


SHEET NUM.											PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.
2	3	5									01/NFA/04	EXT	TOTAL				
											LS	201	11000	LS		<b>ROADWAY</b>	
		2									2	202	20010	2	EACH	CLEARING AND GRUBBING	
		205									205	202	38000	205	FT	HEADWALL REMOVED	
		3									3	202	42001	3	EACH	GUARDRAIL REMOVED	
		136									136	SPECIAL	20270130	136	FT	ANCHOR ASSEMBLY REMOVED, TYPE A, AS PER PLAN	2
											LS	503	11101	LS		PIPE CLEANOUT OVER 48"	
		1									1	606	26550	1	EACH	COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN	3
		2									2	606	26150	2	EACH	ANCHOR ASSEMBLY, MGS TYPE T	
		212.5									212.5	606	15050	212.5	FT	ANCHOR ASSEMBLY, MGS TYPE E (MASH 2016)	
																GUARDRAIL, TYPE MGS	
																<b>EROSION CONTROL</b>	
		47.5									47.5	601	11000	47.5	SY	RIPRAP, TYPE D	
1,600											1,600	659	10000	1,600	SY	SEEDING AND MULCHING	
0.22											0.22	659	20000	0.22	TON	COMMERCIAL FERTILIZER	
0.33											0.33	659	31000	0.33	ACRE	LIME	
8.6											8.6	659	35000	8.6	MGAL	WATER	
5,000											5,000	832	30000	5,000	EACH	EROSION CONTROL	
																<b>DRAINAGE</b>	
		11.89									11.89	602	20000	11.89	CY	CONCRETE MASONRY	
		12.39									12.39	602	20001	12.39	CY	CONCRETE MASONRY, AS PER PLAN	2
		16									16	611	96551	16	FT	FIELD PAVING OF EXISTING PIPE, AS PER PLAN, 144" CMP	2
		120									120	837	10000	120	FT	LINER PIPE, 132", 748.06 OR 707.75 OR 707.18	
		120									120	837	21000	120	FT	BACKFILL FOR LINER PIPE	
																<b>TRAFFIC CONTROL</b>	
		6									6	626	00110	6	EACH	BARRIER REFLECTOR, TYPE 2, BI-DIRECTIONAL	
																<b>INCIDENTALS</b>	
											LS	614	11000	LS		MAINTAINING TRAFFIC	
											LS	624	10000	LS		MOBILIZATION	

GENERAL SUMMARY

DESIGN AGENCY

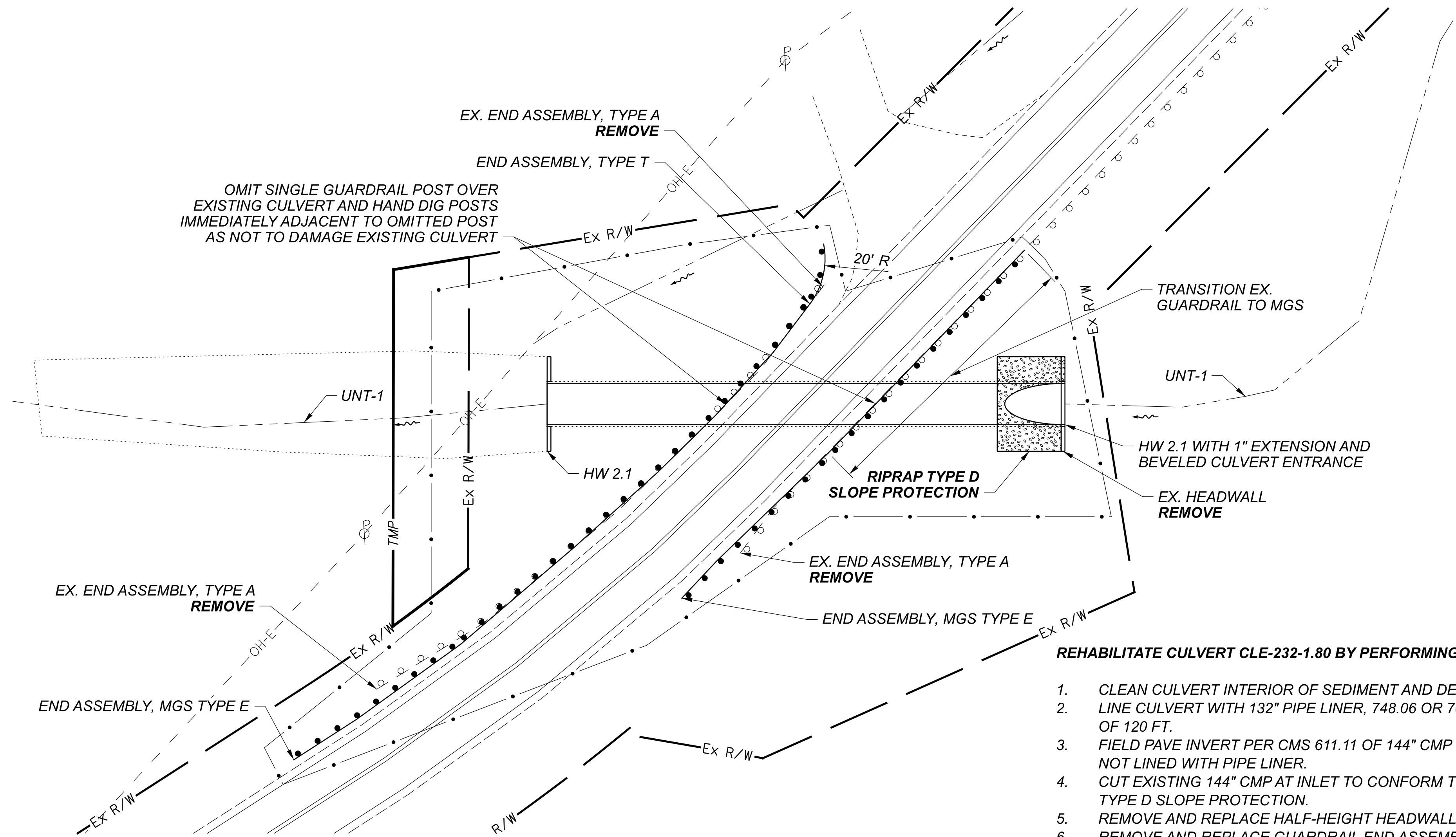


DESIGNER  
MLB

REVIEWER  
TRB 04/21/23

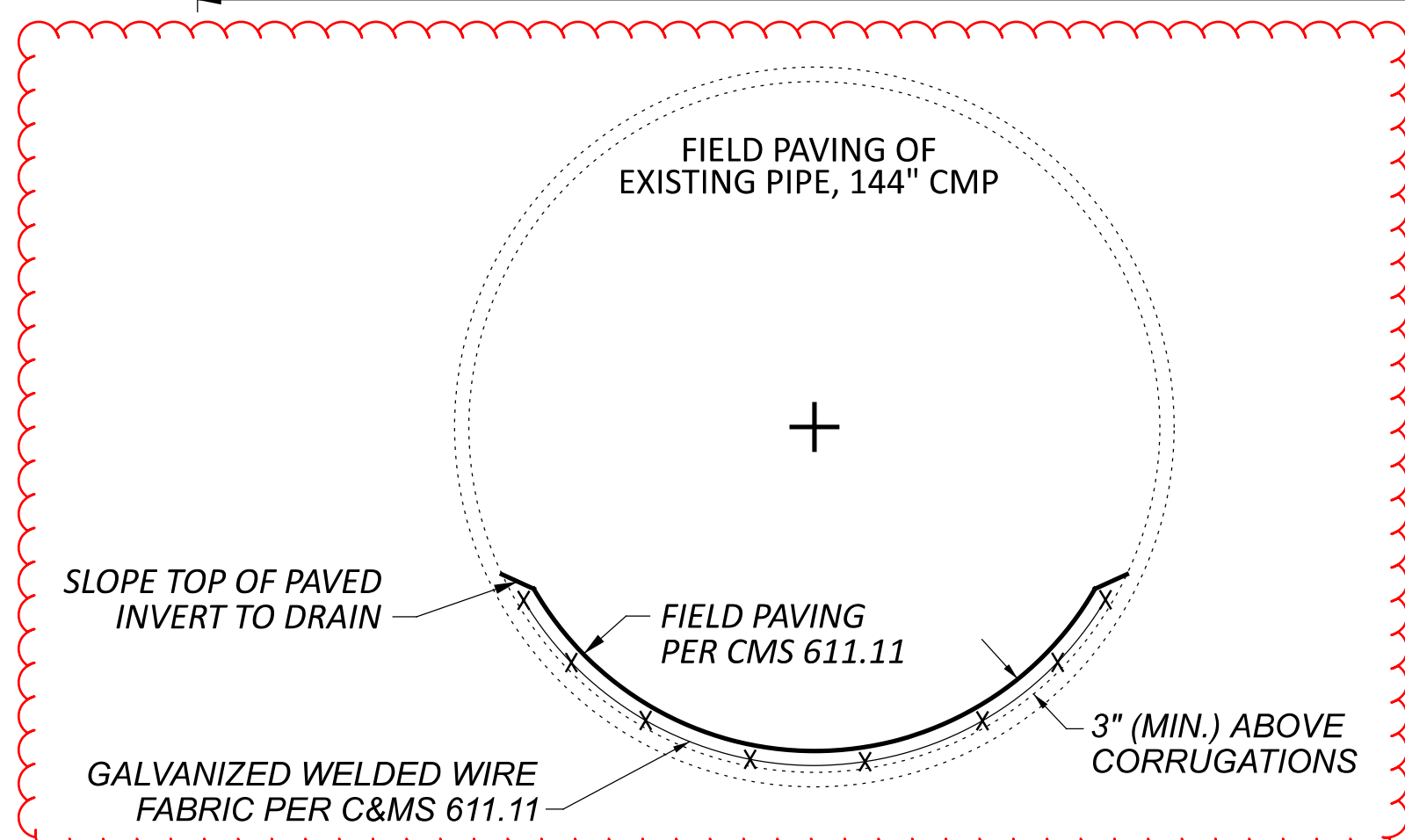
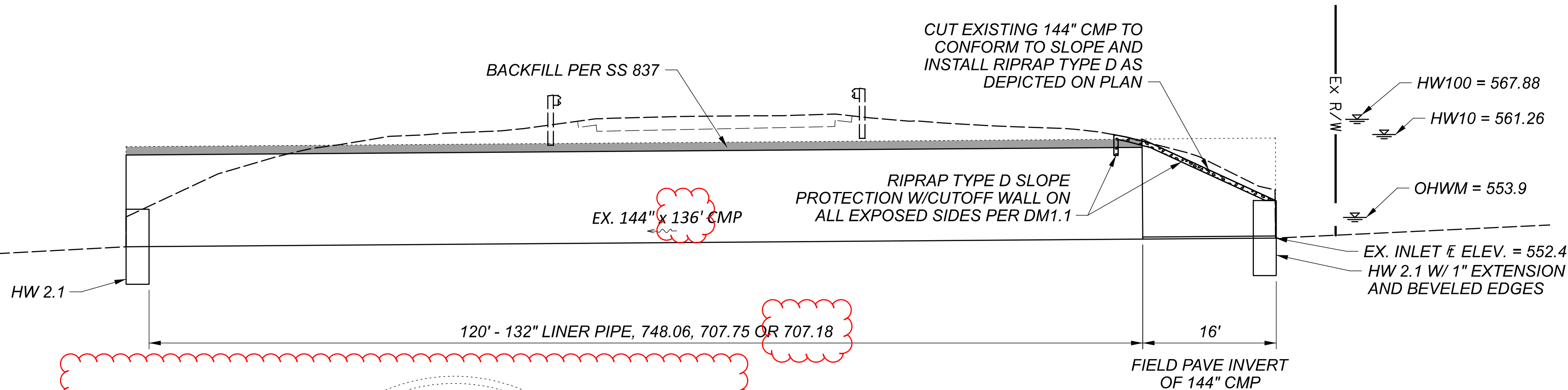
PROJECT ID  
113605

SHEET TOTAL  
04 06



**REHABILITATE CULVERT CLE-232-1.80 BY PERFORMING THE FOLLOWING WORK:**

- CLEAN CULVERT INTERIOR OF SEDIMENT AND DEBRIS.
- LINE CULVERT WITH 132" PIPE LINER, 748.06 OR 707.75 OR 707.18 FOR LENGTH OF 120 FT.
- FIELD PAVE INVERT PER CMS 611.11 OF 144" CMP FOR 16 FT OF CULVERT THAT IS NOT LINED WITH PIPE LINER.
- CUT EXISTING 144" CMP AT INLET TO CONFORM TO SLOPE AND INSTALL RIPRAP TYPE D SLOPE PROTECTION.
- REMOVE AND REPLACE HALF-HEIGHT HEADWALL AT INLET.
- REMOVE AND REPLACE GUARDRAIL END ASSEMBLIES.



**LINER PIPE**

LINE THE EXISTING PIPE PER THE REQUIREMENTS OF SS 837. THE PROPOSED LINER PIPE SIZES AS SHOWN IN THESE PLANS ARE THE MINIMUM DIMENSIONS FOR HYDRAULIC PURPOSES. THE LINER SHALL MATCH THE EXISTING PIPE AS CLOSELY AS POSSIBLE ALLOWING SUFFICIENT ROOM FOR FLOW BYPASS DURING CONSTRUCTION AS WELL AS FOR BACKFILLING THE ANNULAR ARE BETWEEN BOTH THE HOST AND THE LINER PIPE.

DUE TO THE EXCESSIVE SEDIMENT AND DEBRIS AT THIS LOCATION, THE PIPE CLEANOUT PRIOR TO FIELD PAVING OF THE EXISTING PIPE IS ITEMIZED SEPARATELY AND SHALL BE PAID FOR USING THE PAY ITEM PIPE CLEANOUT. SEE NOTE ON THIS SHEET FOR ADDITIONAL INFORMATION.

ESTIMATED QUANTITIES			
ITEM	QUANTITY	UNIT	DESCRIPTION
202	2	EA	HEADWALL REMOVED
202	136	FT	PIPE CLEANOUT, OVER 48"
202	205	FT	GUARDRAIL REMOVED
202	3	EA	ANCHOR ASSEMBLY REMOVED, TYPE A, AS PER PLAN
601	47.5	SY	RIPRAP, TYPE D
602	11.89	CY	CONCRETE MASONRY
602	12.39	CY	CONCRETE MASONRY, AS PER PLAN
606	1	EA	ANCHOR ASSEMBLY, MGS TYPE T
606	2	EA	ANCHOR ASSEMBLY, MGS TYPE E
606	212.5	EA	GUARDRAIL, TYPE MGS
611	16	FT	FIELD PAVING OF EXISTING PIPE, 144" CMP
626	6	EA	BARRIER REFLECTOR, TYPE 2, BI-DIRECTIONAL
837	120	FT	LINER PIPE, 132", 748.06, 707.75 OR 707.18
837	120	FT	LINER BACKFILL

HYDRAULIC DATA			
DRAINAGE AREA = 890 ACRES			
Q (10) = 677 CFS	V (10) = 15.0 FT/S	HW (10) = 561.3 FT	
Q (100) = 1380 CFS	V (100) = 18.2 FT/S	HW (100) = 567.9 FT	
DESIGN SERVICE LIFE: 75 YEARS			
ABRASION LEVEL:			
pH: 7.0			

EXISTING STRUCTURE	
TYPE:	ROUND CORRUGATED METAL
SIZE:	144"
SKEW:	40° RF
ALIGNMENT:	TANGENT
DATE BUILT:	1961
CONDITION:	POOR
SFN:	1304410
STREAM:	UNT-1
OHWM:	553.9 (EX. INV. = 552.4)

**FIELD PAVING OF EXISTING PIPE**

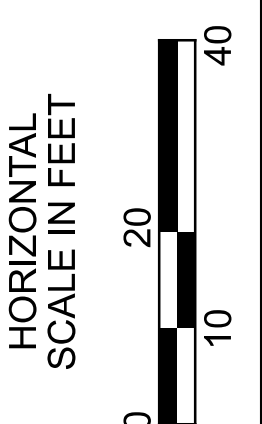
FIELD PAVE THE EXISTING PIPE PER THE REQUIREMENTS OF 611.11. PROVIDE A 2:1 SLOPE AT THE TOP OF THE PAVED INVERT TO PREVENT WATER FROM SITTING ON THE TOP EDGE AS SHOWN IN THE PLAN DETAIL.

DUE TO THE EXCESSIVE SEDIMENT AND DEBRIS AT THIS LOCATION, THE PIPE CLEANOUT PRIOR TO FIELD PAVING OF THE EXISTING PIPE IS ITEMIZED SEPARATELY AND SHALL BE PAID FOR USING THE PAY ITEM PIPE CLEANOUT. SEE NOTE ON THIS SHEET FOR ADDITIONAL INFORMATION.

**PIPE CLEANOUT**

THIS ITEM SHALL BE PAID FOR AT THE UNIT PRICE BID FOR ITEM SPECIAL - PIPE CLEANOUT. THIS PRICE SHALL INCLUDE THE COST FOR MATERIAL, EQUIPMENT, LABOR, AND ALL INCIDENTALS REQUIRED TO COMPLETE THE CLEANOUT.

THIS WORK SHALL CONSIST OF REMOVING SEDIMENT AND DEBRIS FROM THE EXISTING DRAINAGE CONDUITS SPECIFIED IN THE PLANS. ALL MATERIAL REMOVED SHALL BE DISPOSED OF AS PER 105.16 AND 105.17. ALL SEWERS SHALL BE CLEANED OUT TO THE SATISFACTION OF THE ENGINEER.



CLE-232-0180  
 CULVERT PLAN AND DETAIL

DESIGN AGENCY	
DESIGNER	MLB
REVIEWER	TRB 04/21/23
PROJECT ID	113605
SHEET	TOTAL
05	06