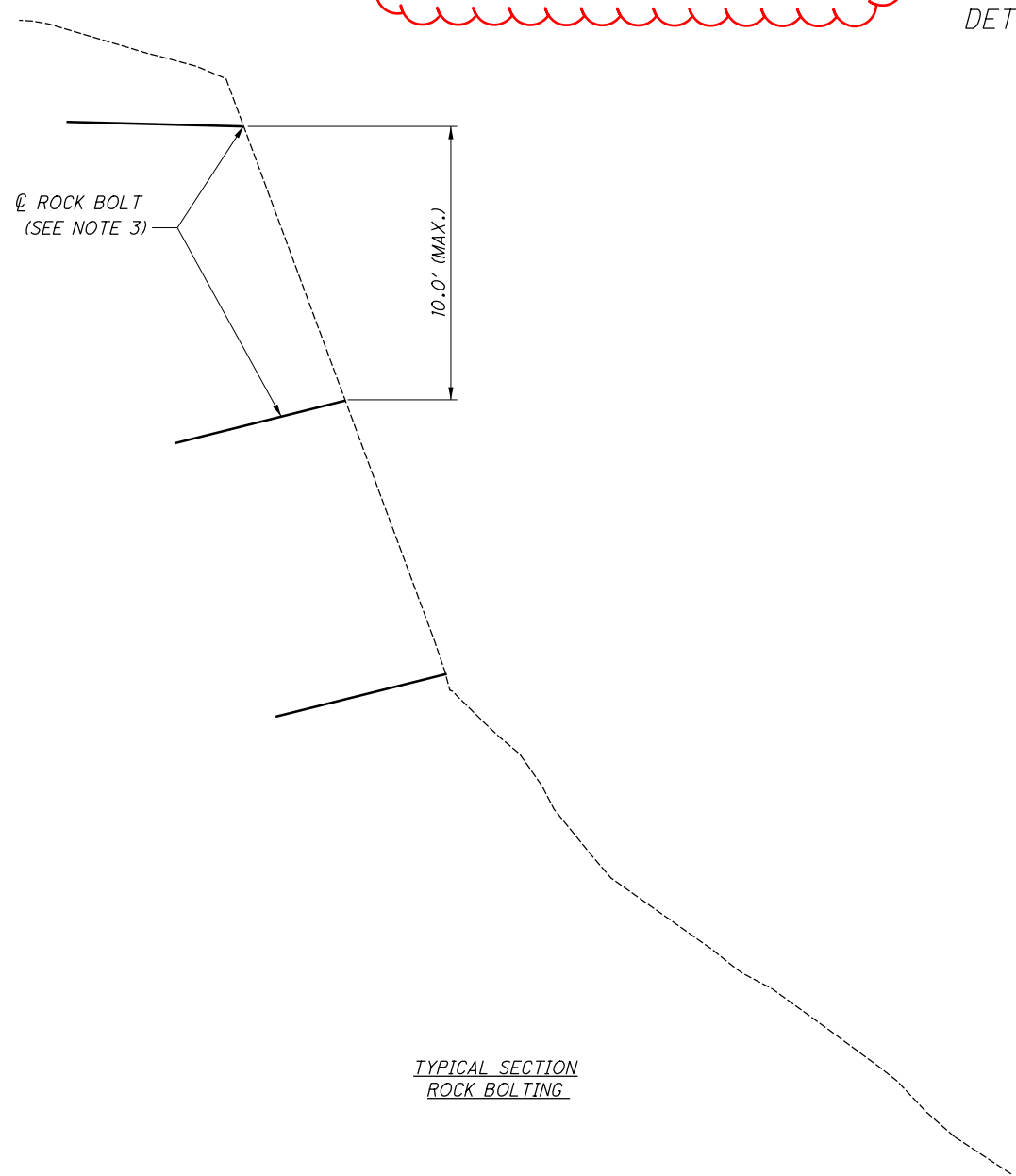
REF NO.	SHEET NO.	STATION TO STATION				202	202	202	204		304			452		606	606	606	622	622	622	622
						CONCRETE BARRIER REMOVED, AS PER PLAN	GUARDRAIL REMOVED	ANCHOR ASSEMBLY REMOVED, TYPE E	SUBGRADE COMPACTION		AGGREGATE BASE			9" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC IP		GUARDRAIL, TYPE MGS	ANCHOR ASSEMBLY, MGS TYPE E	BRIDGE TERMINAL ASSEMBLY, TYPE 1	CONCRETE BARRIER, SINGLE SLOPE, TYPE D	CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN	BARRIER TRANSITION, AS PER PLAN	CONCRETE BARRIER END SECTION, TYPE D
					FT	FT	EACH	SY		CY			SY		FT	EACH	EACH	FT	FT	EACH	EACH	
R-1	9	38+61	TO	47+26	890																	
R-2	9	37+81	TO	38+61		7	1															
CB-1	9	38+61	TO	40+75														180		1	1	
CB-2	9	40+75	TO	47+25				223		37			186						670			
GR-1	9	37+81	TO	38+61											6.25	1	1					
TOTALS CARRIED TO GENERAL SUMMARY					890	7	1	224		38			187		6.25	1	1	180	670	1	1	



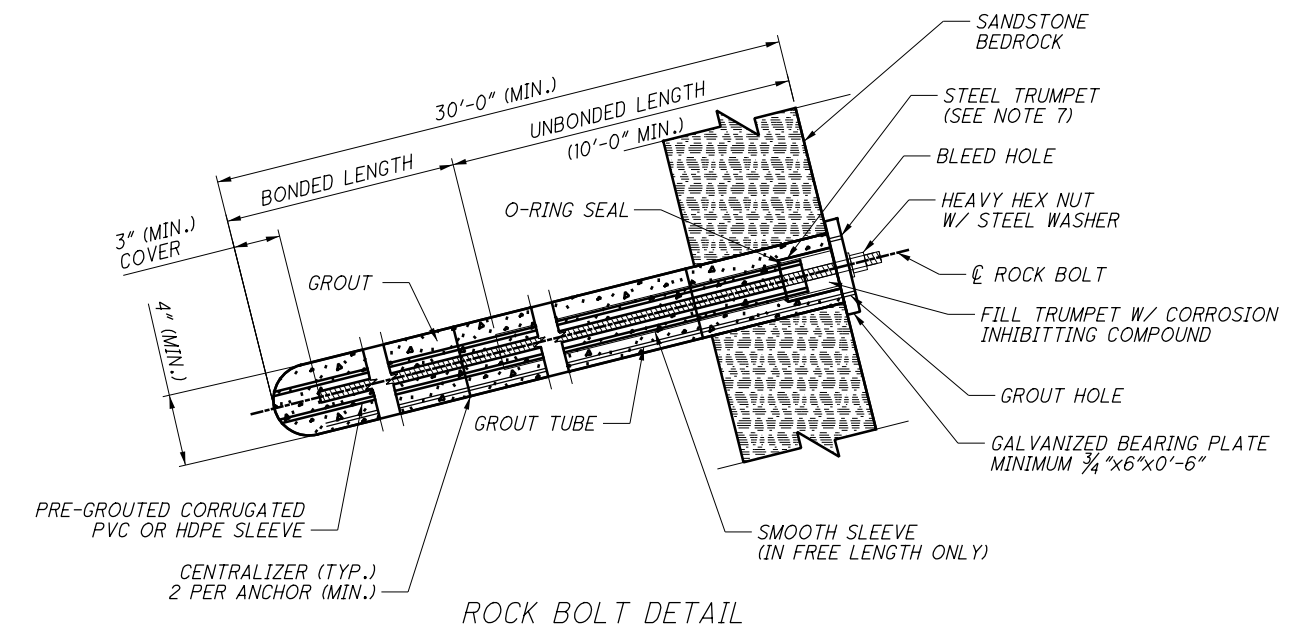
ANCHOR/FOUNDATION SHALL BE DESIGNED BY CONTRACTOR'S ENGINEER IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS

ROCKFALL PROTECTION BARRIER DETAIL

FOR INFORMATION PURPOSES
DETAILS ARE TO BE SPECIFIED BY MANUFACTURER



TYPICAL SECTION
ROCK BOLTING



ROCK BOLT DETAIL

NOTES:

1. FOR PLAN VIEW INFORMATION SEE PLAN ON SHEET 9. THE ROCK SLOPE IS COMPOSED OF VARIOUS GEOMEDIA FORMATIONS AND THE APPROXIMATE LOCATION FOR THE ROCK SLOPE PROTECTION DEVICES AND/OR METHODS ARE SHOWN ON THE PLANS AND SECTIONS. THE FINAL LOCATION OF THE ROCK SLOPE PROTECTION DEVICES AND/OR METHODS SHALL BE COORDINATED WITH THE ENGINEER.
2. ROCKFALL PROTECTION BARRIER SHALL BE DEIGNED TO RETAIN A MAXIMUM 11 FOOT DIAMETER BLOCK OR A MAXIMUM BLOCK KINETIC ENERGY OF 5000KJ. THE BARRIER SHALL BE A MINIMUM HEIGHT OF 15 FEET.
3. ROCK BOLTING SHALL BE LOCATED BETWEEN 755' AND 795' IN ELEVATION.
4. ROCK BOLTS SHALL BE DESIGNED FOR A MINIMUM ALLOWABLE DESIGN LOAD OF 60 KIPS. THE MANUFACTURER OF THE ROCK BOLT SYSTEM SHALL PROVIDE A MINIMUM UNBONDED LENGTH OF 10' AND SHOULD EXTEND FROM THE BLOCK FACE TO THE OPEN JOINT FACE FOR ALL ROCK BOLTS. THE BONDED LENGTH IS TO BE DETERMINED BY THE CONTRACTOR'S ENGINEER AND DESIGNED PER THE GENERAL NOTES. ROCK BOLTS MUST BE DESIGNED TO REMAIN WITHIN EXISTING RIGHT OF WAY.
5. STEEL TRUMPETS SHALL HAVE A MINIMUM WALL THICKNESS OF 0.20 INCHES AND SHALL BE WELDED TO THE BEARING PLATE WITH A MINIMUM 3/16" FILLET WELD PRIOR TO GALVANIZING. PROVIDE A TRUMPET LONG ENOUGH TO OVERLAP THE CORROSION PROTECTION IN THE UNBONDED LENGTH OF THE TENDON BY AT LEAST 4 INCHES (300 mm) WITHOUT A SEAL. THE MINIMUM TRUMPET SIZE SHALL CONFORM TO THE RECOMMENDATIONS OF THE FHWA GEOTECHNICAL CIRCULAR NO. 4 (PUBLICATION FHWA-IF-99-015). FURNISH TRUMPETS FROM FABRICATED STEEL PIPE CONFORMING TO ASTM A53 OR STEEL TUBING CONFORMING TO ASTM A500.

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