

CUY-8/10-02-26/08.69

MODEL: Sheet PAPER: 17x11 (in.) DATE: 3/21/2023 TIME: 7:50:50 AM USER: jml Miller  
X:\Projects\2021\1212\100200 ODOT CUY-8 CUY-10\113674\400-Engineering\Structures\SFN\_1801325\_Sheets\113674\_SFN\_1801325\_SN001.dgn

**REFER TO THE FOLLOWING STANDARD BRIDGE DRAWINGS:**

EXJ-4-87 REVISED 07/15/22  
EXJ-6-17 REVISED 01/15/21

**AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:**

800 DATED 01/20/23

**DESIGN SPECIFICATIONS:**

THE EXISTING STRUCTURE WAS DESIGNED IN CONFORMANCE WITH THE "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1977, INCLUDING THE 1978 THROUGH 1980 INTERIM SPECIFICATIONS AND THE OHIO SUPPLEMENT TO THESE SPECIFICATIONS.

**DESIGN LOADING INCLUDES:**

VEHICULAR LIVE LOAD: HS20-44 CASE II AND THE ALTERNATE MILITARY LOADING

**DESIGN DATA:**

CONCRETE CLASS QC2 - COMPRESSIVE STRENGTH 4.5 KSI (SUPERSTRUCTURE)

**CONCRETE REINFORCEMENT:**

EPOXY COATED STEEL REINFORCEMENT - MINIMUM YIELD STRENGTH 60 KSI

STRUCTURAL STEEL - YIELD STRENGTH 33 KSI (EXISTING U.N.O.)

STRUCTURAL STEEL - ASTM A36 - YIELD STRENGTH 36 KSI (EXIST. BEAMS FOR WIDENING)

STRUCTURAL STEEL - ASTM A709 GRADE 50 - YIELD STRENGTH 50 KSI (PROPOSED)

**MAINTENANCE OF TRAFFIC:**

MAINTENANCE OF TRAFFIC FOR THE STRUCTURE WORK SHALL BE COORDINATED WITH THE OVERALL PROJECT. REFER TO THE MAINTENANCE OF TRAFFIC NOTES AND DETAILS ELSEWHERE IN THE PLANS.

**EXISTING STRUCTURE VERIFICATION:**

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

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

**EXISTING STRUCTURE PLANS:**

PLANS MAY BE EXAMINED BY THE PROSPECTIVE BIDDERS AT THE OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 12, 5500 TRANSPORTATION BOULEVARD, GARFIELD HEIGHTS, OH 44125, PHONE: 216-581-2100.

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

DESCRIPTION: WORK TO BE PAID FOR UNDER THIS ITEM SHALL INCLUDE THE REMOVAL OF EXISTING STRUCTURE COMPONENTS AS DETAILED IN THE PLANS AND AS DIRECTED BY THE ENGINEER. THE REMOVALS SHALL INCLUDE BUT NOT NECESSARILY BE LIMITED TO THE FOLLOWING:

- 1. STRIP SEAL EXPANSION JOINTS, INCLUDING EMBEDDED STEEL, AT THE ABUTMENTS AND ABOVE THE PIER TOWERS AS SHOWN IN THE PLANS.

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

- 2. PORTIONS OF EXISTING BRIDGE DECK SLAB AS SHOWN IN THE PLANS, INCLUDING SAW CUTTING.
- 3. PORTIONS OF EXISTING ABUTMENT BACKWALLS AS SHOWN IN THE PLANS, INCLUDING SAW CUTTING.
- 4. STRUCTURAL STEEL MEMBERS IN PIER TOWERS 4-8 AS SHOWN IN THE PLANS.
- 5. EXISTING STEEL DOWNSPOUT AND COLLECTOR PIPES AS SHOWN IN THE PLANS, INCLUDING ALL DIRT AND DEBRIS CONTAINED WITHIN.
- 6. MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER.

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. 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 SMALL DIAMETER PILOT HOLES 2 INCHES OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 2 INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF CONCRETE REINFORCEMENT IN THE DECK SLAB. CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE 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, THAT IS SIGNED, SEALED, AND DATED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE ENGINEER. OBTAIN THE ENGINEER'S ACCEPTANCE BEFORE PERFORMING REPAIR.

REMOVAL METHODS: 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 (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, THAT IS SIGNED, SEALED, AND DATED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE ENGINEER. OBTAIN THE ENGINEER'S ACCEPTANCE BEFORE PERFORMING REPAIR.

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

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

PORTIONS TO BE PRESERVED. OUTSIDE THE 18-INCH 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 & 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 - CONCRETE REINFORCEMENT, REPLACEMENT OF EXISTING CONCRETE REINFORCEMENT, 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 513 - STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN:**

ALL REQUIREMENTS OF C&MS 513 APPLY TO SHOP FABRICATED MEMBERS. PERFORM WORK FOR FIELD FABRICATED MEMBERS ACCORDING TO ITEM 513, EXCEPT AS MODIFIED HEREIN. THE DEPARTMENT WILL NOT REQUIRE THE CONTRACTOR PERFORMING FIELD FABRICATION TO BE PREQUALIFIED AS SPECIFIED IN S1078. SUBMIT A WRITTEN LETTER OF MATERIAL ACCEPTANCE IN ACCORDANCE WITH C&MS 501.06, TO THE ENGINEER. PROVIDE THE ENGINEER "AS-BUILT" DRAWINGS ACCORDING C&MS 513.06, EXCEPT C&MS 501.04 DOES NOT APPLY. UPON RECEIPT OF THE ENGINEER'S ACCEPTANCE, SUPPLY A COPY OF THE DRAWINGS, ACCORDING TO S1002 TO THE OFFICE OF MATERIAL MANAGEMENT FOR RECORD PURPOSES.

THE FOLLOWING MEMBERS ARE INCLUDED IN THIS ITEM: PIER TOWER CAP AND COLUMN ANGLES AND CHANNELS.

THE CONTRACTOR IS REQUIRED TO MEASURE THE SIZE OF THE MEMBERS TO BE REPLACED. MEMBERS SHALL BE REPLACED IN-KIND (I.E. SAME DIMENSIONS AS THE EXISTING). FAYING SURFACES OF MEMBERS SHALL BE PRIMED.

BOLTS SHALL BE A325 AND BE THE SAME SIZE OR LARGER THAN THE EXISTING BOLTS OR RIVETS AND IN ACCORDANCE WITH CMS 513. BOLT HOLES SHALL BE STANDARD SIZE PER CMS 513.19 AND FIELD DRILLED.

PAYMENT FOR THIS WORK SHALL INCLUDE ALL MATERIALS INCLUDING BOLTS, EQUIPMENT, LABOR, AND INCIDENTALS NECESSARY TO PERFORM THE ABOVE WORK AND IS INCLUDED FOR PAYMENT UNDER THIS ITEM.

**ITEM 514 - SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL, ITEM 514 - FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT, ITEM 514 - FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT & ITEM 514 - FIELD PAINTING STRUCTURAL STEEL, FINISH COAT:**

FIELD PAINTING OF STRUCTURAL STEEL SHALL BE LIMITED TO THE PROPOSED STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN INCLUDING BOLTS, WITH THE ADDITION OF THE FOLLOWING PIER TOWER AND CAP INTERIORS:

- PIER TOWER- 5 CAP INCLUDING NORTH TOWER LEG BETWEEN CONCRETE & DIAPHRAGM D-1 & SOUTH TOWER LEG BETWEEN DIAPHRAGMS C-1 & B-3 (2,472 SF (±))
- PIER TOWER 6 CAP INCLUDING NORTH TOWER LEG BETWEEN DIAPHRAGM A-1 & PIER CAP (1,117 SF (±))
- PIER TOWER 7 CAP INCLUDING ENTIRE NORTH TOWER LEG & SOUTH TOWER LEG BETWEEN DIAPHRAGMS C-1 & C-2 (5,725 SF (±))

BLASTING DEBRIS LYING ON INTERIOR STEEL ELEMENTS INCLUDING THE FLOOR OF THE TOWERS SHALL REMOVED FROM ALL INTERIOR ELEMENTS PRIOR TO COMPLETION OF THE WORK IN THE TOWERS NOTED.

PRIME COAT FAYING SURFACES. COLOR OF THE FINISH COAT SHALL MATCH THE EXISTING PAINT COLOR. ( INTERIORS: FED. STD. 595C 23531; EXTERIOR FED.STD. 595C 34128)

STRUCTURE GENERAL NOTES - 1  
BRIDGE NO. CUY-10-0869  
OVER VALLEY PARKWAY & ROCKY RIVER

SFN	1801325
DESIGN AGENCY	
DESIGNER	JAM
CHECKER	MJL
REVIEWER	CJS
DATE	10/24/22
PROJECT ID	113674
SUBSET	TOTAL
2	30
SHEET	TOTAL
28	82

CUY-8/10-02.26/08.69

MODEL: Sheet PAPER: 17x11 (in.) DATE: 3/20/2023 TIME: 8:53:29 AM USER: jmliller  
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FUNDING		ESTIMATED QUANTITIES										REAR ABUTMENT	FORWARD ABUTMENT	PIERS	SUPER-STRUCTURE	GENERAL	REF. SHEET NUMBER
---	ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION												
	202	11203	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN										LS	2, 28 / 30	
	509	20001	690	LB	CONCRETE REINFORCEMENT, REPLACEMENT OF EXISTING CONCRETE REINFORCEMENT, AS PER PLAN	245	245				200					2 / 30	
	513	10201	77,429	LB	STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN					6	77,429					2 / 30	
	514	00100	LS		SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL									LS	2 / 30		
	514	00200	LS		FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT									LS	2 / 30		
	514	00300	LS		FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT									LS	2 / 30		
	514	00400	LS		FIELD PAINTING STRUCTURAL STEEL, FINISH COAT									LS	2 / 30		
	514	00504	60	MNHR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL						60					2 / 30	
	514	10000	15	EACH	FINAL INSPECTION REPAIR						15						
	516	12301	434	FT	STRIP SEAL EXPANSION JOINT ANCHORED WITH ELASTOMERIC CONCRETE, AS PER PLAN								434			3, 27-28 / 30	
	518	51100	12	FT	8" PIPE DOWNSPOUT, INCLUDING SPECIALS								12				
	518	62100	340	FT	STRUCTURE DRAINAGE, MISC.: 10" GALVANIZED STEEL PIPE, INCLUDING SPECIALS								340			3, 29 / 30	
	518	62200	5	EACH	STRUCTURE DRAINAGE, MISC.: PIER TOWER COVERINGS						5					3 / 30	
	518	63300	LS		STRUCTURE DRAINAGE, MISC.: BRIDGE DRAINAGE SYSTEM CLEANING									LS		3 / 30	
	SPECIAL	53000200	LS		STRUCTURES: PIER TOWER CLEANOUT										LS	3 / 30	
	SPECIAL	53000400	5	EACH	STRUCTURES: ACCESS MANHOLE						5					27-28 / 30	
	607	98000	1,000	FT	FENCE, MISC.: CONSTRUCTION FENCING											3 / 82	

**REINFORCING STEEL LIST**

MARK	NO.	LENGTH	WEIGHT	TYPE	DIMENSIONS					SERIES INC.
					A	B	C	D	E	
<b>ABUTMENTS</b>										
A401	4	4'-8"	12	STR						
A501	16	26'-11"	449	STR						
A502	4	4'-8"	19	STR						
		TOTAL	480	LBS						
<b>SUPERSTRUCTURE</b>										
S401	24	4'-8"	75	STR						
S501	48	26'-11"	1,348	STR						
S502	24	4'-8"	117	STR						
S601	48	26'-11"	1,941	STR						
		TOTAL	3,481	LBS						

**BENDING DIAGRAMS**

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**REINFORCING STEEL NOTES**

- SERIES BARS - EACH BAR VARIES BY TABULATED AMOUNT.
- ALL DIMENSIONS ARE OUT-TO-OUT.
- TYPE 'STR' INDICATES A STRAIGHT BAR.
- THE BAR SIZE NUMBER IS INDICATED IN THE 'MARK' COLUMN. THE FIRST ONE OR TWO DIGITS OF EACH MARK INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, A501 IS A #5 BAR SIZE AND P1101 IS A #11 BAR SIZE.
- ALL REINFORCING STEEL SHALL BE EPOXY COATED.

ESTIMATED QUANTITIES  
 BRIDGE NO. CUY-10-0869  
 OVER VALLEY PARKWAY & ROCKY RIVER

SFN  
1801325  
DESIGN AGENCY



DESIGNER CHECKER  
JDA JG

REVIEWER  
CJS 10/24/22

PROJECT ID  
113674

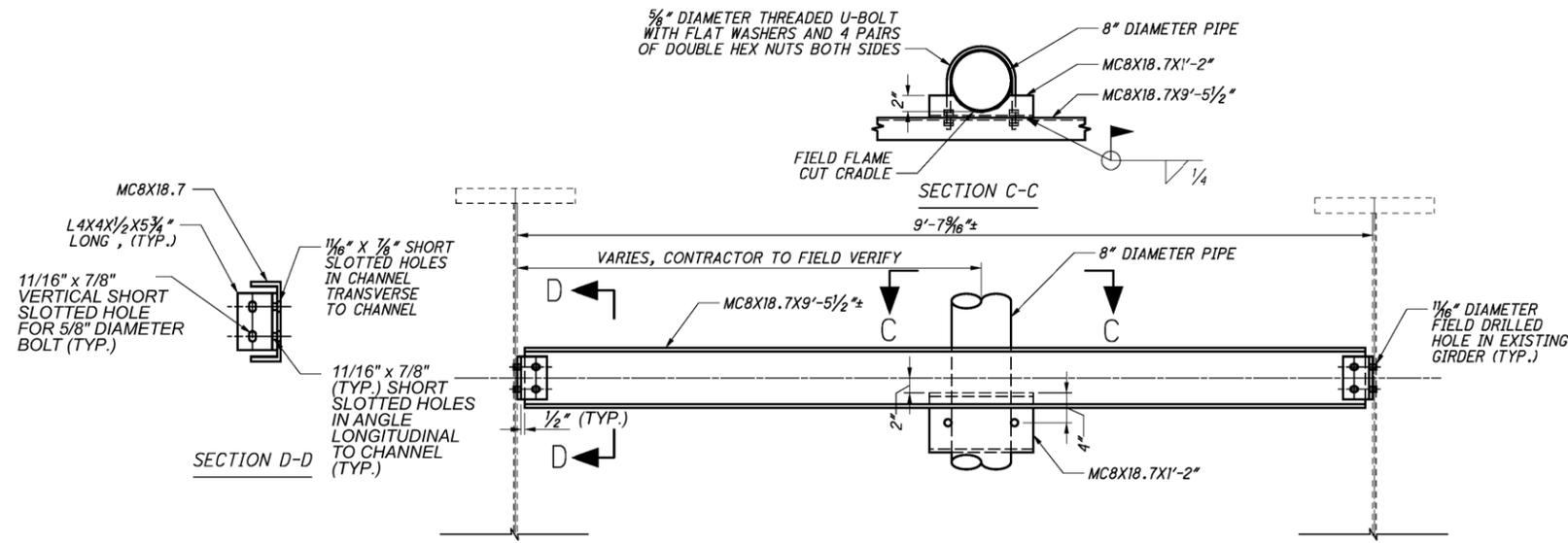
SUBSET	TOTAL
4	30

SHEET	TOTAL
30	82

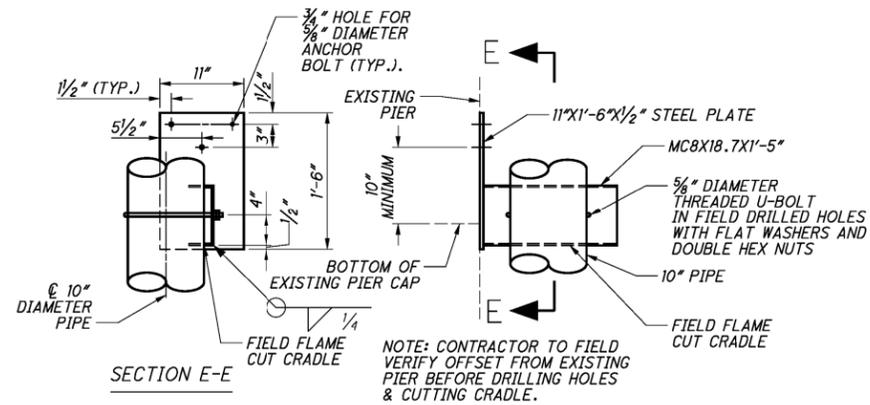
6 3/21/2023

4 3/2/2023

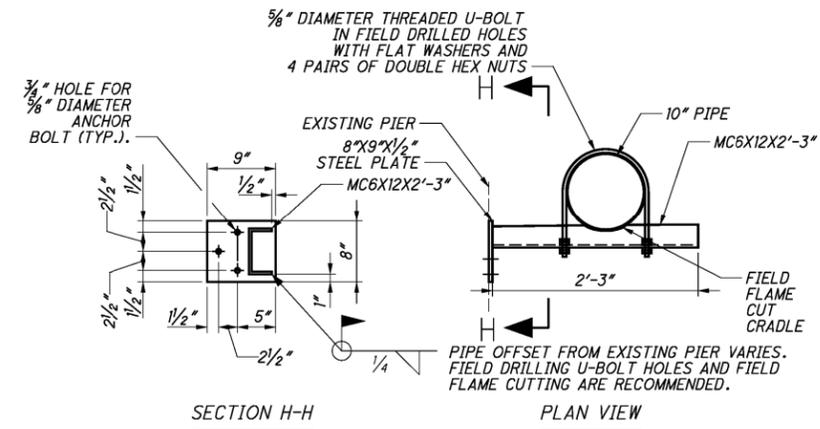
1 12/29/2022



**TYPE 1 PIPE SUPPORT**  
 198 REQUIRED



**TYPE 2 PIPE SUPPORT**  
 18 REQUIRED



**TYPE 3 PIPE SUPPORT**  
 136 REQUIRED

**NOTES**

1. ALL BOLTS SHALL BE ASTM F3125, GRADE A325, WITH THREADS EXCLUDED FROM THE SHEAR PLANE. BOLTS SHALL BE TYPE 1 IN ACCORDANCE WITH CMS 513.
2. EXISTING ANCHOR BOLTS WILL NOT BE REUSED. CUT FLUSH WITH WITH FACE OF CONCRETE.
3. NEW ANCHOR BOLTS SHALL BE 5/8" DIAMETER EPOXY ANCHORS (HILTI RE 500 OR APPROVED EQUAL).

DESIGNER	CJS
CHECKER	SEB
REVIEWER	MJL 10/24/22
PROJECT ID	113674
SUBSET	TOTAL
20	26
SHEET	TOTAL
76	82