

LETTING DATE

CONSTRUCTION PROJECT NO.

TRANSPORTATION CABINET DEPARTMENT OF HIGHWAYS

CARROLL COUNTY US 42 OVER KENTUCKY RIVER BRIDGE 021B00043N SUPERSTRUCTURE REPAIRS

INDEX OF SHEETS

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S6	L9 AND L21 REPAIR DETAIL
S7	PIER 7 CROSSFRAME RETROFIT
S8	PIER 7 JACKING BEAM

SPECIAL NOTES

FOR TRAFFIC CONTROL ON BRIDGE REPAIR CONTRACTS
FOR CONTRACT COMPLETION DATE AND LIQUIDATED DAMAGES ON BRIDGE REPAIR CONTRACT
FOR PAINTING STRUCTURAL STEEL REPAIRS
FOR STEEL REPAIRS ON BRIDGE REPAIR CONTRACTS
FOR BEARING PREVENTATIVE MAINTENANCE

SPECIAL PROVISIONS

SPECIFICATIONS

2019 STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION
2020 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS
2017 AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS

MOT ESTIMATE OF QUANTITIES

BID ITEM CODE	02650	02562	02671	04933	06549	06550	06551	06556	06557	23010EN
BID ITEM	MAINTAIN & CONTROL TRAFFIC	TEMPORARY SIGNS	PORTABLE CHANGEABLE MESSAGE SIGN	TEMP SIGNAL 2 PHASE	PAVE STRIPING-TEMP REM TAPE-B	PAVE STRIPING-TEMP REM TAPE-W	PAVE STRIPING-TEMP REM TAPE-Y	PAVE STRIPING-DUR TY 1-6 IN W	PAVE STRIPING-DUR TY 1-6 IN Y	PAVE MARK TEMP PAINT STOP BAR - 24 IN
UNIT	LS	SF	EACH	EACH	LF	LF	LF	LF	LF	LF
BRIDGE TOTALS	1	272	4	2	1100	1000	1000	2000	2000	24

ESTIMATE OF QUANTITIES

BID ITEM CODE	02568	02569	03305	24879EC	24879EC	24879EC
BID ITEM	MOBILIZATION	DEMOBILIZATION	RESET BEARING SHOE	STEEL REPAIR - PIER 7 JACK BEAMS	STEEL REPAIR - LOWER CHORD L0-L1	STEEL REPAIR - GUSSETS
UNIT	LS	LS	EACH	EACH	EACH	EACH
BRIDGE TOTALS	1	1	4	1	2	8

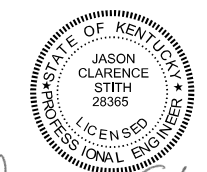
PLANS PREPARED BY:



Michael Baron

MICHAEL BARON, P.E.
KY NO. 20841

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Jason Stith

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COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS



REVISION	DATE

PREPARED BY
1650 Lyndon Farm Court
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Phone: (502)-339-3557
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DATE: 05/10/24

DESIGNED BY: M BARON

DETAILED BY: MJ DWYER

CHECKED BY

D BARON

D BARON

TITLE SHEET

CROSSING
KENTUCKY RIVER

ROUTE
US 42

ITEM NO.
SHEET NO.
S1

COUNTY OF
CARROLL
DRAWING NUMBER
28869

GENERAL NOTES

GENERAL: THESE PLANS ARE USED FOR RETROFITTING GUSSET PLATES AND THE LOWER CHORD AS DESIGNATED AND FOR RETROFITTING THE END CROSSFRAME FOR JACKING FOR BEARING RESETTING AT PIER 7.

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 FOURTH EDITION 2017 AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS AND THE 2020 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, NINTH EDITION.

MATERIAL SPECIFICATIONS:

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

	A.S.T.M.	AASHTO
STRUCTURAL STEEL	A709, GR 50	M270, GR 50
HIGH STRENGTH BOLTS, NUTS AND WASHERS	F3125, GR. A325	M164

ALL NEW TRUSS STEEL SHALL BE ASTM A709, GRADE 50 (FCM). GUSSET, SHIM AND FILL PLATES SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TEST APPLICABLE TO ZONE 2 MINIMUM SERVICE TEMPERATURE FROM 1° TO 30°F, IN ACCORDANCE WITH THE FOLLOWING: M270 GR 50 OF 25 FT-LBS AT 40°F.

MATERIALS DESIGN SPECIFICATIONS:

FOR STRUCTURAL STEEL (NEW)
FY = 50000 PSI FOR GRADE 50

FOR STRUCTURAL STEEL (EXISTING)
FY = 33000 PSI FOR ASTM A7 AND A373
FY = 36000 PSI FOR ASTM A36

COMPLETION OF THE STRUCTURE: THE CONTRACTOR IS REQUIRED TO COMPLETE THE STRUCTURE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. MATERIAL, LABOR, OR CONSTRUCTION OPERATIONS NOT OTHERWISE SPECIFIED, ARE TO BE INCLUDED IN THE BID ITEM MOST APPROPRIATE TO THE WORK INVOLVED AND OTHERWISE CONSIDERED INCIDENTAL TO THE CONTRACT. THIS MAY INCLUDE COFFERDAMS, SHORING, EXCAVATIONS, BACKFILLING, REMOVAL OF ALL OR PARTS OF EXISTING STRUCTURES, PHASE CONSTRUCTION, INCIDENTAL MATERIALS, LABOR, OR ANYTHING ELSE REQUIRED TO COMPLETE THE STRUCTURE.

UTILITIES: BEFORE BEGINNING WORK, LOCATE ALL EXISTING UTILITIES THAT COULD IMPACT THE WORK AREAS. THE INTENT IS TO WORK AROUND AND AVOID DISTURBING THE EXISTING UTILITIES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE, DEACTIVATE AND COORDINATE ACTIVITIES WITH THE UTILITY OWNER, AS NECESSARY.

VERIFYING FIELD CONDITIONS: THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS BEFORE ORDERING MATERIAL. NEW MATERIAL THAT IS UNSUITABLE BECAUSE OF VARIATIONS IN THE EXISTING STRUCTURE SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

DIMENSIONS: DIMENSIONS ARE FOR A NORMAL TEMPERATURE OF 60 DEGREES FAHRENHEIT. LAYOUT DIMENSIONS ARE HORIZONTAL DIMENSIONS.

PAYMENT FOR STRUCTURAL STEEL REPAIRS: THE UNIT BID FOR STRUCTURAL STEEL REPAIRS SHALL BE FULL PAYMENT FOR ALL STRUCTURAL STEEL, BOLTS, WASHERS AND ALL LABOR AND MATERIALS NECESSARY TO ERECT THE STEEL IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.

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

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 OF STRUCTURAL DESIGN AND THEN ONLY IN THE MANNER AND AT THE LOCATIONS DESIGNATED IN THE AUTHORIZATION.

HIGH STRENGTH BOLT CONNECTIONS: UNLESS OTHERWISE SPECIFIED IN THE PLANS, ALL BOLTED CONNECTIONS TO BE ASTM F3125 GRADE A325 7/8" DIAMETER HIGH STRENGTH BOLTS, NUTS, AND WASHERS. OPEN HOLES SHALL BE 1/16" LARGER THAN THE DIAMETER OF THE BOLTS. FURNISH TYPE 1 GALVANIZED BOLTS AS DESCRIBED IN AASHTO M164. 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 DTIS SHALL BE SUITABLE FOR USE WITH GALVANIZED STEEL BOLTS. INSTALLATION DETAILS OF THE DTI'S SHALL BE SHOWN ON THE SHOP PLANS. ANY 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. BOLT THREADS SHALL BE EXCLUDED FROM THE SHEAR PLANE IN ALL BOLTED CONNECTIONS, UNLESS OTHERWISE NOTED.

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 IS TO BE INCIDENTAL TO THE CONTRACT.

VERIFYING FIELD CONDITIONS: THE CONTRACTOR IS NOT TO ORDER ANY MATERIALS, PRODUCE ANY SHOP DRAWINGS, OR BEGIN ANY CONSTRUCTION ACTIVITIES UNTIL AFTER VERIFYING DIMENSIONS AND CONDITIONS IN THE FIELD. DIMENSIONS AND DETAILS SHOWN ON THESE PLANS IN RELATION TO THE EXISTING STRUCTURE SHALL BE CONSIDERED APPROXIMATE. EXISTING PLANS, IF AVAILABLE, SHALL NOT BE CONSIDERED ACCURATE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD AND TO NOTIFY THE PROJECT ENGINEER AND THE DESIGNER OF ANY DIFFERENCES. FAILURE TO NOTIFY EITHER MAY DELAY DRAWING AND OTHER APPROVALS. THEREAFTER MAKE THE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING MATERIALS. ALL SPECIFICATION REQUIREMENTS SHALL REMAIN IN EFFECT. ANY VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN THE SCOPE OF WORK; HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT PRICE BID FOR THE WORK.

PLANS OF EXISTING STRUCTURE: PLANS OF THE EXISTING STRUCTURE ARE AVAILABLE AS AN AID TO THE CONTRACTOR AND SHALL BE USED TO SUPPLEMENT DETAILS NOT SHOWN ON THE PLANS. THE COMPLETENESS OF THESE DRAWINGS IS NOT GUARANTEED, AND NO RESPONSIBILITY IS ASSUMED BY KYTC FOR THEIR ACCURACY. ORIGINAL PLANS INCLUDE:

BRIDGE OVER KENTUCKY RIVER AT CARROLLTON	DN
7952	
BRIDGE 021B00043N SUPERSTRUCTURE STEEL REHABILITATION	DN
27643	

CONSTRUCTION LOAD: THE CONTRACTOR SHALL ABIDE BY THE POSTED BRIDGE LIMITS. STORAGE OF MATERIAL ON THE BRIDGE IS PROHIBITED.

DAMAGE TO THE STRUCTURE: THE CONTRACTOR SHALL BEAR FULL RESPONSIBILITY AND EXPENSE FOR REPAIR OF ANY AND ALL DAMAGE TO THE STRUCTURE, SHOULD SUCH DAMAGE RESULT FROM THE CONTRACTOR'S ACTIONS. 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. 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.

MAINTENANCE OF TRAFFIC: MAINTAIN TRAFFIC ON THE BRIDGE AT ALL TIMES IN ACCORDANCE WITH THE PLANS AND SPECIAL NOTE FOR TRAFFIC CONTROL ON BRIDGE REPAIR CONTRACTS.

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

LEAD PAINT (RESIDUAL): THE CONTRACTOR IS ADVISED TO TAKE ALL NECESSARY PROTECTIVE MEASURES, INCLUDING WORKER SAFETY AND ENVIRONMENTAL REGULATIONS, WHEN PERFORMING SURFACE PREPARATION AND/OR REMOVAL WORK. THE DEPARTMENT WILL NOT CONSIDER ANY CLAIMS BASED ON RESIDUAL LEAD PAINT.

STRUCTURAL STEEL REPAIR FABRICATION: STEEL REPAIRS AND STRUCTURAL STEEL ITEMS FALL UNDER SECTION 607.03.02 (A). SHOP FABRICATED MATERIALS FOR REINFORCING EXISTING BRIDGES REQUIRES AN AISC SBR, IBR OR ABR CERTIFICATION.

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.

RESET BEARINGS AT PIER 7: THIS WORK CONSISTS OF FURNISHING ALL LABOR, MATERIALS, TOOLS, AND EQUIPMENT FOR JACKING AND RESETTING BEARINGS AT PIER 7, SPAN 7. THE CONTRACTOR IS RESPONSIBLE FOR THE COMPLETE DESIGN OF THE BRIDGE LIFTING PROCEDURES AND THE MATERIALS USED. FURNISH AND PLACE ALL BRACING, BLOCKING, TEMPORARY STRUCTURAL STEEL, SHIMS, WEDGES, HYDRAULIC JACKS, AND ANY OTHER MATERIALS AND EQUIPMENT NECESSARY FOR PROPER EXECUTION OF THE WORK.

THE CONTRACTOR SHALL DEVELOP PLAN AND SUPPORTING CALCULATIONS FOR JACKING AND BLOCKING. ALL JACKS AND TEMPORARY SUPPORT SYSTEMS SHALL BE DESIGNED TO SUSTAIN DESIGNATED TRAFFIC LOADINGS, DEAD LOAD, TEMPORARY CONSTRUCTION LOADS, AND ALL OTHER ANTICIPATED LOADING DURING WORK REQUIRING THE JACKING AND BLOCKING OF BEAMS. THE DESIGN SHALL BE IN ACCORDANCE WITH CURRENT AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

THE CONTRACTOR SHALL SUBMIT DETAILS AND CALCULATIONS OF THE PROPOSED JACKING SYSTEMS FOR REVIEW BY THE ENGINEER BEFORE COMMENCING WORK. THE CONTRACTOR'S JACKING PLANS AND PROCEDURES SHALL BE DESIGNED AND SEALED BY A KENTUCKY LICENSED PROFESSIONAL ENGINEER.

THE CONTRACTOR SHALL MONITOR THE JACKING PROCEDURE TO ENSURE THAT JACKING DOES NOT CAUSE DAMAGE AT ANY LOCATION IN THE SPANS. IF THERE IS ANY EVIDENCE OF DAMAGE OR UNUSUAL SITUATION OCCURRING DURING THE JACKING OPERATIONS AT ANY LOCATION ALONG THE SPAN, THE CONTRACTOR SHALL TAKE CORRECTIVE ACTIONS AND NOTIFY THE ENGINEER IMMEDIATELY.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE STRUCTURE CAUSED BY JACKING. NO STRUCTURAL ELEMENTS SHALL BE REMOVED FROM THE EXISTING STRUCTURE WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

SIZE JACKS FOR AT LEAST 200 PERCENT OF THE CALCULATED LIFTING LOAD. THE MINIMUM JACK CAPACITY SHALL BE AS NOTED IN THE PLANS. THE JACKS AND THE JACKING SUPPORTS SHALL BE PLUMB AND PLACED AT LOCATIONS OF LEVEL AND SOUND CONCRETE. MONITOR LATERAL DEFLECTION OF THE JACKING SYSTEM TO ENSURE THAT THE JACKING SYSTEM REMAINS PLUMB. JACKING SHALL BE PERFORMED UNDER DESIGNATED TRAFFIC CONDITIONS.

BEAMS TO BE JACKED AND BLOCKED AND SHALL NOT BE JACKED MORE THAN 1/8 INCH OR AS DIRECTED BY THE ENGINEER. THE DIFFERENCE IN ELEVATION BETWEEN ADJACENT BEAMS DURING THE JACKING AND BLOCKING SHALL NOT BE GREATER THAN 1/8 INCH. SUITABLE GAUGES FOR THE MEASUREMENT OF SUPERSTRUCTURE MOVEMENT SHALL BE FURNISHED BY THE CONTRACTOR.

BEARING STIFFENERS ARE ADDED TO THE NEW BEAM DIRECTLY ABOVE THE JACKING POINT TO EFFECTIVELY TRANSFER THE REACTION TO THE JACKS. PROVIDE JACKS WITH A LOCKING NUT SYSTEM TO RETAIN THE LOADS WITHOUT RELYING ON MAINTAINING THE HYDRAULIC PRESSURE FOR THE ENTIRE TIME THAT THE LOAD IS ENGAGED. PROVIDE CHANNEL SHIMS FOR SUPPLEMENTARY SUPPORT DURING BEARING RESET WORK.

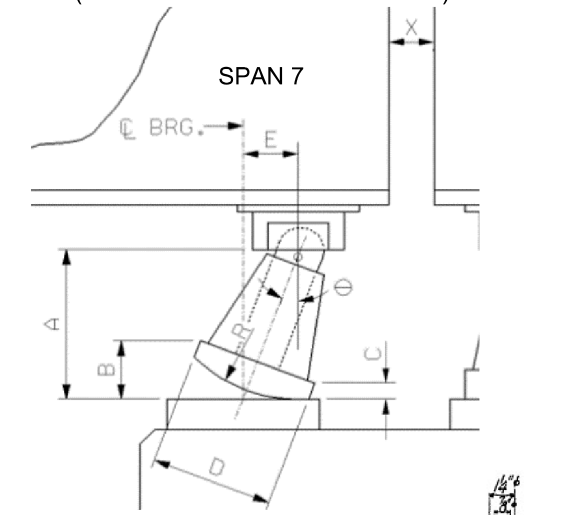
PAYMENT FOR ALL LABOR, ENGINEERING, MATERIALS, TOOLS, EQUIPMENT, JACKING SYSTEM, ACCESS, AND INCIDENTALS INCLUDING RESETTING BEARINGS SHALL BE INCLUDED IN THE UNIT BID PRICE FOR RESET BEARING SHOE.

COST TO INSTALL NEW PERMANENT JACK SUPPORT BEAMS AT PIER 7 ARE PAID AS PART OF THE UNIT BID PRICE FOR STEEL REPAIR - PIER 7 JACK BEAMS.

PRESSURE WASHING: ALL WASTE MATERIALS GENERATED BY THIS PROJECT, INCLUDING, BUT NOT LIMITED TO, WASHING WITH CLEANING SOLVENTS, PRESSURE WASHING, SCRAPING, BRUSHING AND OTHER CLEANING OPERATIONS, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE CONTAINED, COLLECTED AND PROPERLY DISPOSED OF BY THE CONTRACTOR. CONTRACTOR AGREES TO FULLY COMPLY WITH ALL FEDERAL, STATE, AND LOCAL ENVIRONMENTAL LAWS, REGULATIONS, STATUTES AND ORDINANCES AT ALL TIMES.

BEARING ALIGNMENT DETAIL

(LOOKING SOUTH AT GIRDER 4)



A = as-inspected height of rocker (in.)
 B = high corner of rocker plate (in.)
 C = low corner of rocker plate (in.)
 D = width of rocker plate (in.)
 E = longitudinal translation (in.)
 R = radius of rocker plate (in.)
 X = minimum clear distance between girders or from girder to abutment (in.)
 θ = angle of rotation (tilt) (degrees)

Temperature	Acceptable Range of Tilt					
	E from 60F		e from 60F		E max	
	in.	deg	in.	deg	in.	deg
-10	-0.76	-4.4	-2.25	-12.7	0.94	5.4
0	-0.66	-3.7	-2.14	-12.1	1.05	6.0
10	-0.55	-3.1	-2.03	-11.5	1.16	6.6
20	-0.44	-2.5	-1.92	-10.9	1.27	7.2
30	-0.33	-1.9	-1.81	-10.3	1.38	7.8
40	-0.22	-1.3	-1.70	-9.7	1.49	8.5
50	-0.11	-0.6	-1.59	-9.1	1.59	9.1
60	0.00	0.0	-1.49	-8.5	1.70	9.7
70	0.11	0.6	-1.38	-7.8	1.81	10.3
80	0.22	1.3	-1.27	-7.2	1.92	10.9
90	0.33	1.9	-1.16	-6.6	2.03	11.5
100	0.44	2.5	-1.05	-6.0	2.14	12.1
110	0.55	3.1	-0.94	-5.4	2.25	12.7

E from 60F	- Movement (@ listed temperature) calculated from vertical position at 60° F.
e from 60F	- Tilt angle (@ listed temperature) measured from a vertical line at the CL bearings corresponding to the theoretical bridge thermal movement.
E min	- Movement (@ listed temperature) corresponding to the bearing being contracted to the minimum limit at -10° F.
e min	- Tilt angle (@ listed temperature) measured from a vertical line at the CL bearings corresponding to the bearing being contracted to the minimum
E max	- Movement (@ listed temperature) corresponding to the bearing being expanded to the maximum limit at 110° F.
e max	- Tilt angle (@ listed temperature) measured from a vertical line at the CL bearings corresponding to the bearing being expanded to the maximum

NOTES:

1. AT TIME OF RESETTING THE BEARINGS, THE ENGINEER WILL PROVIDE THE RECOMMENDED BEARING RESET VALUE BASED ON THE ALLOWABLE BEARING TILT TABLE AND TEMPERATURE.
2. THE BEARING RESETTING SHALL REUSE THE EXISTING BOLT HOLES IN GIRDER FLANGE. SEE "BEARING CLEANING AND MAINTENANCE NOTES" SHEET NO. S8, NOTES 4 AND 5.
3. CONTRACTOR SHALL NOTIFY THE ENGINEER IF THE PINTLE IS NOT ENGAGED OR IF THE BEARING RESET FALLS OUTSIDE THE ALLOWABLE TOLERANCE FOR E_{min} TO E_{max}.



COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS



TEAM KENTUCKY
TRANSPORTATION
CABINET

REVISION	DATE

PREPARED BY
1850 Lyndon Farm Court
Louisville, KY
Phone: (502)-339-3557
MBAKERINTL.COM

DATE: 05/10/24

CHECKED BY

DESIGNED BY: M BARON

D BARON

DETAILED BY: MJ DWYER

D BARON

GENERAL NOTES

CROSSING
KENTUCKY RIVER

ROUTE

US 42

ITEM NO.

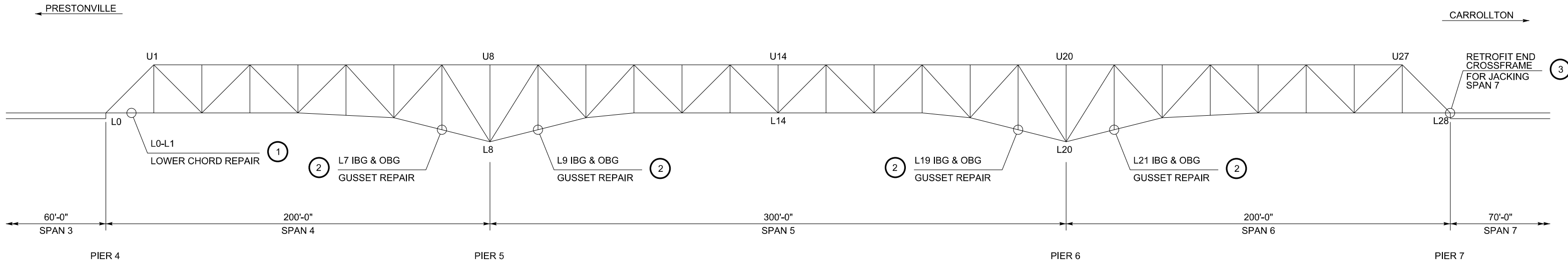
S2

COUNTY OF

CARROLL

DRAWING NUMBER

28869



TRUSS ELEVATION

UPSTREAM TRUSS SHOWN
DOWNSTREAM TRUSS SIMILAR

REPAIR LEGEND

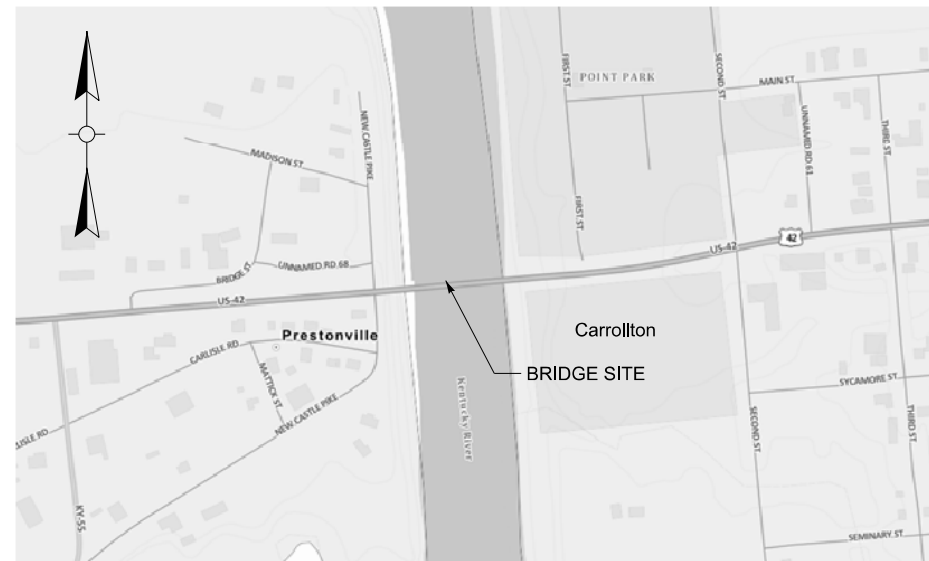
- ① LOWER CHORD STEEL PLATING REPAIR
- ② LOWER GUSSET STEEL PLATING REPAIR
- ③ RETROFIT END CROSSFRAME FOR JACKING AT PIER 7, SPAN 7 SIDE, AND RESET EXISTING GIRDER BEARINGS G1 THRU G4

NOTES

1. ONLY ONE GUSSET REPAIR LOCATION MAY BE WORKED ON AT A TIME.
2. THE LOWER CHORD STEEL REPAIR CAN BE WORKED ON CONCURRENTLY WITH THE GUSSET STEEL REPAIR.
3. COMPLETE ALL WORK ALONG A TRUSS LINE BEFORE BEGINNING WORK ON THE OTHER TRUSS LINE.
4. THE GRATING BETWEEN THE SIDEWALK AND TRUSS MAY BE REMOVED TO PROVIDE ACCESS FOR THE GUSSET REPAIRS. CONTRACTOR TO RESET THE GRATING, TO THE SATISFACTION OF THE ENGINEER, BEFORE REOPENING THE SIDEWALK TO PUBLIC ACCESS. ANY COST IS CONSIDERED INCIDENTAL TO THE GUSSET STEEL REPAIRS.
5. THE JACKING FRAME AT PIER 7 CAN BE INSTALLED BEFORE OR CONCURRENTLY WITH THE OTHER STEEL REPAIRS.
6. JACKING AND RESETTING OF THE APPROACH GIRDER BEARINGS AT PIER 7 MUST OCCUR DURING THE APPROPRIATE LANE CLOSURE. SEE SPECIAL NOTE FOR TRAFFIC CONTROL ON BRIDGE REPAIR CONTRACTS.

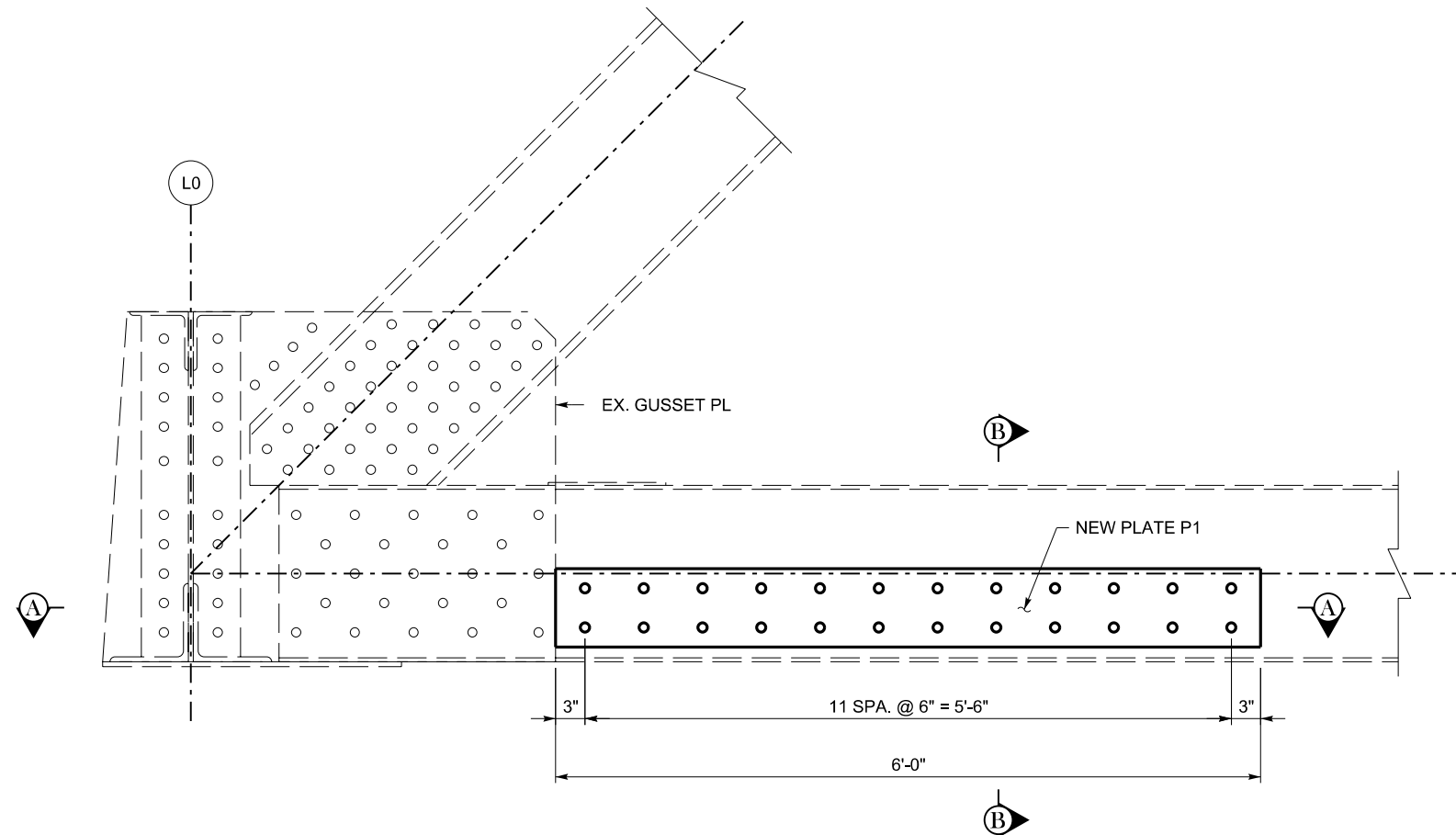
LEGEND

- U UPPER CHORD
- L LOWER CHORD
- IBG INBOARD GUSSET PLATE
- OBG OUTBOARD GUSSET PLATE

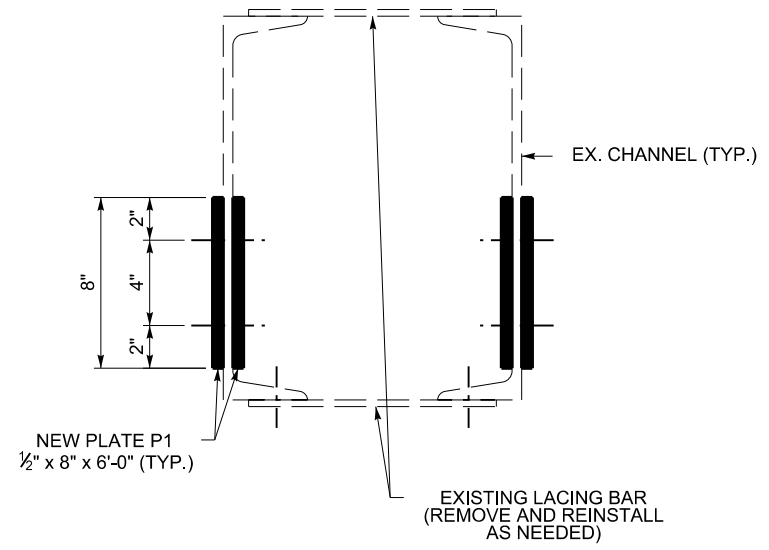


LOCATION MAP

	REVISION	DATE	PREPARED BY 1650 Lyndon Farm Court Louisville, KY Phone: (502)-339-3557 MBAKERINTL.COM	DATE: 05/10/24	CHECKED BY	REPAIR LOCATIONS CROSSING KENTUCKY RIVER	ROUTE	ITEM NO.	COUNTY OF
				DESIGNED BY: M BARON	D BARON		US 42	SHEET NO. S3	CARROLL
MicroStation v10.17.02.61	USER: \$\$\$USER\$\$\$	DATE PLOTTED: \$\$\$DATE\$\$\$	FILE NAME: \$\$\$designFile\$specification\$\$\$	DETAILED BY: MJ DWYER	D BARON			DRAWING NUMBER 28869	

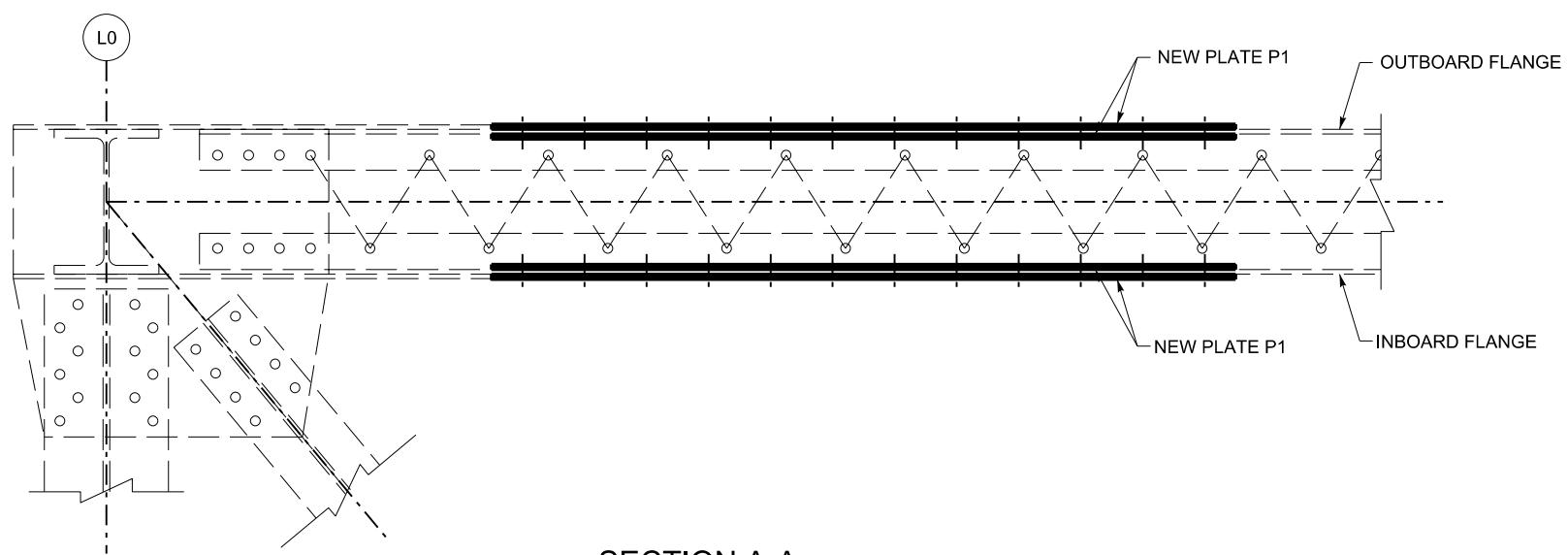


ELEVATION
 INBOARD FLANGE SHOWN
 OUTBOARD FLANGE SIMILAR



(4) PLATES P1 FOR UPSTREAM TRUSS
 (4) PLATES P1 FOR DOWNSTREAM TRUSS

SECTION B-B

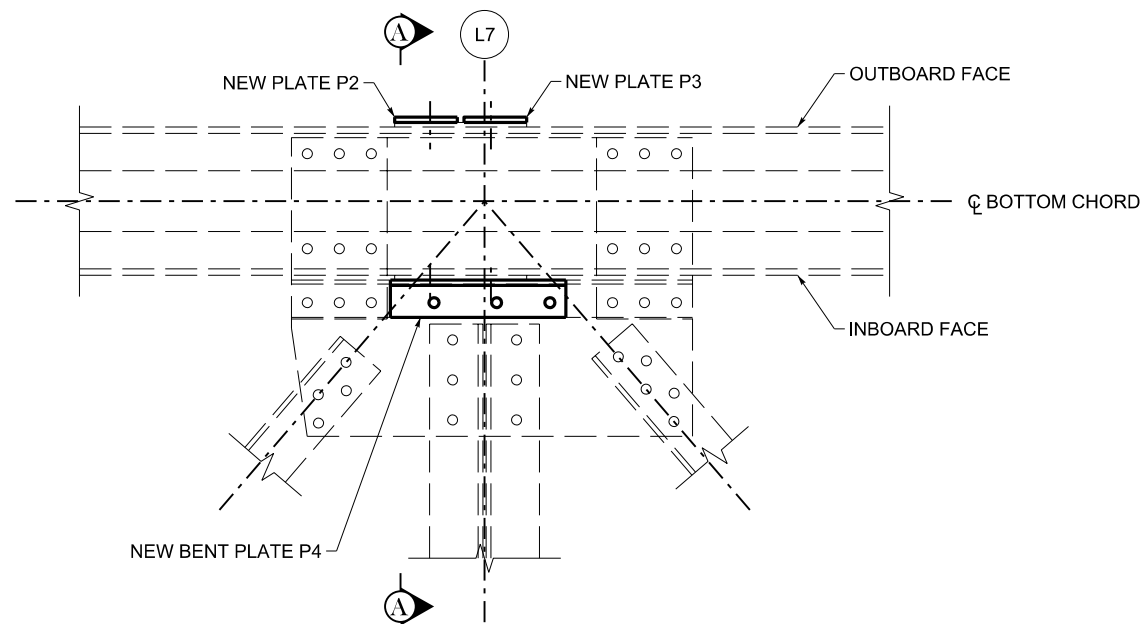


SECTION A-A

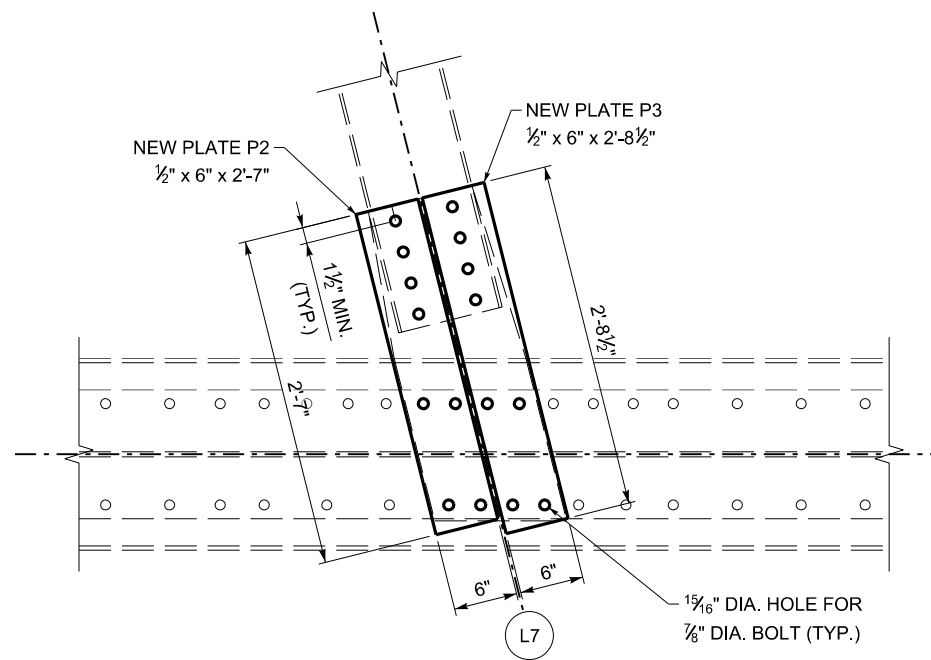
NOTES

1. NEW BOLTS TO BE 7/8" DIA. A325 H.S. GALVANIZED BOLTS AND NUTS.
2. REMOVE LACING BARS AS NEEDED TO ACCESS INSIDE OF LOWER CHORD. REINSTALL LACING BARS WITH NEW 7/8" DIA. H.S. BOLTS AND NUTS.
3. DRILL 15/16" DIA. HOLES ALONG ONE SIDE AT A TIME. INSTALL NEW PLATES AND 7/8" DIA. H.S. BOLTS BEFORE DRILLING HOLES IN THE OPPOSITE SIDE.
4. NEW PLATES TO RECEIVE A SHOP APPLIED PRIMER COAT. EXISTING STEEL WITHIN REPAIR LIMITS TO RECEIVE A PRIMER COAT AFTER CLEANING.
5. SEE SPECIAL NOTE FOR PAINTING STRUCTURAL STEEL REPAIRS.

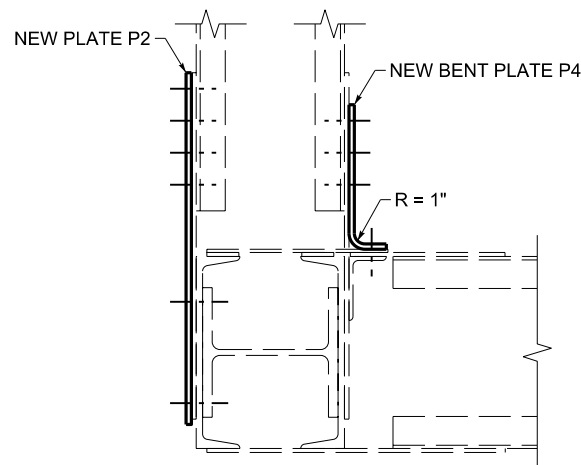
	REVISION _____ _____ _____	DATE _____ _____ _____	PREPARED BY 1650 Lyndon Farm Court Louisville, KY Phone: (502)-339-3557 M.BAKER@INTL.COM	DATE: 05/10/24 DESIGNED BY: M BARON DETAILED BY: MJ DWYER	CHECKED BY D BARON D BARON	L0-L1 REPAIR DETAIL CROSSING KENTUCKY RIVER	ROUTE US 42	ITEM NO. SHEET NO. S4	COUNTY OF CARROLL DRAWING NUMBER 28869
	USER: \$\$\$\$USER\$\$\$\$			DATE PLOTTED: \$\$\$\$DATE\$\$\$\$		FILE NAME: \$\$\$designfile\$specification\$\$\$			



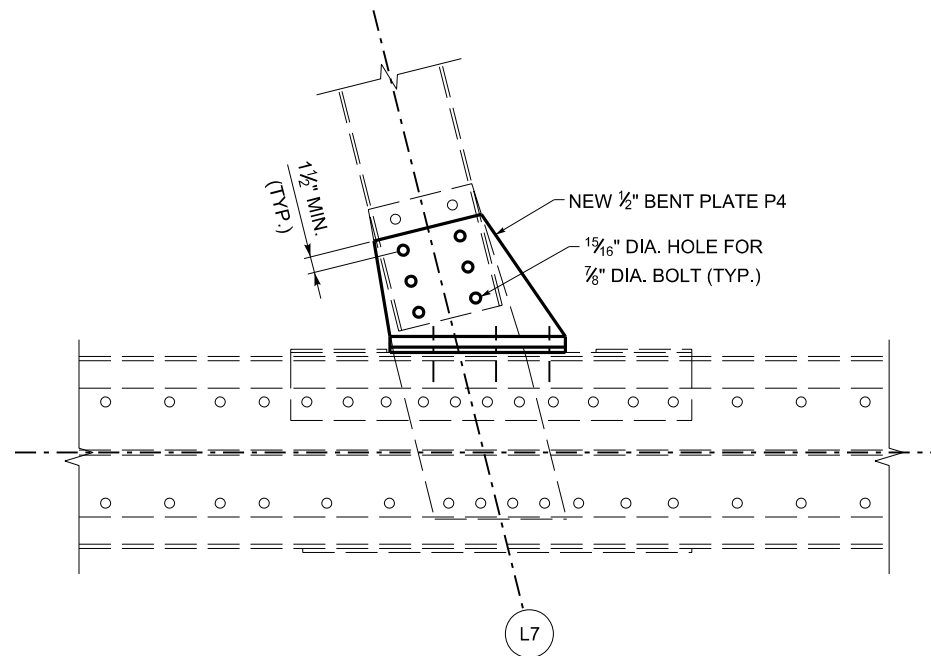
PLAN



OUTBOARD ELEVATION
L7 SHOWN, L19 SIMILAR



SECTION A-A



INBOARD ELEVATION
L7 SHOWN, L19 SIMILAR

NOTES

1. NEW BOLTS TO BE 7/8" DIA. A325 H.S. GALVANIZED BOLTS AND NUTS. USE 15/16" DIA. HOLES IN NEW PLATES.
2. USE AN APPROPRIATE METHOD TO REMOVE 7/8" DIA. RIVETS.
3. COMPLETE INSTALL OF PLATE P2 BEFORE BEGINNING WORK ON PLATE P3.
4. COMPLETE INSTALL OF PLATE P3 BEFORE BEGINNING WORK ON PLATE P4.
5. NEW PLATES TO RECEIVE A SHOP APPLIED PRIMER COAT. EXISTING STEEL WITHIN REPAIR LIMITS TO RECEIVE A PRIMER COAT AFTER CLEANING.
6. SEE SPECIAL NOTE FOR PAINTING STRUTURAL STEEL REPAIRS.



COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS



REVISION	DATE

PREPARED BY
1850 Lyndon Farm Court
Louisville, KY
Phone: (502)-339-3557
MBAKERINTL.COM

DATE: 05/10/24
DESIGNED BY: M BARON
DETAILED BY: MJ DWYER

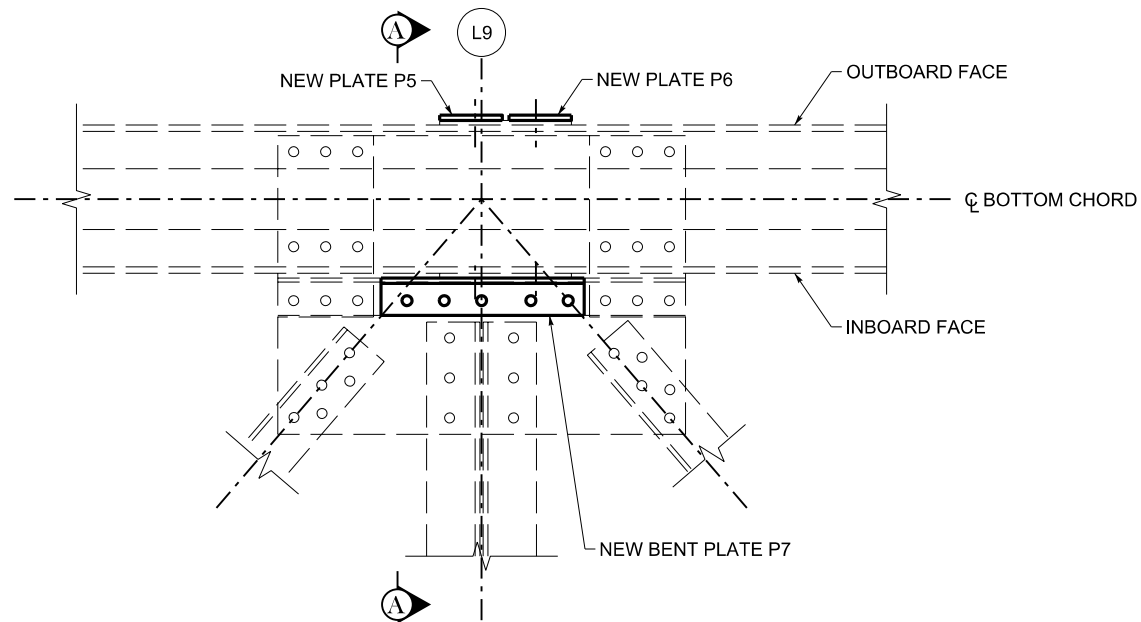
CHECKED BY
D BARON
D BARON

L7 AND L19 REPAIR DETAIL
CROSSING
KENTUCKY RIVER

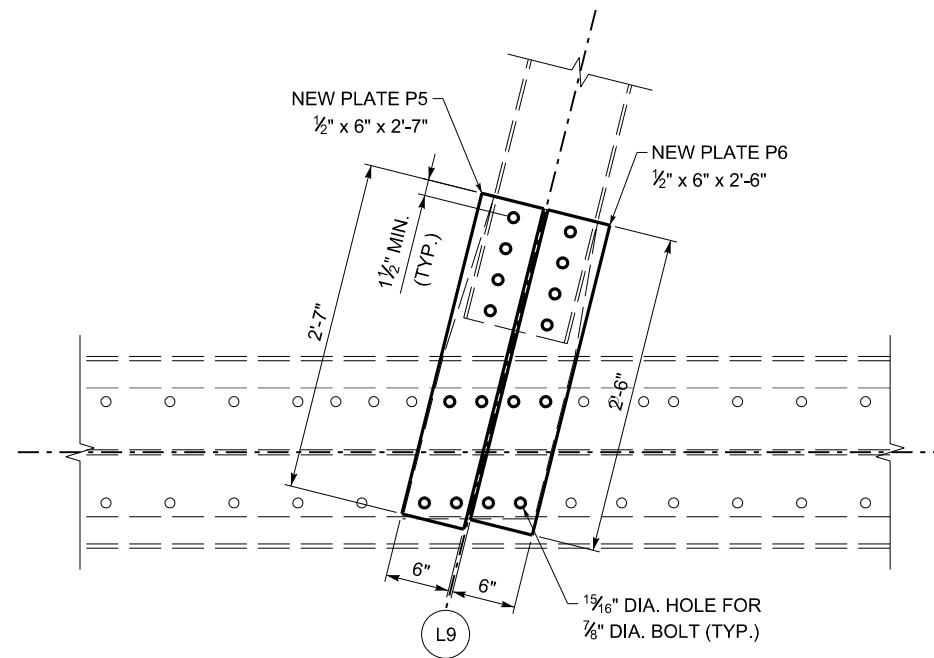
ROUTE
US 42

ITEM NO.
SHEET NO.
S5

COUNTY OF
CARROLL
DRAWING NUMBER
28869

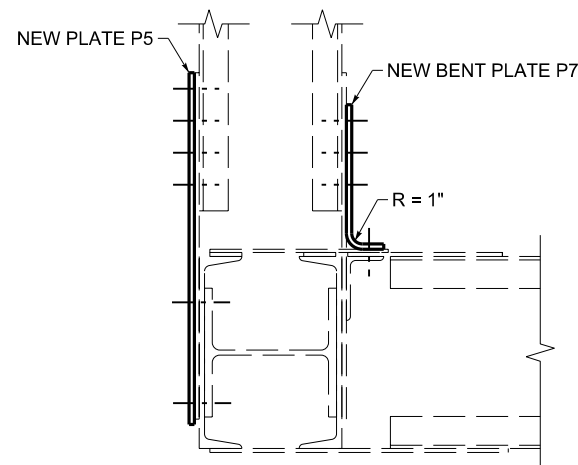


PLAN

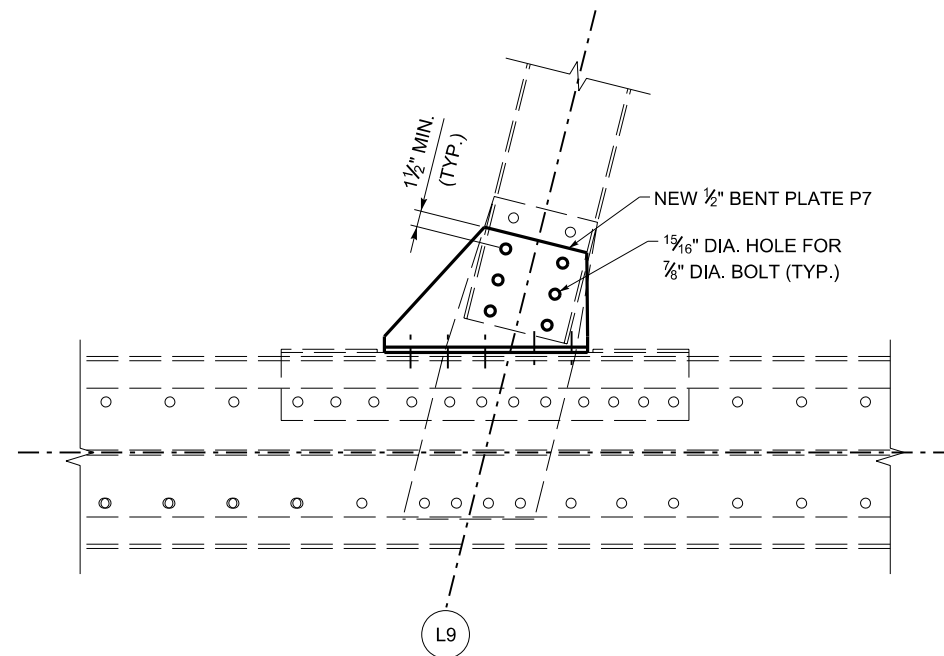


OUTBOARD ELEVATION

L9 SHOWN, L21 SIMILAR



SECTION A-A



INBOARD ELEVATION

L9 SHOWN, L21 SIMILAR

NOTES

1. NEW BOLTS TO BE 7/8" DIA. A325 H.S. GALVANIZED BOLTS AND NUTS. USE 15/16" DIA. HOLES IN NEW PLATES.
2. USE AN APPROPRIATE METHOD TO REMOVE 7/8" DIA. RIVETS.
3. COMPLETE INSTALL OF PLATE P2 BEFORE BEGINNING WORK ON PLATE P6.
4. COMPLETE INSTALL OF PLATE P3 BEFORE BEGINNING WORK ON PLATE P7.
5. NEW PLATES TO RECEIVE A SHOP APPLIED PRIMER COAT. EXISTING STEEL WITHIN REPAIR LIMITS TO RECEIVE A PRIMER COAT AFTER CLEANING.
6. SEE SPECIAL NOTE FOR PAINTING STRUTURAL STEEL REPAIRS.



COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS



REVISION	DATE

PREPARED BY
1850 Lyndon Farm Court
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Phone: (502)-339-3557
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DATE: 05/10/24
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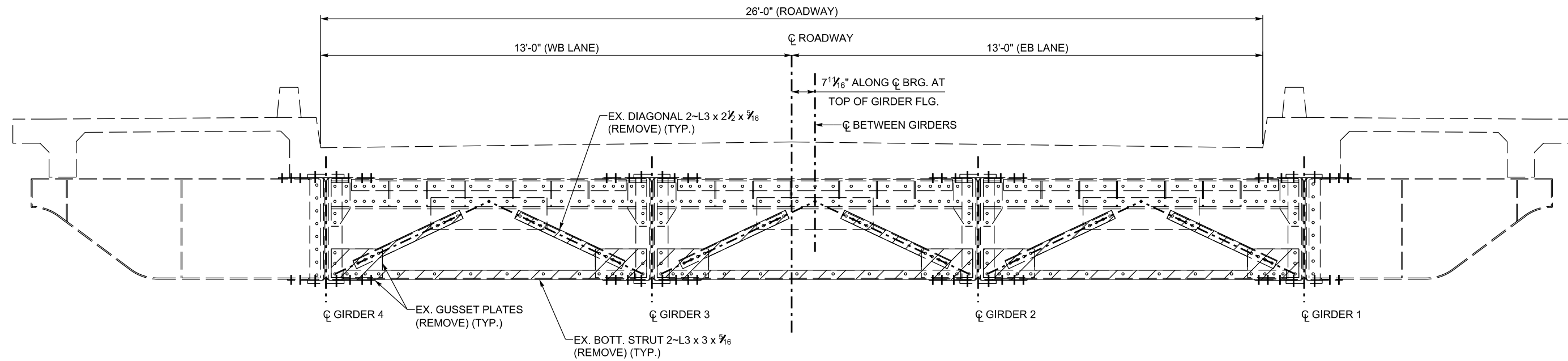
CHECKED BY
D BARON
D BARON

L9 AND L21 REPAIR DETAIL
CROSSING
KENTUCKY RIVER

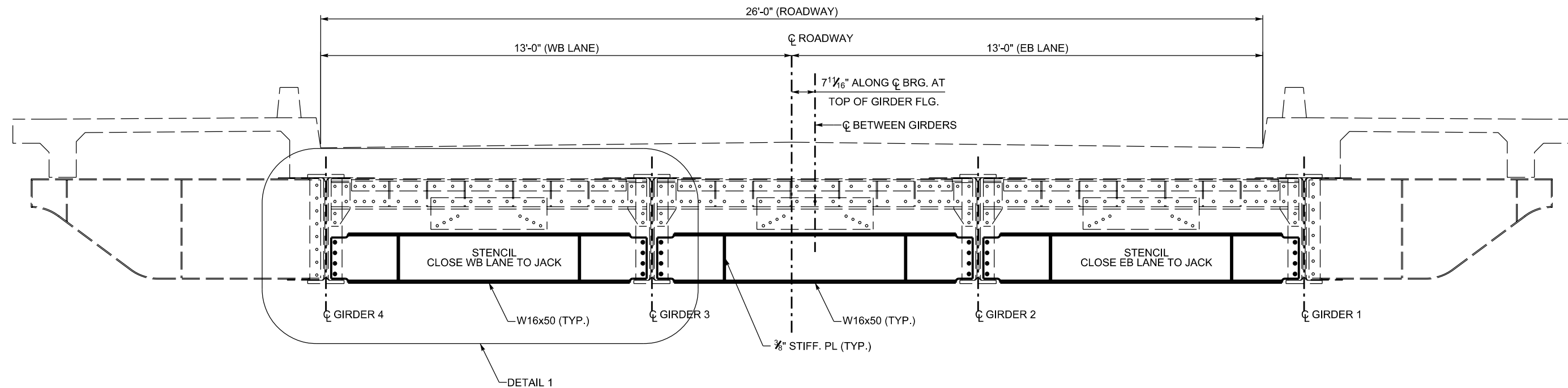
ROUTE
US 42

ITEM NO.
SHEET NO.
S6

COUNTY OF
CARROLL
DRAWING NUMBER
28869



EXISTING SECTION AT PIER 7
APPROACH SPAN 7 CROSSFRAME
(LOOKING AHEAD)



PROPOSED SECTION AT PIER 7
APPROACH SPAN 7 CROSSFRAME
(LOOKING AHEAD)

LEGEND

REMOVAL LIMITS

NOTES

- FOR DETAIL 1, SEE SHEET NO. S8.
- ALL MATERIALS THAT MUST BE MADE SPECIFIC FOR THE PIER 7 JACKING BEAM INSTALLATION SHOULD BE ORDERED AND MADE PRIOR TO THE REMOVAL OF THE EXISTING CROSSFRAME SO THAT DELIVERY DOES NOT DELAY PROGRESS OF THE WORK, UNLESS APPROVED BY THE ENGINEER.



COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS



REVISION	DATE

PREPARED BY
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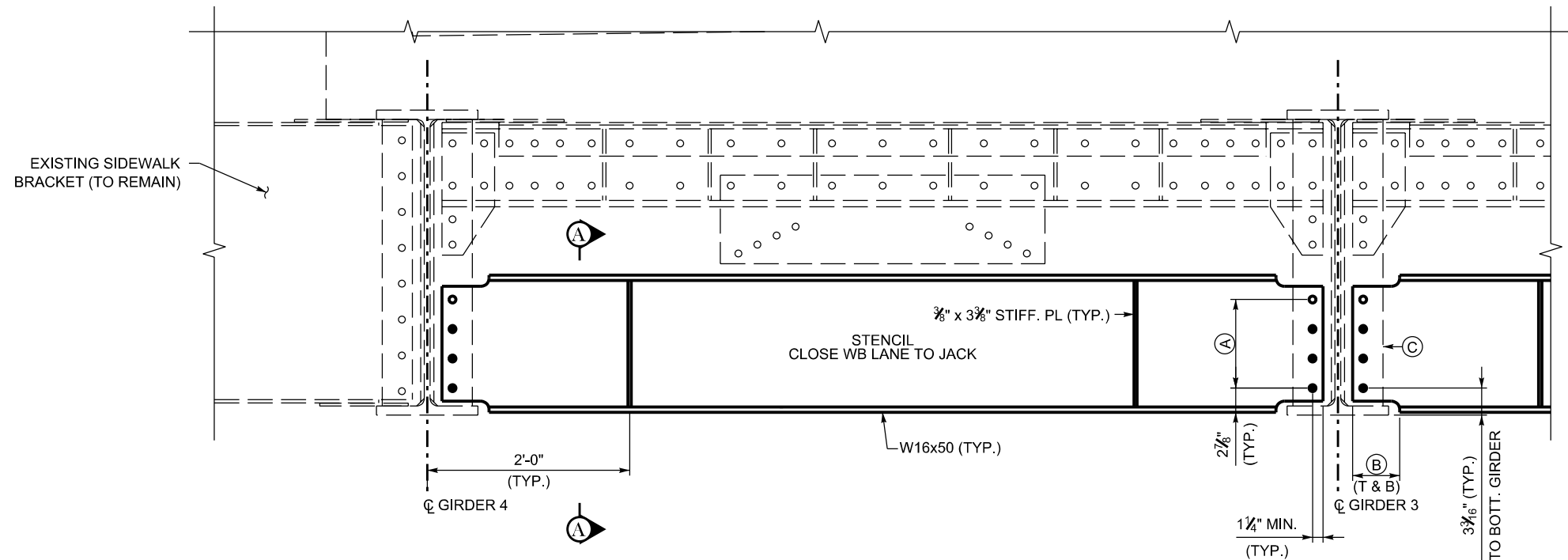
DATE: 05/10/24	CHECKED BY: D BARON
DESIGNED BY: M BARON	D BARON
DETAILED BY: MJ DWYER	D BARON

PIER 7 CROSSFRAME RETROFIT
CROSSING
KENTUCKY RIVER

ROUTE
US 42

ITEM NO.
SHEET NO.
S7

COUNTY OF
CARROLL
DRAWING NUMBER
28869



DETAIL 1

LEGEND

- FIELD DRILL HOLE IN W16 WEB USING EXISTING 13/16" DIA. HOLE IN BRG. STIFF. ANGLE AS TEMPLATE
- FIELD DRILL 13/16" DIA. HOLE IN W16 WEB AND 7/16" LEG OF EXISTING BRG. STIFF. ANGLE
- Ⓐ 3 SPA. @ 3 1/2" = 10 1/2" (TYP.)
FIELD DRILL 13/16" HOLES FOR 3/4" BOLTS AS SHOWN
- Ⓑ W16x50 BEAM COPE AT GIRDERS G1 - G4
TOP FLANGE, 5" x 1 3/8"
BOTTOM FLANGE, 5 1/2" x 1 3/8"
- Ⓒ EXISTING GIRDER BEARING STIFFENER
2-Ls 3 1/2" x 5 x 7/16
TYPICAL GIRDERS G1-G4

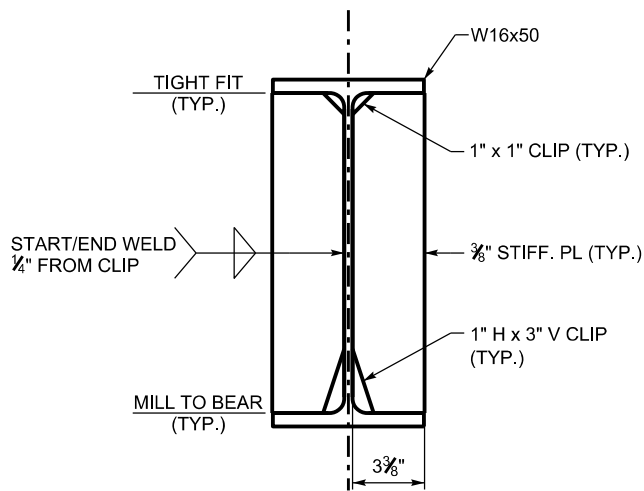
BEARING CLEANING AND MAINTENANCE NOTES

1. REMOVE THE BOLTS CONNECTING THE BEARING TO THE GIRDER FLANGE AFTER JACKING AND SUPPORTING THE GIRDERS AT PIER 7, SPAN 7.
2. REMOVE THE TOP SHOE, PIN, PIN CAP AND ROCKER AND STORE FOR REUSE. LEAVE THE MASONRY PLATE AND CLEAN IN PLACE. CLEAN EACH COMPONENT OF THE BEARING. APPLY RUST INHIBITOR TO THE BEARING COMPONENTS AND MASONRY PLATE. SEE SPECIAL NOTE FOR BEARING PREVENTATIVE MAINTENANCE AND DN 7952, SHEET 22.
3. CLEAN CONTACT SURFACE FOR STRATIFIED AND PACK RUST REMOVAL ALONG BOTTOM FLANGE OF GIRDER. APPLY RUST INHIBITOR.
4. REASSEMBLE BEARING AND RESET ON THE MASONRY PLATE. CONNECT TOP SHOE TO THE GIRDER USING NEW 3/4" DIA. H.S. A325 GALVANIZED BOLTS AND NUTS. DUE TO DEFORMATION AT THE GIRDER ENDS, BOLT LENGTHS MAY NEED TO BE INCREASED TO ACCOMMODATE THE CURRENT CONDITIONS.
5. INSTALL THE (4) BOLTS LOOSELY. FULLY TENSION THE (2) BOLTS FURTHEST AWAY FROM THE GIRDER END. FULLY TENSION THE (2) BOLTS CLOSEST TO THE GIRDER END IN ATTEMPT TO REMOVE THE DEFORMATION OF THE GIRDER BOTTOM FLANGE. IF DEFORMATION REMAINS, THEN FILL ANY OPEN GAP WITH SHIMS AND FULLY TENSION BOLTS. PROCEDURE MAY BE REVISED BASED ON FIELD CONDITIONS WITH APPROVAL OF THE ENGINEER.
6. APPLY BEARING LUBRICATION TO ENTIRE BEARING ASSEMBLY.

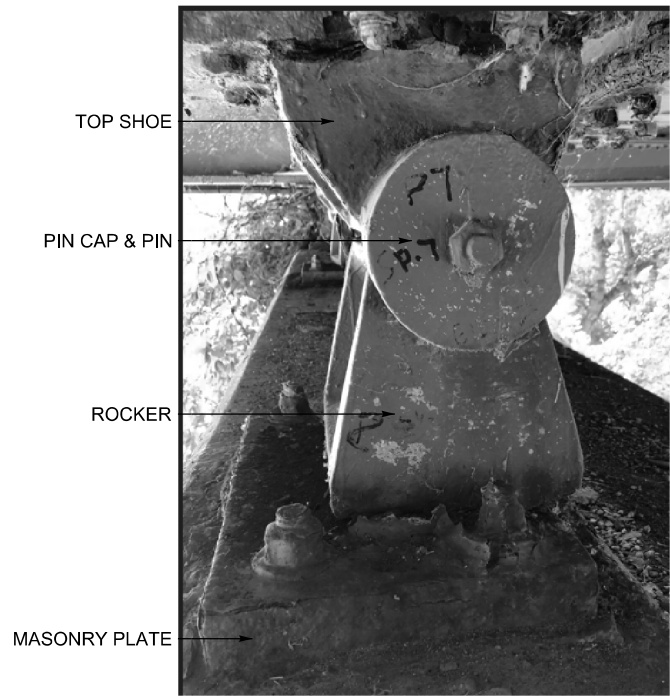
BEARING LOCATION	DC DEAD LOAD (KIP)	LL + IM LIVE LOAD (KIP)	SERVICE 1.3 DC (KIP)	STRENGTH II 1.25DC + 1.35(LL + IM)	JACK REACTION (KIP)	NUMBER OF JACKS	MIN. JACK CAPACITY (TONS)
G1	57	0	74		95	1	95
G2	30	8		48	62	1	62
G3	30	14		56	73	1	73
G4	57	0	74		95	1	95

JACKING NOTES

1. JACKING G1 AND G2 MUST OCCUR DURING EB LANE CLOSURE.
2. JACKING G3 AND G4 MUST OCCUR DURING WB LANE CLOSURE.
3. MINIMUM JACK CAPACITY IS 200% OF THE CALCULATED JACK REACTION.
4. JACK REACTION PRESUMES W16 OVERHANGING JACK SUPPORT - CONCENTRATED LOAD AT END OF OVERHANG.
5. JACKING BEAMS DO NOT HAVE TO BE NEW, BUT SHALL BE THE SAME SIZE AND MATERIAL IN GOOD CONDITION.
6. JACK SUPPORT SHALL BE STACKED PLATES (12" MAX.) OR HP OR W COLUMN SPACER. WELD A 1" PLATE TO THE TOP AND BOTTOM OF THE COLUMN SPACER. CUSTOM FIT THE JACK SUPPORT TO THE JACK BEING USED. DELIVER JACK SUPPORT TO THE LOCAL KYTC MAINTENANCE BARN AT PROJECT COMPLETION.
7. THE CONTRACTOR HAS THE OPTION OF SUBMITTING ANOTHER JACK SUPPORT METHOD TO THE ENGINEER FOR REVIEW. THE JACK SHALL NOT BE USED TO SUPPORT LOAD DURING BEARING REPAIRS. SEE GENERAL NOTES "RESET BEARINGS AT PIER 7".



SECTION A-A



TYPICAL BEARING AT PIER 7, SPAN 7

SEE BEARING CLEANING AND MAINTENANCE NOTES