

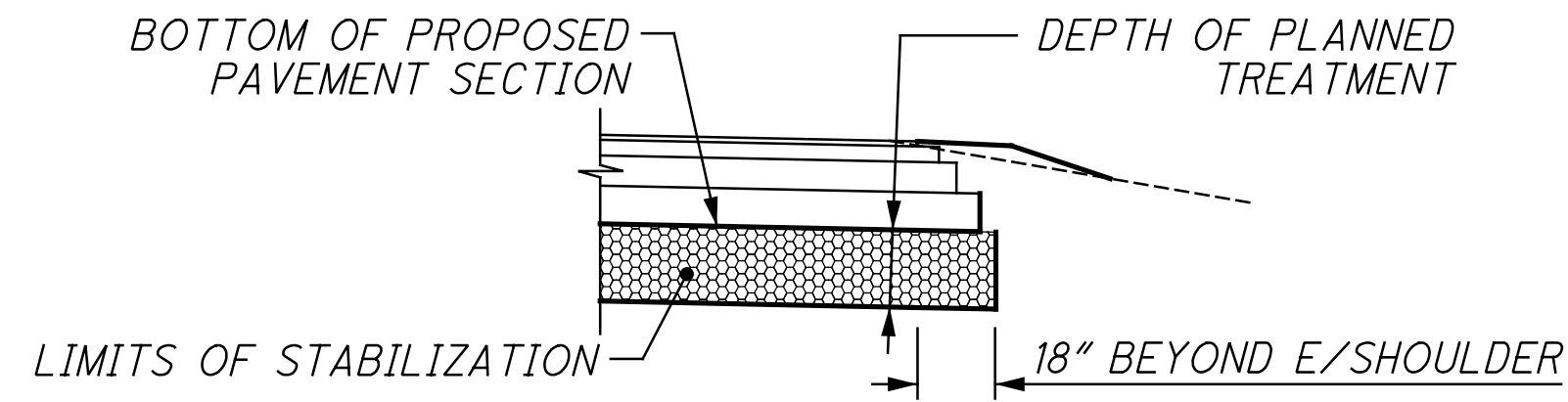
**ROADWAY (CONTINUED)**

**SUBGRADE STABILIZATION**

PAVEMENT SUBGRADE IMPROVEMENT SCHEDULE					
ALIGNMENT	BEGIN STATION	END STATION	SUBGRADE METHOD	DEPTH OF TREATMENT	RECONSTRUCTION SIDE
I-70 EB	145+00.00	147+63.36	CEMENT	14"	FULL WIDTH
I-70 EB	183+50.00	193+21.67	CEMENT	14"	FULL WIDTH
RAMP B5	45+08.00	47+95.01	CEMENT	14"	FULL WIDTH

SUBGRADE STABILIZATION WAS PERFORMED IN THE PRIOR PROJECT FOR THE FOLLOWING AREA:

I-70 EB STA. 181+00 TO 183+50



TYPICAL PAVEMENT SUBGRADE CROSS SECTION

**ITEM 203 - EMBANKMENT, AS PER PLAN**

PLACE AND COMPACT EMBANKMENT MATERIAL IN 6 INCH LIFTS FOR THE CONSTRUCTION OF THE APPROACH EMBANKMENT AT THE FOLLOWING LOCATIONS:

I-70 EB  
FRA-70-1358R STA. 164+62.56 TO STA. 166+62.56

**ITEM 203 - GRANULAR EMBANKMENT, AS PER PLAN**

PLACE AND COMPACT EMBANKMENT MATERIAL IN 6 INCH LIFTS FOR THE CONSTRUCTION OF THE APPROACH EMBANKMENT AT THE FOLLOWING LOCATIONS:

I-70 EB  
FRA-70-1358R STA. 169+12.06 TO STA. 171+12.06

**ITEM 202 - CONCRETE BARRIER REMOVED, AS PER PLAN**

THIS ITEM SHALL INCLUDE THE REMOVAL OF ANY PORTION OF THE CONCRETE BARRIER, PIER COLUMNS AND FOOTING REMAINING FROM THE WHITTIER STREET BRIDGE (FRA-70-1343) AS NECESSARY TO FACILITATE THE CONSTRUCTION OF TEMP WALL T1. THE EXISTING I-70 WB BARRIER SHALL REMAIN. ALL LABOR, TOOLS, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO PERFORM THE ABOVE DESCRIBED WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 202 - CONCRETE BARRIER REMOVED, AS PER PLAN (FT).

**ITEM 204 - PROOF ROLLING**

PROOF ROLLING QUANTITY IS PROVIDED IN THE GENERAL SUMMARY TO ADDRESS LOCATIONS REQUIRING PROOF ROLLING. SEE OFFICE CALCULATIONS FOR QUANTITY CALCULATIONS AND TYPICAL SECTIONS FOR LOCATIONS REQUIRING PROOF ROLLING.

**UNSTABLE OR UNSUITABLE SOILS FOR PAVEMENT STABILIZATION**

THE FOLLOWING ITEMS AND QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER TO ADDRESS UNSTABLE OR UNSUITABLE SOILS ENCOUNTERED BELOW THE PROPOSED SUBGRADE ELEVATION IN THE AREAS OF PAVEMENT CONSTRUCTION.

- ITEM 204 - EXCAVATION OF SUBGRADE 250 CY
- ITEM 204 - GRANULAR MATERIAL, TYPE B 250 CY
- ITEM 204 - GEOTEXTILE FABRIC 500 SY
- ITEM 204 - GEOGRID 500 SY

**ITEM 607 - FENCE, TYPE CLT, AS PER PLAN "A"**

ALL REQUIREMENTS OF SECTION 607 OF THE ODOT CMS AND ODOT SCD F-1.1. SHALL APPLY WITH THE ADDITION THAT THE FENCE SHALL BE 8 FEET TALL WITH MESH FENCE SCREENING. PRIVACY MESH SCREENING SHALL BE ATTACHED TO THE ENTIRE SURFACE OF THE FENCE AND SHALL BE POLYETHYLENE, POLYPROPYLENE OR APPROVED EQUAL AS SUBMITTED TO THE ENGINEER FOR APPROVAL. ALL LABOR, TOOLS, EQUIPMENT, MATERIALS AND INCIDENTALS INCLUDING THE MESH SCREENING SHALL BE INCLUDED IN THE CONTRACT PRICE BID FOR ITEM 607 - FENCE, TYPE CLT, AS PER PLAN "A".

**ITEM 202 - REMOVAL MISC.: PORTABLE BARRIER**

THIS ITEM SHALL INCLUDE THE REMOVAL AND DISPOSAL OF PORTABLE BARRIER PER ODOT CMS 202. ALL LABOR, TOOLS, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO PERFORM THE ABOVE DESCRIBED WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 202 - REMOVAL MISC.: PORTABLE BARRIER (FT).

**ITEM 202 - REMOVAL MISC.: PORTABLE BARRIER WITH VANDAL FENCE**

THIS ITEM SHALL INCLUDE THE REMOVAL AND DISPOSAL OF PORTABLE BARRIER WITH VANDAL FENCE PER ODOT CMS 202. ALL LABOR, TOOLS, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO PERFORM THE ABOVE DESCRIBED WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 202 - REMOVAL MISC.: PORTABLE BARRIER WITH VANDAL FENCE (FT).

**ITEM 202 - PIPE REMOVED, OVER 24" AS PER PLAN**

THIS ITEM SHALL INCLUDE THE REMOVAL OF PIPE OVER 24" PER ODOT CMS 202. ITEM SHALL ALSO INCLUDE THE REMOVAL OF THE GRANULAR MATERIAL WITHIN THE CASING PIPE, TIMBER/SPACERS AND MORTARED BRICK SEALS. ALL LABOR, TOOLS, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO PERFORM THE ABOVE DESCRIBED WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 202 - PIPE REMOVED, OVER 24", AS PER PLAN (FT).



CALCULATED  
ATR  
CHECKED  
CWL

GENERAL NOTES

FRA-70-13.11

NO.	DESCRIPTION	REV. BY	DATE
4	ADDED NOTE	CWL	10-30-23

SHEET NUMBER					PARTICIPATION					ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
P1/158	P2/37	P3/188	P4/152	P5/13	01/IMS/04	02/IMS/11	05/IMS/14	06/MPO/04	07/NHS/04/COL						
LS	LS		LS	LS							201	11000	LS	CLEARING AND GRUBBING	P1,P2,P4
1		1	2								202	20010	4	EACH	HEADWALL REMOVED
32580	3886	21016	43428								202	23000	100910	SY	PAVEMENT REMOVED
	9050	3016	18064								202	30000	30130	SF	WALK REMOVED
	9										202	30200	9	FT	STEPS REMOVED
		114									202	30600	114	SY	CONCRETE MEDIAN REMOVED
1406		5525	3687								202	30700	10618	FT	CONCRETE BARRIER REMOVED
175											202	30701	175	FT	CONCRETE BARRIER REMOVED, AS PER PLAN "4A"
		1280									202	30701	1280	FT	CONCRETE BARRIER REMOVED, AS PER PLAN "6A"
2870	1001	5724	4809	2230							202	32000	16634	FT	CURB REMOVED
											202	32500	271	FT	CURB AND GUTTER REMOVED
		655									202	32800	655	SY	CONCRETE SLOPE PROTECTION REMOVED
835	60	2324	2381	54							202	35100	5654	FT	PIPE REMOVED, 24" AND UNDER
32											202	35201	32	FT	PIPE REMOVED, OVER 24", AS PER PLAN
4722		5283	1745	1647							202	38000	13397	FT	GUARDRAIL REMOVED
1		4									202	47800	5	EACH	IMPACT ATTENUATOR REMOVED
4		9	1								202	58000	14	EACH	MANHOLE REMOVED
13	2	10	13	3							202	58100	41	EACH	CATCH BASIN REMOVED
4		33	13								202	58200	50	EACH	INLET REMOVED
		1									202	58201	1	EACH	INLET REMOVED, AS PER PLAN
			1								202	58400	1	EACH	INLET ABANDONED
			3								202	58401	3	EACH	INLET ABANDONED, AS PER PLAN
1			1								202	58500	2	EACH	CATCH BASIN ABANDONED
			4								202	58501	4	EACH	CATCH BASIN ABANDONED, AS PER PLAN
			323								SPECIAL	20270000	323	FT	FILL AND PLUG EXISTING CONDUIT, 12"
162			50								SPECIAL	20270000	212	FT	FILL AND PLUG EXISTING CONDUIT, 15"
126											SPECIAL	20270000	126	FT	FILL AND PLUG EXISTING CONDUIT, 18"
740	428	1156	1222								202	75000	3546	FT	FENCE REMOVED
											202	75250	3	EACH	GATE REMOVED
2		1									202	75255	1	EACH	GATE REMOVED FOR REUSE, AS PER PLAN
		1									202	75610	4	EACH	VALVE BOX REMOVED
			4								202	98100	9	EACH	REMOVAL MISC.: TRASH RECEPTACLES
	3		6								202	98100	2	EACH	REMOVAL MISC.: INSPECTION WELL
1070		2									202	98200	2770	FT	REMOVAL MISC.: PORTABLE BARRIER
739		1272	428								202	98200	739	FT	REMOVAL MISC.: PORTABLE BARRIER WITH VANDAL FENCE
	303										202	98200	303	FT	REMOVAL MISC.: CURB REMOVED FOR STORAGE
											202	98200	100	FT	REMOVAL MISC.: MISC CONDUIT
		100									202	98200	101	FT	REMOVAL MISC.: TRENCH DRAIN
		101									202	98400	5152	SF	REMOVAL MISC.: BRICK PAVERS REMOVED
	4845		307								202	98400	5152	SF	REMOVAL MISC.: BRICK PAVERS REMOVED
											203	10000	110061	CY	EXCAVATION
19022	623	44689	44578	1149							203	20000	189157	CY	EMBANKMENT
35175	7648	94130	45546	6658							203	20001	34500	CY	EMBANKMENT, AS PER PLAN
3977		24962		5561							203	35000	3360	CY	GRANULAR EMBANKMENT
3360											203	35001	4592	CY	GRANULAR EMBANKMENT, AS PER PLAN
4592											203	35110	2806	CY	GRANULAR MATERIAL, TYPE B
		2806									204	10000	65242	SY	SUBGRADE COMPACTION
24495	4558	29583	6606								204	13000	3148	CY	EXCAVATION OF SUBGRADE
250	975		1923								204	13001	172	CY	EXCAVATION OF SUBGRADE, AS PER PLAN
		172									204	30010	3148	CY	GRANULAR MATERIAL, TYPE B
250	975		1923								204	45000	80	hour	PROOF ROLLING
28	4	12	32	4							204	45001	1	hour	PROOF ROLLING, AS PER PLAN
		1									204	50000	10706	SY	GEOTEXTILE FABRIC
500	3868		6338								204	50001	1032	SY	GEOTEXTILE FABRIC, AS PER PLAN
		1032									204	51000	10706	SY	GEOGRID
500	3868		6338								204	51000	10706	SY	GEOGRID

NO.	DESCRIPTION	REV. BY	DATE
1	REVISED PART 5	CWL	10-2-23
3	REVISED PART 3	CWL	10-23-23
4	REVISED PART 1	CWL	10-30-23

BIG BUILD MASTER GENERAL SUMMARY

FRA-70-13.11

CALCULATED  
CJC  
CHECKED  
CWL

141  
1151

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SHEET NUMBER							PARTICIPATION					ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
OFFICE CALCS	51	52	164	168	304	R/W 6	01/IMS/04										
	LS						LS					201	11000	LS	CLEARING AND GRUBBING	33	
	28		1				1					202	20010	1	EACH	HEADWALL REMOVED	
			32552				32580					202	23000	32580	SY	PAVEMENT REMOVED	
			1406				1406					202	30700	1406	FT	CONCRETE BARRIER REMOVED	
			175				175					202	30701	175	FT	CONCRETE BARRIER REMOVED, AS PER PLAN "4A"	
			2870				2870					202	32000	2870	FT	CURB REMOVED	
			835				835					202	35100	835	FT	PIPE REMOVED, 24" AND UNDER	
			32				32					202	35201	32	FT	PIPE REMOVED, OVER 24", AS PER PLAN	
			4722				4722					202	58000	4722	FT	GUARDRAIL REMOVED	
			4				4					202	47800	1	EACH	IMPACT ATTENUATOR REMOVED	
			13				13					202	58000	4	EACH	MANHOLE REMOVED	
			13				13					202	58100	13	EACH	CATCH BASIN REMOVED	
			4				4					202	58200	4	EACH	INLET REMOVED	
			1				1					202	58500	1	EACH	CATCH BASIN ABANDONED	
			162				162					SPECIAL	20270000	162	FT	FILL AND PLUG EXISTING CONDUIT, 15"	
			126				126					SPECIAL	20270000	126	FT	FILL AND PLUG EXISTING CONDUIT, 18"	
			740				740					202	75000	740	FT	FENCE REMOVED	
			2				2					202	75250	2	EACH	GATE REMOVED	
			1070				1070					202	98200	1070	FT	REMOVAL MISC.: PORTABLE BARRIER	
			739				739					202	98200	739	FT	REMOVAL MISC.: PORTABLE BARRIER WITH VANDAL FENCE	
							19022					203	10000	19022	CY	EXCAVATION	
							35175					203	20000	35175	CY	EMBANKMENT	
							3977					203	20001	3977	CY	EMBANKMENT, AS PER PLAN	
							3360					203	35000	3360	CY	GRANULAR EMBANKMENT	
							4592					203	35001	4592	CY	GRANULAR EMBANKMENT, AS PER PLAN	
23954							24495					204	10000	24495	SY	SUBGRADE COMPACTION	
		250					250					204	13000	250	CY	EXCAVATION OF SUBGRADE	
		250					250					204	30010	250	CY	GRANULAR MATERIAL, TYPE B	
28							28					204	45000	28	hour	PROOF ROLLING	
		500					500					204	50000	500	SY	GEOTEXTILE FABRIC	
		500					500					204	51000	500	SY	GEOGRID	
432							432					206	10500	432	TON	CEMENT	
14276							14276					206	11000	14276	SY	CURING COAT	
14276							14276					206	15020	14276	SY	CEMENT STABILIZED SUBGRADE, 14 INCHES DEEP	
LS							LS					206	30000	LS		MIXTURE DESIGN FOR CHEMICALLY STABILIZED SOILS	
LS							LS					208	14001	LS		VIBRATION CONTROL AND MONITORING, AS PER PLAN	
32							32					209	60201	32	STA	LINEAR GRADING, AS PER PLAN	
			3427				3427					606	15050	3427	FT	GUARDRAIL, TYPE MGS	
			1				1					606	26150	1	EACH	ANCHOR ASSEMBLY, MGS TYPE E (MASH 2016)	
			3				3					606	26550	3	EACH	ANCHOR ASSEMBLY, MGS TYPE T	
			5				5					606	35002	5	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1	
			2				2					606	35102	2	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2	
			2				2					606	60040	2	EACH	IMPACT ATTENUATOR, TYPE 3 UNIDIRECTIONAL (60 MPH, 48" WIDTH)	
			627				627					607	23001	627	FT	FENCE, TYPE CLT, AS PER PLAN "A"	
1065			4068				5133					608	98000	5133	SF	WALKWAY, MISC.: 6" X 6" CONCRETE PAVERS	
132							132					622	10140	132	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE C1	
1551							1551					622	10160	1551	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE D	
1							1					622	25000	1	EACH	CONCRETE BARRIER END SECTION, TYPE D	
4							4					622	25014	4	EACH	CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE C1	
1							1					622	25015	1	EACH	CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE C1, AS PER PLAN "4A"	
19							19					622	25050	19	EACH	CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE D	
1							1					622	25051	1	EACH	CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE D, AS PER PLAN "4A"	
			1610				1610					622	41111	1610	FT	PORTABLE BARRIER, ANCHORED, AS PER PLAN	
							22					623	40500	22	EACH	REFERENCE MONUMENT, TYPE A	
							1					623	40520	1	EACH	RIGHT-OF-WAY MONUMENT, TYPE B	
LS							LS					SPECIAL	69098400	LS		EMERGENCY ACTION PLAN COORDINATION "4A"	
LS							LS					SPECIAL	69098400	LS		WCLPP R/W CONSTRUCTION CAMERA	
LS							LS					SPECIAL	69098400	LS		USACE SURVEY AND AS-BUILTS	
LS							LS					SPECIAL	69098400	LS		SURVEY CONTROL VERIFICATION	
LS							LS					878	25000	LS		INSPECTION AND COMPACTION TESTING OF UNBOUND MATERIALS	

NO.	DESCRIPTION	REV. BY	DATE	SEE SHEET NO.
1	REVISED F-1 & R/W SHEET #	CWL	10-2-23	33
4	UPDATED 202 ITEMS	CWL	10-30-23	39

4A PART 1 GENERAL SUMMARY

FRA-70-13.11

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SHEET NO.	202		202		202		202		202		202		202		202		202		202		202		202		202		SPECIAL				
	PAVEMENT REMOVED		PAVEMENT REMOVED, ASPHALT		REMOVAL MISC.: PORTABLE BARRIER WITH VANDAL FENCE		REMOVAL MISC.: PORTABLE BARRIER		CONCRETE BARRIER REMOVED		FENCE REMOVED		GATE REMOVED		CURB REMOVED		GUARDRAIL REMOVED		IMPACT ATTENUATOR REMOVED		CONCRETE BARRIER REMOVED, AS PER PLAN		PIPE REMOVED, 24" AND UNDER		HEADWALL REMOVED		FENCE, TYPE CLT, AS PER PLAN "A"		FILL AND PLUG EXISTING CONDUIT, 18"		
	SY	SY	SY	SY	FT	FT	FT	FT	FT	FT	EACH	EACH	FT	FT	FT	FT	EACH	EACH	FT	FT	FT	FT	FT	EACH	EACH	FT	FT	FT	FT		
169	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	
173					443	296	642	428											1												
174											444	296	1	1																	
175																	2833	1889								428	285		1		
178																															
179	6441	4294	13090	8727					844	562					1722	1148					105	70					122				
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>	6441	4294	13090	8727	443	296	642	428	844	562	444	296	1	1	1722	1148	2833	1889	1		105	70	428	285	122	1					
SHEET NO.	202		202		202		202		SPECIAL		608		606		606		606		606		606		622		626*		626*		202		
	MANHOLE REMOVED		CATCH BASIN REMOVED		INLET REMOVED		CATCH BASIN ABANDONED		FILL AND PLUG EXISTING CONDUIT, 15"		WALKWAY, MISC.: 6" X 6" CONCRETE PAVERS		GUARDRAIL, TYPE MGS		ANCHOR ASSEMBLY, MGS TYPE E (MASH 2016)		ANCHOR ASSEMBLY, MGS TYPE T		MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1		MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2		IMPACT ATTENUATOR, TYPE 3 UNIDIRECTIONAL		PORTABLE BARRIER, ANCHORED, AS PER PLAN		BARRIER REFLECTOR, TYPE 1, ONE-WAY		BARRIER REFLECTOR, TYPE 2, ONE-WAY		PIPE REMOVED, OVER 24", AS PER PLAN
	EACH	EACH	EACH	EACH	FT	FT	SF	FT	FT	FT	FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH		
169	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	
172	2	2	8	5	2	2				2441	1627																				
173								97	65			2056	1371	1		2	1	3	2	1	1			48	32	43	29				
178																															
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>	2	2	8	5	2	2	1	97	65	2441	1627	2056	1371	1	2	1	3	2	1	1	1	1	966	644	68	45	43	29	32		

\* QUANTITY CARRIED TO TRAFFIC CONTROL GENERAL SUMMARY ON SHEET 371

NO.	DESCRIPTION	REV. BY	DATE
1	REVISED F-1	CWL	10-2-23
4	UPDATED 202 ITEMS	CWL	10-30-23

CALCULATED CJC  
 CHECKED CWL  
**ROADWAY SUBSUMMARY**  
**FRA-70-13.11**  
 164  
 1151

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REF. NO.	SHEET NO.	STATION		SIDE	202		202		202		304		601		670		601		601		660		608		836	
		FROM	TO		MANHOLE REMOVED	CATCH BASIN REMOVED	INLET REMOVED	6" AGGREGATE BASE	TIED CONCRETE BLOCK MAT WITH TYPE 2 UNDERLAYMENT	DITCH EROSION PROTECTION	RIPRAP, WITH GROUT, AS PER PLAN	PAVED GUTTER, TYPE I-2, A.P.P.	SODDING UNSTAKED	WALKWAY, MISC.: 6" X 6" CONCRETE PAVERS	SEEDING AND EROSION CONTROL WITH TURF REINFORCING MAT, TYPE 1											
					01/IMS/0 4	01/IMS/0 4	01/IMS/0 4	01/IMS/0 4	01/IMS/0 4	01/IMS/0 4	01/IMS/0 4	01/IMS/0 4	01/IMS/0 4	01/IMS/0 4	01/IMS/0 4	01/IMS/0 4	01/IMS/0 4	01/IMS/0 4	01/IMS/0 4	01/IMS/0 4	01/IMS/0 4	01/IMS/0 4	01/IMS/0 4	01/IMS/0 04	01/IMS/0 04	
DR-11	203	188+98.14 (I-70 EB)		LT				1																		
DR-12	203	188+21.36 (I-70 EB)		LT				1																		
DR-32	219	45+81.21 (RAMP B5)		RT			1																			
DR-33	185	146+20.85 (I-70 EB)		LT	1																					
DR-34	187	147+76.28 (I-70 EB)		RT	1																					
DR-35	187	148+25.10 (I-70 EB)		LT			1																			
DR-36	187	148+35.81 (I-70 EB)		LT			1																			
DR-51	193	166+08.24 (I-70 EB)		RT			1																			
DR-53	195	170+29.16 (I-70 EB)		RT			1																			
DR-54	195	170+59.13 (I-70 EB)		RT			1																			
DR-57	201	186+67.58 (I-70 EB)		RT			1																			
DR-58	203	187+56.68 (I-70 EB)		RT			1																			
DR-59	203	188+09.74 (I-70 EB)		RT			1																			
DR-60	203	189+99.10 (I-70 EB)		RT			1																			
DR-61	215	270+25.00 (I-71 NB)		RT			1																			
DR-62	215	271+27.71 (I-71 NB)		RT				1																		
DR-63	215	271+89.55 (I-71 NB)		RT				1																		
DR-66	191	157+98.78 (I-70 EB)		RT			1																			
DR-224	191	158+16.80 (I-70 EB)		RT			1																			
E-1	193	163+01.12 (I-70 EB)	166+81.74 (I-70 EB)	RT									9		312											
E-2	193	165+99.42 (I-70 EB)	166+05.00 (I-70 EB)	RT																						
E-3	197	173+61.98 (I-70 EB)	175+15.00 (I-70 EB)	RT											125											
E-4	213	264+50.01 (I-71 NB)	166+00.00 (I-71 NB)	RT											123											
E-5	223 , 225	6006+62.18 (RAMP C6)	6008+13.58 (RAMP C6)	RT											125											
E-6	215	269+50.00 (I-71 NB)	271+00.00 (I-71 NB)	LT																				138		
E-7	191	158+46.04 (I-70 EB)	159+68.57 (I-70 EB)	RT											100											
E-8	191	159+68.57 (I-70 EB)	161+18.57 (I-70 EB)	RT											127											
E-10	301 , 302	15+56.90 (BIKE DETOUR)	20+65.31 (BIKE DETOUR)	RT																			2034			
E-11	301 , 302	15+56.90 (BIKE DETOUR)	20+65.31 (BIKE DETOUR)	LT																			2034			
E-12	301 , 302	15+56.90 (BIKE DETOUR)	20+65.31 (BIKE DETOUR)	RT							66				396											
E-13	301 , 302	15+56.90 (BIKE DETOUR)	20+65.31 (BIKE DETOUR)	LT							66				396											
E-26	215	267+99.81 (I-71 NB)	268+49.94 (I-71 NB)	RT													49				8					
ER-1	187	147+08.42 (I-70 EB)		RT			1																			
ER-2	191	157+61.04 (I-70 EB)		RT			1																			

NO.	DESCRIPTION	REV. BY	DATE
4	ADDED ER-1 & ER-2	CWL	10-30-23

TOTALS CARRIED TO SUBSUMMARY ON SHEETS 164.165

2 2 8 5 2 2 79 53 5 4 547 365 475 317 29 20 5 3 2441 1627 83 55

CALCULATED ATR CHECKED CWL  
**ESTIMATED QUANTITIES**  
**FRA-70-13.11**  
 172  
 1151

01:201212012048\FRA\773725\ROADWAY\SHEETS\7737250010.DGN  
 10/30/2023 12:04:50 PM  
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REF. NO.	SHEET NO.	STATION		SIDE	605		638	605		611		611	202	SPECIAL	SPECIAL	202	FOR INFORMATION ONLY				
		FROM	TO		6" SHALLOW PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC	FT	6" BASE PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC	FT	FT	FT	FT	EACH	FT	FT	EACH	FT	6" PLUG	6" X 6" TEE	6" 45° BEND	20" 45° BEND	20" 22.5° BEND
					01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04	01/IMS/04					
U-180	307	158+53.75 (I-70 EB)	D-105	RT				18		10							1				
U-181	307	158+85.48 (I-70 EB)	D-106	RT				7		10							1				
U-184	307	166+36.62 (I-70 EB)	159+68.57 (I-70 EB)	RT				666									1				
U-185	307	169+84.48 (I-70 EB)	D-260	RT	74					12									1		
U-187	307	6005+64.47 (RAMP C6)	175+15.00 (I-70 EB)	RT/RT				460									1				
U-188	307	170+64.28 (I-70 EB)	175+15.00 (I-70 EB)	RT	446												1				
U-197	306	268+57.24 (I-71 NB)	D-250	RT				299		10							1				
U-198	306	268+57.24 (I-71 NB)	272+36.81 (I-71 NB)	RT/CEN	378					12							1	1			
U-200	306	272+67.62 (I-71 NB)	272+36.81 (I-71 NB)	CEN	31												1				
U-201	306	273+05.88 (I-71 NB)	272+50.00 (I-71 NB)	LT				57		11							1				
U-202	306	272+25.00 (I-71 NB)	272+50.00 (I-71 NB)	LT	25					11								1			
U-203	306	45+08.00 (RAMP B5)	D-243	CEN	48					10		1							2		
U-214	308	187+19.57 (I-70 EB)	DJ-155	LT				48		10							1				
U-215	308	188+52.72 (I-70 EB)	DJ-155	LT				63		10							1				
U-216	308	194+51.06 (I-70 EB)	196+00.00 (I-70 EB)	CEN				139		10							1				
W-2	361	188+20.35 (I-70 EB)	188+14.35 (I-70 WB)	RT/LT			LS							127						2	2
WR-2	361	188+20.35 (I-70 EB)	188+14.35 (I-70 WB)	RT/LT									122		2	32					

NO.	DESCRIPTION	REV. BY	DATE
4	ADDED 202 OVER 24"	CWL	10-30-23

TOTALS CARRIED TO SUBSUMMARY ON SHEETS 164,166,167      601    401    LS    1054    703    49    33    20    14    1    122    127    2    32    11    2    3    2    2

ESTIMATED QUANTITIES

FRA-70-13.11

178  
1151

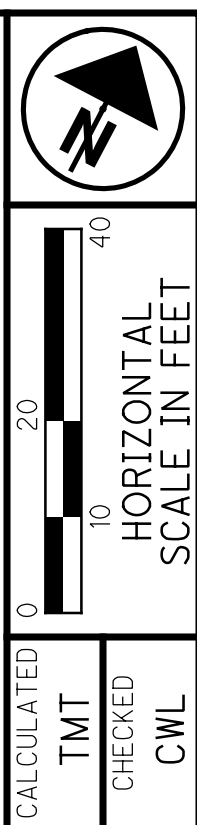
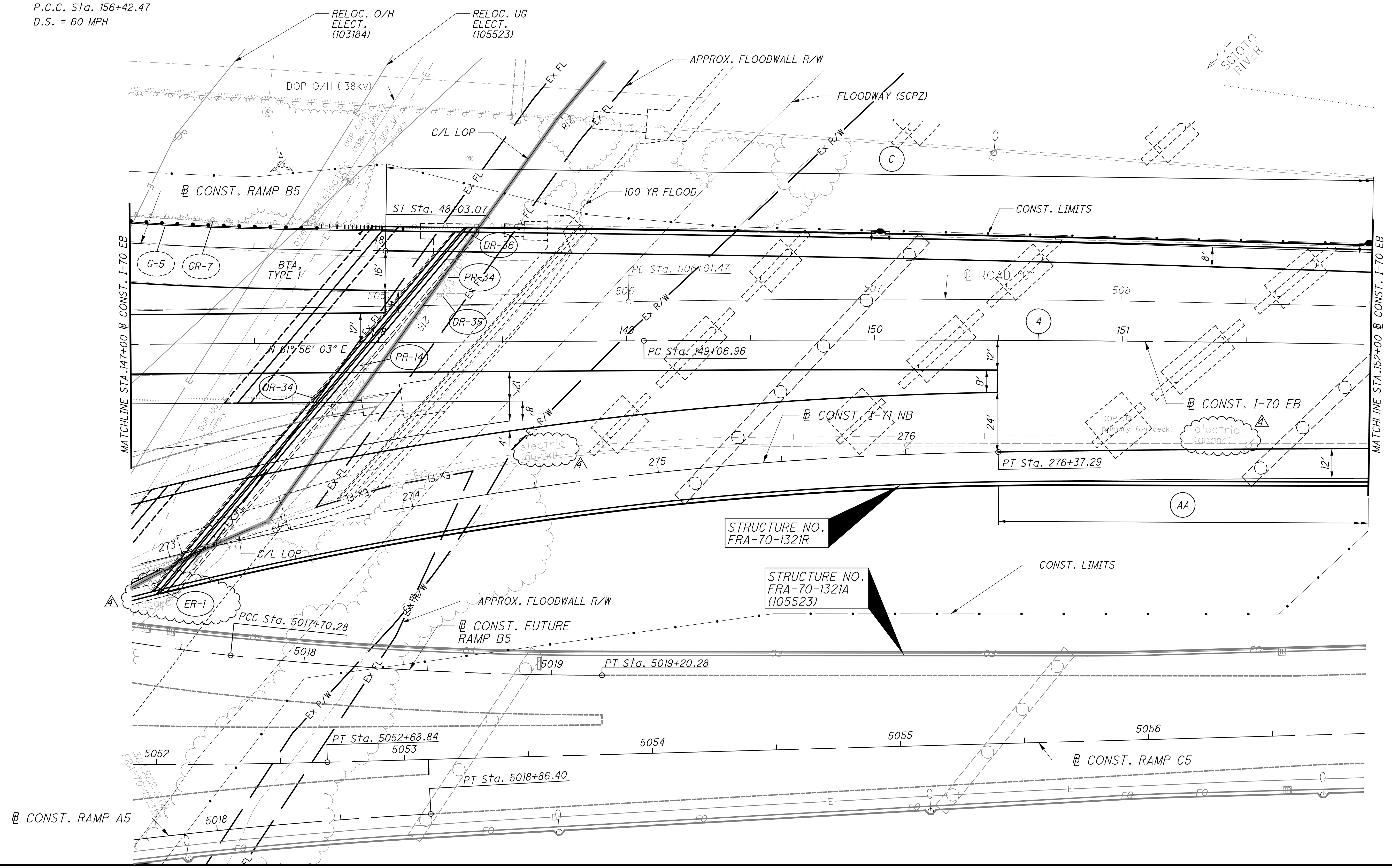
4 @ CONST. I-70 EB  
 P.I. Sta. 152+74.83  
 $\Delta = 3^\circ 25' 57''$  (RT)  
 $D_c = 0^\circ 28' 00''$   
 $R = 12,277.67'$   
 $T = 367.87'$   
 $L = 735.51'$   
 $E = 5.51'$   
 $C = 735.40'$   
 $C.B. = N 63^\circ 39' 01'' E$   
 $e_{max} = N.C.$   
 P.C. Sta. 149+06.96  
 P.C.C. Sta. 156+42.47  
 D.S. = 60 MPH

NO.	DESCRIPTION	REV. BY	DATE
4	ADDED ER-1	CWL	10-30-23

FOR I-70 EB PROFILE, SEE SHEET 188  
 FOR I-71 NB PLANS, SEE SHEETS 211 - 218  
 FOR RAMP B5 PLANS, SEE SHEETS 219 - 222  
 FOR GORE DETAILS, SEE SHEETS 290-292  
 FOR STRUCTURE PLANS, SEE SHEETS 424-524  
 FOR UNDERDRAIN DETAILS, SEE SHEETS 306-308  
 FOR LIGHTING PLANS, SEE SHEETS 401 - 413  
 FOR ESTIMATED QUANTITIES, SEE SHEETS 169 - 178

TAPER TABLE									
TAPER CODE	BEGINNING STATION	ENDING STATION	SIDE	DESCRIPTION	BEGIN WIDTH	END WIDTH	TAPER RATE		
C	148+03.07	I-70 EB	154+53.07	I-70 EB	LT	PAVEMENT	37.00'	24.00'	50:1
AA	150+50.00	I-70 EB	155+00.00	I-70 EB	RT	PAVEMENT	45.00'	36.00'	50:1

----- PROJECT 4R (105523)



PLAN - I-70 EASTBOUND  
 STA. 147+00.00 TO STA. 152+00.00

FRA-70-13.11

187  
1151

01-2012-2012048 VFRAY7372-ROADWAY SHEETS 773720P007.DGN  
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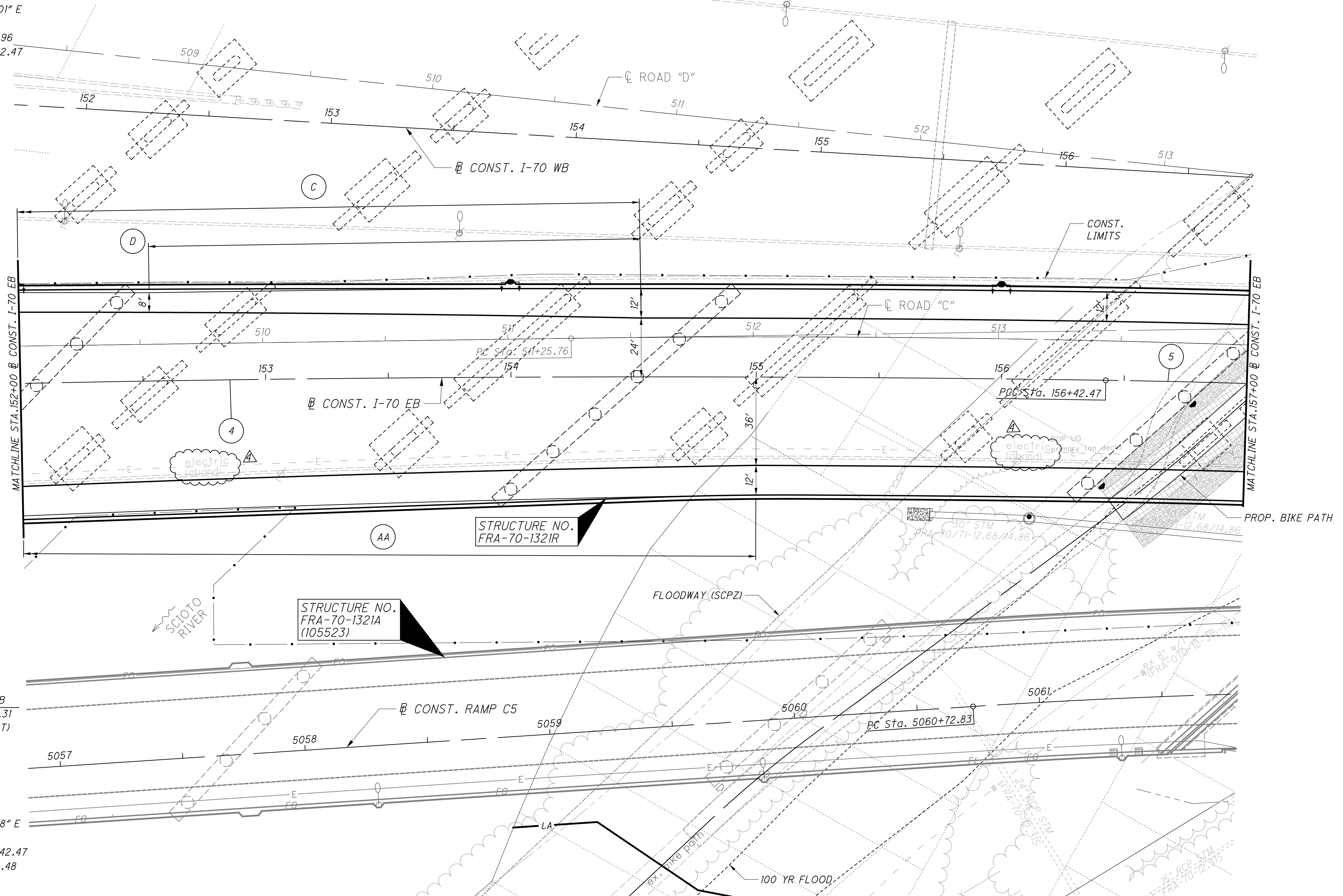
4 @ CONST. I-70 EB  
 P.I. Sta. 152+74.83  
 $\Delta = 3^\circ 25' 57''$  (RT)  
 $D_c = 0^\circ 28' 00''$   
 $R = 12,277.67'$   
 $T = 367.87'$   
 $L = 735.51'$   
 $E = 5.51'$   
 $C = 735.40'$   
 C.B. = N 63° 39' 01" E  
 $e_{max} = N.C.$   
 P.C. Sta. 149+06.96  
 P.C.C. Sta. 156+42.47  
 D.S. = 60 MPH

FOR I-70 EB PROFILE, SEE SHEET 190  
 FOR STRUCTURE PLANS, SEE SHEETS 424-524  
 FOR UNDERDRAIN DETAILS, SEE SHEETS 306-308  
 FOR LIGHTING PLANS, SEE SHEETS 401-413  
 FOR RELOCATED BIKE PATH, SEE SHEETS 296-300  
 FOR ESTIMATED QUANTITIES, SEE SHEETS 169-178

----- PROJECT 4R (105523)

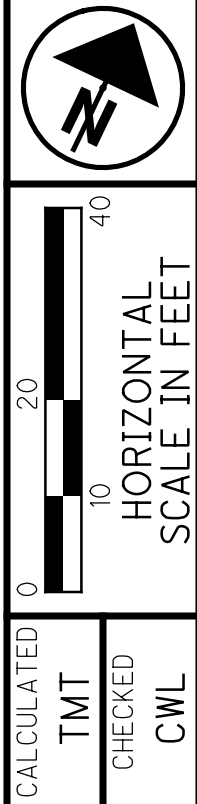
NO.	DESCRIPTION	REV. BY	DATE
4	ADDED LABELS	CWL	10-30-23

TAPER TABLE									
TAPER CODE	BEGINNING STATION	ENDING STATION	SIDE	DESCRIPTION	BEGIN WIDTH	END WIDTH	TAPER RATE		
C	148+03.07	I-70 EB	154+53.07	I-70 EB	LT	PAVEMENT	37.00'	24.00'	50:1
D	152+53.08	I-70 EB	154+53.07	I-70 EB	LT	SHOULDER	8.00'	12.00'	50:1
AA	150+50.00	I-70 EB	155+00.00	I-70 EB	RT	PAVEMENT	45.00'	36.00'	50:1



5 @ CONST. I-70 EB  
 P.I. Sta. 167+27.31  
 $\Delta = 31^\circ 42' 37''$  (RT)  
 $D_c = 1^\circ 30' 00''$   
 $R = 3,819.72'$   
 $T = 1,084.84'$   
 $L = 2,114.01'$   
 $E = 151.07'$   
 $C = 2,087.14'$   
 C.B. = N 81° 13' 18" E  
 $e_{max} = 0.037$   
 P.C.C. Sta. 156+42.47  
 P.T. Sta. 177+56.48  
 D.S. = 60 MPH

01-2012-2012048 FRA7732-ROADWAY SHEETS 77320908.DGN  
 10/30/2023 12:18:30 PM  
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PLAN - I-70 EASTBOUND  
 STA. 152+00.00 TO STA. 157+00.00

FRA-70-13.11

189  
1151

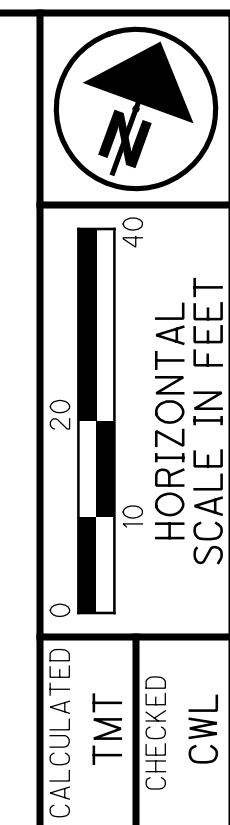


5 **B CONST. I-70 EB**  
 P.I. Sta. 167+27.31  
 $\Delta = 31^\circ 42' 37''$  (RT)  
 $D_c = 1^\circ 30' 00''$   
 $R = 3,819.72'$   
 $T = 1,084.84'$   
 $L = 2,114.01'$   
 $E = 151.07'$   
 $C = 2,087.14'$   
 $C.B. = N 81^\circ 13' 18'' E$   
 $e_{max} = 0.037$   
 P.C.C. Sta. 156+42.47  
 P.T. Sta. 177+56.48  
 D.S. = 60 MPH

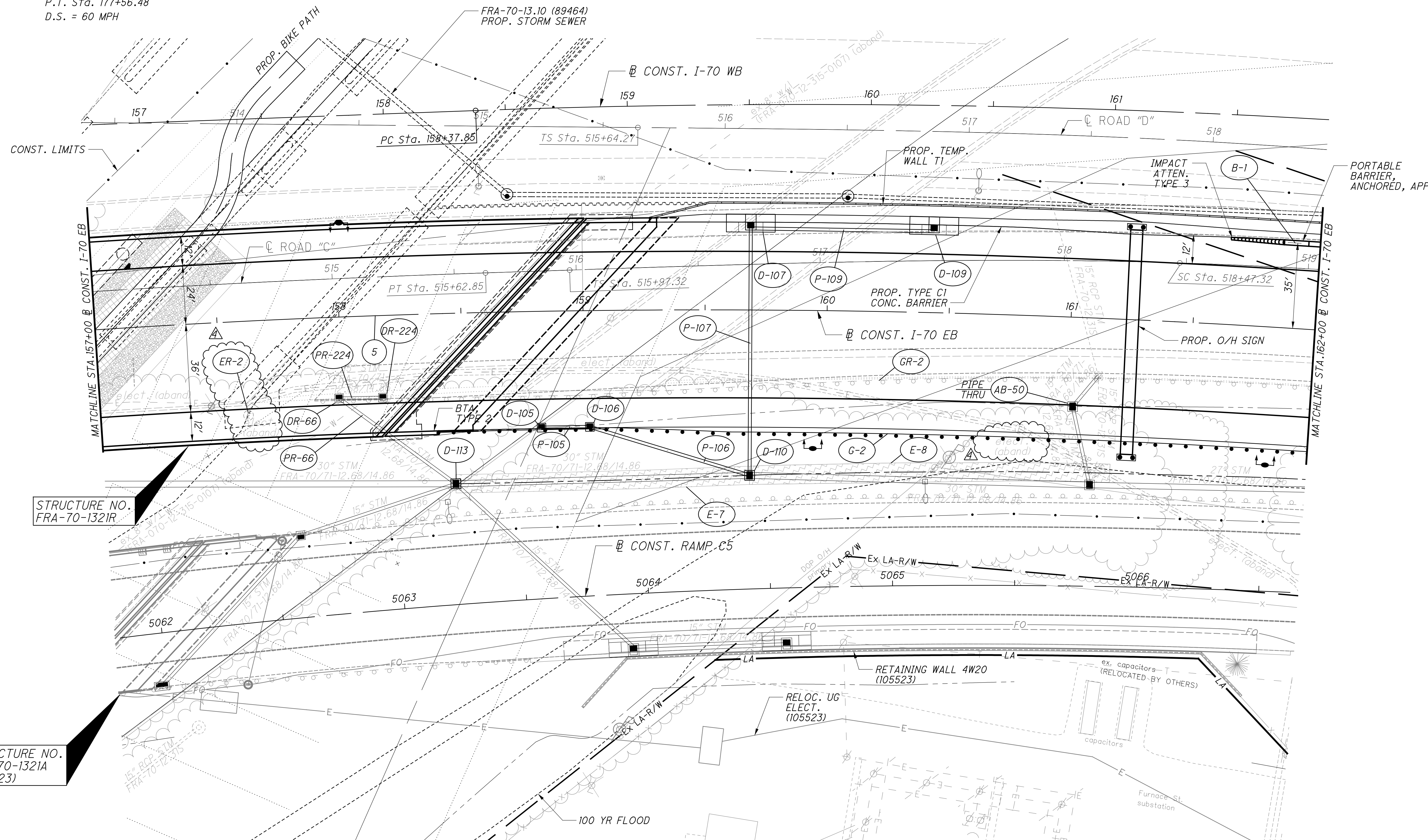
NO.	DESCRIPTION	REV. BY	DATE
4	ADDED ER-2	CWL	10-30-23

ITEM 670 - DITCH EROSION PROTECTION

FOR I-70 EB PROFILE, SEE SHEET 192  
 FOR STRUCTURE PLANS, SEE SHEETS 424 - 524  
 FOR TEMP RETAINING WALL DETAILS, SEE SHEETS 349 - 360  
 FOR UNDERDRAIN DETAILS, SEE SHEETS 306 - 308  
 FOR LIGHTING PLANS, SEE SHEETS 401 - 413  
 FOR RELOCATED BIKE PATH PLANS, SEE SHEETS 296 - 300  
 FOR ESTIMATED QUANTITIES, SEE SHEETS 169 - 178



----- PROJECT 4R (105523)



STRUCTURE NO.  
FRA-70-1321R

STRUCTURE NO.  
FRA-70-1321A  
(105523)

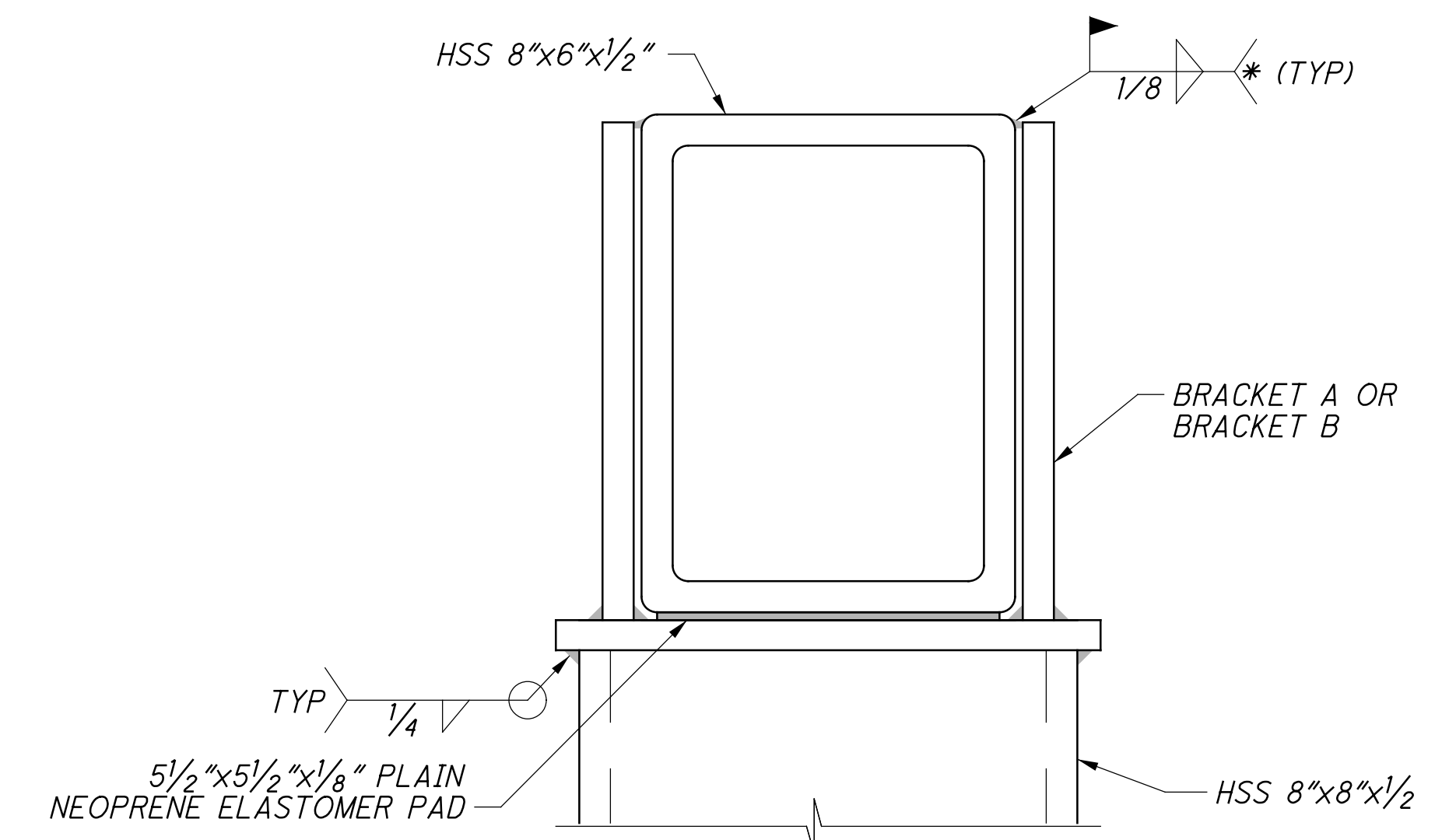
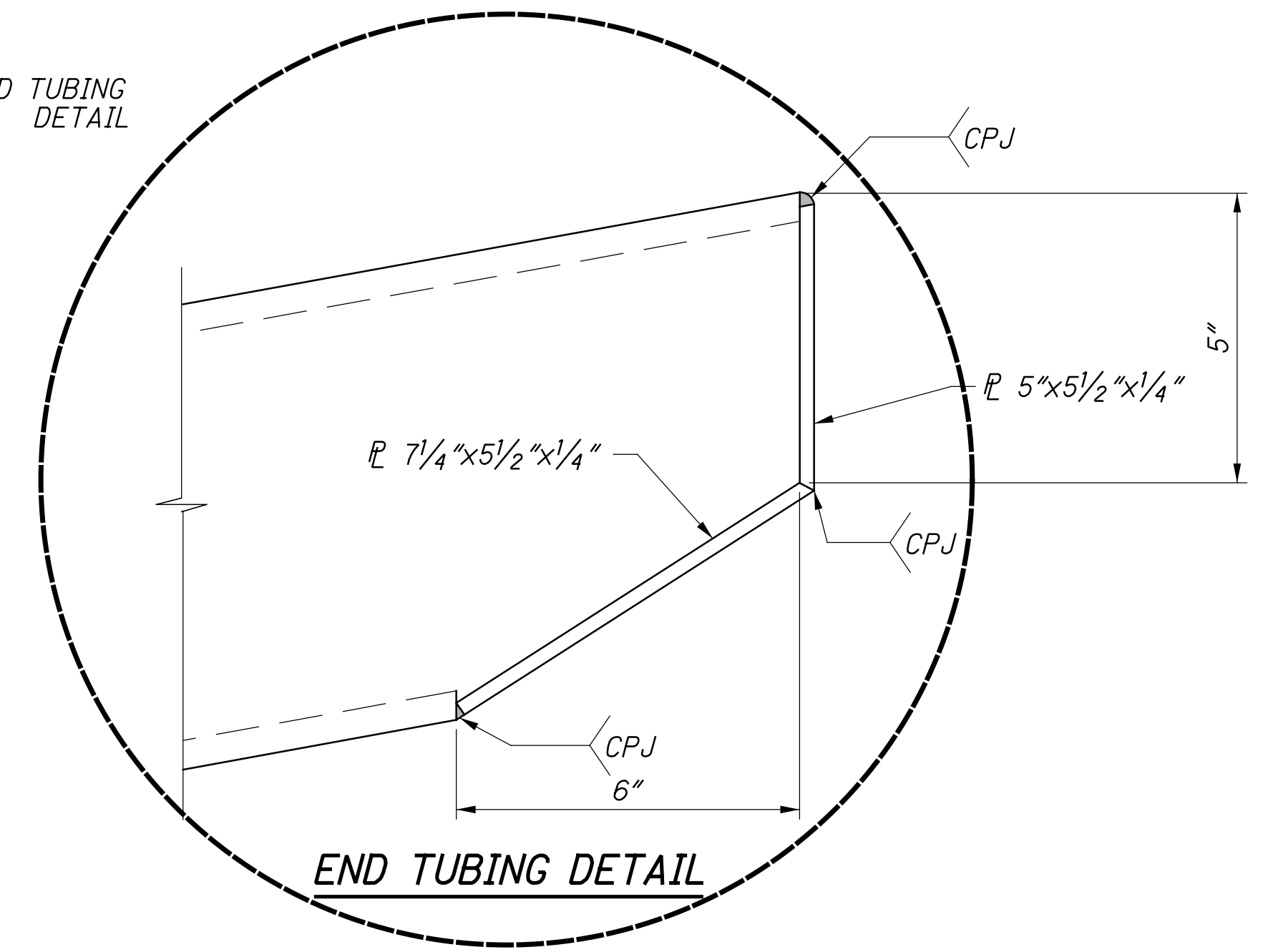
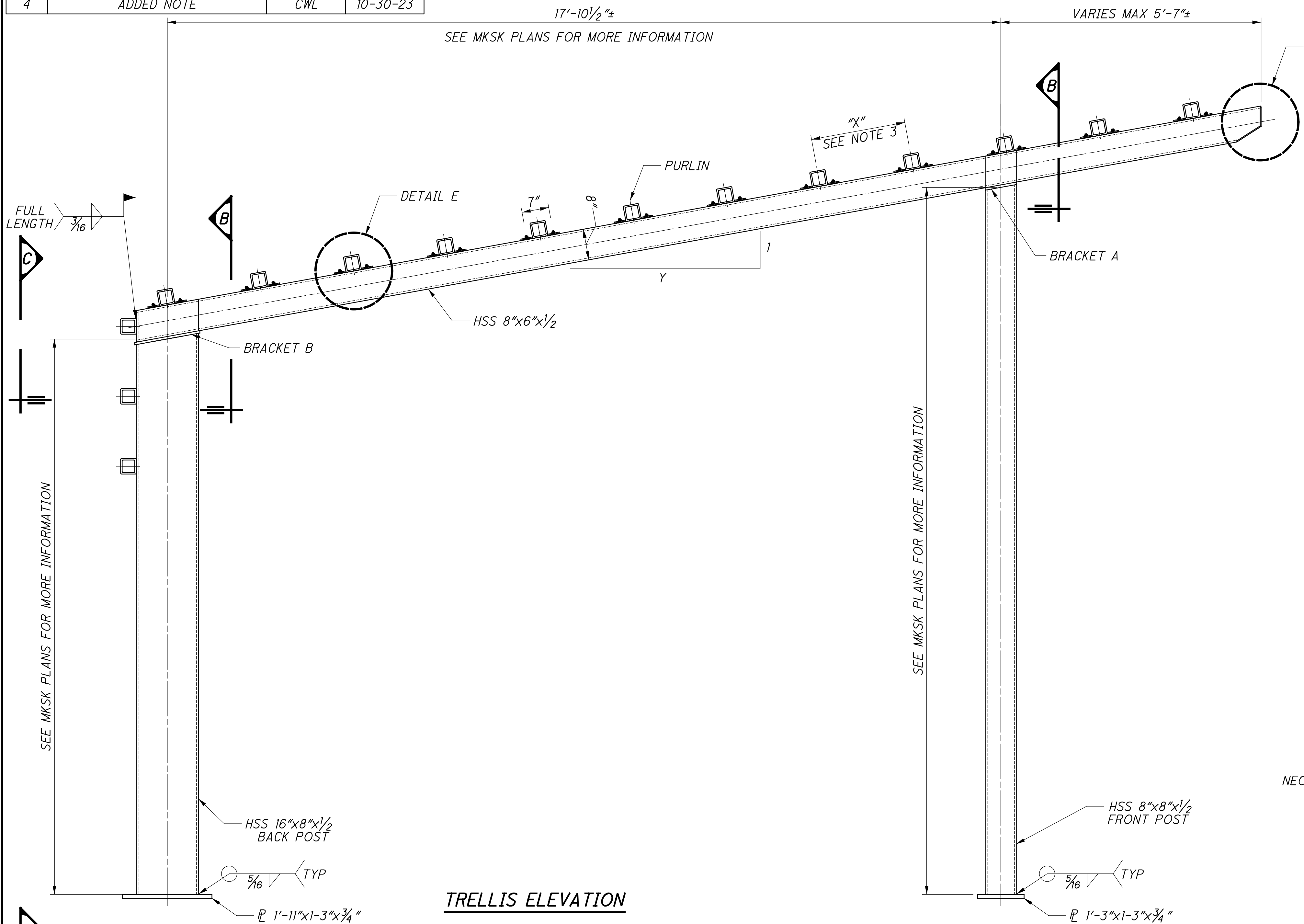
PLAN - I-70 EASTBOUND  
 STA. 157+00.00 TO STA. 162+00.00

FRA-70-13.11

191  
1151

01-2012-2012048 FRA7372-ROADWAY SHEETS 773720P009.DGN  
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NO.	DESCRIPTION	REV. BY	DATE
4	ADDED NOTE	CWL	10-30-23

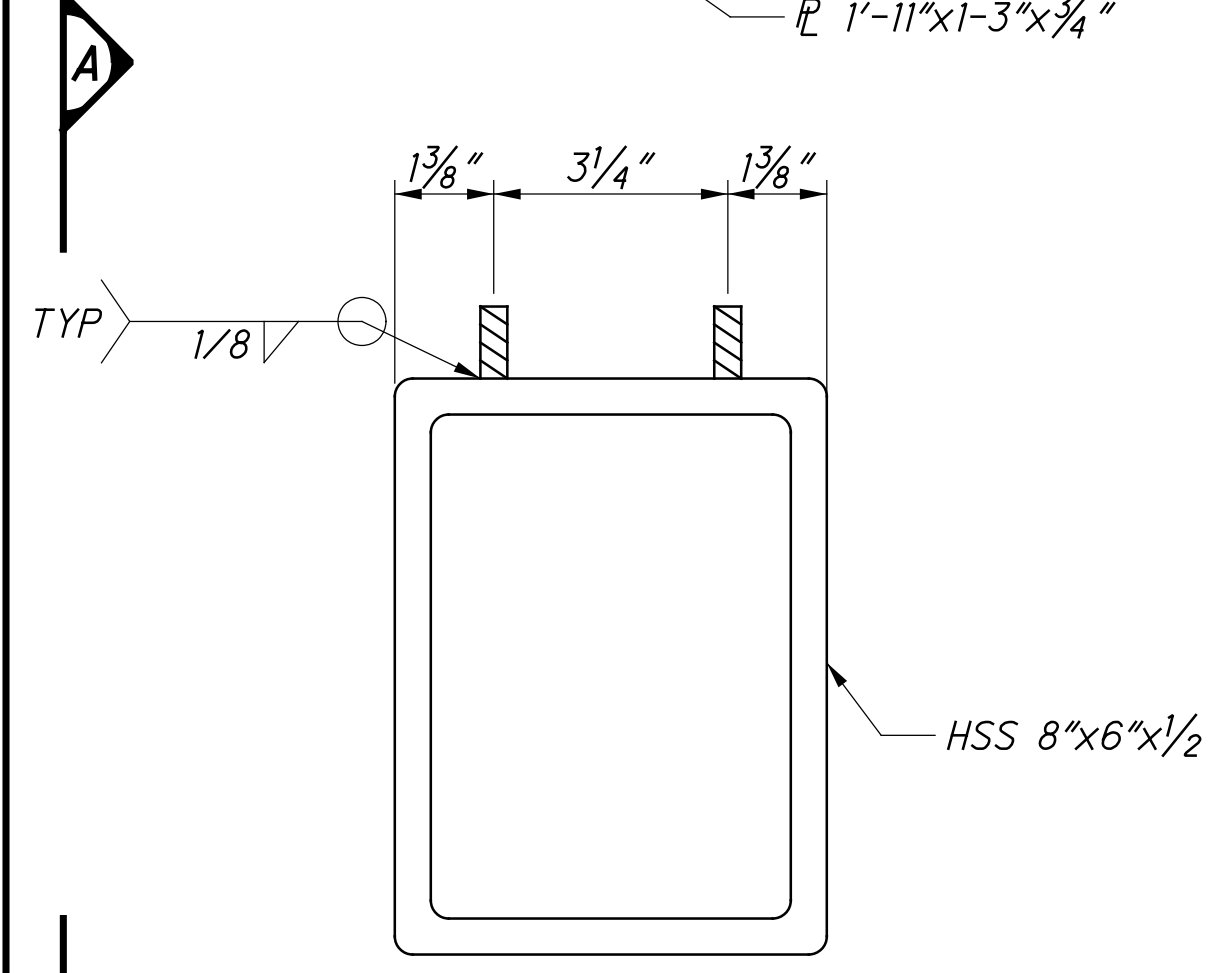


**LEGEND:**  
 \* 2" LONG FILET WELD AT FRONT POST  
 3" LONG FILET WELD AT BACK POST

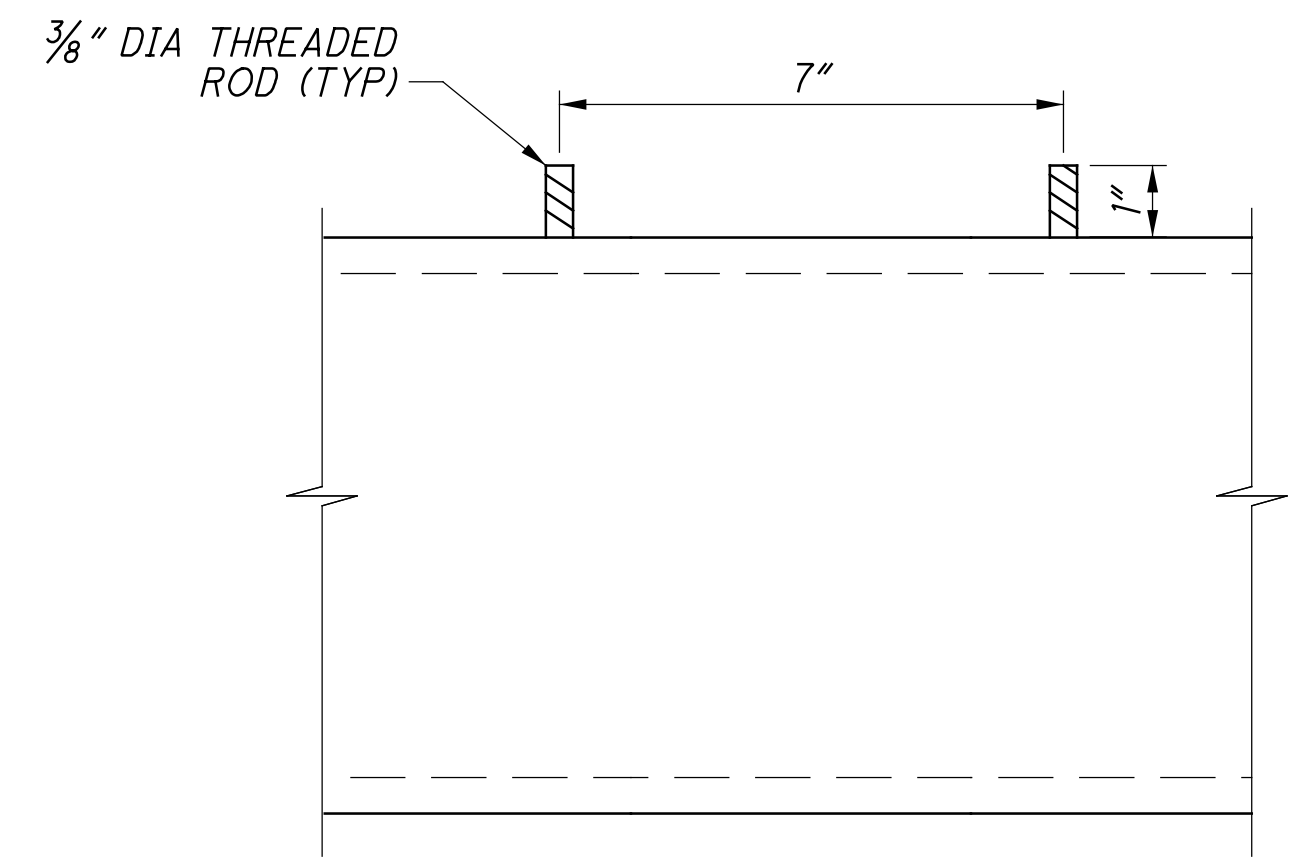
- NOTES:**
- SEE SHEET 2/5 FOR BRACKET A AND B DETAILS
  - SEE SHEET 3/5 FOR DETAIL E
  - "X" AND "Y" SEE MKSK PLANS FOR MORE INFORMATION
  - PLAIN NEOPRENE ELASTOMER PAD SHALL HAVE A HARDNESS OF 50 DUROMETER WITH GRADE 2
  - ALL STEEL SHALL BE ASTM A709 GRADE 50 KSI- YIELD STRENGTH 50 KSI
  - THREADED ROD SHALL BE 316 STAINLESS STEEL AND CONFORM TO ASTM A193
  - METHOD OF WELDING TECHNIQUE ON THE THREADED RODS SHALL BE PROVIDED ON SHOP DRAWINGS.
  - ALL WELDS SHALL BE E70 ELECTRODES.
  - SEE SHEET 5/5 FOR TRELLIS BASE DETAILS

10. TRELLIS CANNOT BE INSTALLED UNTIL THE PROJECT 4R PID 105523 PART 1 CONTRACTOR HAS THE FRA-70-1395C BRIDGE CONSTRUCTED

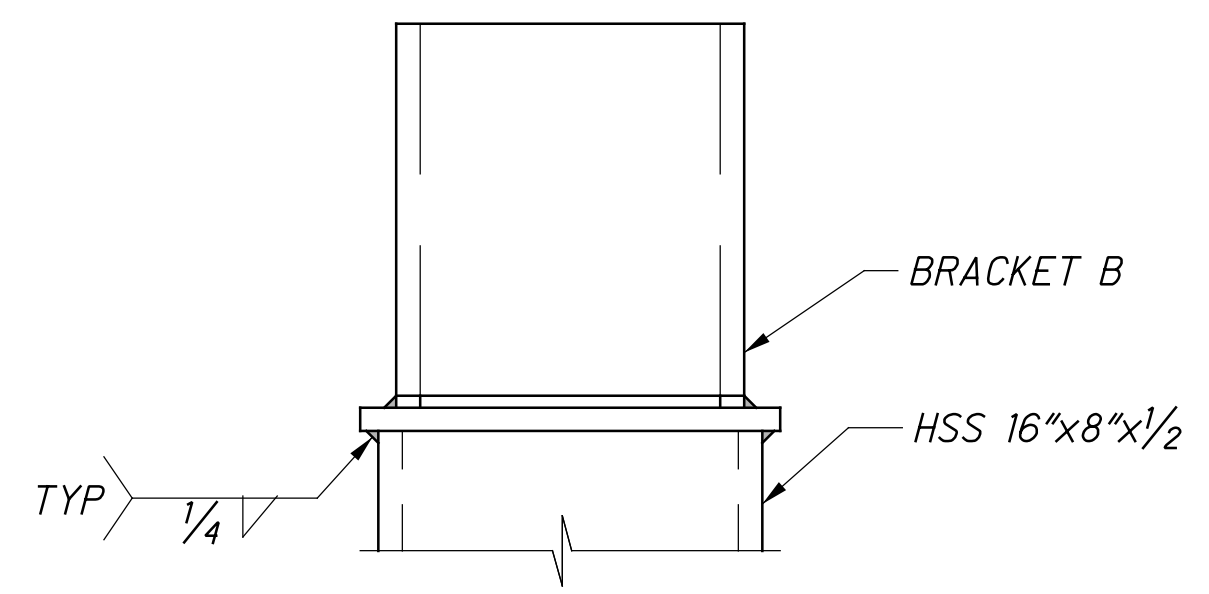
**TRELLIS ELEVATION**



**THREADED ROD DETAILS**

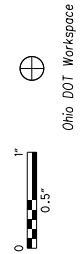


**VIEW A-A**



**VIEW C-C**

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 By: white



34" x 22"

SHEET NUM.										PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
480	693	696						01/IMS/04	04/NHS/10								
<b>RETAINING WALLS (E7)</b>																	
	12,305							12,305		SPECIAL	20302000	12,305	CY	ENGINEERED FILL: LIGHTWEIGHT CELLULAR CONCRETE FILL, CLASS II			
	758							758		SPECIAL	20302000	758	CY	ENGINEERED FILL: LIGHTWEIGHT CELLULAR CONCRETE FILL, CLASS III			
	18							18		203	20000	18	CY	EMBANKMENT			
	691							691		203	35110	691	CY	GRANULAR MATERIAL, TYPE B			
	2							2		SPECIAL	20365000	2	EACH	SETTLEMENT PLATFORM			
	3,117							3,117		203	98000	3,117	CY	ROADWAY, MISC.: EPS GEOFOAM FILL			
	LUMP							LUMP		503	11101	LS		COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN	660		
	87							87		511	53012	87	CY	CLASS QC2 CONCRETE, MISC.: LOAD DISTRIBUTION SLAB			
	281							281		512	10100	281	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)			
	16							16		601	21000	16	SY	CONCRETE SLOPE PROTECTION			
	68							68		516	13200	68	SF	1/2" PREFORMED EXPANSION JOINT FILLER			
	59							59		516	13900	59	SF	2" PREFORMED EXPANSION JOINT FILLER			
	2,906							2,906		840	20001	2,906	SF	MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN	660		
	1,300							1,300		840	21000	1,300	CY	WALL EXCAVATION			
	315							315		840	22000	315	SY	FOUNDATION PREPARATION			
	2,660							2,660		840	23000	2,660	CY	SELECT GRANULAR BACKFILL			
	97							97		840	26000	97	FT	CONCRETE COPING			
	2,906							2,906		840	26050	2,906	SF	AESTHETIC SURFACE TREATMENT			
	5							5		840	27000	5	DAY	ON-SITE ASSISTANCE			
<b>RETAINING WALLS (E9)</b>																	
		1,523						1,523		203	20000	1,523	CY	EMBANKMENT			
		1,229						1,229		203	35110	1,229	CY	GRANULAR MATERIAL, TYPE B			
		LUMP						LUMP		503	11101	LS		COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN	660		
		3,766						3,766		509	10001	3,766	LB	EPOXY COATED REINFORCING STEEL, AS PER PLAN PARAPET INCLUDING SLEEPER SLAB WITH QC/QA	660		
		24						24		511	53012	24	CY	CLASS QC2 CONCRETE, MISC.: (PERMANENT GRAFFITI PROTECTION)			
		41						41		512	10001	41	SY	SEALING OF CONCRETE SURFACES, AS PER PLAN	660		
		500						500		512	10100	500	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)			
		70						70		516	13200	70	SF	1/2" PREFORMED EXPANSION JOINT FILLER			
		195						195		516	13900	195	SF	2" PREFORMED EXPANSION JOINT FILLER			
		17						17		601	21000	17	SY	CONCRETE SLOPE PROTECTION			
		5,574						5,574		840	20001	5,574	SF	MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN	660		
		2,754						2,754		840	21000	2,754	CY	WALL EXCAVATION			
		502						502		840	22000	502	SY	FOUNDATION PREPARATION			
		13,143						13,143		840	23000	13,143	CY	SELECT GRANULAR BACKFILL			
		334						334		840	25010	334	FT	6" DRAINAGE PIPE, PERFORATED			
		169						169		840	26000	169	FT	CONCRETE COPING			
		5,574						5,574		840	26050	5,574	SF	AESTHETIC SURFACE TREATMENT			
		5						5		840	27000	5	DAY	ON-SITE ASSISTANCE			
<b>STRUCTURE OVER 20 FOOT SPAN (FRA-070-1322L)</b>																	
	565							565		503	21101	565	CY	UNCLASSIFIED EXCAVATION, AS PER PLAN	477		
	LUMP							LUMP		505	11100	LS		PILE DRIVING EQUIPMENT MOBILIZATION			
	3,300							3,300		507	00100	3,300	FT	STEEL PILES HP10X42, FURNISHED			
	3,055							3,055		507	00150	3,055	FT	STEEL PILES HP10X42, DRIVEN			
	49							49		507	93300	49	EACH	STEEL POINTS OR SHOES			
	618,934							618,934		509	10001	618,934	LB	EPOXY COATED REINFORCING STEEL, AS PER PLAN	477		
	1,328							1,328		511	34447	1,328	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN	477		
	325							325		511	34450	325	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET)			
	253							253		511	44112	253	CY	CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT NOT INCLUDING FOOTING			
	477							477		511	45602	477	CY	CLASS QC4 MASS CONCRETE, SUBSTRUCTURE WITH QC/QA			
	22							22		511	46012	22	CY	CLASS QC1 CONCRETE WITH QC/QA, RETAINING/WINGWALL NOT INCLUDING FOOTING			
	146							146		511	46512	146	CY	CLASS QC1 CONCRETE WITH QC/QA, FOOTING			
	254							254		512	10001	254	SY	SEALING OF CONCRETE SURFACES, AS PER PLAN (PERMANENT GRAFFITI PROTECTION)	477		
	2,927							2,927		512	10100	2,927	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)			
	248,946	4						248,946	4	513	10280	248,946	4	LB	STRUCTURAL STEEL MEMBERS, LEVEL 4		
	1,712,826	4						1,712,826	4	513	10401	1,712,826	4	LB	STRUCTURAL STEEL MEMBERS, HYBRID GIRDER, LEVEL SIX (6) FABRICATION, AS PER PLAN	479	
	9,471							9,471		513	20000	9,471	EACH	WELDED STUD SHEAR CONNECTORS			
	27,528							27,528		514	00060	27,528	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT			
	27,528							27,528		514	00066	27,528	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT			
	111							111		SPECIAL	51612400	111	FT	MODULAR EXPANSION JOINT	478		

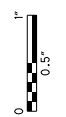
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4	QUANTITY CHANGES	ACW	10/30/23

CALCULATED TAZ CHECKED DEB  
**GENERAL SUMMARY**  
**FRA-70-13.10**  
 195  
 702  
 ms consultants, inc.



ms consultants, inc.  
msconsultants.com

Ohio DOT Workspace  
7077 East Interchange 6A  
www.msconsultants.com



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SHEET NUM.				PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.
480	538			04/NHS/10	EXT	TOTAL				
<b>STRUCTURE OVER 20 FOOT SPAN (FRA-070-1322L) (CONT.)</b>										
16				16	516	13600	16	SF	1" PREFORMED EXPANSION JOINT FILLER	
238				238	516	13900	238	SF	2" PREFORMED EXPANSION JOINT FILLER	
5				5	518	12200	5	EACH	SCUPPERS, INCLUDING SUPPORTS	
120				120	518	21200	120	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
129				129	518	40000	129	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	
39				39	518	40010	39	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	
130				130	518	51200	130	FT	PIPE DOWNSPOUT, INCLUDING SPECIALS, (10")	
180				180	524	94919	180	FT	DRILLED SHAFTS, 60" DIAMETER, INTO BEDROCK, AS PER PLAN	479
537				537	524	94931	537	FT	DRILLED SHAFTS, 66" DIAMETER, ABOVE BEDROCK, AS PER PLAN	479
290				290	526	30010	290	SY	REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=17")	
115				115	526	90010	115	FT	TYPE A INSTALLATION	
48				48	846	00110	48	CF	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM	
24				24	869	00101	24	EACH	HIGH LOAD MULTI-ROTATIONAL (HLMR) BEARINGS, AS PER PLAN	479
12				12	894	10000	12	EACH	THERMAL INTEGRITY PROFILING (TIP) TEST	479
<b>STRUCTURE OVER 20 FOOT SPAN (FRA-070-1323C)</b>										
LUMP				LUMP	202	11003	LS		STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	535
745				745	202	22900	745	SY	APPROACH SLAB REMOVED	
10,500				10,500	202	23500	10,500	SY	WEARING COURSE REMOVED	
278				278	202	32800	278	SY	CONCRETE SLOPE PROTECTION REMOVED	
14				14	202	98100	14	EACH	REMOVAL MISC. PILE REMOVED, EXSTING STRUCTURE	535
3,242				3,242	503	21101	3,242	CY	UNCLASSIFIED EXCAVATION, AS PER PLAN	535
LUMP				LUMP	505	11100	LS		PILE DRIVING EQUIPMENT MOBILIZATION	
6,350				6,350	507	00100	6,350	FT	STEEL PILES HP10X42, FURNISHED	
5,890				5,890	507	00150	5,890	FT	STEEL PILES HP10X42, DRIVEN	
92				92	507	93300	92	EACH	STEEL POINTS OR SHOES	
881,328				881,328	509	10001	881,328	LB	EPOXY COATED REINFORCING STEEL, AS PER PLAN	536
1,710				1,710	511	34447	1,710	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN	536
360				360	511	34450	360	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET)	
394				394	511	44112	394	CY	CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT NOT INCLUDING FOOTING	
596				596	511	45602	596	CY	CLASS QC4 MASS CONCRETE, SUBSTRUCTURE WITH QC/QA	
277				277	511	46012	277	CY	CLASS QC1 CONCRETE WITH QC/QA, RETAINING/WINGWALL NOT INCLUDING FOOTING	
579				579	511	46512	579	CY	CLASS QC1 CONCRETE WITH QC/QA, FOOTING	
843				843	512	10001	843	SY	SEALING OF CONCRETE SURFACES, AS PER PLAN (PERMANENT GRAFFITI PROTECTION)	536
2,389				2,389	512	10100	2,389	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
51				51	512	33000	51	SY	TYPE 2 WATERPROOFING	
355,667				355,667	513	10300	355,667	LB	STRUCTURAL STEEL MEMBERS, LEVEL 5	
2,213,561				2,213,561	513	10401	2,213,561	LB	STRUCTURAL STEEL MEMBERS, HYBRID GIRDER, LEVEL SIX(6) FABRICATION, AS PER PLAN	536
12,801				12,801	513	20000	12,801	EACH	WELDED STUD SHEAR CONNECTORS	
29,490				29,490	514	00060	29,490	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT	
29,490				29,490	514	00066	29,490	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT	
134				134	SPECIAL	51612400	134	FT	MODULAR EXPANSION JOINT	536
377				377	516	13600	377	SF	1" PREFORMED EXPANSION JOINT FILLER	
216				216	516	13900	216	SF	2" PREFORMED EXPANSION JOINT FILLER	
5				5	518	12200	5	EACH	SCUPPERS, INCLUDING SUPPORTS	
481				481	518	21200	481	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
361				361	518	40000	361	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	
45				45	518	40010	45	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	
49				49	518	51200	49	FT	PIPE DOWNSPOUT, INCLUDING SPECIALS (10")	
144				144	524	94919	144	FT	DRILLED SHAFTS, 60" DIAMETER, INTO BEDROCK, AS PER PLAN	537
496				496	524	94931	496	FT	DRILLED SHAFTS, 66" DIAMETER, ABOVE BEDROCK, AS PER PLAN	537
351				351	526	30010	351	SY	REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=17")	
134				134	526	90010	134	FT	TYPE A INSTALLATION	
56				56	846	00110	56	CF	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM	
30				30	869	00101	30	EACH	HIGH LOAD MULTI-ROTATIONAL (HLMR) BEARINGS, AS PER PLAN	537
12				12	894	10000	12	EACH	THERMAL INTEGRITY PROFILING (TIP) TEST	537

CALCULATED TAZ CHECKED DEA

**GENERAL SUMMARY**

**FRA - 70 - 13.10**

196  
702

NO.	DESCRIPTION	REV. BY	DATE
4	QUANTITY CHANGES	ACW	10/30/23

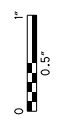
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 34" x 22"

SHEET NUM.				PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.
619	636			04/NHS/10	ITEM	EXT	TOTAL			
									<b>STRUCTURE OVER 20 FOOT SPAN (FRA-070-1358L)</b>	
	LUMP			LUMP	202	11003	LS		STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	602
	645			645	202	22900	645	SY	APPROACH SLAB REMOVED	
	645			645	202	23500	645	SY	WEARING COURSE REMOVED	
	LUMP			LUMP	505	11100	LS		PILE DRIVING EQUIPMENT MOBILIZATION	
	5,490			5,490	507	00200	5,490	FT	STEEL PILES HP12X53, FURNISHED	
	219			219	503	21100	219	CY	UNCLASSIFIED EXCAVATION	
	5,185			5,185	507	00250	5,185	FT	STEEL PILES HP12X53, DRIVEN	
	2,210			2,210	507	00300	2,210	FT	STEEL PILES HP14X73, FURNISHED	
	2,040			2,040	507	00350	2,040	FT	STEEL PILES HP14X73, DRIVEN	
	95			95	507	93300	95	EACH	STEEL POINTS OR SHOES	
	334,495			334,495	509	10001	334,495	LB	EPOXY COATED REINFORCING STEEL, AS PER PLAN	602
	371			371	511	33418	371	CY	CLASS QC2 CONCRETE WITH QC/QA, SUPERSTRUCTURE	
	2			2	511	33501	2	EACH	SEMI-INTEGRAL DIAPHRAGM GUIDE, AS PER PLAN	602
	777			777	511	34446	777	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK	
	98			98	511	34450	98	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET)	
	377			377	511	40512	377	CY	CLASS QC1 CONCRETE WITH QC/QA, PIER ABOVE FOOTINGS	
	404			404	511	43512	404	CY	CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT INCLUDING FOOTING	
	104			104	511	46512	104	CY	CLASS QC1 CONCRETE WITH QC/QA, FOOTING	
	2,548			2,548	512	10100	2,548	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
	95			95	512	33000	95	SY	TYPE 2 WATERPROOFING	
	24			24	515	15130	24	EACH	DRAPED STRAND PRESTRESSED CONCRETE BRIDGE I-BEAM MEMBERS, LEVEL 3, TYPE WF72-49, 135' - 1.25" BEAM LENGTH	
	66			66	515	20000	66	EACH	INTERMEDIATE DIAPHRAGMS	
	232			232	516	10010	232	FT	ARMORLESS PREFORMED JOINT SEAL	
	356			356	516	13900	356	SF	2" PREFORMED EXPANSION JOINT FILLER	
	328			328	516	14020	328	FT	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL	
	12			12	516	44301	12	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN 1'-3" X 4 1/2" X 2'-4" PAD, 1'-4" X 2" X 2'-5" STEEL LOAD PLATE	602
	12			12	516	44301	12	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN 1'-3" X 4 1/2" X 2'-4" PAD, BEVELED 1'-4" X 3" X 2'-5" STEEL LOAD PLATE	602
	12			12	516	44301	12	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN 1'-4" X 4 1/2" X 2'-6" PAD, 1'-5" X 2" X 2'-7" STEEL LOAD PLATE	602
	12			12	516	44301	12	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN 1'-4" X 4 1/2" X 2'-6" PAD, BEVELED 1'-5" X 2" X 2'-7" STEEL LOAD PLATE	602
	204			204	518	21200	204	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
	283			283	518	40000	283	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	
	131			131	518	40010	131	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE INCLUDING SPECIALS	
	784			784	526	30010	784	SY	REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=17")	
	232			232	526	90030	232	FT	TYPE C INSTALLATION	
	114			114	605	14000	114	FT	6" BASE PIPE UNDERDRAINS	
	470			470	607	39900	470	FT	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC	
									<b>STRUCTURE OVER 20 FOOT SPAN (FRA-070-1373L)</b>	
	LUMP			LUMP	202	11203	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	635
	335			335	202	22900	335	SY	APPROACH SLAB REMOVED	
	897			897	202	23500	897	SY	WEARING COURSE REMOVED	
	28			28	202	98100	28	EACH	REMOVAL MISC.: PILE REMOVED, EXISTING STRUCTURE FRA-70-1379S	
	LUMP			LUMP	503	11100	LS		COFFERDAMS AND EXCAVATION BRACING	
	LUMP			LUMP	505	11100	LS		PILE DRIVING EQUIPMENT MOBILIZATION	
	2,870			2,870	507	00200	2,870	FT	STEEL PILES HP12X53, FURNISHED	
	2,730			2,730	507	00250	2,730	FT	STEEL PILES HP12X53, DRIVEN	
	28			28	507	93300	28	EACH	STEEL POINTS OR SHOES	
	73,484			73,484	509	10001	73,484	LB	EPOXY COATED REINFORCING STEEL, AS PER PLAN	635
	120			120	511	33418	120	CY	CLASS QC2 CONCRETE WITH QC/QA, SUPERSTRUCTURE	
	2			2	511	33501	2	EACH	SEMI-INTEGRAL DIAPHRAGM GUIDE, AS PER PLAN	635
	155			155	511	34446	155	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK	
	49			49	511	34450	49	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET)	
	179			179	511	43512	179	CY	CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT INCLUDING FOOTING	
	702			702	512	10100	702	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
	50			50	512	33000	50	SY	TYPE 2 WATERPROOFING	
	7			7	515	15020	7	EACH	DRAPED STRAND PRESTRESSED CONCRETE BRIDGE I-BEAM MEMBERS, LEVEL 3, TYPE 4, 91' - 11" BEAM LENGTH	
	18			18	515	20001	18	EACH	INTERMEDIATE DIAPHRAGMS, AS PER PLAN	635
	136			136	516	10010	136	FT	ARMORLESS PREFORMED JOINT SEAL	

CALCULATED TAZ CHECKED DEA  
**GENERAL SUMMARY**  
**FRA - 70 - 13.10**  
 197  
 702

NO.	DESCRIPTION	REV. BY	DATE
4	QUANTITY/DESCRIPTION CHANGES	ACW	10/20/23

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34" x 22"

SHEET NUM.		PART.			ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
519*	636	04/NHS/10	02/IMS/11	03/NHS/10						
<b>STRUCTURE OVER 20 FOOT SPAN (FRA-070-1373L) (CONT.)</b>										
	21	21			516	13600	21	SF	1" PREFORMED EXPANSION JOINT FILLER	
	189	189			516	13900	189	SF	2" PREFORMED EXPANSION JOINT FILLER	
	150	150			516	14020	150	FT	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL	
	14	14			516	44301	14	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN 1'-4" X 4 1/2" X 2'-0" PAD, 1'-5" X 2' X 2'-1" STEEL LOAD PLATE	635
	82	82			518	21200	82	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
	137	137			518	40000	137	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	
	91	91			518	40010	91	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	
	462	462			526	30010	462	SY	REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=17") / 4	
	136	136			526	90030	136	FT	TYPE C INSTALLATION	
	66	66			605	14000	66	FT	6" BASE PIPE UNDERDRAINS	
<b>STRUCTURE OVER 20 FOOT SPAN (FRA-70-1358R)</b>										
	50		30	20	503	21100	50	CY	UNCLASSIFIED EXCAVATION	
	LUMP		LUMP	LUMP	505	11100	LS		PILE DRIVING EQUIPMENT MOBILIZATION	
	1,540		924	616	507	00100	1,540	FT	STEEL PILES HP10X42, FURNISHED	
	1,450		870	580	507	00150	1,450	FT	STEEL PILES HP10X42, DRIVEN	
	18		10.8	7.2	507	93300	18	EACH	STEEL POINTS OR SHOES	
	67,138		40,283	26,855	509	10001	67,138	LB	EPOXY COATED REINFORCING STEEL, AS PER PLAN	4/47*
	199		119	80	511	34447	199	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN	4/47*
	57		34	23	511	34450	57	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET)	
	73		44	29	511	40512	73	CY	CLASS QC1 CONCRETE WITH QC/QA, PIER ABOVE FOOTINGS	
	24		14	10	511	44112	24	CY	CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT NOT INCLUDING FOOTING	
	54		32	22	511	46512	54	CY	CLASS QC1 CONCRETE WITH QC/QA, FOOTING	
	617		370	247	512	10100	617	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
	5		3	2	512	33000	5	SY	TYPE 2 WATERPROOFING	
	160,700		96,420	64,280	513	10280	160,700	LB	STRUCTURAL STEEL MEMBERS, LEVEL 4	
	1,314		788	526	513	20000	1,314	EACH	WELDED STUD SHEAR CONNECTORS	
	44		26	18	516	10010	44	FT	ARMORLESS PREFORMED JOINT SEAL	
	15		9	6	516	13900	15	SF	2" PREFORMED EXPANSION JOINT FILLER	
	50		30	20	516	14020	50	FT	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL	
	2		1	1	516	44201	2	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN (BEARING: 25" x 20" x 3.75")	36/47*
	2		1	1	516	44201	2	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN (BEARING: 15" x 12" x 3.375")	36/47*
	2		1	1	516	44201	2	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN (BEARING: 17" x 15" x 3.375")	36/47*
	36		22	14	518	21200	36	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
	40		24	16	518	40000	40	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	
	139		83	56	526	30011	139	SY	REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=17"), AS PER PLAN	4,37-39/47*
	45		27	18	526	90030	45	FT	TYPE C INSTALLATION	
	249		149	100	SPECIAL	60740000	249	FT	VANDAL PROTECTION FENCE: 6 FT STRAIGHT, COATED FABRIC	32-34/47*

CALCULATED TAZ CHECKED DEA  
**GENERAL SUMMARY**  
**FRA-70-13.10**  
197A  
702

\* REFERENCE SHEET NUMBER IS FROM PROJECT 4A, FRA-70-12.68, PART 1

NO.	DESCRIPTION	REV. BY	DATE
4	DESCRIPTION CHANGE	ACW	10/30/23



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ESTIMATED QUANTITIES

ESTIMATED QUANTITIES						CALC:	ELS/DBL/ATM	DATE:	10/18/21
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUT.	PIERS	SUPER.	GENERAL	SHEET REF.
503	21101	565	CY	UNCLASSIFIED EXCAVATION, AS PER PLAN	565				5/58
505	11100	LS		PILE DRIVING EQUIPMENT MOBILIZATION					
507	00100	3,300	FT	STEEL PILES HPI0X42, FURNISHED	3,300				
507	00150	3,055	FT	STEEL PILES HPI0X42, DRIVEN	3,055				
507	93300	49	EACH	STEEL POINTS OR SHOES	49				
509	10001	618,934	LB	EPOXY COATED REINFORCING STEEL, AS PER PLAN	31,603	104,209	483,122		5/58   19/58   54/58   55/58   57/58
511	34447	1,328	CY	CLASS OC2 CONCRETE WITH OC/OA, BRIDGE DECK, AS PER PLAN			1,328		5/58
511	34450	325	CY	CLASS OC2 CONCRETE WITH OC/OA, BRIDGE DECK (PARAPET)			325		
511	44112	253	CY	CLASS OC1 CONCRETE WITH OC/OA, ABUTMENT NOT INCLUDING FOOTING	253				
511	45602	477	CY	CLASS OC4 MASS CONCRETE, SUBSTRUCTURE WITH OC/OA		477			
511	46012	22	CY	CLASS OC1 CONCRETE WITH OC/OA, RETAINING/WINGWALL NOT INCLUDING FOOTING	22				
511	46512	146	CY	CLASS OC1 CONCRETE WITH OC/OA, FOOTING	146				
512	10001	254	SY	SEALING OF CONCRETE SURFACES, AS PER PLAN (PERMANENT GRAFFITI PROTECTION)	67	187			5/58
512	10100	2,927	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	67	974	1,886		
513	10280	248,946	LB	STRUCTURAL STEEL MEMBERS, LEVEL 4			248,946		7/58   26/58
513	10401	1,712,826	LB	STRUCTURAL STEEL MEMBERS, HYBRID GIRDER, LEVEL SIX (6) FABRICATION, AS PER PLAN			1,712,826		
513	20000	9,471	EACH	WELDED STUD SHEAR CONNECTORS			9,471		
514	00060	27,528	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT			27,528		
514	00066	27,528	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT			27,528		
516	12400	111	FT	SPECIAL - MODULAR EXPANSION JOINT			111		6/58
516	13600	16	SF	1" PREFORMED EXPANSION JOINT FILLER	16				
516	13900	238	SF	2" PREFORMED EXPANSION JOINT FILLER	238				
518	12200	5	EACH	SCUPPERS, INCLUDING SUPPORTS			5		
518	21200	120	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	120				
518	40000	129	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	129				
518	40010	39	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	39				
518	51200	130	FT	PIPE DOWNSPOUT, INCLUDING SPECIALS (10")			130		
524	94919	180	FT	DRILLED SHAFTS, 60" DIAMETER, INTO BEDROCK, AS PER PLAN		180			7/58
524	94931	537	FT	DRILLED SHAFTS, 66" DIAMETER, ABOVE BEDROCK, AS PER PLAN		537			7/58
526	30010	290	SY	REINFORCED CONCRETE APPROACH SLABS WITH OC/OA (T=17")	290				
526	90010	115	FT	TYPE A INSTALLATION	115				
601	21000	433	SY	CONCRETE SLOPE PROTECTION *	433				
601	32104	910	CY	ROCK CHANNEL PROTECTION, TYPE B WITH GEOTEXTILE FABRIC *	910				
SPECIAL	690E98400	LS		SPECIAL-EMERGENCY ACTION PLAN COORDINATION **					7/58
846	00110	48	CF	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM				48	
869	00101	24	EACH	HIGH LOAD MULTI-ROTATIONAL (HLMR) BEARINGS, AS PER PLAN			24		7/58
894	10000	12	EACH	THERMAL INTEGRITY PROFILING (TIP) TEST		12			7/58

LEGEND:

- \* QUANTITY CARRIED TO EROSION CONTROL IN THE GENERAL SUMMARY.
- \*\* QUANTITY CARRIED TO ROADWAY IN THE GENERAL SUMMARY.

NOTES:

1. SEE BRIDGE NO. FRA-70-1323C FOR:

- ITEM 202 - STRUCTURE REMOVED OVER 20 FOOT SPAN, AS PER PLAN;
- ITEM 202 - APPROACH SLAB REMOVED;
- ITEM 202 - WEARING COURSE REMOVED

NO.	DESCRIPTION	REV. BY	DATE
4	QUANTITY CHANGES	ACW	10/30/23

DESIGN AGENCY  
ms consultants, inc.  
2221 Schrock Road  
Columbus, Ohio 43229

DATE  
3/06/23  
REVIEWED  
WER  
STRUCTURE FILE NUMBER  
2510027

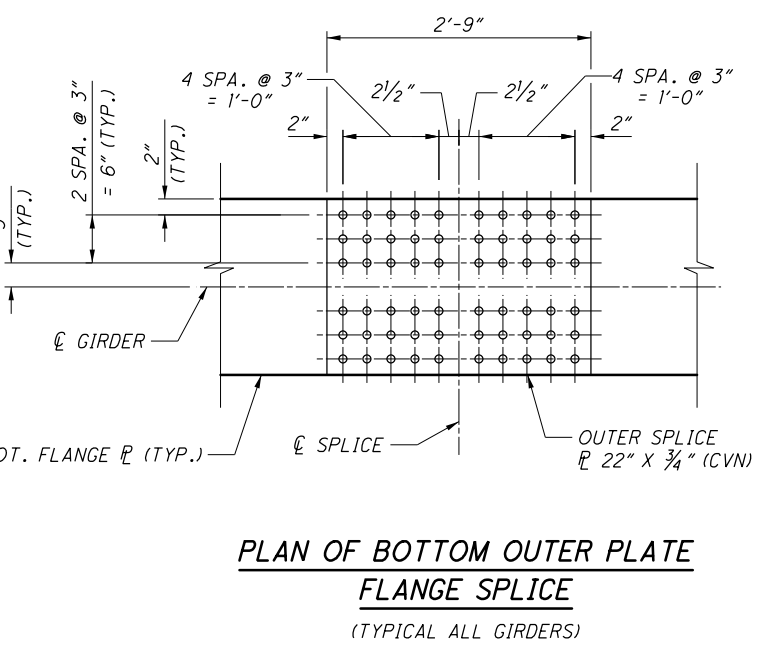
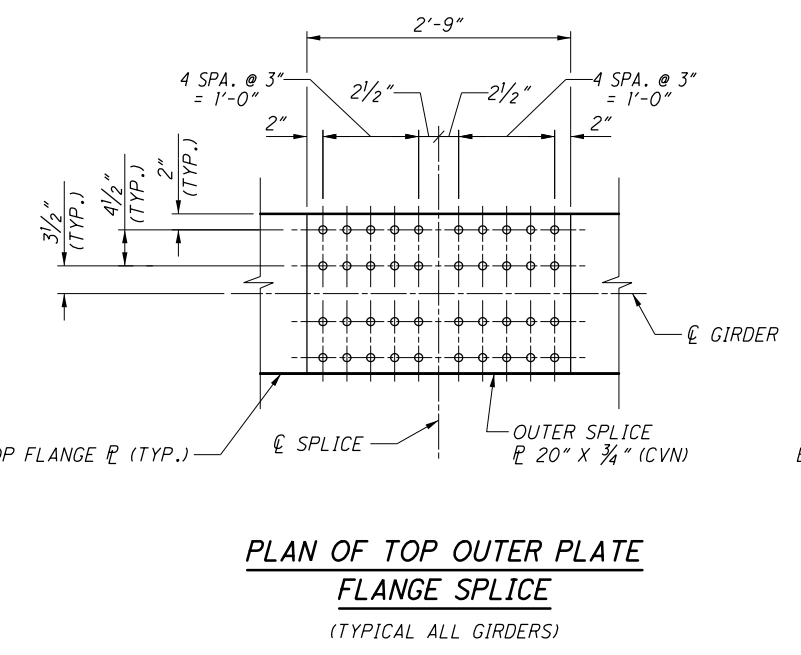
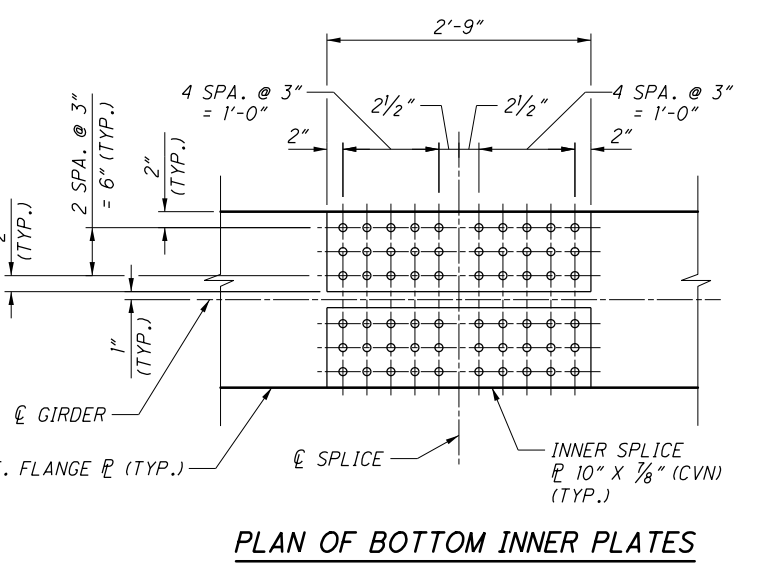
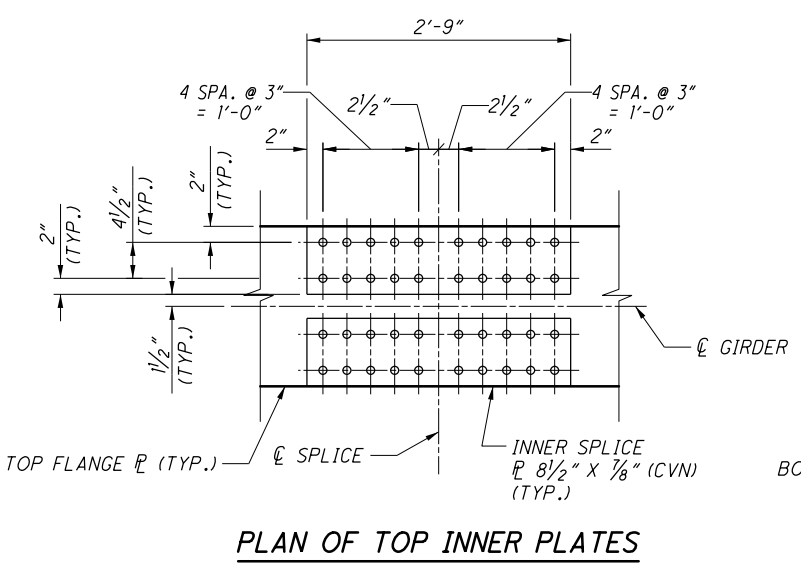
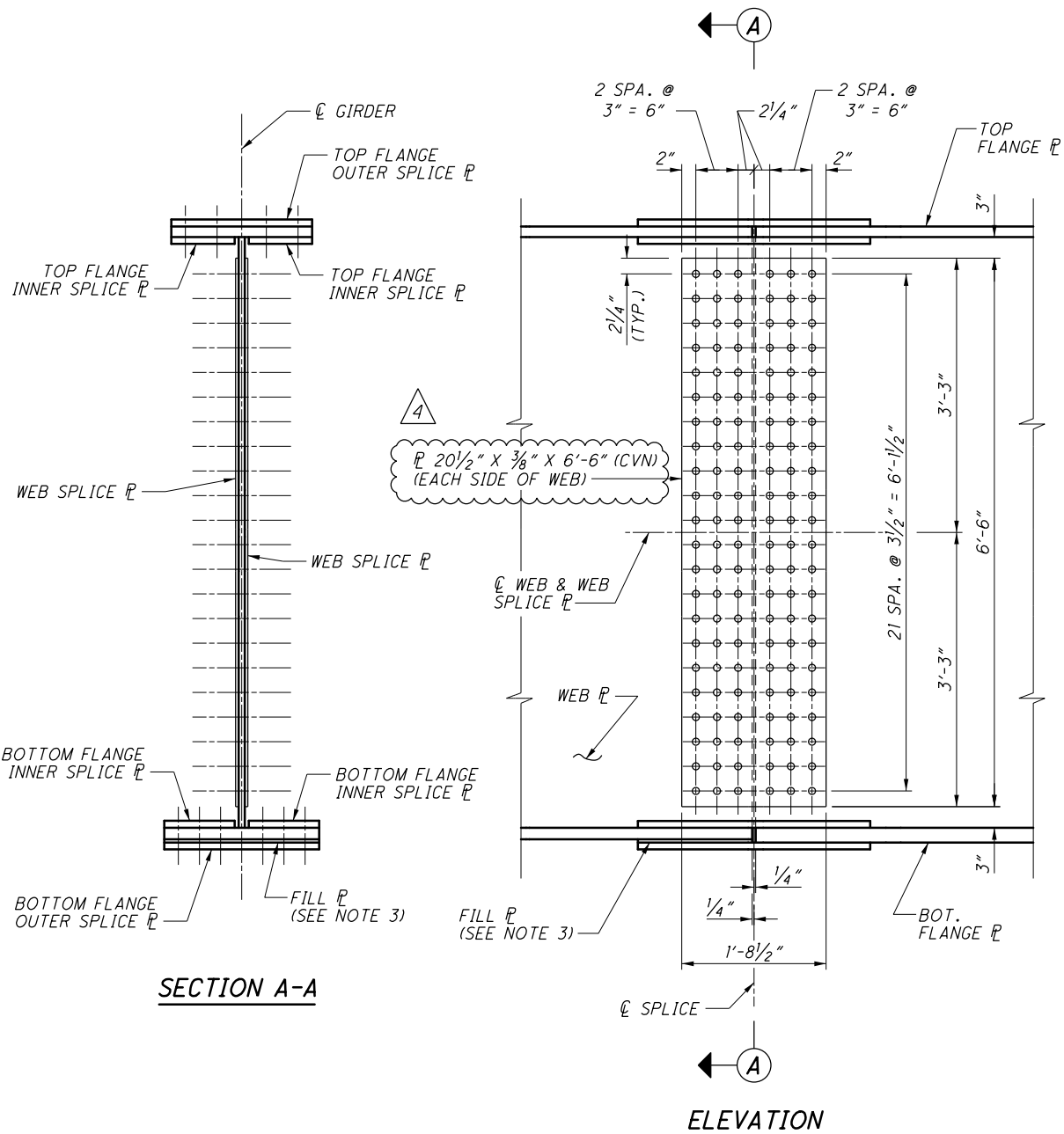
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ESTIMATED QUANTITIES  
BRIDGE NO. FRA-70-1322L  
I-70 WB OVER SCIOTO RIVER

FRA-70-13-10  
PID No. 77372

8 / 58

480  
702



FILL PLATE THICKNESS - AT BOTTOM FLANGE (TYPICAL ALL GIRDERS)

FIELD SPLICE 1	FIELD SPLICE 2	FIELD SPLICE 3	FIELD SPLICE 4	FIELD SPLICE 5	FIELD SPLICE 6	FIELD SPLICE 7	FIELD SPLICE 8
1/8"	3/8"	1/4"	3/8"	1/2"	3/8"	3/8"	3/8"

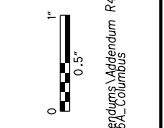
- NOTES:**
- SEE SHEET 28/58 FOR GIRDER ELEVATION.
  - SEE SHEET 27/58 FOR FRAMING PLAN.
  - PLACE FILL PLATE ON THE SIDE OF THE SPLICE WITH THE SMALLER FLANGE THICKNESS.
  - FILL PLATE NOT REQUIRED FOR TOP FLANGE PLATE SPLICES.

NO.	DESCRIPTION	REV. BY	DATE
4	DIMENSION CHANGE	ACW	10/30/23





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34" x 22"

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ESTIMATED QUANTITIES						CALC:	ELS/DBL	DATE:	12/07/21
						CHECK:	ATM	DATE:	12/07/21
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUT.	PIERS	SUPER.	GEN.	SHEET REF.
202	11003	LS		STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				1	5/70
202	22900	745	SY	APPROACH SLAB REMOVED				745	
202	23500	10,500	SY	WEARING COURSE REMOVED				10,500	
202	32800	278	SY	CONCRETE SLOPE PROTECTION REMOVED	278				
202	98100	14	EACH	REMOVAL MISC.: PILE REMOVED, EXISTING STRUCTURE	14				
503	21101	3,242	CY	UNCLASSIFIED EXCAVATION, AS PER PLAN	3,242				6/70
505	11100	LS		PILE DRIVING EQUIPMENT MOBILIZATION				1	
507	00100	6,350	FT	STEEL PILES HPI0X42, FURNISHED	6,350				
507	00150	5,890	FT	STEEL PILES HPI0X42, DRIVEN	5,890				
507	93300	92	EACH	STEEL POINTS OR SHOES	92				
509	10001	881,328	LB	EPOXY COATED REINFORCING STEEL, AS PER PLAN	106,589	191,582	581,813	1,344	6/70 25/70 67/70
511	34447	1,710	CY	CLASS QC2 CONCRETE WITH QC/OA, BRIDGE DECK, AS PER PLAN			1,710		6/70
511	34450	360	CY	CLASS QC2 CONCRETE WITH QC/OA, BRIDGE DECK (PARAPET)			360		
511	44112	394	CY	CLASS QC1 CONCRETE WITH QC/OA, ABUTMENT NOT INCLUDING FOOTING	394				
511	45602	596	CY	CLASS QC4 MASS CONCRETE, SUBSTRUCTURE WITH QC/OA		596			
511	46012	277	CY	CLASS QC1 CONCRETE WITH QC/OA, RETAINING/WINGWALL NOT INCLUDING FOOTING	277				
511	46512	579	CY	CLASS QC1 CONCRETE WITH QC/OA, FOOTING	579				
512	10001	843	SY	SEALING OF CONCRETE SURFACES, AS PER PLAN (PERMANENT GRAFFITI PROTECTION)	751	92			6/70
512	10100	2,389	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)		320	2,069		
512	33000	51	SY	TYPE 2 WATERPROOFING	51				
513	10300	355,667	LB	STRUCTURAL STEEL MEMBERS, LEVEL FIVE			355,667		6/70 32/70
513	10401	2,213,561	LB	STRUCTURAL STEEL MEMBERS, HYBRID GIRDER, LEVEL SIX (6) FABRICATION, AS PER PLAN			2,213,561		
513	20000	12,801	EACH	WELDED STUD SHEAR CONNECTORS			12,801		
514	00060	29,490	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT			29,490		
514	00066	29,490	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT			29,490		
516	12400	134	FT	SPECIAL - MODULAR EXPANSION JOINT				134	6/70 7/70
516	13600	377	SF	1" PREFORMED EXPANSION JOINT FILLER				377	
516	13900	216	SF	2" PREFORMED EXPANSION JOINT FILLER				216	
518	12200	5	EACH	SCUPPERS, INCLUDING SUPPORTS			5		
518	21200	481	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	481				
518	40000	361	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	361				
518	40010	45	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	45				
518	51200	49	FT	PIPE DOWNSPOUT, INCLUDING SPECIALS (10")			49		
524	94919	144	FT	DRILLED SHAFTS, 60" DIAMETER, INTO BEDROCK, AS PER PLAN		144			7/70
524	94931	496	FT	DRILLED SHAFTS, 66" DIAMETER, ABOVE BEDROCK, AS PER PLAN		496			7/70
526	30010	351	SY	REINFORCED CONCRETE APPROACH SLABS WITH QC/OA (T=17")				351	61/70 62/70
526	90010	134	FT	TYPE A INSTALLATION				134	
601	21000	280	SY	CONCRETE SLOPE PROTECTION *	280				
601	32104	4,358	CY	ROCK CHANNEL PROTECTION, TYPE B WITH GEOTEXTILE FABRIC *	995	3,363			
SPECIAL	690E98400	LS		SPECIAL - EMERGENCY ACTION PLAN COORDINATION **				1	5/70
846	00110	56	CF	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM				56	
869	00101	30	EACH	HIGH LOAD MULTI-ROTATIONAL (HLMR) BEARINGS, AS PER PLAN	10	20			7/70
894	10000	12	EACH	THERMAL INTEGRITY PROFILING (TIP) TEST		12			7/70

**LEGEND:**

- \* QUANTITY CARRIED TO EROSION CONTROL IN THE GENERAL SUMMARY.
- \*\* QUANTITY CARRIED TO ROADWAY IN THE GENERAL SUMMARY.

NO.	DESCRIPTION	REV. BY	DATE
4	QUANTITY CHANGES	ACW	10/30/23

DESIGN AGENCY  
**ms consultants, inc.**  
2221 Schrock Road  
Columbus, Ohio 43229

REVIEWED DATE  
GLG/YSJ 03/08/23  
STRUCTURE FILE NUMBER  
2510026

DRAWN ELS  
ELLS  
REVISOR  
ABD

**ESTIMATED QUANTITIES**  
BRIDGE NO. FRA-70-1323C  
RAMP D3 OVER SCIOTO RIVER

**FRA-70-13.10**  
PID No. 77372

8 / 70

538  
702

070\_1358LE0001.dgn Sheet 10/24/2023 11:22:39 AM 89464\_Half\_BW.pltcfgr 89464\_Pen\_BW.tbl Bluebeam PDF Jason.Centers@jacobs.com

ESTIMATED QUANTITIES										
ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUT.	PIERS	SUPER.	GEN.	SHEET #	
202	11003	1	LS	STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN					LUMP	2/32
202	22900	645	SY	APPROACH SLAB REMOVED					645	
202	23500	645	SY	WEARING COURSE REMOVED					645	
3	503	21100	CY	UNCLASSIFIED EXCAVATION		219				
505	11100	1	LS	PILE DRIVING EQUIPMENT MOBILIZATION					LUMP	
507	00200	5490	FT	STEEL PILES HP12X53, FURNISHED	5490					
507	00250	5185	FT	STEEL PILES HP12X53, DRIVEN	5185					
507	00300	2210	FT	STEEL PILES HP14X73, FURNISHED		2210				
507	00350	2040	FT	STEEL PILES HP14X73, DRIVEN		2040				
507	93300	95	EACH	STEEL POINTS OR SHOES	61	34				
509	10001	334495	LB	EPOXY COATED REINFORCING STEEL, AS PER PLAN	28690	48172	257633			2/32
511	33418	371	CY	CLASS QC2 CONCRETE WITH QC/QA, SUPERSTRUCTURE			371			
511	33501	2	EACH	SEMI-INTEGRAL DIAPHRAGM GUIDE	2					2/32
511	34446	777	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK			777			
511	34450	98	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET)			98			
511	40512	377	CY	CLASS QC1 CONCRETE WITH QC/QA, PIER ABOVE FOOTINGS		377				
511	43512	404	CY	CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT INCLUDING FOOTING	404					
511	46512	104	CY	CLASS QC1 CONCRETE WITH QC/QA, FOOTING		104				
512	10100	2548	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	273	698	1577			
512	33000	95	SY	TYPE 2 WATERPROOFING	95					
515	15130	24	EACH	DRAPED STRAND PRESTRESSED CONCRETE BRIDGE I-BEAM MEMBERS, LEVEL 3, TYPE WFT2-49, 135'-1 1/4" BEAM LENGTH				24		
515	20000	66	EACH	INTERMEDIATE DIAPHRAGMS				66		
516	10010	232	FT	ARMORLESS PREFORMED JOINT SEAL			232			
516	13900	356	SF	2" PREFORMED EXPANSION JOINT FILLER	356					
516	14020	328	FT	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL	328					
516	44301	12	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), (1'-3"x 4 1/2"x 2'-4" PAD, 1'-4"x 2"x 2'-5" STEEL LOAD PLATE), AS PER PLAN	12					2/32
516	44301	12	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), (1'-4"x 4 1/2"x 2'-6" PAD, 1'-5"x 2"x 2'-7" STEEL LOAD PLATE), AS PER PLAN	12					2/32
516	44301	12	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), (1'-3"x 4 1/2"x 2'-4" PAD, BEVELED 1'-4"x 3"x 2'-5" STEEL LOAD PLATE), AS PER PLAN		12				2/32
516	44301	12	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), (1'-4"x 4 1/2"x 2'-6" PAD, BEVELED 1'-5"x 2"x 2'-7" STEEL LOAD PLATE), AS PER PLAN		12				2/32
518	21200	204	CY	POROUS BACKFILL WITH FILTER FABRIC	204					
518	40000	283	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	283					
518	40010	131	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	131					
4	526	30010	SY	REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=17")				784		
526	90030	232	FT	TYPE C INSTALLATION				232		
605	14000	114	FT	6" BASE PIPE UNDERDRAINS				114		
607	39900	470	FT	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC			470			

**ABBREVIATIONS**

THE FOLLOWING ABBREVIATIONS HAVE BEEN USED THROUGHOUT THESE PLANS:

- |  |  |  |  |   |   |
|--|--|--|--|---|---|
| <p>&amp; = AND<br/>         @ = AT<br/>         ° = DEGREES<br/>         ' = FEET OR MINUTES<br/>         " = INCHES OR SECONDS<br/>         ± = PLUS OR MINUS</p> <p>AASHTO = AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS<br/>         ABUT. = ABUTMENT<br/>         ADT = AVERAGE DAILY TRAFFIC<br/>         ADTT = AVERAGE DAILY TRUCK TRAFFIC<br/>         A.P.P. = AS PER PLAN<br/>         APPR. = APPROACH<br/>         APPROX. = APPROXIMATE<br/>         ASTM = AMERICAN SOCIETY OF TESTING AND MATERIALS</p> <p>BM = BENCHMARK<br/>         BOT. = BOTTOM<br/>         BOT./FTG. = BOTTOM OF FOOTING<br/>         BRGS. = BEARINGS<br/>         B/W = BETWEEN</p> | <p>⊙ = CENTERLINE<br/>         C/C = CENTER TO CENTER<br/>         CFS = CUBIC FEET PER SECOND<br/>         CJ = CONSTRUCTION JOINT<br/>         CLR. = CLEAR<br/>         CMP = CORRUGATED METAL PIPE<br/>         CMS = CONSTRUCTION AND MATERIAL SPECIFICATIONS<br/>         CONSTR./CONST. = CONSTRUCTION<br/>         CON'T = CONTINUED<br/>         COL. = COLUMN<br/>         C.R./CR = COUNTY ROAD<br/>         CU = CUBIC<br/>         CVN = CHARPY V-NOTCH</p> <p>DEFL. = DEFLECTION<br/>         φ/DIA. = DIAMETER<br/>         DIM. = DIMENSION<br/>         DL = DEAD LOAD<br/>         DWG. = DRAWING</p> <p>E = EAST<br/>         EA. = EACH<br/>         EF = EACH FACE<br/>         EL./ELEV. = ELEVATION</p> | <p>EMBED. = EMBEDMENT<br/>         EQ. = EQUAL<br/>         EX./EXIST. = EXISTING<br/>         EXP. = EXPANSION<br/>         EXT. = EXTENSION</p> <p>F = FAHRENHEIT<br/>         FF = FAR FACE<br/>         F/F = FACE TO FACE<br/>         FS = FIELD SPLICE<br/>         FT. = FEET<br/>         FT/FT. = FOOT/FOOT<br/>         FT/S = FEET PER SECOND<br/>         FTG. = FOOTING<br/>         FWD. = FORWARD<br/>         FWS = FUTURE WEARING SURFACE</p> <p>GEN. = GENERAL</p> <p>HR = HOUR<br/>         HW = HIGH WATER</p> <p>IN. = INCHES<br/>         INT. = INTERMEDIATE</p> | <p>JT. = JOINT</p> <p>LF = LEFT FORWARD<br/>         LONG. = LONGITUDINAL<br/>         LT. = LEFT</p> <p>MAX. = MAXIMUM<br/>         MIN. = MINIMUM<br/>         MISC. = MISCELLANEOUS</p> <p>N = NORTH<br/>         NF = NEAR FACE<br/>         NPCPP = NON-PERFORATED CORRUGATED PLASTIC PIPE<br/>         #/NO. = NUMBER</p> <p>OHWM = ORDINARY HIGH WATER MARK<br/>         OUT/OUT = OUT TO OUT</p> <p>PEJF = PREFORMED EXPANSION JOINT FILLER<br/>         PCPP = PERFORATED CORRUGATED PLASTIC PIPE</p> | <p>P/PL = PLATE<br/>         PSF = POUND PER SQUARE FOOT<br/>         PSI = POUND PER SQUARE INCH<br/>         PT. = POINT<br/>         PVI = POINT OF VERTICAL INTERSECTION</p> <p>Q = FLOW</p> <p>R = RADIUS<br/>         REF. = REFERENCE<br/>         REINF. = REINFORCED<br/>         REQ'D. = REQUIRED<br/>         RF = RIGHT FORWARD<br/>         RT. = RIGHT</p> <p>SHLDR. = SHOULDER<br/>         SPA. = SPACING<br/>         SQ = SQUARE<br/>         STA. = STATION<br/>         STD. = STANDARD<br/>         STR. = STRAIGHT<br/>         SUPER = SUPERSTRUCTURE</p> | <p>T = THICKNESS<br/>         TBR = TO BE REMOVED<br/>         TELE = TELEPHONE<br/>         TRANS. = TRANSVERSE<br/>         TWP. = TOWNSHIP<br/>         TYP. = TYPICAL</p> <p>UBV = ULTIMATE BEARING VALUE</p> <p>V = VELOCITY<br/>         V.C. = VERTICAL CURVE<br/>         VERT. = VERTICAL</p> <p>W = WEST<br/>         W/ = WITH<br/>         W/O = WITHOUT<br/>         W.P. = WORKING POINT<br/>         WT. = WEIGHT</p> <p>YD = YARD</p> |
|--|--|--|--|---|---|

NO.	DESCRIPTION	REV. BY	DATE
3	ADDED UNCLASSIFIED EXCAVATION QUANTITY	JTC	10/20/23
4	CONCRETE WITH QC/QA FOR APPROACH SLAB	JTC	10/24/23

DESIGN AGENCY: **ch2m**  
 1103 Schrock Road, Suite 400  
 Columbus, Ohio 43229  
 DATE: 5/15  
 STRUCTURE FILE NUMBER: 2510028  
 REVIEWED: JTC  
 DRAWN: JBA  
 DESIGNED: ZNG  
 CHECKED: VS  
 ESTIMATED QUANTITIES  
 BRIDGE NO. FRA-070-1358L  
 I-70 WB OVER CSX AND NS RAILROAD  
 FRA-70-13.10  
 PID No. 89464  
 6 / 32  
 606  
 702

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ESTIMATED QUANTITIES										
ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUT.	SUPER.	GEN.	SHEET #		
202	11203	1	LS	PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN			LUMP	3/27		
202	22900	335	SY	APPROACH SLAB REMOVED			335			
202	23500	897	SY	WEARING COURSE REMOVED			897			
202	98100	28	EACH	REMOVAL MISC.: PILE REMOVED, EXISTING STRUCTURE FRA-70-1379S			28			
505	11100	1	LS	PILE DRIVING EQUIPMENT MOBILIZATION			LUMP			
503	11100	1	LS	COFFERDAMS AND EXCAVATION BRACING			LUMP			
507	00200	2870	FT	STEEL PILES HP12X53, FURNISHED	2870					
507	00250	2730	FT	STEEL PILES HP12X53, DRIVEN	2730					
507	93300	28	EACH	STEEL POINTS OR SHOES	28					
509	10001	73484	LB	EPOXY COATED REINFORCING STEEL, AS PER PLAN	11252	62232		3/27		
511	33418	120	CY	CLASS QC2 CONCRETE WITH QC/QA, SUPERSTRUCTURE		120				
511	33501	2	EACH	SEMI-INTEGRAL DIAPHRAGM GUIDE, AS PER PLAN	2			3/27		
511	34446	155	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK		155				
511	34450	49	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET)		49				
511	43512	179	CY	CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT INCLUDING FOOTING	179					
512	10100	702	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	109	593				
512	33000	50	SY	TYPE 2 WATERPROOFING	50					
515	15020	7	EACH	DRAPED STRAND PRESTRESSED CONCRETE BRIDGE I-BEAM MEMBERS, LEVEL 3, TYPE 4, 91'-11" BEAM LENGTH		7				
515	20001	18	EACH	INTERMEDIATE DIAPHRAGMS, AS PER PLAN		18		3/27		
516	10010	136	FT	ARMORLESS PREFORMED JOINT SEAL		136				
516	13600	21	SF	1" PREFORMED EXPANSION JOINT FILLER	21					
516	13900	189	SF	2" PREFORMED EXPANSION JOINT FILLER	189					
516	14020	150	FT	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL	150					
516	44301	14	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (1'-4" x 4 1/2" x 2'-0" PAD, 1'-5" x 2" x 2'-1" STEEL LOAD PLATE), AS PER PLAN	14			3/27		
518	21200	82	CY	POROUS BACKFILL WITH FILTER FABRIC	82					
518	40000	137	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	137					
518	40010	91	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	91					
526	30010	462	SY	REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=17")		462				
526	90030	136	FT	TYPE C INSTALLATION		136				
605	14000	66	FT	6" BASE PIPE UNDERDRAINS *			66			

\* QUANTITIES CARRIED TO DRAINAGE SUB-SUMMARY SHEET

### ABBREVIATIONS

THE FOLLOWING ABBREVIATIONS HAVE BEEN USED THROUGHOUT THESE PLANS:

<p>&amp; = AND @ = AT ° = DEGREES ' = FEET OR MINUTES " = INCHES OR SECONDS ± = PLUS OR MINUS</p> <p>AASHTO = AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS ABUT. = ABUTMENT ADT = AVERAGE DAILY TRAFFIC ADTT = AVERAGE DAILY TRUCK TRAFFIC A.P.P. = AS PER PLAN APPR. = APPROACH APPROX. = APPROXIMATE ASTM = AMERICAN SOCIETY OF TESTING AND MATERIALS</p> <p>BM = BENCHMARK BOT. = BOTTOM BOT./FTG. = BOTTOM OF FOOTING BRGS. = BEARINGS B/W = BETWEEN</p>	<p>⊕ = CENTERLINE C/C = CENTER TO CENTER CFS = CUBIC FEET PER SECOND CJ = CONSTRUCTION JOINT CLR. = CLEAR CMP = CORRUGATED METAL PIPE CMS = CONSTRUCTION AND MATERIAL SPECIFICATIONS CONSTR./CONST. = CONSTRUCTION CON'T = CONTINUED COL. = COLUMN C.R./CR = COUNTY ROAD CU = CUBIC CVN = CHARPY V-NOTCH</p> <p>DEFL. = DEFLECTION φ/DIA. = DIAMETER DIM. = DIMENSION DL = DEAD LOAD DWG. = DRAWING</p> <p>E = EAST EA. = EACH EF = EACH FACE EL./ELEV. = ELEVATION</p>	<p>EMBED. = EMBEDMENT EQ. = EQUAL EX./EXIST. = EXISTING EXP. = EXPANSION EXT. = EXTENSION</p> <p>F = FAHRENHEIT FF = FAR FACE F/F = FACE TO FACE FS = FIELD SPLICE FT. = FEET FT/FT. = FOOT/FOOT FT/S = FEET PER SECOND FTG. = FOOTING FWD. = FORWARD FWS = FUTURE WEARING SURFACE</p> <p>GEN. = GENERAL</p> <p>HR = HOUR HW = HIGH WATER</p> <p>IN. = INCHES INT. = INTERMEDIATE</p>	<p>JT. = JOINT</p> <p>LF = LEFT FORWARD LONG. = LONGITUDINAL LT. = LEFT</p> <p>MAX. = MAXIMUM MIN. = MINIMUM MISC. = MISCELLANEOUS</p> <p>N = NORTH NF = NEAR FACE NPCPP = NON-PERFORATED CORRUGATED PLASTIC PIPE #/NO. = NUMBER</p> <p>OHWM = ORDINARY HIGH WATER MARK OUT/OUT = OUT TO OUT</p> <p>PEJF = PREFORMED EXPANSION JOINT FILLER PCPP = PERFORATED CORRUGATED PLASTIC PIPE</p>	<p>R/PL = PLATE PSF = POUND PER SQUARE FOOT PSI = POUND PER SQUARE INCH PT. = POINT PVI = POINT OF VERTICAL INTERSECTION</p> <p>Q = FLOW</p> <p>R = RADIUS REF. = REFERENCE REINF. = REINFORCED REQ'D. = REQUIRED RF = RIGHT FORWARD RT. = RIGHT</p> <p>SHLDR. = SHOULDER SPA. = SPACING SQ = SQUARE STA. = STATION STD. = STANDARD STR. = STRAIGHT SUPER = SUPERSTRUCTURE</p>	<p>T = THICKNESS TBR = TO BE REMOVED TELE = TELEPHONE TRANS. = TRANSVERSE TWP. = TOWNSHIP TYP. = TYPICAL</p> <p>UBV = ULTIMATE BEARING VALUE</p> <p>V = VELOCITY V.C. = VERTICAL CURVE VERT. = VERTICAL</p> <p>W = WEST W/ = WITH W/O = WITHOUT W.P. = WORKING POINT WT. = WEIGHT</p> <p>YD = YARD</p>
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NO.	DESCRIPTION	REV. BY	DATE
4	CONCRETE WITH QC/QA FOR APPROACH SLAB	JTC	10/24/23

ESTIMATED QUANTITIES  
BRIDGE NO. FRA-070-1373L  
I-70 WB OVER SHORT STREET

FRA-70-13.10  
PID No. 89464

4 / 27

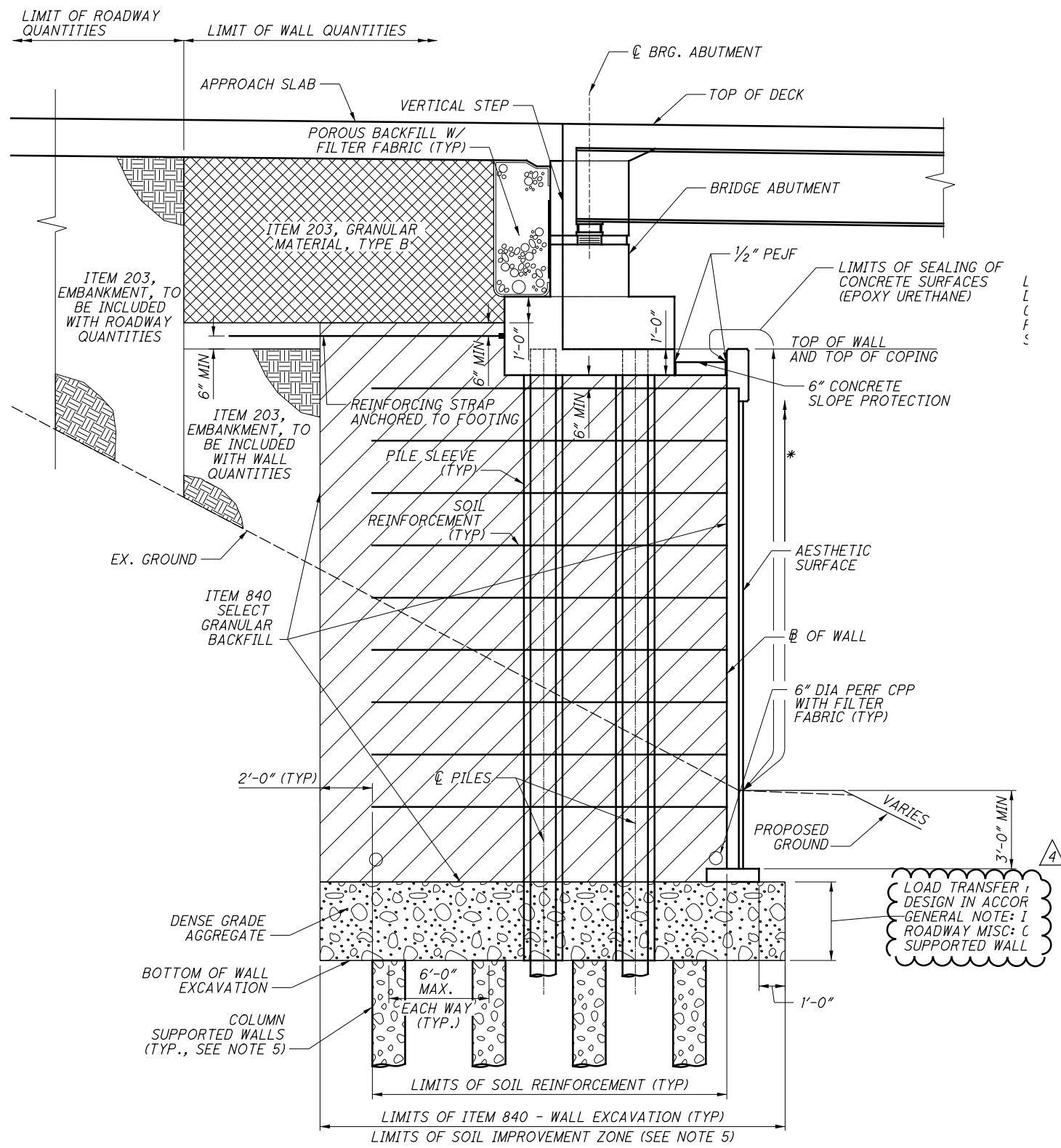
636  
702

DESIGN AGENCY  
**ch2m**  
2 Easton Oval, Suite 500  
Columbus, Ohio 43219

REVIEWED DATE 6/21  
DGS STRUCTURE FILE NUMBER 2510029

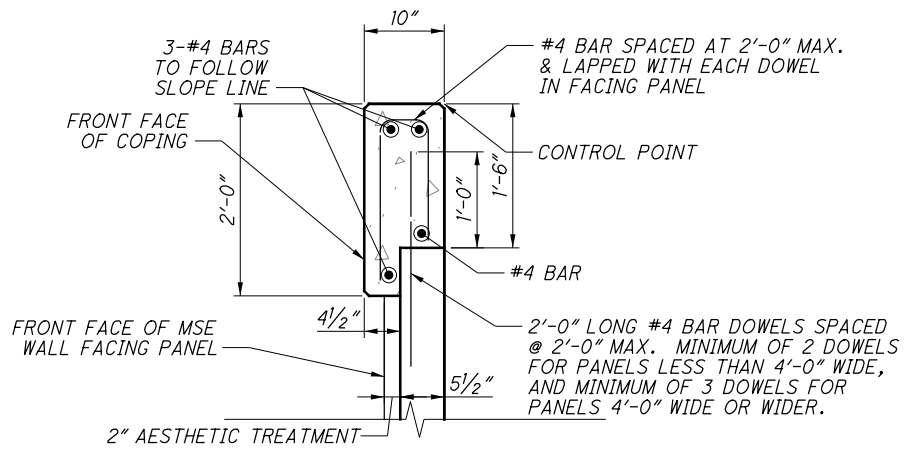
DRAWN JTC  
JTC REVISION  
JTC CHECKED FBW

G:\projects\2013\W-13-072\_FRA-70-13-10\_6A\89464\_structures\wall\_OE2\sheets\105588\_OE2WD002.dgn 10/27/2023 12:20:27 PM meets

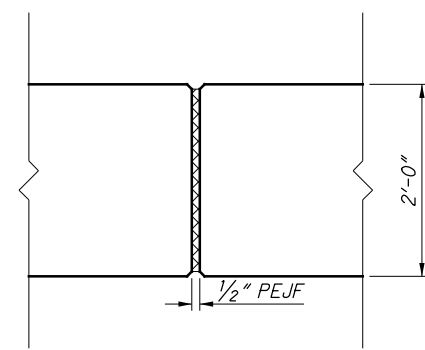


**MSE WALL E2 AT BRIDGE ABUTMENTS**  
 WALL E2 STA. 200+68.45 TO STA. 201+62.80  
 (SECTION SHOWN)  
 WALL E2 STA. 201+62.80 TO STA. 202+02.72  
 (NO GROUND IMPROVEMENT)

NO.	DESCRIPTION	REV. BY	DATE
4	UPDATED CALLOUTS FOR CSW	MMS	10-25-23



**COPING DETAIL**



**COPING EXPANSION JOINTS**

**LEGEND:**

\* - LIMITS OF ITEM 512 - SEALING OF CONCRETE SURFACES, AS PER PLAN (PERMANENT GRAFFITI PROTECTION) SEAL ALL EXPOSED SURFACES EXTENDING 10'-0" VERTICAL FROM GROUND LINE.

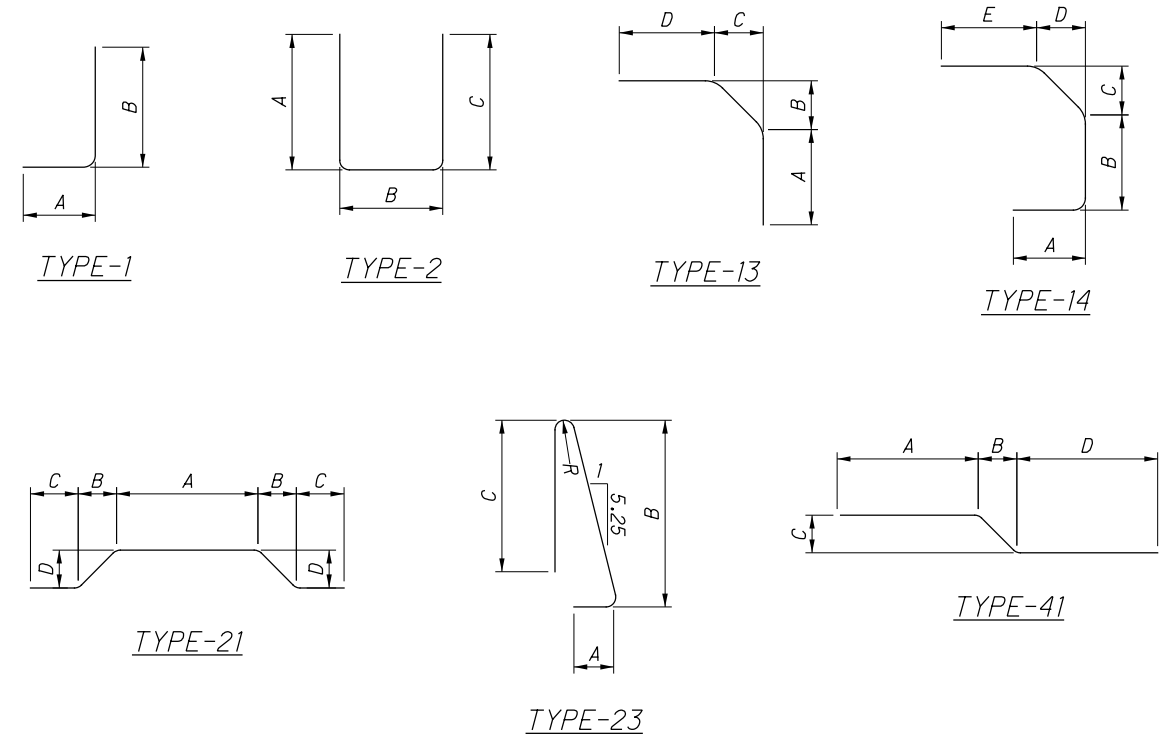
- GRANULAR MATERIAL, TYPE B
- SELECT GRANULAR BACKFILL PER SUPPLEMENTAL SPECIFICATION 840

**NOTES:**

1. SEE BRIDGE PLANS FOR ADDITIONAL ABUTMENT AND WINGWALL DETAILS.
2. SOIL REINFORCEMENT SHALL BE CONSTRUCTED SO AS TO AVOID INTERFERENCE WITH BRIDGE PILING.
3. FOR ABBREVIATION LEGEND, SEE SHEET 660
4. COPING EXPANSION JOINT SHALL BE SPACED NO MORE THAN 20 FEET APART AND ALIGNED WITH JOINTS BETWEEN FACING PANELS.
5. SIZE AND SPACING OF COLUMN SUPPORTED WALLS ARE SHOWN FOR REPRESENTATION ONLY. ACTUAL SIZE AND SPACING TO BE DETERMINED BY CONTRACTOR.

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MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS							
					A	B	C	D	E	R	INC	
*Y411	4	11'-3"	30	ST								
*Y412	4	12'-1"	32	ST								
*Y413	4	6'-2"	16	ST								
*Y414	8	16'-2"	86	ST								
*Y415	52	15'-0"	521	ST								
*Y416	4	11'-5"	30	ST								
*Y417	4	6'-4"	17	ST								
*Y418	4	12'-3"	33	ST								
R510	8	15'-10"	132	ST								
R511	276	9'-10"	2830	23	11"	4'-5"	4'-3"				2 3/4"	
	1	7'-4"				3'-3"	3'-0"					
R512	SER OF	TO	143	23	11"	TO	TO				2 3/4"	
	16	9'-10"				4'-5"	4'-3"					
R513	56	14'-8"	856	ST								
R514	NOT	USED										
R515	6	11'-1"	69	ST								
R516	4	6'-0"	25	ST								
R517	6	11'-11"	75	ST								
R518	35	7'-4"	268	23	11"	3'-3"	3'-0"				2 3/4"	
R611	2	15'-10"	48	ST								
R612	14	14'-8"	308	ST								
R613	2	11'-1"	33	ST								
R614	2	11'-11"	36	ST								
R615	2	6'-0"	18	ST								
F511	20	32'-1"	669	ST								
F512	180	31'-3"	5867	ST								
F513	2	9'-8"	20	ST								
F611	310	9'-3"	4307	41	0'-7"	0'-4"	8'-0"	0'-9"				
F612	325	4'-3"	2075	14	0'-11"	1'-9"	0'-11"	2 1/4"	0'-11"			
F613	325	3'-6"	1709	1	1'-0"	2'-8"						
F614	325	6'-4"	3091	13	0'-9"	2'-2"	3'-3"	0'-9"				
F615	310	8'-6"	3958	ST								
F616	13	10'-9"	210	41	0'-7"	0'-4"	9'-6"	0'-9"				
F617	13	9'-6"	185	ST								
F618	1	5'-9"	9	41	0'-7"	0'-4"	4'-6"	0'-9"				
F619	1	4'-6"	7	ST								
**F620	1	9'-10"	15	41	0'-7"	0'-4"	8'-7"	0'-9"				
**F621	1	8'-7"	13	ST								
L501	14	7'-5"	108	21	1'-4"	1'-10"	0'-6"	1'-10"				
L502	4	3'-0"	13	ST								
L503	8	3'-9"	31	2	1'-0"	2'-0"	1'-0"					
L504	4	7'-9"	32	2	3'-0"	2'-0"	3'-0"					
L505	4	4'-6"	19	ST								
L506	4	10'-9"	45	2	4'-6"	2'-0"	4'-6"					
SUB-TOTAL			27989									



**NOTES:**

1. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE 3 DIGITS ARE USED, AND THE FIRST 2 DIGITS WHERE FOUR DIGITS ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, F601 IS A NO 6 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. "R" INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD" WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.
2. ALL REINFORCING STEEL TO BE EPOXY COATED.

**LEGEND:**

\* - CONTRACTOR SHALL USE GFRP BARS FOR Y BARS

\*\* - STANDARD BEND

NO.	DESCRIPTION	REV. BY	DATE
4	UPDATED NOTE	MMS	10-25-23

**REINFORCING STEEL SCHEDULE**

MSE RETAINING WALL E3  
I-70/I-71 WEST INTERCHANGE PROJECT

PID No. 77372

FRA-70-13-10

9 / 9

679  
702

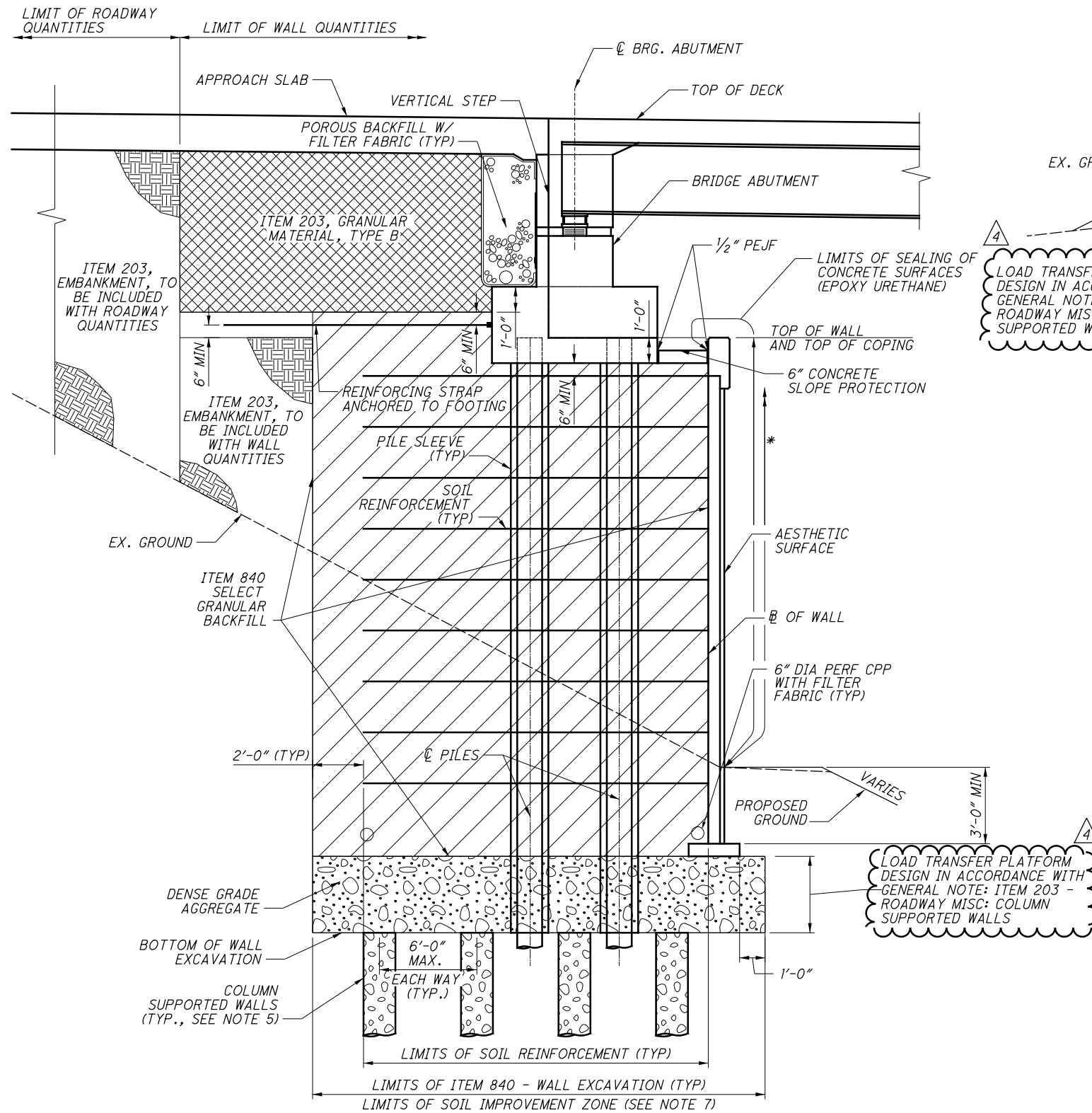
RESOURCE INTERNATIONAL INC.  
 6350 PRESIDENTIAL GATEWAY  
 COLUMBUS, OHIO 43231  
 (614) 823-4849

REVIEWED NCK 11/18/2021  
 DATE 11/18/2021  
 STRUCTURE FILE NUMBER

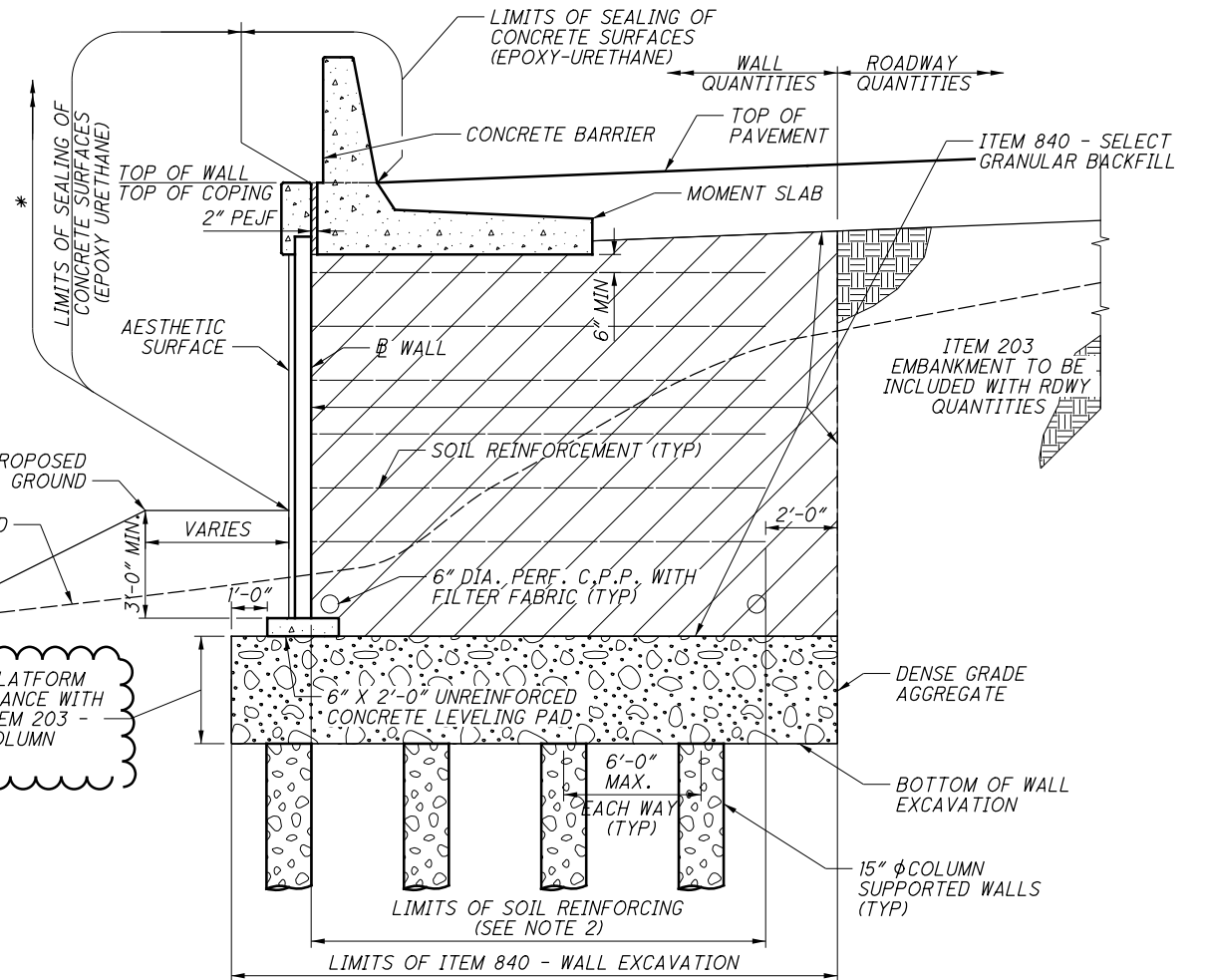
DRAWN MMS  
 MMS  
 REVISIONS

DESIGNED MMS  
 MMS  
 CHECKED JGM

G:\projects\2013\W-13-072\_FRA-70-13-10\_6A\89464\_structures\wall\_OE4\_6A\sheets\105588\_OE4\_WY011.dgn 10/27/2023 12:20:29 PM meets



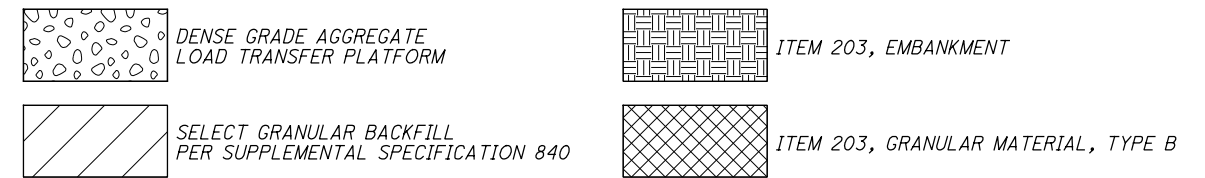
**TYPICAL SECTION  
MSE WALL AT BRIDGE ABUTMENTS  
WALL E4**



**TYPICAL SECTION: WALL E4**

**LEGEND:**

- \* LIMITS OF ITEM 512 - SEALING OF CONCRETE SURFACES, AS PER PLAN (PERMANENT GRAFFITI PROTECTION) SEAL ALL EXPOSED SURFACES EXTENDING 10'-0" VERTICAL FROM GROUND LINE
- # GRADING SLOPES AWAY FROM BARRIER. SEE WALL PLAN SHEETS AND ROADWAY CROSS SECTIONS FOR MORE INFORMATION.



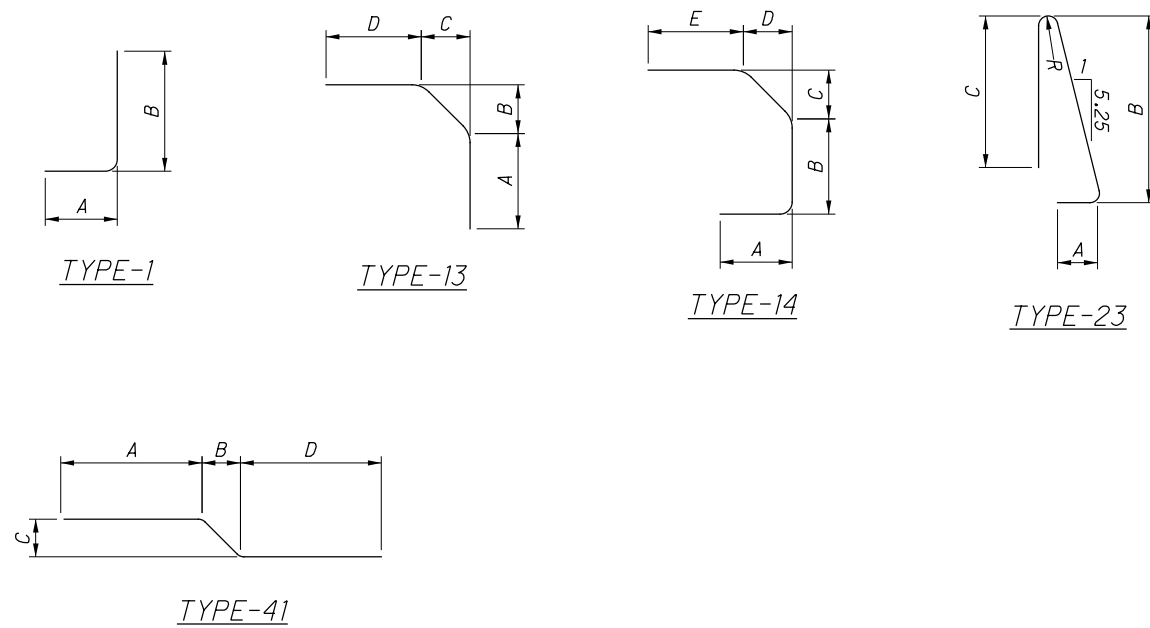
**NOTES:**

1. FLOW LINE OF 6" DIA. PERFORATED PLASTIC PIPE WILL VARY TO PROVIDE POSITIVE DRAINAGE AT OUTLET. MINIMUM SLOPE OF PIPE SHALL BE 1/8" PER FOOT.
2. SOIL REINFORCEMENT LENGTH TO BE DETERMINED BY WALL SUPPLIER OF THE APPROVED WALL SYSTEM, AND SHALL COMPLY WITH THE REQUIREMENTS LISTED ON SHEET 8.
3. THE THICKNESS OF MSE WALL PANELS IS ASSUMED AT 5 1/2".
4. COPING EXPANSION JOINTS SHALL BE SPACED NO MORE THAN 20 FEET APART AND ALIGNED WITH JOINTS BETWEEN FACING PANELS.
5. INSTALL PILE SLEEVES DURING THE CONSTRUCTION OF THE MSE WALL. PILE SLEEVES SHALL EXTEND FROM BOTTOM OF ABUTMENT FOOTING TO BOTTOM OF WALL EXCAVATION.
6. COLUMN SUPPORTED WALLS SHALL BE INSTALLED TO IMPROVE THE SOIL IN THE AREAS AS SHOWN ON SHEETS 2, 3 & 4.
7. SIZE AND SPACING OF COLUMN SUPPORTED WALLS ARE SHOWN FOR REPRESENTATION ONLY. ACTUAL SIZE AND SPACING TO BE DETERMINED BY CONTRACTOR.

NO.	DESCRIPTION	REV. BY	DATE
4	UPDATED CALLOUT FOR CSW	MMS	10-25-23

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MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS						
	TOTAL				A	B	C	D	E	R	INC
RETAINING WALL E4											
* Y421	140	14'-10"	1387	ST							
* Y422	4	15'-8"	42	ST							
* Y423	4	16'-11"	45	ST							
* Y424	4	17'-4"	46	ST							
R521	595	7'-4"	4551	23	11"	3'-3"	3'-0"			2 3/4 "	
R522	70	14'-6"	1059	ST							
R523	2	15'-6"	32	ST							
R524	2	16'-7"	35	ST							
R525	2	17'-0"	35	ST							
R526	60	31'-6"	1971	ST							
R527	16	32'-2"	537	ST							
R528	8	24'-1"	201	ST							
R621	35	14'-6"	762	ST							
R622	1	15'-6"	23	ST							
R623	1	16'-7"	25	ST							
R624	1	17'-0"	26	ST							
F521	270	31'-6"	8871	ST							
F522	66	32'-2"	2214	ST							
F523	36	24'-1"	904	ST							
F621	613	8'-5"	7753	41	0'-7"	0'-4"	7'-2"	0'-9"			
F622	613	4'-3"	3223	14	0'-11"	1'-9"	0'-11"	2 1/4"	0'-11"		
F623	613	3'-6"	3223	1	1'-0"	2'-8"					
F624	613	6'-4"	5831	13	0'-9"	2'-2"	3'-3"	0'-9"			
F625	613	7'-4"	6752	ST							
<b>TOTAL</b>			49546								



**NOTES:**

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2. ALL REINFORCING STEEL TO BE EPOXY COATED.

**LEGEND:**

\* - CONTRACTOR SHALL USE GFRP BARS FOR Y BARS

\*\* - FIELD BENT

NO.	DESCRIPTION	REV. BY	DATE
4	UPDATED NOTE	MMS	10-25-23

RESOURCE INTERNATIONAL INC.  
 6350 PRESIDENTIAL GATEWAY  
 COLUMBUS, OHIO 43231  
 (614) 823-4949

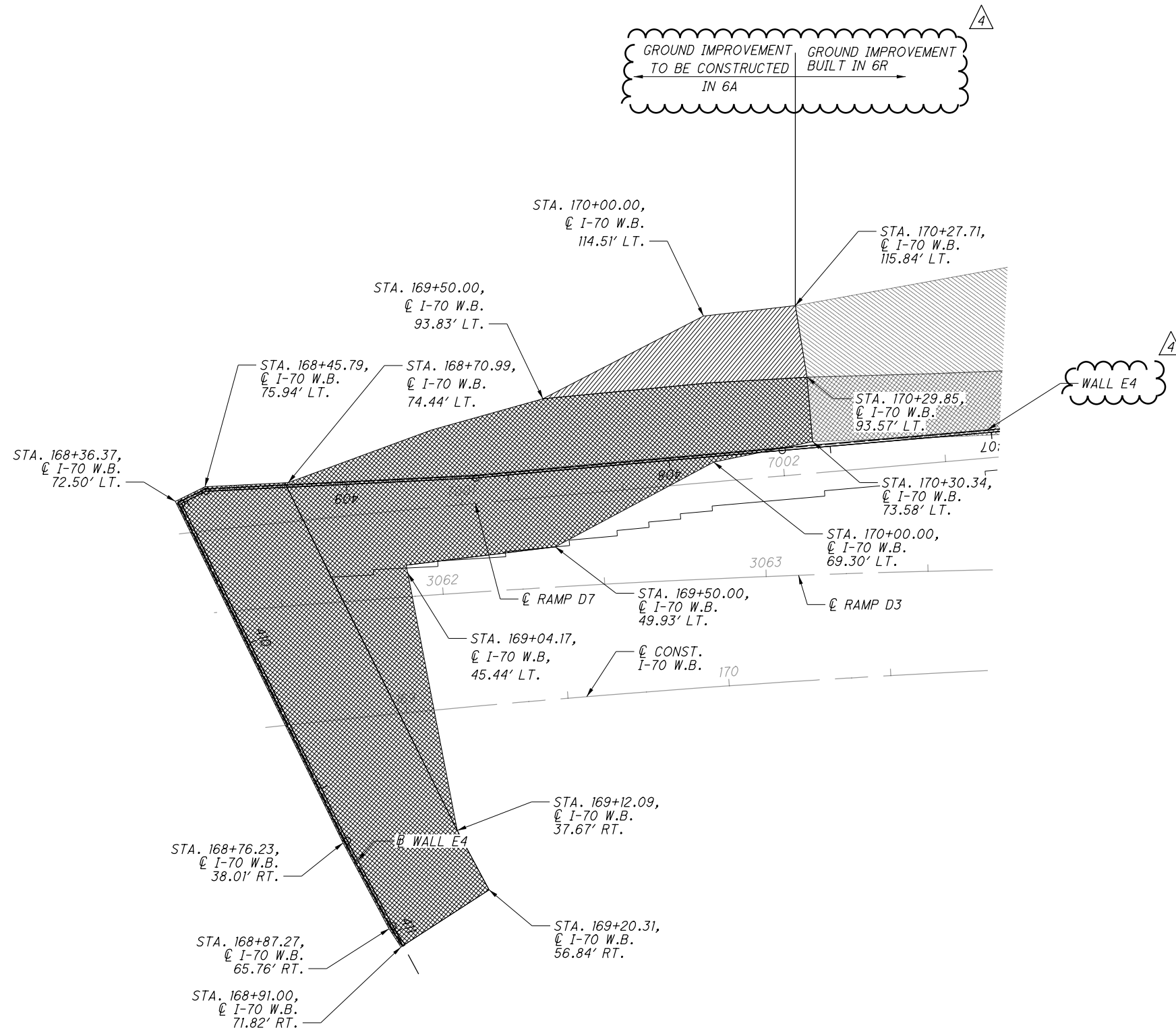
REINFORCING STEEL SCHEDULE  
 RETAINING WALL E4  
 I-70/I-71 WEST INTERCHANGE PROJECT

FRA-70-13.10  
 PID No. 77372

12 / 13  
 691  
 702

REVIEWED DATE: 11/18/2021  
 NCK  
 STRUCTURE FILE NUMBER  
 DRAWN JGM  
 CHECKED MMS  
 REVISIONS

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GROUND IMPROVEMENT TO BE CONSTRUCTED IN 6A

GROUND IMPROVEMENT BUILT IN 6R



WALL E4

NO.	DESCRIPTION	REV. BY	DATE
4	UPDATED CALLOUTS	MMS	10-25-23

= LIMIT OF GROUND IMPROVEMENT NEEDED: 130 SQ. YD.

= LIMIT OF GROUND IMPROVEMENT NEEDED OVER EX. I-70 EMBANKMENT: 1,263 SQ. YD.

RESOURCE INTERNATIONAL INC.  
6350 PRESIDENTIAL GATEWAY  
COLUMBUS, OHIO 43231  
(614) 823-4949



DESIGNED	MMS	CHECKED	JGM
DRAWN	MMS	REVISED	
REVIEWED	NCK	DATE	11/18/2021
STRUCTURE FILE NUMBER			

**GROUND IMPROVEMENT AREA**  
RETAINING WALLS  
I-70/I-71 WEST INTERCHANGE PROJECT

**FRA -71-13.10**  
PID No. 77372

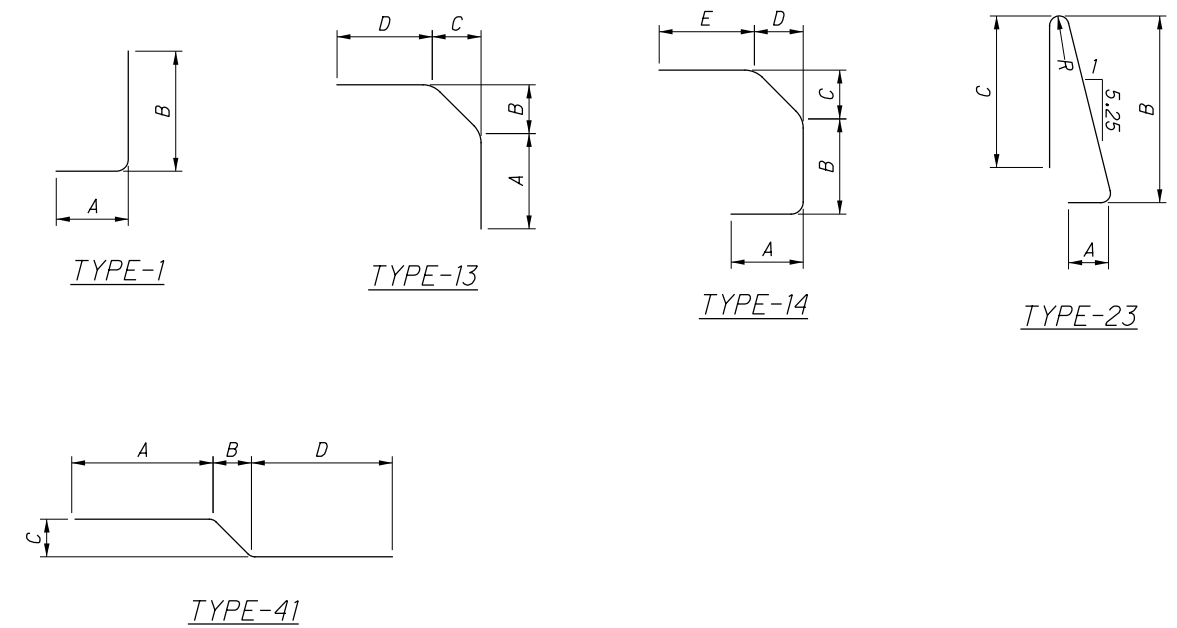
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MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS						
					A	B	C	D	E	R	INC
RETAINING WALL E9											
*Y401	8	14'-10"	79	ST							
*Y402	4	14'-2"	38	ST							
R501	47	7'-4"	359	23	11"	3'-3"	3'-0"			2 3/4"	
R502	4	14'-8"	61	ST							
R503	4	29'-8"	124	ST							
R504	2	13'-11"	29	ST							
R505	4	16'-8"	70	ST							
R601	2	14'-8"	44	ST							
R602	1	13'-11"	21	ST							
F501	18	29'-8"	557	ST							
F502	18	18'-6"	347	ST							
F601	47	8'-5"	594	41	0'-7"	4"	7'-2"	0'-9"			
F602	47	4'-3"	300	14	0'-11"	1'-9"	0'-11"	2 1/4"	0'-11"		
F603	47	3'-6"	247	1	1'-0"	2'-8"					
F604	47	6'-4"	447	13	0'-9"	2'-2"	3'-3"	0'-9"			
F605	47	7'-4"	517	ST							
F606	1	8'-6"	13	41	0'-7"	4"	7'-3"	0'-9"			
F607	1	7'-5"	11	ST							
F608	1	8'-8"	13	41	0'-7"	4"	7'-5"	0'-9"			
F609	1	7'-7"	11	ST							
<b>TOTAL</b>			3766								



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 2. ALL REINFORCING STEEL TO BE EPOXY COATED.

**LEGENDS**  
 \* - CONTRACTOR SHALL USE GFRP BARS FOR Y BARS  
 \*\* - FIELD BEND

NO.	DESCRIPTION	REV. BY	DATE
4	UPDATED NOTE	MMS	10-25-23

**REINFORCING STEEL SCHEDULE**  
 MSE RETAINING WALL E9  
 I-70/I-71 WEST INTERCHANGE PROJECT

**FRA-70-13.10**  
 PID No. 77372

6 / 6

701  
702

RESOURCE INTERNATIONAL INC.  
 6350 PRESIDENTIAL GATEWAY  
 COLUMBUS, OHIO 43231  
 (614) 823-4848

REVIEWED DATE 11/18/2021  
 NCK  
 STRUCTURE FILE NUMBER  
 DRAWN JGM  
 REVISIONS  
 DESIGNED JGM  
 CHECKED MMS

