

LOCATION MAP

LATITUDE: 39° 57' 08" N LONGITUDE: 83° 00' 44" W



END PROJECT
STA. 193+21.67
I-70 EASTBOUND
S.L.M. 14.05

BEGIN PROJECT
STA. 145+00.00
I-70 EASTBOUND
S.L.M. 13.15

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
FRA-70-13.11
PROJECT 4A PART 1
RECONSTRUCTION OF EXISTING
SEPARATED CROSSING WITH THE
NORFOLK SOUTHERN & CSX RAILROADS
CITY OF COLUMBUS
FRANKLIN COUNTY

FOR PART 2, SEE FRA-70-1405C (4H)
FOR PART 3, SEE FRA-70-13.10 (6A)
FOR PART 4, SEE FRA-70-1405 (4B)
FOR PART 5, SEE FRA-70-1301

FOR SHEET INDEX, SEE SHEET 2
FOR ENGINEERS SEALS, SEE SHEET 2
FOR CITY OF COLUMBUS SIGNATURES, SEE SEPARATE SIGNATURE PAGE

PROJECT DESCRIPTION

THE PROJECT CONSISTS OF THE CONSTRUCTION OF 0.90 MILES OF I-70 EB IN THE CITY OF COLUMBUS. WORK INCLUDES THE RECONSTRUCTION OF I-71 NB. WORK ALSO INCLUDES THE CONSTRUCTION OF 2 BRIDGES WITHIN THE INTERCHANGE, CONSTRUCTION OF RETAINING WALLS, DRAINAGE IMPROVEMENTS, REPLACEMENT OF THE FREEWAY LIGHTING SYSTEMS AND TRAFFIC CONTROL UPGRADES.

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA: 27.1 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 1.0 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA: 28.1 ACRES

LIMITED ACCESS

THIS IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02 OF THE OHIO REVISED CODE.

2019 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY EXCEPT FOR THE SIDE ROADS AND RAMPS AS DESCRIBED ON SHEETS 54 - 76 AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

FEMA

PROJECT SITE LOCATED WITHIN FIRM 39049C0309K
EFFECTIVE DATE: 6/17/2008
FEMA SPECIAL FLOOD HAZARD AREA, ZONE AE WITH FLOODWAY
BFE=716.00

BMP'S

THIS PLAN UTILIZES STRUCTURAL BEST MANAGEMENT PRACTICES (BMP'S) FOR POST CONSTRUCTION STORM WATER TREATMENT (INCLUDED AS PART OF ODOT PROJECT FRA-70-13.62 PROJECT 2B PID 94303/3171-E). PORTIONS OF THIS PROJECT LIE WITHIN THE CORPORATION LIMITS OF THE CITY OF COLUMBUS AND THE CITY IS ABSOLVED IN THE FUTURE OF ANY RESPONSIBILITIES FOR THE SWPPP, POST CONSTRUCTION BMP MAINTENANCE AND DOCUMENTATION TO THE OEPA.

PORTION TO BE IMPROVED	—————	—————
INTERSTATE HIGHWAY	—————	—————
FEDERAL ROUTES	—————	—————
STATE ROUTES	—————	—————
COUNTY & TOWNSHIP ROADS	—————	—————
OTHER ROADS	—————	—————

DESIGN DESIGNATION

FOR DESIGN DESIGNATIONS, SEE SHEET 3

DESIGN EXCEPTIONS

DESIGN FEATURE	APPROVAL DATES	SHEET NUMBERS
STOPPING SIGHT DISTANCE (I-71 HORZ.)	4/16/14	10
HORIZONTAL ALIGNMENT (I-71)	4/16/14	10
STOPPING SIGHT DISTANCE (I-71 HORZ.)	1/13/14	10
LANE WIDTH (RAMP C6)	12/23/13	23

UNDERGROUND UTILITIES

Contact Two Working Days
Before You Dig



OHIO811, 8-1-1, or 1-800-362-2764
(Non-members must be called directly)

PLAN PREPARED BY:



GPD GROUP
1801 Watermark Drive, Suite 210
Columbus, OH 43215
614.210.0751 Fax 614.210.0752
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STANDARD CONSTRUCTION DRAWINGS										SUPPLEMENTAL SPECIFICATIONS			
BP-1.1	7/28/00	MGS-1.1	7/16/21	HL-10.11	7/15/22	MT-95.30	7/19/19	TC-12.31	4/15/22	800-2019	SEE	867	4/15/22
BP-2.1	1/21/22	MGS-2.1	1/19/18	HL-10.12	1/20/23	MT-95.31	7/19/19	TC-15.116	7/16/21	PROPOSAL	869	10/17/14	
BP-2.2	1/15/21	MGS-3.1	1/19/18	HL-10.13	1/20/23	MT-95.32	4/19/19	TC-16.22	7/16/21	804	1/20/23	872	1/21/22
BP-2.3	7/18/14	MGS-3.2	1/18/13	HL-20.11	10/21/22	MT-95.40	1/17/20	TC-21.11	7/16/21	807	1/21/22	878	1/21/22
BP-2.5	1/21/22	MGS-4.2	7/19/13	HL-20.13	7/15/22	MT-95.41	1/17/20	TC-21.21	1/20/23	808	1/18/19	894	4/16/21
BP-3.1	1/21/22	MGS-4.3	1/18/13	HL-20.14	4/17/20	MT-95.45	1/17/20	TC-21.50	4/17/20	809	1/20/23	896	7/21/17
BP-3.2	1/18/19	MGS-5.2	7/15/16	HL-30.11	1/15/21	MT-95.50	7/21/17	TC-22.10	4/17/20	813	10/19/18	904	7/15/22
BP-4.1	7/19/13	MGS-5.3	7/15/16	HL-30.21	4/17/20	MT-95.70	1/17/20	TC-22.20	1/17/14	816	10/18/19	905	4/17/20
BP-5.1	7/15/22	MGS-6.1	1/19/18	HL-30.22	1/15/21	MT-95.71	1/17/20	TC-41.10	7/19/13	821	4/20/12	907	10/18/19
BP-7.1	1/20/23			HL-30.31	4/17/20	MT-97.10	4/19/19	TC-41.20	10/18/13	823	1/21/22	908	10/20/17
		MH-1	7/15/22	HL-30.32	4/17/20	MT-97.12	1/20/17	TC-41.30	10/18/13	825	1/17/20	909	10/21/22
		MH-3	7/16/21	HL-30.33	1/21/22	MT-98.10	1/17/20	TC-41.40	10/18/13	826	1/21/22	913	4/16/21
CB-2-2A,				HL-30.41	1/21/22	MT-98.20	4/19/19	TC-41.50	10/18/13	829	1/20/17	916	7/15/22
2-2B,2-2C	1/20/23			HL-40.10	7/17/20	MT-98.21	1/17/20	TC-42.10	10/18/13	832	7/21/23	921	4/20/12
CB-3	7/16/21	RM-1.1	1/20/23	HL-40.20	7/15/22	MT-98.28	1/17/20	TC-42.20	10/18/13	836	1/19/18	929	1/20/17
CB-3A	7/16/21	RM-2.1	7/19/13	HL-50.11	1/16/15	MT-98.29	1/17/20	TC-51.11	1/15/16	839	7/16/21	939	1/17/20
CB-4	7/16/21	RM-3.1	7/20/18	HL-50.21	7/15/22	MT-98.30	7/16/21	TC-51.12	1/15/16	840	4/15/22	992	4/18/14
CB-6	1/21/22	RM-4.1	1/17/20	HL-60.11	7/21/17	MT-99.20	4/19/19	TC-52.10	10/18/13	846	4/17/15	996	7/15/16
CB-8	7/16/21	RM-4.2	4/17/20	HL-60.12	7/16/21	MT-99.30	1/17/20	TC-52.20	1/15/21	850	4/15/22		
		RM-4.3	1/21/22	HL-60.31	1/17/20	MT-99.50	1/17/20	TC-61.30	7/19/19	866	4/21/17		
DM-1.1	7/17/20	RM-4.4	7/19/19			MT-99.60	7/15/16	TC-65.10	1/17/14				
DM-1.2	7/16/21	RM-4.5	7/21/17			MT-100.00	7/16/21	TC-65.11	7/15/22				
DM-1.3	7/18/14	RM-4.6	7/19/13										
DM-2.1	1/18/13	RM-5.2	1/20/23	ITS-10.10	1/20/23	MT-101.60	1/17/20	TC-71.10	7/15/22				
DM-4.1	7/17/20			ITS-10.11	1/20/23	MT-101.70	1/17/20	TC-72.20	7/20/18				
DM-4.2	7/20/12	A-1-20	1/21/22	ITS-12.10	7/15/22	MT-101.75	1/17/20	TC-81.11	1/20/23				
DM-4.3	1/15/16	AS-1-15	7/17/15	ITS-12.50	7/16/21	MT-101.80	1/17/20	TC-81.22	7/15/22				
DM-4.4	1/15/16	AS-2-15	1/18/19	ITS-13.10	1/15/21	MT-101.90	7/17/20	TC-82.10	7/19/19				
		EXJ-4-87	1/19/18	ITS-14.10	1/20/23	MT-102.10	1/17/20	TC-83.20	7/15/22				
F-1.1	7/19/13	GSD-1-19	1/15/21	ITS-14.11	1/20/23	MT-102.20	4/19/19	TC-85.10	10/21/22				
F-3.1	7/19/13	HW-2.1	7/20/18	ITS-14.20	1/20/23	MT-102.30	10/16/15	TC-85.20	7/20/18				
F-3.3	7/19/13	HW-2.2	7/20/18	ITS-14.50	1/20/23	MT-103.10	1/21/22						
F-3.4	7/19/13	PCB-91	7/17/20	ITS-15.10	1/20/23	MT-104.10	10/16/15						
		PSID-1-13	1/15/21	ITS-18.00	7/16/21	MT-105.10	1/17/20						
I-2A	7/16/21	SICD-1-96	7/18/14	ITS-50.10	1/20/23	MT-110.10	7/19/13						
I-3B,3B1	7/15/22	SICD-2-14	1/15/21	ITS-50.12	7/15/22	MT-120.00	1/20/23						
I-3C,3C1	7/15/22	VPF-1-90	7/20/18	ITS-76.10	7/15/22								
I-3D	7/15/22												

SPECIAL PROVISIONS

NO.	DESCRIPTION	REV. BY	DATE
6	REVISED SS832	CWL	11-9-23
8	REVISED SS823	CWL	11-20-23

DISTRICT DEPUTY DIRECTOR

Anthony C. Turowski, P.E.
06

DIRECTOR, DEPARTMENT OF TRANSPORTATION

3084 Dr. E

FEDERAL PROJECT NO. E040 (634)
PID NO. 77372
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT NORFOLK SOUTHERN CSX
FRA-70-13.11

NO.	DESCRIPTION	REV. BY	DATE
8	ADDED SHEET	CWL	11-25-23

SHEET INDEX

TITLE SHEET	1	CROSS SECTIONS - I-71 NB	266 - 274
SHEET INDEX & ENGINEERS SEALS	2	CROSS SECTIONS - RAMP B5	275 - 278
PLAN LEGEND & DESIGN DESIGNATIONS	3	SUPERELEVATION TABLES	279 - 289
SCHEMATIC PLAN	4 - 6	GORE DETAILS	290 - 292
GEOMETRIC PLAN	7 - 9	PAVEMENT REMOVAL PLANS	293 - 295
CURVE DATA	10 - 13	RELOCATED BIKE PATH DETAILS	296 - 300
REFERENCE POINTS AND BENCHMARKS	14	BIKE PATH DETOUR DETAILS	301 - 302
CONTROL POINT KEY MAP	15	ROADWAY DETAILS	303
TYPICAL SECTIONS	16 - 32	DRIVE DETAILS	304
GENERAL NOTES	33 - 52	DRAINAGE DETAILS	305
SUMMARY OF BIG BUILD PART 1		UNDERDRAIN DETAILS	306 - 308
THRU PART 5 MOT SEQUENCING	53	TEST HOLE CERTIFICATION FORMS	309 - 321
MAINTENANCE OF TRAFFIC	54 - 140	RETAINING WALLS	322 - 326
BIG BUILD MASTER GENERAL SUMMARY	141 - 157	WALL 4W3	327 - 339
4A PART 1 GENERAL SUMMARY	158 - 163	WALL 4W8	340 - 344
SUBSUMMARY	164 - 168	WALL 4W10	345 - 348
ESTIMATED QUANTITIES	169 - 178	TEMPORARY WALLS AND SHORING	349 - 360
CALCULATIONS	179	WATER WORK	361 - 369
PROJECT SITE PLAN	180 - 182	TRAFFIC CONTROL	370 - 400
PLAN AND PROFILE - I-70 EB	183 - 210	LIGHTING	401 - 413
PLAN AND PROFILE - I-71 NB	211 - 218	STRUCTURES (OVER 20' SPAN)	
PLAN AND PROFILE - RAMP B5	219 - 222	STRUCTURE DETAILS	414 - 423
PLAN AND PROFILE - RAMP C6	223 - 226	FRA-70-1321R	424 - 524, 475A
CROSS SECTION LAYOUT SHEET	227 - 229	FRA-70-1358R	525 - 571
CROSS SECTIONS - I-70 EB	230 - 265	GEOTECHNICAL PROFILES	622 - 1151, 639A-639C, 646A-646E, 647A-647B, 685A-685B, 945A-945C, 949A, 950A, 1123A-1123D
		RIGHT-OF-WAY	

SHEETS NOT USED: 572 - 621

ENGINEERS SEAL:	ENGINEERS SEAL:	ENGINEERS SEAL:	ENGINEERS SEAL:	ENGINEERS SEAL:	ENGINEERS SEAL:
FOR SHEETS 54 - 140	FOR SHEETS 340 - 341 , 343 - 360	FOR SHEETS 401 - 413	FOR SHEETS 525 - 571	FOR SHEETS 322 - 339 , 342 , 414 - 524	FOR ENTIRE PLAN EXCEPT SHEETS OTHERWISE NOTED

NO.	DESCRIPTION	REV. BY	DATE
8	REL BIKE PATH DETOUR	CWL	11-20-23



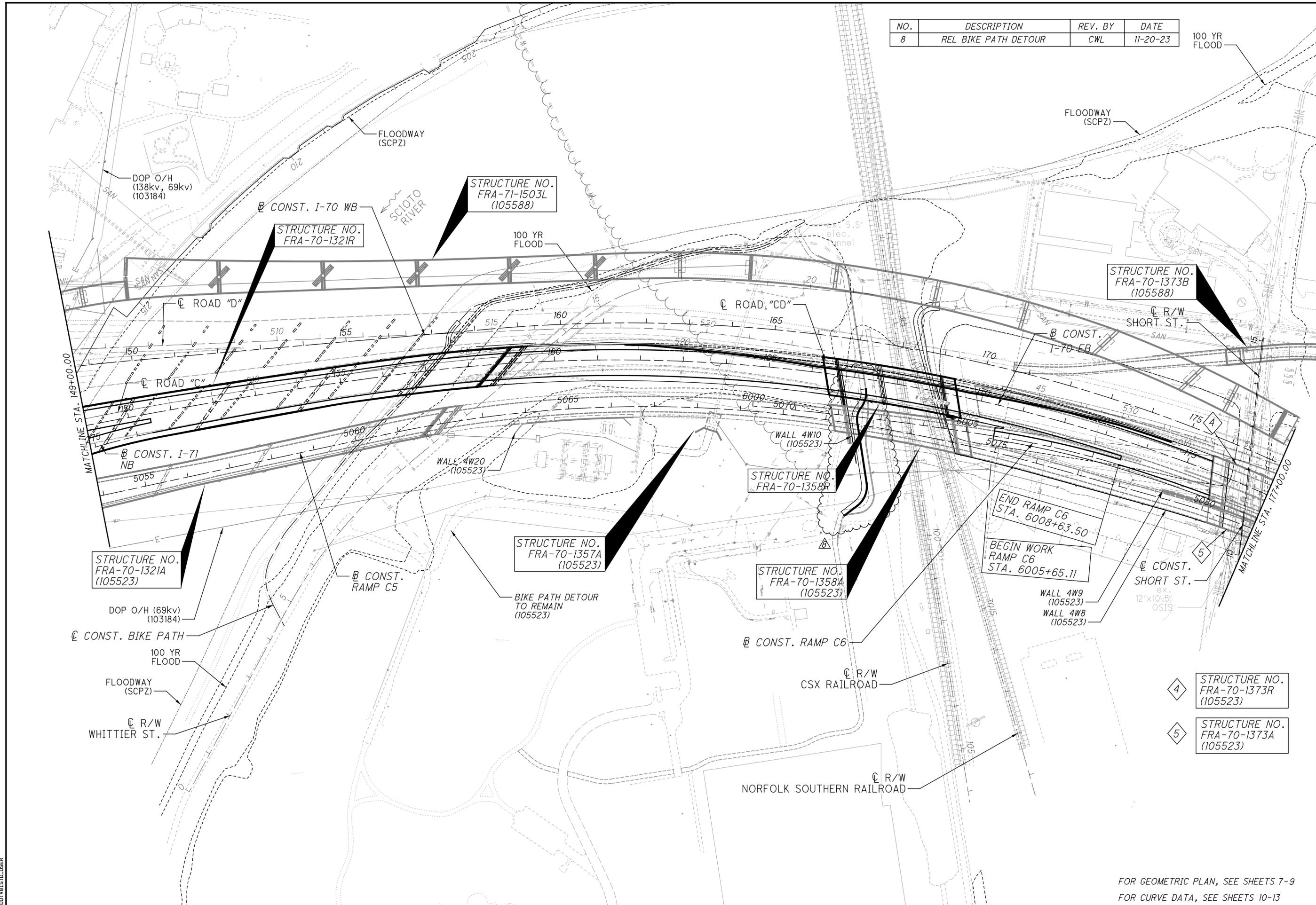
0 50 100 200
 HORIZONTAL SCALE IN FEET

CALCULATED
 ATR
 CHECKED
 CWL

SCHEMATIC PLAN

FRA-70-13.11

5
 1151



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FOR GEOMETRIC PLAN, SEE SHEETS 7-9
 FOR CURVE DATA, SEE SHEETS 10-13

SUMMARY OF BIG BUILD 4A PART 1 / 4H PART 2 / 6A PART 3 / 4B PART 4 / 1301R PART 5 MOT SEQUENCING			
STEP	MOT PHASE	*COORDINATION OF OVERLAP WORK	MOT SCHEMATIC PLAN SHEET # (SEE PART # PLANS FOR DETAILS)
1	4A PART 1 PHASE 1		67/1151
2	4A PART 1 PHASE 2	STRUCTURE 1405C (PART 2)	68/1151
3	4A PART 1 PHASE 3		69/1151
4	6A PART 3 PHASE 1		102/702 - 103/702
5	6A PART 3 PHASE 2	STRUCTURES 1322L (PART 3), 1323C (PART 3) AND 1301L (PART 5)	125/702 - 126/702
	1301 PART 5 (1301L)		12/137
6	6A PART 3 PHASE 3		168/702 - 169/702
7	1301 PART 5 (1301R)		12/137
8	4B PART 4 PHASE 1		41/855 , 78/855 , 79/855
9	4B PART 4 PHASE 2		41/855 , 80/855
10	4B PART 4 PHASE 3		41/855 , 81/855 , 82/855 , 83/855
11	4B PART 4 PHASE 4		41/855 , 84/855 , 85/855
12	4B PART 4 PHASE 5		41/855

* ORIGINAL MOT PHASING BASED ON FOLLOWING PROJECT ORDER - PROJECT 4A-4H / 6A / 1301 / 4B - OVERLAP AREAS IDENTIFIED IN TABLE

I-70 EB AVAILABILITY CLAUSE

PHYSICAL CONSTRUCTION WORK FOR THE PART 1 MAINTENANCE OF TRAFFIC PHASE 1 PLAN PAGES 67 SCHEMATIC AND PAGES 98-112 WHERE I-70 EB AND I-71 NB TRAFFIC ARE MAINTAINED ONTO RAMP C5/C6 CANNOT START UNTIL JUNE 1, 2024. IN ADDITION, I-70 EB STRUCTURES 1321 R, 1358 R, AND 1373 R ALSO CANNOT START UNTIL JUNE 1, 2024. AFTER JUNE 1, 2024, THE CURRENT ONGOING PROJECT PID 105523 WILL HAVE TRAFFIC INTO THAT PROJECT'S PHASE 4 MOT SCHEME AS DESIGNED ON PID 105523'S PH. 4R PLAN PAGES 175-183. FURTHER, STRUCTURE FRA-70-1405C REAR ABUTMENT CONSTRUCTION AND THE CLOSURE OF THE EXISTING I-70 EB RAMP TO LIVINGSTON/4TH CANNOT START UNTIL RAMP C5 IS FULLY CONSTRUCTED IN PROJECT PID 105523 AND OPEN TO TRAFFIC TO FULTON STREET. STRUCTURE FRA-70-1405C ABUTMENT CONSTRUCTION CANNOT START UNTIL RAMP C5/1390C/1395C IS FULLY CONSTRUCTED WITH THE NEW CITY OF COLUMBUS DOP DUCT BANK CONSTRUCTED AND ACTIVE ON 1395C IN PROJECT PID 105523 AND THE 4R 105523 CONTRACTOR REMOVES THE TEMPORARY CITY OF COLUMBUS DOP ELECTRICAL POLES/LINES CROSSING I-70 ADJACENT TO THE 1405C HIGH STREET CROSSING. THESE RESTRICTIONS INCLUDE MAINTENANCE OF TRAFFIC INSTALLATIONS IN EXCESS OF 24 HOURS. DATA COLLECTION INCLUDING BUT NOT LIMITED TO FIELD SURVEYS AND GEOTECHNICAL INVESTIGATIONS ARE PERMITTED UPON SIGNED CONTRACT SUBJECT TO ENVIRONMENTAL AND THIRD-PARTY RESTRICTIONS.

I-70 WB AVAILABILITY CLAUSE

PHYSICAL CONSTRUCTION WORK FOR THE PART 3 MAINTENANCE OF TRAFFIC PHASE 2 I-70 WB BRIDGES CONSTRUCTION PLAN PAGES 125 SCHEMATIC AND PAGES 133-151 CANNOT START UNTIL NOVEMBER 1, 2025. AFTER NOVEMBER 1, 2025, THE CURRENT ONGOING PROJECT PID 105523 WILL HAVE TRAFFIC INTO THAT PROJECT'S PHASE 3B MOT SCHEME AS DESIGNED ON PID 105523'S PH. 6R PLAN PAGES 236-246 WHERE THE I-70 WB MOVEMENT TO I-71 SB WILL BE ON THE 15.03L STRUCTURE. THESE RESTRICTIONS INCLUDE MAINTENANCE OF TRAFFIC INSTALLATIONS IN EXCESS OF 24 HOURS. DATA COLLECTION INCLUDING BUT NOT LIMITED TO FIELD SURVEYS AND GEOTECHNICAL INVESTIGATIONS ARE PERMITTED UPON SIGNED CONTRACT SUBJECT TO ENVIRONMENTAL AND THIRD-PARTY RESTRICTIONS.

MOT CLOSURE NOTES, REFERENCES AND TABLES

PARTS 1 AND 2: SEE SHEETS 54/1151 - 63/1151
PART 3: SEE SHEETS 44/702 - 54/702
PART 4: SEE SHEETS 41/855 - 48/855
PART 5: SEE SHEETS 12/137

NO.	DESCRIPTION	REV. BY	DATE
1	ADDED NOTES	CWL	10-2-23
7	ADDED NOTES	CWL	11-17-23
8	ADDED NOTES	CWL	11-22-23

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	ROADWAY CLEARING AND GRUBBING	P1,P2,P4
1		1	2								202	20010	4	EACH	HEADWALL REMOVED
32990	3886	21016	43428								202	23000	101320	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
											202	58200	50	EACH	INLET REMOVED
		33	13								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
											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"
1047	428	1156	1222								202	75000	3853	FT	FENCE REMOVED
											202	75250	3	EACH	GATE REMOVED
2		1									202	75255	1	EACH	GATE REMOVED FOR REUSE, AS PER PLAN
			4								202	75610	4	EACH	VALVE BOX REMOVED
											202	98100	9	EACH	REMOVAL MISC.: TRASH RECEPTACLES
		2									202	98100	2	EACH	REMOVAL MISC.: INSPECTION WELL
1070		1272	428								202	98200	2770	FT	REMOVAL MISC.: PORTABLE BARRIER
1062											202	98200	1062	FT	REMOVAL MISC.: PORTABLE BARRIER WITH VANDAL FENCE
	303										202	98200	303	FT	REMOVAL MISC.: CURB REMOVED FOR STORAGE
		100									202	98200	100	FT	REMOVAL MISC.: MISC CONDUIT
		101									202	98200	101	FT	REMOVAL MISC.: TRENCH DRAIN
	4845		307								202	98400	5152	SF	REMOVAL MISC.: BRICK PAVERS REMOVED
											203	10000	10061	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	62824	SY	SUBGRADE COMPACTION
24917	4558	26743	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
500	3868		6338								204	50000	10706	SY	GEOTEXTILE FABRIC
		1032									204	50001	1032	SY	GEOTEXTILE FABRIC, AS PER PLAN
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
7	REVISED PART 3	CWL	11-20-23
8	REVISED PART 1	CWL	11-20-23

BIG BUILD MASTER GENERAL SUMMARY

FRA-70-13.11

141
1151

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SHEET NUMBER						PARTICIPATION					ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
P1/161	P2/39	P3/191	P4/156	P5/14		01/IMS/04	02/IMS/11	05/IMS/14	06/MPO/04	08/ENH/04/COL						
															PAVEMENT	
150						150					251	01020	150	SY	PARTIAL DEPTH PAVEMENT REPAIR (442)	P1
		1791				1791					252	01500	1791	FT	FULL DEPTH PAVEMENT SAWING	
		121				121					253	01001	121	SY	PAVEMENT REPAIR, AS PER PLAN	P3
				464				464			254	01000	464	SY	PAVEMENT PLANING, ASPHALT CONCRETE, AVERAGE DEPTH 4.33"	
		170				170					254	01000	170	SY	PAVEMENT PLANING, ASPHALT CONCRETE, 0.25" DEPTH	
		827				827					254	01000	827	SY	PAVEMENT PLANING, ASPHALT CONCRETE, 1.25" DEPTH	
	410					370			40		254	01000	410	SY	PAVEMENT PLANING, ASPHALT CONCRETE, 1.25" AVG DEPTH	
4717						4717					254	01000	4717	SY	PAVEMENT PLANING, ASPHALT CONCRETE, 1.5" AVG DEPTH	
938						938					254	01000	938	SY	PAVEMENT PLANING, ASPHALT CONCRETE, 3.25" AVG DEPTH	
		1406				1406					254	01000	1406	SY	PAVEMENT PLANING, ASPHALT CONCRETE, VARIABLE DEPTH	
		238				238					254	01010	238	SY	PAVEMENT PLANING, PORTLAND CEMENT CONCRETE, 1.25" DEPTH	
10392		11503	15017	2272		36912	2215	57			302	56000	39184	CY	ASPHALT CONCRETE BASE, PG64-22, (449)	
6588	759	9740	1327			17045	1298	29	42		304	20000	18414	CY	AGGREGATE BASE	
		7154				7154					304	20000	7154	CY	AGGREGATE BASE, 6"	
		7				7					304	20000	7	CY	AGGREGATE BASE, 8"	
		331				331					304	20001	331	CY	AGGREGATE BASE, AS PER PLAN, 12"	P3
		36				36					304	20001	36	CY	AGGREGATE BASE, AS PER PLAN, 6"	P3
		176	5			181					305	11010	181	SY	7" CONCRETE BASE, CLASS QC 1P	
		947	293			1240					305	12010	1240	SY	8" CONCRETE BASE, CLASS QC 1P	
	1709	805	4095			6360			249		305	13010	6609	SY	9" CONCRETE BASE, CLASS QC 1P	
20	149	172	317	1426		637			21		407	13900	658	GAL	TACK COAT, 702.13	
6313	101	7621	8726			22744	1344	82	17		407	20000	24187	GAL	NON-TRACKING TACK COAT	
		83				83					441	50000	83	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22	
	75	154				218			11		441	50101	229	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), AS PER PLAN, PG64-22	P2,P4
		9				9					441	50200	9	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448)	
19	88	46	215			355			13		441	50300	368	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)	
95						95					441	70801	95	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (449), (UNDER GUARDRAIL), AS PER PLAN	P1
2482		3551	2977	442		9010	398	44			442	00100	9452	CY	ANTI-SEGREGATION EQUIPMENT	
1732		2215	2054	342		6001	305	37			442	10001	6343	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A, (446), AS PER PLAN, PG70-22M	P1,P3,P4,P5
		325				325					442	10001	325	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A, (446), AS PER PLAN "B", PG76-22M	P3
2174		2114	2496	409		6784	366	43			442	10080	7193	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, 12.5 MM, TYPE A (446)	
71						71					442	22300	71	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, 12.5 MM, TYPE A (449)	
		163				163					451	13010	163	SY	8" REINFORCED CONCRETE PAVEMENT, CLASS QC 1P	
	274	215				489					SPECIAL	45130000	489	FT	PRESSURE RELIEF JOINT, TYPE A	P2,P4
242		977				1219					452	09010	1219	SY	4" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P	
			113			113					452	12050	113	SY	8" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC MS	
	167	12				179					452	14011	179	SY	10" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P, AS PER PLAN	P2,P4
	1247	862				2109					452	15010	2109	SY	12" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P	
1748		439		1491		2187	1070	421			609	24510	3678	FT	CURB, TYPE 4-C	
167						167					609	50000	167	SY	4" CONCRETE TRAFFIC ISLAND	
	497		406			903					609	98000	903	FT	CURB, MISC.: COLUMBUS 18" CONCRETE CURB	P2,P4
	402		1222								609	98000	1624	FT	CURB, MISC.: COLUMBUS 18" GRANITE CURB "A"	P2,P4
			462							1624	609	98000	462	FT	CURB, MISC.: COLUMBUS 18" GRANITE CURB "B"	P4
	168									168	609	98000	168	FT	CURB, MISC.: COLUMBUS 18" GRANITE CURB "C"	P2
		68				68					609	98000	68	FT	CURB, MISC.: COMBINATION CURB & GUTTER, TYPE MOUNTABLE, AS PER PLAN	P3
		318				318					609	98000	318	FT	CURB, MISC.: COMBINATION CURB & GUTTER, TYPE SPECIAL 8", AS PER PLAN	P3
		555				555					609	98000	555	FT	CURB, MISC.: STRAIGHT 18" CONCRETE CURB, AS PER PLAN	P3
	468		900			1368					SPECIAL	69098100	1368	FT	SAWING AND SEALING CONCRETE JOINTS	P2,P4
14						14					823	10000	14	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448)	
		3				3					826	10600	3	CY	ASPHALT CONCRETE SURFACE COURSE, 442 12.5MM, (448), FIBER TYPE A	
14107		23840	22749	587		60696		587			872	10000	61283	FT	VOID REDUCING ASPHALT MEMBRANE (VRAM)	

BIG BUILD MASTER GENERAL SUMMARY

FRA-70-13.11

146
1151

NO.	DESCRIPTION	REV. BY	DATE
1	REVISED PART 5	CWL	10-2-23
2	REVISED PART 4 609 "B"	CWL	10-12-23
6	REVISED PART 1 ITEM EXT.	CWL	11-10-23
7	REVISED PARTS 3 & 5	CWL	11-20-23
8	REVISED PART 1	CWL	11-20-23

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SHEET NUMBER										PARTICIPATION				ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
OFFICE CALCS	51	52	164	168	301	304	R/W 6	01/IMS/04											
	LS							LS					201	11000	LS		ROADWAY CLEARING AND GRUBBING	33	
	28		32962 1406 175 2870 835 32 4722					32990 1406 175 2870 835 32 4722					202	20010	1	EACH	HEADWALL REMOVED		
													202	23000	32990	SY	PAVEMENT REMOVED		
													202	30700	1406	FT	CONCRETE BARRIER REMOVED		
													202	30701	175	FT	CONCRETE BARRIER REMOVED, AS PER PLAN "4A"	39	
													202	32000	2870	FT	CURB REMOVED		
													202	35100	835	FT	PIPE REMOVED, 24" AND UNDER		
													202	35201	32	FT	PIPE REMOVED, OVER 24", AS PER PLAN	39	
													202	38000	4722	FT	GUARDRAIL REMOVED		
													202	47800	1	EACH	IMPACT ATTENUATOR REMOVED		
													202	58000	4	EACH	MANHOLE REMOVED		
													202	58100	13	EACH	CATCH BASIN REMOVED		
													202	58200	4	EACH	INLET REMOVED		
													202	58500	1	EACH	CATCH BASIN ABANDONED		
													SPECIAL	20270000	162	FT	FILL AND PLUG EXISTING CONDUIT, 15"	43	
													SPECIAL	20270000	126	FT	FILL AND PLUG EXISTING CONDUIT, 18"	43	
													202	75000	1047	FT	FENCE REMOVED		
													202	75250	2	EACH	GATE REMOVED		
													202	98200	1070	FT	REMOVAL MISC.: PORTABLE BARRIER	39	
													202	98200	1062	FT	REMOVAL MISC.: PORTABLE BARRIER WITH VANDAL FENCE	39	
													203	10000	19022	CY	EXCAVATION		
													203	20000	35175	CY	EMBANKMENT		
													203	20001	3977	CY	EMBANKMENT, AS PER PLAN	39	
													203	35000	3360	CY	GRANULAR EMBANKMENT		
													203	35001	4592	CY	GRANULAR EMBANKMENT, AS PER PLAN	39	
23954					422	541		24917					204	10000	24917	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							LS					208	14001	LS		VIBRATION CONTROL AND MONITORING, AS PER PLAN	47	
32								32					209	60201	32	STA	LINEAR GRADING, AS PER PLAN	38	
								3427					606	15050	3427	FT	GUARDRAIL, TYPE MGS		
								1					606	26150	1	EACH	ANCHOR ASSEMBLY, MGS TYPE E (MASH 2016)		
								3					606	26550	3	EACH	ANCHOR ASSEMBLY, MGS TYPE T		
								5					606	35002	5	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1		
								2					606	35102	2	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2		
								2					606	60040	2	EACH	IMPACT ATTENUATOR, TYPE 3 UNIDIRECTIONAL (60 MPH, 48" WIDTH)	38	
								942					607	23001	942	FT	FENCE, TYPE CLT, AS PER PLAN "A"	39	
								323					607	39994	323	FT	TEMPORARY VANDAL FENCE, TYPE B		
1065								3187					608	98000	3187	SF	WALKWAY, MISC.: 6" X 6" CONCRETE PAVERS	303	
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"	38	
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"	38	
								1933					622	41111	1933	FT	PORTABLE BARRIER, ANCHORED, AS PER PLAN	38	
								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"	34	
LS								LS					SPECIAL	69098400	LS		WCLPP R/W CONSTRUCTION CAMERA	34	
LS								LS					SPECIAL	69098400	LS		USACE SURVEY AND AS-BUILTS	34	
LS								LS					SPECIAL	69098400	LS		SURVEY CONTROL VERIFICATION	34	
LS								LS					878	25000	LS		INSPECTION AND COMPACTION TESTING OF UNBOUND MATERIALS		

NO.	DESCRIPTION	REV. BY			DATE
		CWL	CWL	CWL	
1	REVISED F1 & R/W SHEET #				10-2-23
4	UPDATED 202 ITEMS				10-30-23
8	REL. BIKE PATH DETOUR				11-20-23

4A PART 1 GENERAL SUMMARY

FRA-70-13.11

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SHEET NUMBER				PARTICIPATION				ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
OFFICE CALCS	51	165	168	01/IMS/04									
		414							649		EROSION CONTROL		
235	4						601	12001		SY	RIPRAP, WITH GROUT, AS PER PLAN	303	
							601	21050		SY	TIED CONCRETE BLOCK MAT WITH TYPE 1 UNDERLAYMENT		
		9					601	21060	9	SY	TIED CONCRETE BLOCK MAT WITH TYPE 2 UNDERLAYMENT		
		49					601	37501	49	FT	PAVED GUTTER, TYPE 1-2, AS PER PLAN	45	
			2				659	00100	2	EACH	SOIL ANALYSIS TEST		
			1290				659	00300	1290	CY	TOPSOIL		
			11620				659	10000	11620	SY	SEEDING AND MULCHING		
			581				659	14000	581	SY	REPAIR SEEDING AND MULCHING		
			581				659	15000	581	SY	INTER-SEEDING		
			1.62				659	20000	1.62	TON	COMMERCIAL FERTILIZER		
			2.40				659	31000	2.40	ACRE	LIME		
			64				659	35000	64	MGAL	WATER		
			26				659	40000	26	MSF	MOWING		
		8					660	30000	8	SY	SODDING UNSTAKED		
		912					670	00700	912	SY	DITCH EROSION PROTECTION		
		LS					832	15000	LS		STORM WATER POLLUTION PREVENTION PLAN		
		LS					832	15002	LS		STORM WATER POLLUTION PREVENTION INSPECTIONS		
		LS					832	15010	LS		STORM WATER POLLUTION PREVENTION INSPECTION SOFTWARE		
		500000					832	30000	500000	EACH	EROSION CONTROL		
		138					836	10000	138	SY	SEEDING AND EROSION CONTROL WITH TURF REINFORCING MAT, TYPE 1		
											ENVIRONMENTAL / REMEDIATION		
	10						SPECIAL	69065002	10	TON	WORK INVOLVING HAZARDOUS WASTE	47	
	50						SPECIAL	69065010	50	TON	WORK INVOLVING SOLID WASTE	47	
	1000						SPECIAL	69065022	1000	GAL	WORK INVOLVING NON-REGULATED WATER	47	
	1000						SPECIAL	69065024	1000	GAL	WORK INVOLVING REGULATED WATER	47	

NO.	DESCRIPTION	REV. BY	DATE
8	REL. BIKE PATH DETOUR	CWL	11-20-23

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		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	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				
173					637	425	642	428											1														
174																																	
175																																	
178																																	
179	6441	4294	13336	8891					844	562					1722	1148					105	70				122							
TOTALS CARRIED TO GENERAL SUMMARY	6441	4294	13336	8891	637	425	642	428	844	562	628	419	1	1	1722	1148	2833	1889	1	105	70	428	285	122	1	565	377	76	50				
SHEET NO.	202		202		202		202		SPECIAL		608		606		606		606		606		606		622		626*		626*		202		607		
	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		TEMPORARY VANDAL FENCE, TYPE B
	EACH	EACH	EACH	EACH	FT	FT	FT	FT	FT	SF	FT	FT	FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	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			
172																																	
173									97	65																							
178																																	
TOTALS CARRIED TO GENERAL SUMMARY	2	2	8	5	2	2	1	97	65	1273	849	2056	1371	1	2	1	3	2	1	1	1	1	1160	773	68	45	43	29	32	323			

* 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
8	REL. BIKE PATH DETOUR	CWL	11-20-23

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

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 11/19/2023
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SHEET NO.	601 TIED CONCRETE BLOCK MAT WITH TYPE 2 UNDERLAYMENT		601 PAVED GUTTER, TYPE 1-2, AS PER PLAN		660 SODDING UNSTAKED		670 DITCH EROSION PROTECTION		304 6" AGGREGATE BASE		601 RIPRAP, WITH GROUT, AS PER PLAN																		
	SY	01/IMS/0 4	01/IMS/0 4	FT	01/IMS/0 4	01/IMS/0 4	SY	01/IMS/0 4	01/IMS/0 4	CY	01/IMS/0 4	01/IMS/0 4	SY	01/IMS/0 4	01/IMS/0 4														
172	5	4		29	20		5	3		547	365		42	28		248	166												
TOTALS CARRIED TO GENERAL SUMMARY	5	4		29	20		5	3		547	365		42	28		248	166												
SHEET NO.	832 STORM WATER POLLUTION PREVENTION PLAN		832 STORM WATER POLLUTION PREVENTION INSPECTIONS		832 STORM WATER POLLUTION PREVENTION INSPECTION SOFTWARE		832 EROSION CONTROL		836 SEEDING AND EROSION CONTROL WITH TURF REINFORCING MAT, TYPE 1																				
	LS	01/IMS/0 4	01/IMS/0 4	LS	01/IMS/0 4	01/IMS/0 4	01/IMS/0 4	01/IMS/0 4	EACH	01/IMS/0 4	01/IMS/0 4	SY	01/IMS/0 4	01/IMS/0 4															
172 180	LS	LS	LS	LS	LS	LS	LS	300000	200000				83	55															
TOTALS CARRIED TO GENERAL SUMMARY	LS	LS	LS	LS	LS	LS	LS	300000	200000				83	55															

NO.	DESCRIPTION	REV. BY	DATE
8	REL. BIKE PATH DETOUR	CWL	11-20-23

CALCULATED CJC
 CHECKED CWL
EROSION CONTROL SUBSUMMARY
FRA-70-13.11
 165
 1151

REF. NO.	SHEET NO.	STATION		SIDE	202		202		202		202		606		622		626						
		FROM	TO		REMOVAL MISC.: PORTABLE BARRIER WITH VANDAL FENCE		REMOVAL MISC.: PORTABLE BARRIER		IMPACT ATTENUATOR REMOVED		CATCH BASIN ABANDONED		IMPACT ATTENUATOR, TYPE 3 UNIDIRECTIONAL		PORTABLE BARRIER, ANCHORED, AS PER PLAN		BARRIER REFLECTOR, TYPE 1, ONE-WAY						
					FT	FT	EACH	EACH	EACH	EACH	FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH					
					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					
AB-50	191	161+02.06 (I-70 EB)		RT																			
B-1	191 - 197	161+85.36 (I-70 EB)	174+49.07 (I-70 EB)	LT										1	1270			26					
B-2	205	192+91.51 (I-70 EB)	194+65.00 (I-70 EB)	LT										1	150			3					
B-3	205	193+60.69 (I-70 EB)	2195+50.00 (I-70 EB TRNS)	LT											190			4					
B-4	301, 302	914+63.87 (REL BIKE DET)	917+80.33 (REL BIKE DET)	RT											323								
BR-1	195, 197	169+98.51 (I-70 EB)	174+49.07 (I-70 EB)	LT																			
BR-2	195, 197	170+84.39 (I-70 EB)	173+96.98 (I-70 EB)	RT																			
BR-3	195, 197	6006+03.81 (RAMP C6)	173+96.98 (I-70 EB)	RT																			
BR-4	301	13+90.50 (BIKE DETOUR)	14+29.99 (BIKE DETOUR)	RT																			
BR-5	301, 302	14+53.99 (BIKE DETOUR)	21+46.63 (BIKE DETOUR)	RT																			
BR-6	301, 302	14+63.87 (BIKE DETOUR)	18+00.00 (BIKE DETOUR)	RT																			
TOTALS CARRIED TO SUBSUMMARY ON SHEETS 164					637	425	642	428	1		1			1	1	1160	773	20	13				

NO.	DESCRIPTION	REV. BY	DATE
8	REL. BIKE PATH DETOUR	CWL	11-20-23

REF. NO.	SHEET NO.	STATION		SIDE	202		202		202		304		601		670		601		601		660		608		836	
		FROM	TO		EACH	EACH	EACH	EACH	EACH	EACH	SY	SY	SY	SY	FT	SY	SF	SY	SY	SY						
					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																						
DR-33	185	146+20.85 (I-70 EB)		LT																						
DR-34	187	147+76.28 (I-70 EB)		RT																						
DR-35	187	148+25.10 (I-70 EB)		LT																						
DR-36	187	148+35.81 (I-70 EB)		LT																						
DR-51	193	166+08.24 (I-70 EB)		RT																						
DR-53	195	170+29.16 (I-70 EB)		RT																						
DR-54	195	170+59.13 (I-70 EB)		RT																						
DR-57	201	186+67.58 (I-70 EB)		RT																						
DR-58	203	187+56.68 (I-70 EB)		RT																						
DR-59	203	188+09.74 (I-70 EB)		RT																						
DR-60	203	189+99.10 (I-70 EB)		RT																						
DR-61	215	270+25.00 (I-71 NB)		RT																						
DR-62	215	271+27.71 (I-71 NB)		RT																						
DR-63	215	271+89.55 (I-71 NB)		RT																						
DR-66	191	157+98.78 (I-70 EB)		RT																						
DR-224	191	158+16.80 (I-70 EB)		RT																						
E-1	193	163+01.12 (I-70 EB)	166+81.74 (I-70 EB)	RT												312										
E-2	193	165+99.42 (I-70 EB)	166+05.00 (I-70 EB)	RT												9										
E-3	197	173+61.98 (I-70 EB)	175+15.00 (I-70 EB)	RT																						
E-4	213	264+50.01 (I-71 NB)	166+00.00 (I-71 NB)	RT																						
E-5	223 , 225	6006+62.18 (RAMP C6)	6008+13.58 (RAMP C6)	RT																						
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																						
E-8	191	159+68.57 (I-70 EB)	161+18.57 (I-70 EB)	RT																						
E-10	302	18+00.00 (BIKE DETOUR)	20+65.31 (BIKE DETOUR)	RT																						
E-11	302	18+00.00 (BIKE DETOUR)	20+65.31 (BIKE DETOUR)	LT																						
E-12	302	18+00.00 (BIKE DETOUR)	20+65.31 (BIKE DETOUR)	RT																						
E-13	302	18+00.00 (BIKE DETOUR)	20+65.31 (BIKE DETOUR)	LT																						
E-26	215	267+99.81 (I-71 NB)	268+49.94 (I-71 NB)	RT																						
ER-1	187	147+08.42 (I-70 EB)		RT																						
ER-2	191	157+61.04 (I-70 EB)		RT																						
TOTALS CARRIED TO SUBSUMMARY ON SHEETS 164.165																										
					2	2	8	5	2	2	42	28	5	4	547	365	248	166	29	20	5	3	1273	849	83	55

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

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NO.	DESCRIPTION	REV. BY	DATE
4	ADDED ER-1 & ER-2	CWL	10-30-23
8	REL. BIKE PATH DETOUR	CWL	11-20-23

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 11:17:52 AM
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STATION		SIDE	LENGTH	AVERAGE WIDTH W	SURFACE AREA A A = LxW	CADD AREAS	202		202		202		202		202	
FROM	TO						PAVEMENT REMOVED SY	PAVEMENT REMOVED, ASPHALT SY	CURB REMOVED FT	CONCRETE BARRIER REMOVED FT	CONCRETE BARRIER REMOVED, AS PER PLAN FT					
							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	
							SF									
EASTBOUND I.R. 70																
145+00.00	148+37.17	LT			3458.91			384.32		176.05						
145+00.00	148+23.21	LT			8103.68	900.41										
145+00.00	148+07.47	RT			3684.84		409.43		328.70							
159+25.00	161+00.00	LT											175.00			
158+55.28	166+26.06	LT			7738.58		859.84									
158+26.09	166+34.85	LT/RT			38938.34	4326.48										
157+95.39	166+43.77	RT			9275.72		1030.64		60.05							
169+80.69	175+55.07	LT			8628.84		958.76		78.83							
169+92.79	175+63.37	LT/RT			27356.90		3039.66									
170+03.60	175+70.23	RT			7212.00		801.33									
181+00.00	196+00.57	LT			13913.84		1545.98		754.40							
181+00.00	186+50.00	LT/RT			29102.16		3233.57									
186+50.00	197+98.47	LT/RT			44593.73	4954.86										
181+00.00	199+27.26	RT			20041.63		2226.85		1248.57	378.20						
NORTHBOUND I.R. 71																
263+12.50	273+95.47	LT			4487.70		498.63		18.14	49.26						
263+12.50	273+77.82	LT			28391.30		3154.59									
263+12.50	273+54.27	RT			13620.81		1513.42		456.64	224.06						
RAMP B5																
45+08.00	148+57.25 (I-70 EB)	LT			4152.17		461.35		337.76							
45+08.00	148+45.27 (I-70 EB)	RT			4982.10	553.57										
45+08.00	46+29.43	RT			1114.66		123.85		125.69							
RAMP C6																
6005+65.11	6006+78.42	LT			912.33		101.37		38.90							
6005+65.11	175+73.72 (I-70 EB)	LT			7441.47		826.83									
6005+65.11	175+78.38 (I-70 EB)	RT			3658.85		406.54									
BIKE PATH																
10+66.95	12+82.71	LT/RT			2162.53		240.28									
BIKE PATH DETOUR																
14+63.87	18+00.00	LT/RT			3691.56		410.17									
TOTALS CARRIED TO ROADWAY SUBSUMMARY ON SHEET 164							6441	4294	13336	8891	1722	1148	844	562	105	70

PAVEMENT REMOVAL CALCULATIONS

FRA-70-13.11

CALCULATED
 ATR
 CHECKED
 CWL

NO.	DESCRIPTION	REV. BY	DATE
8	REL. BIKE PATH DETOUR	CWL	11-20-23

179
1151

NO.	DESCRIPTION	REV. BY	DATE
8	REL BIKE PATH DETOUR	CWL	11-20-23

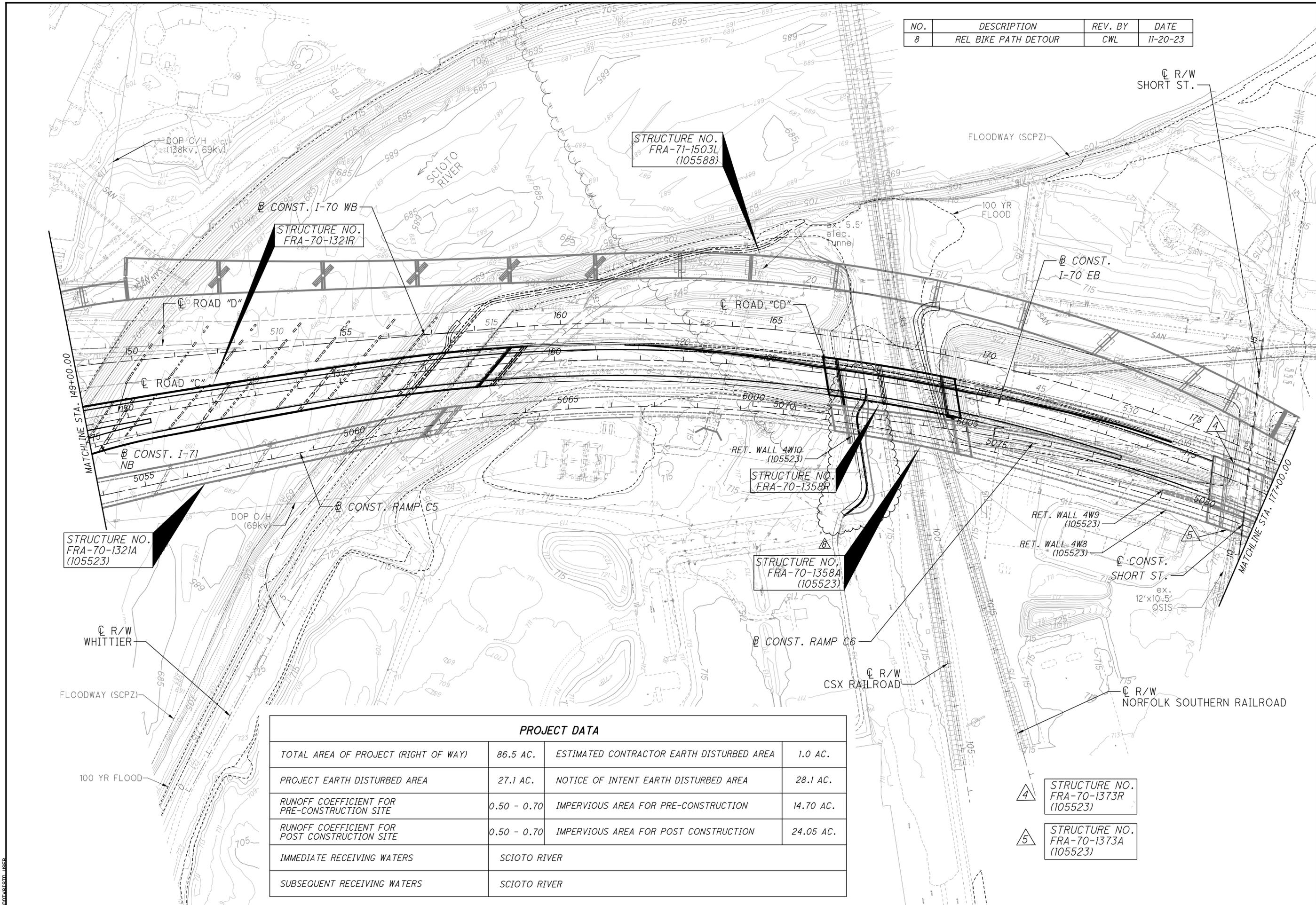


0 50 100 200
 CALCULATED
 ATR
 CHECKED
 CWL
 HORIZONTAL
 SCALE IN FEET

PROJECT SITE PLAN
 STA. 149+00.00 TO STA. 177+00.00

FRA-70-13.11

181
 1151



PROJECT DATA			
TOTAL AREA OF PROJECT (RIGHT OF WAY)	86.5 AC.	ESTIMATED CONTRACTOR EARTH DISTURBED AREA	1.0 AC.
PROJECT EARTH DISTURBED AREA	27.1 AC.	NOTICE OF INTENT EARTH DISTURBED AREA	28.1 AC.
RUNOFF COEFFICIENT FOR PRE-CONSTRUCTION SITE	0.50 - 0.70	IMPERVIOUS AREA FOR PRE-CONSTRUCTION	14.70 AC.
RUNOFF COEFFICIENT FOR POST CONSTRUCTION SITE	0.50 - 0.70	IMPERVIOUS AREA FOR POST CONSTRUCTION	24.05 AC.
IMMEDIATE RECEIVING WATERS	SCIOTO RIVER		
SUBSEQUENT RECEIVING WATERS	SCIOTO RIVER		

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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 $81^\circ 13' 18''$ E
 $e_{max} = 0.037$
 P.C.C. Sta. 156+42.47
 P.T. Sta. 177+56.48
 D.S. = 60 MPH

NOTE "A"
 ENTIRE FRA-70-1358R STRUCTURE
 NOT CONSTRUCTED IN FRA-70-13.11,
 SEE STRUCTURE PLANS FOR FURTHER
 DETAILS.

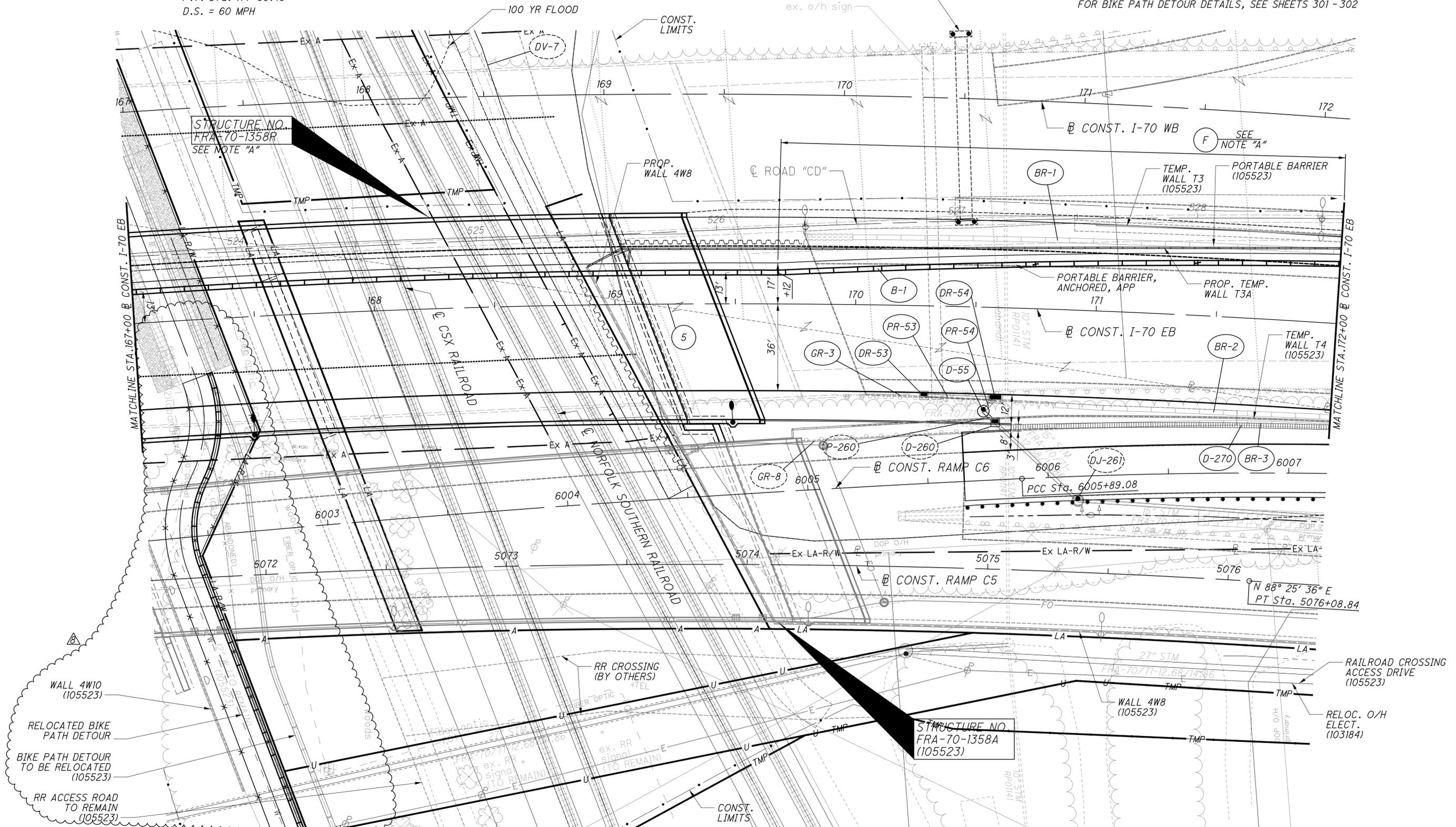
----- PROJECT 4R (105523)
 ----- PROJECT 6R (105588)

NO.	DESCRIPTION	REV. BY	DATE
8	REL BIKE PATH DETOUR	CWL	11-20-23

TAPER TABLE								
TAPER CODE	BEGINNING STATION	ENDING STATION	SIDE	DESCRIPTION	BEGIN WIDTH	END WIDTH	TAPER RATE	
F	169+67.59	I-70 EB	I-70 EB	LT	PVMT/SHLD	17.00'	36.00'	20:1

ITEM 670 - DITCH EROSION PROTECTION

FOR TEMP. RETAINING WALL DETAILS, SEE SHEETS 349 - 360
 FOR I-70 EB PROFILE, SEE SHEET 196
 FOR RAMP C6 PLANS, SEE SHEETS 223 - 292
 FOR GORE DETAILS, SEE SHEETS 290 - 292
 FOR STRUCTURE PLANS, SEE SHEETS 525 - 571
 FOR RETAINING WALL DETAILS, SEE SHEETS 340 - 344
 FOR UNDERDRAIN DETAILS, SEE SHEETS 306 - 308
 FOR LIGHTING PLANS, SEE SHEETS 401 - 413
 FOR ESTIMATED QUANTITIES, SEE SHEETS 169 - 178
 FOR BIKE PATH DETOUR DETAILS, SEE SHEETS 301 - 302

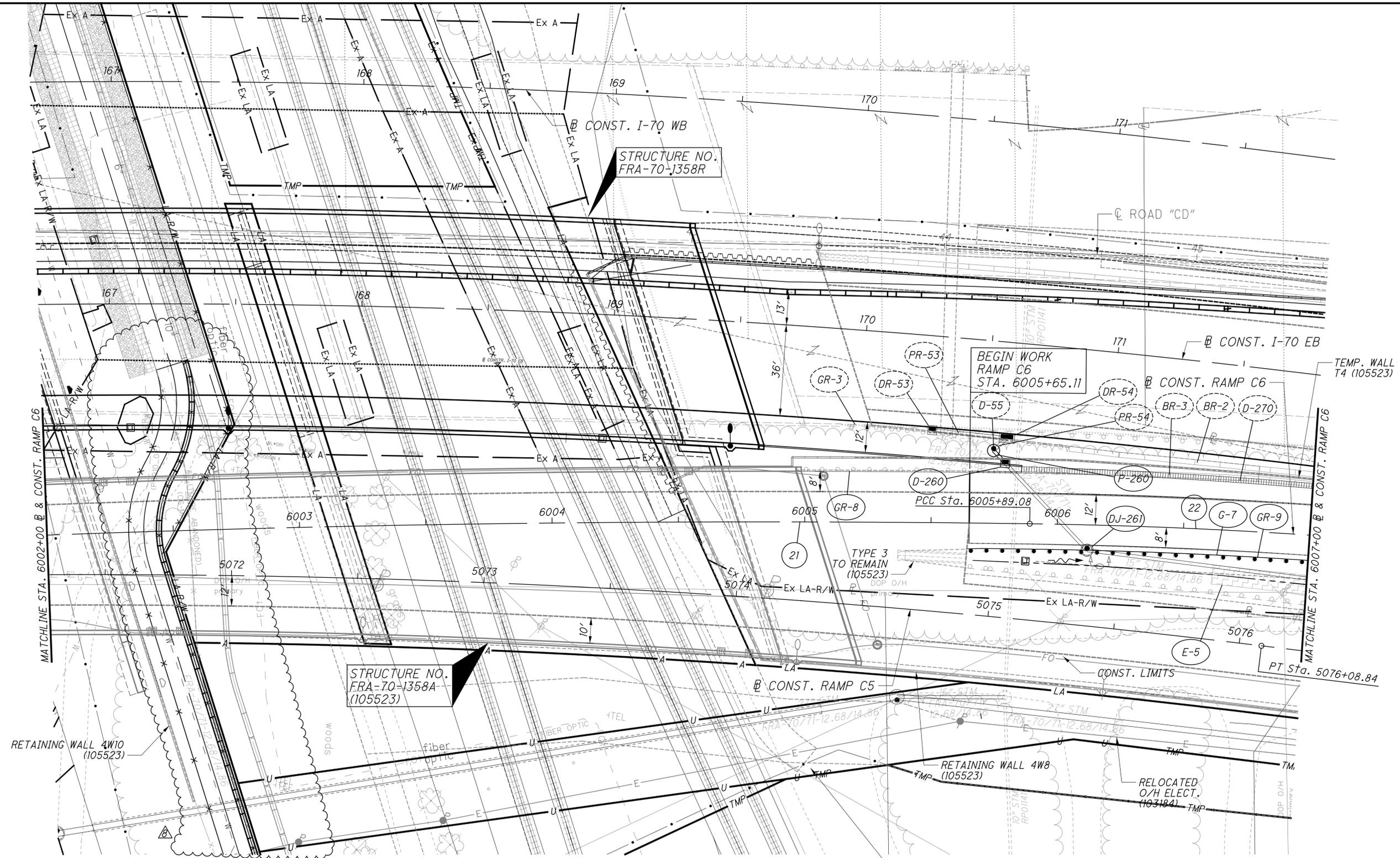


PLAN - I-70 EASTBOUND
 STA. 167+00.00 TO STA. 172+00.00

FRA-70-13.11

195
1151

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22 **CONST. RAMP C6**
 P.I. Sta. 6007+26.49
 $\Delta = 7^\circ 32' 47''$ (RT)
 $D_c = 2^\circ 45' 00''$
 $R = 2,083.48'$
 $T = 137.41'$
 $L = 274.42'$
 $E = 4.53'$
 $C = 274.22'$
 $C.B. = N 86^\circ 02' 35'' E$
 $e_{max} = 0.042$
 P.C.C. Sta. 6005+89.08
 P.T. Sta. 6008+63.50
 D.S. = 50 MPH

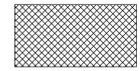
21 **CONST. RAMP C6**
 P.I. Sta. 6002+94.69
 $\Delta = 4^\circ 25' 05''$ (RT)
 $D_c = 0^\circ 45' 00''$
 $R = 7,639.44'$
 $T = 294.69'$
 $L = 589.08'$
 $E = 5.68'$
 $C = 588.94'$
 $C.B. = N 80^\circ 03' 39'' E$
 $e_{max} = 0.028$
 P.C. Sta. 6000+00.00
 P.C.C. Sta. 6005+89.00
 D.S. = 50 MPH

NO.	DESCRIPTION	REV. BY	DATE
8	REL BIKE PATH DETOUR	CWL	11-20-23

FOR RAMP C6 PROFILE, SEE SHEET 224
 FOR I-70 EB PLANS, SEE SHEETS 183-210
 FOR STRUCTURE PLANS, SEE SHEETS 525-571
 FOR RETAINING WALL DETAILS, SEE SHEETS 340-348
 FOR GORE DETAILS, SEE SHEETS 290-292
 FOR UNDERDRAIN DETAILS, SEE SHEETS 306-308
 FOR LIGHTING PLANS, SEE SHEETS 401-413
 FOR ESTIMATED QUANTITIES, SEE SHEETS 169-178



CALCULATED
ATR
CHECKED
CWL



ITEM 202 - PAVEMENT REMOVED



ITEM 202 - PAVEMENT REMOVED, ASPHALT

SCIOTO RIVER

CONST. I-70 WB

CONST. I-70 EB

CONST. RAMP C5

CONST. RAMP C6

MATCHLINE STA. 149+00.00

MATCHLINE STA. 177+00.00

NO.	DESCRIPTION	REV. BY	DATE
8	REL BIKE PATH DETOUR	CWL	11-20-23

FOR CALCULATIONS, SEE SHEET 179

PAVEMENT REMOVAL PLAN

FRA-70-13.11

294
1151

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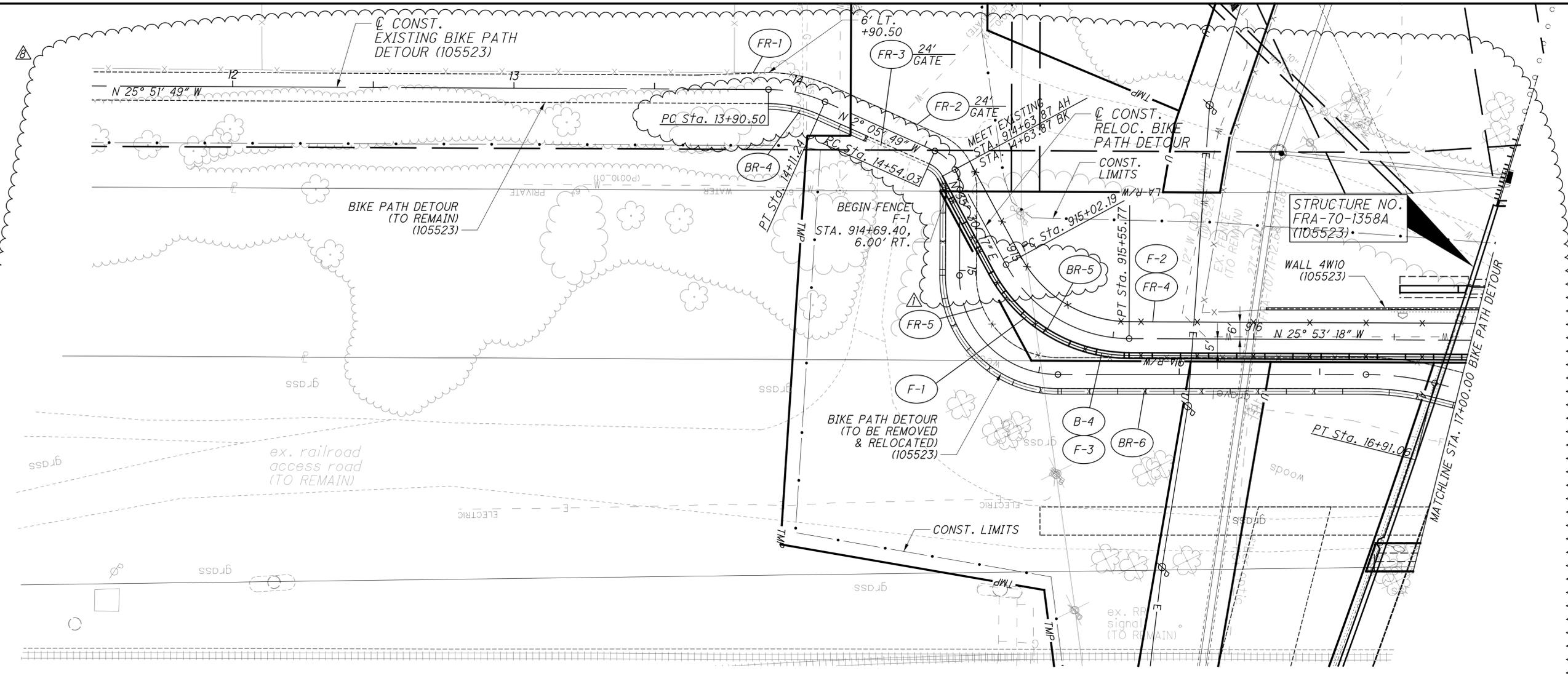
0 10 20 30 40
HORIZONTAL SCALE IN FEET

CALCULATED CJC
CHECKED CWL

PLAN BIKE PATH DETOUR
STA. 11+50.00 TO STA. 17+00.00

FRA-70-13.11

301
1151



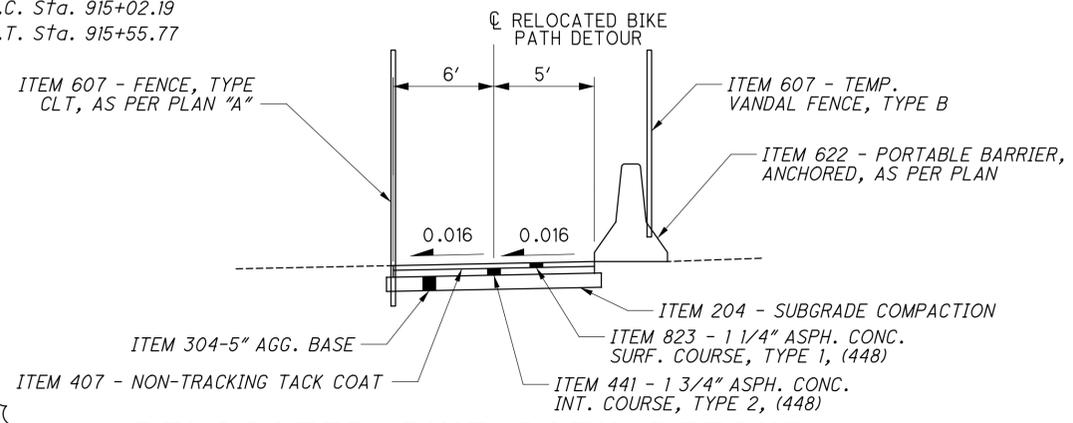
CURVE DATA

P.I. Sta. 915+31.88
 $\Delta = 61^\circ 23' 35''$ (LT)
 $D_c = 114^\circ 35' 30''$
 $R = 50.00'$
 $T = 29.68'$
 $L = 53.58'$
 $E = 8.15'$
 $C = 51.05'$
 $C.B. = N 4^\circ 48' 29'' E$
 P.C. Sta. 915+02.19
 P.T. Sta. 915+55.77

FOLLOWING QUANTITIES CARRIED TO GENERAL SUMMARY:
 ITEM 204 - SUBGRADE COMPACTION = 422 SY
 ITEM 304 - 5" AGGREGATE BASE = 59 CY
 ITEM 407 - NON-TRACKING TACK COAT = 22 GAL
 ITEM 441 - 1 3/4" ASPH. CONC. INT. COURSE, TYPE 2, (448) = 19 CY
 ITEM 823 - 1 1/4" ASPH. CONC. SURF. COURSE, TYPE 1, (448) = 14 CY

NOTES:
 1. EXISTING FENCE (LT) AND PORTABLE BARRIER W/VANDAL FENCE (RT) TO REMAIN UNTIL 1358R (EB-70) AND 1358L (WB-70) FULLY CONSTRUCTED AND WHILE CONSTRUCTION TRAFFIC ACTIVE IN AREA OF RAILROAD.
 2. FENCE F-1, RIPRAP AND PAVERS TO BE CONSTRUCTED ONCE CONSTRUCTION TRAFFIC NO LONGER ACTIVE IN AREA OF RAILROAD.
 3. SEE SHEET 48 FOR BIKE PATH RESTRICTIONS. CONTRACTOR TO COORDINATE WITH 105523 CONTRACTOR TO KEEP LSB OR LSB DETOUR ACCESS OPEN.

----- PROJECT 4R (105523)
 FOR ESTIMATED QUANTITIES, SEE SHEETS 169 -178



RELOCATED BIKE PATH DETOUR

LIMITING STATIONS
 STA. 914+63.87 TO STA. 917+80.33

REFERENCE POINT TABLE		
NORTHING	EASTING	RELOCATED BIKE PATH DETOUR
711476.6433	1826212.7828	PT STA. 914+63.87
711507.8402	1826235.0391	PC STA. 915+02.19
711558.7095	1826239.3180	PT STA. 915+55.77
711686.8246	1826177.1409	PC STA. 916+98.17
711725.4697	1826175.0352	PT STA. 917+37.91
711727.7630	1826175.8541	PC STA. 917+40.35
711766.6265	1826173.6417	PT STA. 917+80.33

STATE PLANE GRID OH SOUTH ZONE NAD 83 (86)
 PROJECT ADJUSTMENT FACTOR: 1.000043907. (GRID TO PROJECT)
 SCALED RADIALLY FROM FRANKLIN COUNTY MONUMENT "FRANK-143".
 ALL COORDINATES LISTED ARE PROJECT COORDINATES

NO.	DESCRIPTION	REV. BY	DATE
1	REVISED F-1	CWL	10-2-23
8	RELOCATED LSB DETOUR	CWL	11-20-23

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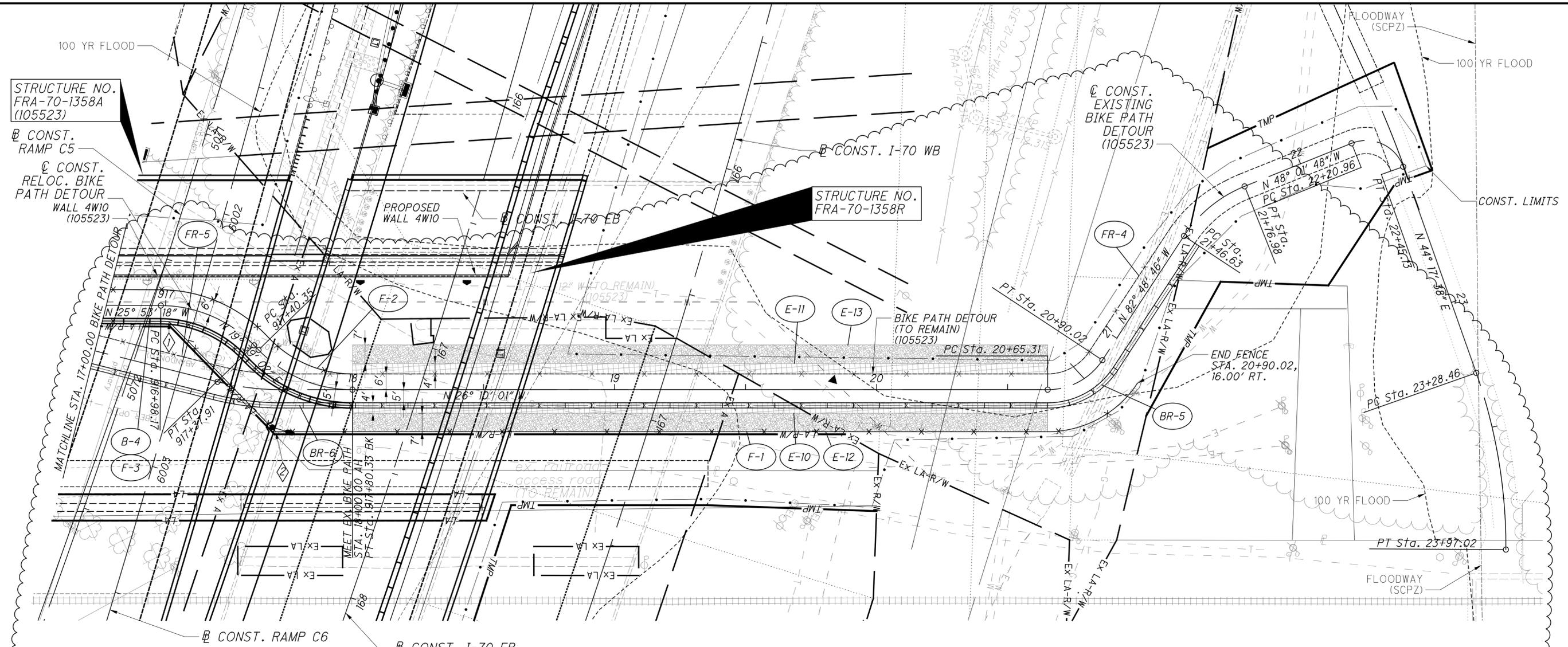
0 10 20 40
HORIZONTAL SCALE IN FEET

CALCULATED CJC CHECKED CWL

PLAN BIKE PATH DETOUR
STA. 17+00.00 TO STA. 22+57.27

FRA-70-13.11

302
1151



CURVE DATA
 P.I. Sta. 917+19.16
 $\Delta = 45^\circ 32' 20''$ (RT)
 $D_c = 114^\circ 35' 30''$
 $R = 50.00'$
 $T = 20.99'$
 $L = 39.74'$
 $E = 4.23'$
 $C = 38.70'$
 C.B. = $N 3^\circ 07' 08'' W$
 P.C. Sta. 916+98.17
 P.T. Sta. 917+37.91

CURVE DATA
 P.I. Sta. 917+61.48
 $\Delta = 45^\circ 49' 03''$ (LT)
 $D_c = 114^\circ 35' 30''$
 $R = 50.00'$
 $T = 21.13'$
 $L = 39.98'$
 $E = 4.28'$
 $C = 38.93'$
 C.B. = $N 3^\circ 15' 29'' W$
 P.C. Sta. 917+40.35
 P.T. Sta. 917+80.33

NOTES:
 1. EXISTING FENCE (LT) AND PORTABLE BARRIER W/VANDAL FENCE (RT) TO REMAIN UNTIL 1358R (EB-70) AND 1358L (WB-70) FULLY CONSTRUCTED AND WHILE CONSTRUCTION TRAFFIC ACTIVE IN AREA OF RAILROAD.
 2. FENCE F-1, RIPRAP AND PAVERS TO BE CONSTRUCTED ONCE CONSTRUCTION TRAFFIC NO LONGER ACTIVE IN AREA OF RAILROAD.
 3. SEE SHEET 48 FOR BIKE PATH RESTRICTIONS. CONTRACTOR TO COORDINATE WITH 105523 CONTRACTOR TO KEEP LSB OR LSB DETOUR ACCESS OPEN.

FOR ESTIMATED QUANTITIES, SEE SHEETS 169-178

- PROJECT 4R (105523)
-  ITEM 608 - WALKWAY MISC.: 6"x6" CONCRETE PAVERS
 -  ITEM 601 - RIP RAP, WITH GROUT, AS PER PLAN
 -  STA. 917+01.78, 6.00' RT.
 -  STA. 917+59.43, 22.19' RT.

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NO.	DESCRIPTION	REV. BY	DATE
8	RELOCATED LSB DETOUR	CWL	11-20-23

UNLESS NOTED OTHERWISE, THE FOLLOWING NOTES PERTAIN TO RETAINING WALLS 4W3, 4W8 & 4W10 AND/OR TEMPORARY RETAINING WALLS T1 & T3A AND/OR TEMPORARY SHORING WALLS TS1 & TS3, WHICH ARE ALL PART OF THIS PROJECT.

SUPPLEMENTAL SPECIFICATIONS

REFER TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:

- 800 DATED 1-20-23
- 840 DATED 4-15-22 (4W8, 4W10)
- 867 DATED 4-15-22 (T1, T3A)

DESIGN SPECIFICATIONS

THESE STRUCTURES CONFORM TO THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 7TH EDITION, 2014 AND THE ODOT BRIDGE DESIGN MANUAL, 2007 EDITION, INCLUDING REVISIONS THROUGH JULY 2015.

DESIGN STRESSES:

CONCRETE CLASS QCI:
COMPRESSIVE STRENGTH - 4.0 KSI (ALL COMPONENTS OF ALL WALLS WITH CLASS QCI CONCRETE SPECIFIED)

REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI

DESIGN LOADING

LIVE LOAD SURCHARGE OF 0.240 KSF

CONSTRUCTION SEQUENCING

WHERE WALL CONSTRUCTION IS PHASED AND A TEMPORARY RETAINING SYSTEM IS REQUIRED, SHOP DRAWINGS OF BOTH PERMANENT AND TEMPORARY WALLS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. THE COST OF THESE SUBMITTALS SHALL BE INCLUDED FOR PAYMENT WITH THE COST OF THE TEMPORARY WALLS.

ITEM 203 - GRANULAR EMBANKMENT, AS PER PLAN (4W8)

PLACE AND COMPACT GRANULAR EMBANKMENT MATERIAL IN 6 INCH LIFTS FOR THE CONSTRUCTION OF THE APPROACH EMBANKMENT.

**ITEM 503 - COFFERDAMS AND EXCAVATION BRACING (4W8)
ITEM 503 - COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN (TS1, TS3)**

THE DESIGN SHOWN ON THE PLANS FOR TEMPORARY SUPPORT OF EXCAVATION IS ONE REPRESENTATIVE DESIGN THAT MAY BE USED TO CONSTRUCT THE PROJECT. THE CONTRACTOR MAY CONSTRUCT THE DESIGN SHOWN ON THE PLANS OR PREPARE AN ALTERNATE DESIGN TO SUPPORT THE SIDES OF EXCAVATIONS. IF CONSTRUCTING AN ALTERNATE DESIGN FOR TEMPORARY SUPPORT OF EXCAVATION, PREPARE AND PROVIDE PLANS IN ACCORDANCE WITH C&MS 501.05. THE DEPARTMENT WILL PAY FOR THE TEMPORARY SUPPORT OF EXCAVATION AT THE CONTRACT LUMP SUM PRICE FOR COFFERDAMS AND EXCAVATION BRACING. NO ADDITIONAL PAYMENT WILL BE MADE FOR PROVIDING AN ALTERNATE DESIGN.

FOUNDATION BEARING RESISTANCE

FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM SERVICE LIMIT STATE BEARING PRESSURE OF 2.30 KIPS PER SQUARE FOOT AND A MAXIMUM STRENGTH LIMIT STATE BEARING PRESSURE OF 3.20 KIPS PER SQUARE FOOT. THE FACTORED BEARING RESISTANCE IS 15.05 KIPS PER SQUARE FOOT.

ITEM 867 - TEMPORARY WIRE FACED MECHANICALLY STABILIZED EARTH WALL (T1, T3A)

THE CONTRACTOR SHALL DESIGN, PREPARE ENGINEERING DRAWINGS FOR, FABRICATE, AND CONSTRUCT A TEMPORARY WIRE FACED MSE WALL IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 867.

BASIS OF PAYMENT: ALL WORK UNDER SUPPLEMENTAL SPECIFICATION 867 SHALL BE PAID FOR AT THE LUMP SUM CONTRACT BID PRICE UNDER ITEM 867 - TEMPORARY WIRE FACED MECHANICALLY STABILIZED EARTH WALL.

PROPRIETARY RETAINING WALL DATA (4W8, 4W10)

FOR ALL MSE WALL PORTIONS BELOW A BRIDGE ABUTMENT, THE PROPRIETARY WALL SUPPLIER SHALL DESIGN THE INTERNAL STABILITY OF A MECHANICALLY STABILIZED EARTH (MSE) WALL IN ACCORDANCE WITH SS840 TO SUPPORT THE ABUTMENT. THE DESIGN FOR INTERNAL STABILITY SHALL INCLUDE A NOMINAL (I.E. UNFACTORED) HORIZONTAL STRIP LOAD DUE TO FRICTION (FR) FROM THE SUPERSTRUCTURE APPLIED PERPENDICULAR TO THE FACE OF WALL AT THE BASE OF THE CONCRETE FOOTING. SEE BELOW FOR STRIP LOADS AT INDIVIDUAL WALLS/BRIDGES. THIS STRIP LOAD DOES NOT INCLUDE EARTH PRESSURE LOADS FROM THE ABUTMENT BACKFILL. HOWEVER, THE PROPRIETARY WALL SUPPLIER SHALL INCLUDE EARTH PRESSURE LOADS FROM THE ABUTMENT BACKFILL IN THE DESIGN CALCULATIONS.

MSE WALL	BRIDGE	NOMINAL HORIZONTAL STRIP LOAD DUE TO FRICTION
4W8	FRA-70-1358R	1.8 K/FT
4W10	FRA-70-1358R	1.8 K/FT

ITEM 840 - MECHANICALLY STABILIZED EARTH WALL AS PER PLAN (4W10)

CONSTRUCTION AND PAYMENT FOR THE MECHANICALLY STABILIZED EARTH (MSE) WALLS SHALL BE IN ACCORDANCE WITH SS840 EXCEPT AS MODIFIED BELOW.

FOR EACH WALL, PROVIDE SOIL REINFORCEMENT LENGTHS AS LISTED IN THE PLAN NOTES.

THE DEPARTMENT WILL NOT ADJUST PAY QUANTITIES FOR VARIATIONS IN THE CONCRETE LEVELING PAD ELEVATIONS AND OR OTHER PAY QUANTITIES ASSOCIATED WITH ADDITIONAL SOIL REINFORCEMENT LENGTH BEYOND THE LISTED LENGTH IN THE PLANS. ANY DEVIATIONS DUE TO THE CHANGE OF SITE CONDITIONS OR FROM THE RESULT OF THE INTERNAL STABILITY ANALYSIS FOR THE FINAL CONDITION (NOT FOR CONDITIONS DURING CONSTRUCTION) MUST HAVE AN APPROVAL FROM ODOT IN ORDER TO BE ELIGIBLE FOR ADDITIONAL PAYMENT. CONTRACTOR SHALL INFORM THE ENGINEER OF ANY SITE CONDITION DEVIATIONS PRIOR TO THE PREPARATION OF SHOP DRAWINGS. (THE INTERNAL STABILITY ANALYSIS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.

ITEM 840 - MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN: (4W8)

THE CONTRACTOR AND MANUFACTURER SHALL COMPLY WITH THE REQUIREMENTS OF SUPPLEMENTAL SPECIFICATION 840, EXCEPT REFERENCES, MATERIALS, AND PAY ITEMS ASSOCIATED WITH FOUNDATION PREPARATION SHALL BE REPLACED WITH ITEM 203 - ROADWAY, MISC.: COLUMN SUPPORTED WALLS.

FOR EACH WALL, PROVIDE SOIL REINFORCEMENT LENGTHS AS LISTED IN THE PLAN NOTES.

THE DEPARTMENT WILL NOT ADJUST PAY QUANTITIES FOR VARIATIONS IN THE CONCRETE LEVELING PAD ELEVATIONS AND OR OTHER PAY QUANTITIES ASSOCIATED WITH ADDITIONAL SOIL REINFORCEMENT LENGTH BEYOND THE LISTED LENGTH IN THE PLANS. ANY DEVIATIONS DUE TO THE CHANGE OF SITE CONDITIONS OR FROM THE RESULT OF THE INTERNAL STABILITY ANALYSIS FOR THE FINAL CONDITION (NOT FOR CONDITIONS DURING CONSTRUCTION) MUST HAVE AN APPROVAL FROM ODOT IN ORDER TO BE ELIGIBLE FOR ADDITIONAL PAYMENT. CONTRACTOR SHALL INFORM THE ENGINEER OF ANY SITE CONDITION DEVIATIONS PRIOR TO THE PREPARATION OF SHOP DRAWINGS. THE INTERNAL STABILITY ANALYSIS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.

ITEM 840 - 6" DRAINAGE PIPE, PERFORATED (4W8, 4W10)

CONNECT THE 6" PERFORATED DRAINAGE PIPE TO THE PIPE AT THE TEMPORARY WALL INSTALLED FROM PROJECT 4R.

MSE WALL DESIGN CRITERIA:

THE FACTORED BEARING RESISTANCE FOR EACH MSE WALL IS LISTED IN THE TABLE BELOW:

MSE LOCATION	DESCRIPTION	FACTORED BEARING RESISTANCE (KSF)			BEFORE GROUND IMPROVEMENT	REQUIRED AFTER GROUND IMPROVEMENT
		WALL LIMITS				
		ALIGNMENT	FROM STA.	TO STA.		
4W8	WALL SECTION SUPPORTING FWD ABUTMENT OF BRIDGE NO. FRA-70-1358R (RR BRIDGE)	B/L WALL 4W8	0+10.03	0+97.52	5.38	9.52
4W10*	WALL SUPPORTING REAR ABUTMENT OF BRIDGE NO. FRA-70-1358R (RR BRIDGE)	B/L WALL 4W10	1+45.00	2+36.25	14.75	N/A

THE FOUNDATION SOIL SHALL BE EVALUATED BY THE GEOTECHNICAL ENGINEER OF RECORD DURING CONSTRUCTION TO DETERMINE SUITABILITY FOR SUPPORT OF THE APPLIED BEARING STRESSES.

* FACTORED BEARING RESISTANCE BASED ON UNDERCUT OF THE SOIL AS OUTLINED IN PLANS.

SOIL REINFORCEMENT LENGTHS:

PROVIDE SOIL REINFORCEMENT LENGTHS EQUAL TO THE GREATER OF 8 FEET OR THE VALUE SPECIFIED IN THE FOLLOWING TABLE ACCORDING TO SUPPLEMENTAL SPECIFICATION 840.04 EXCEPT AS FOLLOWS:

MSE LOCATION	DESCRIPTION	SOIL REINFORCEMENT LENGTHS			REINF. LENGTH
		WALL LIMITS			
		ALIGNMENT	FROM STA.	TO STA.	
4W8	WALL SECTION SUPPORTING FWD ABUTMENT OF BRIDGE NO. FRA-70-1358R (RR BRIDGE)	B/L WALL 4W8	0+10.03	0+97.52	0.70 X H
4W10	WALL SUPPORTING REAR ABUTMENT OF BRIDGE NO. FRA-70-1358R (RR BRIDGE)	B/L WALL 4W10	1+45.00	2+36.25	0.70 X H

H = THE WALL HEIGHT AS DEFINED ACCORDING TO SUPPLEMENTAL SPECIFICATION 840.04.

BASED ON THE SOIL REINFORCEMENT LENGTHS IDENTIFIED ABOVE, THE REINFORCED SOIL MASS PRODUCES THE FOLLOWING MAXIMUM BEARING PRESSURES:

- WALL 4W8: 6.74 KIPS PER SQUARE FOOT SERVICE LIMIT STATE, 9.52 KIPS PER SQUARE FOOT STRENGTH LIMIT STATE.
- WALL 4W10: 6.68 KIPS PER SQUARE FOOT SERVICE LIMIT STATE, 9.46 KIPS PER SQUARE FOOT STRENGTH LIMIT STATE.

TEMPORARY WIRE FACED MECHANICALLY STABILIZED EARTH WALL DESIGN CRITERIA							
WALL LOCATION	WALL LIMITS			NOMINAL BEARING RESISTANCE	RESISTANCE FACTOR	FACTORED RESISTANCE	B
	ALIGNMENT	FROM STA.	TO STA.				
T1	B/L CONST. WALL T1	BEGIN	6+85	7.44	0.65	4.84	0.7H > 8.0 FT
T1	B/L CONST. WALL T1	6+85	7+15	9.69	0.65	6.30	1.05H
T1	B/L CONST. WALL T1	7+15	END	22.69	0.65	14.75	0.7H
T3A	B/L CONST. WALL T3	BEGIN	0+42	8.27	0.65	*9.52	0.7H
T3A	B/L CONST. WALL T3	0+42	0+72	8.96	0.65	5.82	0.75H
T3A	B/L CONST. WALL T3	0+72	END	9.40	0.65	6.11	8.0 FT

* 5.38 BEFORE IMPROVEMENT, 9.52 REQUIRED AFTER IMPROVEMENT

ABBREVIATIONS

- | | | | |
|------------------|----------------------------------|------------|--|
| ABUT. | ABUTMENT | MIN. | MINIMUM |
| BRG. | BEARING | ADDIT. | ADDITIONAL |
| BOT. | BOTTOM | FRWD. | FORWARD |
| BTWN. | BETWEEN | SPL. | SPLICE |
| CONST. JT., C.J. | CONSTRUCTION JOINT | CLR. | CLEAR |
| B.S. | BOTH SIDES | P.C.P.P. | PERFORATED CORRUGATED PLASTIC PIPE |
| N.S. | NEAR SIDE | N.P.C.P.P. | NON-PERFORATED CORRUGATED PLASTIC PIPE |
| F.S. | FAR SIDE | | |
| SER. | SERIES | | |
| TYP. | TYPICAL | | |
| EQ. | EQUAL | | |
| DIM. | DIMENSION | | |
| SPA. | SPACES | | |
| EA. | EACH | | |
| P.E.J.F. | PREFORMED EXPANSION JOINT FILLER | | |

NO.	DESCRIPTION	REV. BY	DATE
6	NOTE REVISED	RSN	11-6-23
8	NOTE REVISED	CWL	11-21-23

01-2012-2012048-FRA70-1358R-STRUCTURES-WALL-GENERAL-SHEETS-77372-MW01.DGN
 11/21/2023 11:54:26 AM
 ODOT\Y81STD_USER

RETAINING WALL NOTES
 DESIGN AGENCY: GPD GROUP, INC. (GPD GROUP, INC. 505 WESTMONT DRIVE, SUITE 200, COVINGTON, LA 70038) (PH: 425-585-1000) (FAX: 425-585-1001)
 DATE: 4-21-23
 REVIEWED: TJW
 DRAWN: MOJ
 CHECKED: RHC
 STRUCTURE FILE NUMBER:
 FRA-70-13-11
 PID No. 77372
 1 / 5
 322
 1151

ITEM 203 - ROADWAY, MISC.: COLUMN SUPPORTED WALLS (4W8) (CONTINUED)

7.4 CSW COLUMN TOLERANCES

A. THE CSW DESIGNER SHALL SPECIFY IN THE CONTRACTOR'S SUBMITTAL THE ALLOWABLE TOLERANCES FOR:

1. COLUMN VERTICALITY
2. HORIZONTAL TOLERANCE FROM PLAN LOCATION.
3. VERTICAL TOLERANCE FROM COLUMN TOP.
4. ACCEPTABLE CONDITION OF COLUMN TOPS PRIOR TO INSTALLATION OF LOAD TRANSFER PLATFORM.
5. MINIMUM COLUMN DIMENSIONS.
6. COLUMN OVERLAP REQUIREMENTS, IF APPLICABLE.
7. MINIMUM STRENGTH REQUIREMENTS OF COLUMN MATERIALS.
8. MATERIAL PROPERTIES, AS INCORPORATED INTO THE COLUMNS.
9. OTHER ITEMS, AS REQUIRED PER ODOT CMS.

B. BEFORE BEGINNING INSTALLATION, THE CONTRACTOR SHOULD ACCURATELY STAKE THE LOCATION OF THE CSW COLUMNS USING A LICENSED SURVEYOR. THE CONTRACTOR SHOULD PROVIDE AN ADEQUATE METHOD FOR LOCATING ELEMENTS TO ALLOW THE ENGINEER TO VERIFY THE AS-BUILT LOCATION OF THE ELEMENTS DURING CONSTRUCTION. THE CONTRACTOR WILL NOT BE COMPENSATED FOR ELEMENTS THAT ARE LOCATED OUTSIDE OF THE SPECIFIED TOLERANCES. IF THE ENGINEER DETERMINES THAT MISALIGNED ELEMENTS WILL INTERFERE WITH CONSTRUCTION, A METHOD OF CORRECTION SHOULD BE PREPARED BY THE CSW DESIGNER AND SUBMITTED BY THE CONTRACTOR TO THE ENGINEER FOR REVIEW AND ACCEPTANCE.

C. COLUMN ELEMENTS INSTALLED BEYOND THE MAXIMUM ALLOWABLE TOLERANCES SHALL BE ABANDONED AND REPLACED WITH NEW COLUMNS, UNLESS THE DESIGNER APPROVES THE CONDITION OR PRESCRIBES OTHER REMEDIAL MEASURES TO BE COMPLETED BY CONTRACTOR AND CSW DESIGNER. ALL MATERIAL AND LABOR REQUIRED TO REPLACE OR REMEDY REJECTED COLUMNS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE DEPARTMENT. REMEDIAL MEASURES MUST BE SUBMITTED TO THE ENGINEER FOR REVIEW AND ACCEPTANCE.

7.5 AS-BUILT COLUMN INSTALLATION RECORDS: THE CONTRACTOR MUST SUBMIT AS-BUILT FIELD MEASUREMENT DATA INDICATING SURVEYED AS-BUILT PLAN LOCATIONS OF EACH CSW ELEMENT, INCLUDING THE ELEMENT CENTER (PER SITE SPECIFIC COORDINATES), THE ELEMENT DIMENSION, THE COLUMN VERTICALITY, THE TOP AND BOTTOM ELEVATIONS OF EACH ELEMENT TO THE ACCURACY REQUIRED BY THE PROJECT SPECIFICATIONS, AND THE DATE OF INSTALLATION. THE AS-BUILT RECORDS SHALL ALSO INCLUDE ALL COMPACTION REPORTS AND RESULTS OF COMPRESSIVE STRENGTH TESTING FOR ANY CEMENTITIOUS ELEMENTS. THE AS-BUILT DOCUMENTATION MUST BE APPROVED BY THE DESIGNER AND SUBMITTED TO THE ENGINEER NO LATER THAN 90 DAYS AFTER THE COMPLETION OF EACH CSW-STABILIZED ZONE. A DISINCENTIVE OF \$300.00 PER DAY WILL BE ASSESSED FOR EACH DAY BEYOND 90 DAYS THAT THE COMPLETED AS-BUILT DRAWINGS ARE NOT SUBMITTED TO THE ENGINEER.

7.6 SELECT FILL PLACEMENT AND QA/QC REQUIREMENTS (LOAD TRANSFER PLATFORMS)

A. NO GEOSYNTHETIC REINFORCEMENT OR FILL MATERIALS SHALL BE PLACED PRIOR TO SATISFYING THE COLUMN PERFORMANCE CRITERIA, UNLESS THE FILL MATERIAL IS REQUIRED AS A WORKING PLATFORM FOR COLUMN INSTALLATION.

B. INSTRUMENTATION FOR PERFORMANCE MEASUREMENTS AND INSTRUMENTATION FOR MONITORING OF EXISTING STRUCTURES AND EMBANKMENTS SHALL BE INSTALLED PRIOR TO PLACEMENT OF ANY SELECT FILL OR GEOSYNTHETIC REINFORCEMENT.

C. PRIOR TO CONSTRUCTION OF THE LOAD TRANSFER PLATFORM, THE CONTRACTOR SHALL PREPARE SUBGRADE, AND REMOVE ANY DELETERIOUS MATERIALS SUCH AS TREE ROOTS. THE FOUNDATION SOIL SHALL BE OBSERVED AND APPROVED BY THE ENGINEER PRIOR TO PLACEMENT OF SELECT REINFORCED FILL.

D. IF CEMENTITIOUS GROUND IMPROVEMENT METHODS ARE USED, PLACEMENT OF FILL MATERIAL SHALL NOT START UNTIL THE COLUMNS HAVE GAINED ADEQUATE STRENGTH TO SUPPORT THE FILL MATERIALS AND FILL INSTALLATION AND CONSTRUCTION EQUIPMENT.

E. SELECT REINFORCED FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT EXCEEDING 10 IN. IN UNCOMPACTED THICKNESS FOR HEAVY COMPACTION EQUIPMENT. FOR ZONES WHERE COMPACTION IS ACCOMPLISHED WITH HAND-OPERATED COMPACTION EQUIPMENT, FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT EXCEEDING 6 IN. IN UNCOMPACTED THICKNESS.

F. SELECT REINFORCED FILL SHALL BE PLACED AND COMPACTED IN ACCORDANCE WITH ITEM 203. THIS MAY NOT BE ACHIEVABLE FOR THE FIRST LIFT OF FILL BECAUSE OF THE WEAK SUBGRADE BETWEEN COLUMNS, HOWEVER, SUBSEQUENT LIFTS SHOULD MEET THE MINIMUM REQUIREMENTS.

G. TEST METHODS AND FREQUENCY, AND VERIFICATION OF MATERIAL SPECIFICATIONS AND COMPACTION, SHALL BE THE RESPONSIBILITY OF THE STATE.

7.7 GEOSYNTHETIC REINFORCEMENT PLACEMENT AND QA/QC REQUIREMENTS

A. PLACE REINFORCEMENT AT THE LOCATIONS AND ELEVATION SHOWN ON THE CONTRACTORS WORKING DRAWINGS. NO CHANGES TO THE GEOSYNTHETIC REINFORCEMENT LAYOUT, INCLUDING, BUT NOT LIMITED TO LENGTH, REINFORCEMENT TYPE (I.E., STRENGTH), DIRECTION OF REINFORCEMENT, OR ELEVATION SHALL BE MADE WITHOUT THE EXPLICIT WRITTEN APPROVAL OF THE DESIGNER. CONTRACTOR SHALL SUBMIT THE CHANGES TO THE ENGINEER FOR ACCEPTANCE.

B. CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY ON THE GEOSYNTHETIC REINFORCEMENT. A MINIMUM FILL THICKNESS OF 150 MM (6 IN.) IS REQUIRED FOR OPERATION OF VEHICLES OVER THE REINFORCEMENT. TURNING OF VEHICLES SHOULD BE KEPT TO A MINIMUM TO PREVENT TRACKS OR TIRES FROM DISPLACING THE FILL AND/OR GEOSYNTHETIC REINFORCEMENT.

C. MINIMUM OVERLAP OF ADJACENT ROLLS OF REINFORCEMENT SHALL BE AS INDICATED BY THE DESIGNER OF THE CONTRACTOR'S WORKING DRAWINGS.

D. EACH ROLL OF GEOSYNTHETIC REINFORCEMENT SHOULD BE INSPECTED BY THE CONTRACTOR TO ENSURE THAT IT IS UNDAMAGED PRIOR TO COVERING WITH FILL MATERIAL.

E. CARE SHALL BE TAKEN TO PREVENT EXCESSIVE MUD, WET CONCRETE, EPOXY, OR OTHER DELETERIOUS MATERIALS FROM COMING IN CONTACT WITH AND AFFIXING TO THE GEOGRID MATERIALS.

F. GEOSYNTHETIC REINFORCEMENT SHALL BE STORED AT TEMPERATURES ABOVE -20 DEGREES F (- 29 DEGREES C).

G. GEOSYNTHETIC REINFORCEMENT SHALL NOT BE LEFT DIRECTLY EXPOSED TO SUNLIGHT FOR A PERIOD LONGER THAN RECOMMENDED BY THE MANUFACTURER OR ONE MONTH WHICHEVER IS SHORTER.

H. ANY ROLL OR PORTION OF A ROLL OF GEOSYNTHETIC DAMAGED BEFORE, DURING, AND/OR AFTER INSTALLATION SHALL BE REPLACED BY THE CONTRACTOR.

I. LARGE PILES OF FILL MATERIAL SHALL NOT BE PLACED ON THE GEOSYNTHETIC REINFORCEMENT.

J. IF GEOTEXTILE SEAMS ARE SPECIFIED, THE SEAMS SHOULD BE PLACED UP AND EVERY STITCH SHOULD BE INSPECTED.

K. THE CONTRACTOR SHALL REMOVE SLACK AND WRINKLES FROM THE GEOSYNTHETIC PRIOR TO PLACING FILL.

L. THE CONTRACTOR SHALL SUBMIT THE LOT NUMBERS AND ROLL NUMBERS ALONG WITH THEIR LOCATIONS WITHIN THE EMBANKMENT FOR ALL GEOSYNTHETIC REINFORCEMENT.

PART 8 POST-INSTALLATION PERFORMANCE MONITORING INSTRUMENTATION

8.1 POST-INSTALLATION PERFORMANCE MONITORING INSTRUMENTATION: FOUR (4) SETS OF CSW PERFORMANCE MONITORING INSTRUMENTATION SHALL BE INSTALLED. THIS INSTRUMENTATION WILL BE PLACED TO MONITOR THE PERFORMANCE OF THE CSW SYSTEM AFTER IT HAS BEEN SUCCESSFULLY CONSTRUCTED AND IS SUBJECT TO THE CONSTRUCTION LOADING AND SUBSEQUENT SERVICE LOADING. THE INSTALLATION MAY BE PERFORMED BY THE PRIME CONTRACTOR, THE CONTRACTOR, OR AN INSTRUMENTATION SUBCONTRACTOR OR CONSULTANT (OR IN WHOLE OR IN PART BY COMBINATIONS THEREOF). IMPORTANT NOTE: IN THE EVENT THAT THIS QA MONITORING WORK IS NOT TO BE COORDINATED OR PERFORMED BY THE CSW CONTRACTOR, THE CSW CONTRACTOR SHALL BE REQUIRED TO SPECIFICALLY COORDINATE THIS WORK AND SUBMIT A WORK PLAN TO THE ENGINEER PRIOR TO INITIATING THE CSW WORK.

A. THE INSTRUMENTATION SHALL BE INSTALLED AS DESCRIBED IN THE FOLLOWING SUBSECTIONS, AT THE APPROXIMATE LOCATIONS IN THE TABLE ON SHEET 5/5, THE SPECIFIC LOCATIONS TO BE DETERMINED BY THE CONTRACTOR AS ACCEPTED BY THE ENGINEER, SUCH THAT CONSTRUCTION INTERFERENCE AND THE POTENTIAL FOR DAMAGE IS MINIMIZED. THE INSTALLATIONS SHALL ALSO BE PLACED SUCH THAT DATA MAY CONTINUE TO BE ACQUIRED ONCE THE FACILITY HAS BEEN PLACED IN SERVICE. DETAILS OF THE EXACT INSTALLATION LOCATIONS WILL BE DETERMINED AT THE PRE-CONSTRUCTION MEETING.

B. MINIMUM INSTRUMENTATION PROVIDED BY THE CONTRACTOR IS TO CONSIST OF:

1. SETTLEMENT PLATES, TO BE INSTALLED ON TOP OF THE LOAD/TRANSFER PLATFORM.
2. PIEZOMETERS TO MONITOR PORE PRESSURES BENEATH THE MSE WALLS AND EMBANKMENTS IN THE STABILIZED ZONE.

C. CONTRACTOR SHALL RECORD INSTRUMENTATION DATA FROM THE TIME OF INSTALLATION (END OF CSW CONSTRUCTION) UNTIL 30 DAYS AFTER THE WALLS REACH THEIR FINAL PLAN ELEVATION (LESS COPING AND PAVEMENTS). READINGS SHALL BE TAKEN TWICE WEEKLY DURING WALL AND EMBANKMENT FILL PLACEMENT AND AT INTERVALS NOT TO EXCEED 15 CALENDAR DAYS AT OTHER TIMES. DATA FROM ALL SENSORS SHALL BE READ IN A UNIFORM MANNER, SUCH THAT ALL DATA IS TAKEN WITHIN A 2-DAY PERIOD AT 15 (OR 30) DAY INTERVALS TO AID IN THE EVALUATION OF THE DATA AND SUBSEQUENT PRESENTATION OF RESULTS.

D. IF THE WALLS SUPPORTED OVER THE CSW ELEMENTS HAVE COMPLETED SETTLEMENT IN ACCORDANCE WITH THE PERFORMANCE CRITERIA WITHIN 30 DAYS OF SUBSTANTIAL WALL COMPLETION AS DEFINED IN (I.A.6), THE CONTRACTOR MAY TURN OVER FURTHER MONITORING OF THE DATA TO THE DEPARTMENT. IF THE WALLS HAVE NOT COMPLETED SETTLEMENT IN ACCORDANCE WITH THE DESIGN CRITERIA, THE CONTRACTOR SHALL CONTINUE MONITORING EFFORTS (AT NO ADDITIONAL COST TO THE DEPARTMENT) AS DIRECTED BY THE ENGINEER.

E. INSTRUMENTATION SHALL BE INSTALLED AFTER THE CONSTRUCTION OF THE CSW ELEMENTS WITHIN THE IN-SITU SOILS AND PRIOR TO MSE WALL CONSTRUCTION OR EMBANKMENT FILL PLACEMENT. A MINIMUM OF 2 SETS OF BASELINE READINGS SHALL BE TAKEN AND CONFIRMED PRIOR TO THE CONSTRUCTION OF ELEMENTS ABOVE THE INSTALLED CSW CONSTRUCTION.

F. INSTRUMENTATION SHALL BE ELECTRONIC AND SELF-RECORDING, WHERE PRACTICAL. READINGS FROM SENSORS SHALL BE TAKEN WITH AUTOMATED DATA COLLECTION SYSTEMS. ANY PARTICULAR INSTRUMENT TYPE SHALL BE OBTAINED FROM THE SAME MANUFACTURER TO MINIMIZE POTENTIAL INCOMPATIBILITIES AND ERRORS. DATA ACQUISITION DEVICES (DATA LOGGERS) SHALL BE OF A TYPE COMPATIBLE WITH EACH TYPE OF INSTRUMENTATION AND RECOMMENDED BY THE MANUFACTURER.

G. INSTRUMENTATION SHALL BE PROVIDED WITH CALIBRATION CERTIFICATES FROM THE MANUFACTURER, AS APPROPRIATE.

H. ALL INSTRUMENTATION AND ASSOCIATED MONITORING AND DATA COLLECTION DEVICES (PROBES, CABLES, DATA COLLECTORS, ETC.) BECOME THE PROPERTY OF THE DEPARTMENT AT THE END OF THE MONITORING PERIOD. ELECTRONIC FILES AND ALL DATA REPORTS SHALL BE PROVIDED TO THE DEPARTMENT AT THE END OF THE MONITORING PERIOD.

I. THE DEPARTMENT RESERVES THE RIGHT TO PUBLISH THE INFORMATION FROM THE MONITORING INVESTIGATION IN INTERNAL AND EXTERNAL TECHNICAL PUBLICATIONS.

J. THE PERFORMANCE MONITORING INSTRUMENTATION AND ASSOCIATED DATA COLLECTION AND ANALYSIS SHALL NEITHER BE USED AS A BASIS OF PAYMENT NOR AS A PERFORMANCE CRITERIA FOR THE DETERMINATION OF SUCCESSFUL INSTALLATION OF THE CSW APPLICATION.

K. INSTRUMENTS SHALL MEET ACCEPTED INDUSTRY STANDARDS AND HAVE AN ACCURACY OF +/- 0.5% WITH A MINIMUM PRECISION OF +/- 0.5% OF FULL SCALE (SPAN).

L. INSTRUMENTS SHALL HAVE APPROPRIATE RUGGEDNESS TO SURVIVE INSTALLATION AND CONSTRUCTION PROCESSES SUCH THAT THEY READ WITH THE MINIMUM PRECISION AND ACCURACY OVER THE DURATION OF CONSTRUCTION AND A MINIMUM OF EIGHTEEN (18) MONTHS OF SERVICE FOLLOWING CONSTRUCTION.

M. INSTRUMENTATION SHALL HAVE AN OPERATING TEMPERATURE RANGE AS APPROPRIATE FOR CONDITIONS ANTICIPATED WHERE INSTALLED (I.E. WITHIN OR ABOVE A CSW ELEMENT).

N. CABLING TO EACH SENSOR (REQUIRING CABLING) SHALL BE INCLUDED SUCH THAT DATA MAY BE OBTAINED AT ALL PHASES OF CONSTRUCTION AND WHEN THE NEW CONSTRUCTION IS IN SERVICE. THE DISTANCE FROM THE DATA ACQUISITION SYSTEM TO ANY GIVEN SENSOR SHALL BE A MINIMUM HORIZONTAL DISTANCE FROM THE SENSOR TO THE OUTSIDE OF THE NEAREST RETAINING WALL OR ABUTMENT FACE, PLUS A MINIMUM CABLING AMOUNT TO PROVIDE FOR ANY NECESSARY VERTICAL TRAVEL TO THE GROUND SURFACE, PLUS 6 FT.

O. THE INSTRUMENTATION INSTALLATIONS SHALL BE ADEQUATELY PROTECTED FROM CONSTRUCTION IMPACTS, DURING CONSTRUCTION, AS WELL AS WEATHER EFFECTS, AND VANDALISM. APPROPRIATE LOCKED CASINGS AND/OR REMOVABLE CABLING AND PLASTIC CONNECTOR CAPS AND RELATED PROTECTIVE DEVICES SHALL BE PROVIDED TO ENSURE THE INTEGRITY OF THE INSTRUMENTATION OVER THE PROPOSED MONITORING DURATION.

P. THE PLAN FOR INSTALLATION OF INSTRUMENTATION SHALL BE APPROVED BY THE DESIGNER AND SUBMITTED TO THE ENGINEER FOR ACCEPTANCE PRIOR TO PLACEMENT.

PART 9 ACCEPTANCE CRITERIA

9.1 ACCEPTANCE CRITERIA: THE COLUMN-SUPPORTED EMBANKMENT IS CONSIDERED ACCEPTABLE WHEN THE EMBANKMENT CONSTRUCTION AND QC/QA REQUIREMENTS ARE COMPLETED IN ACCORDANCE WITH SECTION 6, COMPLIANCE WITH THE PERFORMANCE CRITERIA FROM PARAGRAPH 1.1 IS DEMONSTRATED, AND NO DAMAGE TO ADJACENT FACILITIES IS FOUND OR COMPENSATION IS MADE FOR DAMAGED CAUSED OR DAMAGE IS REPAIRED AT CONTRACTOR'S EXPENSE.

PART 10 CSW PAYMENT

10.1 ALL COST IN CONNECTION WITH MOBILIZATION AND DEMOBILIZATION OF MATERIALS, EQUIPMENT AND LABOR FOR THE CONSTRUCTION OF COLUMN-SUPPORTED WALLS (CSW) AS REQUIRED IN THIS SPECIFICATION, SHALL BE PAID FOR UNDER ITEM 203 - ROADWAY MISC; COLUMN SUPPORTED WALLS.

10.2 ALL COST IN CONNECTION WITH DESIGN, EQUIPMENT, MATERIAL, AND LABOR FOR THE INSTALLATION OF COLUMN-SUPPORTED WALLS (CSW), INCLUDING COLUMN MATERIALS AND CONSTRUCTION, QC MONITORING, INSTRUMENTATION, WORKING AND LOAD TRANSFER PLATFORM MATERIALS, WICK DRAINS IF NECESSARY TO MEET SETTLEMENT REQUIREMENTS, AND THE GEOSYNTHETIC REINFORCEMENTS AS REQUIRED IN THIS SPECIFICATION, SHALL BE INCIDENTAL TO ITEM 203. SEPARATE PAYMENT WILL NOT BE MADE FOR SITE PREPARATION, DEWATERING, TEMPORARY WORKS TO FACILITATE CONSTRUCTION, ETC. INCLUDE ALL THE ANTICIPATED COSTS IN PRICE BID FOR ITEM 203 - ROADWAY, MISC.: COLUMN SUPPORTED WALLS. GROUND IMPROVEMENT AREAS HAVE BEEN DEFINED IN THE PLANS FOR BIDDING PURPOSES. ADDITIONAL COLUMN SUPPORTS SHALL BE PROVIDED AS NECESSARY BEYOND THE DEFINED AREAS TO SATISFY GLOBAL STABILITY AND SHALL BE INCIDENTAL TO THIS ITEM.

10.3 ALL COSTS ASSOCIATED WITH THE INSTALLATION OF TEST COLUMNS, REACTION FRAMES, INSTRUMENTATION, PERFORMANCE, ANALYSIS, AND REPORTING OF TEST RESULTS TO ENGINEER SHALL BE INCLUDED IN UNIT BID FOR ITEM 203 - ROADWAY, MISC.: COLUMN SUPPORTED WALLS.

10.4 THE TERMS CSW AND COLUMN SUPPORTED WALLS SHALL BE USED INTERCHANGEABLY THROUGHOUT THE PLANS.

NO.	DESCRIPTION	REV. BY	DATE
6	NOTE REVISED	RSN	11-6-23
8	NOTE REVISED	CWL	11-21-23

01-2012-2012048 VFR17732-STRUCTURES WALL - GENERAL SHEETS 77372 - MW01.DGN
 11/21/2023 11:59:44 AM
 ODOT\B1STD_USER

RETAINING WALL NOTES
 DESIGN AGENCY: **GPD GROUP**
 1001 Westwood Drive, Suite 200, CO #14215, Bldg 20075
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 DATE: 4-21-23
 REVIEWED: CIL
 DRAWN: MOJ
 CHECKED: DGN
 FILE NUMBER: STRUCTURE FILE NUMBER
FRA - 70 - 13 - 11
PID No. 77372
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 325
 1151

NO.	DESCRIPTION	REV. BY	DATE
7	ADDED QC/QA	CWL	11-17-23
8	PAY ITEM ADDED	GTP	11-22-23

ESTIMATED QUANTITIES

CALCULATED: SAT DATE: 3-25-15
CHECKED: TJW DATE: 6-26-20

ITEM	EXT.	TOTAL	PARTICIPATION		UNITS	DESCRIPTION	ABUTMENT	PIER	SUPER-STRUCTURE	GENERAL	REFERENCE SHEET NO.
			02/IMS/11	03/NHS/10							
202	11002	LS	LS	LS		STRUCTURE REMOVED, OVER 20 FOOT SPAN					
202	22900	324	194	130	SY	APPROACH SLAB REMOVED				324	
202	23500	8,602	5,161	3,441	SY	WEARING COURSE REMOVED			8,278	324	
503	11101	LS	LS	LS		COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN					14
503	21100	1,849	1,109	740	CY	UNCLASSIFIED EXCAVATION	1,849				
505	11100	LS	LS	LS		PILE DRIVING EQUIPMENT MOBILIZATION					
507	00200	6,075	3,645	2,430	FT	STEEL PILES HPI2X53, FURNISHED	6,075				
507	00250	5,670	3,402	2,268	FT	STEEL PILES HPI2X53, DRIVEN	5,670				
507	93300	81	49	32	EACH	STEEL POINTS OR SHOES	81				
509	10001	1,345,121	807,073	538,048	LB	EPOXY COATED REINFORCING STEEL, AS PER PLAN	83,071	254,207	1,007,365	478	9
511	34447	3,365	2,019	1,346	CY	CLASS QC2 CONCRETE WITH QC/OA, BRIDGE DECK, AS PER PLAN			3,365		9
511	34450	415	249	166	CY	CLASS QC2 CONCRETE WITH QC/OA, BRIDGE DECK (PARAPET)			412	3	
511	43512	1,120	672	448	CY	CLASS QC1 CONCRETE WITH QC/OA, ABUTMENT INCLUDING FOOTING	1,120				
511	45602	1,239	743	496	CY	CLASS QC4 MASS CONCRETE, SUBSTRUCTURE WITH QC/OA		1,239			
512	10100	5,860	3,516	2,344	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	792	2,414	2,640	14	
513	10300	3,560,367	2,136,220	1,424,147	LB	STRUCTURAL STEEL MEMBERS, LEVEL 5			3,560,367		
513	10401	2,113,222	1,267,933	845,289	LB	STRUCTURAL STEEL MEMBERS, HYBRID GIRDER, LEVEL SIX (6) FABRICATION, AS PER PLAN			2,113,222		9
513	20000	27,156	16,294	10,862	EACH	WELDED STUD SHEAR CONNECTORS			27,156		
513	95000	19,616	11,670	7,946	FT	STRUCTURAL STEEL, MISC.: HAND HOLD BARS			19,616		52A
513	95030	4	2	2	EACH	STRUCTURAL STEEL, MISC.: PARAPET SLIDING PLATE JOINT			4		9
514	00060	5,026	3,016	2,010	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT			5,026		
514	00066	5,026	3,016	2,010	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT			5,026		
516	12400	313	188	125	FT	SPECIAL - MODULAR EXPANSION JOINT			313		9
516	44101	12	7	5	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN (1'-8" DIA.) (PTFE)			12		11
516	44101	9	5	4	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN (1'-7" DIA.) (PTFE)			9		11
518	12301	3	2	1	EACH	SCUPPER, INCLUDING SUPPORTS, AS PER PLAN			3		67-68
518	21200	346	208	138	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	346				
518	40000	358	215	143	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	358				
518	40010	165	99	66	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	165				
524	95484	288	173	115	FT	DRILLED SHAFTS, 66" DIAMETER, INTO BEDROCK WITH QC/OA, AS PER PLAN		288			9
524	95492	1,004	602	402	FT	DRILLED SHAFTS, 72" DIAMETER, ABOVE BEDROCK WITH QC/OA, AS PER PLAN		1,004			9
526	30011	685	411	274	SY	REINFORCED CONCRETE APPROACH SLABS WITH QC/OA (T=17"), AS PER PLAN				685	93-96
526	90010	272	163	109	FT	TYPE A INSTALLATION				272	
601	21000	1,383	830	553	SY	CONCRETE SLOPE PROTECTION				1,383	
601	32104	2,057	1,234	823	CY	ROCK CHANNEL PROTECTION, TYPE B WITH GEOTEXTILE FABRIC				2,057	
869	00101	41	25	16	EACH	HIGH LOAD MULTI-ROTATIONAL (HLMR) BEARINGS, AS PER PLAN			41		11
894	10000	23	14	9	EACH	THERMAL INTEGRITY PROFILING (TIP) TEST		23			
SPECIAL	69098100	200	120	80	FT	COVERED WALKWAY SYSTEM				200	12

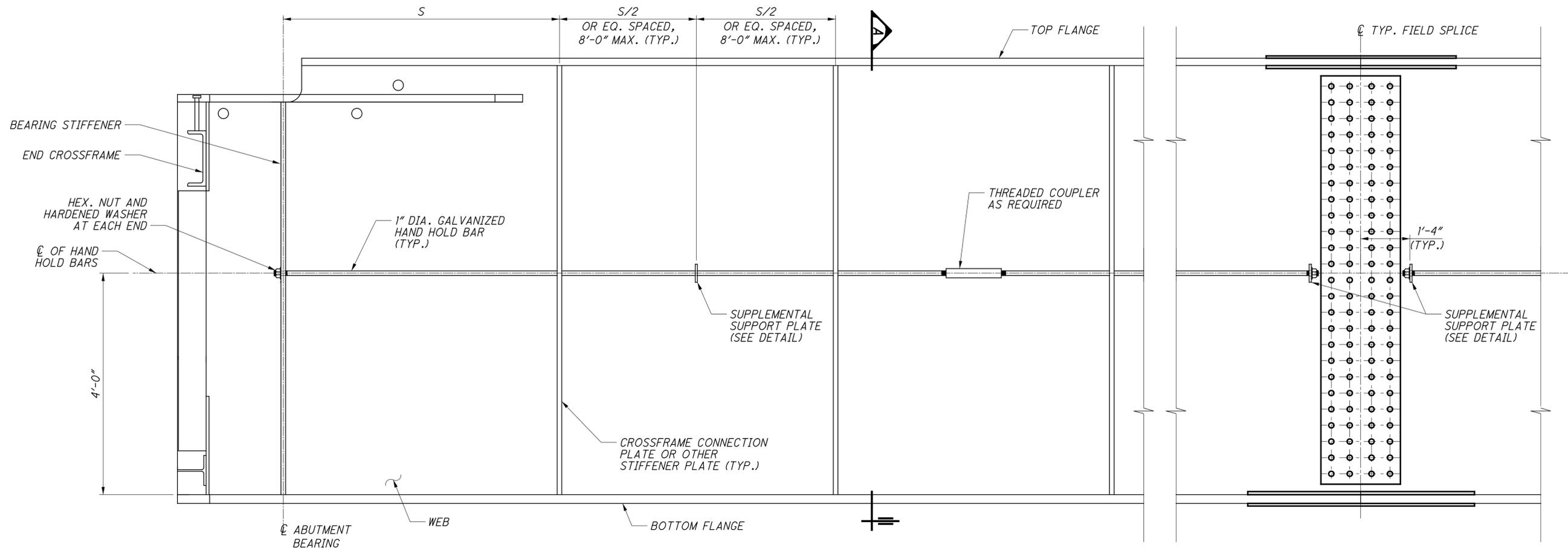
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DESIGN AGENCY: GPD GROUP
 DATE: 4-21-23
 REVIEWED: DGN
 DRAWN: RPR
 CHECKED: DNG
 STRUCTURE FILE NUMBER: 2510016

ESTIMATED QUANTITIES
 BRIDGE NO. FRA-70-1321R
 I-70 E.B. OVER THE SCIOTO RIVER

FRA-70-13-11
PID No. 77372
 13/101
 436/1151

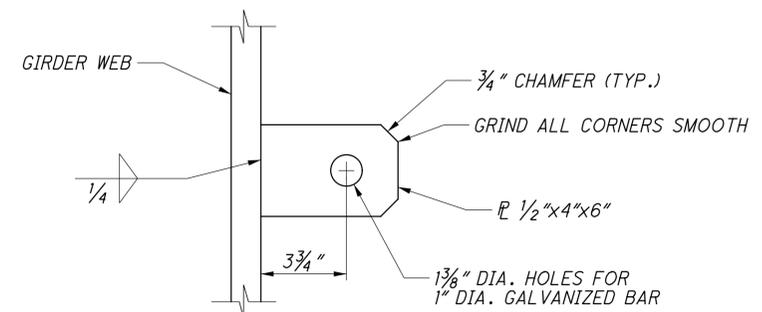


PARTIAL GIRDER ELEVATION (N.T.S.)

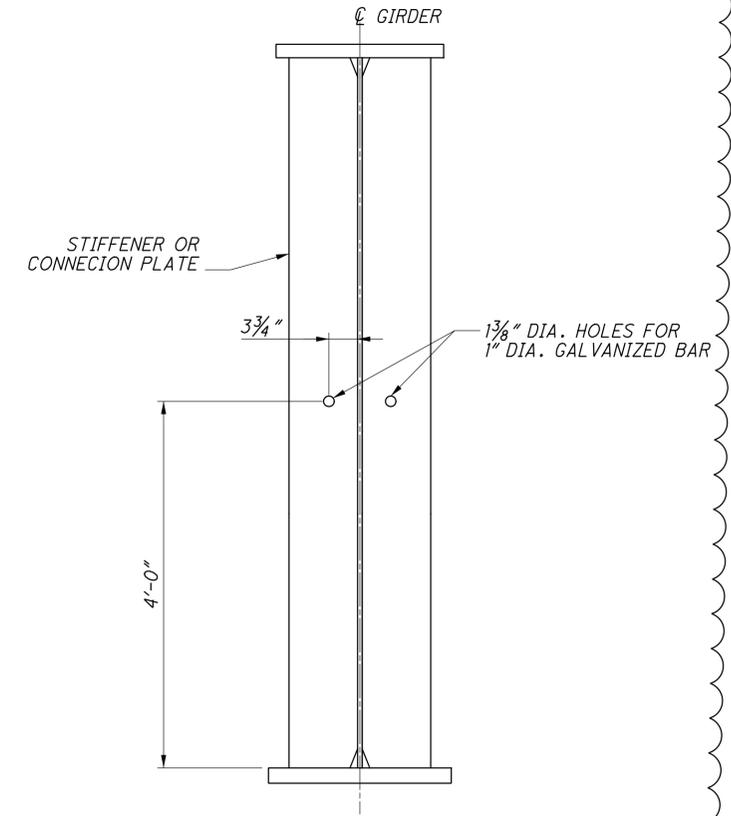
S = SPACING BETWEEN ADJACENT PLATES (BEARING STIFFENER PLATE, CROSSFRAME CONNECTION PLATE, INTERMEDIATE STIFFENER PLATE OR PIER JACKING STIFFENER PLATE). PROVIDE SUPPLEMENTAL SUPPORT PLATE TO TERMINATE HAND HOLD BARS AT GIRDER END DIAPHRAGM LOCATIONS (NOT SHOWN).

NOTES:

- HAND HOLD BARS ARE REQUIRED FULL LENGTH OF EACH GIRDER ON BOTH FACES OF THE GIRDER WEB FOR THE INTERIOR GIRDERS AND ON THE INTERIOR FACES OF THE WEB OF THE EXTERIOR GIRDERS. HAND HOLD BARS SHALL BE SHOP-INSTALLED ON GIRDER SEGMENTS.
- EACH SEGMENT OF HAND HOLD BARS SHALL BE SUPPORTED IN THE MINIMUM OF THREE (3) LOCATIONS.
- THREAD ONLY THAT PORTION OF THE BAR REQUIRED FOR NUT PLACEMENT. BURR THREADS AFTER SNUG TIGHTENING NUTS.
- ROUND BARS SHALL CONFORM TO ASTM A36 SPECIFICATION. NUTS AND WASHERS SHALL CONFORM TO ASTM A563 AND F436 SPECIFICATIONS RESPECTIVELY. SUPPLEMENTAL SUPPORT PLATE MATERIAL SHALL MATCH THE GIRDER WEB TO WHICH IT IS ATTACHED.
- ROUND BARS, NUTS, WASHERS, AND COUPLINGS SHALL BE GALVANIZED PER 711.02 AFTER FABRICATION.
- GALVANIZED COATINGS DAMAGED IN THE SHOP SHALL BE REPAIRED PER ASTM A780 METHOD A3. GALVANIZED COATINGS DAMAGED IN THE FIELD SHALL BE REPAIRED PER ASTM A780 METHOD A1 AS DIRECTED BY THE ENGINEER.
- THE FULL COST TO DRILL HOLES IN GIRDER CROSS FRAME CONNECTION AND STIFFENER PLATES, FURNISH, FABRICATE AND INSTALL SUPPLEMENTAL SUPPORT PLATES AND FURNISH, FABRICATE, GALVANIZE AND INSTALL THE HAND HOLD BARS SHALL BE INCLUDED FOR PAYMENT IN THE UNIT PRICE BID PER FOOT FOR ITEM 513 - STRUCTURAL STEEL, MISC.: HAND HOLD BARS.



SUPPLEMENTAL SUPPORT PLATE DETAIL



SECTION A
TYP. ALL STIFFENERS AND CONNECTION PLATES INTERIOR GIRDER SHOWN

NO.	DESCRIPTION	REV. BY	DATE
8	SHEET ADDED	GTP	11-22-23

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DESIGN AGENCY
GPD GROUP*
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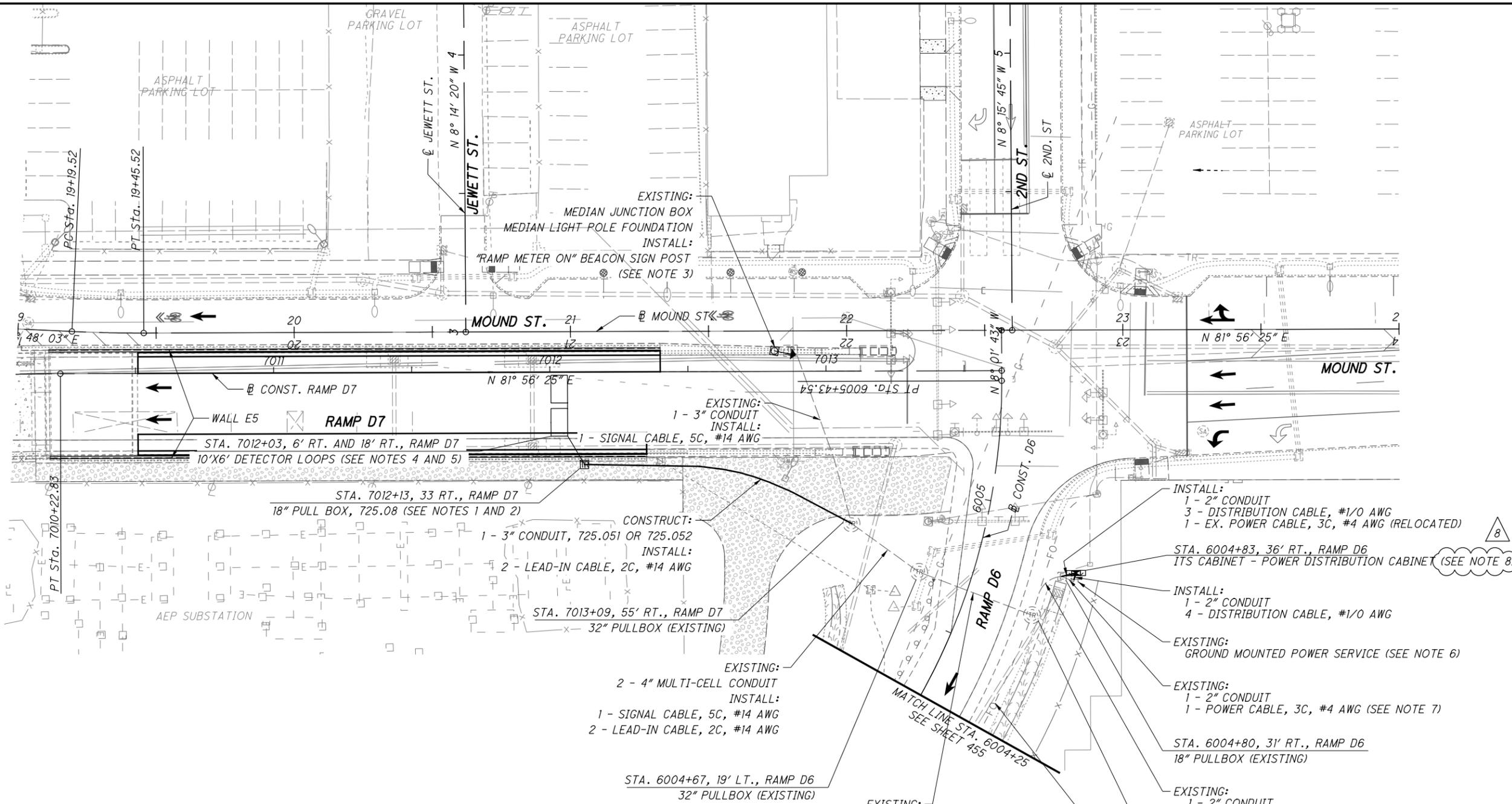
DESIGNED	GTP	CHECKED	TJW
DRAWN	GTP	REVISED	
REVIEWED	DGN	DATE	11-22-23
STRUCTURE FILE NUMBER	2510016		

HAND HOLD BAR DETAILS
 BRIDGE NO. FRA-70-1321R
 I-70 E.B. OVER THE SCIOTO RIVER

FRA-70-13-11
PID No. 77372

52A/101
 475A
 1151

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NOTES:

1. THE PULL BOX SHALL CONFORM TO SCD HL-30.11.
2. SPLICE DETECTOR LOOPS TO LOOP DETECTOR LEAD-IN CABLES PER ODOT MATERIAL SPECIFICATIONS 632.23.
3. THE "RAMP METER ON" BEACON SIGN POST SHALL CONFORM TO SCD ITS-76.10.
4. STATION SHOWN FOR LOOP REFERENCES CENTER OF LOOP.
5. LOOP DETECTORS SHALL CONFORM TO SCD TC-82.10 RECTANGULAR LOOPS WITH LOOP DIMENSIONS SHOWN ON PLAN HEREIN.

6. MODIFY EXISTING POWER SERVICE TO ADD 120 VAC CIRCUIT FOR POWER DISTRIBUTION CABINET.

7. REMOVE POWER CABLE FROM CONDUIT AND RELOCATE IN NEW CONDUIT AND TERMINATE IN POWER DISTRIBUTION CABINET.

8. INSTALL CIRCUITS FOR RAMP D6 ITS CABINET AND RAMP D7 RAMP METER CABINET.



TRAFFIC SURVEILLANCE PLAN - MOUND ST.
STA. 19+00.00 TO STA. 24+00.00

FRA-70-13.10

456
702

NO.	DESCRIPTION	REV. BY	DATE
8	CLARIFIED POWER DISTRIBUTION	RGF	11/17/23

GENERAL NOTES

PROPOSED WORK:

THE PROPOSED WORK CONSISTS OF BUILDING RETAINING WALLS E2, E3, E4, E7 & E9 WITHIN THE I-70/I-71 WEST INTERCHANGE.

STANDARD DRAWING AND SUPPLEMENTAL SPECIFICATIONS:

REFER TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:

840 DATED 4-16-21
867 DATED 1-15-21

DESIGN SPECIFICATIONS:

THESE STRUCTURES CONFORM TO THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 9TH EDITION, 2020, AND THE ODOT BRIDGE DESIGN MANUAL, 2021 EDITION, INCLUDING REVISIONS THROUGH JANUARY 2021.

DESIGN LOADING:

HL-93 AND
250 PSF LIVE LOAD SURCHARGE

DESIGN DATA:

CONCRETE CLASS QC1 - COMPRESSIVE STRENGTH 4.0 KSI (COPING & LEVELING PAD)

CONCRETE CLASS QC2 - COMPRESSIVE STRENGTH 4.5 KSI (PARAPET & MOMENT SLAB)

REINFORCING STEEL - ASTM A615 OR A996 GRADE 60, MINIMUM YIELD STRENGTH 60 KSI

MAINTENANCE OF TRAFFIC:

FOR MAINTENANCE OF TRAFFIC DETAILS, SEE THE ROADWAY PLANS.

UTILITIES:

THE LOCATION OF UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE OBTAINED THROUGH UTILITY OWNERS AS REQUIRED BY SECTION 153.64 O.R.C.

PROPRIETARY RETAINING WALL DATA:

FOR ALL MSE WALL PORTIONS BELOW A BRIDGE ABUTMENT, THE PROPRIETARY WALL SUPPLIER SHALL DESIGN THE INTERNAL STABILITY OF A MECHANICALLY STABILIZED EARTH (MSE) WALL IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 840 TO SUPPORT THE ABUTMENT. THE DESIGN FOR INTERNAL STABILITY SHALL INCLUDE A NOMINAL (I.E. UNFACTORED) HORIZONTAL STRIP LOAD DUE TO FRICTION (FR) FROM THE SUPERSTRUCTURE APPLIED PERPENDICULAR TO THE FACE OF WALL AT THE BASE OF THE CONCRETE FOOTING. SEE BELOW FOR STRIP LOADS AT INDIVIDUAL WALLS/BRIDGES. THIS STRIP LOAD DOES NOT INCLUDE EARTH PRESSURE LOADS FROM THE ABUTMENT BACKFILL. HOWEVER, THE PROPRIETARY WALL SUPPLIER SHALL INCLUDE EARTH PRESSURE LOADS FROM THE ABUTMENT BACKFILL IN THE DESIGN CALCULATIONS.

MSE WALL	BRIDGE	NOMINAL HORIZONTAL STRIP LOAD DUE TO FRICTION
E2	FRA-70-1358L	2.5 K/FT
E4	FRA-70-1358L	2.4 K/FT
E7	FRA-70-1373L	1.7 K/FT
E9	FRA-70-1373L	1.7 K/FT

CONSTRUCTION SEQUENCING:

WHERE WALL CONSTRUCTION IS PHASED AND A TEMPORARY RETAINING SYSTEM IS REQUIRED, SHOP DRAWINGS OF BOTH PERMANENT AND TEMPORARY WALLS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. THE COST OF THESE SUBMITTALS SHALL BE INCLUDED FOR PAYMENT WITH THE COST OF THE TEMPORARY WALLS.

ITEM 503 - COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN

EXCAVATION ENVELOPES AS DETAILED IN THE PLANS SHALL BE PROTECTED FROM CAVING AND SLOUGHING. WHERE CLEARANCES AND CONSTRUCTION SEQUENCING WILL NOT ALLOW FOR SLOPED EXCAVATIONS, APPROPRIATE SHEETING OR BRACING METHODS SHALL BE EMPLOYED BY THE CONTRACTOR. THIS TEMPORARY SHEETING OR BRACING IS CONSIDERED INCIDENTAL TO ITEM 503 - COFFERDAMS AND EXCAVATION BRACING.

ITEM 509 - EPOXY COATED REINFORCING STEEL, AS PER PLAN

GLASS FIBER REINFORCED POLYMER (GFRP) BARS SHALL BE USED FOR DIAGONAL REINFORCEMENT AS SHOWN IN THE PLANS. PAYMENT FOR GFRP BARS SHALL BE INCIDENTAL TO THE COST OF ITEM 509 - EPOXY COATED REINFORCING STEEL, AS PER PLAN.

ITEM 512 - SEALING OF CONCRETE SURFACES, AS PER PLAN. (PERMANENT GRAFFITI PROTECTIN) (WALL E2 & E4):

APPLY A PERMANENT GRAFFITI COATING QUALIFIED ACCORDING TO SUPPLEMENT 1083 THAT IS COMPATIBLE WITH THE CONCRETE SEALER OVER WHICH IT IS APPLIED. APPLY THE GRAFFITI COATING IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS. APPLY PERMANENT GRAFFITI COATING TO THE WALL E4 TO THE RAILROAD.

ITEM 840 - MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN:

THE CONTRACTOR AND MANUFACTURER SHALL COMPLY WITH THE REQUIREMENTS OF SUPPLEMENTAL SPECIFICATION 840, EXCEPT AS MODIFIED BELOW.

REFERENCES, MATERIALS, AND PAY ITEMS ASSOCIATED WITH FOUNDATION PREPARATION SHALL BE REPLACED WITH ITEM 203 - ROADWAY, MISC.: COLUMN SUPPORTED WALLS.

FOR EACH WALL, PROVIDE MINIMUM SOIL REINFORCEMENT LENGTHS AS LISTED IN THE PLAN NOTES ON SHEET 8/8.

THE DEPARTMENT WILL NOT ADJUST PAY QUANTITIES FOR VARIATIONS IN THE CONCRETE LEVELING PAD ELEVATIONS AND OR OTHER PAY QUANTITIES ASSOCIATED WITH ADDITIONAL SOIL REINFORCEMENT LENGTH BEYOND THE LISTED LENGTHS IN THE PLANS. ANY DEVIATION DUE TO THE CHANGE OF SITE CONDITIONS OR FROM THE RESULT OF THE INTERNAL STABILITY ANALYSIS FOR THE FINAL CONDITION (NOT FOR CONDITIONS DURING CONSTRUCTION) MUST HAVE AN APPROVAL FROM ODOT IN ORDER TO BE ELIGIBLE FOR ADDITIONAL PAYMENT. CONTRACTOR SHALL INFORM THE ENGINEER OF ANY SITE CONDITION DEVIATIONS PRIOR TO PREPARATION OF SHOP DRAWINGS. THE INTERNAL STABILITY ANALYSIS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.

ITEM 840 - DRAINAGE PIPE:

PROVIDE A MINIMUM SLOPE OF 1.00% ON ALL MSE WALL DRAINS UNLESS NOTED OTHERWISE.

PIPE LOCATED OUTSIDE THE FACE OF THE MSE WALL PANEL SHALL BE INCLUDED WITH THE ROADWAY QUANTITIES FOR PAYMENT.

LOCATE THE PIPE AS CLOSE AS POSSIBLE TO THE TOP OF THE LEVELING PAD. IT MAY BE LOCATED ABOVE THE BOTTOM ROW OF REINFORCING STRAPS. HOWEVER, AT NO TIME SHALL THE PIPE BE LOCATED WITHIN 1 FOOT OF THE PROPOSED GROUND LINE.

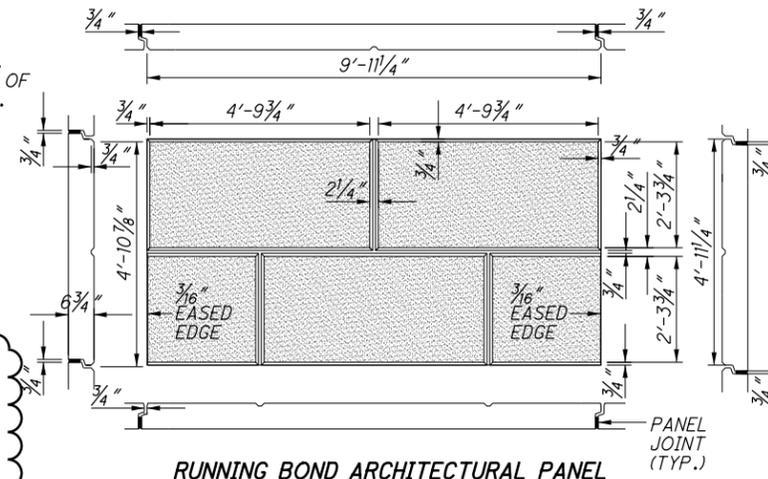
ITEM 840 - MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN:

DO NOT FABRICATE WALL TOP PANELS OR INSTALL COPINGS, BARRIER MOMENT SLABS, OR RAILINGS LOCATED ON TOP OF MSE WALLS UNTIL AFTER THE MSE WALL EMBANKMENT HAS BEEN CONSTRUCTED TO WITHIN 1 FOOT OF THE PROPOSED FINISHED GRADE AND THE SETTLEMENT REQUIREMENTS HAVE BEEN MET. THE CONTRACTOR SHALL FABRICATE THE TOP PANEL TO ACCOUNT FOR THE ACTUAL SETTLEMENT. NO SEPARATE PAYMENT WILL BE MADE TO EXCAVATE AND RE-COMPACT MATERIAL NECESSARY TO PLACE THE TOP PANEL, BUT THE COST THEREOF SHALL BE INCLUDED WITH ITEM 840 - MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN FOR PAYMENT.

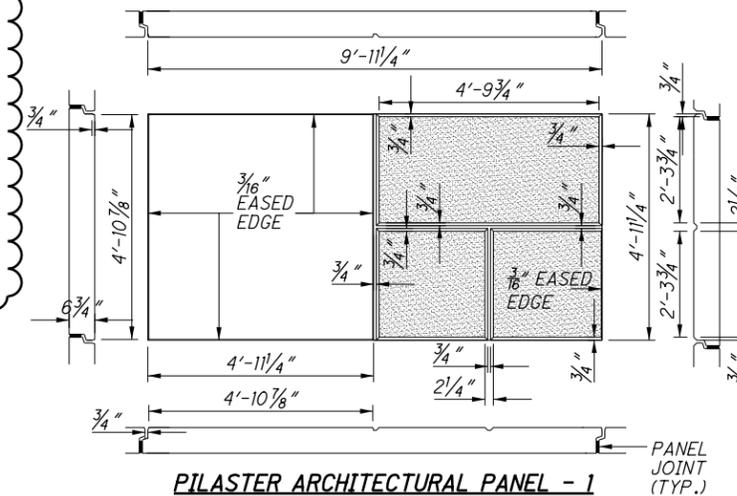
THE DEPARTMENT WILL NOT ADJUST PAY QUANTITIES FOR VARIATIONS IN THE CONCRETE LEVELING PAD ELEVATIONS AND OR OTHER PAY QUANTITIES ASSOCIATED WITH ADDITIONAL SOIL REINFORCEMENT LENGTH BEYOND THE LISTED LENGTHS IN THE PLANS. ANY DEVIATION DUE TO THE CHANGE OF SITE CONDITIONS OR FROM THE RESULT OF THE INTERNAL STABILITY ANALYSIS FOR THE FINAL CONDITION (NOT FOR CONDITIONS DURING CONSTRUCTION) MUST HAVE AN APPROVAL FROM ODOT IN ORDER TO BE ELIGIBLE FOR ADDITIONAL PAYMENT. CONTRACTOR SHALL INFORM THE ENGINEER OF ANY SITE CONDITION DEVIATIONS PRIOR TO PREPARATION OF SHOP DRAWINGS. THE INTERNAL STABILITY ANALYSIS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.

ITEM 840 - AESTHETIC SURFACE TREATMENT:

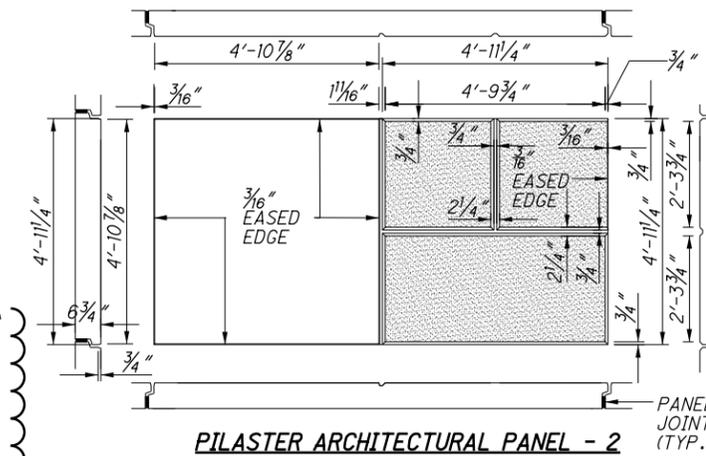
THE ITEM OF WORK SHALL CONSIST OF PROVIDING AESTHETIC TREATMENTS TO THE CONCRETE MSE WALL PANEL SURFACES. THE SURFACE FINISH SHALL BE EITHER A RUNNING BOND AESTHETIC PATTERN & TEXTURE OR A RUNNING BOND AESTHETIC PATTERN & TEXTURE WITH PILASTERS. SEE BELOW FOR DETAILS OF EACH, AND SEE INDIVIDUAL WALL PLANS FOR LOCATION OF VARIOUS SURFACE FINISHES.



RUNNING BOND ARCHITECTURAL PANEL



PILASTER ARCHITECTURAL PANEL - 1



PILASTER ARCHITECTURAL PANEL - 2

ITEM 511 CLASS QC2 CONCRETE MISC.: LOAD DISTRIBUTION SLAB (WALLS E7)

THIS ITEM SHALL INCLUDE THE CONCRETE CONSTRUCTION AS DETAILED IN THE PLANS INCLUDING THE WORK NECESSARY TO FURNISH & PLACE THE REINFORCING STEEL. A SINGLE LAYER OF #5 BARS SPACED AT 12" (IN BOTH DIRECTIONS) SHALL BE PLACED 3" FROM THE BOTTOM OF THE 6" THICK SLAB. CONCRETE FOR THE PROPOSED WORK SHALL BE CLASS QC2 AS PER CMS 511.

METHOD OF MEASUREMENT: THE DEPARTMENT WILL MEASURE THE CONCRETE CONSTRUCTION BY THE NUMBER OF CUBIC YARDS.

PAYMENT: ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK SHALL BE INCLUDED WITH WALL E7 IN THE CONTRACT BID PRICE FOR ITEM 511 CLASS QC2 CONCRETE MISC.: LOAD DISTRIBUTION SLAB.

ABBREVIATIONS:

- CCF - CELLULAR CONCRETE FILL
- CJ - CONSTRUCTION JOINT
- C/C - CENTER TO CENTER
- CLR - CLEAR
- CONST - CONSTRUCTION
- CSW - COLUMN SUPPORTED WALLS
- DIA - DIAMETER
- EF - EACH FACE
- ELEV - ELEVATION
- EOP - EDGE OF PAVEMENT
- EPS - EXPANDED POLYSTYRENE
- EX - EXISTING
- FF - FAR FACE
- I.R. 75 - INTERSTATE ROUTE 75
- INC - INCREMENT
- LT - LEFT
- LDS - LOAD DISTRIBUTION SLAB
- MAX - MAXIMUM
- MIN - MINIMUM
- MISC - MISCELLANEOUS
- MSE - MECHANICALLY STABILIZED EARTH
- NF - NEAR FACE
- PEJF - PREFORMED EXPANSION JOINT FILLER
- PERF CPP - PERFORATED CORRUGATED PLASTIC PIPE
- PROP - PROPOSED
- RT - RIGHT
- SB - SOUTHBOUND
- SER - SERIES
- SGB - SELECT GRANULAR BACKFILL
- SPA - SPACING
- STA - STATION
- ST - STRAIGHT
- TBA - TO BE ABANDONED
- TBR - TO BE REMOVED
- TBRL - TO BE RELOCATED
- TYP - TYPICAL
- VPF - VANDAL PROTECTION FENCE

NO.	DESCRIPTION	REV. BY	DATE
6	NOTE REVISED	MMS	11-9-2023
8	UPDATED NOTES	MMS	11-21-2023

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ITEM 203 ROADWAY MISC.: EPS GEOFOAM FILL (PORTIONS OF WALL E7)

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND PLACING EPS GEOFOAM CONFORMING TO ASTM D6817 TYPE 19 EPS GEOFOAM. THE MATERIAL SHALL HAVE A MINIMUM DENSITY OF 1.15 POUNDS PER CUBIC FEET, AND A MINIMUM COMPRESSIVE RESISTANCE OF 5.8 PSI AT 1% STRAIN DEFORMATION. FOR DESIGN CALCULATIONS, THE AVERAGE DENSITY OF THE EPS GEOFOAM WAS ASSUMED TO BE 1.5 POUNDS PER CUBIC FEET.

ALL EPS GEOFOAM BLOCKS SHALL BE TREATED BY THE MANUFACTURER WITH A TESTED AND PROVEN TERMITE TREATMENT FOR BELOW GRADE APPLICATIONS. THE TREATMENT SHALL BE EPA REGISTERED, MEET REQUIREMENTS OF ICC ES AC239, AND BE RECOGNIZED IN AN ICC ES REPORT.

PRIOR TO ORDERING THE MATERIAL FOR THIS ITEM OF WORK, THE CONTRACTOR SHALL FURNISH THE ENGINEER WITH THE FOLLOWING ITEMS:

- EPS GEOFOAM MANUFACTURERS PRODUCT LITERATURE AND TECH DATA INCLUDING PHYSICAL PROPERTIES IN COMPLIANCE WITH THE ASTM D6817 TYPE SPECIFIED.
- SUMMARY OF TEST COMPLIANCE WITH SPECIFIED PERFORMANCE CHARACTERISTICS AND PHYSICAL PROPERTIES.
- PRODUCT CERTIFICATE SHOWING EVIDENCE OF THIRD PARTY QUALITY CONTROL.
- A SIGNED/NOTARIZED CERTIFICATION FROM THE MANUFACTURER THAT THEIR EPS GEOFOAM MATERIAL MEETS THE PLAN REQUIREMENTS.
- SHOP DRAWINGS SHOWING BLOCK THICKNESS, WIDTH, LENGTH, AND LAYING PATTERN OR SCHEDULE.

8
 A GEOMEMBRANE SHALL BE PLACED ON THE TOP AND ALL VERTICAL FACES OF THE GEOFOAM FILL. THE CONTRACTOR SHALL NOT PLACE THE CELLULAR CONCRETE FILL DIRECTLY AGAINST THE GEOFOAM. THE GEOMEMBRANE MATERIAL SHALL BE TRI-POLYMER CONSISTENT WITH POLYVINYL CHLORIDE, ETHYLENE INTERPOLYMER ALLOY, AND A POLYURETHANE, OR A COMPARABLE POLYMER COMBINATION. THE MATERIAL SHALL MEET THE FOLLOWING PHYSICAL AND CHEMICAL REQUIREMENTS.

- THICKNESS: MIN. 28 MILS (ATSM D751)
- UNLEADED GASOLINE VAPOR MAXIMUM 0.40 TRANSMISSION RATE, OZ. PER SQUARE PER 24 HOURS (ASTM D814)
- GRAB TENSILE STRENGTH: MIN. 600 LBS. BOTH MACHINE AND CROSS DIRECTION (1" GRIP 4' x 8' SAMPLE ASTM D751)
- ELONGATION AT BREAK: 20% MIN. (ASTM D751)
- TOUGHNESS: 14,000 MIN. (GRAB TENSILE STRENGTH x PERCENT ELONGATION)
- PUNCTURE RESISTANCE: 800 LB. MIN. (ASTM D751 BALL TIP)
- COLD CRACK: PASS -30° FAHRENHEIT (ASTM D2136 1" MANDREL, 4 HR)
- FACTORY SEAMS: 2 INCH MIN. BONDED WIDTH
- SHEAR: 320 LBS. MIN. (ASTM D751)

A SIGNED/NOTARIZED CERTIFICATION OF COMPLIANCE SHALL BE FURNISHED BY THE MANUFACTURER STATING THE SELECTED GEOMEMBRANE HAS BEEN TESTED AND MEETS THE ABOVE REQUIREMENTS. JOINTS IN THE GEOMEMBRANE WRAP SHALL BE LAPPED A MINIMUM OF 18 INCHES.

AT WALL E7 STA. 703+00.00 TO STA. 704+21.44, THE GEOFOAM SHALL BE PLACED ON A BASE OF CELLULAR CONCRETE FILL, CLASS II. THE GRANULAR BASE SHALL ALSO BE PLACED ALONG THE SIDES OF THE GEOFOAM FILL THAT ARE IN CONTACT WITH SOIL (NORTH AND EAST SIDES OF THE GEOFOAM).

CARE SHALL BE TAKEN TO PROTECT THE GEOFOAM BLOCKS FROM EXPOSURE TO GASOLINE, SOLVENT NAPHTHA, FUEL OIL, MINERAL OIL, TURPENTINE, OR ANY OTHER SOLVENT. THE BLOCKS SHALL ALSO BE PROTECTED FROM EXPOSURE TO ANY HEAT SOURCE WHICH WOULD REACH 175 DEGREES (F). GEOFOAM SHALL BE STORED ABOVE GROUND, AND PROTECTED FROM MOISTURE AND SUNLIGHT PRIOR TO INSTALLATION.

DAMAGE TO GEOFOAM SHALL BE CORRECTED AS FOLLOWS:

- SLIGHT DAMAGE (< 0.12 CU FT) WITH NO LINEAR DIMENSION GREATER THAN 1 FOOT MAY BE LEFT IN PLACE AS IS.
- MODERATE DAMAGE (< 0.35 CU FEET) WITH NO LINEAR DIMENSION GREATER THAN 1 FOOT SHALL BE FILLED IN WITH SAND.
- GEOFOAM BLOCKS WITH EXCESSIVE DAMAGE (I.E. EXCEEDING THE MODERATE CATEGORY) SHALL BE REPLACED WITH GEOFOAM BLOCKS WHICH MEET THE DAMAGE CRITERIA. GEOFOAM BLOCKS NOT MEETING THE CRITERIA MAY BE CUT TO ELIMINATE THE EXCESSIVE DAMAGE AND THE REMAINING UNDAMAGED PORTION OF THE BLOCK MAY BE USED WITHIN THE FILL, PROVIDED THE UNDAMAGED PORTION OF THE BLOCK MEETS ALL OTHER REQUIREMENTS. SEE SHEETS 694 & 695 FOR SITE PREPARATION, AREA OF APPLICATION, AND EMBANKMENT TO BE PLACED ON TOP OF THE GEOFOAM BLOCKS.

PLACEMENT:

THE SURFACE OF A LAYER OF GEOFOAM BLOCKS TO RECEIVE ADDITIONAL GEOFOAM BLOCKS SHALL BE CONSTRUCTED WITH A VARIATION IN SURFACE TOLERANCE OF NO MORE THAN 1/2" IN ANY 10 FOOT INTERVAL. ALL BLOCKS SHALL BE ACCURATELY FIT RELATIVE TO ADJACENT BLOCKS. NO GAPS GREATER THAN 1" WILL BE ALLOWED ON VERTICAL JOINTS. THE FINISHED SURFACE OF THE GEOFOAM FILL BENEATH PAVEMENT SECTIONS SHALL BE CONSTRUCTED TO WITHIN THE TOLERANCE OF ZERO MINUS 2.5" OF THE INDICATED GRADE.

BLOCKS PLACED IN A ROW IN A PARTICULAR LAYER SHALL BE OFFSET 2 FEET RELATIVE TO BLOCKS PLACED IN ADJACENT ROWS OF THE SAME LAYER. IN ORDER TO AVOID CONTINUOUS JOINTS, EACH SUBSEQUENT LAYER OF BLOCKS SHALL BE ROTATED ON THE HORIZONTAL PLANE 90 DEGREES FROM THE DIRECTION OF PLACEMENT OF THE PREVIOUS LAYER.

THE LONGITUDINAL AXES OF THE UPPERMOST LAYER OF BLOCKS MUST BE PERPENDICULAR TO THE LONGITUDINAL AXIS OF THE ROAD ALIGNMENT.

CONNECTOR PLATES SHALL BE PLACED BETWEEN HORIZONTAL LAYERS OF BLOCK. A MINIMUM OF TWO CONNECTOR PLATES SHALL BE USED BETWEEN BLOCKS.

CONNECTORS SHALL BE GALVANIZED STEEL OR STAINLESS STEEL TWO SIDED MULTI-BARBED CONNECTORS. EACH CONNECTOR SHALL HAVE A LATERAL HOLDING STRENGTH OF AT LEAST 60 LBS. PROVIDE A SIGNED/NOTARIZED CERTIFICATION FROM THE MANUFACTURER THAT THE CONNECTOR PLATES MEET MATERIAL, DESIGN AND STRENGTH REQUIREMENTS OF THESE PLANS.

BLOCKS SHALL BE CUT USING A SAW OR HOT WIRE.

TO PREVENT THE COMPLETED GEOFOAM STRUCTURE FROM DISLODGING OR SHIFTING, CONSTRUCTION OF EMBANKMENT ADJACENT TO THE GEOFOAM SHALL BE DONE SO THAT THE LATERAL EARTH PRESSURES FROM OPPOSITE SIDES REMAIN APPROXIMATELY EQUAL.

NO VEHICLE OR CONSTRUCTION EQUIPMENT SHALL TRAVERSE DIRECTLY ON THE EPS BLOCKS OR ON ANY SEPARATION MATERIAL PLACED BETWEEN THE EPS BLOCKS AND THE PAVEMENT SYSTEM. SOIL FOR THE PAVEMENT SYSTEM SHALL BE PUSHED ONTO THE EPS BLOCKS OR SEPARATION LAYER USING APPROPRIATE EQUIPMENT. A MINIMUM OF 12 INCHES OF FILL SHALL COVER THE TOP OF THE GEOFOAM BLOCK OR SEPARATION LAYER BEFORE COMPACTION COMMENCES. THE CONTRACTOR'S EQUIPMENT USED DURING COMPACTION SHALL NOT PLACE A PRESSURE GREATER THAN 18 PSI ON THE GEOFOAM BLOCKS AT ANY TIME DURING CONSTRUCTION. ANY DAMAGE TO THE GEOFOAM BLOCKS RESULTING FROM THE CONTRACTOR'S VEHICLES, EQUIPMENT, OR OPERATIONS SHALL BE REPLACED BY THE CONTRACTOR.

PAYMENT FOR THIS ITEM OF WORK SHALL BE PAID FOR BY THE UNIT PRICE BID PER CUBIC YARD OF ITEM SPECIAL ROADWAY MISC.: EPS GEOFOAM FILL, WHICH PRICE AND PAYMENT INCLUDES ALL MATERIALS, SITE PREPARATION (EXCLUDING EXCAVATION), GRANULAR BASE, GEOMEMBRANE WRAP, TOOLS, EQUIPMENT, AND LABOR TO COMPLETE THIS ITEM OF WORK IN PLACE.

ALL QUANTITIES AND COSTS ASSOCIATED WITH THIS ITEM SHALL BE INCLUDED IN THE ESTIMATED QUANTITIES AND COST ESTIMATE FOR WALL E7 ONLY.

NO.	DESCRIPTION	REV. BY	DATE
8	NOTE REVISED	MMS	11-21-2023

RETAINING WALL NOTES 3 OF 8
 RETAINING WALLS
 I-70/I-71 WEST INTERCHANGE PROJECT

FRA-70-13-10
 PID No. 77372

3 / 8

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



ITEM 203 - ROADWAY, MISC.: COLUMN SUPPORTED WALLS (WALL E2, E4)

7.4 CSW COLUMN TOLERANCES

A. THE CSW DESIGNER SHALL SPECIFY IN THE CONTRACTOR'S SUBMITTAL THE ALLOWABLE TOLERANCES FOR:

1. COLUMN VERTICALITY
2. HORIZONTAL TOLERANCE FROM PLAN LOCATION.
3. VERTICAL TOLERANCE FROM COLUMN TOP.
4. ACCEPTABLE CONDITION OF COLUMN TOPS PRIOR TO INSTALLATION OF LOAD TRANSFER PLATFORM.
5. MINIMUM COLUMN DIMENSIONS.
6. COLUMN OVERLAP REQUIREMENTS, IF APPLICABLE.
7. MINIMUM STRENGTH REQUIREMENTS OF COLUMN MATERIALS.
8. MATERIAL PROPERTIES, AS INCORPORATED INTO THE COLUMNS.
9. OTHER ITEMS, AS REQUIRED PER ODOT CMS.

B. BEFORE BEGINNING INSTALLATION, THE CONTRACTOR SHOULD ACCURATELY STAKE THE LOCATION OF THE CSW COLUMNS USING A LICENSED SURVEYOR. THE CONTRACTOR SHOULD PROVIDE AN ADEQUATE METHOD FOR LOCATING ELEMENTS TO ALLOW THE ENGINEER TO VERIFY THE AS-BUILT LOCATION OF THE ELEMENTS DURING CONSTRUCTION. THE CONTRACTOR WILL NOT BE COMPENSATED FOR ELEMENTS THAT ARE LOCATED OUTSIDE OF THE SPECIFIED TOLERANCES. IF THE ENGINEER DETERMINES THAT MISALIGNED ELEMENTS WILL INTERFERE WITH CONSTRUCTION, A METHOD OF CORRECTION SHOULD BE PREPARED BY THE CSW DESIGNER AND SUBMITTED BY THE CONTRACTOR TO THE ENGINEER FOR REVIEW AND ACCEPTANCE.

C. COLUMN ELEMENTS INSTALLED BEYOND THE MAXIMUM ALLOWABLE TOLERANCES SHALL BE ABANDONED AND REPLACED WITH NEW COLUMNS, UNLESS THE DESIGNER APPROVES THE CONDITION OR PRESCRIBES OTHER REMEDIAL MEASURES TO BE COMPLETED BY CONTRACTOR AND CSW DESIGNER. ALL MATERIAL AND LABOR REQUIRED TO REPLACE OR REMEDY REJECTED COLUMNS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE DEPARTMENT. REMEDIAL MEASURES MUST BE SUBMITTED TO THE ENGINEER FOR REVIEW AND ACCEPTANCE.

7.5 AS-BUILT COLUMN INSTALLATION RECORDS: THE CONTRACTOR MUST SUBMIT AS-BUILT FIELD MEASUREMENT DATA INDICATING SURVEYED AS-BUILT PLAN LOCATIONS OF EACH CSW ELEMENT, INCLUDING THE ELEMENT CENTER (PER SITE SPECIFIC COORDINATES), THE ELEMENT DIMENSION, THE COLUMN VERTICALITY, THE TOP AND BOTTOM ELEVATIONS OF EACH ELEMENT TO THE ACCURACY REQUIRED BY THE PROJECT SPECIFICATIONS, AND THE DATE OF INSTALLATION. THE AS-BUILT RECORDS SHALL ALSO INCLUDE ALL COMPACTION REPORTS AND RESULTS OF COMPRESSIVE STRENGTH TESTING FOR ANY CEMENTITIOUS ELEMENTS. THE AS-BUILT DOCUMENTATION MUST BE APPROVED BY THE DESIGNER AND SUBMITTED TO THE ENGINEER NO LATER THAN 90 DAYS AFTER THE COMPLETION OF EACH CSW-STABILIZED ZONE. A DISINCENTIVE OF \$300.00 PER DAY WILL BE ASSESSED FOR EACH DAY BEYOND 90 DAYS THAT THE COMPLETED AS-BUILT DRAWINGS ARE NOT SUBMITTED TO THE ENGINEER.

7.6 SELECT FILL PLACEMENT AND QA/QC REQUIREMENTS (LOAD TRANSFER PLATFORMS)

A. NO GEOSYNTHETIC REINFORCEMENT OR FILL MATERIALS SHALL BE PLACED PRIOR TO SATISFYING THE COLUMN PERFORMANCE CRITERIA, UNLESS THE FILL MATERIAL IS REQUIRED AS A WORKING PLATFORM FOR COLUMN INSTALLATION.

B. INSTRUMENTATION FOR PERFORMANCE MEASUREMENTS AND INSTRUMENTATION FOR MONITORING OF EXISTING STRUCTURES AND EMBANKMENTS SHALL BE INSTALLED PRIOR TO PLACEMENT OF ANY SELECT FILL OR GEOSYNTHETIC REINFORCEMENT.

C. PRIOR TO CONSTRUCTION OF THE LOAD TRANSFER PLATFORM, THE CONTRACTOR SHALL PREPARE SUBGRADE, AND REMOVE ANY DELETERIOUS MATERIALS SUCH AS TREE ROOTS. THE FOUNDATION SOIL SHALL BE OBSERVED AND APPROVED BY THE ENGINEER PRIOR TO PLACEMENT OF SELECT REINFORCED FILL.

D. IF CEMENTITIOUS GROUND IMPROVEMENT METHODS ARE USED, PLACEMENT OF FILL MATERIAL SHALL NOT START UNTIL THE COLUMNS HAVE GAINED ADEQUATE STRENGTH TO SUPPORT THE FILL MATERIALS AND FILL INSTALLATION AND CONSTRUCTION EQUIPMENT.

E. SELECT REINFORCED FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT EXCEEDING 10 IN. IN UNCOMPACTED THICKNESS FOR HEAVY COMPACTION EQUIPMENT. FOR ZONES WHERE COMPACTION IS ACCOMPLISHED WITH HAND-OPERATED COMPACTION EQUIPMENT, FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT EXCEEDING 6 IN. IN UNCOMPACTED THICKNESS.

F. SELECT REINFORCED FILL SHALL BE PLACED AND COMPACTED IN ACCORDANCE WITH ITEM 203. THIS MAY NOT BE ACHIEVABLE FOR THE FIRST LIFT OF FILL BECAUSE OF THE WEAK SUBGRADE BETWEEN COLUMNS, HOWEVER, SUBSEQUENT LIFTS SHOULD MEET THE MINIMUM REQUIREMENTS.

G. TEST METHODS AND FREQUENCY, AND VERIFICATION OF MATERIAL SPECIFICATIONS AND COMPACTION, SHALL BE THE RESPONSIBILITY OF THE STATE.

7.7 GEOSYNTHETIC REINFORCEMENT PLACEMENT AND QA/QC REQUIREMENTS

A. PLACE REINFORCEMENT AT THE LOCATIONS AND ELEVATION SHOWN ON THE CONTRACTORS ENGINEERED DRAWINGS. NO CHANGES TO THE GEOSYNTHETIC REINFORCEMENT LAYOUT, INCLUDING, BUT NOT LIMITED TO LENGTH, REINFORCEMENT TYPE (I.E., STRENGTH), DIRECTION OF REINFORCEMENT, OR ELEVATION SHALL BE MADE WITHOUT THE EXPLICIT WRITTEN APPROVAL OF THE DESIGNER. CONTRACTOR SHALL SUBMIT THE CHANGES TO THE ENGINEER FOR ACCEPTANCE.

B. CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY ON THE GEOSYNTHETIC REINFORCEMENT. A MINIMUM FILL THICKNESS OF 150 MM (6 IN.) IS REQUIRED FOR OPERATION OF VEHICLES OVER THE REINFORCEMENT. TURNING OF VEHICLES SHOULD BE KEPT TO A MINIMUM TO PREVENT TRACKS OR TIRES FROM DISPLACING THE FILL AND/OR GEOSYNTHETIC REINFORCEMENT.

C. MINIMUM OVERLAP OF ADJACENT ROLLS OF REINFORCEMENT SHALL BE AS INDICATED BY THE DESIGNER OF THE CONTRACTOR'S ENGINEERED DRAWINGS.

D. EACH ROLL OF GEOSYNTHETIC REINFORCEMENT SHOULD BE INSPECTED BY THE CONTRACTOR TO ENSURE THAT IT IS UNDAMAGED PRIOR TO COVERING WITH FILL MATERIAL.

E. CARE SHALL BE TAKEN TO PREVENT EXCESSIVE MUD, WET CONCRETE, EPOXY, OR OTHER DELETERIOUS MATERIALS FROM COMING IN CONTACT WITH AND AFFIXING TO THE GEOGRID MATERIALS.

F. GEOSYNTHETIC REINFORCEMENT SHALL BE STORED AT TEMPERATURES RECOMMENDED BY THE MANUFACTURER.

G. GEOSYNTHETIC REINFORCEMENT SHALL NOT BE LEFT DIRECTLY EXPOSED TO SUNLIGHT FOR A PERIOD LONGER THAN RECOMMENDED BY THE MANUFACTURER OR ONE MONTH WHICHEVER IS SHORTER.

H. ANY ROLL OR PORTION OF A ROLL OF GEOSYNTHETIC DAMAGED BEFORE, DURING, AND/OR AFTER INSTALLATION SHALL BE REPLACED BY THE CONTRACTOR.

I. LARGE PILES OF FILL MATERIAL SHALL NOT BE PLACED ON THE GEOSYNTHETIC REINFORCEMENT.

J. IF GEOTEXTILE SEAMS ARE SPECIFIED, THE SEAMS SHOULD BE PLACED UP AND EVERY STITCH SHOULD BE INSPECTED.

K. THE CONTRACTOR SHALL REMOVE SLACK AND WRINKLES FROM THE GEOSYNTHETIC PRIOR TO PLACING FILL.

L. THE CONTRACTOR SHALL SUBMIT THE LOT NUMBERS AND ROLL NUMBERS ALONG WITH THEIR LOCATIONS WITHIN THE EMBANKMENT FOR ALL GEOSYNTHETIC REINFORCEMENT.

PART 8 POST-INSTALLATION PERFORMANCE MONITORING INSTRUMENTATION

8.1 POST-INSTALLATION PERFORMANCE MONITORING INSTRUMENTATION: SIX (6) SETS OF CSW PERFORMANCE MONITORING INSTRUMENTATION SHALL BE INSTALLED. THIS INSTRUMENTATION WILL BE PLACED TO MONITOR THE PERFORMANCE OF THE CSW SYSTEM AFTER IT HAS BEEN SUCCESSFULLY CONSTRUCTED AND IS SUBJECT TO THE CONSTRUCTION LOADING AND SUBSEQUENT SERVICE LOADING. THE INSTALLATION MAY BE PERFORMED BY THE PRIME CONTRACTOR, THE CONTRACTOR, OR AN INSTRUMENTATION SUBCONTRACTOR OR CONSULTANT (OR IN WHOLE OR IN PART BY COMBINATIONS THEREOF). IMPORTANT NOTE: IN THE EVENT THAT THIS QA MONITORING WORK IS NOT TO BE COORDINATED OR PERFORMED BY THE CSW CONTRACTOR, THE CSW CONTRACTOR SHALL BE REQUIRED TO SPECIFICALLY COORDINATE THIS WORK AND SUBMIT A WORK PLAN TO THE ENGINEER PRIOR TO INITIATING THE CSW WORK.

A. THE INSTRUMENTATION SHALL BE INSTALLED AS DESCRIBED IN THE FOLLOWING SUBSECTIONS, AT THE APPROXIMATE LOCATIONS IN THE TABLE ON SHEET 8/8, THE SPECIFIC LOCATIONS TO BE DETERMINED BY THE CONTRACTOR AS ACCEPTED BY THE ENGINEER SUCH THAT CONSTRUCTION INTERFERENCE AND THE POTENTIAL FOR DAMAGE IS MINIMIZED. THE INSTALLATIONS SHALL ALSO BE PLACED SUCH THAT DATA MAY CONTINUE TO BE ACQUIRED ONCE THE FACILITY HAS BEEN PLACED IN SERVICE. DETAILS OF THE EXACT INSTALLATION LOCATIONS WILL BE DETERMINED AT THE PRE-CONSTRUCTION MEETING.

B. MINIMUM INSTRUMENTATION PROVIDED BY THE CONTRACTOR IS TO CONSIST OF:

1. SETTLEMENT PLATES, TO BE INSTALLED ON TOP OF THE LOAD/TRANSFER PLATFORM.
2. PIEZOMETERS TO MONITOR PORE PRESSURES BENEATH THE MSE WALLS AND EMBANKMENTS IN THE STABILIZED ZONE.

C. CONTRACTOR SHALL RECORD INSTRUMENTATION DATA FROM THE TIME OF INSTALLATION (END OF CSW CONSTRUCTION) UNTIL 30 DAYS AFTER THE WALLS REACH THEIR FINAL PLAN ELEVATION (LESS COPING AND PAVEMENTS). READINGS SHALL BE TAKEN TWICE WEEKLY DURING WALL AND EMBANKMENT FILL PLACEMENT AND AT INTERVALS NOT TO EXCEED 15 CALENDAR DAYS AT OTHER TIMES. DATA FROM ALL SENSORS SHALL BE READ IN A UNIFORM MANNER, SUCH THAT ALL DATA IS TAKEN WITHIN A 2-DAY PERIOD AT THE 15 (OR 30) DAY INTERVALS TO AID IN THE EVALUATION OF THE DATA AND SUBSEQUENT PRESENTATION OF RESULTS.

D. IF THE WALLS SUPPORTED OVER THE CSW ELEMENTS HAVE COMPLETED SETTLEMENT IN ACCORDANCE WITH THE PERFORMANCE CRITERIA WITHIN 30 DAYS OF SUBSTANTIAL WALL COMPLETION AS DEFINED IN 1.1.A.6 ABOVE, THE CONTRACTOR MAY TURN OVER FURTHER MONITORING OF THE DATA TO THE DEPARTMENT. IF THE WALLS HAVE NOT COMPLETED SETTLEMENT IN ACCORDANCE WITH THE DESIGN CRITERIA, THE CONTRACTOR SHALL CONTINUE MONITORING EFFORTS (AT NO ADDITIONAL COST TO THE DEPARTMENT) AS DIRECTED BY THE ENGINEER.

E. INSTRUMENTATION SHALL BE INSTALLED AFTER THE CONSTRUCTION OF THE CSW ELEMENTS WITHIN THE IN-SITU SOILS AND PRIOR TO MSE WALL CONSTRUCTION OR EMBANKMENT FILL PLACEMENT. A MINIMUM OF 2 SETS OF BASELINE READINGS SHALL BE TAKEN AND CONFIRMED PRIOR TO THE CONSTRUCTION OF ELEMENTS ABOVE THE INSTALLED CSW CONSTRUCTION.

F. INSTRUMENTATION SHALL BE ELECTRONIC AND SELF-RECORDING, WHERE PRACTICAL. READINGS FROM SENSORS SHALL BE TAKEN WITH AUTOMATED DATA COLLECTION SYSTEMS. ANY PARTICULAR INSTRUMENT TYPE SHALL BE OBTAINED FROM THE SAME MANUFACTURER TO MINIMIZE POTENTIAL INCOMPATIBILITIES AND ERRORS. DATA ACQUISITION DEVICES (DATA LOGGERS) SHALL BE OF A TYPE COMPATIBLE WITH EACH TYPE OF INSTRUMENTATION AND RECOMMENDED BY THE MANUFACTURER.

H. ALL INSTRUMENTATION AND ASSOCIATED MONITORING AND DATA COLLECTION DEVICES (PROBES, CABLES, DATA COLLECTORS, ETC.) BECOME THE PROPERTY OF THE DEPARTMENT AT THE END OF THE MONITORING PERIOD. ELECTRONIC FILES AND ALL DATA REPORTS SHALL BE PROVIDED TO THE DEPARTMENT AT THE END OF THE MONITORING PERIOD.

I. THE DEPARTMENT RESERVES THE RIGHT TO PUBLISH THE INFORMATION FROM THE MONITORING INVESTIGATION IN INTERNAL AND EXTERNAL TECHNICAL PUBLICATIONS.

J. THE PERFORMANCE MONITORING INSTRUMENTATION AND ASSOCIATED DATA COLLECTION AND ANALYSIS SHALL NEITHER BE USED AS A BASIS OF PAYMENT NOR AS A PERFORMANCE CRITERIA FOR THE DETERMINATION OF SUCCESSFUL INSTALLATION OF THE CSW APPLICATION.

K. INSTRUMENTS SHALL MEET ACCEPTED INDUSTRY STANDARDS AND HAVE AN ACCURACY OF +/- 0.5% WITH A MINIMUM PRECISION OF +/- 0.5% OF FULL SCALE (SPAN).

L. INSTRUMENTS SHALL HAVE APPROPRIATE RUGGEDNESS TO SURVIVE INSTALLATION AND CONSTRUCTION PROCESSES SUCH THAT THEY READ WITH THE MINIMUM PRECISION AND ACCURACY OVER THE DURATION OF CONSTRUCTION AND A MINIMUM OF EIGHTEEN (18) MONTHS OF SERVICE FOLLOWING CONSTRUCTION.

M. INSTRUMENTATION SHALL HAVE AN OPERATING TEMPERATURE RANGE AS APPROPRIATE FOR CONDITIONS ANTICIPATED WHERE INSTALLED (I.E. WITHIN OR ABOVE A CSW ELEMENT).

N. CABLING TO EACH SENSOR (REQUIRING CABLING) SHALL BE INCLUDED SUCH THAT DATA MAY BE OBTAINED AT ALL PHASES OF CONSTRUCTION AND WHEN THE NEW CONSTRUCTION IS IN SERVICE. THE DISTANCE FROM THE DATA ACQUISITION SYSTEM TO ANY GIVEN SENSOR SHALL BE A MINIMUM HORIZONTAL DISTANCE FROM THE SENSOR TO THE OUTSIDE OF THE NEAREST RETAINING WALL OR ABUTMENT FACE, PLUS A MINIMUM CABLING AMOUNT TO PROVIDE FOR ANY NECESSARY VERTICAL TRAVEL TO THE GROUND SURFACE, PLUS 6 FT.

O. THE INSTRUMENTATION INSTALLATIONS SHALL BE ADEQUATELY PROTECTED FROM CONSTRUCTION IMPACTS, DURING CONSTRUCTION, AS WELL AS WEATHER EFFECTS, AND VANDALISM. APPROPRIATE LOCKED CASINGS AND/OR REMOVABLE CABLING AND PLASTIC CONNECTOR CAPS AND RELATED PROTECTIVE DEVICES SHALL BE PROVIDED TO ENSURE THE INTEGRITY OF THE INSTRUMENTATION OVER THE PROPOSED MONITORING DURATION.

P. THE PLAN FOR INSTALLATION OF INSTRUMENTATION SHALL BE APPROVED BY THE DESIGNER AND SUBMITTED TO THE ENGINEER FOR ACCEPTANCE PRIOR TO PLACEMENT.

PART 9 ACCEPTANCE CRITERIA

9.1 ACCEPTANCE CRITERIA: THE COLUMN-SUPPORTED WALL IS CONSIDERED ACCEPTABLE WHEN THE EMBANKMENT CONSTRUCTION AND QA/QC REQUIREMENTS ARE COMPLETED IN ACCORDANCE WITH SECTION 7, COMPLIANCE WITH THE PERFORMANCE CRITERIA FROM PARAGRAPH 1.1 IS DEMONSTRATED, AND NO DAMAGE TO ADJACENT FACILITIES IS FOUND OR COMPENSATION IS MADE FOR DAMAGED CAUSED OR DAMAGE IS REPAIRED AT CONTRACTOR'S EXPENSE.

PART 10 CSW PAYMENT

10.1 ALL COST IN CONNECTION WITH MOBILIZATION AND DEMOBILIZATION OF MATERIALS, EQUIPMENT AND LABOR FOR THE CONSTRUCTION OF COLUMN-SUPPORTED WALLS (CSW) AS REQUIRED IN THIS SPECIFICATION, SHALL BE IN PAID FOR UNDER ITEM 203 - ROADWAY MISC; COLUMN SUPPORTED WALLS.

10.2 ALL COST IN CONNECTION WITH DESIGN, EQUIPMENT, MATERIAL, AND LABOR FOR THE INSTALLATION OF COLUMN-SUPPORTED WALLS (CSW), INCLUDING COLUMN MATERIALS AND CONSTRUCTION, QA MONITORING, INSTRUMENTATION, WORKING AND LOAD TRANSFER PLATFORM MATERIALS, WICK DRAINS IF NECESSARY TO MEET SETTLEMENT REQUIREMENTS, AND THE GEOSYNTHETIC REINFORCEMENTS AS REQUIRED IN THIS SPECIFICATION, SHALL BE INCIDENTAL TO ITEM-203. SEPARATE PAYMENT WILL NOT BE MADE FOR SITE PREPARATION, DEWATERING, TEMPORARY WORKS TO FACILITATE CONSTRUCTION, ETC. INCLUDE ALL THE ANTICIPATED COSTS IN PRICE BID FOR ITEM 203 - ROADWAY, MISC.: COLUMN SUPPORTED WALLS. GROUND IMPROVEMENT AREAS HAVE BEEN DEFINED IN THE PLANS FOR BIDDING PURPOSES. ADDITIONAL COLUMN SUPPORTS SHALL BE PROVIDED AS NECESSARY BEYOND THE DEFINED AREAS TO SATISFY GLOBAL STABILITY AND SHALL BE INCIDENTAL TO THIS ITEM.

10.3 ALL COSTS ASSOCIATED WITH THE INSTALLATION OF TEST COLUMNS, REACTION FRAMES, INSTRUMENTATION, PERFORMANCE, ANALYSIS, AND REPORTING OF TEST RESULTS TO ENGINEER SHALL BE INCLUDED IN UNIT BID FOR ITEM - 203, ROADWAY, MISC.: COLUMN SUPPORTED WALLS.

10.4 THE TERMS CSW AND COLUMN SUPPORTED WALLS SHALL BE USED INTERCHANGEABLY THROUGHOUT THE PLANS.

NO.	DESCRIPTION	REV. BY	DATE
6	UPDATED NOTES	MMS	11-6-2023
6	UPDATED NOTE	MMS	11-23-2023

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ITEM 511 - CLASS QC1 CONCRETE, MISC.: CAST-IN-PLACE CONCRETE WALL (4W16)

THIS ITEM SHALL INCLUDE THE CONSTRUCTION OF THE CONCRETE WALL AT THE LOCATIONS INDICATED IN THE PLANS FOR WALLS 4W16 AND 4W17. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH CMS 511. THE SHEAR STUDS INSTALLATION SHALL BE IN ACCORDANCE WITH ITEM 513.

METHOD OF MEASUREMENT: THE DEPARTMENT WILL MEASURE THE APPROPRIATE CONCRETE ITEM BY THE NUMBER OF CUBIC YARDS DETERMINED BY CALCULATIONS FROM PLAN DIMENSION, IN PLACE, COMPLETED AND ACCEPTED.

PAYMENT: ALL LABOR EQUIPMENT AND MATERIALS INCLUDING THE SHEAR STUDS NECESSARY TO COMPLETE THE WORK SHALL BE INCLUDED IN THE CONTRACT BID PRICE FOR ITEM 511 - CLASS QC1 CONCRETE, MISC.: CAST-IN-PLACE CONCRETE WALL.

ITEM 511 - CLASS QC1 CONCRETE, MISC.: DRILLED SHAFT CAP WITH QC/QA (4W16, 4W17, 4W18)

THIS ITEM SHALL INCLUDE THE CONSTRUCTION OF THE REINFORCED CONCRETE DRILLED SHAFT CAP, RETAINING WALL, AND COPING ABOVE THE PRECAST FACADE PANELS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH CMS 511.

METHOD OF MEASUREMENT: THE DEPARTMENT WILL MEASURE THE APPROPRIATE CONCRETE ITEM BY THE NUMBER OF CUBIC YARDS DETERMINED BY CALCULATIONS FROM PLAN DIMENSION, IN PLACE, COMPLETED AND ACCEPTED.

PAYMENT: ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO COMPLETE THE WORK SHALL BE INCLUDED IN THE CONTRACT BID PRICE FOR ITEM 511-CLASS QC1 CONCRETE, MISC.: DRILLED SHAFT CAP WITH QC/QA.

ITEM 524 - DRILLED SHAFTS, 42" DIAMETER, ABOVE BEDROCK WITH QC/QA, AS PER PLAN: (4W18)

ITEM 524 - DRILLED SHAFTS, 60" DIAMETER, ABOVE BEDROCK WITH QC/QA, AS PER PLAN: (4W16, 4W17)

THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS PER ITEM 524 EXCEPT THE FOLLOWING:

THE COARSE AGGREGATE SIZE FOR ALL DRILLED SHAFTS SHALL BE A MAXIMUM OF NO. 8.

ALL DRILLED SHAFTS SHALL BE CONSTRUCTED FULL DEPTH FROM THE REQUIRED BOTTOM ELEVATION TO THE PROPOSED TOP PLAN ELEVATION USING THE TEMPORARY CASING CONSTRUCTION METHOD OF HOLE EXCAVATION AS DETAILED IN C&MS 524.04.C. NO OTHER METHODS OF HOLE EXCAVATION SHALL BE PERMITTED.

THE CONSTRUCTION TOLERANCES FOR TANGENT SHAFT INSTALLATION UNDER SECTION 524.14 SHALL BE WITHIN 1/2" OF THE PLAN LOCATION IN THE HORIZONTAL PLANE AT THE PLAN ELEVATION FOR THE TOP OF THE SHAFT.

THE DRILLED SHAFT CAP AND P.E.J.F. JOINTS SHALL BE ACCURATELY PLACED ACCORDING TO THE DESIGN PLAN. IF THE LOCATIONS OF THE INSTALLED DRILLED SHAFTS VARY FROM THE DESIGN PLAN AND RESULT IN THE P.E.J.F. IN THE DRILLED SHAFT CAP FALLING OVER A DRILLED SHAFT INSTEAD OF BETWEEN SHAFTS, ALL VERTICAL SHAFT BARS INTERFERING WITH OR CROSSING, THE CAP JOINT SHALL BE CUT FLUSH WITH THE TOP OF THE DRILLED SHAFT SO THAT BOTH SIDES OF THE CAP ARE NOT TIED TOGETHER BY SHAFT REINFORCING STEEL. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER PRIOR TO CUTTING ANY REINFORCING STEEL. THE DEPARTMENT WILL CONSIDER THIS WORK AS INCIDENTAL AND SHALL BE INCLUDED WITH ITEM 524 FOR PAYMENT.

ITEM 524 - DRILLED SHAFTS, 72" DIAMETER, ABOVE BEDROCK WITH QC/QA, AS PER PLAN (4W16)

THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS PER ITEM 524 EXCEPT THE FOLLOWING:

THE COARSE AGGREGATE SIZE FOR ALL DRILLED SHAFTS SHALL BE A MAXIMUM OF NO. 8.

ALL DRILLED SHAFTS SHALL BE CONSTRUCTED FULL DEPTH FROM THE REQUIRED BOTTOM ELEVATION TO THE PROPOSED TOP PLAN ELEVATION USING THE TEMPORARY CASING CONSTRUCTION METHOD OF HOLE EXCAVATION AS DETAILED IN C&MS 524.04.C. NO OTHER METHODS OF HOLE EXCAVATION SHALL BE PERMITTED.

THE CONSTRUCTION TOLERANCES FOR TANGENT SHAFT INSTALLATION UNDER SECTION 524.14 SHALL WITHIN 1/2" OF THE PLAN LOCATION IN THE HORIZONTAL PLANE AT THE PLAN ELEVATION FOR THE TOP OF THE SHAFT.

AT SHAFT NUMBERS 57, 58, 74, AND 75, STEEL CASING WITHIN THE LIMITS OF THE CAST-IN-PLACE CONCRETE WALL SHALL BE LEFT IN PLACE AND BE INCLUDED FOR PAYMENT WITH ITEM 524.

ITEM SPECIAL - STRUCTURE, MISC.: PRECAST WALL PANELS (4W13, 4W14, 4W15)

THIS BID ITEM CONSISTS OF PRECAST PANELS MANUFACTURED AND CONSTRUCTED IN ACCORDANCE WITH THIS SPECIFICATION AND DESIGNED IN ACCORDANCE WITH THE 8TH EDITION OF THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY AASHTO, AND THE ODOT BRIDGE DESIGN MANUAL, 2019.

DESIGN STRESSES:

CONCRETE - COMPRESSIVE STRENGTH 4,000 PSI
 REINFORCING STEEL - GRADE 60

MATERIALS - CONCRETE:

THE CONCRETE FOR THE WALL SECTIONS SHALL BE COMPOSED OF PORTLAND CEMENT, FINE & COARSE AGGREGATES, ADMIXTURES, AND WATER. PORTLAND CEMENT SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION C150, TYPE I, II, OR III. THE AIR ENTRAINING ADMIXTURE SHALL CONFORM TO AASHTO M154. THE CONCRETE SHALL CONTAIN 6% ±2% ENTRAINING AIR, AND SLUMP SHALL BE MAINTAINED WITHIN THE RANGE OF 1" TO 4". THE SLUMP MAY BE INCREASED TO 7" PROVIDED THE INCREASE IS ACHIEVED BY THE ADDITION OF A CHEMICAL WATER-REDUCING ADMIXTURE APPROVED BY THE ENGINEER.

MATERIALS - REINFORCING AND HARDWARE:

REINFORCEMENT SHALL CONSIST OF WELDED WIRE FABRIC CONFORMING TO ASTM A185 OR A497, OR DEFORMED BILLET-STEEL BARS CONFORMING TO ASTM A615, A616, OR A617, GRADE 60.

SHOP DRAWING REQUIREMENTS:

THE MANUFACTURER SHALL SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO MANUFACTURE. THE SHOP DRAWINGS SHALL INCLUDE THE FOLLOWING:

- ALL STRUCTURAL DESIGN AND LOADING INFORMATION.
- A PLAN VIEW.
- ALL ELEVATION VIEWS.
- ALL DIMENSIONS.

MANUFACTURING SHALL NOT BEGIN UNTIL WRITTEN APPROVAL OF THE SUBMITTED SHOP DRAWINGS HAS BEEN RECEIVED.

TESTING AND INSPECTION:

ACCEPTABILITY OF THE CONCRETE FOR THE PRECAST PANELS WILL BE DETERMINED ON THE BASIS OF COMPRESSION TESTS, CERTIFICATIONS AND VISUAL INSPECTION. THE CONCRETE STRENGTH REQUIREMENTS FOR THE PRECAST PANELS SHALL BE CONSIDERED ATTAINED REGARDLESS OF CURING AGE WHEN COMPRESSION TEST RESULTS INDICATE STRENGTH WILL CONFORM TO 28-DAY SPECIFICATIONS AS STATED BELOW. THE MANUFACTURER SHALL FURNISH FACILITIES AND PERFORM ALL NECESSARY SAMPLING AND TESTING IN AN EXPEDITIOUS AND SATISFACTORY MANNER. PANELS UTILIZING TYPE I OR II CEMENT SHALL BE CONSIDERED ACCEPTABLE FOR PLACEMENT IN THE WALL WHEN 7-DAY INITIAL STRENGTHS EXCEED 85% OF 28-DAY REQUIREMENTS. PANELS UTILIZING TYPE III CEMENT SHALL BE CONSIDERED ACCEPTABLE FOR PLACEMENT IN THE WALL PRIOR TO 28 DAYS ONLY WHEN COMPRESSIVE STRENGTH TEST RESULTS INDICATE THAT THE STRENGTH EXCEEDS THE 28-DAY SPECIFICATION.

MANUFACTURE:

THE AGGREGATES, CEMENT, AND WATER SHALL BE PROPORTIONED AND MIXED IN A BATCH MIXER TO PRODUCE A HOMOGENEOUS CONCRETE MEETING THE STRENGTH REQUIREMENTS OF THESE NOTES. THE PROPORTION OF PORTLAND CEMENT IN THE MIXTURE SHALL NOT BE LESS THAN 564 POUNDS PER CUBIC YARD OF CONCRETE.

THE WALL SECTIONS SHALL BE CURED FOR A SUFFICIENT LENGTH OF TIME SO THAT THE CONCRETE WILL DEVELOP THE SPECIFIED COMPRESSIVE STRENGTH IN 28 DAYS OR LESS. ANY ONE OF THE METHODS OF CURING OR COMBINATION THEREOF SHALL BE USED:

STEAM CURING - THE SECTIONS MAY BE LOW PRESSURE, STEAM CURED BY A SYSTEM THAT WILL MAINTAIN A MOIST ATMOSPHERE.

WATER CURING - THE SECTIONS MAY BE WATER CURED BY ANY METHOD THAT WILL KEEP THE SECTIONS MOIST.

THE FORMS USED IN MANUFACTURE SHALL BE SUFFICIENTLY RIGID AND ACCURATE TO MAINTAIN THE SECTION DIMENSIONS WITHIN THE PERMISSIBLE VARIATIONS GIVEN IN THESE NOTES. ALL CASTING SURFACES SHALL BE OF SMOOTH MATERIAL.

THE WALL SECTIONS SHALL BE STORED IN SUCH A MANNER TO PREVENT CRACKING OR DAMAGES.

THE FRONT FACE OF THE REINFORCED CONCRETE PANELS SHALL HAVE A SMOOTH CONCRETE FINISH AND INCORPORATE THE PATTERNS SHOWN IN THE STRUCTURE AESTHETIC DETAIL PLANS. CAULKING BETWEEN PRECAST PANELS SHALL BE IN ACCORDANCE WITH THE PLAN DETAILS. THE BACK SIDE OF THE REINFORCED CONCRETE PANELS SHALL HAVE AN UNFORMED SURFACE FINISH AND SHALL BE ROUGH SCREED TO ELIMINATE OPEN POCKETS OF AGGREGATE AND SURFACE DISTORTIONS IN EXCESS OF 1/4".

ALL PANELS SHALL BE MANUFACTURED WITH ALL PANEL DIMENSIONS WITHIN 1/4"

COMPRESSIVE STRENGTH:

ACCEPTANCE OF THE CONCRETE PANELS WITH RESPECT TO COMPRESSIVE STRENGTH WILL BE DETERMINED ON THE BASIS OF PRODUCTION LOTS. A PRODUCTION LOT IS DEFINED AS A GROUP OF PANELS THAT WILL BE REPRESENTED BY A SINGLE COMPRESSIVE STRENGTH SAMPLE AND WILL CONSIST OF EITHER 6 PANELS OR A SINGLE DAY'S PRODUCTION, WHICHEVER IS LESS.

DURING THE PRODUCTION OF THE CONCRETE PANELS, THE MANUFACTURER WILL RANDOMLY SAMPLE THE CONCRETE IN ACCORDANCE WITH ASTM C172. A SINGLE COMPRESSIVE STRENGTH SAMPLE, CONSISTING OF A MINIMUM OF FOUR CYLINDERS, WILL BE RANDOMLY SELECTED FOR EVERY PRODUCTION LOT.

CYLINDERS FOR COMPRESSIVE STRENGTH TESTS SHALL BE 6" DIA. X 1'-0" SPECIMENS PREPARED IN ACCORDANCE WITH ASTM C31. FOR EVERY COMPRESSIVE STRENGTH SAMPLE, A MINIMUM OF 2 CYLINDERS WILL BE CURED IN THE SAME MANNER AS THE PANELS AND TESTED AT APPROXIMATELY 7 DAYS. THE AVERAGE COMPRESSIVE STRENGTH OF THESE CYLINDERS, WHEN TESTED IN ACCORDANCE WITH ASTM C39, WILL PROVIDE A TEST RESULT WHICH WILL DETERMINE THE INITIAL STRENGTH OF THE CONCRETE. IN ADDITION, 2 CYLINDERS SHALL BE CURED IN ACCORDANCE WITH ASTM C31 AND TESTED AT 28 DAYS. THE AVERAGE COMPRESSIVE STRENGTH OF THESE TWO CYLINDERS, WHEN TESTED IN ACCORDANCE WITH ASTM C39, WILL PROVIDE A COMPRESSIVE STRENGTH TEST RESULT WHICH WILL DETERMINE THE COMPRESSIVE STRENGTH OF THE PRODUCTION LOT.

IF THE INITIAL STRENGTH TEST RESULTS INDICATE A COMPRESSIVE STRENGTH IN EXCESS OF 4,000 PSI, THEN THESE TEST RESULTS WILL BE UTILIZED AS THE COMPRESSIVE STRENGTH TEST RESULT FOR THE PRODUCTION LOT AND THE REQUIREMENT FOR TESTING AT 28 DAYS WILL BE WAIVED FOR THAT PARTICULAR PRODUCTION LOT.

REJECTION:

PANELS SHALL BE SUBJECT TO REJECTION BECAUSE OF FAILURE TO MEET ANY OF THE REQUIREMENTS SPECIFIED ABOVE. IN ADDITION, ANY OR ALL OF THE FOLLOWING DEFECTS MAY BE SUFFICIENT CAUSE FOR REJECTION:

- DEFECTS THAT INDICATE IMPERFECT MOLDING.
- DEFECTS INDICATING HONEYCOMBED OR OPEN TEXTURED CONCRETE.
- DEFECTS IN THE PHYSICAL CHARACTERISTICS OF THE CONCRETE, SUCH AS BROKEN OR CHIPPED CONCRETE.
- STAINED FORM FACE, DUE TO EXCESS FORM OIL OR OTHER CONTAMINATIONS.
- SIGNS OF AGGREGATE SEGREGATION.
- BROKEN OR CRACKED CORNERS.
- LIFTING INSERTS NOT USABLE.
- EXPOSED REINFORCING STEEL.
- INSUFFICIENT CONCRETE COMPRESSIVE STRENGTH.

THE ENGINEER WILL DECIDE IF AN ATTEMPT MAY BE MADE TO REPAIR A DEFECTIVE PANEL. THE CONTRACTOR OR MANUFACTURER SHALL MAKE THE REPAIRS. IF THE REPAIRS ARE MADE TO THE ENGINEER'S SATISFACTION, THE PANEL WILL BE ACCEPTABLE.

MARKING:

THE DATE OF MANUFACTURE, THE PRODUCTION LOT NUMBER, AND THE PIECE MARK SHALL BE CLEARLY SCRIBED ON THE BACK SURFACE OF EACH PANEL.

CONCRETE LEVELING PAD:

THE CONCRETE LEVELING PAD (MUD SLAB) SHALL BE CONSTRUCTED AS SHOWN IN THE PLANS WITH CONCRETE HAVING A STRENGTH THAT IS NOT LESS THAN 3,500 PSI AND SHALL HAVE SUFFICIENT STRENGTH TO ADEQUATELY SUPPORT THE PANELS AT THE BOTTOM OF THE WALL IN A LEVEL POSITION DURING INSTALLATION. THE PAD SHALL BE CURED A MINIMUM OF 24 HOURS BEFORE PLACING WALL PANELS ON THE LEVELING PAD.

FOUNDATION PREPARATION:

PRIOR TO WALL CONSTRUCTION, THE FOUNDATION, IF NOT IN ROCK, SHALL BE LEVELED AND ROLLED WITH A SMOOTH WHEEL VIBRATORY ROLLER. ANY FOUNDATION SOILS FOUND TO BE UNSUITABLE SHALL BE REMOVED AND REPLACED, AS DIRECTED BY THE ENGINEER.

WALL ERECTION:

PANELS ARE HANDLED BY MEANS OF A LIFTING DEVICE CONNECTED TO THE LIFTING INSERT WHICH IS CAST INTO THE UPPER EDGE OR BACK SIDE OF THE PANELS. ALL PANELS SHALL BE BRACED TO RESIST THE TEMPORARY CONSTRUCTION LOADS INCLUDING WIND LOADS, PRIOR TO FOOTING CONSTRUCTION.

PAYMENT:

PAYMENT FOR ITEM SPECIAL - STRUCTURE, MISC.: PRECAST WALL PANELS COVERS ALL LABOR, MATERIAL, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK DESCRIBED ABOVE.

ITEM 511 - CONCRETE, MISC.: CLASS QC1 CONCRETE WITH QC/QA, FOOTING (FOR OPTION B)

THIS ITEM CONSISTS OF ALL STRUCTURAL DESIGN, PREPARING ENGINEERED DRAWINGS AND CONSTRUCTION OF CAST-IN-PLACE CONCRETE FOOTINGS ASSOCIATED WITH PRECAST CONCRETE RETAINING WALL STEMS FOR OPTION B OF WALLS 4W13, 4W14 AND 4W15. THIS WORK SHALL INCLUDE ALL REQUIRED EXCAVATION FOR THE FOOTING AND FURNISHING AND INSTALLING ALL REINFORCING STEEL AND CONCRETE. ALL WORK SHALL BE IN ACCORDANCE WITH CMS ITEMS 503, 509 AND 511. DESIGN AND SUBMITTAL OF ENGINEERED DRAWINGS SHALL BE IN ACCORDANCE WITH CMS 501.

PAYMENT WILL BE MADE AT THE LUMP SUM PRICE BID FOR ASSOCIATED WALL FOOTINGS UNDER ITEM 511 - CONCRETE, MISC.: CLASS QC1 CONCRETE WITH QC/QA, FOOTING (FOR OPTION B) AND INCLUDE ALL ENGINEERING DESIGN, LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS FOR CONSTRUCTION OF FOOTER.

NO.	DESCRIPTION	DATE	REV. BY
3	REVISED ITEM DESCRIPTION	10-23-23	DJC
6	REVISED NOTES	11-6-23	RSN
8	ADDED NOTES	11-22-23	CWL

DESIGN AGENCY: **GPD GROUP**
 1000 Westwood Drive, Suite 100, Raleigh, NC 27607
 (919) 435-1100
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DATE: 4-21-23
 REVIEWED: DGN
 DRAWN: MOJ
 DESIGNED: MOJ
 CHECKED: DJC

RETAINING WALL GENERAL NOTES
 DRILLED SHAFT AND/OR PRECAST PANEL WALLS

FRA - 70 - 14.05
 PID No. 96053

5 / 6
 304
 855

ITEM	EXT.	OPT. A CAST-IN-PLACE RET. WALL		OPT. B PRECAST CONC. RET. WALL		UNIT	DESCRIPTION	REFERENCE SHEET NO. --- / 855
		TOTAL	01/IMS/04	TOTAL	01/IMS/04			
503	11100	LS	LS	LS	LS		COFFERDAMS AND EXCAVATION BRACING	
503	21100	4,954	4,954	N/A	N/A	△ CY	UNCLASSIFIED EXCAVATION	
509	10000	239,327	239,327	N/A	N/A	LB	EPOXY COATED REINFORCING STEEL	
511	34451	73	73	N/A	N/A	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN	693
511	46012	1,132	1,132	N/A	N/A	CY	CLASS QC1 CONCRETE WITH QC/QA, RETAINING/WINGWALL NOT INCLUDING FOOTING	
511	46512	1,034	1,034	N/A	N/A	CY	CLASS QC1 CONCRETE WITH QC/QA, FOOTING	
△ 511	81200	N/A	N/A	LS*	LS*		CONCRETE, MISC.: CLASS QC1 CONCRETE WITH QC/QA, FOOTING (FOR OPTION B)	304
512	10050	458	458	458	458	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)	693
512	10100	1,326	1,326	1,326	1,326	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	693
512	33000	152	152	629	629	SY	TYPE 2 WATERPROOFING	
516	13600	627	627	627	627	SF	1" PREFORMED EXPANSION JOINT FILLER	
518	20000	1,367	1,367	1,367	1,367	SY	PREFABRICATED GEOCOMPOSITE DRAIN	
518	21200	81	81	81	81	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
518	40000	541	541	541	541	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	
607	98000	536	536	536	536	FT	FENCE, MISC.: WALL MOUNTED TYPE A (W/ VANDAL MESH)	693
SPECIAL	530E00200	N/A	N/A	LS	LS		STRUCTURE, MISC.: PRECAST WALL PANELS	304

* THE CONTRACTOR SHALL DETERMINE FINAL DESIGN AND QUANTITY.



DESIGNED	RFV	CHECKED	RHC
DRAWN	RFV	REVISED	
REVIEWED	DGN	STRUCTURE FILE NUMBER	
DATE	4-21-23	FILE NUMBER	

ESTIMATED QUANTITIES
 CAST-IN-PLACE WALL 4W13
 SOUTH SIDE OF I-70 EB FROM FRA-70-1405E TO FRA-33-1747C

FRA-70-14.05
PID No. 96053
 1 / 10
 306 / 855

NO.	DESCRIPTION	DATE	REV. BY
8	REVISED QUANTITIES	11-21-23	CWL

CALCULATED: RFV DATE: 4-1-20
 CHECKED: DJC DATE: 4-2-20

ITEM	EXT.	OPT. A CAST-IN-PLACE RET. WALL		UNIT	DESCRIPTION	REFERENCE SHEET NO.
		TOTAL	01/IMS/04			
503	11100	LS	LS	LS	COFFERDAMS AND EXCAVATION BRACING	
503	21100	2,675	2,675	N/A	UNCLASSIFIED EXCAVATION,	
509	10000	191,291	191,291	N/A	EPOXY COATED REINFORCING STEEL	
511	34451	41	41	N/A	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN	693
511	46012	878	878	N/A	CLASS QC1 CONCRETE WITH QC/QA, RETAINING/WINGWALL NOT INCLUDING FOOTING	
511	46512	793	793	N/A	CLASS QC1 CONCRETE WITH QC/QA, FOOTING	
511	81200	N/A	N/A	LS*	CONCRETE, MISC.: CLASS QC1 CONCRETE WITH QC/QA, FOOTING (FOR OPTION B)	304
512	10050	159	159	159	SEALING OF CONCRETE SURFACES (NON-EPOXY)	693
512	10100	772	772	772	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	693
512	33000	107	107	448	TYPE 2 WATERPROOFING	
516	13600	416	416	416	1" PREFORMED EXPANSION JOINT FILLER	
518	20000	926	926	926	PREFABRICATED GEOCOMPOSITE DRAIN	
518	21200	45	45	45	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
518	40000	310	310	310	6" PERFORATED CORRUGATED PLASTIC PIPE	
518	40010	10	10	10	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	
607	98000	301	301	301	FENCE, MISC.: WALL MOUNTED TYPE A (WITH VANDAL MESH)	693
SPECIAL	530E00200	N/A	N/A	LS	STRUCTURE, MISC.: PRECAST WALL PANELS	304

* THE CONTRACTOR SHALL DETERMINE FINAL DESIGN AND QUANTITY.



DESIGNED	RFV	CHECKED	DJC
DRAWN	RFV	REVISED	
REVIEWED	DGN	STRUCTURE FILE NUMBER	
DATE	4-21-23		

ESTIMATED QUANTITIES
 CAST-IN-PLACE WALL 4M14
 SOUTHSIDE OF I-70 EB FROM FRA-33-1747C TO FRA-23-1075C

FRA-70-14.05
 PID No. 96053
 1/9
 316
 855

NO.	DESCRIPTION	DATE	REV. BY
8	REVISED QUANTITIES	11-21-23	CWL

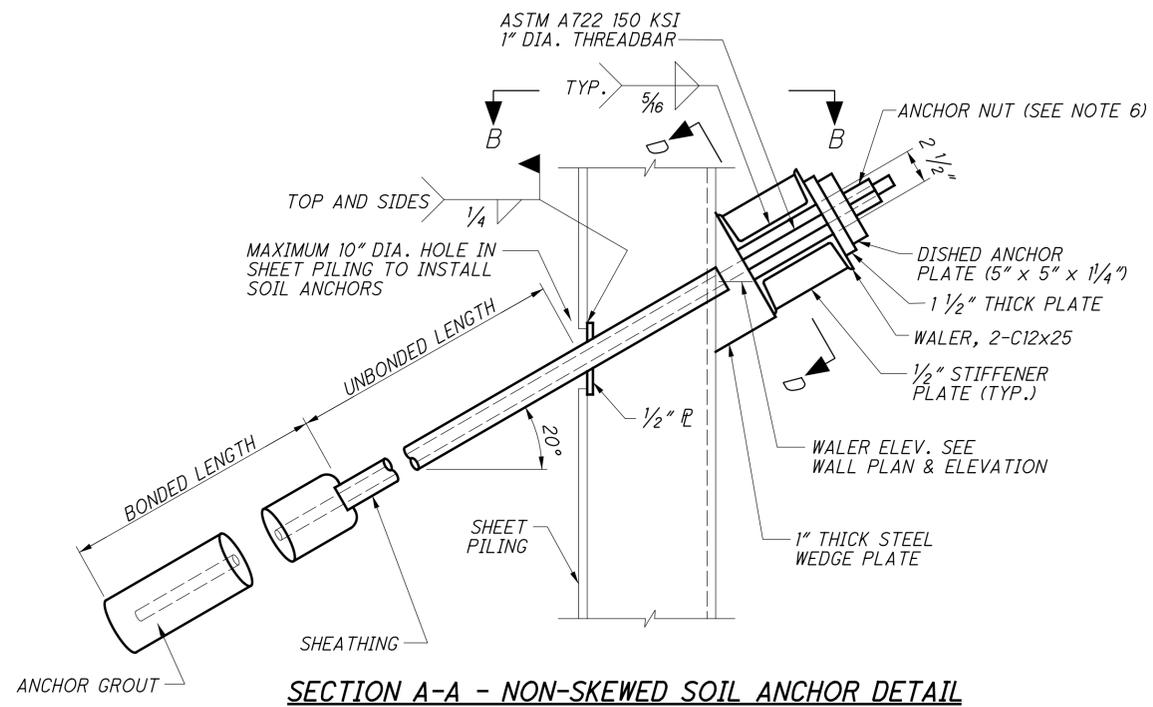
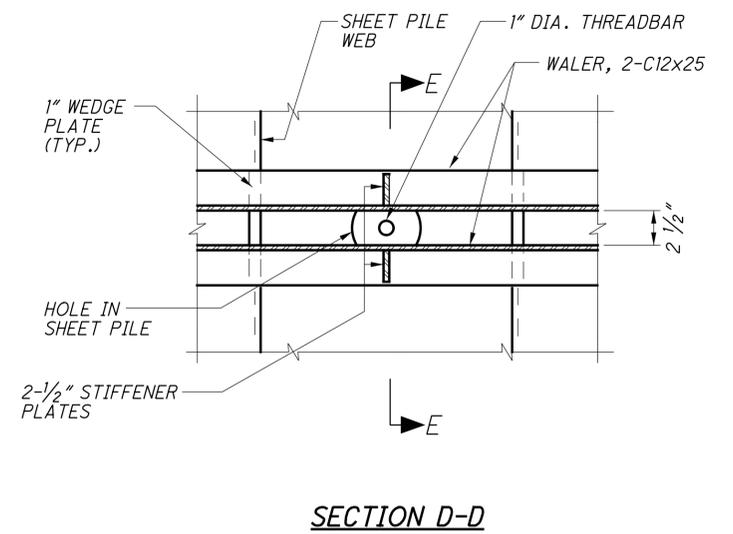
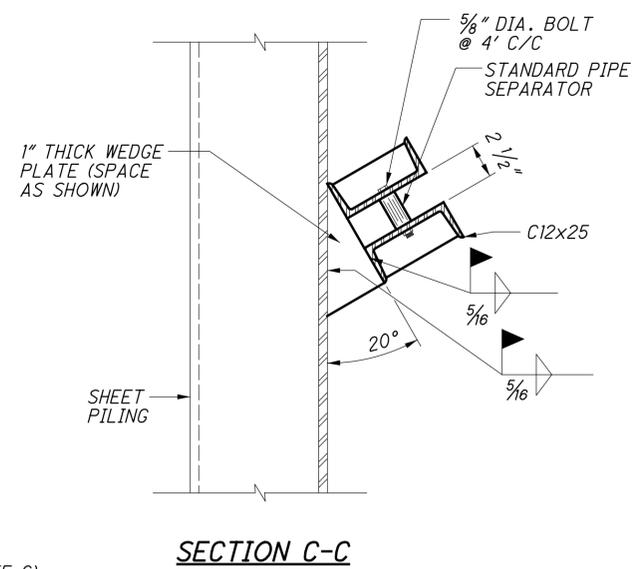
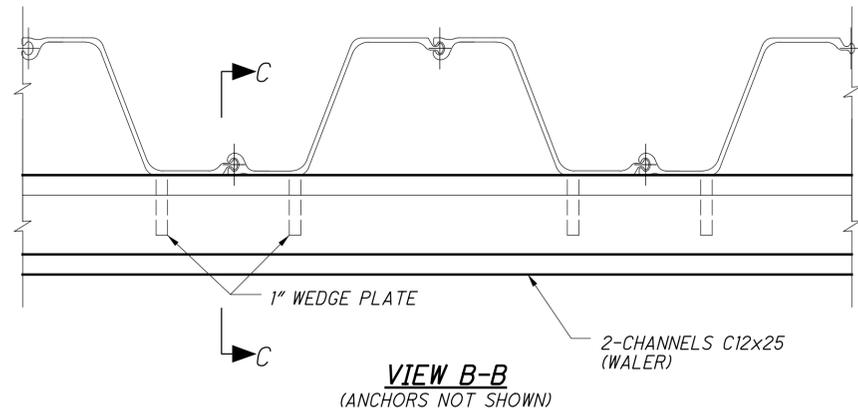
CALCULATED: RFV DATE: 3-27-20
 CHECKED: DJC DATE: 4-1-20

ITEM	EXT.	OPT. A CAST-IN-PLACE RET. WALL		OPT. B PRECAST CONC. RET. WALL		UNIT	DESCRIPTION	REFERENCE SHEET NO.
		TOTAL	01/IMS/04					
202	11201	LS	LS	LS			PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	301
503	11101	LS	LS	LS			COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN	301, 334
503	21100	3,541	3,541	N/A		CY	UNCLASSIFIED EXCAVATION	
509	10000	266,974	266,974	N/A		LB	EPOXY COATED REINFORCING STEEL	
511	34451	62	62	N/A		CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN	693
511	46012	1,229	1,229	N/A		CY	CLASS QC1 CONCRETE WITH QC/QA, RETAINING/WINGWALL NOT INCLUDING FOOTING	
511	46512	1,009	1,009	N/A		CY	CLASS QC1 CONCRETE WITH QC/QA, FOOTING	
511	81200	N/A	N/A	LS*			CONCRETE, MISC.: CLASS QC1 CONCRETE WITH QC/QA, FOOTING (FOR OPTION B)	304
512	10050	244	244	244		SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)	693
512	10100	1,094	1,094	1,094		SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	693
512	33000	165	165	612		SY	TYPE 2 WATERPROOFING	
516	13600	515	515	515		SF	1" PREFORMED EXPANSION JOINT FILLER	
518	20000	1,328	1,328	1,328		SY	PREFABRICATED GEOCOMPOSITE DRAIN	
518	21200	69	69	69		CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
518	40000	470	470	470		FT	6" PERFORATED CORRUGATED PLASTIC PIPE	
518	40010	10	10	10		FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	
607	98000	461	461	461		FT	FENCE, MISC.: WALL MOUNTED TYPE A (W/O VANDAL MESH)	693
SPECIAL	530E00200	N/A	N/A	LS			STRUCTURE, MISC.: PRECAST WALL PANELS	304
866	00100	9	9	9		EACH	GROUND ANCHOR (74 KIP MAX. TEST LOAD)	
866	00400	3	3	3		EACH	PERFORMANCE TEST	

* THE CONTRACTOR SHALL DETERMINE FINAL DESIGN AND QUANTITY.

NO.	DESCRIPTION	DATE	REV. BY
8	REVISED QUANTITIES	11-21-23	CWL

325
855



NOTES:

- ALL MATERIALS (EXCEPT SHEETING), DESIGN, INSTALLATION REQUIREMENTS, TESTING, AND LABOR, FOR CONSTRUCTION OF THE TIE BACK SYSTEM AS DETAILED IN THESE PLANS SHALL CONFORM TO THE REQUIREMENTS OF ODOT SUPPLEMENTAL SPECIFICATION 866.
- WALERS SHALL BE ASTM A572 GRADE 50. SHEET PILING MAY BE EITHER ASTM A328 OR A572 WITH YIELD STRENGTHS OF 39 KSI AND 50 KSI RESPECTIVELY. ALL STEEL NOT OTHERWISE SPECIFIED SHALL BE A36. ALL BOLTS SHALL BE 5/8" DIA. HIGH STRENGTH BOLTS ASTM A325.
- SEE SHEETS 333 / 855 FOR ADDITIONAL NOTES.

NO.	DESCRIPTION	DATE	REV. BY
8	UPDATED NOTES	11-21-23	CWL

G:\2015\2015370\FRA\9605\STRUCTURES\WALL_4\15\SHEETS\9605_4\15\1003.DGN
 11/21/2023 3:38:34 PM
 ODOT\81STD.LJSEB

TEMPORARY SHORING DETAILS
 CAST-IN-PLACE WALL 4W15
 SOUTH SIDE OF I-70 EB - EAST OF FRA-23-1075C

FRA - 70 - 14.05
PID No. 96053

10 / 11
334 / 855

DESIGN AGENCY: **GPD GROUP**
 1000 Westwood Drive, Suite 200, Coon Rapids, MN 55433
 (763) 429-0052
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DESIGNED	DJC	CHECKED	MOJ
DRAWN	RFV	REVISED	
REVIEWED	DGN	STRUCTURE FILE NUMBER	
DATE	4-21-23		

ESTIMATED QUANTITIES

CALCULATED: RFV DATE: 10-2-19
 CHECKED: TJW DATE: 4-3-20

ITEM	EXT.	PARTICIPATION		UNITS	DESCRIPTION	A.P.P REFERENCE SHEET NO.
		TOTAL	01/IMS/04			
503	11101			LS	COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN	301
503	21100	1,142	1,142	CY	UNCLASSIFIED EXCAVATION	
507	98020			LS	PILING, MISC.: SOLDIER PILES	301
509	10000	63,829	63,829	LB	EPOXY COATED REINFORCING STEEL	
511	34451	70	70	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN	301
511	46512	115	115	CY	CLASS QC1 CONCRETE WITH QC/QA, FOOTING	
511	53010	45	45	CY	CLASS QC1 CONCRETE, MISC.: CAST-IN-PLACE CONCRETE WALL	304
511	53010	556	556	CY	CLASS QC1 CONCRETE, MISC.: DRILLED SHAFT CAP WITH QC/QA	304
511	81200			LS	CONCRETE, MISC.: PRECAST LAGGING	301
512	10050	314	314	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)	
512	10100	1,392	1,392	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
512	33000	203	203	SY	TYPE 2 WATERPROOFING	
516	13600	586	586	SF	1" PREFORMED EXPANSION JOINT FILLER	
518	21200	246	246	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
518	40000	1,002	1,002	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	
524	95472	6,016	6,016	FT	DRILLED SHAFTS, 60" DIAMETER, ABOVE BEDROCK WITH QC/QA, AS PER PLAN	304
524	95492	292	292	FT	DRILLED SHAFTS, 72" DIAMETER, ABOVE BEDROCK WITH QC/QA. AS PER PLAN	304
894	10000	86	86	EACH	THERMAL INTEGRITY PROFILING (TIP) TEST	
SPECIAL	20302000	926	926	CY	ENGINEERED FILL (LIGHTWEIGHT CELLULAR CONCRETE FILL), PERVIOUS	302
SPECIAL	53000600	12,867	12,867	SF	STRUCTURES - PRECAST FACADE PANELS	305
SPECIAL	60798000	498	498	FT	FENCE, MISC.: WALL MOUNTED TYPE A (W/ VANDAL MESH)	301



DESIGNED	RHC	CHECKED	DJC
DRAWN	JUB	REVISED	
REVIEWED	DGN	STRUCTURE FILE NUMBER	
DATE	4-21-23		

ESTIMATED QUANTITIES
 TANGENT DRILLED SHAFT WALL 4W16
 NORTHSIDE OF I-70 WB FROM FRA-70-1405C TO FRA-33-1747C

FRA-70-14.05
PID No. 96053

NO.	DESCRIPTION	DATE	REV. BY
3	REVISED ITEM DESCRIPTION	10-23-23	DJC
8	REVISED ITEM DESCRIPTION	11-21-23	CWL

ESTIMATED QUANTITIES

CALCULATED: RFV DATE: 10-2-19
 CHECKED: TJW DATE: 4-3-20

ITEM	EXT.	TOTAL	PARTICIPATION	UNITS	DESCRIPTION	A.P.P. REFERENCE SHEET NO.
			01/IMS/04			
503	11101			LS	COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN	301
503	2100	1,065	1,065	CY	UNCLASSIFIED EXCAVATION	
509	10000	29,151	29,151	LB	EPOXY COATED REINFORCING STEEL	
511	34451	43	43	CY	CLASS QC2 CONCRETE WTH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN	301
511	46512	67	67	CY	CLASS QC1 CONCRETE WITH QC/QA, FOOTING	
511	53010	336	336	CY	CLASS QC1 CONCRETE, MISC.: DRILLED SHAFT CAP WITH QC/QA	304
512	10050	191	191	SY	SEALING CONCRETE SURFACES (NON-EPOXY)	
512	10100	826	826	SY	SEALING CONCRETE SURFACES (EPOXY-URETHANE)	
512	33000	121	121	SY	TYPE 2 WATERPROOFING	
516	13600	302	302	SF	1" PREFORMED EXPANSION JOINT FILLER	
518	21200	118	118	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
518	40000	442	442	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	
524	95453	74	74	FT	DRILLED SHAFTS, 48" DIAMETER, ABOVE BEDROCK WITH QC/QA, AS PER PLAN	304
524	95472	4,347	4,347	FT	DRILLED SHAFTS, 60" DIAMETER, ABOVE BEDROCK WITH QC/QA, AS PER PLAN	304
SPECIAL	53000600	8,451	8,451	SF	STRUCTURES: PRECAST FACADE PANELS	305
607	98000	303	303	FT	FENCE, MISC.: WALL MOUNTED TYPE A (W/ VANDAL MESH)	301
894	10000	60	60	EACH	THERMAL INTEGRITY PROFILING (TIP) TEST	



DESIGNED	TJW	CHECKED	RHC
DRAWN	RPR	REVISED	
REVIEWED	DGN	STRUCTURE FILE NUMBER	
DATE	4-21-23		

ESTIMATED QUANTITIES
 TANGENT DRILLED SHAFT WALL 4W17
 NORTHSIDE OF I-70 WB FROM FRA-33-1747C TO FRA-23-1075C

FRA - 70 - 14.05
PID No. 96053

NO.	DESCRIPTION	DATE	REV. BY
3	REVISED ITEM DESCRIPTION	10-23-23	DJC
8	REVISED ITEM DESCRIPTION	11-21-23	CWL

358
855

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO THE 8TH EDITION OF THE "LRFD BRIDGE DESIGN SPECIFICATION" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2017, AND THE ODOT BRIDGE DESIGN MANUAL, 2019.

STANDARD DRAWINGS

REFER TO THE FOLLOWING ODOT STANDARD BRIDGE DRAWINGS:

- AS-1-15 REVISED: 7-17-15
- AS-2-15 REVISED: 1-18-19
- EXJ-4-87 REVISED: 1-19-18
- GSD-1-19 REVISED: 1-15-21

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATION:

- 800 DATED 1-20-23
- 894 DATED 4-16-21

DESIGN DATA

OPERATIONAL IMPORTANCE: A LOAD MODIFIER OF 1.00 HAS BEEN ASSUMED FOR THE DESIGN OF THIS STRUCTURE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, ARTICLE 1.3.5 AND THE ODOT BRIDGE DESIGN MANUAL, 2020.

DESIGN LOADING

HL-93
FUTURE WEARING SURFACE (FWS) OF 0.060 KIPS PER SQUARE FOOT

DESIGN STRESSES

- CONCRETE CLASS QC1 - COMPRESSIVE STRENGTH 4.0 KSI (SUBSTRUCTURE)
- CONCRETE CLASS QC2 - COMPRESSIVE STRENGTH 4.5 KSI (SUPERSTRUCTURE)
- CONCRETE CLASS QC5 - COMPRESSIVE STRENGTH 4.5 KSI (DRILLED SHAFTS)
- REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI
- STRUCTURAL STEEL - ASTM A709 GRADE 50 - YIELD STRENGTH 50 KSI

DECK PROTECTION METHOD

EPOXY COATED REINFORCING STEEL
2 1/2" CONCRETE COVER
CLASS QC2 CONCRETE

MONOLITHIC WEARING SURFACE

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1 INCH THICK.

EXISTING STRUCTURE VERIFICATION:

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02 AND 513.04.

BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTANTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS THAT HAVE BEEN VERIFIED IN THE FIELD.

CONSTRUCTION CONSTRAINTS:

FILL THE VOID CREATED BY EXCAVATION FOR THE ABUTMENT FOOTING WITH TYPE B GRANULAR MATERIAL, 703.16.C. AFTER THE FOOTING AND THE BREASTWALL HAVE BEEN CONSTRUCTED, FILL THE VOID BEHIND EACH ABUTMENT UP TO THE BEAM SEAT ELEVATION AND FROM THE BEAM SEAT UP ON A 1:1 SLOPE TO THE SUBGRADE ELEVATION PRIOR TO CONSTRUCTING THE BACKWALL AND SETTING THE GIRDERS ON THE ABUTMENT.

STRUCTURE GROUNDING

GROUND THE PROPOSED BRIDGE ACCORDING TO THE REQUIREMENTS OF ODOT STD. DWG. HL-50.21 - STRUCTURE GROUNDING. THE FOLLOWING BRIDGE COMPONENTS SHALL BE CONNECTED TO THE GROUNDING SYSTEM: ALL STRUCTURAL STEEL, UTILITY SUPPORTS, AND LIGHT POLES.

DECK PLACEMENT DESIGN ASSUMPTIONS

THE FOLLOWING ASSUMPTION OF CONSTRUCTION MEANS AND METHODS WERE MADE FOR THE ANALYSIS AND DESIGN OF THE SUPERSTRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE FALSEWORK SUPPORT SYSTEM WITHIN THESE PARAMETERS AND WILL ASSUME RESPONSIBILITY FOR SUPERSTRUCTURE ANALYSIS FOR DEVIATION FROM THESE DESIGN ASSUMPTIONS.

AN EIGHT WHEEL FINISHING MACHINE WITH A MAXIMUM WHEEL LOAD OF 2.54 KIPS.

A MINIMUM OUT-TO-OUT WHEEL SPACING AT EACH END OF THE MACHINE OF 103 IN.

A MAXIMUM SPACING OF OVERHANG FALSEWORK OF 48 IN.

A MAXIMUM DISTANCE FROM THE CENTERLINE OF THE FASCIA GIRDER TO THE FACE OF THE SAFETY HANDLE OF 65 IN.

FOUNDATION BEARING RESISTANCE

REAR ABUTMENT FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM SERVICE LOAD PRESSURE OF 6.00 KIPS PER SQUARE FOOT AND A MAXIMUM STRENGTH LOAD PRESSURE OF 8.67 KIPS PER SQUARE FOOT. THE FACTORED BEARING RESISTANCE IS 16.76 KIPS PER SQUARE FOOT.

PIER FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM SERVICE LOAD PRESSURE OF 6.10 KIPS PER SQUARE FOOT AND A MAXIMUM STRENGTH LOAD PRESSURE OF 9.60 KIPS PER SQUARE FOOT. THE FACTORED BEARING RESISTANCE IS 20.88 KIPS PER SQUARE FOOT.

6 FORWARD ABUTMENT FOUNDATION, AS DESIGNED PRODUCE A MAXIMUM FACTORED LOAD OF 226 KIPS AT EACH DRILLED SHAFT. THIS LOAD IS RESISTED BY TIP RESISTANCE ONLY. THE FACTORED RESISTANCE DEVELOPED BY THE DRILLED SHAFT TIP IS 530 KIPS.

6 ITEM 503 - COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN
THE NEED TO PROVIDE TEMPORARY SHORING BEHIND THE DRILLED SHAFTS TO CONSTRUCT THE CONCRETE CAP SHALL BE DETERMINED BY THE CONTRACTOR BASED ON THEIR MEANS AND METHODS.
DESIGN, LABOR, MATERIAL, EQUIPMENT, AND INCIDENTALS NECESSARY TO INSTALL THE TEMPORARY SHORING SHALL BE COMPENSATED UNDER ITEM 503 -COFFERDAM AND EXCAVATION BRACING, AS PER PLAN.

ITEM 511 - CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT NOT INCLUDING FOOTING, AS PER PLAN

FINISH TOP OF BACKWALL IN LOCATIONS ADJACENT TO SIDEWALKS WITH A BUFF WASH FINISH PER THE STRUCTURE AESTHETIC PLANS.

AFTER CONDUITS ARE PLACED THROUGH THE UTILITY BLOCKOUTS IN THE ABUTMENT BACKWALLS, FILL THE VOIDS USING NON-SHRINK MORTAR CONFORMING TO CMS 705.22.

**ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA, SIDEWALK, AS PER PLAN:
ITEM 512 - SEALING OF CONCRETE SURFACES (NON-EPOXY)
ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)**

SEE STRUCTURE AESTHETIC PLANS FOR DETAILS.

ITEM 514 - FIELD PAINTING STRUCTURAL STEEL, FINISH COAT

ALL NEW STRUCTURAL STEEL SHALL BE PAINTED USING THE IZEU COATING SYSTEM. THE URETHANE TOP COAT SHALL BE TINTED TO MEET FEDERAL COLOR No. 17038 (BLACK)

ITEM 518 - PIPE HORIZONTAL CONDUCTOR, AS PER PLAN (8")

THIS ITEM CONSISTS OF FURNISHING AND INSTALLING 8" DIAMETER PIPE HORIZONTAL CONDUCTOR WITHIN THE BRIDGE SUPERSTRUCTURE AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH THE REQUIREMENTS OF CMS ITEM 518. THIS WORK INCLUDES THE CONDUCTOR PIPE, ELBOWS, CLEANOUTS, REDUCER FITTINGS, EXPANSION JOINT COUPLING, PIPE HANGERS AND ALL OTHER INCIDENTALS TO COMPLETE THE INSTALLATION TO THE SATISFACTION OF THE ENGINEER. PIPE HANGER ASSEMBLIES SHALL BE HOT-DIP GALVANIZED STEEL. ALL MATERIALS SHALL BE SUBMITTED FOR REVIEW IN ACCORDANCE WITH CMS 501.04.

THE METHOD OF MEASUREMENT SHALL BE BY THE FOOT ALONG THE CENTERLINE OF MAIN CONDUCTOR PIPE. PAYMENT WILL BE MADE AT THE UNIT PRICE BID PER FOOT AND SHALL INCLUDE ALL LABOR, MATERIALS, TOOLS AND INCIDENTALS FOR A COMPLETE FUNCTIONING SYSTEM.

ITEM 524 - DRILLED SHAFTS, 60" DIAMETER, ABOVE BEDROCK WITH QC/QA, AS PER PLAN

6 THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS PER ITEM 524 EXCEPT THE FOLLOWING:

THE COARSE AGGREGATE SIZE FOR ALL DRILLED SHAFTS SHALL BE A MAXIMUM OF NO. 8. ALL DRILLED SHAFTS SHALL BE CONSTRUCTED FULL DEPTH FROM THE REQUIRED BOTTOM ELEVATION TO THE PROPOSED TOP PLAN ELEVATION USING THE TEMPORARY CASING CONSTRUCTION METHOD OF HOLE EXCAVATION AS DETAILED IN C&MS 524.04.C. NO OTHER METHODS OF HOLE EXCAVATION SHALL BE PERMITTED.

THE CONSTRUCTION TOLERANCES FOR TANGENT SHAFT INSTALLATION UNDER SECTION 524.14 SHALL WITHIN 1/2" OF THE PLAN LOCATION IN THE HORIZONTAL PLANE AT THE PLAN ELEVATION FOR THE TOP OF THE SHAFT.

STEEL BEAMS SHALL BE ACCURATELY SET AT THE CENTER OF THE DRILLED SHAFT IMMEDIATELY BEFORE PLACING CONCRETE.

THE DRILLED SHAFT CAP AND P.E.-J.F. JOINTS SHALL BE ACCURATELY PLACED ACCORDING TO THE DESIGN PLAN. IF THE LOCATIONS OF THE INSTALLED DRILLED SHAFTS VARY FROM THE DESIGN PLAN AND RESULT IN THE P.E.-J.F. IN THE DRILLED SHAFT CAP FALLING OVER A DRILLED SHAFT INSTEAD OF BETWEEN SHAFTS, ALL VERTICAL SHAFT BARS INTERFERING WITH, OR CROSSING, THE CAP JOINT SHALL BE CUT FLUSH WITH THE TOP OF THE DRILLED SHAFT SO THAT BOTH SIDES OF THE CAP ARE NOT TIED TOGETHER BY SHAFT REINFORCING STEEL. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER PRIOR TO CUTTING ANY REINFORCING STEEL. THE DEPARTMENT WILL CONSIDER THIS WORK AS INCIDENTAL AND SHALL BE INCLUDED WITH ITEM 524 FOR PAYMENT.

ITEM 625 - LIGHT POLE ANCHOR BOLTS, MISC.: LIGHT POLE ANCHOR BOLT ASSEMBLIES EMBEDDED IN CONCRETE BRIDGE DECK

FURNISH ONE ANCHOR BOLT ASSEMBLY FOR EACH LIGHT POLE MOUNTED ON THE BRIDGE. EACH ASSEMBLY INCLUDES A STEEL PLATE AND ALL STEEL ANCHOR RODS, LEVELING RODS, NUTS, AND WASHERS AS SHOWN ON THE DRAWINGS OR AS REQUIRED FOR INSTALLATION. FABRICATE THE ASSEMBLY IN ACCORDANCE WITH CMS 513 AND 730. GALVANIZE THE ASSEMBLY AFTER FABRICATION IN ACCORDANCE WITH CMS 711.02. ALL MATERIALS, LABOR, AND INCIDENTALS NECESSARY TO INSTALL EACH POLE SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 625 - LIGHT POLE ANCHOR BOLTS, MISC.: LIGHT POLE ANCHOR BOLT ASSEMBLIES EMBEDDED IN CONCRETE BRIDGE DECK.

ITEM 894 - THERMAL INTEGRITY PROFILER (T.I.P.) TEST

PERFORM INTEGRITY TESTING ON ALL OF THE DRILLED SHAFTS AT THE FORWARD ABUTMENT BY THERMAL INTEGRITY PROFILING (TIP). PERFORM TIP TESTING PER ASTM D7949, "STANDARD TEST METHODS FOR THERMAL INTEGRITY PROFILING OF CONCRETE DEEP FOUNDATIONS," METHOD B, AND PER SUPPLEMENTAL SPECIFICATION 894

ASBESTOS ABATEMENT AND NOTIFICATION

ASBESTOS SURVEYS OF THE FRA-33-1747C BRIDGE SCHEDULED FOR REPLACEMENT WAS CONDUCTED BY CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALISTS. COPIES OF THE ASBESTOS INSPECTION REPORTS ARE INCLUDED IN THE PLAN SET FOR THIS PROJECT.

THE ASBESTOS SURVEYS DETERMINED THAT 55 SQUARE FEET OF ASBESTOS CONTAINING MATERIAL IS PRESENT ON THE BRIDGE DECK IN EXCESS OF THE ALLOWABLE REGULATORY LIMITS AND REQUIRES ABATEMENT.

THE CONTRACTOR SHALL ENSURE THAT ASBESTOS CONTAINING MATERIALS DO NOT BECOME FRITABLE (BROKEN UP OR DISPERSED) AND THAT NO VISIBLE FIBER EMISSIONS WILL OCCUR. ADDITIONALLY, THE REMOVAL AND DISPOSAL OF THE ASBESTOS CONTAINING MATERIAL SHALL COMPLY WITH CHAPTER 3745-20 OF THE OHIO ADMINISTRATIVE CODE, THE NATIONAL EMISSION STANDARD FOR HAZARDOUS AIR POLLUTANTS (NESHA) AND APPLICABLE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS (29 CFR 1926.1101).

THE CONTRACTOR SHALL SUBMIT A COMPLETED ELECTRONIC NOTIFICATION OF DEMOLITION AND RENOVATION FORM (NDRF), APPLICABLE FEES, AND THE ASBESTOS INSPECTION REPORT TO THE OEPA AT LEAST 10 DAYS PRIOR TO ANY DEMOLITION ACTIVITY, RENOVATION ACTIVITY, OR BOTH. SUBMIT THE NDRF AND PAYMENT ALONG WITH THE ASBESTOS INSPECTION REPORT USING THE OEPA BUSINESS CENTER. SUBMIT ONE ELECTRONIC PDF COPY TO THE ENGINEER. THE ENGINEER WILL PROVIDE ONE COPY TO THE DISTRICT ENVIRONMENTAL COORDINATOR AT MARCI.LININGER@DOT.OHIO.GOV.

BASIS OF PAYMENT - THE CONTRACTOR SHALL FURNISH ALL THE FEES, LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THE OEPA NOTIFICATION OF DEMOLITION AND RENOVATION FORM AND PROPERLY REMOVE, ENCAPSULATE, HANDLE, TRANSPORT AND DISPOSE OF ASBESTOS CONTAINING MATERIALS IN A LANDFILL LICENSED BY THE LOCAL HEALTH DEPARTMENT AND PERMITTED BY THE OHIO ENVIRONMENTAL PROTECTION AGENCY - DIVISION OF AIR POLLUTION CONTROL TO ACCEPT ASBESTOS CONTAINING MATERIAL. PAYMENT FOR THIS WORK SHALL BE MADE AT THE CONTRACT PRICE BID OF LUMP SUM.

PAYMENT FOR THIS WORK SHALL BE INCLUDED IN ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.

NO.	DESCRIPTION	DATE	REV. BY
6	REVISED NOTES	11-6-23	RSN
8	REVISED NOTES	11-21-23	CWL

DESIGN AGENCY: **GPD GROUP**
 1800 Watermark Drive, Columbus, OH 43240
 (614) 231-0751
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DESIGNED	RHC	CHECKED	DJC
DRAWN	RPR	REVISED	
REVIEWED	DGN	STRUCTURE FILE NUMBER	2501554
DATE	4-21-23		

GENERAL NOTES - 1
 BRIDGE NO. FRA-33-1747C
 S. 3RD STREET (U.S. 33) OVER I-70/71

FRA-70-14.05
 PID No. 96093

3 / 42
 561
 855

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO THE 8TH EDITION OF THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2017 AND THE ODOT BRIDGE DESIGN MANUAL, 2019.

SPECIAL DESIGN SPECIFICATIONS

THIS BRIDGE REQUIRED THE USE OF A THREE-DIMENSIONAL FINITE ELEMENT MODEL TO ANALYZE THE STRUCTURE. THE COMPUTER PROGRAM USED FOR STRUCTURAL ANALYSIS WAS MIDAS. THE BRIDGE COMPONENTS DESIGNED BY THIS METHOD WERE THE STEEL GIRDERS AND CROSSFRAMES. THE LOADS WERE DISTRIBUTED AS FOLLOWS:

DEAD LOAD DISTRIBUTION: FOR GREEN CAP OPTION. ALL DEAD LOADS (COMPOSITE AND NON-COMPOSITE) INCLUDING WEIGHT OF GIRDERS, CROSSFRAMES, DECK, PARAPETS, PLANTER WALLS, SIDEWALKS, BENCHES, SOIL, TRELLIS, AND OTHER LANDSCAPING FEATURES WERE INPUT AS LINEAR VARYING DISTRIBUTED LOADS WITH MAGNITUDES CALCULATED USING THE TRIBUTARY AREA METHOD AT TENTH POINTS OF EACH SPAN ALONG EACH GIRDER.

LIVE LOAD DISTRIBUTION: DISTRIBUTION FACTORS FOR LIVE LOAD MOMENT AND SHEAR AT INTERIOR AND EXTERIOR MEMBERS VARIED ACROSS THE STRUCTURE AND WERE BASED ON AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 4.

PEDESTRIAN LOAD DISTRIBUTION: A PEDESTRIAN LOAD WAS APPLIED TO THE ENTIRE DECK SURFACE EXCEPT FOR THE AREA UNDER THE PARAPET PLANTERS. PEDESTRIAN LOAD WAS NOT APPLIED SIMULTANEOUSLY WITH LIVE LOAD.

STANDARD DRAWINGS

REFER TO THE FOLLOWING ODOT STANDARD BRIDGE DRAWINGS:

EXJ-4-87 REVISED: 1-19-18
 GSD-1-19 REVISED: 1-15-21
 PCB-91 REVISED 7-17-20

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATION:

800 DATED 1-20-23
 894 DATED 4-16-21

LRFD LOAD MODIFIERS

OPERATIONAL IMPORTANCE: A LOAD MODIFIER OF 1.00 HAS BEEN ASSUMED FOR THE DESIGN OF THIS STRUCTURE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, ARTICLE 1.3.5 AND THE ODOT BRIDGE DESIGN MANUAL, 2007.

DESIGN LOADING

GREEN CAP OPTION
 LIVE LOAD MAINTENANCE VEHICLE H-10 TRUCK
 NO FUTURE WEARING SURFACE (FWS)
 SATURATED SOIL UNIT WEIGHT OF 0.130 KIPS/CU.FT.
 AGGREGATE FILL UNIT WEIGHT OF 0.100 KIPS/CU.FT.
 PRECAST AND CAST-IN-PLACE CONCRETE UNIT WEIGHT OF 0.150 KIPS/CU.FT.
 TRELLIS COLUMN WEIGHT OF 2.5 KIPS.
 SCREEN WALL UNIT WEIGHT OF 0.095 KIPS/FT.
 MATURE TREE UNIT WEIGHT OF 2.1 KIPS/EACH
 PEDESTRIAN LIVE LOAD OF 0.090 KIPS/SQ.FT.

FOR BUILDING OPTION
 THE SUPERIMPOSED DEAD LOAD IS 140 PSF, UTILITY LOAD 80 #/LF PER GIRDER AND LIVE LOAD IS 90 PSF FOR ENTIRE SLAB OF THE CAP.

THE DESIGN OF THE BRIDGE STRUCTURAL COMPONENTS WERE CONTROLLED BY THE GREEN CAP OPTION. THE BUILDING ENGINEER SHALL PERFORM AN INDEPENDENT ANALYSIS BASED ON THEIR COLUMN LAYOUT AND MAKE ANY NECESSARY MODIFICATIONS TO THE GIRDERS AT NO COST TO THE OWNER, IF NEEDED.

DESIGN STRESSES

CONCRETE CLASS QC5 - COMPRESSIVE STRENGTH 4.5 KSI (DRILLED SHAFTS)
 CONCRETE CLASS QC2 - COMPRESSIVE STRENGTH 4.5 KSI (SUPERSTRUCTURE)
 CONCRETE CLASS QC1 - COMPRESSIVE STRENGTH 4.0 KSI (SUBSTRUCTURE)
 REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI
 STRUCTURAL STEEL - ASTM A709 GRADE 50 - YIELD STRENGTH 50 KSI

DECK PROTECTION METHOD

EPOXY COATED REINFORCING STEEL
 2 1/2" CONCRETE COVER
 CLASS QC2 CONCRETE

MONOLITHIC WEARING SURFACE

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1 INCH THICK.

CONSTRUCTION CONSTRAINTS

FILL THE VOID CREATED BY EXCAVATION FOR THE ABUTMENT FOOTING WITH TYPE B GRANULAR MATERIAL, 703.16.C. AFTER THE FOOTING AND THE BREASTWALL HAVE BEEN CONSTRUCTED, FILL THE VOID BEHIND EACH ABUTMENT UP TO THE BEAM SEAT ELEVATION AND FROM THE BEAM SEAT UP ON A 1:1 SLOPE TO THE SUBGRADE ELEVATION PRIOR TO CONSTRUCTING THE BACK WALL AND SETTING THE GIRDERS ON THE ABUTMENT.

FOUNDATION BEARING RESISTANCE

WEST CAP REAR ABUTMENT FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM SERVICE LOAD PRESSURE OF 8.08 KIPS PER SQUARE FOOT AND A MAXIMUM STRENGTH LOAD PRESSURE OF 11.31 KIPS PER SQUARE FOOT. THE FACTORED BEARING RESISTANCE IS 22.45 KIPS PER SQUARE FOOT.

WEST CAP PIER FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM SERVICE LOAD PRESSURE OF 5.99 KIPS PER SQUARE FOOT AND A MAXIMUM STRENGTH LOAD PRESSURE OF 8.29 KIPS PER SQUARE FOOT. THE FACTORED BEARING RESISTANCE IS 36.93 KIPS PER SQUARE FOOT.

EAST CAP REAR ABUTMENT FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM SERVICE LOAD PRESSURE OF 8.35 KIPS PER SQUARE FOOT AND A MAXIMUM STRENGTH LOAD PRESSURE OF 11.71 KIPS PER SQUARE FOOT. THE FACTORED BEARING RESISTANCE IS 17.06 KIPS PER SQUARE FOOT.

EAST CAP PIER FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM SERVICE LOAD PRESSURE OF 5.99 KIPS PER SQUARE FOOT AND A MAXIMUM STRENGTH LOAD PRESSURE OF 8.29 KIPS PER SQUARE FOOT. THE FACTORED BEARING RESISTANCE IS 21.09 KIPS PER SQUARE FOOT.

FORWARD ABUTMENT FOUNDATION, AS DESIGNED PRODUCE A MAXIMUM FACTORED LOAD OF 410 KIPS AT EACH DRILLED SHAFTHIS LOAD IS RESISTED BY TIP RESISTANCE ONLY. THE FACTORED RESISTANCE PROVIDED BY THE DRILLED SHAFT TIP IS 530 KIPS.

DECK PLACEMENT DESIGN ASSUMPTIONS

THE FOLLOWING ASSUMPTIONS OF CONSTRUCTION MEANS AND METHODS WERE MADE FOR THE ANALYSIS AND DESIGN OF THE SUPERSTRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE FALSEWORK SUPPORT SYSTEM WITHIN THESE PARAMETERS AND WILL ASSUME RESPONSIBILITY FOR SUPERSTRUCTURE ANALYSIS FOR DEVIATION FROM THESE DESIGN ASSUMPTIONS.
 AN EIGHT WHEEL FINISHING MACHINE WITH A MAXIMUM WHEEL LOAD OF 2.5 KIPS.
 A MINIMUM OUT-TO-OUT WHEEL SPACING AT EACH END OF THE MACHINE OF 103".
 A MAXIMUM SPACING OF OVERHANG FALSEWORK BRACKETS OF 48".
 A MAXIMUM DISTANCE FROM THE CENTERLINE OF THE FASCIA GIRDER TO THE FACE OF THE SAFETY HANDRAIL OF 65".

STRUCTURE GROUNDING

GROUND THE PROPOSED BRIDGE ACCORDING TO THE REQUIREMENTS OF ODOT STD. DWG. HL-50.21 - STRUCTURE GROUNDING. THE FOLLOWING BRIDGE COMPONENTS SHALL BE CONNECTED TO THE GROUNDING SYSTEM: ALL STRUCTURAL STEEL, UTILITY SUPPORTS, STEEL SCREEN WALL COMPONENTS, STEEL TRELLISES, STEEL FIN WALLS, METAL BENCHES, ALUMINUM PLANTERS, AND LIGHT POLES.

ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN

FINISH TOP OF EXPANSION DEVICE SLAB WITH A BUFF WASH FINISH PER THE STRUCTURE AESTHETIC PLANS.

ITEM 511 - CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT NOT INCLUDING FOOTING, AS PER PLAN

FINISH TOP OF BACKWALL IN LOCATIONS ADJACENT TO SIDEWALKS WITH A BUFF WASH FINISH PER THE STRUCTURE AESTHETIC PLANS.

AFTER CONDUITS ARE PLACED THROUGH THE UTILITY BLOCKOUTS IN THE ABUTMENT BACKWALLS, FILL THE VOIDS USING NON-SHRINK MORTAR CONFORMING TO CMS 705.22.

**ITEM 512 - SEALING OF CONCRETE SURFACES (NON-EPOXY)
 ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)
 ITEM 607 - FENCE, MISC.: WALL MOUNTED TYPE A (W/ VANDAL MESH)**

SEE STRUCTURE AESTHETIC PLANS FOR DETAILS.

ITEM 514 - FIELD PAINTING STRUCTURAL STEEL, FINISH COAT

ALL NEW STRUCTURAL STEEL SHALL BE PAINTED USING THE IZEU COATING SYSTEM. THE URETHANE TOP COAT SHALL BE TINTED TO MEET FEDERAL COLOR No. 17038 (BLACK).

ITEM 518 - PIPE HORIZONTAL CONDUCTOR, AS PER PLAN (6")

THIS ITEM CONSISTS OF FURNISHING AND INSTALLING 6" DIAMETER PIPE HORIZONTAL CONDUCTOR WITHIN THE BRIDGE SUPERSTRUCTURE AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH THE REQUIREMENTS OF CMS ITEM 518. THIS WORK INCLUDES THE CONDUCTOR PIPE, ELBOWS, CLEANOUTS, REDUCER FITTINGS, EXPANSION JOINT COUPLING, PIPE HANGERS AND ALL OTHER INCIDENTALS TO COMPLETE THE INSTALLATION TO THE SATISFACTION OF THE ENGINEER. PIPE HANGER ASSEMBLIES SHALL BE HOT-DIP GALVANIZED STEEL. ALL MATERIALS SHALL BE SUBMITTED FOR REVIEW IN ACCORDANCE WITH CMS 501.04.
 THE METHOD OF MEASUREMENT SHALL BE BY THE FOOT ALONG THE CENTERLINE OF MAIN CONDUCTOR PIPE. PAYMENT WILL BE MADE AT THE UNIT PRICE BID PER FOOT AND SHALL INCLUDE ALL LABOR, MATERIALS, TOOLS AND INCIDENTALS FOR A COMPLETE FUNCTIONING SYSTEM.

ITEM 524 - DRILLED SHAFTS, 60" DIAMETER, ABOVE BEDROCK WITH QC/QA, AS PER PLAN

THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS PER ITEM 524 EXCEPT THE FOLLOWING:
 THE COARSE AGGREGATE SIZE FOR ALL DRILLED SHAFTS SHALL BE A MAXIMUM OF NO. 8.
 THE CONSTRUCTION TOLERANCES FOR TANGENT SHAFT INSTALLATION UNDER SECTION 524.14 SHALL WITHIN 1/2" OF THE PLAN LOCATION IN THE HORIZONTAL PLANE AT THE PLAN ELEVATION FOR THE TOP OF THE SHAFT.

STEEL BEAMS SHALL BE ACCURATELY SET AT THE CENTER OF THE DRILLED SHAFT IMMEDIATELY BEFORE PLACING CONCRETE.

THE DRILLED SHAFT CAP AND P.E.J.F. JOINTS SHALL BE ACCURATELY PLACED ACCORDING TO THE DESIGN PLAN. IF THE LOCATIONS OF THE INSTALLED DRILLED SHAFTS VARY FROM THE DESIGN PLAN AND RESULT IN THE P.E.J.F. IN THE DRILLED SHAFT CAP FALLING OVER A DRILLED SHAFT INSTEAD OF BETWEEN SHAFTS, ALL VERTICAL SHAFT BARS INTERFERING WITH, OR CROSSING, THE CAP JOINT SHALL BE CUT FLUSH WITH THE TOP OF THE DRILLED SHAFT SO THAT BOTH SIDES OF THE CAP ARE NOT TIED TOGETHER BY SHAFT REINFORCING STEEL. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER PRIOR TO CUTTING ANY REINFORCING STEEL. THE DEPARTMENT WILL CONSIDER THIS WORK AS INCIDENTAL AND SHALL BE INCLUDED WITH ITEM 524 FOR PAYMENT.

ITEM 894 - THERMAL INTEGRITY PROFILER (T.I.P.) TEST

PERFORM INTEGRITY TESTING ON ALL OF THE DRILLED SHAFTS AT THE FORWARD ABUTMENT BY THERMAL INTEGRITY PROFILING (TIP). PERFORM TIP TESTING PER ASTM D7949, "STANDARD TEST METHODS FOR THERMAL INTEGRITY PROFILING OF CONCRETE DEEP FOUNDATIONS," METHOD B, AND PER SUPPLEMENTAL SPECIFICATION 894

ABBREVIATIONS:

- ABUT. ABUTMENT
- BRG. BEARING
- B.S. BOTH SIDES
- C.I.P. CAST-IN-PLACE
- CLR. CLEAR
- CONC. CONCRETE
- CONST. CONSTRUCTION
- DIA. DIAMETER
- DIM. DIMENSION
- EL. ELEVATION
- EXIST. EXISTING
- EXP. EXPANSION
- FIX. FIXED
- FRWD. FORWARD
- F.S. FAR SIDE OR FIELD SPLICE
- JT. JOINT
- N.P.C.P.P. NON-PERFORATED CORRUGATED PLASTIC PIPE
- N.S. NEAR SIDE
- P.C.P.P. PERFORATED CORRUGATED PLASTIC PIPE
- P.E.J.F. PREFORMED EXPANSION JOINT FILLER
- PT. POINT
- SPA. SPACED OR SPACES
- STD. DWG. STANDARD DRAWING
- TYP. TYPICAL
- W/ WITH
- W.P. WORKING POINT

NO.	DESCRIPTION	DATE	REV. BY
6	REVISED NOTE	11-6-23	RSN
8	REVISED NOTE	11-21-23	CWL

O:\2015\2015370_VRA\96095\STRUCTURES\FRA093_1747C_SHEETS CAPS\093_1174GR001.DGN
 11/21/2023 12:41:19 PM
 ODOTV81STD_USER

DESIGN AGENCY
GPD GROUP
 1800 Westwood Drive, Suite 100, Coon Rapids, MN 55433
 (763) 438-1234

GENERAL NOTES - 1
 BRIDGE NO. FRA-33-1747C - CAPS
 S. 3RD STREET (U.S. 33) OVER I-70/71

DRAWN
RPR

CHECKED
RHC

DESIGNED
DGN

REVISIONS
 T JW
 DATE
 4-21-23

STRUCTURE FILE NUMBER
 2505654

PID No. 96053

FRA-70-14.05

2 / 38

602
855

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO THE 8TH EDITION OF THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2017, AND THE ODOT BRIDGE DESIGN MANUAL, 2019.

STANDARD DRAWINGS

REFER TO THE FOLLOWING ODOT STANDARD BRIDGE DRAWINGS:

AS-1-15 REVISED: 7-17-15
 AS-2-15 REVISED: 1-18-19
 EXJ-4-87 REVISED: 1-19-18
 GSD-1-19 REVISED: 1-15-21

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATION:

800 DATED 1-20-23
 894 DATED 4-16-21

DESIGN DATA

OPERATIONAL IMPORTANCE: A LOAD MODIFIER OF 1.00 HAS BEEN ASSUMED FOR THE DESIGN OF THIS STRUCTURE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, ARTICLE 1.3.5 AND THE ODOT BRIDGE DESIGN MANUAL, 2020.

DESIGN LOADING

HL-93
 FUTURE WEARING SURFACE (FWS) OF 0.060 KIPS PER SQUARE FOOT
 SATURATED SOIL UNIT WEIGHT OF 0.130 KIPS PER CUBIC FOOT
 PRECAST AND C.I.P. CONCRETE UNIT WEIGHT OF 0.150 KIPS PER CUBIC FOOT
 SCREEN WALL UNIT WEIGHT OF 0.095 KIPS PER LINEAR FOOT

DESIGN STRESSES

CONCRETE CLASS QC1 - COMPRESSIVE STRENGTH 4.0 KSI (SUBSTRUCTURE)
 CONCRETE CLASS QC2 - COMPRESSIVE STRENGTH 4.5 KSI (SUPERSTRUCTURE)
 CONCRETE CLASS QC5 - COMPRESSIVE STRENGTH 4.5 KSI (DRILLED SHAFTS)
 REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI
 STRUCTURAL STEEL - ASTM A709 GRADE 50 - YIELD STRENGTH 50 KSI

DECK PROTECTION METHOD

EPOXY COATED REINFORCING STEEL
 2 1/2" CONCRETE COVER
 CLASS QC2 CONCRETE

MONOLITHIC WEARING SURFACE

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1 INCH THICK.

EXISTING STRUCTURE VERIFICATION:

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK, BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02, AND 513.04.

BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS THAT HAVE BEEN VERIFIED IN THE FIELD.

DECK PLACEMENT DESIGN ASSUMPTIONS

THE FOLLOWING ASSUMPTIONS OF CONSTRUCTION MEANS AND METHODS WERE MADE FOR THE ANALYSIS AND DESIGN OF THE SUPERSTRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE FALSEWORK SUPPORT SYSTEM WITHIN THESE PARAMETERS AND WILL ASSUME RESPONSIBILITY FOR SUPERSTRUCTURE ANALYSIS FOR DEVIATION FROM THESE DESIGN ASSUMPTIONS.

AN EIGHT WHEEL FINISHING MACHINE WITH A MAXIMUM WHEEL LOAD OF 2.81 KIPS.

A MINIMUM OUT-TO-OUT WHEEL SPACING AT EACH END OF THE MACHINE OF 103 IN.

A MAXIMUM SPACING OF OVERHANG FALSEWORK BRACKETS OF 48 IN.

A MAXIMUM DISTANCE FROM THE CENTERLINE OF THE FASCIA GIRDER TO THE FACE OF THE SAFETY HANDRAIL OF 65 IN.

FOUNDATION BEARING RESISTANCE

REAR ABUTMENT FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM SERVICE LOAD PRESSURE OF 5.90 KIPS PER SQUARE FOOT AND A MAXIMUM STRENGTH LOAD PRESSURE OF 8.46 KIPS PER SQUARE FOOT. THE FACTORED BEARING RESISTANCE IS 12.66 KIPS PER SQUARE FOOT.

PIER FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM SERVICE LOAD PRESSURE OF 1.75 KIPS PER SQUARE FOOT AND A MAXIMUM STRENGTH LOAD PRESSURE OF 2.60 KIPS PER SQUARE FOOT. THE FACTORED BEARING RESISTANCE IS 16.47 KIPS PER SQUARE FOOT.

6 FORWARD ABUTMENT FOUNDATION, AS DESIGNED PRODUCE A MAXIMUM FACTORED LOAD OF 214 KIPS AT EACH DRILLED SHAFT. THE FACTORED RESISTANCE PROVIDED BY THE DRILLED SHAFT TIP IS 530 KIPS.

6 **ITEM 503 - COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN**

THE NEED TO PROVIDE TEMPORARY SHORING BEHIND THE DRILLED SHAFTS TO CONSTRUCT THE CONCRETE CAP SHALL BE DETERMINED BY THE CONTRACTOR BASED ON THEIR MEANS AND METHODS.

DESIGN, LABOR, MATERIAL, EQUIPMENT, AND INCIDENTALS NECESSARY TO INSTALL THE TEMPORARY SHORING SHALL BE COMPENSATED UNDER ITEM 503 -COFFERDAM AND EXCAVATION BRACING, AS PER PLAN.

ITEM 511 - CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT NOT INCLUDING FOOTING, AS PER PLAN

FINISH TOP OF BACKWALL IN LOCATIONS ADJACENT TO SIDEWALKS WITH A BUFF WASH FINISH PER THE STRUCTURE AESTHETIC PLANS.

AFTER CONDUITS ARE PLACED THROUGH THE UTILITY BLOCKOUTS IN THE ABUTMENT BACKWALLS, FILL THE VOIDS USING NON-SHRINK MORTAR CONFORMING TO CMS 705.22

ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN
ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA, SIDEWALK, AS PER PLAN
ITEM 512 - SEALING OF CONCRETE SURFACES (NON-EPOXY)
ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)
ITEM 607 - FENCE, MISC.: WALL MOUNTED TYPE A (W/ VANDAL MESH)
ITEM 607 - FENCE, MISC.: WALL MOUNTED TYPE A (W/O VANDAL MESH)

SEE STRUCTURE AESTHETIC PLANS FOR DETAILS.

ITEM 514 - FIELD PAINTING STRUCTURAL STEEL, FINISH COAT

ALL NEW STRUCTURAL STEEL SHALL BE PAINTED USING THE IZEU COATING SYSTEM. THE URETHANE TOP COAT SHALL BE TINTED TO MEET FEDERAL COLOR No. 17038 (BLACK)

ITEM 518 - PIPE HORIZONTAL CONDUCTOR, AS PER PLAN (8')

THIS ITEM CONSISTS OF FURNISHING AND INSTALLING 8" DIAMETER PIPE HORIZONTAL CONDUCTOR WITHIN THE BRIDGE SUPERSTRUCTURE AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH THE REQUIREMENTS OF CMS ITEM 518. THIS WORK INCLUDES THE CONDUCTOR PIPE, ELBOWS, CLEANOUTS, REDUCER FITTINGS, EXPANSION JOINT COUPLING, PIPE HANGERS AND ALL OTHER INCIDENTALS TO COMPLETE THE INSTALLATION TO THE SATISFACTION OF THE ENGINEER. PIPE HANGER ASSEMBLIES SHALL BE HOT-DIP GALVANIZED STEEL. ALL MATERIALS SHALL BE SUBMITTED FOR REVIEW IN ACCORDANCE WITH CMS 501.04. THE METHOD OF MEASUREMENT SHALL BE BY THE FOOT ALONG THE CENTERLINE OF MAIN CONDUCTOR PIPE. PAYMENT WILL BE MADE AT THE UNIT PRICE BID PER FOOT AND SHALL INCLUDE ALL LABOR, MATERIALS, TOOLS AND INCIDENTALS FOR A COMPLETE FUNCTIONING SYSTEM.

6 **ITEM 524 - DRILLED SHAFTS, 60" DIAMETER, ABOVE BEDROCK WITH QC/QA, AS PER PLAN**

THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS PER ITEM 524 EXCEPT THE FOLLOWING:
 THE COARSE AGGREGATE SIZE FOR ALL DRILLED SHAFTS SHALL BE A MAXIMUM OF NO. 8.

ALL DRILLED SHAFTS SHALL BE CONSTRUCTED FULL DEPTH FROM THE REQUIRED BOTTOM ELEVATION TO THE PROPOSED TOP PLAN ELEVATION USING THE TEMPORARY CASING CONSTRUCTION METHOD OF HOLE EXCAVATION AS DETAILED IN C&MS 524.04.C. NO OTHER METHODS OF HOLE EXCAVATION SHALL BE PERMITTED.

THE CONSTRUCTION TOLERANCES FOR TANGENT SHAFT INSTALLATION UNDER SECTION 524.14 SHALL WITHIN 1/2" OF THE PLAN LOCATION IN THE HORIZONTAL PLANE AT THE PLAN ELEVATION FOR THE TOP OF THE SHAFT.

STEEL BEAMS SHALL BE ACCURATELY SET AT THE CENTER OF THE DRILLED SHAFT IMMEDIATELY BEFORE PLACING CONCRETE.

8 THE DRILLED SHAFT CAP AND P.E.J.E. MONITS SHALL BE ACCURATELY PLACED ACCORDING TO THE DESIGN PLAN. IF THE LOCATIONS OF THE INSTALLED DRILLED SHAFTS VARY FROM THE DESIGN PLAN AND RESULT IN THE P.E.J.F. IN THE DRILLED SHAFT CAP FALLING OVER A DRILLED SHAFT INSTEAD OF BETWEEN SHAFTS, ALL VERTICAL SHAFT BARS INTERFERING WITH, OR CROSSING, THE CAP JOINT SHALL BE CUT FLUSH WITH THE TOP OF THE DRILLED SHAFT SO THAT BOTH SIDES OF THE CAP ARE NOT TIED TOGETHER BY SHAFT REINFORCING STEEL. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER PRIOR TO CUTTING ANY REINFORCING STEEL. THE DEPARTMENT WILL CONSIDER THIS WORK AS INCIDENTAL AND SHALL BE INCLUDED WITH ITEM 524 FOR PAYMENT.

ITEM 625 - LIGHT POLE ANCHOR BOLTS, MISC.: LIGHT POLE ANCHOR BOLT ASSEMBLIES EMBEDDED IN CONCRETE BRIDGE DECK

FURNISH ONE ANCHOR BOLT ASSEMBLY FOR EACH LIGHT POLE MOUNTED ON THE BRIDGE. EACH ASSEMBLY INCLUDES A STEEL PLATE AND ALL STEEL ANCHOR RODS, LEVELING RODS, NUTS, AND WASHERS AS SHOWN ON THE DRAWINGS OR AS REQUIRED FOR INSTALLATION. FABRICATE THE ASSEMBLY IN ACCORDANCE WITH CMS 513 AND 730. GALVANIZE THE ASSEMBLY AFTER FABRICATION IN ACCORDANCE WITH CMS 711.02. ALL MATERIALS, LABOR, AND INCIDENTALS NECESSARY TO INSTALL EACH POLE SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 625 - LIGHT POLE ANCHOR BOLTS, MISC.: LIGHT POLE ANCHOR BOLT ASSEMBLIES EMBEDDED IN CONCRETE BRIDGE DECK.

ITEM 894 - THERMAL INTEGRITY PROFILER (T.I.P.)TEST

PERFORM INTEGRITY TESTING ON ALL OF THE DRILLED SHAFTS AT THE FORWARD ABUTMENT BY THERMAL INTEGRITY PROFILING (TIP). PERFORM TIP TESTING PER ASTM D7949, "STANDARD TEST METHODS FOR THERMAL INTEGRITY PROFILING OF CONCRETE DEEP FOUNDATIONS," METHOD B, AND PER SUPPLEMENTAL SPECIFICATION 894

STRUCTURE GROUNDING

GROUND THE PROPOSED BRIDGE ACCORDING TO THE REQUIREMENTS OF ODOT STD. DWG. HL-50.21 - STRUCTURE GROUNDING. THE FOLLOWING BRIDGE COMPONENTS SHALL BE CONNECTED TO THE GROUNDING SYSTEM: ALL STRUCTURAL STEEL, UTILITY SUPPORTS, STEEL SCREEN WALL COMPONENTS, AND LIGHT POLES.

ASBESTOS ABATEMENT AND NOTIFICATION

ASBESTOS SURVEYS OF THE FRA-23-1075C BRIDGE SCHEDULED FOR REPLACEMENT WAS CONDUCTED BY CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALISTS. COPIES OF THE ASBESTOS INSPECTION REPORTS ARE INCLUDED IN THE PLAN SET FOR THIS PROJECT.

THE ASBESTOS SURVEYS DETERMINED THAT 70 SQUARE FEET OF ASBESTOS CONTAINING MATERIAL IS PRESENT ON THE BRIDGE DECK IN EXCESS OF THE ALLOWABLE REGULATORY LIMITS AND REQUIRES ABATEMENT.

ADDITIONALLY, 6,804 SQUARE FEET OF ASBESTOS CONTAINING TRANSITE UTILITY PIPE AND 880 SQUARE FEET OF ASBESTOS CONTAINING PIPE RACK WAS IDENTIFIED UNDER THE BRIDGE DECK. THIS PIPE WILL BE SUPPORTED AND REMAIN IN PLACE DURING THE BRIDGE DEMOLITION AND RECONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT THE ASBESTOS CONTAINING MATERIAL IS PROTECTED AND NOT DISTURBED THROUGHOUT THE PROJECT BY PROVIDING ADEQUATE SHIELDING TO PREVENT THE DISTURBANCE OF THE ASBESTOS MATERIAL. FOLLOWING THE RELOCATION OF THE UTILITIES IN THIS PIPE, THE PIPE AND PIPE RACK WILL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR IN ACCORDANCE WITH STATE AND FEDERAL REGULATIONS.

THE CONTRACTOR SHALL ENSURE THAT ASBESTOS CONTAINING MATERIALS DO NOT BECOME FRIABLE (BROKEN UP OR DISPERSED) AND THAT NO VISIBLE FIBER EMISSIONS WILL OCCUR. ADDITIONALLY, THE REMOVAL AND DISPOSAL OF THE ASBESTOS CONTAINING MATERIAL SHALL COMPLY WITH CHAPTER 3745-20 OF THE OHIO ADMINISTRATIVE CODE, THE NATIONAL EMISSION STANDARD FOR HAZARDOUS AIR POLLUTANTS (NESHAP) AND APPLICABLE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS (29 CFR 1926.1101).

THE CONTRACTOR SHALL SUBMIT A COMPLETED ELECTRONIC NOTIFICATION OF DEMOLITION AND RENOVATION FORM (NDRF), APPLICABLE FEES, AND THE ASBESTOS INSPECTION REPORT TO THE OEPA AT LEAST 10 DAYS PRIOR TO ANY DEMOLITION ACTIVITY, RENOVATION ACTIVITY, OR BOTH. SUBMIT THE NDRF AND PAYMENT ALONG WITH THE ASBESTOS INSPECTION REPORT USING THE OEPA BUSINESS CENTER. SUBMIT ONE ELECTRONIC PDF COPY TO THE ENGINEER. THE ENGINEER WILL PROVIDE ONE COPY TO THE DISTRICT ENVIRONMENTAL COORDINATOR AT MARCI.LININGER@DOT.OHIO.GOV.

BASIS OF PAYMENT - THE CONTRACTOR SHALL FURNISH ALL THE FEES, LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THE OEPA NOTIFICATION OF DEMOLITION AND RENOVATION FORM AND PROPERLY REMOVE, ENCAPSULATE, HANDLE, TRANSPORT AND DISPOSE OF ASBESTOS CONTAINING MATERIALS IN A LANDFILL LICENSED BY THE LOCAL HEALTH DEPARTMENT AND PERMITTED BY THE OHIO ENVIRONMENTAL PROTECTION AGENCY - DIVISION OF AIR POLLUTION CONTROL TO ACCEPT ASBESTOS CONTAINING MATERIAL. PAYMENT FOR THIS WORK SHALL BE MADE AT THE CONTRACT PRICE BID OF LUMP SUM.

PAYMENT FOR THIS WORK SHALL BE INCLUDED IN ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.

NO.	DESCRIPTION	DATE	REV. BY
6	REVISED NOTES	11-6-23	RSN
8	REVISED NOTES	11-21-23	CWL

01-2015-2015370 FRA 96055 STRUCTURES FRA023-1075C SHEETS 023-1075C0001.DGN
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 ODOT\8151\DL\USER

DESIGN AGENCY
GPD GROUP
 1800 Waterford Drive, Columbus, OH 43240
 (614) 231-0001
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GENERAL NOTES - 1
 BRIDGE NO. FRA-23-1075C
 S. 4TH STREET (U.S. 23) OVER I-70/71

FRA-70-14.05
PID No. 96053

2 / 54
 640
 855

DESIGNED DGN RHC
CHECKED RHC
DRAWN RPR
REVIEWED TJW
DATE 4-21-23
STRUCTURE FILE NUMBER 2502620

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ITEM	EXT.	TOTAL	PARTICIPATION			UNITS	DESCRIPTION	ABUTMENT	PIER	SUPER-STRUCTURE	GENERAL	REFERENCE SHEET NO.
			01/IMS/04	02/IMS/11	09/IMS/17/COI							
202	11002	LS		LS			STRUCTURE REMOVED, OVER 20 FOOT SPAN					2
202	22900	219		219		SY	APPROACH SLAB REMOVED				219	
202	23500	906		906		SY	WEARING COURSE REMOVED				906	
503	11101	LS		LS			COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN					2
503	21100	3,173		3,173		CY	UNCLASSIFIED EXCAVATION	2,438	735			
509	10000	357,555		357,555		LB	EPOXY COATED REINFORCING STEEL	127,946	74,285	155,324		
511	34446	485		485		CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK			485		
511	34451	139		139		CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN			139		2
511	41012	183		183		CY	CLASS QC1 CONCRETE WITH QC/QA, PIER ABOVE FOOTINGS		183			
511	44113	1,186		1,186		CY	CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT NOT INCLUDING FOOTING, AS PER PLAN	1,186				2
511	46512	604		604		CY	CLASS QC1 CONCRETE WITH QC/QA, FOOTING	443	161			
511	51513	98		98		CY	CLASS QC2 CONCRETE WITH QC/QA, SIDEWALK, AS PER PLAN			98		2
512	10050	1,236		1,236		SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)	165		1,071		2
512	10100	1,393		1,393		SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	1,171	222			2
512	33000	193		193		SY	TYPE 2 WATERPROOFING	193				
513	10200	5,360		5,360		LB	STRUCTURAL STEEL MEMBERS, LEVEL UF (PIPE HORIZONTAL CONDUCTOR)			5,360		
513	10200	4,840	4,840			LB	STRUCTURAL STEEL MEMBERS, LEVEL UF (COC, COC DOT, AND ODOT DUCT BANK SUPPORT)			4,840		
513	10200	4,740	4,740			LB	STRUCTURAL STEEL MEMBERS, LEVEL UF (COC: DOT - TELECOM DUCT BANK SUPPORT)			4,740		
513	10200	12,510			12,510	LB	STRUCTURAL STEEL MEMBERS, LEVEL UF (AEP DUCT BANK SUPPORT)			12,510		
513	10200	12,510			12,510	LB	STRUCTURAL STEEL MEMBERS, LEVEL UF (AT&T DUCT BANK SUPPORT)			12,510		
513	10280	553,000		553,000		LB	STRUCTURAL STEEL MEMBERS, LEVEL 4			553,000		
513	20000	6,507		6,507		EACH	WELDED STUD SHEAR CONNECTORS			6,507		
514	00060	24,600		24,600		SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT			24,600		
514	00066	24,600		24,600		SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT			24,600		2
514	10000	25		25		EACH	FINAL INSPECTION REPAIR			25		
516	10010	155		155		FT	ARMORLESS PREFORMED JOINT SEAL				155	
516	11210	177		177		FT	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL (3")			177		
516	13600	584		584		SF	1" PREFORMED EXPANSION JOINT FILLER	584				
516	44101	18		18		EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) 9 1/2" x 1'-4" x 2.67" PAD WITH 10 1/2" x 1'-10" BEVELED PLATE, AS PER PLAN			18		28
516	44201	9		9		EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) 1'-5" x 2'-2" x 3.21" PAD WITH 1'-6" x 2'-11" BEVELED PLATE, AS PER PLAN			9		28
518	12301	2		2		EACH	SCUPPERS, AS PER PLAN			2		37
518	20000	655		655		SY	PREFABRICATED GEOCOMPOSITE DRAIN	655				
518	21200	104		104		CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	104				
518	40000	650		650		FT	6" PERFORATED CORRUGATED PLASTIC PIPE	650				
518	40012	40		40		FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE	40				
518	60031	90		90		FT	PIPE HORIZONTAL CONDUCTOR, AS PER PLAN (8")			90		2 & 37
524	95472	2,602		2,602		FT	DRILLED SHAFTS, 60" DIAMETER, ABOVE BEDROCK WITH QC/QA, AS PER PLAN	2,602				2
526	25010	153		153		SY	REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=15")				153	
526	30011	254		254		SY	REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=17"), AS PER PLAN				254	49
526	90031	160		160		FT	TYPE C INSTALLATION, AS PER PLAN				160	49
625	10620	6		6		EACH	LIGHT POLE ANCHOR BOLTS, MISC.: LIGHT POLE ANCHOR BOLT ASSEMBLIES EMBEDDED IN CONCRETE BRIDGE DECK			6		2
SPECIAL	53000200	LS	LS			LS	STRUCTURES: CITY OF COLUMBUS DUCT BANK COMPLETE					3
SPECIAL	53000200	LS	LS			LS	STRUCTURES: CITY OF COLUMBUS (DEPARTMENT OF TECH) DUCT BANK COMPLETE					3
SPECIAL	53000200	LS		LS		LS	STRUCTURES: AEP DUCT BANK COMPLETE					3
SPECIAL	53000200	LS		LS		LS	STRUCTURES: AT&T DUCT BANK COMPLETE					3
SPECIAL	53000200	LS	LS			LS	STRUCTURES: ODOT DUCT BANK COMPLETE					3
SPECIAL	53000200	LS		LS		LS	STRUCTURES: TEMPORARY UTILITY SUPPORTS					3
SPECIAL	53000600	3,639		3,639		SF	STRUCTURES: PRECAST FACADE PANELS	3,639				3
607	98000	112		112		FT	FENCE, MISC.: WALL MOUNTED TYPE A (W/ VANDAL MESH)	112				2
607	98000	135		135		FT	FENCE, MISC.: WALL MOUNTED TYPE A (W/O VANDAL MESH)	135				2
894	10000	43		43		EACH	THERMAL INTEGRITY PROFILING (TIP) TEST	43				

NO.	3	DESCRIPTION	QUANTITIES REVISIED	REV. BY	DJC	DATE	10-23-23
NO.	8	DESCRIPTION	QUANTITIES REVISIED	REV. BY	DJC	DATE	11-21-23
NO.	6	DESCRIPTION	REVISIED ITEM DESCRIPTION	REV. BY	RSN	DATE	11-1-23

CALCULATED BY: RHC DATE: 7-5-22
 CHECKED BY: DJC DATE: 7-7-22

DESIGN AGENCY
GPD GROUP
 1000 Wilderness Drive, Suite 200, Columbus, GA 31906
 (706) 425-1000

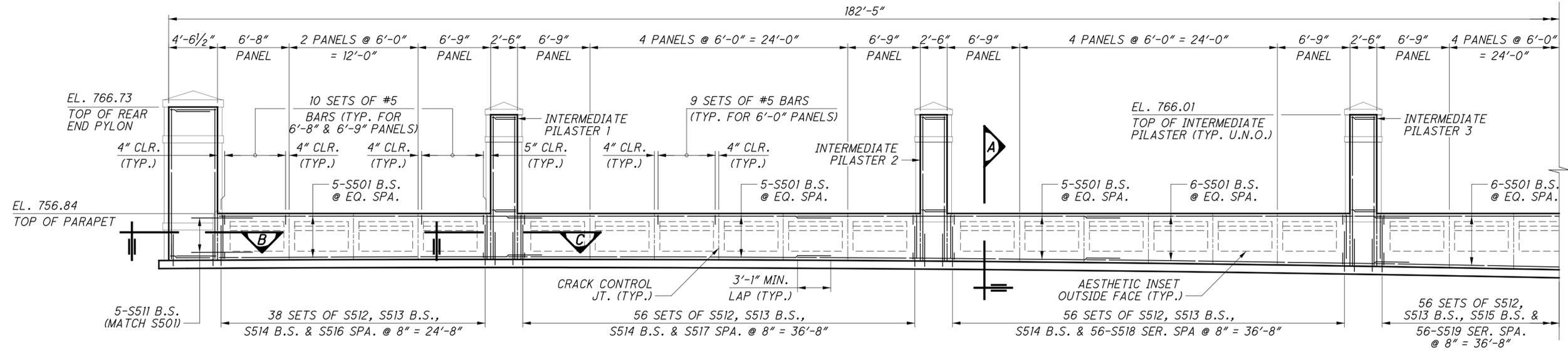
REVIEWED DATE: 4-21-23
 DGN FILE NUMBER: 2502620

DESIGNED DATE: 11-1-23
 MLS CHECKED: RHC

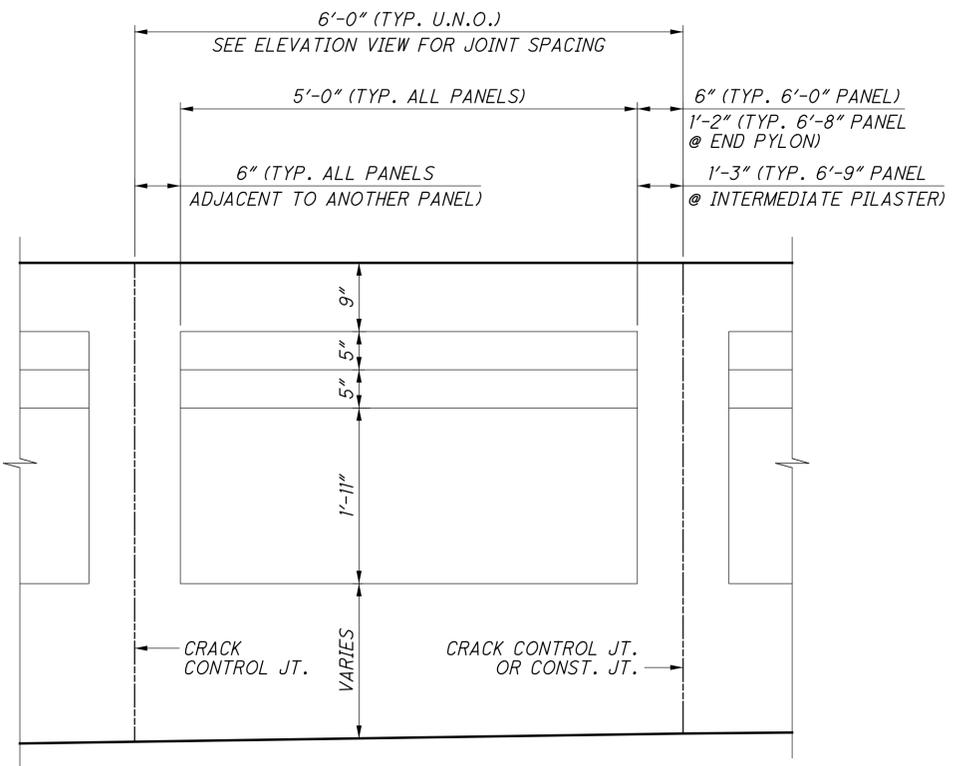
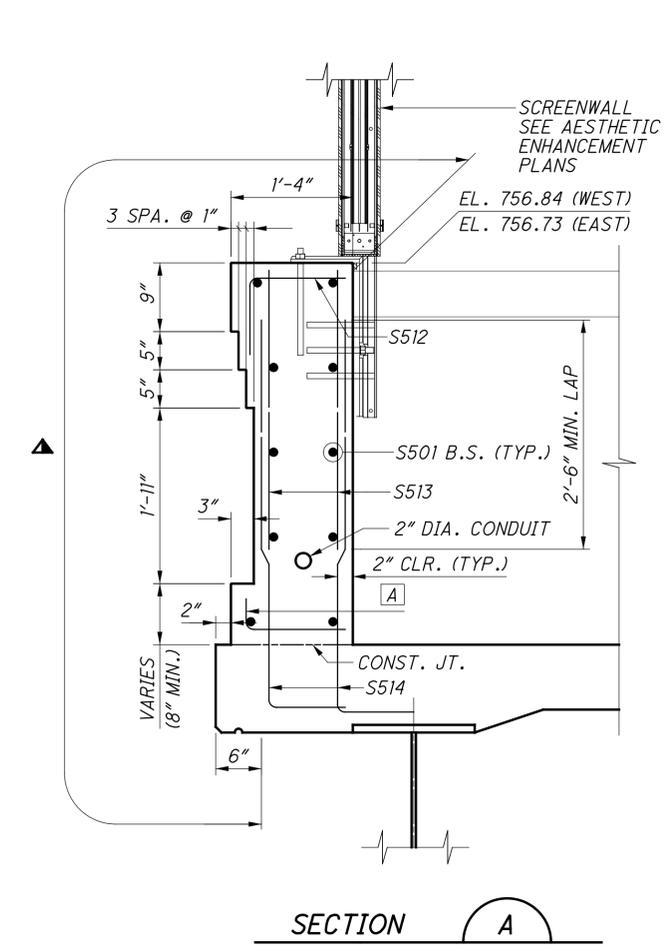
ESTIMATED QUANTITIES
 BRIDGE NO. FRA-23-1075C
 S. 4TH STREET (U.S. 23) OVER I-70/71

FRA - 70 - 14.05
PID No. 96053

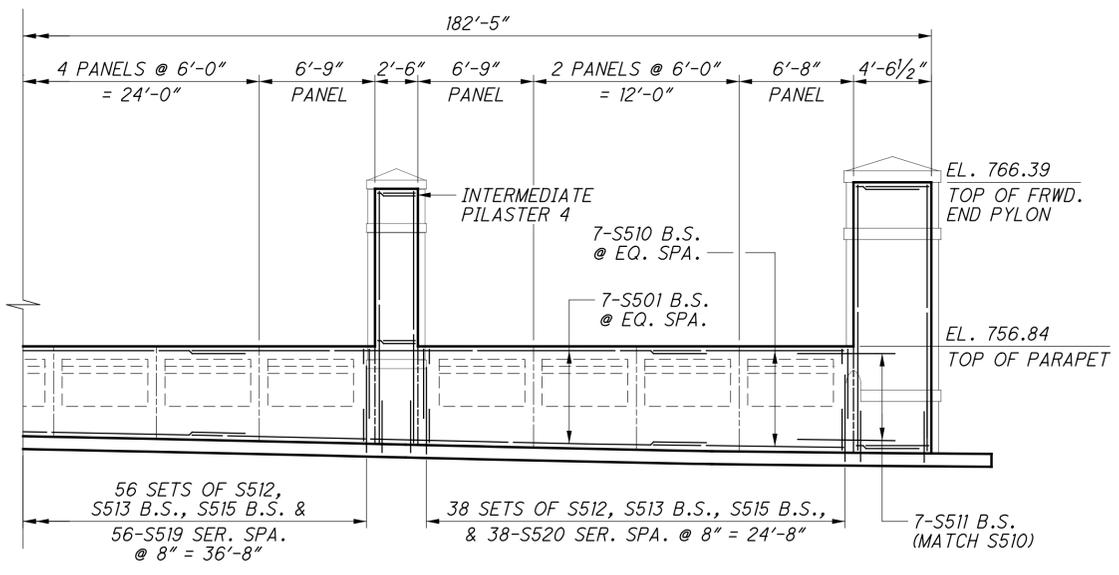
4 / 54
 642 / 855



WEST PARAPET ELEVATION
 VIEW FROM @ 4TH STREET. SIDEWALK NOT SHOWN FOR CLARITY.
 REINFORCING BAR MARKS FOR END PYLONS AND INTERMEDIATE PILASTERS NOT SHOWN FOR CLARITY.



AESTHETIC INSET ELEVATION - OUTSIDE FACE



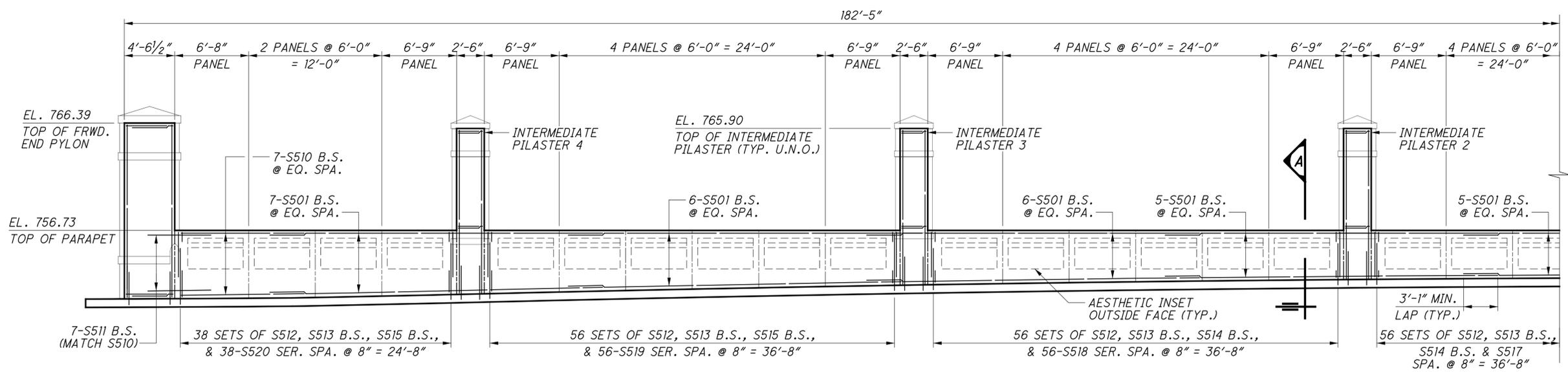
WEST PARAPET ELEVATION
 VIEW FROM @ 4TH STREET. SIDEWALK NOT SHOWN FOR CLARITY.
 REINFORCING BAR MARKS FOR END PYLONS AND INTERMEDIATE PILASTERS NOT SHOWN FOR CLARITY.

- NOTES:**
- FOR END PYLON AND INTERMEDIATE PILASTER DETAILS, SEE SHT. NO. 45/54 AND THE AESTHETIC ENHANCEMENT PLANS.
 - FOR SECTIONS B AND C, SEE SHT NO. 44/54.
 - SEE AESTHETIC ENHANCEMENT PLANS FOR DETAILS OF SURFACE FINISH AND PRECAST PANELS.
 - PAYMENT FOR THE SCREEN WALL SHALL BE INCLUDED WITH ITEM 607 FOR THE STRUCTURE. REFER TO THE AESTHETIC ENHANCEMENT PLANS FOR NOTES AND DETAILS.

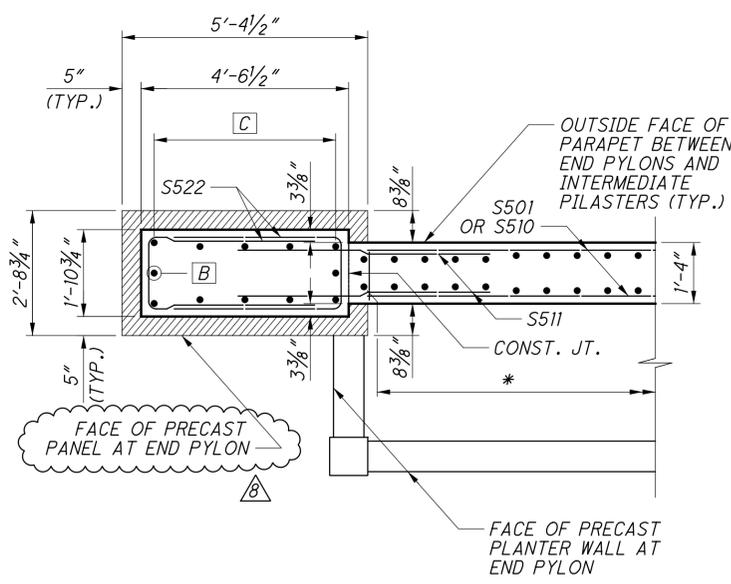
- LEGEND:**
- ▲ LIMITS OF ITEM 512 - SEALING OF CONCRETE SURFACES (NON-EPOXY)
 - S516, S517, S518, S519 OR S520

NO.	DESCRIPTION	DATE	REV. BY
8	REVISED NOTES	11-22-23	CWL

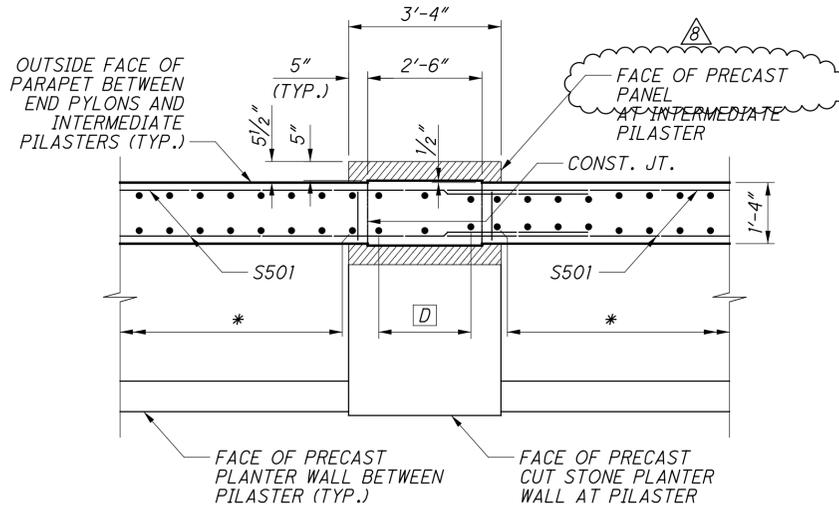
G:\2015\2015370\FRA\96053\STRUCTURES\FRA023_1075C\SHETS\023_1075CSD012.DGN
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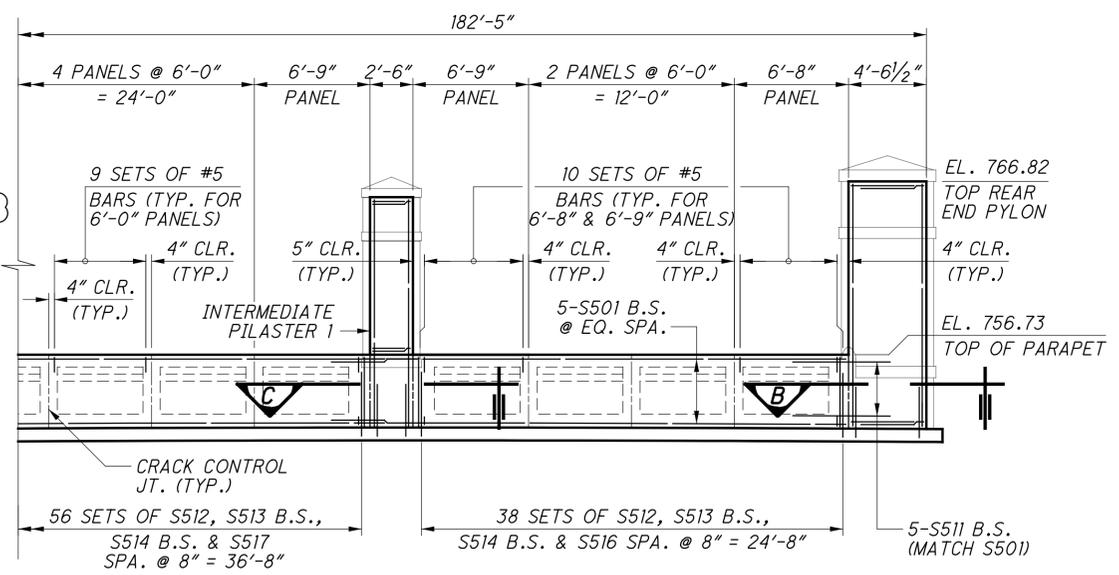
EAST PARAPET ELEVATION
 VIEW FROM S. 4TH STREET. SIDEWALK NOT SHOWN FOR CLARITY.
 REINFORCING BAR MARKS FOR END PYLONS AND INTERMEDIATE PILASTERS NOT SHOWN FOR CLARITY.



SECTION B
 TYPICAL PRECAST PANEL AT PARAPET END PYLON



SECTION C
 TYPICAL PRECAST PANEL AT PARAPET INTERMEDIATE PILASTER



EAST PARAPET ELEVATION
 VIEW FROM S. 4TH STREET. SIDEWALK NOT SHOWN FOR CLARITY.
 REINFORCING BAR MARKS FOR END PYLONS AND INTERMEDIATE PILASTERS NOT SHOWN FOR CLARITY.

LEGEND:

- ▲ LIMITS OF ITEM 512 - SEALING OF CONCRETE SURFACES (NON-EPOXY)
- ▨ LIMITS OF 4" THICK PRECAST PANEL WITH 1" GAP BETWEEN PANEL AND CONCRETE COLUMN.
- * FOR REINFORCING TYPE & SPACING, SEE PARAPET ELEVATIONS.
- ⓑ 1-S528 B.S. (REAR/WEST), 1-S529 B.S. (REAR/EAST), 1-S530 B.S. (FRWD./WEST), 1-S531 B.S. (FRWD./EAST)
- ⓒ 5-S528 B.S. (REAR/WEST), 5-S529 B.S. (REAR/EAST), 5-S530 B.S. (FRWD./WEST), 5-S531 B.S. (FRWD./EAST)
- ⓓ 3-S524 B.S. (PILASTER 1), 3-S525 B.S. (PILASTER 2), 3-S526 B.S. (PILASTER 3), 3-S527 B.S. (PILASTER 4)

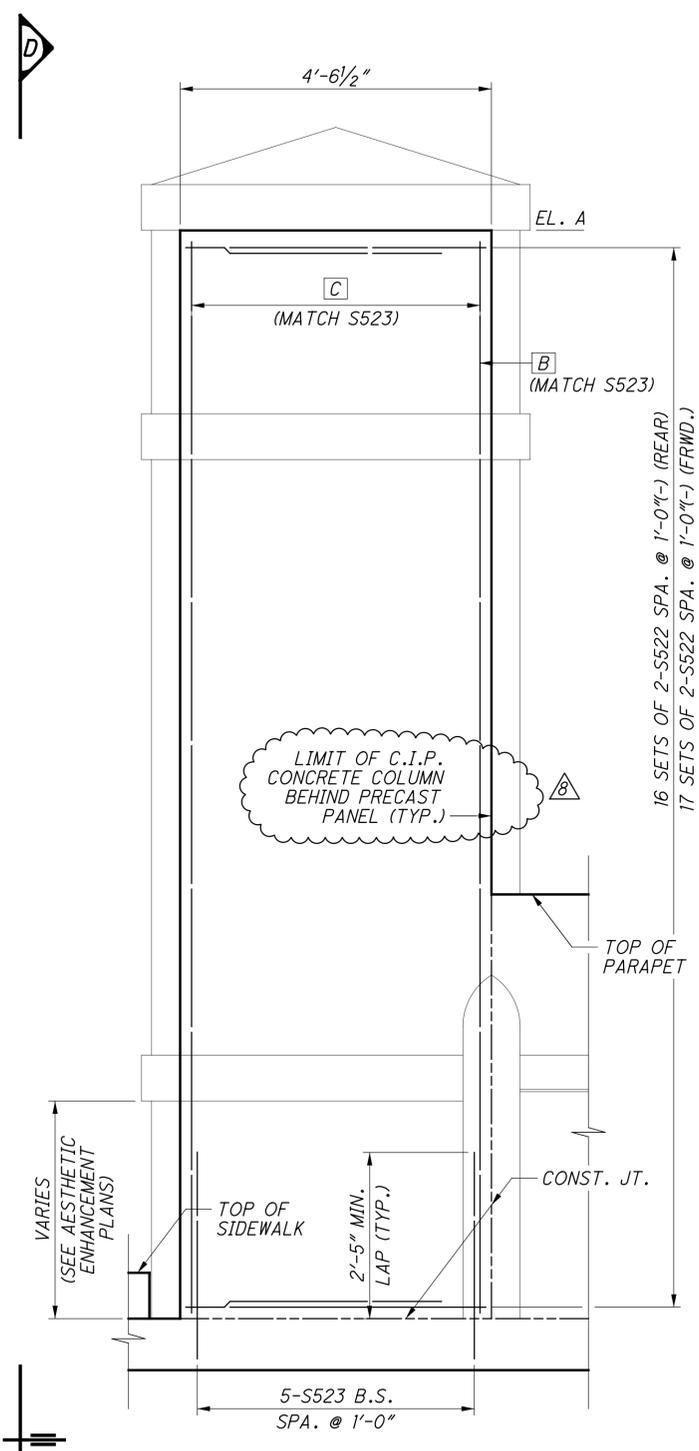
NOTES:

1. FOR SECTION A AND THE AESTHETIC INSET DETAIL, SEE SHT. NO. 43/54.
2. FOR END PYLON AND INTERMEDIATE PARAPET DETAILS, SEE SHT. NO. 45/54 AND THE AESTHETIC ENHANCEMENT PLANS.
3. SEE AESTHETIC ENHANCEMENT PLANS FOR DETAILS OF SURFACE FINISH AND PRECAST PANELS.
4. PAYMENT FOR THE SCREEN WALL SHALL BE INCLUDED WITH ITEM 607 FOR THE STRUCTURE. REFER TO THE AESTHETIC ENHANCEMENT PLANS FOR NOTES AND DETAILS.

NO.	DESCRIPTION	DATE	REV. BY
8	REVISED NOTES	11-22-23	CWL

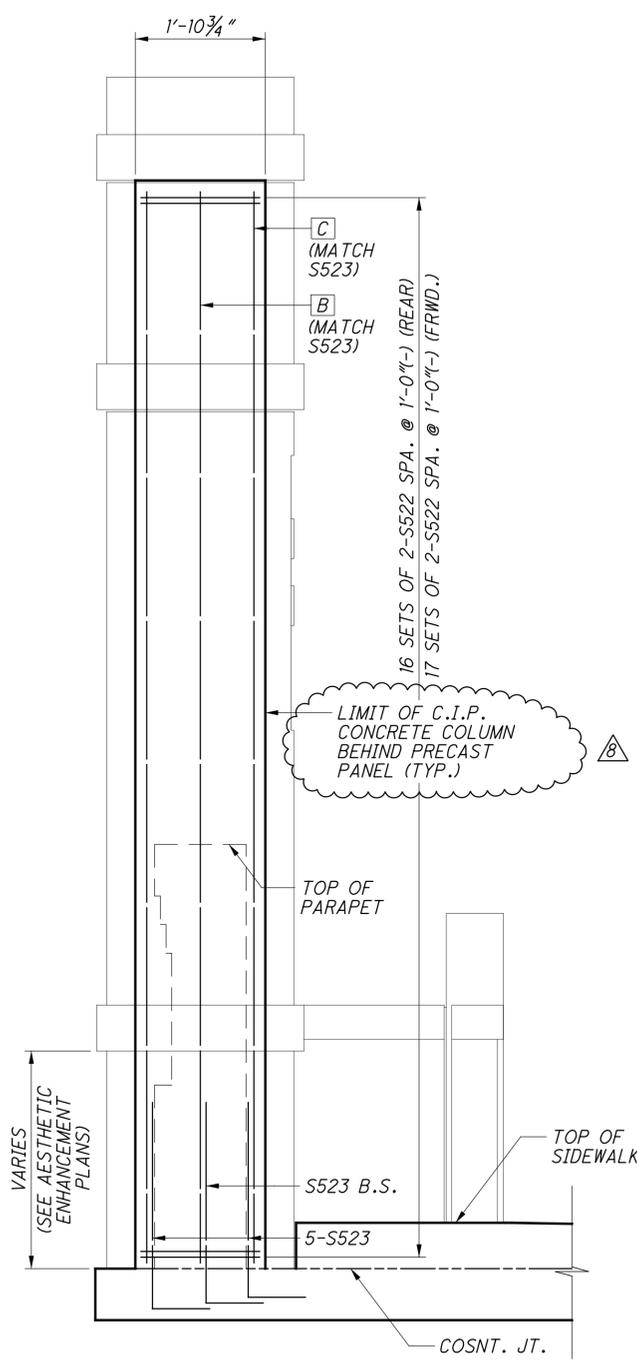
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NO.	DESCRIPTION	DATE	REV. BY
8	REVISED NOTES	11-22-23	CWL



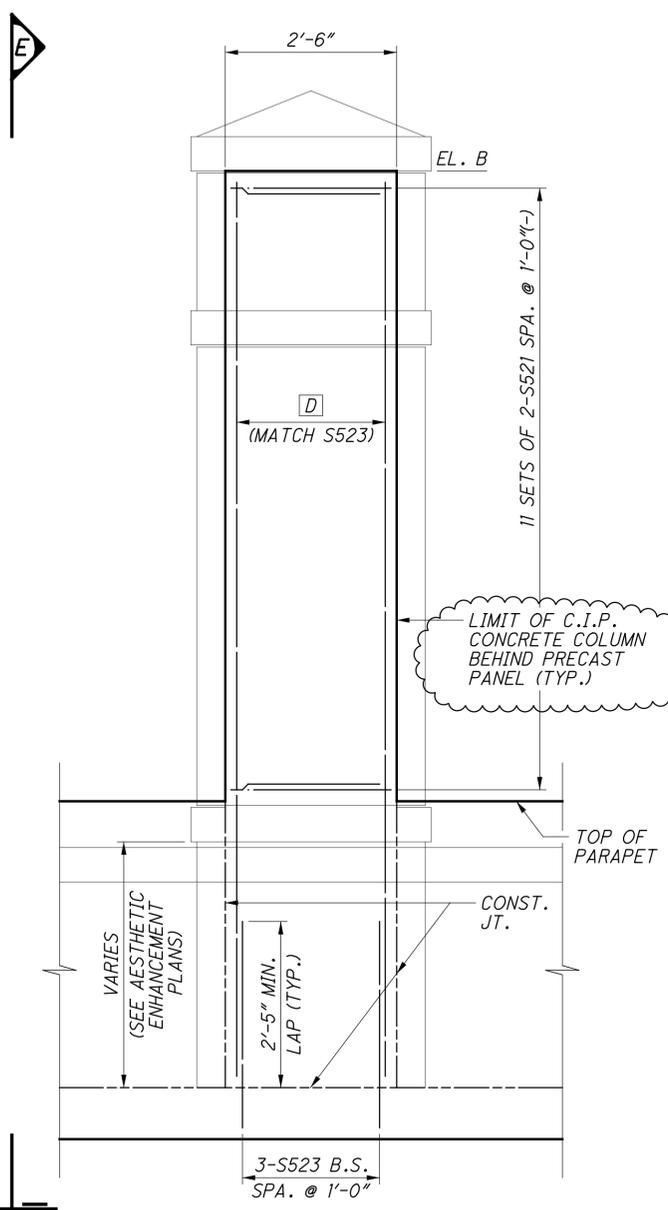
END PYLON ELEVATION

ADDITIONAL REINFORCING NOT SHOWN FOR CLARITY. FOR MORE REINFORCING DETAILS, SEE EAST & WEST PARAPET ELEVATIONS



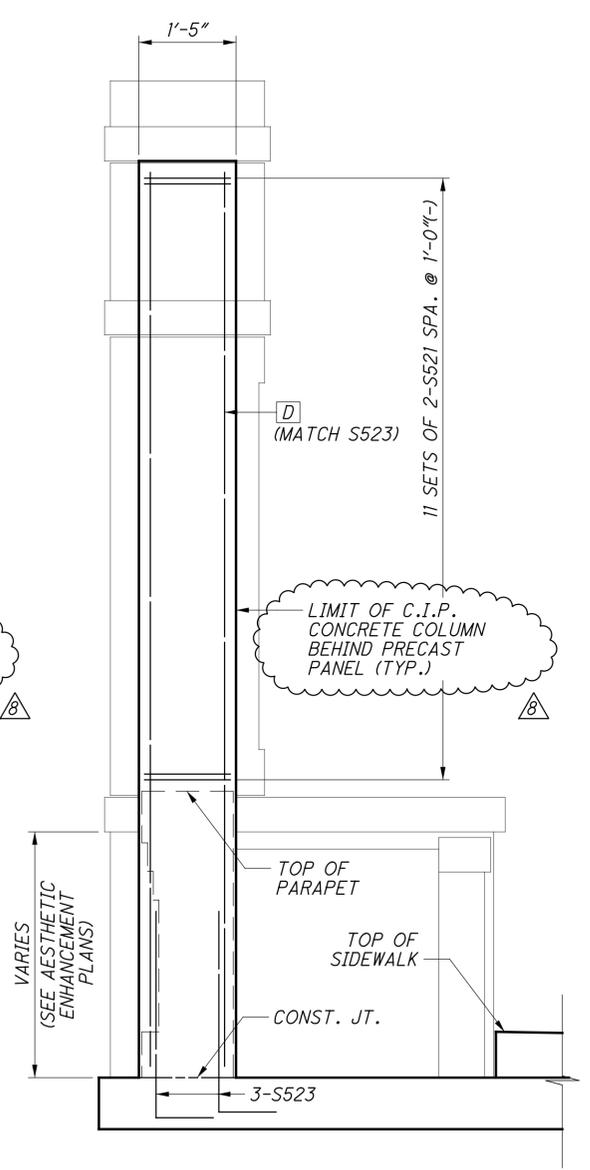
VIEW D

ADDITIONAL REINFORCING NOT SHOWN FOR CLARITY. FOR MORE REINFORCING DETAILS, SEE EAST & WEST PARAPET ELEVATIONS



INTERMEDIATE PILASTER ELEVATION

ADDITIONAL REINFORCING NOT SHOWN FOR CLARITY. FOR MORE REINFORCING DETAILS, SEE EAST & WEST PARAPET ELEVATIONS



VIEW E

ADDITIONAL REINFORCING NOT SHOWN FOR CLARITY. FOR MORE REINFORCING DETAILS, SEE EAST & WEST PARAPET ELEVATIONS

TOP OF C.I.P. CONCRETE COLUMN ELEVATIONS						
	END PYLON (EL. "A")		INTERMEDIATE PILASTER (EL. "B")			
	REAR	FRWD.	1	2	3	4
WEST	766.73	766.39	766.01	766.01	766.01	766.01
EAST	766.82	766.39	765.90	765.90	765.90	765.90

LEGEND:

- ▲ LIMITS OF ITEM 512 - SEALING OF CONCRETE SURFACES (NON-EPOXY)
- Ⓚ 1-S528 B.S. (REAR./WEST), 1-S529 B.S. (REAR./EAST), 1-S530 B.S. (FRWD./WEST), 1-S531 B.S. (FRWD./EAST)
- Ⓚ 5-S528 B.S. (REAR./WEST), 5-S529 B.S. (REAR./EAST), 5-S530 B.S. (FRWD./WEST), 5-S531 B.S. (FRWD./EAST)
- Ⓚ 3-S524 B.S. (PILASTER 1), 3-S525 B.S. (PILASTER 2), 3-S526 B.S. (PILASTER 3), 3-S527 B.S. (PILASTER 4)

NOTES:

1. FOR PARAPET DETAILS, SEE SHT. NO. 43/54 & 44/54.
2. SEE AESTHETIC ENHANCEMENT PLANS FOR DETAILS OF PRECAST PANELS.

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DESIGN AGENCY
GPD GROUP
GPD GROUP, Inc. 100 Waterfront Drive, Suite 700, Cape Feare, NC 28403
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DESIGNED	DJC	CHECKED	RHC
DRAWN	DJC/JUB	REVIEWED	DGN
DATE	4-21-23	STRUCTURE FILE NUMBER	2502620

PARAPET COLUMN DETAILS
 BRIDGE NO. FRA-23-1075C
 S. 4TH STREET (U.S. 23) OVER I-70/71

FRA-70-14.05
PID No. 96053

45 / 54
 683
 855

SEQUENCE OF CONSTRUCTION

FRA-70-1301R STRUCTURE REPLACEMENT

1. THIS WORK SHALL BE PERFORMED IN THE MIDDLE OF PART 3 MOT PHASE 3. ONCE THE WB WORK IS COMPLETED TRAFFIC WILL BE RESTORED TO I-70 WB. HOWEVER, WHILE I-70 EB TRAFFIC IS STILL BEING MAINTAINED ON RAMP C5, THIS STRUCTURE WILL BE CONSTRUCTED. AFTER THE CONSTRUCTION OF THE STRUCTURE I-70 EB TRAFFIC SHALL BE RESTORED AS SHOWN IN PART 3 MOT PHASE 3 EB.

FRA-70-1301L STRUCTURE REPLACEMENT

1. THIS WORK SHALL BE PERFORMED CONCURRENT WITH PHASE 2 OF THE PROJECT 6A (PART 3, FRA-70-13.10) MOT PLANS.

2. THIS PROJECT WILL UTILIZE THE MAINTENANCE OF TRAFFIC SCHEME SHOWN IN PROJECT 6A, FRA-70-13.10 (SEE PART 3 MOT PLAN SHEETS FOR MOT SCHEME).

FRA-70-1301R PATCHING CONCRETE STRUCTURE

THE FIRST CONCRETE PATCHING ON 13.01R WILL TAKE PLACE DURING PART 1 MOT PHASE 1 UNDER A FULL CLOSURE.

THE SECOND AND POTENTIALLY THIRD PATCHINGS WILL TAKE PLACE WHILE 2 LANES OF TRAFFIC ARE MAINTAINED ON THE STRUCTURE. THE WORK SHALL BE DONE USING STANDARD DRAWING MT-95.40 FOR A RIGHT LANE CLOSURE AND THEN FOR A LEFT LANE CLOSURE. THE ODOT PLCS SHALL NOT BE VIOLATED. THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 614 - MAINTENANCE OF TRAFFIC, ONE LANE CLOSURE ON A TWO LANE HIGHWAY	4 EACH
ITEM 614 - WORK ZONE IMPACT ATTENUATOR, 24" WIDE HAZARDS, (UNIDIRECTIONAL)	4 EACH
ITEM 614 - BARRIER REFLECTOR, TYPE 1, 1 WAY	120 EACH
ITEM 614 - OBJECT MARKER, ONE WAY	40 EACH
ITEM 622 - PORTABLE BARRIER, UNANCHORED	1,800 FT

ALL MOT NOTES LISTED IN THE PROJECT 4A (PART 1, FRA-70-13.11) AND PROJECT 6A (PART 3, FRA-70-13.10) PLANS SHALL BE APPLICABLE TO THESE PLANS.

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CALCULATED
GAIN
CHECKED
CWB

MAINTENANCE OF TRAFFIC GENERAL NOTES

FRA-70-13.01

12
137

NO.	DESCRIPTION	REV. BY	DATE
8	EDITED NOTE	ACW	11/24/23