

TRANSPORTATION CABINET DEPARTMENT OF HIGHWAYS DAVISS COUNTY GLOVER CARY BRIDGE (030B00118N) KY 2262 OVER OHIO RIVER REPAIR PLANS

LETTING DATE

CONSTRUCTION PROJECT NO.

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SPECIAL NOTES

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- Special Note for Steel Repairs
- Special Note for Painting Structural Steel Repairs
- Special Note for Stainless Steel Reinforcement
- Special Note for Bridge Deck Removal
- Special Note for Bridge Restoration with Concrete Overlays
- Special Note for Use of Hydromolition Method
- Special Note for Joint Seal Replacement
- Special Note for Concrete Patching
- Special Note for Concrete Sealing
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- Special Note for Structures with Fiber Reinforced Polymer Wrap
- Special Note for Bearing Lubrication
- Special Note for Traffic Control
- Special Note for Coordination with Other Contracts
- Special Note for Contract Completion and Liquidated Damages

SPECIAL PROVISIONS

STANDARD DRAWINGS

BGX-009-04	Bridge Restoration with Concrete Overlays
BJE-003	Expansion Joint Replacement 1" - 3"
BJE-005	Expansion Joint Replacement General Notes
BJE-006	Expansion Joint Replacement 4" & 5"

SPECIFICATIONS

2019 Standard Specifications for Road and Bridge Construction, with current supplemental specifications.
2002 AASHTO Standard Specifications for Highway Bridges.

ESTIMATE OF BRIDGE QUANTITIES

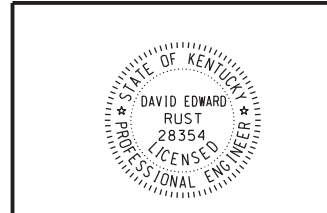
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BID ITEM	DEMOLITION	MOBILIZATION FOR CONCRETE SURFACE TREATMENT	STRINGER REPAIR	REM EPOXY BIT FOREIGN OVERLAY	CONCRETE OVERLAY - LATEX	PARTIAL DEPTH PATCHING	CONC CLASS M FULL DEPTH PATCH	EPOXY-SAND SLURRY	BLAST CLEANING	HYDRODEMOLITION	EXPANSION JOINT REPLACEMENT 1-1/2 IN	STEEL REPAIR (1) (2) (3) (4) (5)	CONCRETE CLASS M1	CONCRETE CLASS AA	REMOVE EXISTING DECK	FINGER DAM REPAIR	REPLACE EXPA JOINT 1 IN (6)	STEEL GRID DECK (7)	SALVAGE AND RE-INSTALL CONDUIT	STEEL REINFORCEMENT - EPOXY COATED	STEEL REINFORCEMENT STAINLESS STEEL	STRUCTURAL STEEL *	JOINT SEAL REPLACEMENT	CONCRETE PATCHING REPAIR	EPOXY INJECT CRACK REPAIR	FRP WRAP	CONCRETE SEALING	BOLT/RIVET REPLACEMENT	BEARING LUBRICATION	ARMORED EDGE FOR CONCRETE
UNIT	EA	LS	EA	SQYD	CUYD	CUYD	CUYD	SQYD	SQYD	SQYD	LF	EA	CUYD	CUYD	LS	LS	LF	SF	LF	LB	LB	LS	LF	SF	LF	SF	SF	EA	EA	LF
GENERAL	1	1	26																											
REPAIR 1: STRINGER REPAIR																1														
REPAIR 2: FINGER EXPANSION JOINT REPAIR																		220	32430	2760										
REPAIR 3: CONCRETE-FILLED STEEL GRID DECK REPLACEMENT																					1000									
REPAIR 4: LATEX CONCRETE DECK OVERLAY				783	33	22	6	309	238	783											102949	84003	1							
REPAIR 5: REINFORCED CONCRETE DECK REPLACEMENT											88																			
REPAIR 6: JOINT REPLACEMENT																														
REPAIR 7: MISCELLANEOUS STEEL REPAIRS												13																		
REPAIR 8: REINFORCED CONCRETE SUBSTRUCTURE REPAIR													6																	
REPAIR 9: CURB/SIDEWALK REPAIR																														
REPAIR 10: MISSING RIVET/ROI T REPLACEMENT																														
REPAIR 11: CLEAN AND GREASE BEARINGS																														
REPAIR 12: GIRDER AND FLOORBEAM REPAIR												1																		
REPAIR 13: GIRDER 1 CRACK REPAIR												1	4								881	748								22
BRIDGE TOTALS	1	1	26	783	33	22	6	309	238	783	88	15	10	607	2	1	220	32430	2760	104830	104047	2	352	453	169	244	4725	14	66	22

MAINTENANCE OF TRAFFIC QUANTITIES

BID ITEM CODE	02014	02562	02650	02671
BID ITEM	BARRICADE-TYPE III	TEMPORARY SIGNS	MAINTAIN AND CONTROL TRAFFIC	PORTABLE CHANGEABLE MESSAGE SIGN
UNIT	EA	SQ FT	LS	EA
GENERAL	4	119	1	12
REPAIR 1: STRINGER REPAIR				
REPAIR 2: FINGER EXPANSION JOINT REPAIR				
REPAIR 3: CONCRETE-FILLED STEEL GRID DECK REPLACEMENT				
REPAIR 4: LATEX CONCRETE DECK OVERLAY				
REPAIR 5: JOINT SEAL REPLACEMENT				
REPAIR 6: EXPANSION JOINT REPLACEMENT				
REPAIR 7: MISCELLANEOUS STEEL REPAIRS				
REPAIR 8: REINFORCED CONCRETE SUBSTRUCTURE REPAIR				
REPAIR 9: CURB/SIDEWALK REPAIR				
REPAIR 10: MISSING RIVET/BOLT REPLACEMENT				
REPAIR 11: CLEAN AND GREASE BEARINGS				
BRIDGE TOTALS	4	119	1	12

* REPAIR 3: ESTIMATED WEIGHT OF STRUCTURAL STEEL = 79,115 LB. (STUDS = 13,867 LB.)
* REPAIR 5: ESTIMATED WEIGHT OF STRUCTURAL STEEL = 48,200 LB. (STUDS = 7,545 LB.)

- SUPPLEMENTAL DESCRIPTIONS:
- (1) SLIDING PIN PLATE REPLACEMENT (QTY. = 6)
 - (2) WELDED SLIDING PLATE REPAIR (QTY. = 1)
 - (3) WINDLOCK ANGLE REPLACEMENT (QTY. = 6)
 - (4) GIRDER CRACK RETROFIT (QTY. = 1)
 - (5) GIRDER SPLICE/FLOORBEAM REPLACEMENT (QTY. = 1)
 - (6) PRECOMPRESS FOAM (QTY. = 1)
 - (7) CONCRETE FILLED



DAVID EDWARD RUST
P.E. 28354

David E. Rust
2024.10.31 10:35:02 -04'00'

GENERAL NOTES

SPECIFICATIONS: REFERENCES TO THE SPECIFICATIONS ARE TO THE CURRENT EDITION OF THE KENTUCKY DEPARTMENT OF HIGHWAYS STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION INCLUDING ANY CURRENT SUPPLEMENTAL SPECIFICATIONS. ALL REFERENCES TO THE AASHTO SPECIFICATIONS ARE TO THE CURRENT EDITION OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, WITH INTERIMS. ALL REFERENCES TO THE ASTM STANDARDS ARE TO THE CURRENT EDITION OF THE ASTM STANDARD SPECIFICATIONS, WITH INTERIMS.

MATERIALS DESIGN SPECIFICATIONS:

FOR CLASS AA CONCRETE: F'C = 4,000 PSI (MAX AGGREGATIVE SIZE=3/8")
 FOR CLASS M CONCRETE: F'C = 4,000 PSI
 FOR EPOXY COATED STEEL REINFORCEMENT: FY = 60,000 PSI
 FOR STAINLESS STEEL REINFORCEMENT: FY = 60,000 PSI

ASTM SPECIFICATIONS, CURRENT EDITION, AS DESIGNATED BELOW SHALL GOVERN THE FOLLOWING MATERIALS FURNISHED.

MATERIAL	ASTM, CURRENT ED.
STRUCTURAL STEEL FOR ROLLED SHAPES AND PLATES	A709 GRADE 36 MIN.
ALTERNATE SPECIFICATION FOR W-SHAPES	A992 GRADE 50
ALTERNATE SPECIFICATIONS FOR ANGLES, PLATES, AND CHANNELS	A572 GRADE 50
BOLTS (UP TO 1/2" Ø)	F3125 GRADE A325

ALL STRUCTURAL STEEL MATERIAL USED IN REPAIR 1- STRINGER REPAIRS SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TENSILE TEST APPLICABLE TO ZONE 2 IN ACCORDANCE WITH THE FOLLOWING, UNLESS OTHERWISE NOTED:
 25 FT.LBS. AT 40°F

DIMENSIONS: DIMENSIONS SHOWN ON THESE PLANS ARE TAKEN FROM THE ORIGINAL CONSTRUCTION CONTRACT PLANS AND DO NOT NECESSARILY REFLECT REVISIONS MADE DURING CONSTRUCTION OR REPAIRS PREVIOUSLY INSTALLED. THE CONTRACTOR SHALL VERIFY ELEVATIONS AND DIMENSIONS, INCLUDING THICKNESS OF PARTS AND FASTENER SIZE/SPACING, WITH FIELD MEASUREMENTS PRIOR TO ORDERING MATERIALS OR FABRICATING STEELWORK. ALL PLAN DIMENSIONS ARE FOR A NORMAL TEMPERATURE OF 60°F. LAYOUT DIMENSIONS ARE HORIZONTAL DIMENSIONS.

BRIDGE PLANS: A COPY OF AVAILABLE EXISTING BRIDGE PLANS WILL BE MADE AVAILABLE TO THE SUCCESSFUL BIDDER UPON WRITTEN REQUEST.

ON SITE INSPECTION: EACH CONTRACTOR SUBMITTING A BID FOR THIS WORK SHALL MAKE A THOROUGH INSPECTION OF THE BRIDGE AND THE WORK SITE PRIOR TO SUBMITTING A BID AND SHALL BE THOROUGHLY FAMILIARIZED WITH EXISTING CONDITIONS SO THAT WORK CAN BE EXPEDITIOUSLY PERFORMED AFTER A CONTRACT IS AWARDED. A SUITABLE METHOD OF PERFORMING THE WORK DESCRIBED HEREIN SHOULD BE INVESTIGATED. SUBMISSION OF A BID WILL BE CONSIDERED EVIDENCE OF THIS INSPECTION HAVING BEEN MADE. ANY CLAIMS FROM SITE CONDITIONS WILL NOT BE HONORED BY THE DEPARTMENT OF HIGHWAYS.

VERIFYING FIELD CONDITIONS: PLAN DIMENSIONS AND DETAILS RELATIVE TO THE EXISTING STRUCTURE ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD AND MAKE THE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING OF MATERIALS. SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN THE SCOPE OF THE WORK; HOWEVER THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT PRICE BID FOR THE WORK. IN ADDITION, THE OVERRUN AND UNDERRUN FORMULAS MAY BE APPLIED TO APPROPRIATE REPAIRS PROVIDED THAT THE REQUIREMENTS OF ARTICLE 104.02.02 OF THE STANDARD SPECIFICATIONS ARE SATISFIED WITH ADDITION OF THE RIVET / BOLT REPLACEMENT AS A COVERED BID ITEM.

MAINTENANCE OF TRAFFIC: THE BRIDGE SHALL BE CLOSED TO TRAFFIC FOR THE DURATION OF WORK.

WORKING OVER THE OHIO RIVER: A MINIMUM LEVEL OF 3'-0" BELOW LOW STEEL SHALL BE MAINTAINED. THE CONTRACTOR SHALL CONTACT THE US COAST GUARD AND HAVE THEIR WORK PLAN APPROVED BEFORE ANY WORK ON THE BRIDGE COMMENCES.

IF ANY WORK IS CONDUCTED FROM A BARGE OR OTHER VESSEL ON THE OHIO RIVER, THE CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPLIANCE WITH ALL REGULATORY, STATUTORY, AND INSURANCE REQUIREMENTS THUS APPLICABLE. AGENCIES INVOLVED INCLUDE BUT ARE NOT LIMITED TO THE US ARMY CORPS OF ENGINEERS AND THE US COAST GUARD. THE DEPARTMENT ASSUMES NO OBLIGATIONS OR LIABILITIES FOR WORK STOPPAGES DUE TO ENFORCEMENT ACTIONS BY GOVERNMENT REGULATORY AGENCIES OR TO RELATED DELAYS THAT THE DEPARTMENT DEEMS NECESSARY.

AT LEAST 30 DAYS IN ADVANCE OF BEGINNING CONSTRUCTION, THE SUCCESSFUL CONTRACTOR SHALL SUBMIT TO THE DEPARTMENT (FOR SUBMITTAL TO THE COAST GUARD) A WORK PLAN FOR PERFORMING WORK OVER THE OHIO RIVER. THIS WORK PLAN SHALL INCLUDE BUT IS NOT LIMITED TO METHODS FOR CONTAINING DEBRIS, DEBRIS REMOVAL FROM STREAM, AND MAINTENANCE OF EXISTING NAVIGATIONAL TRAFFIC DURING CONSTRUCTION.

THE CONTRACTOR MUST ADVISE THE COAST GUARD OF THE CONTRACTOR'S PROPOSED SCHEDULE OF WORK AT LEAST 10 DAYS PRIOR TO THE COMMENCEMENT OF ANY FIELD OPERATIONS. THE NOTIFICATION SHALL BE ADDRESSED TO:

WESTERN RIVERS BRIDGE BRANCH
 EIGHTH COAST GUARD DISTRICT
 1222 SPRUCE STREET, SUITE 2, 102D
 ST. LOUIS, MISSOURI 63103
 PHONE: 314-269-2378

TEMPORARY WORKS: PROVIDE FLOORING FOR WORKERS IN SITUATIONS WHERE THERE IS DANGER FROM A FALL AND FOR PROTECTION TO RIVER TRAFFIC BELOW. IF TEMPORARY FLOORING IS NECESSARY, THE FLOORING IS TO BE DESIGNED USING THE SUM OF DEAD LOAD AND LIVE VERTICAL LOADS. INCLUDE 50 PSF ON HORIZONTAL SURFACES AND THE WEIGHT OF ANY MATERIAL OR EQUIPMENT THAT IS PLACED OR ALLOWED TO FALL DURING CONSTRUCTION OR DEMOLITION IN THE LIVE LOAD COMPUTATION. SUBMIT THE FLOORING DESIGN ALONG WITH THE FALSEWORK DESIGN TO THE ENGINEER FOR APPROVAL. CONSIDER ALL PHASES OF FURNISHING AND REMOVING THE FLOORING AS INCIDENTAL TO THE CONTRACT. THIS ITEM MAY BE CONSIDERED IN ADDITION TO ANY REQUIREMENT SET FORTH IN SUBSECTION 107.01.01 OF THE SPECIFICATIONS.

REINFORCEMENT: DIMENSIONS SHOWN FROM THE FACE OF CONCRETE TO BARS ARE TO CENTER OF BARS UNLESS OTHERWISE SHOWN. SPACING OF BARS IS FROM CENTER TO CENTER OF BARS. CLEAR DISTANCE TO FACE OF CONCRETE IS 2" UNLESS OTHERWISE NOTED.

BARS DESIGNATED BY SUFFIX (SS) SHALL BE STAINLESS STEEL IN ACCORDANCE WITH THE SPECIAL NOTE FOR STAINLESS STEEL REINFORCEMENT.

EXISTING STEEL REINFORCEMENT: THE COST OF CUTTING, BENDING, AND CLEANING EXISTING STEEL REINFORCEMENT SHALL BE INCIDENTAL TO THE REPAIR ITEM BEING COMPLETED.

BEVELED EDGES: BEVEL ALL EXPOSED EDGES 3/4", UNLESS OTHERWISE NOTED.

MILL TEST REPORTS: NOTARIZED MILL TEST REPORTS SHALL BE FURNISHED IN TRIPPLICATE TO THE DEPARTMENT SHOWING THAT ALL STRUCTURAL STEEL CONFORMS TO THE REQUIREMENTS OF THE SPECIFICATIONS.

WELDING SPECIFICATIONS: ALL WELDING AND WELDING MATERIALS EXCEPT FOR REINFORCEMENT, SHALL CONFORM TO 'JOINT SPECIFICATION ANSI/AASHTO/AWS D1.1: 2020 BRIDGE WELDING CODE'. MODIFICATION AND ADDITIONS AS STATED ON THE PLANS SHALL SUPERSEDE THE JOINT SPECIFICATIONS.

PROHIBITED FIELD WELDING: EXCEPT WHERE SHOWN IN THE PLANS, NO WELDING OF ANY NATURE SHALL BE PERFORMED ON THE LOAD CARRYING MEMBERS OF THE BRIDGE WITHOUT THE WRITTEN CONSENT OF THE DIRECTOR, DIVISION OF BRIDGE MAINTENANCE, AND THEN ONLY IN THE MANNER AND AT THE LOCATIONS DESIGNATED IN THE AUTHORIZATION.

WELDING REINFORCEMENT: THE WELDING AND WELD MATERIAL SHALL CONFORM TO THE 'RECOMMENDED PRACTICES FOR WELDING REINFORCING STEEL', AMERICAN WELDING SOCIETY SPECIFICATIONS, CURRENT EDITION. NO DIRECT PAYMENT SHALL BE MADE FOR WELDING OR WELD MATERIAL, BUT THE COST OF THESE ITEMS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE REPAIR BEING COMPLETED.

WELDING PROCEDURES: QUALIFICATION TEST OF ALL WELDING PROCEDURES, WHEN REQUIRED BY AWS, SHALL BE COMPLETED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER PRIOR TO THE FINAL APPROVAL OF THE SHOP DRAWINGS AND THE START OF THE FABRICATION.

WELD SIZES: UNLESS SPECIFIED OTHERWISE, USE THE FOLLOWING FILLET WELD SIZES:

BASE METAL THICKNESS OF THICKER PART JOINED (IN.)	MINIMUM SIZE OF FILLET WELD (IN.)
TO 1/4" INCLUSIVE	1/8"
OVER 1/4" TO 1/2"	3/16"
OVER 1/2" TO 3/4"	1/4"
OVER 3/4"	5/16"

THE WELD SIZE NEED NOT EXCEED THE THICKNESS OF THE THINNER PART JOINED.

REMOVAL OF EXISTING RIVETS AND BOLTS: THE CONTRACTOR WILL BE PERMITTED TO REMOVE RIVETS IN ANY MANNER THAT DOES NOT DAMAGE ADJACENT STRUCTURAL STEEL. THIS MAY INCLUDE MECHANICAL REMOVAL OR OTHER METHODS APPROVED BY THE ENGINEER. USE OF CUTTING TORCHES WILL NOT BE PERMITTED.

HIGH STRENGTH BOLT CONNECTIONS: UNLESS OTHERWISE SPECIFIED ON THE PLANS, ALL BOLTED CONNECTIONS SHALL BE ASTM F3125 GRADE A325 HIGH STRENGTH BOLTS, A563DH NUTS, AND F436 FLAT WASHERS. OPEN HOLES SHALL BE 1/16" INCH GREATER THAN THE BOLT DIAMETER, UNLESS OTHERWISE NOTED. BOLT THREADS SHALL BE EXCLUDED FROM THE SHEAR PLANE IN ALL BOLTED CONNECTIONS, UNLESS OTHERWISE NOTED. FROM AVAILABLE ORIGINAL DESIGN DRAWING INFORMATION, THE EXISTING RIVET SIZES BELOW ARE ANTICIPATED AND SHALL BE REPLACED WHERE NOTED WITH HIGH STRENGTH BOLTS OF EQUAL SIZE. CONTRACTOR TO VERIFY PRIOR TO ORDERING MATERIALS. 1" DIA. IN MAIN TRUSS MEMBERS. 3/8" DIA. IN FLOOR SYSTEM, LATERAL AND SWAY BRACING, LACING AND STAY PLATES, DECK TRUSS APPROACH GIRDERS, ETC.

ANY CONNECTION OR MIS-DRILLED HOLES IN STEEL MEMBERS THAT ARE NOT SPECIFIED TO RECEIVE ANY OTHER CONNECTED PART SHALL BE FILLED WITH A HIGH STRENGTH BOLT THAT IS TENSIONED PER THE SPECIFICATIONS.

TYPE 1 MECHANICALLY GALVANIZED BOLTS SHALL BE USED AS DESCRIBED IN AASHTO M 164, ALL HIGH STRENGTH BOLTED CONNECTIONS ARE TO BE INSTALLED USING 'DIRECT TENSION INDICATORS' (DTI'S) IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND ASTM F959. ALL DTI'S SHALL BE MECHANICALLY ZINC COATED. INSTALLATION DETAILS OF THE DTI'S SHALL BE SHOWN ON THE SHOP PLANS.

SHOP DRAWINGS: SUBMIT SHOP DRAWINGS DIRECTLY TO THE CONSULTANT. WHEN ANY CHANGES IN THE DESIGN PLANS ARE PROPOSED BY THE FABRICATOR OR SUPPLIER, SUBMIT THOSE CHANGES TO THE CONSULTANT.

SUBMIT FINAL APPROVED SHOP DRAWINGS TO THE ENGINEER.

SHOP DRAWINGS WILL BE REQUIRED FOR THE FOLLOWING REPAIRS:
 REPAIR 1 - STRINGER REPAIRS
 REPAIR 2 - FINGER EXPANSION JOINT REPAIR
 REPAIR 3 - CONCRETE FILLED STEEL GRID DECK REPLACEMENT
 REPAIR 7 - MISCELLANEOUS STEEL REPAIRS

STUDS: STUDS SHALL BE WELDED IN ACCORDANCE WITH AWS SPECIFICATIONS. STUD LENGTHS SHALL NOT BE LESS THAN 3.5 INCHES. PROVIDE MINIMUM COVER OF 1.5" FROM THE TOP OF THE DECK TO THE TOP OF THE SHEAR CONNECTOR UNLESS OTHERWISE SHOWN.

CLEANING AND PAINTING: REFER TO THE SPECIAL NOTE FOR PAINTING STRUCTURAL STEEL REPAIRS.

PAINTING DAMAGED AREAS: ALL AREAS OF NEW OR EXISTING STRUCTURAL STEEL ON WHICH THE PAINT HAS BEEN DAMAGED BY THE CONTRACTOR SHALL BE CLEANED AND SPOT PAINTED TO THE SATISFACTION OF THE ENGINEER AND IN ACCORDANCE WITH THE SPECIAL NOTE FOR PAINTING STRUCTURAL STEEL REPAIRS. THE COST OF THIS TOUCH-UP PAINTING IS TO BE INCIDENTAL TO THE CONTRACT.

DISPOSAL OF MATERIALS: ALL MATERIALS AND DEBRIS REMOVED FROM OR BENEATH THE BRIDGE OR APPROACHES SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE RIGHT-OF-WAY.

UTILITIES: UTILITIES MAY BE ON THE BRIDGE OR IN THE EXISTING PLINTH AND ARE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE, DEACTIVATE AND COORDINATE ACTIVITIES WITH THE UTILITY OWNER. SEE GENERAL NOTE FOR SALVAGE AND REINSTALL CONDUIT.

STABILITY OF THE STRUCTURE: THE CONTRACTOR IS COMPLETELY RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE FROM THE TIME OF MOBILIZATION UNTIL AFTER THE BRIDGE HAS BEEN REOPENED TO NORMAL TRAFFIC FOLLOWING COMPLETION OF ALL WORK REQUIRED IN THE CONTRACT.

DAMAGE OUTSIDE CONSTRUCTION LIMITS: ANY AREA THAT IS DISTURBED OUTSIDE THE LIMITS OF THE CONSTRUCTION DURING THE LIFE OF THE PROJECT SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE, SHOULD SUCH DAMAGE RESULT FROM THE CONTRACTOR'S ACTIONS.

DAMAGE TO THE STRUCTURE: THE CONTRACTOR SHALL BEAR FULL RESPONSIBILITY AND EXPENSE FOR REPAIR OF ANY AND ALL DAMAGES TO THE STRUCTURE, SHOULD SUCH DAMAGE RESULT FROM THE CONTRACTOR'S ACTIONS. AFTER COMPLETION OF ALL OPERATIONS, THE STRUCTURE AND SITE SHALL BE LEFT IN A CONDITION THAT IS IN ACCORDANCE WITH SECTION 105.12 OF THE SPECIFICATIONS.

CONSTRUCTION LOAD: THE CONTRACTOR SHALL ABIDE BY THE BRIDGE POSTING LIMITS. STORAGE OF MATERIAL ON THE BRIDGE IS PROHIBITED WITHOUT WRITTEN APPROVAL OF THE ENGINEER.

STEEL CURB FASCIA STRINGER: AS NOTED IN THE PLANS, REPLACE ALL STEEL CURB FASCIA STRINGERS AND ANGLES (UPSTREAM AND DOWNSTREAM SIDE) ON THE DECK REPLACEMENT SPANS 28 & 29 ONLY. ALL STRINGER LENGTHS, BOLT HOLE PATTERNS, AND BOLT DIAMETERS SHALL BE MEASURED IN THE FIELD BY THE CONTRACTOR. ALL STRINGER SPLICE PLATES SHALL BE REPLACED IN-KIND. ALL MATERIALS AND LABOR SHALL BE INCIDENTAL TO THE LUMP SUM BID FOR STRUCTURAL STEEL. HANDRAIL AND POSTS SHALL REMAIN ATTACHED TO THE BRIDGE DURING THE DECK REHABILITATION.

SALVAGE AND REINSTALL CONDUIT: SALVAGE THE EXISTING CONDUIT, CONNECTION, AND HANGER SYSTEM FOR THE BRIDGE LIGHTING UNDER THE SIDEWALK OVERHANG. THE CONDUIT MAY LAY AND REST ON EXISTING KNEE BRACES AND FLOOR BEAMS DURING RECONSTRUCTION OF THE DECK; SOME TEMPORARY SUPPORT MAY BE REQUIRED. TAKE CARE NOT TO DAMAGE THE CONDUIT OR HANGERS DURING CONSTRUCTION. ANY DAMAGE DUE TO THE CONTRACTOR MUST BE REPLACED AT NO COST TO THE DEPARTMENT. PROVIDE AND INSTALL INSERTS TO ACCEPT EXISTING HANGERS AND HARDWARE IN THE PROPOSED SLAB AT THE EXISTING HANGER LOCATIONS. THE CONTRACTOR IS TO ALLOW FOR NEW ALL-THREAD RODS, NUTS, AND WASHERS TO REPLACE EXISTING HARDWARE THAT CANNOT BE REUSED AT EACH LOCATION WITH THIS BID ITEM. REINSTALL CONDUIT AND HANGERS ONCE CONSTRUCTION OF THE DECK SLAB, CURB, AND SIDEWALK IS COMPLETE. INCLUDE ALL WORK FOR THIS ITEM IN THE BID FOR SALVAGE AND REINSTALL CONDUIT PER LINEAR FEET.



COMMONWEALTH OF KENTUCKY
 DEPARTMENT OF HIGHWAYS



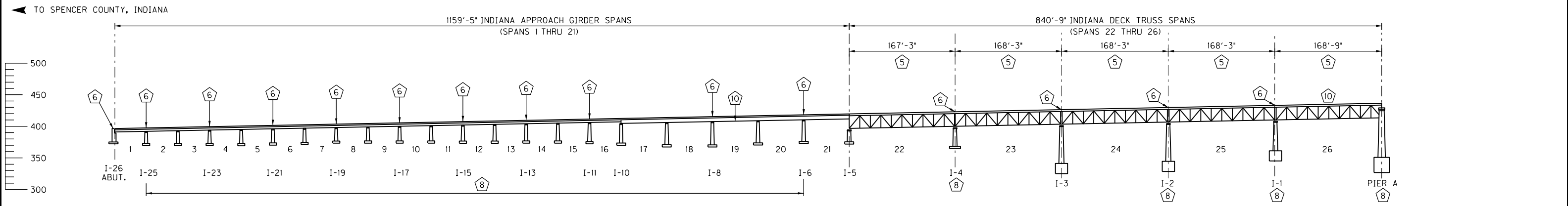
REVISION	DATE

PREPARED BY
 Palmer ENGINEERING

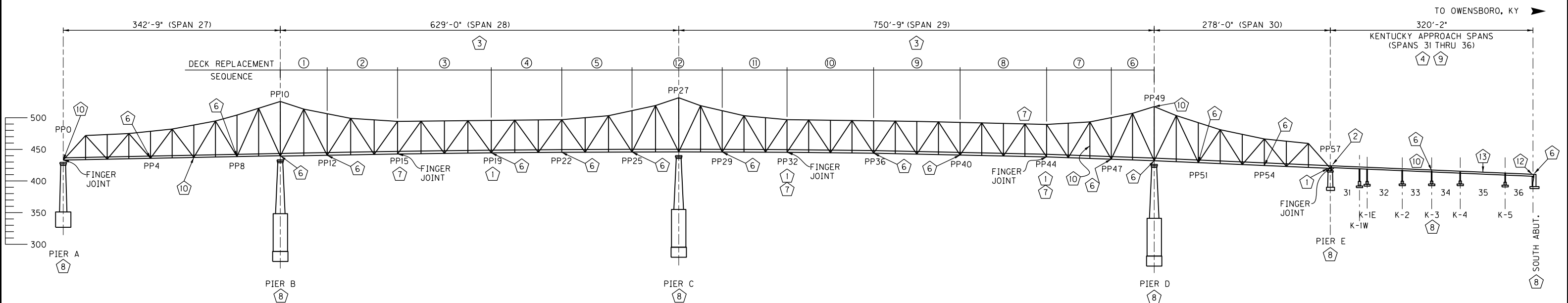
DATE:	OCTOBER 2024	CHECKED BY:	
DESIGNED BY:	J.P. MURRIN	D.E. RUST	
DETAILED BY:	J.A. ROSE	D.E. RUST	

GENERAL NOTES
 CROSSING
 OHIO RIVER at OWENSBORO

ROUTE	ITEM NO.	COUNTY OF
KY 2262	2-10020.00	DAVIESS
	SHEET NO.	DRAWING NUMBER
	S02	28812



ELEVATION - INDIANA APPROACH SPANS
(LOOKING UPSTREAM (EAST))



ELEVATION - THROUGH TRUSS AND KY APPROACH SPANS
(LOOKING UPSTREAM (EAST))

REPAIR LEGEND

- ① STRINGER REPAIR
- ② FINGER EXPANSION JOINT REPAIR
- ③ CONCRETE-FILLED STEEL GRID DECK REPLACEMENT
- ④ LATEX CONCRETE DECK OVERLAY
- ⑤ REINFORCED CONCRETE DECK REPLACEMENT
- ⑥ JOINT REPLACEMENT
- ⑦ MISCELLANEOUS STEEL REPAIRS
- ⑧ REINFORCED CONCRETE SUBSTRUCTURE REPAIR
- ⑨ CURB/SIDEWALK REPAIR
- ⑩ MISSING RIVET / BOLT REPLACEMENT - SEE TABLE FOR LOCATION & QUANTITIES
- ⑪ CLEAN AND GREASE BEARINGS - SEE TABLE FOR LOCATION & QUANTITIES
- ⑫ GIRDER AND FLOORBEAM REPAIR
- ⑬ GIRDER I CRACK REPAIR

③ DECK REPLACEMENT SEQUENCE NOTES:

1. FOR EACH THROUGH TRUSS SPAN (SPANS 28 & 29), REMOVE AND COMPLETELY REPLACE THE EXISTING LIGHTWEIGHT DECK FOR EACH NUMBERED SECTION IN THE SEQUENCE SHOWN PRIOR TO CONTINUING WITH THE NEXT SECTION IN THE SEQUENCE. COMPLETE ALL WORK IN A GIVEN SPAN PRIOR TO BEGINNING WORK IN THE REMAINING SPAN.
2. THE DECK REPLACEMENT SEQUENCE NOTED ABOVE MAY NOT BE MODIFIED UNLESS THE CONTRACTOR SUBMITS FOR THE WRITTEN APPROVAL OF THE ENGINEER, DRAWINGS, PLANS, DETAILS, AND CALCULATIONS PERFORMED BY A PROFESSIONAL ENGINEER LICENSED IN THE COMMONWEALTH OF KENTUCKY SHOWING THAT TRUSS MEMBER STRESSES, UPLIFT FORCES AT PIERS A AND E, AND ANY OTHER CONSTRUCTION CONCERNS OCCURRING AS A RESULT OF THE MODIFIED REPLACEMENT SEQUENCE HAVE BEEN ADDRESSED.
3. THE CONTRACTOR SHALL USE CARE IN REMOVING THE EXISTING DECK ADJACENT TO THE EXISTING FINGER DAMS. ANY DAMAGE CAUSED BY THE DECK REMOVAL IS TO BE REPLACED AT THE CONTRACTORS EXPENSE. THE EXISTING HARDWARE FOR THESE LOCATIONS IS TO BE REUSED. TEMPORARY SUPPORT MAY BE REQUIRED.
4. NEW CONCRETE FILLED STEEL DECK REPLACEMENT MUST BE PLACED AFTER STRINGER REPAIRS HAVE BEEN COMPLETED.

⑤ DECK REPLACEMENT SEQUENCE NOTES:

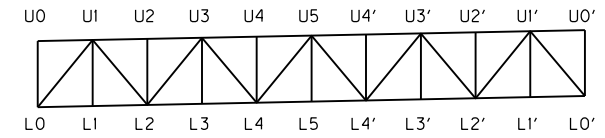
1. FOR EACH DECK TRUSS SPAN (SPANS 22-26) REMOVE AND COMPLETELY REPLACE THE EXISTING REINFORCED CONCRETE DECK. THE NEW CONCRETE DECK SHOULD BE POURED ONE SPAN AT A TIME.
2. THE CONTRACTOR SHALL USE CARE IN REMOVING THE EXISTING DECK ADJACENT TO THE EXISTING FINGER DAM AT PIER A. ANY DAMAGE CAUSED BY THE DECK REMOVAL IS TO BE REPLACED AT THE CONTRACTORS EXPENSE. THE EXISTING HARDWARE FOR THIS LOCATION IS TO BE REUSED. TEMPORARY SUPPORT MAY BE REQUIRED.

REPAIR 11

BEARING LUBRICATION	
PIER	NUMBER OF BEARINGS
I-25	4
I-23	4
I-21	4
I-19	4
I-17	4
I-15	4
I-13	4
I-11	4
I-9	2
I-8	4
I-6	4
I-4	2
I-3	2
I-2	2
I-1	2
A	4
E	2
K-1	2
K-2	2
K-3	2
K-4	2
K-5	2
TOTAL	66

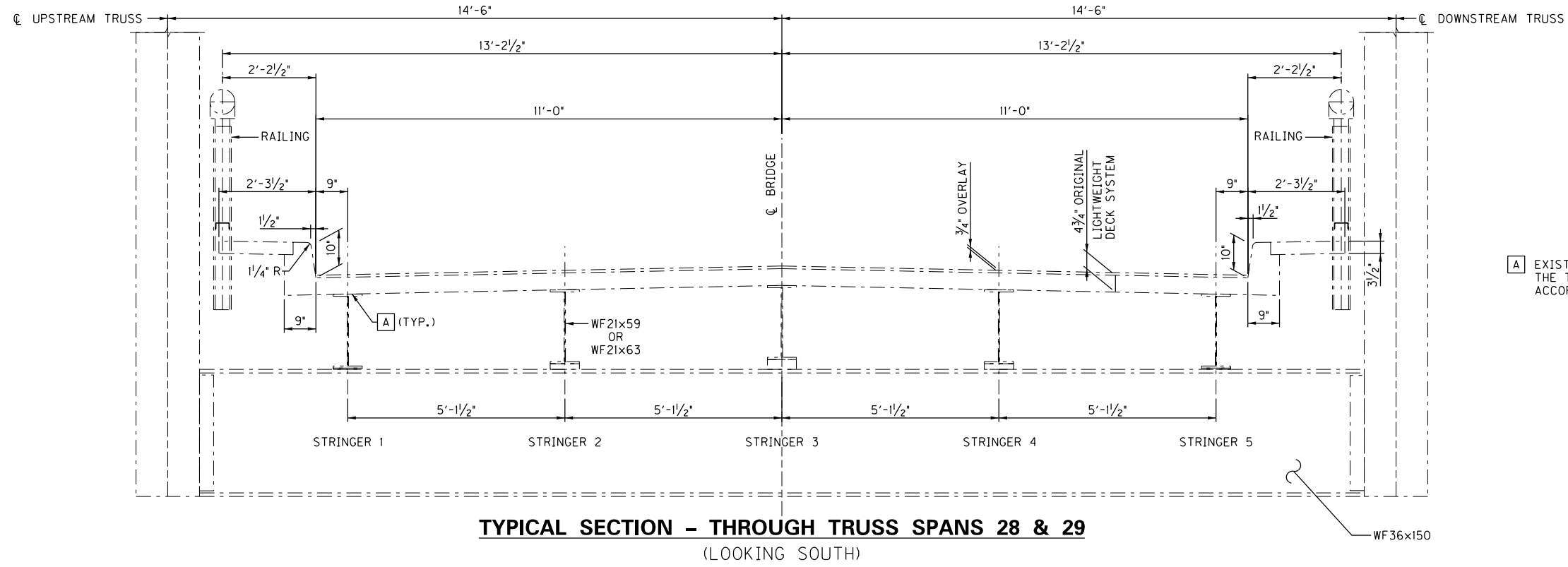
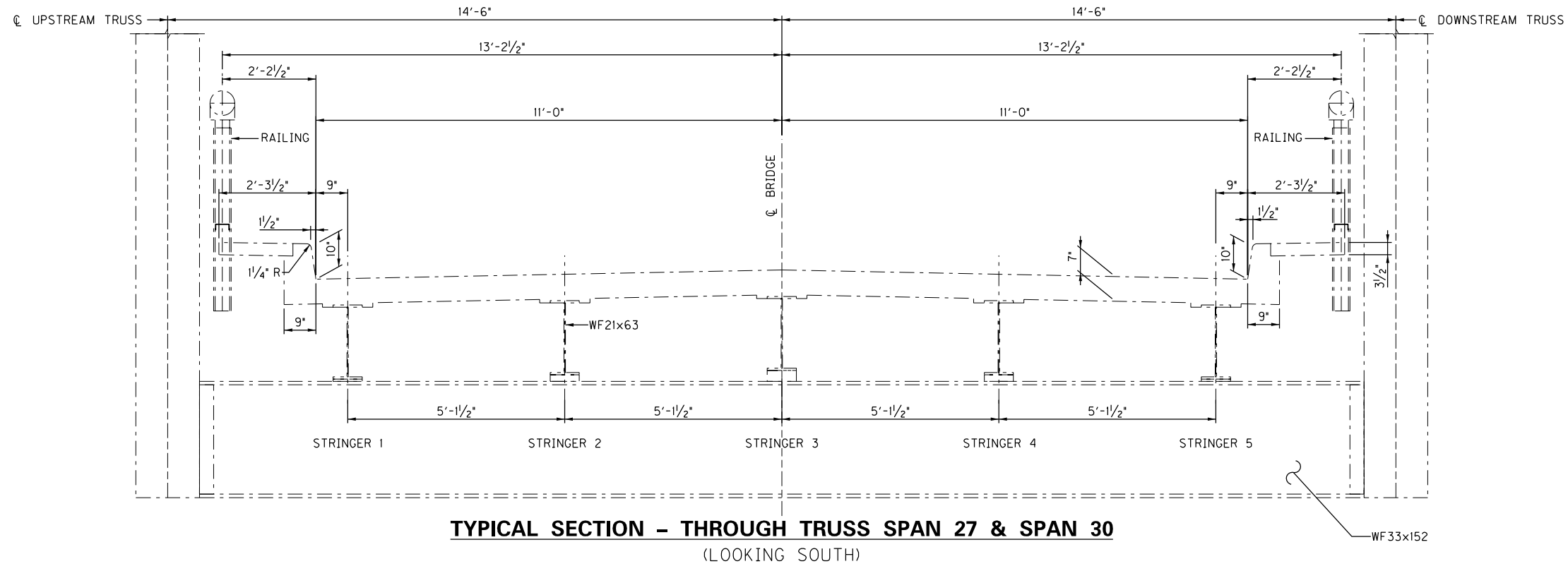
REPAIR 10

MISSING RIVET/BOLT REPLACEMENT			
SPAN	LOCATION	US/DS	NUMBER OF BOLTS
19	GIRDER 1 AT MIDSPAN	US	1
26	U3-U4, U3-U4, U1-FB1	DS	8
27	L0-U1	US	1
27	L5	US	1
29	L46-U46	DS	1
29	U49	DS	1
33	GIRDER 2 AT FB 1	US	1

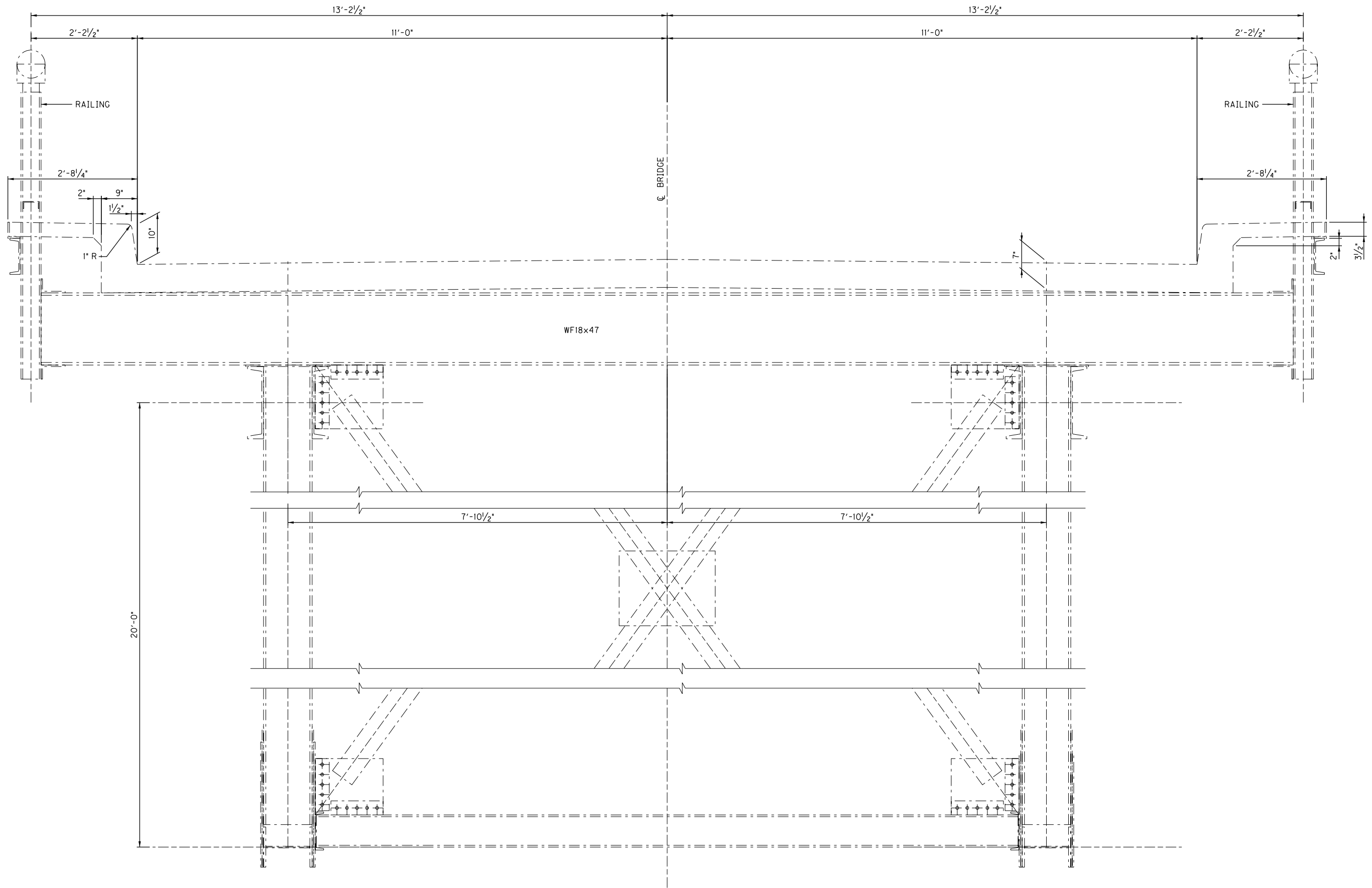


TYPICAL DECK TRUSS
(SPANS 22-26)

	REVISION	DATE	PREPARED BY 	DATE: OCTOBER 2024	CHECKED BY: D.E. RUST	BRIDGE ELEVATION - REPAIR LOCATIONS	ROUTE: KY 2262	ITEM NO.: 2-10020.00	COUNTY OF: DAVIESS
					DESIGNED BY: J.P. MURRIN	D.E. RUST	CROSSING OHIO RIVER at OWENSBORO		SHEET NO.: S03



A EXISTING LIGHTWEIGHT DECK IS WELDED TO THE TOP FLANGE OF THE STRINGERS ACCORDING TO THE ORIGINAL PLANS.



DECK TRUSS SPANS 22 - 26
(LOOKING SOUTH)

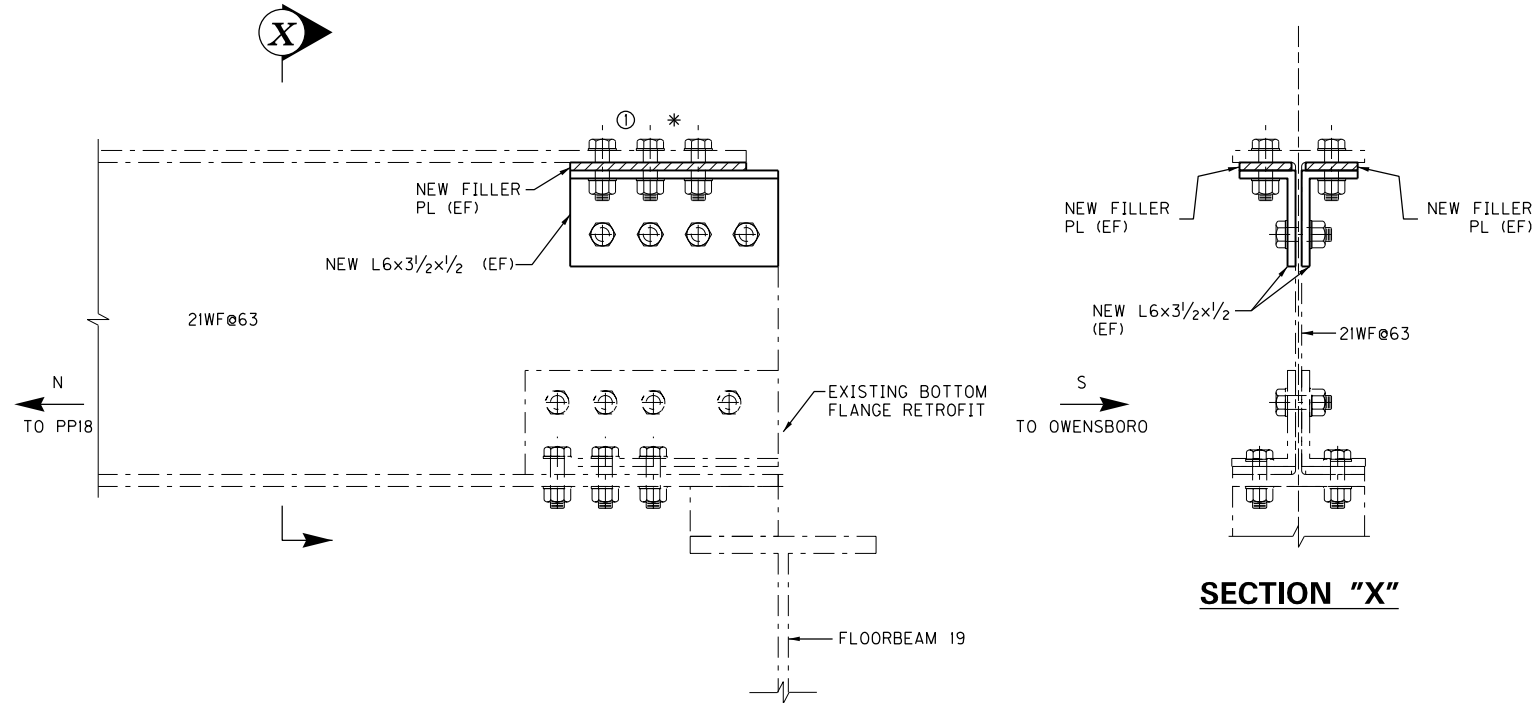
<p>COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS</p>	REVISION	DATE	<p>PREPARED BY</p> <p>Palmer ENGINEERING</p>	DATE: OCTOBER 2024	CHECKED BY:	<p>EXISTING TYPICAL SECTIONS</p> <p>CROSSING</p> <p>OHIO RIVER at OWENSBORO</p>	ROUTE	ITEM NO.	COUNTY OF
					DESIGNED BY: J.P. MURRIN		D.E. RUST	KY 2262	2-10020.00
				DETAILED BY: M.B. HAGGARD	J.P. MURRIN			SHEET NO. S05	DRAWING NUMBER 28812

STRINGER 3 REPAIR AT PP19

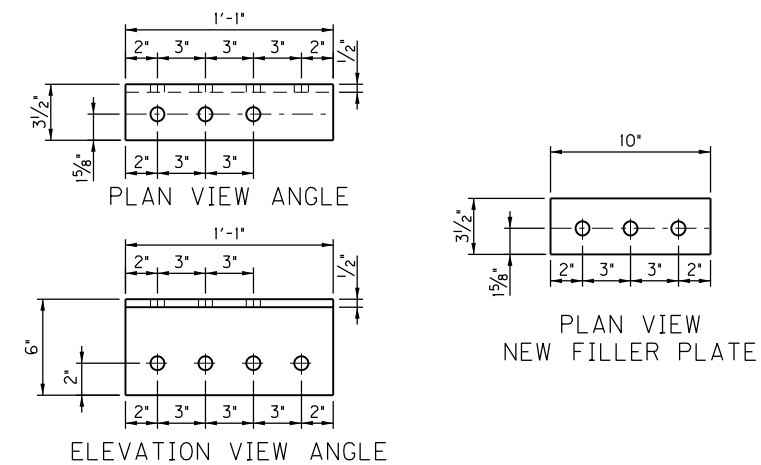
- ① REMOVE CONCRETE LIGHTWEIGHT DECKING TO ALLOW ADEQUATE ACCESS TO STRINGER 3 END BELOW.
- * SEE SHEET S14 FOR CONCRETE FILLED STEEL GRID DECK DESIGN TO BE COMPLETED AFTER REPAIRS TO SUPERSTRUCTURE ARE FINAL.
- CONTRACTOR SHALL TAKE EXTREME CARE NOT TO DAMAGE ANY MEMBERS AROUND THE REPAIR LOCATION. ANY DAMAGE SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- SEE *SPECIAL NOTE FOR PAINTING STRUCTURAL STEEL REPAIRS.*
- SEE *SPECIAL NOTE FOR STEEL REPAIRS.*



LOOKING SOUTHEAST AT THE NORTH FACE OF FLOORBEAM 19



STRINGER 3 REPAIR AT PP19



NEW L6 X 3 1/2" X 12"
AND FILLER PLATE

	REVISION	DATE	PREPARED BY	DATE:	CHECKED BY	REPAIR 1A - PP19 STRINGER 3 REPAIR CROSSING OHIO RIVER at OWENSBORO	ROUTE	ITEM NO.	COUNTY OF
					OCTOBER 2024		D.E. RUST	KY 2262	2-10020.00
				DESIGNED BY:	J.P. MURRIN	J.P. MURRIN		SHEET NO.	DRAWING NUMBER
				DETAILED BY:	M.B. HAGGARD			S06	28812

**PREPARATION – DISASSEMBLY OF EXPANSION JOINT
AND STRINGER ENDS AT PP44 (SEE SHEET 2 OF THIS REPAIR)**

- 1 REMOVE CONCRETE LIGHTWEIGHT DECK TO ALLOW ADEQUATE ACCESS TO STRINGER ENDS BELOW.
 - 2 DISPLACE JOINT SUPPORT CHANNELS BY REMOVING RIVETS ON CONNECTION ANGLES 3A AND 3C.
 - 2B REMOVE RIVETS ATTACHING FINGER JOINT CHANNELS TO CONNECTION ANGLES 3A AND 3C. 8 RIVETS EACH FACE OF STRINGER.
 - 2C REMOVE RIVETS THROUGH TOP FLANGE OF THE STRINGERS THAT IMPEDE CHANNEL SLIDING. 5 RIVETS EACH FACE OF STRINGER.
 - 2D REMOVE FILL PLATES BETWEEN BOOT (CUT CHANNEL) TOP FLANGE AND JOINT CHANNELS, 1 EACH FACE OF STRINGER.
 - 3 REMOVE CONNECTION ANGLES 3A AND 3C BY REMOVING RIVETS THROUGH THE STRINGER WEBS. 2 ANGLES EACH FACE OF STRINGER.
 - 3B REMOVE RIVETS ATTACHING ANGLES 3A AND 3C TO THE STRINGER WEBS, 6 RIVETS TOTAL.
- STEPS 1 THROUGH 3B SHOULD BE DONE TO ALL 5 STRINGER ENDS. THE FINGER PLATES SHOULD BE DISCONNECTED AND FREE TO SLIDE TO THE NORTH AND SOUTH ON TOP OF THE STRINGERS.
- 4 SLIDE SOUTH FINGER PLATE, WITH SUPPORT CHANNELS, ALONG EXISTING STRINGERS TO THE SOUTH IN ORDER TO ACHIEVE ENOUGH CLEARANCE TO REMOVE THE MIDDLE CHANNEL.
 - 5 SLIDE NORTH FINGER PLATE, WITH SUPPORT CHANNELS, ALONG EXISTING STRINGERS TO THE NORTH IN ORDER TO ACHIEVE ENOUGH CLEARANCE TO REMOVE THE MIDDLE CHANNEL.
 - 6 REMOVE MIDDLE CHANNEL BY REMOVING RIVETS ON CONNECTION ANGLE 6B.
 - 6B REMOVE RIVETS ATTACHING ANGLE 6B TO THE CHANNEL WEB (8 TOTAL). COMPLETE AT ALL 5 STRINGER ENDS AND THEN PULL OUT MIDDLE CHANNEL.
 - 6C REMOVE RIVETS ATTACHING ANGLE 6B TO THE STRINGER WEBS (6 TOTAL) AND REMOVE ANGLE 6B.
 - 7 SLIDE NORTH FINGER JOINT TO THE SOUTH SIDE OF THE FLOORBEAM TO ALLOW ENOUGH CLEARANCE FOR THE STRINGER END REPLACEMENTS TO THE NORTH AND BOOT REPLACEMENTS TO THE SOUTH.
 - 8 REMOVE DETERIORATED BOOTS (CUT CHANNELS) BY REMOVING RIVETS THROUGH WEB AND BOTTOM FLANGE OF STRINGER.
 - 8B REMOVE RIVETS THROUGH WEB AND BOTTOM FLANGE, (16 RIVETS TOTAL).
 - 9 REMOVE CRACKED STRINGER SECTION BY REMOVING BOLTS THROUGH FLOORBEAM AND CUT OUT DAMAGED SECTION OF STRINGER.
 - 9B REMOVE BOLTS HOLDING STRINGER TO FLOORBEAM. BEARING ASSEMBLY AND RIVETS MAY NEED TO BE REMOVED FOR CLEANING AND EASIER PLACEMENT OF NEW STRINGER.
 - 9C MECHANICALLY CUT OR USE A PLASMA TORCH TO REMOVE THE STRINGER, TO THE EXTENT SHOWN ON SHEET 4 OF THIS REPAIR. GRIND EDGE SMOOTH TO THE SATISFACTION OF THE ENGINEER. USE OF OXY-ACETYLENE TORCHES WILL NOT BE PERMITTED.

**REPAIR – STRINGER ENDS AND EXPANSION JOINT RE-ASSEMBLY
(SEE SHEETS 3 AND 4 OF THIS REPAIR)**

- A REPLACE CUT OUT SECTION OF STRINGER WITH NEW ROLLED SHAPE (W21x59).
- A1 BOLT NEW SHAPE TO FLOORBEAM 44 WITH NEW HIGH STRENGTH BOLTS AND TIGHTEN PER THE STANDARD SPECIFICATIONS.
- A2 INSTALL NEW SPLICE PLATES TO CONNECT THE NEW SHAPE TO THE EXISTING WF21x59. SEE SHEET 4 OF THIS REPAIR FOR SPLICE PLATE DIMENSIONS AND DETAILS.
- B INSTALL NEW MC18x45.8 BOOTS (CUT CHANNELS) WITH NEW HIGH STRENGTH BOLTS (1 BOOT EF OF STRINGER). SEE SHEET 4 OF THIS REPAIR FOR NEW BOOT (CUT CHANNELS) DIMENSIONS AND DETAILS.
- B1 INSTALL NEW HIGH STRENGTH BOLTS THROUGH THE WEB AND BOTTOM FLANGE AND TIGHTEN PER THE STANDARD SPECIFICATIONS (16 BOLTS TOTAL).
- C SLIDE NORTH FINGER PLATE WITH SUPPORT CHANNELS BACK TO THE NORTH SIDE OF FLOORBEAM 44. ALLOW FOR ENOUGH CLEARANCE TO RE-INSTALL THE MIDDLE CHANNEL.
- D RE-INSTALL THE MIDDLE CHANNEL AND ANGLE 6B.
- D1 INSTALL NEW HIGH STRENGTH BOLTS CONNECTING ANGLE 6B TO THE NEW STRINGER WEB AND TIGHTEN PER THE STANDARD SPECIFICATIONS. (6 BOLTS TOTAL).
- D2 INSTALL NEW HIGH STRENGTH BOLTS CONNECTING THE MIDDLE CHANNEL WEB TO ANGLE 6B AND TIGHTEN PER THE STANDARD SPECIFICATIONS (8 BOLTS TOTAL).
- E SLIDE NORTH FINGER PLATE WITH SUPPORT CHANNELS BACK INTO POSITION TO FASTEN OVER NEW STRINGER ON THE NORTH SIDE OF FLOORBEAM 44.
- F INSTALL NEW HIGH STRENGTH BOLTS TO ATTACH THE JOINT TO THE TOP FLANGE OF THE STRINGER AND TIGHTEN PER THE STANDARD SPECIFICATIONS (2 BOLTS EF OF STRINGER).
- G RE-INSTALL ANGLE 3A.
- G1 INSTALL NEW HIGH STRENGTH BOLTS THROUGH THE STRINGER AND CHANNEL WEBS AND TIGHTEN PER THE STANDARD SPECIFICATIONS (11 BOLTS TOTAL).
- H SLIDE SOUTH FINGER PLATE WITH SUPPORT CHANNELS BACK INTO POSITION TO FASTEN OVER NEW BOOT (CUT CHANNEL) ON THE SOUTH SIDE OF FLOORBEAM 44.
- H1 INSTALL NEW HIGH STRENGTH BOLTS TO ATTACH THE JOINT TO THE TOP FLANGE OF THE NEW BOOT (CUT CHANNEL) AND TIGHTEN TO THE STANDARD SPECIFICATIONS (3 BOLTS EF OF STRINGER).
- I RE-INSTALL ANGLE 3C.
- I1 INSTALL NEW HIGH STRENGTH BOLTS THROUGH THE STRINGER AND CHANNEL WEBS AND TIGHTEN PER THE STANDARD SPECIFICATIONS (11 BOLTS TOTAL).
- I2 PERFORM "PP44 STRINGER 1&5 CORROSION HOLE REPAIR" ON SHEET 5 OF THIS REPAIR. (2 LOCATIONS ONLY)
- J SEE SHEET S13 FOR LIGHTWEIGHT DECK REPLACEMENT TO BE COMPLETED AFTER REPAIRS TO THE SUPERSTRUCTURE ARE FINAL.




NOTES:

- 1. SOME STEPS SHOWN IN MULTIPLE VIEWS FOR CLARITY.
- 2. THE TOTAL NUMBER OF RIVETS OR BOLTS SHOWN IS THE TOTAL AT EACH INDIVIDUAL INTERIOR STRINGER LOCATION. EXTERIOR STRINGERS VARY.
- 3. TEMPORARY SHORING IS REQUIRED ON BOTH SIDES OF FB44 IN ORDER TO COMPLETE REPAIRS.
- 4. CONTRACTOR SHALL TAKE EXTREME CARE NOT TO DAMAGE ANY MEMBERS TO REMAIN. ANY DAMAGE SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- 5. 10 TOTAL STRINGER REPAIRS AT THIS LOCATION (PP4).

SEE "SPECIAL NOTE FOR PAINTING STRUCTURAL STEEL REPAIRS."

SEE "SPECIAL NOTE FOR STEEL REPAIRS."

** THIS REPAIR IS DESCRIBED AND DEPICTED ON SHEETS S07-S10 AS THE STRINGERS AS PP44. THE SAME REPAIR SHALL BE PERFORMED AT PP32. PP32 IS A MIRROR OF PP44.

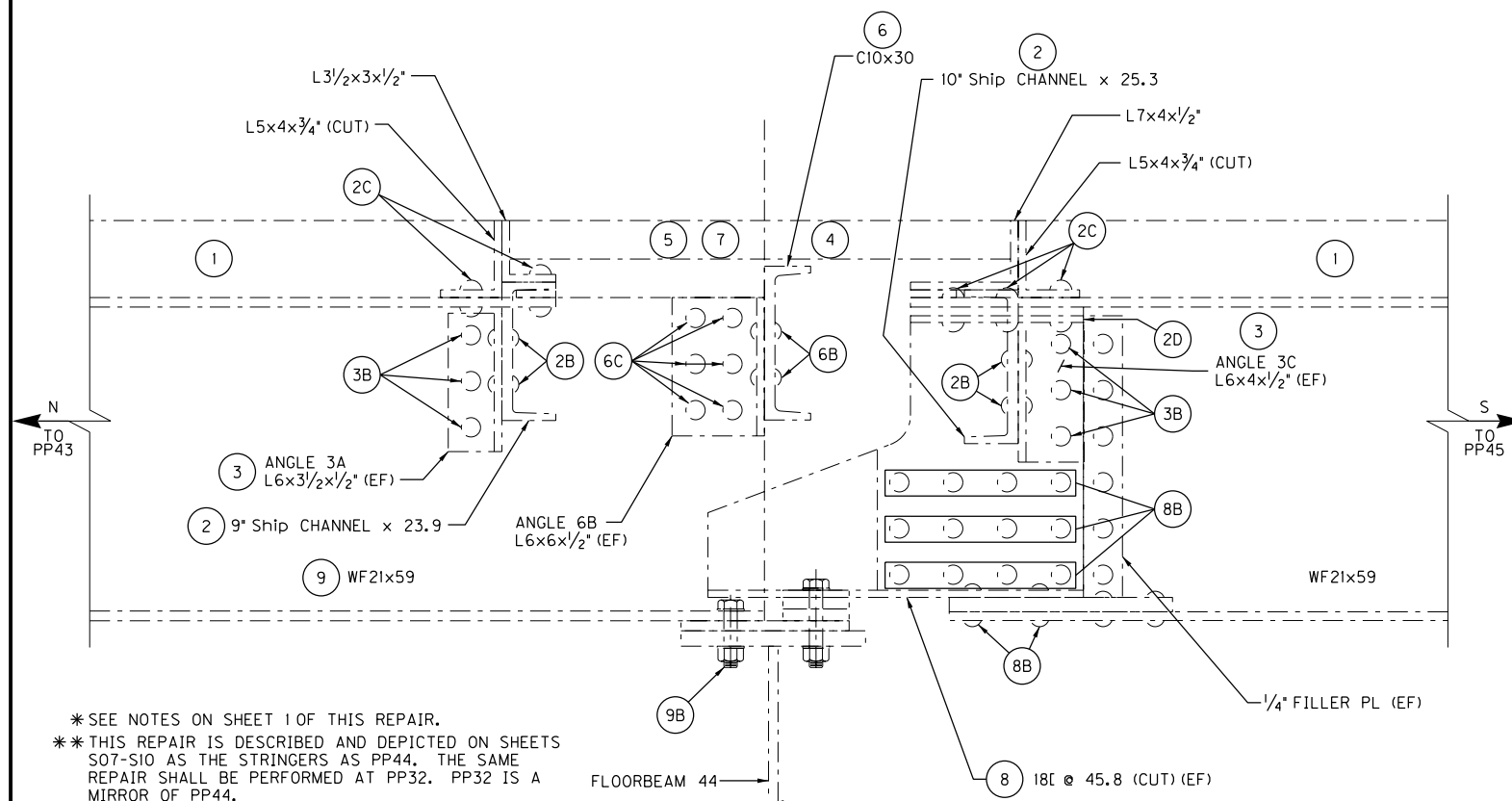
 COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS		REVISION	DATE	PREPARED BY 	DATE: OCTOBER 2024	CHECKED BY	REPAIR 1B - STRINGER REPAIRS PP32&PP44 - SHEET 1	ROUTE	ITEM NO.	COUNTY OF
						DESIGNED BY: J.P. MURRIN		D.E. RUST	CROSSING	2-10020.00
					DETAILED BY: J.A. ROSE	J.P. MURRIN	OHIO RIVER at OWENSBORO	KY 2262	SHEET NO. S07	DRAWING NUMBER 28812



VIEW LOOKING EAST FROM THE SOUTH FACE OF FLOORBEAM 44

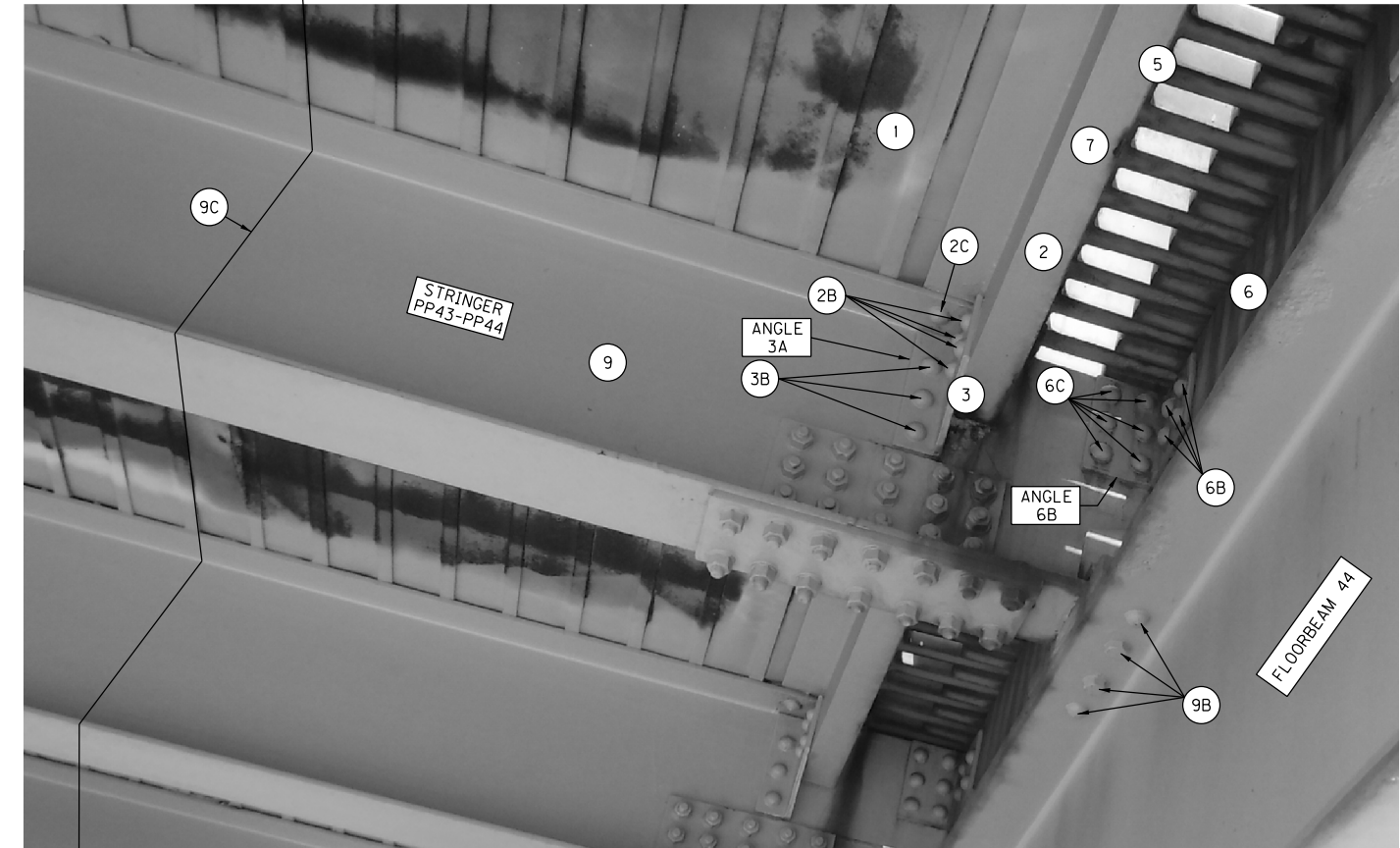


VIEW LOOKING WEST FROM THE CENTERLINE OF PP44



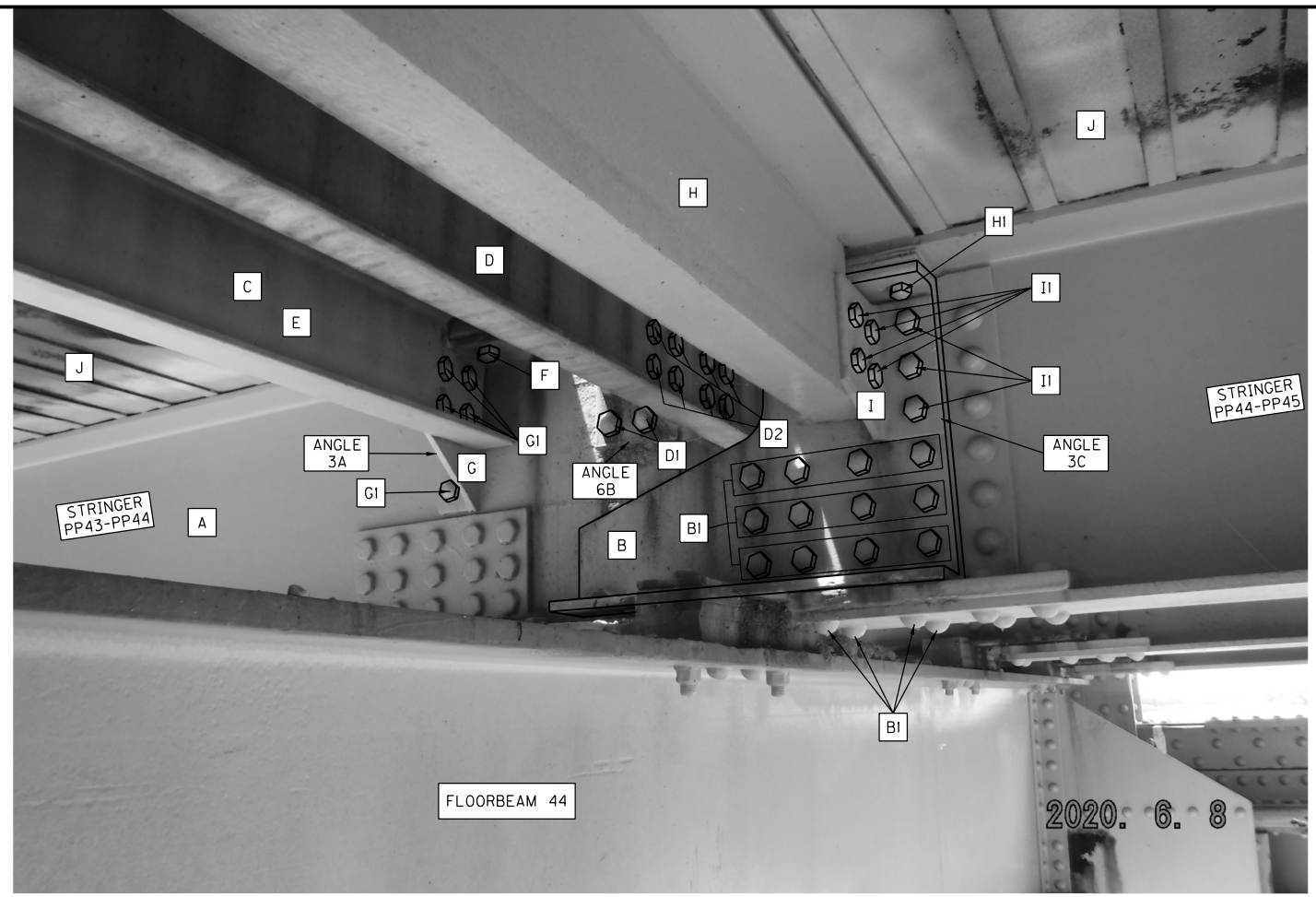
* SEE NOTES ON SHEET 1 OF THIS REPAIR.
 ** THIS REPAIR IS DESCRIBED AND DEPICTED ON SHEETS S07-S10 AS THE STRINGERS AS PP44. THE SAME REPAIR SHALL BE PERFORMED AT PP32. PP32 IS A MIRROR OF PP44.

EXISTING STRINGER ENDS & EXPANSION JOINT AT PP44

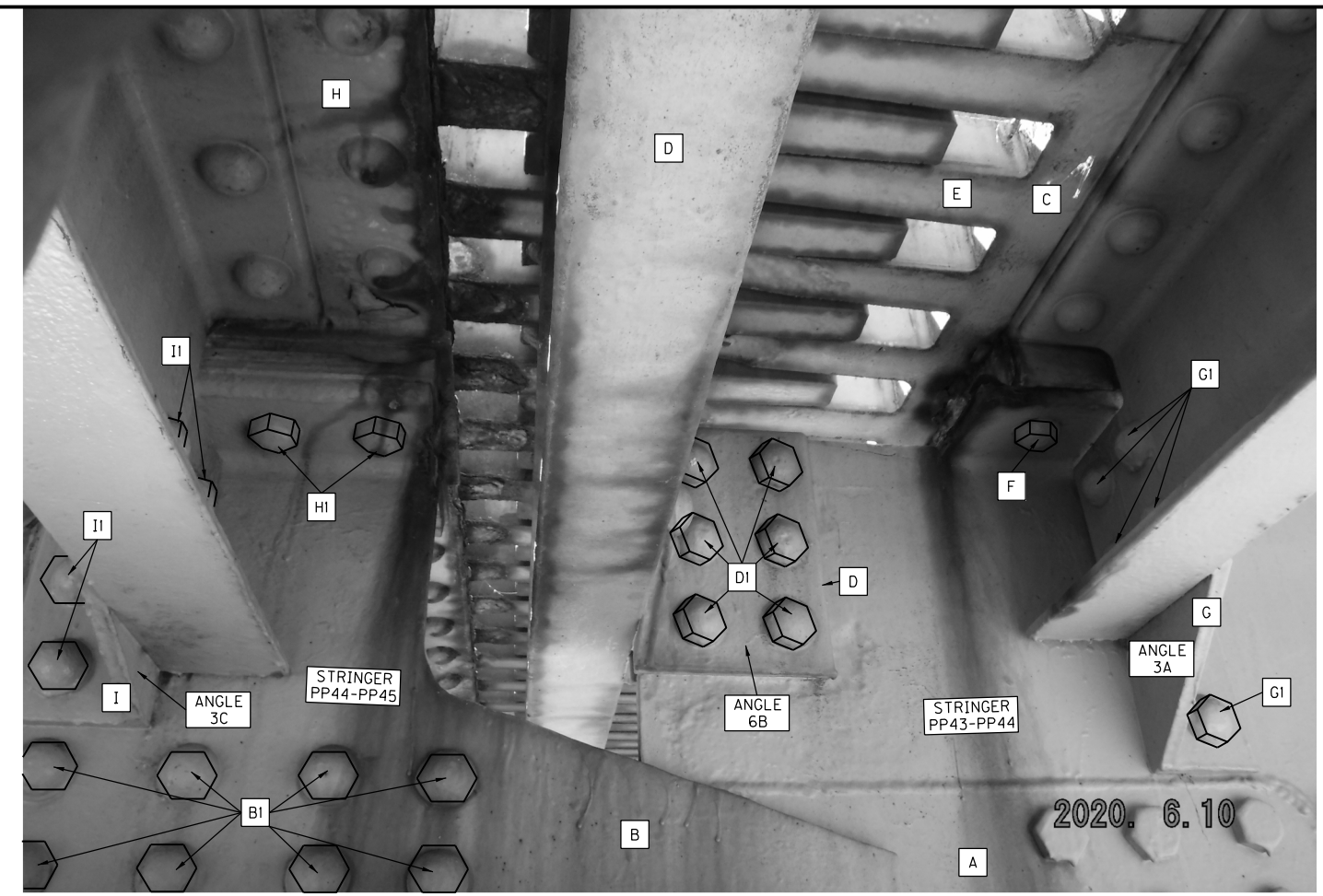


VIEW LOOKING EAST FROM THE NORTH FACE OF FLOORBEAM 44

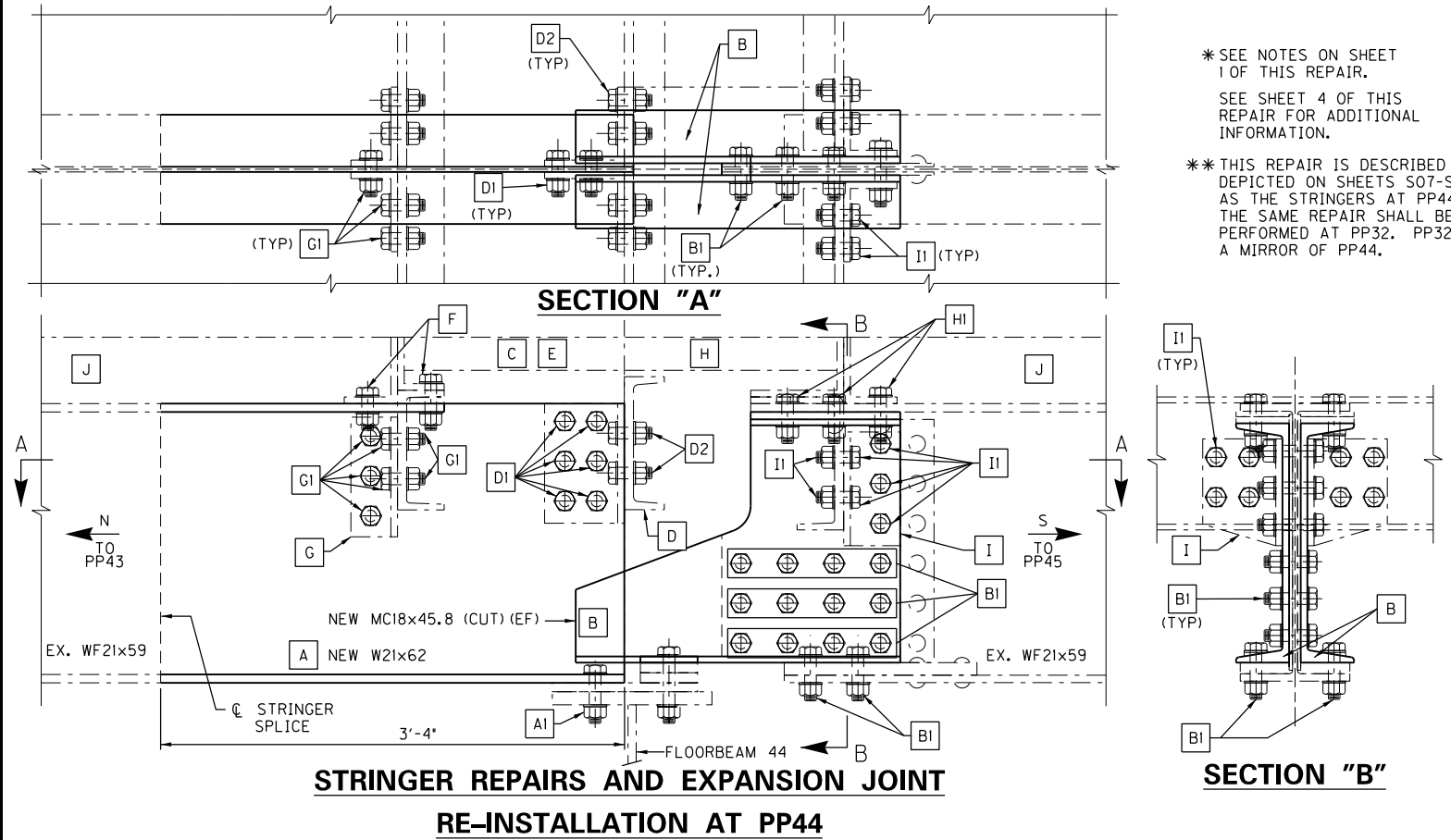
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				OCTOBER 2024	D.E. RUST		KY 2262	2-10020.00	DAVIESS
				DESIGNED BY:	J.P. MURRIN		J.P. MURRIN	SHEET NO.	S08
				DETAILED BY:	J.A. ROSE			28812	



VIEW LOOKING EAST FROM THE SOUTH FACE OF FLOORBEAM 44

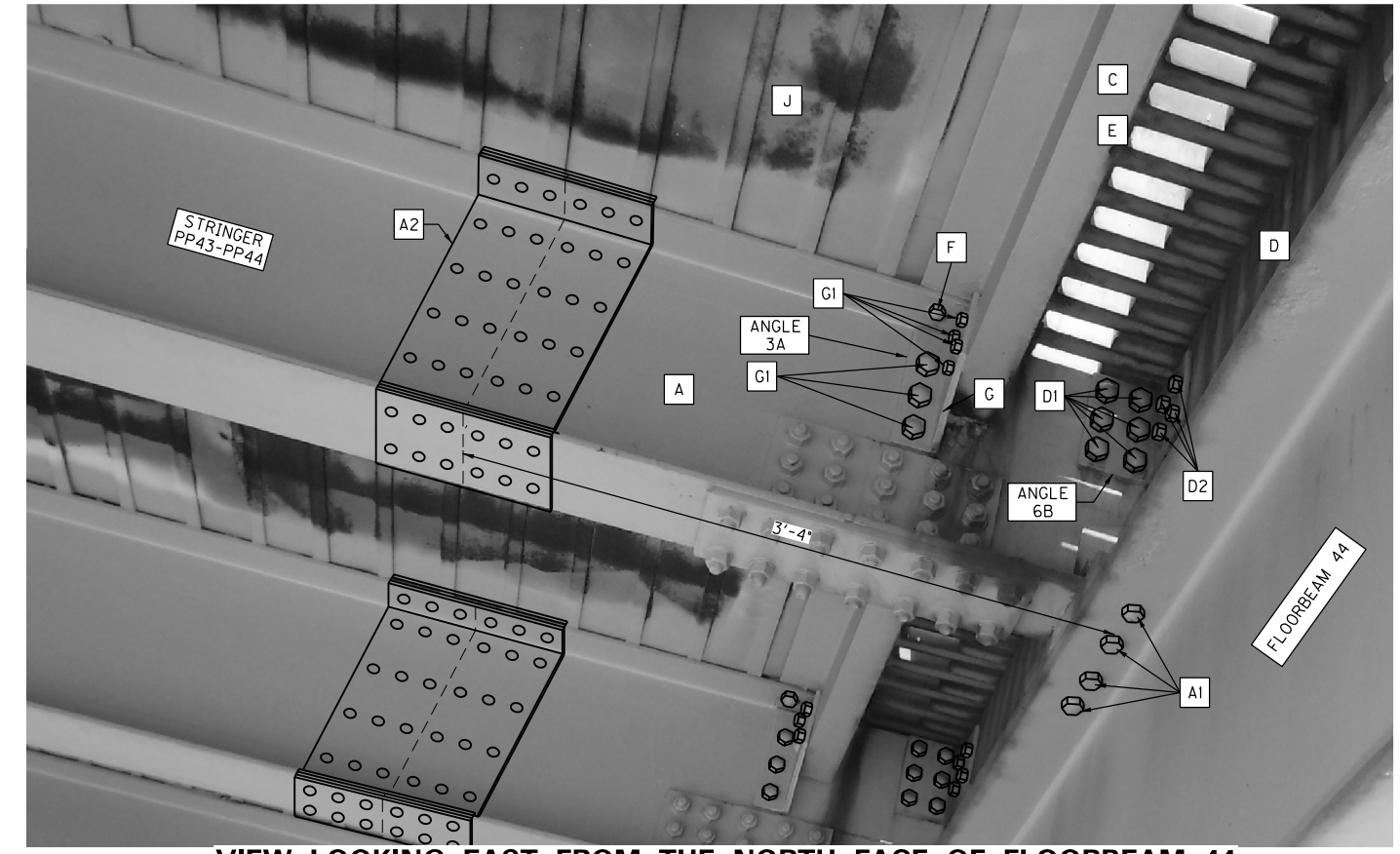


VIEW LOOKING WEST FROM THE CENTERLINE OF PP44



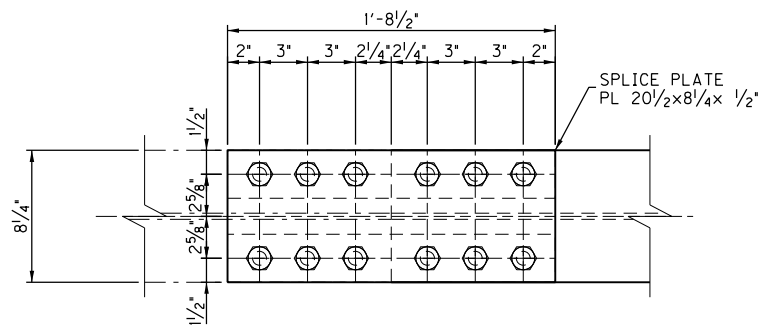
* SEE NOTES ON SHEET 1 OF THIS REPAIR.
SEE SHEET 4 OF THIS REPAIR FOR ADDITIONAL INFORMATION.

* THIS REPAIR IS DESCRIBED AND DEPICTED ON SHEETS S07-S10 AS THE STRINGERS AT PP44. THE SAME REPAIR SHALL BE PERFORMED AT PP32. PP32 IS A MIRROR OF PP44.

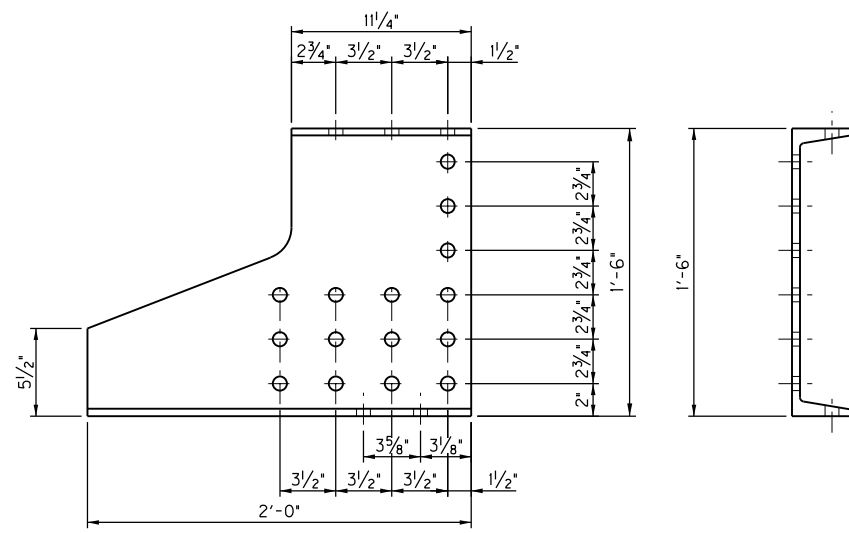


VIEW LOOKING EAST FROM THE NORTH FACE OF FLOORBEAM 44

<p>COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS</p>	<p>KENTUCKY TRANSPORTATION CABINET</p>	REVISION	DATE	PREPARED BY	DATE: OCTOBER 2024	CHECKED BY	REPAIR 1B - STRINGER REPAIRS PP32&PP44 - SHEET 3	ROUTE	ITEM NO.	COUNTY OF
				<p>Palmer ENGINEERING</p>	DESIGNED BY: J.P. MURRIN	D.E. RUST	CROSSING OHIO RIVER at OWENSBORO	KY 2262	2-10020.00	DAVIESS
					DETAILED BY: J.A. ROSE	J.P. MURRIN		SHEET NO. S09	DRAWING NUMBER 28812	

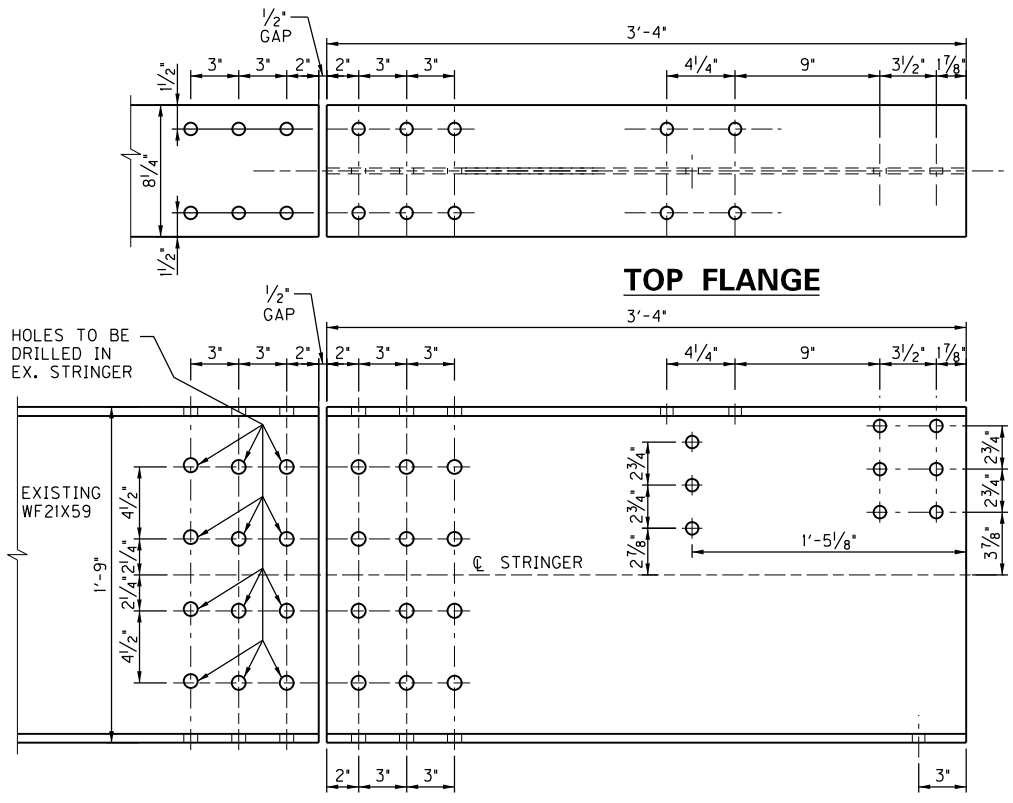


TOP AND BOTTOM FLANGE



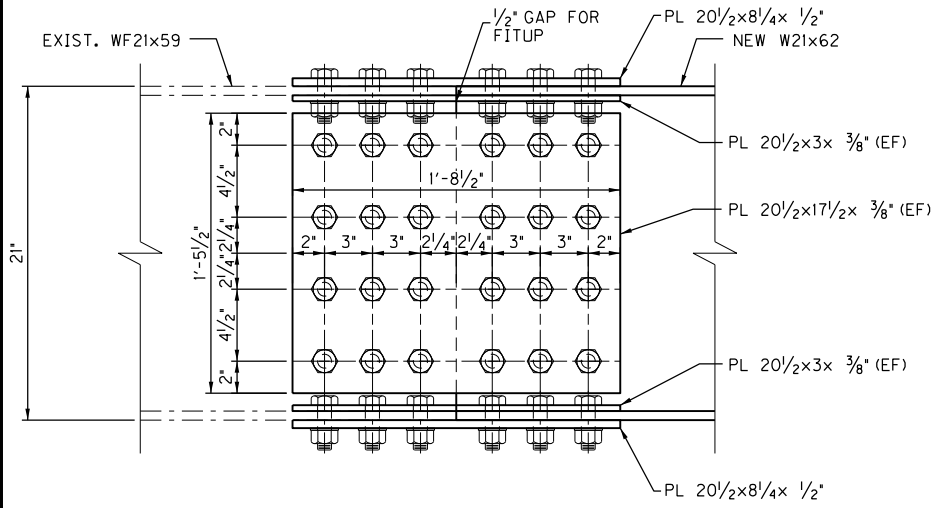
B NEW BOOT (CUT CHANNEL MC18x45.8)

5 TOTAL BOOTS NEEDED EACH ORIENTATION. ALL DIMENSIONS AND HOLE LOCATIONS TO DUPLICATE EXISTING RIVET LOCATIONS SHALL BE FIELD VERIFIED
 NOTE: FRONT FACE IS SHOWN LOOKING EAST, BACK FACE IS MIRRORED.

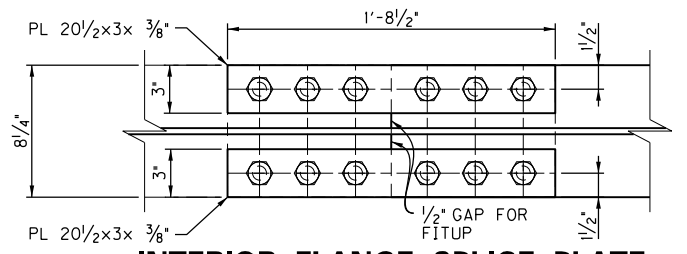


A NEW STRINGER W21x62 - ELEVATION

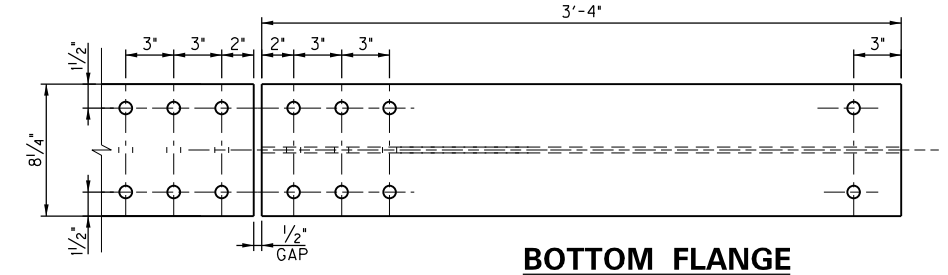
LOCATION OF HOLES THROUGH THE NEW STEEL THAT ARE TO DUPLICATE EXISTING RIVET LOCATIONS SHALL BE FIELD VERIFIED BEFORE DRILLING.



WEB SPLICE PLATE ELEVATION



INTERIOR FLANGE SPLICE PLATE

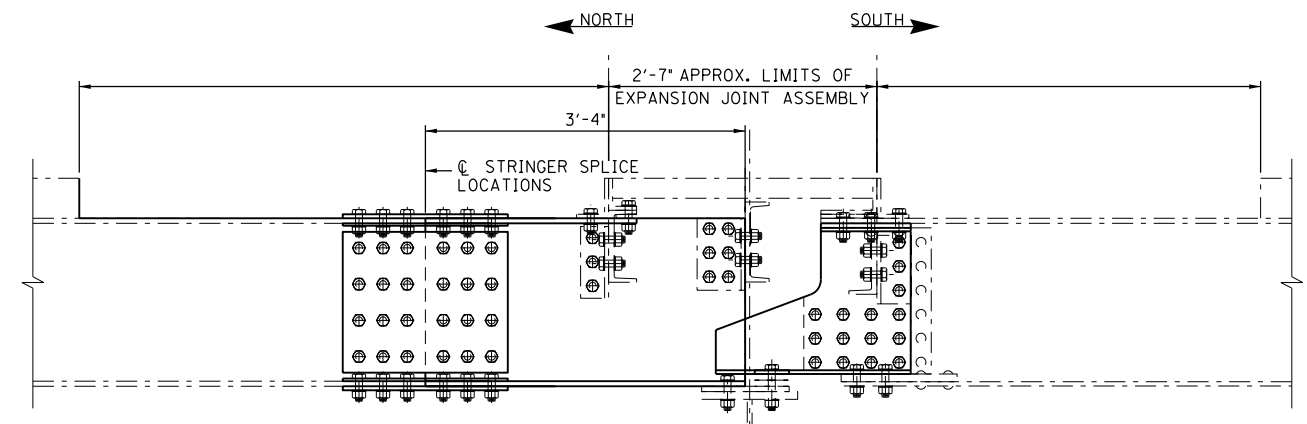


BOTTOM FLANGE

A2 STRINGER REPAIR SPLICE PLATES DETAILS

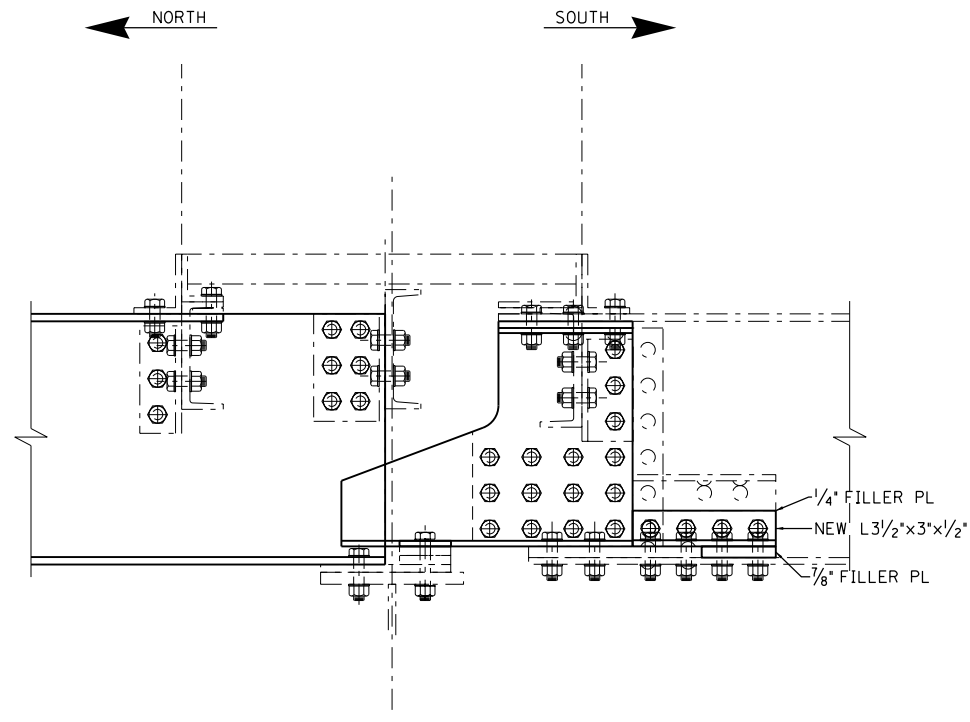
ALL HOLES IN OLD AND NEW STRUCTURAL STEEL SHALL BE DRILLED ACCORDING TO STANDARD SPECIFICATIONS.

* SEE NOTES ON SHEET 1 OF THIS REPAIR.
 ** THIS REPAIR IS DESCRIBED AND DEPICTED ON SHEETS S07-S10 AS THE STRINGERS AT PP44. THE SAME REPAIR SHALL BE PERFORMED AT PP32. PP32 IS A MIRROR OF PP44.

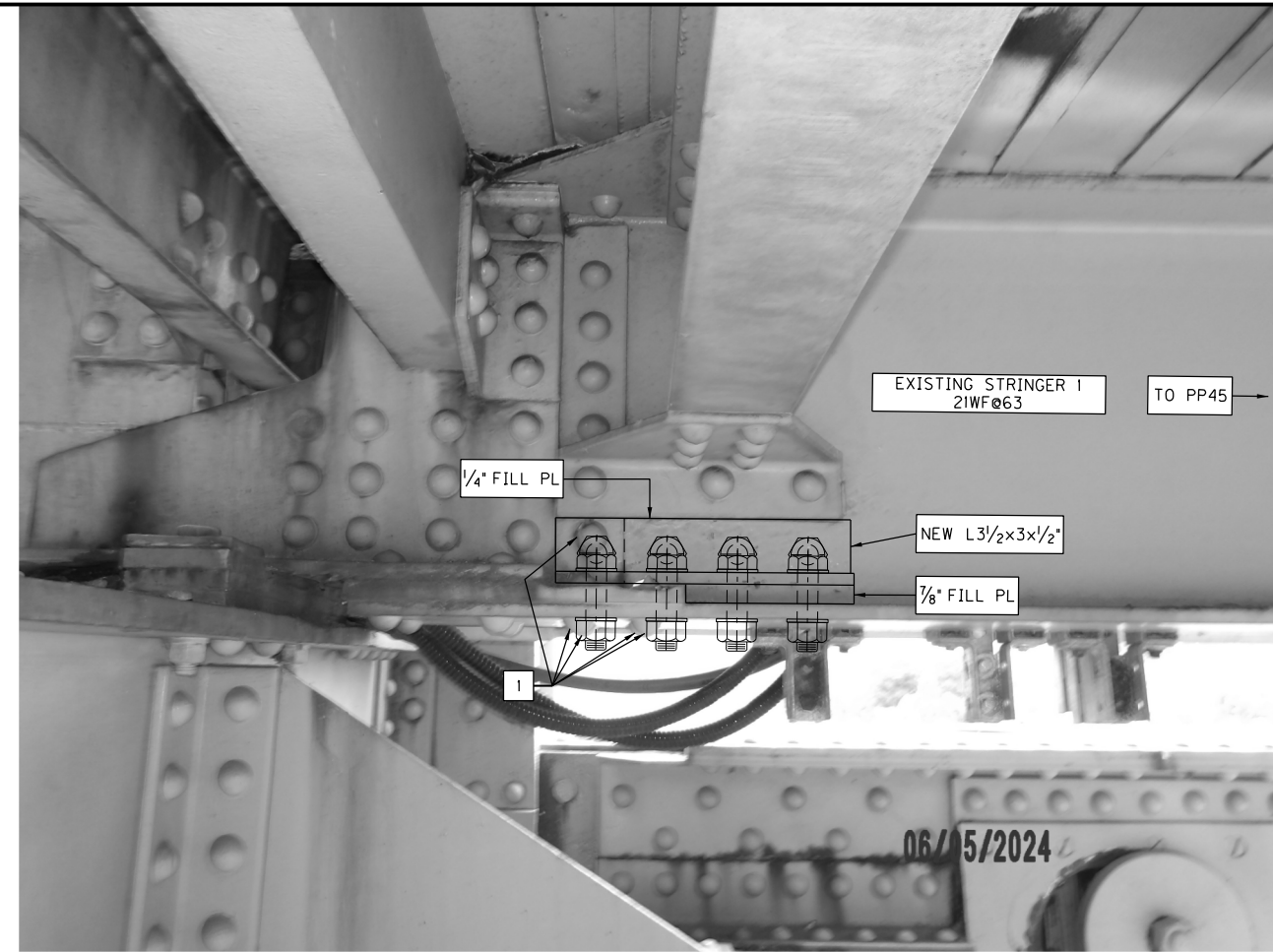


REPAIR LIMITS

	REVISION	DATE	PREPARED BY	DATE:	CHECKED BY	REPAIR 1B - STRINGER REPAIRS PP32&PP44 - SHEET 4 CROSSING OHIO RIVER at OWENSBORO	ROUTE	ITEM NO.	COUNTY OF
				OCTOBER 2024	D.E. RUST		KY 2262	2-10020.00	DAVIESS
				DESIGNED BY:	J.P. MURRIN		SHEET NO.	DRAWING NUMBER	
				DETAILED BY:	J.A. ROSE		S10	28812	

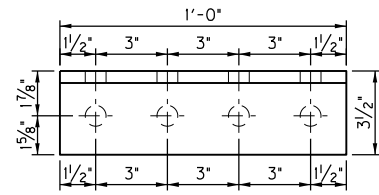


PP44 STRINGER 1&5 - CORROSION HOLE REPAIR

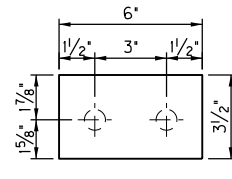


VIEW LOOKING EAST FROM THE SOUTH FACE OF FLOORBEAM 44

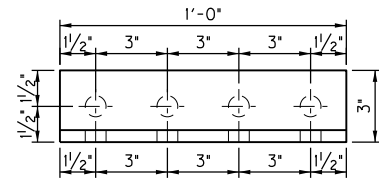
1 REMOVE RIVETS FOR REPAIR ACCESS AND REPLACE WITH HIGH STRENGTH BOLTS. 5 RIVETS TOTAL EACH STRINGER. THIS REPAIR IS ONLY TO BE COMPLETED ON STRINGER 1&5 AT PP44.



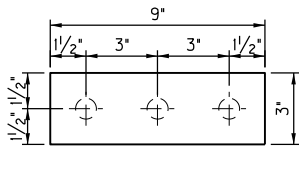
PLAN VIEW OF 3 1/2" x 3" x 1/2" ANGLE
(2 ANGLES NEED PER REPAIR, 1 PER SIDE)



PLAN VIEW OF 7/8" FILLER PLATE
(2 PLATES NEED PER REPAIR, 1 PER SIDE)



ELEVATION VIEW OF 3 1/2" x 3" x 1/2" ANGLE
(2 ANGLES NEED PER REPAIR, 1 PER SIDE)



ELEVATION VIEW OF 1/4" FILLER PLATE
(2 PLATES NEED PER REPAIR, 1 PER SIDE)

EXPANSION JOINT TEMPORARY REMOVAL AND STRINGER PREPARATION

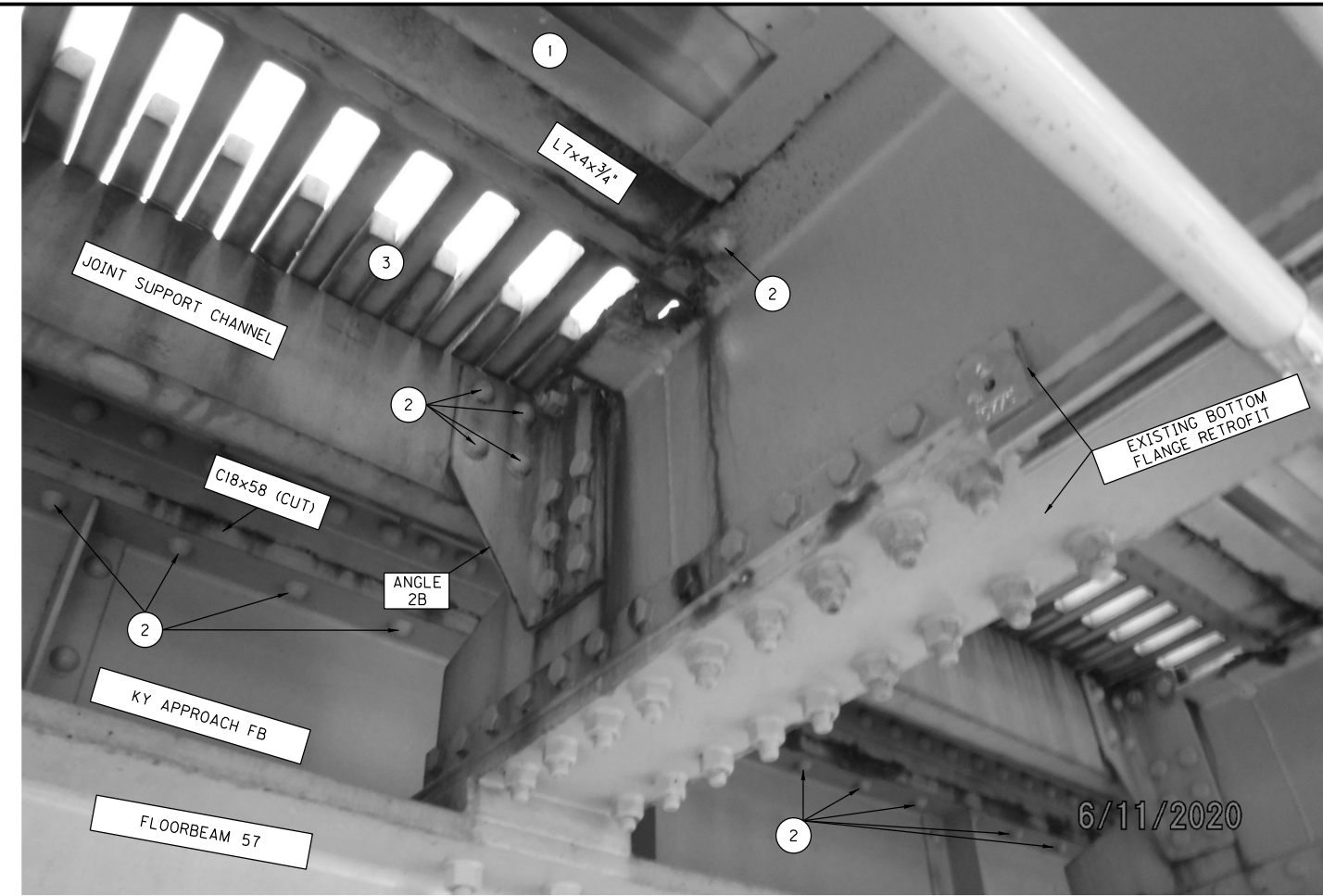
- 1 REMOVE CONCRETE TO THE EXTENT OF THE BLOCKOUTS SHOWN ON THIS SHEET. EDGES OF CONCRETE SHALL BE NEAT AND SQUARE. STEEL EXTENDING INTO BLOCKOUT SHALL REMAIN AND BE CLEANED FREE OF DEBRIS AND RUST.
- 2 DISPLACE JOINT SUPPORT CHANNELS AND CONNECTION ANGLES BY REMOVING RIVETS ON CONNECTION ANGLE 2B (4 RIVETS EF STRINGER), THE EXISTING L7x4x3/4" (1 RIVET EF STRINGER), AND C18x58(CUT) (RIVETS SPACED ~9" ENTIRE LENGTH OF THE KY APPROACH FLOORBEAM).
- 3 REMOVE EXISTING EXPANSION JOINT ASSEMBLY.
- 3B REMOVE 1/2x3/8" PLATES WITH 2" HOOK, FROM THE C18x58(CUT) AND L7x4x3/4". GRIND LEGS OF ANGLES SMOOTH.

NOTE:

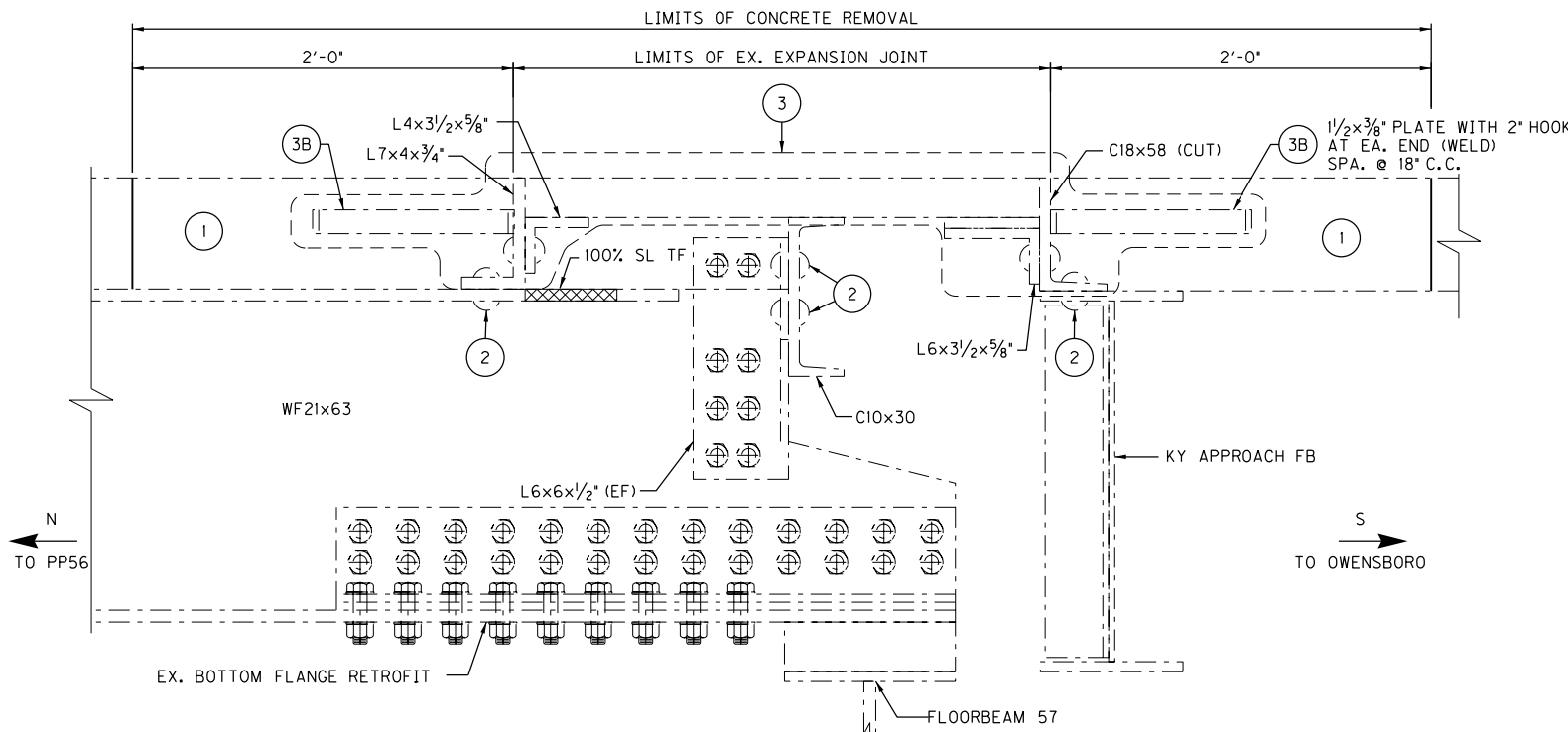
1. THE TOTAL NUMBER OF RIVETS OR BOLTS SHOWN IS THE TOTAL AT EACH INDIVIDUAL INTERIOR STRINGER LOCATION.
2. CONTRACTOR SHALL TAKE EXTREME CARE NOT TO DAMAGE EXISTING JOINTS, DECK REINFORCEMENT, OR ANY STEEL MEMBERS TO REMAIN IN PLACE. ANY DAMAGE SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
3. CLEAN RUST AT STRINGER ENDS WITHIN THE LIMITS OF THE REPAIR.
4. 5 TOTAL STRINGER REPAIRS AT THIS LOCATION (PP57).

SEE "SPECIAL NOTE FOR PAINTING STRUCTURAL STEEL REPAIRS."

SEE "SPECIAL NOTE FOR STEEL REPAIRS."



LOOKING SOUTHWEST FROM THE NORTH FACE OF FLOORBEAM 57



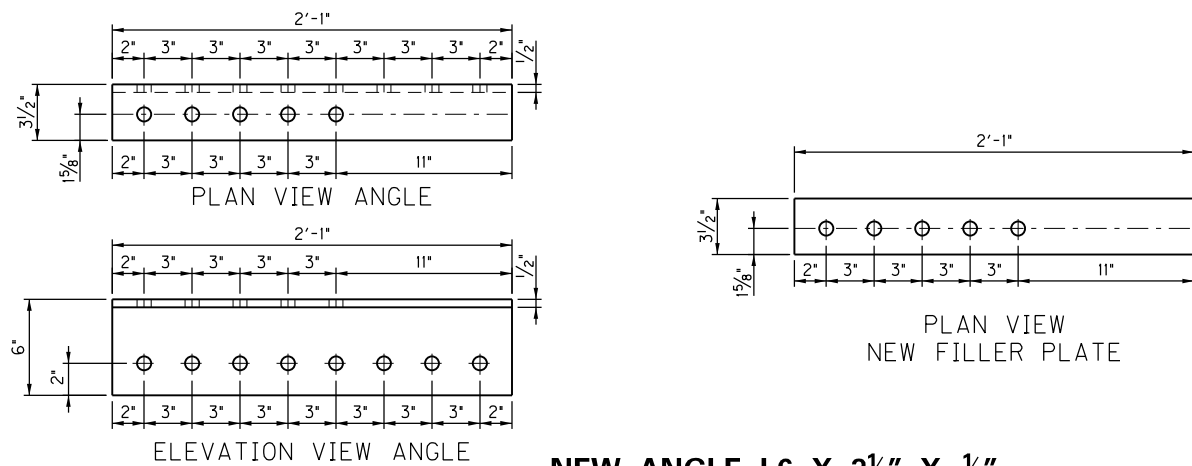
EXISTING SECTION FOR EXPANSION JOINT AND STRINGER ENDS AT PP57 - PIER E

	REVISION	DATE	PREPARED BY	DATE:	OCTOBER 2024	CHECKED BY	J.P. MURRIN	REPAIR 2 - PP57 STRINGERS AND EXPANSION JOINT PIER E - SHEET 1 CROSSING OHIO RIVER at OWENSBORO	ROUTE	ITEM NO.	COUNTY OF
				DESIGNED BY:	J.P. MURRIN	D.E. RUST	KY 2262		2-10020.00	DAVISS	
				DETAILED BY:	J.A. ROSE	J.P. MURRIN	S12		DRAWING NUMBER	28812	

STRINGER RETROFIT AND EXPANSION JOINT RE-INSTALLATION

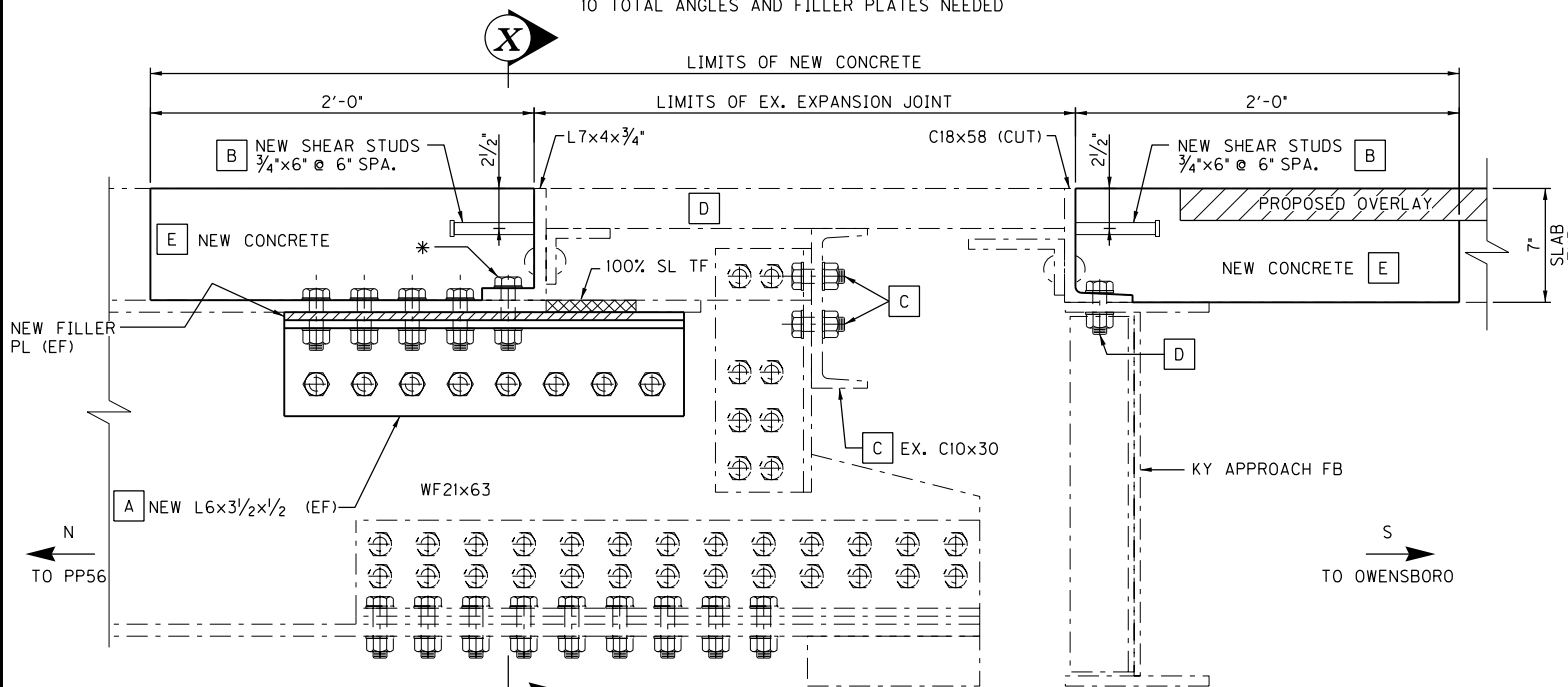
- A** AFTER THE END OF THE STRINGER HAS BEEN CLEANED AND IS FREE OF LAITANCE, INSTALL NEW L6x3½x½" WITH ½" FILLER PLATE. REPLACE PREVIOUS RIVETS WITH EQUIVALENT DIAMETER HIGH STRENGTH BOLTS TENSIONED PER THE STANDARD SPECIFICATIONS.
- B** WELD NEW ¾"x6" SHEAR CONNECTOR STUDS TO EXISTING C18x58 (CUT) AND EXISTING L7x4x¾". WELDING SHALL BE COMPLETED IN ACCORDANCE WITH AWS SPECIFICATIONS. SHEAR STUDS SHALL BE INCIDENTAL TO THE UNIT BID PRICE FOR FINGER DAM REPAIR.
- C** RE-ATTACH JOINT SUPPORT CHANNEL (EX. C10x30) TO ANGLE 2B WITH NEW HIGH STRENGTH BOLTS AND TIGHTEN PER STANDARD SPECIFICATIONS. (4 BOLTS EF OF STRINGER)
- D** RE-INSTALL EXPANSION JOINT ASSEMBLY. INSTALL NEW HIGH STRENGTH BOLTS AND TIGHTEN PER STANDARD SPECIFICATIONS.
- E** POUR NEW CLASS "M" CONCRETE TO THE EXTENT SHOWN AND MATCH EXISTING GRADE.
- E1** FURNISH FOR REPLACEMENT, AS DIRECTED BY THE ENGINEER, 520 LINEAR FEET OF #4 STAINLESS STEEL REINFORCING BARS IN 26' LENGTHS FOR THIS FINGER JOINT LOCATION. PLACE THESE BARS IN AREAS DEEMED BY THE ENGINEER TO REQUIRE ADDITIONAL REINFORCEMENT. FIELD CUTTING AND BENDING IS PERMITTED. DO NOT PLACE ANY ADDITIONAL STEEL ABOVE THE HEIGHT OR THE TOP ROW OF STUDS.

* SEE NOTES ON SHEET 1 OF THIS REPAIR

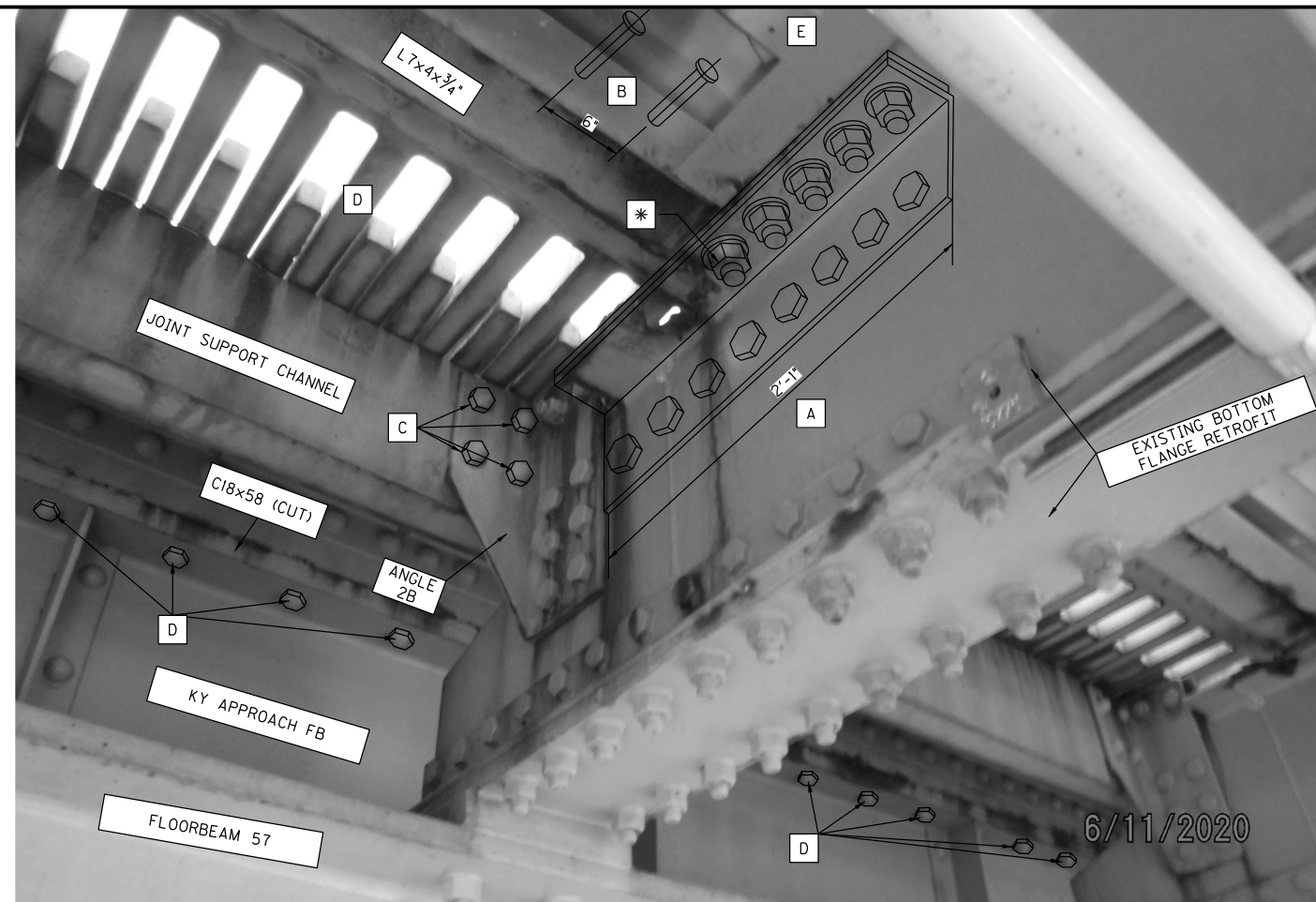


NEW ANGLE L6 X 3½" X ½" RETROFITS AND FILLER PLATE

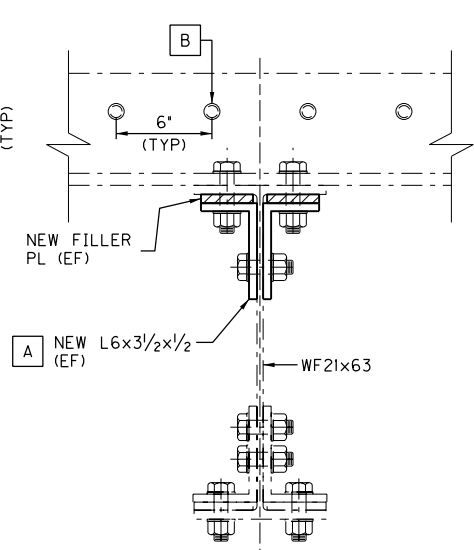
10 TOTAL ANGLES AND FILLER PLATES NEEDED



STRINGER RETROFIT AND EXPANSION JOINT RE-INSTALLATION AT PP57 (PIER E)

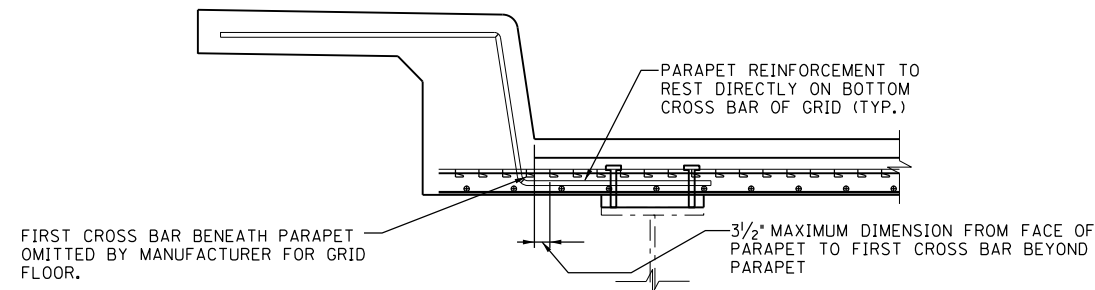


LOOKING SOUTHWEST FROM THE NORTH FACE OF FLOORBEAM 57

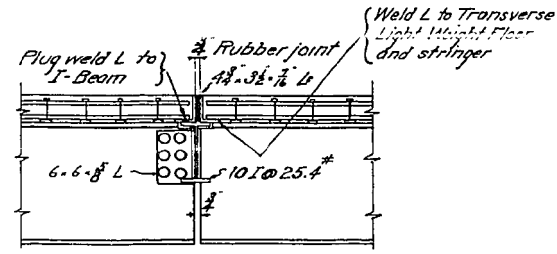


NEW SHEAR STUDS SPACED AT 6" O.C. FOR FULL LENGTH OF THE EXPANSION JOINT.

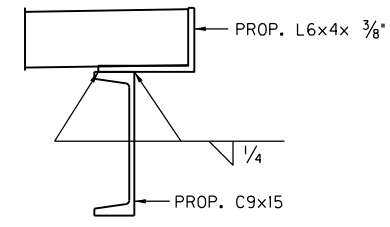
	REVISION	DATE	PREPARED BY	DATE:	OCTOBER 2024	CHECKED BY	REPAIR 2 - PP57 STRINGERS AND EXPANSION JOINT	ROUTE	KY 2262	ITEM NO.	2-10020.00	COUNTY OF	DAVIESS
				DESIGNED BY:	J.P. MURRIN	D.E. RUST	PIER E - SHEET 2	CROSSING	OHIO RIVER at OWENSBORO	SHEET NO.	S13	DRAWING NUMBER	28812



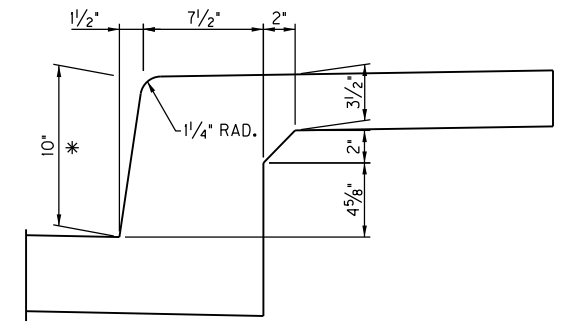
TYPICAL CONCRETE CURB / SIDEWALK DETAIL



STRINGER EXPANSION JOINT (Light Weight Floor)

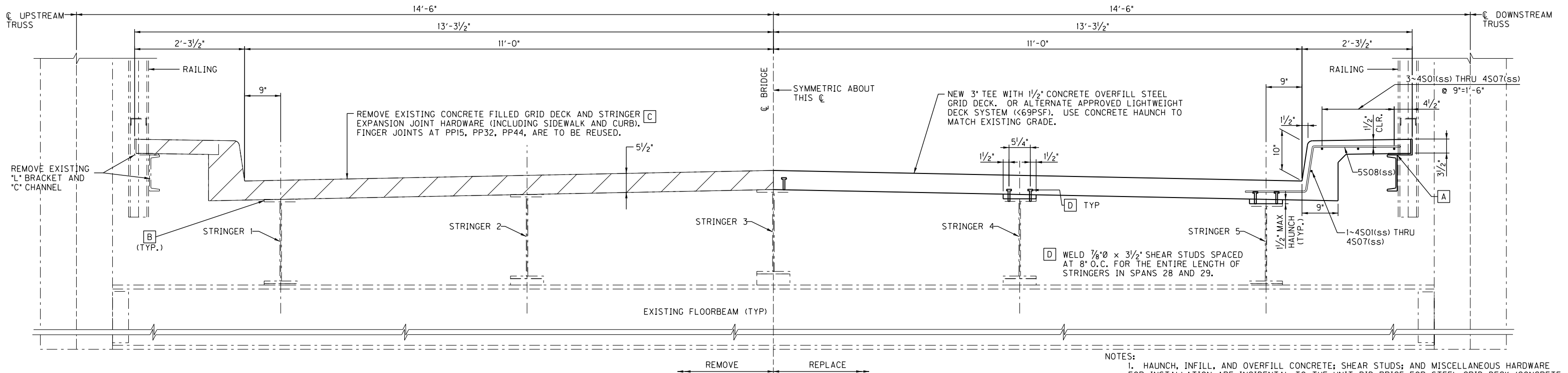


WELD DETAIL

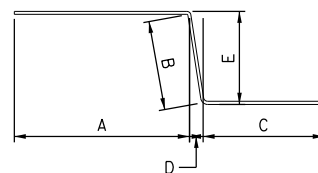


* ADJUST AS NEEDED TO MATCH EXISTING GRADE

CURB DETAIL



**CONCRETE FILLED STEEL GRID DECK REPLACEMENT
MAIN TRUSS SPANS 28 & 29
(LOOKING SOUTH)**

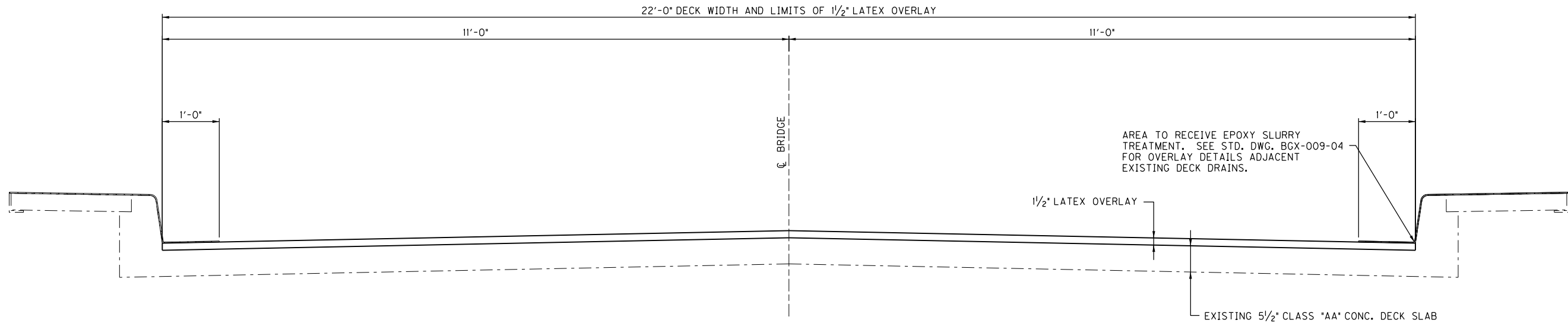


TYPE 21

2'-6" MINIMUM SPLICE LENGTH FOR NO. 4 BARS

BILL OF REINFORCEMENT - CURB / SIDEWALK

MARK	TYPE	NUMBER	SIZE	LENGTH	LOCATION	A	B	C	D	E
4S01(ss)	STR	16	4	38'-1 1/2"	BAY 1					
4S02(ss)	STR	48	4	56'-8"	BAYS 2,4,&5					
4S03(ss)	STR	24	4	50'-0 7/8"	BAY 3					
4S04(ss)	STR	24	4	48'-2 1/2"	BAY 6					
4S05(ss)	STR	32	4	52'-4"	BAYS 7,&11					
4S06(ss)	STR	72	4	46'-3 1/2"	BAYS 8,9,&10					
4S07(ss)	STR	16	4	35'-3"	BAY 12					
5S08(ss)	21	2764	5	4'-1"	TOP OF SLAB/SIDEWALK	1'-10"	0'-11 3/4"	1'-3"	0'-2"	0'-11 5/8"



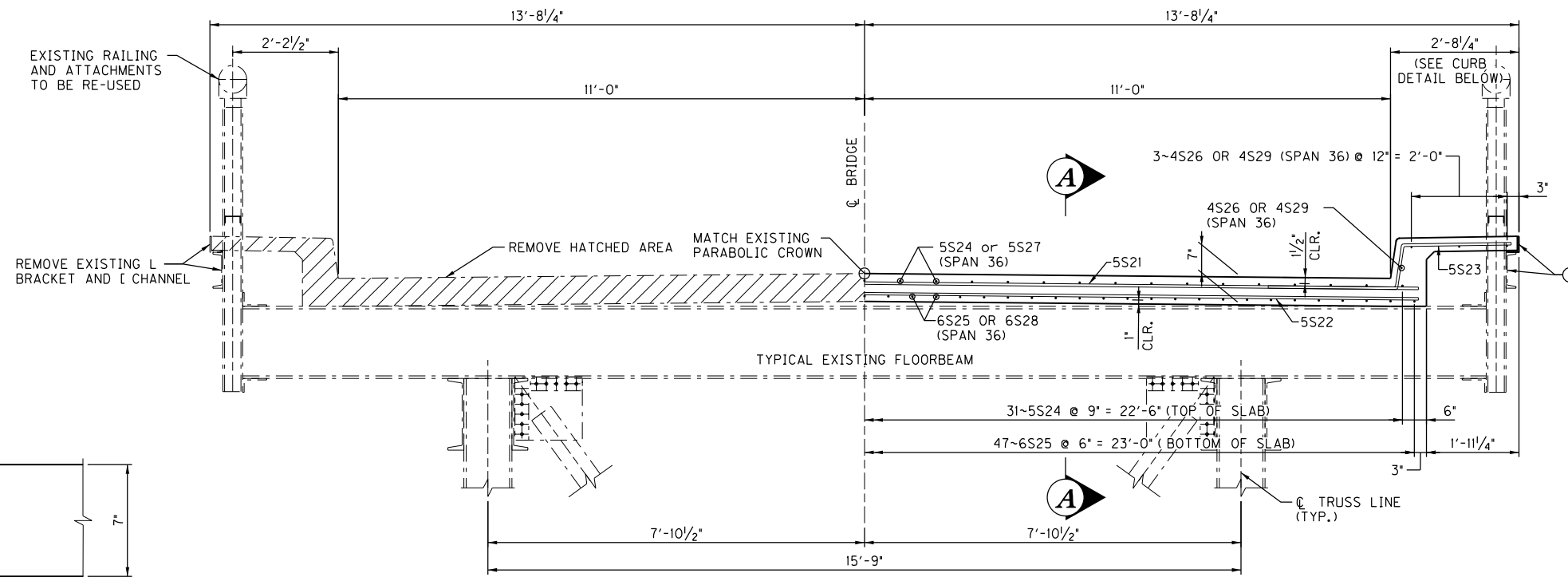
LATEX CONCRETE OVERLAY CONSTRUCTION
KY APPROACH SPANS 31-36
 (SHOWING OVERLAY LIMITS)
 (SUPERSTRUCTURE NOT SHOWN FOR CLARITY)

OVERLAY NOTES

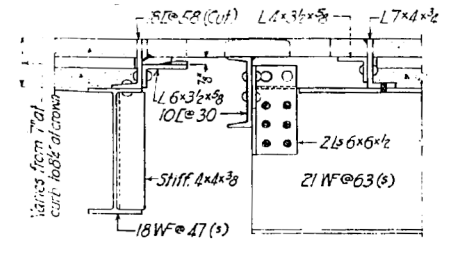
1. LIMITS OF OVERLAY REPLACEMENT ARE FROM PIER E TO THE END OF BRIDGE AT THE KENTUCKY ABUTMENT (SPANS 31-36).
2. SEE "SPECIAL NOTE FOR BRIDGE RESTORATION AND WATERPROOFING WITH CONCRETE OVERLAYS" AND "SPECIAL NOTE FOR USE OF THE HYDRODEMOLITION METHOD" FOR ADDITIONAL INFORMATION.
3. THE CONTRACTOR SHALL PROTECT EXISTING EXPANSION JOINTS DURING OVERLAY PLACEMENT.
4. LONGITUDINAL CONSTRUCTION JOINTS SHALL COMPLY WITH SECTION 606.03.08 OF THE SPECIFICATIONS.

NOTE: EPOXY SLURRY APPLICATION WILL NOT BEGIN UNTIL CURB / SIDEWALK PATCHING REPAIRS (SEE REPAIR 9, SHEET S27) HAVE BEEN COMPLETED.

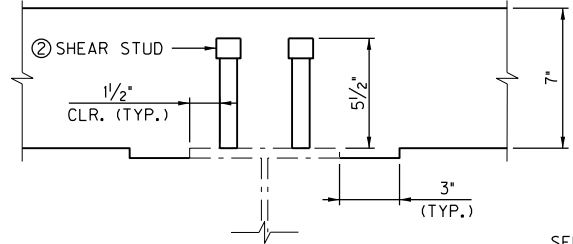
	REVISION	DATE	PREPARED BY	DATE:	CHECKED BY	REPAIR 4 - LATEX CONCRETE DECK OVERLAY CROSSING OHIO RIVER at OWENSBORO	ROUTE	ITEM NO.	COUNTY OF
				OCTOBER 2024	D.E. RUST		KY 2262	2-10020.00	DAVIESS
				DESIGNED BY:	J.P. MURRIN		SHEET NO.	DRAWING NUMBER	
				DETAILED BY:	J.A. ROSE	J.P. MURRIN	S15	28812	



TYPICAL SECTION - DECK TRUSS SPANS 22-26
(LOOKING SOUTH)



③ EXPANSION DAM AT PIER A
For dimensions not shown on Exp. Dams at Piers A & E See Exp. Dams at L15, L32 & L44.



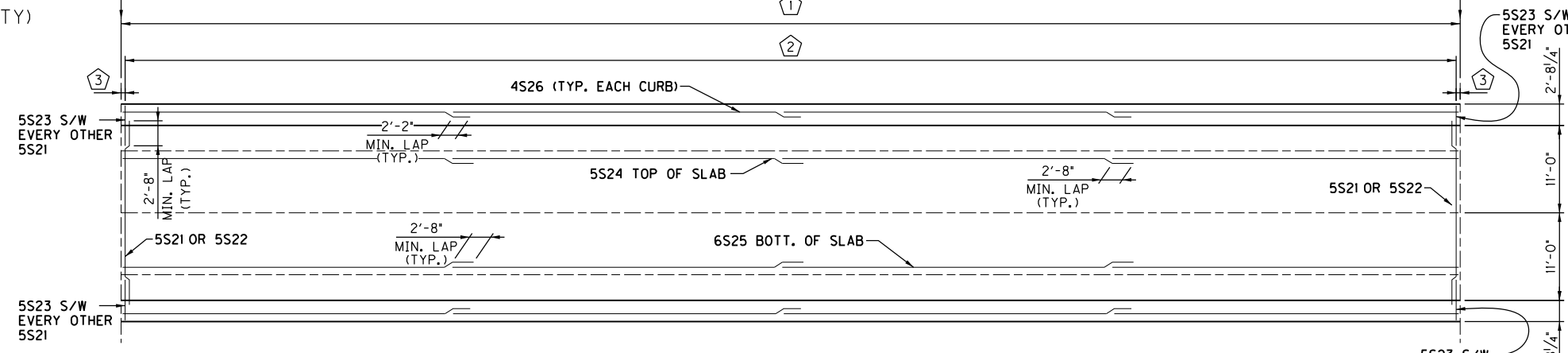
SECTION A-A

(DECK STEEL NOT SHOWN FOR CLARITY)

SEE SHEET S17 FOR EXPANSION JOINT DETAILS AT PIERS I-5, I-3, AND I-1

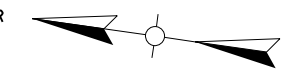
SEE SHEET S17 FOR EXPANSION JOINT DETAILS AT PIERS I-4 AND I-2. SEE ③ FOR PIER A; HARDWARE TO BE RE-INSTALLED

- ① SPAN 22: (167'-2 1/4" OUT TO OUT)
SPANS 23-25: (168'-2 1/4" OUT TO OUT)
SPAN 26: (168'-8 1/4" OUT TO OUT)
- ② SPAN 22: 333-5S21 & 5S22 @ 6" = 166'-0"
SPANS 23-25: 335-5S21 & 5S22 @ 6" = 167'-0"
SPAN 26: 337-5S21 & 5S22 @ 6" = 168'-0"
ALL 5 SPANS: 840 TOTAL 5S23 @ 12" (TYP.) S/W EVERY OTHER 5S21
- ③ SPAN 22: 7/8" EDGE SPACING
SPANS 23-25: 7/8" EDGE SPACING
SPAN 26: 4/8" EDGE SPACING

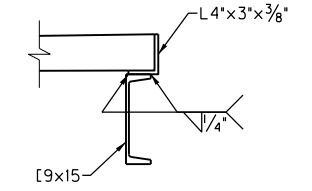


PLAN OF SLAB

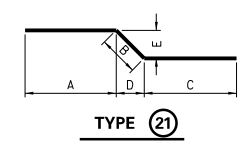
(**SPANS 22-26; CURVE NOT SHOWN)



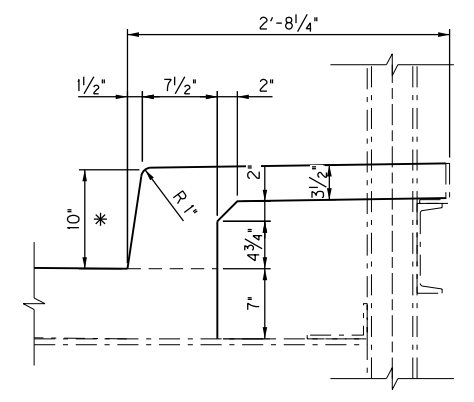
① WELD DETAIL



- ① PROPOSED 19x15 CURB FASCIA STRINGER AND L4x3x5/8 ANGLE ON UPSTREAM AND DOWNSTREAM REHAB SPANS 22-26.
 - ② WELD 7/8"Ø BY 5/2" SHEAR STUDS SPACED AT 12" O.C. FOR THE ENTIRE LENGTH OF ALL FLOORBEAMS, IN SPANS 22 TO 26.
 - ③ EXISTING EXPANSION DAM DETAILS TAKEN DIRECTLY FROM THE ORIGINAL PLANS.
- **SPANS 25 AND 26 ARE IN A HORIZONTAL CURVE. TRANSVERSE BARS TO BE SPACED RADIALLY, AND DECK ELEVATIONS SHALL MATCH THE EXISTING GRADE. LONGITUDINAL BARS SHALL BE LAID KINKED TO ALIGN WITH EXISTING HORIZONTAL CURVE.



TYPE ②1



CURB DETAIL

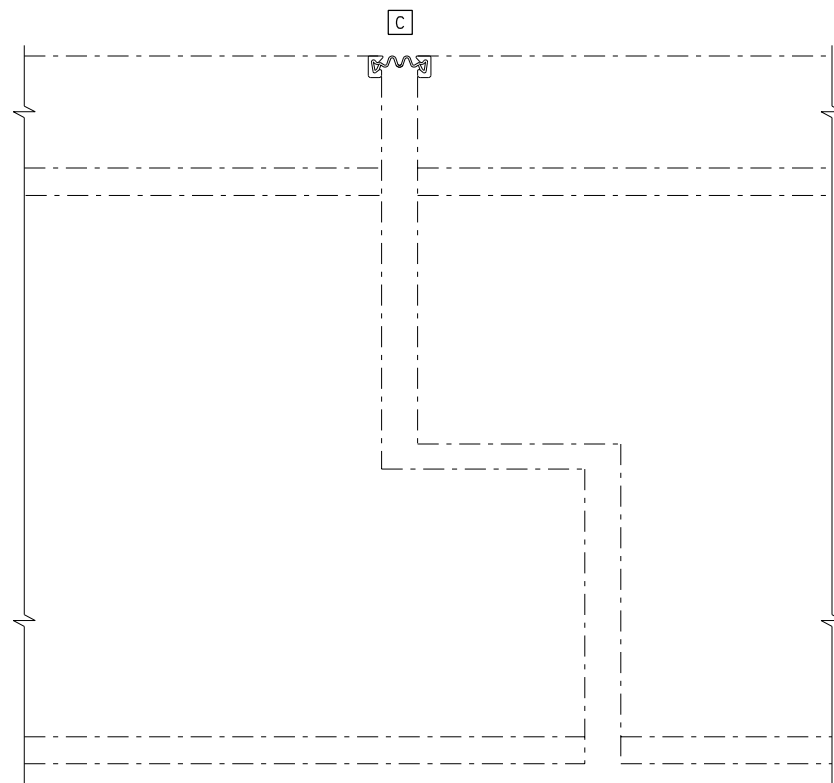
* ADJUST AS NEEDED TO MATCH EXISTING GRADE

BILL OF REINFORCEMENT - DECK TRUSS SPANS

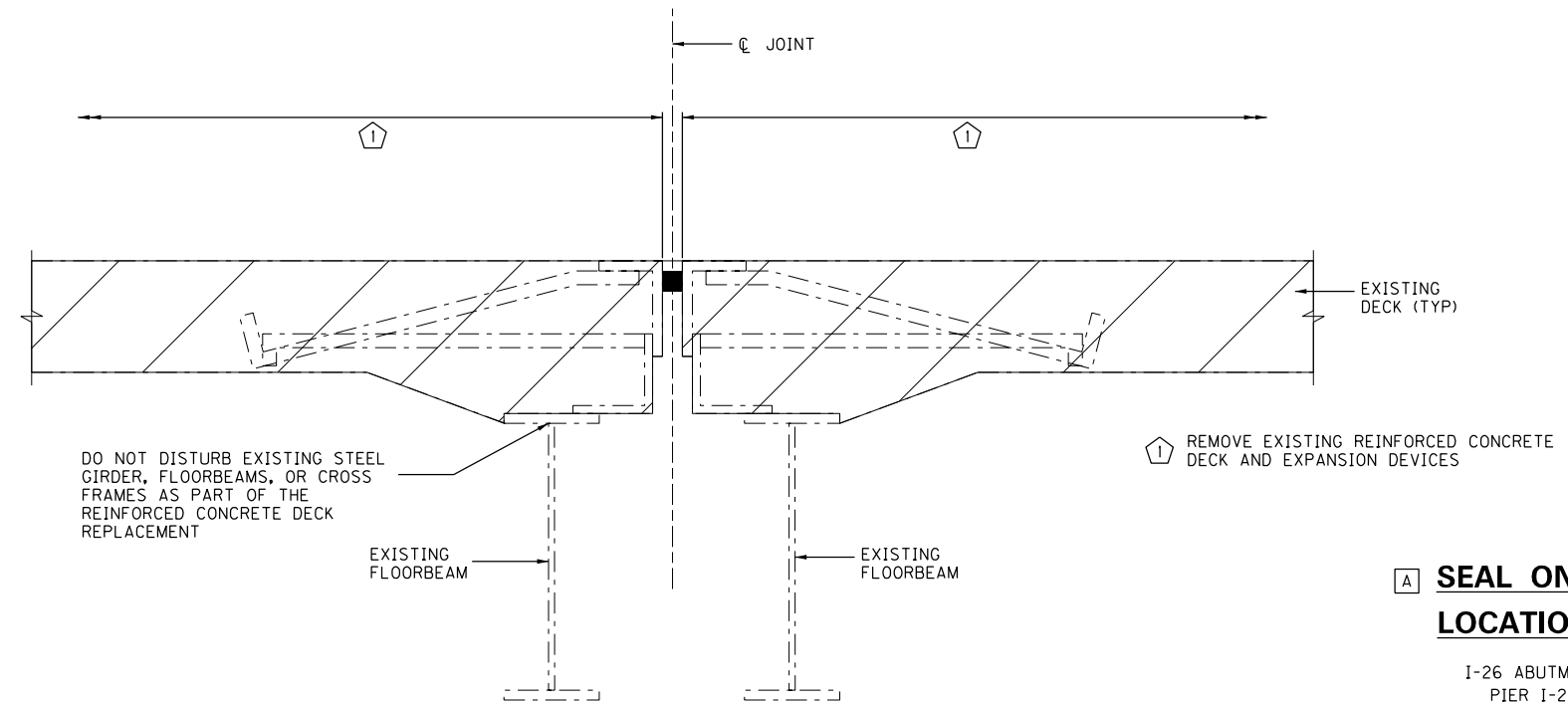
MARK	TYPE	NUMBER	SIZE	LENGTH	LOCATION	A	B	C	D	E
5S21(ss)	STR	1675	5	23'-2"	TOP OF SLAB					
5S22(e)	STR	1675	5	23'-2"	BOTTOM OF SLAB					
5S23(ss)	2I	1680	5	5'-10"	SLAB/SIDEWALK	2'-3 1/4"	0'-10 3/4"	2'-8"	0'-1 3/4"	0'-11 1/4"
5S24(ss)	STR	620	5	44'-3"	TOP OF SLAB					
6S25(e)	STR	940	6	44'-3"	BOTTOM OF SLAB					
4S26(ss)	STR	160	4	43'-11"	SIDEWALK					

BILL OF REINFORCEMENT - SPAN 36

MARK	TYPE	NUMBER	SIZE	LENGTH	LOCATION	A	B	C	D	E
5S21(ss)	STR	16	5	23'-2"	TOP OF SLAB					
5S22(e)	STR	16	5	23'-2"	BOTTOM OF SLAB					
5S23(ss)	2I	16	5	5'-10"	SLAB/SIDEWALK	2'-3 1/4"	0'-10 3/4"	2'-8"	0'-1 3/4"	0'-11 1/4"
5S27(ss)	STR	31	5	7'-0"	TOP OF SLAB					
6S28(e)	STR	47	6	7'-0"	BOTTOM OF SLAB					
4S29(ss)	STR	8	4	7'-0"	SIDEWALK					



PROPOSED STRIP SEAL REPLACEMENT AT PIER K-3



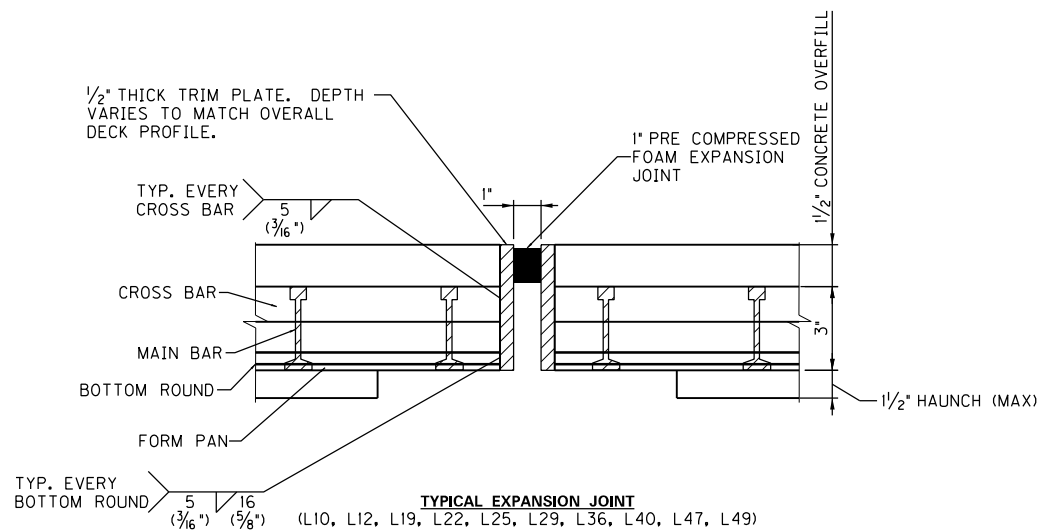
EXISTING SECTION AT COMPRESSION JOINT PIERS I-1, I-2, I-3, & I-4

A SEAL ONLY LOCATIONS

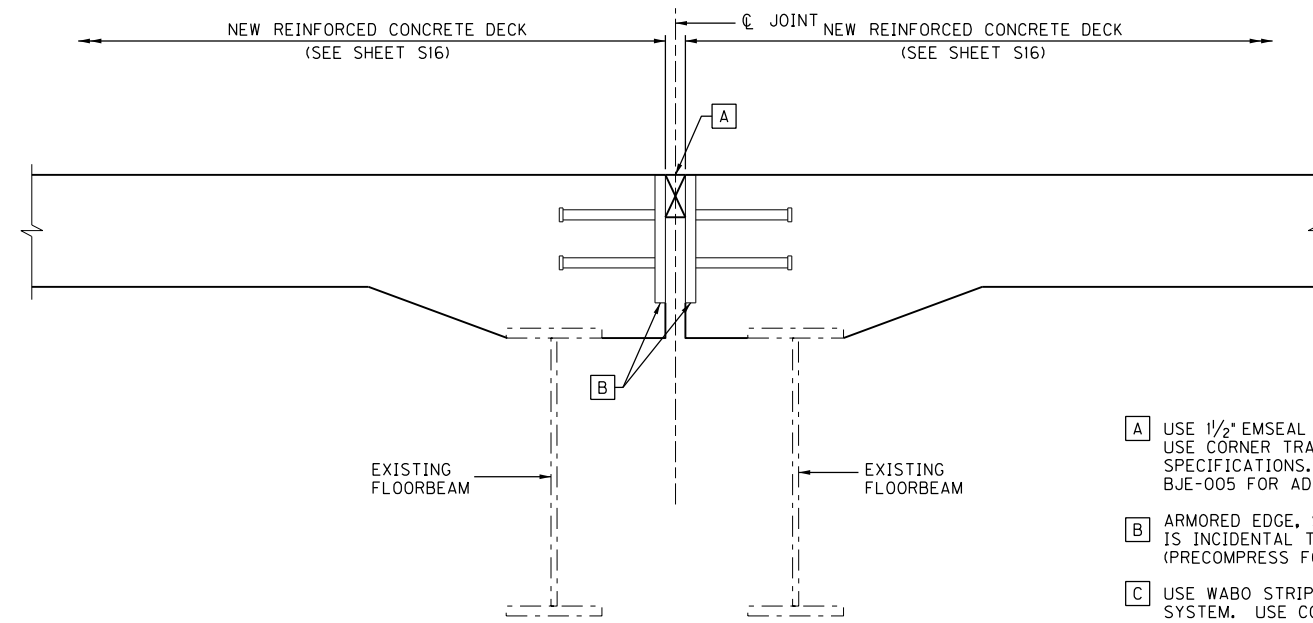
- I-26 ABUTMENT
- PIER I-25
- PIER I-23
- PIER I-21
- PIER I-19
- PIER I-17
- PIER I-15
- PIER I-13
- PIER I-11
- PIER I-8
- PIER I-6
- PANEL POINT 4
- PANEL POINT 8
- PANEL POINT 51
- PANEL POINT 54
- PIER K3

B ARMORED EDGE ONLY LOCATIONS

- SOUTH ABUTMENT



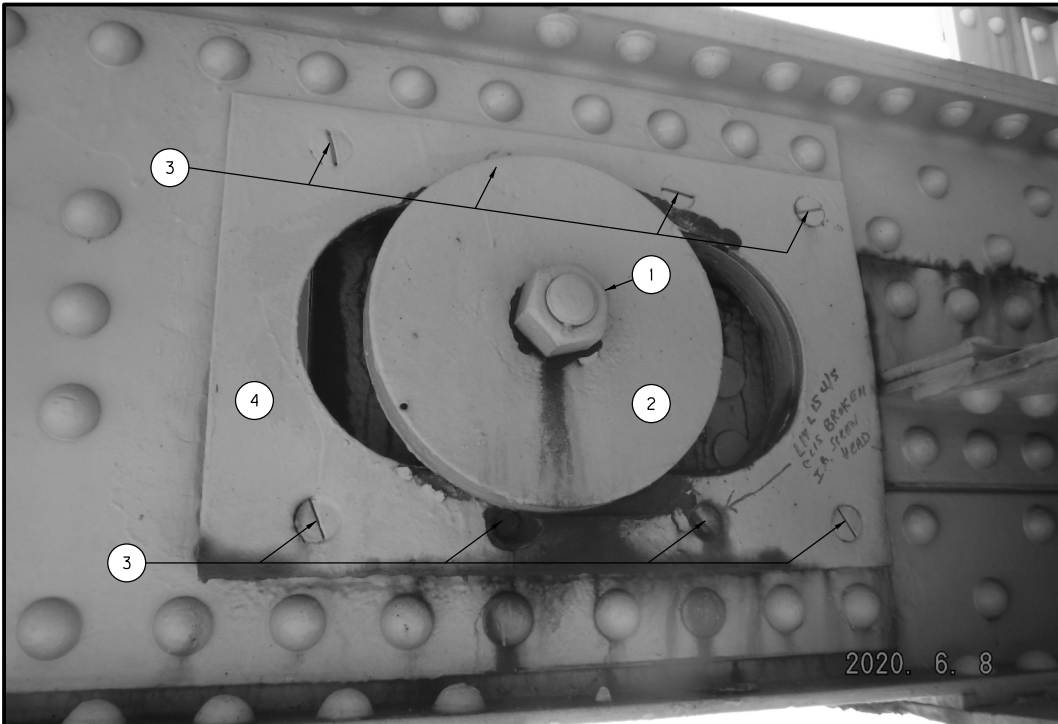
TYPICAL EXPANSION JOINT
(L10, L12, L19, L22, L25, L29, L36, L40, L47, L49)



PROPOSED SECTION AT COMPRESSION JOINT PIERS I-1, I-2, I-3, & I-4

- A** USE 1/2" EMSEAL BEJS OR EQUIVALENT SYSTEM. USE CORNER TRANSITIONS PER THE MANUFACTURER'S SPECIFICATIONS. SEE STD. DWG. BJE-003 AND BJE-005 FOR ADDITIONAL DETAILS.
- B** ARMORED EDGE. SEE STD. DWG. BJE-001, c.e. ARMORED EDGE IS INCIDENTAL TO REPLACE EXPANSION JOINT 1 IN (PRECOMPRESS FOAM).
- C** USE WABO STRIP SEAL WITH SE-400 SEAL OR EQUIVALENT SYSTEM. USE CORNER TRANSITIONS PER MANUFACTURER'S SPECIFICATIONS. SEE STD. DWG. BJE-005 AND BJE-006 FOR ADDITIONAL DETAILS.

	REVISION	DATE	PREPARED BY	DATE:	CHECKED BY	REPAIR 6 - JOINT REPLACEMENTS CROSSING OHIO RIVER at OWENSBORO	ROUTE	ITEM NO.	COUNTY OF
				OCTOBER 2024	D.E. RUST		KY 2262	2-10020.00	DAVIESS
				DESIGNED BY:	J.P. MURRIN			SHEET NO.	DRAWING NUMBER
				DETAILED BY:	J.A. ROSE	J.P. MURRIN		S17	28812



REPAIR 7A – PIN SLIDING PLATE – DISASSEMBLY

(L14-L15 UPSTREAM, INBOARD DEPICTED. TYPICAL FOR L-15, L32, & L44)

NOTE: CONTRACTOR SHOULD TAKE EXTREME CARE WHEN REMOVING THE INBOARD NUT AND WASHER SO THE PIN DOES NOT "WALK OUT" THE OUTBOARD SIDE.

- 1 REMOVE NUT FROM END OF PIN ASSEMBLY.
- 2 REMOVE WASHER FROM THE PIN.
- 3 REMOVE COUNTERSUNK RIVETS.
- 4 REMOVE DETERIORATED PLATE.
- 5 CLEAN RUST FROM AREA OF DETERIORATED PLATE.

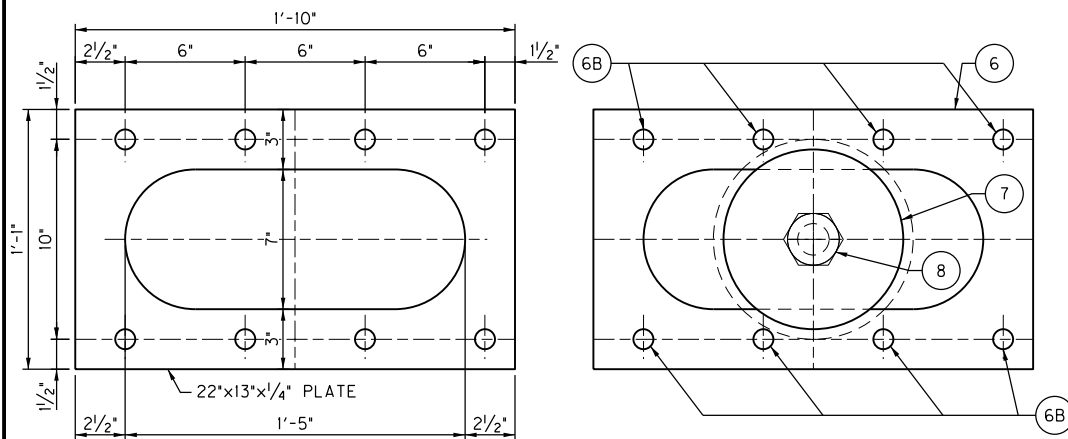
REPAIR 7A – PIN SLIDING PLATE REPAIR

(L14-L15 UPSTREAM, INBOARD DEPICTED. TYPICAL FOR L-15, L32, & L44)

6 STEEL REPAIR LOCATIONS

- 6 INSTALL NEW 1/4" PLATE.
- 6B INSTALL NEW HIGH STRENGTH COUNTERSUNK BOLTS OF MATCHING DIAMETER.
- 7 RE-INSTALL EXISTING WASHER.
- 8 RE-INSTALL EXISTING NUT.

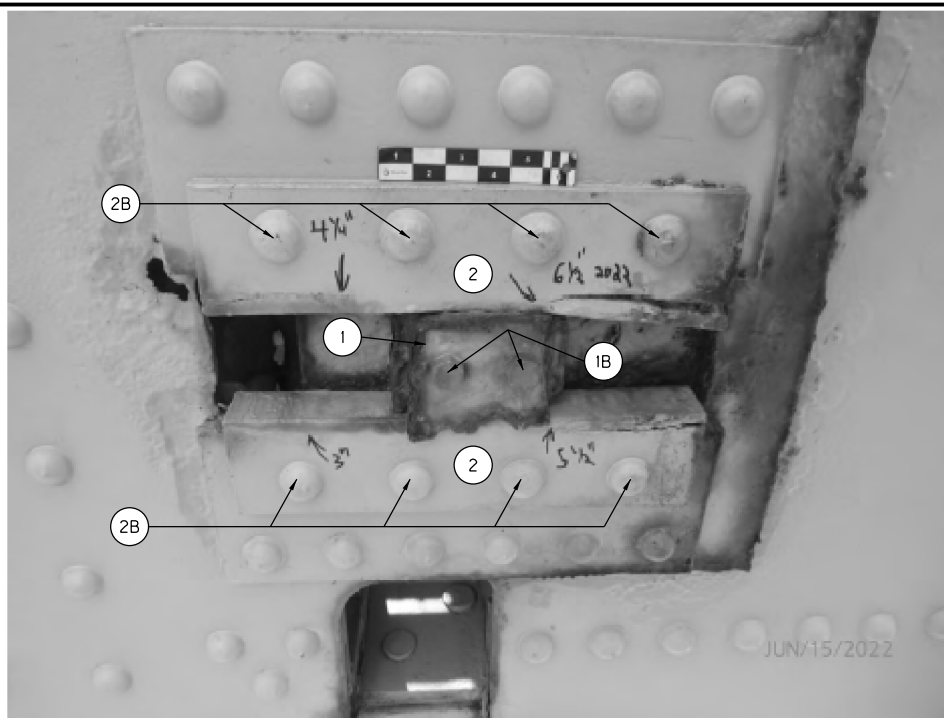
* AFTER REPAIRS HAVE BEEN COMPLETED, SEE "SPECIAL NOTE FOR PAINTING STRUCTURAL STEEL REPAIRS".



NEW PIN SLIDING PLATE

RE-INSTALLATION

ALL DIMENSIONS AND HOLE LOCATIONS TO DUPLICATE EXIST. SLIDING PLATE SHALL BE FIELD VERIFIED

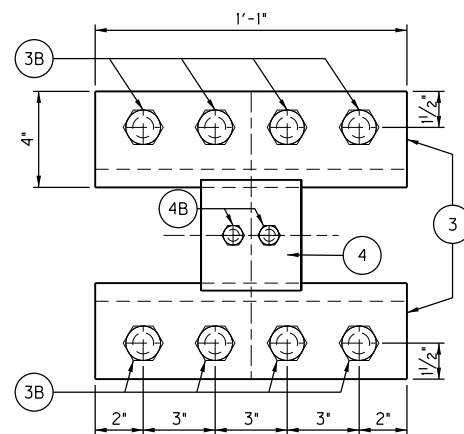


**REPAIR 7B – UNDERSIDE OF WINDLOCK ANGLE REPAIRS
L15, L32, AND L44 (UPSTREAM AND DOWNSTREAM)**

6 STEEL REPAIR LOCATIONS

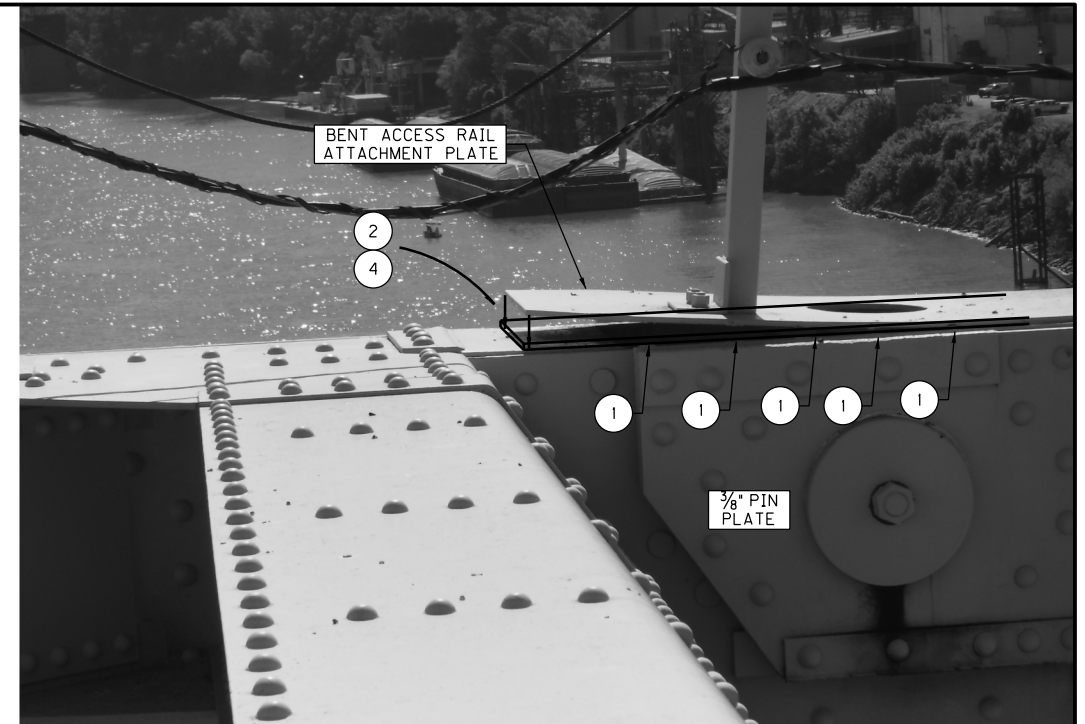
- 1 REMOVE WINDLOCK CAP PLATE BY REMOVING (2) BOLTS.
- 1B REMOVE BOLTS FROM CAP.
- 2 REMOVE DETERIORATED / CRACKED ANGLES BY REMOVING RIVETS. ONE ANGLE TO BE REMOVED AT A TIME.
- 2B REMOVE RIVETS HOLDING EXISTING DETERIORATED ANGLES ON BEARING PLATES.
- 3 INSTALL NEW L4x2x3/4" ANGLES WITH NEW HIGH STRENGTH BOLTS.
- 3B INSTALL NEW HIGH STRENGTH BOLTS OF EQUIVALENT DIAMETER. TIGHTEN BOLTS ACCORDING TO THE STANDARD SPECIFICATIONS.
- 4 INSTALL NEW CAP PLATE WITH NEW HIGH STRENGTH BOLTS.
- 4B INSTALL NEW HIGH STRENGTH BOLTS OF EQUIVALENT DIAMETER. TIGHTEN BOLTS ACCORDING TO THE STANDARD SPECIFICATIONS.

* AFTER REPAIRS HAVE BEEN COMPLETED, SEE "SPECIAL NOTE FOR PAINTING STRUCTURAL STEEL REPAIRS".



NEW ANGLES & RE-INSTALLATION

ALL DIMENSIONS AND HOLE LOCATIONS TO DUPLICATE EXIST. PLATES & ANGLES SHALL BE FIELD VERIFIED

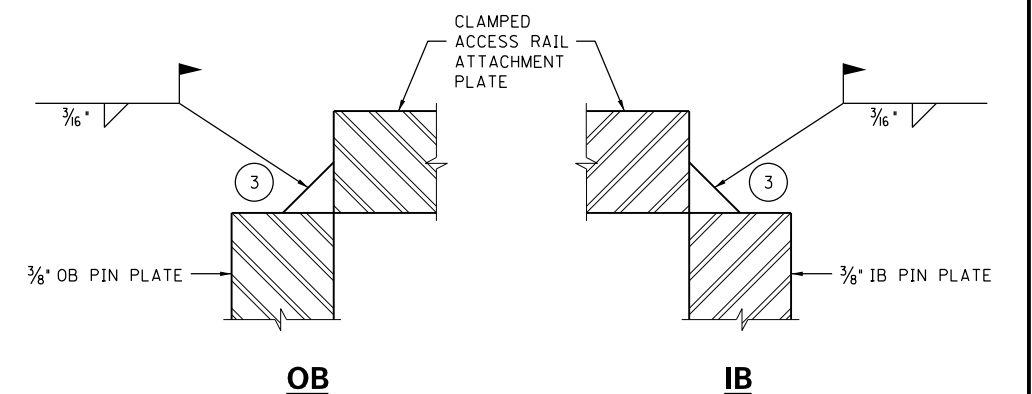


**REPAIR 7C – ACCESS RAIL ATTACHMENT PLATE WELDED REPAIR
U43 UPSTREAM TRUSS**

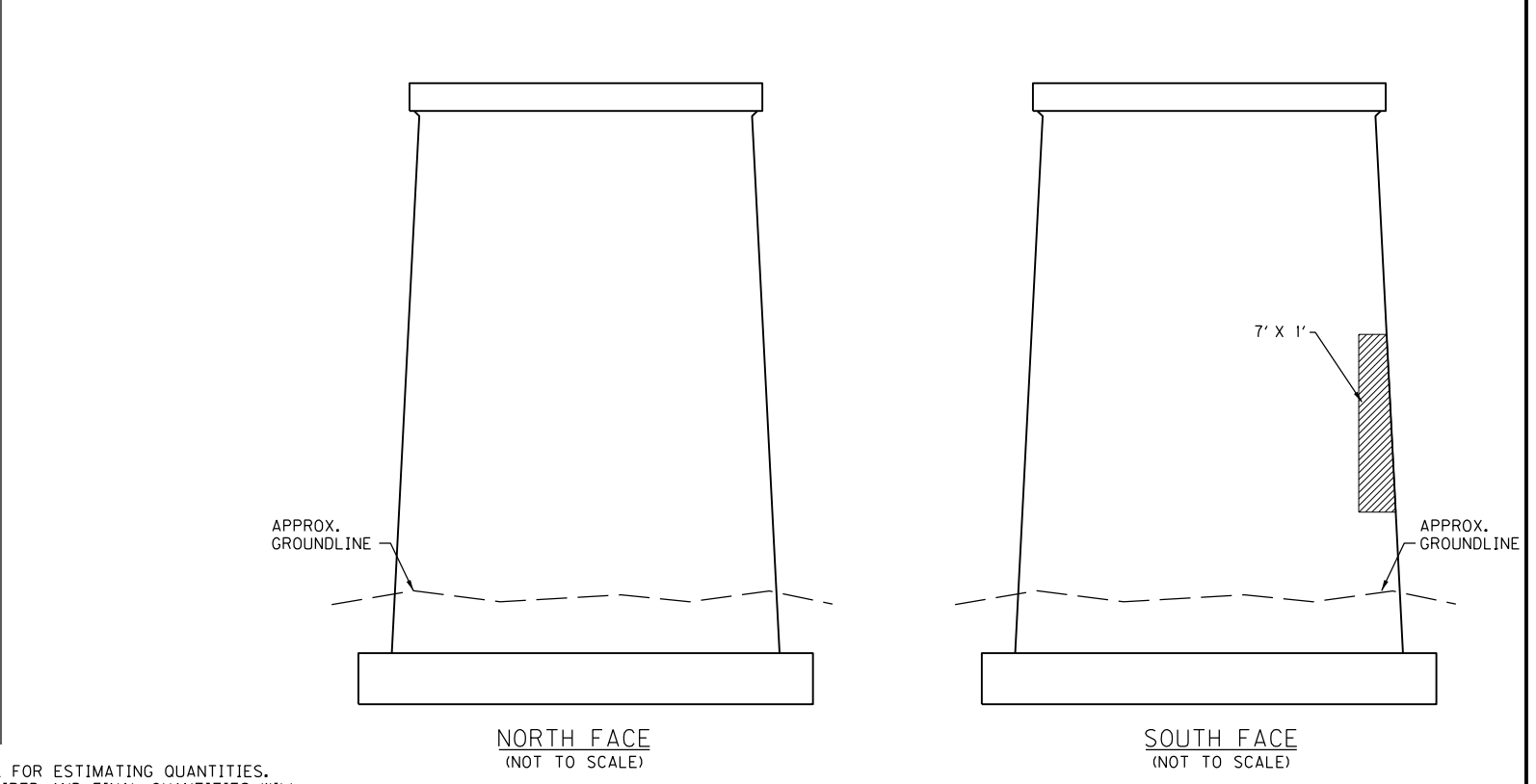
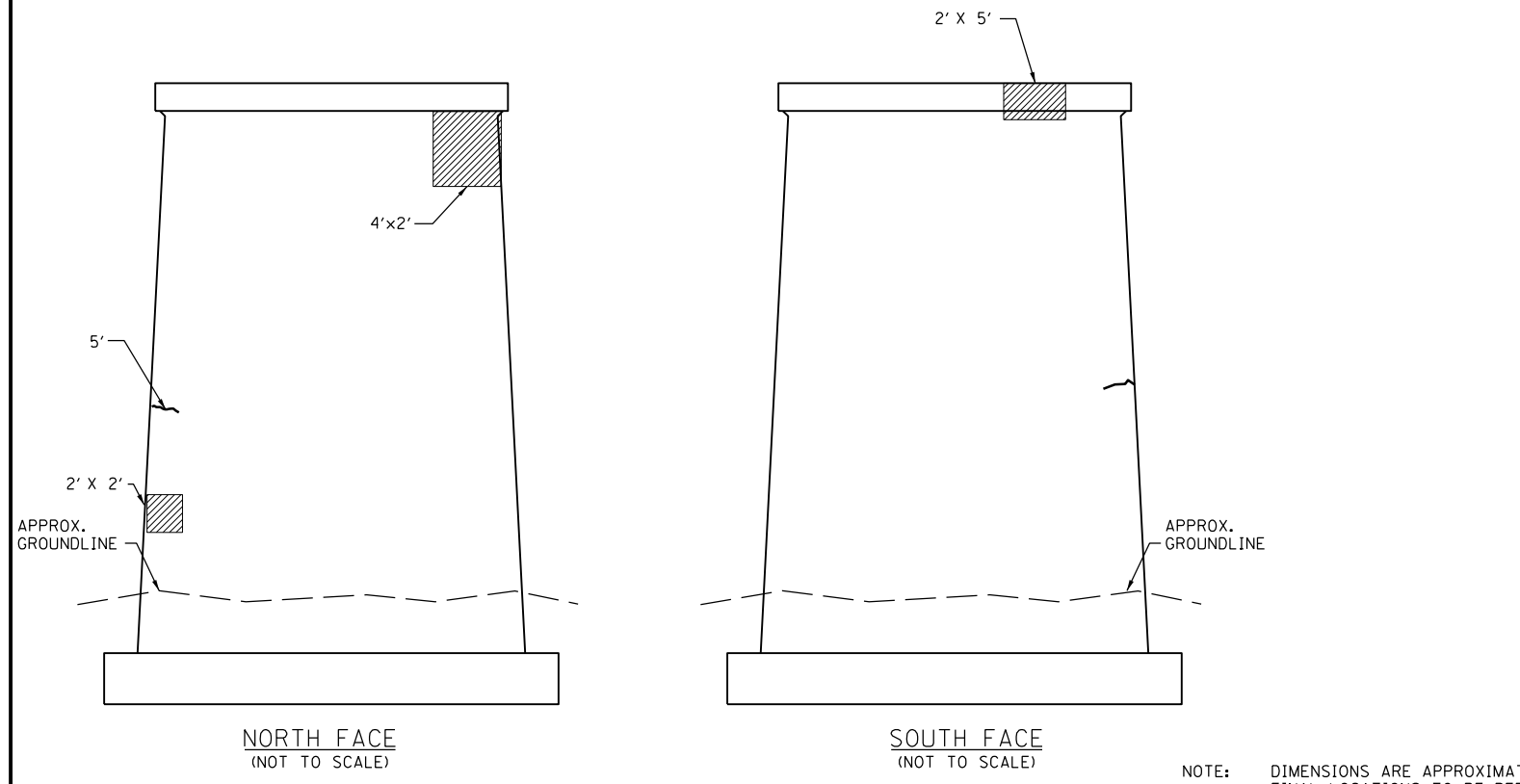
1 STEEL REPAIR LOCATION

- 1 CLEAN SURFACE OF STEEL AND GRIND DOWN ORIGINAL TACK WELDS WITH ROTARY BURR. (5 LOCATIONS EACH SIDE OF PLATE) OBTAIN UNIFORM SURFACE ON BOTH THE BENT ACCESS RAIL ATTACHMENT PLATE AND THE 3/8" PIN PLATE.
- 2 CLAMP THE BENT ACCESS RAIL ATTACHMENT PLATE TO THE UPPER CHORD, INTO THE PLATE'S ORIGINAL INTENDED POSITION.
- 3 FILLET WELD ALONG THE INTERFACE WITH E7018 ELECTRODES. CHECK EACH PASS VISUALLY FOR FREEDOM FROM CRACKS OR OTHER DEFECTS. OBTAIN 3/16" THICKNESS.
- 4 LEAVE CLAMPS IN PLACE FOR 2 HOURS BEFORE REMOVING.

* AFTER REPAIRS HAVE BEEN COMPLETED, SEE "SPECIAL NOTE FOR PAINTING STRUCTURAL STEEL REPAIRS".



	REVISION	DATE	PREPARED BY	DATE	CHECKED BY	REPAIR 7 - MISCELLANEOUS STEEL REPAIRS	ROUTE	ITEM NO.	COUNTY OF
				OCTOBER 2024	D.E. RUST		KY 2262	2-10020.00	DAVIESS
				DESIGNED BY:	J.P. MURRIN		CROSSING	SHEET NO.	DRAWING NUMBER
				DETAILED BY:	J.A. ROSE	J.P. MURRIN	OHIO RIVER at OWENSBORO	S18	28812

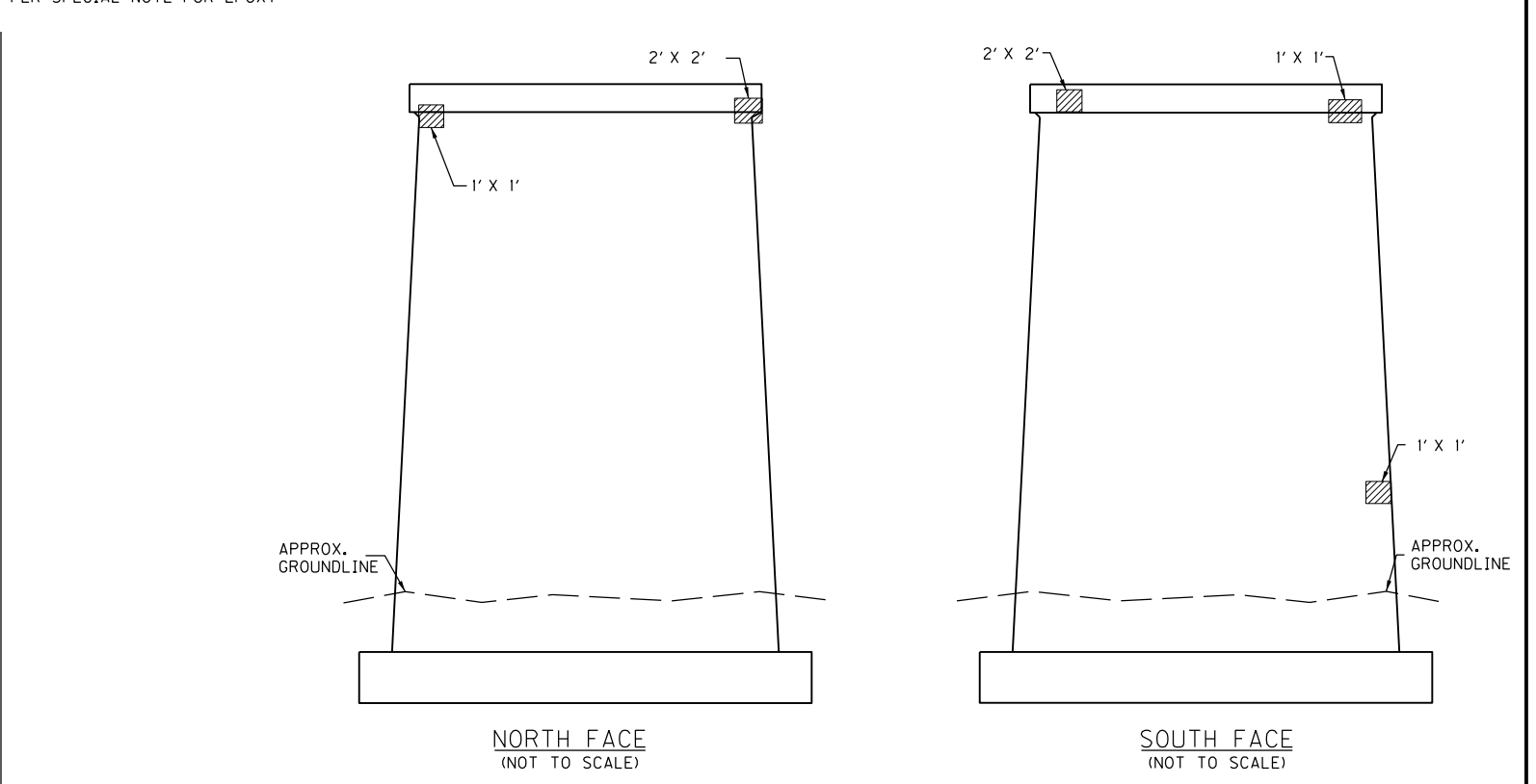
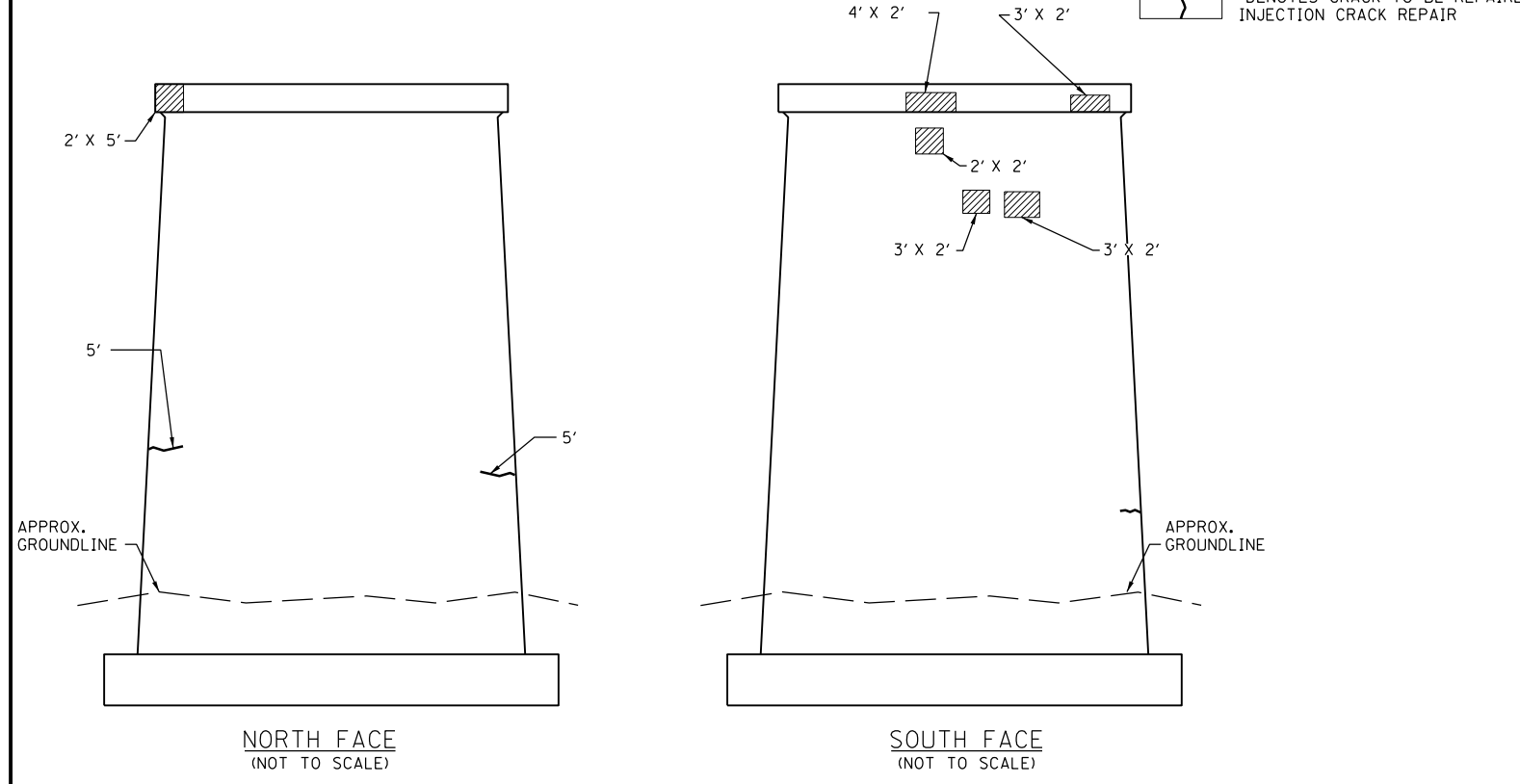


NOTE: DIMENSIONS ARE APPROXIMATE FOR ESTIMATING QUANTITIES. FINAL LOCATIONS TO BE REPAIRED AND FINAL QUANTITIES WILL BE DETERMINED BY THE ENGINEER PER THE SPECIAL NOTES. SEE SPECIAL NOTE FOR CONCRETE PATCHING.

IN APPROACH PIER I-25

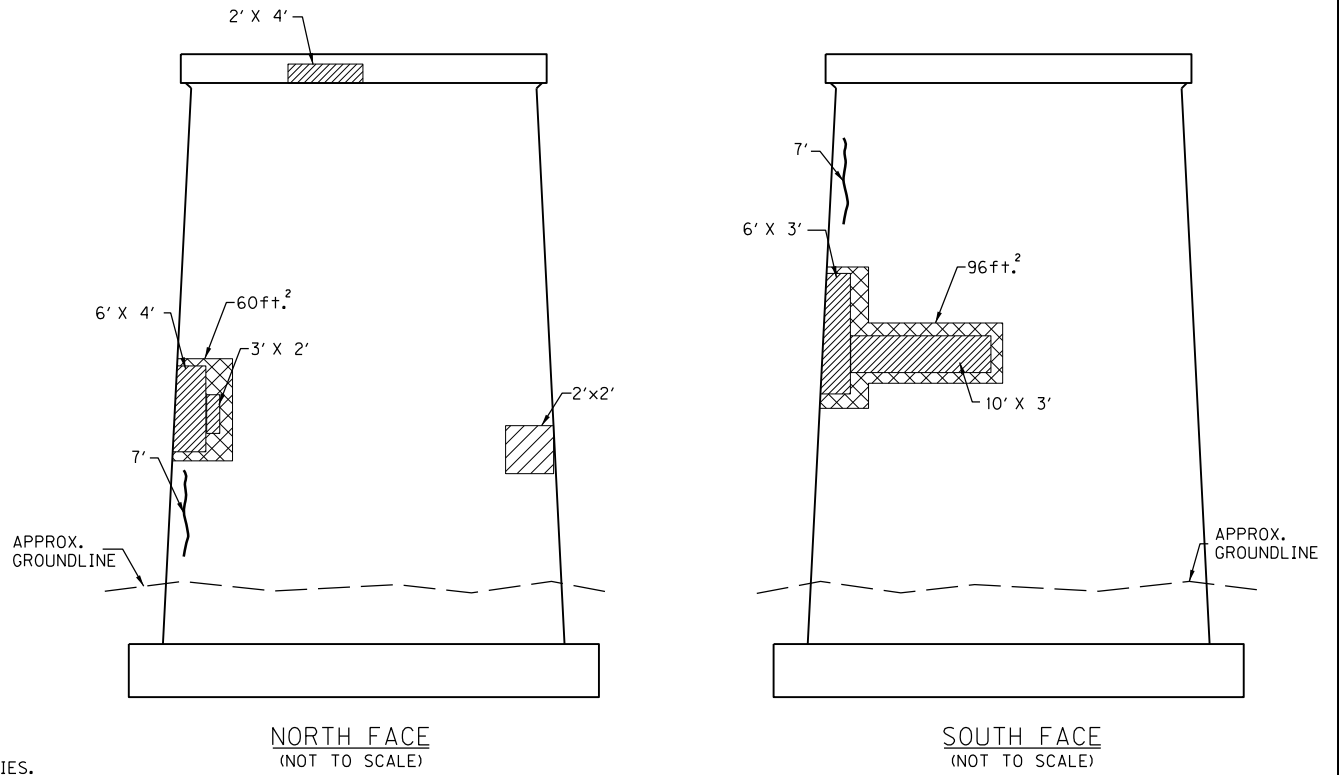
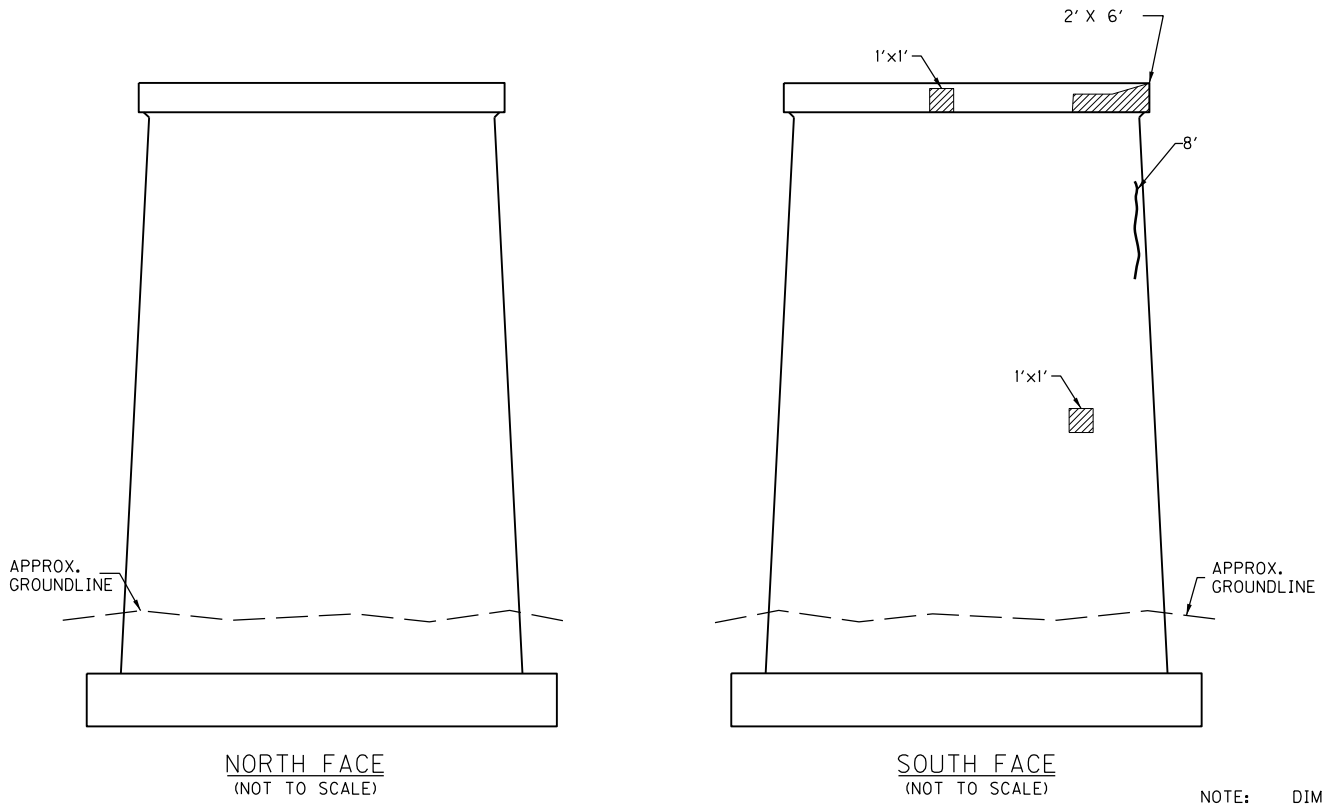
IN APPROACH PIER I-23

- DENOTES AREA TO BE REPAIRED PER SPECIAL NOTE FOR CONCRETE PATCHING REPAIR USING EPOXY MORTAR OR CLASS M CONCRETE
 - DENOTES CRACK TO BE REPAIRED PER SPECIAL NOTE FOR EPOXY INJECTION CRACK REPAIR



IN APPROACH PIER I-24

IN APPROACH PIER I-22

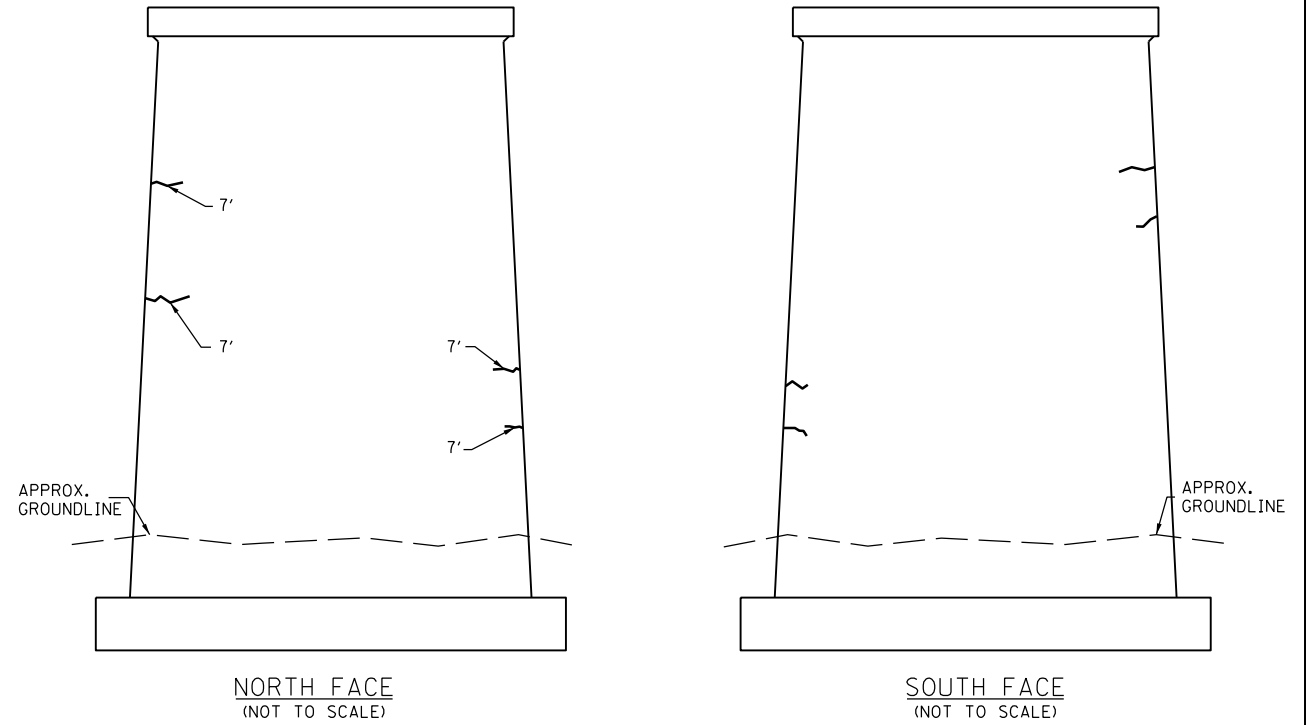
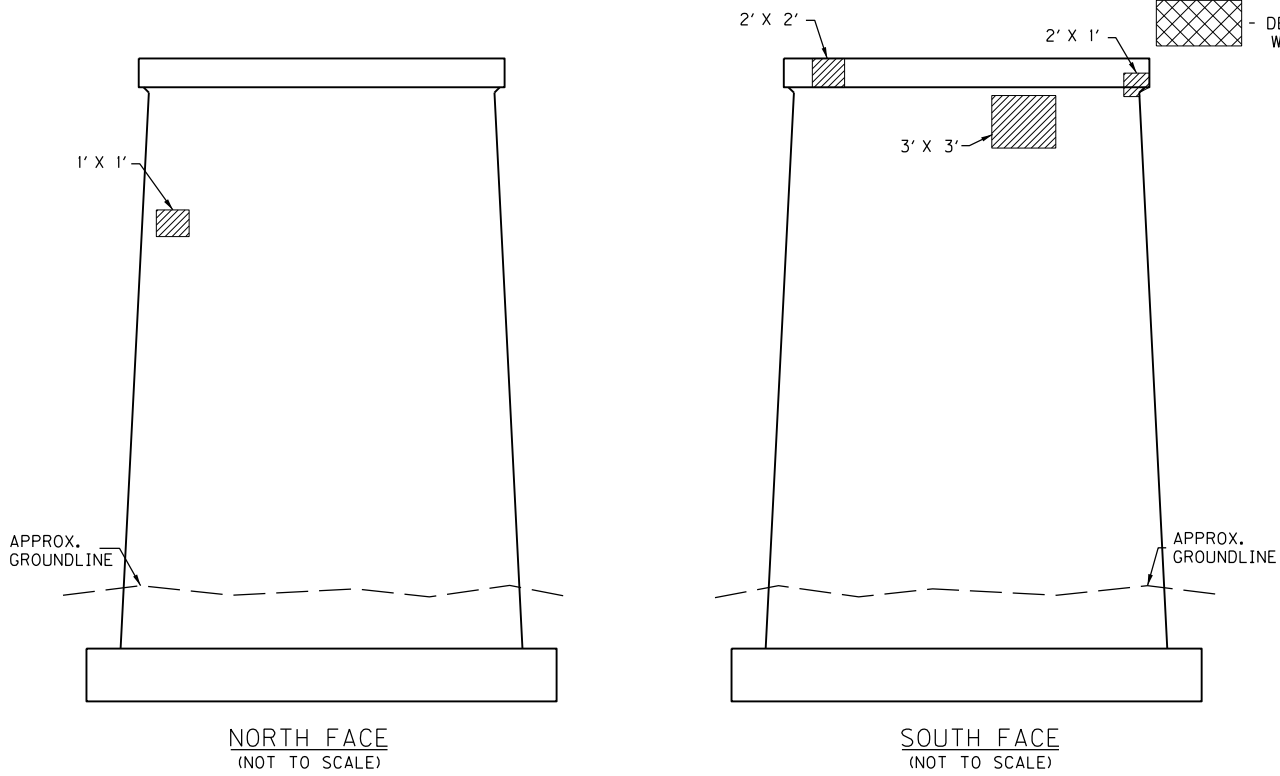


NOTE: DIMENSIONS ARE APPROXIMATE FOR ESTIMATING QUANTITIES. FINAL LOCATIONS TO BE REPAIRED AND FINAL QUANTITIES WILL BE DETERMINED BY THE ENGINEER PER THE SPECIAL NOTES. SEE SPECIAL NOTE FOR CONCRETE PATCHING.

IN APPROACH PIER I-21

IN APPROACH PIER I-19

- DENOTES AREA TO BE REPAIRED PER SPECIAL NOTE FOR CONCRETE PATCHING REPAIR USING EPOXY MORTAR OR CLASS M CONCRETE
- DENOTES CRACK TO BE REPAIRED PER SPECIAL NOTE FOR EPOXY INJECTION CRACK REPAIR
- DENOTES AREA TO BE REPAIRED PER SPECIAL NOTE FOR STRUCTURES WITH FIBER REINFORCED POLYMER WRAP



IN APPROACH PIER I-20

IN APPROACH PIER I-18



COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS



REVISION	DATE

PREPARED BY
Palmer ENGINEERING

DATE:	OCTOBER 2024	CHECKED BY:	D.E. RUST
DESIGNED BY:	J.P. MURRIN	DETAILED BY:	M.B. HAGGARD
			J.P. MURRIN

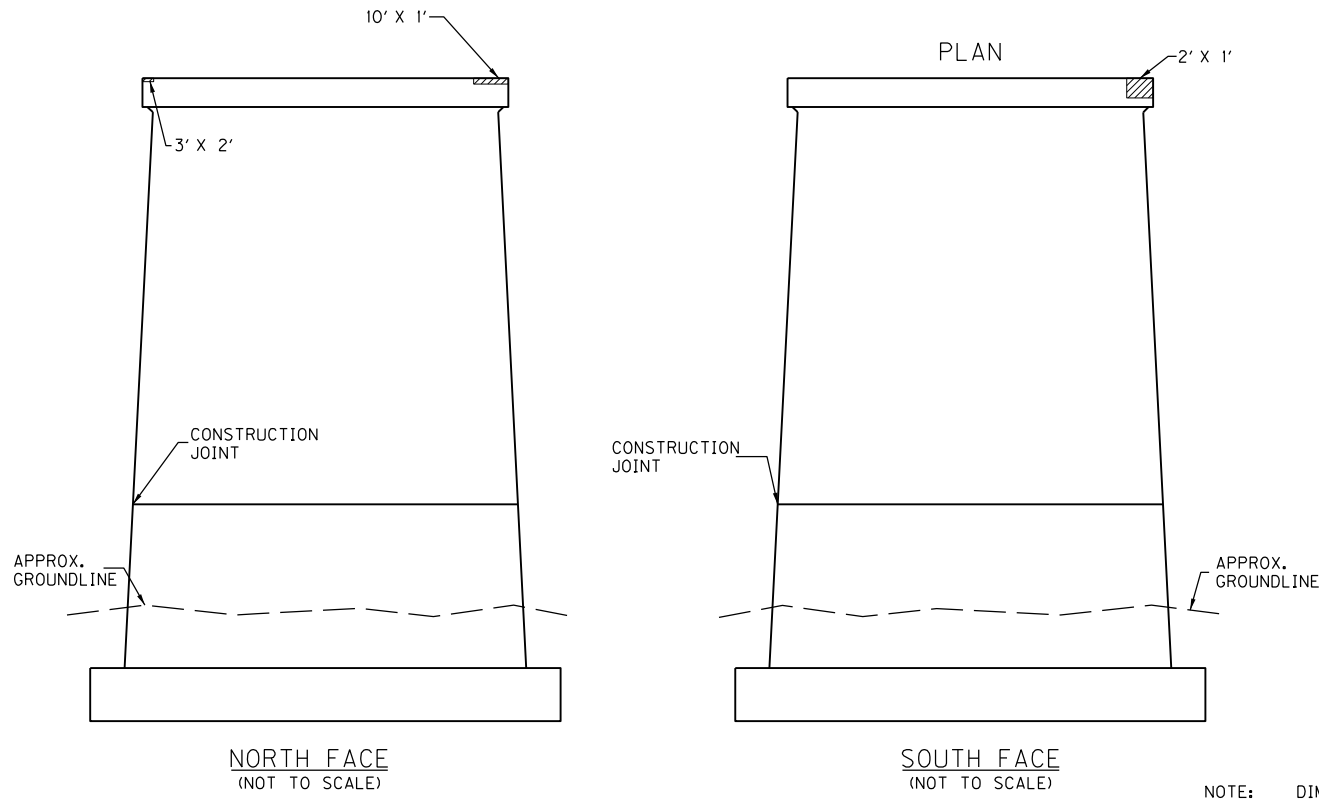
**REPAIR 8 REINFORCED CONCRETE
SUBSTRUCTURE REPAIR SHEET 2**

CROSSING
OHIO RIVER at OWENSBORO

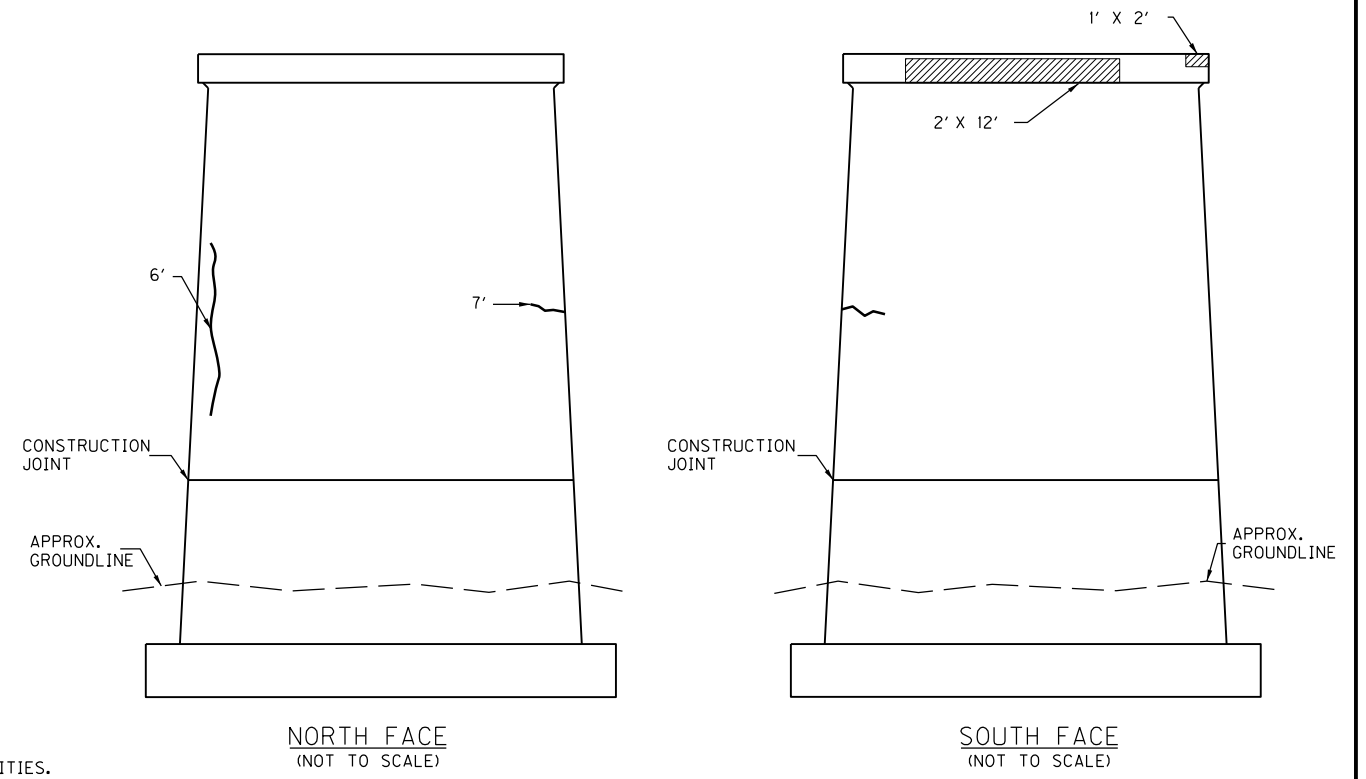
ROUTE
KY 2262

ITEM NO.
2-10020.00
SHEET NO.
S20

COUNTY OF
DAVIESS
DRAWING NUMBER
28812



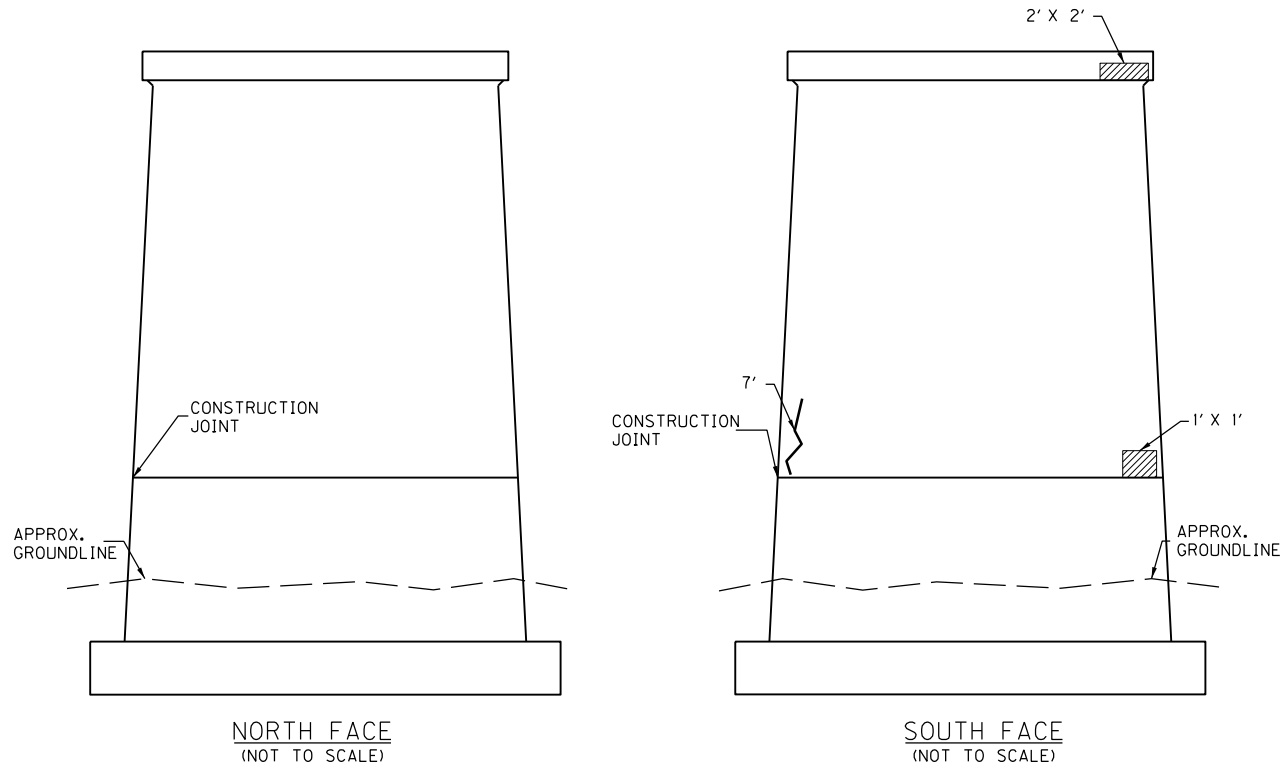
IN APPROACH PIER I-17



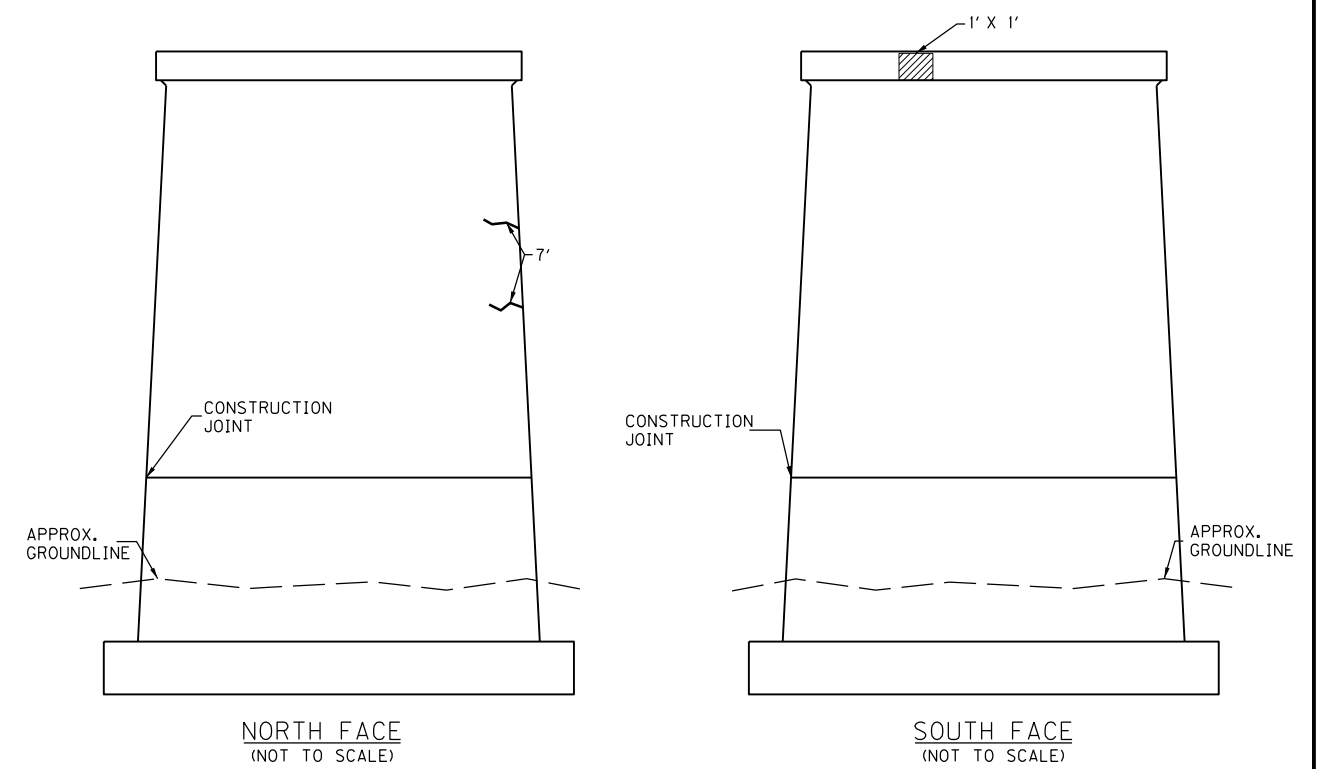
IN APPROACH PIER I-15

NOTE: DIMENSIONS ARE APPROXIMATE FOR ESTIMATING QUANTITIES. FINAL LOCATIONS TO BE REPAIRED AND FINAL QUANTITIES WILL BE DETERMINED BY THE ENGINEER PER THE SPECIAL NOTES. SEE SPECIAL NOTE FOR CONCRETE PATCHING.

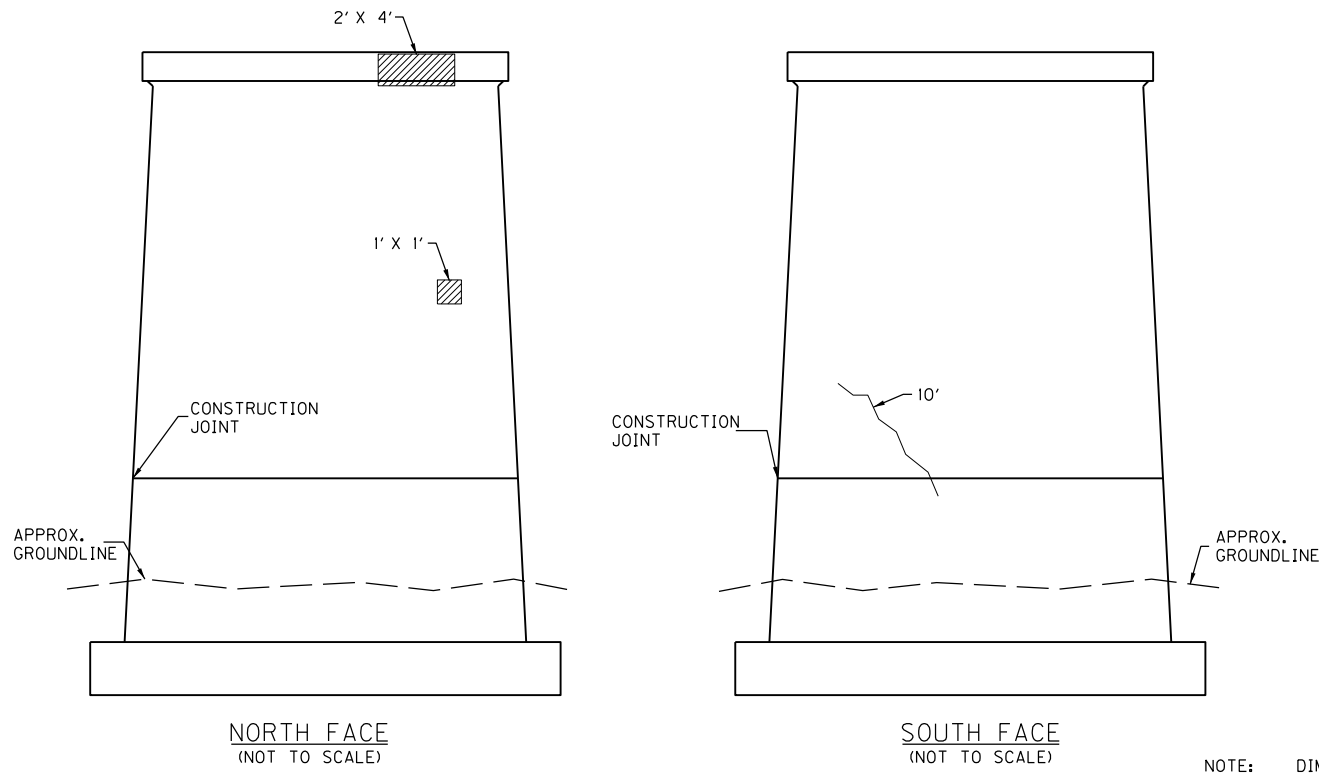
- DENOTES AREA TO BE REPAIRED PER SPECIAL NOTE FOR CONCRETE PATCHING REPAIR USING EPOXY MORTAR OR CLASS M CONCRETE
- DENOTES CRACK TO BE REPAIRED PER SPECIAL NOTE FOR EPOXY INJECTION CRACK REPAIR



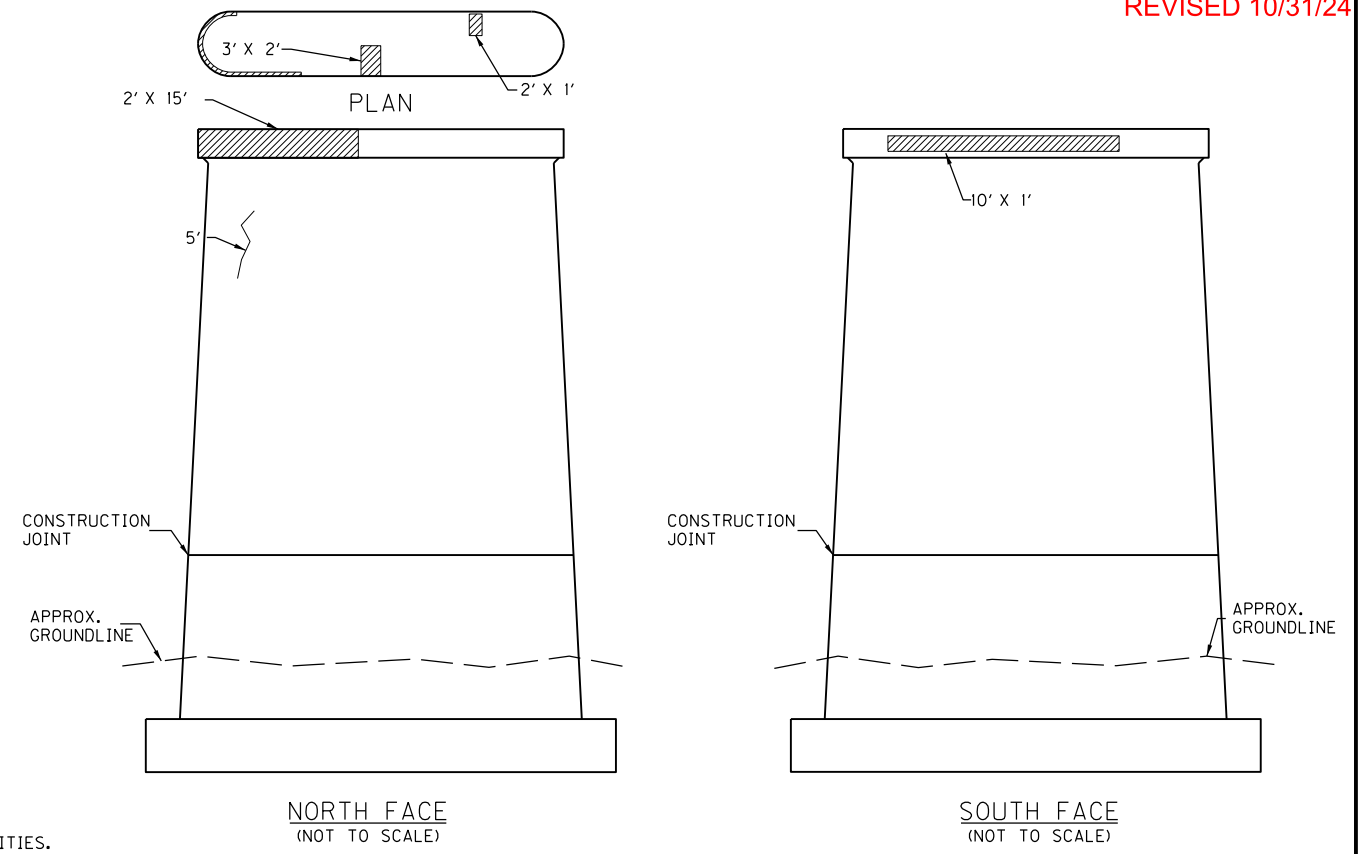
IN APPROACH PIER I-16



IN APPROACH PIER I-14



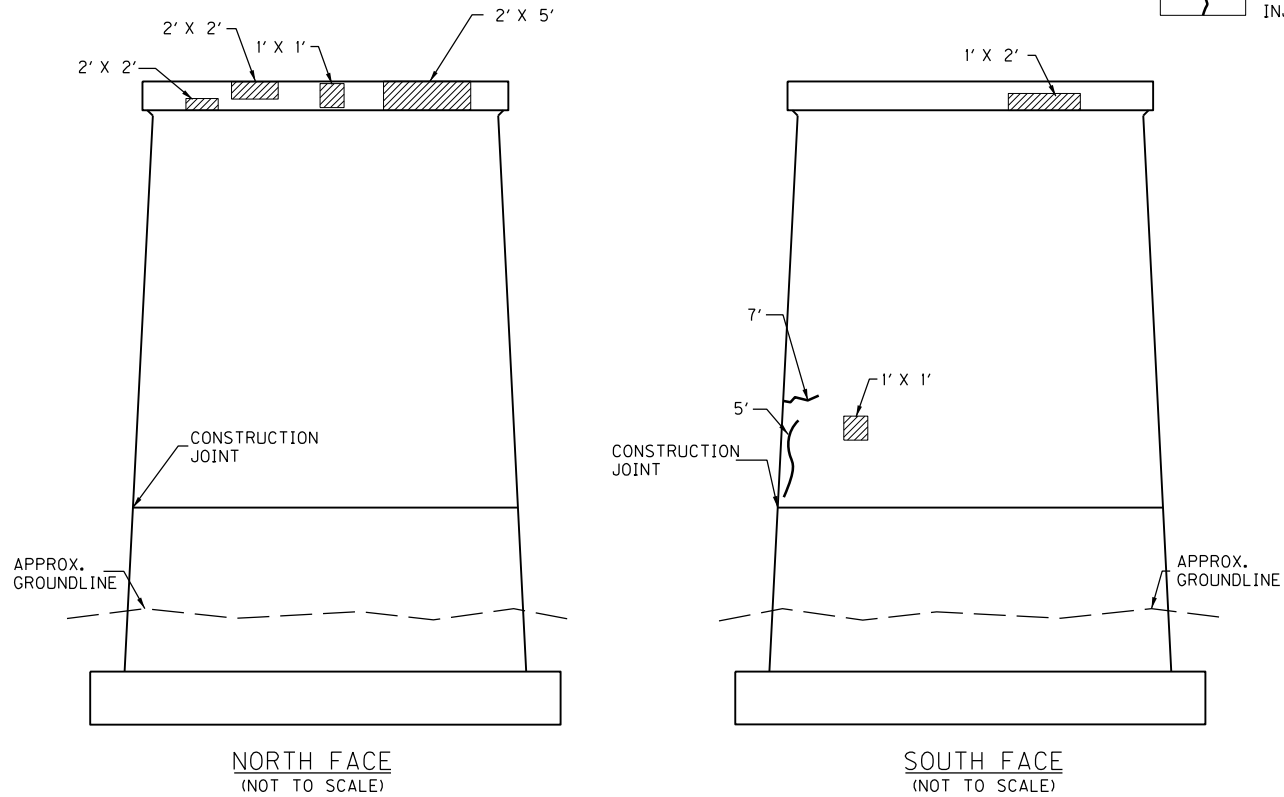
IN APPROACH PIER I-13



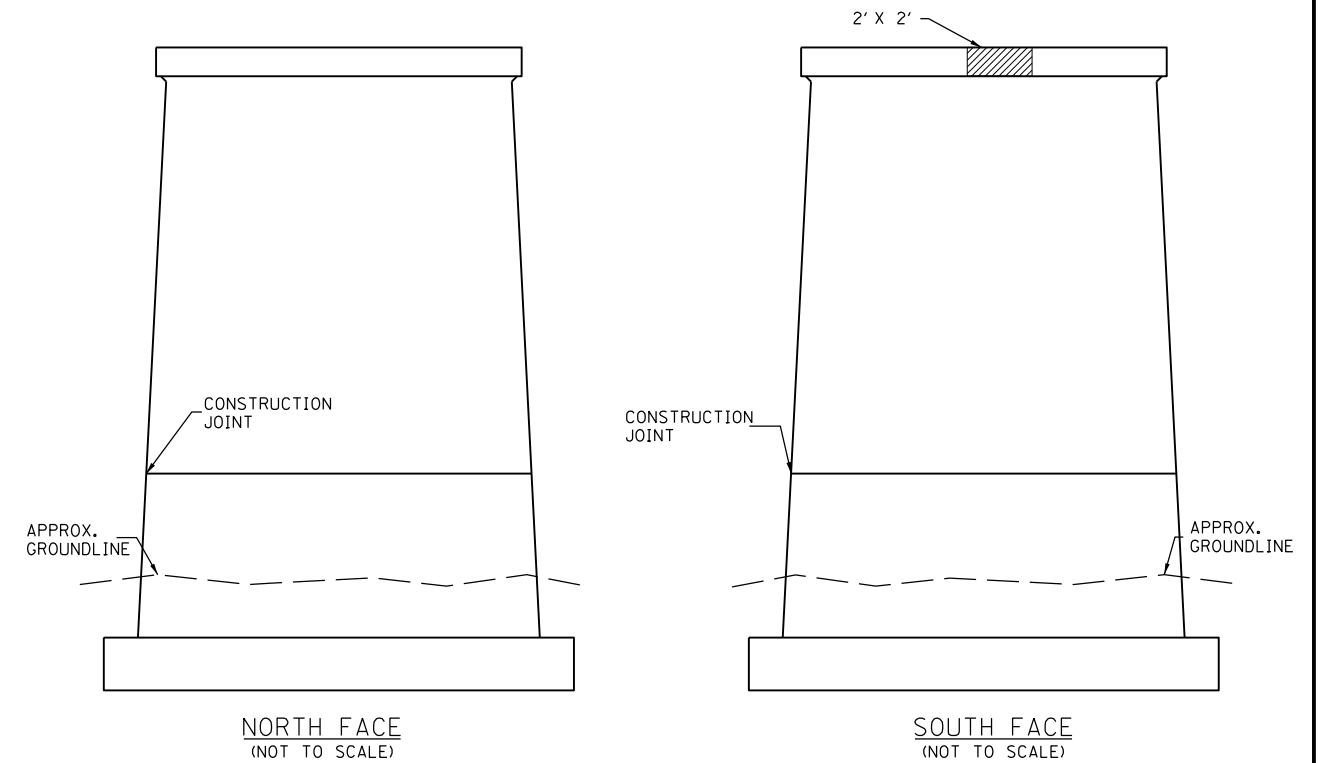
IN APPROACH PIER I-11

NOTE: DIMENSIONS ARE APPROXIMATE FOR ESTIMATING QUANTITIES. FINAL LOCATIONS TO BE REPAIRED AND FINAL QUANTITIES WILL BE DETERMINED BY THE ENGINEER PER THE SPECIAL NOTES. SEE SPECIAL NOTE FOR CONCRETE PATCHING.

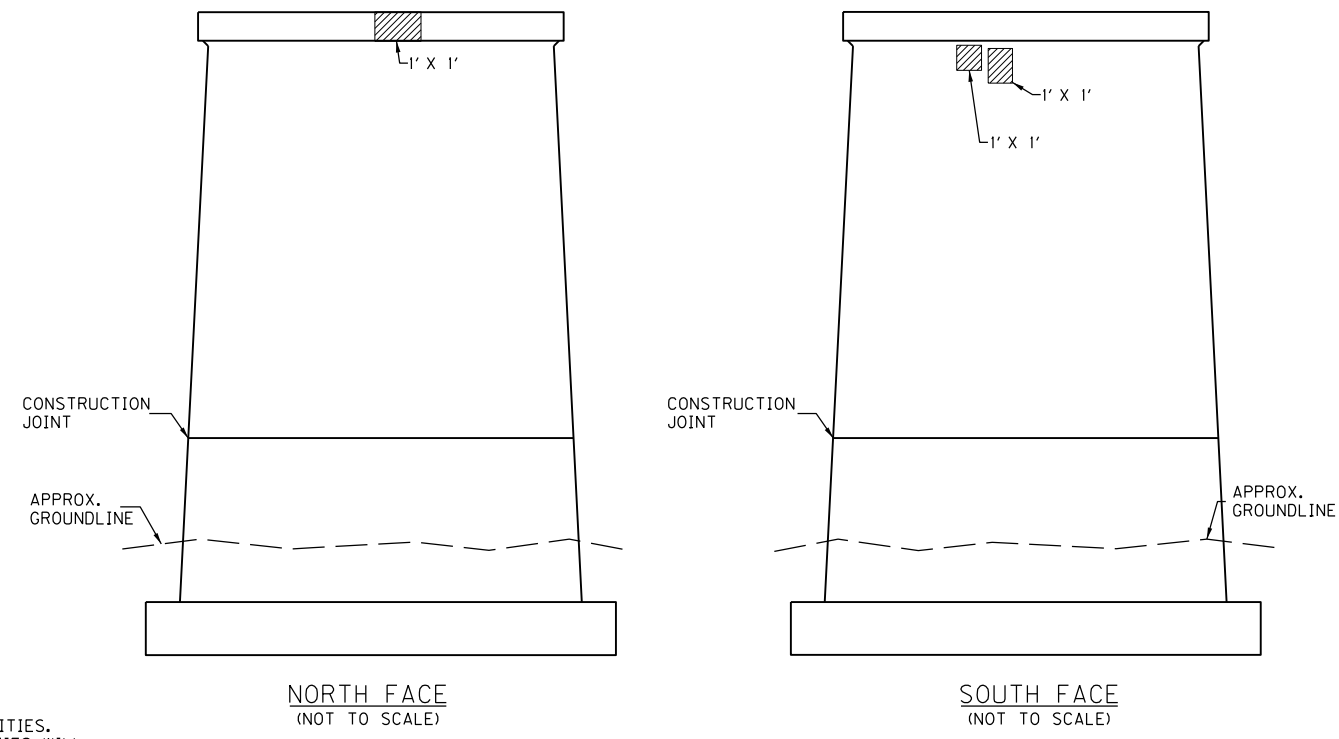
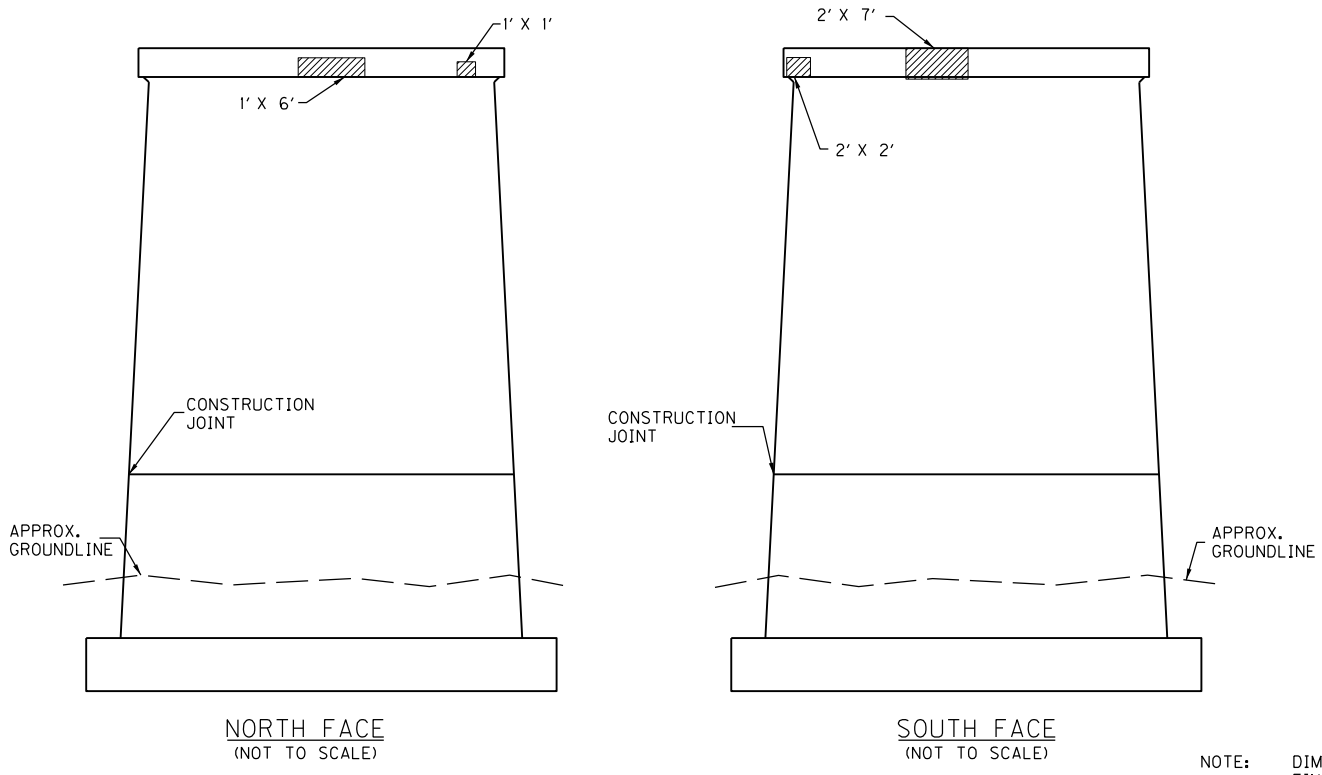
- DENOTES AREA TO BE REPAIRED PER SPECIAL NOTE FOR CONCRETE PATCHING REPAIR USING EPOXY MORTAR OR CLASS M CONCRETE
- DENOTES CRACK TO BE REPAIRED PER SPECIAL NOTE FOR EPOXY INJECTION CRACK REPAIR



IN APPROACH PIER I-12



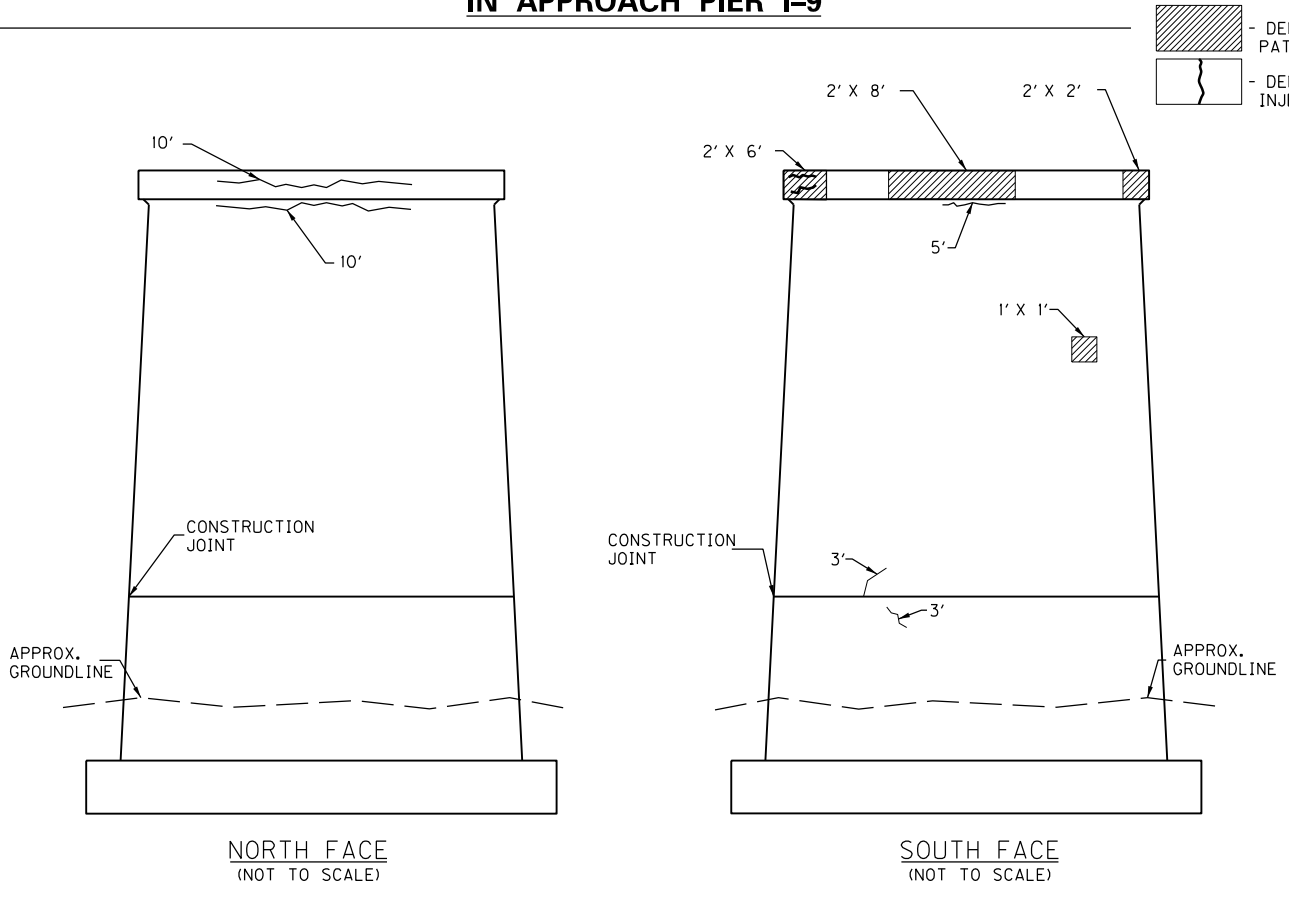
IN APPROACH PIER I-10



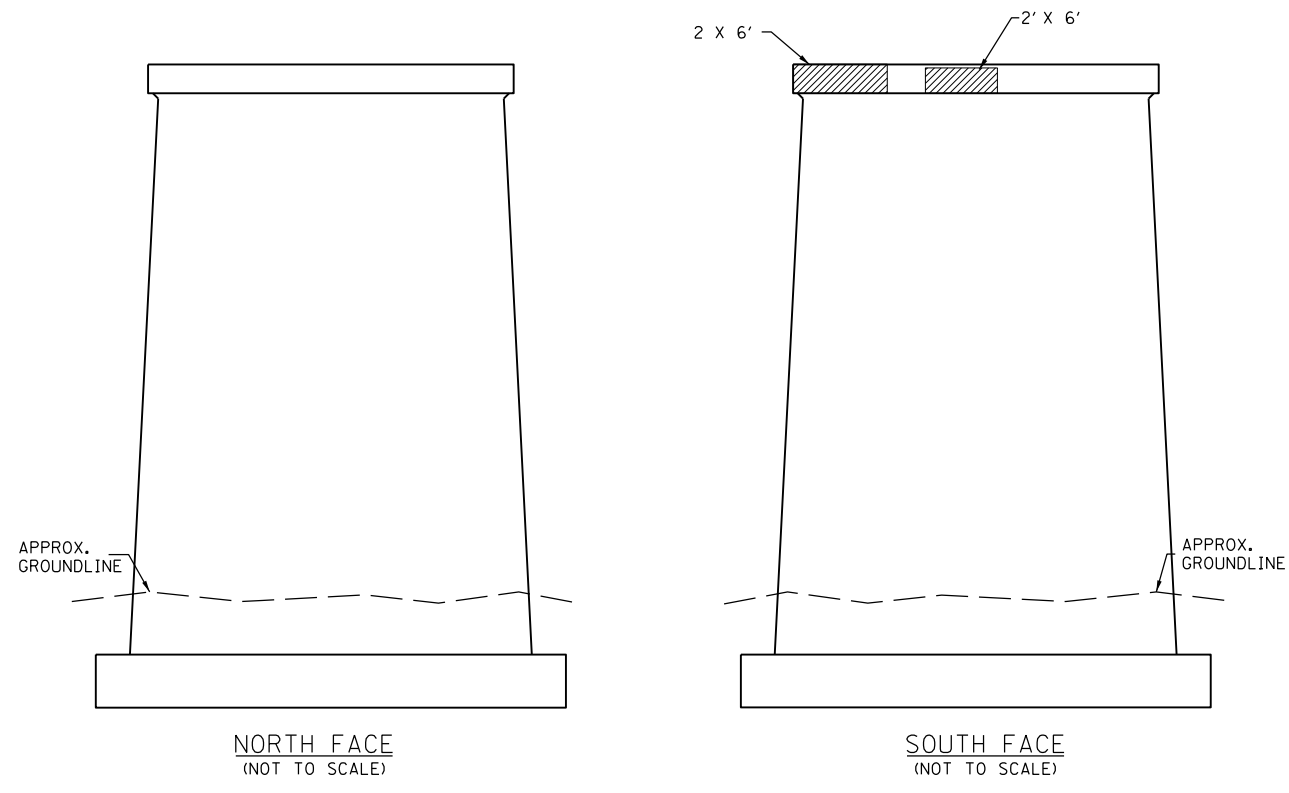
NOTE: DIMENSIONS ARE APPROXIMATE FOR ESTIMATING QUANTITIES. FINAL LOCATIONS TO BE REPAIRED AND FINAL QUANTITIES WILL BE DETERMINED BY THE ENGINEER PER THE SPECIAL NOTES. SEE SPECIAL NOTE FOR CONCRETE PATCHING.

IN APPROACH PIER I-9

IN APPROACH PIER I-7

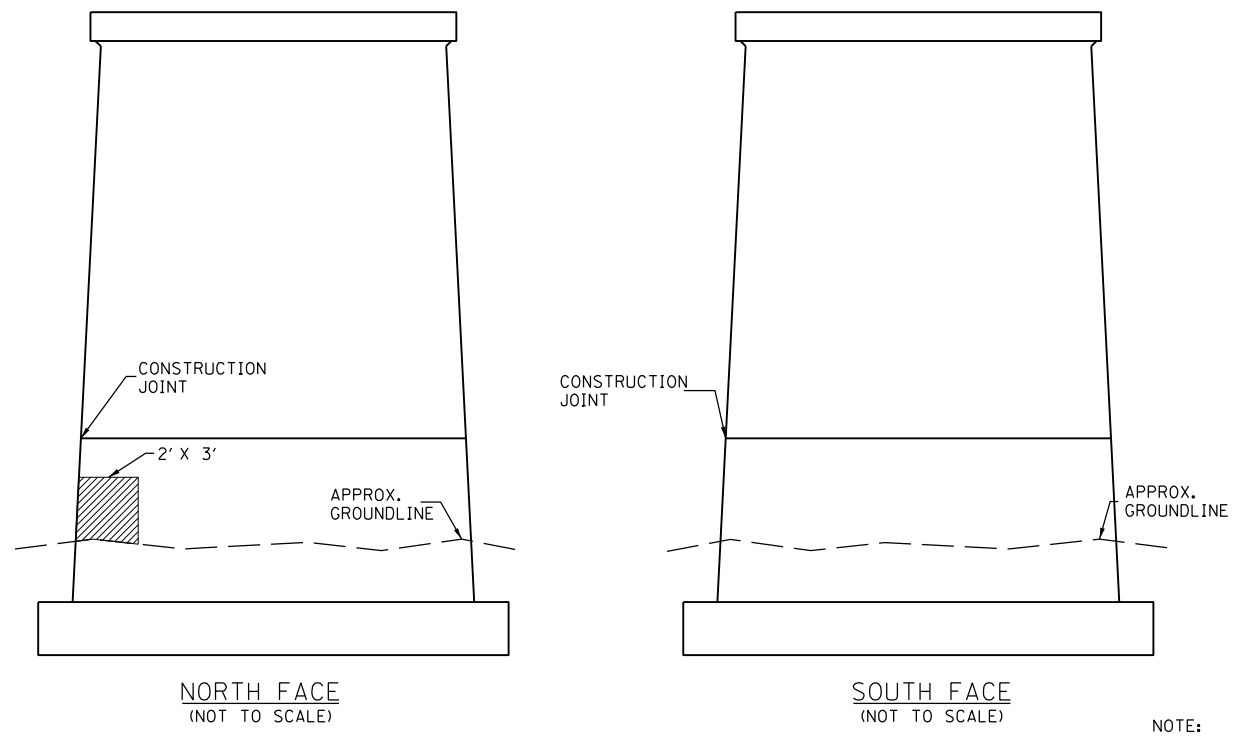


- DENOTES AREA TO BE REPAIRED PER SPECIAL NOTE FOR CONCRETE PATCHING REPAIR USING EPOXY MORTAR OR CLASS M CONCRETE
 - DENOTES CRACK TO BE REPAIRED PER SPECIAL NOTE FOR EPOXY INJECTION CRACK REPAIR

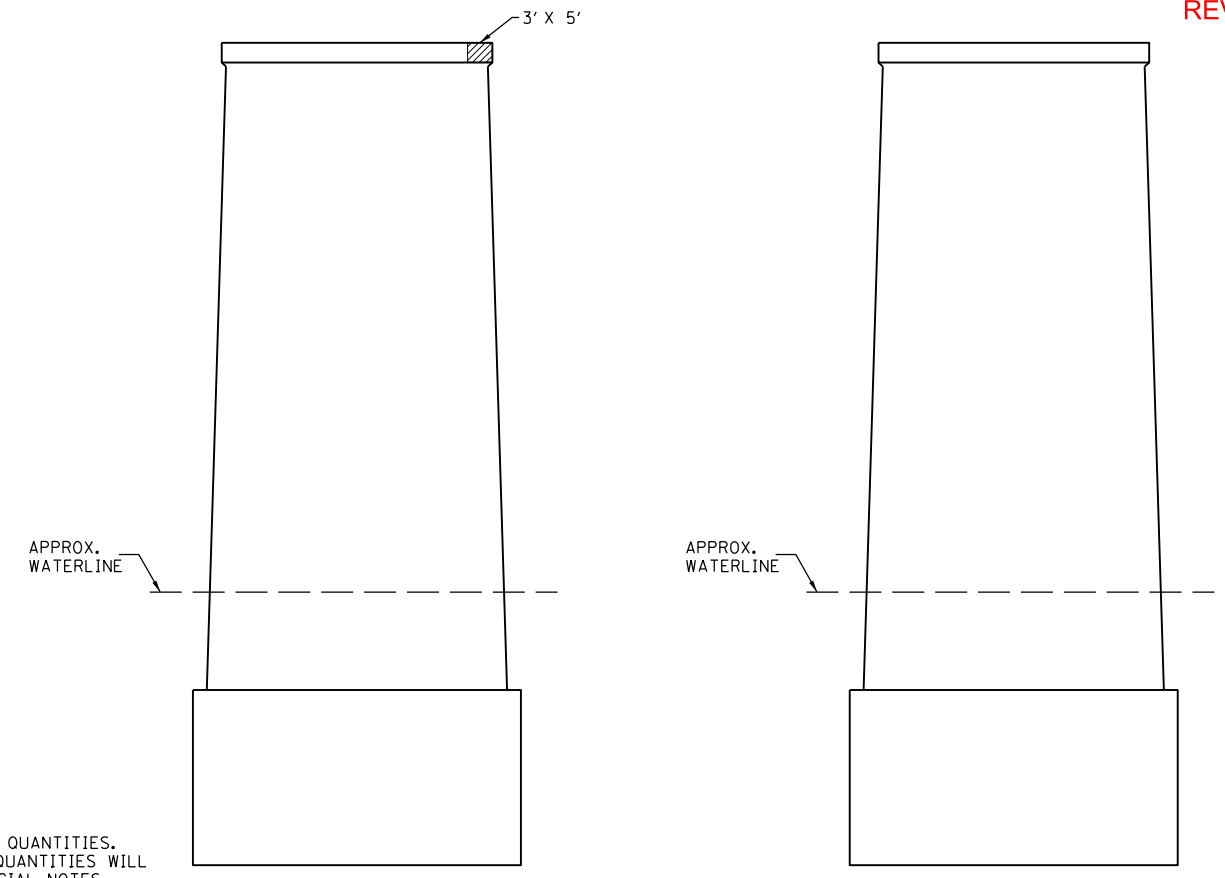


IN APPROACH PIER I-8

IN APPROACH PIER I-6



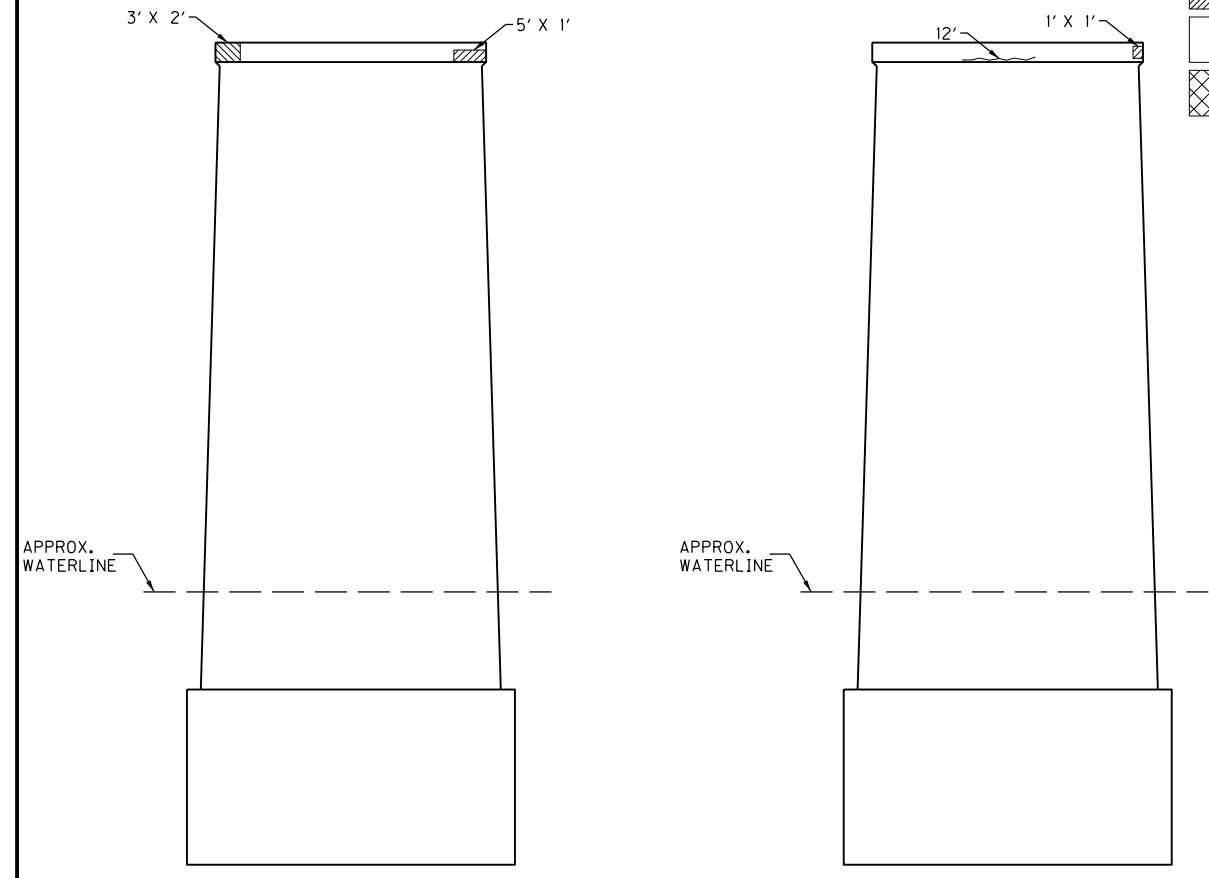
IN APPROACH PIER I-4



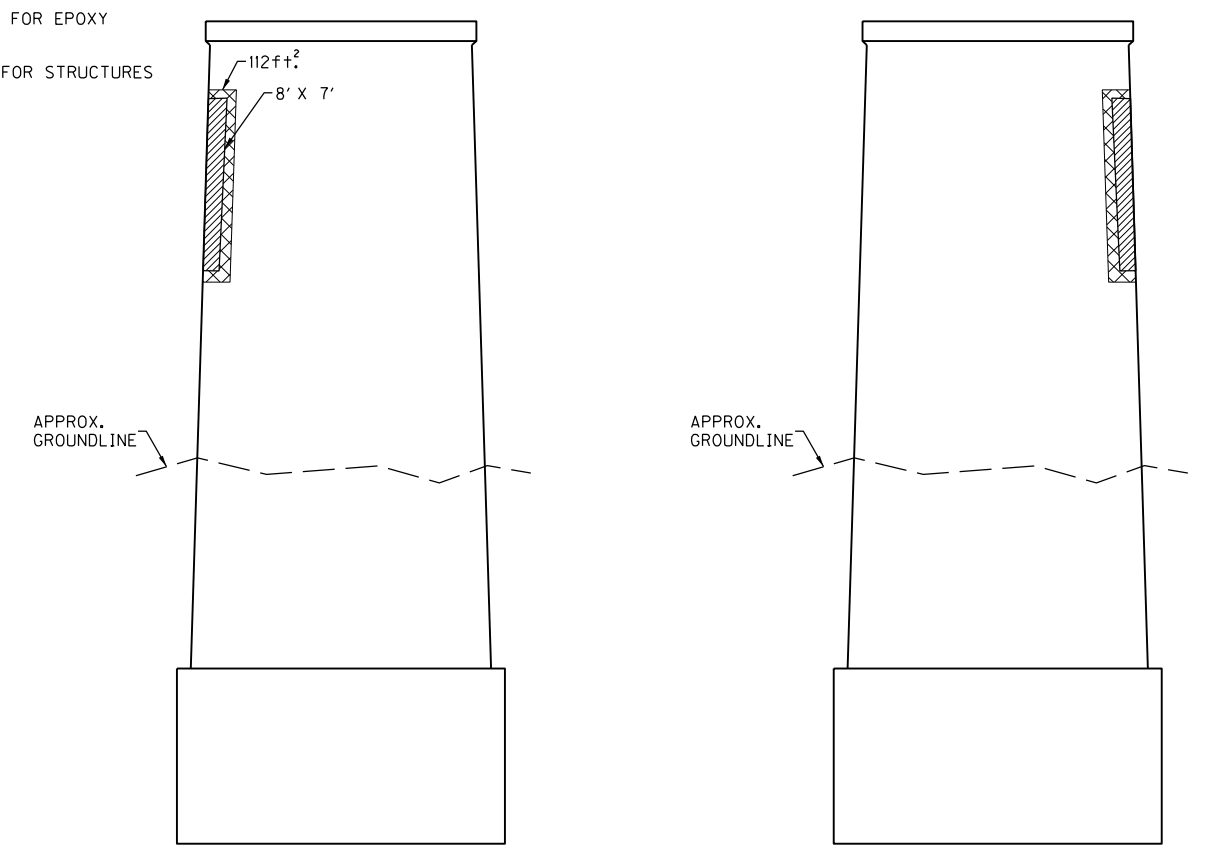
IN APPROACH PIER I-2

NOTE: DIMENSIONS ARE APPROXIMATE FOR ESTIMATING QUANTITIES. FINAL LOCATIONS TO BE REPAIRED AND FINAL QUANTITIES WILL BE DETERMINED BY THE ENGINEER PER THE SPECIAL NOTES. SEE SPECIAL NOTE FOR CONCRETE PATCHING.

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- DENOTES CRACK TO BE REPAIRED PER SPECIAL NOTE FOR EPOXY INJECTION CRACK REPAIR
- DENOTES AREA TO BE REPAIRED PER SPECIAL NOTE FOR STRUCTURES WITH FIBER REINFORCED POLYMER WRAP



IN APPROACH PIER I-3

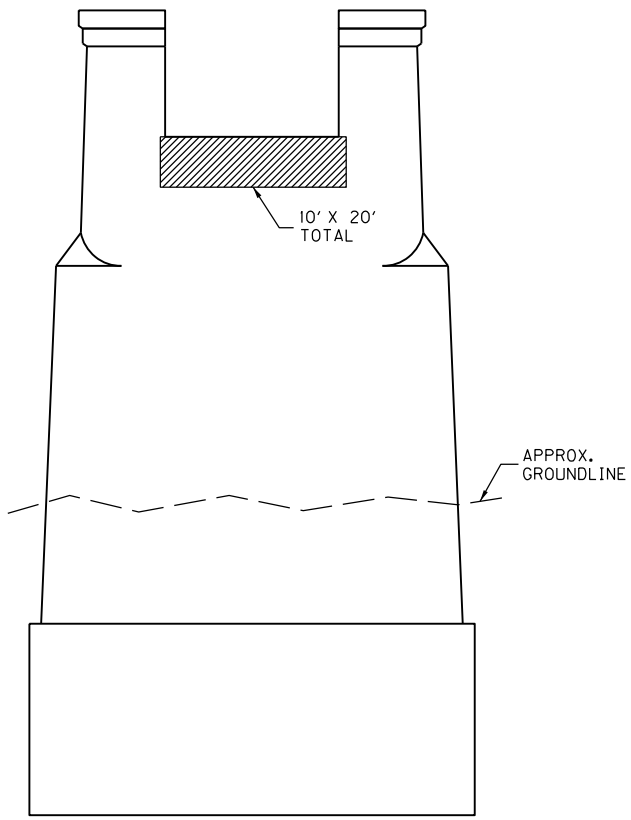


IN APPROACH PIER I-1

REVISION	DATE

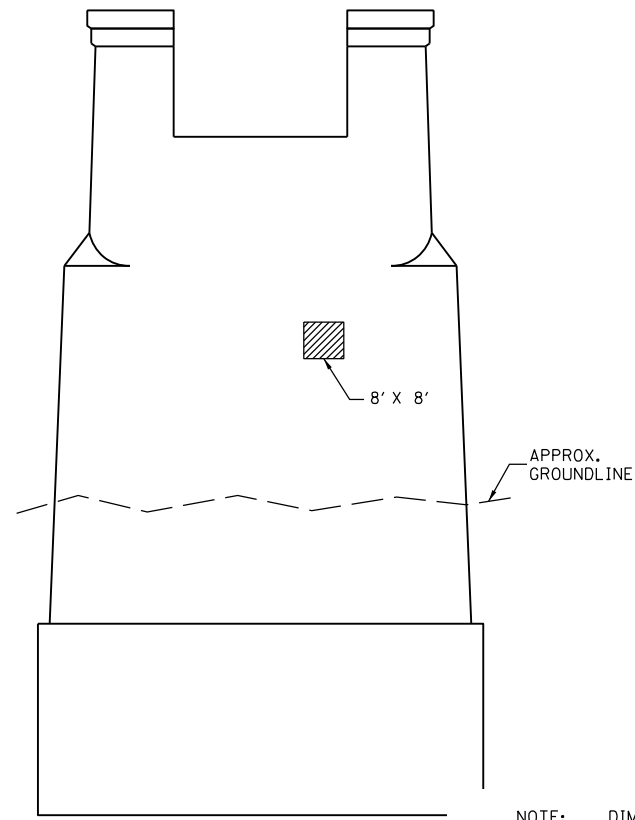
DATE:	OCTOBER 2024	CHECKED BY:	D.E. RUST
DESIGNED BY:	J.P. MURRIN	DETAILED BY:	M.B. HAGGARD
			J.P. MURRIN

ROUTE	ITEM NO.	COUNTY OF
KY 2262	2-10020.00	DAVIESS
	SHEET NO.	DRAWING NUMBER
	S24	28812



NORTH FACE
(NOT TO SCALE)

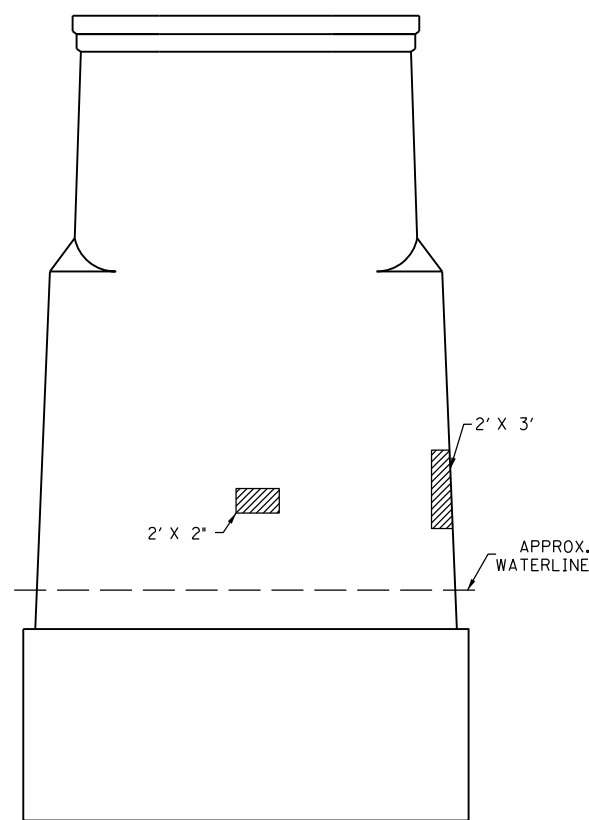
MAIN SPAN PIER A



SOUTH FACE
(NOT TO SCALE)

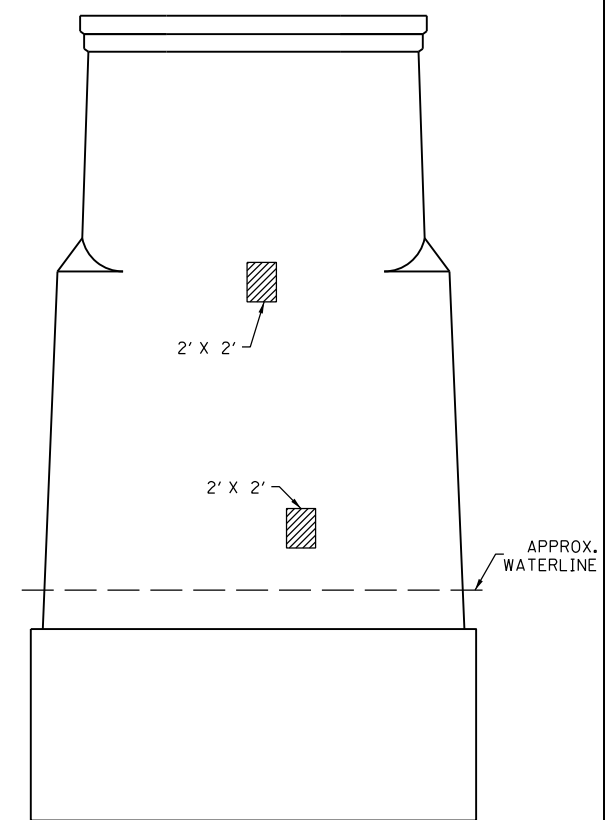
NOTE: DIMENSIONS ARE APPROXIMATE FOR ESTIMATING QUANTITIES. FINAL LOCATIONS TO BE REPAIRED AND FINAL QUANTITIES WILL BE DETERMINED BY THE ENGINEER PER THE SPECIAL NOTES. SEE SPECIAL NOTE FOR CONCRETE PATCHING.

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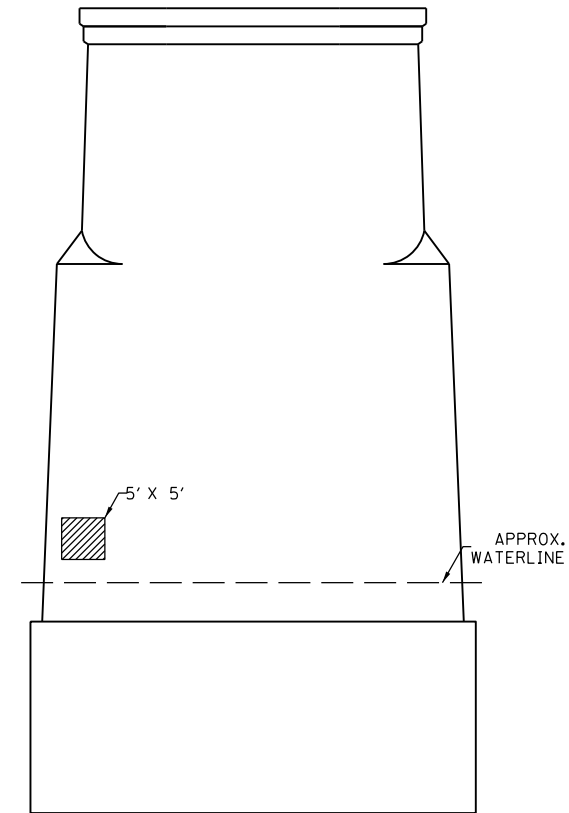


NORTH FACE
(NOT TO SCALE)

MAIN SPAN PIER C

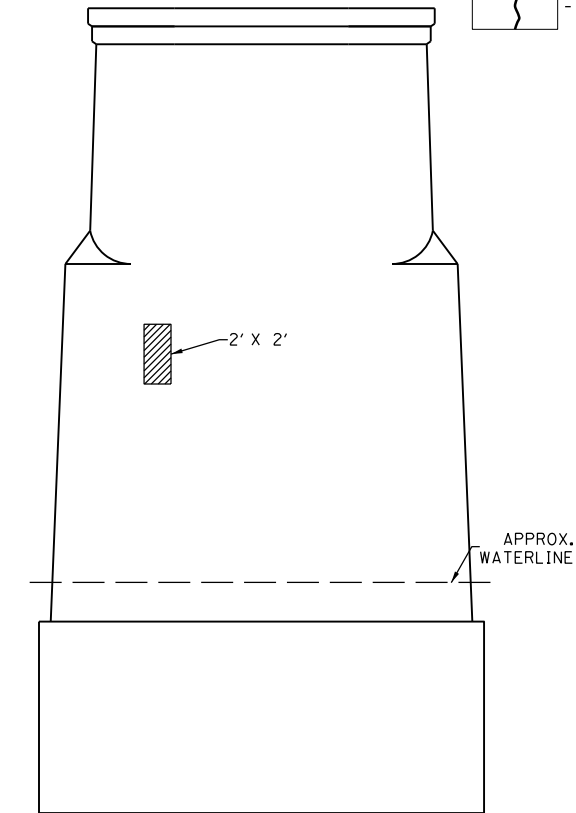


SOUTH FACE
(NOT TO SCALE)

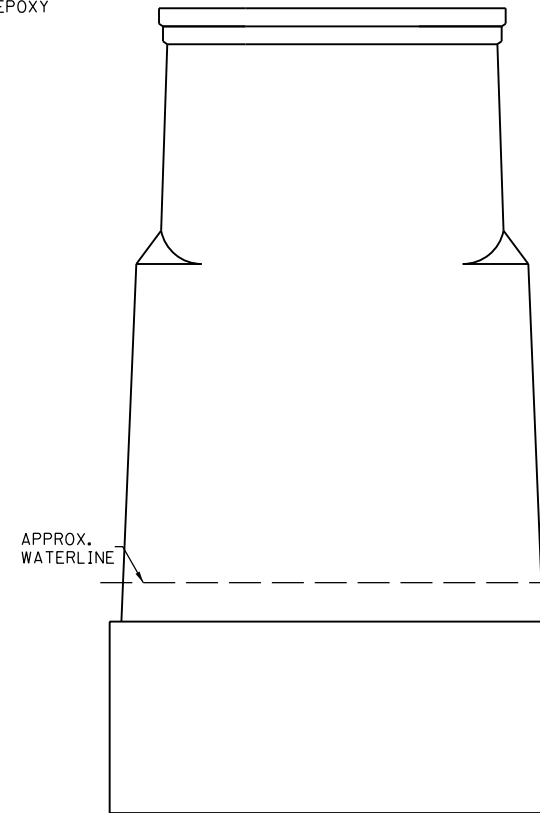


NORTH FACE
(NOT TO SCALE)

MAIN SPAN PIER B

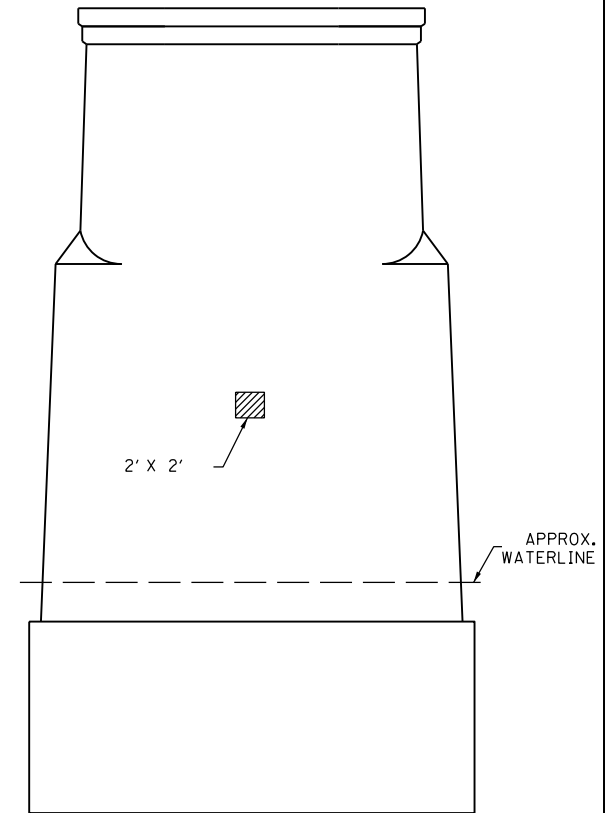


SOUTH FACE
(NOT TO SCALE)

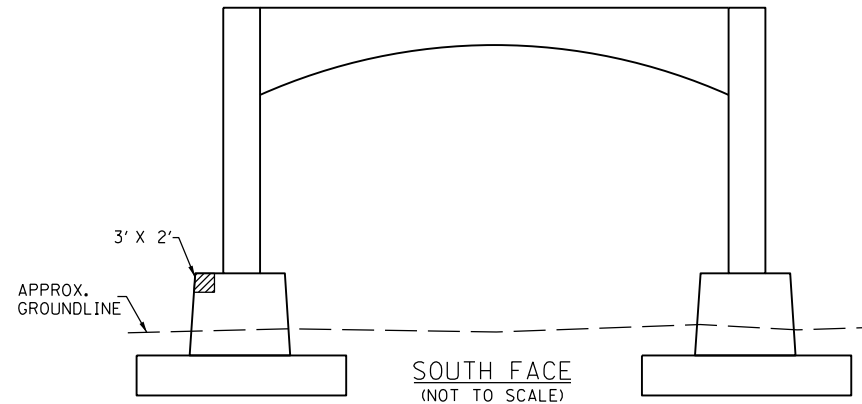
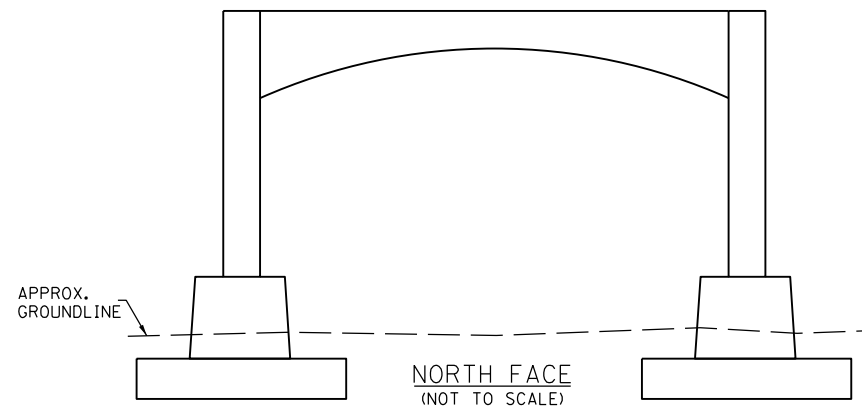


NORTH FACE
(NOT TO SCALE)

MAIN SPAN PIER D



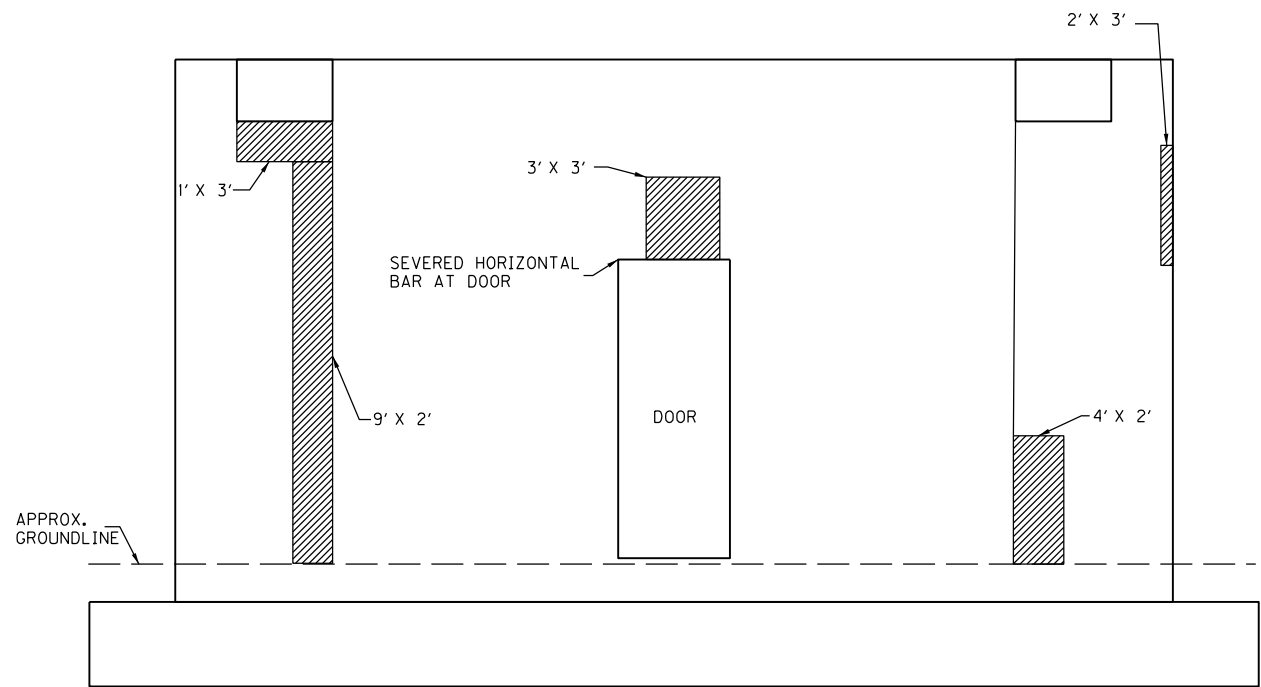
SOUTH FACE
(NOT TO SCALE)



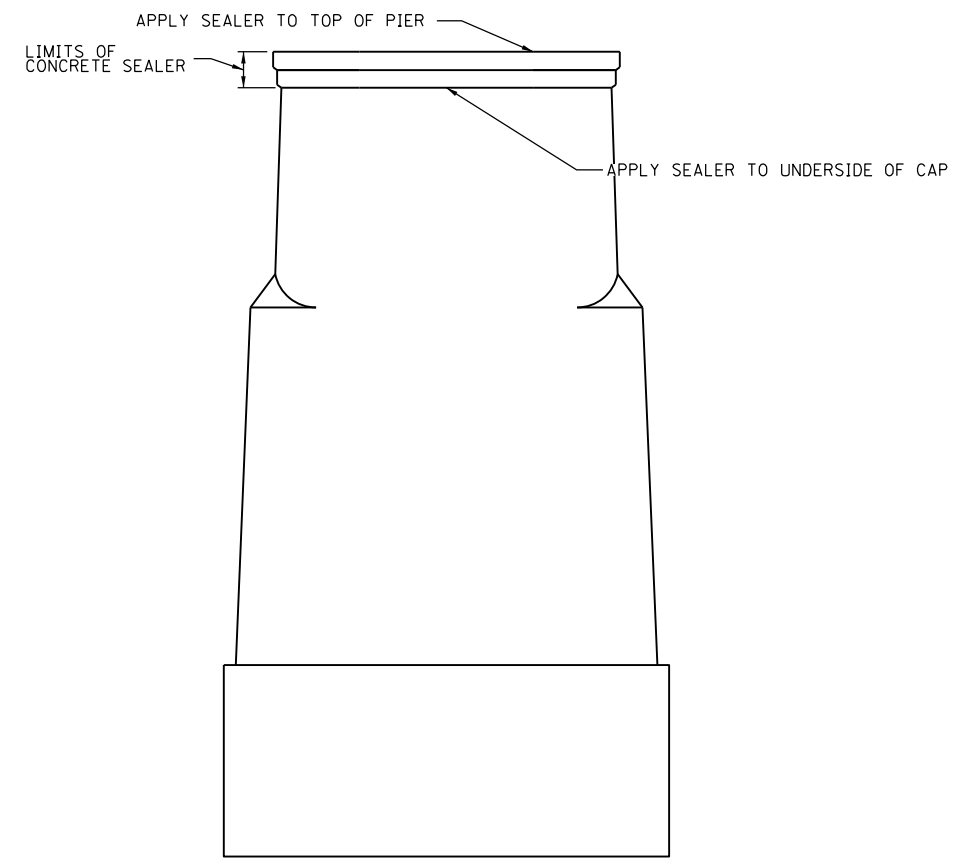
KY APPROACH PIER K-3

NOTE: DIMENSIONS ARE APPROXIMATE FOR ESTIMATING QUANTITIES. FINAL LOCATIONS TO BE REPAIRED AND FINAL QUANTITIES WILL BE DETERMINED BY THE ENGINEER PER THE SPECIAL NOTES. SEE SPECIAL NOTE FOR CONCRETE PATCHING.

- DENOTES AREA TO BE REPAIRED PER SPECIAL NOTE FOR CONCRETE PATCHING REPAIR USING EPOXY MORTAR OR CLASS M CONCRETE
- DENOTES CRACK TO BE REPAIRED PER SPECIAL NOTE FOR EPOXY INJECTION CRACK REPAIR

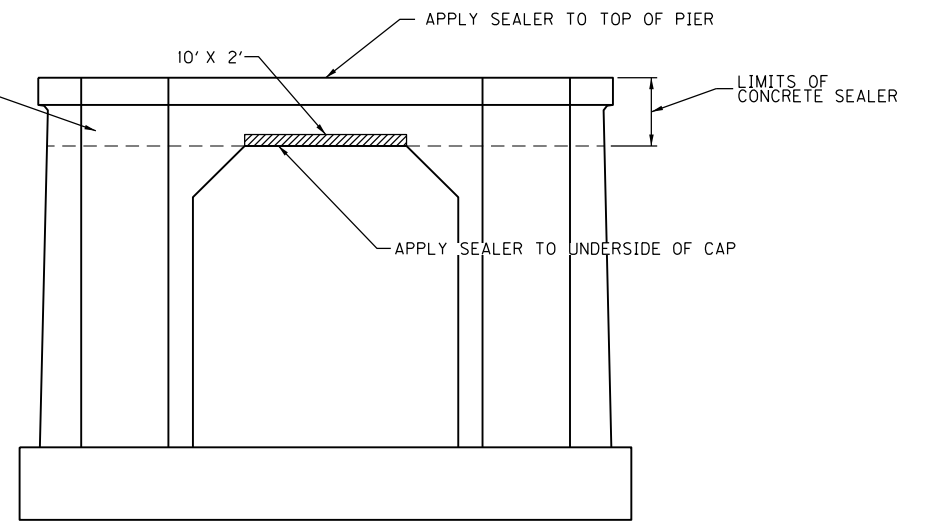


NORTH FACE
(NOT TO SCALE)
SOUTH ABUTMENT



PIER A-D CONCRETE SEALING DETAIL
(NOT TO SCALE)

PLACE A LEVEL LINE OF MASKING TAPE AROUND PIER COLUMN WHERE CONCRETE EDGES DO NOT FORM A NATURAL LINE PRIOR TO APPLYING THE CONCRETE SEALER TO ENSURE A NEAT LINE. REMOVE THE TAPE AFTER THE CONCRETE SEALER HAS CURED ADEQUATELY.



PIER E CONCRETE SEALING DETAIL
(NOT TO SCALE)

LIMITS OF CONCRETE SEALER

APPLY SEALER TO EVERY EXPOSED CONCRETE SURFACE OF THE KENTUCKY ABUTMENT TO THE GROUND LINE ONCE REPAIR NO. 8 IS COMPLETE .

FOR PIERS A-E APPLY CONCRETE SEALER FROM BEAM SEAT TO BOTTOM OF CAP AS DEPICTED.

APPLY CONCRETE SEALER TO ALL FACES OF NEWLY PATCHED CONCRETE.

FOR CONCRETE SEALING INFORMATION SEE SPECIAL NOTE FOR CONCRETE SEALING.



COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS



REVISION	DATE

PREPARED BY
Palmer ENGINEERING

DATE:	OCTOBER 2024	CHECKED BY:	
DESIGNED BY:	J.P. MURRIN	D.E. RUST	
DETAILED BY:	M.B. HAGGARD	J.P. MURRIN	

REPAIR 8 REINFORCED CONCRETE SUBSTRUCTURE REPAIR SHEET 8

CROSSING
OHIO RIVER at OWENSBORO

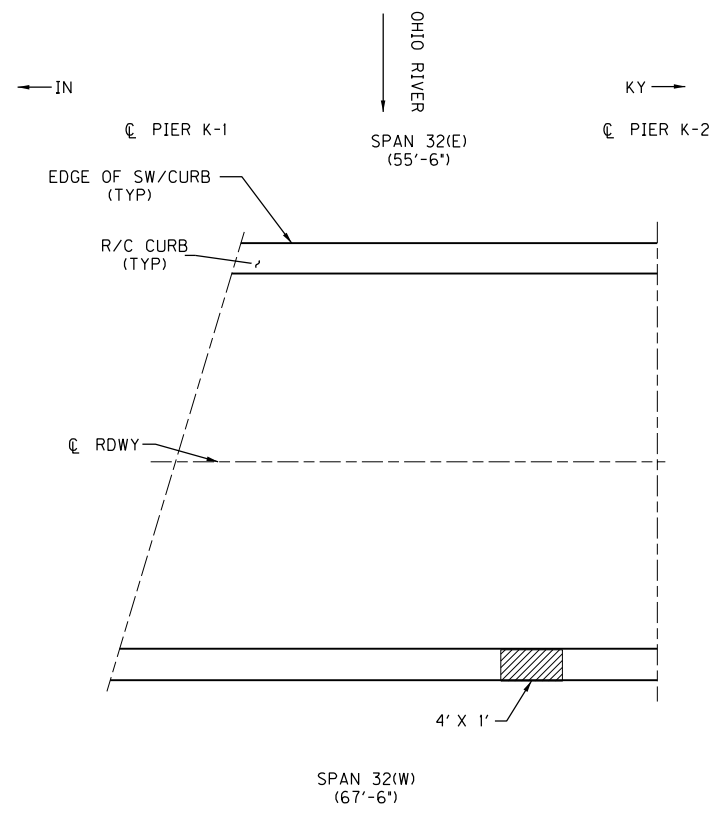
ROUTE
KY 2262

ITEM NO.
2-10020.00

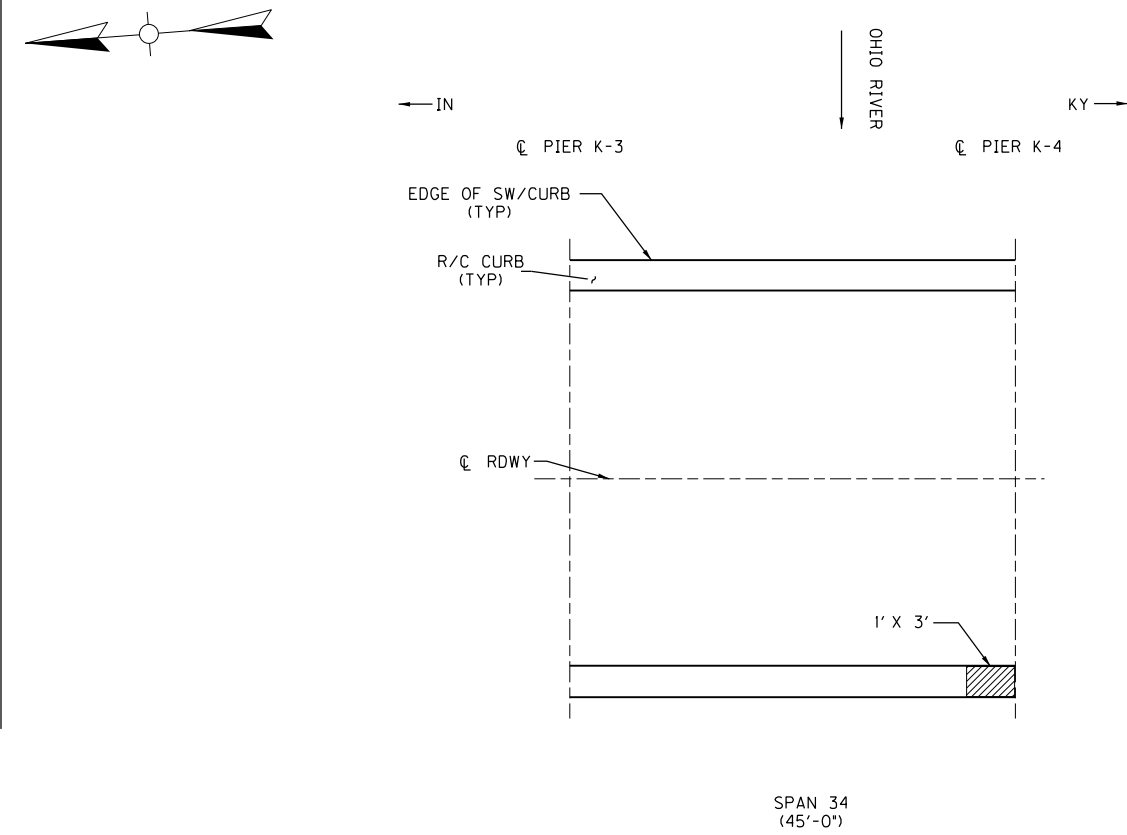
SHEET NO.
S26

COUNTY OF
DAVIESS

DRAWING NUMBER
28812



REPAIR 9 - CURB / SIDEWALK REPAIR (SPAN 32)



REPAIR 9 - CURB / SIDEWALK REPAIR (SPAN 34)

NOTE: DIMENSIONS ARE APPROXIMATE FOR ESTIMATING QUANTITIES. FINAL LOCATIONS TO BE REPAIRED AND FINAL QUANTITIES WILL BE DETERMINED BY THE ENGINEER PER THE SPECIAL NOTES. SEE SPECIAL NOTE FOR CONCRETE PATCHING.

NOTE: EPOXY SLURRY APPLICATION WILL NOT BEGIN UNTIL CURB PATCHING REPAIRS HAVE BEEN COMPLETED.

 - DENOTES AREA TO BE REPAIRED PER SPECIAL NOTE FOR CONCRETE PATCHING REPAIR USING EPOXY MORTAR OR CLASS M CONCRETE

REVISION	DATE

DATE:	OCTOBER 2024	CHECKED BY:	D.E. RUST
DESIGNED BY:	J.P. MURRIN	DETAILED BY:	M.B. HAGGARD
			J.P. MURRIN

ROUTE	ITEM NO.	COUNTY OF
KY 2262	2-10020.00	DAVIESS
	SHEET NO.	DRAWING NUMBER
	S27	28812

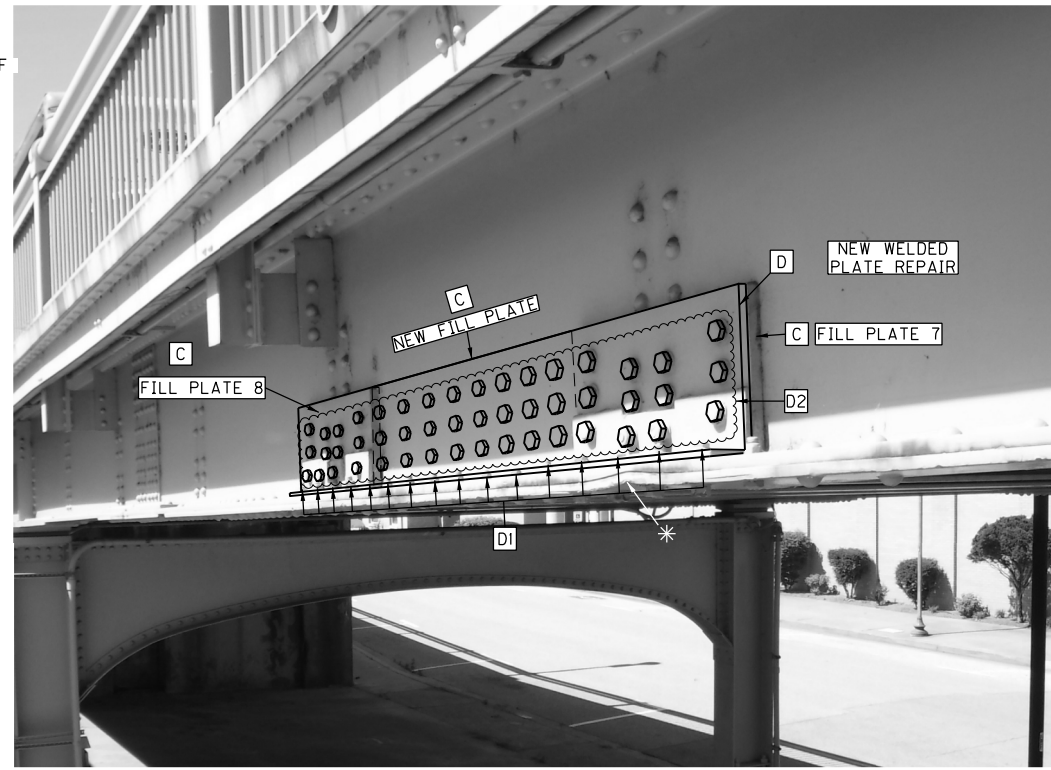
PREPARATION, CONSTRUCTION SEQUENCE

OUTBOARD FACE OF GIRDER 1

- 1A REMOVE 4 BOLTS AND NUTS THAT CONNECT ANGLE 8 TO THE WEB OF THE GIRDER.
- 1B REMOVE 4 NUTS WHILE KEEPING THE BOLTS IN PLACE THAT CONNECT ANGLE 8 TO THE BOTTOM FLANGE OF THE GIRDER.
- 1C REMOVE ANGLE 8.
- 2A REMOVE 8 REMAINING BOLTS THAT CONNECT FILL PLATE 8 TO THE WEB OF THE GIRDER.
- 2B REMOVE FILL PLATE 8.
- 3A REMOVE 4 BOLTS AND NUTS THAT CONNECT ANGLE 7 TO THE WEB OF THE GIRDER.
- 3B REMOVE 4 NUTS, WHILE KEEPING THE BOLTS IN PLACE THAT CONNECT ANGLE 7 TO THE BOTTOM FLANGE OF THE GIRDER.
- 3C REMOVE ANGLE 7.
- 4A REMOVE 8 REMAINING BOLTS THAT CONNECT FILL PLATE 7 TO THE WEB OF THE GIRDER.
- 4B REMOVE FILL PLATE 7.

INBOARD FACE OF GIRDER 1

- 5A REMOVE REMAINING RIVETS THAT ATTACH FLOORBEAM 8 WEB TO GIRDER 1 (13 TOTAL) VIA THE INBOARD ANGLES.
- 5B REMOVE BOTH INBOARD ANGLES ATTACHING FLOORBEAM 8 WEB TO GIRDER 1. THIS SHOULD EXPOSE BOTH ENDS OF THE CRACK. THE FLOORBEAM WILL REMAIN IN PLACE, THROUGHOUT THIS REPAIR.
- 6 INSPECT CRACK LIMITS ON GIRDER 1 AT FLOORBEAM 8 CAREFULLY USING NDE METHODS, SUCH AS MAGNETIC PARTICLE TESTING (MT) OR PENETRANT TESTING (PT), TO IDENTIFY LIMITS OF CRACKING.
- 7 CUT 3/4" DIAMETER CRACK ARREST HOLE IN THE WEB OF THE GIRDER, AT THE END OF THE CRACK. EXTREME CARE SHALL BE TAKEN TO REMOVE ONLY WEB MATERIAL IN THIS STEP. REPEAT THIS STEP AT BOTH ENDS OF THE CRACK. WHEN BOTH ENDS OF THE CRACK ARE ARRESTED, INSPECT AREA AGAIN USING NDE METHODS TO VERIFY NO CRACKS REMAIN.
- 8 REMOVE HEX NUTS (8 TOTAL) FROM THE OUTBOARD BOTTOM FLANGE OF GIRDER 1 BETWEEN FLOORBEAMS 7&8. KEEP THE BOLTS IN PLACE THROUGH THE BOTTOM FLANGE AND COVER PLATE.

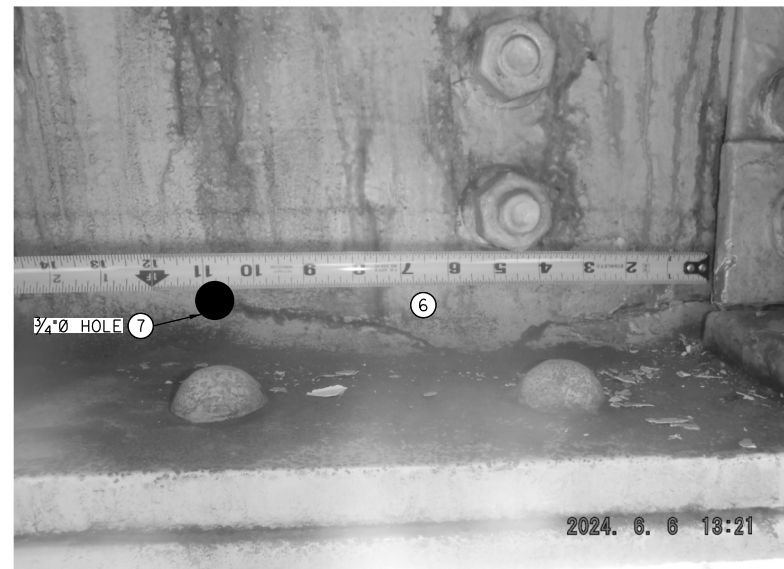


OUTBOARD FACE OF GIRDER 1, SPAN 35, AT FLOORBEAMS 7&8 LOOKING SOUTHWEST
(FILL PLATES AND ANGLES LABELLED BASED ON FLOORBEAM LOCATION)

NOTES:

- 1. SOME STEPS SHOWN IN MULTIPLE VIEWS FOR CLARITY.
- 2. CONTRACTOR SHALL TAKE EXTREME CARE NOT TO DAMAGE ANY MEMBERS AROUND THE REPAIR LOCATION. ANY DAMAGE SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.

SEE *SPECIAL NOTE FOR PAINTING STRUCTURAL STEEL REPAIRS*.
SEE *SPECIAL NOTE FOR STEEL REPAIRS*.

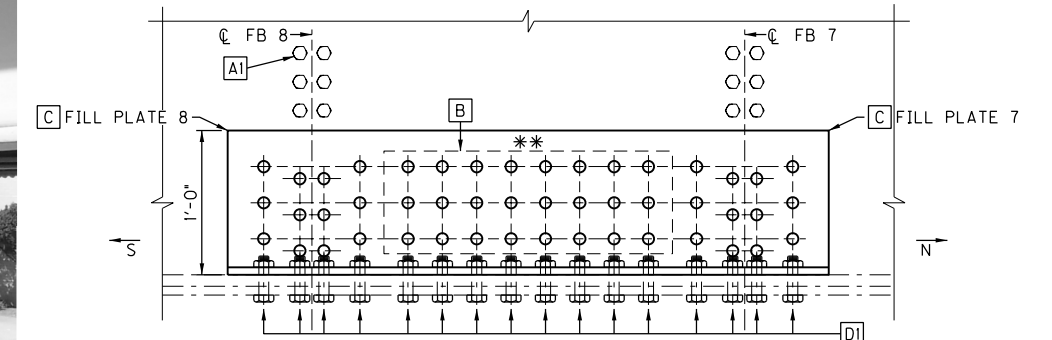


INBOARD FACE OF GIRDER 1, SPAN 35 AT FLOORBEAM 8

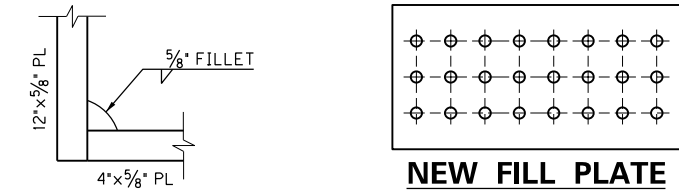
INSTALL REPAIRS, CONSTRUCTION SEQUENCE

REVISED 10/31/24

- A RE-INSTALL BOTH INBOARD ANGLES ATTACHING FLOORBEAM 8 WEB TO GIRDER 1.
- A1 INSTALL NEW HIGH STRENGTH BOLTS AND TIGHTEN PER STANDARD SPECIFICATIONS.
- B DRILL HOLES FOR FILL PLATE AND WELDED REPAIR PLATE (24 TOTAL).
- C RE-POSITION FILL PLATE 7, THE NEW FILL PLATE, AND FILL PLATE 8 INTO PLACE USING NEW HIGH STRENGTH BOLTS.
- D INSTALL NEW WELDED REPAIR PLATE.
- D1 REPLACE THE BOLTS IN THE BOTTOM FLANGE, ONE AT A TIME, WITH EXTENDED LENGTH BOLTS. TIGHTEN THE BOLTS/HEX NUTS PER STANDARD SPECIFICATIONS.
- D2 INSTALL THE WEB NUTS AND TIGHTEN PER STANDARD SPECIFICATIONS.



GIRDER 1 OUTBOARD FACE
NEW 12"x4"x5/8" WELDED REPAIR PLATE



NEW FILL PLATE

- * HEAT STRAIGHTENING OF THE BOTTOM FLANGE MAY BE REQUIRED TO INSTALL WELDED REPAIR PLATE.
- ** CONTRACTOR TO FIELD VERIFY ALL EXISTING PLATE DIMENSIONS, THICKNESS, AND BOLT SPACINGS, AND MATCH NEW REPAIRS TO FIELD CONDITIONS. BOLT SPACING TO BE UNIFORM AND ≤ 7" MIN. EDGE DISTANCE FOR 3/8" Ø BOLTS IS 1.5"



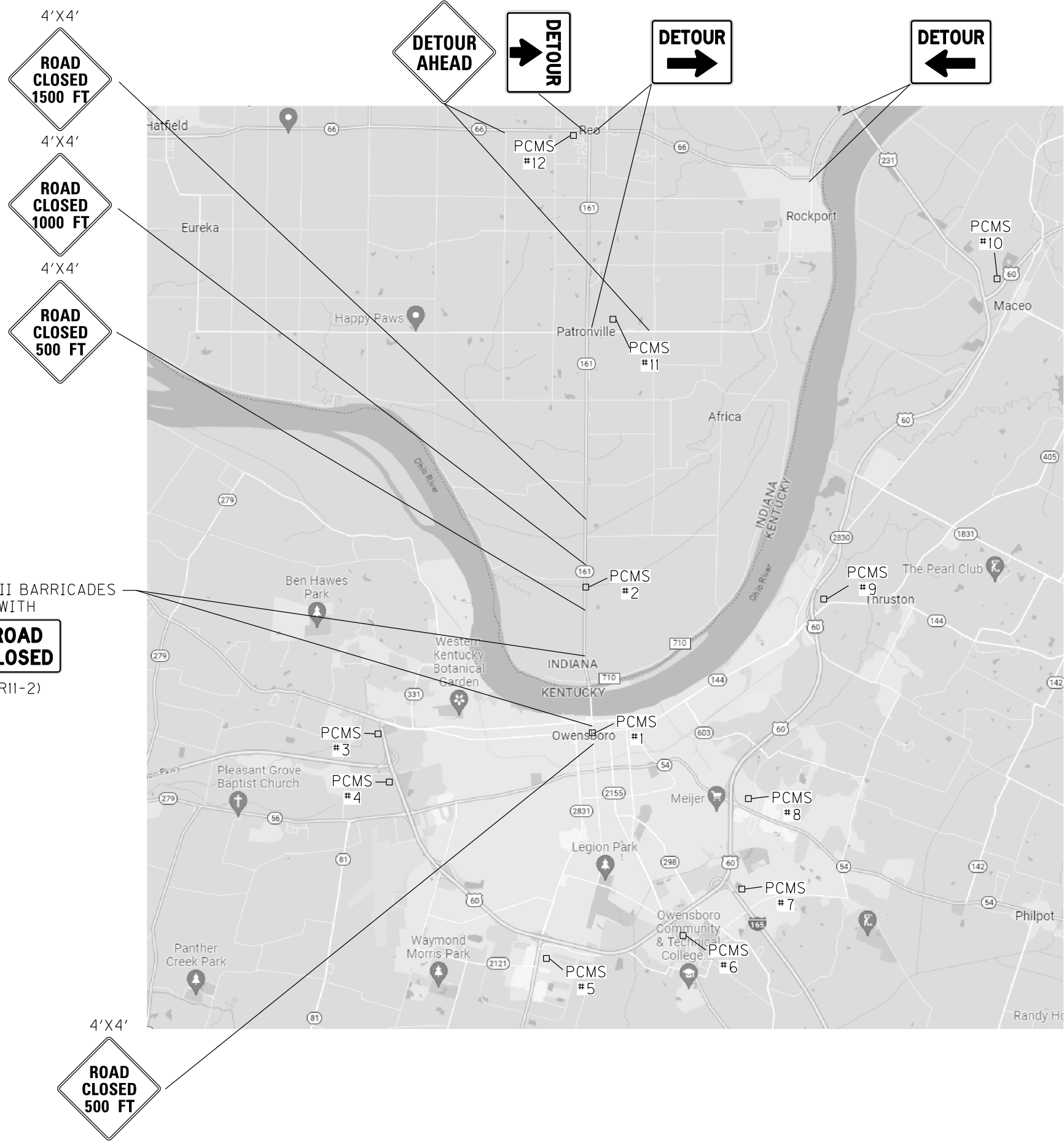
OUTBOARD FACE OF GIRDER 1, SPAN 35, AT FLOORBEAMS 7&8 LOOKING SOUTHWEST

(FILL PLATES AND ANGLES LABELLED BASED ON FLOORBEAM LOCATION)



INBOARD FACE OF GIRDER 1, SPAN 35 AT FLOORBEAM 8

	REVISION	DATE	PREPARED BY	DATE:	CHECKED BY	REPAIR 13 - GIRDER 1 CRACK REPAIR, SPAN 35 CROSSING OHIO RIVER at OWENSBORO	ROUTE	ITEM NO.	COUNTY OF
				OCTOBER 2024	D.E. RUST		KY 2262	2-10020.00	DAVIESS
				DESIGNED BY:	J.P. MURRIN		SHEET NO.	DRAWING NUMBER	
				DETAILED BY:	M.B. HAGGARD	J.P. MURRIN	S29	28812	



(2) TYPE III BARRICADES WITH
ROAD CLOSED
 (R11-2)

PORTABLE CHANGEABLE MESSAGE SIGNS
 INSTALL AND OPERATE PORTABLE CHANGEABLE MESSAGE SIGN(S) TO NOTIFY TRAVELERS OF UPCOMING BRIDGE CLOSURE.
 PCMS #1 AND #2 SHALL BE IN PLACE AT LEAST TWO (2) WEEKS PRIOR TO THE START OF CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL THE START OF CONSTRUCTION.

MESSAGE DISPLAY	
PHASE 1	PHASE 2
BRIDGE TO BE CLOSED	* BEGIN THROUGH **END

*CONTRACTOR SHALL USE SELECTED START DATE
 **CONTRACTOR SHALL USE PLANNED COMPLETION DATE

PCMS #1 THROUGH #12 SHALL BE IN PLACE AT THE START OF CONSTRUCTION AND SHALL REMAIN IN PLACE FOR THE DURATION OF CONSTRUCTION.

MESSAGE DISPLAY	
PHASE 1	PHASE 2
DOWNTOWN BRIDGE CLOSED	DETOUR VIA US 231

SEE SPECIAL NOTE FOR TRAFFIC CONTROL

ENVIRONMENTALLY CLEARED AREA COORDINATES

Lat	Long
37.77400549	-87.10877736
37.77454053	-87.10881237
37.77480805	-87.10876568
37.7802461	-87.10919172
37.78114091	-87.10935514
37.78187891	-87.10946603
37.78657966	-87.11084309
37.78660272	-87.11072053
37.78190269	-87.10938397
37.78115086	-87.10925557
37.78024219	-87.10908631
37.77479493	-87.10867196
37.77401082	-87.10860777
37.77400549	-87.10877736

NOTE: THE AREA BENEATH THE BRIDGE IS NOT INCLUDED IN THE ENVIRONMENTALLY CLEARED AREA AND SHALL NOT BE DISTURBED



COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS



REVISION	DATE

PREPARED BY
Palmer
ENGINEERING

DATE:	OCTOBER 2024	CHECKED BY:	
DESIGNED BY:			
DETAILED BY:	J.A. ROSE	D.E. RUST	

ENVIRONMENTALLY CLEARED AREA
CROSSING
OHIO RIVER at OWENSBORO

ROUTE
KY 2262

ITEM NO.
2-10020.00
SHEET NO.
E01

COUNTY OF
DAVIESS
DRAWING NUMBER
28812