

SHEET NUM.										PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
143	164							01/IMS/14	02/IMS/14/GAH								
STRUCTURE OVER 20 FOOT SPAN (FRA-270-3694 R)																	
LS								LS		202	11203	LS				PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	142
355								355		202	22900	355	SY			APPROACH SLAB REMOVED	
355								355		202	23500	355	SY			WEARING COURSE REMOVED	
LS								LS		503	11100	LS				COFFERDAMS AND EXCAVATION BRACING	
11,309								11,309		509	10000	11,309	LB			EPOXY COATED STEEL REINFORCEMENT	
100								100		509	20001	100	LB			CONCRETE REINFORCEMENT REPLACEMENT OF EXISTING CONCRETE REINFORCEMENT, AS PER PLAN	142
16								16		511	34447	16	CY			CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN	144
2								2		511	34451	2	CY			CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN	144
27								27		511	45711	27	CY			CLASS QC1 CONCRETE, ABUTMENT, AS PER PLAN	144
1,132								1,132		512	10100	1,132	SY			SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
112								112		512	33000	112	SY			TYPE 2 WATERPROOFING	
174								174		516	12300	174	FT			STRIP SEAL EXPANSION JOINT ANCHORED WITH ELASTOMERIC CONCRETE	
34								34		516	45305	34	EACH			REFURBISH BEARING DEVICE, AS PER PLAN	142
LS								LS		516	47001	LS				JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN	142
18								18		518	12701	18	EACH			SCUPPER, VERTICAL EXTENSION, AS PER PLAN	142
28								28		518	21200	28	CY			POROUS BACKFILL WITH GEOTEXTILE FABRIC	
50								50		519	11101	50	SF			PATCHING CONCRETE STRUCTURE, AS PER PLAN	142
435								435		526	25011	435	SY			REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=15"), AS PER PLAN	144
157								157		526	90010	157	FT			TYPE A INSTALLATION	
1								1		630	80100	1	SF			SIGN, FLAT SHEET	
70								70		846	00110	70	CF			POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM	
2,491								2,491		848	10001	2,491	SY			MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN, 1 3/4" THICK	143
2,491								2,491		848	20000	2,491	SY			SURFACE PREPARATION USING HYDRODEMOLITION	
35								35		848	30001	35	CY			MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN	143
25								25		848	50000	25	SY			HAND CHIPPING	
LS								LS		848	50100	LS				TEST SLAB	
24								24		848	50200	24	CY			FULL-DEPTH REPAIR	
2,491								2,491		848	50320	2,491	SY			EXISTING CONCRETE OVERLAY REMOVED, 1 1/4" THICK	
250								250		848	50340	250	SY			REMOVAL OF DEBONDED OR DETERIORATED EXISTING VARIABLE THICKNESS CONCRETE OVERLAY	
STRUCTURE OVER 20 FOOT SPAN (FRA-317-1720)																	
LS								LS		202	11203	LS				PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	163
304								304		202	22900	304	SY			APPROACH SLAB REMOVED	
2,312								2,312		202	23500	2,312	SY			WEARING COURSE REMOVED	
LS								LS		503	11100	LS				COFFERDAMS AND EXCAVATION BRACING	
294,533								294,533		509	10000	294,533	LB			EPOXY COATED STEEL REINFORCEMENT	
9,358								9,358		509	30020	9,358	FT			NO. 4 DEFORMED GFRP REINFORCEMENT	
1,164								1,164		510	10001	1,164	EACH			DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN	163
2								2		511	33501	2	EACH			SEMI-INTEGRAL DIAPHRAGM GUIDE, AS PER PLAN	172
900								900		511	34446	900	CY			CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK	
128								128		511	34450	128	CY			CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET)	
25								25		511	43210	25	CY			CLASS QC1 CONCRETE, PIER	
57								57		511	45710	57	CY			CLASS QC1 CONCRETE, ABUTMENT	
1,941								1,941		512	10100	1,941	SY			SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
86								86		512	33000	86	SY			TYPE 2 WATERPROOFING	
2,706								2,706		513	10200	2,706	LB			STRUCTURAL STEEL MEMBERS, LEVEL UF	
10,380								10,380		513	20000	10,380	EACH			WELDED STUD SHEAR CONNECTORS	
8,125								8,125		514	00050	8,125	SF			SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL	
8,125								8,125		514	00056	8,125	SF			FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT	
8,438								8,438		514	00060	8,438	SF			FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT	
8,438								8,438		514	00066	8,438	SF			FIELD PAINTING STRUCTURAL STEEL, FINISH COAT	163
2								2		514	00504	2	MNHR			GRINDING FINES, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL	
4								4		514	10000	4	EACH			FINAL INSPECTION REPAIR	
925								925		514	27700	925	SF			FIELD PAINTING, MISC.:COATING OF BEAM ENDS	163
24								24		516	13600	24	SF			1" PREFORMED EXPANSION JOINT FILLER	
99								99		516	13900	99	SF			2" PREFORMED EXPANSION JOINT FILLER	

CALCULATED
 CHECKED
 GENERAL SUMMARY
 FRA - 270 - 36 . 94
 75
 208

REVISIONS	
DATE	REVISED
2/13/24	ITEM DESCRIPTION REVISED
2/13/24	QUANTITIES REVISED

Henhart
 2/13/2024 2:43:30 PM
 0:\2008\01895\C_Design\FRA

ESTIMATED QUANTITIES

CALCULATED BY: BMK
CHECKED BY: CLB
DATE: 10/26/22
DATE: 11/16/22

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUTS.	PIERS	SUPER STR.	GENERAL	SEE SHT. NO.
202	11203	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				LS	3/21
202	22900	355	SY	APPROACH SLAB REMOVED				355	
202	23500	355	SY	WEARING COURSE REMOVED				355	
503	11100	LS		COFFERDAMS AND EXCAVATION BRACING				LS	
509	10000	11309	LB	EPOXY COATED STEEL REINFORCEMENT	7775		3534		
509	20001	100	LB	CONCRETE REINFORCEMENT, REPLACEMENT OF EXISTING CONCRETE REINFORCEMENT, AS PER PLAN				100	3/21
511	34447	16	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN			16		5/21
511	34451	2	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN			2		5/21,17/21
511	45711	27	CY	CLASS QC1 CONCRETE, ABUTMENT, AS PER PLAN	27				5/21
512	10100	1132	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	167		965		
512	33000	112	SY	TYPE 2 WATERPROOFING	112				
516	12300	174	FT	STRIP SEAL EXPANSION JOINT ANCHORED WITH ELASTOMERIC CONCRETE			174		
516	45305	34	EACH	REFURBISH BEARING DEVICE, AS PER PLAN			34		3/21
516	47001	LS		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN				LS	3/21
518	12701	18	EACH	SCUPPER, VERTICAL EXTENSION, AS PER PLAN	18				3/21
518	21200	28	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	28				
519	11101	50	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	50				3/21
526	25011	435	SY	REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=15"), AS PER PLAN			435		5/21
526	90010	157	FT	TYPE A INSTALLATION				157	
630	80100	1	SF	SIGN, FLAT SHEET			1		
846	0010	70	CF	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM				70	
848	10001	2491	SY	MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN, 1 3/4" THICK			2491		4/21
848	20000	2491	SY	SURFACE PREPARATION USING HYDRODEMOLITION			2491		
848	30001	35	CY	MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN			35		4/21
848	50000	25	SY	HAND CHIPPING			25		
848	50100	LS		TEST SLAB				LS	
848	50200	24	CY	FULL-DEPTH REPAIR			24		
848	50320	2491	SY	EXISTING CONCRETE OVERLAY REMOVED, 1 1/4" THICK			2491		
848	50340	250	SY	REMOVAL OF DEBONDED OR DETERIORATED EXISTING VARIABLE THICKNESS CONCRETE OVERLAY			250		

ITEM 848 MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION, 1 3/4" THICK, AS PER PLAN:

THIS ITEM SHALL CONFORM TO SUPPLEMENTAL SPECIFICATION 848 WITH THE FOLLOWING CONDITIONS AND REVISIONS:

REVISIONS TO 848.15: AT THE OPTION OF THE ENGINEER, THE CONTRACTOR SHALL MAKE ONE OR MORE, ONE CUBIC YARD, TRIAL BATCHES OF OVERLAY MATERIAL AT LEAST 30 DAYS BEFORE THE OVERLAY IS TO BE PLACED. DEMONSTRATE THE ABILITY TO MEET 848.26 AND 848.31. DEVELOP BEAM BREAK MATURITY CURVES.

REVISIONS TO 848.21: THE FINAL SOUNDING MAY TAKE PLACE WITHIN 24 HOURS OF A RAIN, AND THE DECK DOES NOT HAVE TO BE COMPLETELY DRY. HAND CHIPPING OF AREAS WHERE THE HYDRODEMOLITION MACHINE DOES NOT HAVE ACCESS IS INCIDENTAL TO THE REMOVAL.

REVISIONS TO 848.23: FULL DEPTH REPAIR WILL NOT BE REQUIRED IF LESS THAN ONE HALF OF THE DECK ORIGINAL CONCRETE THICKNESS IS SOUND.

REVISIONS TO 848.24: PRIOR TO THE OVERLAY PLACEMENT, HOLD A PRE-PLACEMENT MEETING. ITEMS TO BE DISCUSSED INCLUDE:

- TIME OF STARTING PLACEMENT.
- ANTICIPATED WEATHER CONDITIONS AND EMERGENCY COVERING MATERIALS IN CASE OF INCLEMENT WEATHER.
- RATE OF DELIVERY OF THE CONCRETE TO ENSURE COMPLETION.
- AN ADEQUATE NUMBER OF DELIVERY VEHICLES AVAILABLE EXCLUSIVELY FOR THE PLACEMENT.
- METHOD OF PLACEMENT.
- CONSOLIDATION AND FINISHING OF THE CONCRETE.
- NUMBER OF FINISHERS AND THEIR DUTIES.
- FINISHING TOOLS AND EQUIPMENT AVAILABLE.
- APPLICATION OF THE SURFACE TEXTURE.
- TIMING OF FOGGING AND PLACEMENT OF WET CURE.
- REMOVAL OF WET CURE.
- APPLICATION OF SPRAY CURE.
- SAWING OF LONGITUDINAL GROOVES.
- ANY OTHER APPROPRIATE SUBJECTS.

REVISIONS TO 848.26: LONGITUDINAL GROOVES SHALL BE SAWED IN THE CONCRETE SURFACE OF THE TRAVELLED LANES PER 511.20, AFTER THE WET CURE IS COMPLETE. AFTER TEXTURING THE CONCRETE SURFACE, CLEAN THE SURFACE AND SPRAY AN UNIFORM APPLICATION OF CURING MATERIAL 705.07, TYPE 1 OR 1D, AS PER CMS 511.17 METHOD B OF MEMBRANE CURING. THE DECK SURFACE MUST BE DRY PRIOR TO PLACEMENT OF THE CURING MATERIAL. IF THE SAWING OF THE LONGITUDINAL

GROOVES CANNOT BE DONE WITHIN THE SAME SHORT-TERM CLOSURE PERIOD AS THE OVERLAY, THE CONTRACTOR MAY ALLOW TRAFFIC ONTO THE OVERLAY, AND SHALL HAVE 24 HOURS FROM REMOVAL OF THE WET CURE TO SAW THE LONGITUDINAL GROOVES AND REAPPLY THE MEMBRANE-CURING COMPOUND

REVISIONS TO 848.27 AND 848.29: THE CONTRACTOR SHALL CONTINUE THE WET CURE FOR THE MAXIMUM NUMBER OF HOURS POSSIBLE DURING THE PERMITTED LANE CLOSURE. THE CLOCK STARTS FOR THE WET CURE WHEN THE OVERLAY PLACEMENT IS COMPLETE.

IF THE CONTRACTOR FAILS TO OPEN LANES TO TRAFFIC AT THE TIMES REQUIRED IN THE MAINTENANCE OF TRAFFIC GENERAL NOTES, THE CONTRACTOR WILL BE ASSESSED A DISINCENTIVE AS SHOWN ON THE LANE VALUE CONTRACT TABLE.

TRAFFIC WILL NOT BE PERMITTED ON THE FINISHED OVERLAY SURFACE UNTIL A MINIMUM WET CURE OF 12 HOURS, AND AFTER TWO TEST BEAMS HAVE ATTAINED AN AVERAGE MODULUS OF RUPTURE OF 650 PSI.

FOR EACH POUR, THE CONTRACTOR SHALL PROVIDE ENOUGH MATERIAL FOR TWO BEAM BREAKS EACH AT 12 HOURS, 24 HOURS, 36 HOURS, AND 48 HOURS.

PERFORM THE BEAM BREAK TESTS AND DOCUMENT THE TIME OF THE POUR, THE TIME OF THE BEAM BREAK TESTS, AND THE MODULUS OF RUPTURE OF EACH BEAM.

REVISIONS TO 848.30: THE REMOVAL OPERATIONS SHALL NOT BEGIN IF SUSTAINED RAINS (5 HOURS OR MORE WITH BREAKS BETWEEN SHOWERS LESS THAN 1*HOURS) ARE PREDICTED WITHIN 48 HOURS OF COMMENCEMENT.

MEET THE OVERLAY SURFACE EVAPORATION RATE REQUIREMENTS UNLESS A FOGGING SYSTEM AS DESCRIBED BELOW IS UTILIZED.

A WATER FOG SHALL BE CONTINUOUSLY APPLIED OVER THE SURFACE OF THE FRESHLY PLACED CONCRETE IN SUCH A MANNER THAT THE ENTIRE SURFACE IS KEPT AT A RELATIVE HUMIDITY OF 90% OR GREATER. THE AREA TO BE FOGGED SHALL BE THE ENTIRE AREA OF THE FRESHLY PLACED CONCRETE, WHICH HAS NOT HAD THE FINAL FINISH APPLIED. THIS FOG SHALL BE DELIVERED THROUGH A NETWORK OF NOZZLES, WHICH ARE PROPERLY SPACED TO PROVIDE A UNIFORM FOG AT THE SURFACE OF THE CONCRETE. THE NOZZLES USED SHALL BE OF THE TYPE, WHICH ATOMIZES THE WATER SO THAT THERE ARE NO VISUALLY DISCERNIBLE DROPLETS OF WATER. THE FOGGING EQUIPMENT SHALL BE CAPABLE OF APPLYING WATER IN A MIST, NOT A SPRAY, TOO FINE TO DAMAGE THE CONCRETE SURFACE. THE AREA OF COVERAGE FROM EACH NOZZLE SHALL OVERLAP ALL ADJACENT COVERAGES BY AT LEAST 12 INCHES. IT SHALL BE DEMONSTRATED PRIOR TO THE PLACEMENT OF THE CONCRETE THAT THE INTENDED SYSTEM IS CAPABLE OF DELIVERING THE REQUIRED FOGGING ENVIRONMENT FOR AT LEAST TWICE THE ANTICIPATED REQUIRED TIME. THE INTENDED SYSTEM MUST BE PROPERLY FIELD TESTED. CARE SHALL BE EXERCISED

DURING FINISHING TO PREVENT FOGGED WATER FROM BECOMING PART OF THE CONCRETE AND TO PREVENT INCREASING THE WATER CONTENT IN THE CONCRETE BY THE WATER USED DURING THE CURING PROCESS.

FOGGING SHALL CONTINUE UNTIL THE SURFACE IS COVERED WITH WET BURLAP. THE WET BURLAP SHALL NOT BE APPLIED UNTIL THE DECK CAN RECEIVE THE WET BURLAP AND ANY PLACEMENT LOADS WITHOUT DEFORMATION.

THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES AT THE SQUARE YARD CONTRACT PRICE FOR ITEM 848 - MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION, 1 3/4" THICK, AS PER PLAN.

ITEM 848 MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN

ALL REVISIONS LISTED IN MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION, 1 3/4" THICK, AS PER PLAN NOTE SHALL APPLY TO THIS ITEM AS WELL. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES AT THE CUBIC YARD CONTRACT PRICE FOR ITEM 848 - MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN.

REVISIONS

DATE	REVISED
2/13/24	AS PER PLAN NOTES ADDED AND ASSOCIATED QUANTITIES REVISED TO AS PER PLAN

C:\Battlinger\10.06.07 AM\2024\2024\01895\Design\Structures\FRA270_3694\Structures\FRA270_3694\Sheets\270_3694\CE0001.dgn

RT. BRIDGE ESTIMATED QUANTITIES & GENERAL NOTES
 BRIDGE NO. FRA-270-3694 L/R
 OVER BIG WALNUT CREEK
 DATE: 05/26/23
 REVIEWED: CLB
 DRAWN: JRW
 DESIGNED: ABD
 CHECKED: SUF
 STRUCTURE FILE NUMBER: 2511800/2511819
 PID No. 86067
 FRA - 270-36.94
 4 / 21
 143
 208

ESTIMATED QUANTITIES

CALCULATED BY: BMK
CHECKED BY: CLB

DATE: 10/26/22
DATE: 11/16/22

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUTS.	PIERS	SUPER STR.	GENERAL	SEE SHT. NO.
202	11203	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				LS	3/21
202	22900	341	SY	APPROACH SLAB REMOVED				341	
202	23500	341	SY	WEARING COURSE REMOVED				341	
503	11100	LS		COFFERDAMS AND EXCAVATION BRACING				LS	
509	10000	11107	LB	EPOXY COATED STEEL REINFORCEMENT	7634		3473		
509	20001	100	LB	CONCRETE REINFORCEMENT, REPLACEMENT OF EXISTING CONCRETE REINFORCEMENT, AS PER PLAN				100	3/21
511	34447	16	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN			16		5/21
511	34451	2	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN			2		5/21,17/21
511	45711	26	CY	CLASS QC1 CONCRETE, ABUTMENT, AS PER PLAN	26				5/21
512	10100	1130	SY	SEALING OF CONCRETE SURFACES (EPOXY URETHANE)	165		965		
512	33000	110	SY	TYPE 2 WATERPROOFING	110				
516	12300	170	FT	STRIP SEAL EXPANSION JOINT ANCHORED WITH ELASTOMERIC CONCRETE			170		
516	45305	34	EACH	REFURBISH BEARING DEVICE, AS PER PLAN			34		3/21
516	47001	LS		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN				LS	3/21
518	12701	18	EACH	SCUPPER, VERTICAL EXTENSION, AS PER PLAN	18				3/21
518	21200	27	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	27				
519	11101	50	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	50				3/21
526	25011	424	SY	REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=15"), AS PER PLAN			424		5/21
526	90010	153	FP	TYPE A INSTALLATION				153	
630	80100	1	SF	SIGN, FLAT SHEET			1		
846	00110	68	CF	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM				68	

ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN:
 ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN:
 ITEM 511 - CLASS QC1 CONCRETE ABUTMENT, AS PER PLAN
 ITEM 526 - REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=15"), AS PER PLAN:

TO EXPEDITE WORK, CLASS QC2 AND QC1 CONCRETE WITH AN ACCELERATING ADMIXTURE SUCH AS SILKA RAPID-1 OR ANY APPROVED EQUIVALENT ADMIXTURE SHALL BE USED TO ACHIEVE 3,000 PSI COMPRESSIVE STRENGTH IN 12 HOURS. USE A NON-CHLORIDE ACCELERATING ADMIXTURE AND PROVIDE DOCUMENTATION THAT THE MIX WILL PROVIDE THE STRENGTH IN THE SPECIFIED TIME.

THIS ITEM SHALL CONFORM TO CMS 511 WITH THE FOLLOWING CONDITIONS AND REVISIONS:

AT LEAST 5 DAYS PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL, A SCHEDULE OF REPAIR WORK ITEMS TO BE COMPLETED. THE SCHEDULE SHALL INCLUDE A BREAKDOWN OF ALL MAJOR WORK ACTIVITIES ON AN HOURLY BASIS. REPAIR WORK SHALL NOT BEGIN UNTIL THE SCHEDULE IS APPROVED BY THE ENGINEER.

THE CONTRACTOR SHALL CONTINUE THE WET CURE FOR THE MAXIMUM NUMBER OF HOURS POSSIBLE DURING THE PERMITTED LANE CLOSURE. THE CLOCK STARTS FOR THE WET CURE WHEN THE CONCRETE PLACEMENT IS COMPLETE.

IF THE CONTRACTOR FAILS TO OPEN LANES TO TRAFFIC AT THE TIMES REQUIRED IN THE MAINTENANCE OF TRAFFIC GENERAL NOTES, THE CONTRACTOR WILL BE ASSESSED A DISINCENTIVE AS SHOWN ON THE LANE VALUE CONTRACT TABLE.

TRAFFIC WILL NOT BE PERMITTED ON THE FINISHED CONCRETE SURFACE UNTIL AFTER COMPLETION OF A 12-HOUR MINIMUM WET CURE AND AFTER TWO TEST BEAMS HAVE ATTAINED AN AVERAGE MODULUS OF RUPTURE OF 400 PSI.

LEGEND

- | | | | |
|---------------------------|-------------------------|---|-------------------------|
| ABUT. - ABUTMENT | EL. - ELEVATION | L.F. - LEFT FORWARD | RT. - RIGHT |
| APP - APPROACH | EX. - EXISTING | LT. - LEFT | SB - SOUTHBOUND |
| BRG. - BEARING | EXP. - EXPANSION | MIN. - MINIMUM | SPA. - SPACES |
| C/C - CENTER TO CENTER | F.A. - FORWARD ABUTMENT | NB - NORTHBOUND | STA. - STATION |
| C.J. - CONSTRUCTION JOINT | F/F - FACE TO FACE | NO. - NUMBER | STR. - STRAIGHT |
| C.I.P. - CAST-IN-PLACE | FWD. - FORWARD | PB - PORTABLE BARRIER | SUPER. - SUPERSTRUCTURE |
| CONC. - CONCRETE | IN. - INCH | PEJF - PREFORMED EXPANSION JOINT FILLER | T/T - TOE TO TOE |
| CONST. - CONSTRUCTION | INCR. - INCREMENT | PROP. - PROPOSED | TYP. - TYPICAL |
| DIA. - DIAMETER | JT. - JOINT | R.A. - REAR ABUTMENT | VERT. - VERTICAL |
| | | | W/ - WITH |



REVISIONS

DATE	REVISED
2/13/24	AS PER PLAN NOTES ADDED AND ASSOCIATED QUANTITIES REVISED TO AS PER PLAN

LT. BRIDGE ESTIMATED QUANTITIES & GENERAL NOTES
 BRIDGE NO. FRA-270-3694 L/R
 OVER BIG WALNUT CREEK

FRA - 270-36.94
PID No. 86067

5 / 21

144
208

ESTIMATED QUANTITIES

CALCULATED BY: ABD
CHECKED BY: CLB
DATE: 11/16/22
DATE: 11/17/22

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	CALCULATED BY: ABD CHECKED BY: CLB				
					ABUTS.	PIERS	SUPER STR.	GENERAL	SEE SHT. NO.
202	11203		LS	PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				LS	3/38
202	22900	304	SY	APPROACH SLAB REMOVED				304	
202	23500	2312	SY	WEARING COURSE REMOVED				2312	
503	11100		LS	COFFERDAMS AND EXCAVATION BRACING				LS	
509	10000	294533	LB	EPOXY COATED STEEL REINFORCEMENT	8416	9013	277104		
509	30020	9358	FT	NO. 4 GFRP DEFORMED BARS			9358		
510	10001	1164	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN	784	380			3/38
511	33501	2	EACH	SEMI-INTEGRAL DIAPHRAGM GUIDE, AS PER PLAN	2				12/38
511	34446	900	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK			900		
511	34450	128	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET)			128		
511	43210	25	CY	CLASS QC1 CONCRETE, PIER		25			
511	45710	57	CY	CLASS QC1 CONCRETE, ABUTMENT	57				
512	10100	1941	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	692	250	999		
512	33000	86	SY	TYPE 2 WATERPROOFING	86				
513	10200	2706	LB	STRUCTURAL STEEL MEMBERS, LEVEL UF					2706
513	20000	10380	EACH	WELDED STUD SHEAR CONNECTORS					10380
514	00050	8125	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL					8125
514	00056	8125	SF	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT					8125
514	00060	8438	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT					8438
514	00066	8438	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT					8438
514	00504	1	MNHR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL					1
514	10000	2	EACH	FINAL INSPECTION REPAIR					2
514	27700	925	SF	FIELD PAINTING, MISC.: COATING OF BEAM ENDS					925
516	13600	24	SF	1" PREFORMED EXPANSION JOINT FILLER					24
516	13900	99	SF	2" PREFORMED EXPANSION JOINT FILLER	99				
516	14020	227	FT	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL	227				
516	44201	20	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN (14" x 16" x 3.982")	20				14/38
516	44400	10	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (18" x 26" x 5.066")		10			
516	47001		LS	JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN				LS	3/38
518	21200	153	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	153				
519	11101	600	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	523	77			3/38
526	25000	539	SY	REINFORCED CONCRETE APPROACH SLABS (T=15")					539
526	90030	202	FT	TYPE C INSTALLATION					202
607	40000	483	FT	SPECIAL - VANDAL PROTECTION FENCE					483
625	33000	1	EACH	STRUCTURE GROUNDING SYSTEM					1

ITEM SPECIAL - VANDAL PROTECTION FENCE (CONTINUED):

PART 2 PRODUCTS

2.01 WIREWALL FENCING

A. PRODUCTS

1. BOTTOM, END AND LINE POSTS AS DESIGNATED ON THE DRAWINGS.
2. INCLUDE ALL BASE PLATES, BRACKETS AND FASTENERS FOR COMPLETE INSTALLATION.
3. THREADED ANCHOR BOLTS SHALL CONFORM TO ASTM A449, HIGH STRENGTH STEEL, GALVANIZED PER ASTM A153.
4. 1/2" X 3" STEEL MESH PANELS WITH SKY WHITE (PWF510S9) PVC COATING CONFORMING TO ASTM F668, CLASS 2B, FUSE BONDED.
5. ALL BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED PER ASTM A153. IF APPROVED, MAY ALSO BE MECHANICALLY ZINC COATED PER ASTM B695, CLASS 50.
6. STRUCTURAL TUBING, SHAPES, PLATES AND BARS REQUIRED TO COMPLETE THIS WORK SHALL CONFORM TO THE PHYSICAL AND CHEMICAL PROPERTIES OF ASTM A709 GRADE 50 STEEL.
7. FURNISHED STEEL SHALL BE GALVANIZED PER ASTM A123 AFTER CUTTING, BENDING AND WELDING. AT THE DISCRETION OF THE ODOT INSPECTOR, REPLACE, REGALVANIZE OR REPAIR DAMAGED GALVANIZED MATERIALS. IF REPAIR IS AUTHORIZED, A METHOD ACCEPTABLE TO THE OHIO DEPARTMENT OF TRANSPORTATION SHALL BE USED.

2.02 FINISHING

- A. ALL LOGOS, FENCE MEMBERS (OTHER THAN WIREWALL), AND FASTENERS SHALL BE GAHANNA GREEN FEDERAL COLOR NO. 595B-24036.
- B. REMOVE ALL WELDING SLAG, SPLATTER, ANTISPLATTER AND BURRS PRIOR TO DELIVERY FOR GALVANIZING.
- C. FIELD REPAIRS AND TOUCH UPS SHOW FOLLOW WORK LIMITATIONS SPECIFIED PER ODOT 514.
- D. CLEAN GALVANIZED COATING PER SSPC SP-1 USING ALKALINE SOLUTION WITH A PH RANGING FROM A MINIMUM OF 11 TO A MAXIMUM OF 12.
- E. PRIOR TO GALVANIZING, ALL CONCERNS OF THERMALLY CUT OR SHEARED EDGES SHALL HAVE A 1/16" RADIUS OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE.
- F. GALVANIZED COATINGS DAMAGED IN THE SHOP SHALL BE REPAIRED PER ASTM A780 METHOD A3. GALVANIZED COATINGS DAMAGED IN THE FIELD SHALL BE REPAIRED PER ASTM A780 METHOD A1.
- G. THE GALVANIZED COATING SYSTEM MAY BE APPLIED BY A GALVANIZER NOT QUALIFIED AS A FABRICATION SHOP UNDER ODOT 513, BUT THE QUALIFIED FABRICATOR OF THE STRUCTURAL STEEL SHALL BE RESPONSIBLE FOR THE QUALITY OF THE APPLIED GALVANIZED COATING SYSTEM AND ANY REPAIRS, RE-FABRICATION AND ADDITIONAL ASSEMBLIES REQUIRED TO ASSURE THE FABRICATED STEEL MEETS THE PLAN REQUIREMENTS.
- H. AFTER REMOVING HIGH SPOTS THE GALVANIZED COATING SHALL BE CLEANED PER SSPC SP-1. THE CLEANING SOLUTION SHALL BE AN ALKALINE SOLUTION WITH A PH RANGING FROM A MINIMUM OF 11 TO A MAXIMUM OF 12. THIS SOLUTION CAN BE APPLIED BY IMMERSION, SPRAY OR SOFT NYLON BRUSH. FOLLOW CLEANING WITH A HOT WATER OR HOT PRESSURE WASHER RINSE. INDIVIDUAL PIECES SHALL BE SEPARATED AND POSITIONED TO FACILITATE DRAINAGE AND DRYING. THE PIECES SHALL BE COMPLETELY DRY BEFORE PROCEEDING.
- L. THE FABRICATED RAILING AND HARDWARE SHALL BE GALVANIZED PER CMS 711.02, EXCEPT THAT FABRICATED RAILING ELEMENTS SHALL NOT BE POST TREATED WITH WATER QUENCHING OR CHROMATE CONVERSION COATED. ALTER GALVANIZATION, ZINC HIGH SPOTS SUCH AS METAL DRIP LINE AND OTHERS THAT WOULD DETRACT FROM THE PAINT APPEARANCE SHALL BE MADE FLUSH WITH THE SURROUNDING SURFACE BY SSPC SP2 OR SP3. CARE SHALL BE TAKEN THAT THE BASE GALVANIZED COATING IS NOT REMOVED. REPAIRED AREAS SHALL BE CHECKED FOR REQUIRED COATING THICKNESS.
- J. AFTER CLEANING, THE PIECES SHALL BE ABRASIVE BLASTED PER SSPC SP-7 BRUSH-OFF BLAST CLEANING. THE BLASTING OPERATION SHALL ROUGHEN THE GALVANIZED SURFACE TO AN ANGULAR SURFACE PROFILE OF 0.25 TO 0.50 MILS. THE BLASTING EQUIPMENT, TECHNIQUE AND ABRASIVE MATERIAL SHALL BE SELECTED TO PROVIDE FOR THE SPECIFIED SURFACE PROFILE WITHOUT REMOVAL OF EXCESSIVE ZINC LAYERS. THE FINAL ZINC MILLAGE SHALL NOT BE LESS THAN 4.0 MILS. ALL ABRASIVE RESIDUES SHALL BE REMOVED WITH CLEAN COMPRESSED AIR OR OTHER METHODS ACCEPTABLE TO THE DEPARTMENT.

- K. THE TWO (2) SHOP COATS (EPOXY/URETHANE ACCORDING TO ODOT 708.02) SHALL BE APPLIED IN A STRUCTURAL STEEL FABRICATION SHOP HAVING PERMANENT BUILDINGS PER ODOT 513.04 AND PREQUALIFIED AT THE ODOT 513 LEVEL UF. THE PAINTER SHALL BE UNDER THE SUPERVISION OF A QUALITY CONTROL PAINT SPECIALIST AND SHALL BE AN ODOT 513 FABRICATOR, THE FIELD PAINTING SUBCONTRACTOR PERFORMING TOUCH UP WORK IN THE FIELD AND OR SHOP PAINTING AT THE ODOT 513 FABRICATOR'S FACILITY OR AN INDEPENDENT PAINTER THAT IS CERTIFIED BY SSPC-QP3 WITH FACILITIES EVALUATION AND ACCEPTANCE BY THE DEPARTMENT.
- L. WITHIN 24 HOURS OF ABRASIVE BLASTING, SHOP-APPLY A TWO-COAT PAINT SYSTEM CONSISTING OF EPOXY INTERMEDIATE COAT AND A URETHANE FINISH COAT MEETING THE REQUIREMENTS OF ODOT 708.02. THE FINISH COAT SHALL MATCH FEDERAL COLOR STANDARD FS-595B, COLOR 24036: GAHANNA GREEN. THE EPOXY COATING SHALL BE APPLIED WITHIN 24 HOURS OF THE BRUSH-OFF BLASTING. THE COATINGS SHALL BE APPLIED IN ACCORDANCE WITH ODOT 514 EXCEPT THAT REQUIREMENTS FOR SURFACE PREPARATION AND PRIMING SHALL NOT BE PERFORMED. THE COATING SHALL BE SHOP APPLIED AS SPECIFIED WITHOUT THE WORK LIMITATION SPECIFIED IN ODOT 514.

PART 3 EXECUTION

3.01 INSTALLATION

- A. INSTALL POSTS AND BASE PLATES AND SHIM AS REQUIRED.
- B. THE LOCATION, ARRANGEMENT AND INSTALLATION OF ALL CUSTOM FENCING AND LOGOS SHALL BE AS SHOWN ON THE DRAWINGS AND PER THIS SPECIFICATION.
- C. CAULK EDGES OF BASE PLATES AND SHIMS. WHEN APPLYING THE CAULK TO THE BASE PLATE, PROVIDE A ONE (1") INCH OPENING THROUGH THE CAULKING ON LOW SIDE OF BASE PLATE.
- D. ATTACH LOGOS ON THE FREEWAY SIDE OF THE WIREWALL FENCING. SECURE LOGOS IN A MANNER THAT ENSURES A HAZARD FROM FALLING DEBRIS IS PREVENTED DURING AN IMPACT ON THE STRUCTURE ABOVE TRAFFIC.

3.02 PAYMENT

PAYMENT FOR THE ABOVE DESCRIBED WORK WILL BE MADE AT THE CONTRACT BID PRICE PER LINEAR FOOT FOR ITEM SPECIAL - VANDAL PROTECTION FENCE.

REVISIONS	
DATE	REVISED
2/13/24	STRUCTURAL STEEL MEMBER, LEVEL UF AND PAINTING QUANTITIES REVISED

C:\Battlinger\2024\12\13\2024\01\2009\01695\C_Design\FRA_86067_Structures\FRA317_31720S_Sheets_317_1720CE0001.dgn
 12:40:13 PM
 2/13/2024
 2009\01695\C_Design\FRA_86067_Structures\FRA317_31720S_Sheets_317_1720CE0001.dgn

GENERAL NOTES AND ESTIMATED QUANTITIES
 BRIDGE NO. FRA-317-1720
 OVER IR 270
FRA - 270 - 36.94
 PID No. 86067
 4 / 38
 164
 208