SUMMARY OF RAMP/ROAD CLOSURES					
MOT PHASE	ESTIMATED PHASE DURATION	STREET/RAMP	LOCATION	MAXIMUM DURATION	DISINCENTIVE
1	10 Months	315 Ramp	315S to I-70E Ramp	None	None
		Scioto Trail	Bike Trail under 70/71	None	None
2	6 Months	315 Ramp	315S to I-70E Ramp	None	None
		I-70/71	Under High St (EB and WB Closed)	Weekend	*
		Fulton Street	West of High Street	30 Days	$8,500
		Livingston Ave	West of High Street	30 Days	$6,000
		Fulton Street	East of High Street	30 Days	$8,500
		Livingston Ave	East of High Street	30 Days	$6,000
3	2 Months	315 Ramp	315S to I-70E Ramp	None	None

Notes:
1. Length and duration of lane closures and restrictions shall be at the approval of the Engineer. It is the intent to minimize the impact to the traveling public. Lane closures or restrictions over segments of the project in which no work is anticipated within a reasonable time frame, as determined by the Engineer, shall not be permitted. The level of utilization of maintenance of traffic devices shall be commensurate with the work in progress.
2. The closure durations listed are maximums and shall be consecutive days. Closure, reopening and closing again shall not be permitted.
3. The weekend closures are 10:00PM Friday - 5:00AM Monday.
4. Night or weekend closures only. Night time closures are 10:00PM - 5:00AM. Weekend closures are 10:00PM Friday - 5:00AM Monday.

* Refer to the Lane Value Contract Table.

ITEM 614 SPECIAL - WORK ZONE TRAFFIC SIGNAL

UNDER THIS ITEM OF WORK, THE CONTRACTOR SHALL FURNISH, INSTALL, RELOCATE, MODIFY AND SUBSEQUENTLY REMOVE: TEMPORARY SIGNAL SUPPORTS, DOWN GUYS, GROUND RODS, SIGNAL CABLE, POWER CABLE, SERVICE CABLE, CONDUIT RISERS, MESSENGER WIRE, SIGNAL HEADS, COVERING OF VEHICULAR SIGNAL HEADS AND A TEMPORARY CONTROLLER AS NEEDED TO RENDER A FULLY FUNCTIONAL TEMPORARY SIGNALIZED INTERSECTION.

AS DETAILED WITHIN, TEMPORARY TRAFFIC SIGNALS OR TRAFFIC SIGNAL MODIFICATIONS TO ACCOMMODATE INDIVIDUAL MAINTENANCE OF TRAFFIC PHASES SHALL BE INSTALLED AT THE INTERSECTIONS LISTED BELOW.

ALL TEMPORARY TRAFFIC SIGNAL EQUIPMENT SHALL COMPLY WITH THE SPECIFICATIONS OUTLINED FOR THE PERMANENT SIGNAL INSTALLATION INCLUDING GROUNDING AND BONDING AND "TRAFFIC SIGNAL PLAN AND SPECIFICATION COMPLIANCE". ALL METHODS OF TRAFFIC CONTROL SHALL BE APPROVED BY THE ENGINEER AND SHALL BE IN PLACE AND OPERATING PRIOR TO THE DEACTIVATION AND REMOVAL AND/OR RELOCATION OF ANY EXISTING SIGNAL EQUIPMENT. REFERENCE IS MADE TO THE REQUIREMENTS OF ITEM 614. ALL MODIFICATIONS TO SIGNALIZATION SHALL BE DONE UNDER THE PROTECTION OF A LAW ENFORCEMENT OFFICER. REFERENCE IS MADE TO ITEM 614 MAINTAINING TRAFFIC, AS PER PLAN. 9

ANY VEHICULAR TRAFFIC SIGNAL HEAD THAT WILL BE OUT OF OPERATION SHALL BE COVERED IN ACCORDANCE WITH 632.25. ANY EXISTING VEHICULAR OR PEDESTRIAN HEAD THAT IS NOT FUNCTIONAL SHALL BE REMOVED IMMEDIATELY OR COVERED. ANY PEDESTRIAN BUTTONS NOT IN USE SHALL ALSO BE COVERED.

EACH TEMPORARY SIGNAL POLE LOCATION SHALL BE STAKED AND THE LOCATION APPROVED BY THE CITY OF COLUMBUS. THE CONTRACTOR MAY REUSE EXISTING SPAN AND PIGTAILS OR INSTALL NEW AS REQUIRED. THE CONTRACTOR SHALL TRANSFER EXISTING SIGNAL ITEMS AND EXTEND EXISTING CABLE AS NEEDED. WEATHERPROOF CABLE SPLICING IS PERMITTED. DOWN GUYS SHALL BE SPECIFIED FOR ALL TEMPORARY WOOD POLES. ONE DOWN GUY PER POLE SHALL BE USED FOR A LAYOUT THAT CONTAINS A MAXIMUM OF 2 VEHICULAR SIGNAL HEADS PER SPAN. TWO DOWN GUYS PER POLE SHALL BE SPECIFIED FOR 3 OR MORE VEHICULAR SIGNAL HEADS PER SPAN. DOWN GUYS SHALL BE POSITIONED TO COUNTERACT THE MOMENT CREATED BY THE SPAN CONFIGURATION. ANY CHANGE TO THE PLANNED POLE LOCATION OR SPAN CONFIGURATION AS DETAILED IN THE PLAN SHALL BE APPROVED BY THE CITY OF COLUMBUS. THE CONTRACTOR SHALL SUBMIT A DIAGRAM TO THE CITY DOCUMENTING PROPOSED CHANGES.

ITEM 614 SPECIAL - WORK ZONE TRAFFIC SIGNAL (CONTINUED)

INSTALL THE SPAN TO PROVIDE FOR A 5 TO 6 PERCENT SAG FOR WOOD POLES. ATTACH THE SPAN NO CLOSER THAN 2 FT. FROM THE TOP OF THE POLE. THE LOWEST VEHICULAR HEAD IN EACH DIRECTION SHALL BE 16.5 FT. ABOVE PAVEMENT SURFACE WITH THE REMAINING VEHICULAR HEADS MEETING THE REQUIREMENTS OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

THE CONTRACTOR SHALL SHIFT EXISTING SIGNAL HEADS TO ALIGN WITH LANES IN THE INDIVIDUAL MAINTENANCE OF TRAFFIC PHASES. DETAILED HEAD PLACEMENT HAS BEEN PROVIDED FOR EACH PHASE OF WORK IN THE MAINTENANCE OF TRAFFIC PLAN. THIS ITEM SHALL CONSIST OF ADJUSTING THE LOCATION OF TEMPORARY TRAFFIC SIGNAL HEADS FOR EACH PHASE OF CONSTRUCTION INCLUDING UNLASHING AND RELASHING ALL WIRING. ALL TEMPORARY AERIAL WIRING SHALL BE A MINIMUM OF 21 FT. ABOVE THE ROADWAY SURFACE.

VEHICULAR DETECTION SHALL BE MAINTAINED AT ALL TIMES AND DURING ALL PHASES OF CONSTRUCTION USING EITHER EXISTING LOOP DETECTORS OR TEMPORARY VIDEO OR RADAR DETECTION.

LOCATE THE NON-FUSED POWER SUPPLY VOLTAGE (120 VOLT) IN A SEPARATE CONDUIT. IN ADDITION, LOCATE THE LOOP DETECTOR, PUSH BUTTON, AND VIDEO DETECTION CABLES IN A SEPARATE CONDUIT FROM ALL OTHER CABLES.

THIS ITEM OF WORK SHALL INCLUDE ALL LABOR, EQUIPMENT AND MATERIAL NECESSARY TO PROVIDE POWER TO THE TRAFFIC SIGNAL CONTROLLER FROM THE PROPOSED OR EXISTING POWER SOURCES AS DETERMINED BY CONSTRUCTION SEQUENCING.

THIS ITEM OF WORK SHALL INCLUDE ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY TO FURNISH, INSTALL, MODIFY, REMOVE, STORE, ERECT, RELOCATE, ADJUST AND REPAIR TEMPORARY TRAFFIC SIGNAL ITEMS AS DESCRIBED ABOVE.

ALL COSTS FOR THE ABOVE WORK SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 614 WORK ZONE TRAFFIC SIGNAL, AS PER PLAN AND SHALL BE PER EACH INTERSECTION.

LANE VALUE CONTRACT TABLE

THE CONTRACTOR SHALL BE ASSESSED A DISINCENTIVE AS DESIGNATED IN THE LANE VALUE CONTRACT TABLE FOR EACH UNIT OF TIME A LANE/SHOULDER/RAMP IS CLOSED BY THE CONTRACTOR'S ACTION WHILE NOT OTHERWISE PERMITTED BY THE LANE VALUE CONTRACT TABLE.

LANE VALUE CONTRACT TABLE

FRA-70

Section (SLM)	Existing Number of Lanes per Direction	Lane closures are NOT permitted: Lane Reduction	Mon to Fri	Sat	Sun	Disincentive Amounts per minute per lane
Glenwood Avenue (12.41) to Sounder Ave (12.82)	3	3 to 2	5AM-9PM	7AM-9AM & 1PM-7PM	7AM-9AM & 1PM-7PM	$370
		3 to 1	5AM-10PM	6AM-8PM	6AM-8PM	$370
Sounder Ave (12.82) to Scioto River (13.41)	2	2 to 1	5AM-11PM	6AM-11PM	6AM-11PM	$555
Scioto River (13.41) to Short Street (13.73)	3	3 to 2	5AM-9PM	7AM-9AM & 1PM-7PM	7AM-9AM & 1PM-7PM	$370
		3 to 1	5AM-11PM	6AM-10PM	6AM-10PM	$370
Short Street (13.73) to Grant Avenue (14.56)	3	3 to 2	5AM-9PM	6AM-10PM	6AM-10PM	$360
		3 to 1	5AM-11PM	5AM-10PM	5AM-10PM	$360
Grant Avenue (14.56) to Champion Street (15.60) (WB)	2	2 to 1	5AM-11PM	6AM-10PM	6AM-10PM	$540
Grant Avenue (14.56) to 18th Street (15.24) (EB)	2	2 to 1	5AM-11PM	6AM-10PM	6AM-10PM	$540
18th Street (15.24) to Alum Creek Drive (17.00) (EB)	4	4 to 3	5AM-9AM & 2PM-7PM	No Restriction	No Restriction	$270
		4 to 2	8AM-8PM	11AM-7PM	11AM-7PM	$270
		4 to 1	5AM-Midnight	7AM-Midnight	7AM-Midnight	$270
Champion Street (15.60) to Alum Creek Drive (17.00) (WB)	4	4 to 3	5AM-9PM	No Restriction	No Restriction	$265
		4 to 2	5AM-8PM	9AM-7PM	9AM-7PM	$265
		4 to 1	5AM-11PM	6AM-11PM	6AM-11PM	$265
Alum Creek Drive (17.00) to College Avenue (18.67) (EB)	4	4 to 3	5AM-9AM & 2PM-7PM	No Restriction	No Restriction	$250
		4 to 2	8AM-8PM	11AM-7PM	11AM-7PM	$250
		4 to 1	5AM-Midnight	7AM-Midnight	7AM-Midnight	$250
Alum Creek Drive (17.00) to College Avenue (18.67) (WB)	3	3 to 2	5AM-8PM	9AM-7PM	9AM-7PM	$335
		3 to 1	5AM-11PM	6AM-11PM	6AM-11PM	$335
Short term shoulder closures are NOT permitted 5AM-9AM and 3PM-6PM Monday-Friday.						

FRA-71

Section (SLM)	Existing Number of Lanes per Direction	Lane closures are NOT permitted: Lane Reduction	Mon to Fri	Sat	Sun	Disincentive Amounts per minute per lane
Frank Road (12.79) to I-70 (15.26)	4	4 to 3	5AM-9AM & 3PM-6PM	No Restriction	No Restriction	$335
		4 to 2	5AM-7PM	7AM-9AM & 2PM-7PM	7AM-9AM & 2PM-7PM	$335
		4 to 1	5AM-11PM	6AM-11PM	6AM-10PM	$335
I-70-West Split (15.26) to I-70-East Split (16.83)	See corresponding section on I-70 (SLM 13.43 to 14.78)					
I-70-East Split (16.83) to Main Street (17.13)	2	2 to 1	5AM-10PM	6AM-10PM	6AM-10PM	$455

10

NO.	DESCRIPTION	REV. BY	DATE
9	UPDATED NOTES	RPD	12-04-2023
10	ADDED TABLE	RPD	12-06-2023

CALCULATED EMW CHECKED RMK

MAINTENANCE OF TRAFFIC NOTES

FRA-70-13.11

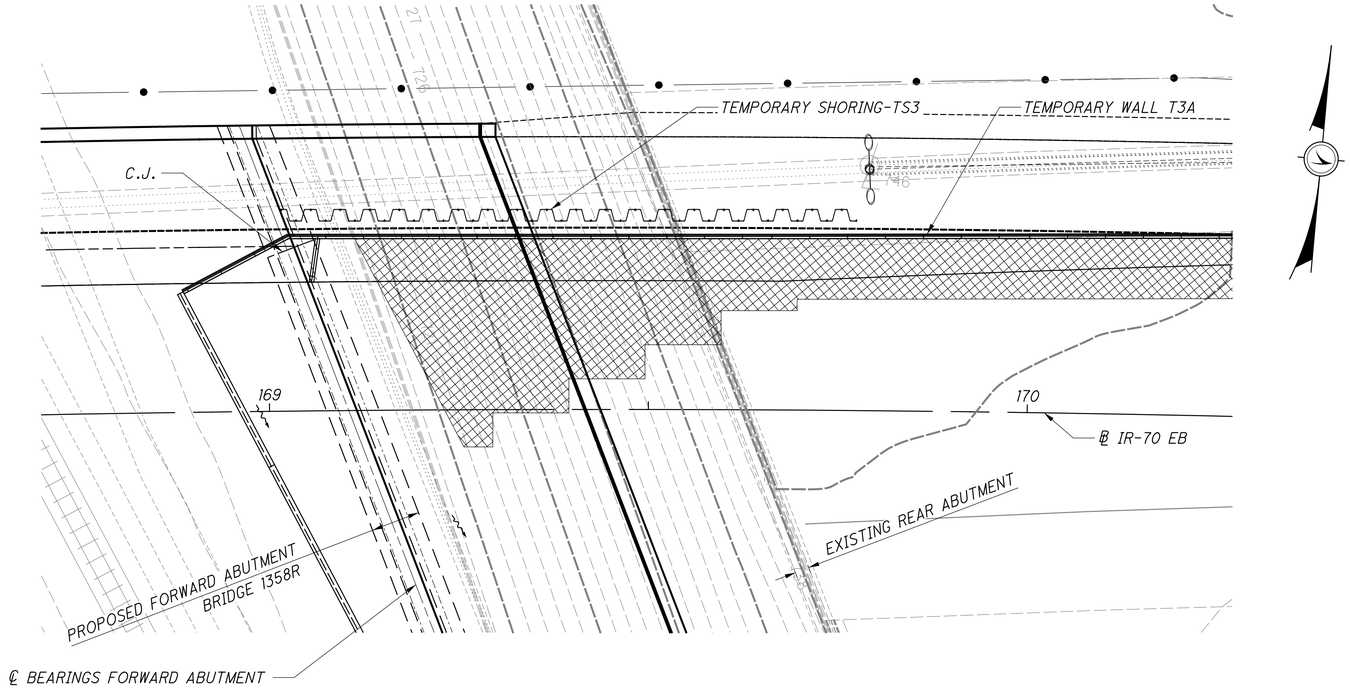
SHEET NUMBER								PARTICIPATION						ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
P1/163	P3/197B	P4/158						01/IMS/04											
																		RETAINING WALLS	
																		FOR RETAINING WALL 4W3 GENERAL SUMMARY	*P1/327*
																		FOR RETAINING WALL 4W8 GENERAL SUMMARY	*P1/340*
																		FOR RETAINING WALL 4W10 GENERAL SUMMARY	*P1/345*
																		FOR TEMPORARY SHORING AND WALL GENERAL SUMMARY	*P1/349*
																		FOR RETAINING WALL E2 GENERAL SUMMARY	*P3/194*
																		FOR RETAINING WALL E3 GENERAL SUMMARY	*P3/194*
																		FOR RETAINING WALL E4 GENERAL SUMMARY	*P3/194*
																		FOR RETAINING WALL E7 GENERAL SUMMARY	*P3/195*
																		FOR RETAINING WALL E9 GENERAL SUMMARY	*P3/195*
																		FOR RETAINING WALL 4W13 GENERAL SUMMARY	*P4/306*
																		FOR RETAINING WALL 4W14 GENERAL SUMMARY	*P4/316*
																		FOR RETAINING WALL 4W15 GENERAL SUMMARY	*P4/325*
																		FOR RETAINING WALL 4W16 GENERAL SUMMARY	*P4/336*
																		FOR RETAINING WALL 4W17 GENERAL SUMMARY	*P4/358*
																		FOR RETAINING WALL 4W18 GENERAL SUMMARY	*P4/369*
																		FOR RETAINING WALL 4W22 GENERAL SUMMARY	*P4/377*
																		FOR RETAINING WALL W4 GENERAL SUMMARY	*P5/14A*
																		3 *FOR RETAINING WALL W6 GENERAL SUMMARY* 5	*P5/14B*
																		STRUCTURE OVER 20 FOOT SPAN	
																		FOR FRA-70-1321R GENERAL SUMMARY	*P1/436*
																		FOR FRA-70-1358R GENERAL SUMMARY	*P1/530*
																		FOR FRA-70-1405C GENERAL SUMMARY	*P2/207*
																		FOR FRA-70-1405C CAP GENERAL SUMMARY	*P2/260*
																		FOR FRA-70-1405C AESTHETIC ENHANCEMENT GENERAL SUMMARY	*P2/314*
																		FOR FRA-70-1395C AESTHETIC ENHANCEMENT GENERAL SUMMARY	*P2/370A*
																		FOR FRA-70-1322L GENERAL SUMMARY	*P3/195-196*
																		FOR FRA-70-1323C GENERAL SUMMARY	*P3/196*
																		FOR FRA-70-1358L GENERAL SUMMARY	*P3/197*
																		FOR FRA-70-1373L GENERAL SUMMARY	*P3/197-197A*
																		FOR FRA-70-1358R GENERAL SUMMARY	*P3/197A*
																		FOR FRA-33-1747C GENERAL SUMMARY	*P4/563*
																		FOR FRA-33-1747C CAP GENERAL SUMMARY	*P4/604*
																		FOR FRA-23-1075C GENERAL SUMMARY	*P4/642*
																		FOR FRA-23-1075C AESTHETIC ENHANCEMENT GENERAL SUMMARY	*P4/705*
																		FOR FRA-70-1301L GENERAL SUMMARY	*P5/14*
																		FOR FRA-70-1301R GENERAL SUMMARY	*P5/14-14A*
																		MISCELLANEOUS STRUCTURE	
	LS							*LS*						*202*	*11000*	*LS*		*STRUCTURE REMOVED*	
	LS							*LS*						*202*	*11003*	*LS*		*STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN*	*P3*
	LS							*LS*						*202*	*11201*	*LS*		*PORTIONS OF STRUCTURE REMOVED, AS PER PLAN*	*P3*
	LS							*LS*						*202*	*11201*	*LS*		*PORTIONS OF STRUCTURE REMOVED, AS PER PLAN "A"*	*P3*
	LS							*LS*						*202*	*11201*	*LS*		*PORTIONS OF STRUCTURE REMOVED, AS PER PLAN "B"*	*P3*
	LS							*LS*						*202*	*11201*	*LS*		*PORTIONS OF STRUCTURE REMOVED, AS PER PLAN "C"*	*P3*
	218							*218*						*202*	*22900*	*218*	*SY*	*APPROACH SLAB REMOVED*	
69	*55*	*27*						*151*						*511*	*50211*	*151*	*CY*	*CLASS QC1 CONCRETE, SUBSTRUCTURE, AS PER PLAN*	*P1,P3,P4*
																		10	
	6727							*6727*						*512*	*10000*	*6727*	*SY*	*SEALING OF CONCRETE SURFACES*	
	443							*443*						*SPECIAL*	*69098100*	*443*	*FT*	*COVERED WALKWAY SYSTEM*	*P3*

NO.	DESCRIPTION	REV. BY	DATE
3	ADDED W4 & W6	CWL	10-23-23
5	REVISED SHEET #	CWL	11-6-23
10	REVISED PART 3	CWL	12-6-23

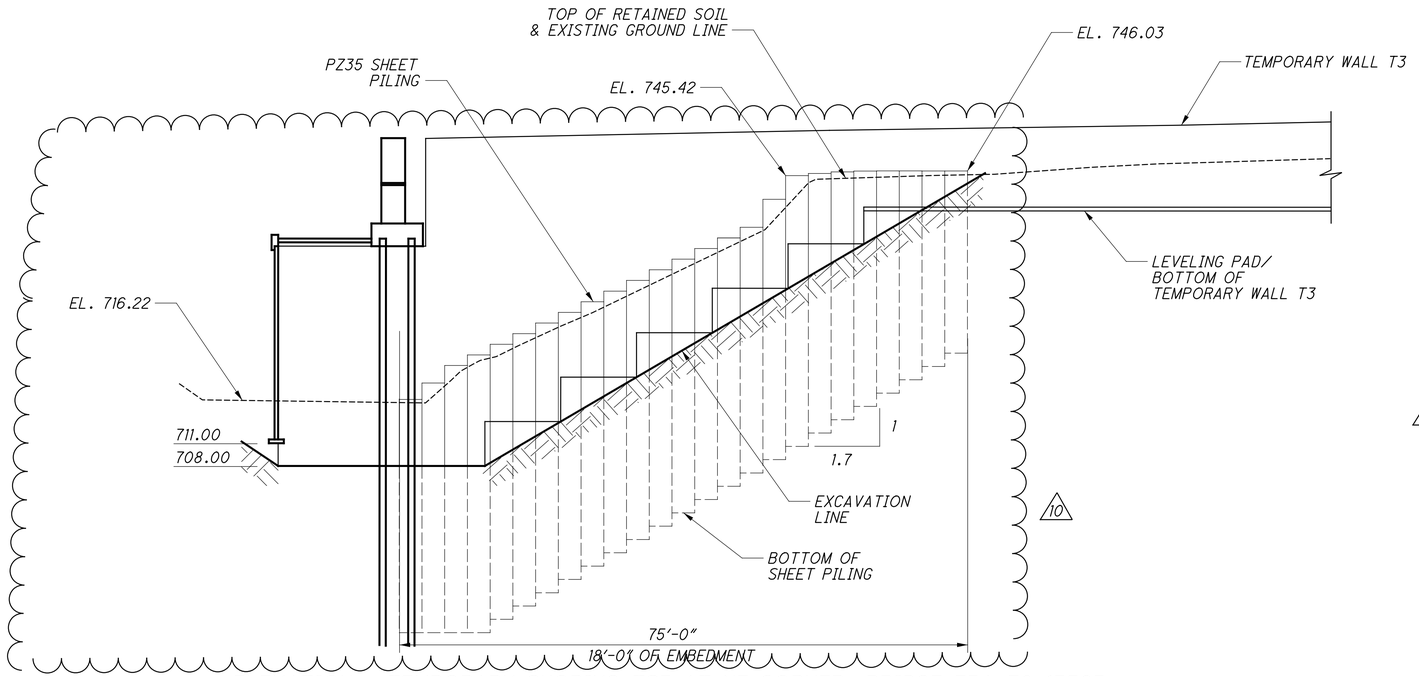
CALCULATED CJC
CHECKED CWL

BIG BUILD MASTER GENERAL SUMMARY

FRA-70-13.11



PLAN - TEMPORARY SHORING-TS3 AT NE CORNER, BRIDGE FRA-70-1358R



ELEVATION - TEMPORARY SHORING-TS3 AT NE CORNER, BRIDGE FRA-70-1358R

LEGEND:

LIMITS OF TEMPORARY WALL T3 EXCAVATION

NOTES:

1. FOR ADDITIONAL SHORING DETAILS AND NOTES, SEE SHEET 352.

10

NO.	DESCRIPTION	REV. BY	DATE
10	WALL PROFILE AND NOTES REVISED	WCB	12/6/2023

DESIGN AGENCY
DYNOTEC, INC.
2931 E. DUBLIN-GRANVILLE RD COLUMBUS, OH 43231
614.880.7320 T * WWW.DJYNOTECINC.COM

DESIGNED	DRAWN	REVIEWED	DATE
DJK	DJK	EC	3/11/2015
CHECKED	REVISED	STRUCTURE FILE NUMBER	
OHK			

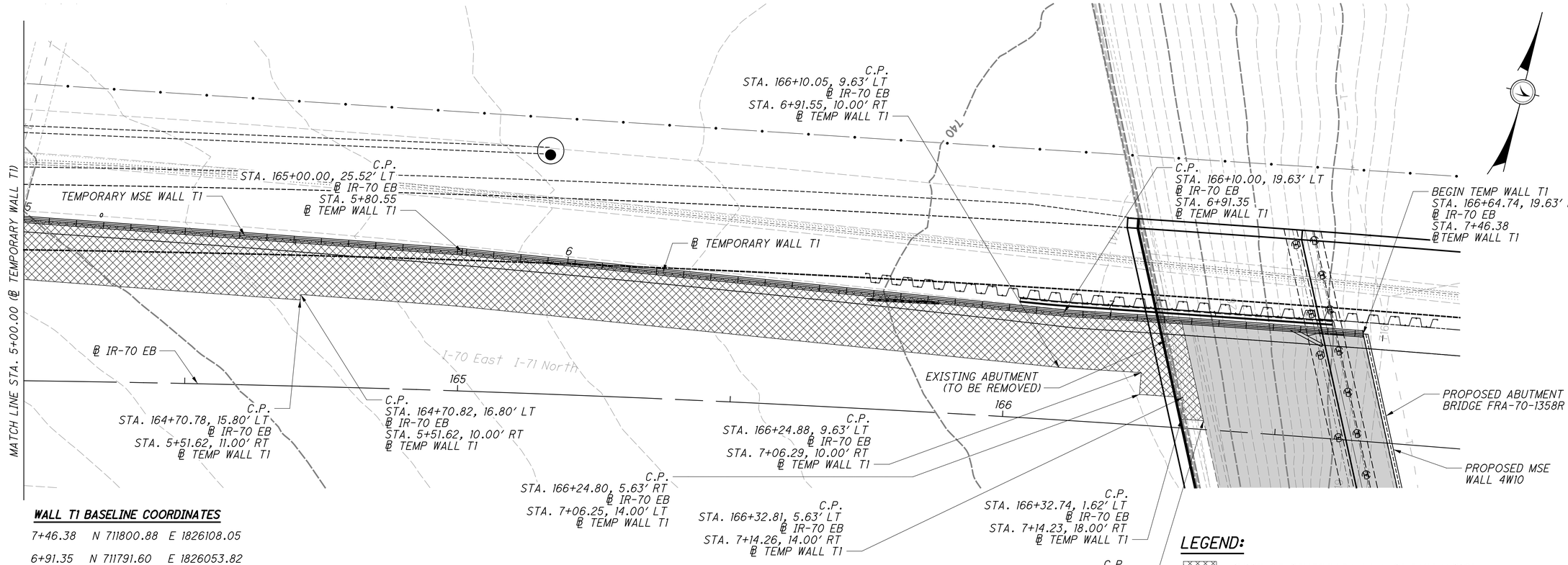
FRANKLIN COUNTY
STA. 168+81.15
STA. 169+94.64

TEMPORARY SHORING DETAILS-TS3
FRA-70-1385R
IR-70 EB OVER CSX & NORFOLK SOUTHERN RAILROADS

FRA-70-13.11
PID No. 77372

1 / 1

351
1151



WALL T1 BASELINE COORDINATES

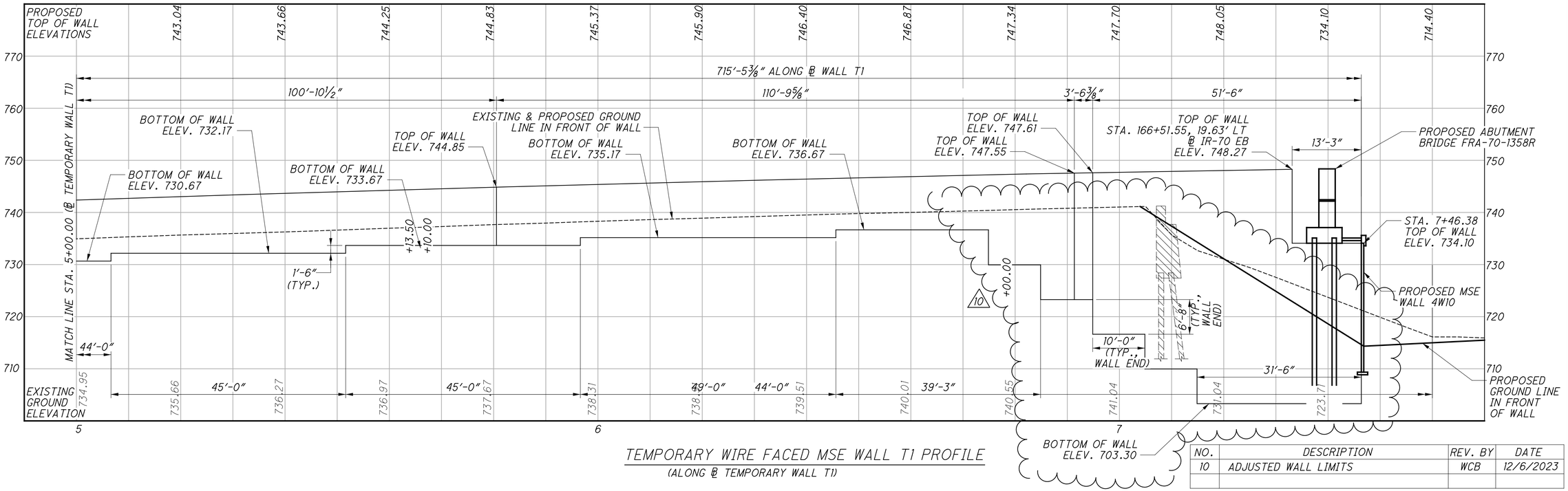
7+46.38 N 711800.88 E 1826108.05

6+91.35 N 711791.60 E 1826053.82

5+80.55 N 711776.39 E 1825944.06

R= 3839.64 FROM 6+91.35 TO 7+46.38

TEMPORARY WIRE FACED MSE WALL T1 PLAN



TEMPORARY WIRE FACED MSE WALL T1 PROFILE

(ALONG ℄ TEMPORARY WALL T1)

NO.	DESCRIPTION	REV. BY	DATE
10	ADJUSTED WALL LIMITS	WCB	12/6/2023

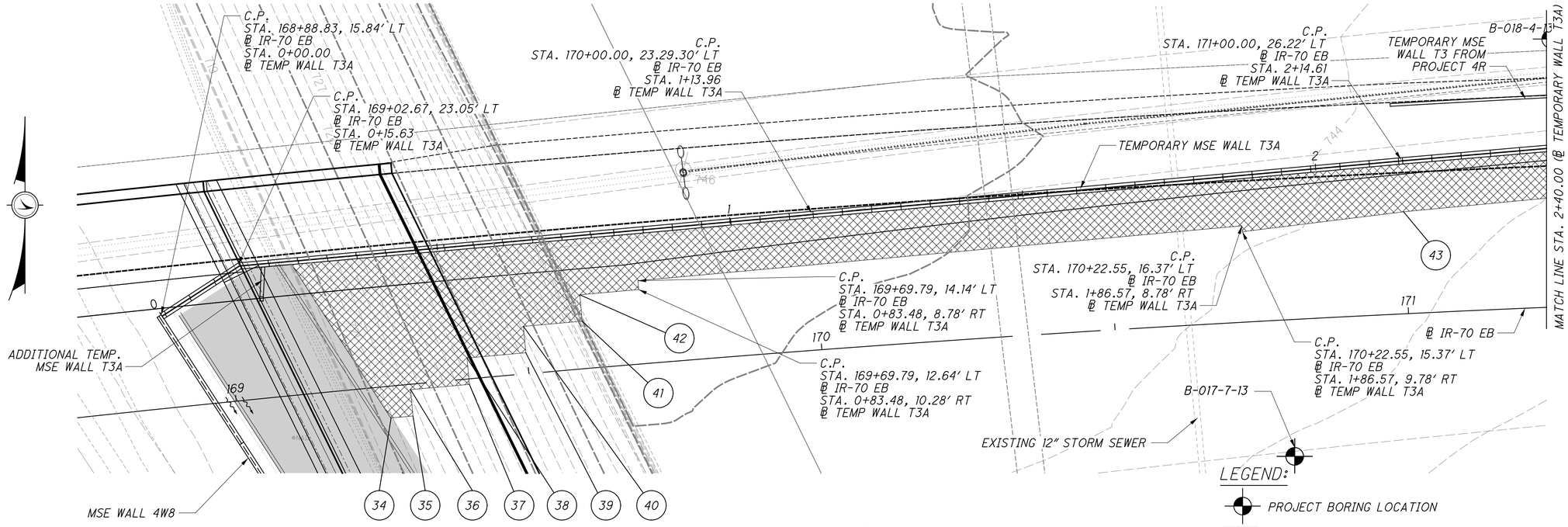
DESIGN AGENCY
DYNOTEC, INC.
2931 E. DUBLIN-GRANVILLE RD COLUMBUS, OH 43231
614.880.7320 T * WWW.DYNOTECINC.COM

DESIGNED DJK | DRAWN DJK | CHECKED OHK | REVIEWED EC | DATE 3/11/2015 | REVISED | STRUCTURE FILE NUMBER

FRANKLIN COUNTY
STA. 5+00.00
STA. 7+46.38

FRA-70-13.11
PID No. 77372

PLAN AND ELEVATON (3 OF 4)
TEMP WIRE FACED MSE WALL T1
BETWEEN BRIDGES FRA-70-132IR AND FRA-70-1358R



	STATION	OFFSET
34	169+25.95	5.40' RT
35	169+29.70	5.42' RT
36	169+29.70	0.92' RT
37	169+39.76	0.92' RT
38	169+39.76	3.56' LT
39	169+49.79	3.56' LT
40	169+49.79	8.06' LT
41	169+59.79	8.06' LT
42	169+59.79	12.56' LT
43	171+00.00	17.33' LT

ALL STATIONS AND OFFSETS ARE FROM THE ℄ CONST. I-70 EB

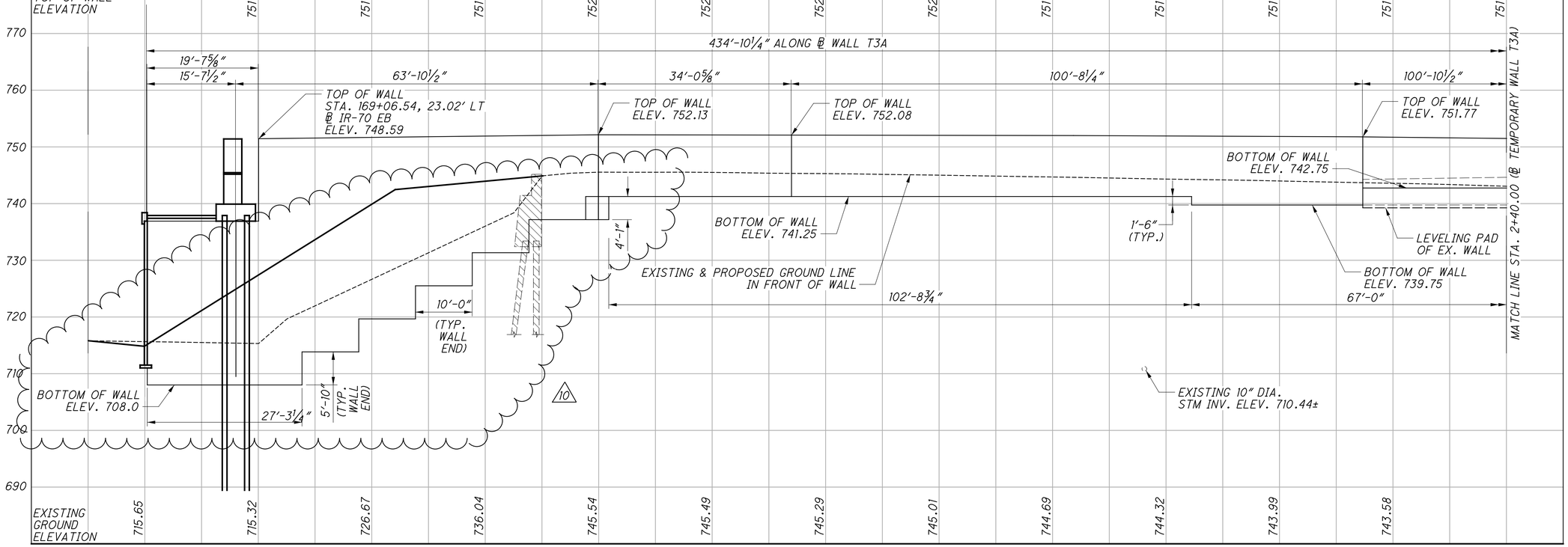
TEMPORARY WIRE FACED MSE WALL T3A PLAN

LEGEND:

- PROJECT BORING LOCATION
- LIMITS OF TEMPORARY WALL T3A EXCAVATION

NOTES:

SEE SHEET 360/1151



TEMPORARY WIRE FACED MSE WALL T3A PROFILE

(ALONG ℄ TEMPORARY WALL T3A)

NO.	DESCRIPTION	REV. BY	DATE
10	ADJUSTED WALL LIMITS	WCB	12/6/2023

DESIGN AGENCY
DYNOTEC, INC.
2931 E. DUBLIN-GRANVILLE RD COLUMBUS, OH 43231
614.880.7320 T * WWW.DYNOTECINC.COM

DESIGNED	DRAWN	REVIEWED	DATE
DJK	DJK	EC	3/11/2015
CHECKED	REVISED	STRUCTURE FILE NUMBER	
OHK			

FRANKLIN COUNTY
STA. 0+00.00
STA. 2+40.00

PLAN AND ELEVATION (1 OF 4)
TEMP WIRE FACED MSE WALL T3A
BETWEEN BRIDGES FRA-70-1358R AND FRA-70-1373R.

FRA-70-13.11
PID No. 77372

1 / 4

357
1151

GENERAL NOTES

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWINGS:

AS-1-15	REVISED	7-17-15
AS-2-15	REVISED	1-18-19
GSD-1-19	REVISED	1-15-21
SBR-1-13	REVISED	7-20-18
SBR-2-13	REVISED	7-20-18

AND THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:

800	DATED	1-20-23
832	DATED	10-19-18
869	DATED	10-17-14
894	DATED	4-16-21

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS 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.

SPECIAL DESIGN SPECIFICATIONS

THIS BRIDGE REQUIRED THE USE OF OF A THREE DIMENSIONAL MODEL USING THE FINITE ELEMENT DESIGN METHOD TO ANALYZE THE STRUCTURE. THE COMPUTER PROGRAM USED FOR STRUCTURAL ANALYSIS WAS MIDAS CIVIL 2015 (VERSION 2.2, BUILD 4/14/2015). THIS PROGRAM WAS USED TO CALCULATE FORCES FOR THE DESIGN OF THE STEEL GIRDERS, CROSSFRAMES AND GIRDER END DIAPHRAGMS AND TO CALCULATE REACTIONS FOR THE DESIGN OF THE BEARINGS AND SUBSTRUCTURES.

DEAD LOAD DISTRIBUTION: THE WEIGHT OF THE STEEL SUPERSTRUCTURE AND CONCRETE DECK WAS APPLIED TO EACH ELEMENT IN THE MODEL BASED ON LOCAL SECTION PROPERTIES AND TRIBUTARY AREA. THE WEIGHT OF THE FUTURE WEARING SURFACE WAS APPLIED EQUALLY TO EACH GIRDER WITHIN A GIVEN SPAN. PARAPET WEIGHT WAS APPLIED TO THE EXTERIOR GIRDERS ONLY WITHIN THE 3D DESIGN MODEL.

LIVE LOAD DISTRIBUTION: THE DESIGN ANALYSIS WAS CARRIED OUT BY APPLYING TRUCK AND LANE LOADS DIRECTLY TO THE FINITE ELEMENT MODEL, RATHER THAN BY USING CALCULATED DISTRIBUTION FACTORS.

OPERATIONAL IMPORTANCE: A LOAD MODIFIER OF 1.05 HAS BEEN ASSUMED FOR THE DESIGN OF THIS STRUCTURE IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, ARTICLE 1.3.5 AND ODOT BRIDGE DESIGN MANUAL, 2007.

DESIGN LOADING: HL-93
FUTURE WEARING SURFACE (FWS) = 0.060 KSF

DESIGN DATA:

CONCRETE CLASS QC2 (SUPERSTRUCTURE) - COMPRESSIVE STRENGTH 4.5KSI
CONCRETE CLASS QC5 - COMPRESSIVE STRENGTH 4.0 KSI (DRILLED SHAFT)
CONCRETE CLASS QC1 (SUBSTRUCTURE) - COMPRESSIVE STRENGTH 4.0 KSI (ABUTMENT)
MASS CONCRETE CLASS QC4 (SUBSTRUCTURE) - COMPRESSIVE STRENGTH 4.0 KSI (PIER CAPS AND COLUMNS)
REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI
STRUCTURAL STEEL - ASTM A709 GRADE 50W - YIELD STRENGTH 50 KSI (GIRDERS, CROSSFRAMES, DIAPHRAGMS, STIFFENERS, FIELD SPLICES)
STRUCTURAL STEEL - ASTM A709 GRADE HPS70W - YIELD STRENGTH 70 KSI (TOP AND BOTTOM FLANGES OF HYBRID GIRDER SECTIONS NOTED AS SUCH IN THE PLANS)
STRUCTURAL STEEL - ASTM A709 GRADE 50 - YIELD STRENGTH 50 KSI (MODULAR JOINTS AND PARAPET SLIDING PLATE JOINTS)
STEEL H-PILES - ASTM A572 GRADE 50 - YIELD STRENGTH 50 KSI

DECK PROTECTION METHOD:

EPOXY COATED REINFORCING STEEL
2½" CONCRETE COVER
CLASS QC2 CONCRETE

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

ITEM 202 - STRUCTURE REMOVED, OVER 20' SPAN

THE EXISTING STRUCTURE SHALL BE REMOVED IN ACCORDANCE WITH CMS ITEM 202. PRIOR TO DEMOLITION OF THE STRUCTURE, THE CONTRACTOR SHALL VERIFY THAT THE EXISTING CITY OF COLUMBUS ELECTRICAL POWER LINE, CARRIED ACROSS THE EXISTING STRUCTURE, HAS BEEN DE-ENERGIZED AND RELOCATED (NEW CONDUIT CONSTRUCTED ONTO FRA-70-1321A STRUCTURE IN PROJECT 4R 105523 PART 1). 5

NO.	DESCRIPTION	REV. BY	DATE
5	REVISED NOTE	CWL	11-6-23
7	ADDED QC/QA	CWL	11-17-23
10	ADDED NOTES	CWL	12-6-23

PILES TO BEDROCK:

DRIVE PILES TO REFUSAL ON BEDROCK. THE DEPARTMENT WILL CONSIDER REFUSAL TO BE OBTAINED WHEN THE PILE PENETRATION IS AN INCH OR LESS AFTER RECEIVING AT LEAST 20 BLOWS FROM THE PILE HAMMER. SELECT THE HAMMER SIZE TO ACHIEVE THE REQUIRED DEPTH TO BEDROCK AND REFUSAL.

THE TOTAL FACTORED LOAD PER PILE AND THE ORDER LENGTHS ARE AS FOLLOWS:

LOCATION	SIZE	ORDER LENGTH (FEET)	FACTORED LOAD (KIPS)
REAR ABUT.	HP 12x53	75	341
FRWD. ABUT.	HP 12x53	75	325

USE STEEL POINTS TO PROTECT THE TIPS OF THE PROPOSED STEEL H-PILES AT THE REAR AND FORWARD ABUTMENTS.

PILE SPLICES: IN LIEU OF USING THE FULL PENETRATION BUTT WELDS SPECIFIED IN CMS 507.09 TO SPLICE STEEL H-PILES, THE CONTRACTOR MAY USE A MANUFACTURED H-PILE SPLICER. FURNISH SPLICERS FROM THE FOLLOWING MANUFACTURER:

ASSOCIATED PILE AND FITTING CORPORATION
8 WOOD HOLLOW RD. PLAZA 1
PARSIPPANY, NEW JERSEY 07054

INSTALL AND WELD THE SPLICER TO THE PILE SECTIONS IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN ASSEMBLY PROCEDURE SUPPLIED TO THE ENGINEER BEFORE THE WELDING IS PERFORMED. 7

DRILLED SHAFTS, 66" DIAMETER, INTO BEDROCK WITH QC/QA, AS PER PLAN
DRILLED SHAFTS, 72" DIAMETER, ABOVE BEDROCK WITH QC/QA, AS PER PLAN

MAXIMUM FACTORED LOADS TO BE SUPPORTED BY EACH DRILLED SHAFT AND FACTORED RESISTANCE PROVIDED BY EACH DRILLED SHAFT AT PIERS ARE LISTED BELOW. THIS LOAD IS RESISTED BY TIP RESISTANCE ONLY. CONCRETE FOR DRILLED SHAFTS SHALL BE PER CMS REQUIREMENTS EXCEPT THAT THE MAXIMUM COARSE AGGREGATE SIZE TO BE USED IS NO. 8.

LOCATION	FACTORED LOAD (KIPS)	FACTORED TIP RESISTANCE (KIPS)
PIER 1	3,054	8,992
PIER 2	2,786	8,992
PIER 3	2,611	8,879
PIER 4	2,702	8,879

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

10 ALL DRILLED SHAFTS INTO BEDROCK SHALL BE CLEANED TO A DEGREE THAT ALLOWS NO MORE THAN 1/2" OF SEDIMENT OVER 50% OF THE BOTTOM AND NO MORE THAN 1" ANYWHERE ON THE BASE. DETERMINE THE BOTTOM CLEANLINESS USING A MINIATURE SHAFT INSPECTION DEVICE (MINI-SID), SHAFT QUANTITATIVE INSPECTION DEVICE (SQUID), OR BY OTHER MEANS CONSIDERED APPROPRIATE AND APPROVED BY THE ENGINEER. FURNISH THE RESULTS OF ALL CLEANLINESS INSPECTIONS TO THE ENGINEER WITHIN SEVEN (7) DAYS AFTER COMPLETION OF THE DRILLED SHAFT.

ITEM 509 - EPOXY COATED REINFORCING STEEL, AS PER PLAN:

IN ADDITION TO THE PROVISIONS OF ITEM 509, FIELD BEND AND/OR CUT THE REINFORCING STEEL DESIGNATED IN THE PLANS, AS NECESSARY, IN ORDER TO MAINTAIN THE REQUIRED CLEARANCES AND BAR SPACINGS. REPAIR ALL DAMAGE TO THE EPOXY COATING, AS A RESULT OF THIS WORK, ACCORDING TO 509.

GLASS FIBER REINFORCED POLYMER (GFRP) PARAPET STIFFENING BARS SHALL ALSO BE INCLUDED IN THIS ITEM. SEE SHEET 90/101, 91/101 & 92/101 FOR QUANTITIES AND DETAILS.

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

LOCATE THE LOWER CONTACT POINT OF THE OVERHANG FALSEWORK NO MORE THAN 17 INCHES ± 2 IN. ABOVE THE TOP OF THE GIRDER'S BOTTOM FLANGE. THE BRACKET CONTACT POINT LOCATION REQUIREMENTS OF C&MS 508 DO NOT APPLY.

ITEM 513 - STRUCTURAL STEEL MEMBERS, HYBRID GIRDER, LEVEL SIX (6) FABRICATION, AS PER PLAN:

1. DESCRIPTION

A. THIS WORK CONSIST OF FURNISHING ALL NECESSARY LABOR, MATERIALS AND EQUIPMENT TO FURNISH AND ERECT STRUCTURAL STEEL MEMBERS, DESIGNED AS A HYBRID/ MIX OF STEEL MATERIALS CONSISTING OF: ASTM A709, HIGH PERFORMANCE GRADE HSP70W IN COMBINATION WITH GRADE 50W STEEL.

B. THIS WORK SHALL BE PERFORMED PER ITEM 513 STRUCTURAL STEEL MEMBER, LEVEL SIX(6) EXCEPT AS MODIFIED BY THE JUNE, 2011 3RD EDITION OF THE GUIDE FOR HIGHWAY BRIDGE FABRICATION WITH HPS70W STEEL (HPS485W), A SUPPLEMENT TO ANSI/AASHTO AWS D1.5" AND AS MODIFIED BY THESE PLAN NOTES.

2. MATERIALS

A. STEEL FOR GIRDER WEBS AND FLANGES SHALL BE A COMBINATION OF ASTM A709 GRADE HPS70W MANUFACTURED BY THE THERMO-MECHANICAL CONTROLLED PROCESSING (TMCP) OR QUENCHED AND TEMPERED HEAT TREATMENT PROCESSING ALONG WITH ASTM A588/709 GRADE 50W. ALL OTHER STEEL SHALL BE ASTM A709 GRADE 50W.

B. STEEL DESIGNATED CVN SHALL BE IMPACT TESTED TO EXCEED THE TEST VALUES OF ASTM A709 TABLE S1.2 "NON-FRACTURE CRITICAL IMPACT TEST REQUIREMENTS" FOR ZONE 2, TEMPERATURE RANGE.

3. ADDITIONAL FABRICATION RESTRICTIONS / WARNINGS:

A. APPLICATION OF HEAT FOR CURVING AND STRAIGHTENING APPLICATIONS, CAMBER AND SWEEP ADJUSTMENT, OR OTHER REASON HEATING IS LIMITED TO 1100°F/590 C MAXIMUM, AND MUST BE DONE BY PROCEDURES APPROVED BY THE DIRECTOR OR HIS AUTHORIZED REPRESENTATIVE.

B. THE MATCHING SUBMERGED ARC WELDING CONSUMABLES ESAB ENI4 ELECTRODE IN COMBINATION WITH LINCOLN MIL800H, RECOMMENDED IN APPENDIX A OF THE AASHTO GUIDE FOR HIGHWAY BRIDGE FABRICATION WITH HPS70W STEEL, HAS PRODUCED WELDMENT CONTAINING UNACCEPTABLE DISCONTINUITIES IN A SUBSTANTIAL NUMBER OF COMPLETE PENETRATION GROOVE WELDS IN ONE STRUCTURE, BASED ON THE PARAMETERS USED AND EXPERIENCE OF ONE FABRICATOR. EXTREME CAUTION SHOULD BE EXERCISED WHEN USING THIS ELECTRODE/FLUX COMBINATION.

C. CONSIDERATION WILL BE GIVEN TO OTHER WELDING PROCESSES IF A WRITTEN REQUEST IS SUBMITTED TO THE OFFICE OF MATERIALS MANAGEMENT IN ACCORDANCE WITH CMS 108.05. OTHER WELDING PROCESSES MUST BE QUALIFIED AND TESTED AS REQUIRED BY THE REFERENCED SPECIFICATIONS AND THESE NOTES.

D. IN ADDITION TO THE REQUIREMENTS OF ANSI/AASHTO/AWS D1.5 SECTION 5.17. ALL PROCEDURE QUALIFICATION TESTS MUST BE ULTRASONICALLY TESTED IN CONFORMANCE WITH THE REQUIREMENTS OF AWS D1.5, SECTION 6, PART C. EVALUATION MUST BE IN ACCORDANCE WITH AWS D1.5, TABLE 6.3, ULTRASONIC ACCEPTANCE REJECTION CRITERIA TENSILE STRESS. INDICATIONS FOUND AT THE INTERFACE OF THE BACKING BAR MAY BE DISREGARDED, REGARDLESS OF THE DEFECT RATING.

E. WHENEVER MAGNETIC PARTICLE TESTING IS DONE, ONLY THE YOKE TECHNIQUE WILL BE ALLOWED, AS DESCRIBED IN SECTION 6.7.6.2 OF THE ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE, MODIFIED TO TEST USING ALTERNATING CURRENT ONLY. THE PROD TECHNIQUE WILL NOT BE ALLOWED.

4. BASIS OF PAYMENT:

PAYMENT FOR THE ABOVE COMPLETED AND ACCEPTED QUANTITIES WILL BE MADE AT THE CONTRACT BID PRICE FOR:

ITEM	EXT	UNITS	DESCRIPTION
513	10401	POUND	STRUCTURAL STEEL MEMBERS, HYBRID GIRDER, LEVEL SIX (6) FABRICATION, AS PER PLAN.

ITEM 513 - STRUCTURAL STEEL, MISC.: PARAPET SLIDING PLATE JOINT:

THIS WORK CONSISTS OF FURNISHING, FABRICATING, COATING AND ERECTING STRUCTURAL STEEL PARAPET SLIDING PLATE JOINT ASSEMBLIES PLACED ADJACENT TO, AND IN CONJUNCTION WITH, BRIDGE DECK MODULAR EXPANSION JOINTS FURNISHED UNDER A SEPARATE ITEM. ALL WORK SHALL BE IN ACCORDANCE WITH CMS 513 AND THE PLAN DETAILS. COAT PARAPET SLIDING PLATE ASSEMBLIES IN ACCORDANCE WITH CMS 516.03.

PAYMENT SHALL BE MADE FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICE PER EACH PARAPET JOINT ASSEMBLY UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: PARAPET SLIDING PLATE JOINT WHICH PRICE SHALL INCLUDE ALL LABOR, MATERIALS, TOOLS AND INCIDENTALS FOR A COMPLETE FUNCTIONING ASSEMBLY.

ITEM 516 - SPECIAL - MODULAR EXPANSION JOINT

ABUTMENT JOINTS SHALL BE WATSON BOWMAN ACME (WABO MODULAR), DS BROWN (STEELFLEX MODULAR), OR APPROVED ALTERNATE.

THE MANUFACTURER SHALL SUBMIT DESIGN CALCULATIONS SHOWING THAT THE DEVICE CAN MEET THE IMPACT AND FATIGUE DESIGN REQUIREMENTS SET FORTH BY THE CURRENT AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

DESIGN AGENCY
GPD GROUP®
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.
1801 Watermark Drive, Suite 210, Columbus, OH 43215 614.210.0751

DESIGNED	DRAWN	REVIEWED	DATE
TJW	JLH	DGN	4-21-23
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RHC		2510016	

GENERAL NOTES
BRIDGE NO. FRA-70-1321R
I-70 E.B. OVER THE SCIOTO RIVER

FRA-70-13.11
PID No. 77372

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GENERAL SUMMARY

668	671	680	PART. 01/IMS/04	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
								RETAINING WALLS (E2)	
261			261	203	20000	261	CY	EMBANKMENT	
1,112			1,112	203	35110	1,112	CY	GRANULAR MATERIAL, TYPE B	
2			2	SPECIAL	20365000	2	EACH	SETTLEMENT PLATFORM	
273			273	203	98100	273	SY	ROADWAY, MISC.: COLUMN SUPPORTED WALLS	
45			45	601	21000	45	SY	CONCRETE SLOPE PROTECTION	
129			129	512	10001	129	SY	SEALING OF CONCRETE SURFACES, AS PER PLAN (PERMANENT GRAFFITI PROTECTION)	660
168			168	512	10100	168	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	660
121			121	516	13200	121	SF	1/2" PREFORMED EXPANSION JOINT FILLER	
2,115			2,115	840	20001	2,115	SF	MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN	660
1			1	SPECIAL	20307500	1	EACH	PNEUMATIC PIEZOMETER	667
298			298	840	21000	298	CY	WALL EXCAVATION	
368			368	840	22000	368	SY	FOUNDATION PREPARATION	
1,851			1,851	840	23000	1,851	CY	SELECT GRANULAR BACKFILL	
312			312	840	25010	312	FT	6" DRAINAGE PIPE, PERFORATED	
135			135	840	26000	135	FT	CONCRETE COPING	
2,115			2,115	840	26050	2,115	SF	AESTHETIC SURFACE TREATMENT	
5			5	840	27000	5	DAY	ON-SITE ASSISTANCE	
								RETAINING WALLS (E3)	
	73		73	203	20000	73	CY	EMBANKMENT	
	27,989		27,989	509	10001	27,989	LB	EPOXY COATED REINFORCING STEEL, AS PER PLAN	660
	196		196	511	53012	196	CY	CLASS QC2 CONCRETE, MISC.: PARAPET INCLUDING SLEEPER SLAB WITH QC/QA	
	618		618	512	10100	618	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
	670		670	516	13900	670	SF	2" PREFORMED EXPANSION JOINT FILLER	
	3,854		3,854	840	20001	3,854	SF	MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN	660
	443		443	840	22000	443	SY	FOUNDATION PREPARATION	
	1,097		1,097	840	23000	1,097	CY	SELECT GRANULAR BACKFILL	
	709		709	840	25010	709	FT	6" DRAINAGE PIPE, PERFORATED	
	335		335	840	26000	335	FT	CONCRETE COPING	
	3,854		3,854	840	26050	3,854	SF	AESTHETIC SURFACE TREATMENT	
	5		5	840	27000	5	DAY	ON-SITE ASSISTANCE	
								RETAINING WALLS (E4)	
		1,334	1,334	203	20000	1,334	CY	EMBANKMENT	
		919	919	203	35110	919	CY	GRANULAR MATERIAL, TYPE B	
		3	3	SPECIAL	20365000	3	EACH	SETTLEMENT PLATFORM	661
		1,393	1,393	203	98100	1,393	SY	ROADWAY, MISC.: COLUMN SUPPORTED WALLS	664
		3	3	SPECIAL	20307500	3	EACH	PNEUMATIC PIEZOMETER	667
		49,546	49,546	509	10001	49,546	LB	EPOXY COATED REINFORCING STEEL, AS PER PLAN	660
		332	332	511	53012	332	CY	CLASS QC2 CONCRETE, MISC.:PARAPET INCLUDING SLEEPER SLAB WITH QC/QA	
		216	216	512	10001	216	SY	SEALING OF CONCRETE SURFACES, AS PER PLAN (PERMANENT GRAFFITI PROTECTION)	660
		1,841	1,841	512	10100	1,841	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
		70	70	516	13200	70	SF	1/2" PREFORMED EXPANSION JOINT FILLER	
		35	35	601	21000	35	SY	CONCRETE SLOPE PROTECTION	
		1,241	1,241	516	13900	1,241	SF	2" PREFORMED EXPANSION JOINT FILLER	
		14,829	14,829	840	20001	14,829	SF	MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN	660
		1,098	1,098	840	21000	1,098	CY	WALL EXCAVATION	
		7,391	7,391	840	23000	7,391	CY	SELECT GRANULAR BACKFILL	
		1,172	1,172	840	25010	1,172	FT	6" DRAINAGE PIPE, PERFORATED	
		707	707	840	26000	707	FT	CONCRETE COPING	
		123	123	840	26001	123	FT	CONCRETE COPING, AS PER PLAN	686
		14,829	14,829	840	26050	14,829	SF	AESTHETIC SURFACE TREATMENT	
		5	5	840	27000	5	DAY	ON-SITE ASSISTANCE	

NO.	DESCRIPTION	REV. BY	DATE
3	QUANTITY CHANGES	ACW	10/20/23
6	ITEM ADDITIONS/REMOVALS QUANTITY CHANGES	ACW	11/13/23
10	QUANTITY REMOVALS	ACW	12/6/23

CALCULATED TAZ
CHECKED DEA

FRA-70-13.10

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SHEET NUM. 480	693	696									PART. 01/IMS/04	04/NHS/10	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
																	RETAINING WALLS (E7)	
	12,305										12,305		SPECIAL	20302000	12,305	CY	ENGINEERED FILL: LIGHTWEIGHT CELLULAR CONCRETE FILL, CLASS II	
	758										758		SPECIAL	20302000	758	CY	ENGINEERED FILL: LIGHTWEIGHT CELLULAR CONCRETE FILL, CLASS III	
	18										18		203	20000	18	CY	EMBANKMENT	
	691										691		203	35110	691	CY	GRANULAR MATERIAL, TYPE B	
	2										2		SPECIAL	20307500	2	EACH	PNEUMATIC PIEZOMETER	667
	2										2		SPECIAL	20365000	2	EACH	SETTLEMENT PLATFORM	
	3,117										3,117		203	98000	3,117	CY	ROADWAY, MISC.: EPS GEOFOAM FILL	
	87										87		511	53012	87	CY	CLASS QC2 CONCRETE, MISC.: LOAD DISTRIBUTION SLAB	
	281										281		512	10100	281	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
	16										16		601	21000	16	SY	CONCRETE SLOPE PROTECTION	
	68										68		516	13200	68	SF	1/2" PREFORMED EXPANSION JOINT FILLER	
	59										59		516	13900	59	SF	2" PREFORMED EXPANSION JOINT FILLER	
	2,906										2,906		840	20001	2,906	SF	MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN	660
	1,300										1,300		840	21000	1,300	CY	WALL EXCAVATION	
	315										315		840	22000	315	SY	FOUNDATION PREPARATION	
	97										97		840	26000	97	FT	CONCRETE COPING	
	2,906										2,906		840	26050	2,906	SF	AESTHETIC SURFACE TREATMENT	
	5										5		840	27000	5	DAY	ON-SITE ASSISTANCE	
																	RETAINING WALLS (E9)	
		1,523									1,523		203	20000	1,523	CY	EMBANKMENT	
		1,229									1,229		203	35110	1,229	CY	GRANULAR MATERIAL, TYPE B	
		3,766									3,766		509	10001	3,766	LB	EPOXY COATED REINFORCING STEEL, AS PER PLANPARAPET INCLUDING SLEEPER SLAB WITH QC/QA	660
		24									24		511	53012	24	CY	CLASS QC2 CONCRETE, MISC.: (PERMANENT GRAFFITI PROTECTION)	
		41									41		512	10001	41	SY	SEALING OF CONCRETE SURFACES, AS PER PLAN	660
		500									500		512	10100	500	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
		70									70		516	13200	70	SF	1/2" PREFORMED EXPANSION JOINT FILLER	
		195									195		516	13900	195	SF	2" PREFORMED EXPANSION JOINT FILLER	
		17									17		601	21000	17	SY	CONCRETE SLOPE PROTECTION	
		5,574									5,574		840	20001	5,574	SF	MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN	660
		2,754									2,754		840	21000	2,754	CY	WALL EXCAVATION	
		502									502		840	22000	502	SY	FOUNDATION PREPARATION	
		4,381									4,381		840	23000	4,381	CY	SELECT GRANULAR BACKFILL	
		334									334		840	25010	334	FT	6" DRAINAGE PIPE, PERFORATED	
		169									169		840	26000	169	FT	CONCRETE COPING	
		5,574									5,574		840	26050	5,574	SF	AESTHETIC SURFACE TREATMENT	
		5									5		840	27000	5	DAY	ON-SITE ASSISTANCE	
																	STRUCTURE OVER 20 FOOT SPAN (FRA-070-1322L)	
565												565	503	21101	565	CY	UNCLASSIFIED EXCAVATION, AS PER PLAN	477
LUMP												LUMP	505	11100	LS		PILE DRIVING EQUIPMENT MOBILIZATION	
3,300												3,300	507	00100	3,300	FT	STEEL PILES HP10X42, FURNISHED	
3,055												3,055	507	00150	3,055	FT	STEEL PILES HP10X42, DRIVEN	
49												49	507	93300	49	EACH	STEEL POINTS OR SHOES	
618,934												618,934	509	10001	618,934	LB	EPOXY COATED REINFORCING STEEL, AS PER PLAN	477
1,328												1,328	511	34447	1,328	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN	477
325												325	511	34450	325	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET)	
253												253	511	44112	253	CY	CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT NOT INCLUDING FOOTING	
477												477	511	45602	477	CY	CLASS QC4 MASS CONCRETE, SUBSTRUCTURE WITH QC/QA	
22												22	511	46012	22	CY	CLASS QC1 CONCRETE WITH QC/QA, RETAINING/WINGWALL NOT INCLUDING FOOTING	
146												146	511	46512	146	CY	CLASS QC1 CONCRETE WITH QC/QA, FOOTING	
254												254	512	10001	254	SY	SEALING OF CONCRETE SURFACES, AS PER PLAN (PERMANENT GRAFFITI PROTECTION)	477
2,927												2,927	512	10100	2,927	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
248,946												248,946	513	10280	248,946	LB	STRUCTURAL STEEL MEMBERS, LEVEL 4	
1,712,826												1,712,826	513	10401	1,712,826	LB	STRUCTURAL STEEL MEMBERS, HYBRID GIRDER, LEVEL SIX (6) FABRICATION, AS PER PLAN	479
9,471												9,471	513	20000	9,471	EACH	WELDED STUD SHEAR CONNECTORS	
27,528												27,528	514	00060	27,528	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT	
27,528												27,528	514	00066	27,528	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT	
111												111	SPECIAL	51612400	111	FT	MODULAR EXPANSION JOINT	478

NO.	DESCRIPTION	REV. BY	DATE
4	QUANTITY CHANGES	ACW	10/30/23
6	ITEM ADDITIONS/REMOVALS QUANTITY CHANGES	ACW	11/13/23
8	QUANTITY CHANGES	ACW	11/24/23
10	QUANTITY REMOVALS	ACW	12/6/23

CALCULATED TAZ
CHECKED DEA

GENERAL SUMMARY

FRA-70-13.10

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PLOT.CEL

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Ohio DOT Workspace
70\71 East Interchange 6A
www.msconsultants.com

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PDF: ohdot\V8i
PDF: 60-06634_6A_Columbus

Batchplot Spec: \\msconsultants.com\files\production\03\60\06634_6A\standards\plotdir\batchplt.606
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Model: Sheet @ 1:27:23 PM
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34" x 22"

View: FENCE_VIEW1
By: tzeigmeister

SHEET NUM.												PART.	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
48	49	50	52	54	59E	117	167B	198	200	693	Office	01/IMS/04						
																	MISCELLANEOUS STRUCTURE	
								LUMP				LUMP	202	11000	LS		STRUCTURE REMOVED	
								LUMP				LUMP	202	11003	LS		STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	35
								LUMP				LUMP	202	11201	LS		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	35
								LUMP				LUMP	202	11201	LS		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN "A"	35
								LUMP				LUMP	202	11201	LS		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN "B"	35
								LUMP				LUMP	202	11201	LS		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN "C"	35
								218				218	202	22900	218	SY	APPROACH SLAB REMOVED	
											55	55	511	50211	55	CY	CLASS QC1 CONCRETE, SUBSTRUCTURE, AS PER PLAN	34
						372	222		6,133			6,727	512	10000	6,727	SY	SEALING OF CONCRETE SURFACES	
					443							443	SPECIAL	69098100	443	FT	COVERED WALKWAY SYSTEM	52
																	MAINTENANCE OF TRAFFIC	
		944										944	614	11110	944	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
					19							19	614	12380	19	EACH	WORK ZONE IMPACT ATTENUATOR, 24" WIDE HAZARDS, (UNIDIRECTIONAL)	
	LUMP											LUMP	614	12420	LS		DETOUR SIGNING	
	9											9	614	12484	9	EACH	WORK ZONE INCREASED PENALTIES SIGN	
20												20	614	12500	20	EACH	REPLACEMENT SIGN	
50												50	614	12600	50	EACH	REPLACEMENT DRUM	
					3,504							3,504	614	12801	3,504	EACH	WORK ZONE RAISED PAVEMENT MARKER, AS PER PLAN	51
					1,566							1,566	614	13310	1,566	EACH	BARRIER REFLECTOR, TYPE 1, ONE WAY	
29												29	614	13312	29	EACH	BARRIER REFLECTOR, TYPE 2, ONE WAY	
29					519							548	614	13350	548	EACH	OBJECT MARKER, ONE WAY	
			1,000									1,000	614	18030	1,000	FT	MAINTAINING TRAFFIC, MISC.: PORTABLE WATER FILLED BARRIER PROTECTED PEDESTRIAN WALKWAY	52
		89										89	614	18601	89	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	50
					12.87							12.87	614	20056	12.87	MILE	WORK ZONE LANE LINE, CLASS I, 6", 807 PAINT	
					0.11							0.11	614	21050	0.11	MILE	WORK ZONE CENTER LINE, CLASS I, 807 PAINT, DOUBLE SOLID, WHITE	
					25.1							25.1	614	22056	25.1	MILE	WORK ZONE EDGE LINE, CLASS I, 6", 807 PAINT	
					64,782							64,782	614	23110	64,782	FT	WORK ZONE CHANNELIZING LINE, CLASS I, 12", 807 PAINT	
					11,051							11,051	614	24102	11,051	FT	WORK ZONE DOTTED LINE, CLASS I, 6", 807 PAINT	
					2,026							2,026	614	28400	2,026	FT	WORK ZONE GORE MARKING, CLASS II, 740.06, TYPE I	
					8							8	614	30400	8 5	EACH	WORK ZONE ARROW, CLASS I, 740.06, TYPE I 5	
					3 5						5	3	614	98200	3	EACH	WORK ZONE PAVEMENT MARKING, MISC: 814 INTERSTATE ELONGATED ROUTE SHIELD SYMBOL MARKING	51
				4,032								4,032	615	20001	4,032	SY	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN	54
				100								100	615	25001	100	SY	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS B, AS PER PLAN, TYPE 1	54
				50								50	615	25001	50	SY	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS B, AS PER PLAN, TYPE 2	54
				20								20	615	25001	20	SY	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS B, AS PER PLAN, TYPE 3	54
					4							4	622	10201	4	EACH	BARRIER TRANSITION, AS PER PLAN	52
					7,279							7,279	622	41011	7,279 5	FT	PORTABLE BARRIER, 50", AS PER PLAN	52
					11,575 5						5	11,575	622	41100	11,575	FT	PORTABLE BARRIER, UNANCHORED	
	288											288	808	18700	288	SNMT	DIGITAL SPEED LIMIT (DSL) SIGN ASSEMBLY	
																	INCIDENTALS	
												LUMP	614	11000	LS		MAINTAINING TRAFFIC	
												LUMP	623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING	
												LUMP	624	10000	LS		MOBILIZATION	

NO.	DESCRIPTION	REV. BY	DATE
5	QUANTITY/DESCRIPTION CHANGES	ACW	12/6/23
10	REMOVE QUANTITY	TAZ	12/6/23

CALCULATED TAZ
CHECKED LM/JML

GENERAL SUMMARY

FRA-70-13.10

197B
702

ITEM 513 STRUCTURAL STEEL MEMBERS, HYBRID GIRDER, LEVEL SIX FABRICATION, AS PER PLAN

A. DESCRIPTION

1. THIS WORK CONSIST OF FURNISHING ALL NECESSARY LABOR, MATERIALS AND EQUIPMENT TO FURNISH AND ERECT STRUCTURAL STEEL MEMBERS, DESIGNED AS A HYBRID/ MIX OF STEEL MATERIALS CONSISTING OF: ASTM A709, HIGH PERFORMANCE GRADE HSP70W IN COMBINATION WITH GRADE 50W STEEL.

2. THIS WORK SHALL BE PERFORMED PER ITEM 513 STRUCTURAL STEEL MEMBER, LEVEL SIX (6) EXCEPT AS MODIFIED BY THE APRIL, 2011 3RD EDITION OF THE GUIDE FOR HIGHWAY BRIDGE FABRICATION WITH HPS70W STEEL, A SUPPLEMENT TO ANSI/AASHTO AWS D1.5" AND AS MODIFIED BY THESE PLAN NOTES.

B. MATERIALS

1. STEEL FOR GIRDER WEBS AND FLANGES SHALL BE A COMBINATION OF ASTM A709 GRADE HPS70W MANUFACTURED BY THE THERMO-MECHANICAL CONTROLLED PROCESSING (TMCP) OR QUENCHED AND TEMPERED HEAT TREATMENT PROCESSING ALONG WITH ASTM A588/709 GRADE 50W. ALL OTHER STEEL SHALL BE ASTM A709 GRADE 50W.

2. STEEL DESIGNATED CVN SHALL BE IMPACT TESTED TO EXCEED THE TEST VALUES OF ASTM A709 TABLE S1.2 NON-FRACTURE CRITICAL IMPACT TEST REQUIREMENTS FOR ZONE 2, TEMPERATURE RANGE.

C. ADDITIONAL FABRICATION RESTRICTIONS / WARNINGS

1. APPLICATION OF HEAT FOR CURVING AND STRAIGHTENING APPLICATIONS, CAMBER AND SWEEP ADJUSTMENT, OR OTHER REASON HEATING IS LIMITED TO 1100°F/590°C MAXIMUM, AND MUST BE DONE BY PROCEDURES APPROVED BY THE DIRECTOR OR HIS AUTHORIZED REPRESENTATIVE.

2. THE MATCHING SUBMERGED ARC WELDING CONSUMABLES ESAB ENI4 ELECTRODE IN COMBINATION WITH LINCOLN MIL800H, RECOMMENDED IN APPENDIX A OF THE AASHTO GUIDE FOR HIGHWAY BRIDGE FABRICATION WITH HPS70W STEEL, HAS PRODUCED WELDMENT CONTAINING UNACCEPTABLE DISCONTINUITIES IN A SUBSTANTIAL NUMBER OF COMPLETE PENETRATION GROOVE WELDS IN ONE STRUCTURE, BASED ON THE PARAMETERS USED AND EXPERIENCE OF ONE FABRICATOR. EXTREME CAUTION SHOULD BE EXERCISED WHEN USING THIS ELECTRODE/FLUX COMBINATION.

3. CONSIDERATION WILL BE GIVEN TO OTHER WELDING PROCESSES IF A WRITTEN REQUEST IS SUBMITTED TO THE OFFICE OF MATERIALS MANAGEMENT IN ACCORDANCE WITH CMS 108.05. OTHER WELDING PROCESSES MUST BE QUALIFIED AND TESTED AS REQUIRED BY THE REFERENCED SPECIFICATIONS AND THESE NOTES.

4. IN ADDITION TO THE REQUIREMENTS OF ANSI/AASHTO/AWS D1.5 SECTION 5.17. ALL PROCEDURE QUALIFICATION TESTS MUST BE ULTRASONICALLY TESTED IN CONFORMANCE WITH THE REQUIREMENTS OF AWS D1.5, SECTION 6, PART C. EVALUATION MUST BE IN ACCORDANCE WITH AWS D1.5, TABLE 6.3, ULTRASONIC ACCEPTANCE REJECTION CRITERIA TENSILE STRESS. INDICATIONS FOUND AT THE INTERFACE OF THE BACKING BAR MAY BE DISREGARDED, REGARDLESS OF THE DEFECT RATING.

5. WHENEVER MAGNETIC PARTICLE TESTING IS DONE, ONLY THE YOKE TECHNIQUE WILL BE ALLOWED, AS DESCRIBED IN SECTION 6.7.6.2 OF THE ANSI/AASHTO/ AWS D1.5 BRIDGE WELDING CODE, MODIFIED TO TEST USING ALTERNATING CURRENT ONLY. THE PROD TECHNIQUE WILL NOT BE ALLOWED.

D. BASIS OF PAYMENT

PAYMENT FOR THE ABOVE COMPLETED AND ACCEPTED QUANTITIES WILL BE MADE AT THE CONTRACT BID PRICE FOR:

ITEM	EXT	UNITS	DESCRIPTION
513	10401	POUND	STRUCTURAL STEEL MEMBERS, HYBRID GIRDER, LEVEL SIX FABRICATION, AS PER PLAN

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

7

THE SHAFT BOTTOM SHALL BE CLEANED TO A DEGREE THAT ALLOWS NO MORE THAN ½" OF SEDIMENT OVER 50% OF THE BOTTOM AND NO MORE THAN 1" ANYWHERE ON THE BASE. DETERMINE THE BOTTOM CLEANLINESS USING A MINIATURE SHAFT INSPECTION DEVICE (MINI-SID), SHAFT QUANTITATIVE INSPECTION DEVICE (SQUID), OR BY OTHER MEANS CONSIDERED APPROPRIATE AND APPROVED BY THE ENGINEER. FURNISH THE RESULTS OF ALL CLEANLINESS INSPECTIONS TO THE ENGINEER WITHIN SEVEN (7) DAYS AFTER COMPLETION OF THE DRILLED SHAFT.

ITEM 524 - DRILLED SHAFTS, 66" DIAMETER, ABOVE BEDROCK, WITH QC/QA, AS PER PLAN

7

ALL DRILLED SHAFTS SHALL BE CONSTRUCTED FULL DEPTH FROM THE REQUIRED BOTTOM ELEVATION TO THE PROPOSED PLAN ELEVATION USING THE TEMPORARY CASING CONSTRUCTION METHOD OF HOLE EXCAVATION AS DETAILED IN C&MS 524.04.C AND/OR THE PERMANENT CASING CONSTRUCTION METHOD OF HOLE EXCAVATION AS DETAILED IN C&MS 524.04.D. NO OTHER METHODS OF HOLE EXCAVATION SHALL BE PERMITTED. PAYMENT FOR THE CASINGS SHALL BE INCLUDED IN THE PAY ITEM 524, DRILLED SHAFTS, 66" DIAMETER, ABOVE BEDROCK, AS PER PLAN. CONCRETE SHALL MEET THE REQUIREMENTS OF ITEM 524 WITH THE EXCEPTION OF A MAXIMUM COARSE AGGREGATE SIZE OF ⅜".

10

ITEM SPECIAL - EMERGENCY ACTION PLAN COORDINATION

THIS ITEM INCLUDES ALL COSTS AND EXPENSES INCURRED BY THE CONTRACTOR TO COORDINATE WITH THE ARMY CORPS OF ENGINEERS, CITY OF COLUMBUS AND ODOT AS IT RELATES TO UPDATING THE EMERGENCY ACTION PLAN DURING CONSTRUCTION FOR THE CONTRACTOR'S ACTUAL MEANS AND METHODS FOR CONSTRUCTING THE NEW FLOODWALL AND MAINTAINING THE INTEGRITY OF THE FLOOD PROTECTION SYSTEM INCLUDING I-WALLS AND ADJACENT LEVEES. THIS ITEM IS ALSO TO INCLUDE ALL CONTRACTOR COSTS FOR ATTENDING WEEKLY PROGRESS MEETING AND PREPARING STATUS REPORTS RELATED TO THE WORK. CONTRACTOR SHALL SUBMIT A WORK PLAN TO ODOT, CITY OF COLUMBUS, AND THE ARMY CORPS OF ENGINEERS OUTLINING THE PROPOSED SEQUENCE OF CONSTRUCTION WITHIN THE EXISTING FLOODWALL RIGHT-OF-WAY.

PAYMENT FOR THIS WORK SHALL BE MADE AT THE LUMP SUM PRICE BID WHICH SHALL CONSTITUTE FULL PAYMENT FOR ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS TO COMPLETE THE WORK.

ITEM 869 - HIGH LOAD MULTI-ROTATIONAL (HLMR) BEARINGS, AS PER PLAN

DESIGN, PREPARE SHOP DRAWINGS FOR, FABRICATE, TEST, FURNISH, AND INSTALL HIGH LOAD MULTI ROTATIONAL (HLMR) BEARINGS IN ACCORDANCE WITH SS869 AND THE PLAN DETAILS. HLMR BEARINGS MAY BE POT OR DISC TYPE BEARINGS.

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

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

ASBESTOS NOTIFICATION

AN ASBESTOS SURVEY OF THE FRA-71-1322L SFN 2504413 BRIDGE WAS CONDUCTED BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST. THE SURVEY DETERMINED THAT NO ASBESTOS IS PERESENT AT THE BRIDGE. A COPY OF THE ASBESTOS INSPECTION REPORT IS INCLUDED IN THE PLAN SET FOR THIS PROJECT.

ELECTRONIC SUBMISSION

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 ACTITVITY, OR BOTH. SUBMIT THE NDRF AND PAYMENT ALONG WITH THE ASBESTOS INSPECTION REPORT USING THE OEPA BUSINESS CENTER. SUBMIT ONE ELECTRONIC PDF COPY AND ONE HARD COPY OF THE NRDF TO THE ENGINEER. THE ENGINEER WILL PROVIDE ONE COPY TO THE DISTRICT ENVIRONMENTAL STAFF.

HARDCOPY SUBMISSION

THE CONTRACTOR MAY SUBMIT A HARD COPY OF THE COMPLETED NDRF AND PAYMENT ALONG WITH THE ASBESTOS INSPECTION REPORT. FOLLOW THE MAILING INSTRUCTIONS ON THE NDRF. CHECK WITH THE LOCAL HEALTH DEPARTMENT, COLUMBUS PUBLIC HEALTH, 240 PARSONS AVE. COLUMBUS OH 43215. 614-645-7005 TO DETERMINE IF THEY REQUIRE A HARD COPY SUBMITTAL.

SUBMIT THE COMPLETED NDRF TO OEPA AT LEAST 10 DAYS PRIOR TO DEMOLITION ACTIVITY, RENOVATION ACTIVITY OR BOTH. RETAIN TWO HARD COPIES OF THE NDRF AND SUBMIT ONE COPY TO THE ENGINEER AND EMAIL ONE COPY OF THE ODOT DISTRICT ENVIRONMENTAL COORDINATOR AT MARCI.LININGER@DOT.OHIO.GOV.

BASIS OF PAYMENT

THE CONTRACTOR SHALL FURNISH ALL FEES, LABOR, AND MATERIALS NECESSARY TO COMPLETE AND SUBMIT THE OEPA NOTIFICATION FORM. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN ITEM 202-STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

ABBREVIATIONS

ABUT.	ABUTMENT	MIN.	MINIMUM
APPR.	APPROACH	N.T.S.	NOT TO SCALE
BL	BASELINE	NE	NORTHEAST
BOT.	BOTTOM	NO.	NUMBER
BRG.	BEARING	NW	NORTHWEST
C.J.	CONSTRUCTION JOINT	O/O	OUT-TO-OUT
C.P.P.	CORRUGATED PLASTIC PIPE	P.E.J.F.	PREFORMED EXPANSION JOINT FILLER
C/C	CENTER-TO-CENTER	P.G.	PROPOSED GRADE
℄	CENTERLINE	PL	PLATE
CLR.	CLEAR	PROP.	PROPOSED
CONN.	CONNECTION	PT.	POINT
CONST.	CONSTRUCTION	R	RADIUS
CONT.	CONTRACTION	R.A.	REAR ABUTMENT
DIA.	DIAMETER	R.F.	REAR FACE
E.F.	EACH FACE	RT.	RIGHT
EA.	EACH	SAN.	SANITARY
EB	EASTBOUND	SB	SOUTHBOUND
EL.	ELEVATION	SHLDR.	SHOULDER
EOP	EDGE OF PAVEMENT	SPA.	SPACES
EQ.	EQUAL	STA.	STATION
EX.	EXISTING	STD.	STANDARD
EXP.	EXPANSION	SW	SOUTHWEST
F.A.	FORWARD ABUTMENT	T/WALL	TOP OF WALL
F.F.	FRONT FACE	TEMP.	TEMPORARY
FL	FLOW LINE	TYP.	TYPICAL
FWD.	FORWARD	VAR.	VARIES
JT.	JOINT	W.P.	WORK POINT
LT.	LEFT	W/	WITH
MAX.	MAXIMUM	WB	WESTBOUND
MEAS.	MEASURED	WW	WINGWALL

NO.	DESCRIPTION	REV. BY	DATE
7	CHANGED NOTE HEADING	ACW	11/20/23
10	UPDATED NOTE	ATM	12/06/23

BRIDGE GENERAL NOTES (3 OF 3)
BRIDGE NO. FRA-70-1322L
I-70 WB OVER SCIOTO RIVER

DESIGNED	DRAWN	REVIEWED	DATE
LAW	KRM	WER	3/06/23
CHECKED	REVISED	STRUCTURE FILE NUMBER	
TVB	---	2510027	

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

FRA-70-13.10
PID No. 77372

ITEM 516 SPECIAL - MODULAR EXPANSION JOINT (CONTINUED)

D. FABRICATION

1. THE MODULAR JOINTS SHALL BE FABRICATED ACCORDING TO C&MS 513.

2. SHOP ASSEMBLE THE MODULAR JOINT WITH ALL COMPONENTS EXCEPT, NEOPRENE SEALS, PER 513.24 EXCEPT THAT FULL ASSEMBLY IS REQUIRED WITH PHASED CONSTRUCTION.

3. JOINTS IN STRIP SEALS: NO JOINTS ARE ALLOWED.

4. JOINTS IN RETAINERS: WELDS ARE WATER TIGHT, PARTIAL PENETRATION WELDS AROUND THE OUTER PERIPHERY OF THE ABUTTING SURFACES. MAKE SPLICES ONLY IN COMPRESSION ZONES OF THE JOINT ARMOR. GRIND FLUSH ALL WELDS IN CONTACT WITH THE SEAL AND JOINT ARMOR. DO NOT USE SHORT PIECES OF RETAINERS LESS THAN 6'-0" LONG, UNLESS REQUIRED AT CURBS OR SIDEWALKS. DO NOT PROVIDE ADDITIONAL SPLICES IN RETAINERS AT CURB OR SIDEWALK SECTIONS OTHER THAN REQUIRED FOR GEOMETRY.

5. SHOP OR FIELD WELDS OF CENTER BEAMS, SHALL BE COMPLETE PENETRATION WELDS, GROUND TO PROVIDE SMOOTH TRANSITIONS AND BE 100% ULTRASONICALLY TESTED PER AASHTO/AWS BRIDGE WELDING CODE, WITH TENSION ACCEPTANCE CRITERIA, WITNESSED BY THE DEPARTMENT.

6. SUPPORT BAR CONNECTIONS SHALL BE COMPLETE PENETRATION WELDS GROUND TO PROVIDE SMOOTH TRANSITIONS AND BE 100% ULTRASONICALLY TESTED PER AASHTO/AWS BRIDGE WELDING CODE, WITH TENSION ACCEPTANCE CRITERIA, WITNESSED BY THE DEPARTMENT.

7. TEMPORARY SUPPORTS: FABRICATOR DESIGNED AND INSTALLED SUPPORTS ARE REQUIRED TO SUPPORT SHIPPING, ERECTION AND CONSTRUCTION FORCES WITHOUT DAMAGE TO THE STEEL ARMOR OR COATINGS. THESE SUPPORTS SHALL BE ADJUSTABLE FOR FIELD TEMPERATURE SETTING. PROVIDE PROTECTIVE LAYERS BETWEEN TEMPORARY SUPPORTS AND COATED SURFACES TO PREVENT DAMAGE.

8. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.

E. COATING

1. GALVANIZE OR METALIZE ALL STEEL SURFACES AND COMPONENTS, EXCEPT AT STAINLESS STEEL AND PTFE SLIDING SURFACES. THESE COATING MAY BE MIXED ON ONE ASSEMBLY, IF ALL SIMILAR COMPONENTS OF THE ASSEMBLY HAVE THE SAME COATING TYPE.

2. PROVIDE A GALVANIZED COATING PER ASTM A123, WITH A MINIMUM THICKNESS OF 4 MILS. CLEAN EXCESSIVE GALVANIZING AS NECESSARY TO ACHIEVE MECHANICAL MOVEMENT AND SEAL INSTALLATION.

3. PROVIDE A METALIZED COATING PER SOCIETY FOR PROTECTIVE COATINGS (SSPC) SPECIFICATION SSPC-CS23.00 (MARCH 17, 2003) FOR THERMAL SPRAY METALLIC COATINGS. THE COATING SHALL BE A MINIMUM OF 8 MILS THICK. THE METALIZING WIRE SHALL BE 100% ZINC. AREAS OF STRUCTURAL STEEL THAT ARE IN CONTACT WITH CAST-IN-PLACE CONCRETE SHALL HAVE AN ADDITIONAL COATING. THE COATING SHALL BE THE EPOXY INTERMEDIATE COAT SPECIFIED IN CMS 514. THE COATING THICKNESS WILL COVER ALL PEAKS, VALLEYS AND SURFACE ROUGHNESS ATTRIBUTED TO METALIZING.

4. COATING REPAIRS: DAMAGED COATINGS SHALL BE REPAIRED BY ASTM A780, ANNEX "A1. REPAIR USING ZINC BASED ALLOYS". THE PROCEDURE SHALL BE AS FOLLOWS: REMOVE SURFACE CONTAMINATES, PREHEAT TO 600 DEGREES F, AND APPLY ZINC COATING BY RUBBING WITH PURE WITH A PURE ZINC STICK OR SPRINKLING ZINC POWDER ON THE PREHEATED SURFACE, TO ACHIEVE A MINIMUM COATING THICKNESS OF 6 MILS. MAKE COATING REPAIRS OF WELDED SURFACES PRIOR TO CONCRETE PLACEMENT OPERATIONS.

5. THE METALIZED OR GALVANIZED COATINGS SHOULD NOT BE FIELD PAINTED, EXCEPT FOR AREAS DAMAGED BY CONNECTION TO PAINTED SUPERSTRUCTURE STEEL MEMBERS. THESE AREAS SHALL BE PAINTED USING THE SAME SYSTEM SPECIFIED FOR THE SUPERSTRUCTURE.

6. PRIOR TO SHIPPING, RETAINER GROOVES SHALL BE PROTECTED FROM CONSTRUCTION DEBRIS BY THE INSTALLATION OF BACKER RODS OR OTHER EFFECTIVE MASKING TECHNIQUES.

F. INSTALLATION

1. A JOINT MANUFACTURER'S TECHNICAL REPRESENTATIVE TO PHYSICALLY OVERSEE THE FABRICATION, INSTALLATION, ADJUSTMENT AND TESTING DURING ALL OPERATIONS. WHERE SPECIAL INSTRUCTIONS ARE NOT CONTAINED HEREIN OR ELSEWHERE IN THESE NOTES, DIRECTION FOR THE INSTALLATION SHALL BE ACCORDING TO THE RECOMMENDATIONS OF THE TECHNICAL REPRESENTATIVE.

2. COORDINATE AND SCHEDULE THE TECHNICAL REPRESENTATIVE.

3. INSTALL THE SUPERSTRUCTURE SUPPORTING UNITS BEFORE INSTALLING THE MODULAR JOINT. POSITION THE JOINT TO MATCH ROADWAY GEOMETRY SUPERSTRUCTURE CONNECTIONS AND TEMPERATURE OPENING. TAKE CARE TO MAINTAIN EXACT ALIGNMENT OF ADJACENT ENDS OF THE ARMOR AND SEPARATION BEAMS/TRANSVERSE DIVIDERS/CENTER BEAMS FOR FIELD WELDED UNITS. PROVIDE TEMPORARY SUPPORTS AS DIRECTED BY THE MANUFACTURER TO MAINTAIN THE PROPER POSITIONING. FOR PHASED CONSTRUCTION, THE CONTRACTOR'S METHODS FOR INSTALLATION AND TEMPORARY SUPPORTS SHALL ACHIEVE SEPARATION OF THE PHASES AND UNRESTRICTED TEMPERATURE MOVEMENT.

4. PERFORM CONCRETE PLACEMENT USING VIBRATION AND HAND WORK AS NECESSARY TO ACHIEVE CONSOLIDATION AND ELIMINATE AIR VOIDS.

5. SPACING OF SUPPORT BARS SHALL BE LIMITED TO 3-FT CENTERS UNDER MAIN LOAD BEARING BEAMS UNLESS FATIGUE TESTING OF THE ACTUAL WELDING CONNECTION DETAILS HAS BEEN PERFORMED TO SHOW THAT A GREATER SPACING IS ACCEPTABLE. FATIGUE RESISTANCE SHALL BE DETERMINED ACCORDING TO AASHTO LRFD 6.6.1.2.5. ALL COMPONENTS OR DETAILS SHALL BE DESIGNED FOR INFINITE LIFE USING FATIGUE I LOAD COMBINATION.

6. CONTRACTOR SHALL COORDINATE AND ADJUST REBAR DETAILS AT EXPANSION JOINT BLOCKOUT WITH JOINT MANUFACTURER TO AVOID INTERFERENCE WITH EXPANSION JOINT COMPONENTS. FILL BLOCKOUT VOID WITH CLASS QC2-4.5KSI CONCRETE.

7. PLACE THE DECK CONCRETE FIRST. CHECK THE ABUTMENT OR ADJACENT SPAN SIDE OF THE MODULAR JOINT FOR ALIGNMENT AND TEMPERATURE ADJUSTMENT. TEMPERATURE SHALL BE MEASURED AT THE UNDERSIDE OF THE CONCRETE DECK AT EACH END AND MID-SPAN TO ACHIEVE THE AVERAGE SUPER STRUCTURE TEMPERATURE. PLACE THE BACKWALL OR ADJACENT SPAN CONCRETE SECOND. THE MANUFACTURER'S REPRESENTATIVE SHALL CHECK THAT TEMPERATURE MOVEMENT HAS NOT CAUSED ANY DAMAGE TO THE BOND BETWEEN THE JOINT AND THE CONCRETE.

8. EXAMINE SEAL RETAINERS FOR SOIL OR DEFECTS THAT CAN DAMAGE THE SEAL. REPAIR ANY DEFECTS AS DIRECTED BY THE MANUFACTURER'S REPRESENTATIVE.

9. SOLVENT CLEAN THE NEOPRENE SEAL ELEMENTS AND THE RETAINER GROOVES TO REMOVE OIL, GREASE OR OTHER SOIL IMMEDIATELY PRIOR TO INSTALLING THE SEALS. INSTALL SEALS USING PROCEDURES AND ADHESIVE SPECIFIED BY THE JOINT MANUFACTURER. KEEP THE BONDING SURFACES CLEAN, DRY AND WARMER THAN 45°F.

10. TEST THE INSTALLED MODULAR JOINT FOR LEAKS. FLOOD THE TOTAL EXPANSION JOINT LENGTH WITH WATER FOR A PERIOD OF NOT LESS THAN ONE HOUR. COVER THE ENTIRE JOINT SYSTEM BY EITHER PONDING OR FLOWING WATER. LOCATE ANY POINTS OF LEAKAGE AND TAKE ANY AND ALL MEASURES NECESSARY TO STOP THE LEAKAGE. PERFORM THIS WORK AT THE CONTRACTOR'S EXPENSE. PERFORM A SECOND WATER TEST AFTER ALL REPAIRS HAVE BEEN MADE.

G. METHOD OF MEASUREMENT

THE DEPARTMENT WILL MEASURE EACH ITEM BY THE NUMBER OF FEET HORIZONTALLY ALONG THE JOINT CENTERLINE AND BETWEEN THE OUTER LIMITS OF THE FABRICATED JOINT.

H. BASIS OF PAYMENT

THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICES AS FOLLOWS:

ITEM	UNIT	DESCRIPTION
516	FT	SPECIAL - MODULAR EXPANSION JOINT

7 **ITEM 524 - DRILLED SHAFTS, 66" DIAMETER, ABOVE BEDROCK WITH QC/QA, AS PER PLAN**

ALL DRILLED SHAFTS SHALL BE CONSTRUCTED FULL DEPTH FROM THE REQUIRED BOTTOM ELEVATION TO THE PROPOSED PLAN ELEVATION USING THE TEMPORARY CASING CONSTRUCTION METHOD OF HOLE EXCAVATION AS DETAILED IN C&MS 524.04.C AND/OR THE PERMANENT CASING CONSTRUCTION METHOD OF HOLE EXCAVATION AS DETAILED IN C&MS 524.04.D. NO OTHER METHODS OF HOLE EXCAVATION SHALL BE PERMITTED. PAYMENT FOR THE CASINGS SHALL BE INCLUDED IN THE PAY ITEM 524, DRILLED SHAFTS, 66" DIAMETER, ABOVE BEDROCK, AS PER PLAN. CONCRETE SHALL MEET THE REQUIREMENTS OF ITEM 524 WITH THE EXCEPTION OF A MAXIMUM COARSE AGGREGATE SIZE OF 3/8". 10

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

THE SHAFT BOTTOM SHALL BE CLEANED TO A DEGREE THAT ALLOWS NO MORE THAN 1/2" OF SEDIMENT OVER 50% OF THE BOTTOM AND NO MORE THAN 1" ANYWHERE ON THE BASE. DETERMINE THE BOTTOM CLEANLINESS USING A MINIATURE SHAFT INSPECTION DEVICE (MINI-SID), SHAFT QUANTITATIVE INSPECTION DEVICE (SQUID), OR BY OTHER MEANS CONSIDERED APPROPRIATE AND APPROVED BY THE ENGINEER. FURNISH THE RESULTS OF ALL CLEANLINESS INSPECTIONS TO THE ENGINEER WITHIN SEVEN (7) DAYS AFTER COMPLETION OF THE DRILLED SHAFT.

ITEM 869 - HIGH LOAD MULTI-ROTATIONAL (HLMR) BEARINGS, AS PER PLAN

DESIGN, PREPARE SHOP DRAWINGS FOR, FABRICATE, TEST, FURNISH, AND INSTALL HIGH LOAD MULTI ROTATIONAL (HLMR) BEARINGS IN ACCORDANCE WITH SS869 AND THE PLAN DETAILS. HLMR BEARINGS MAY BE POT OR DISC TYPE BEARINGS.

ITEM 894 - THERMAL INTEGRITY PROFILER (TIP) TEST

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

ABBREVIATIONS

ABUT.	- ABUTMENT	MIN.	- MINIMUM
APPR.	- APPROACH	N.T.S.	- NOT TO SCALE
℄	- BASELINE	NE	- NORTHEAST
BOT.	- BOTTOM	NO.	- NUMBER
BRG.	- BEARING	NW	- NORTHWEST
C.J.	- CONSTRUCTION JOINT	O/O	- OUT-TO-OUT
C.P.P.	- CORRUGATED PLASTIC PIPE	P.E.J.F.	- PREFORMED EXPANSION JOINT FILLER
C/C	- CENTER-TO-CENTER	P.G.	- PROPOSED GRADE
℄	- CENTERLINE	ℙ	- PLATE
CLR.	- CLEAR	PROP.	- PROPOSED
CONN.	- CONNECTION	PT.	- POINT
CONST.	- CONSTRUCTION	R	- RADIUS
CONT.	- CONTRACTION	R.A.	- REAR ABUTMENT
DIA.	- DIAMETER	R.F.	- REAR FACE
E.F.	- EACH FACE	RT.	- RIGHT
EA.	- EACH	SAN.	- SANITARY
EB	- EASTBOUND	SB	- SOUTHBOUND
EL.	- ELEVATION	SHLDR.	- SHOULDER
EOP	- EDGE OF PAVEMENT	SPA.	- SPACES
EQ.	- EQUAL	STA.	- STATION
EX.	- EXISTING	STD.	- STANDARD
EXP.	- EXPANSION	SW	- SOUTHWEST
F.A.	- FORWARD ABUTMENT	T/WALL	- TOP OF WALL
F.F.	- FRONT FACE	TEMP.	- TEMPORARY
℄	- FLOW LINE	TYP.	- TYPICAL
FWD.	- FORWARD	VAR.	- VARIES
JT.	- JOINT	W.P.	- WORK POINT
LT.	- LEFT	W/	- WITH
MAX.	- MAXIMUM	WB	- WESTBOUND
MEAS.	- MEASURED	WW	- WINGWALL

NO.	DESCRIPTION	REV. BY	DATE
7	UPDATED NOTE HEADING	ACW	11/20/23
10	UPDATED NOTE	ATM	12/06/23

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

DESIGNED	DRAWN	REVIEWED	DATE
CMA	CMA	GLG/YSJ	03/08/23
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ELS		2510026	

BRIDGE GENERAL NOTES (3 OF 3)
BRIDGE NO. FRA-70-1323C
RAMP D3 OVER SCIOTO RIVER

FRA-70-13.10
PID No. 77372

7/70

537/702

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 SPECIFICATONS:

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.

10

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 ACCORDNACE WITH MANUFACTURER'S PRINTED INSTRUCTIONS. APPLY PERMANENT GRAFFITI COATING TO THE WALL E4 TO THE RAILROAD.

6

ITEM 840 - MECHANICALLY STABLIZED 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.

8

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 STABLIZED EARTH WALL, AS PER PLAN:

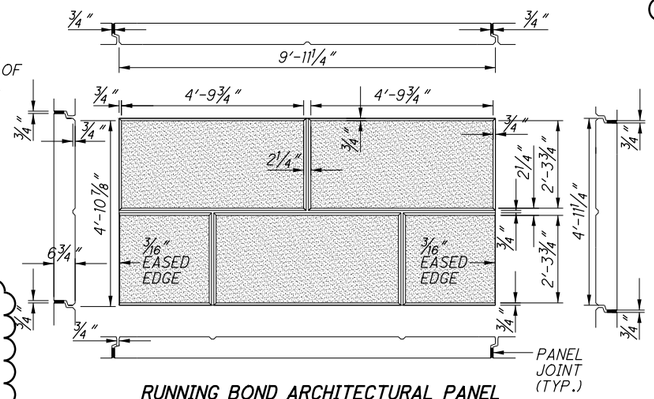
DO NOT FABRICATE WALL TOP PANELS OR INSTALL COPINGS, BARRIER MOMENT SLABS, OR RAILINGS LOCATED ON TOP OF MSE WALLS UNTIL AFTER THE MSE WALL EMBANKMENT HAS BEEN CONSTRUCTED TO WITHIN 1 FOOT OF THE PROPOSED FINISHED GRADE AND THE SETTLEMENT REQUIREMENTS HAVE BEEN MET. THE CONTRACTOR SHALL FABRICATE THE 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.

8

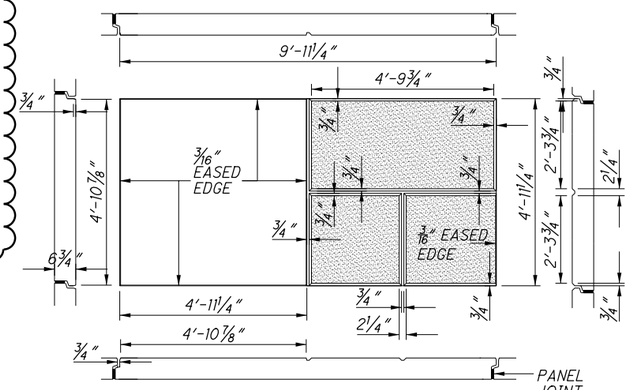
THE DEPARTMENT WILL NOT ADJUST PAY QUANTITIES FOR VARIATIONS IN THE CONCRETE LEVELING PAD ELEVATIONS AND OR OTHER PAY QUANTITIES ASSOCIATED WITH ADDITIONAL SOIL REINFORCEMENT LENGTH BEYOND THE LISTED LENGTHS IN THE PLANS. ANY DEVIATION DUE TO THE CHANGE OF SITE CONDITIONS OR FROM THE RESULT OF THE INTERNAL 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 - AESTHETIC SURFACE TREATMENT:

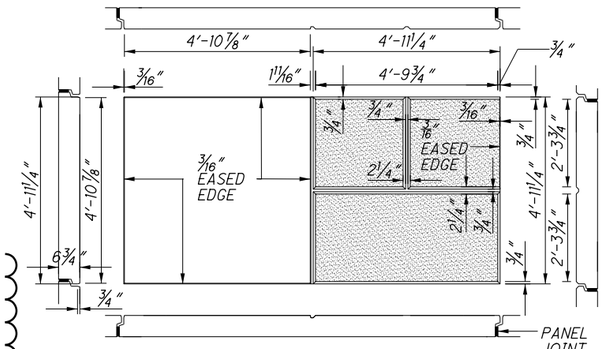
THE ITEM OF WORK SHALL CONSIST OF PROVIDING AESTHETIC TREATMENTS TO THE CONCRETE MSE WALL PANEL SURFACES. THE SURFACE FINISH SHALL BE EITHER A RUNNING BOND AESTHETIC PATTERN & TEXTURE OR A RUNNING BOND AESTHETIC PSTTERN & TEXTURE WITH PILASTERS. SEE BELOW FOR DETAILS OF EACH, AND SEE INDIVIDUAL WALL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



RUNNING BOND ARCHITECTURAL PANEL



PILASTER ARCHITECTURAL PANEL - 1



PILASTER ARCHITECTURAL PANEL - 2

6

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.

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

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
10	COFFERDAM AND EXCAVATION BRACING NOTE REMOVED	MMS	12-5-2023

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

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

RETAINING WALL NOTES 1 OF 8
RETAINING WALLS
I-70/I-71 WEST INTERCHANGE PROJECT

FRA-70-13.10
PID No. 77372

1 / 8

660
702

CALCULATED BY: MMS DATE: 11/18/2021
CHECKED BY: JGM DATE: 11/18/2021

ESTIMATED QUANTITIES

ITEM	ITEM EXT	TOTAL	UNIT	DESCRIPTION	AS PER PLAN REFERENCE SHEET
203	07500	1	EACH	SPECIAL - PNEUMATIC PIEZOMETER	6
203	20000	261	CU YD	EMBANKMENT	6
203	35110	1112	CU YD	GRANULAR MATERIAL, TYPE B	
203	65000	2	EACH	SPECIAL - SETTLEMENT PLATFORM	661 667
203	98100	273	SQ YD	ROADWAY MISC.: COLUMN SUPPORTED WALLS	664
512	10001	128	SQ YD	SEALING OF CONCRETE SURFACES, AS PER PLAN (PERMANENT GRAFFITI PROTECTION)	10 660
512	10100	168	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY URETHANE)	
516	13200	121	SQ FT	1/2" PREFORMED EXPANSION JOINT FILLER	
601	21000	45	SY	CONCRETE SLOPE PROTECTION	
840	20001	2115	SQ FT	MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN	660
840	21000	298	CU YD	WALL EXCAVATION	
840	22000	368	SQ YD	FOUNDATION PREPARATION	
840	23000	1851	CU YD	SELECT GRANULAR BACKFILL	
840	25010	312	FT	6" DRAINAGE PIPE, PERFORATED	
840	26000	135	FT	CONCRETE COPING	
840	26050	2115	SQ FT	AESTHETIC SURFACE TREATMENT	
840	27000	5	DAY	ON-SITE ASSISTANCE	

NO.	DESCRIPTION	REV. BY	DATE
6	ADDED ITEM203 - PNEUMATIC PIEZOMETER QUANTITY	MMS	11-6-2023
6	UPDATED AS PER PLAN REFERENCE SHEET NUMBERS	MMS	11-6-2023
10	COFFERDAM AND EXCAVATION BRACING QUANTITY REMOVED	MMS	12-5-2023

RESOURCE INTERNATIONAL INC.
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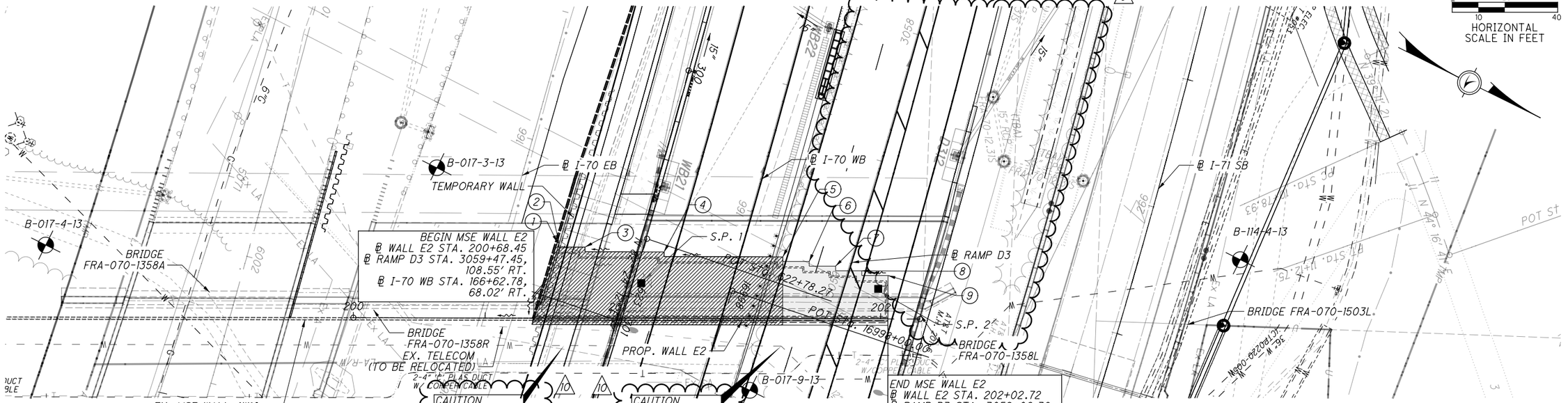
DESIGNED MMS | CHECKED JGM
DRAWN MMS | REVISED
REVIEWED NCK 11/18/2021 DATE | STRUCTURE FILE NUMBER

ESTIMATED QUANTITIES
RETAINING WALL E2
I-70/I-71 WEST INTERCHANGE PROJECT

FRA-70-.13.10
PID No. 77372



MSE WALL E2, TANGENT 1
STA. 200+68.45
STA. 202+02.72
L = 134.92'
BRG. = N 26°10'01" W

EX. MSE WALL 4W10 (CONSTRUCTED BY PROJECT 4A)

ALL STATIONS AND OFFSETS ARE FROM THE ℄ OF WALL E2

	STATION	OFFSET
1	200+77.24	28.71' LT.
2	200+77.80	28.71' LT.
3	200+87.80	26.96' LT.
4	201+17.80	25.21' LT.
5	201+62.80	23.46' LT.
6	201+72.80	21.71' LT.
7	201+82.80	19.96' LT.
8	201+92.80	18.21' LT.
9	202+02.72	16.46' LT.

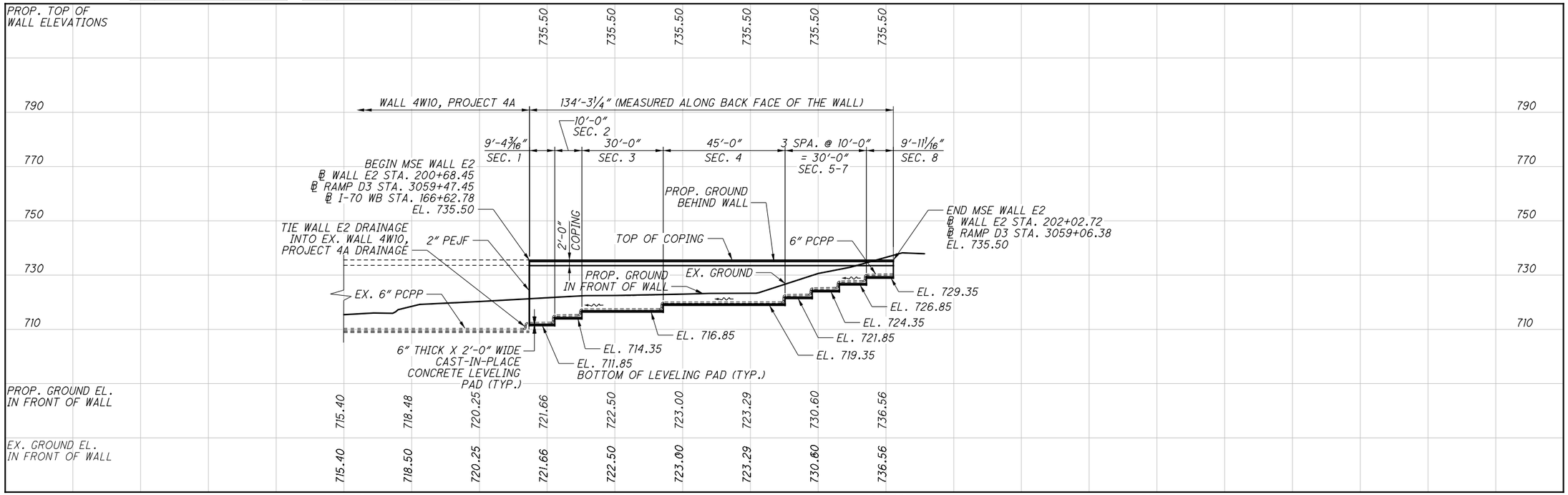
PLAN

NOTES:

1. LEVELING PAD ELEVATIONS ARE GIVEN AT BOTTOM OF PAD.
2. ALL EXISTING UTILILITIES TO BE REMOVED/RELOCATED UNLESS NOTED OTHERWISE.
3. STATIONING IS ALONG ℄ WALL E2.
4. STATIONS AND OFFSETS ARE GIVEN AT BACK FACE OF THE WALL.
5. TOP OF WALL ELEVATIONS ARE GIVEN AT TOP OF COPING.

LEGEND:

- 6" DIA PERF CPP
- PROJECT BORING LOCATION (6)
- SETTLEMENT PLATFORM & PIEZOMETER
- HISTORIC BORING LOCATION
- = PLAN BOUNDARY FOR ITEMS INCLUDED WITH MSE WALL E2 FOR PAYMENT
- = LIMITS OF GROUND IMPROVEMENT NEEDED = 273 SY



ELEVATION ALONG BACK OF WALL

NO.	DESCRIPTION	REV. BY	DATE
6	REMOVED HATCH PATTERN	MMS	11-6-2023
6	UPDATED LEGEND	MMS	11-6-2023
10	ADDED CALLOUTS	MMS	12-5-23

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

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

MSE RETAINING WALL E2 - PLAN AND ELEVATION 1 OF 1
I-70 EB, I-70 WB & RAMP D3
I-70/I-71 WEST INTERCHANGE PROJECT

FRA-70-13.10
PID No. 77372

2 / 3

669
702

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CALCULATED BY: MMS DATE: 11/18/2021
CHECKED BY: JGM DATE: 11/18/2021

ESTIMATED QUANTITIES					AS PER PLAN REFERENCE SHEET
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	
203	20000	73	CU YD	EMBANKMENT	
509	10001	27989	LB	EPOXY COATED REINFORCING STEEL, AS PER PLAN	660
511	53012	196	CU YD	CLASS QC2 CONCRETE, MISC.: PARAPET INCLUDING SLEEPER SLAB WITH QC/QA	
512	10100	618	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY URETHANE)	
516	13900	670	SQ FT	2" PREFORMED EXPANSION JOINT FILLER	
840	20001	3854	SQ FT	MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN	660
840	22000	443	SQ YD	FOUNDATION PREPARATION	
840	23000	1097	CU YD	SELECT GRANULAR BACKFILL	
840	25010	709	FT	6" DRAINAGE PIPE, PERFORATED	
840	26000	335	FT	CONCRETE COPING	
840	26050	3854	SQ FT	AESTHETIC SURFACE TREATMENT	
840	27000	5	DAY	ON-SITE ASSISTANCE	

10

NO.	DESCRIPTION	REV. BY	DATE
10	COFFERDAM AND EXCAVATION BRACING QUANTITY REMOVED	MMS	12-5-2023

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

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

ESTIMATED QUANTITIES

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

FRA-70-.13.10
PID No. 77372

CALCULATED BY: JGM DATE: 11/18/2021
CHECKED BY: MMS DATE: 11/18/2021

ESTIMATED QUANTITIES

ITEM	ITEM EXT	TOTAL	UNIT	DESCRIPTION	AS PER PLAN REFERENCE SHEET
203	07500	3	EACH	SPECIAL - PNEUMATIC PIEZOMETER	667
203	20000	1334	CU YD	EMBANKMENT	
203	35110	919	CU YD	GRANULAR MATERIAL, TYPE B	
203	98100	1336	SQ YD	ROADWAY MISC.: COLUMN-SUPPORTED WALLS *	664
203	65000	3	EACH	SPECIAL - SETTLEMENT PLATFORM	661 , 667
509	10001	19546	LB	EPOXY COATED REINFORCING STEEL, AS PER PLAN	680
511	53012	332	CU YD	CLASS QC2 CONCRETE, MISC.: PARAPET INCLUDING SLEEPER SLAB WITH QC/QA	
512	10001	216	SQ YD	SEALING OF CONCRETE SURFACES, (PERMANENT GRAFFITI PROTECTION), AS PER PLAN	660
512	10100	1841	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY URETHANE)	
516	13200	70	SQ FT	1/2" PREFORMED EXPANSION JOINT FILLER	
516	13900	1241	SQ FT	2" PREFORMED EXPANSION JOINT FILLER	
601	21000	35	SY	CONCRETE SLOPE PROTECTION	
840	20001	14829	SQ FT	MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN	660
840	21000	1056	CU YD	WALL EXCAVATION	
840	23000	1381	CU YD	SELECT GRANULAR BACKFILL	
840	25010	1172	FT	6" DRAINAGE PIPE, PERFORATED	
840	26000	707	FT	CONCRETE COPING	
840	26001	123	FT	CONCRETE COPING, AS PER PLAN	686
840	26050	14829	SQ FT	AESTHETIC SURFACE TREATMENT	
840	27000	5	DAY	ON-SITE ASSISTANCE	

* - QUANTITY FOR COLUMN-SUPPORTED WALLS INCLUDES GROUND IMPROVEMENTS PERFORMED UNDER THIS SET OF PLANS. SEE SHEETS 692 FOR LIMITS.

NO.	DESCRIPTION	REV. BY	DATE
6	ADDED ITEM203 - PNEUMATIC PIEZOMETER QUANTITY	MMS	11-6-2023
6	UPDATED AS PER PLAN REFERENCE SHEET NUMBERS & SETTLEMENT PLATFORM QUANTITY	MMS	11-6-2023
6	REMOVED FOUNDATION PREPARATION QUANTITY	MMS	11-6-2023
10	COFFERDAM AND EXCAVATION BRACING QUANTITY REMOVED	MMS	12-5-2023

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

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

ESTIMATED QUANTITIES
RETAINING WALL E4
I-70/I-71 WEST INTERCHANGE PROJECT

FRA-70-13.10
PID No. 77372

CALCULATED BY: MMS DATE: 11/18/2021
CHECKED BY: JGM DATE: 11/18/2021

ESTIMATED QUANTITIES					AS PER PLAN REFERENCE SHEET
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	
203	02000	12305	CU YD	SPECIAL - ENGINEERED FILL: LIGHTWEIGHT CELLULAR CONCRETE FILL, CLASS II	663
203	02000	758	CU YD	SPECIAL - ENGINEERED FILL: LIGHTWEIGHT CELLULAR CONCRETE FILL, CLASS III	663
203	07500	2	EACH	SPECIAL - PNEUMATIC PIEZOMETER	667
203	80000	18	CU YD	EMBANKMENT	
203	35110	691	CU YD	GRANULAR MATERIAL, TYPE B	
203	98000	3117	CU YD	ROADWAY MISC.: EPS GEOFOAM FILL	662
203	65000	2	EACH	SPECIAL - SETTLEMENT PLATFORM	661 , 667
511	53012	87	CU YD	CLASS QC2 CONCRETE, MISC.: LOAD DISTRIBUTION SLAB	660
512	10100	281	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY URETHANE)	
516	13200	68	SQ FT	1/2" PREFORMED EXPANSION JOINT FILLER	
516	13900	59	SQ FT	2" PREFORMED EXPANSION JOINT FILLER	
601	21000	16	SQ YD	CONCRETE SLOPE PROTECTION	
840	20001	2906	SQ FT	MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN	660
840	21000	1300	CU YD	WALL EXCAVATION	
840	22000	315	SQ YD	FOUNDATION PREPARATION	
840	26000	97	FT	CONCRETE COPING	
840	26050	2906	SQ FT	AESTHETIC SURFACE TREATMENT	
840	27000	5	DAY	ON-SITE ASSISTANCE	

ABOVE WALL QUANTITIES ALSO INCLUDE ROADWAY QUANTITIES LISTED BELOW BETWEEN STATION 177+17.60 TO 179+00.00.
THE BELOW ROADWAY QUANTITIES ARE PAID FOR WITH WALL E7 AS THE PLAN NOTES INDICATE. THE TABLE BELOW IS FOR INFORMATION ONLY AND THE QUANTITIES ARE NOT CARRIED TO THE ROADWAY GENERAL SUMMARY.

ESTIMATED QUANTITIES - ROADWAYS					AS PER PLAN REFERENCE SHEET
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	
203	02000	7941	CU YD	SPECIAL - ENGINEERED FILL: LIGHTWEIGHT CELLULAR CONCRETE FILL, CLASS II	663
203	02000	555	CU YD	SPECIAL - ENGINEERED FILL: LIGHTWEIGHT CELLULAR CONCRETE FILL, CLASS III	663
203	35110	564	CU YD	GRANULAR MATERIAL, TYPE B	
203	98000	3117	CU YD	ROADWAY MISC.: EPS GEOFOAM FILL	662

NO.	DESCRIPTION	REV. BY	DATE
6	ADDED ITEM203 - PNEUMATIC PIEZOMETER QUANTITY	MMS	11-9-2023
6	UPDATED AS PER PLAN REFERENCE SHEET NUMBERS	MMS	11-9-2023
6	REMOVED ITEM-840, SELECT GRANULAR BACKFILL QUANTITY	MMS	11-9-2023
10	COFFERDAM AND EXCAVATION BRACING QUANTITY REMOVED	MMS	12-5-2023

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COLUMBUS, OHIO 43231
(614) 823-4949

DESIGNED JGM | DRAWN MMS | REVIEWED NCK 11/18/2021 DATE | CHECKED MMS

REVISED | STRUCTURE FILE NUMBER

ESTIMATED QUANTITIES
RETAINING WALL E7
1-70/1-71 WEST INTERCHANGE PROJECT

FRA-70-13.10
PID No. 77372

CALCULATED BY: MMS DATE: 11/18/2021
CHECKED BY: JGM DATE: 11/18/2021

ESTIMATED QUANTITIES

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	AS PER PLAN REFERENCE SHEET
203	20000	1523	CU YD	EMBANKMENT	
203	35110	1229	CU YD	GRANULAR MATERIAL, TYPE B	
509	10001	3766	LB	EPOXY COATED REINFORCING STEEL, AS PER PLAN	660
511	53012	24	CU YD	CLASS QC2 CONCRETE, MISC.: PARAPET INCLUDING SLEEPER SLAB WITH QC/QA	
512	10001	41	SQ YD	SEALING OF CONCRETE SURFACES, (PERMANENT GRAFFITI PROTECTION), AS PER PLAN	660
512	10100	500	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY URETHANE)	
516	13200	70	SQ FT	1/2" PREFORMED EXPANSION JOINT FILLER	
516	13900	195	SQ FT	2" PREFORMED EXPANSION JOINT FILLER	
601	21000	17	SY	CONCRETE SLOPE PROTECTION	
840	20001	5574	SQ FT	MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN	660
840	21000	2754	CU YD	WALL EXCAVATION	
840	22000	582	SQ YD	FOUNDATION PREPARATION	
840	23000	4381	CU YD	SELECT GRANULAR BACKFILL	
840	25018	334	FT	6" DRAINAGE PIPE, PERFORATED	
840	26000	169	FT	CONCRETE COPING	
840	26050	5574	SQ FT	AESTHETIC SURFACE TREATMENT	
840	27000	5	DAY	ON-SITE ASSISTANCE	

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NO.	DESCRIPTION	REV. BY	DATE
6	UPDATED QUANTIY	MMS	11-6-2023
10	COFFERDAM AND EXCAVATION BRACING QUANTITY REMOVED	MMS	12-5-2023

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

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

ESTIMATED QUANTITIES
RETAINING WALL E9
I-70/I-71 WEST INTERCHANGE PROJECT

FRA-70-13.10
PID No. 77372

ITEM 203, SPECIAL - ENGINEERED FILL (LIGHTWEIGHT CELLULAR CONCRETE FILL): (4W16)

A. DESCRIPTION.
THIS WORK CONSISTS OF FURNISHING AND PLACING A LOW DENSITY, LIGHTWEIGHT, FLOWABLE, CEMENTITIOUS FILL MATERIAL, HEREIN REFERRED TO AS CELLULAR CONCRETE FILL (CCF).

6 ALL LIGHTWEIGHT CELLULAR CONCRETE FILL INSTALLATIONS SHALL BE SUBJECT TO FINAL ACCEPTANCE BY THE ENGINEER.

B. QUALIFICATIONS.

1. SUPPLIER/PRODUCER.
PROVIDE CCF FROM A SUPPLIER/PRODUCER REGULARLY ENGAGED IN THE PLACEMENT OF CCF MATERIAL, WHO HAS IN THE PAST THREE YEARS COMPLETED MASS FILLS HAVING A COMBINED QUANTITY OF AT LEAST 10,000 TOTAL CUBIC YARDS (7,650 CUBIC METERS).

DOCUMENTATION FOR THE ABOVE QUALIFICATIONS SHALL BE SUBMITTED AT OR BEFORE THE PRECONSTRUCTION CONFERENCE ACCORDING TO C&MS 108.02.

2. CCF MATERIAL.
PROVIDE CCF MATERIAL, MEETING THE REQUIREMENT OF SECTION C OF THIS SPECIFICATION, WHICH HAS BEEN SUCCESSFULLY PLACED ON AT LEAST 5 PROJECTS THAT HAVE PERFORMED SATISFACTORY FOR AT LEAST FIVE YEARS.

PREAPPROVAL OF THE CCF MATERIAL WILL BE BASED ON DOCUMENTATION FOR THE ABOVE QUALIFICATIONS. THIS DOCUMENTATION SHALL BE SUBMITTED TO THE LABORATORY. PREAPPROVED CCF MATERIALS WILL BE LISTED ON THE DEPARTMENT'S QUALIFIED PROJECT LIST AND WILL NEED TO BE REAPPROVED YEARLY.

C. MATERIALS

1. FOAM.
USE A FOAMING AGENT CONFORMING TO ASTM C796. PERVIOUS CCF SHALL COMPLY WITH THE STANDARD SPECIFICATIONS OF ASTM C869 WHEN TESTED IN ACCORDANCE WITH ASTM C796.

6 THE CONTRACTOR SHALL PROVIDE A PLAN FOR PROTECTION AND STORAGE OF FOAMING AGENTS PREPARED BY THE MANUFACTURER FOR THE ENGINEER TO REVIEW.

2. CEMENT.
USE PORTLAND CEMENT CONFORMING TO C&MS 701.04 OR C&MS 701.05

3. WATER.
USE WATER ACCORDING TO C&MS 499.02. POTABLE WATER IS SATISFACTORY FOR USE IN CCF.

4. ADMIXTURES.
USE ADMIXTURES CONFORMING TO C&MS 499.02 FOR WATER REDUCING, RETARDING, ACCELERATING, IMPROVING THE BOND, OR FOR OTHER SPECIFIC PROPERTIES, WHEN SPECIFICALLY APPROVED BY THE SUPPLIER/PRODUCER OF THE CCF.

D. MIX DESIGN.
DESIGN OF THE PROPOSED CCF MIX WILL BE PROVIDED BY THE SUPPLIER/PRODUCER. THE PROPOSED MIX DESIGN MUST MEET THE PROPERTIES OF TABLE A.

MIX DESIGNS MUST BE APPROVED BY THE LABORATORY PRIOR TO USE. A MINIMUM OF 30 DAYS PRIOR TO PLACING CCF, SUBMIT A PROPOSED MIX DESIGN, WITH CERTIFIED TEST DATA FROM THE SUPPLIER/PRODUCER, TO THE LABORATORY, WITH A COPY TO THE ENGINEER.

E. QUALITY CONTROL.
PERFORM CAST DENSITY MEASUREMENTS ON A MINIMUM OF 8 BATCHES PER PRODUCTION DAY. MAINTAIN A LOG OF THE CAST DENSITY MEASUREMENTS.

F. QUALITY ASSURANCE.
QUALITY ASSURANCE WILL BE BASED ON THE CAST DENSITY AND COMPRESSIVE STRENGTH AT THE POINT OF PLACEMENT. ANY MIXES NOT MEETING THE TABLE A PROPERTIES WILL BE REJECTED.

1. CAST DENSITY
AT A MINIMUM, THE DEPARTMENT WILL CHECK ONE OF THE BATCHES EACH DAY AS FOLLOWS:

A) WEIGH THE CONTAINER OF KNOWN VOLUME AND RECORD THE WEIGHT. A STANDARD CONCRETE CYLINDER MOLD MAY BE USED AS THE CONTAINER.

B) FILL THE CONTAINER WITH CCF, TAPPING THE CONTAINER SIDES BRISKLY WITH A RUBBER HAMMER DURING THE FILLING.

C) OVERFILL THE CONTAINER, STRIKING OFF THE EXCESS CCF. WIPE OFF THE OUTSIDE SURFACE OF THE CONTAINER.

D) WEIGH THE FULL CONTAINER.

E) SUBTRACT THE WEIGHT OF THE EMPTY CONTAINER FROM THE FULL CONTAINER.

F) CALCULATE THE CAST DENSITY AND COMPARE IT TO THE MAXIMUM DENSITY FOR THE CLASS OF CCF.

IF THE CCF MATERIAL EXCEEDS THE MAXIMUM DENSITY FOR THE CLASS OF CCF, ADJUST THE MIX AND RECHECK THE CAST DENSITY.

2. COMPRESSIVE STRENGTH.
TAKE AT LEAST FOUR (4) TEST SPECIMENS FOR EACH 300 CUBIC YARDS (230 CUBIC METERS) OF CCF PLACED OR FOR EACH DAY'S PRODUCTION, PREPARE, CURE, AND TEST THE SPECIMENS IN ACCORDANCE WITH ASTM C796 EXCEPT AS FOLLOWS:

A) FILL AN APPROPRIATE 3-INCH BY 6-INCH (75 MM BY 150 MM) CYLINDER MOLD ACCORDING TO ASTM C796, EXCEPT STRIKE OFF THE EXCESS CCF WITH A TROWEL.

B) CURE THE MOLDS IN A CURING BOX.

C) AFTER CURING, DO NOT OVEN DRY THE SPECIMENS THAT ARE TO BE LOAD TESTED. AIR DRY THE SPECIMENS FOR 1 TO 3 DAYS PRIOR TO TESTING.

D) WHILE SPECIMENS MAY BE TESTED AT ANY AGE TO MONITOR COMPRESSIVE STRENGTH OF THE CCF, TEST A MINIMUM OF TWO SPECIMENS AT 28 DAYS FOR ACCEPTANCE.

E) PROVIDE THE 28 DAY TEST RESULTS TO THE ENGINEER.

REVIEW THE STATUS OF THE CCF MATERIAL THAT FAILS TO MEET THE MINIMUM COMPRESSIVE STRENGTH FOR THE CLASS OF CCF TO DETERMINE IF IT IS ACCEPTABLE AT THAT LOCATION.

6 3. PRE-PRODUCTION TRIAL POUR.
AT LEAST 4 DAYS PRIOR TO PRODUCTION POURS TAKING PLACE, THE CONTRACTOR SHALL MAKE AN ON-SITE TRIAL POUR OUTSIDE THE PRODUCTION AREA USING THE APPROVED PROPOSED MIX. THE TRIAL POUR SHALL HAVE VOLUME NOT LESS THAN 3 CUBIC YARDS. THE CONTRACTOR SHALL CONSTRUCT NECESSARY WATERTIGHT FORMWORK WITH A BOTTOM AND SIDES TO PROVIDE A 4 FOOT DEEP FINISHED POUR DEPTH. THE ENGINEER WILL PERFORM CAST DENSITY TESTS USING THREE (3) TEST SPECIMEN CORES OF THE TRIAL POUR COLLECTED BY THE CONTRACTOR AFTER NOT LESS THAN 24 HOURS CURE. THE ENGINEER WILL ALSO EVALUATE ANY RESULTING VOLUME LOSS WITHIN THE CELLULAR CONCRETE MATERIAL AFTER IT HAS CURED FOR A PERIOD OF NOT LESS THAN 24 HOURS. TRIAL POURS NOT MEETING THE CAST DENSITY REQUIREMENTS OR EXHIBITING VOLUME LOSS SHALL BE CAUSE FOR REJECTION OF THE MIX. IN THE EVENT THAT AN INITIAL TRIAL POUR IS REJECTED, THE CONTRACTOR SHALL CONSTRUCT ADDITIONAL FORMS FOR SUBSEQUENT TRIAL POUR(S). THE CONTRACTOR SHALL DISPOSE OF ALL TRIAL POUR MATERIALS, FORMS, ETC. THE COST TO PERFORM TRIAL POURS SHALL BE INCIDENTAL TO THE WORK AND NO ADDITIONAL COMPENSATION WILL BE MADE.

G. CONSTRUCTION METHODS.
PLACEMENT OF CCF SHALL BE ACCORDING TO PROCEDURES PROVIDED BY THE SUPPLIER/PRODUCER.

1. PREPARATION.
THE ENGINEER WILL EXAMINE THE SUBSOIL CONDITIONS IN THE PLACEMENT AREAS. CORRECT UNSUITABLE SOIL CONDITIONS PRIOR TO PLACING THE CCF. PROPERTY FIX IN PLAN POSITION ITEMS TO BE ENCASED IN THE CCF. COAT ANY ALUMINUM TO PREVENT OXIDATION FROM THE FRESH CONCRETE.

2. WEATHER.
DO NOT PLACE CCF WHEN THE SUBSOIL IS FROZEN, WHEN THE AMBIENT TEMPERATURE IS LESS THAN 32°F (0°C), OR WHEN FREEZING CONDITIONS ARE EXPECTED IN LESS THAN 24 HOURS. IF THESE CONDITIONS CANNOT BE MET, FOLLOW THE MANUFACTURER'S RECOMMENDATIONS TO DETERMINE PRECAUTIONS NECESSARY TO ASSURE ACCEPTABLE INSTALLATION.

TAKE PRECAUTIONS TO AVOID DAMAGE TO THE CCF FROM FREEZING TEMPERATURES PER THE MANUFACTURER'S RECOMMENDATIONS.

3. MIXING AND CONVEYING.
USE JOB SITE MIXING AND CONVEYING EQUIPMENT FOR PROPORTIONING, MIXING AND PLACING THE CCF APPROVED BY THE SUPPLIER/PRODUCER. MIX THE MATERIALS ACCORDING TO THE SUPPLIER/PRODUCER MIX DESIGN PROCEDURES AND, PROMPTLY AFTER MIXING, CONVEY THE CCF TO ITS FINAL POSITION. AVOID EXCESSIVE HANDLING OF THE CCF.

4. PLACEMENT.
THE TOP OF THE PERVIOUS CCF SHALL NOT BE LESS THAN 3'-0" FROM THE BOTTOM OF THE SIDEWALK.

DO NOT PLACE CCF IN LIFTS GREATER THAN 48" UNLESS RECOMMENDED BY THE MANUFACTURER.

DO NOT PLACE CCF INTO AN AREA OF STANDING WATER.

CONTRACTOR SHALL PROVIDE WORKING DRAWINGS SHOWING THE FINAL WEIGHT TO BE USED IN THE FIELD, PLAN AND SECTIONS LOCATING THE CROWNS, AND LOCATIONS OF THE STEPS IN THE CCF LIFTS.

FINISHING THE CCF:
THE TOP SURFACE OF THE CCF SHALL BE FINISHED TO DRAIN AS SHOWN ON THE PLANS. THE FINISHING MAY BE EXECUTED DURING PLACEMENT, OR GRADED AFTERWARDS, AT THE CONTRACTOR'S DISCRETION. THE FINISHED SURFACE SHALL NOT EXHIBIT EXCESSIVE CRACKING SUBJECT TO THE APPROVAL OF THE ENGINEER.

5. LOADING.
DO NOT APPLY ANY LOAD ONTO THE CCF UNTIL IT HAS ATTAINED A COMPRESSIVE STRENGTH OF AT LEAST 20 PSI (0.14 MPA).

H. METHOD OF MEASUREMENT.
THE DEPARTMENT WILL MEASURE EACH CLASS OF CCF BY THE NUMBER OF CUBIC YARDS COMPLETE IN PLACE.

I. BASIS OF PAYMENT.
THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICE AS FOLLOWS:

ITEM	UNIT	DESCRIPTION
SPECIAL	CUBIC YARD	ENGINEERED FILL: LIGHTWEIGHT CELLULAR CONCRETE FILL, PERVIOUS (4W16)

TABLE A - CELLULAR CONCRETE FILL PROPERTIES	
PROPERTY	PERVIOUS CCF
*-CAST DENSITY, MAX	35 LB/FT3 (561 KG/M3)
**-COMPRESSIVE STRENGTH, MIN. @ 28 DAYS	210 PSI *** (0.28 MPA)
COEFFICIENT OF PERMEABILITY	247 FT/DAY *** (0.087 CM/SEC)

* - SPECIFIED IN SECTION F.1 OF THIS SPECIFICATION
** - SPECIFIED IN SECTION F.2 OF THIS SPECIFICATION
*** - VALUE MAY VARY BASED ON MATERIAL ADJUSTMENTS DUE TO CHANGES IN INDUSTRY STANDARDS (I.E. CEMENT TYPE) BUT SHALL STILL BE SUBJECT TO FINAL ACCEPTANCE BY THE ENGINEER.

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NO.	DESCRIPTION	DATE	REV. BY
6	ADDED NOTES	11-6-23	RSN
10	ADDED NOTES	12-6-23	CWL

DESIGN AGENCY
GPD GROUP®
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.
1801 Watermark Drive, Suite 210, Columbus, OH 43215 614.210.0751

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

RETAINING WALL GENERAL NOTES

FRA-70-14.05
PID No. 96053