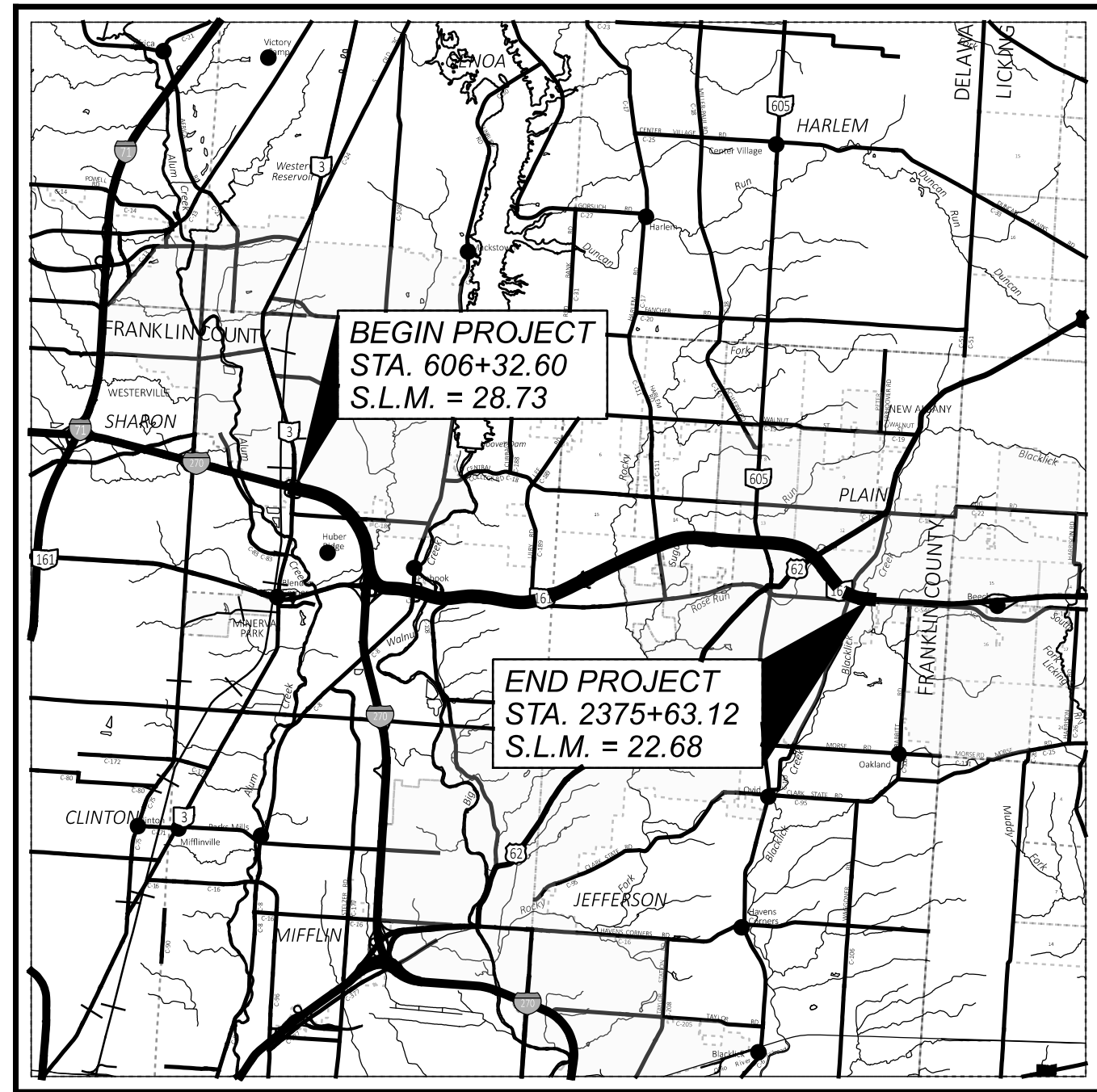


# STATE OF OHIO DEPARTMENT OF TRANSPORTATION

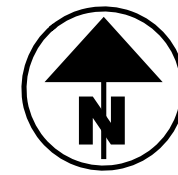
## FRA-161-15.80

### CITY OF COLUMBUS AND NEW ALBANY BLENDON TOWNSHIP FRANKLIN COUNTY



**LOCATION MAP**

LATITUDE: 40°04'52" LONGITUDE: 82°51'44"  
MAP SCALE: 1" = 2 MILE



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

#### DESIGN DESIGNATION

SEE SHEET 2 FOR DESIGN DESIGNATIONS

#### DESIGN EXCEPTIONS

DESIGN FEATURE	APPROVAL DATES	SHEET NUMBERS
LOAD RATING - FRA-00161-18.600 L (SR 161 OVER HAMILTON RD)	10/14/2022	628
LOAD RATING - FRA-00161-19.090 L&R (SR 161 OVER US 62)	10/14/2022	700
HORIZONTAL: LANE WIDTH - IR 270, SR 161, CDE, CDW, RAMP A	10/13/2022	23, 24, 26 - 37, 45
HORIZONTAL: SHOULDER WIDTH - IR 270, SR 161, CDE, CDW, RAMP A	10/13/2022	22 - 25, 28 - 37, 41, 45
HORIZONTAL: STOPPING SIGHT DISTANCE - IR 270, SR 161, CDE, CDW, RAMP A	10/13/2022 & 1/6/2023	185, 193, 194, 197, 198, 205, 206, 211, 228, 229, 231, 232
HORIZONTAL: SUPERELEVATION - SR 161	10/13/2022	365 - 374

#### ADA DESIGN WAIVERS

NONE REQUIRED

**UNDERGROUND UTILITIES**  
Contact Two Working Days  
Before You Dig

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

PLAN PREPARED BY:



HDR ENGINEERING, INC.  
600 SUPERIOR AVENUE, ST 1700  
CLEVELAND, OHIO 44114  
216-912-4240

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#### ENGINEER'S SEALS

FOR ENGINEER'S SEALS SEE SHEET 2

FOR CITY OF COLUMBUS AND CITY OF NEW ALBANY SIGNATURES,  
SEE SEPARATE SIGNATURE PAGE

#### ALTERNATE PLAN SIZES

THIS PLAN SET UTILIZES THE ODOT STANDARD D SIZE PLAN SHEET (34"x22") AS WELL AS E+ PLAN SHEETS (34"x66"). D SIZE SHEETS ARE USED FOR THE TITLE SHEET, TYPICAL SECTIONS, NOTES, SUMMARIES, AND ALL STRUCTURES OVER 20' PLANS. E+ SHEETS ARE UTILIZED FOR SCHEMATIC, PLAN AND PROFILE, CROSS SECTIONS, STORM SEWER PROFILES, MAINTENANCE OF TRAFFIC PLANS, TRAFFIC CONTROL PLANS AND LIGHTING/ITS PLANS. DETAIL SHEETS USE BOTH D AND E+ SIZE SHEETS.

#### FEDERAL PROJECT NUMBER

NON-FEDERAL

#### RAILROAD INVOLVEMENT

NONE

#### PROJECT DESCRIPTION

THIS PROJECT WILL ADD A THRU LANE IN BOTH DIRECTIONS ALONG SR 161 FROM IR 270 TO US 62 AND WIDEN STRUCTURES TO ACCOMMODATE THE ADDED LANE. THE PROJECT INCLUDES THE FOLLOWING WORK LISTED BELOW.

WIDENING AND RESURFACING OF 1.78 MILES OF I-270 NORTHBOUND IN BLENDON TOWNSHIP FROM SR 161 TO SR 3.

WIDENING AND RESURFACING OF 2.60 MILES OF SR 161 CD LANES FROM I-270 TO SUNBURY PKWY. WIDENING AND RESURFACING OF 5.50 MILES OF SR 161 FROM SUNBURY PKWY TO STRUCTURES FRA-00161-22.68 OVER BLACKLICK CREEK.

RECONSTRUCTION OF THE DECK EDGES ON STRUCTURES FRA-00161-16.620 A AND FRA-00161-15.590 B OVER BIG WALNUT CREEK.

WIDENING OF STRUCTURE FRA-00161-18.600 L OVER HAMILTON RD. WIDENING OF STRUCTURES FRA-00161-19.090 L&R OVER ROCKY FORK CREEK.

WIDENING OF STRUCTURES FRA-00161-21.730 L&R OVER US 62.

#### EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA:	63.4 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	10.1 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA:	73.5 ACRES

#### LIMITED ACCESS

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

#### 2019 SPECIFICATIONS

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

#### DISTRICT DEPUTY DIRECTOR

*Anthony C. Turowski*

Anthony C. Turowski, P.E.  
06

#### DIRECTOR, DEPARTMENT OF TRANSPORTATION

*Jack Markants*

ODOT STANDARD CONSTRUCTION DRAWINGS														SUPPLEMENTAL SPECIFICATIONS		SPECIAL PROVISIONS		CITY OF COLUMBUS										
BP-2.1	1/21/22	DM-1.1	7/17/20	MGS-2.1	1/19/18	RM-4.6	7/19/13	HL-30.21	4/17/20	ITS-18.10	7/16/21	MT-98.11	1/17/20	MT-102.30	10/16/15	TC-42.20	10/18/13	800-2019	SEE PROPOSAL	878	1/21/22	WATERWAY	STANDARD CONSTRUCTION DRAWINGS	SUPPLEMENTAL SPECIFICATIONS	DESIGN AGENCY			
BP-2.2	1/15/21	DM-1.2	7/16/21	MGS-3.1	1/19/18			HL-30.22	1/15/21	ITS-30.11	4/16/21	MT-98.20	4/19/19	MT-103.10	1/21/22	TC-51.11	1/15/16	804	1/20/23	889	7/17/20	PERMIT 4/5/23	1500	9/15/15	1620	9/10/18		
BP-2.3	7/18/14	DM-1.3	7/18/14	MGS-3.2	1/18/13	AS-1-15	1/20/23	HL-30.31	4/17/20	ITS-30.12	7/15/22	MT-98.21	1/17/20	MT-104.10	10/16/15	TC-51.12	1/15/16	807	1/21/22	894	4/16/21	1510	9/15/15					
BP-2.4	7/19/13	DM-4.1	7/17/20	MGS-4.2	7/19/20	AS-2-15	1/21/22	HL-30.33	1/21/22	ITS-30.13	4/16/21	MT-98.22	1/17/20	MT-105.10	1/17/20	TC-52.10	10/18/13	808	1/18/19	899	1/17/20	1520	9/15/15					
BP-2.5	1/21/22	DM-4.2	7/20/12	MGS-4.3	1/18/13	CPP-1-08	7/21/17	HL-30.41	1/21/22	ITS-35.11	4/16/21	MT-98.29	1/17/20			TC-52.20	1/15/21	809	1/20/23	904	7/15/22	1550	9/15/15					
BP-3.1	1/21/22	DM-4.4	1/15/16	MGS-5.2	7/15/16	EXJ-4-87	1/20/23	HL-50.21	7/15/22	ITS-35.12	7/15/22	MT-98.30	7/16/21	TC-12.31	4/15/22	TC-61.10	1/17/20	813	10/19/18	906	10/15/10	4000	8/10/17					
BP-5.1	7/15/22			MGS-5.3	7/15/16	GSD-1-19	1/15/21			ITS-35.13	7/15/22	MT-99.20	4/19/19	TC-15.116	7/16/21	TC-61.30	7/19/19	821	4/20/12	908	10/20/17	4001	8/01/15					
BP-6.1	7/19/13	F-1.1	7/19/13	MGS-6.1	1/19/18	HW-2.1	7/20/18	ITS-10.10	1/20/23	ITS-36.12	7/15/22	MT-99.30	1/17/20	TC-21.11	7/16/21	TC-65.10	1/17/14	829	1/20/17	909	10/21/22	4002	5/01/14					
BP-9.1	1/18/19	F-3.1	7/19/13	MGS-6.2	7/19/19	HW-2.2	7/20/18	ITS-10.11	1/20/23	ITS-50.10	7/15/22	MT-99.50	1/17/20	TC-21.21	1/20/23	TC-65.11	7/15/22	832	7/15/22	921	4/20/12	4020	5/01/14					
		F-3.3	7/19/13			PCB-91	7/17/20	ITS-12.10	7/15/22	ITS-50.11	1/20/23	MT-99.60	7/15/16	TC-21.50	4/17/20	TC-71.10	7/15/22	839	7/16/21	929	1/20/17	4022	7/01/20					
CB-3A	7/16/21	F-3.4	7/19/13	MH-3	7/16/21	SBR-1-20	1/20/23	ITS-14.10	1/20/23			MT-101.60	1/17/20	TC-22.10	4/17/20	TC-72.20	7/20/18	846	4/17/15	939	1/17/20	4600	7/01/20					
CB-4	7/16/21							ITS-14.11	1/20/23	MT-95.30	7/19/19	MT-101.70	1/17/20	TC-22.20	1/17/14			847	1/15/21	987	1/16/09	4602	7/01/20					
CB-4A, 5A, 8A	7/16/21	I-3B, 3B1	7/15/22	RM-1.1	1/15/21	HL-10.11	7/15/22	ITS-14.20	1/20/23	MT-95.40	1/17/20	MT-101.75	1/17/20	TC-41.10	7/19/13			848	1/15/21									
CB-5	7/16/21	I-3C, 3C1	7/15/22	RM-4.2	4/17/20	HL-10.12	1/20/23	ITS-14.50	1/20/23	MT-95.45	1/17/20	MT-101.80	1/17/20	TC-41.20	10/18/13			850	4/15/22									
CB-6	1/21/22	I-3D	7/15/22	RM-4.3	1/21/22	HL-10.13	1/20/23	ITS-15.10	1/20/23	MT-97.10	4/19/19	MT-101.90	7/17/20	TC-41.30	10/18/13			861	1/15/21									
CB-8	7/16/21			RM-4.4	7/19/19	HL-20.13	7/15/22	ITS-15.11	1/20/23	MT-97.12	1/20/17	MT-102.10	1/17/20	TC-41.40	10/18/13			872	1/21/22									
		MGS-1.1	7/16/21	RM-4.5	7/21/17	HL-30.11	1/15/21	ITS-18.00	7/16/21	MT-98.10	1/17/20	MT-102.20	4/19/19	TC-42.10	10/18/13			873	4/16/21									

FRA-161-15.80



DESIGNER  
CLW

REVIEWER  
MJL 04/17/23

PROJECT ID  
116322

SHEET TOTAL  
1 846

FRA-161-15.80

MODEL: Sheet PAPER SIZE: 34x22 (in.) DATE: 5/17/2023 TIME: 2:18:29 PM USER: MLORENZ pvc:\ohio\odot-pw-bentley.com\ohio\odot-pw-02\Documents\01 Active Projects\District 06\Franklin\116322\401-Engineering\_HDR\Roadway\Sheets\116322\_GT4001.dgn

**DESIGN DESIGNATION**

CURRENT ADT (2024)	IR 270	CDN (IR 270)
DESIGN YEAR ADT (2045)	93950	7,340
DESIGN HOURLY VOLUME (2045)	9,530	760
DIRECTIONAL DISTRIBUTION	N/A	N/A
TRUCKS (24 HOUR B&C)	7%	7%
DESIGN SPEED	70 MPH	60 MPH
LEGAL SPEED	65 MPH	60 MPH
DESIGN FUNCTIONAL CLASSIFICATION:	01 INTERSTATE (URBAN)	01 INTERSTATE URBAN
NHS PROJECT	YES	YES

RAMP A (SR 161)	RAMP K (SR 3)	RAMP D (SR 161)
27,489	11,574	1,453
36,900	17,050	1,570
4,350	1,850	210
N/A	N/A	N/A
5%	5%	4%
50 MPH	PER L&D I FIGURE 503-1	25 MPH
RAMP	FOR 70 MPH	RAMP
YES	YES	YES

RAMP Q (SUNBURY RD.)	RAMP H (SR 161)	RAMP N (SR 161)
7,273	27,462	2,213
8,690	34,790	65,990
1,110	4,000	7,840
N/A	N/A	N/A
3%	3%	2%
PER L&D I FIGURE 503-1	PER L&D I FIGURE 503-1	PER L&D I FIGURE 503-1
RAMP	FOR 60 MPH	RAMP
YES	YES	YES

RAMP T (LITTLE TURTLE WAY)	CDW (SR 161)	CDE (SR 161)
7,739	54,951	53,296
8,520	71,690	65,990
1,030	8,580	7,840
N/A	N/A	N/A
3%	60 MPH	60 MPH
PER L&D I FIGURE 503-1	60 MPH	60 MPH
FOR 60 MPH	55 MPH	55 MPH
RAMP	01 INTERSTATE (URBAN)	01 INTERSTATE (URBAN)
YES	YES	YES

SR 161 SLM 17.48 (EB) & SLM 17.22 (WB)	SR 161 SLM 18.60 (EB&WB)
20,921	64,716
28,890	86,550
3,350	9,080
65% (EB)	50%
3%	8%
60 MPH	70 MPH
55 MPH	65 MPH
02 OTHER FREEWAY	02 OTHER FREEWAY
OR EXPRESSWAY (URBAN)	OR EXPRESSWAY (URBAN)
YES	YES

US 62	HAMILTON RD
15,270	NA
23,820	NA
2,270	NA
28%	NA
60 MPH	NA
50 MPH	35 MPH
50 MPH	35 MPH
03 PRINCIPAL ARTERIAL (URBAN)	03 PRINCIPAL ARTERIAL (URBAN)
YES	NO

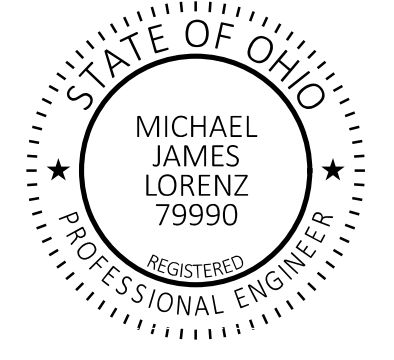
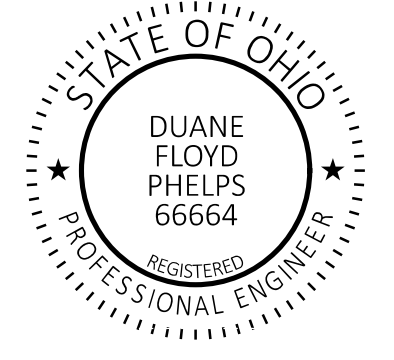
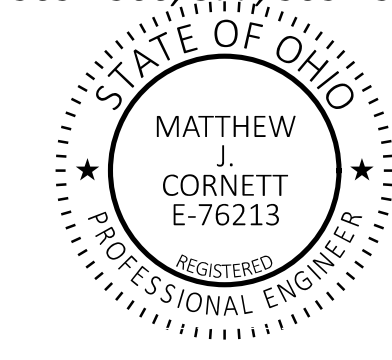
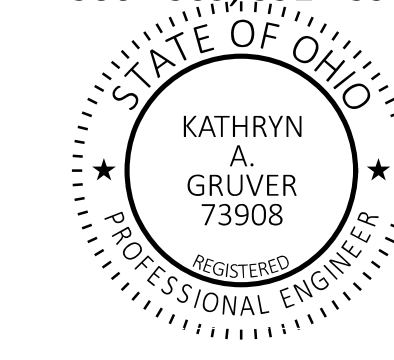
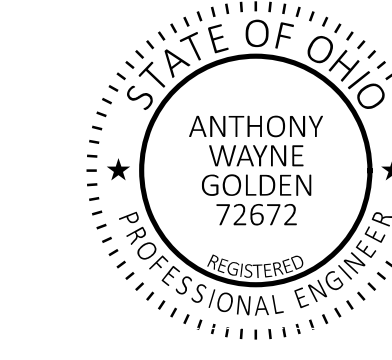
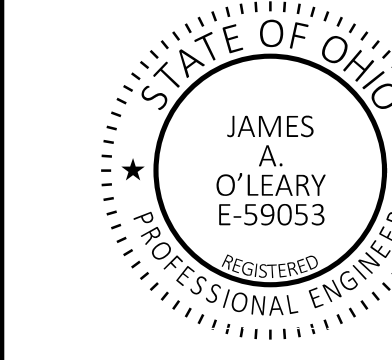
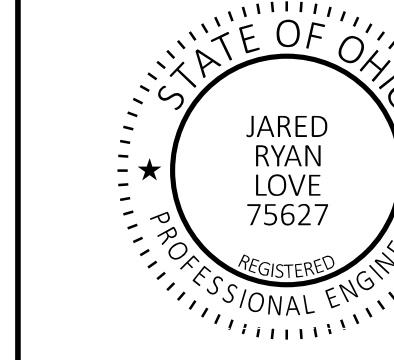
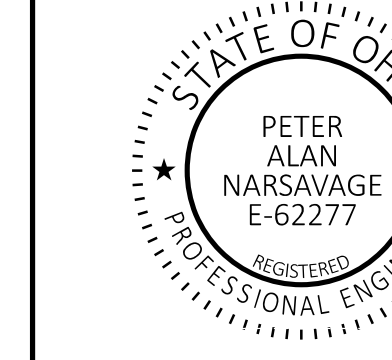
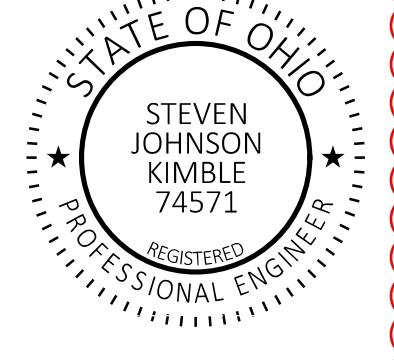
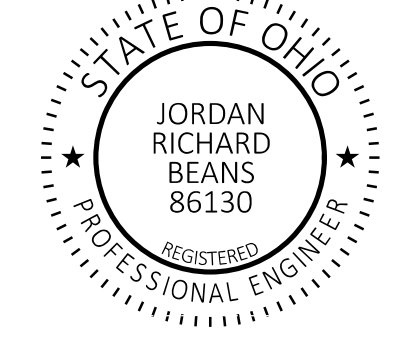

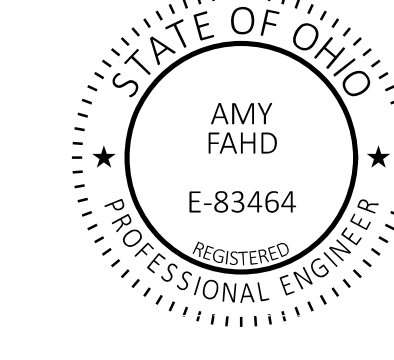
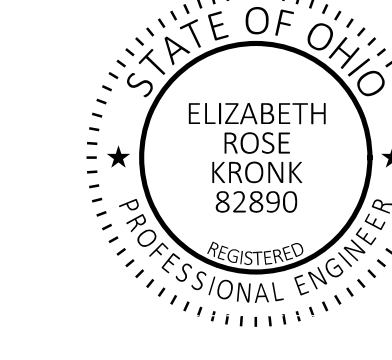
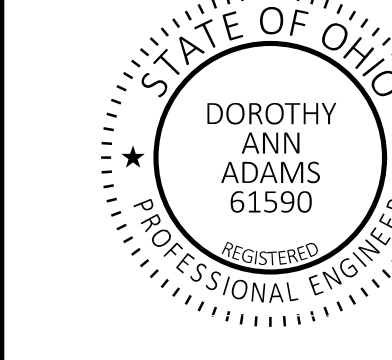
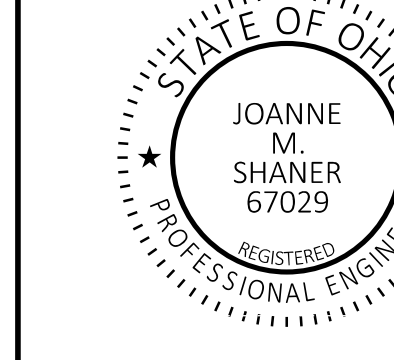
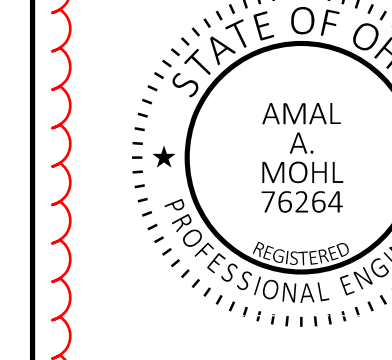
FEMA FLOOD ZONE AE ALUM CREEK	FEMA FLOOD ZONE A SPRING RUN	FEMA FLOOD ZONE AE BIG WALNUT CREEK	FEMA FLOOD ZONE AE ROCKY FORK CREEK	FEMA FLOOD ZONE AE SUGAR RUN CREEK	FEMA FLOOD ZONE AE BLACKLICK CREEK
FIRM: 39049C0183K 06/17/2008	FIRM: 39049C0183K 06/17/2008	FIRM: 39049C0184K 06/17/2008	FIRM: 39049C0203K 06/17/2008	FIRM: 39049C0204K 06/17/2008	FIRM: 39049C0208K 06/17/2008
BASE FLOOD ELEVATION: ±787	BASE FLOOD ELEVATION: UNKNOWN	BASE FLOOD ELEVATION: ±821	BASE FLOOD ELEVATION: ±957	BASE FLOOD ELEVATION: ±974	BASE FLOOD ELEVATION: ±1,060
WORK PERMITTED: NO WORK PERFORMED IN ZONE AE LIMITS. NO FILL TO BE PLACED IN FLOODWAY AND FLOOD ZONE AE.	WORK PERMITTED: NO WORK PERFORMED IN ZONE A LIMITS. NO FILL TO BE PLACED IN FLOODWAY AND FLOOD ZONE A.	WORK PERMITTED: NO WORK PERFORMED IN ZONE AE LIMITS. NO FILL TO BE PLACED IN FLOODWAY AND FLOOD ZONE AE.	WORK PERMITTED: PROPOSED BRIDGE PIERS FOR STRUCTURE WIDENING, CHANNEL PROTECTION AND AND MINOR REGRADING TO RE-ESTABLISH SLOPES. ADDITIONAL PIERS TO BE PLACED IN FLOODWAY AND FLOOD ZONE AE. TEMPORARY ACCESS FILL WILL BE PLACED FOR CONSTRUCTION ACTIVITIES. SEE PROJECT SITE PLAN SHEET 176	WORK PERMITTED: NO WORK PERFORMED IN ZONE AE LIMITS. NO FILL TO BE PLACED IN FLOODWAY AND FLOOD ZONE AE.	WORK PERMITTED: NO WORK PERFORMED IN ZONE AE LIMITS. NO FILL TO BE PLACED IN FLOODWAY AND FLOOD ZONE AE.


DESIGN DESIGNATION	RAMP U (LITTLE TURTLE WAY)	RAMP V (LITTLE TURTLE WAY)	RAMP C (HAMILTON RD.)	RAMP D (HAMILTON RD.)	RAMP E (HAMILTON RD.)	RAMP F (HAMILTON RD.)	RAMP L (NEW ALBANY RD.)	RAMP M (NEW ALBANY RD.)	RAMP N (NEW ALBANY RD.)	RAMP P (NEW ALBANY RD.)	RAMP G (US 62)	RAMP H (US 62)	RAMP J (US 62)	RAMP K (US 62)
CURRENT ADT (2024)	7,739	7,739	7,739	7,739	7,739	7,739	7,739	7,739	7,739	7,739	7,739	7,739	7,739	7,739
DESIGN YEAR ADT (2045)	8,520	8,520	8,520	8,520	8,520	8,520	8,520	8,520	8,520	8,520	8,520	8,520	8,520	8,520
DESIGN HOURLY VOLUME (2045)	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030
DIRECTIONAL DISTRIBUTION	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TRUCKS (24 HOUR B&C)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
DESIGN SPEED	PER L&D I FIGURE 503-1	PER L&D I FIGURE 503-1	PER L&D I FIGURE 503-1	PER L&D I FIGURE 503-1	PER L&D I FIGURE 503-1	PER L&D I FIGURE 503-1	PER L&D I FIGURE 503-1	PER L&D I FIGURE 503-1	PER L&D I FIGURE 503-1	PER L&D I FIGURE 503-1	PER L&D I FIGURE 503-1	PER L&D I FIGURE 503-1	PER L&D I FIGURE 503-1	PER L&D I FIGURE 503-1
LEGAL SPEED	FOR 60 MPH	FOR 60 MPH	FOR 60 MPH	FOR 60 MPH	FOR 60 MPH	FOR 60 MPH	FOR 60 MPH	FOR 60 MPH	FOR 60 MPH	FOR 60 MPH	FOR 60 MPH	FOR 60 MPH	FOR 60 MPH	FOR 60 MPH
DESIGN FUNCTIONAL CLASSIFICATION:	RAMP	RAMP	RAMP	RAMP	RAMP	RAMP	RAMP	RAMP	RAMP	RAMP	RAMP	RAMP	RAMP	RAMP
NHS PROJECT	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

**DESIGN DESIGNATION**

THE FOLLOWING RAMPS ARE LISTED DUE TO PROJECT IMPACTS LIMITED TO PAVEMENT PLANING AND RESURFACING AT THE ENTRANCE/EXIT TERMINALS WITH NO GEOMETRIC ADJUSTMENTS - NO DESIGN DESIGNATION IS REQUIRED FOR THE FOLLOWING:

- RAMP R (SUNBURY RD.)
- RAMP S (LITTLE TURTLE WAY)
- RAMP U (LITTLE TURTLE WAY)
- RAMP V (LITTLE TURTLE WAY)
- RAMP C (HAMILTON RD.)
- RAMP D (HAMILTON RD.)
- RAMP E (HAMILTON RD.)
- RAMP F (HAMILTON RD.)
- RAMP L (NEW ALBANY RD.)
- RAMP M (NEW ALBANY RD.)
- RAMP N (NEW ALBANY RD.)
- RAMP P (NEW ALBANY RD.)
- RAMP G (US 62)
- RAMP H (US 62)
- RAMP J (US 62)
- RAMP K (US 62)

<p>ENGINEER'S SEAL</p> <p><b>ROADWAY, WATER LINE</b></p> <p>SHEETS: 1 - 7, 19 - 20, 45 - 52, 54 - 59, 122 - 131, 135 - 136, 139 - 140, 148 - 154, 215 - 233, 310 - 357, 367 - 374, 394 - 398, 414 - 421</p> 	<p>ENGINEER'S SEAL</p> <p><b>ROADWAY, DRAINAGE</b></p> <p>SHEETS: 8 - 13, 22 - 27, 132, 137, 141 - 142, 155, 15, 161, 167 - 168, 182 - 196, 234 - 266, 359 - 364, 375 - 376, 378 - 382, 412</p> 	<p>ENGINEER'S SEAL</p> <p><b>MOT, ROADWAY, DRAINAGE</b></p> <p>SHEETS: 14 - 21, 28 - 44, 53, 60 - 121, 133 - 134, 138, 143 - 147, 156, 159, 162 - 163, 169 - 171, 197 - 214, 267 - 309, 365 - 366, 377, 383 - 385</p> 	<p>ENGINEER'S SEAL</p> <p><b>DRAINAGE</b></p> <p>SHEETS: 157, 160, 164, 166, 172 - 173, 176 - 181, 386 - 389, 392 - 393</p> 	<p>ENGINEER'S SEAL</p> <p><b>DRAINAGE</b></p> <p>SHEETS: 165, 174 - 175, 390 - 391</p> 	<p>ENGINEER'S SEAL</p> <p><b>BARRIER DETAILS REFACE/REPLACE</b></p> <p>SHEETS: 399 - 410</p> 	<p>ENGINEER'S SEAL</p> <p><b>TRAFFIC CONTROL</b></p> <p>SHEETS: 422 - 426, 429 - 480</p> 	<p>ENGINEER'S SEAL</p> <p><b>TRAFFIC CONTROL SIGN SUPPORT FOUNDATION</b></p> <p>SHEETS: 427 - 428</p> 
<p>ENGINEER'S SEAL</p> <p><b>ITS</b></p> <p>SHEETS: 481 - 505</p> 	<p>ENGINEER'S SEAL</p> <p><b>CTSS</b></p> <p>SHEETS: 506 - 534</p> 	<p>ENGINEER'S SEAL</p> <p><b>LIGHTING</b></p> <p>SHEETS: 535 - 587</p> 	<p>ENGINEER'S SEAL</p> <p><b>BRIDGE</b></p> <p>FRA-00161-16.620 A FRA-00161-16.590 B</p> <p>SHEETS: 588 - 627</p> 	<p>ENGINEER'S SEAL</p> <p><b>BRIDGE</b></p> <p>FRA-00161-18.600 L&amp;R</p> <p>SHEETS: 628 - 636, 638 - 666</p> 	<p>ENGINEER'S SEAL</p> <p><b>BRIDGE</b></p> <p>FRA-00161-18.600 L TEMP SHORING DESIGN</p> <p>SHEET: 637</p> 	<p>ENGINEER'S SEAL</p> <p><b>BRIDGE</b></p> <p>FRA-00161-19.090 L&amp;R FRA-00161-21.730 L&amp;R</p> <p>SHEETS: 667 - 720, 723 - 753</p> 	<p>ENGINEER'S SEAL</p> <p><b>BRIDGE</b></p> <p>FRA-00161-21.730 L&amp;R TEMP SHORING DESIGN</p> <p>SHEETS: 721 - 722</p> 

DESIGN AGENCY	
DESIGNER	CLW
REVIEWER	MJL 02/10/23
PROJECT ID	116322
SHEET	2
TOTAL	846

LANE VALUE CONTRACT TABLE						
ULRY RD						
SECTION	EXISTING NUMBER OF LANES PER DIRECTION	LANE CLOSURES ARE NOT PERMITTED:				DISINCENTIVE AMOUNTS PER MINUTE PER LANE
		LANE REDUCTION	MON TO FRI	SAT	SUN	
E DUBLIN GRANVILLE RD ULRY CT	1	1 SHARED LANE	6AM-9AM & 3PM-7PM	NO RESTRICTION	NO RESTRICTION	\$50

FULL CLOSURE OF ULRY RD IS NOT PERMITTED. AT LEAST ONE LANE OF TWO-WAY TRAFFIC MUST BE MAINTAINED

LANE VALUE CONTRACT TABLE								
HAMILTON RD								
SECTION	EXISTING NUMBER OF LANES PER DIRECTION	LANE CLOSURES ARE NOT PERMITTED:				DISINCENTIVE AMOUNTS PER MINUTE PER LANE	PRIMARY DETOUR ROUTE	SECONDARY DETOUR ROUTE
		LANE REDUCTION	MON TO FRI	SAT	SUN			
SR 161 EB RAMP TO SR 161 WB RAMP	2	2 TO 1	6AM-9AM & 3PM-7PM	NO RESTRICTION	NO RESTRICTION	\$90	NB: 161 EB TO NEW ALBANY RD N TO 161 WB; SB: 161 WB TO SUNBURY RD S TO 161 EB	E DUBLIN GRANVILLE RD TO HARLEM RD TO WARNER RD
		2 TO 0*	5AM-11PM	6AM-11PM	6AM-10PM	\$90		

\* WHEN REQUIRED FOR STRUCTURE WORK WITH THE ENGINEER'S APPROVAL ONLY

LANE VALUE CONTRACT TABLE						
HARLEM RD						
SECTION	EXISTING NUMBER OF LANES PER DIRECTION	LANE CLOSURES ARE NOT PERMITTED:				DISINCENTIVE AMOUNTS PER MINUTE PER LANE
		LANE REDUCTION	MON TO FRI	SAT	SUN	
BISHOPS WOOD RD TO WARNER RD	2	2 TO 1	7AM-9AM & 4PM-6PM	NO RESTRICTION	NO RESTRICTION	\$50

FULL CLOSURE OF HARLEM RD IS NOT PERMITTED. AT LEAST ONE LANE OF TWO-WAY TRAFFIC MUST BE MAINTAINED

LANE VALUE CONTRACT TABLE						
NEW ALBANY RD						
SECTION	EXISTING NUMBER OF LANES PER DIRECTION	LANE CLOSURES ARE NOT PERMITTED:				DISINCENTIVE AMOUNTS PER MINUTE PER LANE
		LANE REDUCTION	MON TO FRI	SAT	SUN	
SR 161 EB RAMP TO SR 161 WB RAMP	2	2 TO 1	6AM-9AM & 3PM-7PM	NO RESTRICTION	NO RESTRICTION	\$125

FULL CLOSURE OF HARLEM RD IS NOT PERMITTED. AT LEAST ONE LANE OF TWO-WAY TRAFFIC MUST BE MAINTAINED

LANE VALUE CONTRACT TABLE						
NEW ALBANY CONDIT RD (SR 605)						
SECTION	EXISTING NUMBER OF LANES PER DIRECTION	LANE CLOSURES ARE NOT PERMITTED:				DISINCENTIVE AMOUNTS PER MINUTE PER LANE
		LANE REDUCTION	MON TO FRI	SAT	SUN	
KARDULES FIELDS WAY TO WALTON PKWY	1	1 SHARED LANE	7AM-10AM & 3PM-7PM	NO RESTRICTION	NO RESTRICTION	\$75

FULL CLOSURE OF NEW ALBANY CONDIT RD (SR 605) IS NOT PERMITTED. AT LEAST ONE LANE OF TWO-WAY TRAFFIC MUST BE MAINTAINED

LANE VALUE CONTRACT TABLE								
JOHNSTOWN RD (US 62)								
SECTION	EXISTING NUMBER OF LANES PER DIRECTION	LANE CLOSURES ARE NOT PERMITTED:				DISINCENTIVE AMOUNTS PER MINUTE PER LANE	PRIMARY DETOUR ROUTE	SECONDARY DETOUR ROUTE
		LANE REDUCTION	MON TO FRI	SAT	SUN			
SR 161 EB RAMP TO SR 161 WB RAMP	2	2 TO 1	6AM-9AM & 3PM-7PM	NO RESTRICTION	NO RESTRICTION	\$115	NB: 161 EB TO BEECH RD N TO 161 WB; SB: 161 WB TO NEW ALBANY RD S TO 161 EB	E DUBLIN GRANVILLE RD TO KITZMILLER RD TO SMITH'S MILL RD
		2 TO 0	5AM-11PM	6AM-11PM	6AM-10PM	\$115		

RAMP CLOSURE RESTRICTIONS					
I-270					
SECONDARY ROUTE: STATE ROUTE 3			SLM ALONG I-270: 28.71 (NORTH SIDE)		
RAMP DESIGNATION	MOVEMENT	NO CLOSURES ALLOWED		DETOUR ROUTES	
		MON-FRI	SAT-SUN	PRIMARY DETOUR ROUTE	SECONDARY DETOUR ROUTE
J	I-270 EB TO US-3	5AM-10PM	8AM-8PM	270 S TO SR-161 TO SR-3 N	270 S TO SR-161 E TO SUNBURY RD TO 270 N TO SR-3 (RAMP K)
K	I-270 WB TO US-3	5AM-9PM	8AM-8PM	270 N TO CLEVELAND AVE TO 270 E TO SR-3 (RAMP J)	270 N TO CLEVELAND AVE S TO SR-161 E TO SR-3 N
L	US-3 TO I-270 WB	5AM-10PM	8AM-8PM	SR-3 S TO 270 S (RAMP M) TO SR-161 E TO SUNBURY RD TO 270 N TO 270 W	SR-3 S TO SR-161 E TO 270 N TO 270 W
M	US-3 TO I-270 EB	5AM-10PM	8AM-8PM	SR-3 S TO SR-161 E TO 270 S	SR-3 S TO 270 W (RAMP L) TO CLEVELAND AVE TO 270 E

\* ODOT RESERVES THE RIGHT TO AMEND THE LANE AND RAMP CLOSURES TABLES. NO RAMP CLOSURES AT ADJACENT INTERCHANGES SHALL OCCUR CONCURRENTLY, INCLUDING SR-3 AND SUNBURY ROAD.

THE FOLLOWING TABLE APPLIES TO POST CONSTRUCTION ONCE ALL CRITICAL WORK (AS DEFINED IN THE LUMP SUM MINUS INCENTIVE - SPECIAL CONTRACT TABLE) HAS BEEN COMPLETED AND NEW LANES ARE OPEN TO ACTIVE TRAFFIC:

LANE VALUE CONTRACT TABLE						
FRA-161						
SECTION (SLM)	EXISTING NUMBER OF LANES PER DIRECTION	LANE CLOSURES ARE NOT PERMITTED:				DISINCENTIVE AMOUNTS PER MINUTE PER LANE
		LANE REDUCTION	MON TO FRI	SAT	SUN	
STRAWBERRY FARMS BLVD (15.24) TO LITTLE TURTLE WAY (17.31) MAINLINE	2	2 TO 1	5AM-9AM & 2PM-7PM	NO RESTRICTION	NO RESTRICTION	\$75
I-270 (15.70) TO LITTLE TURTLE WAY (17.31) CD	4	4 TO 3	6AM-9AM & 3PM-6PM	NO RESTRICTION	NO RESTRICTION	\$255
		4 TO 2	6AM-10PM & 2PM-7PM	9AM-6PM	10AM-5PM	\$255
		4 TO 1	5AM-9PM	6AM-7PM	8AM-7PM	\$255
LITTLE TURTLE WAY (17.31) TO HAMILTON ROAD (18.60)	4	4 TO 3	6AM-9AM & 3PM-6PM	NO RESTRICTION	NO RESTRICTION	\$180
		4 TO 2	5AM-9AM & 2PM-7PM	9AM-6PM	10AM-5PM	\$180
		4 TO 1	5AM-9PM	6AM-7PM	8AM-7PM	\$180
HAMILTON ROAD (18.60) TO KITZMILLER ROAD (22.40)	3	3 TO 2	6AM-9AM & 3PM-6PM	NO RESTRICTION	NO RESTRICTION	\$250
		3 TO 1	5AM-7PM	8AM-7PM	8AM-7PM	\$250
KITZMILLER ROAD (22.40) TO LICKING COUNTY LINE (23.71)	2	2 TO 1	5AM-7PM	8AM-7PM	8AM-7PM	\$320

SHORT TERM SHOULDER CLOSURES ARE NOT PERMITTED 6AM-9AM & 3PM-6PM MONDAY-FRIDAY.

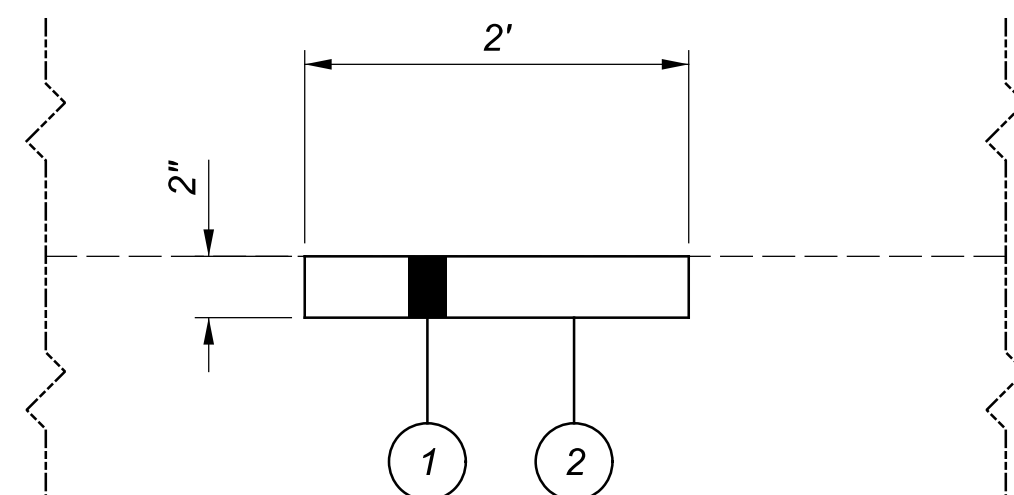
**ITEM 615 PAVEMENT FOR MAINTAINING TRAFFIC, CLASS B, APP, TYPE 2:  
 ITEM 615 PAVEMENT FOR MAINTAINING TRAFFIC, CLASS B, APP, TYPE 3:**

THIS ITEM SHALL BE UTILIZED FOR THE PAVEMENT REPAIRS NEEDED DURING THIS CONSTRUCTION PROCESS. ALL AREAS TO BE REPAIRED SHALL BE LOCATED BY THE ENGINEER. IT IS LIKELY THAT REPAIRS WILL BE NEEDED PRIOR TO EACH PHASE SWITCH. GREAT CARE SHALL BE TAKEN TO MAINTAIN THE EXISTING PAVEMENT CROSS SLOPE AS WELL AS ALL LONGITUDINAL SLOPES. THE TYPE OF REPAIR SHALL BE DETERMINED BY THE PROJECT ENGINEER. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS REQUIRED FOR MAINTENANCE OF TRAFFIC FOR PAVEMENT REPAIRS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC.

TYPE 2 - IS TO BE USED FOR FIXING THE LONGITUDINAL JOINT ISSUES OF VARYING LENGTH AND HAVE A CONSISTENT WIDTH OF 2 FEET.

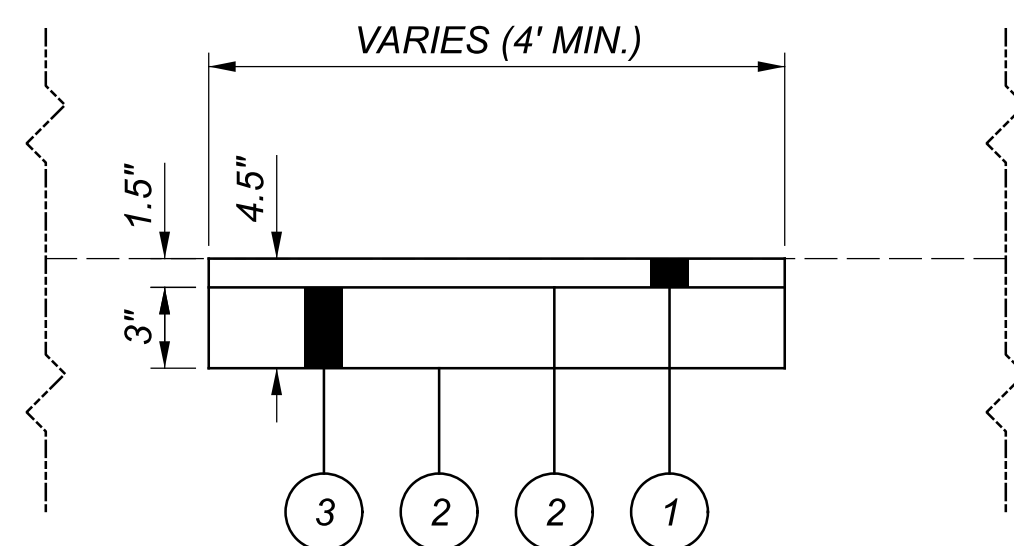
TYPE 3 - IS TO BE USED FOR DEEPER REPAIRS OF VARYING LENGTH AND WILL HAVE AN AVERAGE WIDTH OF NOT LESS THAN 4 FEET.

ALL COSTS ASSOCIATED WITH REMOVING AND REPLACING PAVEMENT AND TACK COAT FOR THE REPAIRS SHALL BE INCIDENTAL TO ITEM 615 PAVEMENT FOR MAINTAINING TRAFFIC, CLASS B, AS PER PLAN.



**TYPE 2 DETAIL**

PARTIAL DEPTH PAVEMENT REPAIR, AS PER PLAN TYPE 2



**TYPE 3 DETAIL**

PARTIAL DEPTH PAVEMENT REPAIR, AS PER PLAN TYPE 3

**LEGEND:**

- ① ITEM 441: TYPE 1 (449) (AS DESCRIBED IN C&MS 615.05)
- ② ITEM 407 - NON-TRACKING TACK COAT (RATE PER C&MS TABLE 407.06-1)
- ③ ITEM 301 - ASPHALT CONCRETE BASE, PG64-22 (449)

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 615 PAVEMENT FOR MAINTAINING TRAFFIC, CLASS B, APP, TYPE 2 = 3000 SY

ITEM 615 PAVEMENT FOR MAINTAINING TRAFFIC, CLASS B, APP, TYPE 3 = 4000 SY

**RESURFACING TRANSITION AREAS**

RESURFACING OF THE TRANSITION AREAS SHALL BE PERFORMED AT THE TIME THAT THE SURFACE COURSE IS BEING APPLIED TO THE ENTIRE PROJECT. PRIOR TO APPLICATION OF THE SURFACE COURSE ON THE PROJECT, THE EXISTING PAVEMENT WITHIN THE TRANSITION AREA SHALL BE REMOVED TO A DEPTH NECESSARY TO REACH THE LEVEL OF THE INTERMEDIATE COURSE OF THE PAVEMENT, AS DETERMINED BY THE ENGINEER.

RESURFACING OF THE TRANSITION AREAS SHALL BE AS FOLLOWS:

US 62 (JOHNSTOWN RD) NORTHBOUND AND SOUTHBOUND STA. 64+66 TO STA. 71+36

THE FOLLOWING BID ITEMS HAVE BEEN PROVIDED TO RESURFACE TRANSITION AREAS AND THE QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE (T = 1.5") = 5,244 SQUARE YARDS

ITEM 407 NON-TRACKING TACK COAT @ 0.08 GAL/SY = 420 GAL

ITEM 441 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446) PG70-22 = 220 CY

ITEM 621 RPM, REMOVED = 69 EACH

ITEM 621 RPM = 69 EACH

ITEM 644 PAVEMENT MARKING MISC.: EDGE LINE, 5" WHITE = 1,343 FT

ITEM 644 PAVEMENT MARKING MISC.: EDGE LINE, 5" YELLOW = 1,343 FT

ITEM 644 PAVEMENT MARKING MISC.: LANE LINE, 5" = 1,343 FT

ITEM 644 PAVEMENT MARKING MISC.: CHANNELIZING LINE, 10" , WHITE = 1,219 FT

ITEM 644 PAVEMENT MARKING MISC.: STOP LINE, 20" , WHITE = 72 FT

ITEM 644 PAVEMENT MARKING MISC.: LANE ARROW, 72" = 8 EACH

ITEM 644 WORD ON PAVEMENT 96" = 2 EACH

PAYMENT FOR RESURFACING WITHIN THE TRANSITION AREA SHALL BE PAID FOR UNDER THE APPROPRIATE BID ITEMS FOR THE WORK REQUIRED, AS PROVIDED FOR IN THE PLANS.

**ITEM 644 - PAVEMENT MARKING, MISC.: (BY TYPE)**

THESE ITEMS SHALL CONSIST OF PLACING THE SPECIFIED MARKINGS ACCORDING TO ITEM 644 EXCEPT THE WIDTH SHALL BE AS INDICATED IN THE ITEM DESCRIPTIONS

**LUMP SUM MINUS INCENTIVE - SPECIAL**

THE CONTRACTOR WILL BE PAID A LUMP SUM INCENTIVE AS DESIGNATED IN THE LUMP SUM MINUS INCENTIVE CONTRACT TABLE FOR COMPLETING THE WORK BEFORE THE COMPLETION DATE(S). THE LUMP SUM MINUS INCENTIVE CONTRACT TABLE IS LOCATED BELOW. THE LUMP SUM INCENTIVE WILL BE DECREASED BY THE DISINCENTIVE AMOUNT SHOWN IN THE LUMP SUM MINUS INCENTIVE CONTRACT TABLE FOR EACH DAY THAT THE CONTRACTOR DOES NOT HAVE THE ITEMS OF CRITICAL WORK COMPLETED UNTIL THE LUMP SUM INCENTIVE REACHES ZERO. IN THE EVENT THE CONTRACTOR IMPEDES THE FLOW OF TRAFFIC SUBSEQUENT TO THE COMPLETION OF ANY LISTED CRITICAL WORK, THE CONTRACTOR SHALL BE ASSESSED LIQUIDATED DAMAGES AS PER C&MS 108.07 FOR EACH DAY OR A PORTION OF EACH DAY THAT TRAFFIC IS RESTRICTED. CRITICAL WORK IS SHOWN IN THE LUMP SUM MINUS INCENTIVE CONTRACT TABLE. CRITICAL WORK IS DEFINED AS HAVING THE DESIGNATED SECTION OF WORK OPEN TO UNRESTRICTED TRAFFIC AS SHOWN IN THE TABLE, OR THE ENTIRE PROJECT IF NOT OTHERWISE LISTED. UNRESTRICTED TRAFFIC IS DEFINED AS ALL TRAFFIC LANES BEING AVAILABLE FOR USE AT THEIR FINAL DESIGN WIDTH WITH ALL MARKINGS, RPM'S, AND SAFETY FEATURES INSTALLED, ALONG WITH NO RESTRICTIONS WITHIN 2 FEET OF THE EDGE LINE ON THE SHOULDERS. EXTENSIONS OF TIME WILL BE FOR CALENDAR DAYS AND CALCULATED IN ACCORDANCE WITH C&MS 108.06.

LUMP SUM MINUS INCENTIVE SPECIAL CONTRACT TABLE			
DESCRIPTION OF CRITICAL WORK	COMPLETION DATE	LUMP SUM INCENTIVE \$	DISINCENTIVE PER DAY \$
TRAFFIC IN FINAL CONFIGURATION ON INTERMEDIATE ASPHALT ON TEMPORARY PAVEMENT MARKINGS WITH TRAFFIC SAFETY ITEMS INSTALLED (INCLUDING GUARDRAIL, SIGNAGE, AND RPMS).	10/15/2024	\$1,000,000	\$22,500

**PN 140 - SHORT-TERM HOURLY CLOSURE WINDOW CONTRACT**

THE CONTRACTOR HAS THE NUMBER OF HOURS DESIGNATED IN THE SHORT-TERM HOURLY CLOSURE WINDOW CONTRACT TABLE (TABLE) TO COMPLETE ALL ITEMS OF CRITICAL WORK AS DEFINED IN THE TABLE. THE TABLE IS LOCATED BELOW. COMPLETION OF THE CRITICAL WORK IS DEFINED AS HAVING THE DESIGNATED WORK COMPLETED AND THE IMPACTED ROADWAY SECTION OPEN TO UNRESTRICTED TRAFFIC; ALL TRAFFIC LANES BEING AVAILABLE FOR USE AT THEIR REQUIRED WIDTH WITH SAFETY FEATURES INSTALLED. PRIOR TO INITIATING THE CRITICAL WORK, THE CONTRACTOR AND PROJECT ENGINEER MUST MUTUALLY REVIEW AND AGREE TO THE APPROPRIATENESS OF THE WEATHER FORECAST. A COPY OF THE WEATHER FORECAST SHALL BE KEPT IN THE PROJECT RECORD. THE CRITICAL WORK MAY NEED RESCHEDULED. THE CONTRACTOR WILL BE SUBJECT TO HOURLY DISINCENTIVES, AS IDENTIFIED, IF THE CRITICAL WORK IS NOT COMPLETED WITHIN THE DURATION DESIGNATED IN THE TABLE. IF THE CRITICAL WORK IS INITIATED, THE CONTRACTOR SHALL REMAIN REASONABLY ONSITE DURING A WEATHER EVENT AND SHALL RESUME WORK IMMEDIATELY FOLLOWING THE CESSATION OF AN IMPACTING WEATHER EVENT. HOURLY TIME EXTENSIONS FOR WEATHER-SENSITIVE CRITICAL WORK THAT HAS BEEN IMPACTED BY WEATHER WILL ONLY BE FOR THE DURATION OF THE ACTUAL UNANTICIPATED WEATHER EVENT AND THE DURATION OF ANY SUBSEQUENT NECESSARY WEATHER-CAUSED REMEDIATION WORK. THE CONTRACTOR MUST IMMEDIATELY AND ACTIVELY PURSUE ALL REMEDIATION WORK. TIME EXTENSIONS WILL BE CALCULATED IN HOURS AND ON AN HOUR-FOR-HOUR BASIS FOR PORTIONS THEREOF. DISINCENTIVES WILL BE WAIVED FOR THE DURATION OF ANY UNANTICIPATED WEATHER IMPACTS AND FOR THE DURATION NECESSARY TO PERFORM REMEDIATION WORK CAUSED BY UNANTICIPATED WEATHER. WEATHER DELAY DURATION (I.E. "DOWN-TIME") IS NON-COMPENSABLE FOR EQUIPMENT AND SUPERVISORY LABOR. NON-SUPERVISORY CRAFT HOURLY LABOR FORCES MAY BE COMPENSABLE, WITHOUT MARKUP ON THE WAGES AND BENEFITS, IF LABOR FORCES CANNOT REASONABLY BE DISMISSED FROM THE PROJECT SITE DURING THE WEATHER IMPACT. THE CONTRACTOR WILL BE COMPENSATED FOR NECESSARY REMEDIATION WORK CAUSED BY UNANTICIPATED WEATHER.

SHORT-TERM HOURLY CLOSURE WINDOW CONTRACT TABLE		
DESCRIPTION OF CRITICAL WORK	HOURS TO COMPLETE	DISINCENTIVE \$ PER HOUR
SINGLE LANE CLOSURE OF RAMP H (SR-161W TO I-270S) BETWEEN THE HOURS OF 9 PM FRIDAY THROUGH 5AM MONDAY TO PERFORM ALL WORK ASSOCIATED WITH PRE-PHASE 1A	56 HOURS	\$3,000

SHEET NO.	STATION TO STATION	ITEM DESCRIPTION																				
		614	614	614	614	614	614	614	642	622	622	411	615	251	606	606	615	614	614	614	614	
		WORK ZONE IMPACT ATTENUATOR, 24" WIDE HAZARDS, (UNIDIRECTIONAL)	WORK ZONE EDGE LINE, CLASS I, 6", 807 PAINT (WHITE)	WORK ZONE EDGE LINE, CLASS I, 6", 807 PAINT (YELLOW)	WORK ZONE LANE LINE, CLASS I, 6", 807 PAINT	WORK ZONE CHANNELIZING LINE, CLASS I, 12", 807 PAINT	WORK ZONE DOTTED LINE, CLASS I, 6", 807 PAINT	LANE REDUCTION ARROW, TYPE 1	PORTABLE BARRIER, UNANCHORED		PORTABLE BARRIER, "Y" CONNECTOR	STABILIZED CRUSHED AGGREGATE	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A	PARTIAL DEPTH PAVEMENT REPAIR (441)	GUARDRAIL, TYPE MGS	ANCHOR ASSEMBLY, MGS TYPE E	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN	WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT(WHITE)	WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT(YELLOW)		WORK ZONE LANE LINE, CLASS I, 4", 642 PAINT	WORK ZONE CHANNELIZING LINE, CLASS I, 8", 642 PAINT
		EACH	FT	FT	FT	FT	FT	EACH	FT		EACH	CY	SY	SY	FT	EACH	SY	FT	FT		FT	FT
	<b>IR 270</b>																					
	<b>PHASE 4B</b>																					
120	600+00.00 TO 628+50.00	1	1183	1281					2520		1											
	<b>US 62 (JOHNSTOWN RD)</b>																					
80	61+50.00 TO 73+50.00	2							716									1334	1334		1334	494
	<b>HAMILTON RD</b>																					
81	163+50.00 TO 176+00.00	2							465													
<b>SUBTOTAL</b>		<b>5</b>	<b>1183</b>	<b>1281</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3701</b>		<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1334</b>	<b>1334</b>		<b>1334</b>	<b>500</b>
<b>TOTALS CARRIED FROM PREVIOUS SHEET</b>		<b>27</b>	<b>112009</b>	<b>114194</b>	<b>135918</b>	<b>60396</b>	<b>12114</b>	<b>4</b>	<b>94641</b>		<b>5</b>	<b>1605</b>	<b>222</b>	<b>610</b>	<b>137.5</b>	<b>1</b>	<b>1757</b>	<b>0</b>	<b>0</b>		<b>0</b>	<b>0</b>
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>		<b>32</b>	<b>43.31 MI</b>	<b>25.75 MI</b>	<b>60396</b>	<b>12114</b>	<b>4</b>	<b>98342</b>		<b>6</b>	<b>1605</b>	<b>222</b>	<b>610</b>	<b>137.5</b>	<b>1</b>	<b>1757</b>	<b>0.51 MI</b>				<b>0.26 MI</b>	<b>500</b>

MAINTENANCE OF TRAFFIC SUBSUMMARY

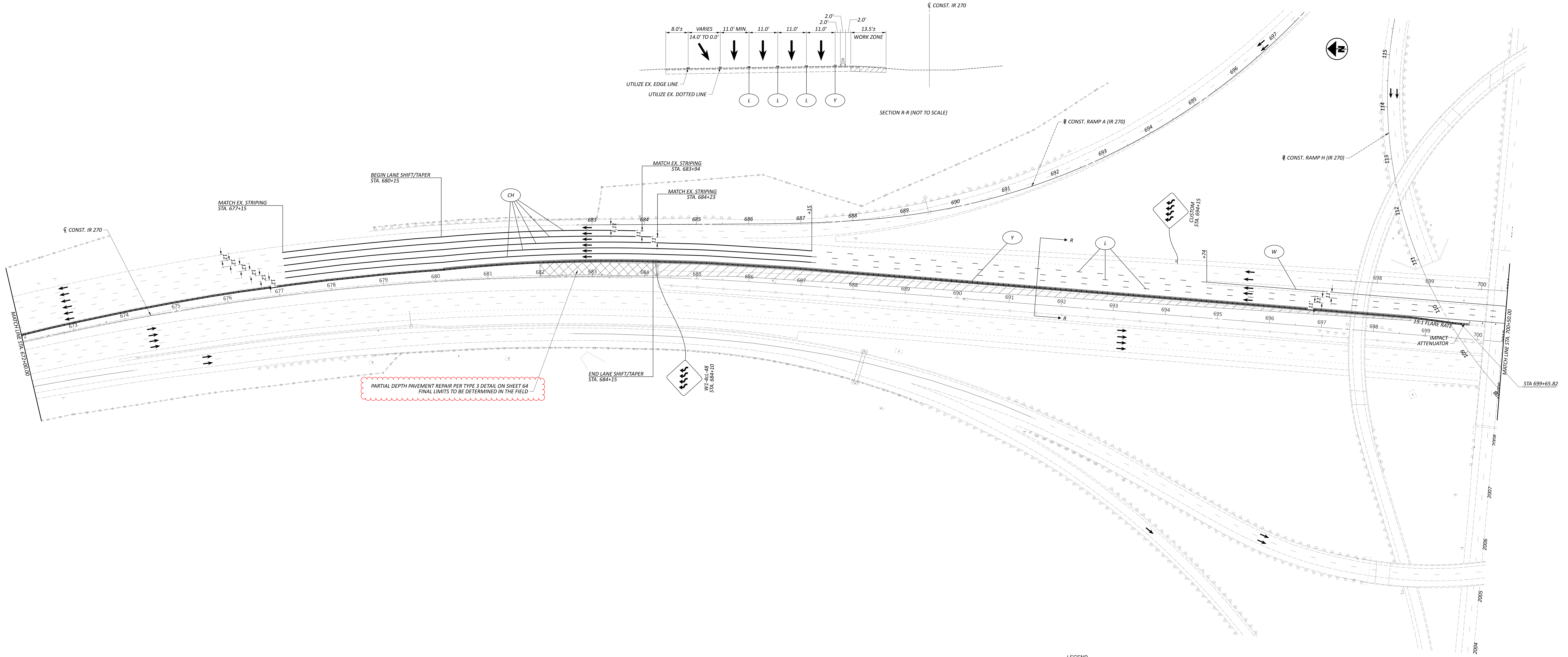
DESIGN AGENCY  
  
**E.L. ROBINSON**  
 ENGINEERING  
 1468 West 9th St, Suite 800  
 Cleveland, Ohio  
 950 Goodale Blvd, Suite 180  
 Grandview Heights, Ohio

DESIGNER  
**SMB**

REVIEWER  
**MJC 02/10/23**

PROJECT ID  
**116322**

SHEET TOTAL  
**79 | 846**




**LEGEND**

	WORK ZONE		ITEM 614 - WORK ZONE EDGE LINE, WHITE, CLASS I, 807 PAINT		PROPOSED PAVEMENT COMPLETED PRIOR TO THE START OF THIS PHASE
	CONSTRUCTION BARREL		ITEM 614 - WORK ZONE EDGE LINE, YELLOW, CLASS I, 807 PAINT		TEMPORARY PAVEMENT FOR MAINTAINING TRAFFIC
	DIRECTION OF TRAVEL		ITEM 614 - WORK LANE LINE, CLASS I, 807 PAINT		
	TYPE 3 BARRICADE		ITEM 614 - WORK ZONE CHANNELIZING LINE, CLASS I, 807 PAINT		
	PORTABLE BARRIER		ITEM 614 - WORK ZONE DOTTED LINE, CLASS I, 807 PAINT		

SHEET NUM.													PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.
54	55	57	59		79	135	140	151	157	397	398	509	01/NHS/03	EXT	TOTAL				
LS									3				LS	201	11000	LS		CLEARING AND GRUBBING	
								58,139		54	24		3	202	20010	3	EACH	HEADWALL REMOVED	
										43			58,217	202	23000	58,217	SY	PAVEMENT REMOVED	
										43			43	202	30600	43	SY	CONCRETE MEDIAN REMOVED	
					2,940						44		2,984	202	30700	2,984	FT	CONCRETE BARRIER REMOVED	
					285					67			352	202	32000	352	FT	CURB REMOVED	
									2,997				2,997	202	35100	2,997	FT	PIPE REMOVED, 24" AND UNDER	
									1,042				1,042	202	35200	1,042	FT	PIPE REMOVED, OVER 24"	
					10,185								10,185	202	38000	10,185	FT	GUARDRAIL REMOVED	
					2,010								2,010	202	38300	2,010	FT	GUARDRAIL REMOVED, BARRIER DESIGN	
					42								42	202	42206	42	EACH	ANCHOR ASSEMBLY REMOVED	
					13								13	202	42210	13	EACH	ANCHOR ASSEMBLY REMOVED, BARRIER DESIGN	
					16								16	202	47000	16	EACH	BRIDGE TERMINAL ASSEMBLY REMOVED	
					2								2	202	47800	2	EACH	IMPACT ATTENUATOR REMOVED	
					18,857								18,857	202	48001	18,857	FT	CABLE BARRIER REMOVED, AS PER PLAN	55
									8				8	202	58000	8	EACH	MANHOLE REMOVED	
									46				46	202	58100	46	EACH	CATCH BASIN REMOVED	
									3				3	202	58200	3	EACH	INLET REMOVED	
		500											500	SPECIAL	20270110	500	FT	PIPE CLEANOUT, 24" AND UNDER	57
		100											100	SPECIAL	20270120	100	FT	PIPE CLEANOUT, 27" TO 48"	57
		100											100	SPECIAL	20270130	100	FT	PIPE CLEANOUT OVER 48"	57
					963								963	202	75000	963	FT	FENCE REMOVED	
												1,118	1,118	SPECIAL	20275711	1,118	FT	EXISTING CONDUIT CLEANED, AS PER PLAN	506
					1								1	202	98100	1	EACH	REMOVAL MISC.: EX. TRAFFIC EQUIPMENT	56
		1											1	202	98100	1	EACH	REMOVAL MISC.: INSPECTION WELL	57
		50											50	202	98200	50	FT	REMOVAL MISC.: CONDUIT	57
									64				64	202	98200	64	FT	REMOVAL MISC.: SLOTTED DRAIN	57
												14,301	14,301	202	98200	14,301	FT	REMOVAL MISC.: FIBER OPTIC CABLE	506
	119,811												119,811	203	10000	119,811	CY	EXCAVATION	
	18,223												18,223	203	20000	18,223	CY	EMBANKMENT	
		5											5	203	20001	5	CY	EMBANKMENT, AS PER PLAN	56
										97	24		121	204	10000	121	SY	SUBGRADE COMPACTION	
									1	1			2	204	45000	2	HOUR	PROOF ROLLING	
						28							28	209	15000	28	STA	RESHAPING UNDER GUARDRAIL	
								87					87	209	60200	87	STA	LINEAR GRADING	
					1,605								1,605	411	10000	1,605	CY	STABILIZED CRUSHED AGGREGATE	
					137.5		17,629						17,766.5	606	15050	17,766.5	FT	GUARDRAIL, TYPE MGS	
							175						175	606	15150	175	FT	GUARDRAIL, TYPE MGS HALF POST SPACING	
							536						536	606	15550	536	FT	GUARDRAIL, BARRIER DESIGN, TYPE MGS	
							1						1	606	26050	1	EACH	ANCHOR ASSEMBLY, MGS TYPE B	
					1		39						40	606	26150	40	EACH	ANCHOR ASSEMBLY, MGS TYPE E, MASH 2016	
							28						28	606	26550	28	EACH	ANCHOR ASSEMBLY, MGS TYPE T	
							20						20	606	35002	20	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1	
							2						2	606	35006	2	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1, BARRIER DESIGN	
							8						8	606	35102	8	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2	
							1						1	606	60012	1	EACH	IMPACT ATTENUATOR, TYPE 1 (BIDIRECTIONAL)	
							1						1	606	60022	1	EACH	IMPACT ATTENUATOR, TYPE 2 (UNIDIRECTIONAL) 60 MPH, 36" WIDE	
							1						1	606	60022	1	EACH	IMPACT ATTENUATOR, TYPE 2 (UNIDIRECTIONAL) 70 MPH, 24" WIDE	
							1						1	606	60028	1	EACH	IMPACT ATTENUATOR, TYPE 2 (BIDIRECTIONAL) 70 MPH, 24" WIDE	
							1,000						1,000	607	23000	1,000	FT	FENCE, TYPE CLT	
							150						150	607	35000	150	FT	FENCE REMOVED AND REBUILT	
							966						966	607	70000	966	FT	FENCELINE SEEDING AND MULCHING	
							3,416						3,416	622	10060	3,416	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE B	
											44		44	622	10061	44	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE B, AS PER PLAN	398
							5,644						5,644	622	10120	5,644	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE C	
							458						458	622	10121	458	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE C, AS PER PLAN	56
							60						60	622	10121	60	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE C, AS PER PLAN 1	412


GENERAL SUMMARY

DESIGN AGENCY  
  
 DESIGNER  
 VLE  
 REVIEWER  
 MJL 02/10/23  
 PROJECT ID  
 116322  
 SHEET TOTAL  
 122 846

SHEET NUM.												PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.
64	422	435	438	440	443	485						01/NHS/03	EXT	TOTAL				
<b>TRAFFIC CONTROL (CONT.)</b>																		
				1								1	630	72410	1	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-15.116, DESIGN 1	
				8								8	630	72420	8	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-15.116, DESIGN 2	
					35							35	630	79611	35	EACH	SIGN SUPPORT ASSEMBLY, BARRIER MOUNTED, AS PER PLAN	
					1,290.8							1,290.8	630	80100	1,290.8	SF	SIGN, FLAT SHEET	
					596							596	630	80200	596	SF	SIGN, GROUND MOUNTED EXTRUSHEET	
				8,629								8,629	630	80224	8,629	SF	SIGN, OVERHEAD EXTRUSHEET	
				14								14	630	84010	14	EACH	CONCRETE BARRIER MEDIAN OVERHEAD SIGN SUPPORT FOUNDATION, TYPE TC-21.50	
					10							10	630	84500	10	EACH	GROUND MOUNTED STRUCTURAL BEAM SUPPORT FOUNDATION	
				26								26	630	84510	26	EACH	RIGID OVERHEAD SIGN SUPPORT FOUNDATION	
				2								2	630	84511	2	EACH	RIGID OVERHEAD SIGN SUPPORT FOUNDATION, AS PER PLAN	
			110									110	630	84900	110	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
					2							2	630	85100	2	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	
			33									33	630	85400	33	EACH	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DISPOSAL	
			111									111	630	86002	111	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
			42									42	630	86102	42	EACH	REMOVAL OF GROUND MOUNTED STRUCTURAL BEAM SUPPORT AND DISPOSAL	
			9									9	630	86272	9	EACH	REMOVAL OF GROUND MOUNTED PIPE SUPPORT AND DISPOSAL	
			50									50	630	87400	50	EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL	
				1								1	630	89100	1	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT AND REERECTION, TYPE TC-12.30	
				15								15	630	89706	15	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TYPE TC-12.30	
				11								11	630	89804	11	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TYPE TC-15.115	
					1							1	630	97700	1	EACH	SIGNING, MISC.: SAFE SIGN BREAKAWAY SYSTEM	
												3	631	94490	3	EACH	REMOVAL, MISC.: DYNAMIC MESSAGE SIGN	
		271										271	644	00720	271	FT	CHEVRON MARKING	
		13										13	644	01350	13	EACH	LANE REDUCTION ARROW	
2												2	644	01410	2	EACH	WORD ON PAVEMENT, 96"	
8												8	644	50100	8	EACH	PAVEMENT MARKING, MISC.: LANE ARROW, 72"	
1,343												1,343	644	50300	1,343	FT	PAVEMENT MARKING, MISC.: EDGE LINE, 5", WHITE	
1,343												1,343	644	50300	1,343	FT	PAVEMENT MARKING, MISC.: EDGE LINE, 5", YELLOW	
1,343												1,343	644	50300	1,343	FT	PAVEMENT MARKING, MISC.: LANE LINE, 5"	
1,219												1,219	644	50300	1,219	FT	PAVEMENT MARKING, MISC.: CHANNELIZING LINE, 10", WHITE	
72												72	644	50300	72	FT	PAVEMENT MARKING, MISC.: STOP LINE, 20", WHITE	
	8											8	647	21012	8	EACH	SPEED MEASUREMENT MARKING, TYPE B125	
		0.87										0.87	807	12010	0.87	MILE	WET REFLECTIVE EPOXY PAVEMENT MARKING, EDGE LINE, 6"	
		1.06										1.06	807	12110	1.06	MILE	WET REFLECTIVE EPOXY PAVEMENT MARKING, LANE LINE, 6"	
		33.88										33.88	807	13010	33.88	MILE	WET REFLECTIVE SPRAY THERMOPLASTIC PAVEMENT MARKING, EDGE LINE, 6"	
		39.83										39.83	807	13110	39.83	MILE	WET REFLECTIVE SPRAY THERMOPLASTIC PAVEMENT MARKING, LANE LINE, 6"	
		12,993										12,993	807	13310	12,993	FT	WET REFLECTIVE SPRAY THERMOPLASTIC PAVEMENT MARKING, CHANNELIZING LINE, 12"	
		14,600										14,600	807	13410	14,600	FT	WET REFLECTIVE SPRAY THERMOPLASTIC PAVEMENT MARKING, DOTTED LINE, 6"	
		5,419										5,419	807	13430	5,419	FT	WET REFLECTIVE SPRAY THERMOPLASTIC PAVEMENT MARKING, DOTTED LINE, 12"	
		73.71										73.71	850	10010	73.71	MILE	GROOVING FOR 6" RECESSED PAVEMENT MARKING, (ASPHALT)	
		14,600										14,600	850	10110	14,600	FT	GROOVING FOR 6" RECESSED PAVEMENT MARKING, (ASPHALT)	
		18,412										18,412	850	10130	18,412	FT	GROOVING FOR 12" RECESSED PAVEMENT MARKING, (ASPHALT)	
		1.93										1.93	850	20010	1.93	MILE	GROOVING FOR 6" RECESSED PAVEMENT MARKING, (CONCRETE)	
<b>TRAFFIC SIGNALS</b>																		
						2						2	625	00450	2	EACH	CONNECTION, FUSED PULL APART	
						2						2	625	00460	2	EACH	CONNECTION, UNFUSED PULL APART	
						2						2	625	00480	2	EACH	CONNECTION, UNFUSED PERMANENT	
					12,321							12,321	625	22990	12,321	FT	NO. 6 AWG 600 VOLT DISTRIBUTION CABLE	
					1,512							1,512	625	23000	1,512	FT	NO. 4 AWG 600 VOLT DISTRIBUTION CABLE	
						1,641						1,641	625	23100	1,641	FT	NO. 2 AWG 600 VOLT DISTRIBUTION CABLE	
					435							435	625	23308	435	FT	DISTRIBUTION CABLE, MISC.: 1 CONDUCTOR, NO. 12 AWG	
					1,092							1,092	625	23308	1,092	FT	DISTRIBUTION CABLE, MISC.: 1 CONDUCTOR, NO. 3 AWG	
						783						783	625	23308	783	FT	DISTRIBUTION CABLE, MISC.: 1 CONDUCTOR, NO. 1/2 AWG	
						109						109	625	25400	109	FT	CONDUIT, 2", 725.04	
					2,326							2,326	625	25408	2,326	FT	CONDUIT, 2", 725.051	
					175							175	625	25908	175	FT	CONDUIT, JACKED OR DRILLED, 725.052, 2"	
					162							162	625	25909	162	FT	CONDUIT, JACKED OR DRILLED, 725.052, AS PER PLAN, 2"	
					4,103							4,103	625	29010	4,103	FT	TRENCH, 30" DEEP	

GENERAL SUMMARY

DESIGN AGENCY



DESIGNER  
VLE

REVIEWER  
MJL 02/10/23

PROJECT ID  
116322


SHEET TOTAL  
127 846





SHEET NO.	REFERENCE NO.	LOCATION	STATION		SIDE	621		644		807		807		807		807		807		850		850		850		850				
			FROM	TO		EACH	EACH	EACH	EACH	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	
448	ELY2	IR 270	696+12	703+28	LT							716									716									
448	ELY3	IR 270	685+50	714+00	LT							2,850										2,850								
448	ELY4	RAMP H (IR 270)	113+00	114+00	RT							100										100								
448	LL1	RAMP A (IR 270)	685+50	695+00	RT																	950								
448	LL2	RAMP A (IR 270)	685+50	695+00	RT																	950								
448	LL3	IR 270	696+12	703+28	LT																	716								
448	LL4	IR 270	685+50	688+48	LT																	298								
448	LL5	IR 270	685+50	714+00	LT																	2,850								
448	LL6	IR 270	685+50	714+00	LT																	2,850								
449	ELW1	SR 161	714+00	716+75	LT																	275								
449	ELY1	SR 161	714+00	716+75	LT																	275								
449	LL1	SR 161	714+00	716+75	LT																	275								
449	LL2	SR 161	714+00	716+75	LT																	275								
450	CH1	RAMP A/WB CD	701+23.2	120+18.8	RT																	169					169			
450	CH2	WB CD (SR 161)	118+50.8	120+18.8	RT/CL																	168					168			
450	CH3	WB CD (SR 161)	129+28.8	133+62	RT																	433					433			
450	CH4	WB CD (SR 161)	129+28.8	133+63	RT																	434					434			
450	CH5	WB CD (SR 161)	140+50	141+77	LT																	130					130			
450	CM1	WB CD (SR 161)	118+50.8	120+18.8	LT																	78								
450	DL1	RAMP H/WB CD	114+00	129+28.8	RT																									
450	DL2	WB CD (SR 161)	134+50	140+50	LT																									
450	DL3	EB CD (SR 161)	235+60	241+32	RT																									
450	ELW1	RAMP A/WB CD	695+00	141+77	LT																									
450	ELW2	RAMP H (SR 161)	116+00	118+50.8	CL																									
450	ELW3	EB CD (SR 161)	229+66.24	241+32	RT																									
450	ELY1	RAMP A (SR 161)	695+00	701+23.2	RT																									
450	ELY2	RAMP H/WB CD	114+00	133+63	RT																									
450	ELY3	WB CD (SR 161)	133+65	141+77	RT																									
450	ELY4	EB CD (SR 161)	229+66.24	241+32	LT																									
450	LL1	RAMP A/WB CD	695+00	141+77	RT/LT																									
450	LL2	RAMP A/WB CD	695+00	141+77	RT/LT																									
450	LL3	RAMP H/WB CD	116+00	141+77	RT																									
450	LL4	EB CD (SR 161)	229+66.24	241+32	LT																									
450	LL5	EB CD (SR 161)	229+66.24	241+32	RT																									
450	LL6	EB CD (SR 161)	229+66.24	241+32	RT																									
450	LA1	RAMP H (SR 161)	119+50		RT																									
450	LA2	RAMP H (SR 161)	125+50		RT																									
451	CH1	WB CD (SR 161)	142+56	144+65	LT																									
451	CH2	WB CD (SR 161)	141+77	144+67	LT																									
451	CH3	WB CD (SR 161)	167+47.6	172+10	RT																									
451	CH4	WB CD (SR 161)	169+93	172+10	RT																									
451	CH5	WB CD (SR 161)	170+43	172+10	RT																									
451	CH6	WB CD (SR 161)	170+43	172+10	RT																									
451	CH7	EB CD (SR 161)	243+25	244+67	RT																									
451	CH8	EB CD (SR 161)	243+25	244+66	RT																									
451	CM1	WB CD (SR 161)	170+43	172+10	RT																									
451	DL1	EB CD (SR 161)	241+32	243+25	RT																									
451	ELW1	WB CD (SR 161)	141+77	144+63	LT																									
451	ELW2	WB CD (SR 161)	144+67	154+97	LT																									
451	ELW3	WB CD (SR 161)	154+97	158+15	LT																									
451	ELW4	WB CD (SR 161)	158+15	167+46.8	LT																									
451	ELW5	EB CD (SR 161)	241+32	244+63	RT																									
451	ELW6	EB CD (SR 161)	244+67	252+37	RT																									
451	ELW7	EB CD (SR 161)	252+37	255+64	RT																									
451	ELW8	EB CD (SR 161)	255+64	272+19	RT																									
451	ELY1	WB CD (SR 161)	141+77	154+83	RT																									
451	ELY2	WB CD (SR 161)	154+83	157+86	RT																									
451	ELY3	WB CD (SR 161)	157+86	169+93	RT																									
451	ELY4	EB CD (SR 161)	241+32	252+64	LT																									
451	ELY5	EB CD (SR 161)	252+64	255+97	LT																									
TOTALS CARRIED TO SUB-SUMMARY - SHEET 435							52	78	173		2	138		9,642	12,150	21,131	1,795	2,894	1,334		545	636	0		42,923	2,894	3,129	1,181		

TRAFFIC CONTROL SUBSUMMARY

DESIGN AGENCY  
  
WSP USA, Inc.  
2 Miranova Pl,  
Suite 450  
Columbus, OH 43215

DESIGNER  
EAT

REVIEWER  
JRL 02/10/23

PROJECT ID  
116322

SHEET TOTAL  
430 846



**STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS:**

REFER TO THE FOLLOWING STANDARD BRIDGE AND ROADWAY DRAWINGS:

- AS-1-15 REVISED 07-17-15
- AS-2-15 REVISED 01-18-19
- EXJ-4-87 REVISED 07-15-22
- GSD-1-19 REVISED 01-15-21
- RM-4.2 REVISED 04-17-20
- SBR-1-20 REVISED 07-17-20

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATION:  
 800 DATED SEE PROPOSAL

**DESIGN SPECIFICATIONS:**

THE PROPOSED MODIFICATIONS FOR THIS CONFORMS TO THE 9th EDITION OF THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2020, AND THE ODOT BRIDGE DESIGN MANUAL, 2020.

**OPERATIONAL IMPORTANCE:**

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

**DESIGN LOADING INCLUDES:**

THIS BRIDGE RECEIVED APPROVED DESIGN EXCEPTIONS FOR SHOULDER WIDTH AND LANE WIDTH.

DECK: HL-93 & 0.060 KSF FUTURE WEARING SURFACE (FWS)

SUPERSTRUCTURE: EXISTING BEAMS - AS LOAD RATED (HS20-44 & ALTERNATE MILITARY LOADING) & 0.060 KSF FWS

SUBSTRUCTURE: EXISTING SUBSTRUCTURE & FOUNDATION MS18 CASE 1 & ALTERNATE MILITARY LOADING (LOADING FROM EXISTING PLANS)

**DESIGN DATA:**

CONCRETE CLASS QC2 - COMPRESSIVE STRENGTH 4.5 KSI (SUPERSTRUCTURE)

CONCRETE CLASS QC1 - COMPRESSIVE STRENGTH 4.0 KSI (SUBSTRUCTURE)

**CONCRETE REINFORCEMENT:**

EPOXY COATED STEEL REINFORCEMENT - MINIMUM YIELD STRENGTH 60-KSI (RAILING, DECK, BACKWALLS, AND WINGWALLS)

GFRP REINFORCEMENT CMS 705.28 - MEAN TENSILE MODULUS OF ELASTICITY LIMIT (ASTM D7957 TABLE 1) SHALL MEET OR EXCEED 8700 KSI (RAILING)

STRUCTURAL STEEL - ASTM A709 GRADE 50 - YIELD STRENGTH 50.0 KSI

**MONOLITHIC WEARING SURFACE:**

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

**UTILITY LINES:**

FOR THE LIST OF UTILITIES IN THE PROJECT AREA SEE PROJECT GENERAL NOTES, SHEET 54.

**PROPOSED WORK:**

1. REMOVAL OF THE RIGHT RAILING, AND REMOVAL OF THE RIGHT SIDE OF THE EXISTING DECK, BACKWALLS, EXPANSION JOINTS, AND PORTIONS OF THE WINGWALLS AS DETAILED IN THE PLANS.
2. CONSTRUCTION OF THE RIGHT RAIL, AND THE RIGHT SIDE OF THE DECK, BACKWALLS, AND WINGWALLS TO MATCH THE MODIFIED BRIDGE TRANSVERSE SECTION AS DETAILED IN THE PLANS.
3. PLACE ASPHALT OVERLAY ON REAR RIGHT AND FORWARD RIGHT APPROACH SLAB. (ASPHALT OVERLAY DETAILS AND PAYMENT SHOWN WITH THE ROADWAY DETAILS AND QUANTITIES.)
4. SEALING OF CONCRETE SURFACES.

**PLANS OF EXISTING BRIDGE**

METRIC CONSTRUCTION PLANS FOR THE EXISTING BRIDGE ARE ON FILE AT THE OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 6 OFFICE, 400 EAST WILLIAM STREET, DELAWARE, OH 43015 AND ARE AVAILABLE FOR REFERENCE.

**EXISTING STRUCTURE VERIFICATION:**

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM METRIC PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO C&MS SECTIONS 102.05, AND 105.02. BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS THAT HAVE BEEN VERIFIED IN THE FIELD.

**PROTECTION OF WATERWAY**

THE CONTRACTOR SHALL PREVENT DEBRIS AND CONSTRUCTION MATERIAL FROM ENTERING THE BIG WALNUT CREEK WATERWAY BOTH DURING REMOVAL OPERATIONS AND DURING CONSTRUCTION OPERATIONS. DURING REMOVAL OPERATIONS, THE CONTRACTOR SHALL PLACE TEMPORARY PROTECTION BELOW THE DECK TO PREVENT DEBRIS FROM FALLING INTO THE BIG WALNUT CREEK WATERWAY, IN BOTH THE INTERIOR BAY AND THE CANTILEVER SECTION WHERE THE DECK IS BEING REMOVED. THE COST FOR ALL WORK ASSOCIATED WITH THIS REQUIREMENT SHALL BE INCLUDED WITH THE LUMP SUM CONTRACT PRICE FOR ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

**ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN:**

**DESCRIPTION:**

THIS WORK CONSISTS OF THE REMOVAL OF CONCRETE DECKS, CONCRETE BRIDGE RAILINGS, DECK JOINTS AND OTHER APPURTENANCES FROM STEEL SUPPORTING SYSTEMS (BEAMS, GIRDERS, CROSS-FRAMES, ETC.). THE PROVISIONS OF ITEM 202 APPLY EXCEPT AS SPECIFIED BY THE FOLLOWING NOTES. PERFORM WORK CAREFULLY DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. THE DEPARTMENT WILL NOT PERMIT THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED. SUBMIT CONSTRUCTION PLANS ACCORDING TO C&MS 501.05.

**REMOVAL METHODS:**

THE CONTRACTOR MAY REMOVE CONCRETE BY MEANS OF CUTTING FOR THE REMOVAL OF THE BRIDGE RAILING ONLY. FOR ALL OTHER LOCATIONS ON THIS STRUCTURE, INCLUDING APPROACH RAILINGS, THE CONTRACTOR MAY ONLY REMOVED CONCRETE BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS OVER STRUCTURAL MEMBERS (STEEL BEAM STEEL GIRDER, ETC.), THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS OF THE DECK TO BE PRESERVED. OUTSIDE THE 18-IN LIMIT, THE CONTRACTOR MAY USE HAMMERS NOT EXCEEDING 90 POUNDS UPON THE APPROVAL OF THE ENGINEER. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH CONCRETE REINFORCEMENT THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE. REMOVAL METHODS OVER STRUCTURAL MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND PREVENT NICKING OR GOUGING THE PRIMARY STRUCTURAL MEMBERS. DUE TO THE POSSIBLE PRESENCE OF ATTACHMENTS (E.G., FINISHING MACHINE, SCUPPER AND FORM SUPPORTS, ETC.) TO EXISTING STRUCTURAL MEMBERS, PERFORM WORK CAREFULLY DURING DECK REMOVAL TO AVOID DAMAGING STRUCTURAL MEMBERS THAT ARE TO REMAIN. REPLACE OR REPAIR STRUCTURAL MEMBERS DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE ENGINEER. OBTAIN THE ENGINEER'S APPROVAL BEFORE PERFORMING REPAIR.

**DECK REMOVALS - COMPOSITE DECK DESIGNS STEEL SUPERSTRUCTURES:**

DUE TO THE PRESENCE OF WELDED STUDS TO THE EXISTING STRUCTURAL STEEL, SUBMIT A DETAILED PROCEDURE OF THE DECK REMOVAL WITH THE ENGINEERED DRAWINGS ACCORDING TO C&MS 501.05. THE PROCEDURE SHALL INCLUDE ALL DETAILS, EQUIPMENT AND METHODS TO BE USED FOR REMOVAL OF THE CONCRETE OVER THE FLANGES AND AROUND THE STUDS. REPLACE OR REPAIR MAIN STEEL AND STUDS DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN ACCORDING TO C&MS 501.05.C TO THE ENGINEER TO REPLACE OR REPAIR STRUCTURAL STEEL AND STUDS DAMAGED BY THE REMOVAL OPERATIONS. THE DEPARTMENT WILL NOT PAY FOR DAMAGE REPAIRS.

**EXISTING WELDED ATTACHMENTS:**

REMOVE EXISTING WELDED ATTACHMENTS (E.G., FINISHING MACHINE AND FORM SUPPORTS; AND SUPPORTS FOR SCUPPERS AND BULB ANGLES WHICH ARE TO BE REMOVED) LOCATED IN THE DESIGNATED TENSION PORTIONS OF THE TOP FLANGES OF EXISTING STEEL MEMBERS AND GRIND THE FLANGE SURFACES SMOOTH. CAREFULLY GRIND PARALLEL TO THE FLANGES.

CUT LINE CONSTRUCTION JOINT PREPARATION: SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. LEAVE THE EXISTING CONCRETE REINFORCEMENT, IF REQUIRED IN THE PLANS, IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST, OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING STEEL REINFORCEMENT DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH BUT REMOVE ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

**SUBSTRUCTURE CONCRETE REMOVAL:**

REMOVE CONCRETE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. THE DEPARTMENT WILL NOT PERMIT HYDRAULIC HOE-RAM TYPE HAMMERS. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18-IN LIMIT, THE CONTRACTOR MAY USE HAMMERS NOT EXCEEDING 90 POUNDS UPON THE APPROVAL OF THE ENGINEER. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH CONCRETE REINFORCEMENT THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

**PROTECTION OF BIG WALNUT CREEK WATERWAY:**

THE CONTRACTOR SHALL PREVENT DEBRIS AND CONSTRUCTION MATERIAL FROM ENTERING THE BIG WALNUT CREEK WATERWAY BOTH DURING REMOVAL OPERATIONS AND DURING CONSTRUCTION OPERATIONS. DURING REMOVAL OPERATIONS, THE CONTRACTOR SHALL PLACE TEMPORARY PROTECTION BELOW THE DECK TO PREVENT DEBRIS FROM FALLING INTO THE BIG WALNUT CREEK WATERWAY, UNDER THE INTERIOR BAY AND UNDER THE CANTILEVER SECTION WHERE THE DECK AND RAILING ARE BEING REMOVED. THE TEMPORARY PROTECTION SYSTEM MAY BE SUPPORTED FROM THE GROUND BUT NO WORK OR MATERIAL SHALL BE PERFORMED WITHIN THE WATERWAY. THE TEMPORARY PROTECTION SYSTEM IS PERMITTED TO HANG FROM THE BRIDGE GIRDERS AND IS PERMITTED TO BE LOCATED BELOW THE BOTTOM FLANGES OF THE BRIDGE GIRDERS. AT LEAST 7 DAYS BEFORE INSTALLING TEMPORARY PROTECTION, SUBMIT A PROPOSED TEMPORARY PROTECTION DETAILS, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE ENGINEER. OBTAIN THE ENGINEER'S APPROVAL BEFORE INSTALLATION.

MEASUREMENT & PAYMENT: THE DEPARTMENT WILL MEASURE THE QUANTITY OF REMOVALS ON A LUMP SUM BASIS. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES OF REMOVALS AT THE CONTRACT PRICE FOR ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

**ITEM 509 - REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN:**

REPLACE ALL EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION. THE DEPARTMENT WILL MEASURE THE REPLACEMENT CONCRETE REINFORCEMENT BY THE NUMBER OF POUNDS ACCEPTED IN PLACE. REPLACE ALL EXISTING STEEL REINFORCEMENT BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND ARE DEEMED BY THE ENGINEER TO BE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS WITH NEW CONCRETE REINFORCEMENT OF THE SAME SIZE, COATING, AND MATERIAL AT NO COST TO THE DEPARTMENT.

**ITEM 510 - DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN**

A QUANTITY OF 10 EACH DOWEL HOLES HAVE BEEN INCLUDED FOR THE PURPOSES OF DOWELING IN REINFORCING STEEL INTO THE EXISTING CONCRETE SUBSTRUCTURE THAT ARE DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION.

**ITEM 511 - CLASS QC2 CONCRETE, BRIDGE DECK, AS PER PLAN**

ALL PROVISION OF CMS 511 SHALL APPLY WITH THE FOLLOWING ADDITIONS.

THE EXISTING TRANSVERSE REINFORCING STEEL BARS THAT ARE TO BE INCORPORATED IN THE NEW CONCRETE DECK WILL NEED TO BE FIELD BENT TO MATCH THE PROPOSED MODIFIED CROSS SLOPE. FIELD BEND EACH BAR TO CLOSELY MATCH THE PROPOSED TRANSVERSE REINFORCING STEEL BAR IT IS TO BE LAPPED WITH. BARS SHOULD NOT BE MORE THAN 1 INCH VERTICALLY OFFSET FROM THE PROPOSED BAR IT IS BEING LAPPED WITH. THE EXISTING BARS SHALL MAINTAIN THE MINIMUM CONCRETE COVER AS SHOWN IN THE PLANS.

ALL LABOR, MATERIAL, AND EQUIPMENT NECESSARY TO FIELD BEND THE EXISTING TRANSVERSE REINFORCING STEEL BARS SHALL BE CONSIDERED INCLUDED WITH AND CONSIDERED INCIDENTAL WITH THE PRICE BID FOR ITEM 511- CLASS QC2 CONCRETE, BRIDGE DECK, AS PER PLAN.

**DECK PLACEMENT DESIGN ASSUMPTIONS:**

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

AN EIGHT WHEEL FINISHING MACHINE WITH A MAXIMUM WHEEL LOAD OF 2.53 KIPS.

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

A MAXIMUM SPACING OF OVERHANG FALSEWORK BRACKETS OF 48 IN.

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

**DECK SLAB THICKNESS FOR CONCRETE QUANTITY:**

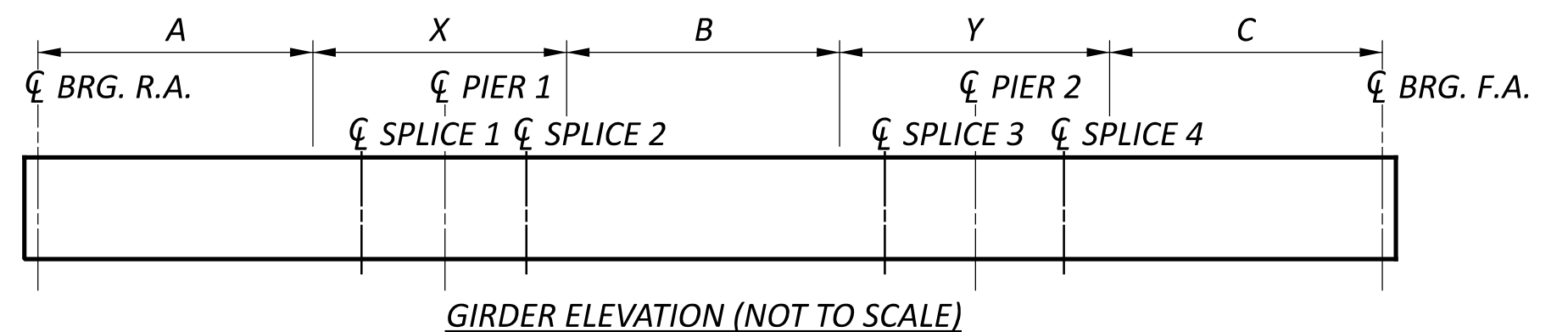
THE ESTIMATED QUANTITY OF DECK CONCRETE IS MEASURED ACCORDING TO C&MS 511. IN ADDITION TO THE DESIGN SLAB THICKNESS, THE QUANTITY INCLUDES A VARIABLE HAUNCH THICKNESS THAT PROVIDES AN ALLOWANCE FOR: VERTICAL GRADE ADJUSTMENT, BEAM CAMBER AND ADDITIONAL SACRIFICIAL HAUNCH THICKNESS.

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

THE COLOR OF THE URETHANE FINISH COAT OF THE EPOXY-URETHANE SEALER SHALL BE TINTED SO THE FINAL COLOR IS FEDERAL COLOR STANDARD NO. 17778 - LIGHT NEUTRAL AS SPECIFIED UNDER CMS 512.03-G.1.e.

**WELDED ATTACHMENTS**

WELD ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". DO NOT WELD ATTACHMENTS TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE AT LEAST 1" FROM EDGE OF FLANGE, BE NO MORE THAN 2" LONG, AND BE AT LEAST 1/4" FOR THICKNESSES UP TO 3/4" OR 5/16" FOR GREATER THAN 3/4" THICK. SEE BELOW FOR TENSION AND COMPRESSION AREAS DERIVED FROM THE EXISTING BRIDGE PLANS.



GIRDER	COMPRESSION AREAS			TENSION AREAS	
	A	B	C	X	Y
1	59'-10"	53'-2"	61'-1"	61'-7"	61'-10"
2	59'-9"	53'-0"	60'-11"	61'-7"	61'-10"
3	59'-7"	52'-9"	60'-9"	61'-7"	61'-10"
4	59'-5"	52'-7"	60'-6"	61'-7"	61'-10"
5	59'-4"	52'-4"	60'-4"	61'-7"	61'-10"
6	59'-2"	52'-2"	60'-2"	61'-7"	61'-10"

MADE BY: JOL		DATE: 11/29/2022		ESTIMATED QUANTITIES						STRUCTURAL FILE NUMBER: 2509539			
CHECKED BY: MJM		DATE: 12/9/2022		ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUT.	PIER	SUPER.	GEN.	REFERENCE SHEET NO.
202	11203	LUMP						PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN					GENERAL NOTES (1 OF 2)
509	10000	49,372	LB					EPOXY COATED REINFORCING STEEL	274		49,098		
509	20001	40	LB					REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN			40		GENERAL NOTES (1 OF 2)
509	30020	5,346	FT					NO. 4 GFRP DEFORMED BARS			5,346		
510	10001	10	EACH					DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN	10				GENERAL NOTES (1 OF 2)
511	34445	147	CY					CLASS QC2 CONCRETE, BRIDGE DECK, AS PER PLAN			147		GENERAL NOTES (1 OF 2)
511	34448	52	CY					CLASS QC2 CONCRETE, BRIDGE DECK (PARAPET)			52		
511	44110	2	CY					CLASS QC1 CONCRETE, ABUTMENT NOT INCLUDING FOOTING	2				
512	10100	379	SY					SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	21		358		
512	44450	11	SY					TYPE E WATERPROOFING	11				
513	10200	553	LB					STRUCTURAL STEEL MEMBERS, LEVEL UF			553		
514	00060	65	SF					FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT			65		
514	00067	65	SF					FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN			65		GENERAL NOTES (2 OF 2)
514	21001	LUMP						FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN					GENERAL NOTES (2 OF 2)
514	27702	1,014	EACH					FIELD PAINTING, MISC.: EPOXY COATING REPAIR OF EXISTING EPOXY COATED REINFORCING STEEL			1,014		GENERAL NOTES (2 OF 2)
516	11901	34	FT					HORIZONTAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN	34				
516	13600	27	SF					1" PREFORMED EXPANSION JOINT FILLER	27				
516	14600	74	FT					STRUCTURAL JOINT OR JOINT SEALER, MISC.: HOT APPLIED JOINT SEALER PER CMS 705.04	74				GENERAL NOTES (2 OF 2)

ESTIMATED QUANTITIES  
 BRIDGE NO. FRA-00161-16.620 A  
 CDW (SR 161) OVER BIG WALNUT CREEK

SFN	2509539
DESIGN AGENCY	
DESIGNER	CHECKER
MJM	LAH
REVIEWER	RER 02/10/23
PROJECT ID	116322
SUBSET	TOTAL
4	20
SHEET	TOTAL
591	846

MARK	MAT'RL TYPE	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS							
		TOTAL				A	B	C	D	E	R	INC	
<b>REAR ABUTMENT (60 KSI, EPOXY COATED)</b>													
RA501	ECSR	3	15'-6"	48	STR								
RA502	ECSR	2	14'-11"	31	STR								
RA601	ECSR	16	2'-5"	58	2	11"	11"	11"					
<b>SUBTOTAL</b>				137	ITEM 509 - EPOXY COATED REINFORCING STEEL								

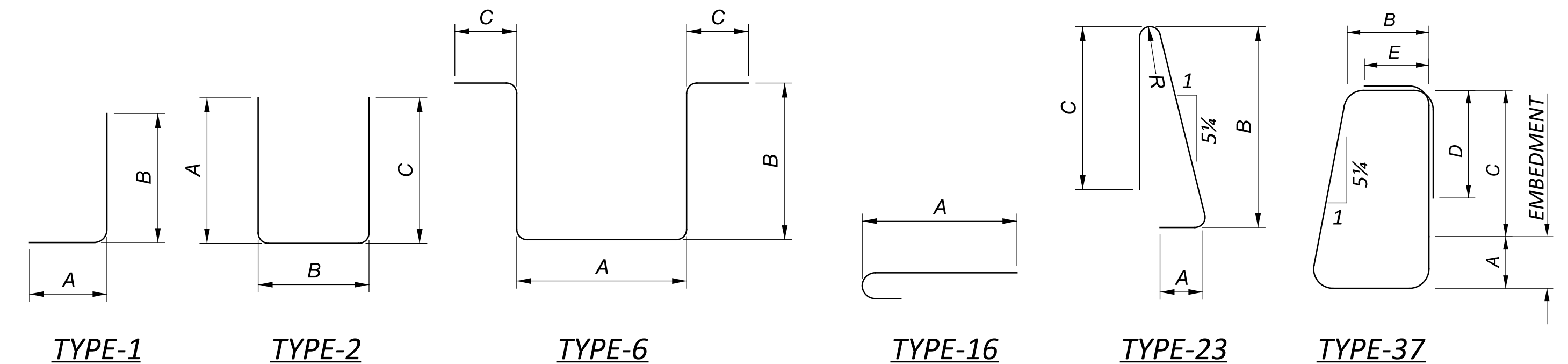
MARK	MAT'RL TYPE	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS							
		TOTAL				A	B	C	D	E	R	INC	
<b>FORWARD ABUTMENT (60 KSI, EPOXY COATED)</b>													
FA501	ECSR	3	15'-2"	47	STR								
FA502	ECSR	2	15'-4"	32	STR								
FA601	ECSR	16	2'-5"	58	2	11"	11"	11"					
<b>SUBTOTAL</b>				137	ITEM 509 - EPOXY COATED REINFORCING STEEL								

MARK	MAT'RL TYPE	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS							
		TOTAL				A	B	C	D	E	R	INC	
<b>SUPERSTRUCTURE (60 KSI, EPOXY COATED)</b>													
S401	ECSR	133	40'-0"	3,554	STR								
S402	ECSR	19	34'-6"	438	STR								
S403	ECSR	1 SER. OF 5	5'-3" TO 9'-0"	24	2	2'-8" TO 6'-5"	7" TO 7"	2'-2" TO 2'-2"					Incr A = 11 1/4" Incr B = 0" Incr C = 0"
S404	ECSR	501	9'-7"	3,207	2	7'-0"	7"	2'-2"					
S501	ECSR	147	40'-0"	6,133	STR								
S502	ECSR	21	34'-6"	756	STR								
S503	ECSR	108	20'-0"	2,253	STR								
S504	ECSR	505	7'-0"	3,687	6	1'-2"	1'-2"	2'-0"					
S601	ECSR	8	2'-6"	30	STR								
S602	ECSR	1 SER. OF 12	3'-4" TO 13'-10"	155	16	2'-8" TO 13'-2"							11 1/2"
S603	ECSR	1 SER. OF 12	2'-8" TO 13'-2"	143	STR								11 1/2"
S604	ECSR	494	14'-4"	10,635	16	13'-8"							
S605	ECSR	494	13'-8"	10,141	STR								
S606	ECSR	1 SER. OF 13	2'-9" TO 13'-6"	159	16	2'-1" TO 12'-10"							10 3/4"
S607	ECSR	1 SER. OF 13	2'-1" TO 12'-10"	146	STR								10 3/4"
S608	ECSR	8	2'-5"	29	STR								
<b>SUBTOTAL</b>				41,490	ITEM 509 - EPOXY COATED REINFORCING STEEL								

MARK	MAT'RL TYPE	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS							
		TOTAL				A	B	C	D	E	R	INC	
<b>RIGHT BRIDGE RAILING (60 KSI, EPOXY COATED)</b>													
R601	ECSR	35	8'-6"	447	23	1'-0"	3'-9"	3'-9"					2"
R602	ECSR	325	7'-0"	3,417	23	6"	3'-3"	3'-3"					2"
R603	ECSR	325	7'-4"	3,580	37	9"	9 1/2"	1'-5"	1'-0"	7"			
R604	ECSR	2 SER. OF 11	3'-6" TO 4'-4"	129	1	9"	2'-11" TO 3'-9"						1"
R605	ECSR	8	2'-11"	35	STR								
<b>SUBTOTAL</b>				7,608	ITEM 509 - EPOXY COATED REINFORCING STEEL								

MARK	MAT'RL TYPE	NUMBER	LENGTH	TOTAL LENGTH	TYPE	DIMENSIONS							
		TOTAL				A	B	C	D	E	R	INC	
<b>RIGHT BRIDGE RAILING (GFRP REINFORCEMENT)</b>													
R401G	GFRP	26	13'-6"	351'-0"	STR								
R402G	GFRP	4	15'-0"	60'-0"	STR								
R403G	GFRP	4	11'-3"	45'-0"	STR								
R404G	GFRP	77	40'-0"	3080'-0"	STR								
R405G	GFRP	11	24'-1"	264'-11"	STR								
R406G	GFRP	8	13'-5"	107'-4"	STR								
R407G	GFRP	108	10'-2"	1098'-0"	STR								
R408G	GFRP	11	8'-2"	89'-10"	STR								
R409G	GFRP	4	7'-4"	29'-4"	STR								
R410G	GFRP	12	9'-9"	117'-0"	STR								
R411G	GFRP	4	10'-11"	43'-8"	STR								
R412G	GFRP	12	4'-11"	59'-0"	STR								
<b>SUBTOTAL</b>				5345'-1"	ITEM 509 - NO. 4 GFRP DEFORMED BARS								

**BAR BENDING DIAGRAM**



**NOTES:**

- FOR ADDITIONAL INFORMATION, SEE GENERAL NOTES (1 OF 2) AND (2 OF 2).
- THE LETTER PREFIX INDICATES BAR LOCATION. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS ON THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHEN FOUR DIGITS ARE USED, INDICATES THE BAR SIZE NUMBER. ALL REINFORCING IS ASSUMED EPOXY COATED UNLESS OTHERWISE INDICATED BY A LETTER SUFFIX. IF A LETTER SUFFIX IS PROVIDED, IT INDICATES BAR OR BAR COATING TYPE. EXAMPLE: R401G
- BAR DIMENSIONS ARE SHOWN OUT-TO-OUT UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BAR BEND AT THE END OF THE BAR. STRAIGHT BARS ARE INDICATED BY "STR."
- BAR MATERIAL:  
 "ECSR" = EPOXY COATED STEEL REINFORCEMENT, GRADE 60 STEEL  
 "GFRP" = GLASS FIBER REINFORCED POLYMER

- R: THE LOCATION OF THE BARS IN THE STRUCTURE (BRIDGE RAILING)
- 4: BAR SIZE DIMENSION NO. 4
- 01: SEQUENCE NUMBER
- G: GFRP REINFORCEMENT

- THE FOLLOWING IS A LIST OF BAR LOCATION PREFIXES:
- S: SUPERSTRUCTURE
  - R: BRIDGE RAILING
  - RA: REAR ABUTMENT
  - FA: FORWARD ABUTMENT

- THE FOLLOWING IS A LIST OF BAR MATERIAL SUFFIXES:
- G: GFRP REINFORCEMENT

**STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS:**

REFER TO THE FOLLOWING STANDARD BRIDGE AND ROADWAY DRAWINGS:

- AS-1-15 REVISED 07-17-15
- AS-2-15 REVISED 01-18-19
- EXI-4-87 REVISED 07-15-22
- GSD-1-19 REVISED 01-15-21
- RM-4.2 REVISED 04-17-20
- SBR-1-20 REVISED 07-17-20

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATION:

- 800 DATED SEE PROPOSAL
- 847 DATED 01-15-21

**DESIGN SPECIFICATIONS:**

THE PROPOSED MODIFICATIONS FOR THIS STRUCTURE CONFORMS TO THE 9th EDITION OF THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2020, AND THE ODOT BRIDGE DESIGN MANUAL, 2020.

**OPERATIONAL IMPORTANCE:**

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

**DESIGN LOADING INCLUDES:**

THIS BRIDGE RECEIVED APPROVED DESIGN EXCEPTIONS FOR SHOULDER WIDTH AND LANE WIDTH.

DECK: HL-93 & 0.060 KSF FUTURE WEARING SURFACE (FWS)

SUPERSTRUCTURE: EXISTING BEAMS - AS LOAD RATED (HS20-44 & ALTERNATE MILITARY LOADING) & 0.060 KSF FWS

SUBSTRUCTURE: EXISTING SUBSTRUCTURE & FOUNDATION MS18 CASE 1 & ALTERNATE MILITARY LOADING (LOADING FROM EXISTING PLANS)

**DESIGN DATA:**

CONCRETE CLASS QC2 - COMPRESSIVE STRENGTH 4.5 KSI (SUPERSTRUCTURE)

CONCRETE CLASS QC1 - COMPRESSIVE STRENGTH 4.0 KSI (SUBSTRUCTURE)

**CONCRETE REINFORCEMENT:**

EPOXY COATED STEEL REINFORCEMENT - MINIMUM YIELD STRENGTH 60-KSI (RAILING, DECK, BACKWALLS, AND WINGWALLS)

GFRP REINFORCEMENT CMS 705.28 - MEAN TENSILE MODULUS OF ELASTICITY LIMIT (ASTM D7957 TABLE 1) SHALL MEET OR EXCEED 8700 KSI (RAILING)

STRUCTURAL STEEL - ASTM A709 GRADE 50 - YIELD STRENGTH 50.0 KSI

**MONOLITHIC WEARING SURFACE:**

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

**UTILITY LINES:**

FOR THE LIST OF UTILITIES IN THE PROJECT AREA SEE PROJECT GENERAL NOTES, SHEET 54.

**PROPOSED WORK:**

1. REMOVAL OF THE RIGHT RAILING, AND REMOVAL OF THE RIGHT SIDE OF THE EXISTING DECK, BACKWALLS, EXPANSION JOINTS, AND PORTIONS OF THE WINGWALLS AS DETAILED IN THE PLANS.
2. CONSTRUCTION OF THE RIGHT RAIL, AND THE RIGHT SIDE OF THE DECK, BACKWALLS, AND WINGWALLS TO MATCH THE MODIFIED BRIDGE TRANSVERSE SECTION AS DETAILED IN THE PLANS.
3. PLACE ASPHALT OVERLAY ON REAR RIGHT APPROACH SLAB, AND SUPERPLASTICIZED DENSE CONCRETE (SDC) OVERLAY ON FORWARD RIGHT APPROACH SLAB TO MATCH THE MODIFIED BRIDGE TRANSVERSE SECTION. (ASPHALT OVERLAY DETAILS AND PAYMENT SHOWN WITH THE ROADWAY DETAILS AND QUANTITIES.)
4. SEALING OF CONCRETE SURFACES.

**PLANS OF EXISTING BRIDGE**

METRIC CONSTRUCTION PLANS FOR THE EXISTING BRIDGE ARE ON FILE AT THE OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 6 OFFICE, 400 EAST WILLIAM STREET, DELAWARE, OH 43015 AND ARE AVAILABLE FOR REFERENCE.

**EXISTING STRUCTURE VERIFICATION:**

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM METRIC PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO C&MS SECTIONS 102.05, AND 105.02. BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS THAT HAVE BEEN VERIFIED IN THE FIELD.

**PROTECTION OF WATERWAY**

THE CONTRACTOR SHALL PREVENT DEBRIS AND CONSTRUCTION MATERIAL FROM ENTERING THE BIG WALNUT CREEK WATERWAY BOTH DURING REMOVAL OPERATIONS AND DURING CONSTRUCTION OPERATIONS. DURING REMOVAL OPERATIONS, THE CONTRACTOR SHALL PLACE TEMPORARY PROTECTION BELOW THE DECK TO PREVENT DEBRIS FROM FALLING INTO THE BIG WALNUT CREEK WATERWAY, IN BOTH THE INTERIOR BAY AND THE CANTILEVER SECTION WHERE THE DECK IS BEING REMOVED. THE COST FOR ALL WORK ASSOCIATED WITH THIS REQUIREMENT SHALL BE INCLUDED WITH THE LUMP SUM CONTRACT PRICE FOR ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

**ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN:**

**DESCRIPTION:**

THIS WORK CONSISTS OF THE REMOVAL OF CONCRETE DECKS, CONCRETE BRIDGE RAILINGS, DECK JOINTS AND OTHER APPURTENANCES FROM STEEL SUPPORTING SYSTEMS (BEAMS, GIRDERS, CROSS-FRAMES, ETC.). THE PROVISIONS OF ITEM 202 APPLY EXCEPT AS SPECIFIED BY THE FOLLOWING NOTES. PERFORM WORK CAREFULLY DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. THE DEPARTMENT WILL NOT PERMIT THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED. SUBMIT CONSTRUCTION PLANS ACCORDING TO C&MS 501.05.

**REMOVAL METHODS:**

THE CONTRACTOR MAY REMOVE CONCRETE BY MEANS OF CUTTING FOR THE REMOVAL OF THE BRIDGE RAILING ONLY. FOR ALL OTHER LOCATIONS ON THIS STRUCTURE, INCLUDING APPROACH RAILINGS, THE CONTRACTOR MAY ONLY REMOVE CONCRETE BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS OVER STRUCTURAL MEMBERS (STEEL BEAM STEEL GIRDER, ETC.), THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS OF THE DECK TO BE PRESERVED. OUTSIDE THE 18-IN LIMIT, THE CONTRACTOR MAY USE HAMMERS NOT EXCEEDING 90 POUNDS UPON THE APPROVAL OF THE ENGINEER. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH CONCRETE REINFORCEMENT THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE. REMOVAL METHODS OVER STRUCTURAL MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND PREVENT NICKING OR GOUGING OF THE PRIMARY STRUCTURAL MEMBERS. DUE TO THE POSSIBLE PRESENCE OF ATTACHMENTS (E.G., FINISHING MACHINE, SCUPPER AND FORM SUPPORTS, ETC.) TO EXISTING STRUCTURAL MEMBERS, PERFORM WORK CAREFULLY DURING DECK REMOVAL TO AVOID DAMAGING STRUCTURAL MEMBERS THAT ARE TO REMAIN. REPLACE OR REPAIR STRUCTURAL MEMBERS DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE ENGINEER. OBTAIN THE ENGINEER'S APPROVAL BEFORE PERFORMING REPAIR.

**DECK REMOVALS - COMPOSITE DECK DESIGNS STEEL SUPERSTRUCTURES:**

DUE TO THE PRESENCE OF WELDED STUDS TO THE EXISTING STRUCTURAL STEEL, SUBMIT A DETAILED PROCEDURE OF THE DECK REMOVAL WITH THE ENGINEERED DRAWINGS ACCORDING TO C&MS 501.05. THE PROCEDURE SHALL INCLUDE ALL DETAILS, EQUIPMENT AND METHODS TO BE USED FOR REMOVAL OF THE CONCRETE OVER THE FLANGES AND AROUND THE STUDS. REPLACE OR REPAIR MAIN STEEL AND STUDS DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN ACCORDING TO C&MS 501.05.C TO THE ENGINEER TO REPLACE OR REPAIR STRUCTURAL STEEL AND STUDS DAMAGED BY THE REMOVAL OPERATIONS. THE DEPARTMENT WILL NOT PAY FOR DAMAGE REPAIRS.

**EXISTING WELDED ATTACHMENTS:**

REMOVE EXISTING WELDED ATTACHMENTS (E.G., FINISHING MACHINE AND FORM SUPPORTS; AND SUPPORTS FOR SCUPPERS AND BULB ANGLES WHICH ARE TO BE REMOVED) LOCATED IN THE DESIGNATED TENSION PORTIONS OF THE TOP FLANGES OF EXISTING STEEL MEMBERS AND GRIND THE FLANGE SURFACES SMOOTH. CAREFULLY GRIND PARALLEL TO THE FLANGES.

CUT LINE CONSTRUCTION JOINT PREPARATION: SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. LEAVE THE EXISTING CONCRETE REINFORCEMENT, IF REQUIRED IN THE PLANS, IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST, OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING STEEL REINFORCEMENT DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH BUT REMOVE ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

**SUBSTRUCTURE CONCRETE REMOVAL:**

REMOVE CONCRETE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. THE DEPARTMENT WILL NOT PERMIT HYDRAULIC HOE-RAM TYPE HAMMERS. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18-IN LIMIT, THE CONTRACTOR MAY USE HAMMERS NOT EXCEEDING 90 POUNDS UPON THE APPROVAL OF THE ENGINEER. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH CONCRETE REINFORCEMENT THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

**PROTECTION OF BIG WALNUT CREEK WATERWAY:**

THE CONTRACTOR SHALL PREVENT DEBRIS AND CONSTRUCTION MATERIAL FROM ENTERING THE BIG WALNUT CREEK WATERWAY BOTH DURING REMOVAL OPERATIONS AND DURING CONSTRUCTION OPERATIONS. DURING REMOVAL OPERATIONS, THE CONTRACTOR SHALL PLACE TEMPORARY PROTECTION BELOW THE DECK TO PREVENT DEBRIS FROM FALLING INTO THE BIG WALNUT CREEK WATERWAY, UNDER THE INTERIOR BAY AND UNDER THE CANTILEVER SECTION WHERE THE DECK AND RAILING ARE BEING REMOVED. THE TEMPORARY PROTECTION SYSTEM MAY BE SUPPORTED FROM THE GROUND BUT NO WORK OR MATERIAL SHALL BE PERFORMED WITHIN THE WATERWAY. THE TEMPORARY PROTECTION SYSTEM IS PERMITTED TO HANG FROM THE BRIDGE GIRDERS AND IS PERMITTED TO BE LOCATED BELOW THE BOTTOM FLANGES OF THE BRIDGE GIRDERS. AT LEAST 7 DAYS BEFORE INSTALLING TEMPORARY PROTECTION, SUBMIT A PROPOSED TEMPORARY PROTECTION DETAILS, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE ENGINEER. OBTAIN THE ENGINEER'S APPROVAL BEFORE INSTALLATION.

MEASUREMENT & PAYMENT: THE DEPARTMENT WILL MEASURE THE QUANTITY OF REMOVALS ON A LUMP SUM BASIS. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES OF REMOVALS AT THE CONTRACT PRICE FOR ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

**ITEM 509 - REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN:**

REPLACE ALL EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION. THE DEPARTMENT WILL MEASURE THE REPLACEMENT CONCRETE REINFORCEMENT BY THE NUMBER OF POUNDS ACCEPTED IN PLACE. REPLACE ALL EXISTING STEEL REINFORCEMENT BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND ARE DEEMED BY THE ENGINEER TO BE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS WITH NEW CONCRETE REINFORCEMENT OF THE SAME SIZE, COATING, AND MATERIAL AT NO COST TO THE DEPARTMENT.

**ITEM 510 - DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN**

A QUANTITY OF 10 EACH DOWEL HOLES HAVE BEEN INCLUDED FOR THE PURPOSES OF DOWELING IN REINFORCING STEEL INTO THE EXISTING CONCRETE SUBSTRUCTURE THAT ARE DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION.

**ITEM 511 - CLASS QC2 CONCRETE, BRIDGE DECK, AS PER PLAN**

ALL PROVISION OF CMS 511 SHALL APPLY WITH THE FOLLOWING ADDITIONS.

THE EXISTING TRANSVERSE REINFORCING STEEL BARS THAT ARE TO BE INCORPORATED IN THE NEW CONCRETE DECK WILL NEED TO BE FIELD BENT TO MATCH THE PROPOSED MODIFIED CROSS SLOPE. FIELD BEND EACH BAR TO CLOSELY MATCH THE PROPOSED TRANSVERSE REINFORCING STEEL BAR IT IS TO BE LAPPED WITH. BARS SHOULD NOT BE MORE THAN 1 INCH VERTICALLY OFFSET FROM THE PROPOSED BAR IT IS BEING LAPPED WITH. THE EXISTING BARS SHALL MAINTAIN THE MINIMUM CONCRETE COVER AS SHOWN IN THE PLAN.

ALL LABOR, MATERIAL, AND EQUIPMENT NECESSARY TO FIELD BEND THE EXISTING TRANSVERSE REINFORCING STEEL BARS SHALL BE CONSIDERED INCLUDED WITH AND CONSIDERED INCIDENTAL WITH THE PRICE BID FOR ITEM 511- CLASS QC2 CONCRETE, BRIDGE DECK, AS PER PLAN.

**DECK PLACEMENT DESIGN ASSUMPTIONS:**

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

AN EIGHT WHEEL FINISHING MACHINE WITH A MAXIMUM WHEEL LOAD OF 2.53 KIPS.

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

A MAXIMUM SPACING OF OVERHANG FALSEWORK BRACKETS OF 48 IN.

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

**DECK SLAB THICKNESS FOR CONCRETE QUANTITY:**

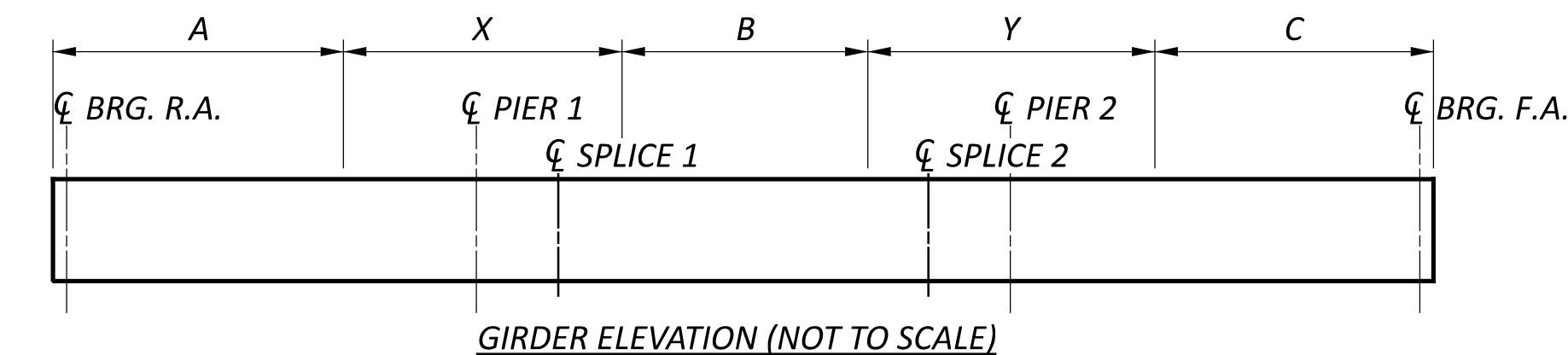
THE ESTIMATED QUANTITY OF DECK CONCRETE IS MEASURED ACCORDING TO C&MS 511. IN ADDITION TO THE DESIGN SLAB THICKNESS, THE QUANTITY INCLUDES A VARIABLE HAUNCH THICKNESS THAT PROVIDES AN ALLOWANCE FOR: VERTICAL GRADE ADJUSTMENT, BEAM CAMBER AND ADDITIONAL SACRIFICIAL HAUNCH THICKNESS.

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

THE COLOR OF THE URETHANE FINISH COAT OF THE EPOXY-URETHANE SEALER SHALL BE TINTED SO THE FINAL COLOR IS FEDERAL COLOR STANDARD NO. 17778 - LIGHT NEUTRAL AS SPECIFIED UNDER CMS 512.03-G.1.e.

**WELDED ATTACHMENTS**

WELD ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". DO NOT WELD ATTACHMENTS TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE AT LEAST 1" FROM EDGE OF FLANGE, BE NO MORE THAN 2" LONG, AND BE AT LEAST 1/4" FOR THICKNESSES UP TO 3/4" OR 5/16" FOR GREATER THAN 3/4" THICK. SEE BELOW FOR TENSION AND COMPRESSION AREAS DERIVED FROM THE EXISTING BRIDGE PLANS.



GIRDER	COMPRESSION AREAS			TENSION AREAS	
	A	B	C	X	Y
1	60'-0"	45'-6"	61'-1"	67'-9"	68'-0"
2	60'-11"	47'-2"	61'-11"	66'-2"	65'-10"
3	61'-3"	47'-4"	61'-3"	65'-11"	65'-10"
4	61'-1"	47'-1"	60'-7"	66'-0"	66'-6"
5	60'-11"	47'-10"	59'-8"	66'-0"	66'-6"
6	60'-6"	46'-7"	59'-1"	67'-6"	66'-11"

GENERAL NOTES (1 OF 2)  
 BRIDGE NO. FRA-00161-16.590 B  
 CDE (SR 161) OVER BIG WALNUT CREEK

SFN 2509520  
 DESIGN AGENCY  
  
 E.L. ROBINSON ENGINEERING  
 1488 West 9th St, Suite 800  
 Cleveland, Ohio 44115  
 950 Grandview Blvd, Suite 100  
 Grandview Heights, Ohio 44131  
 DESIGNER: MJM CHECKER: AEF  
 REVIEWER: RER 02/10/23  
 PROJECT ID: 116322  
 SUBSET TOTAL: 2 20  
 SHEET TOTAL: 609 846

MADE BY: JOL		DATE: 11/28/2022		ESTIMATED QUANTITIES					STRUCTURAL FILE NUMBER: 2509520		
CHECKED BY: MJM		DATE: 12/9/2022							ABUT.	PIER	SUPER.
ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION							
202	11203	LUMP		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN					GENERAL NOTES (1 OF 2)		
254	01010	22	SY	PAVEMENT PLANING, PORTLAND CEMENT CONCRETE (1/4" THICK)				22			
254	01010	14	SY	PAVEMENT PLANING, PORTLAND CEMENT CONCRETE (1 1/2" THICK)				14			
509	10000	55,537	LB	EPOXY COATED REINFORCING STEEL	227		55,310				
509	20001	40	LB	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN			40		GENERAL NOTES (1 OF 2)		
509	30020	5,521	FT	NO. 4 GFRP DEFORMED BARS			5,521				
510	10001	10	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN	10				GENERAL NOTES (1 OF 2)		
511	34445	146	CY	CLASS QC2 CONCRETE, BRIDGE DECK, AS PER PLAN			146		GENERAL NOTES (1 OF 2)		
511	34448	53	CY	CLASS QC2 CONCRETE, BRIDGE DECK (PARAPET)			53				
511	44110	3	CY	CLASS QC1 CONCRETE, ABUTMENT NOT INCLUDING FOOTING	3						
512	10100	384	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	21		364				
512	44450	15	SY	TYPE E WATERPROOFING	15						
513	10200	554	LB	STRUCTURAL STEEL MEMBERS, LEVEL UF			554				
514	00060	64	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT			64				
514	00067	64	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN			64		GENERAL NOTES (2 OF 2)		
514	21001	LUMP		FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN					GENERAL NOTES (2 OF 2)		
514	27702	1,594	EACH	FIELD PAINTING, MISC.: EPOXY COATING REPAIR OF EXISTING EPOXY COATED REINFORCING STEEL			1,594		GENERAL NOTES (2 OF 2)		
516	10000	16	FT	PREFORMED ELASTOMERIC COMPRESSION JOINT SEAL	16						
516	11901	34	FT	HORIZONTAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN	34						
516	13600	26	SF	1" PREFORMED EXPANSION JOINT FILLER	26						
516	14600	59	FT	STRUCTURAL JOINT OR JOINT SEALER, MISC.: HOT APPLIED JOINT SEALER PER CMS 705.04	59				GENERAL NOTES (2 OF 2)		
847	10201	35	SY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY, AS PER PLAN (1 1/2" THICK)				35	GENERAL NOTES (2 OF 2)		
847	20201	2	CY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN				2	GENERAL NOTES (2 OF 2)		
847	30000	LUMP		TEST SLAB							
847	50000	2	SY	HAND CHIPPING				2			

ESTIMATED QUANTITIES  
 BRIDGE NO. FRA-00161-16.590 B  
 CDE (SR 161) OVER BIG WALNUT CREEK

SFN	2509520
DESIGN AGENCY	
DESIGNER	CHECKER
MJM	LAH
REVIEWER	RER 02/10/23
PROJECT ID	116322
SUBSET	TOTAL
4	20
SHEET	TOTAL
611	846



MARK	MAT'RL TYPE	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS						
		TOTAL				A	B	C	D	E	R	INC
<b>REAR ABUTMENT (60 KSI, EPOXY COATED)</b>												
RA501	ECSR	2	15'-11"	33	STR							
RA502	ECSR	1	15'-5"	16	STR							
RA601	ECSR	11	3'-9"	62	2	1'-7"	11"	1'-7"				
				<b>SUBTOTAL</b>	111	ITEM 509 - EPOXY COATED REINFORCING STEEL						

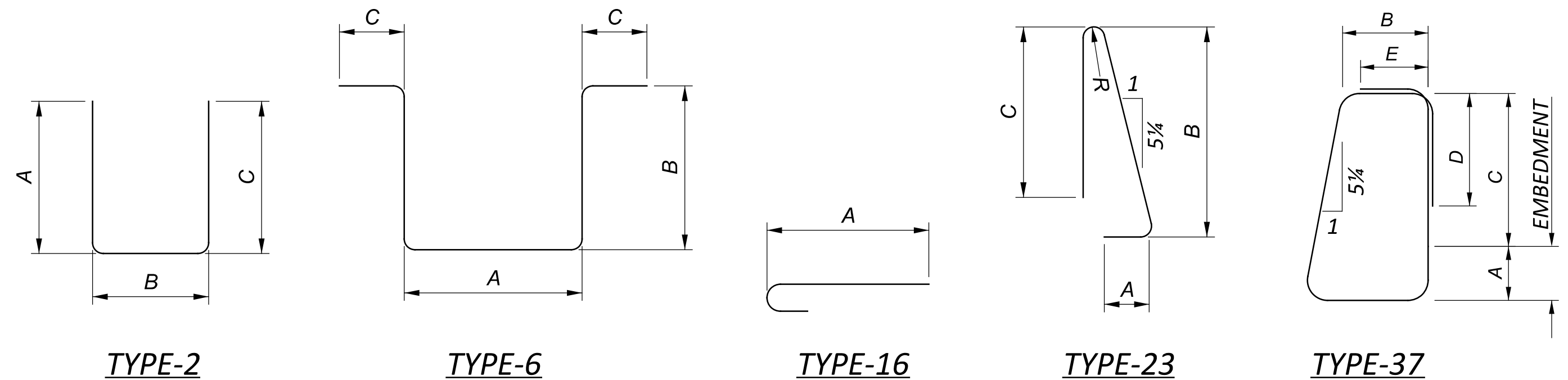
MARK	MAT'RL TYPE	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS						
		TOTAL				A	B	C	D	E	R	INC
<b>FORWARD ABUTMENT (60 KSI, EPOXY COATED)</b>												
FA501	ECSR	2	15'-2"	32	STR							
FA502	ECSR	1	15'-4"	16	STR							
FA601	ECSR	12	3'-9"	68	2	1'-7"	11"	1'-7"				
				<b>SUBTOTAL</b>	116	ITEM 509 - EPOXY COATED REINFORCING STEEL						

MARK	MAT'RL TYPE	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS						
		TOTAL				A	B	C	D	E	R	INC
<b>SUPERSTRUCTURE (60 KSI, EPOXY COATED)</b>												
S401	ECSR	133	40'-0"	3,554	STR							
S402	ECSR	19	37'-2"	472	STR							
S403	ECSR	1 SER. OF 8	5'-3" TO 9'-4"	39	2	2'-6" TO 6'-7"	7" TO 7"	2'-4" TO 2'-4"				Incr A = 7" Incr B = 0" Incr C = 0"
S404	ECSR	787	9'-9"	5,126	2	7'-0"	7"	2'-4"				
S501	ECSR	147	40'-0"	6,133	STR							
S502	ECSR	21	37'-2"	814	STR							
S503	ECSR	8	2'-3"	19	STR							
S504	ECSR	1 SER. OF 20	3'-1" TO 14'-7"	184	16	2'-6" TO 14'-0"						7 1/4"
S505	ECSR	1 SER. OF 20	2'-6" TO 14'-0"	172	STR							7 1/4"
S506	ECSR	775	14'-5"	11,653	16	13'-10"						
S507	ECSR	775	13'-10"	11,182	STR							
S508	ECSR	1 SER. OF 22	2'-3" TO 14'-3"	189	16	1'-8" TO 13'-8"						6 7/8"
S509	ECSR	1 SER. OF 22	1'-8" TO 13'-8"	176	STR							6 7/8"
S510	ECSR	8	2'-0"	17	STR							
S511	ECSR	396	6'-7"	2,719	6	1'-3"	11"	2'-0"				
S512	ECSR	393	6'-11"	2,835	6	1'-3"	1'-1"	2'-0"				
S513	ECSR	108	19'-10"	2,234	STR							
				<b>SUBTOTAL</b>	47,518	ITEM 509 - EPOXY COATED REINFORCING STEEL						

MARK	MAT'RL TYPE	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS						
		TOTAL				A	B	C	D	E	R	INC
<b>RIGHT BRIDGE RAILING (60 KSI, EPOXY COATED)</b>												
R601	ECSR	28	8'-0"	336	23	1'-0"	3'-6"	3'-6"			2"	
R602	ECSR	330	7'-0"	3,470	23	6"	3'-3"	3'-3"			2"	
R603	ECSR	330	7'-4"	3,635	37	9"	9 1/2"	1'-5"	1'-0"	7"		
R604	ECSR	27	8'-8"	351	23	1'-0"	3'-10"	3'-10"			2"	
				<b>SUBTOTAL</b>	7,792	ITEM 509 - EPOXY COATED REINFORCING STEEL						

MARK	MAT'RL TYPE	NUMBER	LENGTH	TOTAL LENGTH	TYPE	DIMENSIONS						
		TOTAL				A	B	C	D	E	R	INC
<b>RIGHT BRIDGE RAILING (GFRP REINFORCEMENT)</b>												
R401G	GFRP	52	13'-7"	706'-4"	STR							
R402G	GFRP	8	15'-0"	120'-0"	STR							
R403G	GFRP	8	11'-5"	91'-4"	STR							
R404G	GFRP	8	10'-3"	82'-0"	STR							
R405G	GFRP	112	10'-2"	1138'-8"	STR							
R406G	GFRP	77	40'-0"	3080'-0"	STR							
R407G	GFRP	11	27'-6"	302'-6"	STR							
				<b>SUBTOTAL</b>	5520'-10"	ITEM 509 - NO. 4 DEFORMED BARS						

**BAR BENDING DIAGRAM**



**NOTES:**

- FOR ADDITIONAL INFORMATION, SEE GENERAL NOTES (1 OF 2) AND (2 OF 2).
- THE LETTER PREFIX INDICATES BAR LOCATION. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHEN FOUR DIGITS ARE USED, INDICATES THE BAR SIZE NUMBER. ALL REINFORCING IS ASSUMED EPOXY COATED UNLESS OTHERWISE INDICATED BY A LETTER SUFFIX. IF A LETTER SUFFIX IS PROVIDED, IT INDICATES BAR OR BAR COATING TYPE. EXAMPLE: R401G  
 R: THE LOCATION OF THE BARS IN THE STRUCTURE (BRIDGE RAILING)  
 4: BAR SIZE DIMENSION NO. 4  
 01: SEQUENCE NUMBER  
 G: GFRP REINFORCEMENT  
 THE FOLLOWING IS A LIST OF BAR LOCATION PREFIXES:  
 S: SUPERSTRUCTURE  
 R: BRIDGE RAILING  
 RA: REAR ABUTMENT  
 FA: FORWARD ABUTMENT  
 THE FOLLOWING IS A LIST OF BAR MATERIAL SUFFIXES:  
 G: GFRP REINFORCEMENT
- BAR DIMENSIONS ARE SHOWN OUT-TO-OUT UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BAR BEND AT THE END OF THE BAR. STRAIGHT BARS ARE INDICATED BY "STR."
- BAR MATERIAL:  
 "ECSR" = EPOXY COATED STEEL REINFORCEMENT, GRADE 60 STEEL  
 "GFRP" = GLASS FIBER REINFORCED POLYMER

**STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS:**

REFER TO THE FOLLOWING STANDARD DRAWINGS:

AS-1-15	REVISED	7-17-2015
AS-2-15	REVISED	1-18-2019
EXJ-4-87	REVISED	7-15-2022
GSD-1-19	REVISED	1-15-2021
HL-30.31	REVISED	4-17-2020
HL-50.21	REVISED	7-15-2022
RM-4.2	REVISED	4-17-2020
SBR-1-20	REVISED	7-17-2020

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:

800	DATED	SEE PROPOSAL
848	DATED	1-15-2021
894	DATED	4-16-2021

**DESIGN SPECIFICATIONS:**

THIS STRUCTURE CONFORMS TO THE 9TH EDITION OF THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2020 AND THE ODOT BRIDGE DESIGN MANUAL, 2020.

**OPERATIONAL IMPORTANCE:**

A LOAD MODIFIER OF 1.05 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.

**DESIGN LOADING INCLUDES:**

PROPOSED DECK AND SUPERSTRUCTURE: HL-93 AND 0.060 KSF FUTURE WEARING SURFACE (FWS)  
 EXISTING DECK: HS-20-44 & ALTERNATE MILITARY LOADING  
 EXISTING SUPERSTRUCTURE: AS LOAD RATED (HL-93) AND 0.060 KSF FUTURE WEARING SURFACE (FWS)

PROPOSED SUBSTRUCTURE AND FOUNDATION: HL-93 AND 0.060 KSF FUTURE WEARING SURFACE (FWS)  
 EXISTING SUBSTRUCTURE AND FOUNDATION: HS-20-44 & ALTERNATE MILITARY LOADING

THIS BRIDGE RECEIVED AN APPROVED DESIGN EXCEPTION FOR DESIGN LOADING STRUCTURAL CAPACITY.

**DESIGN DATA:**

CONCRETE CLASS QC2 - COMPRESSIVE STRENGTH 4.5 KSI (SUPERSTRUCTURE)  
 CONCRETE CLASS QC1 - COMPRESSIVE STRENGTH 4.0 KSI (SUBSTRUCTURE)  
 CONCRETE CLASS QC5, WITH 1.0-IN MAX. AGGREGATE SIZE - COMPRESSIVE STRENGTH 4.5 KSI (DRILLED SHAFT)  
 CONCRETE REINFORCEMENT:  
 UNCOATED STEEL REINFORCEMENT - MINIMUM YIELD STRENGTH 60 KSI (ABUTMENT)  
 EPOXY COATED STEEL REINFORCEMENT - MINIMUM YIELD STRENGTH 60 KSI (DECK, BRIDGE RAILING, ABUTMENT, PIER, APPROACH SLAB)  
 GFRP REINFORCEMENT (BRIDGE RAILING)  
 STRUCTURAL STEEL - ASTM A709 GRADE 50 - YIELD STRENGTH 50 KSI  
 STEEL CIP PILES - ASTM A252 GRADE 3 - YIELD STRENGTH 45 KSI (ALTERNATE 1)  
 STEEL H-PILES - ASTM A572 - YIELD STRENGTH 50 KSI (ALTERNATE 2)

**MONOLITHIC WEARING SURFACE:**

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

**PROPOSED WORK:**

1. PHASED REMOVAL OF THE EXISTING RAILINGS, DECK, APPROACH SLABS, ABUTMENTS
2. PHASED CONSTRUCTION OF THE PILES, ABUTMENTS, PIERS, BEAMS, CROSSFRAMES, DECK AND RAILING.
3. PHASED CONSTRUCTION OF EXISTING BRIDGE DECK OVERLAY OF RIGHT BRIDGE (EASTBOUND).
4. PATCHING OF EXISTING CONCRETE BRIDGE RAILING OF RIGHT BRIDGE (EASTBOUND).
5. INSTALLATION OF ABUTMENT SLOPE PROTECTION.
6. PAINTING OF STRUCTURAL STEEL AND SEALING OF CONCRETE SURFACES.
7. INSTALLATION OF BRICK VENEER ON ABUTMENTS AND APPLICATION OF SEALER ON BRICK (BY OTHERS).

**ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN:**

DESCRIPTION:

THIS WORK CONSISTS OF THE REMOVAL OF CONCRETE DECKS INCLUDING CONCRETE BRIDGE RAILING, DECK JOINTS AND OTHER APPURTENANCES FROM STEEL SUPPORTING SYSTEMS (BEAMS, GIRDERS, CROSSFRAMES, ETC.). THIS ITEM INCLUDES TAKING SURVEY SHOTS OF THE EXISTING BEAM FLANGES, AS NOTED IN THE PLANS, BEFORE AND AFTER DECK REMOVAL AND CALCULATING THE REQUIRED ITEMS TO DETERMINE THE SCREED AND TOP OF HAUNCH ELEVATIONS. IT SHALL ALSO INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND THAT ARE NOT SEPARATELY LISTED FOR PAYMENT. ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER. THE DEPARTMENT WILL NOT PERMIT THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE-RAMS. DO NOT BEGIN WORK UNTIL THE ENGINEER ACCEPTS THE METHOD OF REMOVAL AND THE WEIGHT OF HAMMER SHALL BE APPROVED BY THE ENGINEER. PERFORM ALL WORK IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE THE EXISTING CONCRETE REINFORCEMENT TO BE PRESERVED. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 90-POUND CLASS. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH CONCRETE REINFORCEMENT THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE. THE PROVISIONS OF ITEM 202 APPLY EXCEPT AS SPECIFIED BY THE FOLLOWING NOTES. PERFORM WORK CAREFULLY DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. SUBMIT CONSTRUCTION PLANS ACCORDING TO C&MS 501.05

**PROTECTION OF STEEL SUPPORT SYSTEMS:**

BEFORE DECK SLAB CUTTING BEGINS, DRAW THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK ON THE SURFACE OF DECK. DRILL CUTS OVER OR WITHIN 2 INCHES OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK REINFORCEMENT IN THE DECK SLAB. CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF DECK. PERFORM WORK CAREFULLY DURING CUTTING OF THE DECK SLAB TO AVOID DAMAGING STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE. REPLACE OR REPAIR STEEL MEMBERS DAMAGED BY THE DECK SLAB CUTTING OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE ENGINEER. OBTAIN ENGINEER'S APPROVAL BEFORE PERFORMING REPAIR.

**REMOVAL METHOD:**

THE CONTRACTOR MAY REMOVE CONCRETE BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS OVER STRUCTURAL MEMBERS (PRESTRESSED BOX BEAM, I-BEAM, STEEL BEAM STEEL GIRDER, ETC.), THE CONTRACTOR MAY USE A HAMMER HEAVIER THAN 35 POUNDS BUT NOT TO EXCEED 90 POUNDS UNLESS APPROVED BY THE ENGINEER. REMOVAL METHODS OVER STRUCTURAL MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND PREVENT NICKING OR GOUGING THE PRIMARY STRUCTURAL MEMBERS. DUE TO THE POSSIBLE PRESENCE OF ATTACHMENTS (E.G., FINISHING MACHINE, SCUPPER AND FORM SUPPORTS, ETC.) TO EXISTING STRUCTURAL MEMBERS, PERFORM WORK CAREFULLY DURING DECK REMOVAL TO AVOID DAMAGING STRUCTURAL MEMBERS THAT ARE TO REMAIN. REPLACE OR REPAIR STRUCTURAL MEMBERS DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE ENGINEER. OBTAIN THE ENGINEER'S APPROVAL BEFORE PERFORMING REPAIR.

**DECK REMOVALS - COMPOSITE DECK DESIGN - STEEL SUPERSTRUCTURES:**

DUE TO THE PRESENCE OF WELDED STUDS TO THE EXISTING STRUCTURAL STEEL, SUBMIT A DETAILED PROCEDURE OF THE DECK REMOVAL WITH THE ENGINEERED DRAWINGS ACCORDING TO C&MS 501.05. DEPARTMENT ACCEPTANCE IS NOT REQUIRED. THE PROCEDURE SHALL INCLUDE ALL DETAILS, EQUIPMENT AND METHODS TO BE USED FOR REMOVAL OF THE CONCRETE OVER THE FLANGES AND AROUND THE STUDS. REPLACE OR REPAIR MAIN STEEL AND STUDS DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN ACCORDING TO C&MS 501.05C TO THE ENGINEER TO REPLACE OR REPAIR STRUCTURAL STEEL AND STUDS DAMAGED BY THE REMOVAL OPERATIONS. THE DEPARTMENT WILL NOT PAY FOR DAMAGE REPAIRS.

**EXISTING WELDED ATTACHMENTS:**

REMOVE EXISTING WELDED ATTACHMENTS (E.G., FINISHING MACHINE AND FORM SUPPORTS; AND SUPPORTS FOR SCUPPERS AND BULB ANGLES WHICH ARE TO BE REMOVED) LOCATED IN THE DESIGNATED TENSION PORTIONS OF THE TOP FLANGES OF EXISTING STEEL MEMBERS AND GRIND THE FLANGE SURFACES SMOOTH. CAREFULLY GRIND PARALLEL TO THE FLANGES.

**CUT LINE CONSTRUCTION JOINT PREPARATION:**

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. LEAVE THE EXISTING CONCRETE REINFORCEMENT, IF REQUIRED IN THE PLANS, IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING STEEL REINFORCEMENT DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH BUT REMOVE ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

**SUBSTRUCTURE CONCRETE REMOVAL:**

REMOVE CONCRETE BY MEANS OR APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. THE DEPARTMENT WILL NOT PERMIT HYDRAULIC HOE-RAM TYPE HAMMERS. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18-IN LIMIT, THE CONTRACTOR MAY USE HAMMERS NOT EXCEEDING 90 POUNDS UPON THE APPROVAL OF THE ENGINEER. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH CONCRETE REINFORCEMENT THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

**MEASUREMENT AND PAYMENT:**

THE DEPARTMENT WILL MEASURE THE QUANTITY OF REMOVALS ON A LUMP SUM BASIS. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES OF REMOVALS AT THE CONTRACT PRICE FOR ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.

**ITEM 503, UNCLASSIFIED EXCAVATION, AS PER PLAN:**

UNCLASSIFIED EXCAVATION SHALL BE IN ACCORDANCE WITH PERTINENT SECTIONS OF CMS SECTION 503 AND SHALL INCLUDE THE EXCAVATION AND BACKFILLING REQUIRED TO CONSTRUCT THE NEW PORTIONS OF THE ABUTMENTS (SEE DIAGRAM SHEET 30). EXCAVATION AND BACKFILLING REQUIRED FOR SUBSTRUCTURE REMOVAL AND STRUCTURE DRAINAGE SHALL BE INCLUDED WITH RESPECTIVE ITEMS 202 AND 518.

**PILE DESIGN LOADS (ULTIMATE BEARING VALUE): (ALTERNATE 1)**

THE ULTIMATE BEARING VALUE IS 259 KIPS PER PILE FOR THE REAR AND FORWARD ABUTMENT PILES.

**ABUTMENT PILES:**

12" CAST-IN-PLACE REINFORCED CONCRETE PILES, 45 FEET LONG, ORDER LENGTH  
 1 DYNAMIC LOAD TESTING ITEM

PROVIDE PLAIN CYLINDRICAL CASINGS WITH A MINIMUM PILE WALL THICKNESS OF 0.281 INCH FOR THE CAST-IN-PLACE REINFORCED CONCRETE PILES.

USE CONICAL STEEL PILE POINTS TO PROTECT THE TIPS OF THE PROPOSED STEEL CIP REINFORCED CONCRETE PIPE PILES AT BOTH ABUTMENTS.

**PILES TO BEDROCK: (ALTERNATE 2)**

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

THE TOTAL FACTORED LOAD IS 181 KIPS PER PILE FOR THE ABUTMENT PILES.

**ABUTMENT PILES:**

HP10X42 PILES 60 FEET LONG, ORDER LENGTH

USE STEEL PILE POINTS TO PROTECT THE TIPS OF THE PROPOSED STEEL H-PILES AT BOTH ABUTMENTS.

**PILE SPLICES: (ALTERNATE 2)**

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

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

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

**ITEM SPECIAL - STRUCTURES, MISC.: PRECONSTRUCTION CONDITION SURVEY:**

BEFORE PILE DRIVING BEGINS, CONDUCT A CONDITION SURVEY OF ALL EXISTING BUILDINGS, STRUCTURES, (INCLUDING THE 63"x98" TYPE A CONDUIT), AND UTILITIES WITHIN 200-FT OF THE PILE DRIVING WORK. THE PURPOSE OF THE SURVEY IS TO DOCUMENT THE CONDITION OF THE BUILDINGS, STRUCTURES OR UTILITIES PRIOR TO PILE DRIVING, SO THAT CLAIMS OF DAMAGE CAUSED BY THE PILE DRIVING CAN BE VERIFIED.

RETAIN AN EXPERIENCED VIBRATION SPECIALIST TO PERFORM OR SUPERVISE THE CONDITION SURVEY. USE A VIBRATION SPECIALIST THAT MEETS THE QUALIFICATION REQUIREMENTS FOR VIBRATION MONITORING.

RECORD THE CONDITION OF EXISTING STRUCTURES AND MATERIALS, USING WRITTEN TEXT, PHOTOGRAPHS, AND VIDEO RECORDINGS. RECORD THE LOCATION, SIZE, AND TYPE OF ALL CRACKS AND OTHER STRUCTURAL DEFICIENCIES.

IF OWNERS FAIL TO ALLOW ACCESS TO THE PROPERTY FOR THE PRECONSTRUCTION CONDITION SURVEY, SEND A CERTIFIED LETTER TO THE OWNER. DOCUMENT THE NOTIFICATION EFFORT AND THE CERTIFIED LETTER IN THE REPORT.

SUBMIT THREE COPIES OF A REPORT TO THE ENGINEER THAT SUMMARIZES THE PRECONSTRUCTION CONDITION OF THE EXISTING RETAINING WALLS, AND THAT IDENTIFIES AREAS OF CONCERN.

THE DEPARTMENT WILL PAY FOR THIS ITEM AT THE CONTRACT LUMP SUM PRICE FOR ITEM SPECIAL - STRUCTURES, MISC.: PRECONSTRUCTION CONDITION SURVEY.

GENERAL NOTES (1 OF 2)  
 BRIDGE NO. FRA-00161-21.730 L&R  
 SR 161 OVER US 62 (JOHNSTOWN RD.)

SFN 2503530 (R)

SFN 2503565 (L)

DESIGN AGENCY



DESIGNER RBK CHECKER BTA

REVIEWER

DWW 02/10/23

PROJECT ID 116322

SUBSET TOTAL 4 54

SHEET TOTAL 703 846

**ESTIMATED QUANTITIES**

ALT (X)	ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION	LEFT STRUCTURE (WESTBOUND): SFN 2503565					RIGHT STRUCTURE (EASTBOUND): SFN 2503530				
						ABUT.	PIERS	SUPER.	GEN.	SEE SHEET	ABUT.	PIERS	SUPER.	GEN.	SEE SHEET
	201	11001	LS		CLEARING AND GRUBBING, AS PER PLAN					5 / 54					5 / 54
	202	11203	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN					4, 9-19, 30, 40 / 54					4, 9-19, 30, 42 / 54
	202	22901	68	SY	APPROACH SLAB REMOVED, AS PER PLAN				34	10-19 / 54			34		10-19 / 54
	503	11101	LS		COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN					5, 22-23 / 54					5, 22-23 / 54
	503	21101	416	CY	UNCLASSIFIED EXCAVATION, AS PER PLAN	208				4 / 54	208				4 / 54
	505	11100	LS		PILE DRIVING EQUIPMENT MOBILIZATION										
	509	10000	125924	LB	EPOXY COATED REINFORCING STEEL	18464	3657	39170	1113		18464	3732	40090	1234	
	509	20001	580	LB	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN	12		238	40	5 / 54	12		238	40	5 / 54
	509	25000	1308	LB	UNCOATED REINFORCING STEEL	654					654				
	509	30020	6277	FT	NO. 4 GFRP DEFORMED BARS			2370	763				2370	774	
	510	10001	264	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN	132				5 / 54	132				5 / 54
	511	34446	221	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK			108					113		
	511	34450	66	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET)			24	9				24	9	
	511	41012	19	CY	CLASS QC1 CONCRETE WITH QC/QA, PIER ABOVE FOOTINGS							10			
	511	44113	159	CY	CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT NOT INCLUDING FOOTING, AS PER PLAN	80				30 / 54	79				30 / 54
	511	46512	112	CY	CLASS QC1 CONCRETE WITH QC/QA, FOOTING	56					56				
	512	10050	335	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)			166					169		
	512	10100	348	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	102	26		44		104	28		44	
	512	33000	40	SY	TYPE 2 WATERPROOFING	20					20				
	512	74000	20	SY	REMOVAL OF EXISTING COATINGS FROM CONCRETE SURFACES	10					10				
	513	10260	144000	LB	STRUCTURAL STEEL MEMBERS, LEVEL 3			72000					72000		
	513	20000	2364	EACH	WELDED STUD SHEAR CONNECTORS			1182					1182		
	514	00050	460	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL			230					230		
	514	00056	460	SF	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT			230					230		
	514	00060	9040	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT			4520					4520		
	514	00066	9040	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT			4520					4520		
	514	00504	2	MNHR	GRINDING FINES, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL			1					1		
	514	10000	2	EACH	FINAL INSPECTION REPAIR			1					1		
	516	11901	97	FT	HORIZONTAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN			49		5, 48 / 54			48		5, 48 / 54
	516	13600	94	SF	1" PREFORMED EXPANSION JOINT FILLER	47					47				
	516	13900	9	SF	2" PREFORMED EXPANSION JOINT FILLER									9	
	516	44101	8	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN (11" x 13" x 2.17" WITH 12" x 14" x 1.5" LOAD PLATE)	4				37 / 54	4				37 / 54
	516	44101	4	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN (23" x 11.5" x 2.65" WITH 24" x 24.5" x 1.5" LOAD PLATE)		2			37 / 54		2			37 / 54
	518	21200	124	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	62					62				
	518	40000	94	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	47					47				
	518	40010	32	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	16					16				
	519	11101	10	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN									10	5, 47 / 54
	524	94802	94	FT	DRILLED SHAFTS, 42" DIAMETER, ABOVE BEDROCK		47					47			
	526	25010	264	SY	REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=15")				132					132	
	526	90010	100	FT	TYPE A INSTALLATION				50					50	
	SPECIAL	53000200	LS		STRUCTURES, MISC.: PRECONSTRUCTION CONDITION SURVEY					4 / 54					4 / 54
	601	20000	80	SY	CRUSHED AGGREGATE SLOPE PROTECTION				40					40	
	601	20001	26	SY	CRUSHED AGGREGATE SLOPE PROTECTION, AS PER PLAN				13	5 / 54				13	5 / 54
	848	10200	609	SY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION (1.75" THICK)								609		
	848	20000	609	SY	SURFACE PREPARATION USING HYDRODEMOLITION								609		
	848	30200	11	CY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY								11		
	848	50000	20	SY	HAND CHIPPING								20		
	848	50100	LS		TEST SLAB										
	894	10000	2	EACH	THERMAL INTEGRITY PROFILING (TIP) TEST		1					1			
<b>STRUCTURE ALTERNATES</b>															
X	507	00500	1520	FT	12" CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN (ALTERNATE 1)	760					760				
X	507	00550	1710	FT	12" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED (ALTERNATE 1)	855					855				
X	507	93300	38	EACH	STEEL POINTS OR SHOES (ALTERNATE 1)	19					19				
X	523	20000	1	EACH	DYNAMIC LOAD TESTING (ALTERNATE 1)	1					1				
X	507	00100	2280	FT	STEEL PILES HP10x42, FURNISHED (ALTERNATE 2)	1140					1140				
X	507	00150	2090	FT	STEEL PILES HP10x42, DRIVEN (ALTERNATE 2)	1045					1045				
X	507	93300	38	EACH	STEEL POINTS OR SHOES (ALTERNATE 2)	19					19				

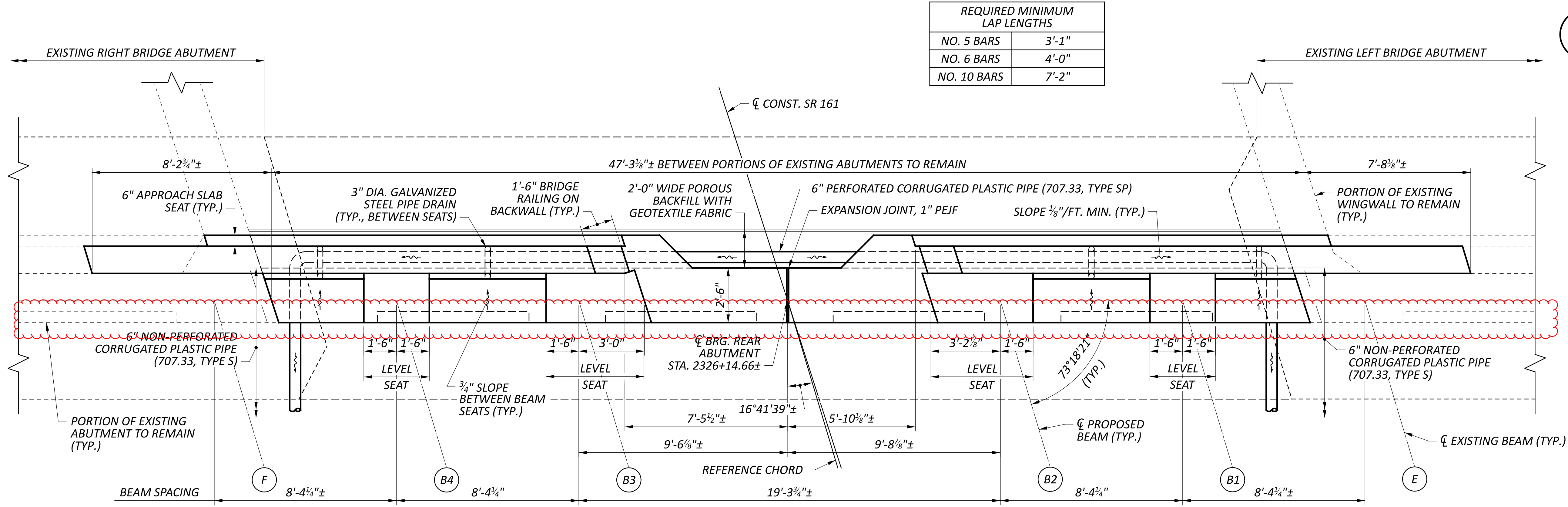
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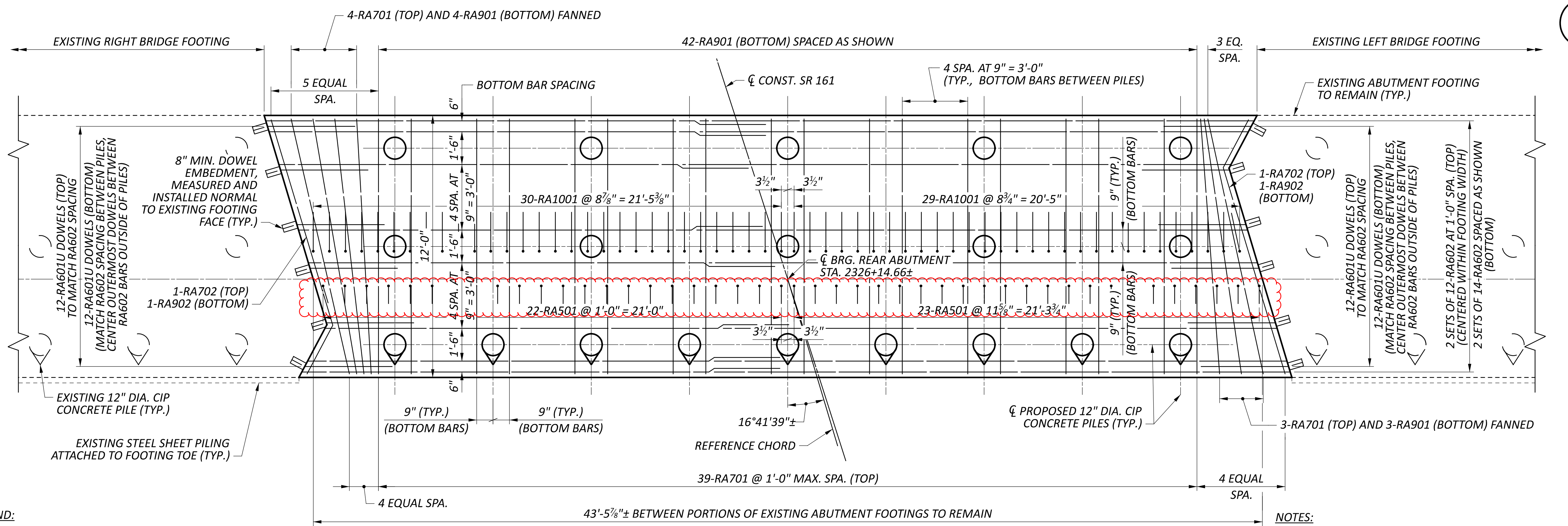
ESTIMATED QUANTITIES  
 BRIDGE NO. FRA-00161-21.730 L&R  
 SR 161 OVER US 62 (JOHNSTOWN RD.)

SFN	2503530 (R)
SFN	2503565 (L)
DESIGN AGENCY	
8890 LYRA DR. SUITE 100 COLUMBUS, OH 43240 614.839.5770	
DESIGNER	CHECKER
RBK	DGJ
REVIEWER	
DWW 02/10/23	
PROJECT ID	
116322	
SUBSET	TOTAL
6	54
SHEET	TOTAL
705	846

REQUIRED MINIMUM LAP LENGTHS	
NO. 5 BARS	3'-1"
NO. 6 BARS	4'-0"
NO. 10 BARS	7'-2"



**PLAN**  
(PILES NOT SHOWN FOR CLARITY)



**FOOTING PLAN**

- LEGEND:**
- (X) EXISTING BEAM
  - (B#) PROPOSED BEAM

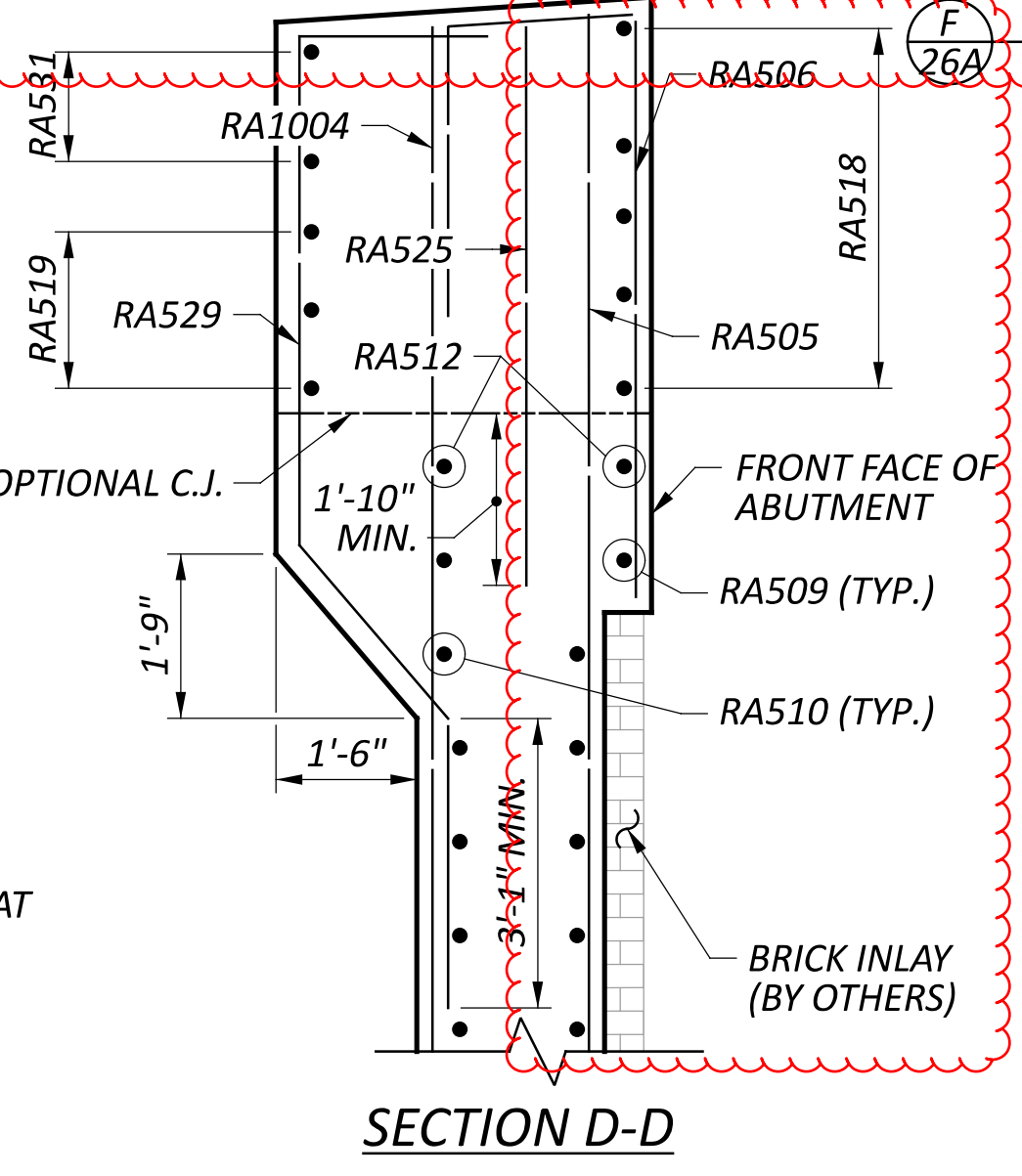
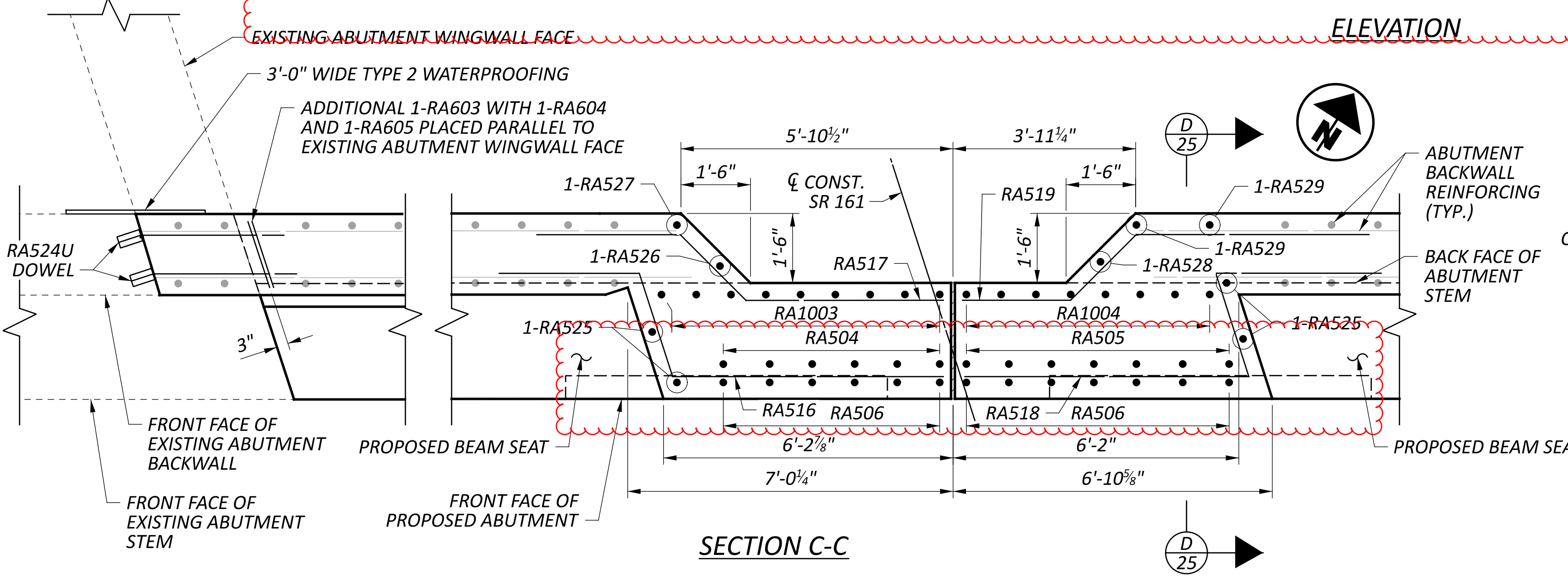
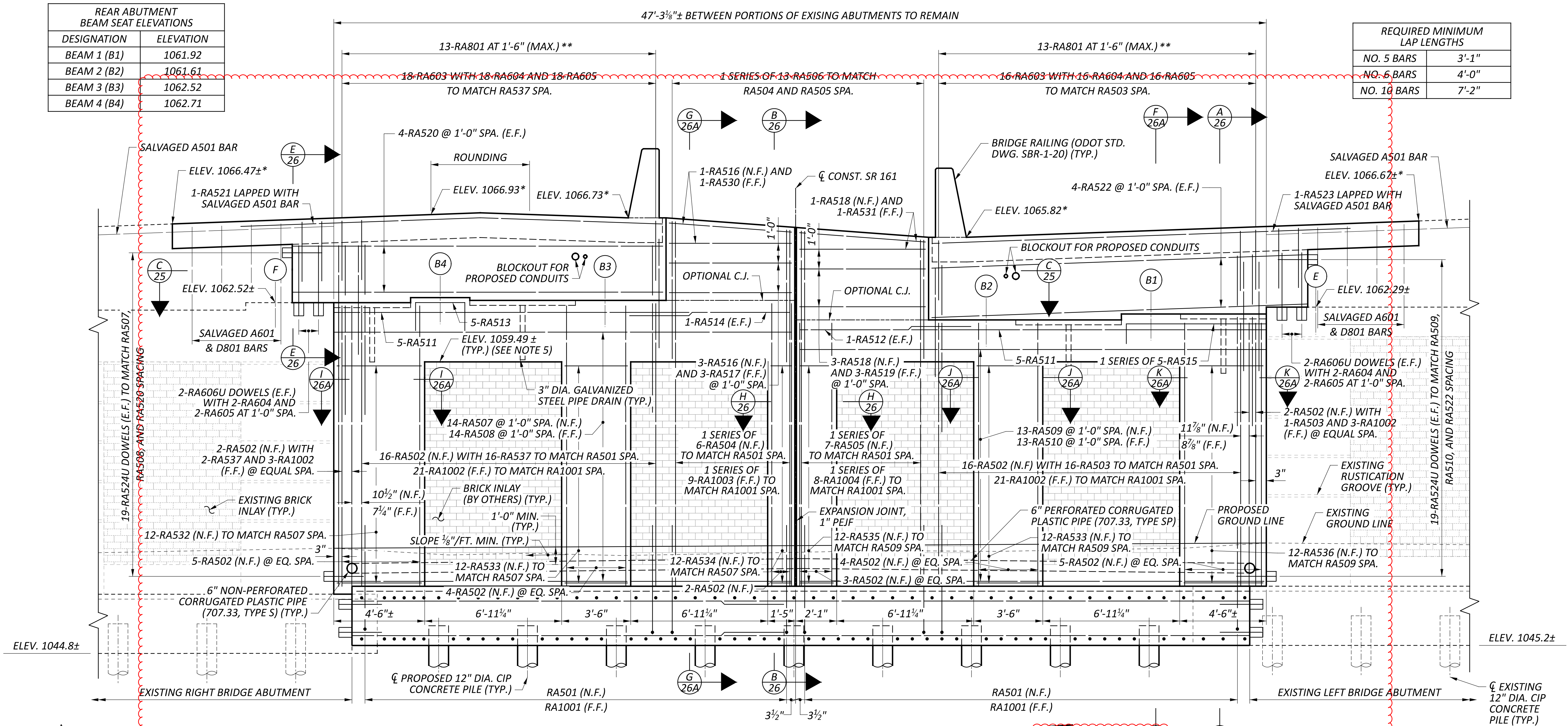
- NOTES:**
1. FOR REAR ABUTMENT ELEVATION VIEW, SEE SHEET 25 OF 54.
  2. FOR REAR ABUTMENT DETAILS, SEE SHEET 26 OF 54.
  3. FOR ADDITIONAL NOTES AND ABUTMENT DETAILS, SEE SHEET 30 OF 54.

**REAR ABUTMENT PLAN**  
**BRIDGE NO. FRA-00161-21.730 L&R**  
**SR 161 OVER US 62 (JOHNSTOWN RD.)**

SFN	2503530 (R)
SFN	2503565 (L)
DESIGN AGENCY	<b>HDR</b>
DESIGNER	JML
CHECKER	RBK
REVIEWER	DWW
PROJECT ID	116322
SUBSET	24
TOTAL	54
SHEET	723
TOTAL	846

REAR ABUTMENT BEAM SEAT ELEVATIONS	
DESIGNATION	ELEVATION
BEAM 1 (B1)	1061.92
BEAM 2 (B2)	1061.61
BEAM 3 (B3)	1062.52
BEAM 4 (B4)	1062.71

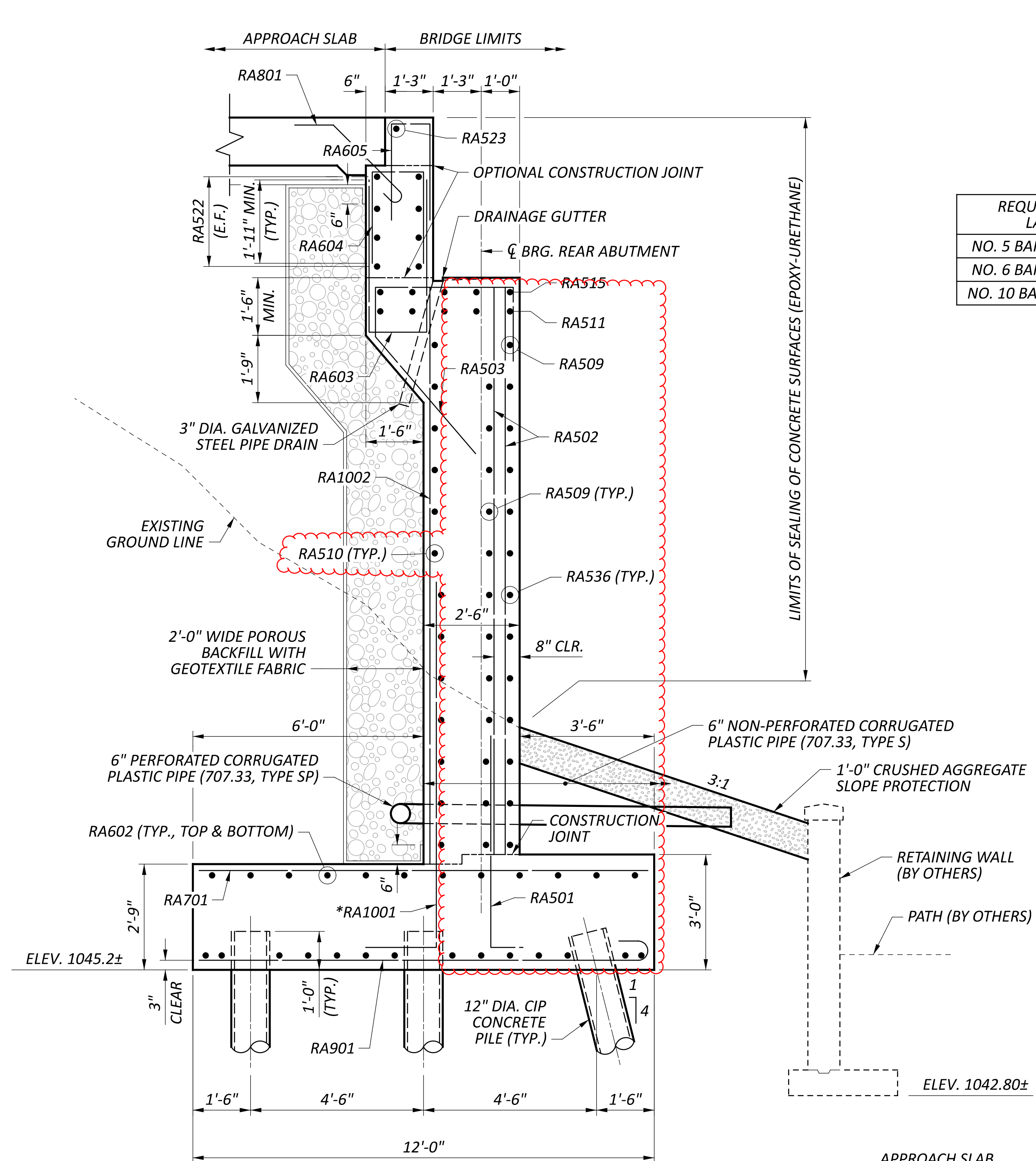
REQUIRED MINIMUM LAP LENGTHS	
NO. 5 BARS	3'-1"
NO. 6 BARS	4'-0"
NO. 10 BARS	7'-2"



- LEGEND:**
- (X) EXISTING BEAM
  - (B#) PROPOSED BEAM
  - \* ELEVATIONS PROVIDED AT FACE OF BACKWALL
  - \*\* MEASURED AND PLACED PARALLEL TO  $\bar{C}$  CONST. SR 161
- NOTES:**
- FOR REAR ABUTMENT PLAN VIEWS, SEE SHEET 24 OF 54.
  - FOR REAR ABUTMENT DETAILS, SEE SHEET 26 AND 26A OF 54.
  - FOR ADDITIONAL NOTES AND ABUTMENT DETAILS, SEE SHEET 30 OF 54.
  - FOR BEARING DETAILS, SEE SHEET 37 OF 54.
  - TOP OF BRICK INLAY (BY OTHERS) SHALL MATCH THE EXISTING RIGHT BRIDGE TOP OF BRICK ELEVATION.

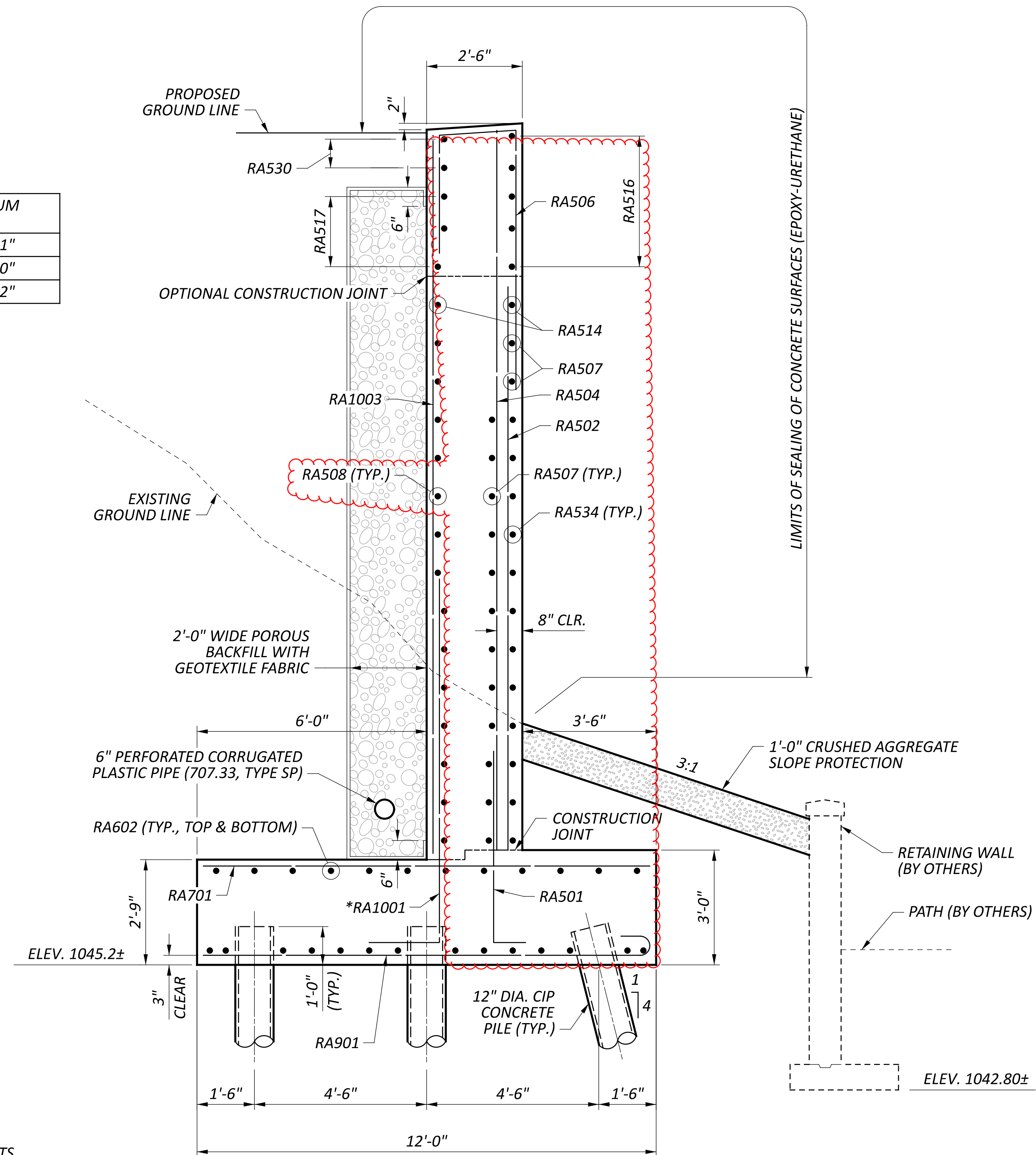
REAR ABUTMENT ELEVATION  
 BRIDGE NO. FRA-00161-21.730 L&R  
 SR 161 OVER US 62 (JOHNSTOWN RD.)

SFN	2503530 (R)
SFN	2503565 (L)
DESIGN AGENCY	<b>HDR</b>
DESIGNER	JML
CHECKER	RBK
REVIEWER	DWW 02/10/23
PROJECT ID	116322
SUBSET	25
TOTAL	54
SHEET	724
TOTAL	846

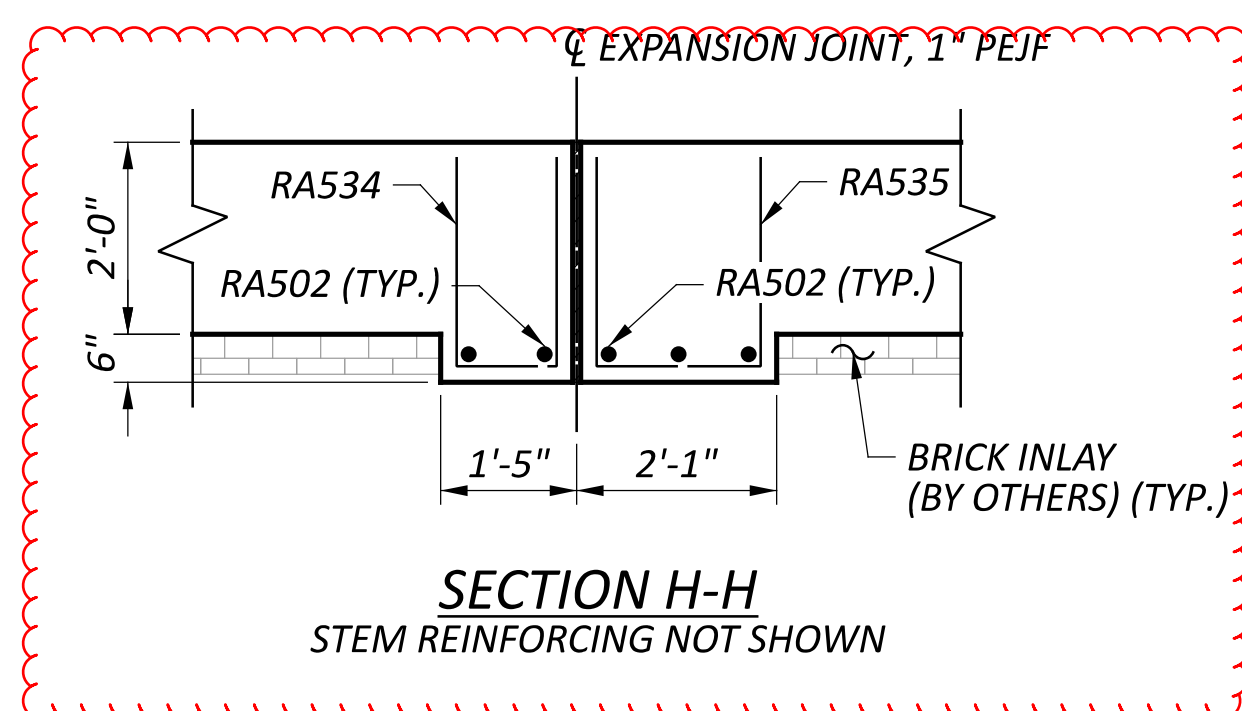


SECTION A-A

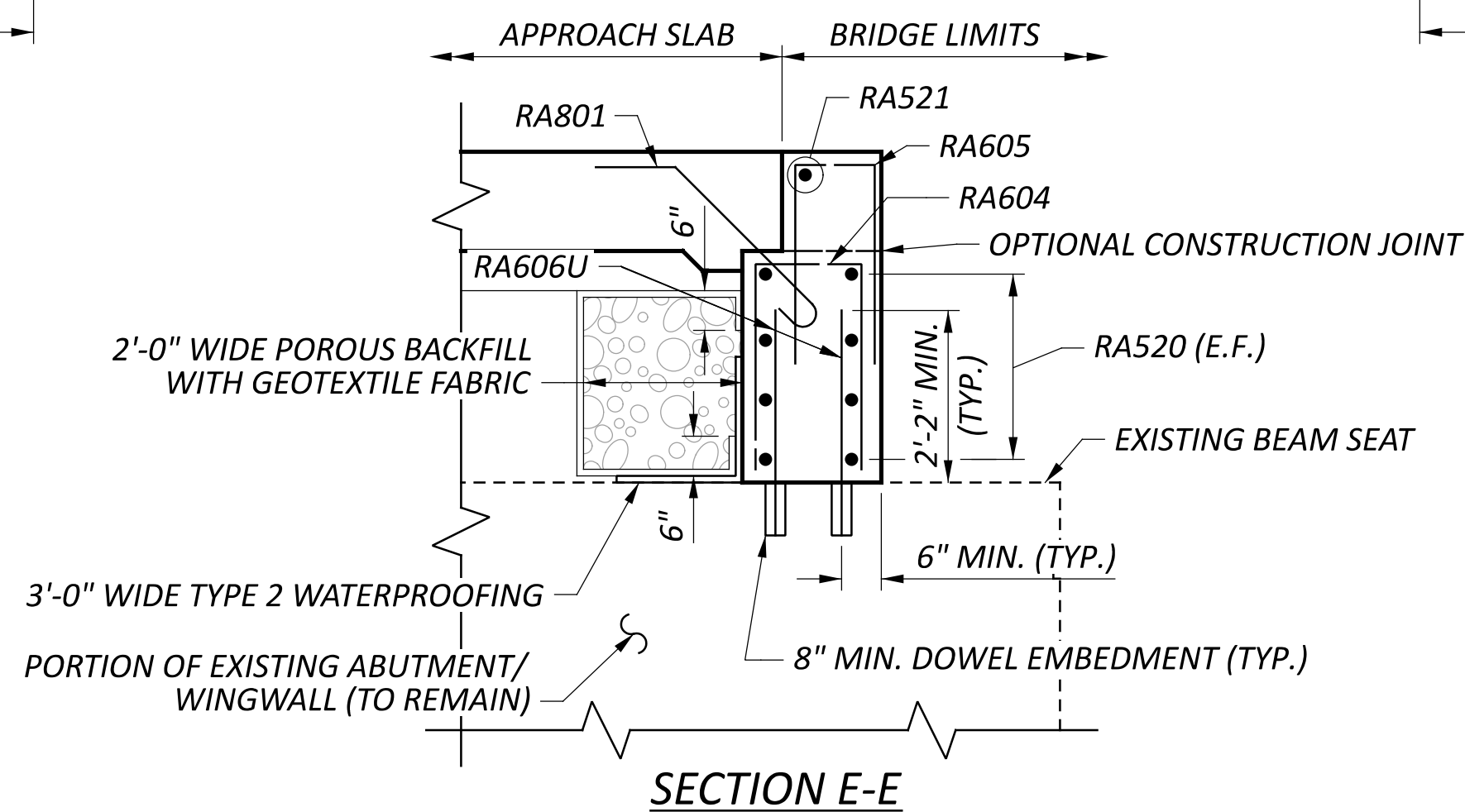
REQUIRED MINIMUM LAP LENGTHS	
NO. 5 BARS	3'-1"
NO. 6 BARS	4'-0"
NO. 10 BARS	7'-2"



SECTION B-B



SECTION H-H  
STEM REINFORCING NOT SHOWN



SECTION E-E

LEGEND:

\* RAISE BAR WHEN IT COINCIDES WITH PILE LOCATION

NOTES:

- FOR REAR ABUTMENT PLAN VIEWS, SEE SHEET 24 OF 54.
- FOR REAR ABUTMENT ELEVATION VIEW, SEE SHEET 25 OF 54.
- FOR ADDITIONAL NOTES AND ABUTMENT DETAILS, SEE SHEET 30 OF 54.
- FOR BEARING DETAILS, SEE SHEET 37 OF 54.
- ALL CLEAR COVER TO REINFORCING STEEL SHALL BE 2 INCHES MINIMUM, UNLESS NOTED OTHERWISE.

REAR ABUTMENT DETAILS (1 OF 2)  
 BRIDGE NO. FRA-00161-21.730 L&R  
 SR 161 OVER US 62 (JOHNSTOWN RD.)

SFN 2503530 (R)

SFN 2503565 (L)

DESIGN AGENCY



8890 LYRA DR.  
 SUITE 100  
 COLUMBUS, OH 43240  
 614.839.5770

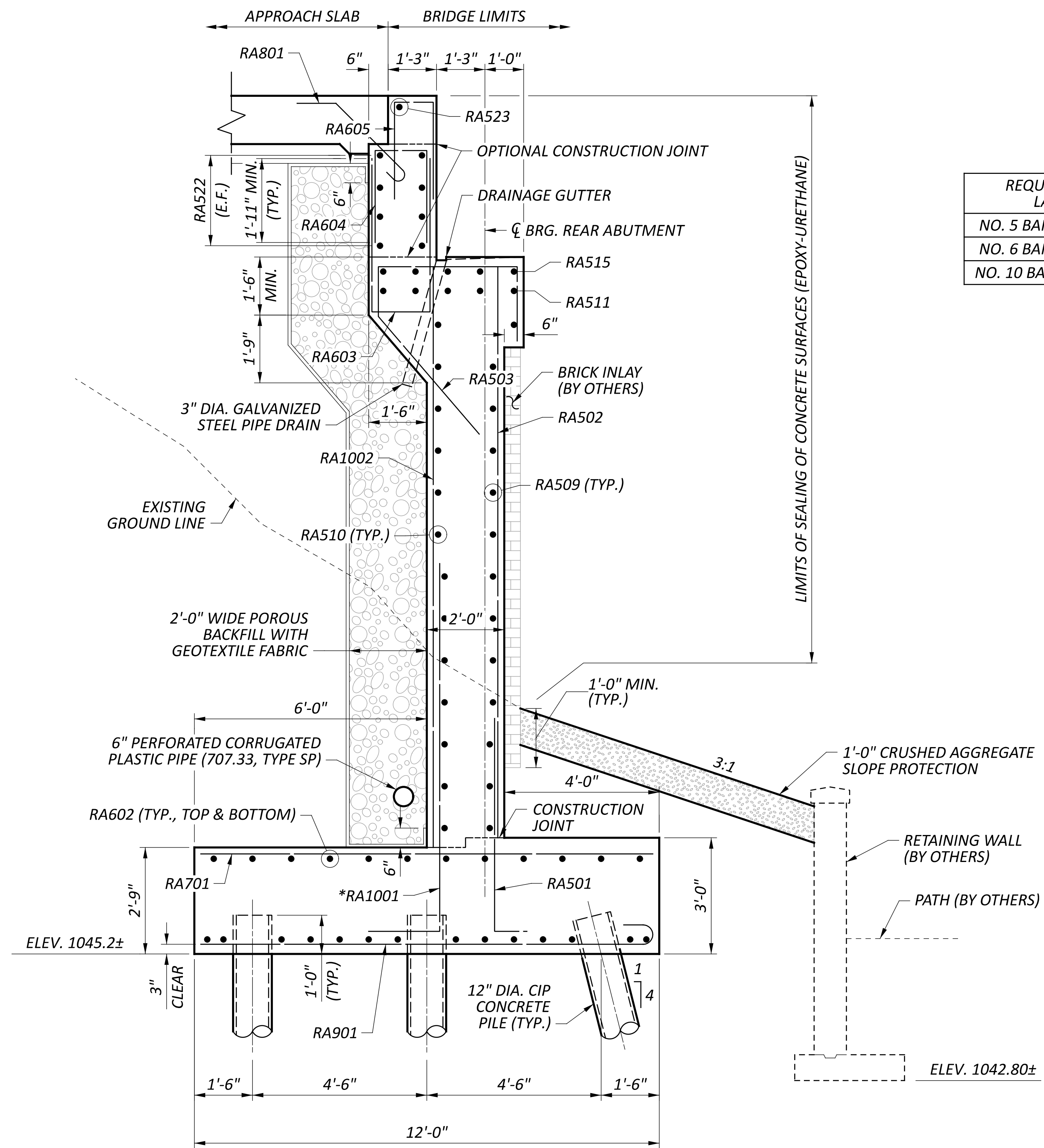
DESIGNER JML  
 CHECKER RBK

REVIEWER  
 DWW 02/10/23

PROJECT ID  
 116322

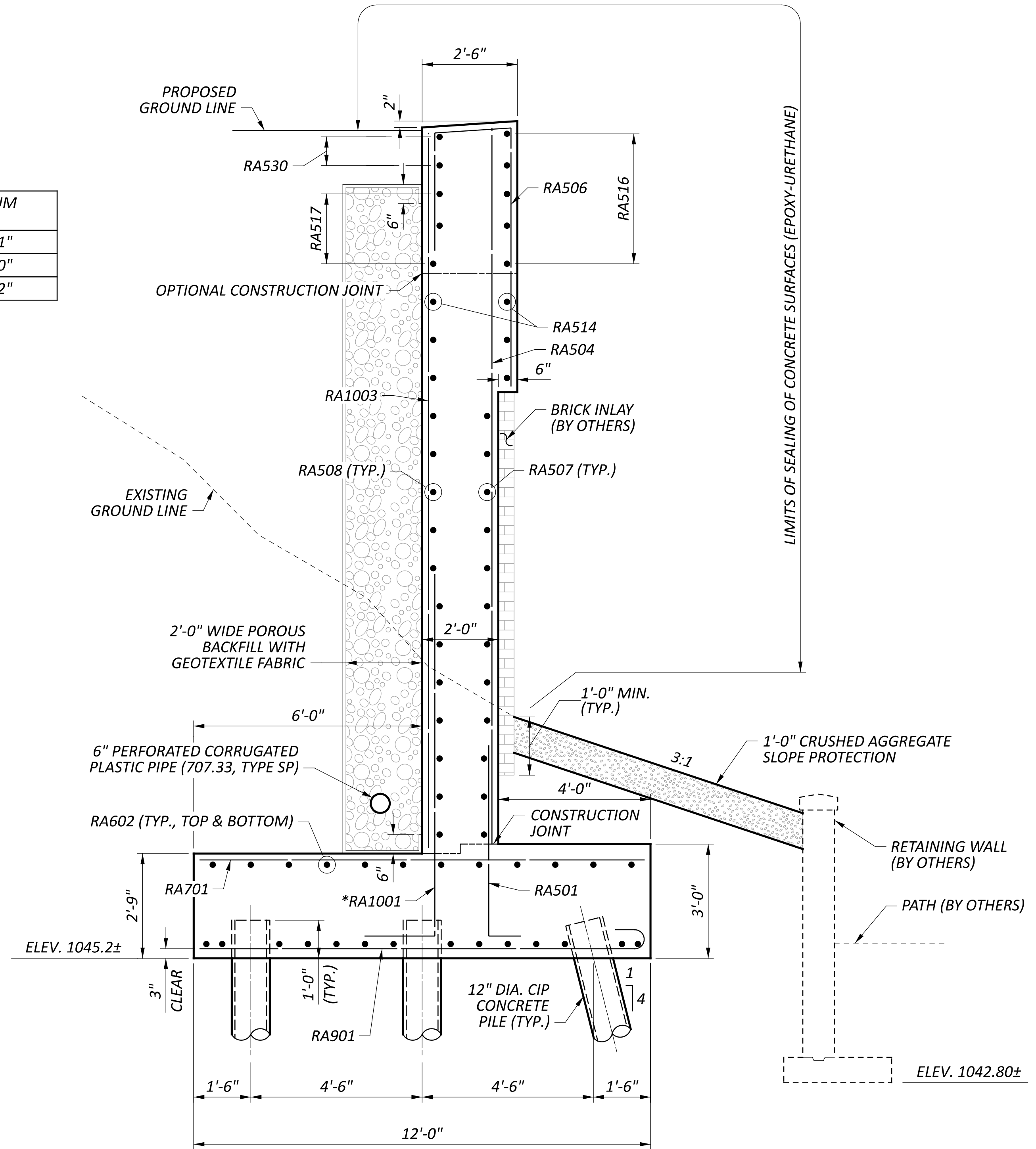
SUBSET TOTAL  
 26 54

SHEET TOTAL  
 725 846

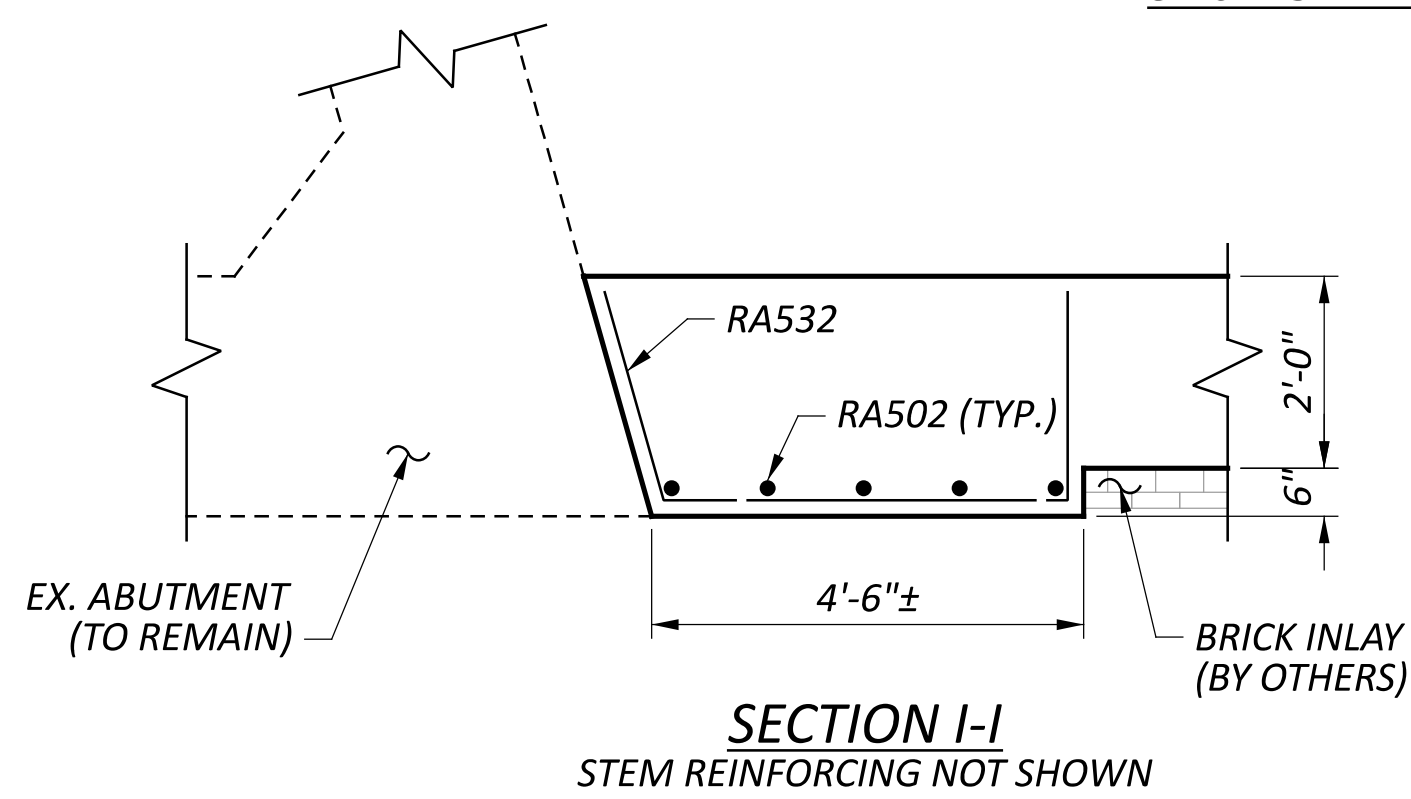


SECTION F-F

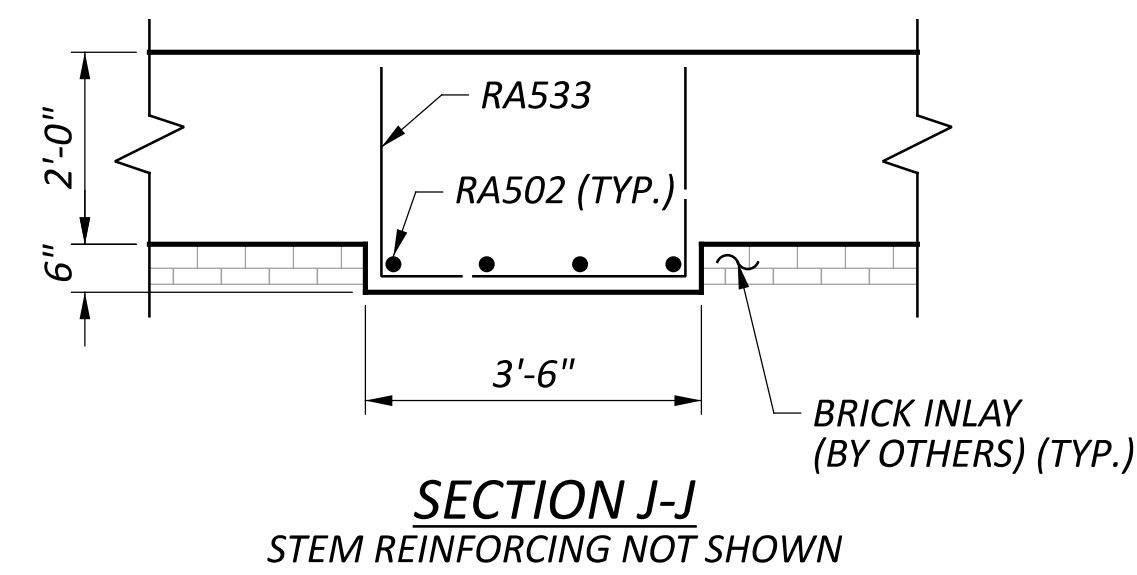
REQUIRED MINIMUM LAP LENGTHS	
NO. 5 BARS	3'-1"
NO. 6 BARS	4'-0"
NO. 10 BARS	7'-2"



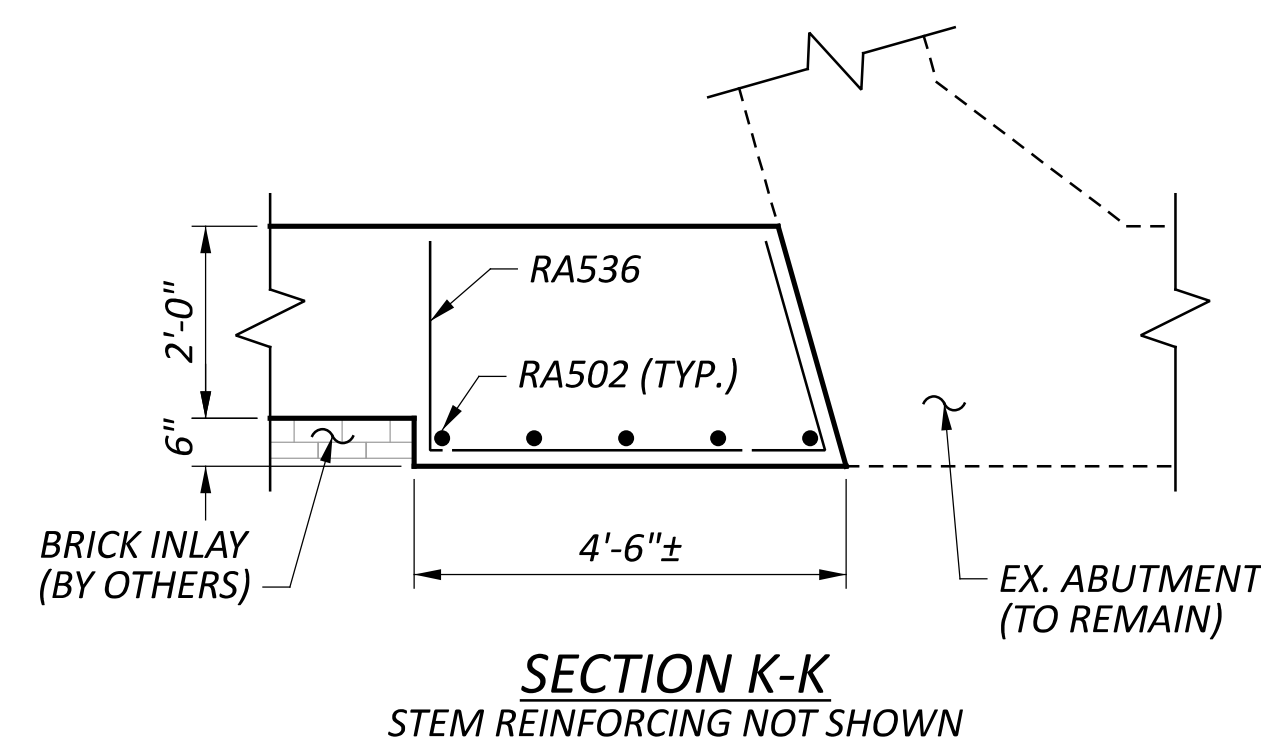
SECTION G-G



SECTION I-I  
STEM REINFORCING NOT SHOWN



SECTION J-J  
STEM REINFORCING NOT SHOWN



SECTION K-K  
STEM REINFORCING NOT SHOWN

LEGEND:

\* RAISE BAR WHEN IT COINCIDES WITH PILE LOCATION

NOTES:

1. FOR ADDITIONAL REAR ABUTMENT NOTES, SEE SHEET 26 OF 54.

SFN 2503530 (R)

SFN 2503565 (L)

DESIGN AGENCY



8890 LYRA DR.  
 SUITE 100  
 COLUMBUS, OH 43240  
 614.839.5770

DESIGNER RBK

CHECKER JTW

REVIEWER

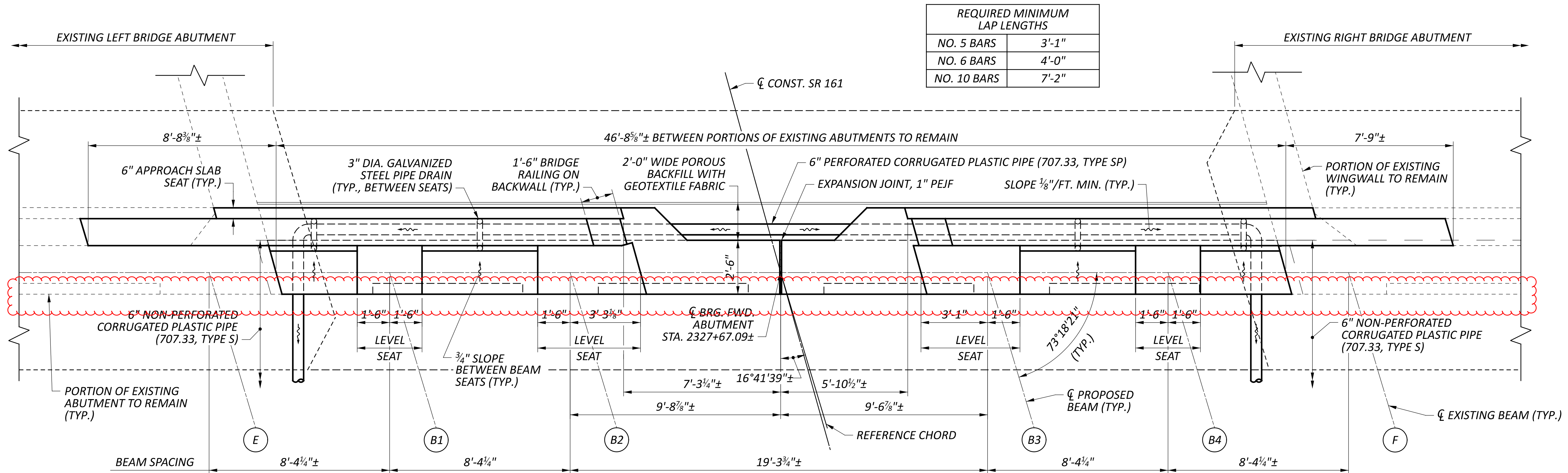
PROJECT ID 116322

SUBSET 26A

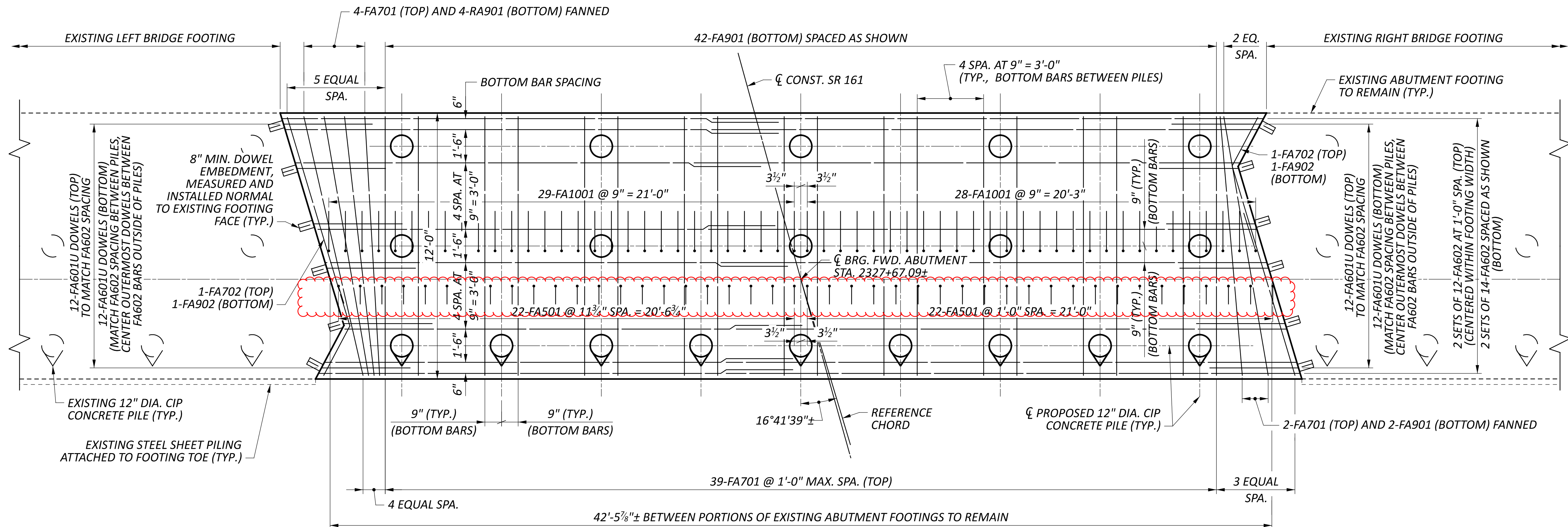
TOTAL 54

SHEET 725A

TOTAL 846



**PLAN**  
(PILES NOT SHOWN FOR CLARITY)



**FOOTING PLAN**

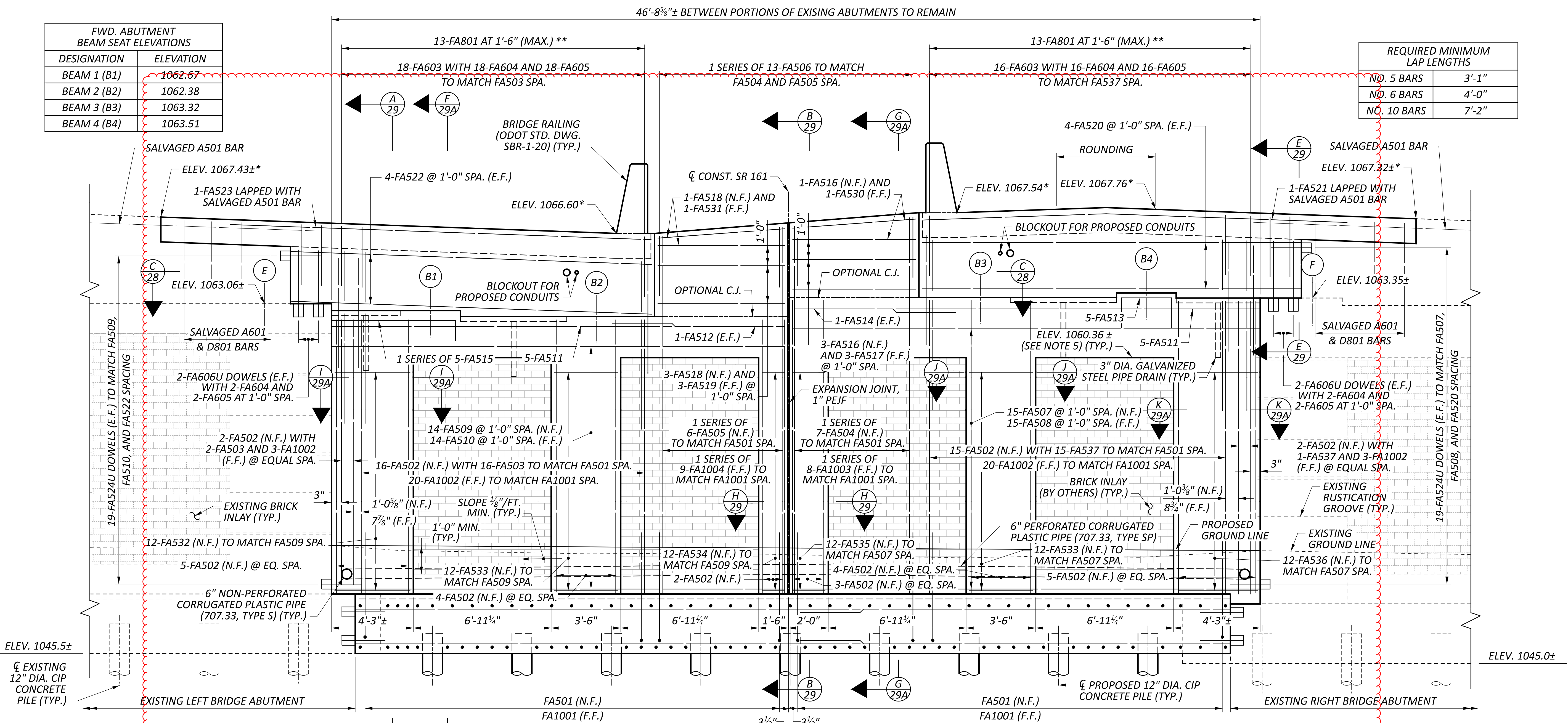
- LEGEND:**
- (X) EXISTING BEAM
  - (B#) PROPOSED BEAM

- NOTES:**
- FOR FWD. ABUTMENT ELEVATION VIEW, SEE SHEET 28 OF 54.
  - FOR FWD. ABUTMENT DETAILS, SEE SHEET 29 OF 54.
  - FOR ADDITIONAL NOTES AND ABUTMENT DETAILS, SEE SHEET 30 OF 54.

**FORWARD ABUTMENT PLAN**  
 BRIDGE NO. FRA-00161-21.730 L&R  
 SR 161 OVER US 62 (JOHNSTOWN RD.)

SFN	2503530 (R)
SFN	2503565 (L)
DESIGN AGENCY	<b>HDR</b>
DESIGNER	JML
CHECKER	RBK
REVIEWER	
DWW	02/10/23
PROJECT ID	116322
SUBSET	TOTAL
27	54
SHEET	TOTAL
726	846

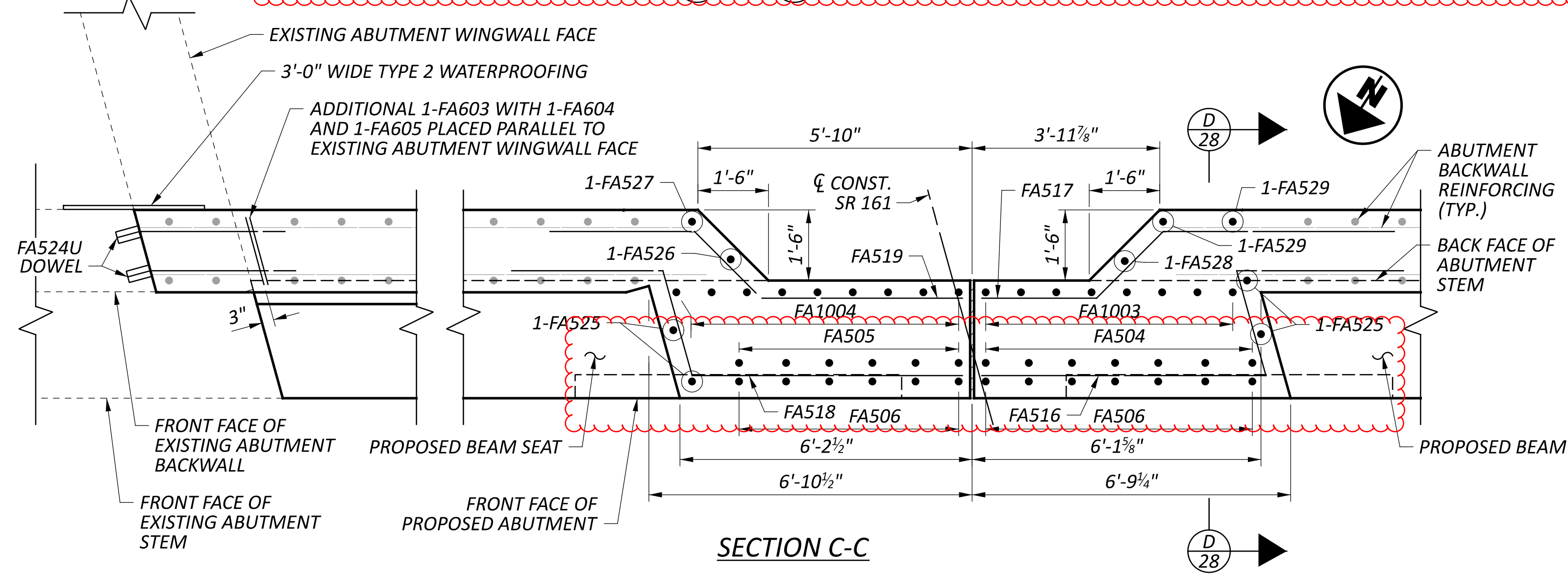




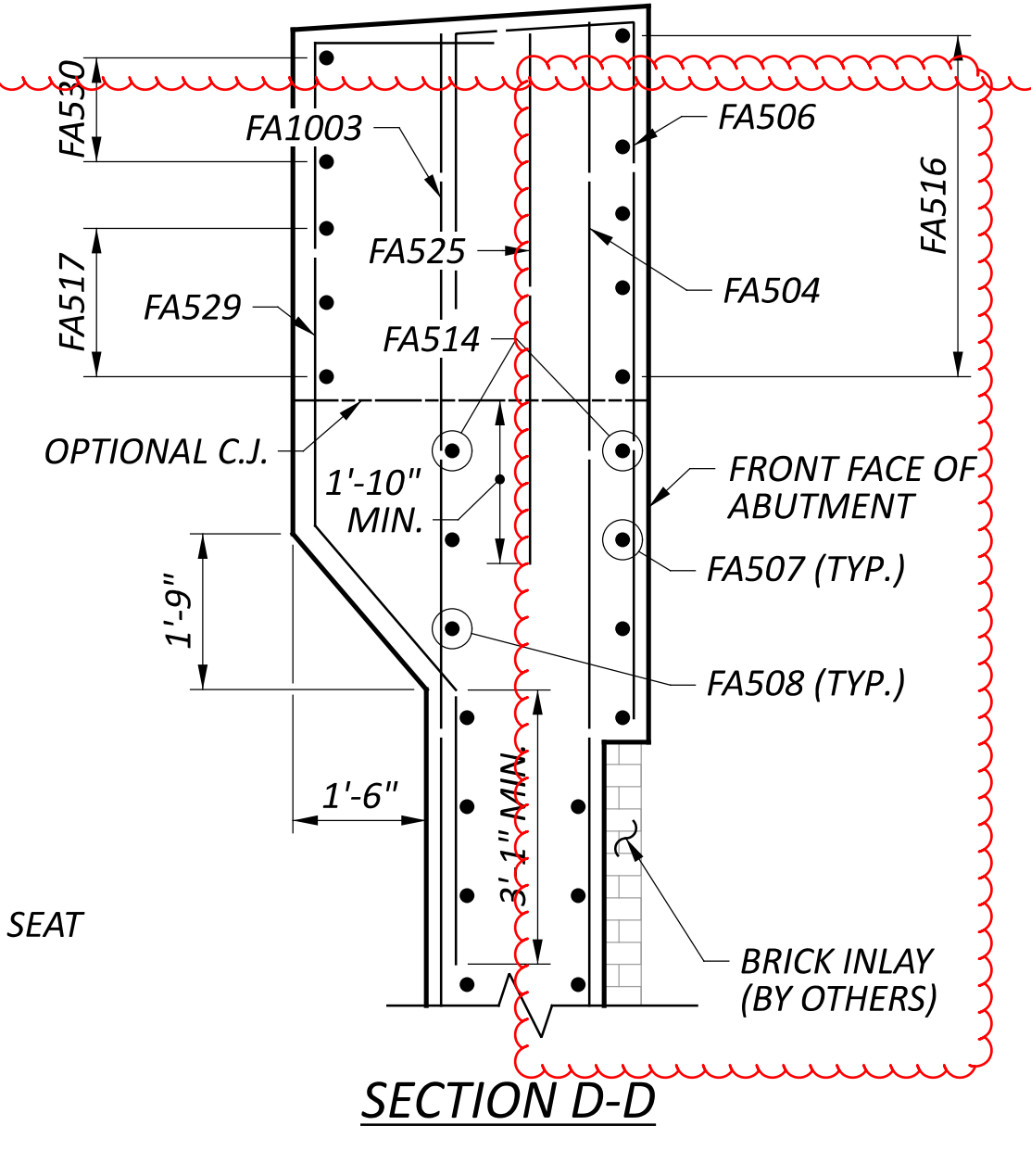
FWD. ABUTMENT BEAM SEAT ELEVATIONS	
DESIGNATION	ELEVATION
BEAM 1 (B1)	1062.67
BEAM 2 (B2)	1062.38
BEAM 3 (B3)	1063.32
BEAM 4 (B4)	1063.51

REQUIRED MINIMUM LAP LENGTHS	
NO. 5 BARS	3'-1"
NO. 6 BARS	4'-0"
NO. 10 BARS	7'-2"

ELEVATION



SECTION C-C



SECTION D-D

LEGEND:

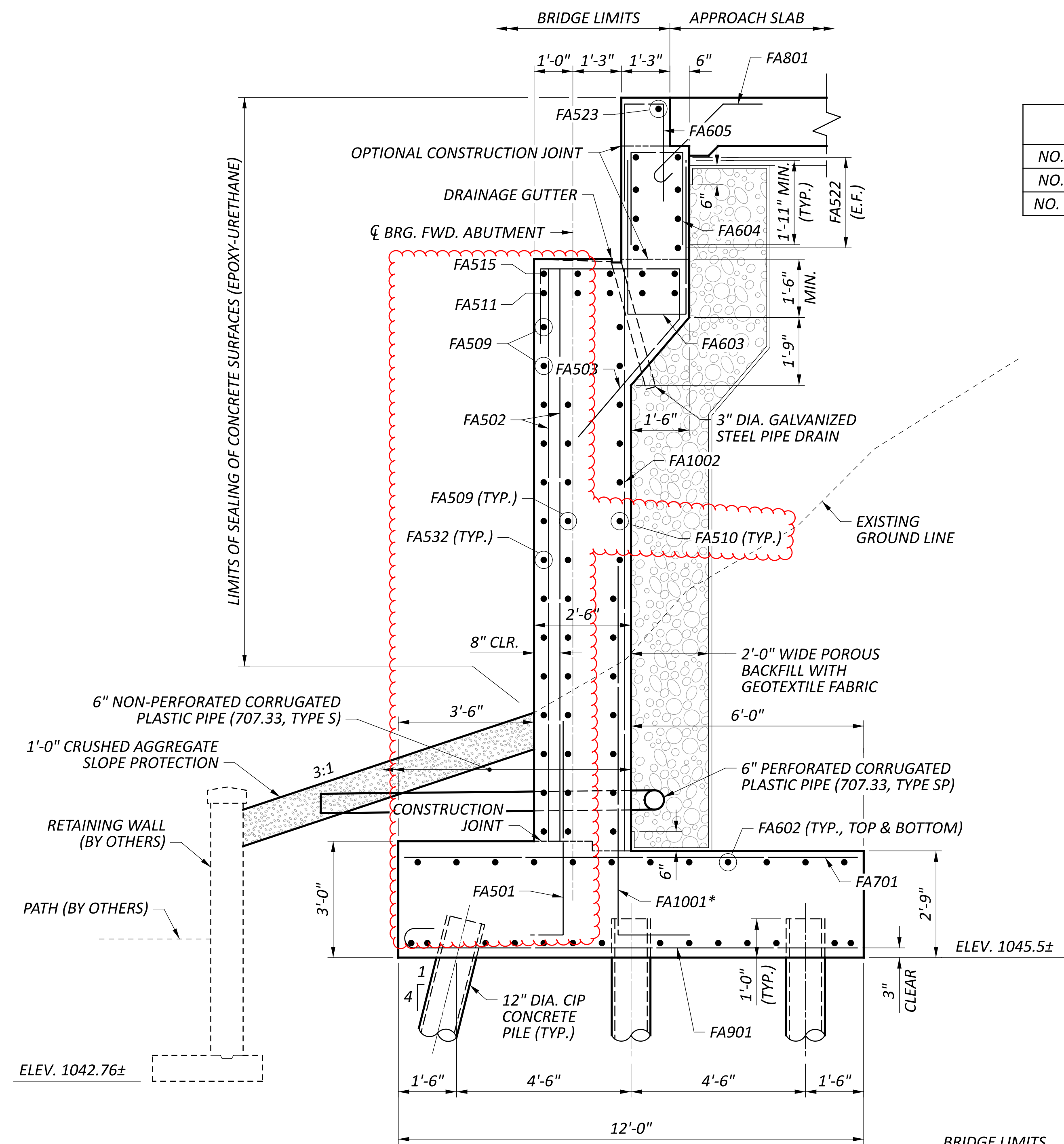
- (X) EXISTING BEAM
- (B#) PROPOSED BEAM
- \* ELEVATIONS PROVIDED AT FACE OF BACKWALL
- \*\* MEASURED AND PLACED PARALLEL TO  $\bar{C}$  CONST. SR 161

NOTES:

1. FOR FWD. ABUTMENT PLAN VIEWS, SEE SHEET 27 OF 54.
2. FOR FWD. ABUTMENT DETAILS, SEE SHEET 29 AND 29A OF 54.
3. FOR ADDITIONAL NOTES AND ABUTMENT DETAILS, SEE SHEET 30 OF 54.
4. FOR BEARING DETAILS, SEE SHEET 37 OF 54.
5. TOP OF BRICK INLAY (BY OTHERS) SHALL MATCH THE EXISTING RIGHT BRIDGE TOP OF BRICK ELEVATION.

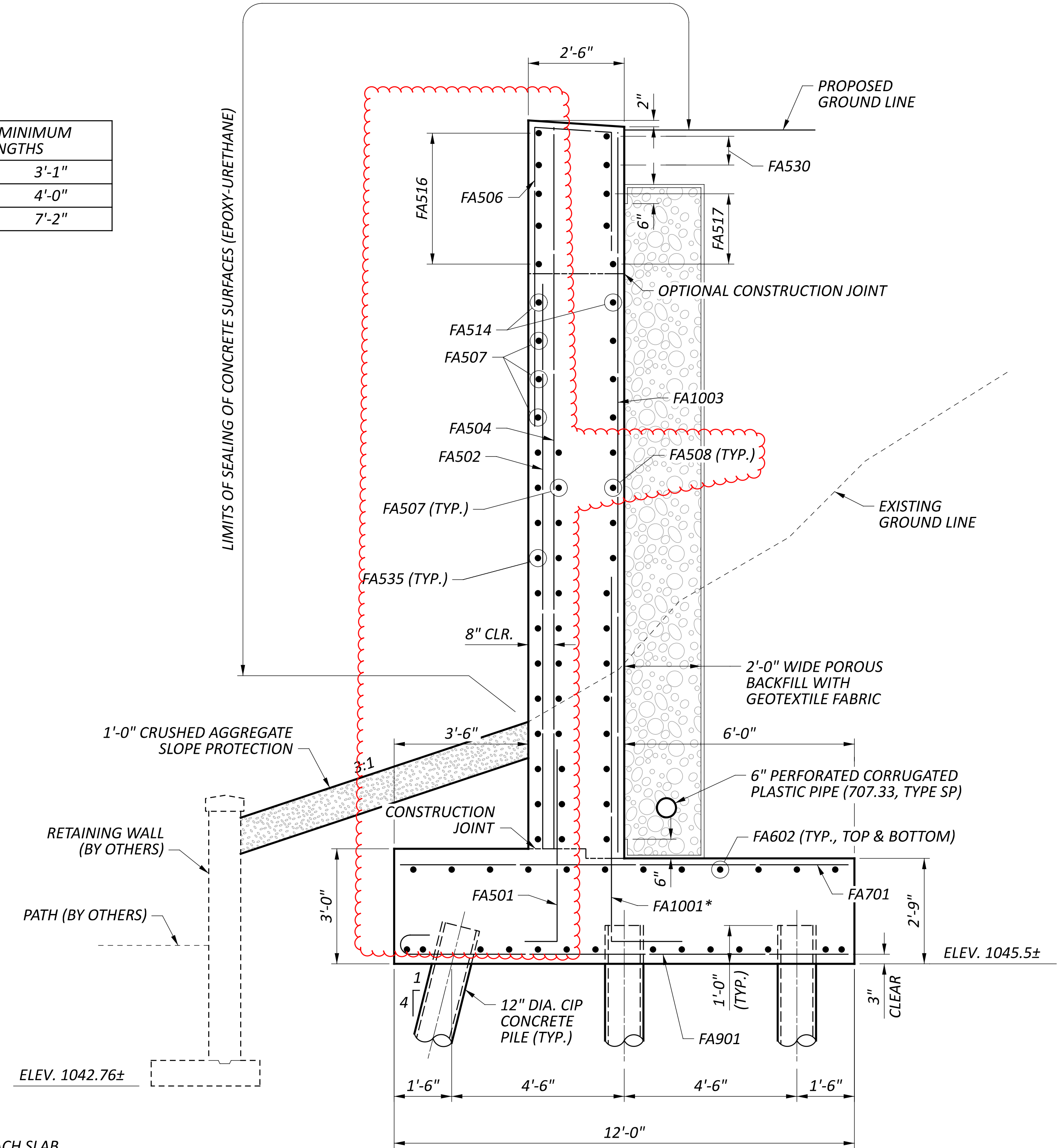
FORWARD ABUTMENT ELEVATION  
 BRIDGE NO. FRA-00161-21.730 L&R  
 SR 161 OVER US 62 (JOHNSTOWN RD.)

SFN	2503530 (R)
SFN	2503565 (L)
DESIGN AGENCY	<b>HDR</b>
DESIGNER	JML
CHECKER	RBK
REVIEWER	DWW 02/10/23
PROJECT ID	116322
SUBSET	28
TOTAL	54
SHEET	727
TOTAL	846

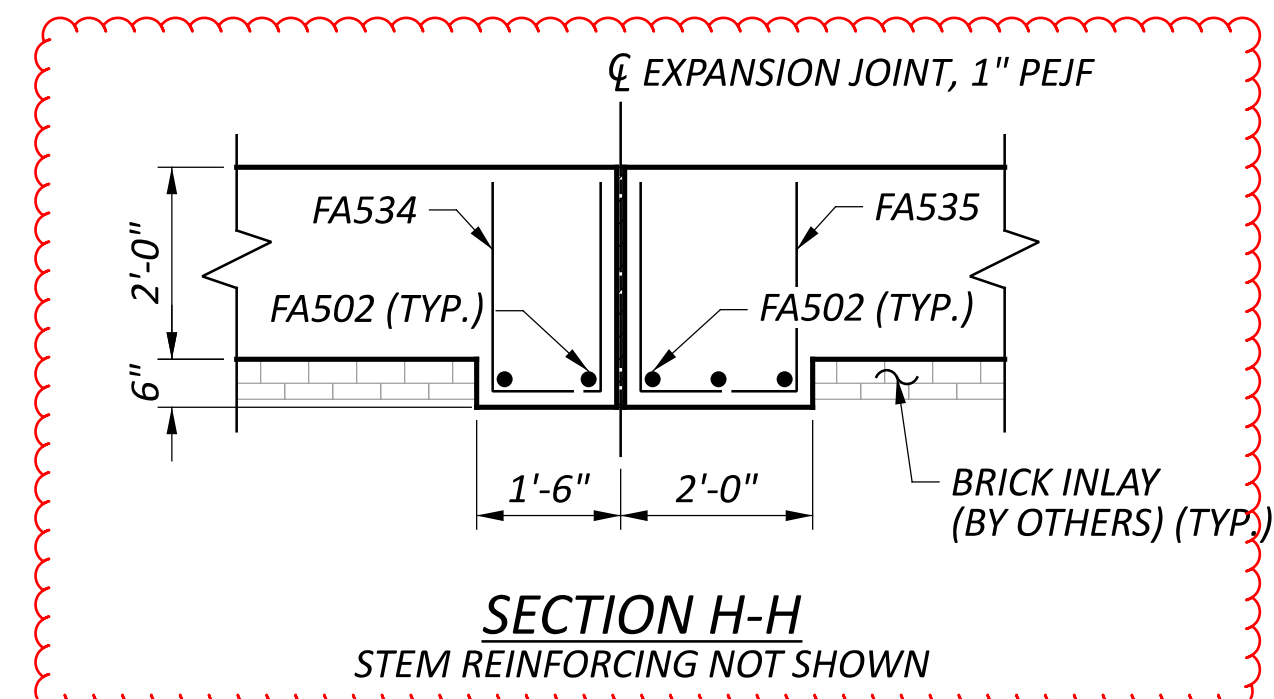


SECTION A-A

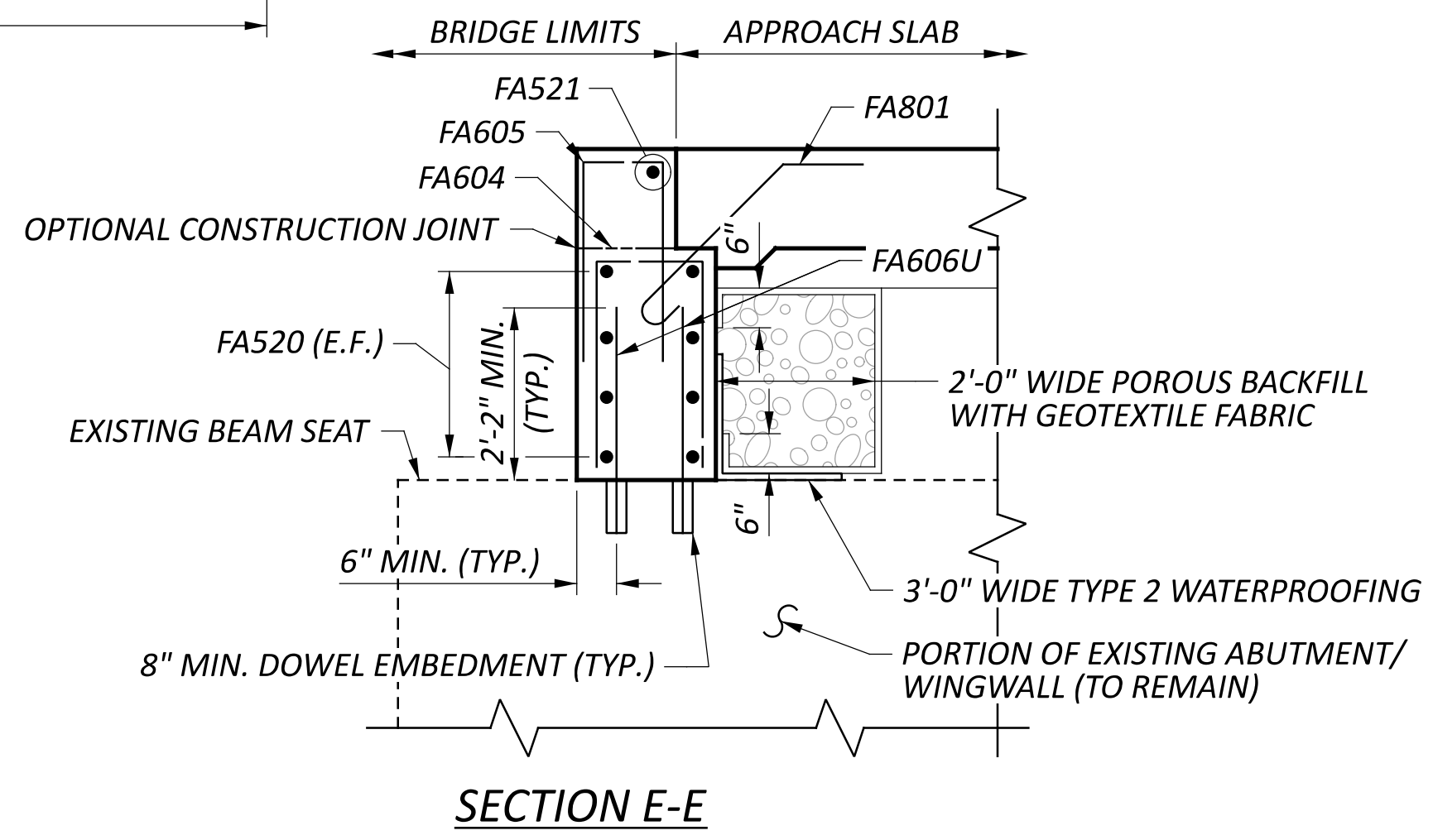
REQUIRED MINIMUM LAP LENGTHS	
NO. 5 BARS	3'-1"
NO. 6 BARS	4'-0"
NO. 10 BARS	7'-2"



SECTION B-B



SECTION H-H



SECTION E-E

LEGEND

\* RAISE BAR WHEN IT COINCIDES WITH PILE LOCATION

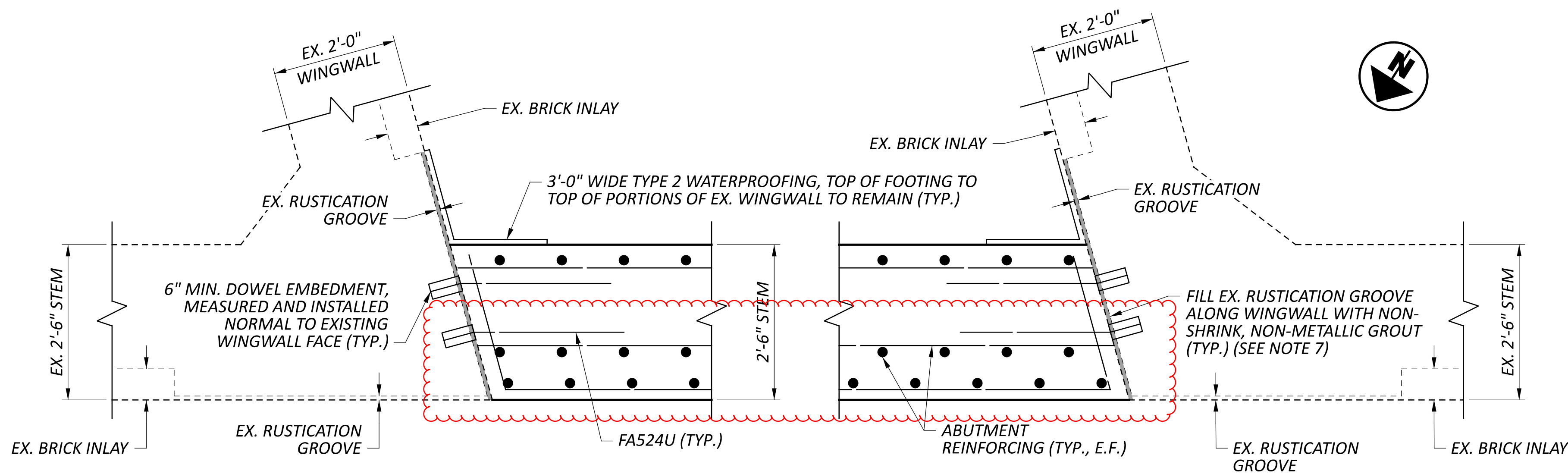
NOTES:

- FOR FWD. ABUTMENT PLAN VIEWS, SEE SHEET 27 OF 54.
- FOR FWD. ABUTMENT ELEVATION VIEW, SEE SHEET 28 OF 54.
- FOR ADDITIONAL NOTES AND ABUTMENT DETAILS, SEE SHEET 30 OF 54.
- FOR BEARING DETAILS, SEE SHEET 37 OF 54.
- ALL CLEAR COVER TO REINFORCING STEEL SHALL BE 2 INCHES MINIMUM, UNLESS NOTED OTHERWISE.

FORWARD ABUTMENT DETAILS (1 OF 2)  
 BRIDGE NO. FRA-00161-21.730 L&R  
 SR 161 OVER US 62 (JOHNSTOWN RD.)

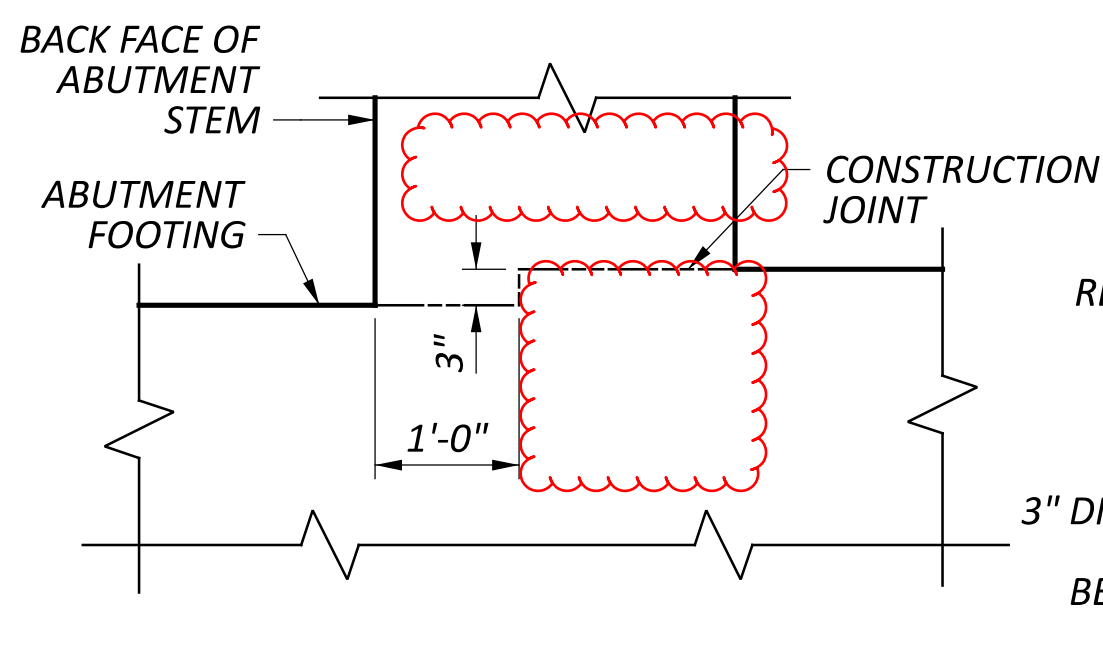
SFN	2503530 (R)
SFN	2503565 (L)
DESIGN AGENCY	<b>HDR</b>
DESIGNER	JML
CHECKER	RBK
REVIEWER	DWW 02/10/23
PROJECT ID	116322
SUBSET	29
TOTAL	54
SHEET	728
TOTAL	846



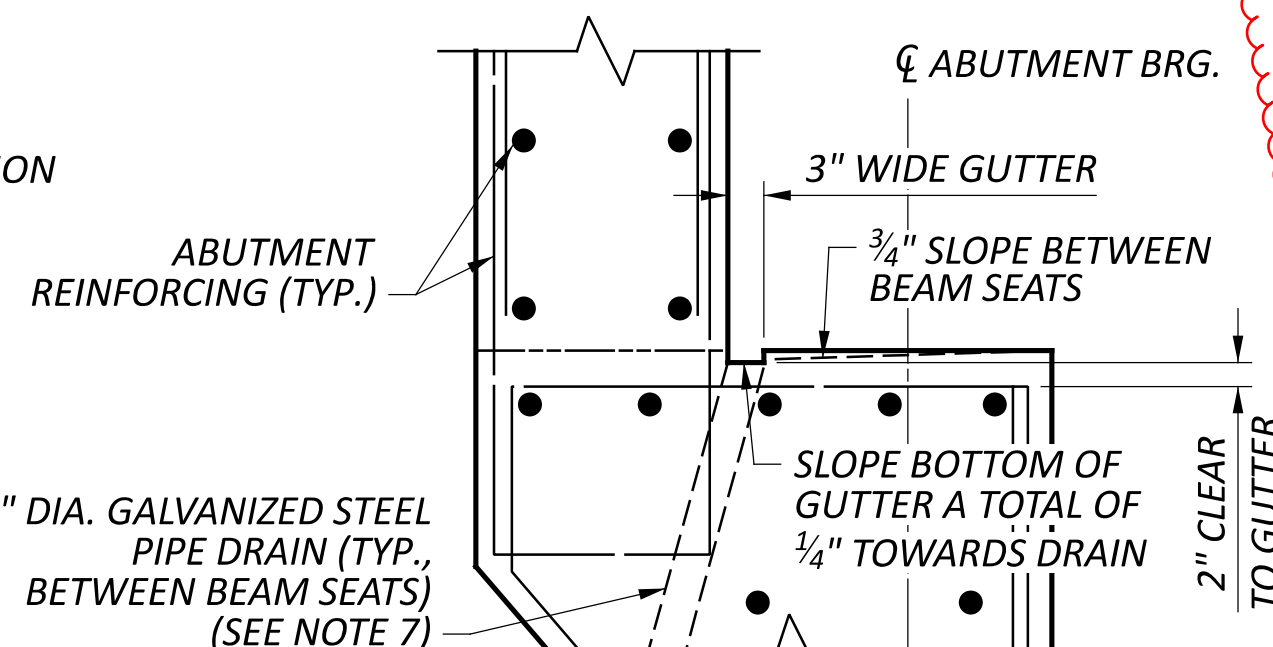


**PARTIAL ABUTMENT STEM PLAN**

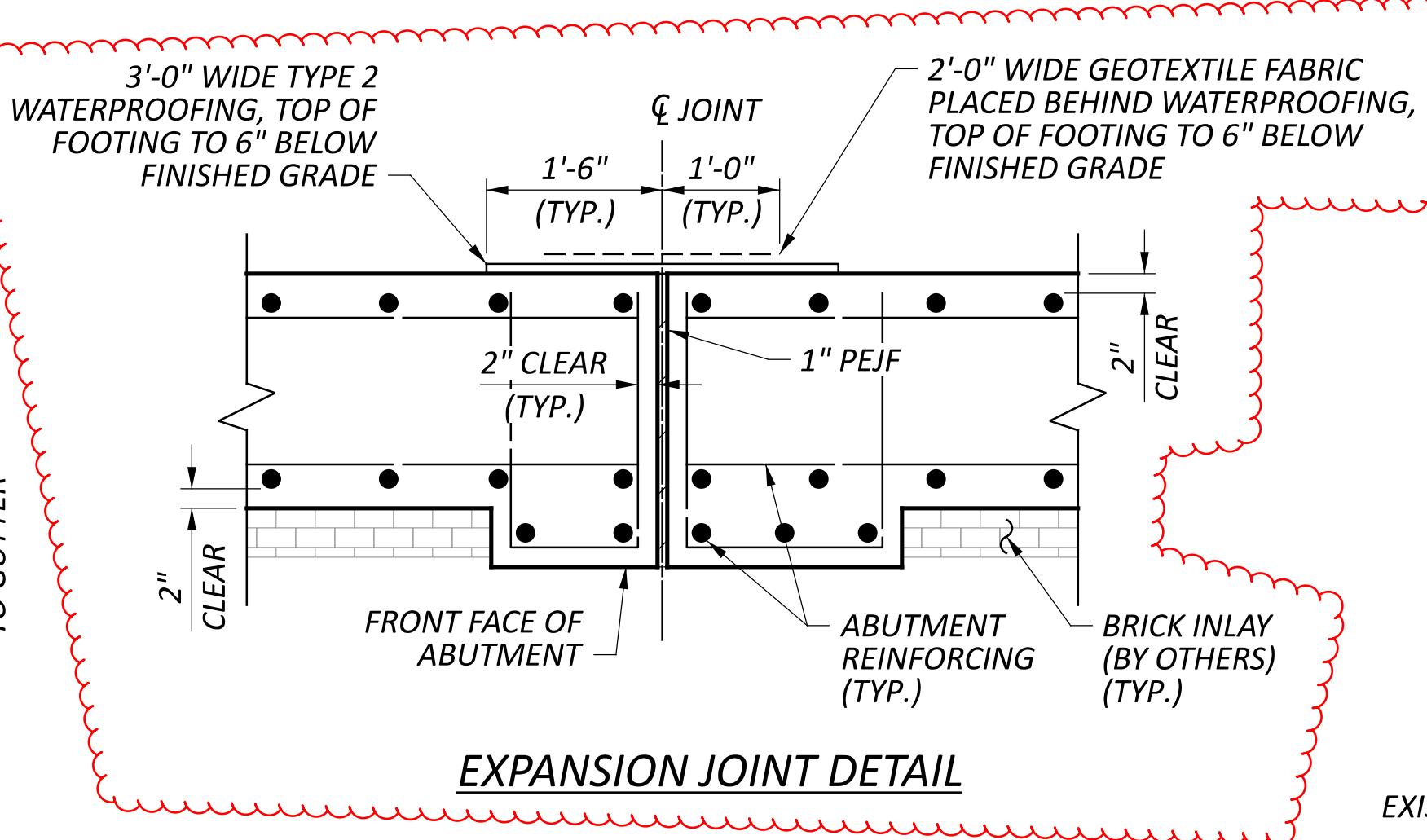
(FWD. ABUTMENT SHOWN, REAR ABUTMENT SIMILAR)



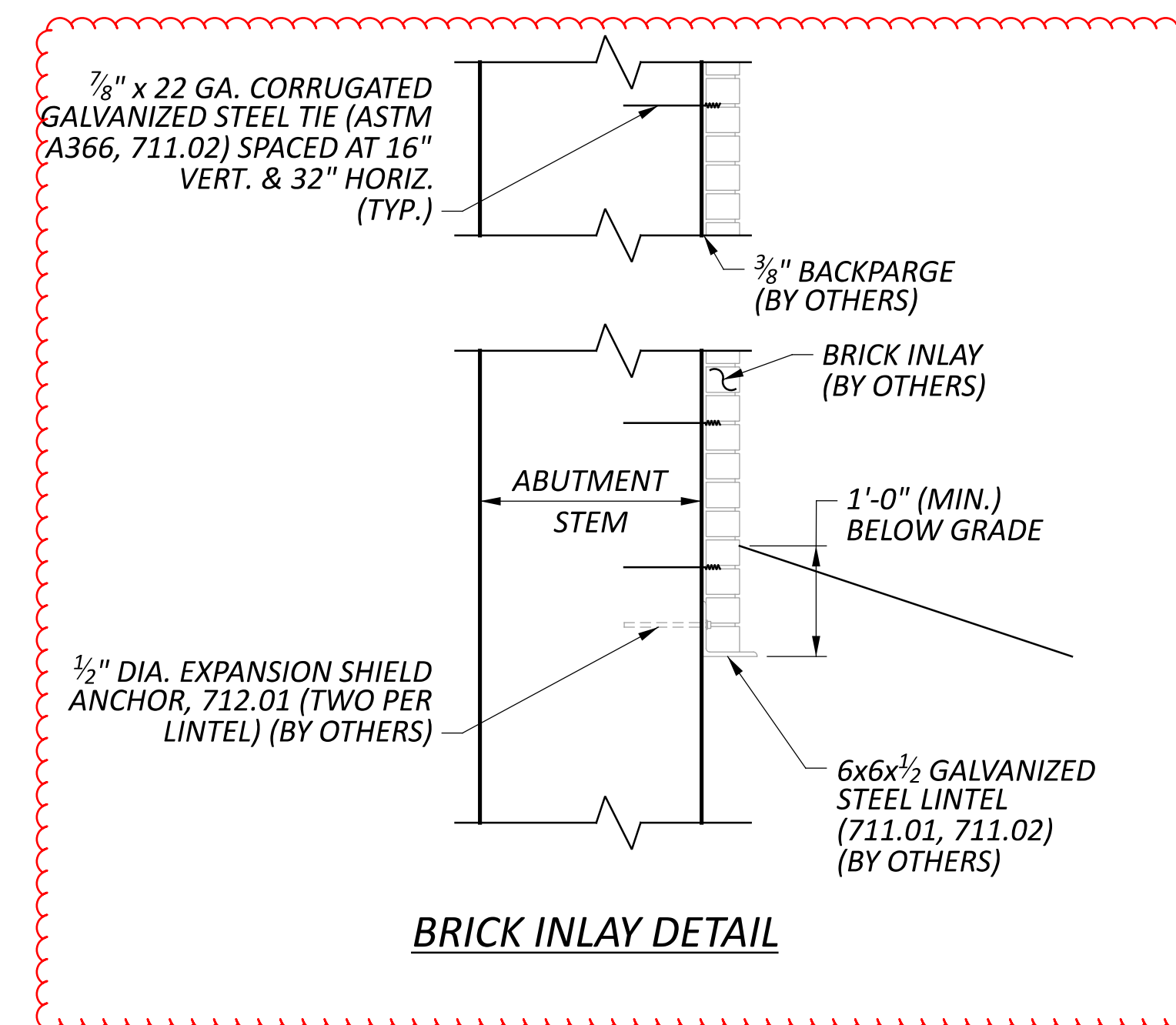
**CONSTRUCTION JOINT DETAIL**



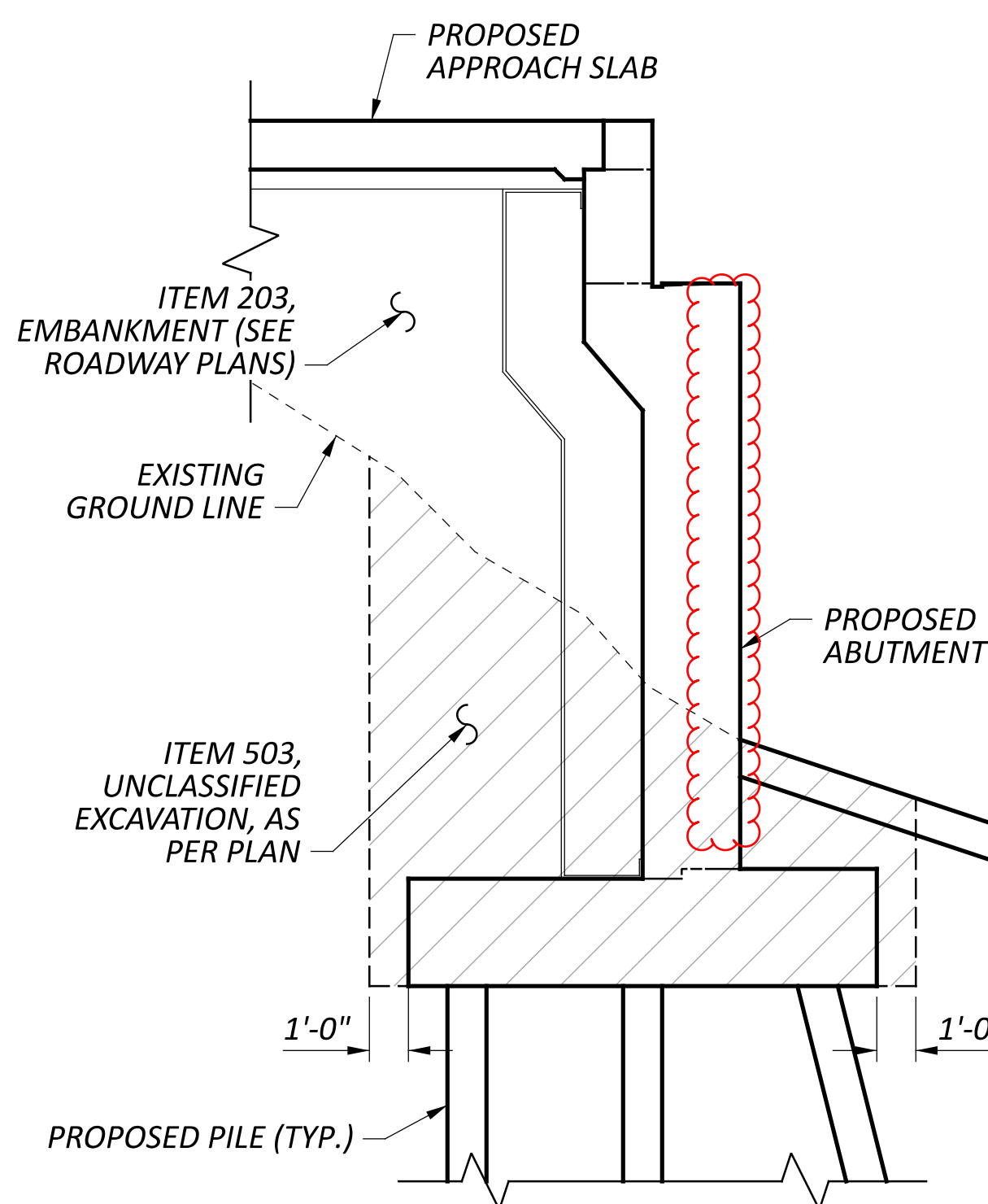
**GUTTER SECTION DETAIL**



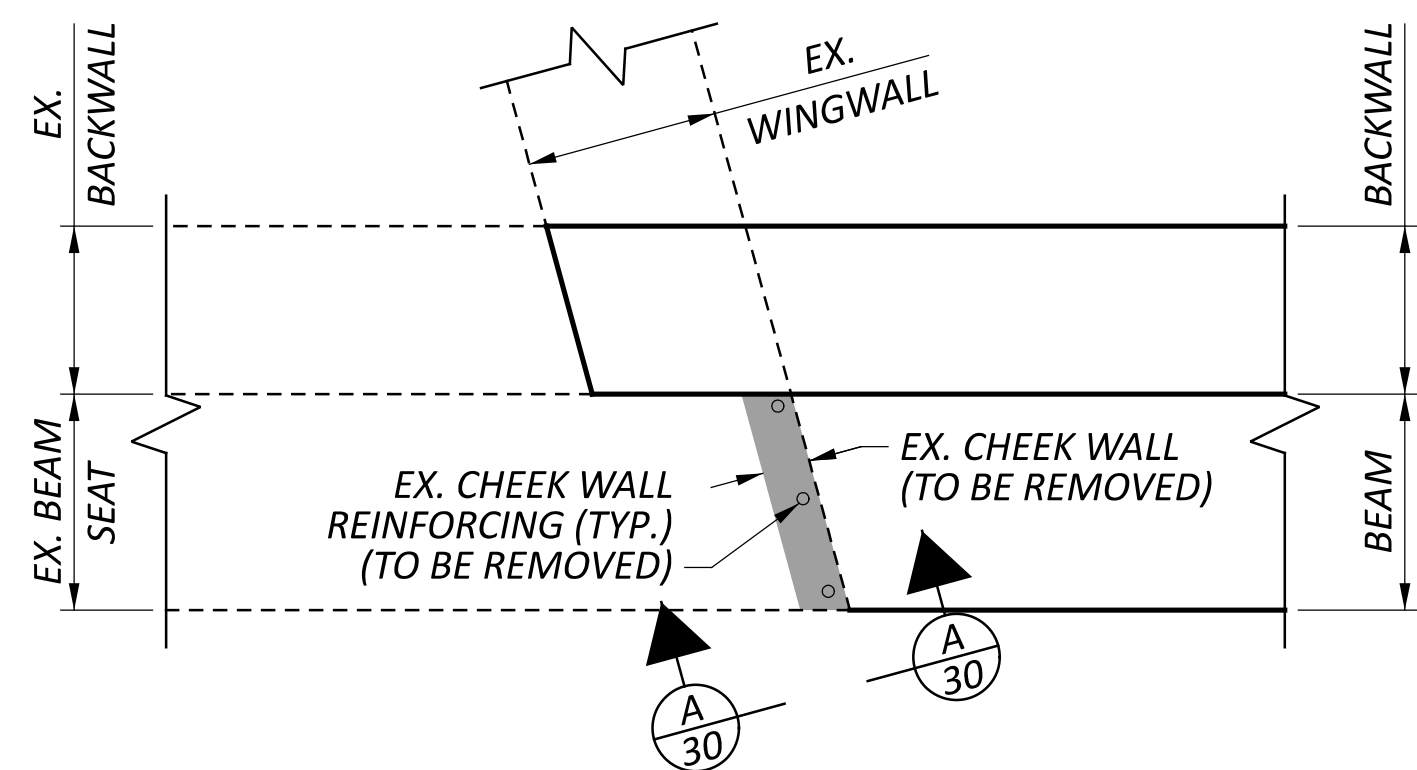
**EXPANSION JOINT DETAIL**



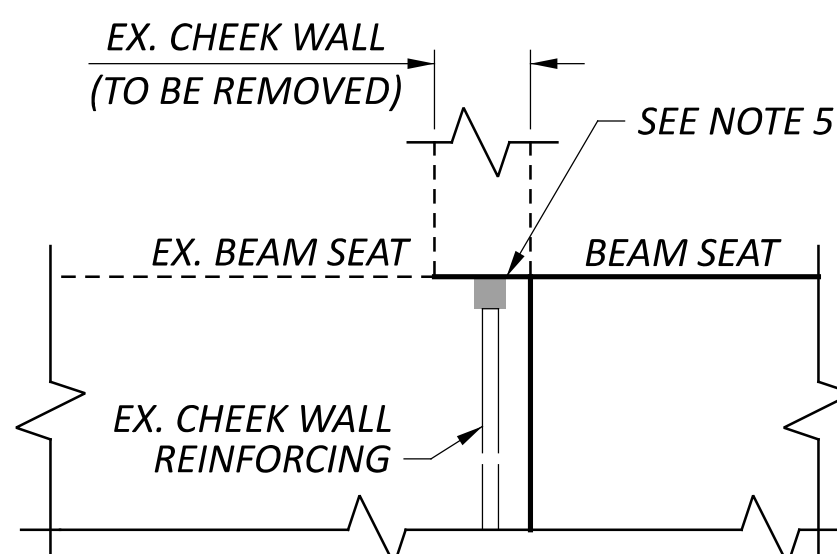
**BRICK INLAY DETAIL**



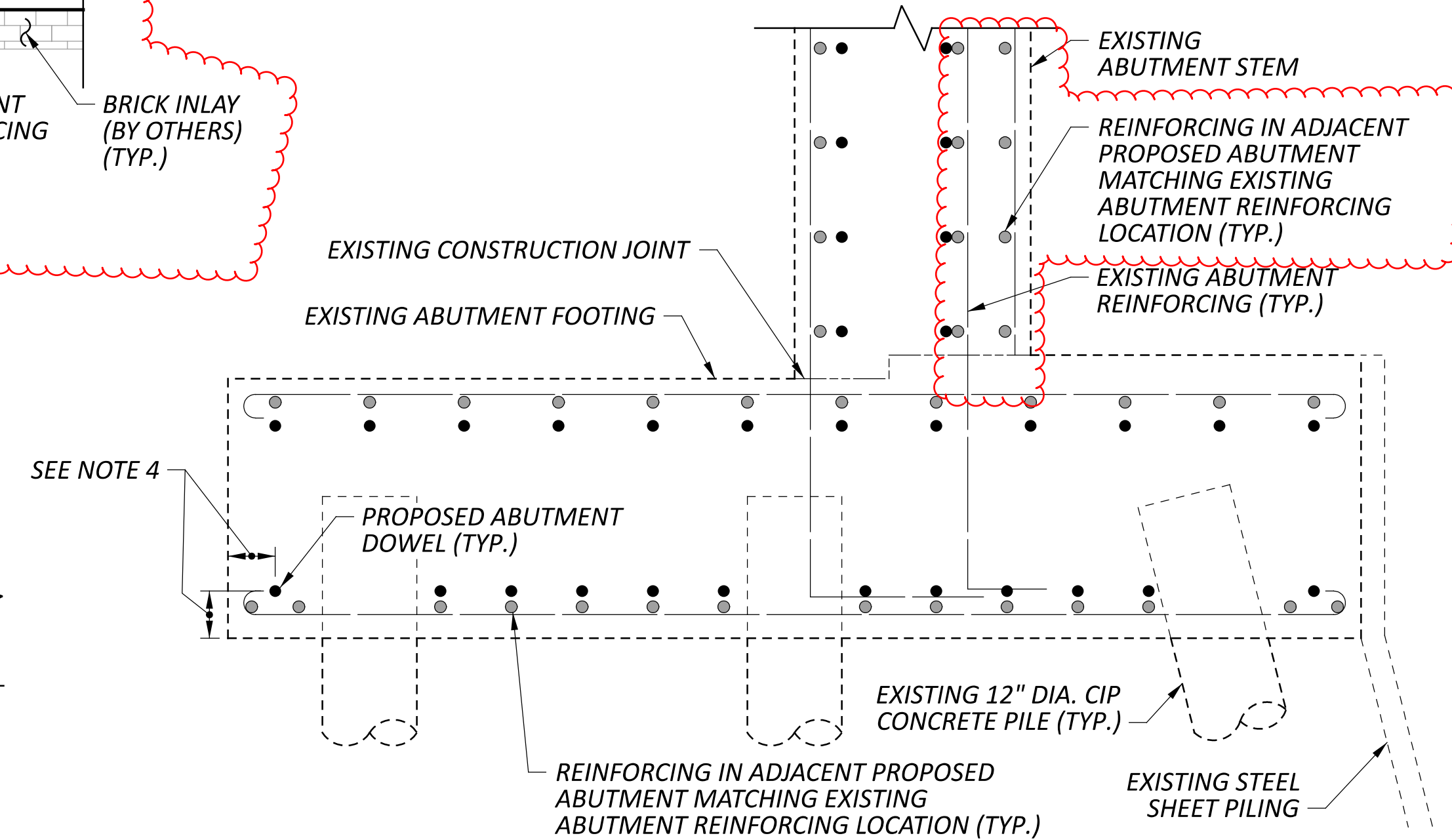
**EXCAVATION DETAIL**



**EX. CHEEK WALL REINFORCING PLAN DETAIL**



**VIEW A-A**



**ABUTMENT DOWEL LOCATION DETAIL**

**NOTES:**

1. FOR REAR ABUTMENT DETAILS, SEE SHEETS 24 THRU 26 OF 54.
2. FOR FWD. ABUTMENT DETAILS, SEE SHEETS 27 THRU 29 OF 54.
3. ALL CLEAR COVER TO REINFORCING STEEL SHALL BE 2 INCHES MINIMUM, UNLESS NOTED OTHERWISE.
4. ALL DOWELS SHALL BE PLACED SUCH THAT A MINIMUM OF 6" IS PROVIDED FROM THE CENTER OF THE DOWEL TO THE EDGE OF ALL EXISTING CONCRETE SURFACES.
5. AFTER REMOVAL OF CHEEK WALL, DRILL OUT EX. VERTICAL CHEEK WALL REINFORCING TO A MINIMUM DEPTH OF 2 INCHES. REPAIR ENDS OF EXISTING REINFORCING PER CMS 509.10. FILL VOID IN CONCRETE WITH NON-SHRINK, NON-METALLIC GROUT PER CMS 705.20. GRIND SMOOTH CONCRETE SURFACE TO REMAIN WHERE CHEEK WALL IS REMOVED AND APPLY EPOXY-URETHANE SEALER. LABOR AND MATERIAL FOR THIS WORK SHOULD BE INCLUDED WITH ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN. REMOVAL AND END REPAIR OF EX. VERTICAL CHEEK WALL REINFORCING BY OTHER MEANS SHALL BE APPROVED AND ACCEPTED BY THE ENGINEER.

6. ALL DOWELS SHALL BE INSTALLED PER CMS 510 AND SET WITH NON-SHRINK, NON-METALLIC GROUT THAT SATISFIES ACI 308.4 REQUIREMENTS. ADJUST DOWEL SPACING AS NEEDED TO AVOID EXISTING REINFORCING, RUSTICATION GROOVES AND TO PROVIDE SUFFICIENT EDGE CLEARANCE.

REBAR DOWEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM EMBEDMENT DEPTHS:

- NO. 5 BAR = 6"
- NO. 6 BAR = 8"

7. THE 22 GAUGE CORRUGATED, GALVANIZED STEEL TIES SHALL BE TIED INTO THE CONCRETE FORM WORK BEFORE THE CONCRETE ABUTMENT WALLS ARE POURED.

8. NON-SHRINK, NON-METALLIC GROUT FILLING EXISTING RUSTICATION GROOVES, INSTALLATION OF GALVANIZED STEEL PIPE DRAINS AND THE 22 GAUGE CORRUGATED GALVANIZED STEEL TIES SHALL BE INCLUDED IN ITEM 511, CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT NOT INCLUDING FOOTING, AS PER PLAN, FOR PAYMENT.

SFN 2503530 (R)

SFN 2503565 (L)

DESIGN AGENCY



8890 LYRA DR.  
 SUITE 100  
 COLUMBUS, OH 43240  
 614.839.5770

DESIGNER: JML  
 CHECKER: RBK

REVIEWER

DWW 02/10/23

PROJECT ID: 116322

SUBSET: 30 TOTAL: 54

SHEET: 729 TOTAL: 846

MARK	NUMBER	LENGTH	MATERIAL	WEIGHT (LBS.)	TYPE	DIMENSIONS						
						A	B	C	D	E	R	INC.
REAR ABUTMENT (60 KSI, EPOXY COATED)												
RA501	45	6'-7"	ECSR	309	1	0'-10"	5'-10"					
RA502	59	13'-3"	ECSR	815	STR							
RA503	17	10'-3"	ECSR	182	12	2'-7"	3'-0 1/8"	1'-3"	3'-8"	1'-8"		
RA504	SERIES OF 6	TO 18'-5"	ECSR	114	STR							0'-1 1/4"
RA505	1 SERIES OF 7	TO 17'-11"	ECSR	129	STR							0'-0 7/8"
RA506	1 SERIES OF 13	TO 11'-9"	ECSR	153	2	3'-1"	2'-2"	5'-10" TO 6'-9"				0'-0 7/8"
RA507	14	23'-1"	ECSR	337	STR							
RA508	14	23'-11"	ECSR	349	STR							
RA509	13	23'-8"	ECSR	321	STR							
RA510	13	22'-11"	ECSR	311	STR							
RA511	10	19'-6"	ECSR	203	STR							
RA512	2	7'-4"	ECSR	15	STR							
RA513	5	6'-7"	ECSR	34	2	2'-1"	2'-8"	2'-1"				
RA514	2	7'-6"	ECSR	16	STR							
RA515	1 SERIES OF 5	TO 9'-3"	ECSR	46	1	2'-2"	6'-4" TO 7'-2"					0'-2 1/2"
RA516	5	11'-2"	ECSR	58	42	5'-10"	0'-9 1/4"	2'-4 7/8"	3'-1"			
RA517	3	9'-6"	ECSR	30	42	3'-1"	1'-6"	1'-6"	4'-4"			
RA518	5	11'-8"	ECSR	61	43	6'-6"	0'-8 5/8"	2'-3"	3'-1"			
RA519	3	7'-6"	ECSR	23	42	2'-4"	1'-6"	1'-6"	3'-1"			
RA520	8	20'-8"	ECSR	172	STR							
RA521	1	22'-6"	ECSR	23	STR							
RA522	8	20'-7"	ECSR	172	STR							
RA523	1	22'-7"	ECSR	24	STR							
RA525	4	5'-11"	ECSR	25	STR							
RA526	1	11'-5"	ECSR	12	44	3'-1"	0'-10 1/2"	0'-9"	5'-4"	2'-0"		
RA527	1	12'-5"	ECSR	13	44	3'-1"	1'-9"	1'-6"	5'-3"	2'-0"		
RA528	1	11'-5"	ECSR	12	44	3'-1"	0'-10 1/2"	0'-9"	5'-4"	2'-0"		
RA529	2	12'-5"	ECSR	26	44	3'-1"	1'-9"	1'-6"	5'-3"	2'-0"		
RA530	2	8'-9"	ECSR	18	42	3'-1"	1'-0"	1'-0"	4'-4"			
RA531	2	6'-9"	ECSR	14	42	2'-4"	1'-0"	1'-0"	3'-1"			
RA532	12	8'-4"	ECSR	104	10	0'-8 1/2"	2'-2"	4'-2"	2'-2"			
RA533	24	7'-3"	ECSR	181	2	2'-2"	3'-2"	2'-2"				
RA534	12	5'-2"	ECSR	65	2	2'-2"	1'-0 1/2"	2'-2"				
RA535	12	5'-10"	ECSR	73	2	2'-2"	1'-8 1/2"	2'-2"				
RA536	12	8'-4"	ECSR	104	9	0'-8 1/2"	2'-2"	4'-2"	2'-2"			
RA537	18	11'-2"	ECSR	210	12	2'-7"	3'-0 1/8"	1'-3"	3'-8"	2'-7"		
RA602	52	23'-9"	ECSR	1,855	STR							
RA603	35	9'-1"	ECSR	478	2	4'-0"	1'-5"	4'-0"				
RA604	39	5'-11"	ECSR	347	2	2'-5"	1'-5"	2'-5"				
RA605	39	7'-5"	ECSR	434	2	3'-5"	0'-11"	3'-5"				
RA701	46	11'-8"	ECSR	1,097	STR							
RA702	2	12'-4"	ECSR	50	19	9'-10 3/8"	1'-9 1/2"	1'-9 1/4"				
RA801	26	5'-0"	ECSR	347	18	2'-9"	1'-0"	1'-0"				
RA901	49	12'-11"	ECSR	2,152	16	11'-8"						
RA902	2	12'-4"	ECSR	84	19	9'-10 3/8"	1'-9 1/2"	1'-9 1/4"				
RA1001	59	11'-5"	ECSR	2,898	1	1'-10"	9'-11"					
RA1002	48	13'-3"	ECSR	2,737	STR							
RA1003	1 SERIES OF 9	TO 18'-3"	ECSR	697	STR							0'-0 3/4"
RA1004	1 SERIES OF 8	TO 17'-9"	ECSR	604	STR							0'-0 3/4"
SUB-TOTAL				18,534	ITEM 509 - EPOXY COATED REINFORCING STEEL							

MARK	NUMBER	LENGTH	MATERIAL	WEIGHT (LBS.)	TYPE	DIMENSIONS						
						A	B	C	D	E	R	INC.
REAR ABUTMENT (60 KSI, UNCOATED)												
RA524U	76	3'-7"	USR	284	19	3'-1"	0'-5 3/4"	0'-1 7/8"				
RA601U	48	4'-8"	USR	336	19	4'-0"	0'-7 3/4"	0'-2 3/8"				
RA606U	8	2'-10"	USR	34	STR							
SUB-TOTAL				654	ITEM 509 - UNCOATED REINFORCING STEEL							

NOTES:

- FOR GENERAL NOTES, SEE SHEET 4 AND 5 OF 54.
- FOR BAR BENDING DIAGRAM AND ADDITIONAL NOTES, SEE SHEET 54 OF 54.

CONCRETE REINFORCEMENT BAR LIST - (1 OF 4)  
 BRIDGE NO. FRA-00161-21.730 L&R  
 SR 161 OVER US 62 (JOHNSTOWN RD.)

SFN 2503530 (R)

SFN 2503565 (L)

DESIGN AGENCY



8890 LYRA DR.  
 SUITE 100  
 COLUMBUS, OH 43240  
 614.839.5770

DESIGNER JML CHECKER RBK

REVIEWER

DWW 02/10/23

PROJECT ID

116322

SUBSET TOTAL

51 54

SHEET TOTAL

750 846


MARK	NUMBER	LENGTH	MATERIAL	WEIGHT (LBS.)	TYPE	DIMENSIONS					
						A	B	C	D	E	R
FORWARD ABUTMENT (60 KSI, EPOXY COATED)											
FA501	44	6'-7"	ECSR	302	1	0'-10"	5'-10"				
FA502	58	13'-8"	ECSR	827	STR						
FA503	18	10'-2"	ECSR	191	12	2'-7"	3'-0 1/8"	1'-3"	3'-8"	1'-7"	
FA504	1 SERIES OF 7	18'-5" TO 18'-11"	ECSR	136	STR						0'-1"
FA505	1 SERIES OF 6	17'-11" TO 18'-5"	ECSR	114	STR						0'-1 1/4"
FA506	1 SERIES OF 13	10'-9" TO 11'-8"	ECSR	153	2	3'-1"	2'-2"	5'-9" TO 6'-8"			0'-0 7/8"
FA507	15	23'-5"	ECSR	366	STR						
FA508	15	22'-9"	ECSR	356	STR						
FA509	14	22'-10"	ECSR	333	STR						
FA510	14	23'-6"	ECSR	343	STR						
FA511	10	19'-6"	ECSR	203	STR						
FA512	2	7'-2"	ECSR	15	STR						
FA513	5	6'-7"	ECSR	34	2	2'-1"	2'-8"	2'-1"			
FA514	2	7'-0"	ECSR	15	STR						
FA515	1 SERIES OF 5	8'-4" TO 9'-1"	ECSR	45	1	2'-2"	6'-3" TO 7'-0"				0'-2 1/4"
FA516	5	11'-6"	ECSR	60	43	6'-4"	0'-7 1/2"	2'-3"	3'-1"		
FA517	3	7'-7"	ECSR	24	42	3'-1"	1'-6"	1'-6"	2'-5"		
FA518	5	11'-4"	ECSR	59	42	6'-0"	0'-8"	2'-4 3/8"	3'-1"		
FA519	3	9'-5"	ECSR	29	42	4'-3"	1'-6"	1'-6"	3'-1"		
FA520	8	20'-7"	ECSR	172	STR						
FA521	1	21'-4"	ECSR	22	STR						
FA522	8	20'-2"	ECSR	168	STR						
FA523	1	23'-10"	ECSR	25	STR						
FA525	4	5'-11"	ECSR	25	STR						
FA526	1	11'-5"	ECSR	12	44	3'-1"	0'-10 1/2"	0'-9"	5'-4"	2'-0"	
FA527	1	12'-5"	ECSR	13	44	3'-1"	1'-9"	1'-6"	5'-3"	2'-0"	
FA528	1	11'-5"	ECSR	12	44	3'-1"	0'-10 1/2"	0'-9"	5'-4"	2'-0"	
FA529	2	12'-5"	ECSR	26	44	3'-1"	1'-9"	1'-6"	5'-3"	2'-0"	
FA530	2	6'-10"	ECSR	14	42	3'-1"	1'-0"	1'-0"	2'-5"		
FA531	2	8'-8"	ECSR	18	42	4'-3"	1'-0"	1'-0"	3'-1"		
FA532	12	8'-1"	ECSR	101	10	0'-7"	2'-2"	3'-11"	2'-2"		
FA533	24	7'-3"	ECSR	181	2	2'-2"	3'-2"	2'-2"			
FA534	12	5'-3"	ECSR	66	2	2'-2"	1'-1 1/2"	2'-2"			
FA535	12	5'-9"	ECSR	72	2	2'-2"	1'-7 1/2"	2'-2"			
FA536	12	8'-1"	ECSR	101	9	0'-7"	2'-2"	3'-11"	2'-2"		
FA537	16	11'-1"	ECSR	185	12	2'-7"	3'-0 1/8"	1'-3"	3'-8"	2'-6"	
FA602	52	23'-3"	ECSR	1,816	STR						
FA603	35	9'-1"	ECSR	478	2	4'-0"	1'-5"	4'-0"			
FA604	39	5'-11"	ECSR	347	2	2'-5"	1'-5"	2'-5"			
FA605	39	7'-5"	ECSR	434	2	3'-5"	0'-11"	3'-5"			
FA701	45	11'-8"	ECSR	1,073	STR						
FA702	2	12'-4"	ECSR	50	19	9'-10 1/4"	1'-9 1/2"	1'-9 1/4"			
FA801	26	5'-0"	ECSR	347	18	2'-9"	1'-0"	1'-0"			
FA901	48	12'-11"	ECSR	2,108	16	11'-8"					
FA902	2	12'-4"	ECSR	84	19	9'-10 1/4"	1'-9 1/2"	1'-9 1/4"			
FA1001	57	11'-5"	ECSR	2,800	1	1'-10"	9'-11"				
FA1002	46	13'-8"	ECSR	2,705	STR						
FA1003	1 SERIES OF 8	18'-3" TO 18'-9"	ECSR	637	STR						0'-0 7/8"
FA1004	1 SERIES OF 9	17'-9" TO 18'-3"	ECSR	697	STR						0'-0 3/4"
SUB-TOTAL				18,394	ITEM 509 - EPOXY COATED REINFORCING STEEL						

MARK	NUMBER	LENGTH	MATERIAL	WEIGHT (LBS.)	TYPE	DIMENSIONS					
						A	B	C	D	E	R
FORWARD ABUTMENT (60 KSI, UNCOATED)											
FA524U	76	3'-7"	USR	284	19	3'-1"	0'-5 3/4"	0'-1 7/8"			
FA601U	48	4'-8"	USR	336	19	4'-0"	0'-7 3/4"	0'-2 3/8"			
FA606U	8	2'-10"	USR	34	STR						
SUB-TOTAL				654	ITEM 509 - UNCOATED REINFORCING STEEL						

NOTES:

- FOR GENERAL NOTES, SEE SHEET 4 AND 5 OF 54.
- FOR BAR BENDING DIAGRAM AND ADDITIONAL NOTES, SEE SHEET 54 OF 54.

CONCRETE REINFORCEMENT BAR LIST - (1A OF 4)  
 BRIDGE NO. FRA-00161-21.730 L&R  
 SR 161 OVER US 62 (JOHNSTOWN RD.)

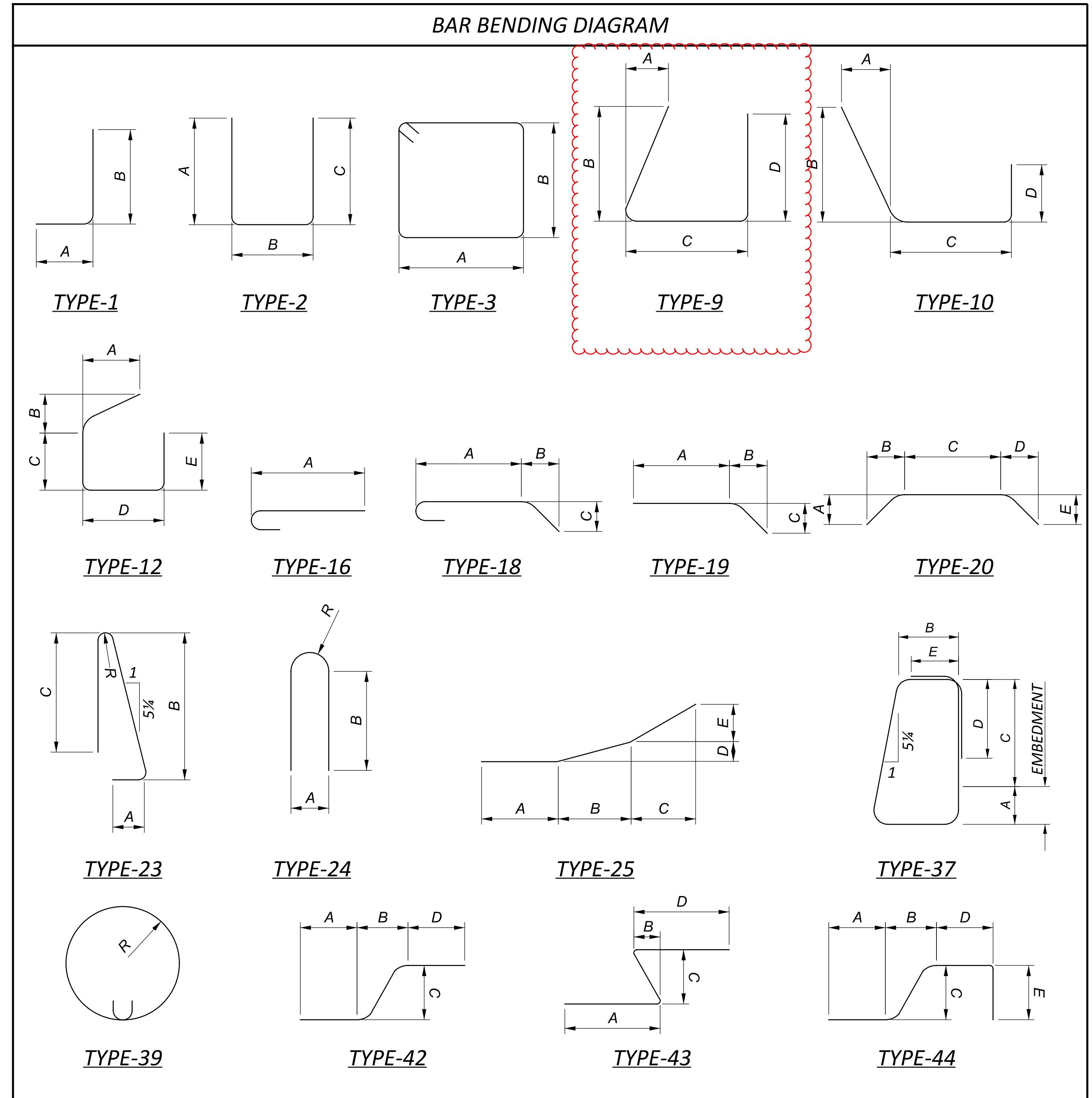
SFN	2503530 (R)
SFN	2503565 (L)
DESIGN AGENCY	
DESIGNER	JML
CHECKER	RBK
REVIEWER	DWW 02/10/23
PROJECT ID	116322
SUBSET TOTAL	51A   54
SHEET TOTAL	750A   846

MARK	NUMBER	LENGTH	MATERIAL	WEIGHT (LBS.)	TYPE	DIMENSIONS						
						A	B	C	D	E	R	INC.
LEFT BRIDGE APPROACH SLAB (60 KSI, EPOXY COATED)												
AS501	114	24'-5"	ECSR	2904	STR.							
AS502	32	24'-6"	ECSR	818	STR.							
AS1001	80	25'-11"	ECSR	8922	16	24'-6"						
SUB-TOTAL				**	INCLUDED WITH ITEM 526 - REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=15") FOR PAYMENT							

MARK	NUMBER	LENGTH	MATERIAL	WEIGHT (LBS.)	TYPE	DIMENSIONS						
						A	B	C	D	E	R	INC.
LEFT BRIDGE SLEEPER SLAB (60 KSI, EPOXY COATED)												
SS501	16	24'-2"	ECSR	404	STR.							
SS502	48	7'-10"	ECSR	392	STR.							
SUB-TOTAL				**	INCLUDED WITH ITEM 526 - TYPE A INSTALLATION FOR PAYMENT							

MARK	NUMBER	LENGTH	MATERIAL	WEIGHT (LBS.)	TYPE	DIMENSIONS						
						A	B	C	D	E	R	INC.
RIGHT BRIDGE APPROACH SLAB (60 KSI, EPOXY COATED)												
AS501	114	24'-5"	ECSR	2904	STR.							
AS502	32	24'-6"	ECSR	818	STR.							
AS1001	80	25'-11"	ECSR	8922	16	24'-6"						
SUB-TOTAL				**	INCLUDED WITH ITEM 526 - REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=15") FOR PAYMENT							

MARK	NUMBER	LENGTH	MATERIAL	WEIGHT (LBS.)	TYPE	DIMENSIONS						
						A	B	C	D	E	R	INC.
RIGHT BRIDGE SLEEPER SLAB (60 KSI, EPOXY COATED)												
SS501	16	24'-2"	ECSR	404	STR.							
SS502	48	7'-10"	ECSR	392	STR.							
SUB-TOTAL				**	INCLUDED WITH ITEM 526 - TYPE A INSTALLATION FOR PAYMENT							



**NOTES:**

- FOR GENERAL NOTES, SEE SHEETS 4 AND 5 OF 54.
- THE LETTER PREFIX INDICATES BAR LOCATION. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE TWO DIGITS WHEN FOUR DIGITS ARE USED INDICATES BAR SIZE NUMBER. ALL REINFORCEMENT IS ASSUMED EPOXY COATED UNLESS OTHERWISE INDICATED BY A LETTER SUFFIX. IF A LETTER SUFFIX IS PROVIDED, IT INDICATES BAR OR BAR COATING TYPE. EXAMPLE: R401G

- R: THE LOCATION OF THE BARS IN THE STRUCTURE (BRIDGE RAILING)
- 4: BAR SIZE DIMENSION NO. 4
- 01: SEQUENCE NUMBER
- G: GFRP REINFORCEMENT

**THE FOLLOWING IS A LIST OF BAR LOCATION PREFIXES:**

- S: SUPERSTRUCTURE
- R: BRIDGE RAILING
- RA: REAR ABUTMENT
- FA: FORWARD ABUTMENT
- P: PIER
- DS: DRILLED SHAFT
- AS: APPROACH SLAB
- SS: SLEEPER SLAB

**NOTES (CONT'D):**

- THE FOLLOWING IS A LIST OF BAR MATERIAL SUFFIXES:
- G: GFRP REINFORCEMENT
  - U: UNCOATED REINFORCEMENT
- BAR DIMENSIONS ARE SHOWN OUT-TO-OUT UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION STANDS FOR STANDARD BAR BEND AT THE END OF THE BAR. STRAIGHT BARS ARE INDICATED BY "STR."
  - BAR MATERIAL:
    - "ECSR" = GRADE 60 EPOXY COATED STEEL REINFORCEMENT
    - "USR" = GRADE 60 UNCOATED STEEL REINFORCEMENT
    - "GFRP" = GLASS FIBER REINFORCED POLYMER

**CONCRETE REINFORCEMENT BAR LIST - (4 OF 4)**  
 BRIDGE NO. FRA-00161-21.730 L&R  
 SR 161 OVER US 62 (JOHNSTOWN RD.)

SFN	2503530 (R)
SFN	2503565 (L)
DESIGN AGENCY	
DESIGNER	RBK
CHECKER	JML
REVIEWER	DWW 02/10/23
PROJECT ID	116322
SUBSET	54
TOTAL	54
SHEET	753
TOTAL	846