ITEM	EXTENSION	FUNDING SPLIT 01/NHS/PV	FUNDING SPLIT 01/NHS/PV	TOTAL	UNIT	DESCRIPTION	SEE SHEET
410	12000			200	CY	TRAFFIC COMPACTED SURFACE, TYPE A OR B	70
503	11100			LS		COFFERDAMS AND EXCAVATION BRACING	
607	30001	440	560	1000	FT	FENCE, SNOW, AS PER PLAN	
611	05900	2	2	4	FT	15" CONDUIT, TYPE B	
611	07400	55	71	126	FT	18" CONDUIT, TYPE B	
611	98700	0	1	1	EACH	INLET, SIDE DITCH	
611	99114	0	1	1	EACH	INLET, NO. 3 FOR SINGLE SLOPE BARRIER, TYPE D	
611	99500	2	2	4	EACH	INLET, MISC.: LOCAL DEPRESSION REMOVE FROM INLET	
611	99500	0	1	1	EACH	INLET, MISC.: INLET, CAPPED BELOW GRADE	78
611	99574	0	1	1	EACH	MANHOLE, NO. 3	
611	99910	316	402	718	FT	DRAINAGE STRUCTURE, MISC.: LONGITUDINAL TRENCH DRAIN FOR MOT	78
614	11000			LS		MAINTAINING TRAFFIC	70
614	11110	1980	2520	4500	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	73
614	11630	16786	21364	38150	FT	INCREASED BARRIER DELINEATION	74
614	12380	14	17	31	EACH	WORK ZONE IMPACT ATTENUATOR, 24" WIDE HAZARDS, (UNIDIRECTIONAL)	73
614	12420			LS		DETOUR SIGNING	75
614	12484	2.64	3.36	6	EACH	WORK ZONE INCREASED PENALTIES SIGN	75
614	12500	22	28	50	EACH	REPLACEMENT SIGN	74
614	12600	132	168	300	EACH	REPLACEMENT DRUM	74
614	12801	443	563	1006	EACH	WORK ZONE RAISED PAVEMENT MARKER, AS PER PLAN	70
614	13310	350	446	796	EACH	BARRIER REFLECTOR, TYPE 1, ONE-WAY	74
614	13312	7	9	16	EACH	BARRIER REFLECTOR, TYPE 2, ONE-WAY	76
614	13350	356	454	810	EACH	OBJECT MARKER, ONE WAY	74 / 76
614	18000	66000	84000	150000	EACH	MAINTAINING TRAFFIC, MISC.: BRIDGE DECK AND PAVEMENT PATCHING	77
614	18030	440	560	1000	FT	MAINTAINING TRAFFIC, MISC.: CONSTRUCTION FENCE	77
614	18601	112	142	254	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	74
614	20011	0.96	1.23	2.19	MILE	WORK ZONE LANE LINE, CLASS I, 6" SPRAY THERMOPLASTIC, AS PER PLAN	74
614	20056	2.55	3.24	5.79	MILE	WORK ZONE LANE LINE, CLASS I, 6", 807 PAINT	
614	21001	0.01	0.02	0.03	MILE	WORK ZONE CENTER LINE, CLASS I SPRAY THERMOPLASTIC, AS PER PLAN	74
614	21050	0.26	0.33	0.59	MILE	WORK ZONE CENTER LINE, CLASS I, 807 PAINT	
614	21100	0.29	0.37	0.66	MILE	WORK ZONE CENTER LINE, CLASS I, 642 PAINT	
614	22011	2.24	2.85	5.09	MILE	WORK ZONE EDGE LINE, CLASS I, 6" SPRAY THERMOPLASTIC, AS PER PLAN	74
614	22056	6.53	8.31	14.84	MILE	WORK ZONE EDGE LINE, CLASS I, 6", 807 PAINT	
614	22110	0.34	0.43	0.77	MILE	WORK ZONE EDGE LINE, CLASS I, 6", 642 PAINT	
614	23011	4319	5498	9817	FT	WORK ZONE CHANNELIZING LINE, CLASS I, 12" SPRAY THERMOPLASTIC, AS PER PLAN	74
614	23100	11612	14780	26392	FT	WORK ZONE CHANNELIZING LINE, CLASS I, 12", 807 PAINT	
614	24001	93	119	212	FT	WORK ZONE DOTTED LINE, CLASS I SPRAY THERMOPLASTIC, AS PER PLAN	74
614	24100	3572	4546	8118	FT	WORK ZONE DOTTED LINE, CLASS I, 4", 807 PAINT	
614	24200	474	603	1077	FT	WORK ZONE DOTTED LINE, CLASS I, 642 PAINT	
614	25200	525	669	1194	FT	WORK ZONE TRANSVERSE/DIAGONAL LINE, CLASS I, 642 PAINT	
614	26200	27	34	61	FT	WORK ZONE STOP LINE, CLASS I, 642 PAINT	
614	30200	8	10	18	EACH	WORK ZONE ARROW, CLASS I, 642 PAINT	
614	40000	191	244	435	FT	LONGITUDINAL CHANNELIZER	76
615	10000			LS		ROADS FOR MAINTAINING TRAFFIC	
615	25000	2145	2729	4874	SY	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS B	
615	25001	44	56	100	SY	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS B, AS PER PLAN, TYPE 1	77
615	25001	22	28	50	SY	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS B, AS PER PLAN, TYPE 2	77
615	25001	9	11	20	SY	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS B, AS PER PLAN, TYPE 3	77
615	25001	9	11	20	SY	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS B, AS PER PLAN, TYPE 4	77
615	20001	2958	3765	6723	SY	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN	70
616	10000	601	764	1365	MGAL	WATER	74
622	41100	14102	17948	32050		PORTABLE BARRIER, UNANCHORED	
622	41110	97	123	220		PORTABLE BARRIER, ANCHORED	
622	41050	1	2	3	EACH	PORTABLE BARRIER, "Y" CONNECTOR	
808	18700	55	69	124	SNMT	DIGITAL SPEED LIMIT (DSL) SIGN ASSEMBLY	75
896	00010	82	104	186	SNMT	PORTABLE NON-INTRUSIVE TRAFFIC SENSOR, CLASS I	77
896	00021	27	35	62	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	77

NO.	DESCRIPTION	REV. BY	DATE
4	FUNDING SPLIT CHANGE	EMW	11-29-2021
8	ITEM EXTENSION UPDATES	EMW	12-6-2021

CALCULATED EMW
CHECKED RMK

MAINTENANCE OF TRAFFIC GENERAL SUMMARY

FRA-70-12.68

UNLESS NOTED OTHERWISE, THE FOLLOWING NOTES PERTAIN TO RETAINING WALLS 4W1, 4W2, 4W4, 4W5, 4W6, 4W7, 4W8, 4W9, 4W10, 4W11, 4W12, 4W20 AND/OR TEMPORARY RETAINING WALLS T2, T3, T4, T5, T6, T7 AND/OR TEMPORARY SHORING WALLS TS2, TS4, TS5, TS6, WHICH ARE ALL PART OF THIS PROJECT.

FOR SPECIFIC NOTES PERTAINING TO CAST-IN-PLACE REINFORCED CONCRETE WALLS ON SPREAD FOOTINGS, WHICH INCLUDE A PORTION OF 4W1, 4W7, AND 4W9, SEE SHEET 7/14.

FOR SPECIFIC NOTES PERTAINING TO CAST-IN-PLACE REINFORCED CONCRETE WALLS ON DRILLED SHAFTS, WHICH INCLUDE A PORTION OF 4W1, SEE SHEET 8/14.

FOR SPECIFIC NOTES PERTAINING TO TANGENT DRILLED SHAFT WALLS WITH PRECAST PANELS, WHICH INCLUDE A PORTION OF 4W1, 4W2, AND 4W4, SEE SHEETS 8/14 AND 9/14.

FOR SPECIFIC NOTES PERTAINING TO MSE WALLS, WHICH INCLUDE 4W5, 4W6, 4W8, 4W10, 4W11, 4W12, AND 4W20, SEE SHEETS 10/14 THROUGH 12/14.

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS

REFER TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:

840	DATED	1-18-19	(4W8, 4W10, 4W11, 4W12, 4W20, 4W5, 4W6))
867	DATED	1-18-19	(T2, T3, T4, T5, T6, T7)

DESIGN SPECIFICATIONS

THESE STRUCTIRES 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 2014.

OPERATIONAL IMPORTANCE:

(4W1 4W2 4W4 4W5 4W6)
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 STRESSES:

CONCRETE CLASS QC1:
COMPRESSIVE STRENGTH - 4.0 KSI (ALL COMPONENTS OF ALL WALLS WITH CLASS QC1 CONCRETE SPECIFIED)

CONCRETE CLASS QC2:
COMPRESSIVE STRENGTH - 4.5 KSI (ALL COMPONENTS OF ALL WALLS WITH CLASS QC2 CONCRETE SPECIFIED)

CONCRETE CLASS QC5:
COMPRESSIVE STRENGTH - 4.5 KSI (4W1, 4W2, 4W4 DRILLED SHAFTS)

REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI

STRUCTURAL STEEL - ASTM A709 GRADE 50 - YIELD STRENGTH 50 KSI (4W1, 4W2)

DESIGN LOADING

LIVE LOAD SURCHARGE OF 0.240 KSF.
FUTURE WEARING SURFACE (FWS) OF 0.060 KSF.

HL-93 (4W1, 4W2, 4W4)

EXISTING STRUCTURE PLANS:

PLANS MAY BE EXAMINED BY PROSPECTIVE BIDDERS AT THE OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 6 OFFICES, 400 E. WILLIAM ST., DELEWARE, OHIO 43015 (PHONE 740-833-8000).

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 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

(4W1) THIS ITEM SHALL INCLUDE REMOVAL OF THE TOP PORTION OF THE EXISTING RETAINING WALL AND FOOTING TOE AS INDICATED IN THE PLANS FROM THE EAST END OF THE NEW PROPOSED WALL TO NEAR THE ANGLE POINT OF THE NEW WALL. IT SHALL ALSO INCLUDE REMOVAL OF THE EXISTING WALL FROM THE TOP OF THE EXISTING WALL TO THE BOTTOM OF THE EXISTING FOOTING FROM THE ANGLE POINT TO THE WEST END OF THE PROPOSED NEW WALL.

(4W2) THIS ITEM SHALL INCLUDE REMOVAL OF THE TOP PORTION OF THE EXISTING RETAINING WALL AND FOOTING TOE AS INDICATED IN THE PLANS FROM THE EAST END OF THE NEW PROPOSED WALL TO NEAR THE ANGLE POINT OF THE NEW WALL. IT SHALL ALSO INCLUDE REMOVAL OF THE EXISTING WALL FROM THE TOP OF THE EXISTING WALL TO THE BOTTOM OF THE EXISTING FOOTING FROM THE ANGLE POINT TO THE WEST END OF THE PROPOSED NEW WALL.

EXCAVATION, SHEETING AND BRACING

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 503 - COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN (WALLS 4W1)

THE LEFT IN PLACE SOLDIER PILE DETAILS SHOWN ON THE PLAN FOR TEMPORARY SUPPORT OF EXCAVATION ARE NOT PART OF THE CONTRACT AND ARE ONLY INCLUDED FOR INFORMATION PURPOSES. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DESIGNING THE SHORING SYSTEM, PREPARING WORKING DRAWINGS, AND PERFORMING CALCULATIONS ACCORDING TO CMS 501.05. THE DEPARTMENT WILL PAY FOR TEMPORARY SUPPORT OF EXCAVATION AT THE LUMP SUM PRICE FOR ITEM 503 - COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN.

ITEM 503 - COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN (WALLS 4W5, 4W6 AND 4W7)

THE DETAILS SHOWN ON THE PLAN FOR TEMPORARY SUPPORT OF EXCAVATION ARE NOT PART OF THE CONTRACT AND ARE ONLY INCLUDED FOR INFORMATION PURPOSES. STEEL SHEETING AND VIBRATORY DRIVING METHODS ARE NOT PERMITTED TO AVOID DAMAGING THE ADJACENT 60" SANITARY SEWER. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DESIGNING THE SHORING SYSTEM, INCLUDING THE SECTION OVER THE EXISTING 60" SANITARY SEWER, PREPARING WORKING DRAWINGS, AND PERFORMING CALCULATIONS ACCORDING TO CMS 501.05. TEMPORARY SHORING FOR 4W5 AND 4W6 SHALL REMAIN. THE DEPARTMENT WILL PAY FOR TEMPORARY SUPPORT OF EXCAVATION AT THE LUMP SUM PRICE FOR ITEM 503 - COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN.

ITEM 503 - COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN (TS2, TS4, TS5, TS6)

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. TEMPORARY SHORING OF TS2, TS4 AND TS6 SHALL REMAIN. 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.

ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN (4W1, 4W2, 4W4, FRA-70-1395C)
ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA, SIDEWALK, AS PER PLAN (4W1, 4W2)

FOR NOTES, SEE SHEET 1746A.

ITEM 511 - CLASS QC2 CONCRETE MISC.: LOAD DISTRIBUTION SLAB: (4W5, 4W6)

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 SLAB. ALL BARS SHALL BE EPOXY COATED. 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 IN THE CONTRACT BID PRICE FOR ITEM 511 - CLASS QC2 CONCRETE MISC.: LOAD DISTRIBUTION SLAB.

ITEM 511 - CLASS QC2 CONCRETE, MISC.: PARAPET INCLUDING SLEEPER SLAB, WITH QC/QA (4W5, 4W6, 4W8, 4W12, 4W20)

ALL MATERIALS, LABOR AND INCIDENTALS NECESSARY TO FURNISH AND PLACE CONCRETE FOR THE PARAPET ATOP THE SLEEPER SLAB ALONG THE MSE WALL SHALL BE INCLUDED WITH ITEM 511 - CLASS QC2 CONCRETE, MISC.: PARAPET INCLUDING SLEEPER SLAB, WITH QC/QA. THIS ITEM SHALL INCLUDE ALL JOINT MATERIALS, DOWEL BARS AND BOND BREAKERS IN CONTACT WITH THE SLEEPER SLAB. ALL REINFORCING STEEL IN THE SLEEPER SLAB AND PARAPET SHALL BE INCLUDED WITH ITEM 509.

ALL LABOR, MATERIALS, INCIDENTALS, ETC. NECESSARY FOR SEALING THE LONGITUDINAL CONSTRUCTION JOINT BETWEEN THE SLEEPER SLABS AND THE PARAPETS WITH HMWM RESIN PER CMS 511.19 IS ALSO INCLUDED IN THIS ITEM. THE SEALING SHALL OCCUR AND BE FULLY CURED BEFORE THE FINAL PAVEMENT IS PLACED OVER THE SLEEPER SLAB.

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		

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.

NO.	DESCRIPTION	REV. BY	DATE
4	ADDED NOTE	MOJ	11-29-2021
8	ADDED NOTE	RFV	12-7-2021

DESIGN AGENCY: GPD GROUP.
DESIGNED: DGN | CHECKED: RHC | DRAWN: MOJ | REVISED | REVIEWED: TJW | DATE: 9-6-19 | STRUCTURE FILE NUMBER

RETAINING WALL GENERAL NOTES

FRA-70/71-12.68/14.86
PID No. 105523

3/14
700/1815

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ITEM 203, SPECIAL - ENGINEERED FILL (EPS GEOFOAM FILL) (4W5, 4W6)

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND PLACING EPS GEOFOAM CONFORMING TO ASTM D6817 TYPE EPS 19 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.

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.

A GEOMEMBRANE SHALL BE PLACED ON THE TOP AND SIDES 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.

ON THE SOUTH SIDE OF THE EXISTING RETAINING WALL ALONG FULTON STREET, THE GEOFOAM SHALL BE PLACED ON A BASE OF CELLULAR CONCRETE FILL, CLASS II. ON THE NORTH SIDE OF THE RETAINING WALL, THE GEOFOAM FILL SHALL BE PLACED ON A BASE OF GRANULAR MATERIAL CONFORMING TO SIZE NO. 9 OF TABLE 703.01-1 OF THE CMS. 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 777/1815 & 786A/1815 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 ½" 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 - ENGINEERED FILL (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 WALLS 4W5 AND 4W6 ONLY.

NO.	DESCRIPTION	REV. BY	DATE
8	ADDED SHEET CALLOUT	RFV	12-7-2021

DESIGN AGENCY: GPD GROUP.
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.
1801 Watermark Drive, Suite 150, Columbus, Ohio 43215 614.210.0751

DESIGNED DGN | DRAWN MOJ | REVIEWED TJW | DATE 9-6-19
CHECKED RHC | REVISED | STRUCTURE FILE NUMBER

RETAINING WALL GENERAL NOTES

FRA-70/71-12.68/14.86
PID No. 105523

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ITEM 203, SPECIAL - ENGINEERED FILL (LIGHTWEIGHT CELLULAR CONCRETE FILL): (4W1, 4W2, 4W5, 4W6)

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).

B. QUALIFICATIONS.
1. CONTRACTOR.
PROVIDE CCF FROM A CONTRACTOR 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).

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.

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.

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.

5. 701.10 MICRO-SILICA, 701.11 GGBF SLAG, OR FLY ASH SHALL BE CLASS C OR CLASS F AND COMPATIBLE WITH FOAMING AGENT.

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.

E. QUALITY CONTROL AND ASSURANCE.
PERFORM CAST DENSITY MEASUREMENTS HOURLY ON EACH DAY OF PRODUCTION. MAINTAIN A LOG OF THE CAST DENSITY MEASUREMENTS. QUALITY ASSURANCE WILL BE BASED ON THE CASTDENSITY AND COMPRESSIVE STRENGTH AT THE POINT OFPLACEMENT. ANY MIXES NOT MEETING THE TABLE A PROPERTIES WILL BE REJECTED.

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:

1) 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.

2) CURE THE MOLDS IN A CURING BOX.

3) 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.

4) PROVIDE THE SPECIMENS TO THE ENGINEER FOR TESTING. WHILE SPECIMENS MAY BE TESTED AT ANY AGE TO MONITOR COMPRESSIVE STRENGTH OF THE CCF, A MINIMUM OF TWO SPECIMENS SHALL BE TESTED AT 28 DAYS FOR ACCEPTANCE.

5. CONSTRUCTION METHODS.
PLACEMENT OF CCF SHALL BE ACCORDING TO PROCEDURES PROVIDED BY THE CONTRACTOR. PORTABLE PLANT SHALL COMPLY WITH CMS ITEM 107.11.C AND ALL APPLICABLE ENVIRONMENTAL PERMITS AND REGULATIONS.

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

ii. 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 MATERIAL PRODUCER/SUPPLIER'S RECOMMENDATIONS TO DETERMINE PRECAUTIONS NECESSARY TO ASSURE ACCEPTABLE INSTALLATION.

TAKE PRECAUTIONS TO AVOID DAMAGE TO THE CCF FROM FREEZING TEMPERATURES PER THE MATERIAL PRODUCER/SUPPLIER'S RECOMMENDATIONS.

iii. 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.

iv. PLACEMENT.
1) TOP OF THE CLASS III CCF SHALL NOT BE LESS THAN 2'-0" BELOW THE TOP OF PAVEMENT.

2) THE TOP OF THE CLASS II CCF SHALL NOT BE LESS THAN 4'-0" FROM THE TOP OF PAVEMENT.

3) 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. PROVIDE AN INVERTED CROWN IN THE CLASS III CCF, AND PIPE UNDERDRAINS, AS SHOWN IN THE DETAILS.

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.

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

TABLE A - CELLULAR CONCRETE FILL PROPERTIES			
PROPERTY	CLASS II	CLASS III	PERVIOUS
*-CAST DENSITY, MAX	30 LB/FT^3 (481 KG/M^3)	36 LB/FT^3 (577 KG/M^3)	35 LB/FT^3 (561 KG/M^3)
**-COMPRESSIVE STRENGTH, MIN. @ 28 DAYS	40 PSI (0.28 MPA)	80 PSI (0.55 MPA)	210 PSI (1.45 MPA)
***-WATER ABSORPTION, ASTM C796, MAX.	20 PERCENT	16 PERCENT	N/A
COEFFICIENT OF PERMEABILITY	N/A	N/A	247 FT/DAY (0.087 CM/SEC)
* - SPECIFIED IN SECTION F.1 OF THIS SPECIFICATION ** - SPECIFIED IN SECTION F.2 OF THIS CLASSIFICATION *** - EXPRESSED AS PERCENT OF CAST DENSITY			

F. SUBMITTALS TO THE ENGINEER.

PROVIDE THE FOLLOWING SUBMITTALS TO THE ENGINEER A MINIMUM OF 30 DAYS PRIOR TO PLACEMENT OF CCF FOR EACH LOCATION:

1. RESUME OF CONTRACTOR'S SHOWING EXPERIENCE AS SPECIFIED ABOVE, INCLUDING QUALIFICATIONS OF CONTRACTOR'S SUPERINTENDENT AND/OR FOREMAN.

2. CCF MIX DESIGN MEETING THE REQUIREMENTS SPECIFIED ABOVE, INCLUDING MATERIALS TO BE USED, THEIR SOURCES AND TEST DATA.

3. QC PLAN IDENTIFYING THE METHOD AND FREQUENCY OF TESTING IN ACCORDANCE WITH ASTM C796 AND MEETING THE REQUIREMENTS ABOVE.

4. DESCRIPTION OF EQUIPMENT AND PLACEMENT METHODS TO VERIFY COMPLIANCE WITH THE MIXING AND CONVEYING REQUIREMENTS GIVEN IN THIS NOTE.

5. WORKING DRAWINGS SHOWING METHOD OF PLACEMENT FOR CONSTRUCTION PER THE PLANS AND DEMONSTRATING COMPLIANCE WITH THIS NOTE. THESE DRAWINGS SHALL PROVIDE SECTIONS LOCATING THE CROWNS AND LOCATIONS OF THE STEPS IN THE CLASS III CCF LIFT.

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

H. 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, CLASS II (4W5, 4W6)
SPECIAL	CUBIC YARD	ENGINEERED FILL: LIGHTWEIGHT CELLULAR CONCRETE FILL, CLASS III (4W5, 4W6)
SPECIAL	CUBIC YARD	ENGINEERED FILL: LIGHTWEIGHT CELLULAR CONCRETE FILL, PERVIOUS (4W1, 4W2)

ALL QUANTITIES AND COSTS ASSOCIATED WITH THIS ITEM BETWEEN STA. 176+50 AND STA. 182+00 (℄ CONST. FUTURE I-70 EB) SHALL BE INCLUDED IN THE ESTIMATED QUANTITIES AND COST ESTIMATE FOR WALLS 4W5 AND 4W6.

NO.	DESCRIPTION	REV. BY	DATE
1	REVISED NOTE	MOJ	11-5-2021
8	REVISED NOTE	RFV	12-7-2021

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DESIGN AGENCY
GPD GROUP.
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.
1801 Watermark Drive, Suite 150, Columbus, Ohio 43215 614.210.0753

DESIGNED DGN | DRAWN MOJ | REVIEWED TJW | DATE 9-6-19
CHECKED RHC | REVISED | STRUCTURE FILE NUMBER

RETAINING WALL GENERAL NOTES

FRA-70/71-12.68/14.86
PID No. 105523

FOUNDATION BEARING RESISTANCE (4W1, 4W7, 4W9)

THE C.I.P. PORTION OF WALL 4W1 FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM SERVICE LOAD PRESSURE OF 3.1 KIPS PER SQUARE FOOT AND A MAXIMUM STRENGTH LOAD PRESSURE OF 4.5 KIPS PER SQUARE FOOT. THE FACTORED BEARING RESISTANCE IS 50.4 KIPS PER SQUARE FOOT.

THE 15'-0" WIDE PORTION OF C.I.P. WALL 4W7 FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM SERVICE LOAD PRESSURE OF 4.8 KIPS PER SQUARE FOOT AND A MAXIMUM STRENGTH LOAD PRESSURE OF 7.6 KIPS PER SQUARE FOOT. THE FACTORED BEARING RESISTANCE IS 18.8 KIPS PER SQUARE FOOT.

THE 12'-0" WIDE PORTION OF C.I.P. WALL 4W7 FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM SERVICE LOAD PRESSURE OF 3.7 KIPS PER SQUARE FOOT AND A MAXIMUM STRENGTH LOAD PRESSURE OF 5.9 KIPS PER SQUARE FOOT. THE FACTORED BEARING RESISTANCE IS 17.3 KIPS PER SQUARE FOOT.

THE 11'-0" WIDE PORTION OF C.I.P. WALL 4W7 FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM SERVICE LOAD PRESSURE OF 2.6 KIPS PER SQUARE FOOT AND A MAXIMUM STRENGTH LOAD PRESSURE OF 3.8 KIPS PER SQUARE FOOT. THE FACTORED BEARING RESISTANCE IS 16.8 KIPS PER SQUARE FOOT.

C.I.P. WALL 4W9 FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM SERVICE LOAD PRESSURE OF 1.7 KIPS PER SQUARE FOOT AND A MAXIMUM STRENGTH LOAD PRESSURE OF 2.4 KIPS PER SQUARE FOOT. THE FACTORED BEARING RESISTANCE IS 15.0 KIPS PER SQUARE FOOT.

ITEM 511 - CLASS QC1 CONCRETE WITH QC/QA, RETAINING/WINGWALL INCLUDING FOOTING, AS PER PLAN (4W9)
ITEM 511 - CLASS QC1 CONCRETE WITH QC/QA, FOOTING, AS PER PLAN: (4W1, 4W7)

IN ADDITION TO THE REQUIREMENTS OF THE 511 ITEMS LISTED ABOVE, INSTALL A REFERENCE MONUMENT AT THE LOCATIONS SHOWN IN THE TABLES TO THE RIGHT. THE REFERENCE MONUMENT SHALL CONSIST OF A #8, OR LARGER, EPOXY COATED REBAR EMBEDDED AT LEAST 6" INTO THE FOOTING AND EXTENDED VERTICALLY 4 TO 6 INCHES ABOVE THE TOP OF THE FOOTING. INSTALL A SIX INCH DIAMETER, SCHEDULE 40, PLASTIC PIPE AROUND THE REFERENCE MONUMENT. CENTER THE PIPE ON THE REFERENCE MONUMENT AND PLACE THE PIPE VERTICAL WITH ITS TOP AT THE FINISHED GRADE. THE PIPE SHALL HAVE A REMOVABLE, SCHEDULE 40, PLASTIC CAP. PERMANENTLY ATTACH THE BOTTOM OF THE PIPE TO THE TOP OF THE FOOTING.

ESTABLISH A BENCHMARK TO DETERMINE THE ELEVATIONS OF THE REFERENCE MONUMENTS AT VARIOUS MONITORING PERIODS THROUGHOUT THE LENGTH OF THE CONSTRUCTION PROJECT. THE BENCHMARK SHALL BE THE SAME THROUGHOUT THE PROJECT AND SHALL BE INDEPENDENT OF ALL STRUCTURES.

RECORD THE ELEVATION OF EACH REFERENCE MONUMENT AT EACH MONITORING PERIOD SHOWN IN THE TABLES TO THE RIGHT.

THE ORIGINAL COMPLETED TABLES WILL BECOME PART OF THE DISTRICT'S PROJECT PLAN RECORDS.

PROJECT NUMBER:				FRA-70/71-12.68/14.86, PID: 105523	
BENCHMARK LOCATION:					
SPREAD FOOTING PORTION OF WALL 4W1	15'-0" WIDE FOOTING				
MAX. FACTORED BEARING PRESSURE	4.5 KIPS PER SQUARE FOOT				
MONITORING PERIOD	MONUMENT #1 ALIGNMENT: B/L CONST. FUTURE I-70 EB STA. 190+51.17 OFFSET: 47.41' RT.	MONUMENT #2 ALIGNMENT: B/L CONST. FUTURE I-70 EB STA. 191+03.92 OFFSET: 47.54' RT.			
AFTER FOOTING CONCRETE IS PLACED:					
AFTER STEM CONCRETE IS PLACED					
AFTER BARRIER CONCRETE IS PLACED:					
PROJECT COMPLETION:					

PROJECT NUMBER:				FRA-70/71-12.68/14.86, PID: 105523	
BENCHMARK LOCATION:					
C.I.P. WALL 4W7	15'-0" WIDE FOOTING PORTION		12'-0" WIDE PORTION	11'-0" WIDE FOOTING PORTION	
MAX. FACTORED BEARING PRESSURE	7.6 KIPS PER SQUARE FOOT		5.9 KSF	3.8 KIPS PER SQUARE FOOT	
MONITORING PERIOD	MONUMENT #1 ALIGNMENT: B/L CONST. FUTURE I-70 EB STA. 177+04.32 OFFSET: 43.01' LT.	MONUMENT #2 ALIGNMENT: B/L CONST. FUTURE I-70 EB STA. 178+36.73 OFFSET: 41.78' LT.	MONUMENT #3 ALIGNMENT: B/L CONST. FUTURE I-70 EB STA. 179+73.73 OFFSET: 41.95' LT.	MONUMENT #4 ALIGNMENT: B/L CONST. FUTURE I-70 EB STA. 180+63.73 OFFSET: 42.07' LT.	MONUMENT #5 ALIGNMENT: B/L CONST. FUTURE I-70 EB STA. 181+15.28 OFFSET: 43.53' LT.
AFTER FOOTING CONCRETE IS PLACED:					
AFTER STEM CONCRETE IS PLACED					
AFTER BARRIER CONCRETE IS PLACED:					
PROJECT COMPLETION:					

PROJECT NUMBER:				FRA-70/71-12.68/14.86, PID: 105523	
BENCHMARK LOCATION:					
C.I.P. WALL 4W9	6'-6" WIDE FOOTING				
MAX. FACTORED BEARING PRESSURE	2.4 KIPS PER SQUARE FOOT				
MONITORING PERIOD	MONUMENT #1 ALIGNMENT: B/L WALL 4W9 STA. 1+02.00 OFFSET: 2.50' LT.	MONUMENT #2 ALIGNMENT: B/L WALL 4W9 STA. 2+39.07 OFFSET: 2.50' LT.			
AFTER FOOTING CONCRETE IS PLACED:					
AFTER STEM CONCRETE IS PLACED					
AFTER BARRIER CONCRETE IS PLACED:					
PROJECT COMPLETION:					

NO.	DESCRIPTION	REV. BY	DATE
8	REMOVED TABLE	RFV	12-7-2021

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DESIGN AGENCY
GPD GROUP.

DESIGNED DGN | CHECKED RHC | DRAWN MOJ | REVISED | REVIEWED TJW | DATE 9-6-19 | STRUCTURE FILE NUMBER

RETAINING WALL GENERAL NOTES
CAST-IN-PLACE CONCRETE WALLS

FRA-70/71-12.68/14.86
PID No. 105523

7/14

704/1815

ESTIMATED QUANTITIES

CALCULATED: RHC DATE: 5/27/19
CHECKED: DJC DATE: 5/31/19

ITEM	EXT.	TOTAL	PARTICIPATION		UNITS	DESCRIPTION	REFERENCE SHEET NO. --- / 1815
			01/NHS/PV	01/NHS/PV			
202	11201	LS	LS	LS		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	700
503	11100	LS	LS	LS		COFFERDAMS AND EXCAVATION BRACING	
503	11101	LS	LS	LS		COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN	700
503	21100	710	312	398	CY	UNCLASSIFIED EXCAVATION	
509	10000	116,285	51,165	65,120	LB	EPOXY COATED REINFORCING STEEL	
511	34451	42	18	24	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN	1746A
511	46012	502	221	281	CY	CLASS QC1 CONCRETE WITH QC/QA RETAINING/WINGWALL NOT INCLUDING FOOTING	
511	46513	208	92	116	CY	CLASS QC1 CONCRETE WITH QC/QA, FOOTING, AS PER PLAN	
511	51513	179	79	100	CY	CLASS QC2 CONCRETE WITH QC/QA, SIDEWALK, AS PER PLAN	1746A
511	53010	240	106	134	CY	CLASS QC1 CONCRETE, MISC.: SUPPORT BRACKET AND DRILLED SHAFT CAP	705
511	53010	16	7	9	CY	CLASS QC1 CONCRETE, MISC.: CAST-IN-PLACE CONCRETE WALL	705
512	10050	287	126	161	SY	SEALING CONCRETE SURFACES (NON-EPOXY)	1746A
512	10100	1,069	470	599	SY	SEALING CONCRETE SURFACES (EPOXY-URETHANE)	1746A
512	33000	169	74	95	SY	TYPE 2 WATERPROOFING	
513	10220	201,414	88,622	112,792	LB	STRUCTURAL STEEL MEMBERS, LEVEL 1	
516	13600	286	126	160	SF	1" PREFORMED EXPANSION JOINT FILLER	
518	21200	306	135	171	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
518	39900	460	202	258	FT	4" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	
518	40000	417	183	234	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	
524	95472	390	172	218	FT	DRILLED SHAFTS, 60" DIAMETER, ABOVE BEDROCK WITH QC/QA, AS PER PLAN	705
524	95492	1,133	499	634	FT	DRILLED SHAFTS, 72" DIAMETER, ABOVE BEDROCK WITH QC/QA, AS PER PLAN	705
607	98000	307	135	172	FT	FENCE MISC.: WALL MOUNTED TYPE A (WITH VANDAL MESH)	1746A
867	00101	LS	LS	LS		TEMPORARY WIRE FACED MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN	707
SPECIAL	20302000	1,496	658	838	CY	ENGINEERED FILL: LIGHTWEIGHT CELLULAR CONCRETE FILL, PERVIOUS	702

NO.	DESCRIPTION	REV. BY	DATE
4	FUNDING CODE CHANGE	CWL	11-29-2021
6	QUANTITY UPDATE	MOJ	12-3-2021
8	ADDED ITEM	RFV	12-7-2021

DESIGN AGENCY
GPD GROUP.
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.
1801 Watermark Drive, Suite 130, Columbus, Ohio 43215 614.210.0731

DESIGNED RFV | DRAWN RFV | REVIEWED DGN | DATE 9-6-19
CHECKED DJC | REVISED | STRUCTURE FILE NUMBER

ESTIMATED QUANTITIES
CAST-IN-PLACE/TANGENT DRILLED SHAFT WALL 4W1
SOUTHSIDE OF I-70 EB FROM FRA-70-1395C TO FRA-70-1405C

FRA-70/71-12.68/14.86
PID No. 105523

ITEM SPECIAL – 50'/2 WOOD POLE

THIS ITEM SHALL BE A 50'/2 WOOD POLE.

PAYMENT WILL BE MADE AT THE UNIT PRICE BID UNDER ITEM SPECIAL, "50'/2 WOOD POLE" FOR EACH POLE WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY WORKMANLIKE MANNER. SEE SHEETS 942–958 FOR DETAILS.

ITEM SPECIAL – THREE PHASE DEADEND ATTACHMENTS (TDMIS–406)

THIS ITEM SHALL BE THE THREE PHASE DEADEND ATTACHMENTS PER COLUMBUS DOP TDMIS–406.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER ITEM SPECIAL, "THREE PHASE DEADEND ATTACHMENTS (TDMIS–406)" FOR EACH ATTACHMENT SET WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY WORKMANLIKE MANNER. SEE SHEETS 942–958 FOR DETAILS.

ITEM SPECIAL – WOOD CROSSARM (TDMIS–10)

THIS ITEM SHALL BE A WOOD CROSSARM PER COLUMBUS DOP TDMIS–10.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER ITEM SPECIAL, "WOOD CROSSARM (TDMIS–10)" FOR EACH CROSSARM WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY WORKMANLIKE MANNER. SEE SHEETS 942–958 FOR DETAILS.

ITEM SPECIAL – PRIMARY DOWN GUY (TDMIS–100)

THIS ITEM SHALL BE A PRIMARY DOWN GUY PER COLUMBUS DOP TDMIS–100.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER ITEM SPECIAL, "PRIMARY DOWN GUY (TDMIS–100)" FOR EACH DOWN GUY WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY WORKMANLIKE MANNER. SEE SHEETS 942–958 FOR DETAILS.

ITEM SPECIAL – DISTRIBUTION POLE GROUND (TDMIS–7)

THIS ITEM SHALL BE A DISTRIBUTION POLE GROUND PER COLUMBUS DOP
TDMIS–7.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER ITEM SPECIAL, "DISTRIBUTION POLE GROUND" FOR EACH POLE GROUND WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY WORKMANLIKE MANNER. SEE SHEETS 942–958 FOR DETAILS.

ITEM SPECIAL – DISTRIBUTION RISER (TDMIS–1001)

THIS ITEM SHALL BE A DISTRIBUTION RISER AND ALL NECESSARY APPURTENANCES PER COLUMBUS DOP TDMIS–1001.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER ITEM SPECIAL, "DISTRIBUTION RISER (TDMIS–1001)" FOR EACH RISER STRUCTURE WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY WORKMANLIKE MANNER. SEE SHEETS 942–958 FOR DETAILS.

ITEM SPECIAL – 6" SCH 40 PVC CONDUIT

THIS ITEM SHALL BE 6" SCHEDULE 40 PVC CONDUIT AND ALL NECESSARY APPURTENANCES FOR CONNECTIONS.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER ITEM SPECIAL, "6" SCH 40 PVC CONDUIT" FOR EACH LINEAR FOOT OF CONDUIT WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY WORKMANLIKE MANNER. SEE SHEETS 942–958 FOR DETAILS.

ITEM SPECIAL – DOP MANHOLE (TDMIS–1015)

THIS ITEM SHALL BE A DOP MANHOLE PER COLUMBUS DOP TDMIS–1015.

SUMP PUMP OUTLET PIPE SHALL BE CONNECTED TO A NEARBY DRAINAGE FEATURE, I.E. UNDERDRAIN, STORM SEWER PIPE, MANHOLE, CATCH BASIN. COST OF THE OUTLET PIPE SHALL BE IN INCLUDED IN THE CONTRACT PRICE BID FOR ITEM SPECIAL – DOP MANHOLE (TDMIS–1015).

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER ITEM SPECIAL "DOP MANHOLE (TDMIS–1015)" FOR EACH MANHOLE WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY WORKMANLIKE MANNER. SEE SHEETS 942–958 FOR DETAILS.

ITEM SPECIAL – 30" DIRECTIONAL BORE AND PIPE, 748.06

THIS ITEM SHALL BE 30" DIRECTIONAL BORING AND PIPE, 748.06.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER ITEM SPECIAL, "30" DIRECTIONAL BORE AND PIPE, 748.06" FOR EACH LINEAR FOOT OF DIRECTIONAL BORING AND BORE PIPE WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY WORKMANLIKE MANNER.

ITEM SPECIAL – 4' x 4' x 4' PULLBOX (TDMIS–1012)

THIS ITEM SHALL BE A 4' x 4' x 4' PULLBOX PER COLUMBUS DOP TDMIS–1012.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER ITEM SPECIAL, "4' x 4' x 4' PULLBOX (TDMIS–1012)" FOR EACH PULLBOX WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY WORKMANLIKE MANNER. SEE SHEETS 942–958 FOR DETAILS.

ITEM SPECIAL – BRIDGE MOUNTED CONDUIT HANGER

THIS ITEM SHALL BE A BRIDGE MOUNTED CONDUIT SPACER AS SHOWN ON SHEET 1418

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER ITEM SPECIAL, "BRIDGE MOUNTED CONDUIT SPACER" FOR EACH SPACER WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY WORKMANLIKE MANNER.

ITEM SPECIAL – 6" XHW FIBERGLASS CONDUIT

THIS ITEM SHALL BE 6" XHW FIBERGLASS CONDUIT.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER ITEM SPECIAL, "6" XHW FIBERGLASS CONDUIT" FOR EACH LINEAR FOOT OF CONDUIT WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY WORKMANLIKE MANNER.

ITEM SPECIAL – (3)–750kCMIL Cu, 15kV XLP INS. 133% w/ Cu TAPE SHIELD WITH (1)–350kCMIL Cu, 600V NEUTRAL

THIS ITEM SHALL BE (3)–750kCMIL Cu, 15kV XLP INS. 133% w/ Cu TAPE SHIELD WITH (1)–350kCMIL Cu, 600V NEUTRAL.
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PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER ITEM SPECIAL, "750kCMIL Cu, 15kV XLP INS. 133% w/ Cu TAPE SHIELD" FOR EACH CIRCUIT FOOT OF CONDUCTOR WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY WORKMANLIKE MANNER.

ITEM SPECIAL – CABLE TRAY RISER

THIS ITEM SHALL BE A CABLE TRAY RISER SYSTEM.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER ITEM SPECIAL, "CABLE TRAY RISER SYSTEM" FOR ALL MATERIAL SHOWN ON SHEETS 923–924 WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY WORKMANLIKE MANNER.

ITEM SPECIAL – 22.5° SCH 40 PVC CONDUIT SWEEP

THIS ITEM SHALL BE A 22.5° SCH 40 PVC CONDUIT SWEEP.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER ITEM SPECIAL, "22.5° SCH 40 PVC CONDUIT SWEEP" FOR EACH SWEEP WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY WORKMANLIKE MANNER.

ITEM SPECIAL – FIBERGLASS TO PVC CONDUIT COUPLER

THIS ITEM SHALL BE A FIBERGLASS TO PVC CONDUIT COUPLER.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER ITEM SPECIAL, "FIBERGLASS TO PVC CONDUIT COUPLER" FOR EACH COUPLER WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY WORKMANLIKE MANNER.

ITEM SPECIAL – ADJUSTING EXISTING GRADE

THIS ITEM SHALL BE THE ADJUSTMENT OF THE EXISTING MANHOLE AND VAULT GRATE TO GRADE.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER ITEM SPECIAL, "ADJUSTING EXISTING GRADE" FOR EACH ADJUSTMENT WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY WORKMANLIKE MANNER.

ITEM SPECIAL – 5" XHW FIBERGLASS CONDUIT

THIS ITEM SHALL BE 5" XHW FIBERGLASS CONDUIT.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER ITEM SPECIAL, "5" XHW FIBERGLASS CONDUIT" FOR EACH LINEAR FOOT OF CONDUIT WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY WORKMANLIKE MANNER.

ITEM SPECIAL – (1)–250kCMIL Cu, 15Kv XLP Ins. 133% w/ Cu TAPE SHIELD WITH (1)–1/0 Cu, 600V NEUTRAL

THIS ITEM SHALL BE (1)–250kCMIL Cu, 15Kv XLP Ins. 133% w/ Cu TAPE SHIELD WITH (1)–1/0 Cu, 600V NEUTRAL.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER ITEM SPECIAL, "(1)–250kCMIL Cu, 15Kv XLP Ins. 133% w/ Cu TAPE SHIELD WITH (1)–1/0 Cu, 600V NEUTRAL" FOR EACH CIRCUIT FOOT OF CONDUCTOR WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY WORKMANLIKE MANNER.

ITEM SPECIAL – 5" SCH 40 PVC CONDUIT

THIS ITEM SHALL BE 5" SCHEDULE 40 PVC CONDUIT AND ALL NECESSARY APPURTENANCES FOR CONNECTIONS.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER ITEM SPECIAL, "5" SCH 40 PVC CONDUIT" FOR EACH LINEAR FOOT OF CONDUIT WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY WORKMANLIKE MANNER.

ITEM SPECIAL – 3 x 3 CONCRETE DUCT BANK (TDMIS–3000)

THIS ITEM SHALL BE A 3 x 3 CONCRETE DUCT BANK WITH 5" SCH 40 PVC CONDUIT PER COLUMBUS DOP TDMIS–3000.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER ITEM SPECIAL, "3x3 CONCRETE DUCT BANK (TDMIS–3000)" FOR EACH LINEAR FOOT OF CONCRETE DUCT BANK WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY WORKMANLIKE MANNER. SEE SHEETS 942–958 FOR DETAILS.

ITEM SPECIAL – 6" FIBERGLASS CONDUIT EXPANSION FITTINGS

THIS ITEM SHALL BE A 6" FIBERGLASS CONDUIT EXPANSION FITTING.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER ITEM SPECIAL, "6" FIBERGLASS CONDUIT EXPANSION FITTING" FOR EACH FITTING WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY WORKMANLIKE MANNER.

ITEM SPECIAL – 2 x 3 DUCT BANK – 6" PVC (TDMIS–3000)

THIS ITEM SHALL BE A 2 x 3 DUCT BANK WITH 6" SCH 40 PVC CONDUIT PER COLUMBUS DOP TDMIS–3000.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER ITEM SPECIAL, "2x3 BANK – 6" PVC (TDMIS–3000)" FOR EACH LINEAR FOOT OF DUCT BANK WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY WORKMANLIKE MANNER. SEE SHEETS 942–958 FOR DETAILS.

ITEM SPECIAL – (3)–350kCMIL Cu, 15Kv XLP Ins. 133% w/ Cu TAPE SHIELD WITH (1)–4/0 Cu, 600V NEUTRAL

THIS ITEM SHALL BE (3)–350kCMIL Cu, 15Kv XLP Ins. 133% w/ Cu TAPE SHIELD WITH (1)–4/0 Cu, 600V NEUTRAL.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER ITEM SPECIAL, "(3)–350kCMIL Cu, 15Kv XLP Ins. 133% w/ Cu TAPE SHIELD WITH (1)–4/0 Cu, 600V NEUTRAL" FOR EACH CIRCUIT FOOT OF CONDUCTOR WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY WORKMANLIKE MANNER.

ITEM SPECIAL – EXISTING MANHOLE REMOVAL

THIS ITEM SHALL BE THE REMOVAL OF AN EXISTING MANHOLE.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER ITEM SPECIAL, "EXISTING MANHOLE REMOVAL" FOR EACH MANHOLE REMOVED WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY WORKMANLIKE MANNER.

ITEM SPECIAL – 5" FIBERGLASS 90° SWEEP

THIS ITEM SHALL BE A 5" FIBERGLASS 90° SWEEP.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER ITEM SPECIAL, "5" FIBERGLASS 90° SWEEP" FOR EACH SWEEP WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY WORKMANLIKE MANNER.

ITEM SPECIAL – (3)–#1 AL, 15kV XLP WITH (1)–#2 AI, 600V NEUTRAL

THIS ITEM SHALL BE (3)–#1 AL, 15kV XLP WITH (1)–#2 AI, 600V NEUTRAL.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER ITEM SPECIAL, "(3)–#1 AL, 15kV XLP WITH (1)–#2 AI, 600V NEUTRAL" FOR EACH CIRCUIT FOOT OF CONDUCTOR WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY WORKMANLIKE MANNER.

ITEM SPECIAL – 4" SCH 40 PVC CONDUIT

THIS ITEM SHALL BE 4" SCHEDULE 40 PVC CONDUIT AND ALL NECESSARY APPURTENANCES FOR CONNECTIONS.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER ITEM SPECIAL, "4" SCH 40 PVC CONDUIT" FOR EACH LINEAR FOOT OF CONDUIT WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY WORKMANLIKE MANNER.

NO.	DESCRIPTION	REV. BY	DATE
2	DOP TDMIS CHANGE	CWL	11-12-2021
4	UPDATED BORE SPACERS NOTE	CWL	11-29-2021
8	UPDATED MANHOLE NOTE	CWL	12-7-2021

ITEM SPECIAL – 11.25° SCH 40 PVC CONDUIT SWEEP

THIS ITEM SHALL BE A 11.25° SCH 40 PVC CONDUIT SWEEP.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER ITEM SPECIAL, "11.25° SCH 40 PVC CONDUIT SWEEP" FOR EACH SWEEP WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY WORKMANLIKE MANNER.

ITEM SPECIAL - PADMOUNT TRANSFORMER RELOCATION

THIS ITEM SHALL BE THE RELOCATION OF AN EXISTING PADMOUNT TRANSFORMER, INCLUDING THE NEW FIBERGLASS BOXPAD SIZED PER TRANSFORMER SIZE AND INSTALLED PER MANUFACTURER RECOMMENDATION, GROUNDING, RE-ESTABLISHING ALL SECONDARY CONNECTIONS AND ALL BUSHING AND LOADBREAK ELBOW ACCESSORIES.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER ITEM SPECIAL, "PADMOUNT TRANSFORMER RELOCATION" FOR EACH PADMOUNT TRANSFORMER RELOCATED WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY WORKMANLIKE MANNER.

CASTING ALLOWABLE TOLERANCE ON CITY OF COLUMBUS STREETS – AS PER PLAN

FOR ALL MANHOLES, WATERVALVES, TRAFFIC AND INTERCONNECT PULL BOXES, ELECTRIC AND COMMUNICATION VAULTS, AND ANY OTHER UTILITY STRUCTURE IN THE ROADWAY OF CITY OF COLUMBUS STREETS AND ALLEYS WITHIN THE PAVING LIMITS OF THE PROJECT, THE MAXIMUM ALLOWABLE TOLERANCE IS MINUS 1/4 INCH BELOW THE FINISHED PAVEMENT SURFACE. THERE IS NO ALLOWABLE TOLERANCE ABOVE THE FINISHED PAVEMENT SURFACE. ALL PRIVATE UTILITY CASTINGS WILL BE ADJUSTED TO GRADE BY THE PRIVATE UTILITY COMPANY.

THE CONTRACTOR SHALL MAKE EVERY EFFORT TO INSTALL OR ADJUST CASTINGS TO BE WITHIN THIS TOLERANCE. IT IS ALSO THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ODOT PROJECT ENGINEER OF ANY CASTINGS THAT NEED TO BE ADJUSTED TO GRADE THAT WERE NOT PART OF THE PLAN QUANTITIES FOR NEW CONSTRUCTION OR ADJUSTMENT TO GRADE.

MEASUREMENT WILL BE BY PLACING A 10 FOOT STRAIGHTEDGE CENTERED OVER THE CENTER OF THE CASTING IN THE DIRECTION OF TRAFFIC, MEASURED TO VARIOUS POINTS ON THE TOP OF THE CASTING FRAME OF THE STRUCTURE. IF ANY MEASUREMENT EXCEEDS 1/4 INCH, THE CASTING WILL BE DEEMED OUT OF TOLERANCE AND ADJUSTED TO GRADE BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE PROJECT.

THE ODOT PROJECT ENGINEER, ALONG WITH ATTENDANCE BY A REPRESENTATIVE OF THE CITY OF COLUMBUS, WILL CONDUCT THE MEASUREMENTS AFTER THE FINAL SURFACE COURSE IS PLACED.

TWO METHODS OF ADJUSTING CASTINGS TO GRADE WILL BE ACCEPTED:

1) SAWCUT THE PAVEMENT AROUND THE CASTING STRUCTURE IN A SQUARE SHAPE. SAWCUT LINE MUST BE AT LEAST 1 FOOT OUTSIDE OF THE OUTER DIAMETER OF THE CASTING. REMOVE PAVEMENT FULL DEPTH AROUND THE CASTING IN ORDER TO COMPLETELY REMOVE THE CASTING STRUCTURE, HEAVY DUTY VALVE BOX, OR OTHER TYPE OF UTILITY STRUCTURE. REMOVE AND CLEAN THE EXISTING FRAME, ADJUST THE HEIGHT OF THE SUPPORTING WALLS, AND RESET THE EXISTING FRAME IN A BED OF CONCRETE MORTAR OR STRUCTURE CONCRETE TO THE NEW GRADE. PLACE CONCRETE PAVEMENT AROUND THE STRUCTURE, HOLDING THE CONCRETE 2 INCHES BELOW THE FINISHED PAVMENT SURFACE. FOR PULLBOXES, MANHOLES AND CASTINGS GREATER THAN 30 INCHES, INCLUDE TWO #4 REBAR EVENLY SPACED ON ALL FOUR SIDES OF THE CASTING IN THE CONCRETE PAVEMENT. ONCE THE CONCRETE HAS PROPERLY CURED, PLACE TACK COAT AND SURFACE ASPHALT PAVEMENT NEATLY AROUND THE STRUCTURE AND SEAL THE JOINT WITH A HOT APPLIED JOINT SEALER PER CITY OF COLUMBUS CMSC ITEM 705.04.

2) SAWCUT THE PAVEMENT AROUND THE CASTING STRUCTURE WITH A LARGER CIRCULAR CUTTING SAW. SAWCUT LINE MUST BE AT LEAST 1 FOOT OUTSIDE OF THE OUTER DIAMETER OF THE CASTING. REMOVE PAVEMENT FULL DEPTH AROUND THE CASTING IN ORDER TO COMPLETELY REMOVE THE CASTING STRUCTURE, HEAVY DUTY VALVE BOX, OR OTHER TYPE OF UTILITY STRUCTURE. REMOVE AND CLEAN THE EXISTING FRAME, ADJUST THE HEIGHT OF THE SUPPORTING WALLS, AND RESET THE EXISTING FRAME IN A BED OF CONCRETE MORTAR OR STRUCTURE CONCRETE TO THE NEW GRADE. PLACE CONCRETE PAVEMENT AROUND THE STRUCTURE FULL DEPTH NEATLY AROUND THE STRUCTURE AND UP TO THE FINISHED GRADE. FOR PULLBOXES, MANHOLES AND CASTINGS GREATER THAN 30 INCHES, INCLUDE TWO CIRCULAR RINGS OF #4 REBAR EVENLY SPACED IN THE CONCRETE PAVEMENT. SEAL JOINT WITH A HOT APPLIED JOINT SEALER PER CITY OF COLUMBUS CMSC ITEM 705.04.

ALL CASTINGS BEING ADJUSTED TO GRADE WITH EITHER METHOD MUST BE PROPERLY COVERED WITH A STEEL PLATE DURING THE ADJUSTMENT WORK AND UNTIL THE CONCRETE MATERIAL USED IS PROPERLY CURED. FULL DEPTH IS DEFINED AS FROM THE TOP SURFACE OF THE SURFACE COURSE PAVEMENT TO THE BOTTOM OF THE PAVEMENT BASE MATERIAL. PRIVATE UTILITY COMPANY CASTINGS WILL BE ADJUSTED TO GRADE BY THE PRIVATE UTILITY, WITH NOTICE GIVEN BY THE ODOT PROJECT ENGINEER.

CITY DOP FURNACE STREET SUBSTATION SAFETY PROTOCOL AND REGULATIONS

FOR ALL WORK WITHIN THE CITY OF COLUMBUS DOP FURNACE STREET SUBSTATION, ALL NORMAL SAFETY PROTOCOL AND PRACTICES SHALL BE FOLLOWED FOR WORKING IN AN ENERGIZED SUBSTATION YARD. CITY DOP REQUIRES ALL CONTRACTORS TO TAKE A CITY CONTRACTOR SAFETY COURSE THAT IS ONLINE PRIOR TO PERFORMING ANY WORK.

ANY GROUND GRID THAT IS DISTURBED SHALL BE REPAIRED DURING CONSTRUCTION. FENCE SHALL BE IN PLACE THE ENTIRE DURATION OF CONSTRUCTION. ALL FENCE SHALL BE BONDED TO THE GRID. CONTRACTOR SHALL EXCAVATE WITH CARE AND CAUTION. SUBSTATION LIGHTING SHALL BE MAINTAINED. SUBSTATION ACCESS SHALL BE PROVIDED FOR CITY DOP FOR EMERGENCY CASES.

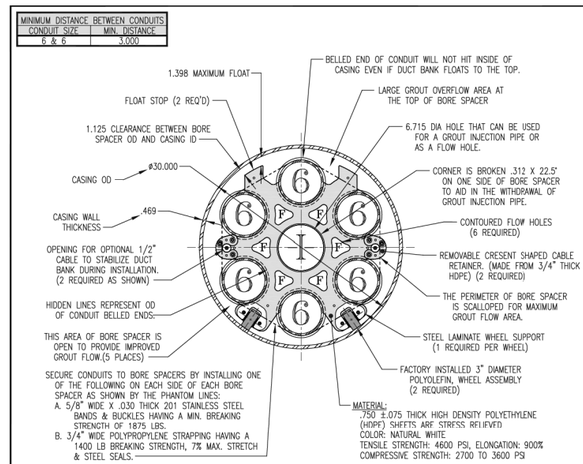
ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY TO MEET THESE REQUIREMENTS SHALL BE CONSIDERED INCIDENTAL TO THE VARIOUS ELECTRICAL PAY ITEMS.

ITEM SPECIAL – DIRECTIONAL BORE SPACERS FOR 6" SCH 40 PVC

THIS ITEM SHALL BE DIRECTIONAL BORE SPACERS FOR 6" SCH 40 PVC PER THE DETAIL BELOW OR AS APPROVED EQUAL. CONTRACTOR SHALL USE A THERMAL GROUT AS RECOMMENDED BY THE BORE SPACER MANUFACTURER.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID UNDER ITEM SPECIAL, "DIRECTIONAL BORE SPACERS FOR 6" SCH 40 PVC" FOR EACH SPACER WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED INCLUDING ANY NECESSARY GROUT TO COMPLETE THIS ITEM IN A SATISFACTORY WORKMANLIKE MANNER.

MINIMUM DISTANCE BETWEEN CONDUITS	
CONDUIT SIZE	MIN. DISTANCE
6 & 6	3.000



DIRECTIONAL BORE SPACERS DETAIL

NOTES:
1. USE ONE BORE SPACER FOR EVERY 5 FEET OF DUCT BANK.
2. THE CASING ID MUST BE SMOOTH AND FREE FROM RIDGES, PROJECTIONS AND SEAMS THAT MIGHT IMPEDE THE ROLLING OF WHEELS.
3. INSTALL BORE SPACERS PERPENDICULAR TO CONDUITS TO REDUCE THE TENDENCY OF DUCT BANK TO CORKSCREW.
4. A TROUGH OR FEEDER BRIDGE SHOULD BE CONSTRUCTED AT THE LEADING END OF THE CASING TO SUPPORT SECTIONS OF DUCT BANK AS THEY ARE ASSEMBLED AND PULLED INTO THE CASING.
5. THIS BORE SPACER IS DESIGNED FOR A CASING THAT IS STRAIGHT AND TRUE.
6. IT IS POSSIBLE THAT THE DUCT BANK WILL ROTATE (CORKSCREW) AS IT IS PULLED THRU THE CASING UNLESS AN "OFF CENTER WEIGHT TECHNIQUE" OR "STABILIZATION CABLES" ARE USED.
7. THIS BORE SPACER WILL ACCOMODATE THE "SINGLE–END", "FLUSH COUPLED EXTRACTABLE INJECTION PIPE" OR "STATIONARY SACRIFICIAL INJECTION PIPE" METHODS OF GROUT FILLING.
8. IT IS ESSENTIAL THAT THE BORE SPACERS ARE HELD IN PLACE RELATIVE TO THE CONDUIT. REASON: AS THE GROUT IS PUMPED INTO THE CASING, THE COMPARTMENTS FORMED BETWEEN THE BORE SPACERS ARE MORE OR LESS FILLED SEQUENTIALLY, PLACING A TEMPORARY THRUST LOAD ON EACH BORE SPACER.
9. THE DUCT BANK MUST BE HELD IN POSITION AT BOTH ENDS TO ACCOMMODATE POSSIBLE UNEVEN THRUST LOADS THAT MAY BE GENERATED DURING THE GROUTING OPERATION.
10. WHEN FILLING THE AREA BETWEEN THE CONDUITS AND CASING WITH GROUT, TAKE CARE NOT TO EXCEED THE HYDRAULIC COLLAPSE PRESSURE OF THE CONDUITS.
11. DEPENDING ON THE GROUT SPECIFIC GRAVITY AND GROUT FLOW, IT IS POSSIBLE THAT THE DUCT BANK WILL FLOAT TO THE TOP OF THE CASING.
12. ACTUAL QUANTITY OF GROUT USED SHOULD BE MEASURED AND RECORDED.

HORIZONTAL SCALE IN FEET
0 50 100 200

CALCULATED TAM | CHECKED PCT

ELECTRICAL RELOCATION PAYMENT NOTES

FRA-70/71-12.89/14.93

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.

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: 1-18-19

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATION:

800 DATED:	10-15-21
832 DATED:	10-19-18
846 DATED:	4-17-15

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, 2007.

DESIGN LOADING

- HL-93 (VEHICULAR BRIDGE)
- AASHTO STANDARD SPECIFICATIONS H-10 TRUCK (CAP)
- FUTURE WEARING SURFACE (FWS) OF 0.060 KIPS PER SQUARE FOOT (EXCLUDING THE EAST CAP)
- SATURATED SOIL UNIT WEIGHT OF 0.120 KIPS/CU. FT.
- PLANTER BOX PRECAST CONCRETE UNIT WEIGHT OF 0.150 KIPS/CU. FT.
- DECORATIVE TRELLIS - REAR SUPPORT POSTS UNIT WEIGHT OF 6.0 KIPS/EACH (INCLUDING TRELLIS PADS); FRONT SUPPORT POSTS UNIT OF 6.8 KIPS/EACH (INCLUDING TRELLIS PADS)
- SCREEN WALL UNIT WEIGHT OF 0.095 KIPS/FT.
- PEDESTRIAN PED POLE UNIT WEIGHT OF 0.20 KIPS/EACH
- LIGHT POLE UNIT WEIGHT OF 0.30 KIPS/EACH
- MAST ARM SIGNAL POLE UNIT WEIGHT OF 1.50 KIPS/EACH
- UTILITY CONDUITS INCLUDING HANGER SUPPORTS UNIT WEIGHT OF 0.080 KIPS/FT.
- MATURE TREE UNIT WEIGHT OF 3.2 KIPS/EACH
- SIDEWALK LIVE LOAD OF 0.075 KIPS/SQ. FT.

DESIGN STRESSES

CONCRETE CLASS QC2 - COMPRESSIVE STRENGTH 4.0 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
2½" CONCRETE COVER

MONOLITHIC WEARING SURFACE

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

ABBREVIATIONS

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

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.

EXISTING STRUCTURE PLANS:

PLANS MAY BE EXAMINED BY PROSPECTIVE BIDDERS AT THE OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 6 OFFICES, 400 E. WILLIAM ST., DELAWARE, OHIO 43015 (PHONE 740-833-8000).

ITEM 203 - EMBANKMENT, AS PER PLAN

PLACE AND COMPACT EMBANKMENT MATERIAL IN 6 INCH LIFTS FOR THE CONSTRUCTION OF THE APPROACH EMBANKMENT. PAID FOR IN THE ROADWAY QUANTITIES.

FOUNDATION BEARING RESISTANCE

PIER FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM SERVICE LOAD PRESSURE OF 8.22 KIPS PER SQUARE FOOT AND A MAXIMUM STRENGTH LOAD PRESSURE OF 10.65 KIPS PER SQUARE FOOT. THE FACTORED BEARING RESISTANCE IS 65.58 KIPS PER SQUARE FOOT.

DRILLED SHAFTS

THE MAXIMUM FACTORED LOAD TO BE SUPPORTED BY EACH DRILLED SHAFT IS 273 KIPS AT THE REAR ABUTMENT AND 289 KIPS AT THE FORWARD ABUTMENT. THIS LOAD IS RESISTED BY TIP RESISTANCE ONLY. THE FACTORED RESISTANCE DEVELOPED BY THE DRILLED SHAFT TIP IS 530 KIPS.

THE MAXIMUM COARSE AGGREGATE SIZE TO BE USED IN THE DRILLED SHAFT CONCRETE SHALL BE NO. 67.

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 3.12 KIPS FOR A TOTAL MACHINE LOAD OF 24.96 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.

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 TRELLIS, LIGHT POLES, AND SIGNAL PEDESTALS.

ITEM 503-COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN

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 EXCAVATION. IF CONSTRUCTING AN ALTERNATE DESIGN FOR TEMPORARY SUPPORT OF EXCAVATION, PREPARE AND PROVIDE PLANS IN ACCORDANCE WITH CMS 501.05. THE DEPARTMENT WILL PAY FOR THE TEMPORARY SUPPORT OF EXCAVATION AT THE CONTRACT LUMP SUM PRICE FOR COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN. NO ADDITIONAL PAYMENT WILL BE MADE FOR PROVIDING AN ALTERNATE DESIGN.

ITEM 625, LIGHT POLE ANCHOR BOLTS, MISC.: COMBINATION SIGNAL POLE & PEDESTRIAN POLE ANCHOR BOLT ASSEMBLIES EMBEDDED IN CONCRETE BRIDGE DECK:

FURNISH ANCHOR ASSEMBLIES FOR COMBINATION SIGNAL POLES AND PEDESTRIAN POLES MOUNTED ON THE BRIDGE. THE ITEM INCLUDES STEEL PLATES, ANCHOR RODS, NUTS, AND WASHERS AS SHOWN ON THE DRAWINGS OR AS REQUIRED FOR INSTALLATION. ANCHOR RODS SHALL CONFORM TO ASTM F1554 GRADE 55. COORDINATE DIMENSIONS OF ASSEMBLY WITH THE TRAFFIC PLANS. FABRICATE ASSEMBLY IN ACCORDANCE WITH CMS 513 AND 730. GALVANIZE THE ASSEMBLY AFTER FABRICATION IN ACCORDANCE WITH CMS 711.02.

ITEM 511 - CLASS QC1 CONCRETE WITH QC/QA, FOOTING, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ITEM 511, INSTALL A REFERENCE MONUMENT AT EACH END OF THE PIER SPREAD FOOTING. THE REFERENCE MONUMENT SHALL CONSIST OF #8, OR LARGER, EPOXY COATED REBAR EMBEDDED AT LEAST 6" INTO THE FOOTING AND EXTENDED VERTICALLY 4 TO 6 INCHES ABOVE THE TOP OF THE FOOTING. INSTALL A SIX INCH DIAMETER, SCHEDULE 40, MONUMENT AND PLACE THE PIPE VERTICAL WITH ITS TOP AT THE FINISHED GRADE. THE PIPE SHALL HAVE A REMOVABLE, SCHEDULE 40, PLASTIC PIPE. PERMANENTLY ATTACH THE BOTTOM OF THE PIPE TO THE TOP OF THE FOOTING.

ESTABLISH A BENCHMARK TO DETERMINE THE ELEVATION OF THE REFERENCE MONUMENTS AT VARIOUS MONITORING PERIODS THROUGHOUT THE LENGTH OF THE CONSTRUCTION PROJECT. THE BENCHMARK SHALL BE THE THROUGHOUT THE PROJECT AND SHALL BE INDEPENDENT OF ALL STRUCTURES.

RECORD THE ELEVATION OF EACH REFERENCE MONUMENT AT EACH MONITORING PERIOD SHOWN IN THE TABLE BELOW.

THE ORIGINAL COMPLETED TABLES WILL BECOME PART OF THE DISTRICT'S PROJECT PLAN RECORDS.

PROJECT NAME: FRA-70/71-12.68/14.86	MAXIMUM BEARING PRESSURE: 8.22 KSF	
BRIDGE NUMBER: FRA-70-1395	STRUCTURE FILE NUMBER: 2510023	
BENCHMARK LOCATION:		
FOOTING LOCATION: PIER		
MONITORING PERIOD	LEFT MONUMENT	RIGHT MONUMENT
AFTER FOOTING CONCRETE IS PLACED		
BEFORE PLACEMENT OF SUPERSTRUCTURE MEMBERS		
BEFORE DECK PLACEMENT		
AFTER DECK PLACEMENT		
PROJECT COMPLETION		

PROJECT NAME: FRA-70/71-12.68/14.86	MAXIMUM BEARING PRESSURE: 8.22 KSF	
BRIDGE NUMBER: FRA-70-1395	STRUCTURE FILE NUMBER: 2510023	
BENCHMARK LOCATION:		
FOOTING LOCATION: PIER		
MONITORING PERIOD	LEFT MONUMENT	RIGHT MONUMENT
AFTER FOOTING CONCRETE IS PLACED		
BEFORE PLACEMENT OF SUPERSTRUCTURE MEMBERS		
BEFORE DECK PLACEMENT		
AFTER DECK PLACEMENT		
PROJECT COMPLETION		

ITEM 512 - SEALING OF CONCRETE SURFACES (NON-EPOXY)

THIS ITEM SHALL COVER THE SEALING OF THE SUPERSTRUCTURE, INCLUDING THE TOP AND BOTH FACES OF THE PARAPETS, PILASTERS, PYLONS, DECK EDGES, AND SIDEWALKS. PROVIDE A BUFF-WASH FINISH.

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

THIS ITEM SHALL COVER THE SEALING OF THE SUBSTRUCTURES, INCLUDING ALL EXPOSED SURFACES OF THE ABUTMENTS AND THE PIER. THE FINAL COAT SHALL BE TINTED SO THAT THE FINAL COLOR IS FEDERAL COLOR STANDARD NO. 17778--LIGHT NEUTRAL.

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

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.

NO.	DESCRIPTION	REV. BY	DATE
8	ADDED ITEM	RFV	12-7-2021

DESIGN AGENCY
GPD GROUP.

DESIGNED DGN | DRAWN RPR | REVIEWED DGN | DATE 9-6-19
CHECKED DJC | REVISED | STRUCTURE FILE NUMBER 2510023

GENERAL NOTES
BRIDGE NO. FRA-70-1395C
S. FRONT STREET OVER I-70/71

FRA-70/71-12.68/14.86
PID No. 105523

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By: tzongmester

34" x 22"

SHEET NUM.														PART. 08/NHS/PV.	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
857	864																			
																			RETAINING WALLS (E5)	
438														438	203	20000	438	CY	EMBANKMENT	
24,388														24,388	509	10001	24,388	LB	EPOXY COATED REINFORCING STEEL, AS PER PLAN	838
150														150	511	53012	150	CY	CLASS QC2 CONCRETE, MISC.: PARAPET INCLUDING SLEEPER SLAB WITH QC/QA	838
449														449	512	10001	449	SY	SEALING OF CONCRETE SURFACES, AS PER PLAN, (PERMANENT GRAFFITI PROTECTION)	838
698														698	512	10100	698	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
875														875	516	13900	875	SF	2" PREFORMED EXPANSION JOINT FILLER	
179														179	607	39901	179	FT	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC, AS PER PLAN	838
5,533														5,533	840	20001	5,533	SF	MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN	843
1,162														1,162	840	21000	1,162	CY	WALL EXCAVATION	
691														691	840	22000	691	SY	FOUNDATION PREPARATION	
2,164														2,164	840	23000	2,164	CY	SELECT GRANULAR BACKFILL	
997														997	840	25010	997	FT	6" DRAINAGE PIPE, PERFORATED	
438														438	840	26000	438	FT	CONCRETE COPING	
4,658														4,658	840	26050	4,658	SF	AESTHETIC SURFACE TREATMENT	
5														5	840	27000	5	DAY	ON-SITE ASSISTANCE	
																			RETAINING WALLS (E7)	
	9,684													9,684	SPECIAL	20302000	9,684	CY	ENGINEERED FILL: LIGHTWEIGHT CELLULAR CONCRETE FILL, CLASS II	841
	451													451	SPECIAL	20302000	451	CY	ENGINEERED FILL: LIGHTWEIGHT CELLULAR CONCRETE FILL, CLASS III	841
	436													436	203	20000	436	CY	EMBANKMENT	
	935													935	203	35110	935	CY	GRANULAR MATERIAL, TYPE B	
	2													2	SPECIAL	20365000	2	EACH	SETTLEMENT PLATFORM	841
	4,687													4,687	203	98000	4,687	CY	ROADWAY, MISC.:EPS GEOFOAM FILL	840
	LUMP													LUMP	503	11101	LS		COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN	838
	31,202													31,202	509	10001	31,202	LB	EPOXY COATED REINFORCING STEEL, AS PER PLAN	838
	199													199	511	53012	199	CY	CLASS QC2 CONCRETE, MISC.: PARAPET INCLUDING SLEEPER SLAB WITH QC/QA	838
	132													132	511	53012	132	CY	CLASS QC2 CONCRETE, MISC.: LOAD DISTRIBUTION SLAB	838
	5,058													5,058	511	71200	5,058	SF	CONCRETE, MISC.: PRECAST WALL PANELS	838
	121													121	511	81100	121	FT	CONCRETE, MISC.: PRECAST FOOTING	838
	2,080													2,080	512	10100	2,080	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
	76													76	516	13200	76	SF	1/2" PREFORMED EXPANSION JOINT FILLER	
	857													857	516	13900	857	SF	2" PREFORMED EXPANSION JOINT FILLER	
	363													363	607	39901	363	FT	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC, AS PER PLAN	838
	12,751													12,751	840	20001	12,751	SF	MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN	839, 843
	4,995													4,995	840	21000	4,995	CY	WALL EXCAVATION	
	1,485													1,485	840	22000	1,485	SY	FOUNDATION PREPARATION	
	2,660													2,660	840	23000	2,660	CY	SELECT GRANULAR BACKFILL	
	506													506	840	25010	506	FT	6" DRAINAGE PIPE, PERFORATED	
	523													523	840	26000	523	FT	CONCRETE COPING	
	16,763													16,763	840	26050	16,763	SF	AESTHETIC SURFACE TREATMENT	
	5													5	840	27000	5	DAY	ON-SITE ASSISTANCE	

NO.	DESCRIPTION	REV. BY	DATE
1	Removal of Item 203E35120	TAZ	11-05-2021
3	Remove Item 840E28000	TAZ	11-19-2021
3	Update Item 509 to A.P.P.	TAZ	11-19-2021
4	Update Funding Splits	TAZ	11-24-2021
6	Update 511E53012 Qty.	TAZ	12-03-2021
6	Remove Item 503E11100	TAZ	12-03-2021
8	Update 840E20001 Qty.	TAZ	12-07-2021

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GENERAL SUMMARY

FRA-71-14.36

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1228

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SHEET NUM.														PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE
874	884													08/NHS/PV.		EXT	TOTAL			SHEET NO.
																			RETAINING WALLS (E10)	
1,346														1,346	SPECIAL	20302000	1,346	CY	ENGINEERED FILL: LIGHTWEIGHT CELLULAR CONCRETE FILL, CLASS II	841
122														122	SPECIAL	20302000	122	CY	ENGINEERED FILL: LIGHTWEIGHT CELLULAR CONCRETE FILL, CLASS III	841
678														678	203	20000	678	CY	EMBANKMENT	
827														827	203	35110	827	CY	GRANULAR MATERIAL, TYPE B	
6,138														6,138	203	98000	6,138	CY	ROADWAY, MISC.:EPS GEOFOAM FILL	840
LUMP														LUMP	503	11101	LS		COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN	838
39,409														39,409	509	10001	39,409	LB	EPOXY COATED REINFORCING STEEL, AS PER PLAN	838
247														247	511	53012	247	CY	CLASS QC2 CONCRETE, MISC.: PARAPET INCLUDING SLEEPER SLAB WITH QC/QA	838
129														129	511	53012	129	CY	CLASS QC2 CONCRETE, MISC.: LOAD DISTRIBUTION SLAB	838
4,628														4,628	511	71200	4,628	SF	CONCRETE, MISC.: PRECAST WALL PANELS	838
152														152	511	81100	152	FT	CONCRETE, MISC.: PRECAST FOOTING	838
1,240														1,240	512	10100	1,240	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
5,717														5,717	840	20001	5,717	SF	MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN	839
4,104														4,104	840	21000	4,104	CY	WALL EXCAVATION	
743														743	840	22000	743	SY	FOUNDATION PREPARATION	
1,748														1,748	840	23000	1,748	CY	SELECT GRANULAR BACKFILL	
455														455	840	25010	455	FT	6" DRAINAGE PIPE, PERFORATED	
5														5	840	27000	5	DAY	ON-SITE ASSISTANCE	
	2,649													2,649	203	20000	2,649	CY	**RETAINING WALLS (W2)** EMBANKMENT	
	LUMP													LUMP	503	11100	LS		COFFERDAMS AND EXCAVATION BRACING	
	87,095													87,095	509	10001	87,095	LB	EPOXY COATED REINFORCING STEEL, AS PER PLAN	838
	560													560	511	53012	560	CY	CLASS QC2 CONCRETE, MISC.: PARAPET INCLUDING SLEEPER SLAB WITH QC/QA	838
	1,627													1,627	512	10001	1,627	SY	SEALING OF CONCRETE SURFACES, AS PER PLAN, (PERMANENT GRAFFITI PROTECTION)	838
	4,459													4,459	512	10100	4,459	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
	216													216	516	13200	216	SF	1/2" PREFORMED EXPANSION JOINT FILLER	
	2,217													2,217	516	13900	2,217	SF	2" PREFORMED EXPANSION JOINT FILLER	
	431													431	601	37500	431	FT	PAVED GUTTER, TYPE 1-2	
	36,756													36,756	840	20001	36,756	SF	MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN	843
	6,905													6,905	840	21000	6,905	CY	WALL EXCAVATION	
	3,332													3,332	840	22000	3,332	SY	FOUNDATION PREPARATION	
	27,781													27,781	840	23000	27,781	CY	SELECT GRANULAR BACKFILL	
	924													924	840	23050	924	CY	NATURAL SOIL	
	3,135													3,135	840	25010	3,135	FT	6" DRAINAGE PIPE, PERFORATED	
	1,555													1,555	840	26000	1,555	FT	CONCRETE COPING	
	33,647													33,647	840	26050	33,647	SF	AESTHETIC SURFACE TREATMENT	
	5													5	840	27000	5	DAY	ON-SITE ASSISTANCE	

NO.	DESCRIPTION	REV. BY	DATE
1	Removal of Item 203E35120	TAZ	11-05-2021
3	Remove Item 840E28000	TAZ	11-19-2021
3	Update Item 509 to A.P.P.	TAZ	11-19-2021
4	Update Funding Splits	TAZ	11-24-2021
6	Add Load Dist. Slab Qty.	TAZ	12-03-2021
8	Update 840E20001 Qty.	TAZ	12-07-2021

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GENERAL SUMMARY

FRA-71-14.36

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SHEET NUM.												PART.			ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
912	944											09/NHS/BR	09/NHS/BR.	09/NHS/BR,						
																			STRUCTURE REPAIR (FRA-70-1373L)	
LUMP														LUMP	202	11203	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	911
157														157	202	22900	157	SY	APPROACH SLAB REMOVED	
705														705	202	23501	705	SY	WEARING COURSE REMOVED, AS PER PLAN	911
3														3	202	98100	3	EACH	REMOVAL MISC.: PILE REMOVED, EXISTING STRUCTURE	917
8														8	407	20000	8	GAL	NON-TRACKING TACK COAT	
5														5	441	10000	5	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG64-22	
LUMP														LUMP	503	11100	LS		COFFERDAMS AND EXCAVATION BRACING	
11,409														11,409	509	25000	11,409	LB	UNCOATED REINFORCING STEEL	
372														372	510	10000	372	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	
48														48	511	21521	48	CY	CLASS QC2 CONCRETE, SUPERSTRUCTURE, AS PER PLAN	911
117														117	512	33010	117	SY	TYPE 3 WATERPROOFING	
987														987	513	10200	987	LB	STRUCTURAL STEEL MEMBERS, LEVEL UF	
1,005														1,005	513	10240	1,005	LB	STRUCTURAL STEEL MEMBERS, LEVEL 2	
4														4	518	12200	4	EACH	SCUPPERS, INCLUDING SUPPORTS	
32														32	SPECIAL	51912510	32	SY	PATCHING CONCRETE BRIDGE DECK	911
4														4	846	00110	4	CF	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM	
																			STRUCTURE (FRA-71-1503L)	
	LUMP											LUMP	LUMP		202	11003	LS		STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	941
	LUMP											LUMP	LUMP		202	11201	LS		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	941
	159											80	79		202	22900	159	SY	APPROACH SLAB REMOVED	
	2,034											1,017	1,017		202	23500	2,034	SY	WEARING COURSE REMOVED	
	21											11	10		202	98100	21	EACH	REMOVAL MISC.: PILE REMOVED, EXISTING STRUCTURE	946
	LUMP											LUMP	LUMP		503	11101	LS		COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN	942
	6,586											3,293	3,293		503	21101	6,586	CY	UNCLASSIFIED EXCAVATION, AS PER PLAN	942
	LUMP											LUMP	LUMP		505	11100	LS		PILE DRIVING EQUIPMENT MOBILIZATION	
	980											490	490		507	00100	980	FT	STEEL PILES HP10X42, FURNISHED	
	935											468	467		507	00150	935	FT	STEEL PILES HP10X42, DRIVEN	
	1,760											880	880		507	00200	1,760	FT	STEEL PILES HP12X53, FURNISHED	
	1,680											840	840		507	00250	1,680	FT	STEEL PILES HP12X53, DRIVEN	
	27											14	13		507	93300	27	EACH	STEEL POINTS OR SHOES	
	6,011,221											3,005,611	3,005,610		509	10001	6,011,221	LB	EPOXY COATED REINFORCING STEEL, AS PER PLAN	942
	8,950											4,475	4,475		511	34447	8,950	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN	942
	1,506											753	753		511	34451	1,506	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN	942, 1143
	278											139	139		511	43512	278	CY	CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT INCLUDING FOOTING	
	11,516											5,758	5,758		511	45602	11,516	CY	CLASS QC4 MASS CONCRETE, SUBSTRUCTURE WITH QC/QA	
	1,642											821	821		512	10001	1,642	SY	SEALING OF CONCRETE SURFACES, AS PER PLAN, (PERMANENT GRAFFITI PROTECTION)	942, 1143
	22,021											11,011	11,010		512	10100	22,021	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
	19											10	9		512	33000	19	SY	TYPE 2 WATERPROOFING	
	13,156,600											6,578,300	6,578,300		513	10401	13,156,600	LB	STRUCTURAL STEEL MEMBERS, HYBRID GIRDER, LEVEL SIX (6) FABRICATION, AS PER PLAN	942, 1035
	84,927											42,464	42,463		513	20000	84,927	EACH	WELDED STUD SHEAR CONNECTORS	
	154,349											77,175	77,174		514	00060	154,349	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT	
	154,349											77,175	77,174		514	00066	154,349	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT	
	118											59	59		516	10010	118	FT	ARMORLESS PREFORMED JOINT SEAL	
	263											132	131		SPECIAL	51612400	263	FT	MODULAR EXPANSION JOINT	943
	26											13	13		516	13600	26	SF	1" PREFORMED EXPANSION JOINT FILLER	
	10											5	5		518	12200	10	EACH	SCUPPERS, INCLUDING SUPPORTS	
	83											42	41		518	21200	83	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
	46											23	23		518	40000	46	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	
	38											19	19		518	40010	38	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	
	229											115	114		518	51200	229	FT	PIPE DOWNSPOUT, INCLUDING SPECIALS, 10"	
	130											65	65		524	94804	130	FT	DRILLED SHAFTS, 42" DIAMETER, INTO BEDROCK	
	1,340											670	670		524	94902	1,340	FT	DRILLED SHAFTS, 48" DIAMETER, ABOVE BEDROCK	
	725											363	362		524	94904	725	FT	DRILLED SHAFTS, 48" DIAMETER, INTO BEDROCK	
	2,854											1,427	1,427		524	94906	2,854	FT	DRILLED SHAFTS, 54" DIAMETER, ABOVE BEDROCK	
	290											145	145		524	94994	290	FT	DRILLED SHAFTS, 90" DIAMETER, INTO BEDROCK	
	633											317	316		524	94996	633	FT	DRILLED SHAFTS, 96" DIAMETER, ABOVE BEDROCK	

NO.	DESCRIPTION	REV. BY	DATE
2	DOWEL PAY ITEM INCLUDED	TAZ	11-10-2021
3	Update Item & QTY.	TAZ	11-19-2021
4	Update Funding Splits	TAZ	11-24-2021
8	Update 51BE01200 QTY.	TAZ	12-01-2021

CALCULATED HRB
CHECKED TAZ

GENERAL SUMMARY

FRA-71-14.36

2750
1228

GENERAL NOTES

PROPOSED WORK:
THE PROPOSED WORK CONSISTS OF BUILDING RETAINING WALLS W2, W3, W5, E4, E5, E7 & E10 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
E4	FRA-70-1373B	2.4 K/FT
E7	FRA-71-1503L	1.0 K/FT
W5	FRA-71-1503L	1.2 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.

EXCAVATION, SHEETING AND BRACING

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 503 - COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN (WALLS E4, E7 & E10)

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.

ITEM 509 - EPOXY COATED REINFORCING STEEL, AS PER PLAN

GLASS FIBER REINFORCED POLYMER (GFRP) BARSH SHALL BE USED FOR DIAGONAL REINFORCEMEMNT 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 511 CONCRETE MISC.: PRECAST WALL PANELS (WALLS E7 & E10)

THIS ITEM SHALL INCLUDE THE FABRICATION AND ERECTION OF THE PRECAST WALL PANELS AS DETAILED IN THE PLANS. CONCRETE FOR THE PRECAST PANELS SHALL BE CLASS QC 1 AS PER CMS 511. PRECAST WALL PANELS SHALL BE USED ADJACENT TO WHERE EPS GEOFOAM FILL IS USED. THE FABRICATION OF THE PANELS, TESTING OF THE CONCRETE AND ERECTION OF THE PANELS SHALL MEET THE REQUIREMENTS OF SS 840.04B, 840.05, 840.06A, B, C, D, F, G, K & L, WITH THE FOLLOWING EXCEPTIONS:

1. IN ALL CASES, REPLACE "SOIL REINFORCEMENT CONNECTION "WITH "ANCHOR PLATE AND STUD CONNECTION"

2. REPLACE "(ACCREDITED) MSE WALL SYSTEM" WITH "PRECAST WALL PANELS"

3. REPLACE "LEVELING PAD" WITH "PRECAST FOOTING."

4. IGNORE REFERENCES TO HORIZONTALJOINTS, BATTER OF PANELS, MULTIPLE ROWS OR LIFTS OF PANELS, AND SELECT GRANULAR BACKFILL (SGB).

5. FOLLOW THE SPECIFICATION FOR SECTION 840.04B WITH THE EXCEPTION TO REQUIREMENTS REGARDING SOIL REINFORCEMENT AND REINFORCED SOIL ZONE.

6. PROVIDE A DETAILED SEQUENCE OF CONSTRUCTION FOR THE ERECTION OF THE PANELS RATHER THAN AN MSE CONSTRUCTION MANUAL.

FORMLINERS SHALL BE USED TO PROVIDE AN AESTHETIC TREATMENT ON WALL E7. THE AESTHETIC TREATMENT SHALL BE AN ASHLAR STONE FINISH WITH A MINIMUM OF 1" AND A MAXIMUM OF 1 ½" RELIEF. THIS WORK ALSO INCLUDES THE PLACEMENT OF THE ANCHOR PLATE AND STUDS. THE STEEL PLATE SHALL BE GALVANIZED AS PER CMS 711.02.

SEQUENCE OF CONSTRUCTION: THE CONTRACTOR SHALL DEVELOP A SEQUENCE OF CONSTRUCTION FOR THE INSTALLATION OF THE WALLS IN THE GEOFOAM AREA. TO MINIMIZE THE TIME FOR TEMPORARY SUPPORTING THE PRECAST PANEL, THE CONTRACTOR MAY FORM AND POUR THE CELLULAR CONCRETE AND PLACE THE GEOFOAM BLOCKS PRIOR TO INSTALLATION OF THE PRECAST PANELS.

SETTLEMENT OF THE PRECAST CONCRETE PANELS IS EXPECTED ADJACENT TO THE GEOFOAM. FINAL SETTLEMENT IS CONSIDERED COMPLETE WHEN LESS THAN A ⅛" SETTLEMENT IS MEASURED OVER A SINGLE 48 HOUR PERIODS. ONCE FINAL SETTLEMENT HAS BEEN ACHIEVED, THE PRECAST PANELS CAN BE CONNECTED TO THE LOAD DISTRIBUTION SLAB. THE CONTRACTOR SHALL MONITOR THE SETTLEMENT OF THE PANELS IN THE GEOFOAM AREA NEAR THE WALL TO TRACK THE SETTLEMENT PRIOR TO ANCHORING THE WALL TO THE LOAD DISTRIBUTION SLAB.

ITEM 511 CONCRETE MISC.: PRECAST WALL PANELS (WALLS E7 & E10) CONT.

THE CONTRACTOR SHALL ESTABLISH FIVE (5) REFERENCE POINTS ALONG EACH WALL (E7 & E10) TO BE USED TO MONITOR THE SETTLEMENT OF THE PRECAST CONCRET PANELS. PLACE REFERENCE POINTS AT THE BEGINNING AND END OF THE WALLS AND THREE (3) INTERMEDIATE POINTS EQUALLY SPACED. THE CONTRACTOR SHALL MONITOR THESE POINTS ON A DAILY BASIS UNTIL FINAL SETTLEMENT HAS BEEN ACHIEVED. ONCE THE FINAL SETTLEMENT HAS BEEN ACHIEVED THESE REFERENCE POINT CAN BE REMOVED.

METHOD OF MEASUREMENT: THE DEPARTMENT WILL MEASURE THE PRECAST PANELS BY THE NUMBER OF SQUARE FEET.

PAYMENT: ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK SHALL BE INCLUDED IN THE CONTRACT BID PRICE FOR ITEM 511 CONCRETE MISC.: PRECAST WALL PANELS.

ITEM 511 CONCRETE MISC.: PRECAST FOOTING (WALLS E7 & E10)

THIS ITEM SHALL INCLUDE THE FABRICATION AND PLACEMENT OF THE PRECAST FOOTINGS AS DETAILED IN THE PLANS. INCLUDING THE REINFORCING STEEL. CONCRETE FOR THE PRECAST FOOTING SHALL BE CLASS QC1 AS PER CMS 511.

PRECAST FOOTING SHALL BE FOUNDED ON EITHER A GRANULAR EMBANKMENT TYPE C OR A CAST-IN-PLACE LEVELING PAD OR A LEVEL SURFACE OF LOW STRENGTH MORTAR BACKFILL (LSM) OR CLASSIC QC MISC CONCRETE. PRECAST FOOTING SHALL BE LEVEL.

METHOD OF MEASUREMENT: THE DEPARTMENT WILL MEASURE THE PRECAST FOOTINGS BY THE NUMBER OF FEET.

PAYMENT: ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK SHALL BE INCLUDED IN THE CONTRACT BID PRICE FOR ITEM 511 CONCRETE MISC.: PRECAST FOOTING.

ITEM 511 CLASS QC2 CONCRETE MISC.: LOAD DISTRIBUTION SLAB (WALLS E7 & E10)

THIS ITEM SHALL INCLUDE THE CONCRETE CONSTRUCTION AS DETAILED IN THE PLANS INCLUDING THE WORK NECESSARY TO FURNISH & PLACE THE REINFORCING STEEL. 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
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

ITEM 512 - SEALING OF CONCRETE SURFACES, AS PER PLAN, (PERMANENT GRAFFITI PROTECTIN) (WALLS E4, E5 & W2):

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 WALLS E4 TO THE RAILROAD, E5 NORTH FACING, AND W2.

ITEM 607 - VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC, AS PER PLAN:

ALL FENCE POSTS, RAILS, FABRIC, BASE PLATES, POST SLEEVES, TENSION BANDS, TRUSS RODS, FABRIC TIES AND ALL OTHER VISIBLE PORTIONS OF FENCE NOT LISTED SHALL BE BLACK PVC COATED.

THE MOUNTING BASE PLATE AND SLEEVE SHALL BE BP-5 PER STANDARD DRAWING VPF-1-90. FOR THE ROADWAY PLANS WHERE VANDAL PROTECTION FENCE IS MOUNTED ON THE BARRIER, THE POST SPACING SHALL BE 5 FOOT. SEE THE STRUCTURES PLANS FOR POST SPACING ON BRIDGE AND WALLS.

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.

NO.	DESCRIPTION	REV. BY	DATE
1	CHANGED CMC- CONTROLLED MODULUS COLUMNS TO CSW - COLUMN SUPPORTED WALLS	MMS	11/5/21
1	UPDATED SHEET TITLE	MMS	11/5/21
3	ADDED NOTE	MMS	11/18/21
3	REMOVED NOTE	MMS	11/18/21
8	REVISED NOTE	JWE	12/7/21

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RETAINING WALL NOTES 1 OF 9
RETAINING WALLS
I-70/I-71 WEST INTERCHANGE PROJECT

FRA-71-14.36
PID No. 105588

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ITEM 203, SPECIAL - ENGINEERED FILL (LIGHTWEIGHT CELLULAR CONCRETE FILL): (WALL E7 AND WALL E10)

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

B. QUALIFICATIONS.
1. CONTRACTOR.
PROVIDE CCF FROM A CONTRACTOR 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 (7650 CUBIC METERS).

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.

C. MATERIALS
1. FOAM.
USE A FOAMING AGENT CONFORMING TO ASTM C796.

2. CEMENT.
USE PORTLAND CEMENT COMPLYING WITH ASTM C150 (TYPE I, II OR III).

3. WATER.
USE WATER ACCORDING TO C&MS 499.02. POTABLE WATER IS SATISFACTORY FOR USE IN CCF. WATER SHALL BE FREE FROM DELETERIOUS SUBSTANCES.

4. ADMIXTURES.
USE ADMIXTURES CONFORMING TO C&MS 499.02 FOR WATER REDUCING, RETARDING, ACCELERATING, ANTI-WASHOUT, IMPROVING THE BOND, OR FOR OTHER SPECIFIC PROPERTIES, WHEN SPECIFICALLY APPROVED BY THE MANUFACTURER OF THE PRE-FORMED FOAM.

701.10 MICRO-SILICA, 701.11 GGBF SLAG, OR FLY ASH SHALL BE CLASS C OR CLASS F AND COMPATIBLE WITH FOAMING AGENT.

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.

E. QUALITY CONTROL AND ASSURANCE.
PERFORM CAST DENSITY MEASUREMENTS HOURLY ON EACH DAY OF PRODUCTION. MAINTAIN A LOG OF THE CAST DENSITY MEASUREMENTS.

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.

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

F. CONSTRUCTION METHODS.
PORTABLE PLANT SHALL COMPLY WITH C&MS ITEM 107.11.C AND ALL APPLICABLE ENVIORNMENTAL PERMITS AND REGULATIONS.

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. PROPERLY 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 IF THE SUBSOIL IS FROZEN. WHEN THE AMBIENT TEMPERATURE IS LESS THAN 32°F (0°C), FOLLOW THE MATERIAL PRODUCER/SUPPLIER'S RECOMMENDATIONS SUCH AS HEATED MIX WATER OR TYP III CEMENT.

TAKE PRECAUTIONS TO AVOID DAMAGE TO THE CCF FROM FREEZING TEMPERATURES PER THE MATERIAL PRODUCER/ SUPPLIER'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.
1) TOP OF THE CLASS III CCF SHALL NOT BE LESS THAN 2'-0" BELOW THE TOP OF PAVEMENT.

2) THE TOP OF THE CLASS II CCF SHALL NOT BE LESS THAN 4'-0" FROM THE TOP OF PAVEMENT.

DO NOT PLACE CCF INTO AN AREA OF STANDING WATER. PROVIDE AN INVERTED CROWN IN THE CLASS III CCF, AND PIPE UNDERDRAINS, AS SHOWN IN THE DETAILS.

DO NOT PLACE REINFORCEMENTS AT COLD JOINTS. SUPPORT REINFORCEMENTS IN A LEVEL POSITION THROUGHOUT THEIR LENGTH AND KEEP THEM AT LEAST 6 INCHES ABOVE THE PREVIOUS DAY'S COLD JOINT.

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).

TABLE A - CELLULAR CONCRETE FILL PROPERTIES

PROPERTY	CLASS II	CLASS III
*-CAST DENSITY, MAX	30 LB/FT^3 (481 KG/M^3)	36 LB/FT^3 (577 KG/M^3)
**-COMPRESSIVE STRENGTH, MIN. @ 28 DAYS	40 PSI (0.28 MPA)	80 PSI (0.55 MPA)
***-WATER ABSORPTION, ASTM C796, MAX.	20 PERCENT	16 PERCENT
* - SPECIFIED IN SECTION F.1 OF THIS SPECIFICATION ** - SPECIFIED IN SECTION F.2 OF THIS CLASSIFICATION *** - EXPRESSED AS PERCENT OF CAST DENSITY		

G. SUBMITTALS TO THE ENGINEER.
PROVIDE THE FOLLOWING SUBMITTALS TO THE ENGINEER A MINIMUM OF 30 DAYS PRIOR TO PLACEMENT OF CCF FOR EACH LOACTION:

1. RESUME OF CONTRACOTR'S SHOWING EXPERIENCE AS SPECIFIED ABOVE, INCLUDING QUALIFICATIONS OF CONTRACTOR'S SUPERINTENDENT AND/OR FOREMAN.

2. CCF MIX DESIGN MEETING THE REQUIREMENTS SPECIFIED ABOVE, INCLUDING MATERIALS TO BE USED, THEIR SOURCES AND TEST DATA.

3. QC PLAN IDENTIFYING THE METHOD AND FREQUENCY OF TESTING IN ACCORDANCE WITH ASTM C796 AND MEETING THE REQUIREMENTS ABOVE.

4. DESCRIPTION OF EQUIPMENT AND PLACEMENT METHODS TO VERIFY COMPLIANCE WITH THE MIXING AND CONVEYING THE REQUIRMENTS ABOVE.

5. WORKING DRAWINGS SHOWING METHOD OF PLACEMENT FOR CONSTRUCTION PER THE PLANS AND DEMONSTRATING COMPLIANCE WITH THIS NOTE. THESE DRAWINGS SHALL PROVIDE SECTIONS LOCATING THE CROWNS AND LOCATIONS OF THE STEPS IN THE CLASS III CCF LIFT.

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, CLASS II
SPECIAL	CUBIC YARD	ENGINEERED FILL: LIGHTWEIGHT CELLULAR CONCRETE FILL, CLASS III

ALL QUANTITIES AND COSTS ASSOCIATED WITH THIS ITEM BETWEEN STA. 702+19.50 AND STA. 705+60.87 (℄ WALL E7) SHALL BE INCLUDED IN THE ESTIMATED QUANTITIES AND COST ESTIMATE FOR WALL E7.

ALL QUANTITIES AND COSTS ASSOCIATED WITH THIS ITEM BETWEEN STA. 277+97.19 AND STA. 380+20.00 (℄ I-71 S.B.) SHALL BE INCLUDED IN THE ESTIMATED QUANTITIES AND COST ESTIMATE FOR WALL E10.

NO.	DESCRIPTION	REV. BY	DATE
1	UPDATED SHEET TITLE	MMS	11/5/21
1	MODIFIED NOTES	MMS	11/5/21
6	MODIFIED TITLE	MMS	12/1/21
6	MODIFIED NOTE	MMS	12/1/21
8	MODIFIED NOTE	KSJ	12/7/21

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RETAINING WALL NOTES 4 OF 9
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CALCULATED BY: KSJ DATE: 06/08/2020
CHECKED BY: MMS DATE: 06/08/2020

ESTIMATED QUANTITIES					AS PER PLAN REFERENCE SHEET
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	
203	02000	9684	CU YD	SPECIAL - ENGINEERED FILL: LIGHTWEIGHT CELLULAR CONCRETE FILL, CLASS II	
203	02000	451	CU YD	SPECIAL - ENGINEERED FILL: LIGHTWEIGHT CELLULAR CONCRETE FILL, CLASS III	
203	20000	436	CU YD	EMBANKMENT	
203	35110	935	CU YD	GRANULAR MATERIAL, TYPE B	
203	65000	2	EACH	SPECIAL - SETTLEMENT PLATFORM	
203	98000	4687	CU YD	ROADWAY MISC.: EPS GEOFOAM FILL	
503	11101	LS	LS	COFFERDAMS AND EXCAVATION, AS PER PLAN	838
509	10001	31202	LB	EPOXY COATED REINFORCING STEEL, AS PER PLAN	838
511	53012	199	CU YD	CLASS QC2 CONCRETE, MISC.: PARAPET INCLUDING SLEEPER SLAB WITH QC/QA	
511	53012	132	CU YD	CLASS QC2 CONCRETE, MISC.: LOAD DISTRIBUTION SLAB	
511	71200	5058	SQ FT	CONCRETE MISC.: PRECAST WALL PANELS	
511	81100	121	FT	CONCRETE MISC.: PRECAST FOOTING	
512	10100	2080	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY URETHANE)	
516	13200	76	SQ FT	1/2" PREFORMED EXPANSION JOINT FILLER	
516	13900	857	SQ FT	2" PREFORMED EXPANSION JOINT FILLER	
607	39901	363	FT	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC, AS PER PLAN	838
840	20001	12751	SQ FT	MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN	839 & 843
840	21000	4995	CU YD	WALL EXCAVATION	
840	22000	1485	SQ YD	FOUNDATION PREPARATION	
840	23000	2660	CU YD	SELECT GRANULAR BACKFILL	
840	25010	506	FT	6" DRAINAGE PIPE, PERFORATED	
840	26000	523	FT	CONCRETE COPING	
840	26050	16763	SQ FT	AESTHETIC SURFACE TREATMENT	
840	27000	5	DAY	ON-SITE ASSISTANCE	

NO.	DESCRIPTION	REV. BY	DATE
1	REMOVED ITEM 203 - GRANULAR MATERIAL, TYPE C QUANTITY	KSJ	11/5/21
3	UPDATED ITEM 509 TO AS PER PLAN	MMS	11/18/21
3	REMOVED ITEM 840E28000 - SGB INSPECTION AND COMPACTION TESTING	MMS	11/18/21
6	UPDATED QUANTITY	MMS	12/1/21
8	UPDATED ITEM 840 - MSE WALL QUANTITY	MMS	12/7/21

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ESTIMATED QUANTITIES

RETAINING WALL E7
I-70/I-71 WEST INTERCHANGE PROJECT

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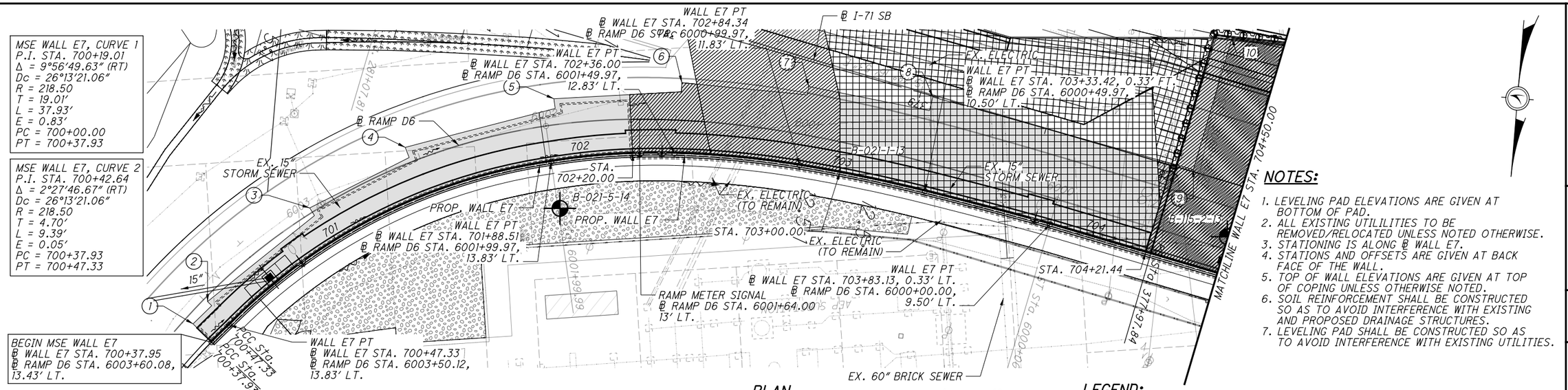

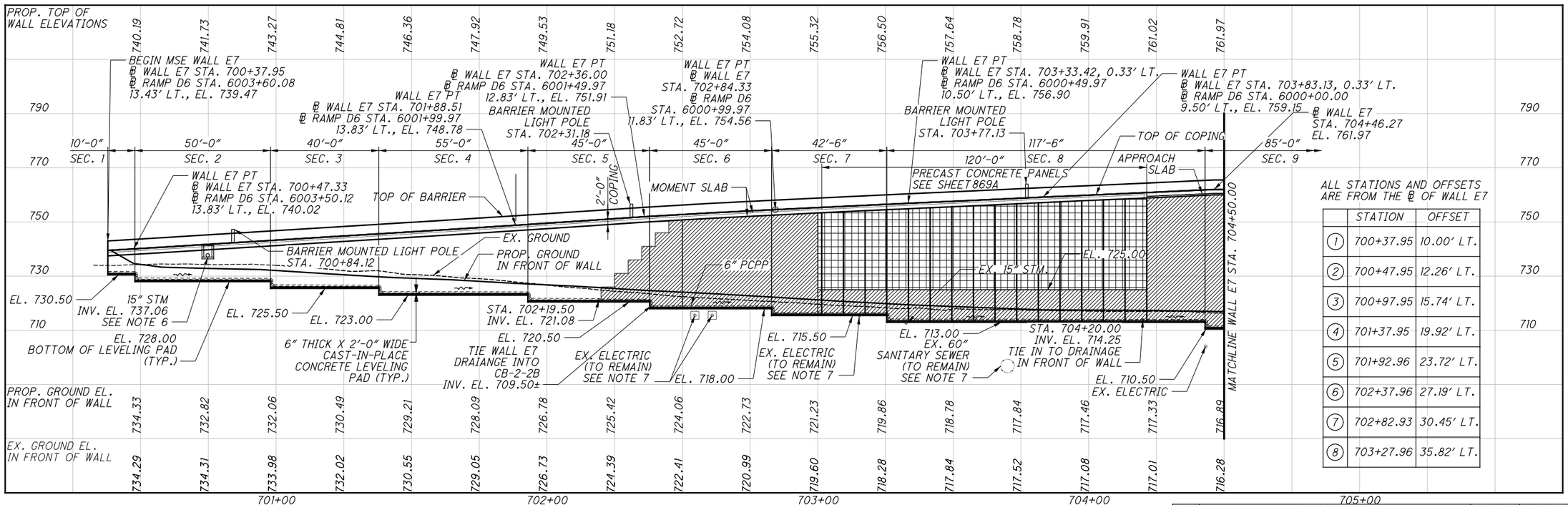

ELEVATION ALONG FACE OF WALL

NO.	DESCRIPTION	REV. BY	DATE
6	MODIFIED PRECAST PANEL DETAIL	MMS	12/2/21
6	UPDATED WALL STATIONS	MMS	12/2/21
8	UPDATED DRAINAGE BEHIND PRECAST PANEL	MMS	12/7/21
8	MODIFIED NOTES	MMS	12/7/21

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JGM		
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MMS		

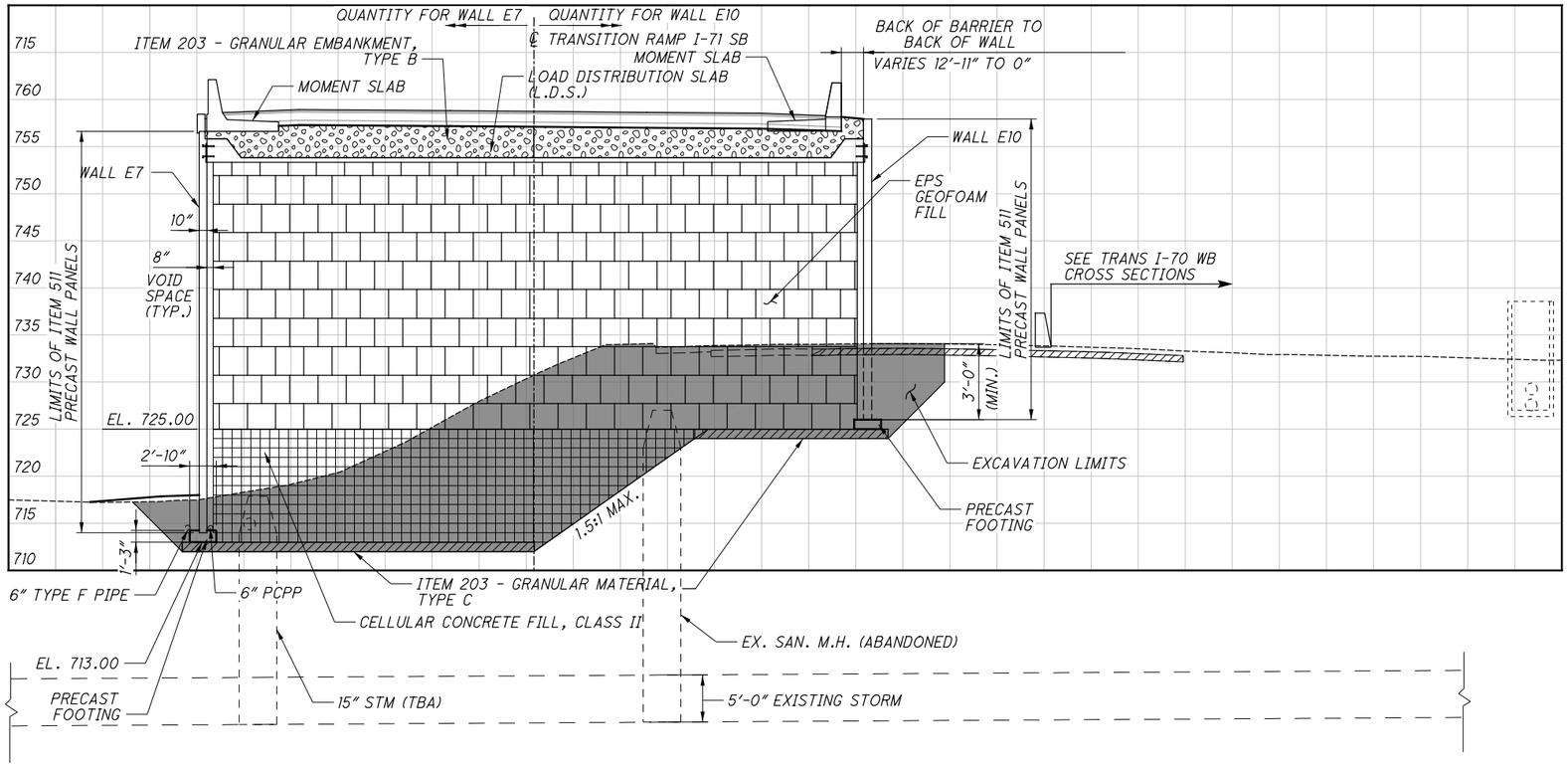
PLAN AND ELEVATION 1 OF 2
RETAINING WALL E7 (RAMP D6 & SHORT ST.)
I-70/I-71 WEST INTERCHANGE PROJECT

FRA-71-14.36
PID No. 105588

2 / 11

865
1228

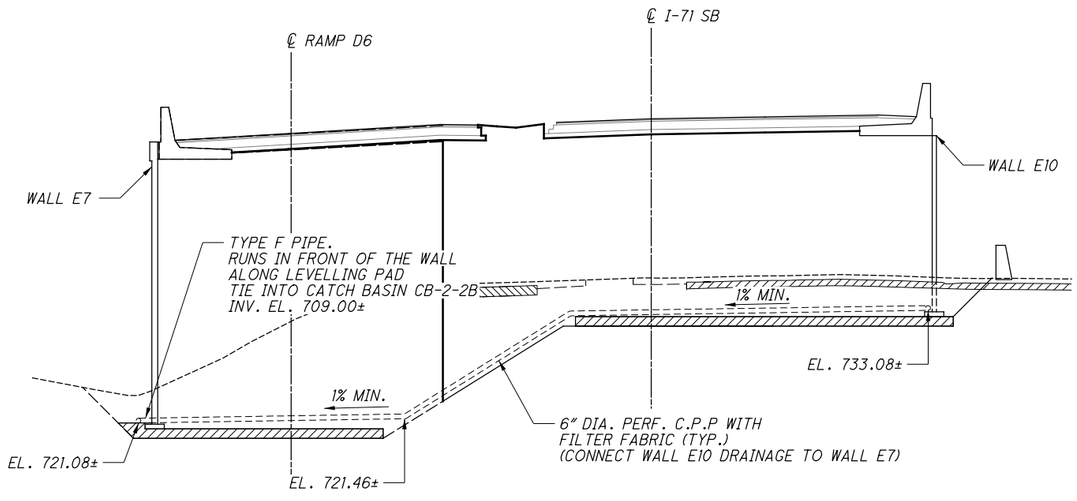
G:\projects\2013\W-13-072 FRA-70-13.10 6A\89464\structures\wall_0E7\sheets\105588_0E7WP001.dgn 12/7/2021 2:15:20 PM meets



℄ RAMP D6, STA. 6000+11.70

℄ WALL E7, STA. 703+71.43
℄ I-71 TRANSITION SB RAMP, STA. 378+50.00

NO.	DESCRIPTION	REV. BY	DATE
6	UPDATED SECTION	MMS	12/2/21
6	REMOVED REDUNDANT GEOFOAM WALL SECTION	MMS	12/2/21
6	REMOVED REDUDANT L.D.S. DETAIL	MMS	12/2/21
8	ADDED 6" PCPP	MMS	12/7/21



℄ RAMP D6, STA. 6001+67.73

℄ WALL E7, STA. 702+19.50
℄ I-71 TRANSITION SB RAMP, STA. 380+20.00

LEGEND:

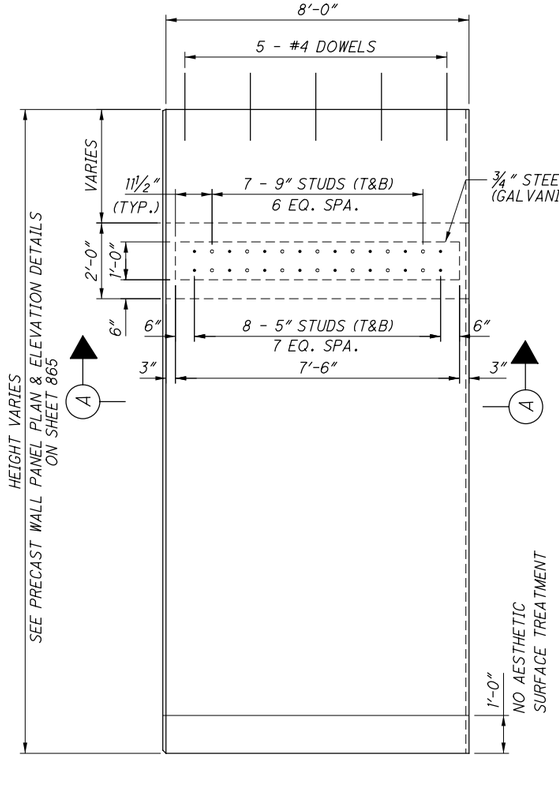
- CELLULAR CONCRETE FILL, CLASS II
- GRANULAR EMBANKMENT, TYPE B
- EPS GEOFOAM FILL
- EXCAVATION LIMITS
- GRANULAR MATERIAL, TYPE C

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

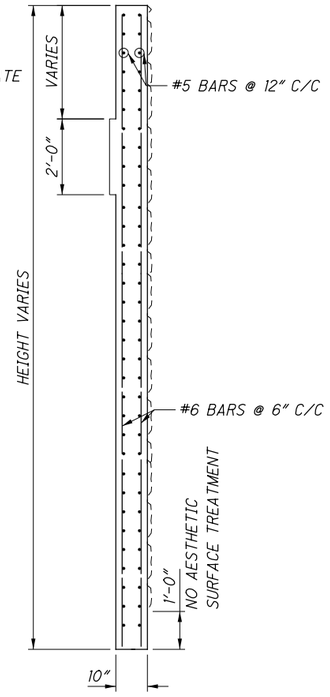
DESIGNED MMS | DRAWN MMS | REVIEWED NCK | DATE 6/23/2021
CHECKED JGM | REVISED | STRUCTURE FILE NUMBER

CROSS SECTIONS 2 OF 2
RETAINING WALL E7
I-70/I-71 WEST INTERCHANGE PROJECT

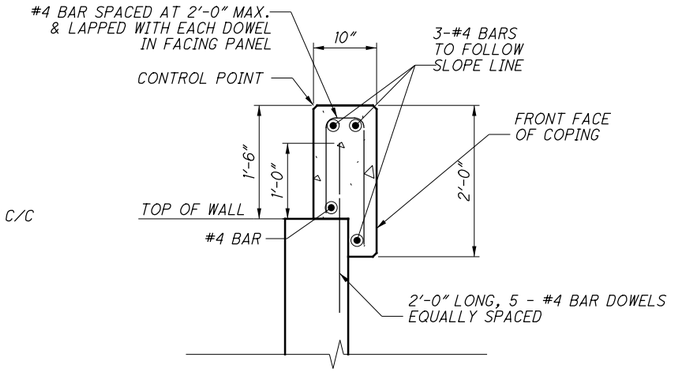
FRA-71-14.36
PID No. 105588



PRECAST PANEL DETAILS



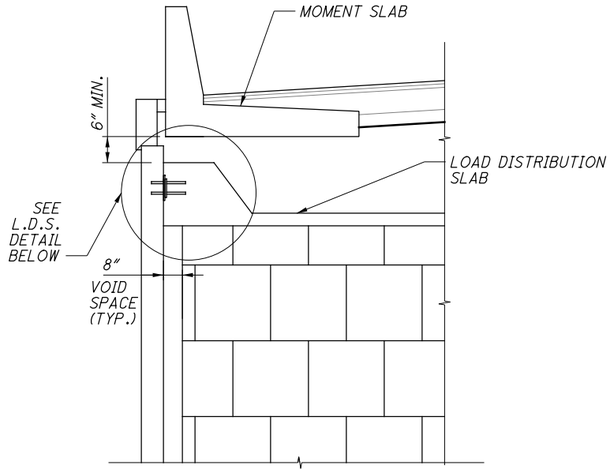
SECTION



COPING DETAIL

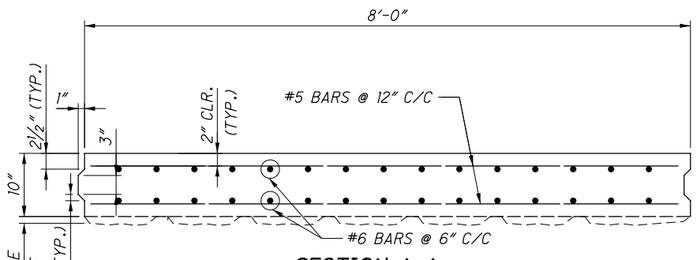
PRECAST CONCRETE PANELS *				
	STA.	OFFSET	B/L	TOP OF WALL
BEGIN	703+01.44	0.33' LT.	E7	753.88
END	704+21.44	0.33' LT.	E7	759.36

* - ALL STATIONS, OFFSETS AND ELEVATIONS ARE TO THE BACK FACE OF THE PRECAST WALL.

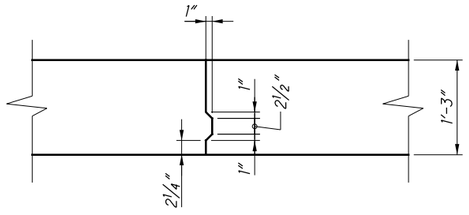


GEOFOAM WALL WITH MOMENT SLAB

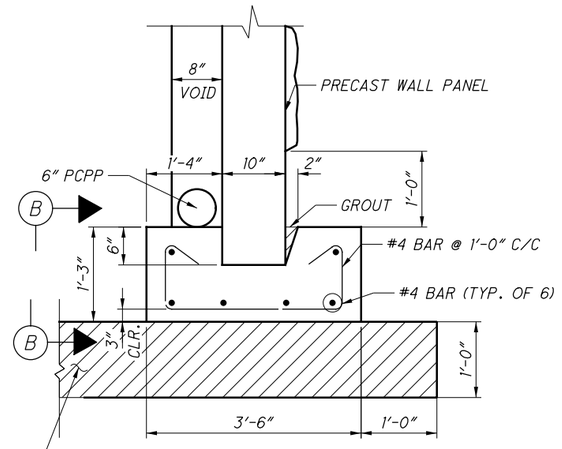
NO.	DESCRIPTION	REV. BY	DATE
6	MODIFIED PRECAST PANEL AND FOOTING DETAIL	MMS	12/2/21
6	UPDATED COPING DETAIL	MMS	12/2/21
6	UPDATED GEOFOAM WALL SECTION	MMS	12/2/21
6	MIRRORED L.D.S. DETAIL	MMS	12/2/21
6	REMOVED TIE STRIP DETAIL	MMS	12/2/21
6	ADDED WALL BEGIN AND END STATION	MMS	12/3/21
8	UPDATED PRECAST PANEL DETAILS	MMS	12/7/21
8	UPDATED TOP OF WALL ELEVATION	MMS	12/7/21
8	UPDATED L.D.S DETAIL	MMS	12/7/21



SECTION A-A

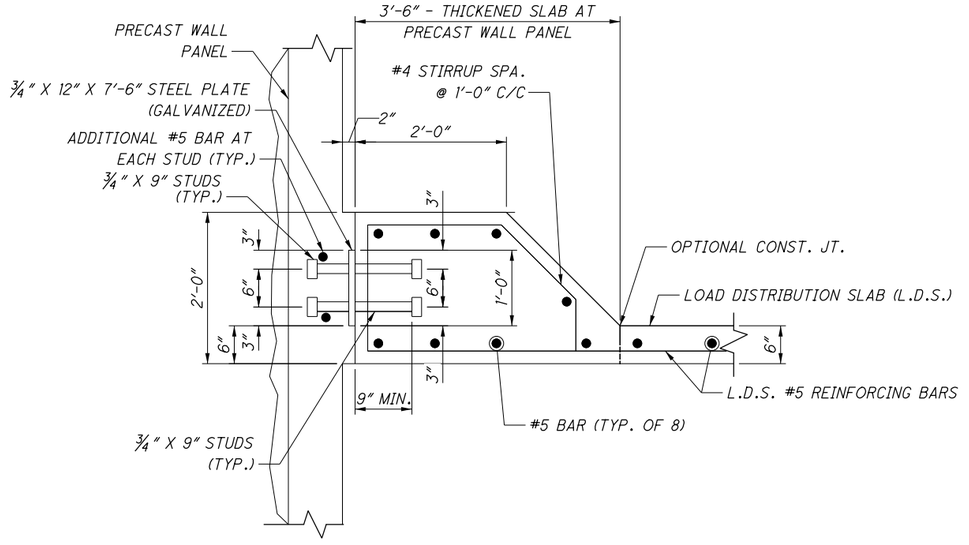


VIEW B-B



PRECAST FOOTING DETAIL

8'-0" LONG (SECTIONS)



L.D.S. CONNECTION DETAIL

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

DESIGNED MMS | DRAWN MMS | REVIEWED NCK 6/23/202 | DATE
CHECKED JGM | REVISED | STRUCTURE FILE NUMBER

PRECAST CONCRETE PANEL DETAILS
RETAINING WALL E7
I-70/I-71 WEST INTERCHANGE PROJECT

FRA-71-14.36
PID No. 105588

7 / 11

869A
1228

CALCULATED BY: KSJ DATE: 03/04/2020
CHECKED BY: MMS DATE: 03/04/2020

ESTIMATED QUANTITIES					AS PER PLAN REFERENCE SHEET
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	
203	02000	1346	CU YD	SPECIAL - ENGINEERED FILL: LIGHTWEIGHT CELLULAR CONCRETE FILL, CLASS II	
203	02000	122	CU YD	SPECIAL - ENGINEERED FILL: LIGHTWEIGHT CELLULAR CONCRETE FILL, CLASS III	
203	20000	678	CU YD	EMBANKMENT	
203	35110	827	CU YD	GRANULAR MATERIAL, TYPE B	
203	98000	6138	CU YD	ROADWAY MISC.: EPS GEOFOAM FILL	
503	11101	LS	LS	COFFERDAMS AND EXCAVATION, AS PER PLAN	838
509	10001	39409	LB	EPOXY COATED REINFORCING STEEL, AS PER PLAN	838
511	53012	247	CU YD	CLASS QC2 CONCRETE, MISC.: PARAPET INCLUDING SLEEPER SLAB WITH QC/QA	
511	53012	129	CU YD	CLASS QC2 CONCRETE, MISC.: LOAD DISTRIBUTION SLAB	
511	71200	4628	SQ FT	CONCRETE MISC.: PRECAST WALL PANELS	
511	81100	152	FT	CONCRETE MISC.: PRECAST FOOTING	
512	10100	1240	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY URETHANE)	
					839
840	20001	5717	SQ FT	MECHANICALLY STABILIZED EARTH WALL, AS PER PLAN	
840	21000	4104	CU YD	WALL EXCAVATION	
840	22000	743	SQ YD	FOUNDATION PREPARATION	
840	23000	1748	CU YD	SELECT GRANULAR BACKFILL	
840	25010	455	FT	6" DRAINAGE PIPE, PERFORATED	
840	27000	5	DAY	ON-SITE ASSISTANCE	

NO.	DESCRIPTION	REV. BY	DATE
1	REMOVED ITEM 203 - GRANULAR MATERIAL, TYPE C QUANTITY	KSJ	11/5/21
3	UPDATED ITEM 509 TO AS PER PLAN	MMS	11/18/21
3	REMOVED ITEM 840E28000 - SGB INSPECTION AND COMPACTION TESTING	MMS	11/18/21
6	ADDED ITEM-511 LOAD DISTRIBUTION SLAB	MMS	12/1/21
8	UPDATED ITEM 840 - MSE WALL QUANTITY	MMS	12/7/21

RESOURCE INTERNATIONAL INC.
6350 PRESIDENTIAL GATEWAY
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(614) 823-4949

DESIGNED KSJ | CHECKED MMS
DRAWN MMS | REVISED
REVIEWED NCK 6/23/2021 | STRUCTURE FILE NUMBER

ESTIMATED QUANTITIES
RETAINING WALL E10
I-70/I-71 WEST INTERCHANGE PROJECT

FRA-71-14.36
PID No. 105588

1 / 10

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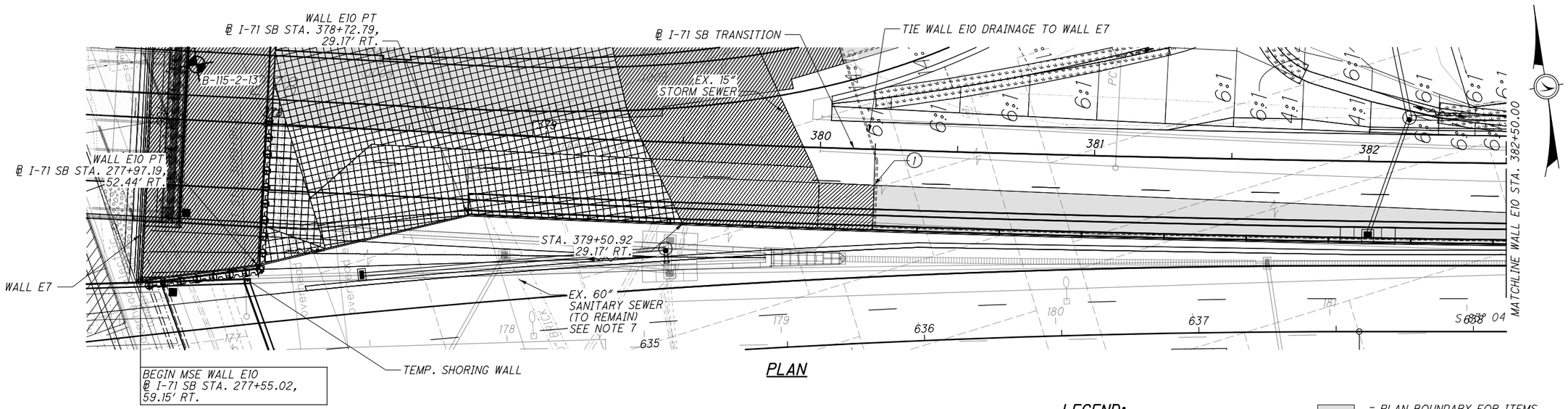
1228



PLAN

	STATION	OFFSET
①	380+20.00	13.05' RT.

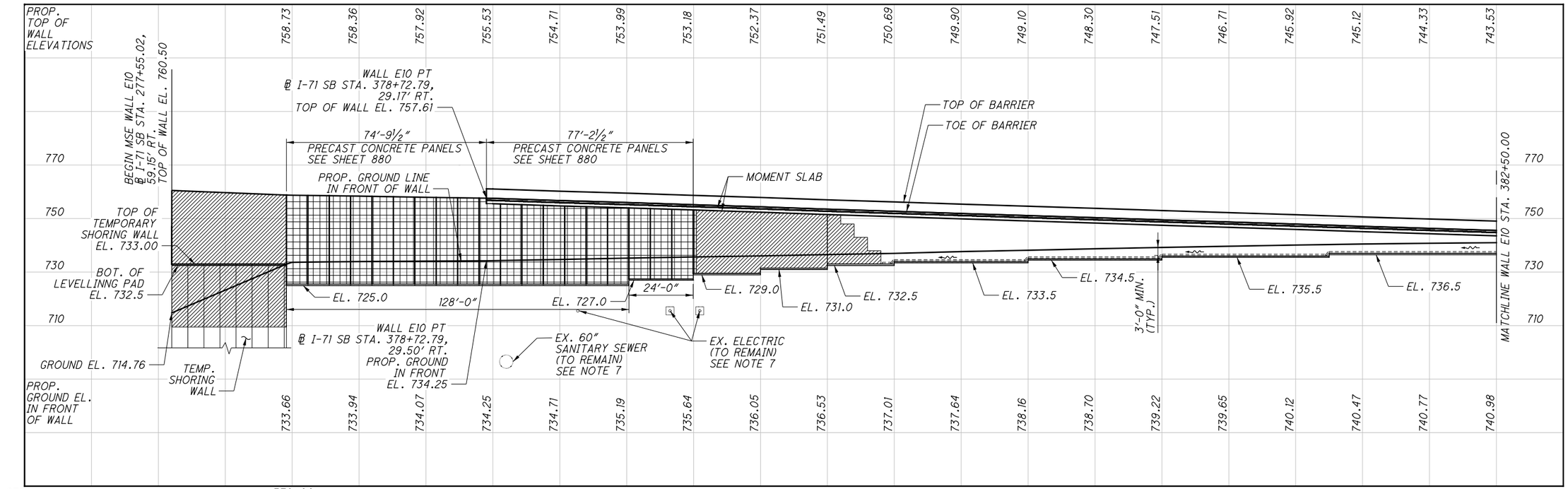
NOTES:

1. LEVELLING PAD ELEVATIONS ARE GIVEN AT BOTTOM OF PAD.
2. ALL EXISTING UTILILITIES TO BE REMOVED/RELOCATED UNLESS NOTED OTHERWISE.
3. STATIONING IS ALONG ℄ I-71 SB TRANSITION.
4. STATIONS AND OFFSETS ARE GIVEN AT BACK FACE OF THE WALL.
5. TOP OF WALL ELEVATIONS ARE GIVEN AT TOP OF MSE WALL PANEL.
6. SOIL REINFORCEMENT SHALL BE CONSTRUCTED SO AS TO AVOID INTERFERENCE WITH EXISTING AND PROPOSED DRAINAGE STRUCTURES.
7. LEVELING PAD SHALL BE CONSTRUCTED SO AS TO AVOID INTERFERENCE WITH EXISTING UTILITIES.

0 20 10 40
HORIZONTAL SCALE IN FEET

LEGEND:

- 6" DIA PERF CPP
- PROJECT BORING LOCATION
- SETTLEMENT PLATFORM
- HISTORIC BORING LOCATION
- = PLAN BOUNDARY FOR ITEMS INCLUDED WITH MSE WALL E10 FOR PAYMENT
- = LIMITS OF GEOFOAM BACKFILL
- = LIMITS OF CELLULAR CONCRETE FILL



ELEVATION ALONG FACE OF WALL

NO.	DESCRIPTION	REV. BY	DATE
6	MODIFIED PRECAST PANEL DETAIL	MMS	12/2/21
6	UPDATED WALL STATION OFFSETS	MMS	12/2/21
8	UPDATED TOP OF WALL ELEVATIONS	MMS	12/6/21

RESOURCE INTERNATIONAL INC.
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DESIGNED MMS | DRAWN MMS | REVIEWED NCK | DATE 6/23/202
CHECKED JGM | REVISED | STRUCTURE FILE NUMBER

PLAN AND ELEVATION 1 OF 2
RETAINING WALL E10 (MAINLINE I-71 SB, I-70WB & SHORT ST.)
I-70/I-71 WEST INTERCHANGE PROJECT

FRA-71-14.36
PID No. 105588

2 / 10

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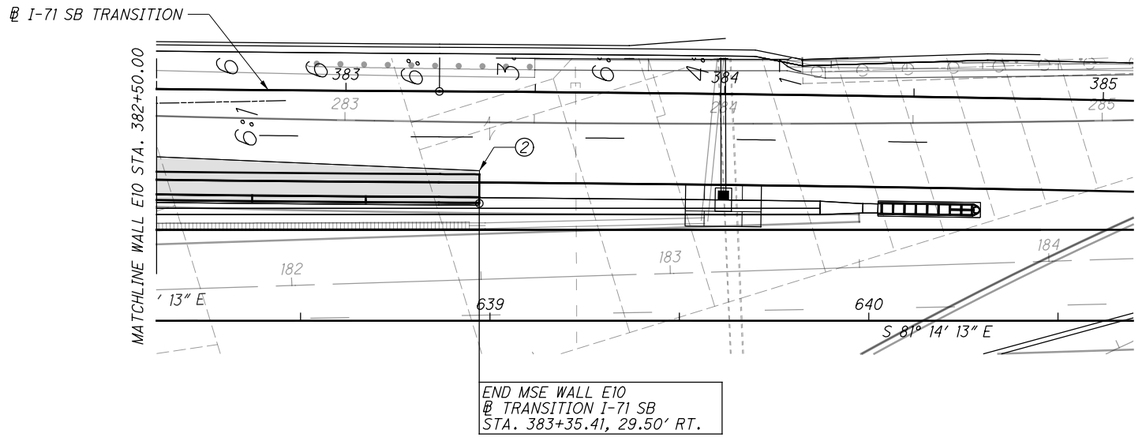
1228



PLAN

	STATION	OFFSET
②	383+35.41	20.87' RT.

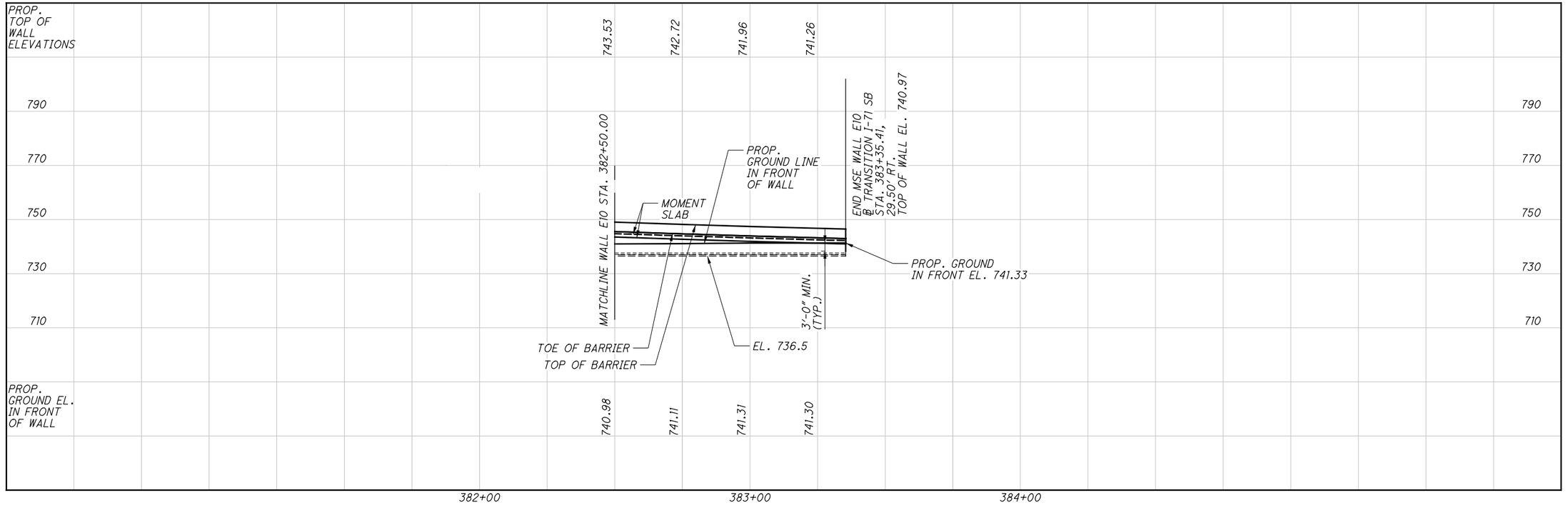
NOTES:

1. ALL EXISTING UTILILITIES TO BE REMOVED/RELOCATED UNLESS NOTED OTHERWISE.
2. STATIONING IS ALONG ℄ I-71 SB TRANSITION.
3. STATIONS AND OFFSETS ARE GIVEN AT TOP OF THE WALL.

LEGEND:

- 6" DIA PERF CPP
- PROJECT BORING LOCATION
- SETTLEMENT PLATFORM
- HISTORIC BORING LOCATION
- = PLAN BOUNDARY FOR ITEMS INCLUDED WITH MSE WALL E10 FOR PAYMENT

0 20
10 40
HORIZONTAL SCALE IN FEET



ELEVATION ALONG FACE OF WALL

NO.	DESCRIPTION	REV. BY	DATE
8	UPDATED TOP OF WALL ELEVATIONS	MMS	12/6/21

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

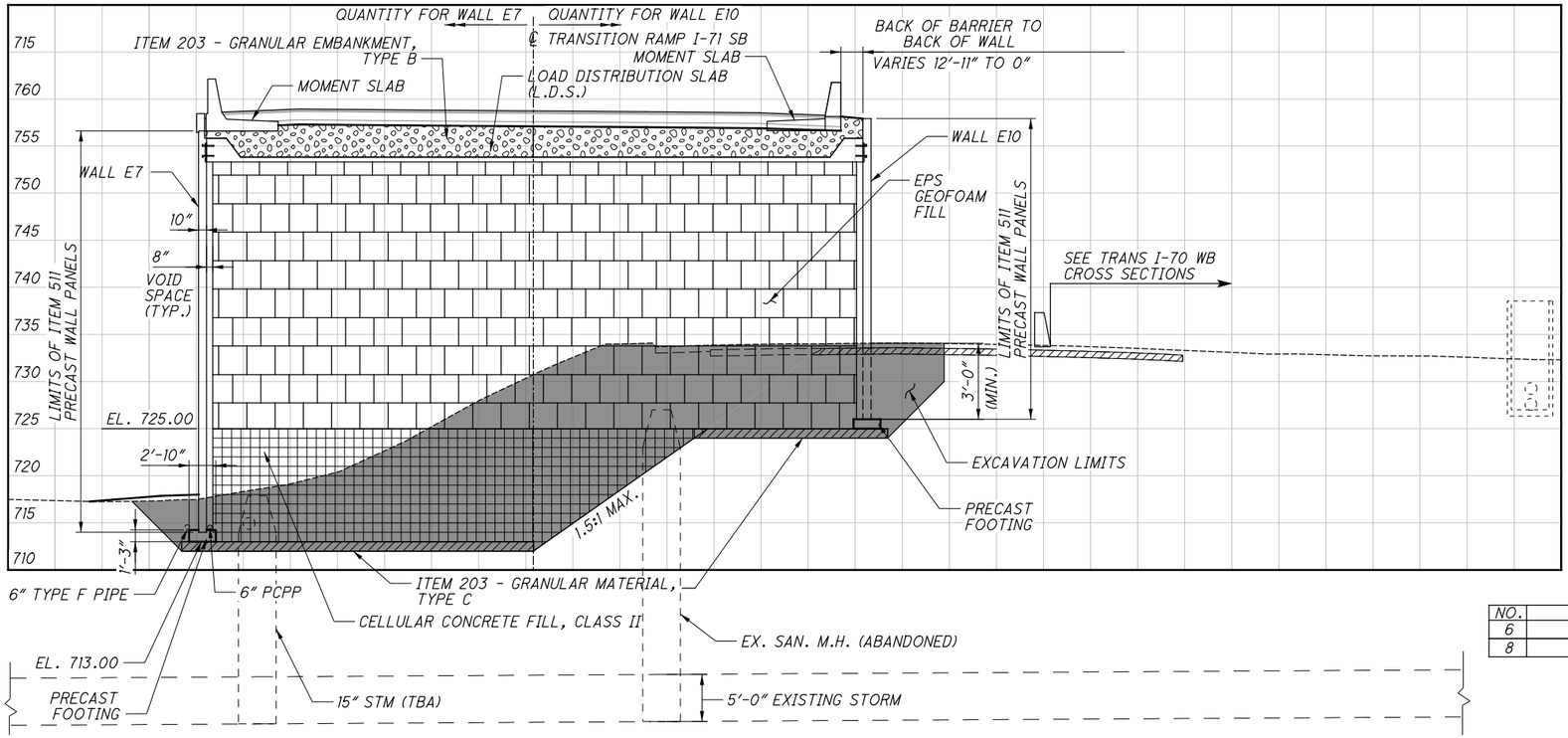
DESIGNED	DRAWN	REVIEWED	DATE
MMS	MMS	NCK	6/23/2021
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JGM			

PLAN AND ELEVATION 2 OF 2
RETAINING WALL E10 (MAINLINE I-71 SB, I-70WB & SHORT ST.)
I-70/I-71 WEST INTERCHANGE PROJECT

FRA-71-14.36
PID No. 105588

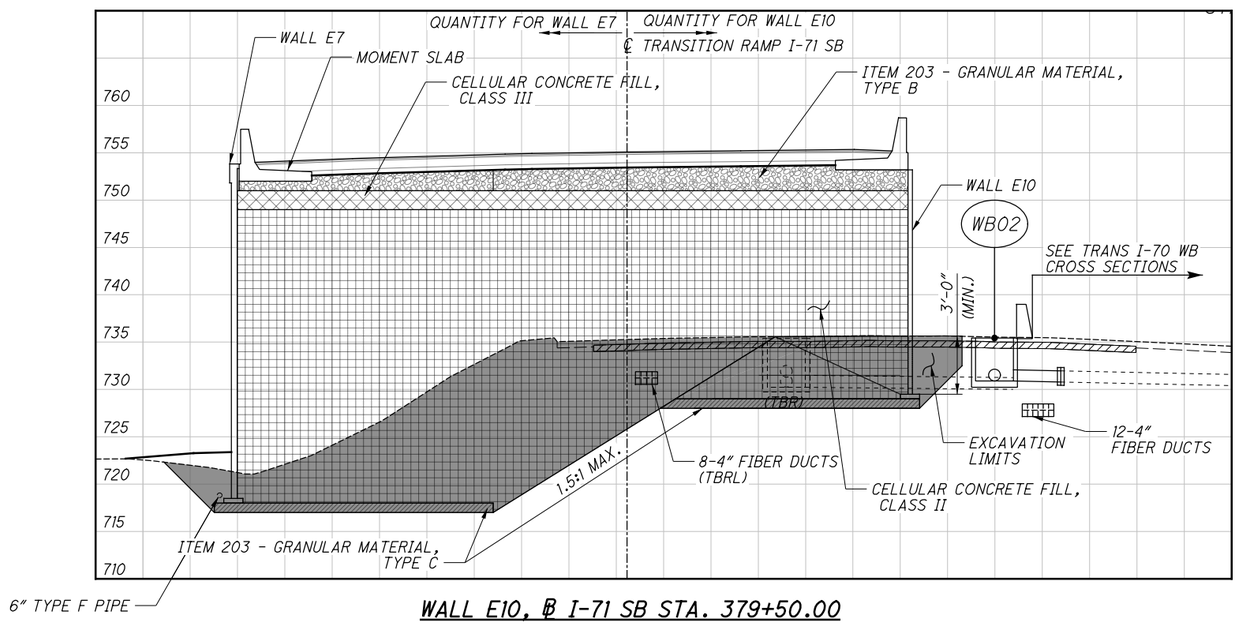
3 / 10

876
1228



NO.	DESCRIPTION	REV. BY	DATE
6	UPDATED SECTION	MMS	12/2/21
8	ADDED 6" PCPP	MMS	12/7/21

℄ RAMP I-71 SB TRANSITION, WALL E10 STA. 277+97.84 TO STA. 379+50
TYPICAL SECTION



WALL E10, ℄ I-71 SB STA. 379+50.00

NOTES:

1. SEE BRIDGE PLANS FOR ADDITIONAL ABUTMENT AND WINGWALL DETAILS.
2. SOIL REINFORCEMENT SHALL BE CONSTRUCTED SO AS TO AVOID INTERFERENCE WITH BRIDGE PILING.
3. FOR ABBREVIATION LEGEND, SEE SHEET 838

LEGEND:

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

- CELLULAR CONCRETE FILL, CLASS II
- CELLULAR CONCRETE FILL, CLASS III
- GRANULAR MATERIAL, TYPE B
- GRANULAR MATERIAL, TYPE C
- EXCAVATION LIMITS
- EPS GEOFOAM FILL

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

DESIGNED MMS | DRAWN MMS | REVIEWED NCK 6/23/2021 | DATE

CHECKED JGM | REVISED | STRUCTURE FILE NUMBER

CROSS SECTIONS
RETAINING WALL E10
I-70/I-71 WEST INTERCHANGE PROJECT

FRA-71-14.36
PID No. 105588

6 / 10

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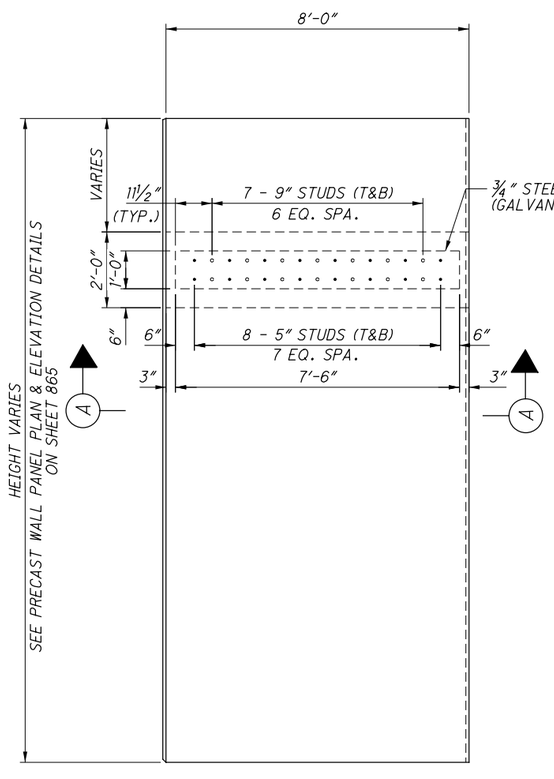
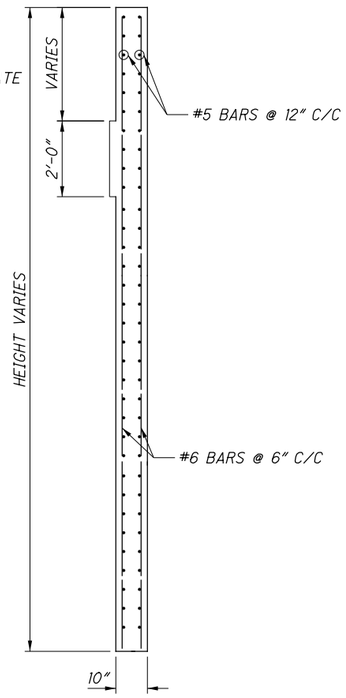


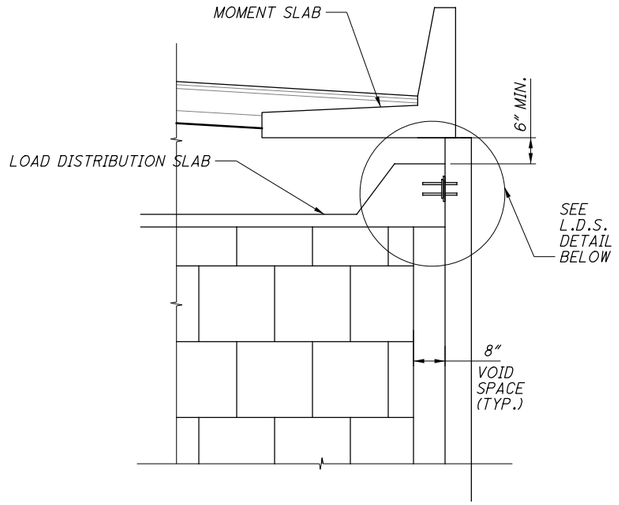
PRECAST PANEL DETAILS



SECTION

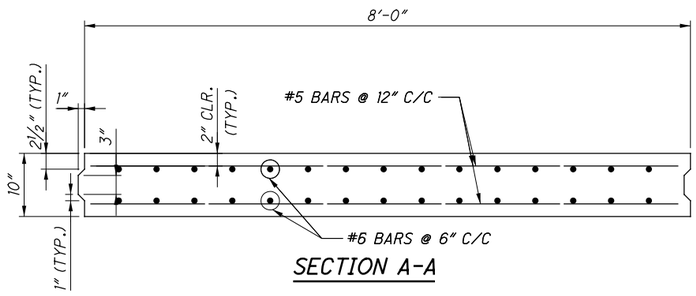
PRECAST CONCRETE PANELS*				
	STA.	OFFSET	B/L	TOP OF WALL
BEGIN	277+97.84	50.79' RT.	I-71 SB	758.75
END	379+50.92	29.17' RT.	I-71 SB	753.19

* - ALL STATIONS, OFFSETS AND ELEVATIONS ARE TO THE BACK FACE OF THE PRECAST WALL.

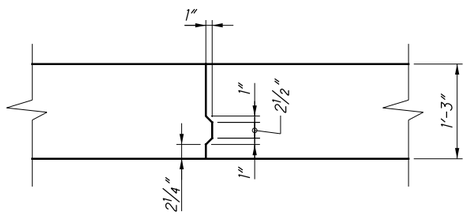


GEOFOAM WALL WITH MOMENT SLAB

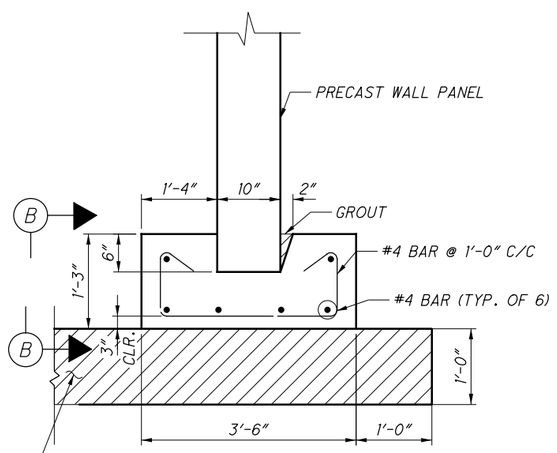
NO.	DESCRIPTION	REV. BY	DATE
6	MODIFIED PRECAST PANEL AND FOOTING DETAIL	MMS	12/2/21
6	UPDATED SECTION TO SHOW 8" VOID	MMS	12/2/21
6	REMOVED TIE STRIP DETAIL	MMS	12/2/21
6	ADDED WALL BEGIN AND END STATION	MMS	12/3/21
8	UPDATED TOP OF WALL ELEVATION	MMS	12/6/21
8	UPDATED PRECAST PANEL DETAILS	MMS	12/7/21
8	UPDATED L.D.S DETAIL	MMS	12/7/21



SECTION A-A

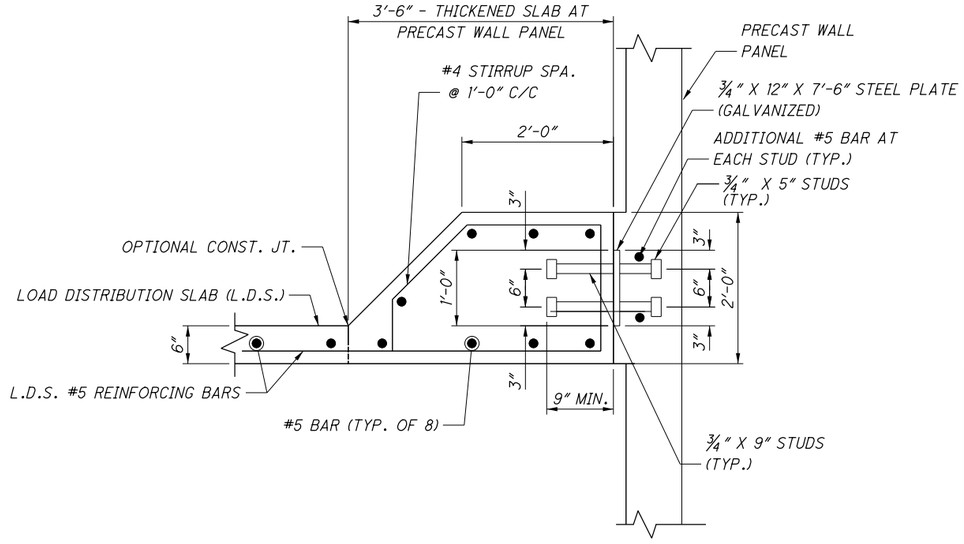


VIEW B-B



PRECAST FOOTING DETAIL

8'-0" LONG (SECTIONS)



L.D.S. CONNECTION DETAIL

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

DESIGNED	DRAWN	REVIEWED	DATE
MMS	MMS	NCK	6/23/202
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JGM			

PRECAST CONCRETE PANEL DETAILS
RETAINING WALL E10
I-70/I-71 WEST INTERCHANGE PROJE

FRA-71-14.36
PID No. 105588

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PLOT.CEL

ms consultants, inc.
msconsultants.com

Ohio DOT Workspace
70\71 West Interchange 6R
www.msconsultants.com

1"
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PCF: 60-06634_6R_Columbus

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By: darnold

34" x 22"

PARTICIPATION	ESTIMATED QUANTITES					
09/NHS/BR	ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SHEET REF.
	202	11203		LUMP	PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	2/12
705	202	23501	705	SY	WEARING COURSE REMOVED, AS PER PLAN	2/12
157	202	22900	157	SY	APPROACH SLAB REMOVED	
3	202	98100	3	EACH	REMOVAL MISC.: PILE REMOVED, EXISTING STRUCTURE	
8	407	20000	8	GAL	NON-TRACKING TACK COAT	
5	441	10000	5	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG64-22	
	503	11100		LUMP	COFFERDAMS AND EXCAVATION BRACING	
11,409	509	25000	11,409	LB	REINFORCING STEEL	
372	510	10000	372	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	
48	511	21521	48	CY	CLASS QC2 CONCRETE, SUPERSTRUCTURE, AS PER PLAN	2/12
117	512	33010	117	SY	TYPE 3 WATERPROOFING	2/12
987	513	10200	987	LB	STRUCTURAL STEEL MEMBERS, LEVEL UF	
1,005	513	10240	1,005	LB	STRUCTURAL STEEL MEMBERS, LEVEL 2	
4	518	12200	4	EACH	SCUPPERS, INCLUDING SUPPORTS	
32	519	12510	32	SY	SPECIAL - PATCHING CONCRETE BRIDGE DECK - TYPE A	
4	846	00110	4	CF	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM	10/12

NO.	DESCRIPTION	REV. BY	DATE
2	DOWEL PAY ITEM INCLUDED	DEA	11-09-2021
4	PARTICIPATION CODE	DEA	11-23-2021
8	QUANTITY REVISION	DEA	12-7-2021

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

DESIGNED	DRAWN	REVIEWED	DATE
DEA	CDH	GLG	20-Apr
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ELP		2504537	

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

FRA-71-14.36
PID No. 105588

3 / 12

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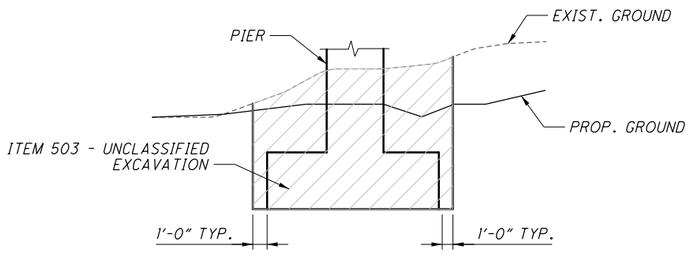
ITEM 503 - UNCLASSIFIED EXCAVATION, AS PER PLAN

THE BACKFILL MATERIAL SHALL BE PLACED AND COMPACTED IN 6" MAXIMUM LIFTS. THE LIMITS OF UNCLASSIFIED EXCAVATION ARE AS FOLLOWS:



TYPICAL PIER

ITEM 503 - COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN

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 CMS 501.05. THE DEPARTMENT WILL PAY FOR 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.

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

PROVIDE LONG TERM TEMPORARY BRIDGE BARRIER IN ACCORDANCE WITH THE PLAN DETAILS. PAYMENT IS BASED ON VOLUME THE OF BARRIER CONCRETE. ALL OTHER REQUIRED MATERIALS SHALL BE INCIDENTAL TO THE COST OF ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN.

ITEM 512 - SEALING OF CONCRETE SURFACES, AS PER PLAN, (PERMANENT GRAFFITI PROTECTION)

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.

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 513 - STRUCTURAL STEEL MEMBERS, HYBRID GIRDER, LEVEL SIX (6) 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 HPS70W 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 EN14 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 530 - SPECIAL STRUCTURE, MISC.: SOLDIER PILE RETAINING WALL

FURNISH AND INSTALL SOLDIER PILE RETAINING WALL AS INDICATED. ITEM INCLUDES PRE BORED HOLES, CONCRETE BACKFILL OR PREBORED HOLES, STEEL SOLDIER PILES, TIMBER LAGGING, BLOCKING, EXCAVATION FOR THE BOTTOM ROWS OF TIMBERS, AND ALL OTHER INCIDENTALS.

ITEM 607 - VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC, AS PER PLAN

ALL FENCE POSTS, RAILS, FABRIC, BASE PLATES, POST SLEEVES, TENSION BANDS, TRUSS RODS, FABRIC TIES, AND ALL OTHER VISIBLE PORTIONS OF FENCE NOT LISTED SHALL BE BLACK PVC COATED.

ASBESTOS NOTIFICATION

AN ASBESTOS SURVEY FOR THE BRIDGE STRUCTURE SCHEDULED FOR DEMOLITION WORK WAS CONDUCTED BY A LICENSED ASBESTOS HAZARD EVALUATION SPECIALIST. THE ASBESTOS INSPECTION REPORT DID NOT IDENTIFY THE PRESENCE OF ANY ASBESTOS CONTAINING MATERIALS ABOVE REGULATORY LIMITS. A COPY OF THE ASBESTOS INSPECTION REPORT FOR THE STRUCTURE IS INCLUDED IN THE PLAN PACKAGE 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 ACTIVITY, OR BOTH. SUBMIT THE NDRF AND PAYMENT ALONG WITH THE ASBESTOS INSPECTION REPORT USING THE OEPA EBUSINESS CENTER. SUBMIT ONE ELECTRONIC PDF COPY AND ONE HARD COPY OF THE NDRF TO THE ENGINEER. THE ENGINEER WILL PROVIDE ONE COPY TO THE DISTRICT ENVIRONMENTAL STAFF.

HARD COPY 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 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 TO 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 $^{13}/_{32}$ PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.

NO.	DESCRIPTION	REV. BY	DATE
3	GFRP PAYMENT MOVED TO ITEM 509	DEA	11-16-2021
8	REVISE ASBESTOS NOTE	DEA	12-7-2021

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

DESIGNED AKS | DRAWN PES | REVIEWED GLG | DATE 20-Apr | STRUCTURE FILE NUMBER 2510025 | CHECKED FBW | REVISED

GENERAL NOTES (3 OF 4)
BRIDGE NO. FRA-71-1503L
I-71 SB OVER SCIOTO RIVER

FRA-71-14.36
PID No. 105588