09-20-2024 LETTING ITEM 060

FOR INDEX OF SHEETS, SEE SHEET NO. 3

FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 4–10

TRAFFIC DATA

2023 ADT = 30,279
2025 ADT = 33,780
2045 ADT = 45,490
PV% = 76.32%
SU% = 5.11%
MU% = 18.59%

TOWNSHIPS

JEFFERSON (IL)

DESIGN DESIGNATION : INTERSTATE

COORDINATE SYSTEM : ILLINOIS COORDINATE SYSTEM, EAST ZONE

POSTED SPEED : 70 MPH

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROPOSED HIGHWAY PLANS

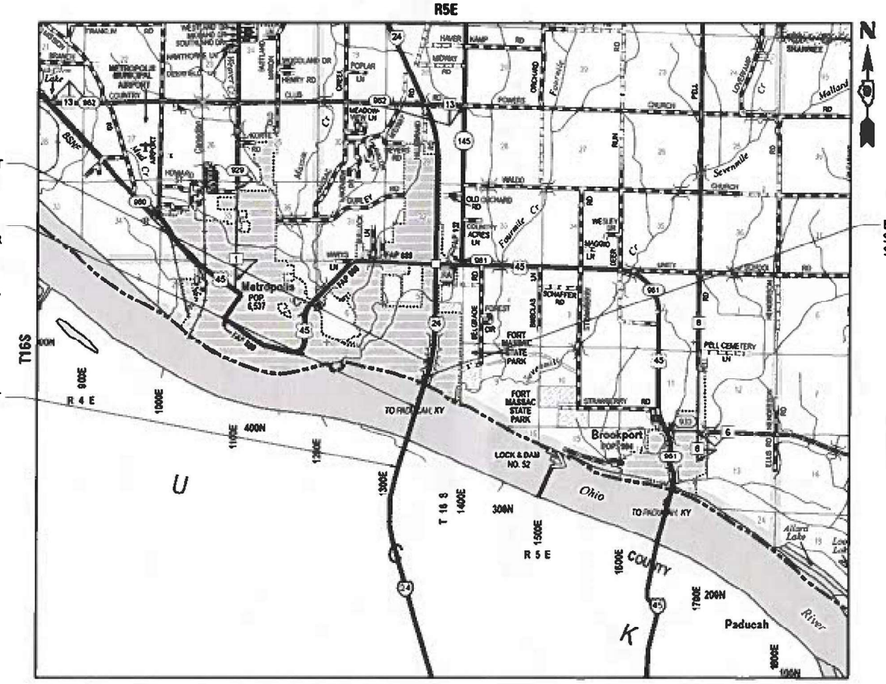
FAI ROUTE 24 (I–24)
SECTION (64–3B)BP–1,BRR–1
PROJECT BR–DIKS(922)
BRIDGE PAINTING, REPAIR AND OVERLAY
I–24 OVER OHIO RIVER
MASSAC COUNTY, ILLINOIS
McCRACKEN COUNTY, KENTUCKY

C–99–016–23

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	1
	ILLINOIS	CONTRACT NO. 78972		

* 236 + 1 = 237 TOTAL SHEETS

D–99–006–23



SCALE: 1" = 5,000'

GROSS LENGTH = 7,284.12 FT. = 1.380 MILE
NET LENGTH = 7,284.12 FT. = 1.380 MILE

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED June 21 20 24
Kris H. Brown
REGION FIVE ENGINEER

August 16, 2024
ENGINEER OF DESIGN AND ENVIRONMENT

August 16, 2024
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

PLANS PREPARED BY:

TWM ENGINEERING GEOSPATIAL SERVICES
4940 Old Collinsville Road
Swansea, Illinois 62226
Tel: 618.624.4488
www.twm-inc.com
Illinois Professional Design Firm
No. 184-001220
License Expires: 04/30/2025
ILLINOIS - MISSOURI - TENNESSEE

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1–800–892–0123
OR 811

LICENSED PROFESSIONAL ENGINEER
TIMOTHY B. PADGETT
062-049162
STATE OF ILLINOIS

PROJECT ENGINEER EHREN KIRBY

TIMOTHY B. PADGETT, PE EXPIRATION DATE
LICENSE NO. 062-049162 11-30-2025

SEAL COVERS SHEETS 1–61

CONTRACT NO. 78972

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

REV - MS

Prepared By:

DISTRICT STUDIES & PLANS ENGINEER

Examined By:

DISTRICT LAND ACQUISITION ENGINEER

Examined By:

DISTRICT PROGRAM DEVELOPMENT ENGINEER

Examined By:

DISTRICT OPERATIONS ENGINEER

Examined By:

DISTRICT PROJECT IMPLEMENTATION ENGINEER

Examined By:

DISTRICT CONSTRUCTION ENGINEER

Examined By:

DISTRICT MATERIALS ENGINEER

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PLOT DATE = 6/13/2024	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SIGNATURE SHEET

SCALE: N.T.S. | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	2
		CONTRACT NO. 78972		
		ILLINOIS FED. AID PROJECT		

GENERAL NOTES

1. FACTORS USED FOR ESTIMATING PLAN QUANTITIES ARE AS FOLLOWS AND SHALL NOT BE USED FOR THE BASIS OF FINAL QUANTITIES:

   ALL HOT MIX ASPHALT: 2.016 TONS/CU. YD.
   ALL AGGREGATE: 2.05 TONS/CU. YD.

2. THE ALGEBRAIC DIFFERENCE BETWEEN THE PAVEMENT AND SHOULDER SLOPES SHALL NOT EXCEED 8%. THE SHOULDER ON THE OUTSIDE OF SUPERELEVATED CURVES SHALL BE FLATTENED ACCORDINGLY.

3. THE QUANTITY OF SHORT TERM PAVEMENT MARKING SHOWN IN THE PLANS IS BASED ON ONE APPLICATION AFTER THE REMOVAL OF STAGE CONSTRUCTION.

4. EXISTING PIPE UNDERDRAIN OUTLETS IN THE FORESLOPES OR MEDIAN SLOPES SHALL BE PRESERVED AND PROTECTED DURING CONSTRUCTION. ANY DAMAGE TO AN UNDERDRAIN OUTLET RESULTING FROM CONSTRUCTION ACTIVITY SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

5. NO PINNING OF TEMPORARY CONCRETE BARRIER ALLOWED IN THE NEW MICROSILICA OVERLAY. REFER TO TEMPORARY CONCRETE BARRIER STRUCTURE NO. 064-0035 FOR PINNING OF TEMPORARY CONCRETE BARRIER.

6. A MINIMUM OF 1 AIR MONITOR WILL BE REQUIRED TO MONITOR ABRASIVE BLASTING OPERATIONS AT THIS SITE. SEE SPECIAL PROVISION FOR "CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES".

7. THE CONTRACTOR SHALL SUBMIT CALCULATIONS AND DETAILS DEMONSTRATING THE STRUCTURAL INTEGRITY OF THE BRIDGE IS MAINTAINED UNDER THE ADDITIONAL IMPOSED LOADS OF THE CONTAINMENT SYSTEM. SEE SPECIAL PROVISIONS.

COMMITMENTS

COMMITMENTS FOR THIS PROJECT ARE AS FOLLOWS: NONE

INDEX OF SHEETS

1	COVER SHEET
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13-14	PROPOSED TYPICAL SECTIONS
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30-31	PRE-STAGE B-2 - STAGING TYPICAL SECTIONS
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34	STAGE 1 AND STAGE 2 - STAGING PLAN
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50	WIDE LOAD SIGNING PLAN
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54	EXISTING DRAINAGE SYSTEM
55	DETAIL A AND DETAIL B
56	TEMPORARY RUMBLE STRIP DETAIL
57	PCC JOINT SPACING DETAIL
58	CONCRETE COLLAR DETAIL
58A	PARTIAL DEPTH PATCHING DETAIL
59	CONCRETE BARRIER TRANSITION DETAIL
60-61	CONCRETE BARRIER WALL (SPECIAL) DETAIL
62-102	STRUCTURAL SHEETS - JOINT REPLACEMENT, PARAPET REHABILITATION, BRIDGE DECK OVERLAY, BRIDGE PAINTING AND STRUCTURAL STEEL REPAIR
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HIGHWAY STANDARDS

000001-08	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF AN INCH AND OF A FOOT
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
420001-10	PAVEMENT JOINTS
420701-03	PAVEMENT WELDED WIRE REINFORCMENT
542546-01	FLUSH INLET BOX FOR MEDIAN
602306-03	INLET - TYPE B
604001-05	FRAME AND LIDS TYPE 1
630001-13	STEEL PLATE BEAM GUARDRAIL
638101-02	CONCRETE GLARE SCREEN
642001-03	SHOULDER RUMBLE STRIPS, 16 IN.
701101-05	OFF-ROAD OPERATIONS, MULTILANE, 15' TO 24" FROM PAVEMENT EDGE
701106-02	OFF-ROAD OPERATIONS, MULTILANE, MORE THAN 15' AWAY
701401-13	LANE CLOSURE, FREEWAY/EXPRESSWAY
701402-12	LANE CLOSURE, FREEWAY/EXPRESSWAY, WITH BARRIER
701406-13	LANE CLOSURE, FREEWAY/EXPRESSWAY, DAY OPERATIONS ONLY
701416-11	LANE CLOSURE, FREEWAY/EXPRESSWAY, WITH CROSSOVER AND BARRIER
701426-09	LANE CLOSURE, MULTILANE, INTERMITTENT OR MOVING OPERATION, FOR SPEEDS ≥45 MPH
701428-01	TRAFFIC CONTROL, SETUP AND REMOVAL, FREEWAY/EXPRESSWAY
701901-09	TRAFFIC CONTROL DEVICES
704001-08	TEMPORARY CONCRETE BARRIER
780001-05	TYPICAL PAVEMENT MARKINGS
781001-04	TYPICAL APPLICATIONS RAISED REFLECTIVE PAVEMENT MARKERS
782006-01	GUARDRAIL AND BARRIER WALL REFLECTOR MOUNTING DETAILS

MIX REQUIREMENTS

LOCATION(S):	HOT-MIX ASPHALT PATCHING
MIXTURE USE(S):	POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, MIX E, N90
PG:	SBS PG 76-22
DESIGN AIR VOIDS:	4.0%, 90 GYRATION DESIGN
MIXTURE COMPOSITION: (GRADATION MIXTURE)	IL-9.5mm
FRICTION AGGREGATE:	MIX E
MIXTURE WEIGHT:	112 LBS/SQ YD/IN
QUALITY MANAGEMENT PROGRAM:	QC/QA
SUBLOT SIZE:	3000 TONS
MATERIAL TRANSFER DEVICE	NO

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PLOT DATE = 8/16/2024		DATE - 6/2024		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES, INDEX OF SHEETS, HIGHWAY STANDARDS & COMMITMENTS

SCALE: N.T.S. | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	3
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

				CONSTRUCTION CODE			
				ILLINOIS (90% FED / 10% STATE)	KENTUCKY (90% FED / 10% STATE)	ILLINOIS (90% FED / 10% STATE)	KENTUCKY (90% FED / 10% STATE)
CODE NO.	PAY ITEM	UNIT	TOTAL QUANTITY	0004	0004	0013	0013
				RURAL	RURAL	RURAL	RURAL
31100600	SUBBASE GRANULAR MATERIAL, TYPE A 7"	SQ YD	1478	739	739		
31100910	SUBBASE GRANULAR MATERIAL, TYPE A 12"	SQ YD	1324	662	662		
40600290	BITUMINOUS MATERIALS (TACK COAT)	POUND	60	30	30		
40600295	POLYMERIZED BITUMINOUS MATERIALS (TACK COAT)	POUND	1641			820.5	820.5
40604174	POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "E", N90	TON	409			204.5	204.5
42000060	WELDED WIRE REINFORCEMENT	SQ YD	2802	1401	1401		
42000506	PORTLAND CEMENT CONCRETE PAVEMENT 10 1/4" (JOINTED)	SQ YD	2802	1401	1401		
44001980	CONCRETE BARRIER REMOVAL	FOOT	665	332.5	332.5		
44004250	PAVED SHOULDER REMOVAL	SQ YD	1543	771.5	771.5		
48300400	PORTLAND CEMENT CONCRETE SHOULDERS 9"	SQ YD	65	32.5	32.5		
50102400	CONCRETE REMOVAL	CU YD	118.7			59.35	59.35
50157300	PROTECTIVE SHIELD	SQ YD	1176			588	588
50300255	CONCRETE SUPERSTRUCTURE	CU YD	208.2			104.1	104.1
50300300	PROTECTIVE COAT	SQ YD	50014			25007	25007
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	27900			13950	13950

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES
SN 064-0035

SCALE: | SHEET 1 OF 7 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	4
		CONTRACT NO. 78972		
	ILLINOIS FED. AID PROJECT			

				CONSTRUCTION CODE			
				ILLINOIS (90% FED / 10% STATE)	KENTUCKY (90% FED / 10% STATE)	ILLINOIS (90% FED / 10% STATE)	KENTUCKY (90% FED / 10% STATE)
CODE NO.	PAY ITEM	UNIT	TOTAL QUANTITY	0004	0004	0013	0013
				RURAL	RURAL	RURAL	RURAL
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	45120			22560	22560
50800515	BAR SPLICERS	EACH	552			276	276
50800530	MECHANICAL SPLICERS	EACH	1356			678	678
54244405	FLUSH INLET BOX FOR MEDIAN, STANDARD 542546	EACH	1	0.5	0.5		
54248510	CONCRETE COLLAR	CU YD	0.4	0.2	0.2		
550A0120	STORM SEWERS, CLASS A, TYPE 1 24"	FOOT	3	1.5	1.5		
550A0340	STORM SEWERS, CLASS A, TYPE 2 12"	FOOT	11	5.5	5.5		
55101200	STORM SEWER REMOVAL 24"	FOOT	5	2.5	2.5		
60240215	INLETS, TYPE B, TYPE 1 FRAME, CLOSED LID	EACH	2	1	1		
60500060	REMOVING INLETS	EACH	1	0.5	0.5		
63000017	STEEL PLATE BEAM GUARDRAIL, TYPE D, 6 FOOT POSTS	FOOT	738	369	369		
63700805	CONCRETE BARRIER TRANSITION	FOOT	60	30	30		
63800920	MODULAR GLARE SCREEN SYSTEM, TEMPORARY	FOOT	28800	14400	14400		
63801000	CONCRETE GLARE SCREEN	FOOT	5562			2781	2781

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PLOT DATE = 6/24/2024	DATE - 6/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES
SN 064–0035

SCALE: | SHEET 2 OF 7 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	5
		CONTRACT NO, 78972		
	ILLINOIS	FED. AID PROJECT		

				CONSTRUCTION CODE			
				ILLINOIS (90% FED / 10% STATE)	KENTUCKY (90% FED / 10% STATE)	ILLINOIS (90% FED / 10% STATE)	KENTUCKY (90% FED / 10% STATE)
CODE NO.	PAY ITEM	UNIT	TOTAL QUANTITY	0004	0004	0013	0013
				RURAL	RURAL	RURAL	RURAL
64200116	SHOULDER RUMBLE STRIPS, 16 INCH	FOOT	5968	2984	2984		
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	36	18	18		
67100100	MOBILIZATION	L SUM	1	0.5	0.5		
70100205	TRAFFIC CONTROL AND PROTECTION, STANDARD 701401	EACH	4	2	2		
70100207	TRAFFIC CONTROL AND PROTECTION, STANDARD 701402	EACH	10	5	5		
70100410	TRAFFIC CONTROL AND PROTECTION, STANDARD 701416	EACH	2	1	1		
70100701	TRAFFIC CONTROL AND PROTECTION, STANDARD 701406	EACH	2	1	1		
70106700	TEMPORARY RUMBLE STRIPS	EACH	48	24	24		
70107007	PAVEMENT MARKING BLACKOUT TAPE, 7"	FOOT	50608	25304	25304		
70107025	CHANGEABLE MESSAGE SIGN	CAL DA	1940	970	970		
70200100	NIGHTTIME WORK ZONE LIGHTING	L SUM	1	0.5	0.5		
70300100	SHORT TERM PAVEMENT MARKING	FOOT	1112	556	556		
70300150	SHORT TERM PAVEMENT MARKING REMOVAL	SQ FT	371	185.5	185.5		
70300241	TEMPORARY PAVEMENT MARKING - LINE 6"- PAINT	FOOT	25038	12519	12519		

REV - MS

					CONSTRUCTION CODE			
					ILLINOIS (90% FED / 10% STATE)	KENTUCKY (90% FED / 10% STATE)	ILLINOIS (90% FED / 10% STATE)	KENTUCKY (90% FED / 10% STATE)
	CODE NO.	PAY ITEM	UNIT	TOTAL QUANTITY	0004	0004	0013	0013
					RURAL	RURAL	RURAL	RURAL
	70400100	TEMPORARY CONCRETE BARRIER	FOOT	28800	14400	14400		
	70400125	PINNING TEMPORARY CONCRETE BARRIER	EACH	2166	1083	1083		
	70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	40613	20306.5	20306.5		
	70600251	IMPACT ATTENUATORS, TEMPORARY (NON- REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	7	3.5	3.5		
	70600352	IMPACT ATTENUATORS, RELOCATE (NON- REDIRECTIVE,NARROW), TEST LEVEL 3	EACH	7	3.5	3.5		
*	78008330	POLYUREA PAVEMENT MARKING TYPE II - LINE 6"	FOOT	32779	16389.5	16389.5		
*	78011035	GROOVING FOR RECESSED PAVEMENT MARKING 7"	FOOT	32779	16389.5	16389.5		
*	78100100	RAISED REFLECTIVE PAVEMENT MARKER	EACH	140			70	70
*	78200005	GUARDRAIL REFLECTORS, TYPE A	EACH	22	11	11		
*	78200011	BARRIER WALL REFLECTORS, TYPE C	EACH	3675	1837.5	1837.5		
	78300200	RAISED REFLECTIVE PAVEMENT MARKER REMOVAL	EACH	140	70	70		
	78300201	PAVEMENT MARKING REMOVAL - GRINDING	SQ FT	12519	6259.5	6259.5		
	X7011858	REAL-TIME TRAFFIC CONTROL SENSOR UNIT	WEEK	840	420	420		
	X1200201	STRIP SEAL GLAND REPLACEMENT	FOOT	330			165	165
	X4005553	HOLES DRILLED	EACH	129	64.5	64.5		
	X4404260	PAVED SHOULDER REMOVAL (SPECIAL)	SQ YD	1324	662	662		

* SPECIALTY ITEM

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IL DESIGN FIRM LICENSE NO: 184-001220

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES
SN 064-0035

SCALE: | SHEET 4 OF 7 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	7
		CONTRACT NO. 78972		
	ILLINOIS FED. AID PROJECT			

					CONSTRUCTION CODE			
					ILLINOIS (90% FED / 10% STATE)	KENTUCKY (90% FED / 10% STATE)	ILLINOIS (90% FED / 10% STATE)	KENTUCKY (90% FED / 10% STATE)
	CODE NO.	PAY ITEM	UNIT	TOTAL QUANTITY	0004	0004	0013	0013
					RURAL	RURAL	RURAL	RURAL
	X5030250	BRIDGE DECK GROOVING (LONGITUDINAL)	SQ YD	29999			14999.5	14999.5
	X5080530	BAR TERMINATORS	EACH	640			320	320
*	X6310214	TRAFFIC BARRIER TERMINAL, TYPE 6 (SPECIAL)	EACH	1	0.5	0.5		
	X6320100	GUARDRAIL REMOVAL (SPECIAL)	FOOT	775	387.5	387.5		
	X6370050	CONCRETE BARRIER WALL (SPECIAL)	FOOT	605	302.5	302.5		
	X6380200	RELOCATE MODULAR GLARE SCREEN SYSTEM	FOOT	40613	20306.5	20306.5		
	X7010239	CHANGEABLE MESSAGE SIGN (SPECIAL)	CAL WK	1470	735	735		
*	X7820008	BARRIER WALL REFLECTORS (SPECIAL)	EACH	8	4	4		
	X8570002	SMART TRAFFIC MONITORING SYSTEM	CAL WK	210	105	105		
	X8570004	SMART TRAFFIC MONITORING DEVICE	CAL WK	1050	525	525		
	Z0001903	STRUCTURAL STEEL REMOVAL	POUND	76620			38310	38310
	Z0001905	STRUCTURAL STEEL REPAIR	POUND	7500			3750	3750
	Z0004556	HOT-MIX ASPHALT SURFACE REMOVAL (DECK)	SQ YD	40843			20421.5	20421.5
*	Z0007101	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 1	L SUM	1			0.5	0.5

* SPECIALTY ITEM

REV - MS

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES
SN 064-0035

SCALE: | SHEET 5 OF 7 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	8
		CONTRACT NO. 78972		
	ILLINOIS FED. AID PROJECT			

					CONSTRUCTION CODE			
					ILLINOIS (90% FED / 10% STATE)	KENTUCKY (90% FED / 10% STATE)	ILLINOIS (90% FED / 10% STATE)	KENTUCKY (90% FED / 10% STATE)
	CODE NO.	PAY ITEM	UNIT	TOTAL QUANTITY	0004	0004	0013	0013
					RURAL	RURAL	RURAL	RURAL
*	Z0010501	CLEANING AND PAINTING STEEL BRIDGE NO. 1	L SUM	1			0.5	0.5
	Z0012130	BRIDGE DECK SCARIFICATION 3/4"	SQ YD	36837			18418.5	18418.5
	Z0012146	BRIDGE DECK SCARIFICATION 2 3/4"	SQ YD	302			151	151
	Z0012168	BRIDGE DECK MICROSILICA CONCRETE OVERLAY 3"	SQ YD	37140			18570	18570
	Z0012754	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	6894			3447	3447
	Z0013798	CONSTRUCTION LAYOUT	L SUM	1	0.5	0.5		
	Z0016001	DECK SLAB REPAIR (FULL DEPTH, TYPE I)	SQ YD	2			1	1
	Z0016002	DECK SLAB REPAIR (FULL DEPTH, TYPE II)	SQ YD	329			164.5	164.5
	Z0023500	FILLING EXISTING CULVERTS	CU YD	17.2	8.6	8.6		
	Z0029090	DIAMOND GRINDING (BRIDGE SECTION)	SQ YD	32499			16249.5	16249.5
	Z0032400	JOINT REPAIR	EACH	1			0.5	0.5
	Z0034390	MODULAR EXPANSION JOINT 6"	FOOT	66			33	33
	Z0034393	MODULAR EXPANSION JOINT 9"	FOOT	66			33	33
	Z0034398	MODULAR EXPANSION JOINT 15"	FOOT	66			33	33

* SPECIALTY ITEM

REV - MS

MODEL: Default
FILE NAME: P:\2021\21059\IJ&L - FAI 24 Ohio River Bridge Painting\4 CADD - DWG\4.7 Trans\CAD Sheets\D978972-sht-SOQ.dgn

TWM, INC. WWW.TWM-INC.COM
ENGINEERING GEOSPATIAL SERVICES
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = bjlihartz	DESIGNED - KMO	REVISED -	
	DRAWN - BAB	REVISED -	
PLOT SCALE = 10.000 ' / In.	CHECKED - TBP	REVISED -	
PLOT DATE = 6/27/2024	DATE - 6/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES
SN 064-0035

SCALE: | SHEET 6 OF 7 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	9
		CONTRACT NO. 78972		
	ILLINOIS FED. AID PROJECT			

					CONSTRUCTION CODE			
					ILLINOIS (90% FED / 10% STATE)	KENTUCKY (90% FED / 10% STATE)	ILLINOIS (90% FED / 10% STATE)	KENTUCKY (90% FED / 10% STATE)
	CODE NO.	PAY ITEM	UNIT	TOTAL QUANTITY	0004	0004	0013	0013
					RURAL	RURAL	RURAL	RURAL
	Z0034500	MODULAR EXPANSION JOINT 18"	FOOT	66			33	33
	Z0034605	MODULAR EXPANSION JOINT 21"	FOOT	66			33	33
	Z0053750	RETROFIT CONCRETE PARAPET	FOOT	11162			5581	5581
Ø	Z0076600	TRAINEES	HOUR	2000	2000			
Ø	Z0076604	TRAINEES TRAINING PROGRAM GRADUATE	HOUR	2000	2000			
	X4406220	PARTIAL DEPTH REMOVAL, TYPE II, 2"	SQ YD	134	67	67		
	X4406801	PORTLAND CEMENT CONCRETE SURFACE REMOVAL (COLD MILLING)	SQ YD	134	67	67		
	X4421000	PARTIAL DEPTH PATCHING	TON	15	7.5	7.5		

Ø 0042

REV - MS

MODEL: Default
FILE NAME: P:\2021\21059\IJ&L - FAI 24 Ohio River Bridge Painting\4 CADD - DWG\4.7 Trans\CAD_Sheets\D078972-sht-SOQ.dgn

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = bjillhartz	DESIGNED - KMO	REVISED -	
	DRAWN - BAB	REVISED -	
PLOT SCALE = 10.000 ' / In.	CHECKED - TBP	REVISED -	
PLOT DATE = 6/27/2024	DATE - 6/2024	REVISED -	

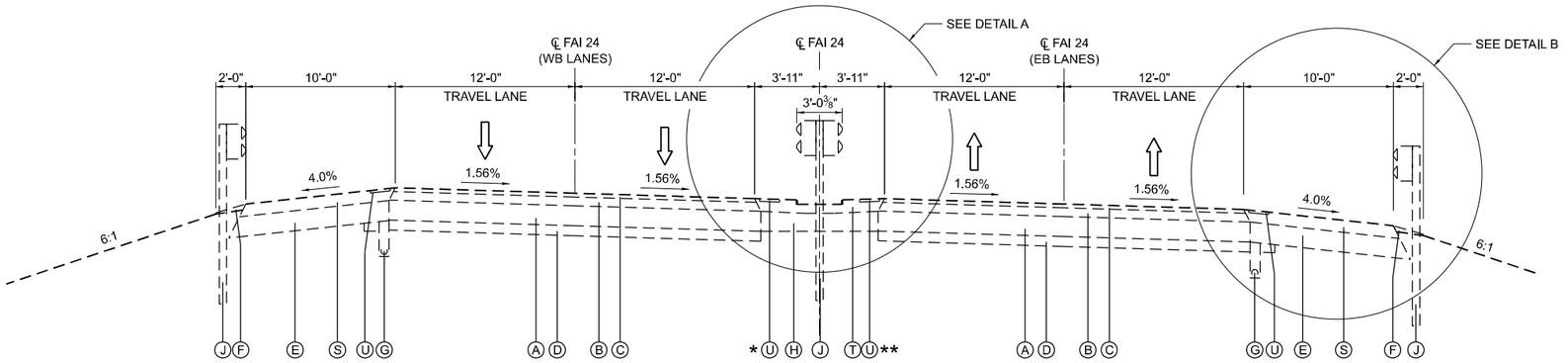
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES
SN 064-0035

SCALE: | SHEET 7 OF 7 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	10
		CONTRACT NO. 78972		
	ILLINOIS FED. AID PROJECT			

ILLINOIS SIDE



EXISTING TYPICAL SECTION (WESTBOUND)

* STA. 418+23.49 LT TO STA. 421+60.00 LT

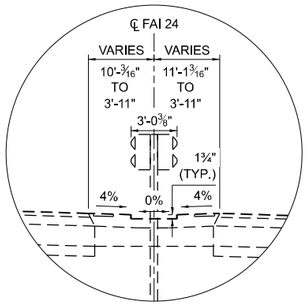
STA. 418+23.49 LT TO STA. 423+53.98 LT

EXISTING TYPICAL SECTION (EASTBOUND)

** STA. 418+32.35 RT TO STA. 421+60.00 RT

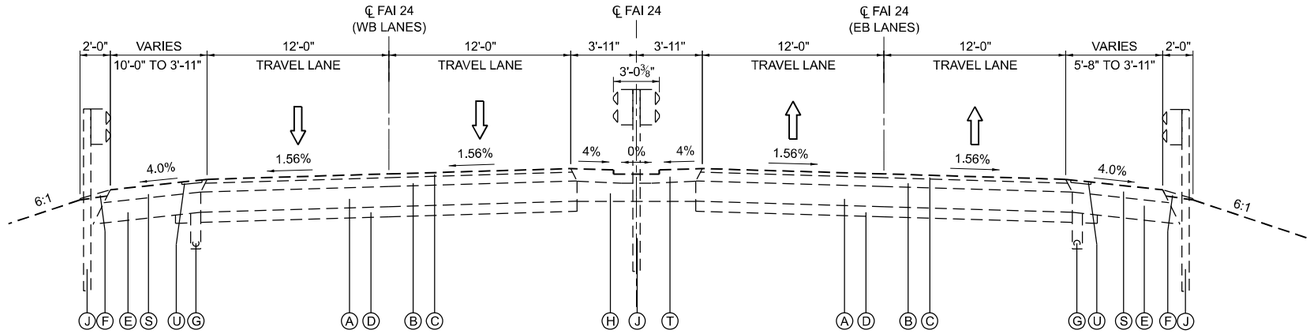
STA. 418+32.35 RT TO STA. 424+85.87 RT BK
STA. 428+06.78 RT AH TO STA. 429+40.11 RT

- (A) EX. CRC PAVEMENT, 8"
- (B) EX. POLY HMA BINDER COURSE, 3½"
- (C) EX. POLY HMA SURFACE COURSE, 1½"
- (D) EX. STABILIZED SUB-BASE, 4"
- (E) EX. SHOULDER BAM, 8"
- (F) EX. AGGREGATE WEDGE SHOULDERS, TY B
- (G) EX. PIPE UNDERDRAINS (TO REMAIN IN PLACE - TYP), 4"
- (H) EX. BITUMINOUS AGGREGATE MIXTURE SHOULDER, VARIES 5"-7"
- (J) EX. GUARDRAIL
- (K) EX. CONCRETE BARRIER TRANSITION SECTION
- (L) EX. CONCRETE PAVEMENT, 8"
- (M) EX. HMA RESURFACING, APPROX. 5"
- (N) EX. HMA BASE COURSE, 6½"
- (O) EX. DENSE GRADED AGGREGATE, 11"
- (P) EX. DENSE GRADED AGGREGATE, FULL-DEPTH/ CEMENT TREATED BANK GRAVEL BASE, 17½"
- (Q) EX. CONCRETE CURB
- (R) EX. AGGREGATE SHOULDER
- (S) EX. HMA SHOULDERS, 5"
- (T) EX. HMA SHOULDERS, VARIES 2¾"-4½"
- (U) EX. 16" RUMBLE STRIPS
- (V) EX. HMA SHOULDERS, 1¾"
- (W) EX. STABILIZED MEDIAN
- (X) EX. HMA SHOULDERS, APPROX. 5"
- (Y) EX. HMA, 1"
- (Z) EX. REINF. CONCRETE MEDIAN BARRIER, TYPE-2 (KY STANDARD)
- (AA) EX. #6 HOOK BAR



DETAIL A

STA. 417+83.74 LT TO STA. 423+50.00 LT
STA. 417+83.74 RT TO STA. 424+75.00 RT

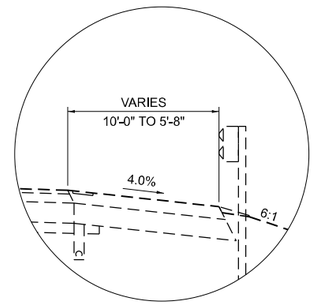


EXISTING TYPICAL SECTION (WESTBOUND)

STA. 423+53.98 LT TO STA. 424+85.87 LT BK
STA. 428+06.78 LT AH TO STA. 430+45.76 LT

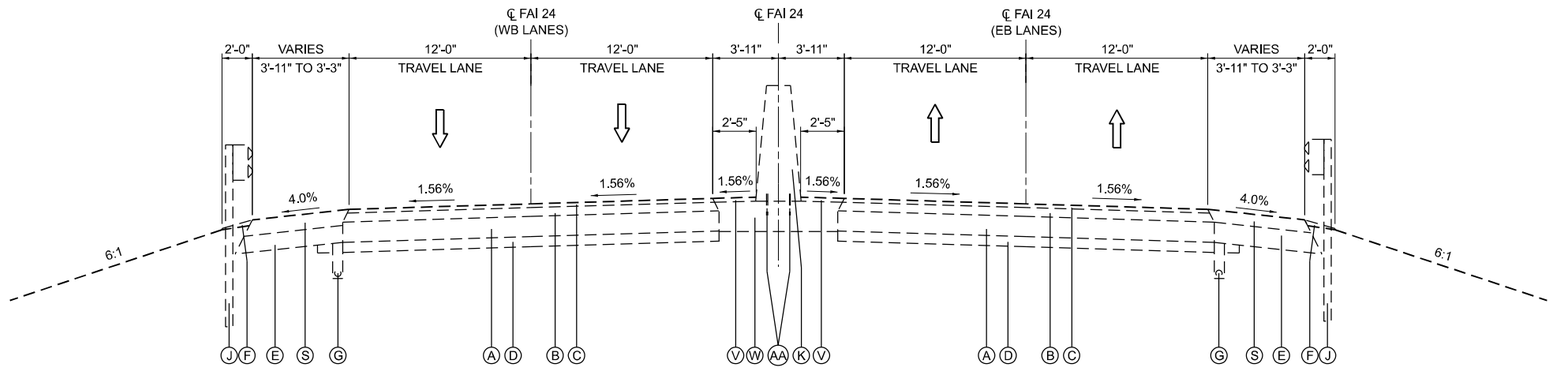
EXISTING TYPICAL SECTION (EASTBOUND)

STA. 429+40.11 RT TO STA. 430+45.76 RT



DETAIL B

STA. 423+53.96 RT TO STA. 429+40.11 RT



EXISTING TYPICAL SECTION (WESTBOUND)

STA. 430+45.76 LT TO STA. 430+88.00 LT

EXISTING TYPICAL SECTION (EASTBOUND)

STA. 430+45.76 RT TO STA. 430+88.00 RT

STATION EQUATION

STA. 424+85.87 BK = STA. 428+06.78 AH

SN 064-0035

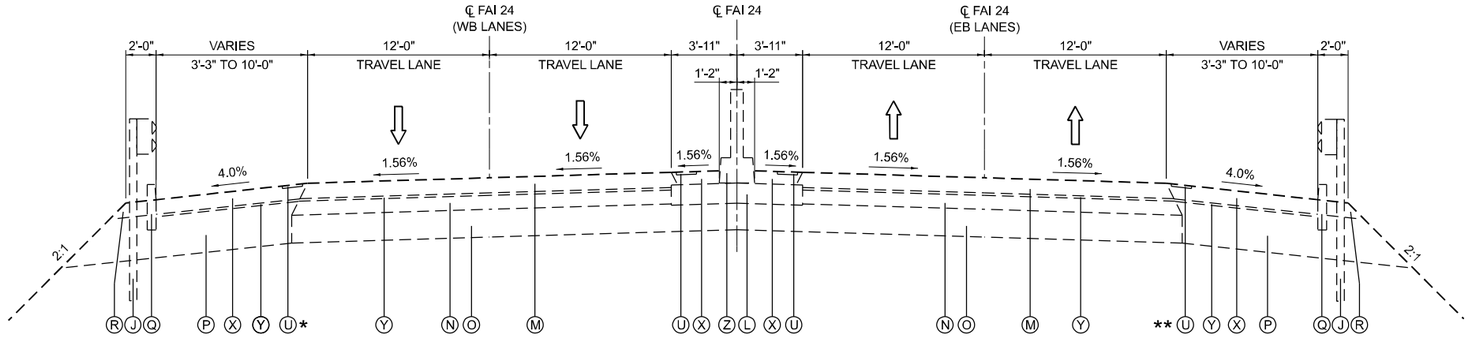
(END OF BRIDGE PARAPET TO END OF BRIDGE PARAPET)
STA. 430+88.00 TO STA. 487+39.25

MODEL: Existing Typicals
FILE NAME: P:\2021\210593-J&L - FAI 24 Ohio River Bridge Painting\4 CADD - DWG\4-7 Trim\CAD_Sheets\D297697<<elvkrydak-424.dgn

TWM ENGINEERING GEOSPATIAL SERVICES — TWM, INC. WWW.TWM.INC.COM — IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = bdlhartz	DESIGNED - KMO	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING TYPICAL SECTIONS I–24
		DRAWN - BAB	REVISED -		
	PLOT SCALE = 10.000 ' / In.	CHECKED - TBP	REVISED -		
	PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -		SCALE: N.T.S. SHEET 1 OF 2 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	11
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

KENTUCKY SIDE



EXISTING TYPICAL SECTION (WESTBOUND)

* STA. 487+98.00 LT TO STA. 488+53.50 LT

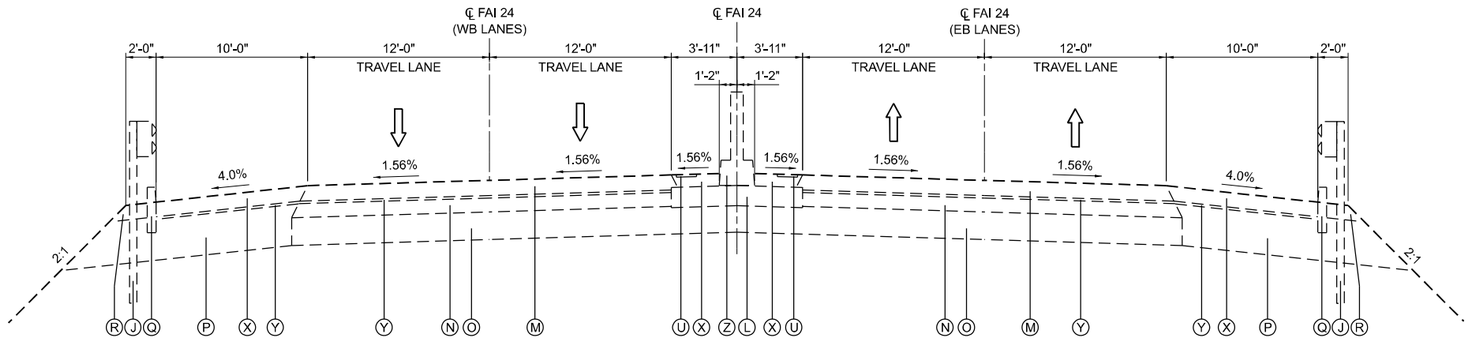
STA. 487+39.25 LT TO STA. 488+53.50 LT

EXISTING TYPICAL SECTION (EASTBOUND)

** STA. 487+98.00 RT TO STA. 488+53.50 RT

STA. 487+39.25 RT TO STA. 488+53.50 RT

Ⓐ EX. CRC PAVEMENT, 8"
Ⓑ EX. POLY HMA BINDER COURSE, 3½"
Ⓒ EX. POLY HMA SURFACE COURSE, 1½"
Ⓓ EX. STABILIZED SUB-BASE, 4"
Ⓔ EX. SHOULDER BAM, 8"
Ⓕ EX. AGGREGATE WEDGE SHOULDERS, TY B
Ⓖ EX. PIPE UNDERDRAINS (TO REMAIN IN PLACE - TYP), 4"
Ⓗ EX. BITUMINOUS AGGREGATE MIXTURE SHOULDER, VARIES 5"-7"
Ⓙ EX. GUARDRAIL
Ⓚ EX. CONCRETE BARRIER TRANSITION SECTION
Ⓛ EX. CONCRETE PAVEMENT, 8"
Ⓜ EX. HMA RESURFACING, APPROX. 5"
Ⓝ EX. HMA BASE COURSE, 6½"
Ⓞ EX. DENSE GRADED AGGREGATE, 11"
Ⓟ EX. DENSE GRADED AGGREGATE, FULL-DEPTH/ CEMENT TREATED BANK GRAVEL BASE, 17½"
Ⓠ EX. CONCRETE CURB
Ⓡ EX. AGGREGATE SHOULDER
Ⓢ EX. HMA SHOULDERS, 5"
Ⓣ EX. HMA SHOULDERS, VARIES 2¾"-4½"
Ⓤ EX. 16" RUMBLE STRIPS
Ⓥ EX. HMA SHOULDERS, 1¾"
Ⓦ EX. STABILIZED MEDIAN
Ⓧ EX. HMA SHOULDERS, APPROX. 5"
Ⓨ EX. HMA, 1"
Ⓩ EX. REINF. CONCRETE MEDIAN BARRIER, TYPE-2 (KY STANDARD)
Ⓐⓐ EX. #6 HOOK BAR



EXISTING TYPICAL SECTION (WESTBOUND)

STA. 488+53.50 LT TO STA. 497+00.00 LT

EXISTING TYPICAL SECTION (EASTBOUND)

STA. 488+53.50 RT TO STA. 497+00.00 RT

MODEL: Existing Typicals
FILE NAME: P:\2021\21059\J&L • FAI 24 Ohio River Bridge Painting\4 CADD • DWG\4_7 Tran\CAD_Sheets\D978972-existingtypicalsi424.dgn

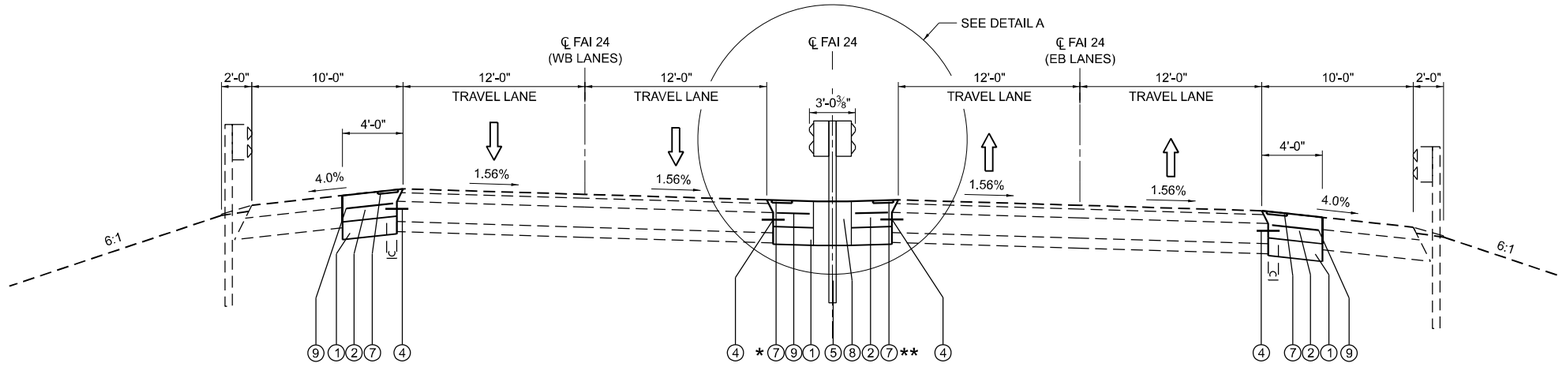
TWM ENGINEERING & GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM IL DESIGN FIRM LICENSE NO. 184-001220	USER NAME = bbillhartz	DESIGNED - KMO	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
			DRAWN - BAB	REVISED -	
		PLOT SCALE = 10.000 ' / In.	CHECKED - TBP	REVISED -	
		PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

EXISTING TYPICAL SECTIONS
I–24

SCALE: N.T.S. | SHEET 2 OF 2 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	12
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

ILLINOIS SIDE



PROPOSED TYPICAL SECTION (WESTBOUND)

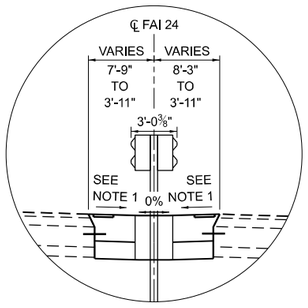
* STA. 420+18.97 LT TO STA. 421+60.00 LT

STA. 420+07.80 LT TO STA. 423+53.98 LT

PROPOSED TYPICAL SECTION (EASTBOUND)

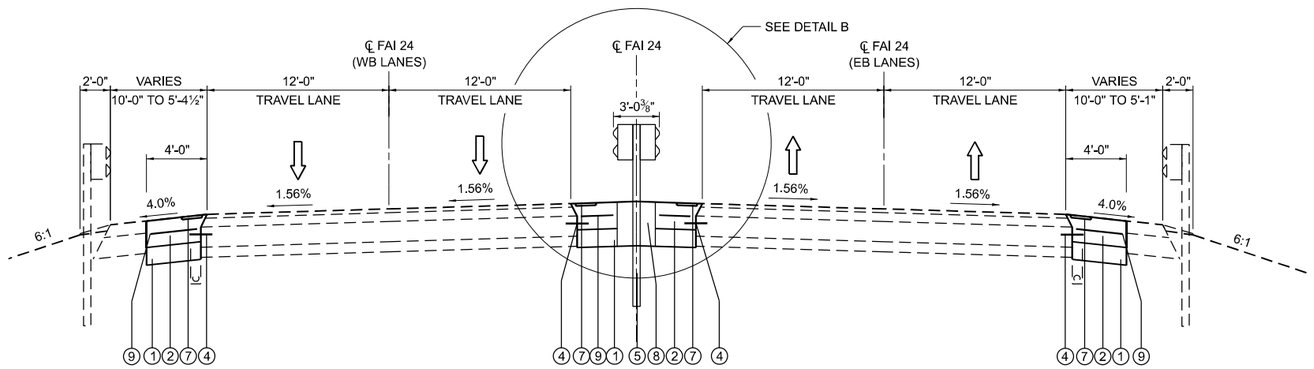
** STA. 420+18.97 RT TO STA. 421+60.00 RT

STA. 419+67.97 RT TO STA. 423+53.98 RT



DETAIL A

STA. 420+18.97 LT TO STA. 423+50.00 LT
STA. 420+18.97 RT TO STA. 424+75.00 RT

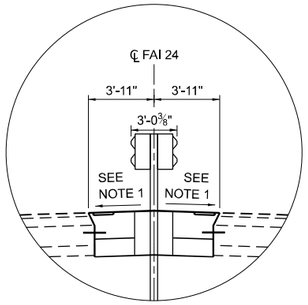


PROPOSED TYPICAL SECTION (WESTBOUND)

STA. 423+53.98 LT TO STA. 424+85.87 LT BK
STA. 428+06.78 LT AH TO STA. 429+99.77 LT

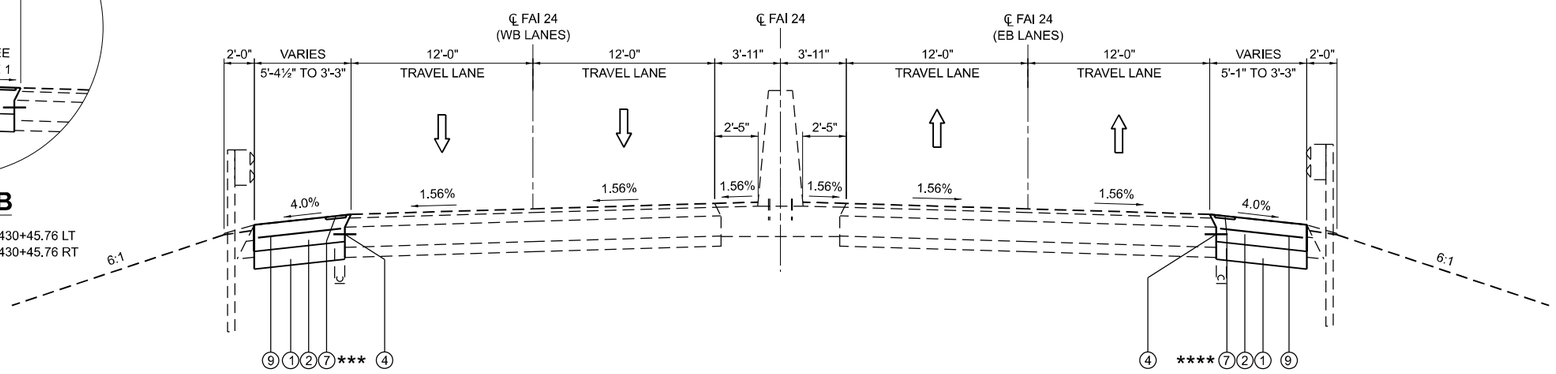
PROPOSED TYPICAL SECTION (EASTBOUND)

STA. 423+53.98 RT TO STA. 424+85.87 RT BK
STA. 428+06.78 RT AH TO STA. 430+37.27 RT



DETAIL B

STA. 423+50.00 LT TO STA. 430+45.76 LT
STA. 424+75.00 RT TO STA. 430+45.76 RT



PROPOSED TYPICAL SECTION (WESTBOUND)

*** STA. 429+99.77 LT TO STA. 430+45.76 LT

STA. 429+99.77 LT TO STA. 430+88.00 LT

PROPOSED TYPICAL SECTION (EASTBOUND)

**** STA. 430+37.27 RT TO STA. 430+45.67 RT

STA. 430+37.27 RT TO STA. 430+88.00 RT

- (A) EX. CRC PAVEMENT, 8"
- (B) EX. POLY HMA BINDER COURSE, 3½"
- (C) EX. POLY HMA SURFACE COURSE, 1½"
- (D) EX. STABILIZED SUB-BASE, 4"
- (E) EX. SHOULDER BAM, 8"
- (F) EX. AGGREGATE WEDGE SHOULDERS, TY B
- (G) EX. PIPE UNDERDRAINS (TO REMAIN IN PLACE - TYP), 4"
- (H) EX. BITUMINOUS AGGREGATE MIXTURE SHOULDER, VARIES 5"-7"
- (J) EX. GUARDRAIL
- (K) EX. CONCRETE BARRIER TRANSITION SECTION
- (L) EX. CONCRETE PAVEMENT, 8"
- (M) EX. HMA RESURFACING, APPROX. 5"
- (N) EX. HMA BASE COURSE, 6½"
- (O) EX. DENSE GRADED AGGREGATE, 11"
- (P) EX. DENSE GRADED AGGREGATE, FULL-DEPTH/ CEMENT TREATED BANK GRAVEL BASE, 17½"
- (Q) EX. CONCRETE CURB
- (R) EX. AGGREGATE SHOULDER
- (S) EX. HMA SHOULDERS, 5"
- (T) EX. HMA SHOULDERS, VARIES 2¾"-4½"
- (U) EX. 16" RUMBLE STRIPS
- (V) EX. HMA SHOULDERS, 1¾"
- (W) EX. STABILIZED MEDIAN
- (X) EX. HMA SHOULDERS, APPROX. 5"
- (Y) EX. HMA, 1"
- (Z) EX. REINF. CONCRETE MEDIAN BARRIER, TYPE-2 (KY STANDARD)
- (AA) EX. #6 HOOK BAR

- (1) PR. SUBBASE GRANULAR MATERIAL, TYPE A, 7"
- (2) PR. PCC PAVEMENT 10¼" (JOINTED)
- (3) PR. SUBBASE GRANULAR MATERIAL, TYPE A, 12"
- (4) PR. DRILL AND GROUT #6 TIE BARS (INCLUDED IN PCC PAVEMENT)
- (5) PR. STEEL PLATE BEAM GUARDRAIL, TYPE D, 6 FOOT POSTS
- (6) PR. CONCRETE BARRIER WALL (SPECIAL)
- (7) PR. SHOULDER RUMBLE STRIPS, 16 INCH
- (8) PR. HOLES DRILLED
- (9) PR. WELDED WIRE REINFORCEMENT

NOTES:

1.) SEE DRAINAGE PLAN SHEETS FOR CROSS SLOPES OF PROPOSED MEDIAN.

2.) THESE PROPOSED TYPICALS REPRESENT THE FINAL CONDITIONS AFTER STAGE CONSTRUCTION. SEE STAGING SHEETS FOR PROPOSED SEQUENCE OF CONSTRUCTION.

STATION EQUATION

STA. 424+85.87 BK = STA. 428+06.78 AH

SN 064-0035

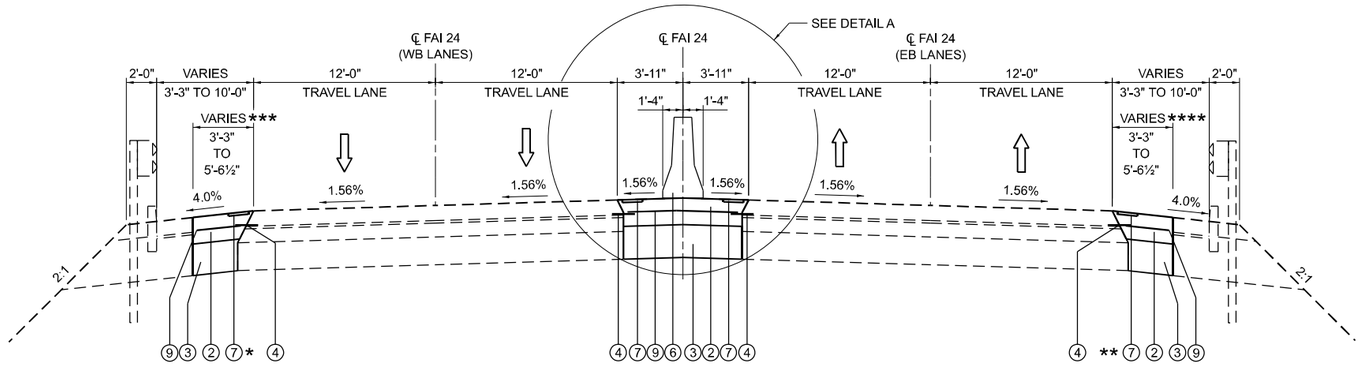
(END OF BRIDGE PARAPET TO END OF BRIDGE PARAPET)
STA. 430+88.00 TO STA. 487+39.25

MODEL: Proposed Typicals
FILE NAME: P:\2021\21105\03\J&L - FAI 24 Ohio River Bridge Paintings\4 CADD - DWGs\4_7 Trans\CAD_Sheets\D97687?<ahl<hyk\sl-f24.dgn

TWM, INC. WWW.TWM-INC.COM ENGINEERING & GEOSPATIAL SERVICES	USER NAME = billhartz	DESIGNED - KMO	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PROPOSED TYPICAL SECTIONS I–24
IL DESIGN FIRM LICENSE NO: 184-001220		DRAWN - BAB	REVISED -		SCALE: N.T.S. SHEET 1 OF 2 SHEETS STA. TO STA.
	PLOT SCALE = 10.000 ' / In.	CHECKED - TBP	REVISED -		
	PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	13
		CONTRACT NO. 78972		
		ILLINOIS	FED. AID PROJECT	

KENTUCKY SIDE



PROPOSED TYPICAL SECTION (WESTBOUND)

STA. 487+39.25 LT TO STA. 488+53.50 LT

PROPOSED TYPICAL SECTION (EASTBOUND)

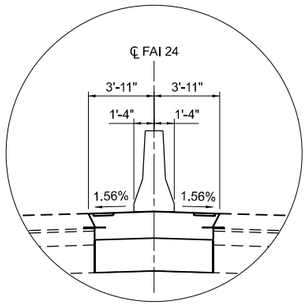
STA. 487+39.25 RT TO STA. 488+53.50 RT

* STA. 487+98.00 LT TO STA. 488+53.50 LT
*** STA. 487+38.75 LT TO STA. 487+77.68 LT

** STA. 487+98.00 RT TO STA. 488+53.50 RT
**** STA. 487+38.75 RT TO STA. 487+77.68 RT

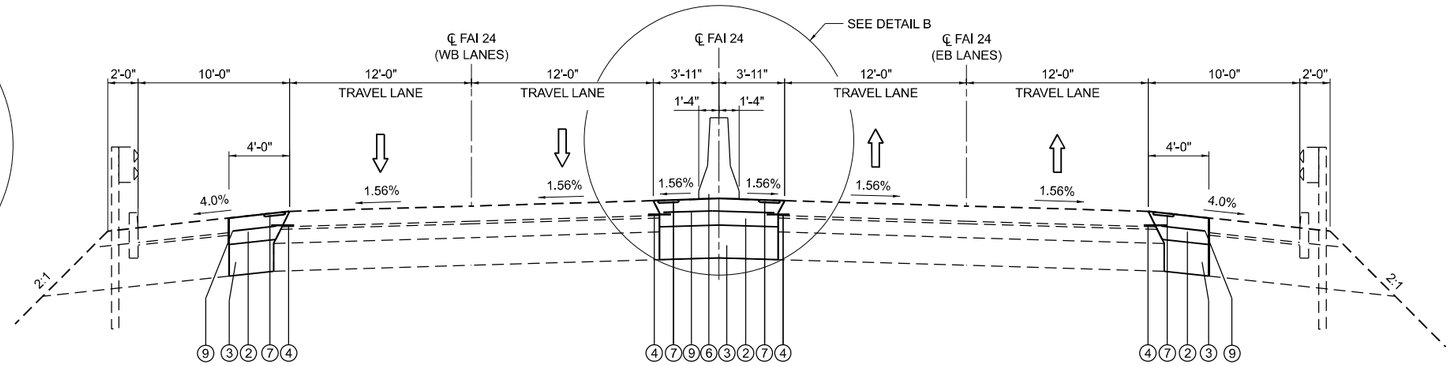
Ⓐ EX. CRC PAVEMENT, 8"
Ⓑ EX. POLY HMA BINDER COURSE, 3½"
Ⓒ EX. POLY HMA SURFACE COURSE, 1½"
Ⓓ EX. STABILIZED SUB-BASE, 4"
Ⓔ EX. SHOULDER BAM, 8"
Ⓕ EX. AGGREGATE WEDGE SHOULDERS, TY B
Ⓖ EX. PIPE UNDERDRAINS (TO REMAIN IN PLACE - TYP), 4"
Ⓗ EX. BITUMINOUS AGGREGATE MIXTURE SHOULDER, VARIES 5"-7"
Ⓙ EX. GUARDRAIL
Ⓚ EX. CONCRETE BARRIER TRANSITION SECTION
Ⓛ EX. CONCRETE PAVEMENT, 8"
Ⓜ EX. HMA RESURFACING, APPROX. 5"
Ⓝ EX. HMA BASE COURSE, 6½"
Ⓞ EX. DENSE GRADED AGGREGATE, 11"
Ⓟ EX. DENSE GRADED AGGREGATE, FULL-DEPTH/ CEMENT TREATED BANK GRAVEL BASE, 17½"
Ⓠ EX. CONCRETE CURB
Ⓡ EX. AGGREGATE SHOULDER
Ⓢ EX. HMA SHOULDERS, 5"
Ⓣ EX. HMA SHOULDERS, VARIES 2¾"-4½"
Ⓤ EX. 16" RUMBLE STRIPS
Ⓥ EX. HMA SHOULDERS, 1¾"
Ⓦ EX. STABILIZED MEDIAN
Ⓧ EX. HMA SHOULDERS, APPROX. 5"
Ⓨ EX. HMA, 1"
Ⓩ EX. REINF. CONCRETE MEDIAN BARRIER, TYPE-2 (KY STANDARD)
Ⓐⓐ EX. #6 HOOK BAR

① PR. SUBBASE GRANULAR MATERIAL, TYPE A, 7"
② PR. PCC PAVEMENT 10¼" (JOINTED)
③ PR. SUBBASE GRANULAR MATERIAL, TYPE A, 12"
④ PR. DRILL AND GROUT #6 TIE BARS (INCLUDED IN PCC PAVEMENT)
⑤ PR. STEEL PLATE BEAM GUARDRAIL, TYPE D, 6 FOOT POSTS
⑥ PR. CONCRETE BARRIER WALL (SPECIAL)
⑦ PR. SHOULDER RUMBLE STRIPS, 16 INCH
⑧ PR. HOLES DRILLED
⑨ PR. WELDED WIRE REINFORCEMENT



DETAIL A

STA. 488+42.26 TO STA. 488+53.50

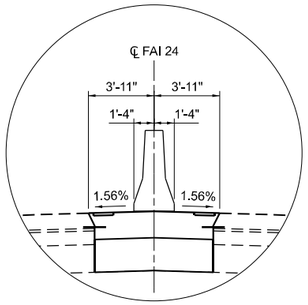


PROPOSED TYPICAL SECTION (WESTBOUND)

STA. 488+53.50 LT TO STA. 495+73.00 LT

PROPOSED TYPICAL SECTION (EASTBOUND)

STA. 488+53.50 RT TO STA. 495+73.00 RT



DETAIL B

STA. 488+53.50 TO STA. 495+07.60

NOTES:

1.) THESE PROPOSED TYPICALS REPRESENT THE FINAL CONDITIONS AFTER STAGE CONSTRUCTION. SEE STAGING SHEETS FOR PROPOSED SEQUENCE OF CONSTRUCTION.

MODEL: Proposed Typicals
FILE NAME: P:\2021\210593.IJ&L - FAI 24 Ohio River Bridge Painting\d CADD - DWGs_7 Tran\CAD_Sheets\D97897*ellkoy\dcul-024.dgn

TWM ENGINEERING & GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = billhartz	DESIGNED - KMO	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PROPOSED TYPICAL SECTIONS I–24	
			DRAWN - BAB	REVISED -			
		PLOT SCALE = 10.000 ' / In.	CHECKED - TBP	REVISED -			
		PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -		SCALE: N.T.S. SHEET 2 OF 2 SHEETS STA. TO STA.	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	14
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

STORM SEWER SCHEDULE

LOCATION							FLUSH INLET BOX FOR MEDIAN, STANDARD 542546	STORM SEWERS, CLASS A, TYPE 1 24"	STORM SEWERS, CLASS A, TYPE 2 12"	CONCRETE COLLAR	STORM SEWER REMOVAL 24"	INLETS, TYPE B, TYPE 1 FRAME, CLOSED LID	REMOVING INLETS	FILLING EXISTING CUVLERTS
STATION	OFFSET	LT/RT	TO	STATION	OFFSET	LT/RT	EACH	FOOT	FOOT	CU YD	FOOT	EACH	EACH	CU YD
418+20.47	3.79	RT										1		
418+20.47	6.40	RT								0.44				
418+20.47	0.00	RT	TO	418+20.47	5.00	RT					5			
418+20.47	0.00	RT	TO	418+20.47	3.79	RT		1.0						
418+20.47	3.79	RT	TO	418+20.47	6.40	RT		1.6						
418+20.47	3.79	RT	TO	418+32.97	4.15	RT			9.6					
418+32.97	0.00						1							
418+32.97	4.15	RT										1		
418+32.97	4.15	RT	TO	418+32.97	0	RT			1.3					
422+73.62	0.95	RT											1	17.2
						PAY TOTAL:	1	3	11	0.4	5	2	1	17.2

GUARDRAIL SCHEDULE

LOCATION				STEEL PLATE BEAM GUARDRAIL, TYPE D, 6 FOOT POSTS	CONCRETE BARRIER TRANSITION	GUARDRAIL REFLECTORS, TYPE A	HOLES DRILLED	TRAFFIC BARRIER TERMINAL, TYPE 6 (SPECIAL)	GUARDRAIL REMOVAL (SPECIAL)	CONCRETE BARRIER WALL (SPECIAL)	BARRIER WALL REFLECTORS (SPECIAL)
STATION	TO	STATION	LT/RT	FOOT	FOOT	EACH	EACH	EACH	FOOT	FOOT	EACH
PRE-STAGE B-1											
418+12.97	TO	418+40.97	LT/RT	37.5		2			37.5		
419+87.23	TO	430+45.76	LT/RT						737.5		
STAGE 5											
419+87.23	TO	430+08.86	LT/RT	700.0		18	112				
430+08.86	TO	430+45.76	LT/RT			2	17	1			
488+42.26	TO	494+72.26	LT/RT		30						1
488+72.26	TO	494+77.60	LT/RT							605	6
494+77.60	TO	495+07.60	LT/RT		30						1
			PAY TOTAL:	738	60	22	129	1	775	605	8

CHANGEABLE MESSAGE SIGN SCHEDULE

LOCATION	CHANGEABLE MESSAGE SIGN	
	CAL DAY	CAL DAY
	EB	WB
FAI 24		
2 WEEKS BEFORE PRE-STAGE A	28	28
2 WEEKS BEFORE PRE-STAGE B-1	28	28
2 WEEKS BEFORE PRE-STAGE B-2	28	28
2 WEEKS BEFORE STAGE 1	28	28
2 WEEKS BEFORE STAGE 2	28	28
2 WEEKS BEFORE STAGE 3	28	28
2 WEEKS BEFORE STAGE 4	28	28
2 WEEKS BEFORE STAGE 5	28	28
US 45		
2 WEEKS BEFORE PRE-STAGE A	14	14
DURATION OF 1ST CONSTRUCTION SEASON	244	244
DURATION OF 2ND CONSTRUCTION SEASON	244	244
DURATION OF 3RD CONSTRUCTION SEASON	244	244
SUB TOTAL	970	970
PAY TOTAL:	1940	

TRAFFIC CONTROL & PROTECTION STANDARD 701400 (SPECIAL) SCHEDULE

LOCATION		TEMPORARY RUMBLE STRIPS	REAL-TIME TRAFFIC CONTROL SENSOR UNIT	CHANGEABLE MESSAGE SIGN (SPECIAL)	SMART TRAFFIC MONITORING SYSTEM	SMART TRAFFIC MONITORING DEVICE
		EACH	WEEK	CAL WK	CAL WK	CAL WK
1ST CONSTRUCTION SEASON						
EB	LT/RT	8	140	245	35	175
WB	LT/RT	8	140	245	35	175
2ND CONSTRUCTION SEASON						
EB	LT/RT	8	140	245	35	175
WB	LT/RT	8	140	245	35	175
3RD CONSTRUCTION SEASON						
EB	LT/RT	8	140	245	35	175
WB	LT/RT	8	140	245	35	175
PAY TOTAL:		48	840	1470	210	1050

RAISED REFLECTIVE PAVEMENT MARKER SCHEDULE

LOCATION			RAISED REFLECTIVE PAVEMENT MARKER	RAISED REFLECTIVE PAVEMENT MARKER REMOVAL
STATION	TO	STATION	EACH	EACH
STAGE 3 - WB CENTERLINE				
431+31.68	TO	486+95.72	70	70
STAGE 4 - EB CENTERLINE				
431+31.68	TO	486+95.72	70	70
PAY TOTAL:			140	140

MODEL: Default
FILE NAME: P:\2021\210593.01 - FAI 24 Ohio River Bridge Painting\4 CADD - DWGs\4.7 Trafi\CAD_Sheets\D97697\e-inSheetIndex.dgn

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC.
WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = bbillhartz	DESIGNED - KMO	REVISED -	
	DRAWN - BAB	REVISED -	
PLOT SCALE = 10.000 ' / In.	CHECKED - TBP	REVISED -	
PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SCHEDULE OF QUANTITIES
SN 064-0035

SCALE: | SHEET 1 OF 5 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	15
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

PRE-STAGE A SCHEDULE

LOCATION				SUBBASE GRANULAR MATERIAL, TYPE A 7" *	SUBBASE GRANULAR MATERIAL, TYPE A 12" *	WELDED WIRE REINFORCEMENT *	PORTLAND CEMENT CONCRETE PAVEMENT 10 1/4" (JOINTED) *	PAVED SHOULDER REMOVAL *	MODULAR GLARE SCREEN SYSTEM, TEMPORARY **	SHOULDER RUMBLE STRIPS, 16 INCH *	TEMPORARY CONCRETE BARRIER **	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE, NARROW), TEST LEVEL 3 ***	PAVED SHOULDER REMOVAL (SPECIAL) *	TRAFFIC CONTROL AND PROTECTION, STANDARD 701402 ****
STATION	TO	STATION	LT/RT	SQ YD	SQ YD	SQ YD	SQ YD	SQ YD	FOOT	FOOT	FOOT	EACH	SQ YD	EACH
EB TRAFFIC												1		1
416+66.56	TO	417+91.56	RT						125.0		125.0			
417+91.56	TO	496+76.25	RT						7575.0		7575.0			
419+67.97	TO	430+88.00	RT	359.8		359.8	359.8	359.8		799.2				
485+89.18	TO	496+76.25	RT											
487+39.25	TO	495+73.00	RT		372.5	372.5	372.5			833.8			372.5	
WB TRAFFIC												1		
417+93.59	TO	496+01.25	LT						7487.5		7487.5			1
420+07.80	TO	430+88.00	LT	341.2			341.2	341.2	341.2		759.3			
487+39.25	TO	495+73.00	LT		372.5	372.5	372.5			833.8			372.5	
496+01.25	TO	497+26.25	LT						125.0		125.0			
			PAY TOTAL:	701	745	1446	1446	701	15312.5	3226	15312.5	2	745	2

* SEE PRE-STAGE B-1 SCHEDULE FOR ADDITIONAL QUANTITIES

** SEE PRE-STAGE B-2, STAGE 3 AND STAGE 4 SCHEDULES FOR ADDITIONAL QUANTITIES

*** SEE STAGE 3, STAGE 4, AND STAGE 5 SCHEDULES FOR ADDITIONAL QUANTITIES

**** SEE STAGE B-1, STAGE 1, STAGE 2, AND STAGE 5 SCHEDULES FOR ADDITIONAL QUANTITIES

PRE-STAGE B-1 SCHEDULE

LOCATION				SUBBASE GRANULAR MATERIAL, TYPE A 7" *	SUBBASE GRANULAR MATERIAL, TYPE A 12" *	WELDED WIRE REINFORCEMENT *	PORTLAND CEMENT CONCRETE PAVEMENT 10 1/4" (JOINTED) *	CONCRETE BARRIER REMOVAL	PAVED SHOULDER REMOVAL *	PORTLAND CEMENT CONCRETE SHOULDERS 9"	SHOULDER RUMBLE STRIPS, 16 INCH *	RELOCATE TEMPORARY CONCRETE BARRIER **	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE, NARROW), TEST LEVEL 3 ***	PAVED SHOULDER REMOVAL (SPECIAL) *	RELOCATE MODULAR GLARE SCREEN SYSTEM **	TRAFFIC CONTROL AND PROTECTION, STANDARD 701402 ****
STATION	TO	STATION	LT/RT	SQ YD	SQ YD	SQ YD	SQ YD	FOOT	SQ YD	SQ YD	FOOT	FOOT	EACH	SQ YD	FOOT	EACH
418+12.97	TO	418+40.97	LT/RT						64.9	64.9						
420+18.97	TO	430+45.76	LT/RT	777.0		777.0	777.0		777.0		1411.8					
488+42.26	TO	495+07.60	LT/RT		579.1	579.1	579.1	665.3			1330.7			579.1		
EB TRAFFIC													1			1
416+66.56	TO	417+91.56	RT									125.0			125.0	
417+91.56	TO	496+76.25	RT									7575.0			7575.0	
WB TRAFFIC													1			1
417+93.59	TO	496+01.25	LT									7487.5			7487.5	
496+01.25	TO	497+26.25	LT									125.0			125.0	
			PAY TOTAL:	777	579	1356	1356	665	842	65	2742	15312.5	2	579	15312.5	2

* SEE PRE-STAGE A SCHEDULE FOR ADDITIONAL QUANTITIES

** SEE STAGE 1, STAGE 2, STAGE 3, STAGE 4 AND STAGE 5 SCHEDULES FOR ADDITIONAL QUANTITIES

*** SEE STAGE 1, STAGE 2, AND STAGE 5 SCHEDULES FOR ADDITIONAL QUANTITIES

**** SEE PRE-STAGE A, STAGE 1, STAGE 2, AND STAGE 5 SCHEDULES FOR ADDITIONAL QUANTITIES

MODEL: Default
FILE NAME: P:\2021\21059\L&L • FA4 24 Ohio River Bridge Painting\4 CADD • DWG\4_7 Trn\CAD_Sheets\D97897\sht*Sched.dgn

TWM ENGINEERING & GEOSPATIAL SERVICES
TWM, INC.
WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = bbillhartz	DESIGNED - KMO	REVISED -
	DRAWN - BAB	REVISED -
PLOT SCALE = 10.000 ' / In.	CHECKED - TBP	REVISED -
PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SCHEDULE OF QUANTITIES
SN 064-0035

SCALE: | SHEET 2 OF 5 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	16
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

PRE-STAGE B-2 SCHEDULE

LOCATION				MODULAR GLARE SCREEN SYSTEM, TEMPORARY *	TEMPORARY CONCRETE BARRIER *	PINNING TEMPORARY CONCRETE BARRIER **
STATION	TO	STATION	LT/RT	FOOT	FOOT	EACH
419+93.98	TO	430+70.76	LT/RT	762.5	762.5	30
488+17.26	TO	495+32.60	LT/RT	725.0	725.0	30
			PAY TOTAL:	1487.5	1487.5	60

* SEE PRE-STAGE A, STAGE 3 AND STAGE 4 SCHEDULES FOR ADDITIONAL QUANTITIES

** SEE STAGE 1, STAGE 2, STAGE 3 AND STAGE 4 SCHEDULES FOR ADDITIONAL QUANTITIES

STAGE 2 SCHEDULE

LOCATION				PINNING TEMPORARY CONCRETE BARRIER **	RELOCATE TEMPORARY CONCRETE BARRIER *	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE, NARROW), TEST LEVEL 3 ****	RELOCATE MODULAR GLARE SCREEN SYSTEM *	TRAFFIC CONTROL AND PROTECTION, STANDARD 701402 *****
STATION	TO	STATION	LT/RT	EACH	FOOT	EACH	FOOT	EACH
EB TRAFFIC						1		1
433+70.35	TO	434+95.35	RT		125.0		125.0	
434+95.35	TO	476+66.09	RT	90	4175.0		4175.0	
WB TRAFFIC						1		1
435+61.08	TO	477+32.15	LT	90	4175.0		4175.0	
477+32.15	TO	478+57.15	LT		125.0		125.0	
			PAY TOTAL:	180	8600	2	8600	2

* SEE PRE-STAGE B-1, STAGE 1, STAGE 3, STAGE 4 AND STAGE 5 SCHEDULES FOR ADDITIONAL QUANTITIES

** SEE PRE-STAGE B-2, STAGE 1, STAGE 3 AND STAGE 4 SCHEDULES FOR ADDITIONAL QUANTITIES

*** SEE PRE-STAGE A, PRE-STAGE B-1, STAGE 1, AND STAGE 5 SCHEDULES FOR ADDITIONAL QUANTITIES

**** SEE PRE-STAGE A, PRE-STAGE B-1, STAGE 1, AND STAGE 5 SCHEDULES FOR ADDITIONAL QUANTITIES

STAGE 3 SCHEDULE

LOCATION				MODULAR GLARE SCREEN SYSTEM, TEMPORARY *	TRAFFIC CONTROL AND PROTECTION, STANDARD 701416 **	TEMPORARY CONCRETE BARRIER *	PINNING TEMPORARY CONCRETE BARRIER ***	RELOCATE TEMPORARY CONCRETE BARRIER ****	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE, NARROW), TEST LEVEL 3 *****	RELOCATE MODULAR GLARE SCREEN SYSTEM ****	BITUMINOUS MATERIALS (TACK COAT) **	PARTIAL DEPTH PATCHING **	PARTIAL DEPTH REMOVAL, TYPE II, 2" **	PORTLAND CEMENT CONCRETE SURFACE REMOVAL (COLD MILLING) **
STATION	TO	STATION	LT/RT	FOOT	EACH	FOOT	EACH	FOOT	EACH	FOOT	POUND	TON	SQ YD	SQ YD
419+62.23	TO	495+07.60	RT	5737.5		5737.5	1518	1487.5		1487.5				
430+86.50	TO	430+96.50	LT								15.1	3.8	33.5	33.5
487+30.75	TO	487+40.75	LT								15.0	3.7	33.3	33.3
488+42.26	TO	491+28.97	LT/RT	287.5		287.5	15.0							
PRE-STAGE B-2 RE-ERECTED							30.0	762.5		762.5				
PRE-STAGE B-2 RE-ERECTED							30.0	725.0		725.0				
EB TRAFFIC					1				1					
WB TRAFFIC														
			PAY TOTAL:	6025	1	6025	1593	2975	1	2975	30	7.5	67	67

* SEE PRE-STAGE A, PRE-STAGE B-2 AND STAGE 4 SCHEDULES FOR ADDITIONAL QUANTITIES

** SEE STAGE 4 SCHEDULE FOR ADDITIONAL QUANTITY

*** SEE PRE-STAGE B-2, STAGE 1, STAGE 2 AND STAGE 4 SCHEDULES FOR ADDITIONAL QUANTITIES

**** SEE PRE-STAGE B-1, STAGE 1, STAGE 2, STAGE 4 AND STAGE 5 SCHEDULES FOR ADDITIONAL QUANTITIES

***** SEE PRE-STAGE A, STAGE 4 AND STAGE 5 SCHEDULES FOR ADDITIONAL QUANTITIES

STAGE 1 SCHEDULE

LOCATION				PINNING TEMPORARY CONCRETE BARRIER **	RELOCATE TEMPORARY CONCRETE BARRIER *	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE, NARROW), TEST LEVEL 3 ****	RELOCATE MODULAR GLARE SCREEN SYSTEM *	TRAFFIC CONTROL AND PROTECTION, STANDARD 701402 *****
STATION	TO	STATION	LT/RT	EACH	FOOT	EACH	FOOT	EACH
EB TRAFFIC						1		1
433+70.35	TO	434+95.35	RT		125.0		125.0	
434+95.35	TO	476+66.09	RT	90	4175.0		4175.0	
WB TRAFFIC						1		1
435+61.08	TO	477+32.15	LT	90	4175.0		4175.0	
477+32.15	TO	478+57.15	LT		125.0		125.0	
			PAY TOTAL:	180	8600	2	8600	2

* SEE PRE-STAGE B-1, STAGE 2, STAGE 3, STAGE 4 AND STAGE 5 SCHEDULES FOR ADDITIONAL QUANTITIES

** SEE PRE-STAGE B-2, STAGE 2, STAGE 3 AND STAGE 4 SCHEDULES FOR ADDITIONAL QUANTITIES

*** SEE PRE-STAGE A, STAGE 3, STAGE 4 AND STAGE 5 SCHEDULES FOR ADDITIONAL QUANTITIES

**** SEE PRE-STAGE B-1, STAGE 2, AND STAGE 5 FOR ADDITIONAL QUANTITIES

***** SEE PRE-STAGE A, PRE-STAGE B-1, STAGE 2 AND STAGE 5 SCHEDULES FOR ADDITIONAL QUANTITIES

STAGE 4 SCHEDULE

LOCATION				MODULAR GLARE SCREEN SYSTEM, TEMPORARY *	TRAFFIC CONTROL AND PROTECTION, STANDARD 701416 **	TEMPORARY CONCRETE BARRIER *	PINNING TEMPORARY CONCRETE BARRIER ***	RELOCATE TEMPORARY CONCRETE BARRIER ****	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE, NARROW), TEST LEVEL 3 *****	RELOCATE MODULAR GLARE SCREEN SYSTEM ****	BITUMINOUS MATERIALS (TACK COAT) **	PARTIAL DEPTH PATCHING **	PARTIAL DEPTH REMOVAL, TYPE II, 2" **	PORTLAND CEMENT CONCRETE SURFACE REMOVAL (COLD MILLING) **
STATION	TO	STATION	LT/RT	FOOT	EACH	FOOT	EACH	FOOT	EACH	FOOT	POUND	TON	SQ YD	SQ YD
420+62.83	TO	495+32.60	LT	5662.5		5662.5	138	1487.5		1487.5				
424+13.18	TO	430+45.76	RT	312.5		312.5	15.0							
430+86.50	TO	430+96.50	RT								15.1	3.8	33.5	33.5
487+30.75	TO	487+40.75	RT								15.0	3.7	33.3	33.3
EB TRAFFIC					1				1					
WB TRAFFIC														
PAY TOTAL:				5975	1	5975	153	1488	1	1488	30	7.5	67	67

* SEE PRE-STAGE A, PRE-STAGE B-2 AND STAGE 3 SCHEDULES FOR ADDITIONAL QUANTITIES

** SEE STAGE 3 SCHEDULE FOR ADDITIONAL QUANTITY

*** SEE PRE-STAGE B-2, STAGE 1, STAGE 2 AND STAGE 3 SCHEDULES FOR ADDITIONAL QUANTITIES

**** SEE PRE-STAGE B-1, STAGE 1, STAGE 2, STAGE 3 AND STAGE 5 SCHEDULES FOR ADDITIONAL QUANTITIES

***** SEE PRE-STAGE A, STAGE 3 AND STAGE 5 SCHEDULES FOR ADDITIONAL QUANTITIES

BARRIER WALL REFLECTORS, TYPE C SCHEDULE

LOCATION	BARRIER WALL REFLECTORS, TYPE C
	EACH
1ST CONSTRUCTION SEASON	1225
2ND CONSTRUCTION SEASON	1225
3RD CONSTRUCTION SEASON	1225
PAY TOTAL:	3675

*ASSUMES NEW BARRIER WALL REFLECTORS, TYPE C INSTALLED AT THE BEGINNING OF EACH CONSTRUCTION SEASON

STAGE 5 SCHEDULE

LOCATION				RELOCATE TEMPORARY CONCRETE BARRIER *	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE, NARROW), TEST LEVEL 3 **	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE, NARROW), TEST LEVEL 3 ***	RELOCATE MODULAR GLARE SCREEN SYSTEM *	TRAFFIC CONTROL AND PROTECTION, STANDARD 701402 ****
STATION	TO	STATION	LT/RT	FOOT	EACH	EACH	FOOT	EACH
EB TRAFFIC					1	1		1
418+37.09	TO	430+70.76	RT	912.5			912.5	
486+92.77	TO	496+04.76	RT	912.5			912.5	
WB TRAFFIC					2			1
418+88.01	TO	431+95.25	LT	987.5			987.5	
488+17.26	TO	496+42.26	LT	825.0			825	
PAY TOTAL:				3637.5	3	1	3637.5	2

* SEE PRE-STAGE B-1, STAGE 1, STAGE 2, STAGE 3, AND STAGE 4 SCHEDULE FOR ADDITIONAL QUANTITIES

** SEE PRE-STAGE A, STAGE 3 AND STAGE 4 QUANTITIES FOR ADDITIONAL QUANTITIES

*** SEE PRE-STAGE B-1, STAGE 1 AND STAGE 2 SCHEDULES FOR ADDITIONAL QUANTITIES

**** SEE PRE-STAGE A, PRE-STAGE B-1, STAGE 1 AND STAGE 2 SCHEDULES FOR ADDITIONAL QUANTITIES

TRAFFIC CONTROL & PROTECTION STANDARD 701401 SCHEDULE

LOCATION		TRAFFIC CONTROL AND PROTECTION, STANDARD 701401
		EACH
1ST CONSTRUCTION SEASON		
EB	LT/RT	1
WB	LT/RT	1
2ND CONSTRUCTION SEASON		
EB	LT/RT	1
WB	LT/RT	1
PAY TOTAL:		4

*TRAFFIC CONTROL & PROTECTION STANDARD 701041 USED FOR HMA BRIDGE DECK PATCHING

PAVEMENT MARKING SCHEDULE

LOCATION					TRAFFIC CONTROL & PROTECTION STANDARD 701406	PAVEMENT MARKING BLACKOUT TAPE, 7"	SHORT TERM PAVEMENT MARKING	SHORT TERM PAVEMENT MARKING REMOVAL	TEMPORARY PAVEMENT MARKING - LINE 6" - PAINT		POLYUREA PAVEMENT MARKING TYPE II - LINE 6"		GROOVING FOR RECESSED PAVEMENT MARKING 7"	PAVEMENT MARKING REMOVAL - GRINDING
									YELLOW	WHITE	YELLOW	WHITE		
STATION	TO	STATION	LOCATION	TYPE	EACH	FOOT	FOOT	SQ FT	FOOT	FOOT	FOOT	FOOT	FOOT	SQ FT
PRE-STAGE A														
402+41.56	TO	412+41.56	EB - CENTERLINE	SINGLE		1000.0								
501+51.25	TO	511+51.25	WB - CENTERLINE	SINGLE		1000.0								
PRE-STAGE B-1														
402+41.56	TO	412+41.56	EB - CENTERLINE	SINGLE		1000.0								
501+51.25	TO	511+51.25	WB - CENTERLINE	SINGLE		1000.0								
STAGE 1 - EB						2875.0								
STAGE 1 - WB						2875.0								
STAGE 2 - EB						2470.0								
STAGE 2 - WB						2470.0								
STAGE 3 - EB														
409+67.97	TO	419+67.97	CENTERLINE	SINGLE		1000.0								
419+67.97	TO	495+73.00	EDGELINE, RT	SINGLE		7284.0								
422+89.86	TO	492+93.85	EDGELINE, LT	SINGLE		6683.0								
STAGE 3 - WB														
420+18.97	TO	428+59.80	EDGELINE, LT	SINGLE		520.0								
431+31.68	TO	486+95.72	EDGELINE, RT	SINGLE						5564.0				2782.0
431+31.68	TO	486+95.72	CENTERLINE	SKIP-DASH			556.0	185.0		1391.0				696.0
431+31.68	TO	486+95.72	EDGELINE, LT	SINGLE					5564.0					2782.0
490+04.10	TO	495+07.60	EDGELINE, LT	SINGLE		504.0								
495+07.60	TO	505+07.60	CENTERLINE	SINGLE		1000.0								
STAGE 4 - EB														
410+57.60	TO	420+57.60	CENTERLINE	SINGLE		1000								
420+57.60	TO	428+69.78	EDGELINE, LT	SINGLE		491.0								
431+31.68	TO	486+95.72	EDGELINE, RT	SKIP-DASH						5564.0				2782.0
431+31.68	TO	486+95.72	CENTERLINE	SKIP-DASH			556.0	186.0		1391.0				695.0
431+31.68	TO	486+95.72	EDGELINE, LT	SKIP-DASH					5564.0					2782.0
490+04.10	TO	495+07.60	EDGELINE, LT	SINGLE		504.0								
STAGE 4 - WB														
420+07.80	TO	495+73.00	EDGELINE, RT	SINGLE		7244.0								
422+84.87	TO	492+93.85	EDGELINE, LT	SINGLE		6688.0								
495+73.00	TO	505+73.00	CENTERLINE	SINGLE		1000.0								
STAGE 5 - EB														
404+61.76	TO	414+61.76	CENTERLINE	SINGLE		1000.0								
STAGE 5 - WB														
500+67.26	TO	510+67.26	CENTERLINE	SINGLE		1000.0								
STAGE 6 - FINAL PAVEMENT MARKING EB					1									
419+67.97	TO	495+73.00	EDGELINE, RT	SINGLE								7284.0	7284.0	
419+67.97	TO	495+73.00	CENTERLINE	SKIP-DASH							1822.0		1822.0	
419+67.97	TO	495+73.00	EDGELINE, LT	SINGLE								7284.0	7284.0	
STAGE 6 - FINAL PAVEMENT MARKING WB					1									
419+67.97	TO	495+73.00	EDGELINE, RT	SINGLE								7284.0	7284.0	
419+67.97	TO	495+73.00	CENTERLINE	SKIP-DASH							1821.0		1821.0	
419+67.97	TO	495+73.00	EDGELINE, LT	SINGLE								7284.0	7284.0	
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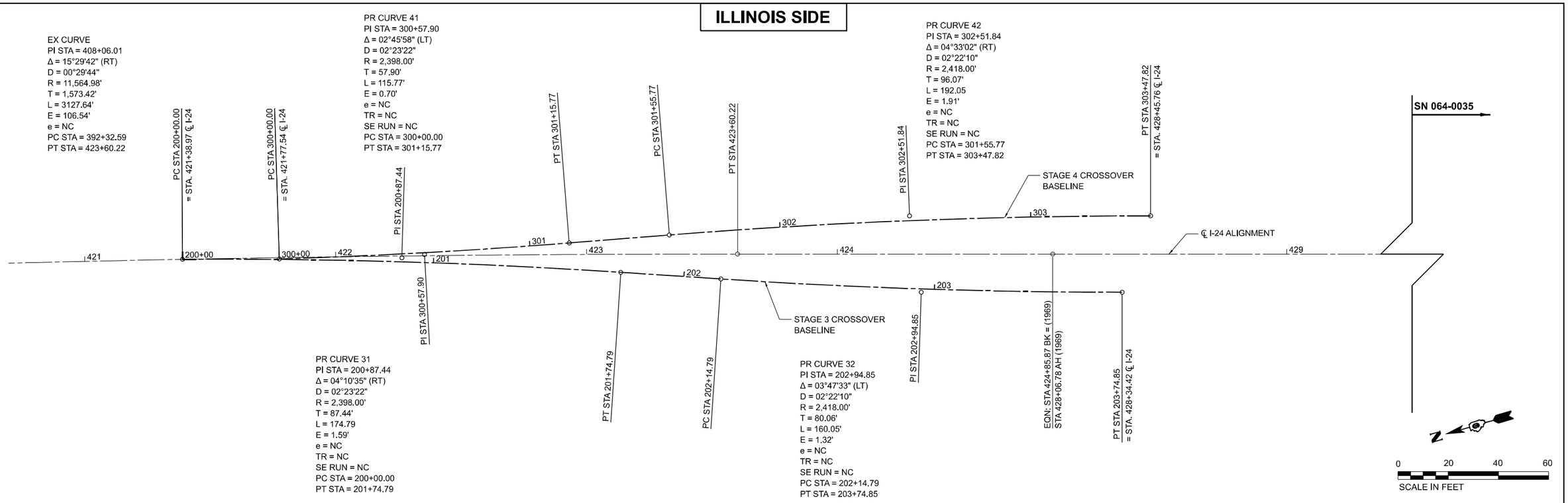
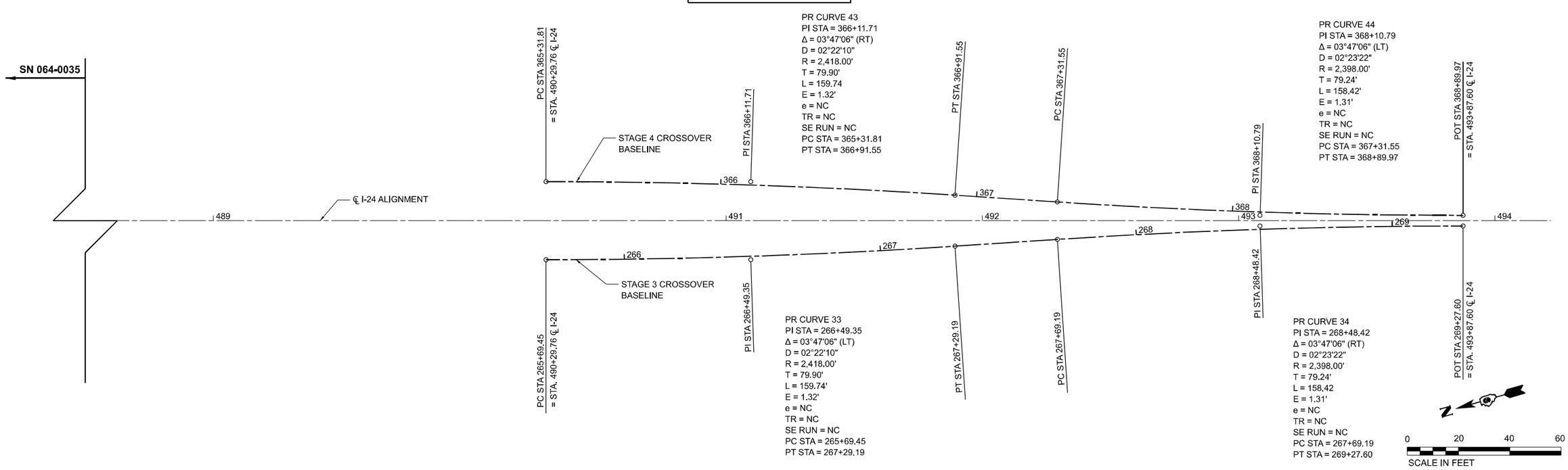
ILLINOIS SIDE



KENTUCKY SIDE



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TWM ENGINEERING GEOSPATIAL SERVICES — TWM, INC. WWW.TWM-INC.COM — IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = bbillhartz	DESIGNED - KMO	REVISED -	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**	**ALIGNMENT**
		DRAWN - BAB	REVISED -		
	PLOT SCALE = 40.000 ' / In.	CHECKED - TBP	REVISED -		SCALE: 1"=20' SHEET 1 OF 1 SHEETS STA. TO STA.
	PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	20
		CONTRACT NO. 78972		
		ILLINOIS	FED. AID PROJECT	

SUGGESTED STAGE CONSTRUCTION SEQUENCE FOR CONSTRUCTION SEASON 1

ADVANCE WARNING

1. ERECT WORK ZONE SMART TRAFFIC MONITORING SYSTEM.
2. ERECT WIDE LOAD SIGNING.

HMA PARTIAL DEPTH PATCHING

1. HMA PARTIAL DEPTH BRIDGE DECK PATCHING AS DETERMINED BY THE ENGINEER USING TRAFFIC CONTROL & PROTECTION STANDARD 701400 (SPECIAL) AND SMART ZONE FOR FAI 24 AND HIGHWAY STANDARD 701401. (SEE TRAFFIC CONTROL PLAN SPECIAL PROVISION)

PRE-STAGE A

1. CLOSE EB AND WB OUTSIDE TRAFFIC LANES ACCORDING TO PRE-STAGE A DETAILS.
2. STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES) ON OUTSIDE BRIDGE PARAPET ON BOTH EB AND WB TRAFFIC LANES.
3. RETROFIT CONCRETE PARAPET ON OUTSIDE BRIDGE PARAPETS.
4. REPLACE EB AND WB OUTSIDE SHOULDERS FOR STAGE CONSTRUCTION:
   - A. REMOVE EXISTING PAVED SHOULDERS.
   - B. CONSTRUCT SUBBASE GRANULAR MATERIAL, TYPE A.
   - C. CONSTRUCT PCC PAVEMENT 10 1/4" (JOINTED).

PRE-STAGE B-1

1. CLOSE EB AND WB INSIDE TRAFFIC LANES ACCORDING TO PRE-STAGE B-1 DETAILS.
2. STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES) ON CENTER BARRIER ON BOTH EB AND WB TRAFFIC LANES.
3. REPLACE CENTER MEDIANS FOR CROSSOVER TRAFFIC:
   - A. REMOVE EXISTING GUARDRAIL AND CONCRETE BARRIER.
   - B. REMOVE EXISTING PAVED SHOULDERS.
   - C. CONSTRUCT SUBBASE GRANULAR MATERIAL, TYPE A.
   - D. CONSTRUCT PCC PAVEMENT 10 1/4" (JOINTED).
4. CONSTRUCT MEDIAN STORM SEWER.
5. FILL EXISTING INLET AND CULVERT.
6. CONSTRUCT CONCRETE GLARE SCREEN ON CENTER BRIDGE BARRIER.

PRE-STAGE B-2

1. CONTINUE TO KEEP EB AND WB INSIDE TRAFFIC LANES CLOSED ACCORDING TO PRE-STAGE B-2 DETAILS.
2. ERECT TEMPORARY CONCRETE BARRIER IN CENTER MEDIAN.

STAGE 1

1. CONTINUE TO KEEP EB AND WB INSIDE TRAFFIC LANES CLOSED ACCORDING TO STAGE 1 DETAILS.
2. REPLACE EB AND WB INSIDE BRIDGE EXPANSION JOINTS.
3. STRUCTURAL STEEL REPAIRS.

SUGGESTED STAGE CONSTRUCTION SEQUENCE FOR CONSTRUCTION SEASON 1 (CONTINUED)

STAGE 2

1. CLOSE EB AND WB OUTSIDE TRAFFIC LANES USING ACCORDING TO STAGE 2 DETAILS.
2. REPLACE EB AND WB OUTSIDE BRIDGE EXPANSION JOINTS.
3. STRUCTURAL STEEL REPAIRS.
4. REMOVE ALL TRAFFIC CONTROL FROM FAI 24 FOR WINTER SHUTDOWN, EXCEPT FOR TEMPORARY CONCRETE BARRIER IN CENTER MEDIAN ERECTED DURING PRE-STAGE B-2.

SUGGESTED STAGE CONSTRUCTION SEQUENCE FOR CONSTRUCTION SEASON 2

ADVANCE WARNING

1. ERECT WORK ZONE SMART TRAFFIC MONITORING SYSTEM.
2. ERECT WIDE LOAD SIGNING.

HMA PARTIAL DEPTH PATCHING

1. HMA PARTIAL DEPTH BRIDGE DECK PATCHING AS DETERMINED BY THE ENGINEER USING TRAFFIC CONTROL & PROTECTION STANDARD 701400 (SPECIAL) AND SMART ZONE FOR FAI 24 AND HIGHWAY STANDARD 701401. (SEE TRAFFIC CONTROL PLAN SPECIAL PROVISION)

STAGE 3

1. CLOSE WB TRAFFIC LANES ON SN 064 0035 WITH CROSSOVERS ACCORDING TO STAGE 3 DETAILS.
2. REMOVE CENTER MEDIAN TEMPORARY CONCRETE BARRIER.
3. BRIDGE PAINTING ON WB TRAFFIC LANES.
4. REPLACE WB SN 064-0035 DECK WEARING SURFACE.
5. HMA PARTIAL DEPTH PATCHING ON ROADWAY.
6. INSTALL RAISED REFLECTIVE PAVEMENT MARKERS ON WB BRIDGE DECK.
7. REMOVE ALL TRAFFIC CONTROL FROM FAI 24 FOR WINTER SHUTDOWN.

SUGGESTED STAGE CONSTRUCTION SEQUENCE FOR CONSTRUCTION SEASON 3

ADVANCE WARNING

1. ERECT WORK ZONE SMART TRAFFIC MONITORING SYSTEM.
2. ERECT WIDE LOAD SIGNING.

STAGE 4

1. CLOSE EB TRAFFIC LANES ON SN 064-0035 WITH CROSSOVERS ACCORDING TO STAGE 4 DETAILS.
   - A. NO PINNING OF TEMPORARY CONCRETE BARRIER ALLOWED IN NEW MICROSILICA OVERLAY.
2. REMOVE CENTER MEDIAN TEMPORARY CONCRETE BARRIER.
3. BRIDGE PAINTING ON EB TRAFFIC LANES.
4. REPLACE EB SN 064-0035 DECK WEARING SURFACE.
5. HMA PARTIAL DEPTH PATCHING ON ROADWAY.
6. THE ENDS OF THE EXISTING CENTER MEDIAN GUARDRAIL AND EXISTING CENTER MEDIAN CONCRETE BARRIER SHALL BE PROTECTED BY THE ERECTION OF STAGE 5 TRAFFIC CONTROL PLACED IMMEDIATELY FOLLOWING STAGE 4.
7. INSTALL RAISED REFLECTIVE PAVEMENT MARKERS ON EB BRIDGE DECK.

STAGE 5

1. CLOSE EB AND WB INSIDE TRAFFIC LANES ACCORDING TO STAGE 5 DETAILS.
2. REPLACE GUARDRAIL (IL SIDE) CENTER BARRIER (KY SIDE).
   - A. PLACE STEEL PLATE BEAM GUARDRAIL, TYPE D, 6 FOOT POSTS AND TRAFFIC BARRIER TERMINAL, TYPE 6 (SPECIAL).
   - B. PLACE CONCRETE BARRIER WALL (SPECIAL).

STAGE 6

1. UTILIZE HIGHWAY STANDARDS 701406 AND 701426 TO PLACE PAVEMENT MARKINGS.

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TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = bbillhartz	DESIGNED - KMO	REVISED -	
	DRAWN - BAB	REVISED -	
PLOT SCALE = 10.000 ' / In.	CHECKED - TBP	REVISED -	
PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUGGESTED STAGE CONSTRUCTION SEQUENCE

SCALE: N.T.S. | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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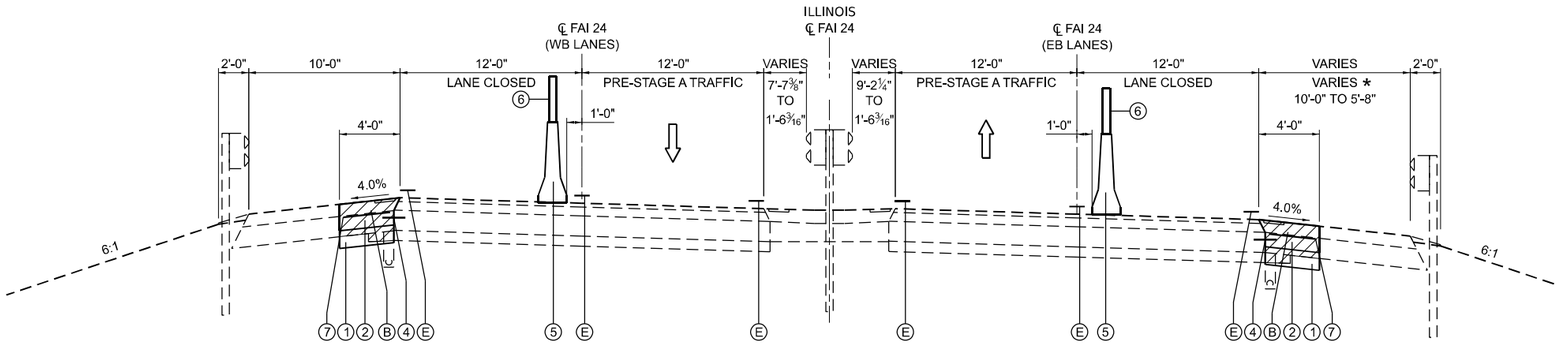
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



PRE-STAGE A TYPICAL SECTION (WESTBOUND)

STA. 420+07.80 LT TO STA. 423+53.98 LT

PRE-STAGE A TYPICAL SECTION (EASTBOUND)

STA. 419+67.97 RT TO STA. 424+85.87 RT BK
STA. 428+06.78 RT AH TO STA. 429+40.11 RT

✱ STA. 423+53.98 RT TO STA. 429+40.11 RT

Ⓐ GUARDRAIL REMOVAL (SPECIAL)
Ⓑ PAVED SHOULDER REMOVAL
Ⓒ CONCRETE BARRIER REMOVAL
Ⓓ PAVED SHOULDER REMOVAL (SPECIAL)
Ⓔ PAVEMENT MARKING (TO REMAIN)

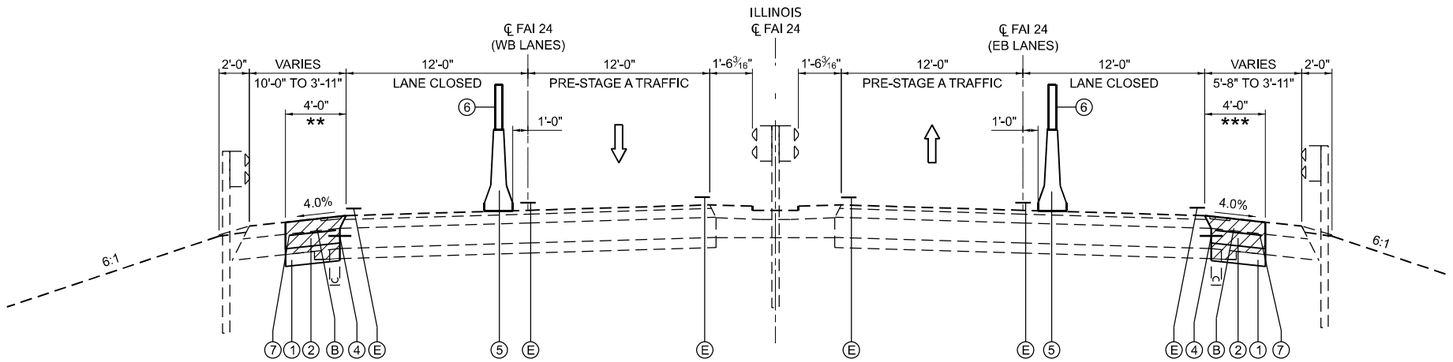
① PR. SUBBASE GRANULAR MATERIAL, TYPE A, 7" (SEE NOTES)
② PR. PCC PAVEMENT 10¼" (JOINTED)
③ PR. SUBBASE GRANULAR MATERIAL, TYPE A, 12" (SEE NOTES)
④ PR. DRILL AND GROUT #6 TIE BARS (INCLUDED IN PCC PAVEMENT)
⑤ TEMPORARY CONCRETE BARRIER
⑥ MODULAR GLARE SCREEN SYSTEM, TEMPORARY
⑦ PR. WELDED WIRE REINFORCEMENT (SEE NOTES)

NOTES:

1.) PROPOSED WELDED WIRE REINFORCEMENT INSTALLED VERTICALLY IN THE CENTER OF THE PROPOSED PCC PAVEMENT 10¼" (JOINTED).

2.) SEE PRE-STAGE A STAGING PLAN SHEETS FOR TEMPORARY CONCRETE BARRIER LAYOUT.

3.) ALL EXCAVATION REQUIRED FOR THE CONSTRUCTION OF SUBBASE GRANULAR MATERIAL, TYPE A WILL NOT BE PAID FOR AND SHALL BE INCLUDED IN THE COST PER SQUARE YARD FOR SUBBASE GRANULAR MATERIAL, TYPE A OF THE DEPTH SPECIFIED.



PRE-STAGE A TYPICAL SECTION (WESTBOUND)

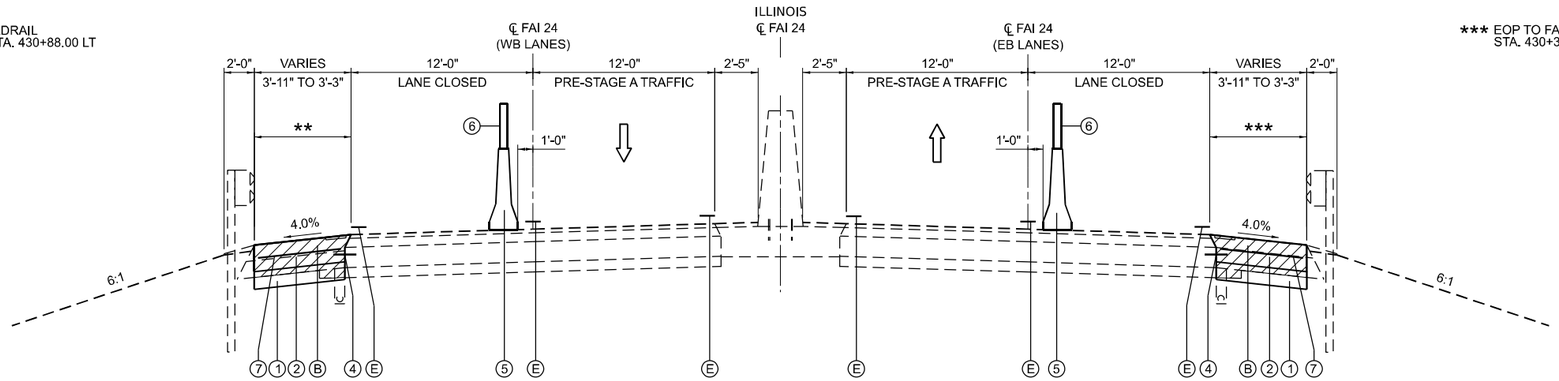
STA. 423+53.98 LT TO STA. 424+85.87 LT BK
STA. 428+06.78 LT AH TO STA. 430+45.76 LT

PRE-STAGE A TYPICAL SECTION (EASTBOUND)

STA. 429+40.11 RT TO STA. 430+45.76 RT

REMOVAL ITEM

** EOP TO FACE OF GUARDRAIL
STA. 429+99.77 LT TO STA. 430+88.00 LT



PRE-STAGE A TYPICAL SECTION (WESTBOUND)

STA. 430+45.76 LT TO STA. 430+88.00 LT

PRE-STAGE A TYPICAL SECTION (EASTBOUND)

STA. 430+45.76 RT TO STA. 430+88.00 RT

*** EOP TO FACE OF GUARDRAIL
STA. 430+37.27 RT TO STA. 430+88.00 RT

STATION EQUATION

STA. 424+85.87 BK = STA. 428+06.78 AH

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TWM ENGINEERING & GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM IL DESIGN FIRM LICENSE NO. 184-001220	USER NAME = bbillhartz	DESIGNED - KMO	REVISED -	
			DRAWN - BAB	REVISED -	
		PLOT SCALE = 10.000 ' / in.	CHECKED - TBP	REVISED -	
		PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PRE–STAGE A – STAGING TYPICAL SECTIONS
I–24 – SHOULDER WIDENING

SCALE: N.T.S. | SHEET 1 OF 4 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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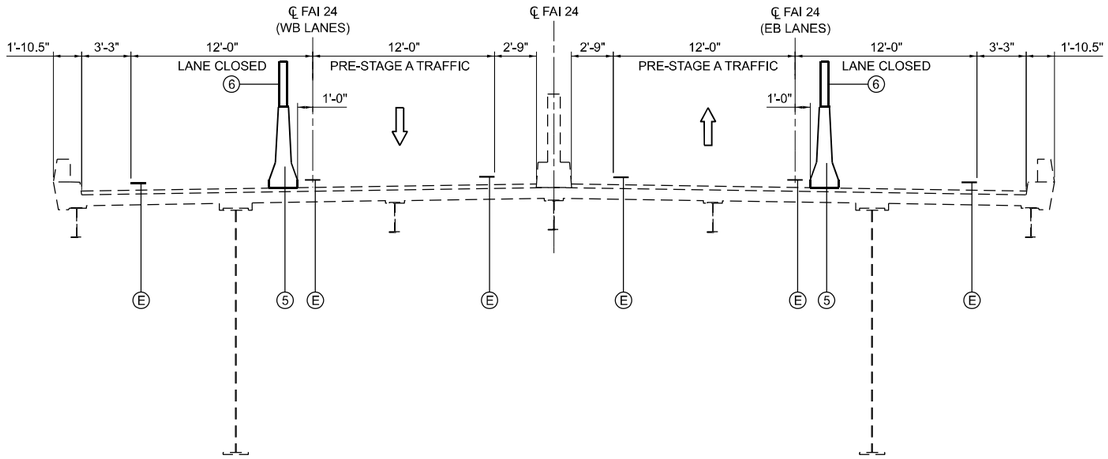
		CONTRACT NO. 78972		
	ILLINOIS FED. AID PROJECT			

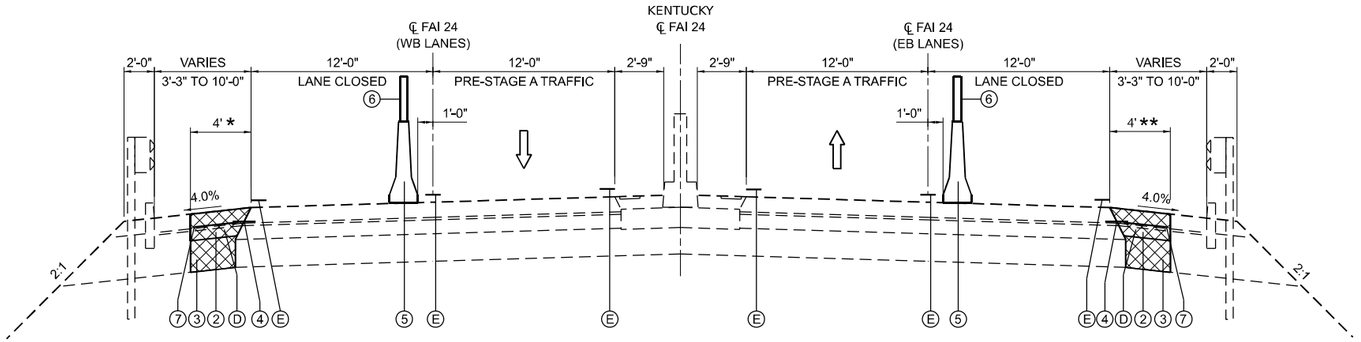


PRE-STAGE A TYPICAL SECTION (WESTBOUND)

STA. 430+88.00 LT TO STA. 487+39.25 LT

PRE-STAGE A TYPICAL SECTION (EASTBOUND)

STA. 430+88.00 RT TO STA. 487+39.25 RT



* EOP TO FACE OF GUARDRAIL
STA. 487+39.25 LT TO STA. 487+77.66 LT

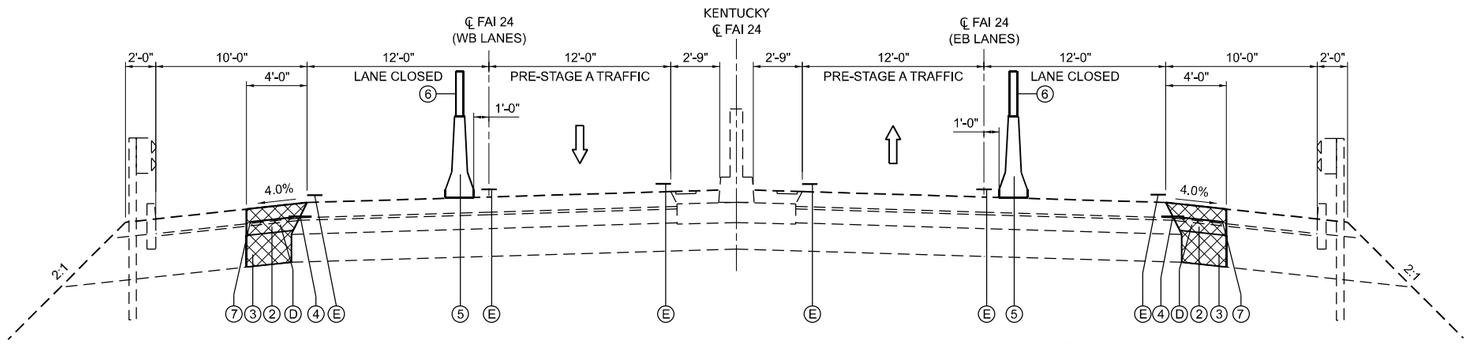
** EOP TO FACE OF GUARDRAIL
STA. 487+39.25 RT TO STA. 487+77.66 RT

PRE-STAGE A TYPICAL SECTION (WESTBOUND)

STA. 487+39.25 LT TO STA. 488+53.50 LT

PRE-STAGE A TYPICAL SECTION (EASTBOUND)

STA. 487+39.25 RT TO STA. 488+53.50 RT



PRE-STAGE A TYPICAL SECTION (WESTBOUND)

STA. 488+53.50 LT TO STA. 495+73.00 LT

PRE-STAGE A TYPICAL SECTION (EASTBOUND)

STA. 488+53.50 RT TO STA. 495+73.00 RT

(A) GUARDRAIL REMOVAL (SPECIAL)
(B) PAVED SHOULDER REMOVAL
(C) CONCRETE BARRIER REMOVAL
(D) PAVED SHOULDER REMOVAL (SPECIAL)
(E) PAVEMENT MARKING (TO REMAIN)

(1) PR. SUBBASE GRANULAR MATERIAL, TYPE A, 7" (SEE NOTES)
(2) PR. PCC PAVEMENT 10¼" (JOINTED)
(3) PR. SUBBASE GRANULAR MATERIAL, TYPE A, 12" (SEE NOTES)
(4) PR. DRILL AND GROUT #6 TIE BARS (INCLUDED IN PCC PAVEMENT)
(5) TEMPORARY CONCRETE BARRIER
(6) MODULAR GLARE SCREEN SYSTEM, TEMPORARY
(7) PR. WELDED WIRE REINFORCEMENT (SEE NOTES)

NOTES:

1.) PROPOSED WELDED WIRE REINFORCEMENT INSTALLED VERTICALLY IN THE CENTER OF THE PROPOSED PCC PAVEMENT 10¼" (JOINTED).

2.) SEE PRE-STAGE A STAGING PLAN SHEETS FOR TEMPORARY CONCRETE BARRIER LAYOUT.

3.) ALL EXCAVATION REQUIRED FOR THE CONSTRUCTION OF SUBBASE GRANULAR MATERIAL, TYPE A WILL NOT BE PAID FOR AND SHALL BE INCLUDED IN THE COST PER SQUARE YARD FOR SUBBASE GRANULAR MATERIAL, TYPE A OF THE DEPTH SPECIFIED.

REMOVAL ITEM

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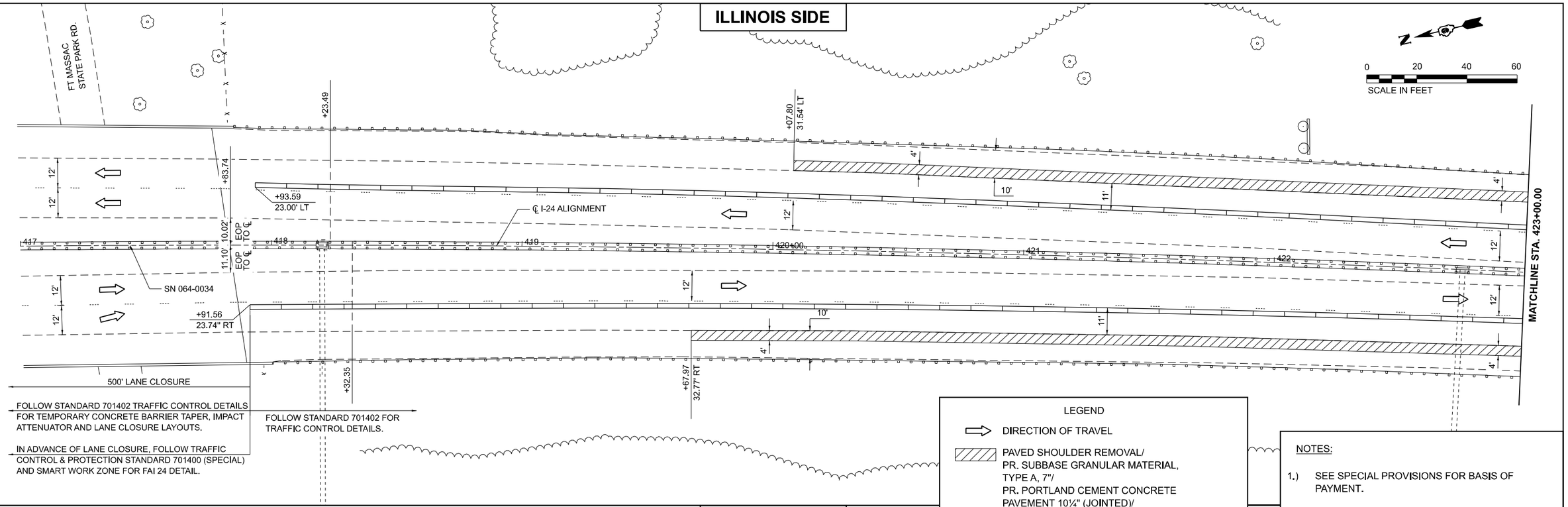
TWM, INC. WWW.TWM-INC.COM ENGINEERING & GEOSPATIAL SERVICES — IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = billhartz	DESIGNED - KMO	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		DRAWN - BAB	REVISED -	
	PLOT SCALE = 10.000 ' / In.	CHECKED - TBP	REVISED -	
	PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

PRE-STAGE A – STAGING TYPICAL SECTIONS
I-24 – SHOULDER WIDENING

SCALE: N.T.S. | SHEET 2 OF 4 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	23
		CONTRACT NO. 78972		
		ILLINOIS	FED. AID PROJECT	

ILLINOIS SIDE



LEGEND

- DIRECTION OF TRAVEL
- PAVED SHOULDER REMOVAL/
  PR. SUBBASE GRANULAR MATERIAL, TYPE A, 7"/
  PR. PORTLAND CEMENT CONCRETE PAVEMENT 10¼" (JOINTED)/
  PR. DRILL AND GROUT #6 TIE BARS
  PR. WELDED WIRE REINFORCEMENT
- TEMPORARY CONCRETE BARRIER/ MODULAR GLARE SCREEN SYSTEM ,TEMPORARY
- TYPE II BARRICADE, DRUM OR VERTICAL BARRICADE

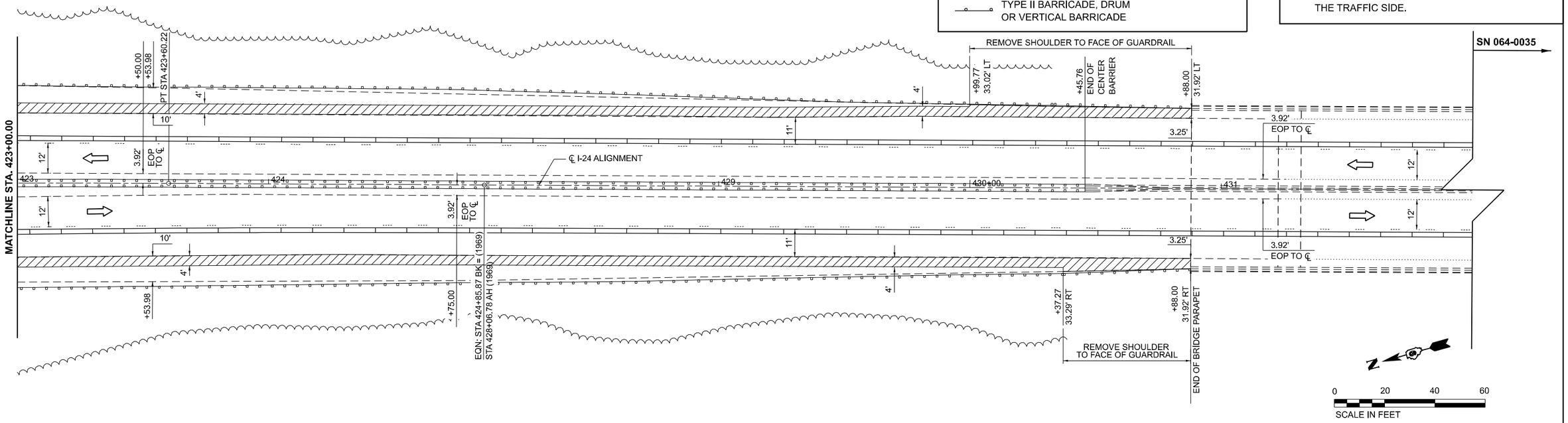
NOTES:

1.) SEE SPECIAL PROVISIONS FOR BASIS OF PAYMENT.

2.) OUTSIDE TRAFFIC LANES SHALL CONTINUE TO BE CLOSED ACROSS SN 064-0035.

3.) ALL OFFSETS FOR THE TEMPORARY CONCRETE BARRIER ARE TO THE FACE OF THE TRAFFIC SIDE.

ILLINOIS SIDE



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TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = bbillhartz	DESIGNED - KMO	REVISED -	
	DRAWN - BAB	REVISED -	
PLOT SCALE = 40.00000000 ' / In.	CHECKED - TBP	REVISED -	
PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

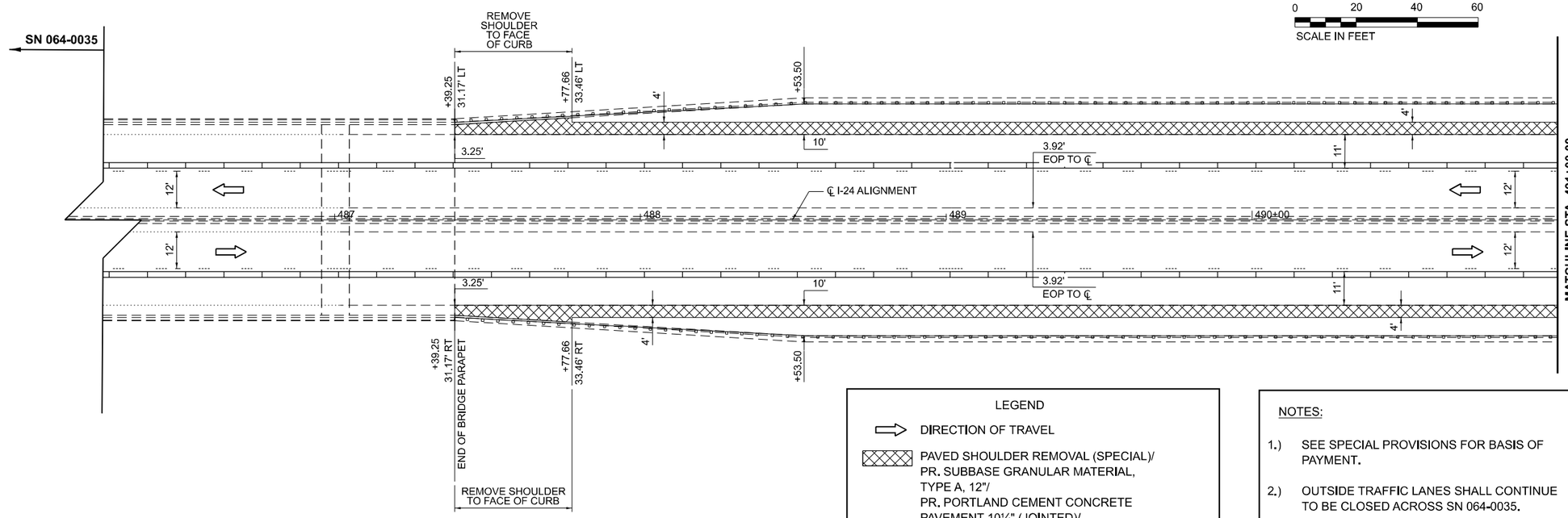
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PRE-STAGE A – STAGING PLAN
I-24 – SHOULDER WIDENING

SCALE: 1"=20' | SHEET 3 OF 4 SHEETS | STA. 417+00.00 TO STA. 432+00.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	24
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

KENTUCKY SIDE



0 20 40 60
SCALE IN FEET

LEGEND

- DIRECTION OF TRAVEL
- PAVED SHOULDER REMOVAL (SPECIAL)/ PR. SUBBASE GRANULAR MATERIAL, TYPE A, 12"/ PR. PORTLAND CEMENT CONCRETE PAVEMENT 10¼" (JOINTED)/ PR. DRILL AND GROUT #6 TIE BARS PR. WELDED WIRE REINFORCEMENT
- TEMPORARY CONCRETE BARRIER/ MODULAR GLARE SCREEN SYSTEM ,TEMPORARY
- TYPE II BARRICADE, DRUM OR VERTICAL BARRICADE

NOTES:

1.) SEE SPECIAL PROVISIONS FOR BASIS OF PAYMENT.

2.) OUTSIDE TRAFFIC LANES SHALL CONTINUE TO BE CLOSED ACROSS SN 064-0035.

3.) ALL OFFSETS FOR THE TEMPORARY CONCRETE BARRIER ARE TO THE FACE OF THE TRAFFIC SIDE.

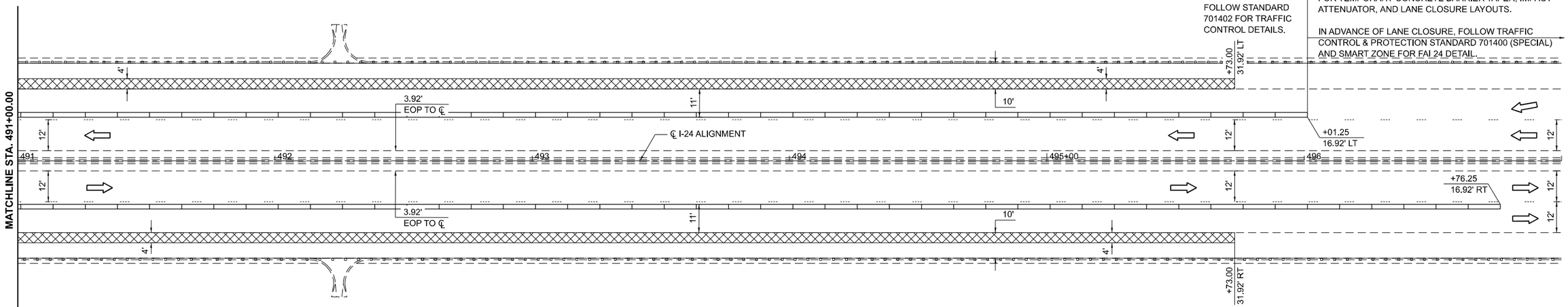
KENTUCKY SIDE

500' LANE CLOSURE

FOLLOW STANDARD 701402 TRAFFIC CONTROL DETAILS FOR TEMPORARY CONCRETE BARRIER TAPER, IMPACT ATTENUATOR, AND LANE CLOSURE LAYOUTS.

IN ADVANCE OF LANE CLOSURE, FOLLOW TRAFFIC CONTROL & PROTECTION STANDARD 701400 (SPECIAL) AND SMART ZONE FOR FAI 24 DETAIL.

FOLLOW STANDARD 701402 FOR TRAFFIC CONTROL DETAILS.



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SCALE IN FEET

MODEL: Plan 2
FILE NAME: P:\2021\210593.00\L - FAI 24 Ohio River Bridge Painting\4 CADD - DWGs\4.7 Trans\CAD_Sheets\D97697-sht-bbi-I-24-prestageA.dgn

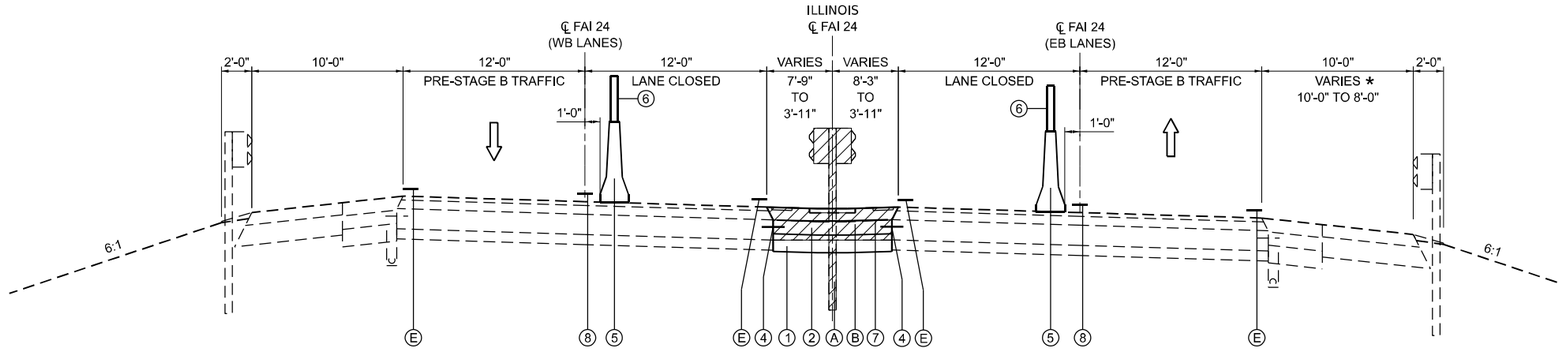
TWM, INC. WWW.TWM-INC.COM ENGINEERING GEOSPATIAL SERVICES — IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = bbillhartz	DESIGNED - KMO	REVISED -	
		DRAWN - BAB	REVISED -	
	PLOT SCALE = 40.00000000 ' / in.	CHECKED - TBP	REVISED -	
	PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PRE–STAGE A – STAGING PLAN
I–24 – SHOULDER WIDENING

SCALE: 1"=20' | SHEET 4 OF 4 SHEETS | STA. 486+00.00 | TO STA. 497+00.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	25
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



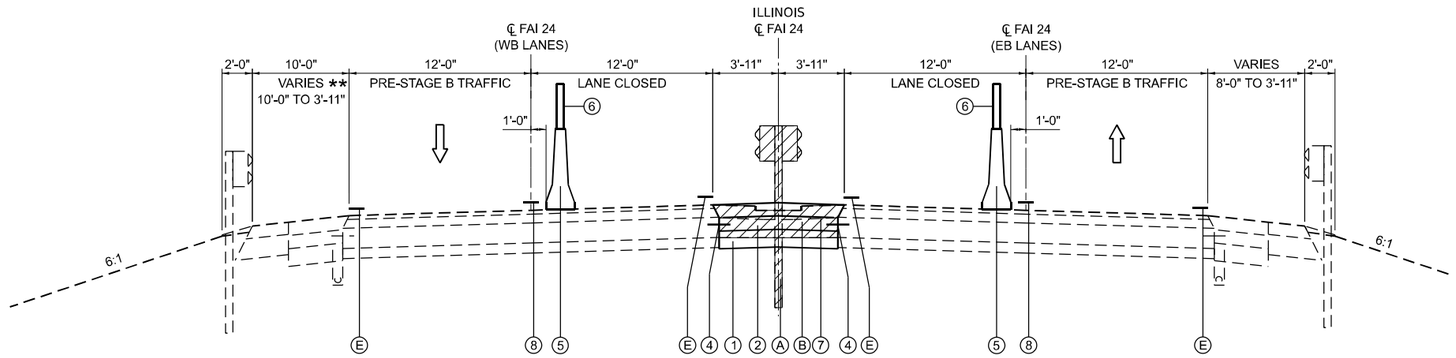
PRE-STAGE B-1 TYPICAL SECTION (WESTBOUND)

STA. 420+18.97 LT TO STA. 423+50.00 LT

PRE-STAGE B-1 TYPICAL SECTION (EASTBOUND)

STA. 420+18.97 RT TO STA. 424+75.00 RT

* STA. 423+53.98 RT TO STA. 424+75.00 RT



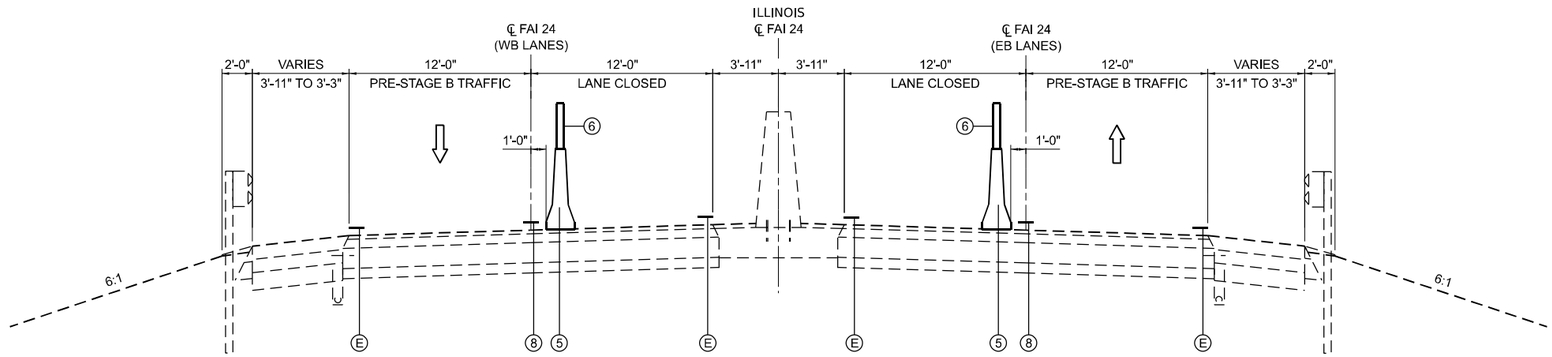
PRE-STAGE B-1 TYPICAL SECTION (WESTBOUND)

STA. 423+50.00 LT TO STA. 424+85.87 LT BK
STA. 428+06.78 LT AH TO STA. 430+45.76 LT

PRE-STAGE B-1 TYPICAL SECTION (EASTBOUND)

STA. 424+75.00 RT TO STA. 424+85.87 RT BK
STA. 428+06.78 RT AH TO STA. 430+45.76 RT

** STA. 423+53.98 LT TO STA. 430+45.76 LT



PRE-STAGE B-1 TYPICAL SECTION (WESTBOUND)

STA. 430+45.76 LT TO STA. 430+88.00 LT

PRE-STAGE B-1 TYPICAL SECTION (EASTBOUND)

STA. 430+45.76 RT TO STA. 430+88.00 RT

Ⓐ GUARDRAIL REMOVAL (SPECIAL)
Ⓑ PAVED SHOULDER REMOVAL
Ⓒ CONCRETE BARRIER REMOVAL
Ⓓ PAVED SHOULDER REMOVAL (SPECIAL)
Ⓔ PAVEMENT MARKING (TO REMAIN)

① PR. SUBBASE GRANULAR MATERIAL, TYPE A, 7" (SEE NOTES)
② PR. PCC PAVEMENT 10¼" (JOINTED)
③ PR. SUBBASE GRANULAR MATERIAL, TYPE A, 12" (SEE NOTES)
④ PR. DRILL AND GROUT #6 TIE BARS (INCLUDED IN PCC PAVEMENT)
⑤ TEMPORARY CONCRETE BARRIER
⑥ MODULAR GLARE SCREEN SYSTEM, TEMPORARY
⑦ PR. WELDED WIRE REINFORCEMENT (SEE NOTES)
⑧ TEMPORARY PAVEMENT MARKING - LINE 6" - TYPE IV

NOTES:

1.) SEE DRAINAGE PLAN SHEETS FOR CROSS SLOPES OF PROPOSED MEDIAN.

2.) PROPOSED CENTER MEDIAN TO BE LEFT IN PLACE PERMANENTLY AFTER THE CONSTRUCTION OF THIS PROJECT.

3.) PROPOSED WELDED WIRE REINFORCEMENT INSTALLED VERTICALLY IN THE CENTER OF THE PROPOSED PCC PAVEMENT 10¼" (JOINTED).

4.) SEE PRE-STAGE B-1 STAGING PLAN SHEETS FOR TEMPORARY CONCRETE BARRIER LAYOUT.

5.) ALL EXCAVATION REQUIRED FOR THE CONSTRUCTION OF SUBBASE GRANULAR MATERIAL, TYPE A WILL NOT BE PAID FOR AND SHALL BE INCLUDED IN THE COST PER SQUARE YARD FOR SUBBASE GRANULAR MATERIAL, TYPE A OF THE DEPTH SPECIFIED.

REMOVAL ITEM

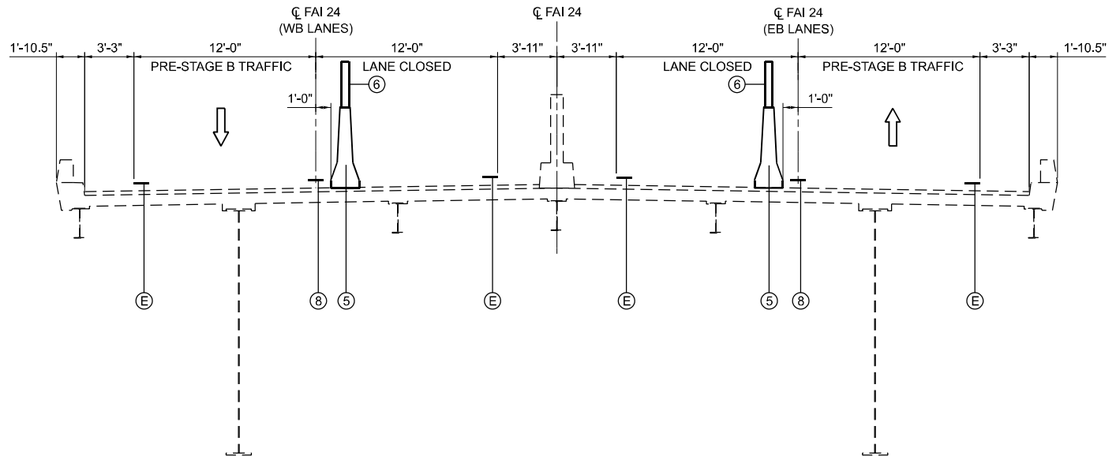
STATION EQUATION

STA. 424+85.87 BK = STA. 428+06.78 AH

MODEL: Default
FILE NAME: P:\2021\210593\J&L • FAI 24 Ohio River Bridge Painting\4 CADD • DWG\4.7 Trans\CADD_Sheets\D978972-eth-hydfai24-prestageB-1.dgn

TWM, INC. WWW.TWM-INC.COM ENGINEERING GEOSPATIAL SERVICES IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = bbillhartz	DESIGNED - KMO	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PRE-STAGE B-1 – STAGING TYPICAL SECTIONS I-24 – CROSSOVER PAVEMENT
		DRAWN - BAB	REVISED -		
	PLOT SCALE = 10.000 ' / In.	CHECKED - TBP	REVISED -		
	PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -		SCALE: N.T.S. SHEET 1 OF 4 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	26
		CONTRACT NO. 78972		
	ILLINOIS FED. AID PROJECT			

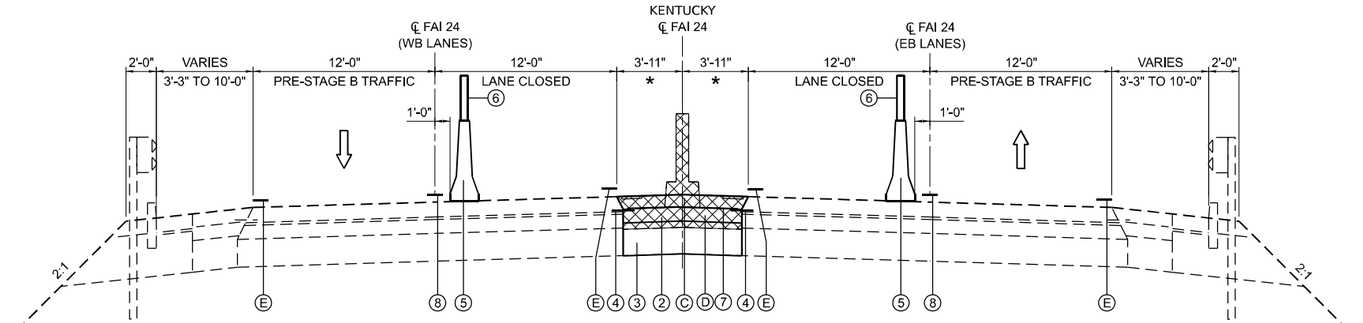


PRE-STAGE B-1 TYPICAL SECTION (WESTBOUND)

STA. 430+88.00 LT TO STA. 487+39.25 LT

PRE-STAGE B-1 TYPICAL SECTION (EASTBOUND)

STA. 430+88.00 RT TO STA. 487+39.25 RT

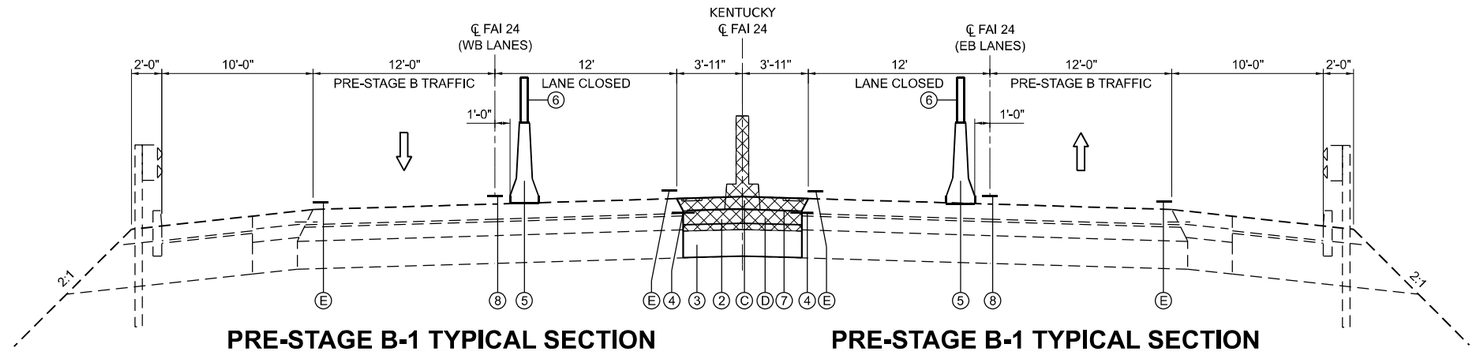


PRE-STAGE B-1 TYPICAL SECTION (WESTBOUND)

STA. 487+39.25 LT TO STA. 488+53.50 LT

PRE-STAGE B-1 TYPICAL SECTION (EASTBOUND)

STA. 487+39.25 RT TO STA. 488+53.50 RT



PRE-STAGE B-1 TYPICAL SECTION (WESTBOUND)

STA. 488+53.50 LT TO STA. 497+07.60 LT

PRE-STAGE B-1 TYPICAL SECTION (EASTBOUND)

STA. 488+53.50 RT TO STA. 497+07.60 RT

(A) GUARDRAIL REMOVAL (SPECIAL)
(B) PAVED SHOULDER REMOVAL
(C) CONCRETE BARRIER REMOVAL
(D) PAVED SHOULDER REMOVAL (SPECIAL)
(E) PAVEMENT MARKING (TO REMAIN)

(1) PR. SUBBASE GRANULAR MATERIAL, TYPE A, 7" (SEE NOTES)
(2) PR. PCC PAVEMENT 10¼" (JOINTED)
(3) PR. SUBBASE GRANULAR MATERIAL, TYPE A, 12" (SEE NOTES)
(4) PR. DRILL AND GROUT #6 TIE BARS (INCLUDED IN PCC PAVEMENT)
(5) TEMPORARY CONCRETE BARRIER
(6) MODULAR GLARE SCREEN SYSTEM, TEMPORARY
(7) PR. WELDED WIRE REINFORCEMENT (SEE NOTES)
(8) TEMPORARY PAVEMENT MARKING - LINE 6" - TYPE IV

NOTES:

1.) PROPOSED WELDED WIRE REINFORCEMENT INSTALLED VERTICALLY IN THE CENTER OF THE PROPOSED PCC PAVEMENT 10¼" (JOINTED).

2.) SEE PRE-STAGE B-1 STAGING PLAN SHEETS FOR TEMPORARY CONCRETE BARRIER LAYOUT.

3.) ALL EXCAVATION REQUIRED FOR THE CONSTRUCTION OF SUBBASE GRANULAR MATERIAL, TYPE A WILL NOT BE PAID FOR AND SHALL BE INCLUDED IN THE COST PER SQUARE YARD FOR SUBBASE GRANULAR MATERIAL, TYPE A OF THE DEPTH SPECIFIED.

REMOVAL ITEM

* WORK BEGINS: STA. 488+42.26

MODEL: Default
FILE NAME: P:\2021\210593.00\L-FAI 24 Ohio River Bridge Painting\4 CADD - DWGs\4.7 Trav\CAD_Sheets\D97697-sht-typical-I24-prestageB-1.dgn

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC.
WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = billhartz	DESIGNED - KMO	REVISED -	
	DRAWN - BAB	REVISED -	
PLOT SCALE = 10.000 ' / In.	CHECKED - TBP	REVISED -	
PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

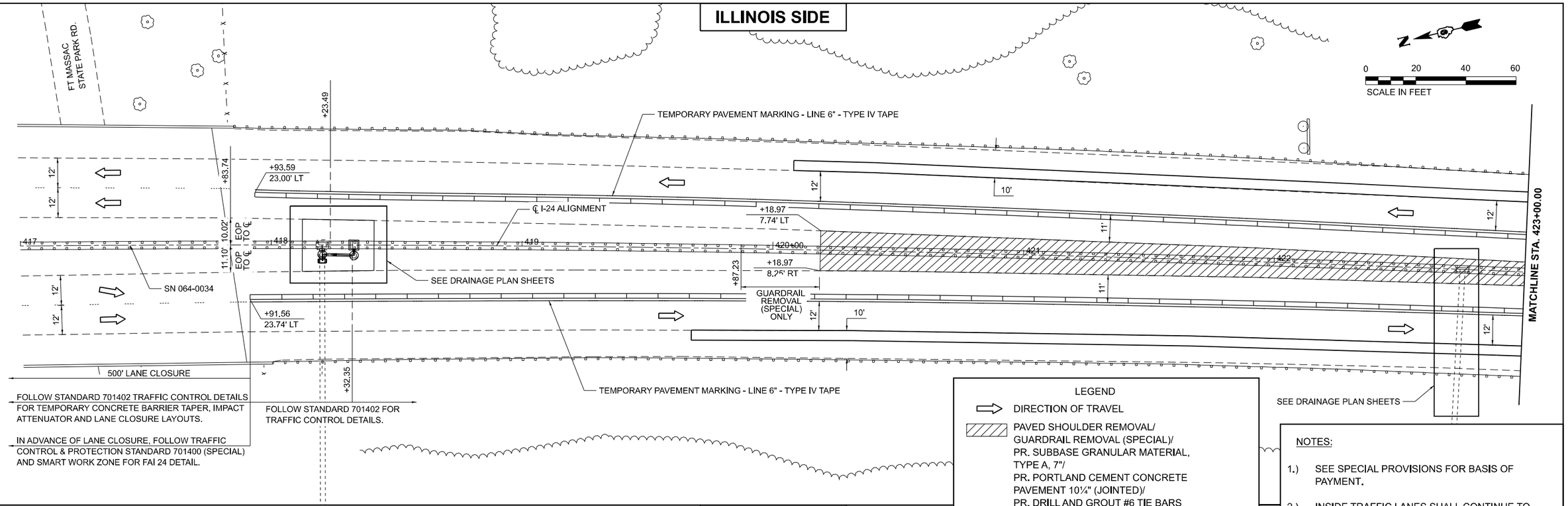
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PRE–STAGE B–1 – STAGING TYPICAL SECTIONS
I–24 – CROSSOVER PAVEMENT

SCALE: N.T.S. | SHEET 2 OF 4 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	27
		CONTRACT NO. 78972		
		ILLINOIS	FED. AID PROJECT	

ILLINOIS SIDE



FOLLOW STANDARD 701402 TRAFFIC CONTROL DETAILS FOR TEMPORARY CONCRETE BARRIER TAPER, IMPACT ATTENUATOR AND LANE CLOSURE LAYOUTS.

IN ADVANCE OF LANE CLOSURE, FOLLOW TRAFFIC CONTROL & PROTECTION STANDARD 701400 (SPECIAL) AND SMART WORK ZONE FOR FAI 24 DETAIL.

FOLLOW STANDARD 701402 FOR TRAFFIC CONTROL DETAILS.

LEGEND

- DIRECTION OF TRAVEL
- PAVED SHOULDER REMOVAL/ GUARDRAIL REMOVAL (SPECIAL)/ PR. SUBBASE GRANULAR MATERIAL, TYPE A, 7"/ PR. PORTLAND CEMENT CONCRETE PAVEMENT 10¼" (JOINTED)/ PR. DRILL AND GROUT #6 TIE BARS PR. WELDED WIRE REINFORCEMENT
- TEMPORARY CONCRETE BARRIER/ MODULAR GLARE SCREEN SYSTEM, TEMPORARY TYPE II BARRICADE, DRUM OR VERTICAL BARRICADE

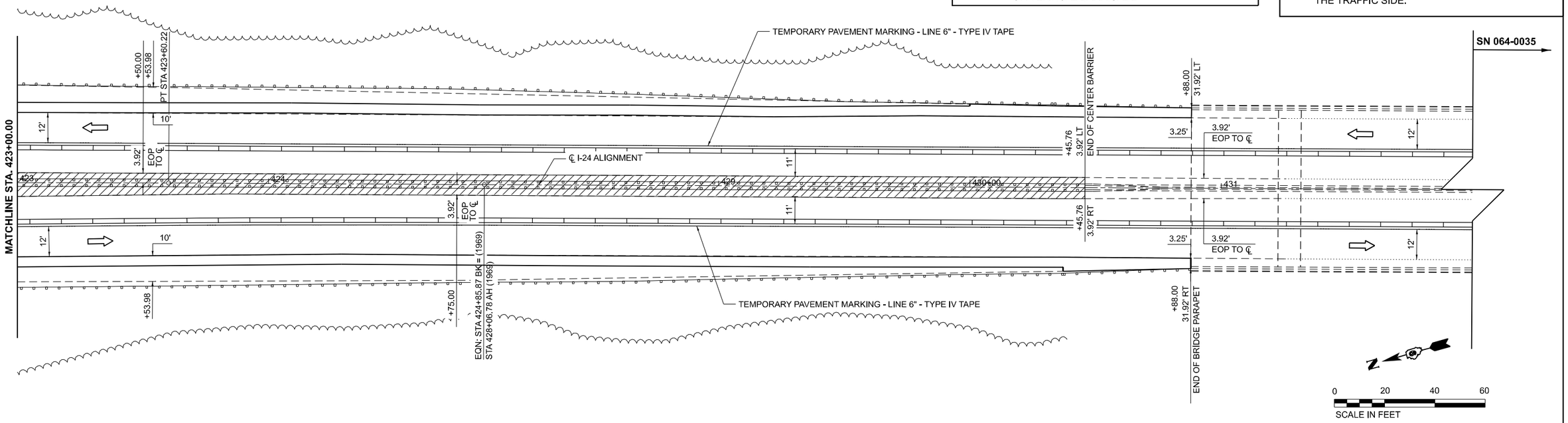
NOTES:

1.) SEE SPECIAL PROVISIONS FOR BASIS OF PAYMENT.

2.) INSIDE TRAFFIC LANES SHALL CONTINUE TO BE CLOSED ACROSS SN 064-0035.

3.) ALL OFFSETS FOR THE TEMPORARY CONCRETE BARRIER ARE TO THE FACE OF THE TRAFFIC SIDE.

ILLINOIS SIDE



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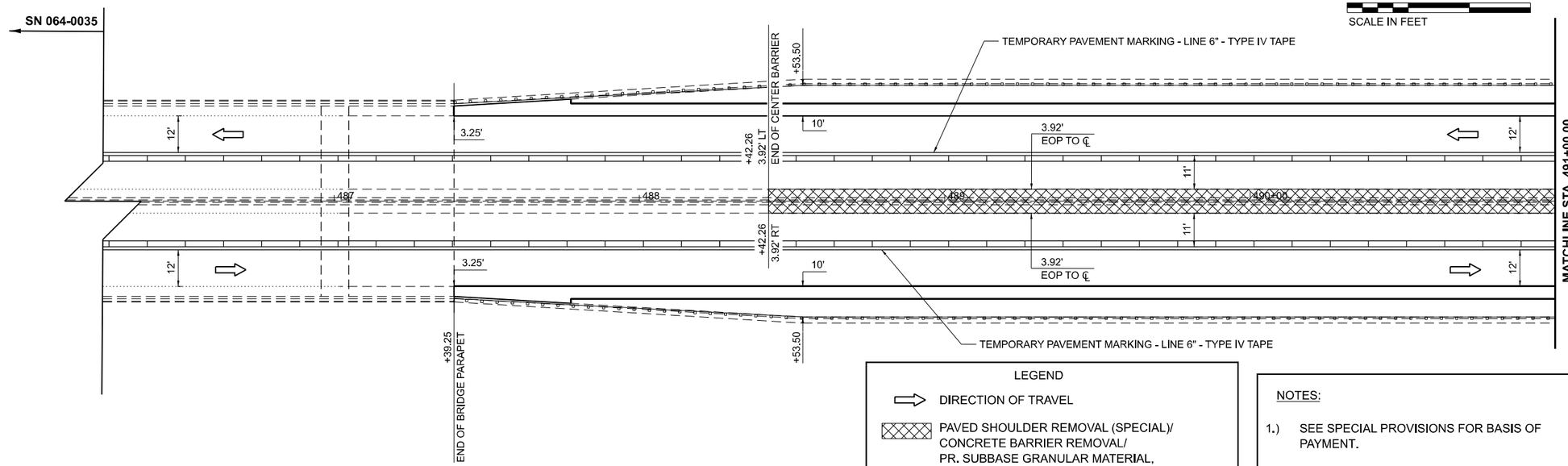
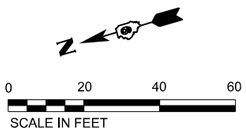
TWM, INC. WWW.TWM-INC.COM IL DESIGN FIRM LICENSE NO: 184-001220 ENGINEERING GEOSPATIAL SERVICES	USER NAME = bbillhartz	DESIGNED - KMO	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PRE–STAGE B–1 – STAGING PLAN I–24 – CROSSOVER PAVEMENT
		DRAWN - BAB	REVISED -		
	PLOT SCALE = 40.00000000 ' / in.	CHECKED - TBP	REVISED -		SCALE: 1"=20' SHEET 3 OF 4 SHEETS STA. 417+00.00 TO STA. 432+00.00
	PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	28
		CONTRACT NO. 78972		
	ILLINOIS FED. AID PROJECT			

KENTUCKY SIDE





LEGEND

- DIRECTION OF TRAVEL
- PAVED SHOULDER REMOVAL (SPECIAL)/ CONCRETE BARRIER REMOVAL/ PR. SUBBASE GRANULAR MATERIAL, TYPE A, 12"/ PR. PORTLAND CEMENT CONCRETE PAVEMENT 10¼" (JOINTED)/ PR. DRILL AND GROUT #6 TIE BARS PR. WELDED WIRE REINFORCEMENT
- TEMPORARY CONCRETE BARRIER/ MODULAR GLARE SCREEN SYSTEM, TEMPORARY
- TYPE II BARRICADE, DRUM OR VERTICAL BARRICADE

NOTES:

1.) SEE SPECIAL PROVISIONS FOR BASIS OF PAYMENT.

2.) INSIDE TRAFFIC LANES SHALL CONTINUE TO BE CLOSED ACROSS SN 064-0035.

3.) ALL OFFSETS FOR THE TEMPORARY CONCRETE BARRIER ARE TO THE FACE OF THE TRAFFIC SIDE.

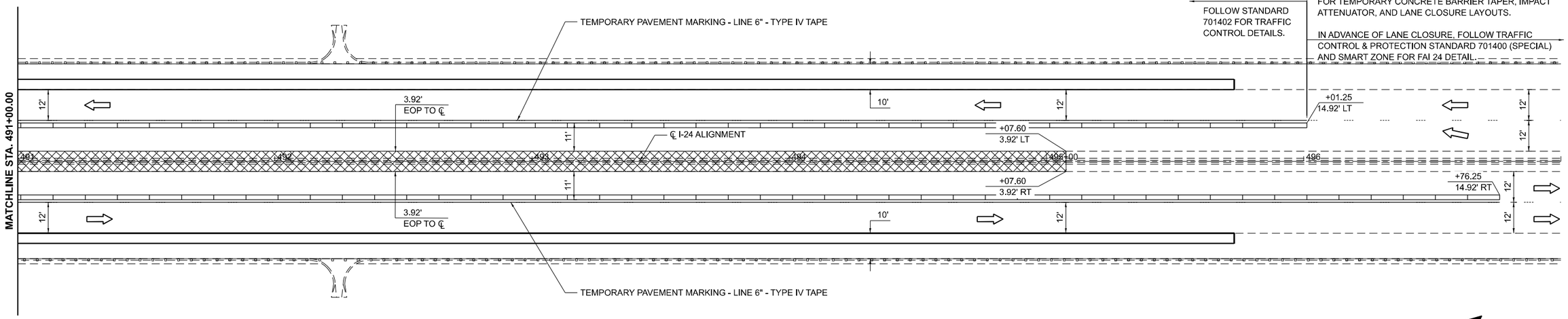
500' LANE CLOSURE

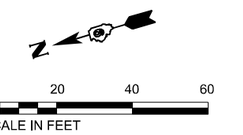
FOLLOW STANDARD 701402 TRAFFIC CONTROL DETAILS FOR TEMPORARY CONCRETE BARRIER TAPER, IMPACT ATTENUATOR, AND LANE CLOSURE LAYOUTS.

IN ADVANCE OF LANE CLOSURE, FOLLOW TRAFFIC CONTROL & PROTECTION STANDARD 701400 (SPECIAL) AND SMART ZONE FOR FAI 24 DETAIL.

FOLLOW STANDARD 701402 FOR TRAFFIC CONTROL DETAILS.

KENTUCKY SIDE





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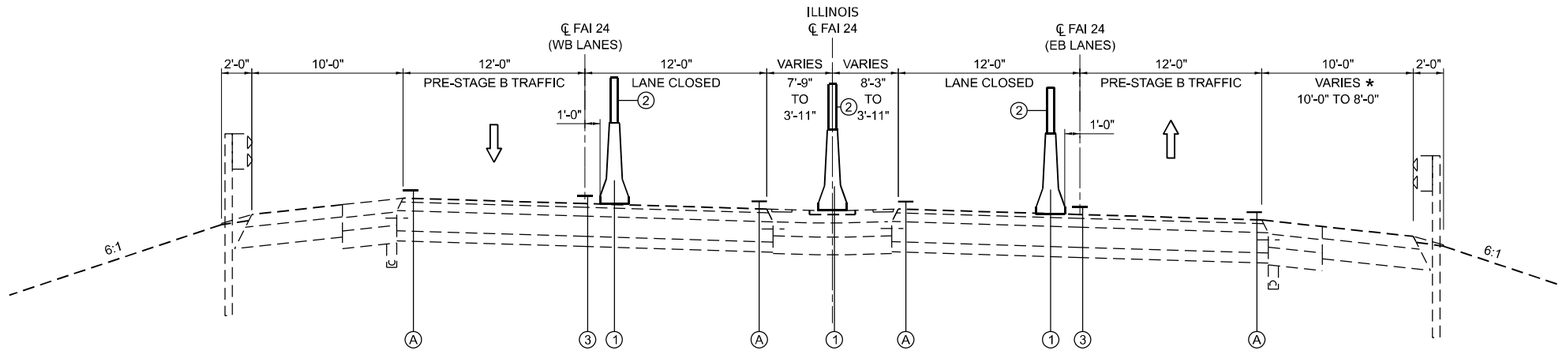
TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = billhartz	DESIGNED - KMO	REVISED -	
			DRAWN - BAB	REVISED -	
		PLOT SCALE = 40.00000000 ' / In.	CHECKED - TBP	REVISED -	
		PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PRE-STAGE B-1 – STAGING PLAN
I-24 – CROSSOVER PAVEMENT

SCALE: 1"=20' | SHEET 4 OF 4 SHEETS | STA. 486+00.00 | TO STA. 497+00.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	29
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



PRE-STAGE B-2 TYPICAL SECTION (WESTBOUND)

STA. 420+18.97 LT TO STA. 423+50.00 LT

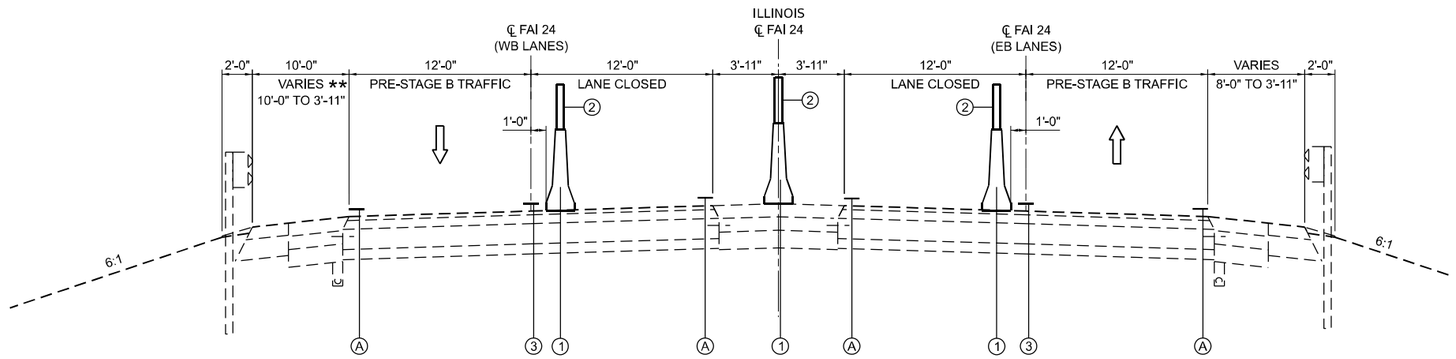
PRE-STAGE B-2 TYPICAL SECTION (EASTBOUND)

STA. 420+18.97 RT TO STA. 424+75.00 RT

✱ STA. 423+53.98 RT TO STA. 424+75.00 RT

Ⓐ PAVEMENT MARKING (TO REMAIN)

① TEMPORARY CONCRETE BARRIER
② MODULAR GLARE SCREEN SYSTEM, TEMPORARY
③ TEMPORARY PAVEMENT MARKING - LINE 6" - TYPE IV TAPE



PRE-STAGE B-2 TYPICAL SECTION (WESTBOUND)

STA. 423+50.00 LT TO STA. 424+85.87 LT BK
STA. 428+06.78 LT AH TO STA. 430+45.76 LT

PRE-STAGE B-2 TYPICAL SECTION (EASTBOUND)

STA. 424+75.00 RT TO STA. 424+85.87 RT BK
STA. 428+06.78 RT AH TO STA. 430+45.76 RT

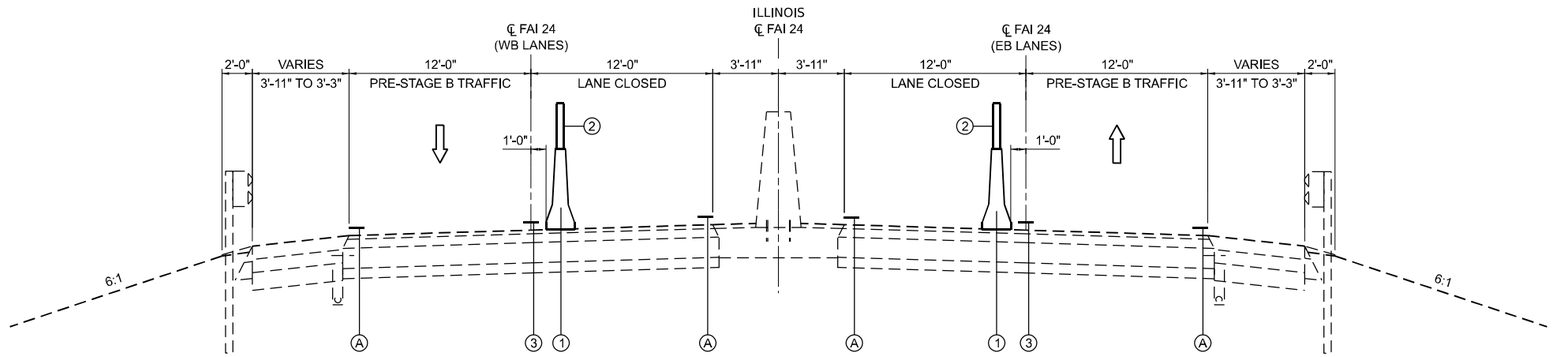
✱✱ STA. 423+53.98 LT TO STA. 430+45.76 LT

NOTES:

1.) SEE PRE-STAGE B-2 STAGING PLANS FOR TEMPORARY CONCRETE BARRIER LAYOUT.

STATION EQUATION

STA. 424+85.87 BK = STA. 428+06.78 AH



PRE-STAGE B-2 TYPICAL SECTION (WESTBOUND)

STA. 430+45.76 LT TO STA. 430+88.00 LT

PRE-STAGE B-2 TYPICAL SECTION (EASTBOUND)

STA. 430+45.76 RT TO STA. 430+88.00 RT

MODEL: Default
FILE NAME: P:\2021\21059\J&L • FAI 24 Ohio River Bridge Painting\4 CADD • DWG\4.7 Trans\CAD_Sheets\D978972=elwykrydak\424=elwlagplB2.dgn

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC. WWW.TWM.INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

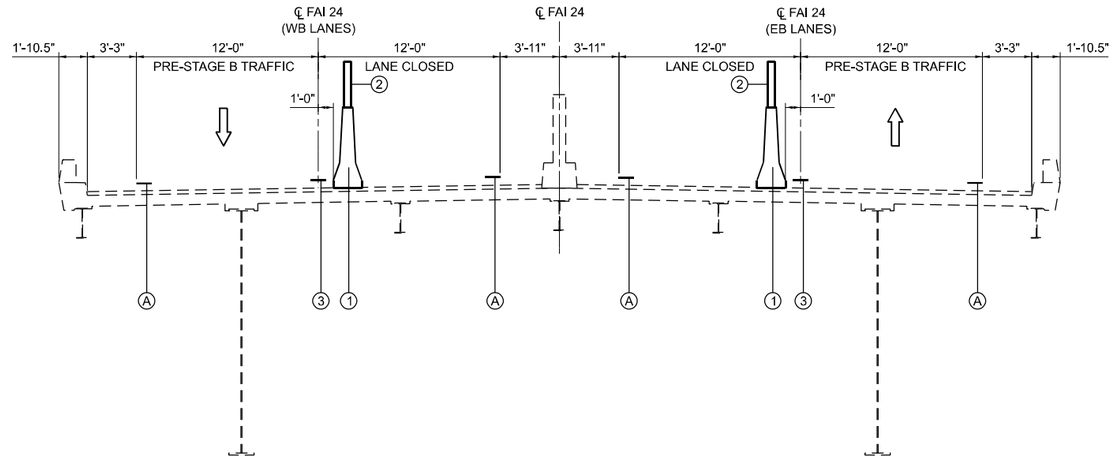
USER NAME = bblthartz	DESIGNED - KMO	REVISED -	
	DRAWN - BAB	REVISED -	
PLOT SCALE = 10.000 ' / In.	CHECKED - TBP	REVISED -	
PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PRE–STAGE B–2 – STAGING TYPICAL SECTIONS
I–24 – CROSSOVER PAVEMENT

SCALE: N.T.S. | SHEET 1 OF 4 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	30
		CONTRACT NO. 78972		
	ILLINOIS FED. AID PROJECT			

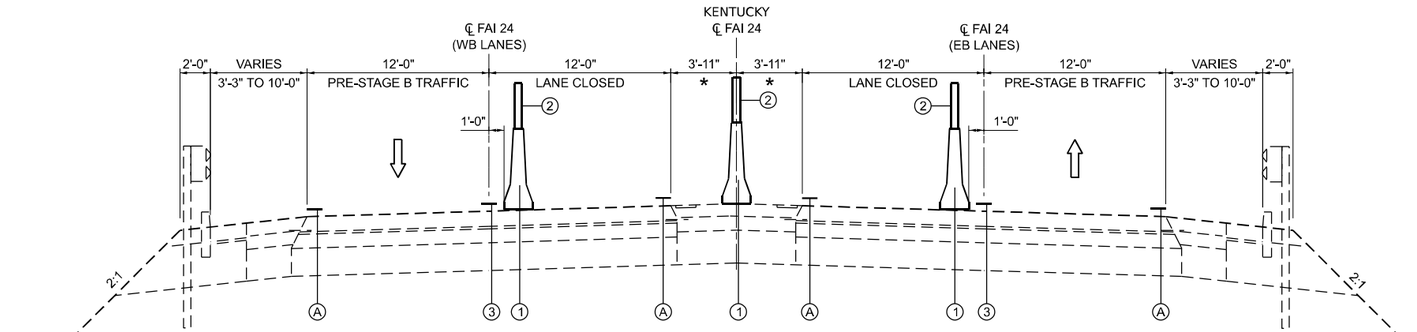


PRE-STAGE B-2 TYPICAL SECTION (WESTBOUND)

STA. 430+88.00 LT TO STA. 487+39.25 LT

PRE-STAGE B-2 TYPICAL SECTION (EASTBOUND)

STA. 430+88.00 RT TO STA. 487+39.25 RT

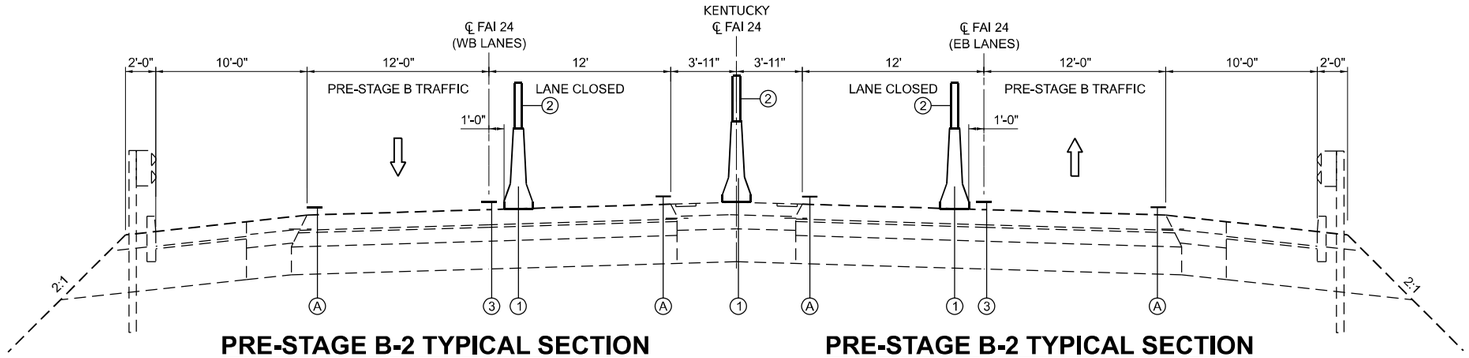


PRE-STAGE B-2 TYPICAL SECTION (WESTBOUND)

STA. 487+39.25 LT TO STA. 488+53.50 LT

PRE-STAGE B-2 TYPICAL SECTION (EASTBOUND)

STA. 487+39.25 RT TO STA. 488+53.50 RT



PRE-STAGE B-2 TYPICAL SECTION (WESTBOUND)

STA. 488+53.50 LT TO STA. 497+07.60 LT

PRE-STAGE B-2 TYPICAL SECTION (EASTBOUND)

STA. 488+53.50 RT TO STA. 497+07.60 RT

Ⓐ PAVEMENT MARKING (TO REMAIN)

① TEMPORARY CONCRETE BARRIER
② MODULAR GLARE SCREEN SYSTEM, TEMPORARY
③ TEMPORARY PAVEMENT MARKING - LINE 6" - TYPE IV TAPE

NOTES:

1.) SEE PRE-STAGE B-2 STAGING PLANS FOR TEMPORARY CONCRETE BARRIER LAYOUT.

* WORK BEGINS: STA. 488+42.26

MODEL: Default
FILE NAME: P:\2021\21050\3d\L • FAI 24 Ohio River Bridge Painting\4 CADD • DWGs\7 Trans\CAD_Sheets\D97697-sht-hydraul-I24-prestageB-2.dgn

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC.
WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = billhartz	DESIGNED - KMO	REVISED -	
	DRAWN - BAB	REVISED -	
PLOT SCALE = 10.000 ' / In.	CHECKED - TBP	REVISED -	
PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

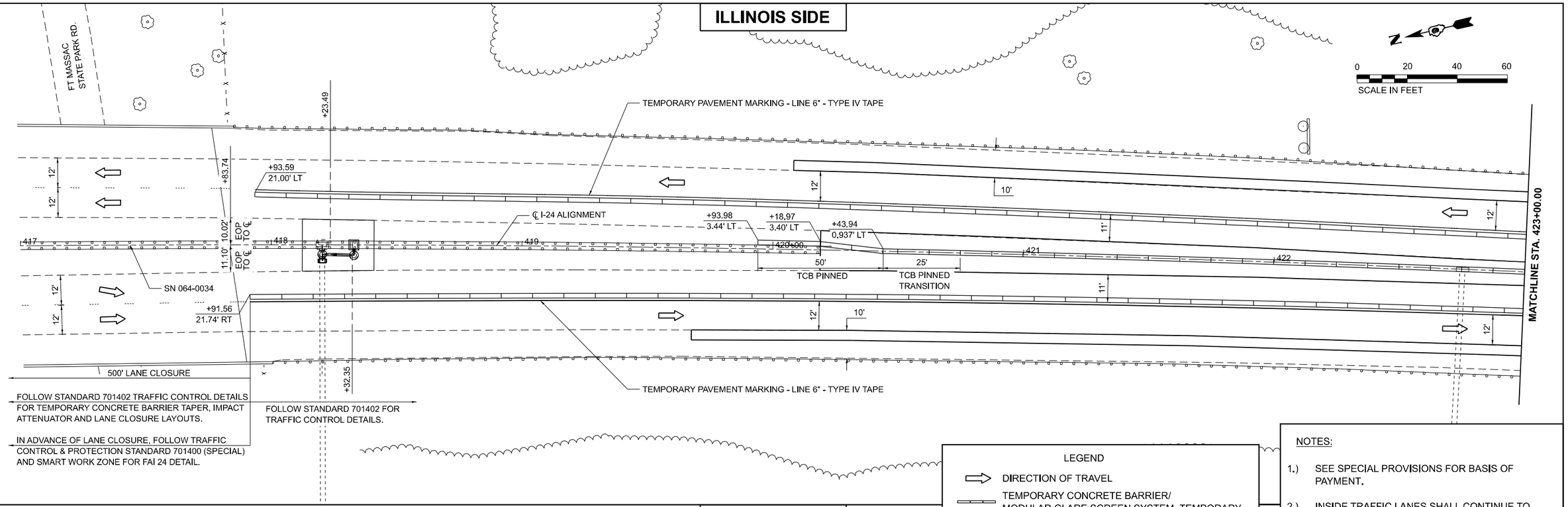
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PRE–STAGE B–2 – STAGING TYPICAL SECTIONS
I–24 – CROSSOVER PAVEMENT

SCALE: N.T.S. | SHEET 2 OF 4 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	31
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

ILLINOIS SIDE



LEGEND

- DIRECTION OF TRAVEL
- TEMPORARY CONCRETE BARRIER/ MODULAR GLARE SCREEN SYSTEM, TEMPORARY
- TYPE II BARRICADE, DRUM OR VERTICAL BARRICADE

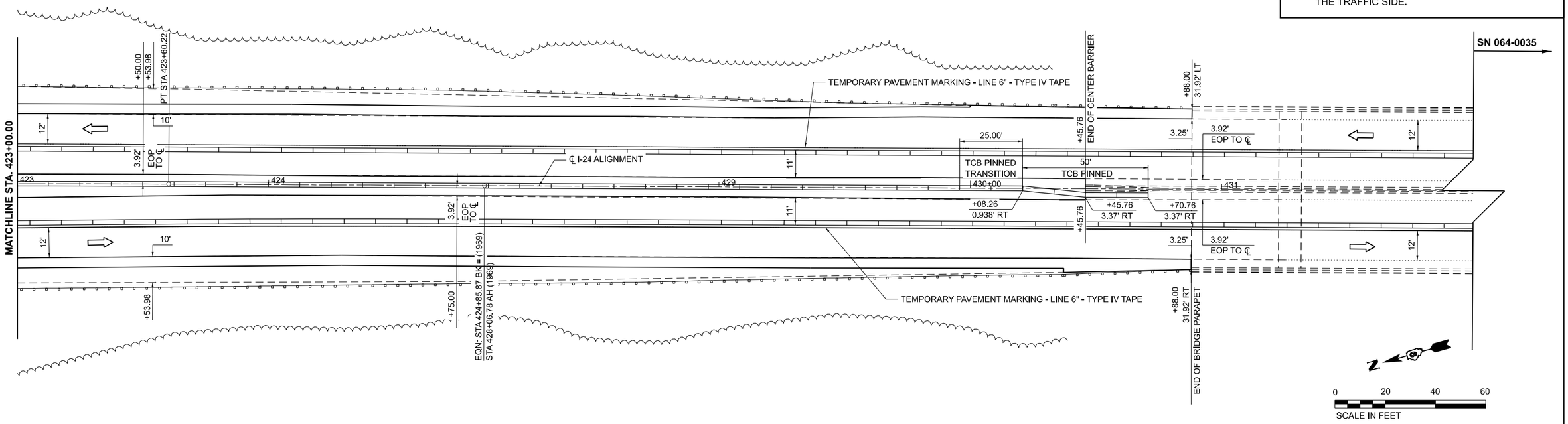
NOTES:

1.) SEE SPECIAL PROVISIONS FOR BASIS OF PAYMENT.

2.) INSIDE TRAFFIC LANES SHALL CONTINUE TO BE CLOSED ACROSS SN 064-0035.

3.) ALL OFFSETS FOR THE TEMPORARY CONCRETE BARRIER ARE TO THE FACE OF THE TRAFFIC SIDE.

ILLINOIS SIDE



MODEL: Plan 1
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TWM ENGINEERING & GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM IL DESIGN FIRM LICENSE NO. 184-001220	USER NAME = bbillhartz	DESIGNED - KMO	REVISED -	
			DRAWN - BAB	REVISED -	
		PLOT SCALE = 40.00000000 ' / In.	CHECKED - TBP	REVISED -	
		PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

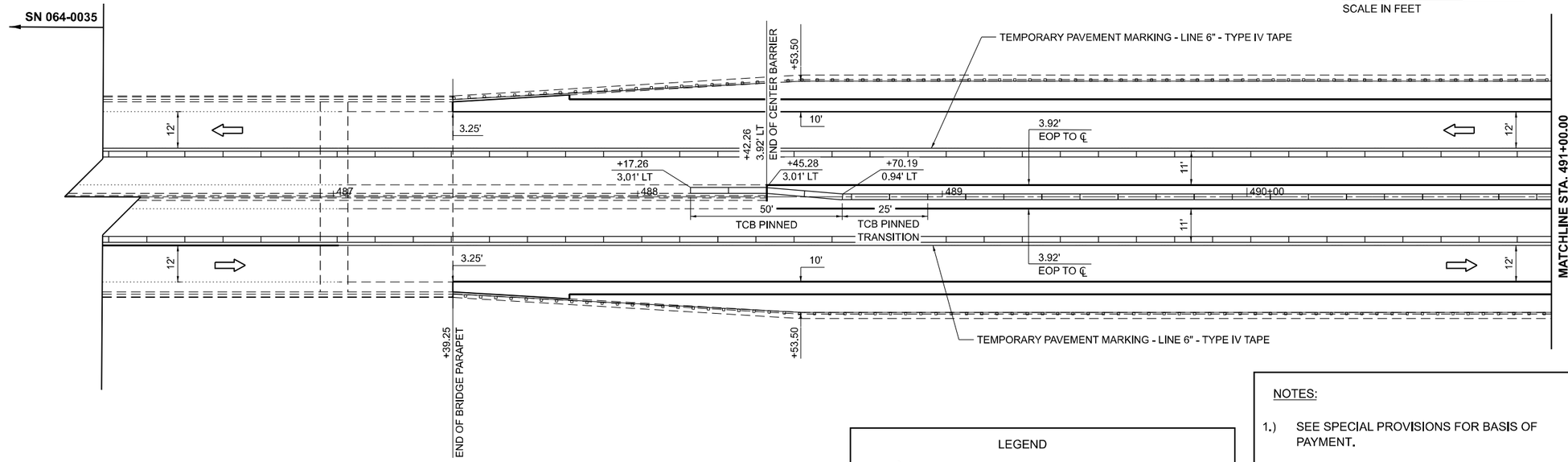
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

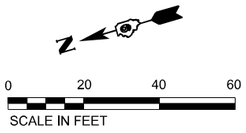
PRE–STAGE B–2 – STAGING PLAN
I–24 – CROSSOVER PAVEMENT

SCALE: 1"=20' | SHEET 3 OF 4 SHEETS | STA. 417+00.00 | TO STA. 432+00.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	32
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

KENTUCKY SIDE





LEGEND

- DIRECTION OF TRAVEL
- TEMPORARY CONCRETE BARRIER/ MODULAR GLARE SCREEN SYSTEM, TEMPORARY
- TYPE II BARRICADE, DRUM OR VERTICAL BARRICADE

NOTES:

1.) SEE SPECIAL PROVISIONS FOR BASIS OF PAYMENT.

2.) INSIDE TRAFFIC LANES SHALL CONTINUE TO BE CLOSED ACROSS SN 064-0035.

3.) ALL OFFSETS FOR THE TEMPORARY CONCRETE BARRIER ARE TO THE FACE OF THE TRAFFIC SIDE.

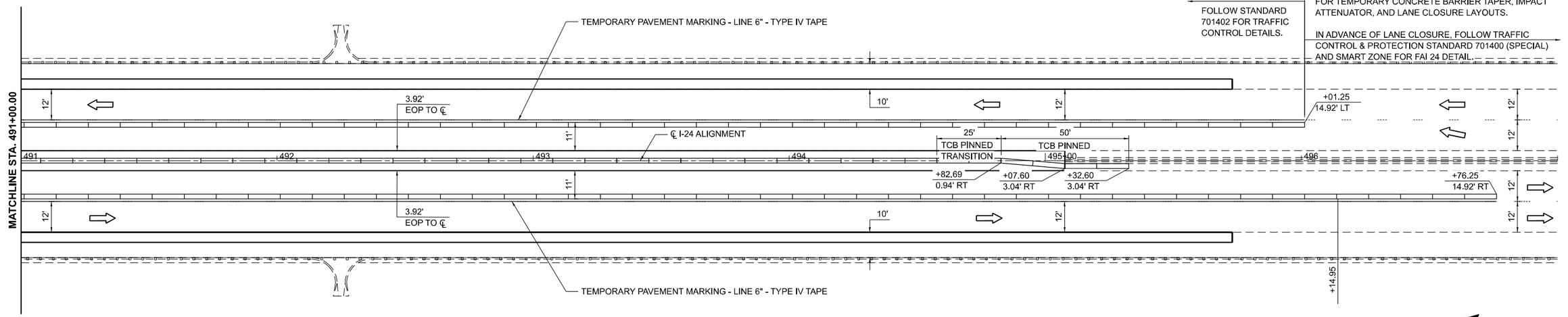
KENTUCKY SIDE

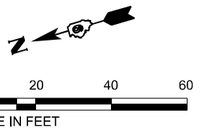
500' LANE CLOSURE

FOLLOW STANDARD 701402 TRAFFIC CONTROL DETAILS FOR TEMPORARY CONCRETE BARRIER TAPER, IMPACT ATTENUATOR, AND LANE CLOSURE LAYOUTS.

IN ADVANCE OF LANE CLOSURE, FOLLOW TRAFFIC CONTROL & PROTECTION STANDARD 701400 (SPECIAL) AND SMART ZONE FOR FAI 24 DETAIL.

FOLLOW STANDARD 701402 FOR TRAFFIC CONTROL DETAILS.





MODEL: Plan 2
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TWM, INC. WWW.TWM-INC.COM ENGINEERING GEOSPATIAL SERVICES IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = bbillhartz	DESIGNED - KMO	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		DRAWN - BAB	REVISED -	
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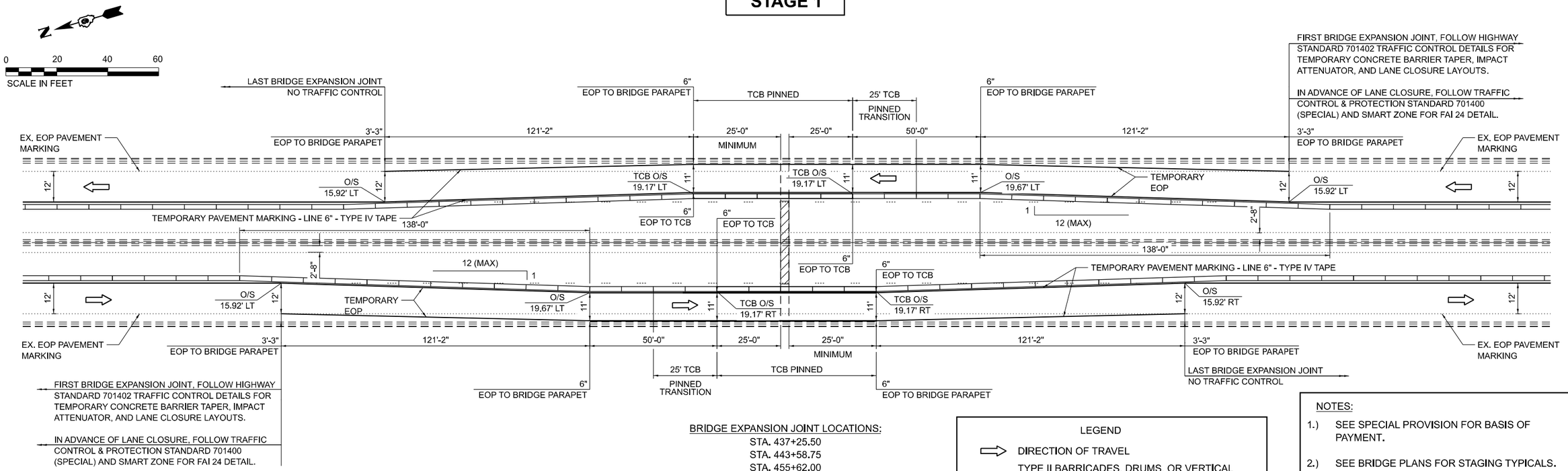
	PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

PRE–STAGE B–2 – STAGING PLAN
I–24 – CROSSOVER PAVEMENT

SCALE: 1"=20' | SHEET 4 OF 4 SHEETS | STA. 486+00.00 | TO STA. 497+00.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	33
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

STAGE 1

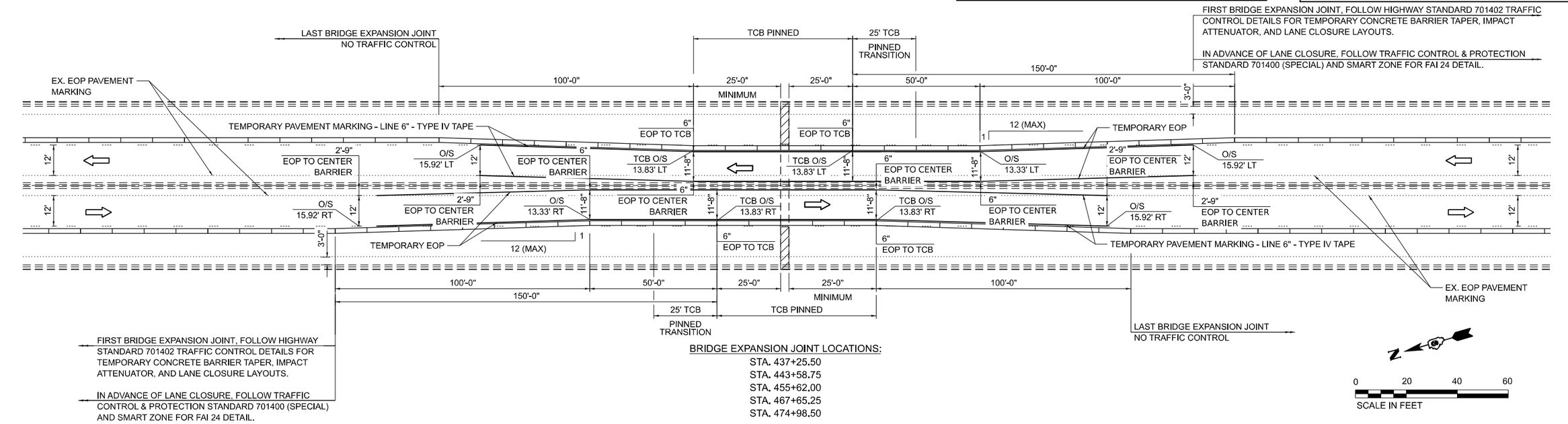


BRIDGE EXPANSION JOINT LOCATIONS:
STA. 437+25.50
STA. 443+58.75
STA. 455+62.00
STA. 467+65.25
STA. 474+98.50

LEGEND
- DIRECTION OF TRAVEL
- TYPE II BARRICADES, DRUMS, OR VERTICAL BARRICADES WITH STEADY BURN MONO DIRECTIONAL LIGHTS
- TEMPORARY CONCRETE BARRIER/ MODULAR GLARE SCREEN SYSTEM, TEMPORARY
- TEMPORARY IMPACT ATTENUATOR
- WORK ZONE (SEE STRUCTURE PLANS)

NOTES:
1.) SEE SPECIAL PROVISION FOR BASIS OF PAYMENT.
2.) SEE BRIDGE PLANS FOR STAGING TYPICALS.
3.) TRAFFIC LANES SHALL CONTINUE TO BE CLOSED BETWEEN BRIDGE EXPANSION JOINTS.
4.) ALL OFFSETS FOR THE TEMPORARY CONCRETE BARRIER ARE TO THE FACE OF THE TRAFFIC SIDE.

STAGE 2



BRIDGE EXPANSION JOINT LOCATIONS:
STA. 437+25.50
STA. 443+58.75
STA. 455+62.00
STA. 467+65.25
STA. 474+98.50

0 20 40 60
SCALE IN FEET

MODEL: Plan 1
FILE NAME: P:\2021\210593\J&L • FAI 24 Ohio River Bridge Painting\d CADD • DWG\4.7 Trav\CAD_Sheets\D978972=etlhc4dk81u-l24=staging 1and2.dgn

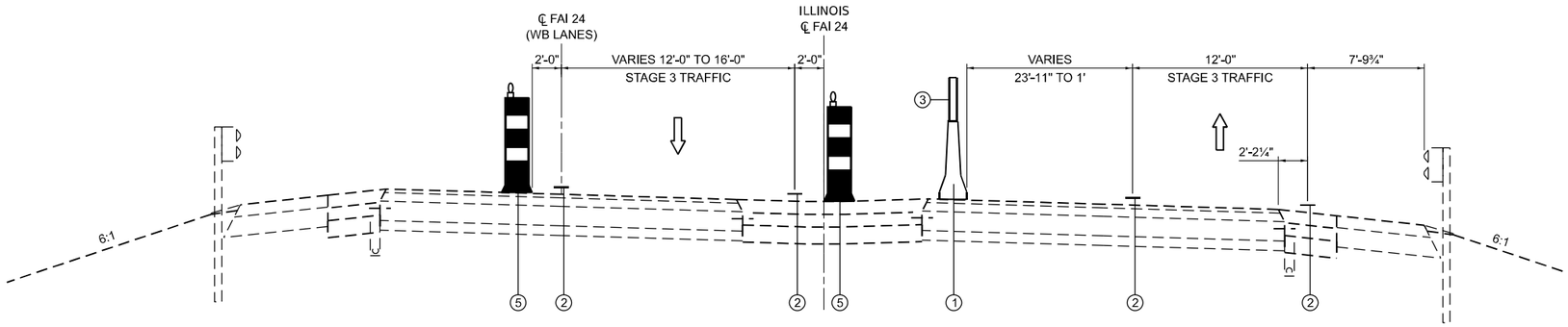
TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = bbillhartz	DESIGNED - KMO	REVISED -
			DRAWN - BAB	REVISED -
		PLOT SCALE = 40.00000000 ' / In.	CHECKED - TBP	REVISED -
		PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE 1 AND STAGE 2 – STAGING PLAN
I-24 – BRIDGE EXPANSION JOINTS

SCALE: 1"=20' | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	34
		CONTRACT NO. 78972		
	ILLINOIS FED. AID PROJECT			



1. TEMPORARY CONCRETE BARRIER
2. TEMPORARY PAVEMENT MARKING - LINE 6" - TYPE IV TAPE
3. MODULAR GLARE SCREEN SYSTEM, TEMPORARY
4. TEMPORARY CONCRETE BARRIER PINNED (WITH 25 FT TRANSITIONS AT THE ENDS)
5. DRUM OR TYPE II BARRICADE WITH STEADY BURN MONODIRECTIONAL LIGHT. (SEE STAGING PLAN SHEETS).

STAGE 3 TYPICAL SECTION (WESTBOUND)

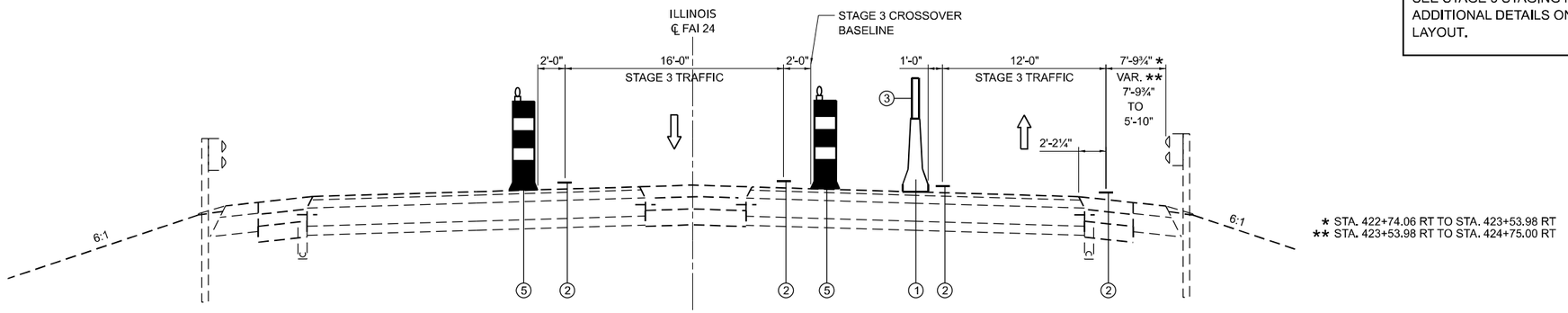
STA. 420+18.97 LT TO STA. 421+39.17 LT

STAGE 3 TYPICAL SECTION (EASTBOUND)

STA. 419+67.97 RT TO STA. 422+74.06 RT

NOTES:

SEE STAGE 3 STAGING PLAN SHEETS FOR ADDITIONAL DETAILS ON STAGE 3 TRAFFIC CONTROL LAYOUT.



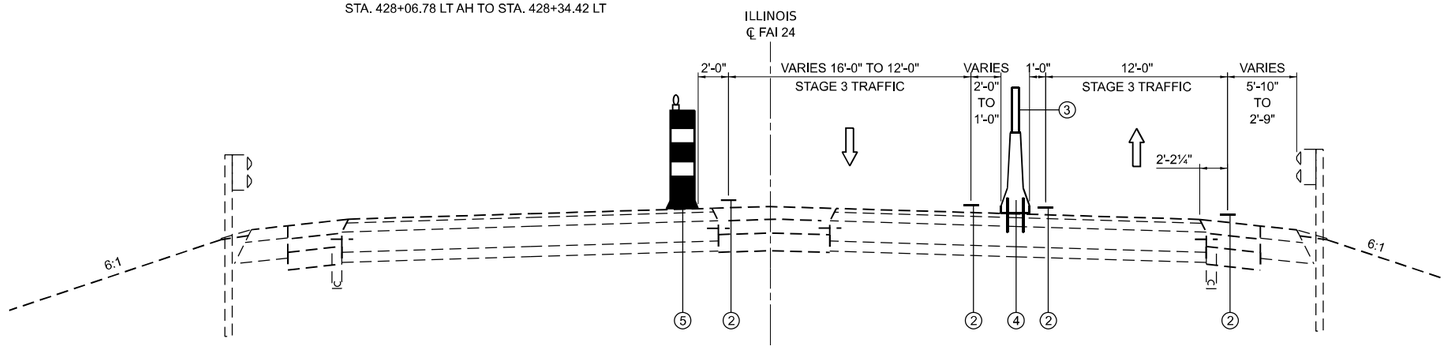
★ STA. 422+74.06 RT TO STA. 423+53.98 RT
★★ STA. 423+53.98 RT TO STA. 424+75.00 RT

STAGE 3 TYPICAL SECTION (WESTBOUND)

STA. 421+39.17 LT TO STA. 424+85.87 LT BK
STA. 428+06.78 LT AH TO STA. 428+34.42 LT

STAGE 3 TYPICAL SECTION (EASTBOUND)

STA. 422+74.06 RT TO STA. 424+75.00 RT



STAGE 3 TYPICAL SECTION (WESTBOUND)

STA. 428+34.42 LT TO STA. 429+84.42 LT

STAGE 3 TYPICAL SECTION (EASTBOUND)

STA. 424+75.00 RT TO STA. 424+85.87 RT BK
STA. 428+06.78 RT AH TO STA. 429+84.42 RT

STATION EQUATION

STA. 424+85.87 BK = STA. 428+06.78 AH

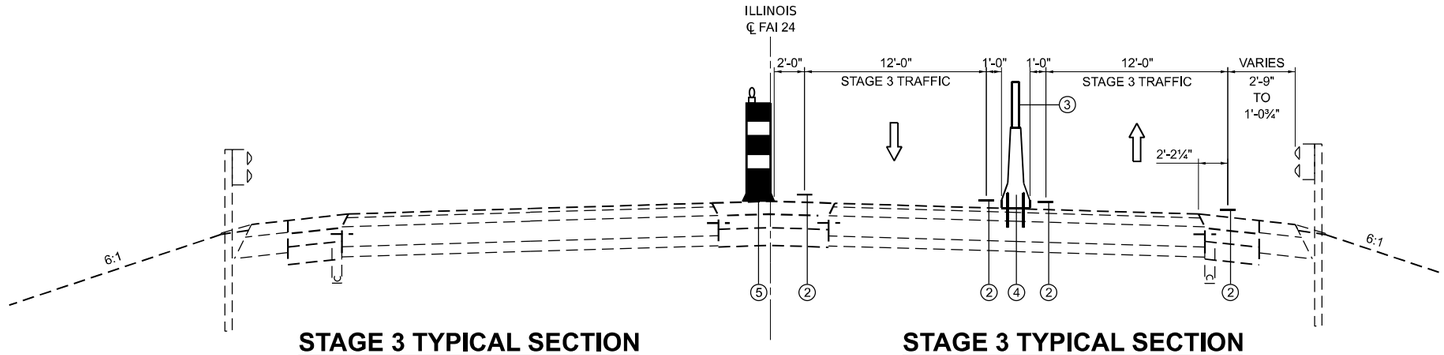
MODEL: Default
FILE NAME: P:\2021\210593.J&L • FAI 24 Ohio River Bridge Painting\4 CADD • DWG\4.7 Trans\CAD_Sheets\D297697=etkrydaux1424stage3.dgn

TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM.INC.COM IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = ballhartz	DESIGNED - KMO	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
			DRAWN - BAB	REVISED -	
		PLOT SCALE = 10.000 ' / In.	CHECKED - TBP	REVISED -	
		PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

STAGE 3 – STAGING TYPICAL SECTIONS
I-24 – CROSSOVERS

SCALE: N.T.S. | SHEET 1 OF 5 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	35
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



STAGE 3 TYPICAL SECTION (WESTBOUND)

STA. 429+84.42 LT TO STA. 430+88.00 LT

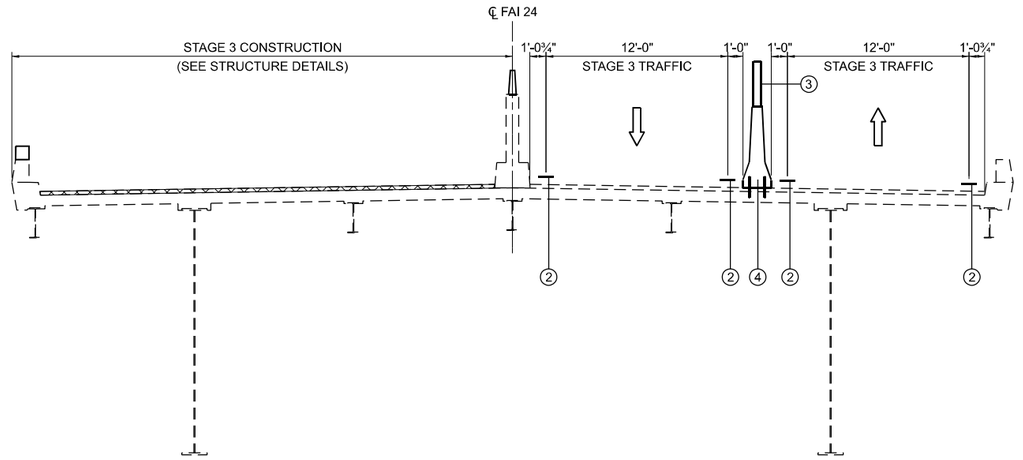
STAGE 3 TYPICAL SECTION (EASTBOUND)

STA. 429+84.42 RT TO STA. 430+88.00 RT

① TEMPORARY CONCRETE BARRIER
② TEMPORARY PAVEMENT MARKING - LINE 6" - TYPE IV TAPE
③ MODULAR GLARE SCREEN SYSTEM, TEMPORARY
④ TEMPORARY CONCRETE BARRIER PINNED (WITH 25 FT TRANSITIONS AT THE ENDS)
⑤ DRUM OR TYPE II BARRICADE WITH STEADY BURN MONODIRECTIONAL LIGHT. (SEE STAGING PLAN SHEETS).

NOTES:

SEE STAGE 3 STAGING PLAN SHEETS FOR ADDITIONAL DETAILS ON STAGE 3 TRAFFIC CONTROL LAYOUT.

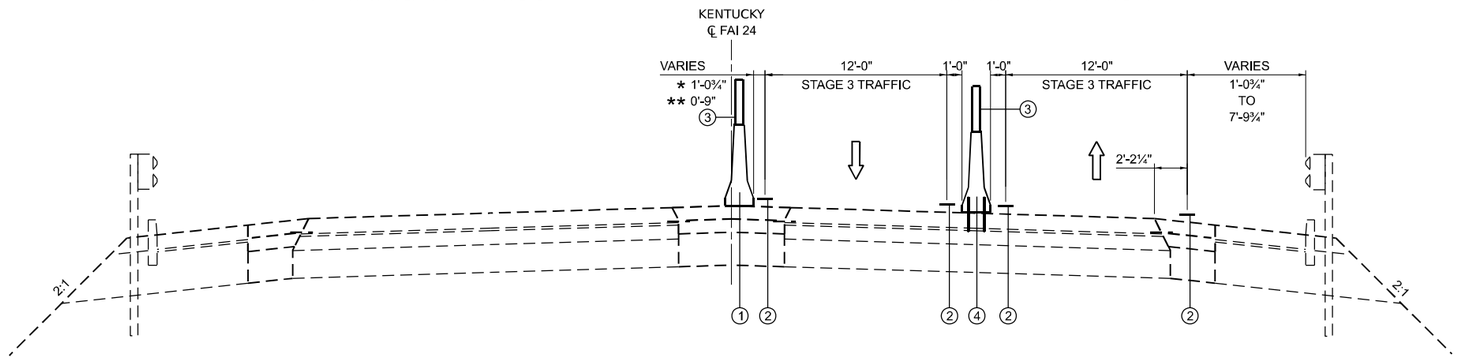


STAGE 3 TYPICAL SECTION (WESTBOUND)

STA. 430+88.00 LT TO STA. 487+39.25 LT

STAGE 3 TYPICAL SECTION (EASTBOUND)

STA. 430+88.00 RT TO STA. 487+39.25 RT



* STA. 487+38.75 RT TO STA. 488+42.26 RT
** STA. 488+42.26 RT TO STA. 488+79.76 RT

STAGE 3 TYPICAL SECTION (WESTBOUND)

STA. 487+39.25 LT TO STA. 488+79.76 LT

STAGE 3 TYPICAL SECTION (EASTBOUND)

STA. 487+39.25 RT TO STA. 488+53.50 RT

MODEL: Default
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TWM ENGINEERING & GEOSPATIAL SERVICES
TWM, INC.
WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

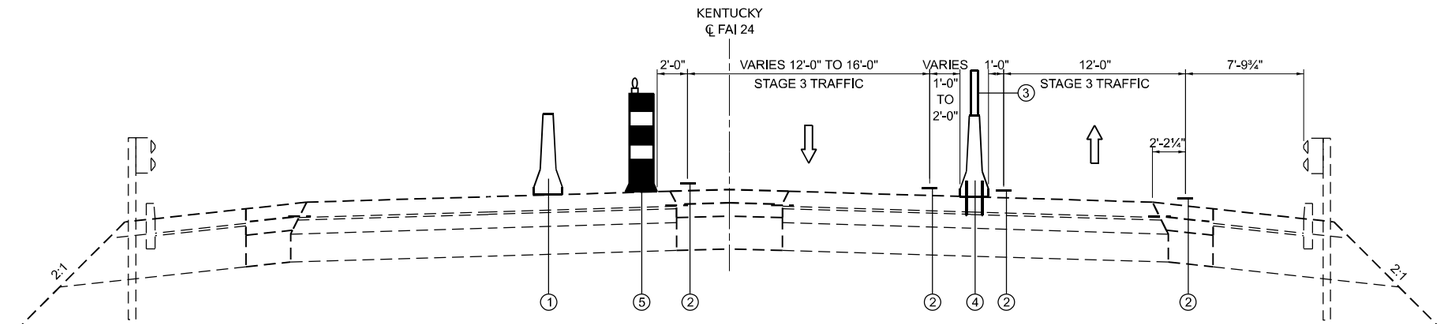
USER NAME = bbillhartz	DESIGNED - KMO	REVISED -	
	DRAWN - BAB	REVISED -	
PLOT SCALE = 10.000 ' / In.	CHECKED - TBP	REVISED -	
PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE 3 – STAGING TYPICAL SECTIONS
I-24 – CROSSOVERS

SCALE: N.T.S. | SHEET 2 OF 5 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	36
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



STAGE 3 TYPICAL SECTION (WESTBOUND)

STA. 488+79.76 LT TO STA. 490+29.76 LT

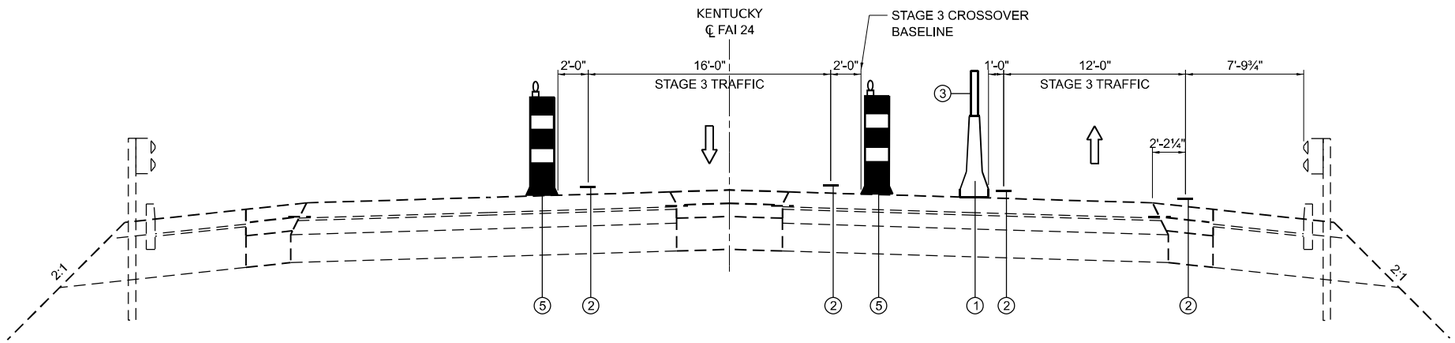
STAGE 3 TYPICAL SECTION (EASTBOUND)

STA. 488+53.50 RT TO STA. 490+29.76 RT

① TEMPORARY CONCRETE BARRIER
② TEMPORARY PAVEMENT MARKING - LINE 6" - TYPE IV TAPE
③ MODULAR GLARE SCREEN SYSTEM, TEMPORARY
④ TEMPORARY CONCRETE BARRIER PINNED (WITH 25 FT TRANSITIONS AT THE ENDS)
⑤ DRUM OR TYPE II BARRICADE WITH STEADY BURN MONODIRECTIONAL LIGHT. (SEE STAGING PLAN SHEETS).

NOTES:

SEE STAGE 3 STAGING PLAN SHEETS FOR ADDITIONAL DETAILS ON STAGE 3 TRAFFIC CONTROL LAYOUT.

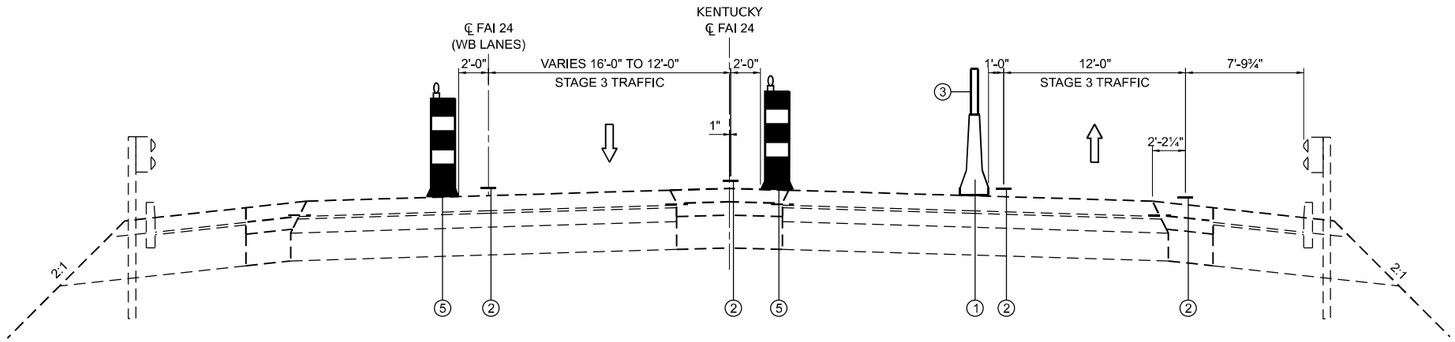


STAGE 3 TYPICAL SECTION (WESTBOUND)

STA. 490+29.76 LT TO STA. 493+87.60 LT

STAGE 3 TYPICAL SECTION (EASTBOUND)

STA. 490+29.76 RT TO STA. 493+87.60 RT



STAGE 3 TYPICAL SECTION (WESTBOUND)

STA. 493+87.60 LT TO STA. 495+07.60 LT

STAGE 3 TYPICAL SECTION (EASTBOUND)

STA. 493+87.60 RT TO STA. 495+73.00 RT

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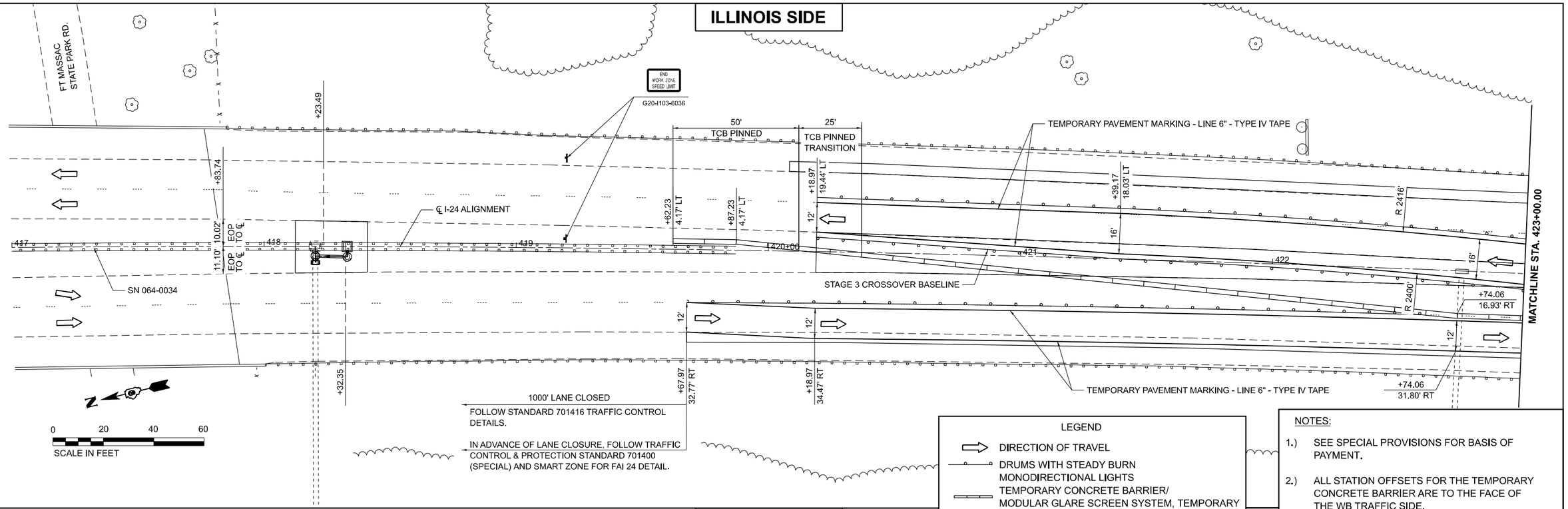
TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = billhartz	DESIGNED - KMO	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
			DRAWN - BAB	REVISED -	
		PLOT SCALE = 10.000 ' / In.	CHECKED - TBP	REVISED -	
		PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

STAGE 3 – STAGING TYPICAL SECTIONS
I–24 – CROSSOVERS

SCALE: N.T.S. | SHEET 3 OF 5 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	37
		CONTRACT NO. 78972		
		ILLINOIS	FED. AID PROJECT	

ILLINOIS SIDE



LEGEND

- DIRECTION OF TRAVEL
- DRUMS WITH STEADY BURN MONODIRECTIONAL LIGHTS
- TEMPORARY CONCRETE BARRIER/ MODULAR GLARE SCREEN SYSTEM, TEMPORARY
- TEMPORARY IMPACT ATTENUATOR
- WORK ZONE (SEE STRUCTURE PLANS)
- TYPE III BARRICADES WITH FLASHING LIGHTS
- TYPE II BARRICADE WITH STEADY BURN MONODIRECTIONAL LIGHT

NOTES:

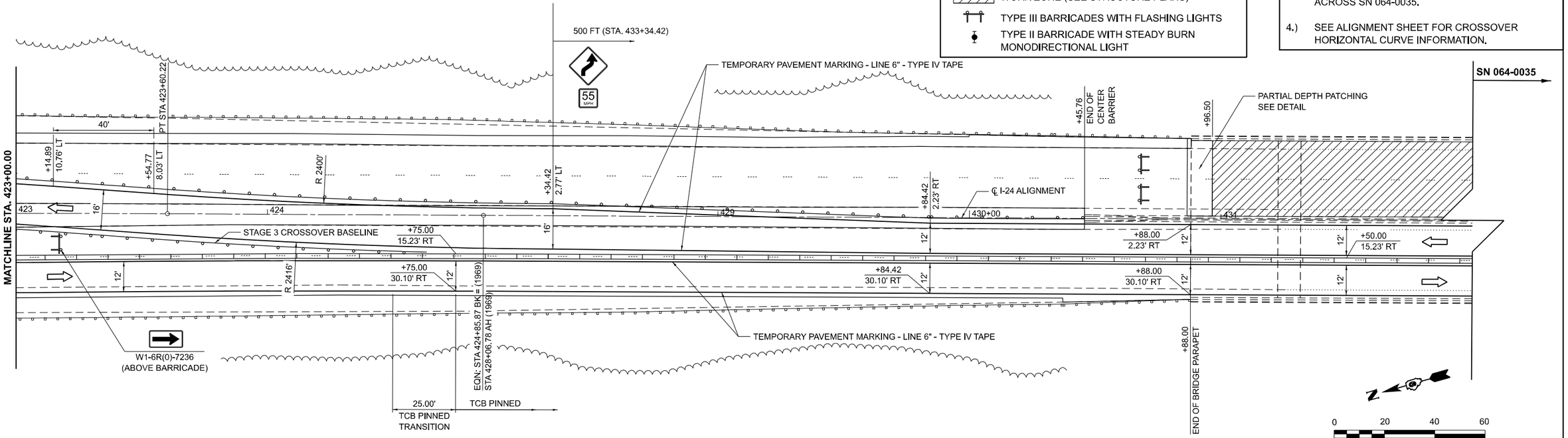
1.) SEE SPECIAL PROVISIONS FOR BASIS OF PAYMENT.

2.) ALL STATION OFFSETS FOR THE TEMPORARY CONCRETE BARRIER ARE TO THE FACE OF THE WB TRAFFIC SIDE.

3.) CROSSOVER TRAFFIC SHALL CONTINUE ACROSS SN 064-0035.

4.) SEE ALIGNMENT SHEET FOR CROSSOVER HORIZONTAL CURVE INFORMATION.

ILLINOIS SIDE



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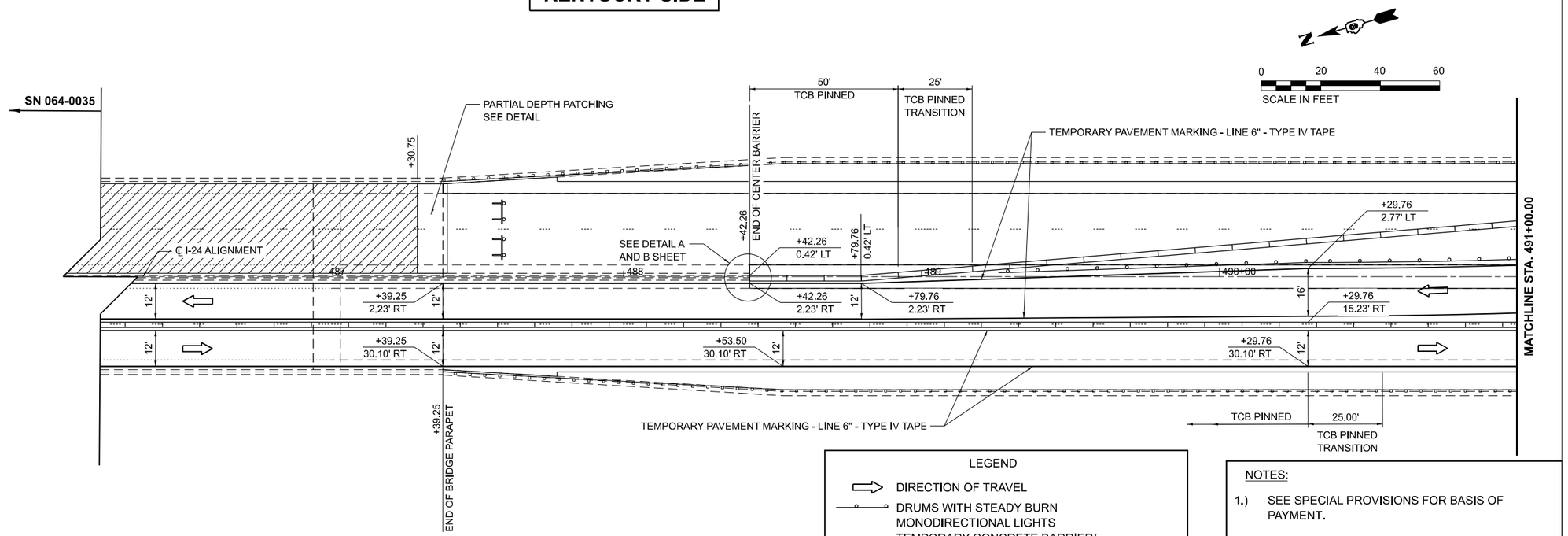
TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = bblhartz	DESIGNED - KMO	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
			DRAWN - BAB	REVISED -	
		PLOT SCALE = 40.00000000 ' / In.	CHECKED - TBP	REVISED -	
		PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

STAGE 3 – STAGING PLAN
I–24 – CROSSOVERS

SCALE: 1"=20' | SHEET 4 OF 5 SHEETS | STA. 417+00.00 | TO STA. 432+00.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	38
		CONTRACT NO. 78972		
	ILLINOIS FED. AID PROJECT			

KENTUCKY SIDE



LEGEND

- DIRECTION OF TRAVEL
- DRUMS WITH STEADY BURN MONODIRECTIONAL LIGHTS
- TEMPORARY CONCRETE BARRIER/ MODULAR GLARE SCREEN SYSTEM, TEMPORARY
- TEMPORARY IMPACT ATTENUATOR
- WORK ZONE (SEE STRUCTURE PLANS)
- TYPE III BARRICADES WITH FLASHING LIGHTS
- TYPE II BARRICADE WITH STEADY BURN MONODIRECTIONAL LIGHT

NOTES:

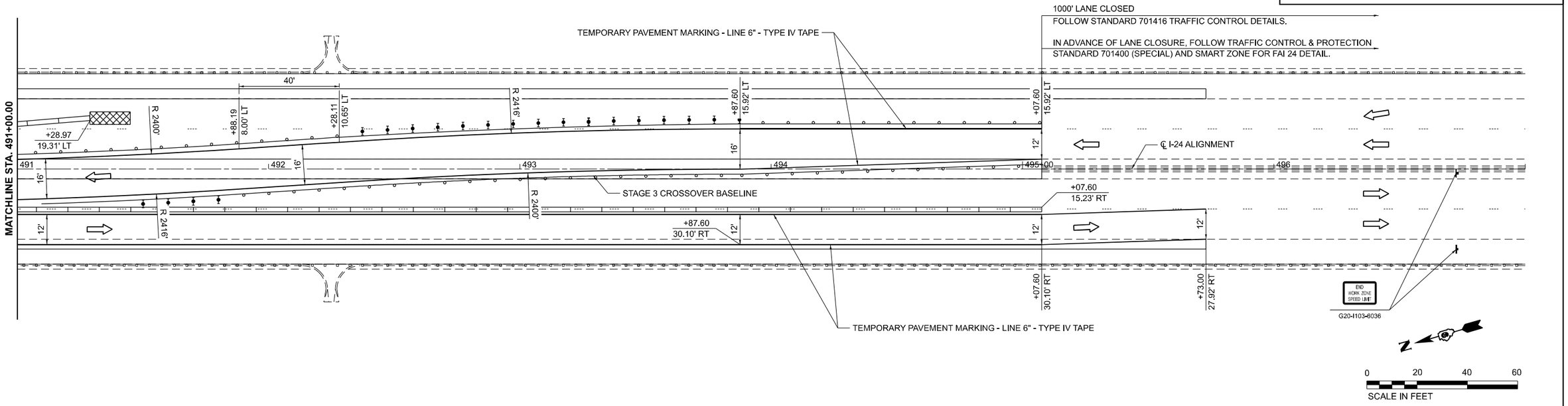
1.) SEE SPECIAL PROVISIONS FOR BASIS OF PAYMENT.

2.) ALL STATION OFFSETS FOR THE TEMPORARY CONCRETE BARRIER ARE TO THE FACE OF THE WB TRAFFIC SIDE.

3.) CROSSOVER TRAFFIC SHALL CONTINUE ACROSS SN 064-0035.

4.) SEE ALIGNMENT SHEET FOR CROSSOVER HORIZONTAL CURVE INFORMATION.

KENTUCKY SIDE



MODEL: Plan 2
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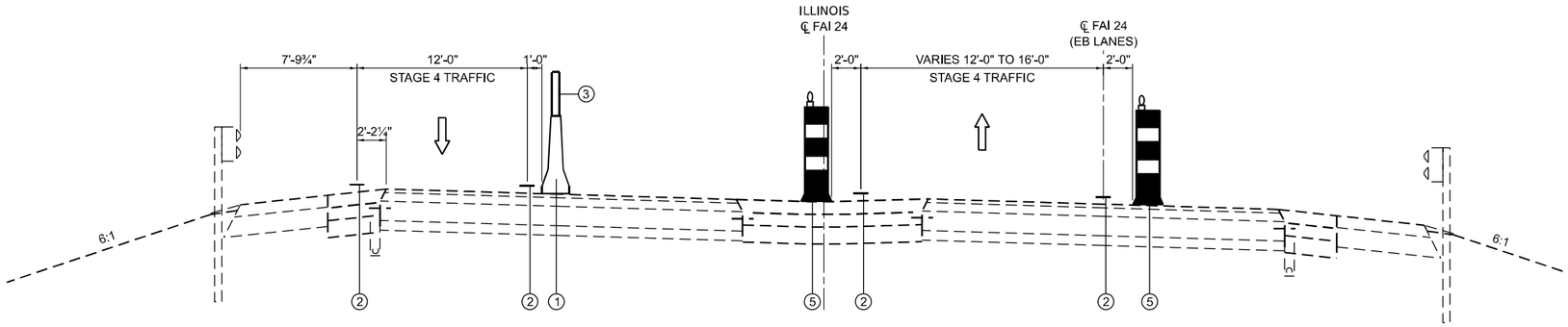
TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = bbillhartz	DESIGNED - KMO	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
			DRAWN - BAB	REVISED -	
		PLOT SCALE = 40.00000000 ' / In.	CHECKED - TBP	REVISED -	
		PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

STAGE 3 – STAGING PLAN
I–24 – CROSSOVERS

SCALE: 1"=20' | SHEET 5 OF 5 SHEETS | STA. 486+00.00 | TO STA. 497+00.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	39
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



STAGE 4 TYPICAL SECTION (WESTBOUND)

STA. 420+07.80 LT TO STA. 423+50.00 LT

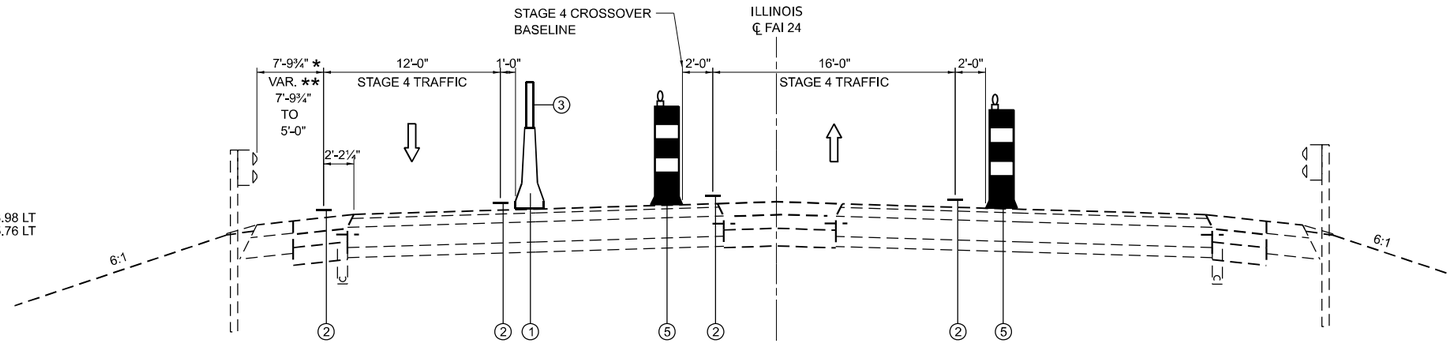
STAGE 4 TYPICAL SECTION (EASTBOUND)

STA. 420+57.60 RT TO STA. 421+77.60 RT

① TEMPORARY CONCRETE BARRIER
② TEMPORARY PAVEMENT MARKING - LINE 6" - TYPE IV TAPE
③ MODULAR GLARE SCREEN SYSTEM, TEMPORARY
④ TEMPORARY CONCRETE BARRIER PINNED (WITH 25 FT TRANSITIONS AT THE ENDS)
⑤ DRUM OR TYPE II BARRICADE WITH STEADY BURN MONODIRECTIONAL LIGHT. (SEE STAGING PLAN SHEETS).

NOTES:

SEE STAGE 4 STAGING PLAN SHEETS FOR ADDITIONAL DETAILS ON STAGE 4 TRAFFIC CONTROL LAYOUT.



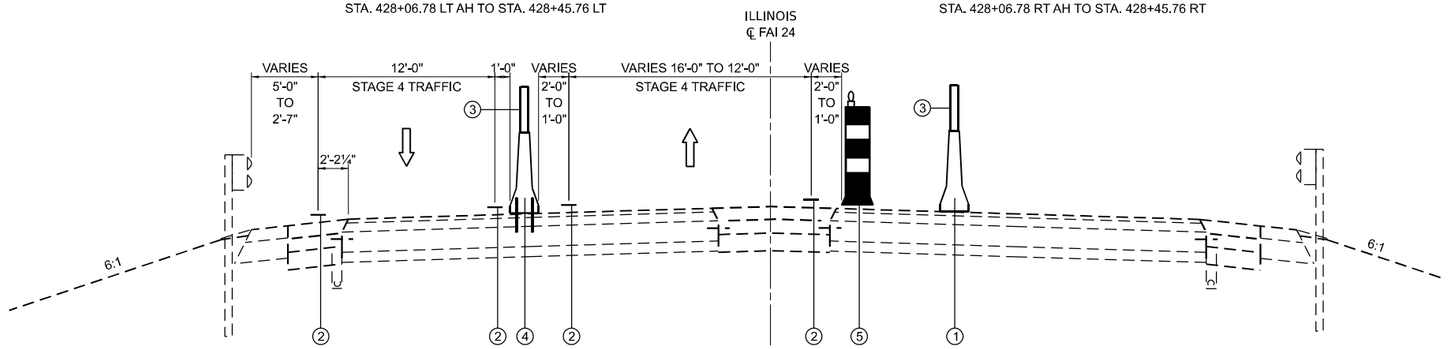
⋆ STA. 423+50.00 LT TO STA. 423+53.98 LT
⋆⋆ STA. 423+53.98 LT TO STA. 428+45.76 LT

STAGE 4 TYPICAL SECTION (WESTBOUND)

STA. 423+50.00 LT TO STA. 424+85.87 LT BK
STA. 428+06.78 LT AH TO STA. 428+45.76 LT

STAGE 4 TYPICAL SECTION (EASTBOUND)

STA. 421+77.60 RT TO STA. 424+85.87 RT BK
STA. 428+06.78 RT AH TO STA. 428+45.76 RT



STAGE 4 TYPICAL SECTION (WESTBOUND)

STA. 428+45.76 LT TO STA. 429+95.76 LT

STAGE 4 TYPICAL SECTION (EASTBOUND)

STA. 428+45.76 RT TO STA. 429+95.76 RT

STATION EQUATION

STA. 424+85.87 BK = STA. 428+06.78 AH

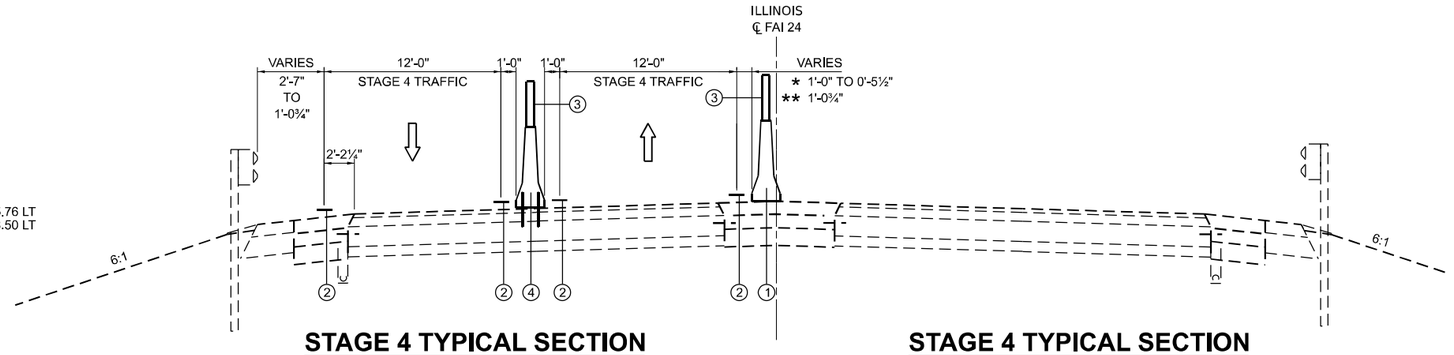
MODEL: Default
FILE NAME: P:\2021\210593\J&L • FAI 24 Ohio River Bridge Painting\4 CADD • DWG\4-7 Trsn\CAD_Sheets\ID297697=etkrydaiuk424stage4.dgn

TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM.INC.COM	USER NAME = bdlhartz	DESIGNED - KMO	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	IL DESIGN FIRM LICENSE NO: 184-001220		DRAWN - BAB	REVISED -	
		PLOT SCALE = 10.000 ' / In.	CHECKED - TBP	REVISED -	
		PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

STAGE 4 – STAGING TYPICAL SECTIONS
I–24 – CROSSOVERS

SCALE: N.T.S. | SHEET 1 OF 5 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	40
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



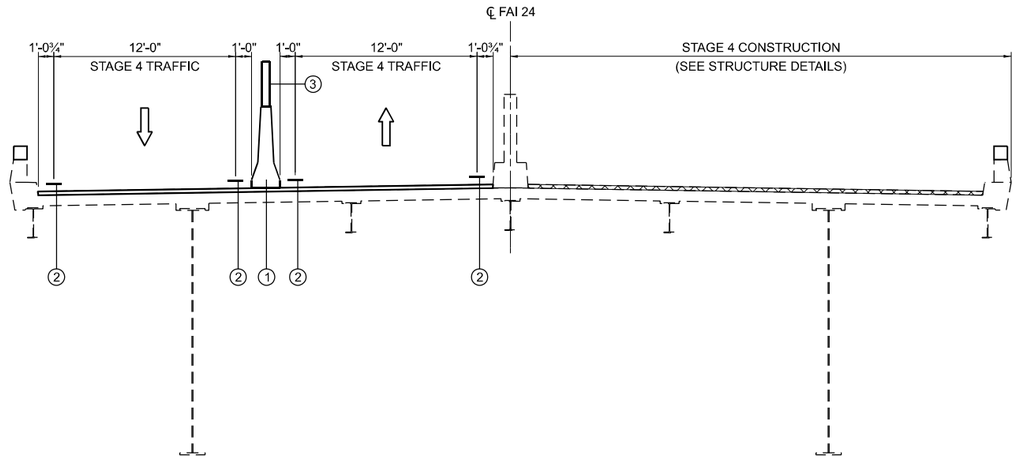
* STA. 429+95.76 LT TO STA. 430+45.76 LT
** STA. 430+45.76 LT TO STA. 430+88.50 LT

STAGE 4 TYPICAL SECTION (WESTBOUND)

STA. 429+95.76 LT TO STA. 430+88.00 LT

STAGE 4 TYPICAL SECTION (EASTBOUND)

STA. 429+95.76 RT TO STA. 430+88.00 RT

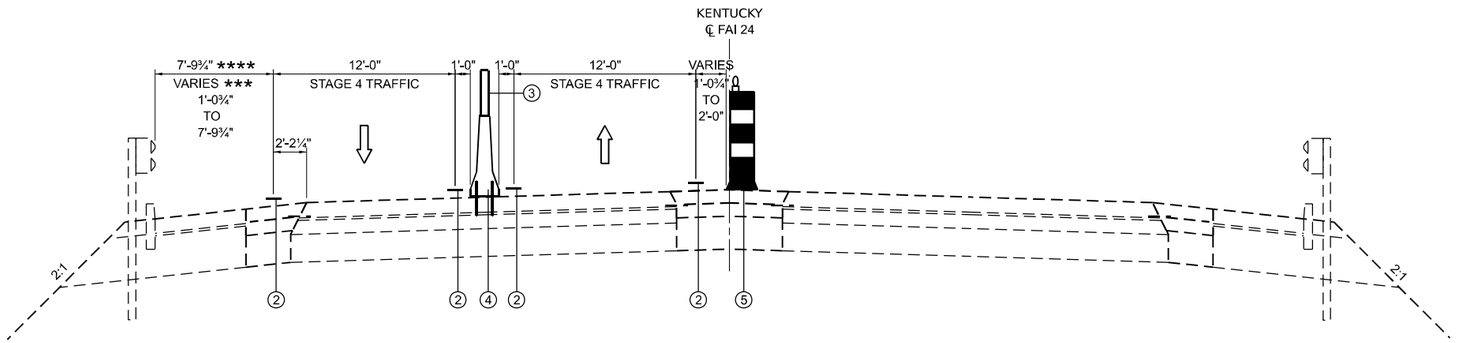


STAGE 4 TYPICAL SECTION (WESTBOUND)

STA. 430+88.00 LT TO STA. 487+39.25 LT

STAGE 4 TYPICAL SECTION (EASTBOUND)

STA. 430+88.00 RT TO STA. 487+39.25 RT



*** STA. 487+38.75 LT TO STA. 488+50.00 LT
**** STA. 488+50.00LT TO STA. 488+79.76 LT

STAGE 4 TYPICAL SECTION (WESTBOUND)

STA. 487+39.25 LT TO STA. 488+79.76 LT

STAGE 4 TYPICAL SECTION (EASTBOUND)

STA. 487+39.25 RT TO STA. 488+79.76 RT

① TEMPORARY CONCRETE BARRIER
② TEMPORARY PAVEMENT MARKING - LINE 6" - TYPE IV TAPE
③ MODULAR GLARE SCREEN SYSTEM, TEMPORARY
④ TEMPORARY CONCRETE BARRIER PINNED (WITH 25 FT TRANSITIONS AT THE ENDS)
⑤ DRUM OR TYPE II BARRICADE WITH STEADY BURN MONODIRECTIONAL LIGHT. (SEE STAGING PLAN SHEETS).

NOTES:

SEE STAGE 4 STAGING PLAN SHEETS FOR ADDITIONAL DETAILS ON STAGE 4 TRAFFIC CONTROL LAYOUT.

MODEL: Default
FILE NAME: P:\2021\21059\L&L • FAI 24 Ohio River Bridge Painting\4 CADD • DWGs\4_7 Tran\CAD_Sheets\D97697\<sh>\<rdcs>\I24-stage4.dgn

TWM ENGINEERING & GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = billhartz	DESIGNED - KMO	REVISED -
	DRAWN - BAB	REVISED -
PLOT SCALE = 10.000 ' / In.	CHECKED - TBP	REVISED -
PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -

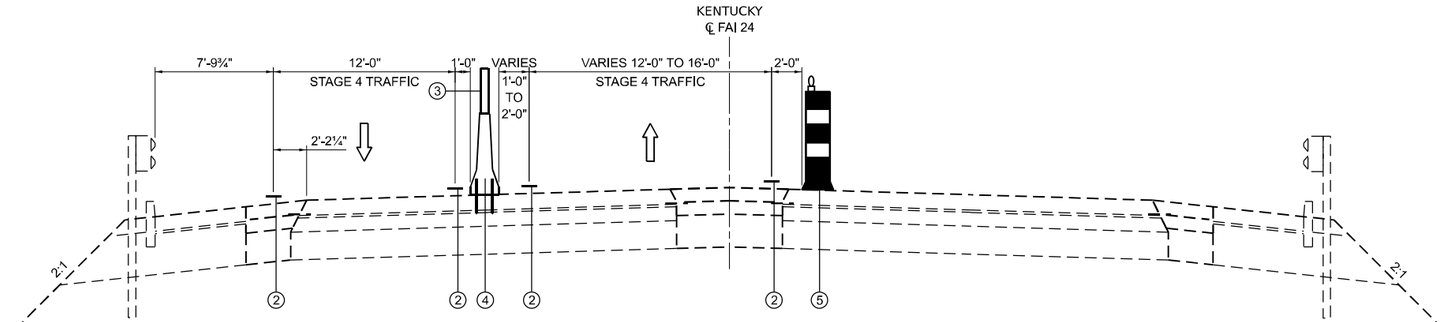
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE 4 – STAGING TYPICAL SECTIONS
I-24 – CROSSOVERS

SCALE: N.T.S. | SHEET 2 OF 5 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	41
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

1. TEMPORARY CONCRETE BARRIER
2. TEMPORARY PAVEMENT MARKING - LINE 6" - TYPE IV TAPE
3. MODULAR GLARE SCREEN SYSTEM, TEMPORARY
4. TEMPORARY CONCRETE BARRIER PINNED (WITH 25 FT TRANSITIONS AT THE ENDS)
5. DRUM OR TYPE II BARRICADE WITH STEADY BURN MONODIRECTIONAL LIGHT. (SEE STAGING PLAN SHEETS).



STAGE 4 TYPICAL SECTION (WESTBOUND)

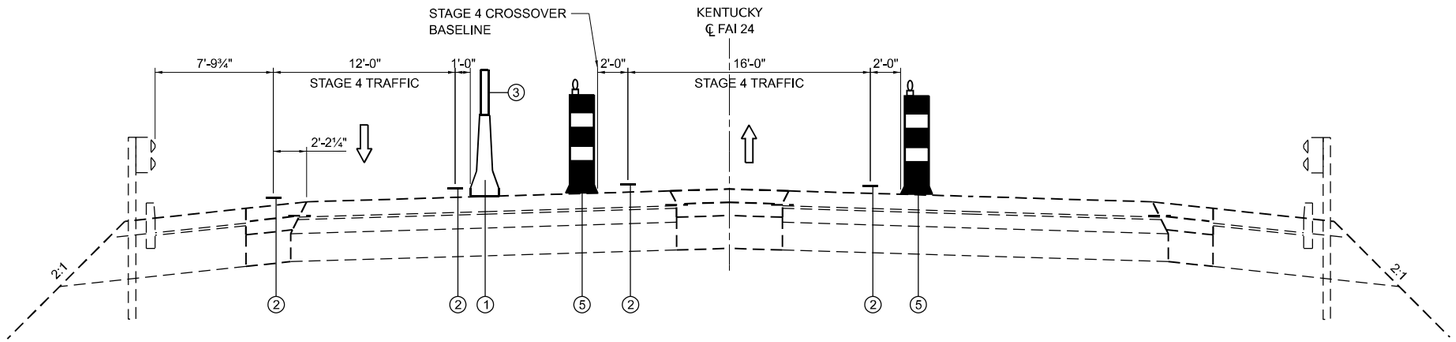
STA. 488+79.76 LT TO STA. 490+29.76 LT

STAGE 4 TYPICAL SECTION (EASTBOUND)

STA. 488+79.76 RT TO STA. 490+29.76 RT

NOTES:

SEE STAGE 4 STAGING PLAN SHEETS FOR ADDITIONAL DETAILS ON STAGE 4 TRAFFIC CONTROL LAYOUT.

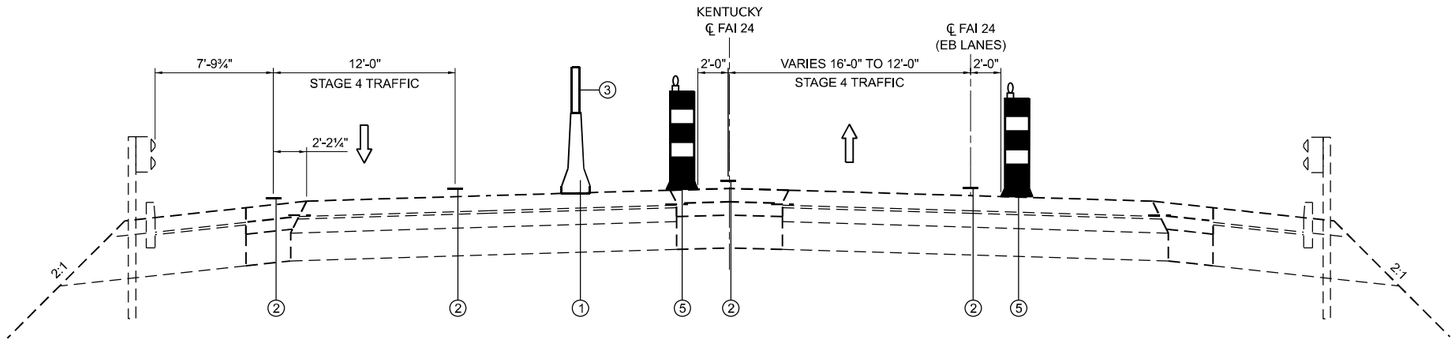


STAGE 4 TYPICAL SECTION (WESTBOUND)

STA. 490+29.76 LT TO STA. 492+83.27 LT

STAGE 4 TYPICAL SECTION (EASTBOUND)

STA. 490+29.76 RT TO STA. 493+87.60 RT



STAGE 4 TYPICAL SECTION (WESTBOUND)

STA. 492+83.27 LT TO STA. 495+73.00 LT

STAGE 4 TYPICAL SECTION (EASTBOUND)

STA. 493+87.60 RT TO STA. 495+07.60 RT

MODEL: Default
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TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = billhartz	DESIGNED - KMO	REVISED -	
	DRAWN - BAB	REVISED -	
PLOT SCALE = 10.000 ' / In.	CHECKED - TBP	REVISED -	
PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

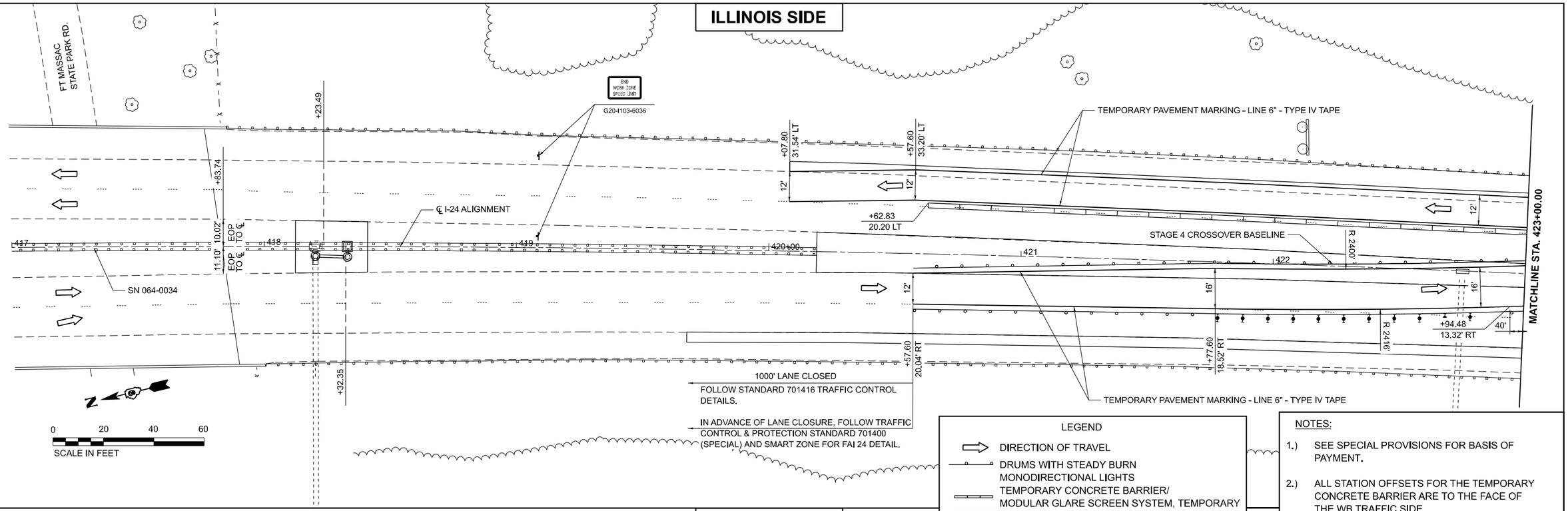
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE 4 – STAGING TYPICAL SECTIONS
I-24 – CROSSOVERS

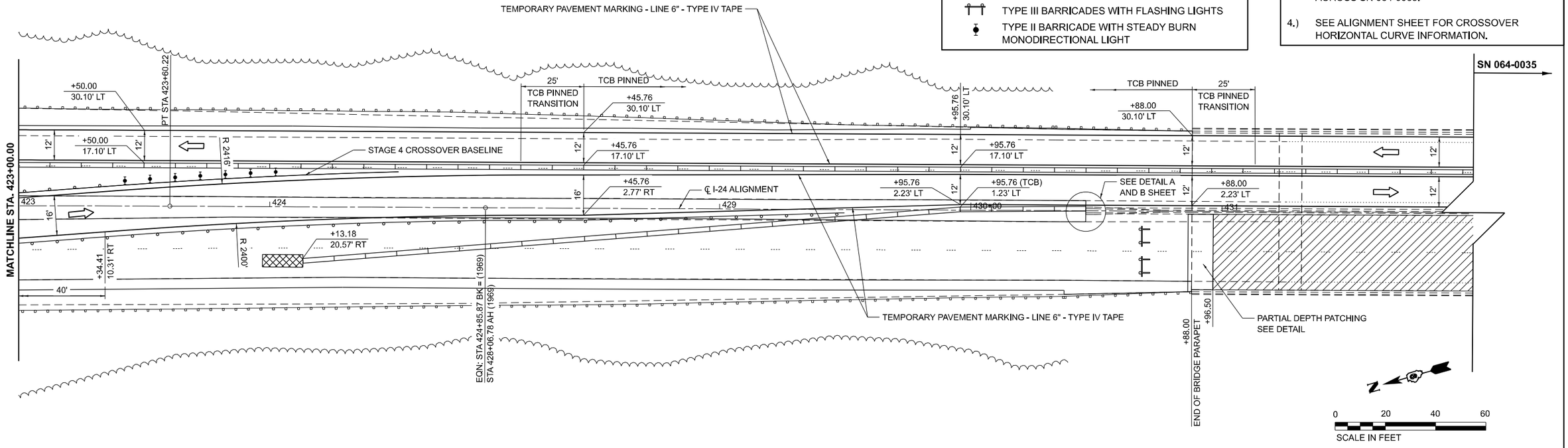
SCALE: N.T.S. | SHEET 3 OF 5 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	42
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

ILLINOIS SIDE



ILLINOIS SIDE



LEGEND

- DIRECTION OF TRAVEL
- DRUMS WITH STEADY BURN MONODIRECTIONAL LIGHTS
- TEMPORARY CONCRETE BARRIER/ MODULAR GLARE SCREEN SYSTEM, TEMPORARY
- TEMPORARY IMPACT ATTENUATOR
- WORK ZONE (SEE STRUCTURE PLANS)
- TYPE III BARRICADES WITH FLASHING LIGHTS
- TYPE II BARRICADE WITH STEADY BURN MONODIRECTIONAL LIGHT

NOTES:

1.) SEE SPECIAL PROVISIONS FOR BASIS OF PAYMENT.

2.) ALL STATION OFFSETS FOR THE TEMPORARY CONCRETE BARRIER ARE TO THE FACE OF THE WB TRAFFIC SIDE.

3.) CROSSOVER TRAFFIC SHALL CONTINUE ACROSS SN 064-0035.

4.) SEE ALIGNMENT SHEET FOR CROSSOVER HORIZONTAL CURVE INFORMATION.

MODEL: Plan 1
FILE NAME: P:\2021\210593.00\L - FAI 24 Ohio River Bridge Painting\4 CADD - DWGs\4_7 Trans\CAD_Sheets\D097697.sht<blk>L=I24staging4.dgn

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = bbillhartz	DESIGNED - KMO	REVISED -	
	DRAWN - BAB	REVISED -	
PLOT SCALE = 40.00000000 ' / In.	CHECKED - TBP	REVISED -	
PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

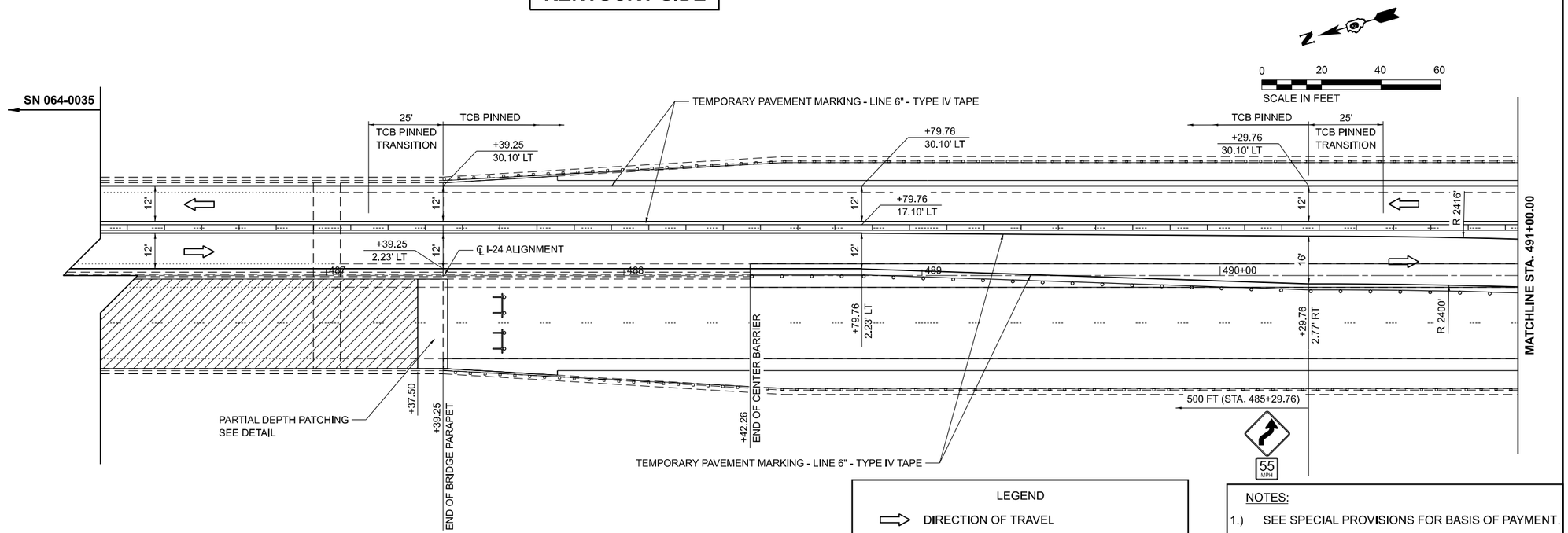
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE 4 – STAGING PLAN
I–24 – CROSSOVERS

SCALE: 1"=20' | SHEET 4 OF 5 SHEETS | STA. 417+00.00 | TO STA. 432+00.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	43
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

KENTUCKY SIDE



LEGEND

- DIRECTION OF TRAVEL
- DRUMS WITH STEADY BURN MONODIRECTIONAL LIGHTS
- TEMPORARY CONCRETE BARRIER
- TEMPORARY IMPACT ATTENUATOR
- WORK ZONE (SEE STRUCTURE PLANS)
- TYPE III BARRICADES WITH FLASHING LIGHTS

NOTES:

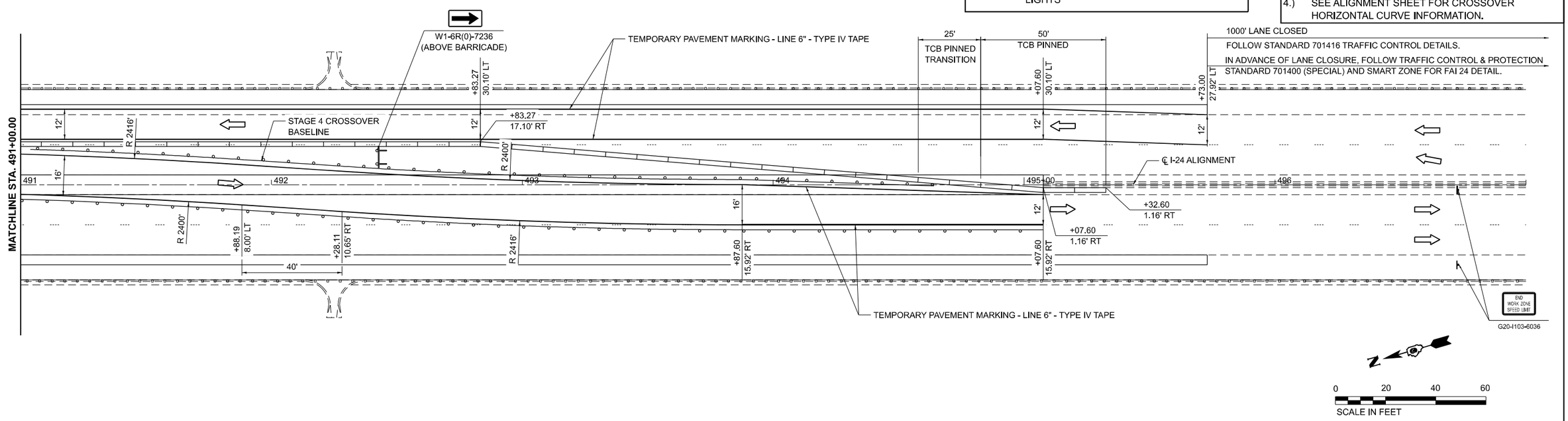
1.) SEE SPECIAL PROVISIONS FOR BASIS OF PAYMENT.

2.) ALL STATION OFFSETS FOR THE TEMPORARY CONCRETE BARRIER ARE TO THE FACE OF THE WB TRAFFIC SIDE.

3.) CROSSOVER TRAFFIC SHALL CONTINUE ACROSS SN 064-0035.

4.) SEE ALIGNMENT SHEET FOR CROSSOVER HORIZONTAL CURVE INFORMATION.

KENTUCKY SIDE



MODEL: Plan 2
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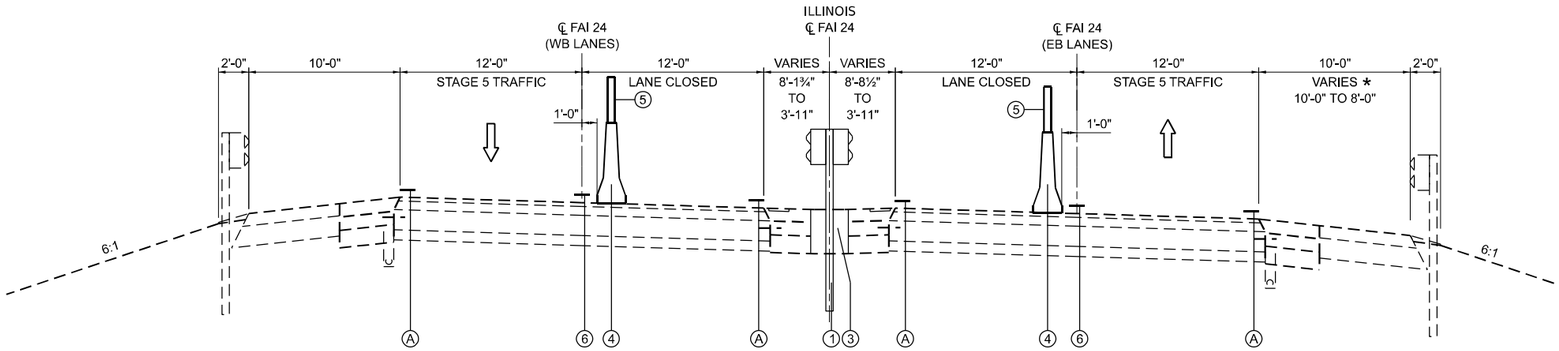
TWM. INC. WWW.TWM.INC.COM ENGINEERING GEOSPATIAL SERVICES	IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = bbillhartz	DESIGNED - KMO	REVISED -	
			DRAWN - BAB	REVISED -	
		PLOT SCALE = 40.00000000 ' / in.	CHECKED - TBP	REVISED -	
		PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE 4 – STAGING PLAN
I–24 – CROSSOVERS

SCALE: 1"=20' | SHEET 5 OF 5 SHEETS | STA. 486+00.00 TO STA. 497+00.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	44
		CONTRACT NO. 78972		
		ILLINOIS	FED. AID PROJECT	



STAGE 5 TYPICAL SECTION (WESTBOUND)

STA. 419+87.23 LT TO STA. 423+50.00 LT

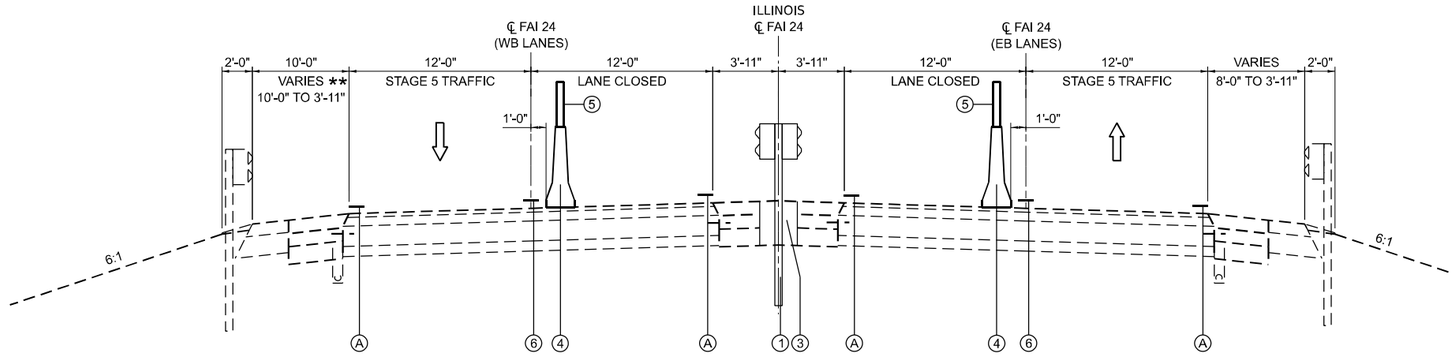
STAGE 5 TYPICAL SECTION (EASTBOUND)

STA. 419+87.23 RT TO STA. 424+75.00 RT

Ⓐ PAVEMENT MARKING (TO REMAIN)

① PR. STEEL PLATE BEAM GUARDRAIL, TYPE D, 6 FOOT POSTS
② PR. CONCRETE BARRIER WALL (SPECIAL)
③ PR. HOLES DRILLED
④ TEMPORARY CONCRETE BARRIER
⑤ MODULAR GLARE SCREEN SYSTEM, TEMPORARY
⑥ TEMPORARY PAVEMENT MARKING - LINE 6" - TYPE IV TAPE

✱ STA. 423+53.98 RT TO STA. 424+75.00 RT



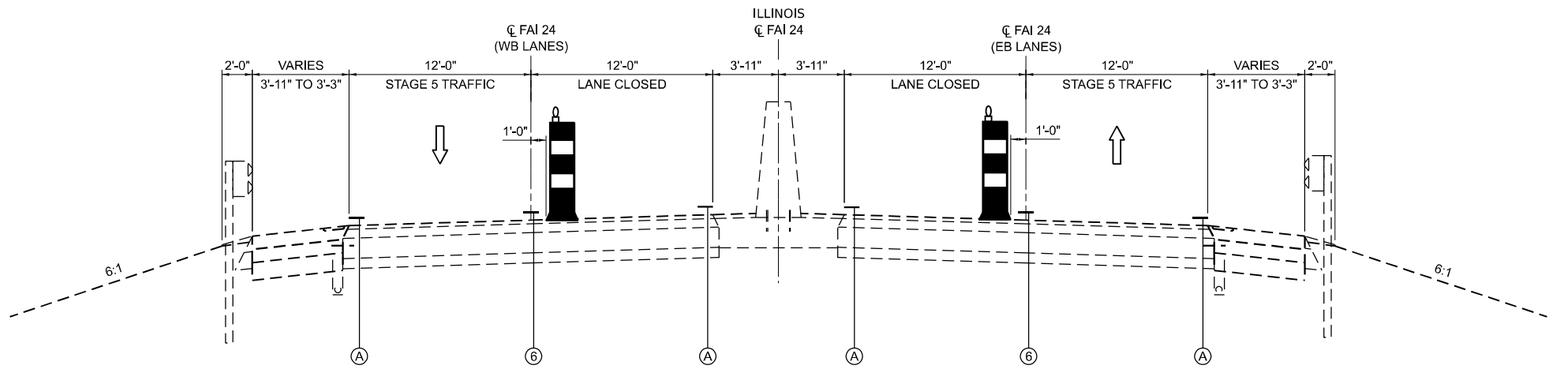
STAGE 5 TYPICAL SECTION (WESTBOUND)

STA. 423+50.00 LT TO STA. 424+85.87 LT BK
STA. 428+06.78 LT AH TO STA. 430+45.76 LT

STAGE 5 TYPICAL SECTION (EASTBOUND)

STA. 424+75.00 RT TO STA. 424+85.87 RT BK
STA. 428+06.78 RT AH TO STA. 430+45.76 RT

✱✱ STA. 423+53.98 LT TO STA. 430+45.76 LT



STAGE 5 TYPICAL SECTION (WESTBOUND)

STA. 430+45.76 LT TO STA. 430+88.00 LT

STAGE 5 TYPICAL SECTION (EASTBOUND)

STA. 430+45.76 RT TO STA. 430+88.00 RT

STATION EQUATION

STA. 424+85.87 BK = STA. 428+06.78 AH

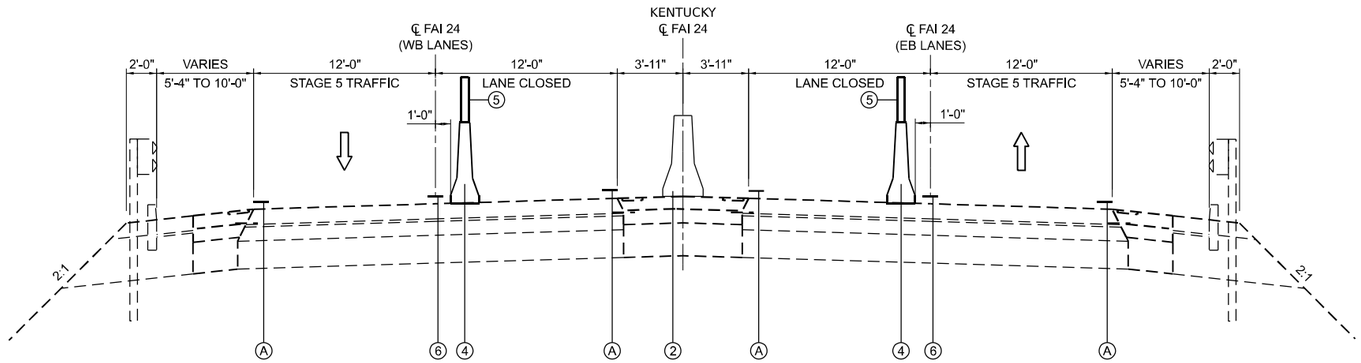
SN 064-0035

(END OF BRIDGE PARAPET TO END OF BRIDGE PARAPET)
STA. 430+88.50 TO STA. 487+38.75

MODEL: Default
FILE NAME: P:\2021\210593.J&L • FAI 24 Ohio River Bridge Painting\st CADD • DWGs\J.T Tran\CAD_Sheets\t297897\enkeydata\424stage5.dgn

TWM, INC. WWW.TWM-INC.COM ENGINEERING GEOSPATIAL SERVICES IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = bbillhartz	DESIGNED - KMO	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STAGE 5 – STAGING TYPICAL SECTIONS I–24 – GUARDRAIL AND CENTER BARRIER
		DRAWN - BAB	REVISED -		
	PLOT SCALE = 10.000 ' / In.	CHECKED - TBP	REVISED -		
	PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -		SCALE: N.T.S. SHEET 1 OF 4 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	45
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

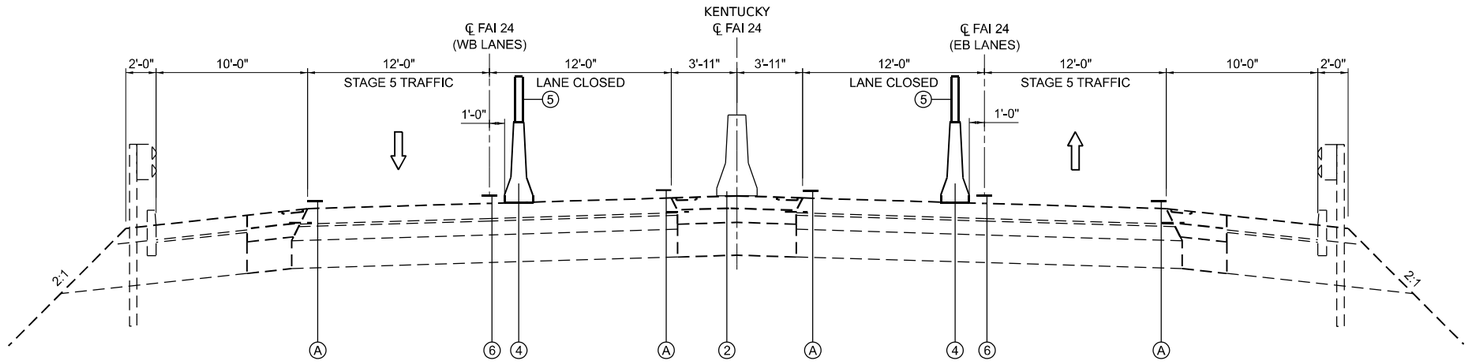


STAGE 5 TYPICAL SECTION (WESTBOUND)

STA. 488+42.26 LT TO STA. 488+53.50 LT

STAGE 5 TYPICAL SECTION (EASTBOUND)

STA. 488+42.26 RT TO STA. 488+53.50 RT



STAGE 5 TYPICAL SECTION (WESTBOUND)

STA. 488+53.50 LT TO STA. 497+07.60 LT

STAGE 5 TYPICAL SECTION (EASTBOUND)

STA. 488+53.50 RT TO STA. 497+07.60 RT

Ⓐ PAVEMENT MARKING (TO REMAIN)

① PR. STEEL PLATE BEAM GUARDRAIL, TYPE D, 6 FOOT POSTS
② PR. CONCRETE BARRIER WALL (SPECIAL)
③ PR. HOLES DRILLED
④ TEMPORARY CONCRETE BARRIER
⑤ MODULAR GLARE SCREEN SYSTEM, TEMPORARY
⑥ TEMPORARY PAVEMENT MARKING - LINE 6" - TYPE IV TAPE

MODEL: Default
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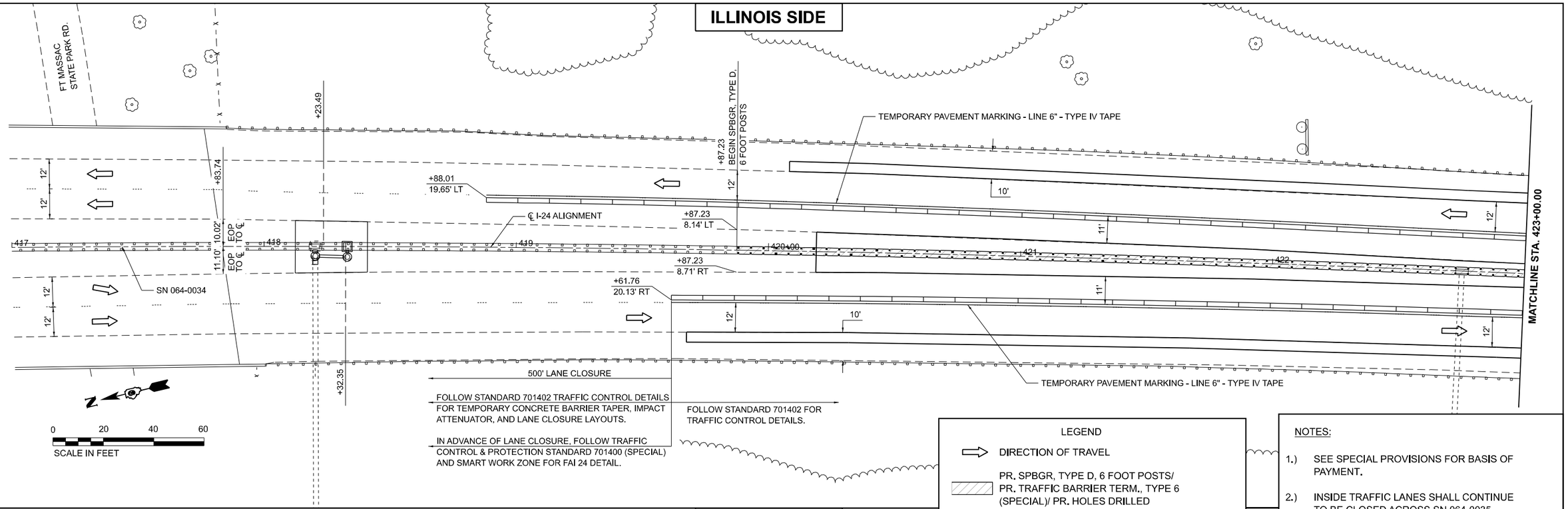
TWM ENGINEERING & GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM IL DESIGN FIRM LICENSE NO. 184-001220	USER NAME = bbillhartz	DESIGNED - KMO	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
			DRAWN - BAB	REVISED -	
		PLOT SCALE = 10.000 ' / In.	CHECKED - TBP	REVISED -	
		PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

STAGE 5 – STAGING TYPICAL SECTIONS
I–24 – GUARDRAIL AND CENTER BARRIER

SCALE: N.T.S. | SHEET 2 OF 4 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	46
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

ILLINOIS SIDE



LEGEND

- DIRECTION OF TRAVEL
- PR. SPBGR, TYPE D, 6 FOOT POSTS/ PR. TRAFFIC BARRIER TERM., TYPE 6 (SPECIAL)/ PR. HOLES DRILLED
- TEMPORARY CONCRETE BARRIER/ MODULAR GLARE SCREEN SYSTEM, TEMPORARY
- TYPE II BARRICADE, DRUM OR VERTICAL BARRICADE

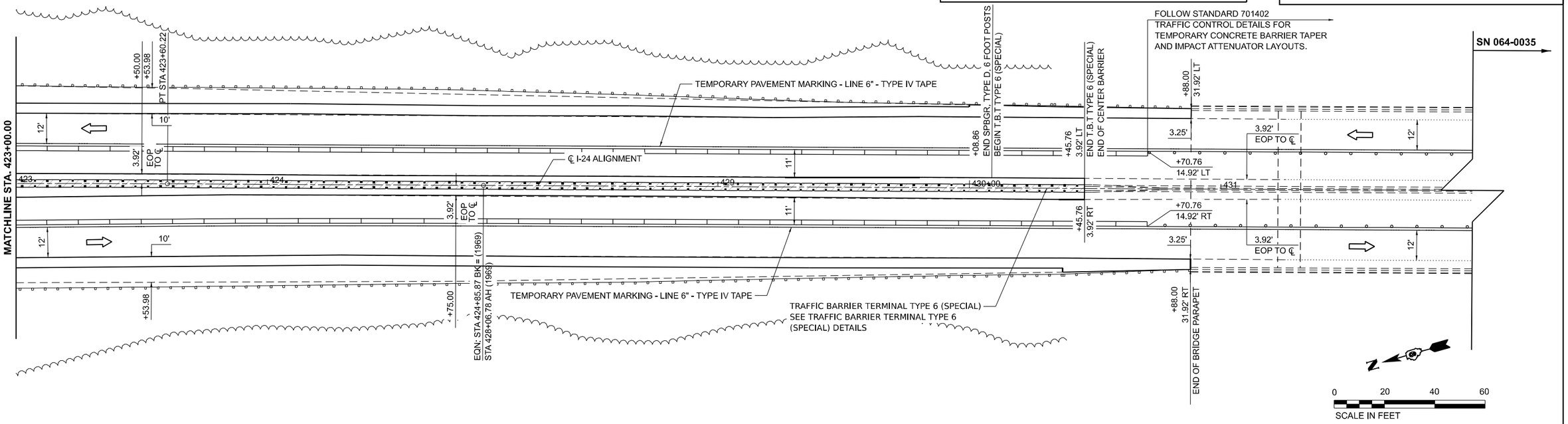
NOTES:

1.) SEE SPECIAL PROVISIONS FOR BASIS OF PAYMENT.

2.) INSIDE TRAFFIC LANES SHALL CONTINUE TO BE CLOSED ACROSS SN 064-0035.

3.) ALL OFFSETS FOR THE TEMPORARY CONCRETE BARRIER ARE TO THE FACE OF THE TRAFFIC SIDE.

ILLINOIS SIDE



MODEL: Plan 1
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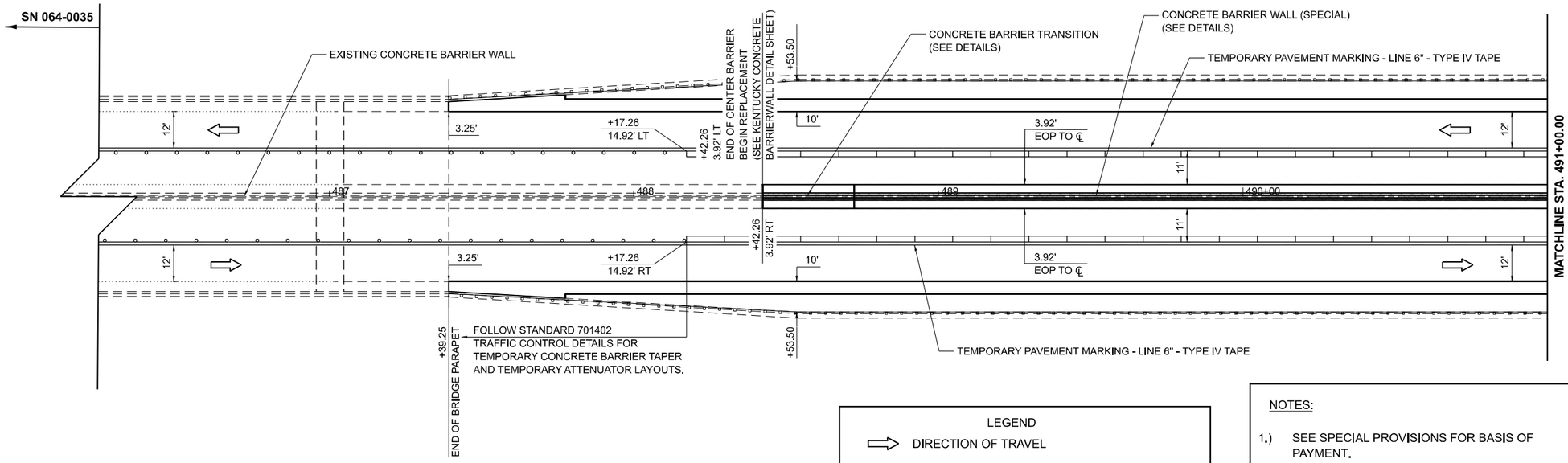
TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = billhartz	DESIGNED - KMO	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
			DRAWN - BAB	REVISED -	
		PLOT SCALE = 40.00000000 ' / In.	CHECKED - TBP	REVISED -	
		PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

STAGE 5 – STAGING PLAN
I–24 – GUARDRAIL AND CENTER BARRIER

SCALE: 1"=20' | SHEET 3 OF 4 SHEETS | STA. 417+00.00 TO STA. 432+00.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	47
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

KENTUCKY SIDE



LEGEND

- DIRECTION OF TRAVEL
- PR. CONCRETE BARRIER WALL (SPECIAL)/ PR. CONCRETE BARRIER TRANSITION
- TEMPORARY CONCRETE BARRIER/ MODULAR GLARE SCREEN SYSTEM, TEMPORARY
- TYPE II BARRICADE, DRUM OR VERTICAL BARRICADE

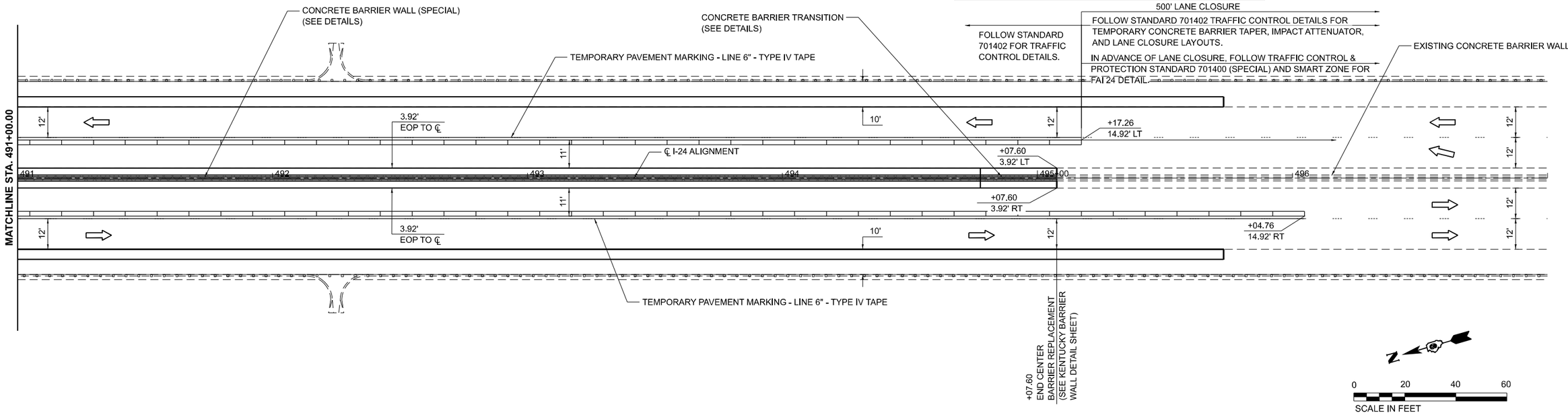
NOTES:

1.) SEE SPECIAL PROVISIONS FOR BASIS OF PAYMENT.

2.) INSIDE TRAFFIC LANES SHALL CONTINUE TO BE CLOSED ACROSS SN 064-0035.

3.) ALL OFFSETS FOR THE TEMPORARY CONCRETE BARRIER ARE TO THE FACE OF THE TRAFFIC SIDE.

KENTUCKY SIDE



MODEL: Plan 2
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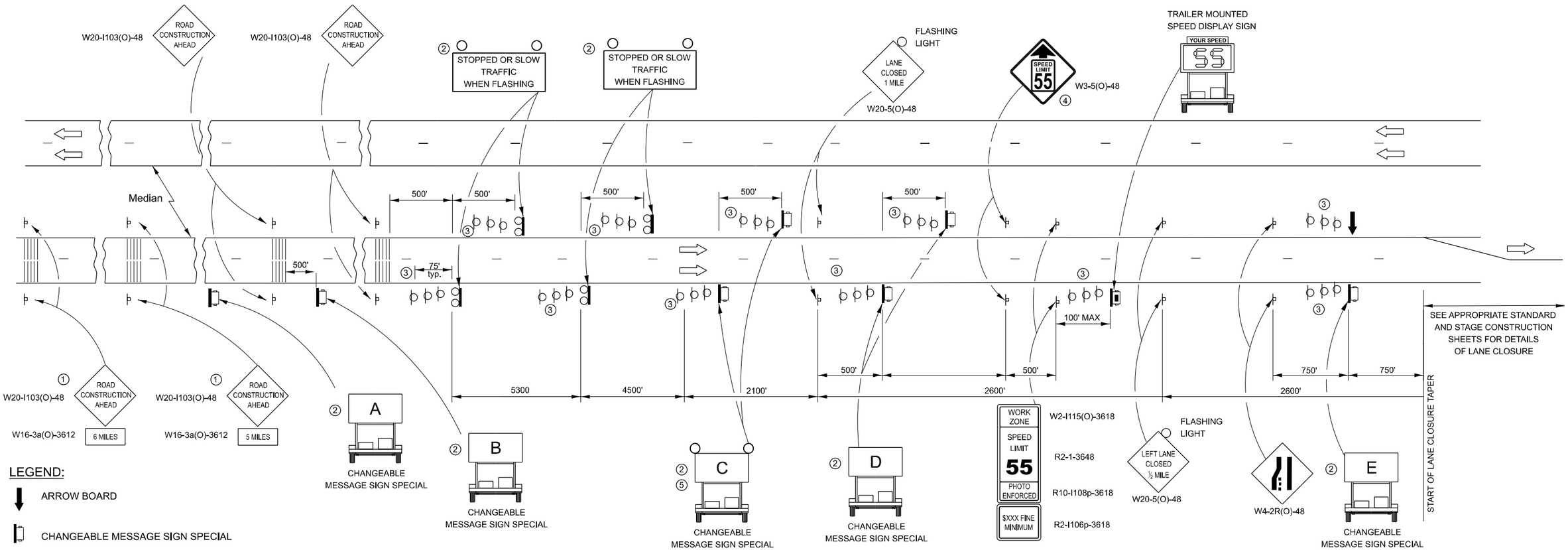
TWM, INC. WWW.TWM-INC.COM	USER NAME = bbillhartz	DESIGNED - KMO	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
ENGINEERING GEOSPATIAL SERVICES		DRAWN - BAB	REVISED -	
IL DESIGN FIRM LICENSE NO: 184-001220	PLOT SCALE = 40.00000000 ' / in.	CHECKED - TBP	REVISED -	
	PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

STAGE 5 – STAGING PLAN
I-24 – GUARDRAIL AND CENTER BARRIER

SCALE: 1"=20' | SHEET 4 OF 4 SHEETS | STA. 486+00.00 | TO STA. 497+00.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	48
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

TRAFFIC CONTROL & PROTECTION STANDARD 701400 (SPECIAL) AND SMART TRAFFIC MONITORING SYSTEM FOR FAI 24



LEGEND:

- ARROW BOARD
- CHANGEABLE MESSAGE SIGN SPECIAL
- SIGN
- REAL-TIME TRAFFIC CONTROL SENSOR UNIT (RTTC)
- TYPE II BARRICADE, DRUM, OR VERTICAL BARRICADE WITH MONODIRECTIONAL FLASHING LIGHT.
- TEMPORARY RUMBLE STRIPS SEE TEMPORARY RUMBLE STRIP DETAIL
- SPEED DISPLAY TRAILER

NOTES:

1. THE ROAD CONSTRUCTION AHEAD SIGN SHALL BE LOCATED 5 AND 6 MILES IN ADVANCE OF THE PROJECT LIMITS.
2. UNIT TO BE PAID FOR SEPARATELY. TO BE PLACED OUTSIDE OF EXISTING PAVED SHOULDER. ANY REQUIRED EARTHWORK IS INCLUDED IN THE COST OF THE UNIT.
3. THREE, TYPE II BARRICADES, DRUMS, OR VERTICAL BARRICADES AT 25' CENTERS.
4. THIS SIGN SHALL ONLY BE USED IF THE EXISTING SPEED LIMIT IS GREATHER THAN 65 MPH.
5. WHEN SHOWN, CHANGEABLE MESSAGE SIGN SPECIAL SHALL HAVE EQUIVALENT FLASHING BEACONS AS REAL TIME TRAFFIC CONTROL SIGNING. COST INCLUDED IN CHANGEABLE MESSAGE SIGN (SPECIAL).

CHANGEABLE MESSAGE BOARD SPECIAL SUGGESTED VERBIAGE

CHANGEABLE MESSAGE SIGN LOCATION	APPROXIMATE DISTANCE TO LANE CLOSURE	FREE FLOW > 40MPH		ZIPPER (STOPPED/SLOW) <= 30MPH	
A	± 5 MI	XX MIN DELAY TO OHIO RIVER	-	XX MIN DELAY TO OHIO RIVER	CONSIDER ALTERNATE ROUTE
B	± 5 MI	LEFT LANE CLOSED AHEAD	5 MILES AHEAD	STOPPED TRAFFIC	X MILES AHEAD
C	± 1.4 MI	MERGE AHEAD	-	STOPPED TRAFFIC AHEAD	STAY IN YOUR LANE
D	± 0.9 MI	MERGE RIGHT	LEFT LANE CLOSED	STOPPED TRAFFIC AHEAD	STAY IN YOUR LANE
E	± 750 FT	MAINTAIN WORKZONE SPEED	-	MERGE NOW	TAKE YOUR TURN

GENERAL NOTES:

THIS STANDARD IS USED WHERE AT ANY TIME A LANE IS CLOSED ON A FREEWAY/EXPRESSWAY. WHEN THE RIGHT LANE IS CLOSED, RIGHT LANE CLOSED SIGNS SHALL BE SUBSTITUTED FOR THE LEFT LANE CLOSED SIGNS.

THE ROAD CONSTRUCTION AHEAD SIGNS AND TEMPORARY RUMBLE STRIPS ARE STATIONARY. THE OTHER ITEMS SHALL BE MOVED AS NECESSARY TO MAINTAIN THE REQUIRED DISTANCE FROM THE START OF THE LANE CLOSURE TAPER(S).

SEE SPECIAL PROVISIONS FOR SMART TRAFFIC MONITORING SYSTEM, CHANGEABLE MESSAGE SIGN SPECIAL, AND TRAFFIC CONTROL AND PROTECTION STANDARD 701400 (SPECIAL) AND SMART ZONE FOR FAI 24.

THIS DETAIL APPLIES TO BOTH EB AND WB APPROACHES TO THE WORK ZONE.

WHEN EXISTING SIGNS, POLES, AND OTHER ITEMS CONFLICT WITH LOCATING THE EQUIPMENT SHOWN, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER TO DECONFLICT EQUIPMENT PLACEMENT.

ALL ORANGE SIGN SHEETING SHALL BE FLOURESCENT ORANGE MATERIAL.

MODEL: Default
FILE NAME: P:\2021\21059\J&L • FAI 24 Ohio River Bridge Painting\4 CADD • 01W0342.7 TrafficCAD_Sheets\D978972~ethertk•Traffic Control & Protection 701400 (Special).dgn

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = bblilhartz	DESIGNED - KMO	REVISED -	
	DRAWN - BAB	REVISED -	
PLOT SCALE = 2.000 ' / In.	CHECKED - TBP	REVISED -	
PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

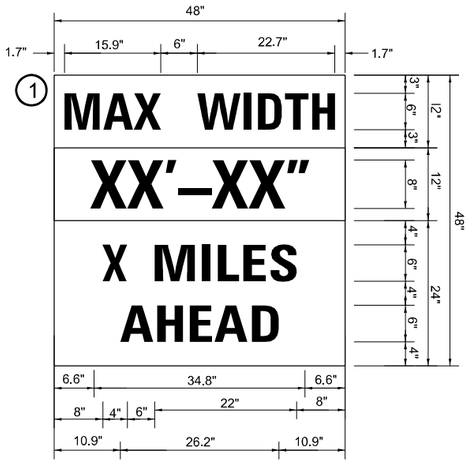
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TC&P STANDARD 701400 (SPECIAL) AND SMART ZONE FOR FAI 24

SCALE: N.T.S. | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	49
		CONTRACT NO. 78972		
	ILLINOIS FED. AID PROJECT			

SIGN LEGEND

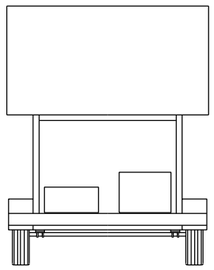


W12-I103

W12-I103 (WIDTH IS 8D);
NO BORDER, BLACK ON WHITE; "MAX WIDTH" D;
NO BORDER, BLACK ON ORANGE; "XX'-XX"" D;
NO BORDER, BLACK ON WHITE; "X MILES" D; "AHEAD" D

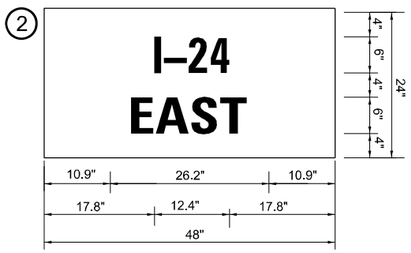
TABLE A		
	EB	WB
PRE-STAGE A	13'-0"	13'-0"
PRE-STAGE B-1	14'-9"	14'-9"
PRE-STAGE B-2	14'-9"	14'-9"
STAGE 1	10'-6"	10'-6"
STAGE 2	11'-2"	11'-2"
STAGE 3	12'-6"	12'-2"
STAGE 4	11'-9"	12'-6"
STAGE 5	14'-9"	14'-9"

4



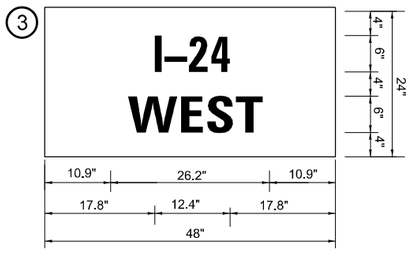
"NO SEMI TRUCKS ALLOWED ON BROOKPORT BRIDGE"

2



NO BORDER, BLACK ON WHITE; "I-24" D;
NO BORDER, BLACK ON WHITE; "EAST" D

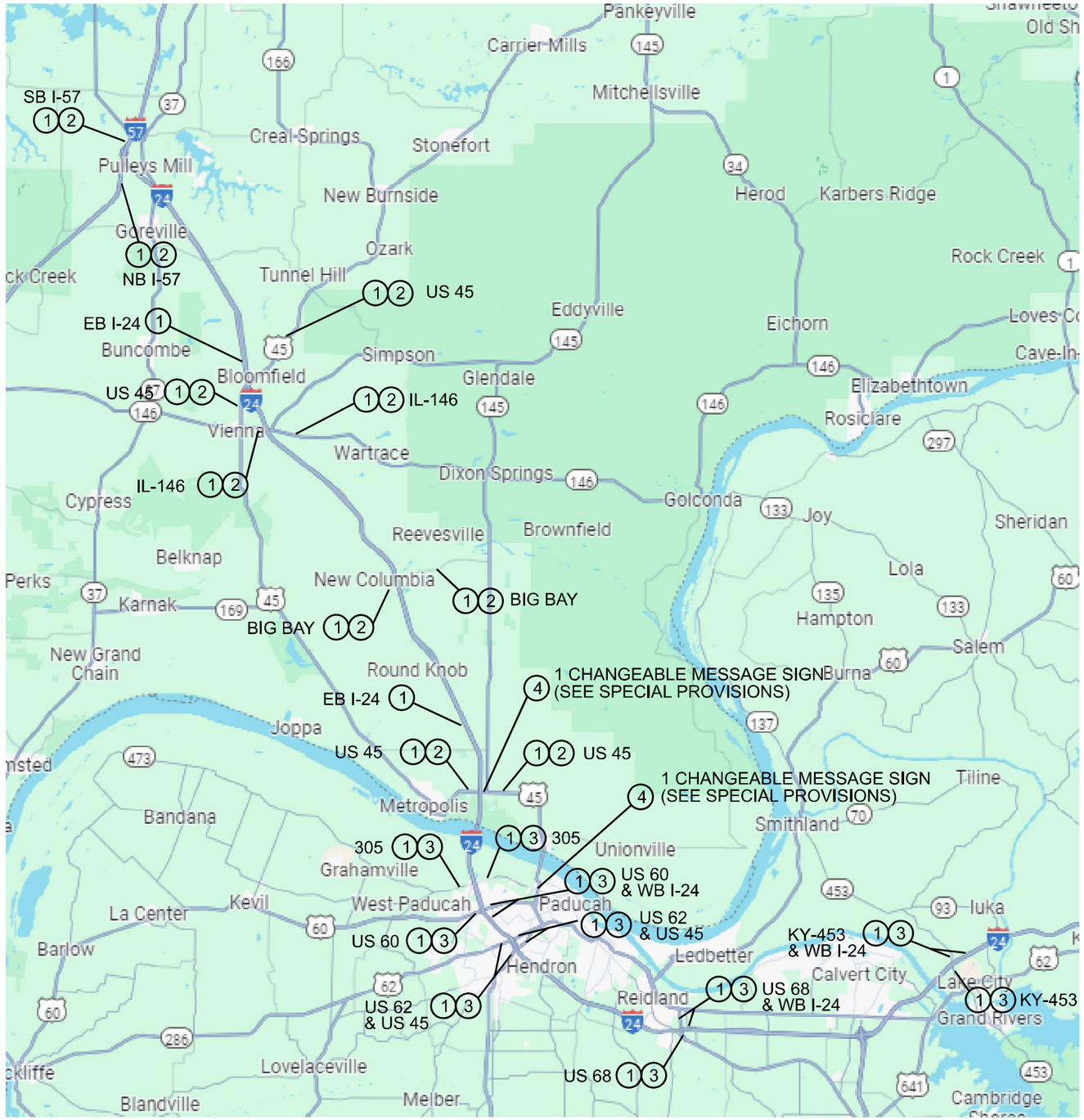
3



NO BORDER, BLACK ON WHITE; "I-24" D;
NO BORDER, BLACK ON WHITE; "WEST" D

DETOUR NOTES:

1. THE CONTRACTOR SHALL FURNISH THE POSTS AND ERECT THE SIGNS AT THE LOCATIONS AS DIRECTED BY THE ENGINEER. ALL SIGNS SHALL BE POST MOUNTED.
2. THE ABOVE NOTED WORK, INCLUDING SIGNS, POSTS, HARDWARE AND LABOR SHALL BE INCLUDED IN THE COST OF THE CONTRACT.
3. THE WIDTH SHOWN ON THE W12-I103 SIGN SHALL BE ACCORDING TO TABLE A OR AS DIRECTED BY THE ENGINEER. THE "X" MILES AHEAD WILL BE DETERMINED BY THE ENGINEER.



WIDE LOAD SIGNING PLAN

SCALE

NTS

MODEL: Default
FILE NAME: P:\2021\21059\3\L - FAI 24 Ohio River Bridge Painting\4 CADD - DWGs\4_7 Trans\CAD_Sheets\D97697<eh>d3-Wide Load Sign.dgn

TWM ENGINEERING & GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = billhartz	DESIGNED - KMO	REVISED -	
			DRAWN - BAB	REVISED -	
		PLOT SCALE = 10.000 ' / In.	CHECKED - TBP	REVISED -	
		PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

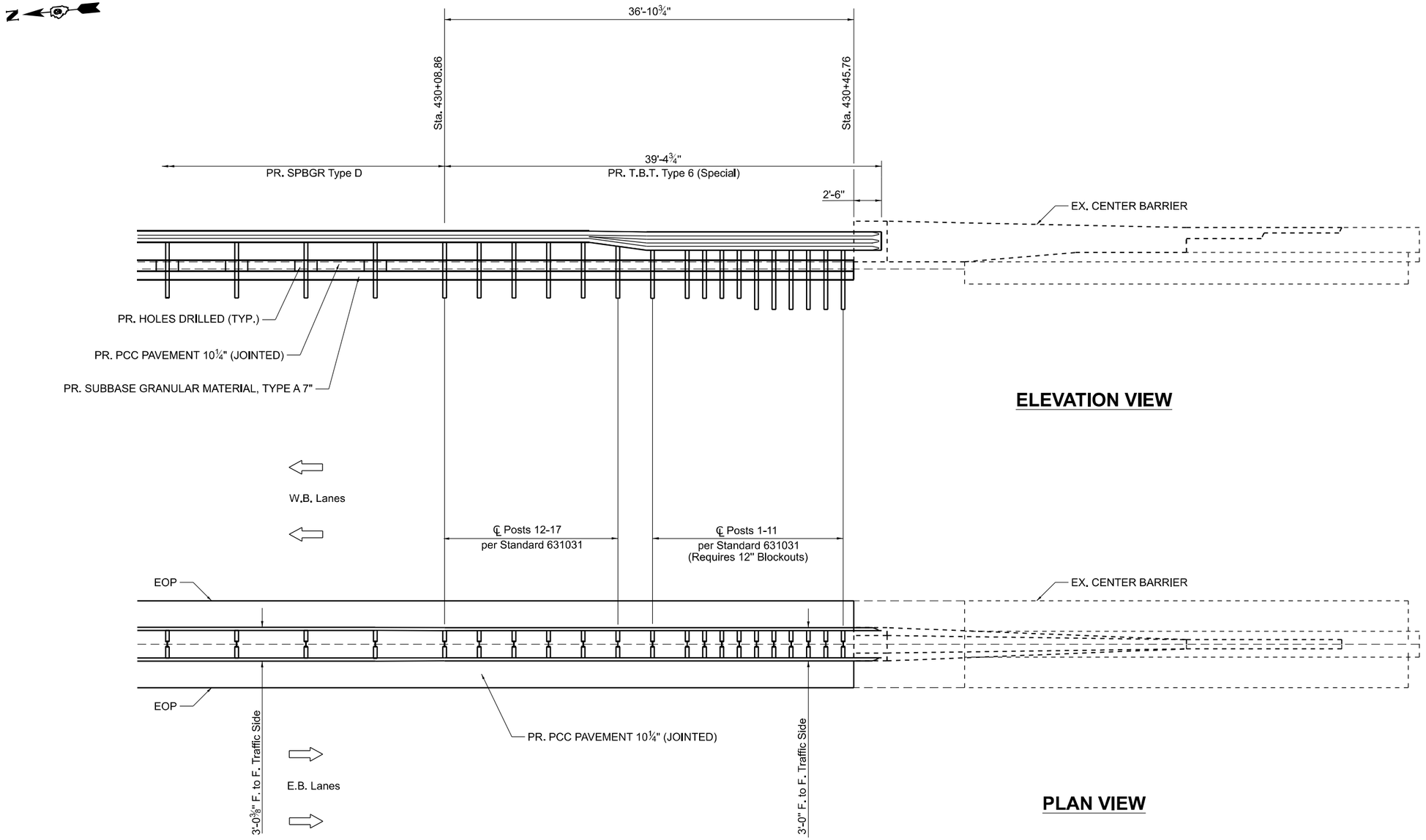
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WIDE LOAD SIGNING PLAN

SCALE: N.T.S. | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	50
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

ILLINOIS SIDE



ELEVATION VIEW

PLAN VIEW

TRAFFIC BARRIER TERMINAL TYPE 6 (SPECIAL) DETAIL

SCALE
NTS

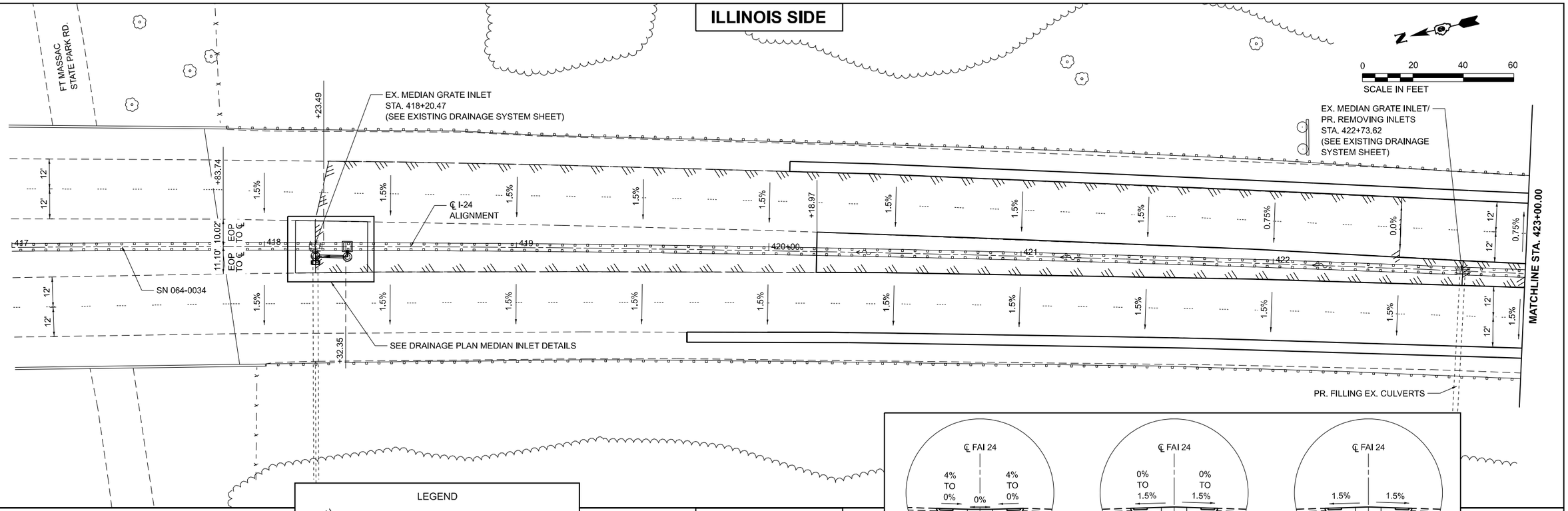
MODEL: Default
FILE NAME: P:\2021\21059\L0&L • FA\24 Ohio River Bridge Painting\4 CADD • \DWG\4_7 TrafficCAD_Sheets\D97897\<xh><3-TBT-TT-40(Special)#.dgn

TWM ENGINEERING & GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = bbillhartz	DESIGNED - KMO	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
			DRAWN - BAB	REVISED -	
		PLOT SCALE = 10.000 ' / In.	CHECKED - TBP	REVISED -	
		PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

TRAFFIC BARRIER TERMINAL TYPE 6 (SPECIAL) DETAILS

SCALE: N.T.S. | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	51
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



MODEL: Plan 1
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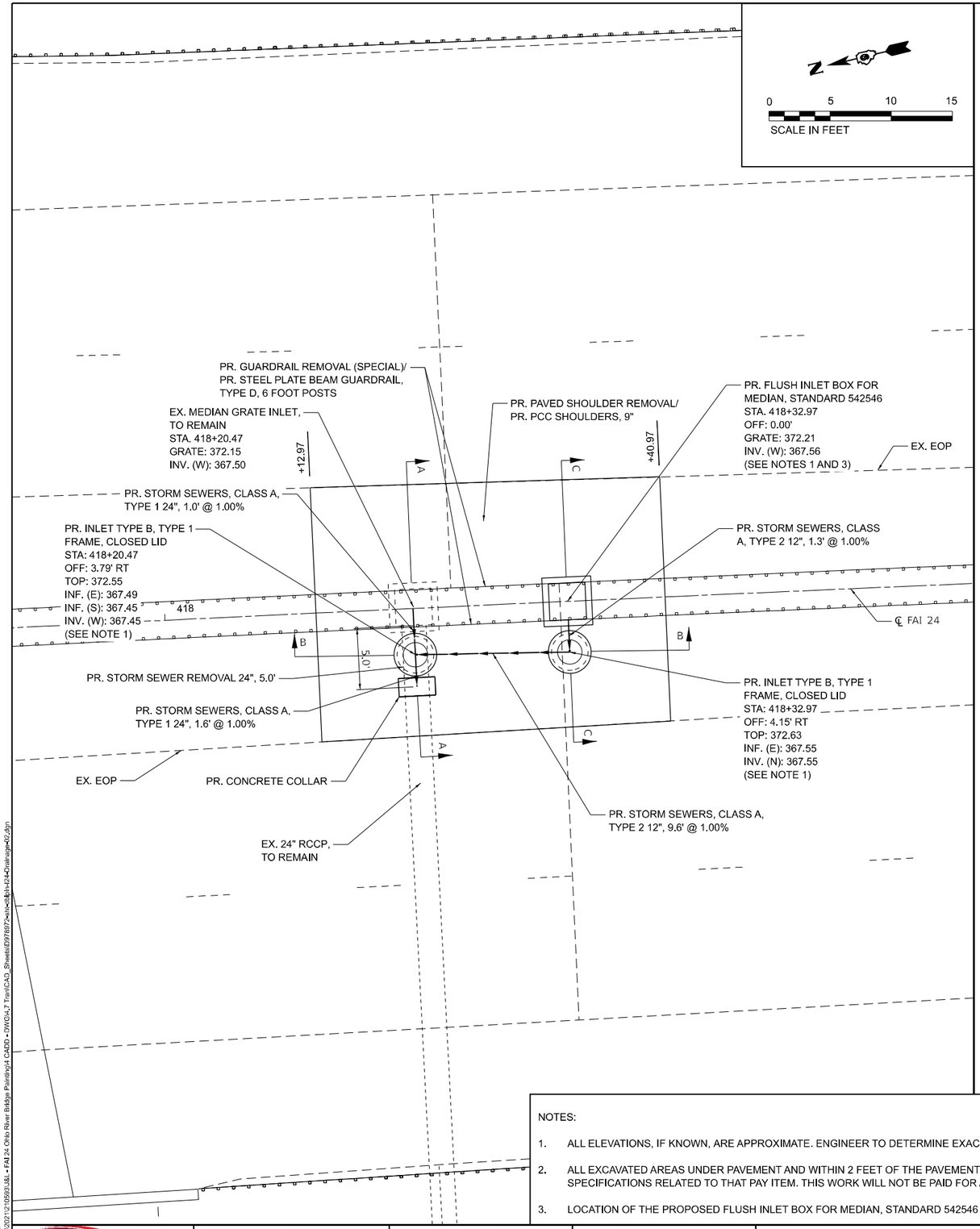
TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = bbillhartz	DESIGNED - KMO	REVISED -	
			DRAWN - BAB	REVISED -	
		PLOT SCALE = 40.00000000 ' / In.	CHECKED - TBP	REVISED -	
		PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

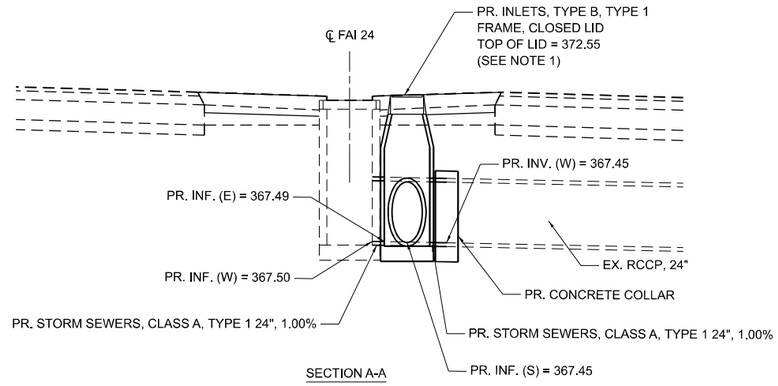
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DRAINAGE PLAN
I–24 – PAVEMENT

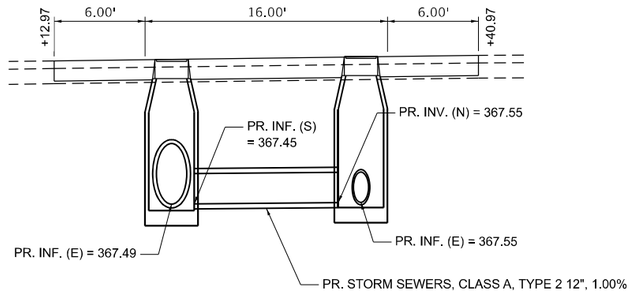
SCALE: 1"=20' | SHEET 1 OF 2 SHEETS | STA. 417+00.00 TO STA. 432+00.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	52
		CONTRACT NO. 78972		
	ILLINOIS FED. AID PROJECT			

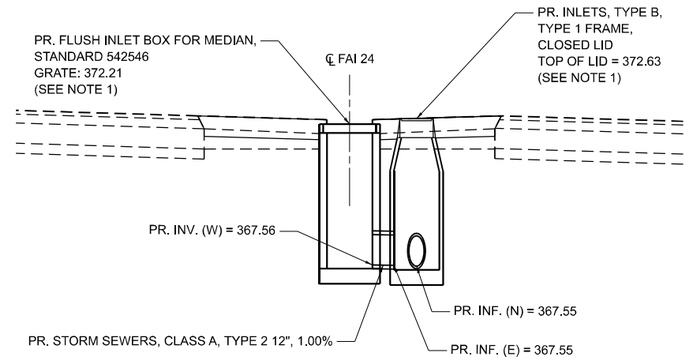




SECTION A-A



SECTION B-B



SECTION C-C

NOTES:

1. ALL ELEVATIONS, IF KNOWN, ARE APPROXIMATE. ENGINEER TO DETERMINE EXACT ELEVATIONS IN THE FIELD TO FIT EXISTING FIELD CONDITIONS.
2. ALL EXCAVATED AREAS UNDER PAVEMENT AND WITHIN 2 FEET OF THE PAVEMENT EDGE SHALL BE BACKFILLED ACCORDING TO THE SECTIONS OF THE STANDARD SPECIFICATIONS RELATED TO THAT PAY ITEM. THIS WORK WILL NOT BE PAID FOR AND SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE RELATED TO THAT PAY ITEM.
3. LOCATION OF THE PROPOSED FLUSH INLET BOX FOR MEDIAN, STANDARD 542546 SHALL BE LOCATED TO MISS PROPOSED GUARDRAIL POSTS.

MODEL: Default
FILE NAME: P:\2021\21059\3d\L • FAI 24 Ohio River Bridge Painting\4 CADD • \DWG\4_7 Trans\CAD_Sheets\D97897\sht\d8\1\1-FAI24Drainage02.dgn

TWM ENGINEERING & GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = billhartz	DESIGNED - KMO	REVISED -
	DRAWN - BAB	REVISED -
PLOT SCALE = 10.000 ' / In.	CHECKED - TBP	REVISED -
PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -

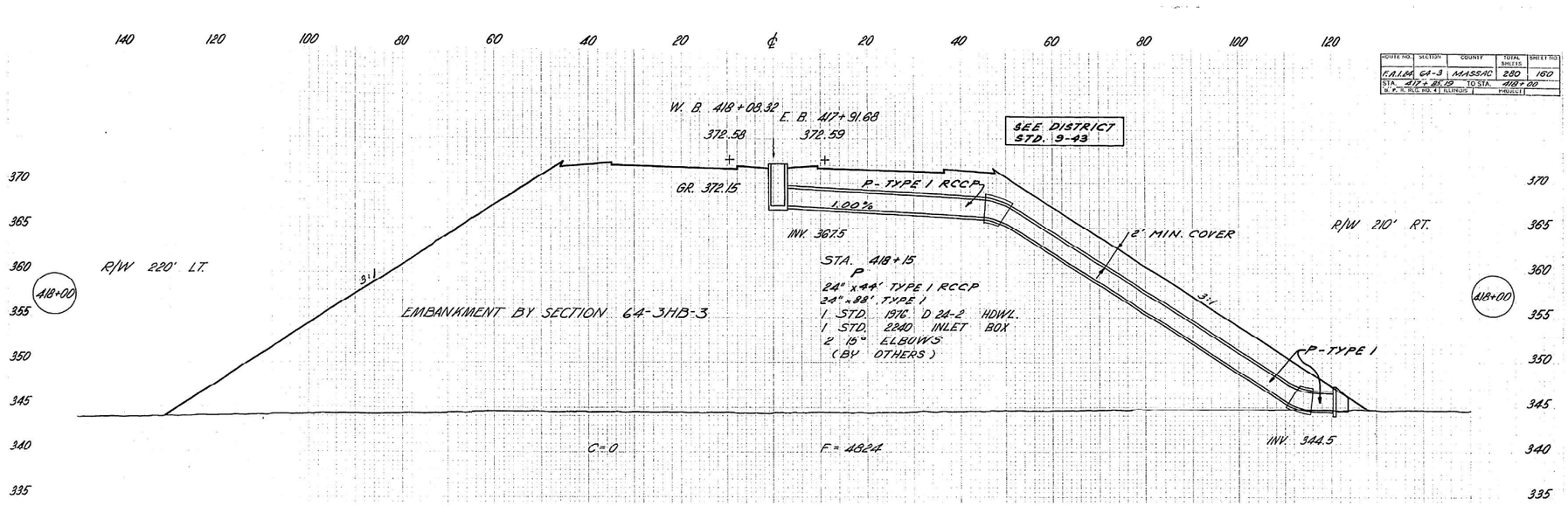
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DRAINAGE PLAN
MEDIAN INLET DETAILS

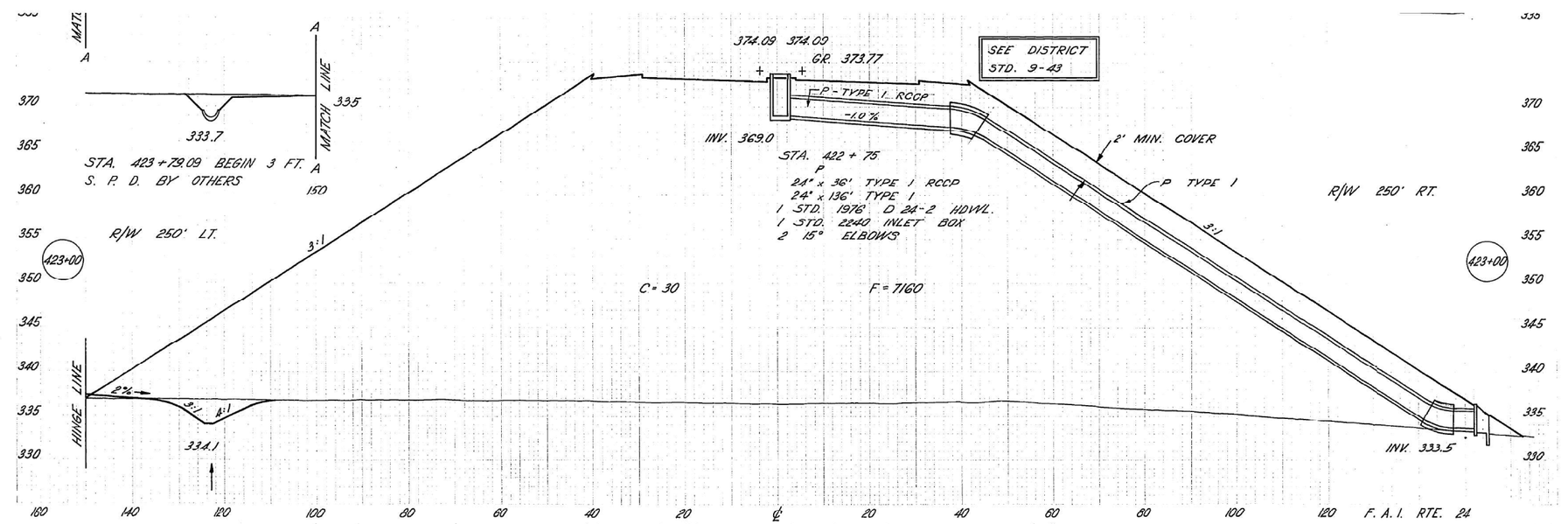
SCALE: 1"=5' | SHEET 2 OF 2 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	53
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

FOR INFORMATION ONLY



FOR INFORMATION ONLY



MODEL: Default
FILE NAME: P:\2021\210593.J&L - FA124 Ohio River Bridge Paintingt CADD - DWG\4.7 Tim\CAD_Sheets\[3978972-sht]ect-Existing Drainage System.dgn

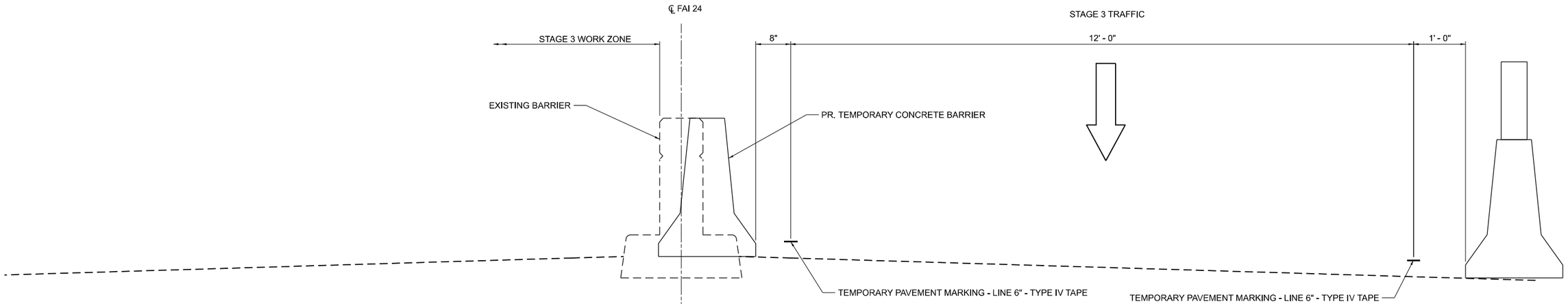
TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM	USER NAME = billhartz	DESIGNED - KMO	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	IL DESIGN FIRM LICENSE NO: 184-001220		DRAWN - BAB	REVISED -	
		PLOT SCALE = 2.000 ' / In.	CHECKED - TBP	REVISED -	
		PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

STA. 418 + 20.47 AND STA. 422 + 73.62
EXISTING DRAINAGE SYSTEM

SCALE: N.T.S. | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	54
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

DETAIL A



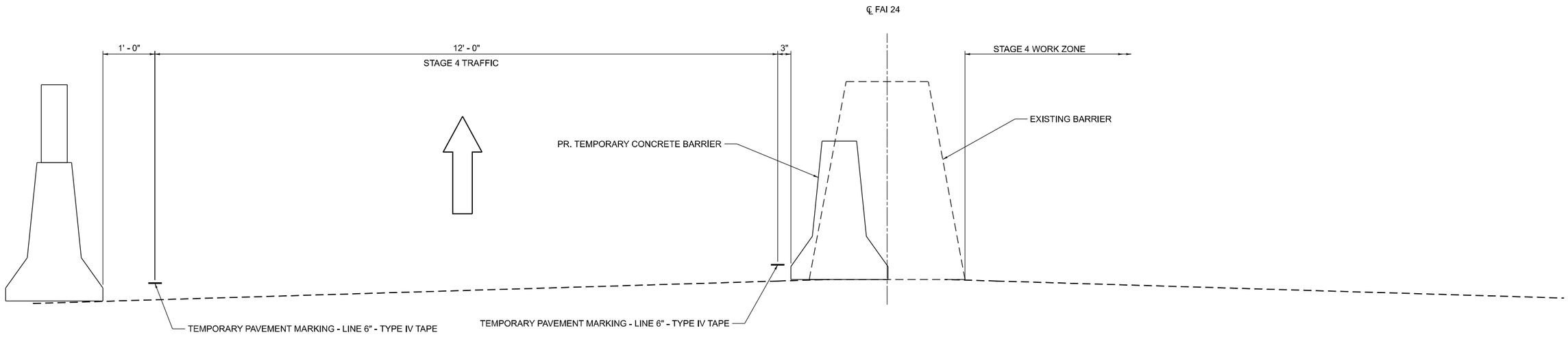
TEMPORARY CONCRETE BARRIER TO EXISTING CENTER BRIDGE BARRIER DETAIL

STA. 488+42.26
(LOOKING UP STATIONING)

NOTE:

PR. TEMPORARY CONCRETE BARRIER MUST BE OFFSET FROM EXISTING BRIDGE BARRIER TO PROTECT TRAFFIC FROM EXISTING BRIDGE BARRIER STEP.

DETAIL B



TEMPORARY CONCRETE BARRIER TO EXISTING CENTER BRIDGE BARRIER DETAIL

STA. 430+45.76
(LOOKING UP STATIONING)

NOTE:

PR. TEMPORARY CONCRETE BARRIER MUST BE OFFSET FROM EXISTING BRIDGE BARRIER TO PROTECT TRAFFIC FROM EXISTING CENTER BARRIER.

MODEL: Default
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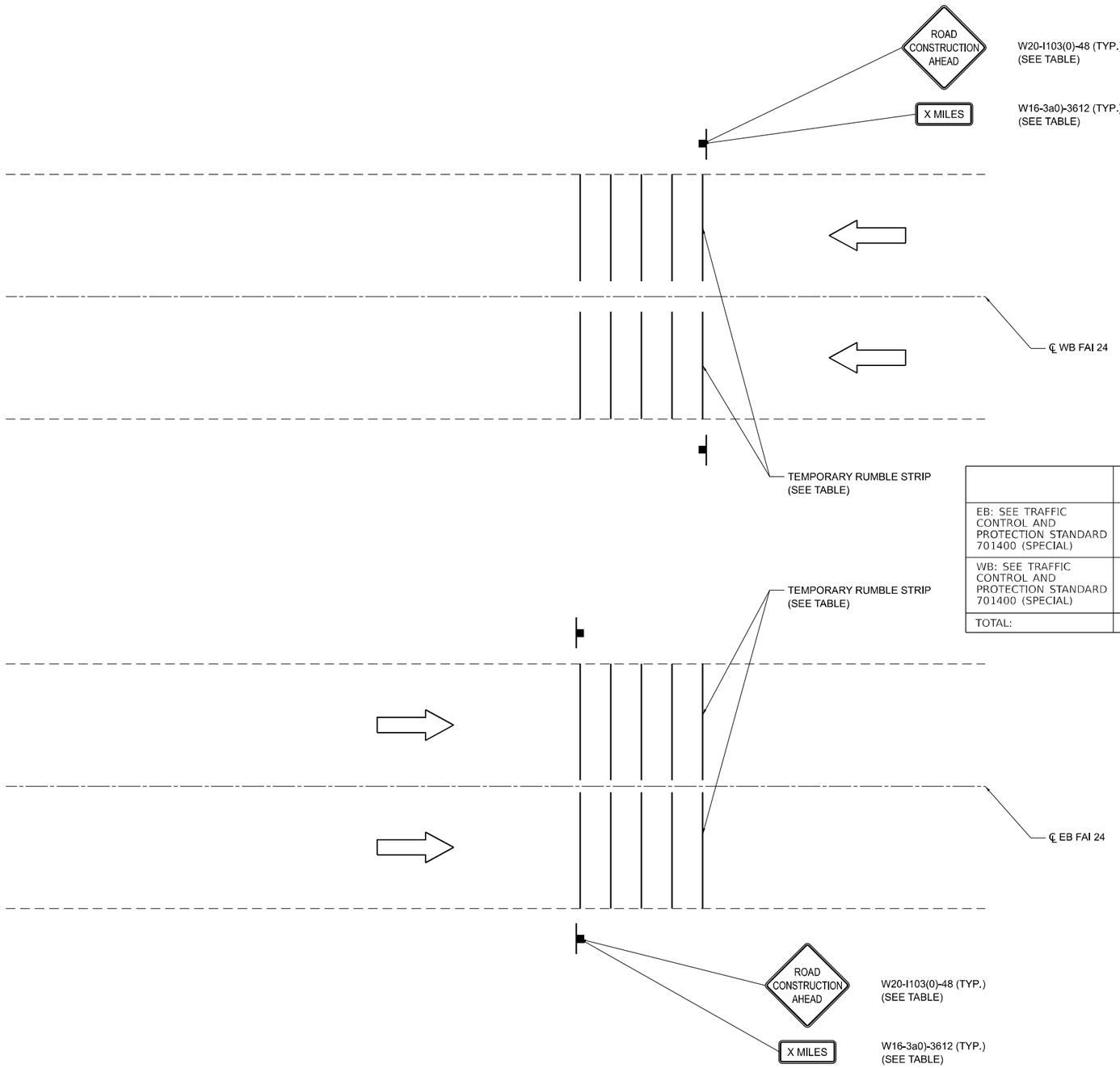
TWM ENGINEERING & GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = billhartz	DESIGNED - KMO	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
			DRAWN - BAB	REVISED -	
		PLOT SCALE = 2,000 ' / in.	CHECKED - TBP	REVISED -	
		PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

DETAIL A & DETAIL B

SCALE: N.T.S. | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	55
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



EB AND WB I-24

	ROAD CONSTRUCTION AHEAD SIGN	MILE PLAQUE	TEMPORARY RUMBLE STRIP
EB: SEE TRAFFIC CONTROL AND PROTECTION STANDARD 701400 (SPECIAL)	8 EACH	4 EACH	8 EACH
WB: SEE TRAFFIC CONTROL AND PROTECTION STANDARD 701400 (SPECIAL)	8 EACH	4 EACH	8 EACH
TOTAL:	16	8	16

TEMPORARY RUMBLE STRIP DETAIL

NOTES:

1. THE TEMPORARY RUMBLE STRIPS SHALL BE REMOVED DURING WINTER SHUT DOWN AND REPLACED EVERY SPRING WHEN STAGE CONSTRUCTION RESUMES.
2. THE COST OF THE ROAD CONSTRUCTION AHEAD SIGNS AND THE MILE MARKER PLAQUES SHALL NOT BE PAID FOR SEPARATELY AND SHALL BE INCLUDED IN HIGHWAY STANDARD 701400 AND TRAFFIC CONTROL & PROTECTION STANDARD 701400 (SPECIAL) WHICH IS INCLUDED IN THE COST OF THE CONTRACT.

MODEL: Default
FILE NAME: P:\2021\2-10593.J&L - FAI 24 Ohio River Bridge Painting\4 CADD - DWGs\4_7 Tran\CAD_Sheets\D978972=sht=s4-Temporary Rumble Strips.dgn

TWM ENGINEERING & GEOSPATIAL SERVICES
TWM, INC.
WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = billhartz	DESIGNED - KMO	REVISED -	
	DRAWN - BAB	REVISED -	
PLOT SCALE = 2.000 ' / In.	CHECKED - TBP	REVISED -	
PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

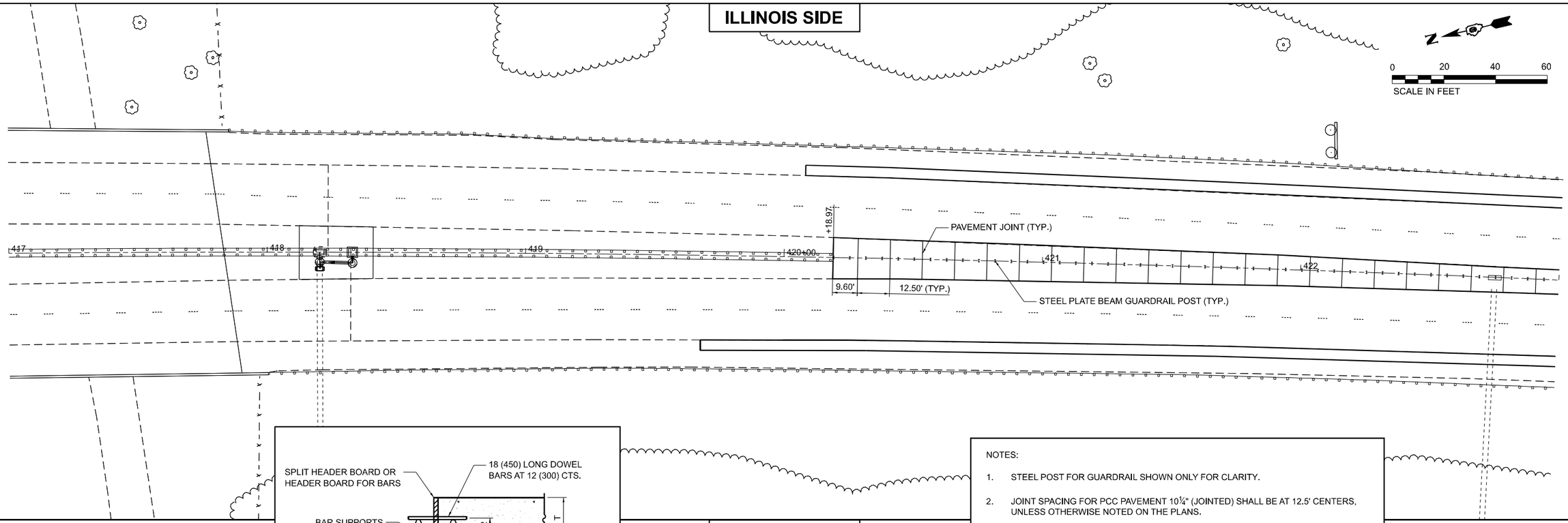
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

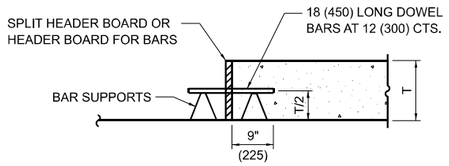
TEMPORARY RUMBLE STRIP DETAIL

SCALE: N.T.S. | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	56
		CONTRACT NO. 78972		
	ILLINOIS FED. AID PROJECT			

ILLINOIS SIDE



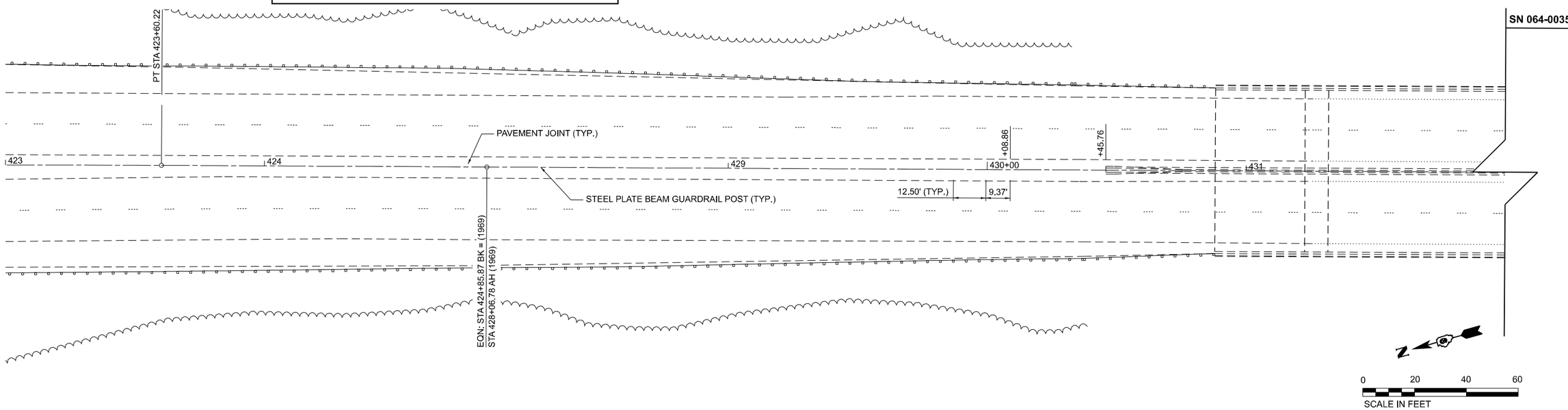


TRANSVERSE CONSTRUCTION JOINT

NOTES:

1. STEEL POST FOR GUARDRAIL SHOWN ONLY FOR CLARITY.
2. JOINT SPACING FOR PCC PAVEMENT 10¼" (JOINTED) SHALL BE AT 12.5' CENTERS, UNLESS OTHERWISE NOTED ON THE PLANS.
3. ALL JOINTS SHALL BE SPACED TO MISS PROPOSED STEEL PLATE BEAM GUARDRAIL, TYPE D. CONTRACTOR TO VERIFY PLACEMENT OF JOINTS DO NOT INTERFERE WITH POST PLACEMENT OR MEDIAN INLETS.

ILLINOIS SIDE



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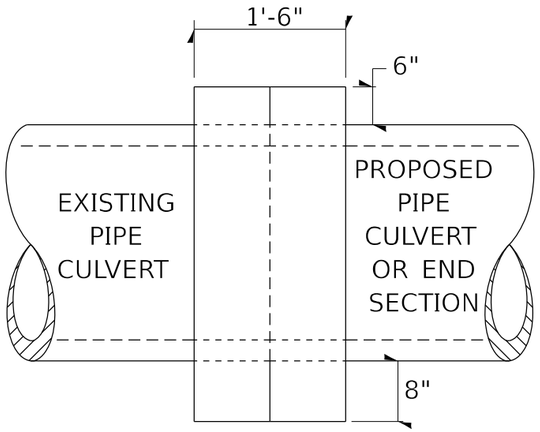
TWM ENGINEERING GEOSPATIAL SERVICES — TWM, INC. WWW.TWM-INC.COM — IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = billhartz	DESIGNED - KMO	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		DRAWN - BAB	REVISED -	
	PLOT SCALE = 40.00000000 ' / In.	CHECKED - TBP	REVISED -	
	PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

PCC PAVEMENT JOINT SPACING DETAIL

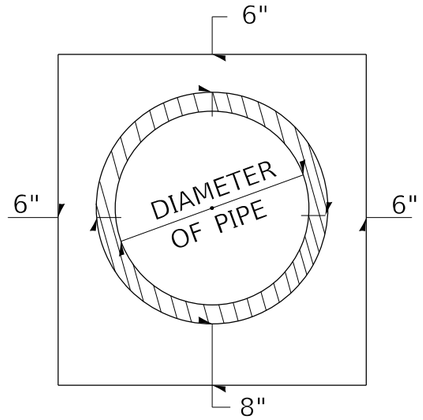
SCALE: 1"=20' | SHEET 1 OF 1 SHEETS | STA. 417+00.00 TO STA. 432+00.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	57
		CONTRACT NO. 78972		
	ILLINOIS FED. AID PROJECT			

CONCRETE COLLAR
PIPE TO PIPE



SIDE VIEW



END VIEW

TABULATION

DIAMETER OF PIPE	CL SI CONC CU YDS EST
12"	0.24
15"	0.29
18"	0.32
24"	0.44
30"	0.56
36"	0.66
42"	0.80
48"	0.93
54"	1.07
60"	1.22
72"	1.55

THE CONCRETE COLLAR SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER CUBIC YARD FOR CONCRETE COLLAR, AS SHOWN ON THE PLANS, WHICH PRICE SHALL INCLUDE THE REMOVAL OF SUCH PORTIONS THE EXISTING HEADWALLS AS MAY BE REQUIRED.

CLASS SI CONCRETE SHALL BE USED THROUGHOUT.

REVISIONS

DRAWN	7-13-90
REVISED	8-22-94
REVISED	3-26-08
REVISED	5-17-13
REVISED	10-21-21

STD. 9-79

MODEL: Default
FILE NAME: P:\2021\2-10593.J&L - FAI 24 Ohio River Bridge Painting\4 CADD - DWGs\4_7 Tran\CAD_Sheets\D97687\xsh\4d-Concrete Collar.dgn

TWM ENGINEERING & GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

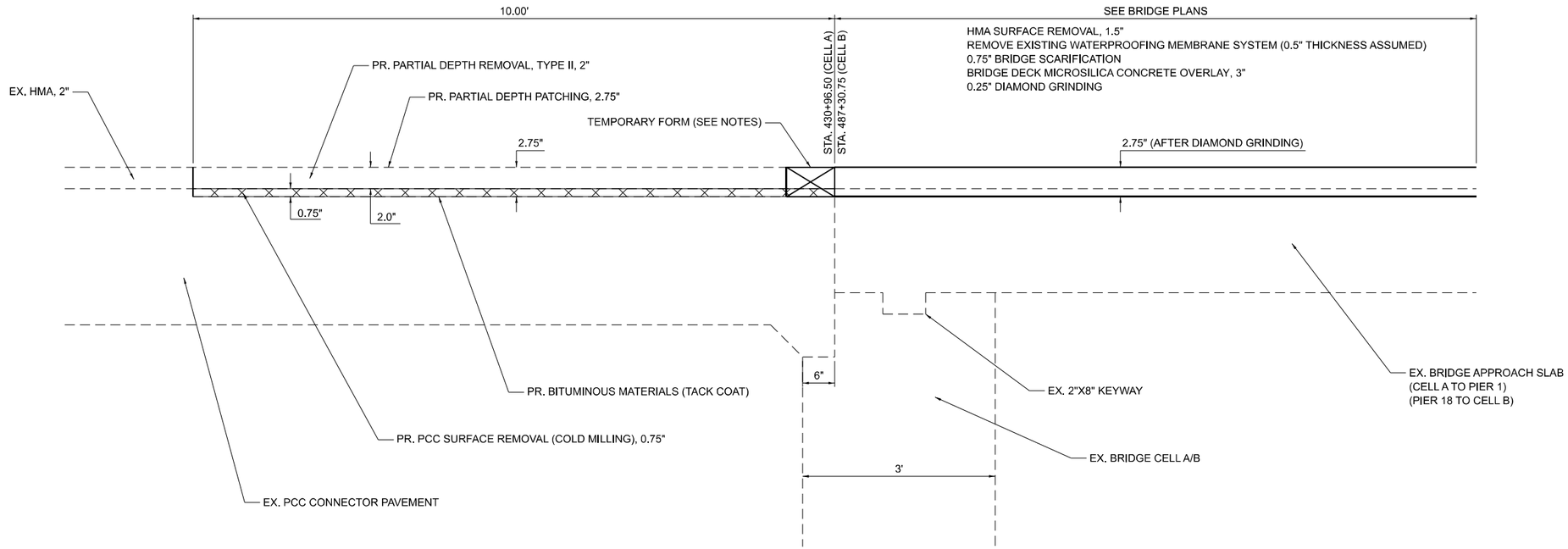
USER NAME = billhartz	DESIGNED - KMO	REVISED -	
	DRAWN - BAB	REVISED -	
PLOT SCALE = 10.000 ' / In.	CHECKED - TBP	REVISED -	
PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT 9 DETAIL
CONCRETE COLLAR

SCALE: N.T.S. | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	58
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



PARTIAL DEPTH PATCHING DETAIL

NOTES:

THE CONTRACTOR SHALL ERECT AND REMOVE A TEMPORARY FORM FOR THE PROPOSED MICROSILICA CONCRETE OVERLAY. THE COST OF THIS WORK SHALL BE INCLUDED IN THE COST PER SQUARE YARD FOR BRIDGE DECK MICROSILICA CONCRETE OVERLAY, 3".

MODEL: Default
FILE NAME: P:\2021\21059\Jbl. • FAI 24 Ohio River Bridge Painting\4 CADD • DWG\4_7 Tran\CAD_Sheets\D97697-sht-ch14-Partial Depth Patching.dgn

TWM ENGINEERING GEOSPATIAL SERVICES

TWM, INC.
WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

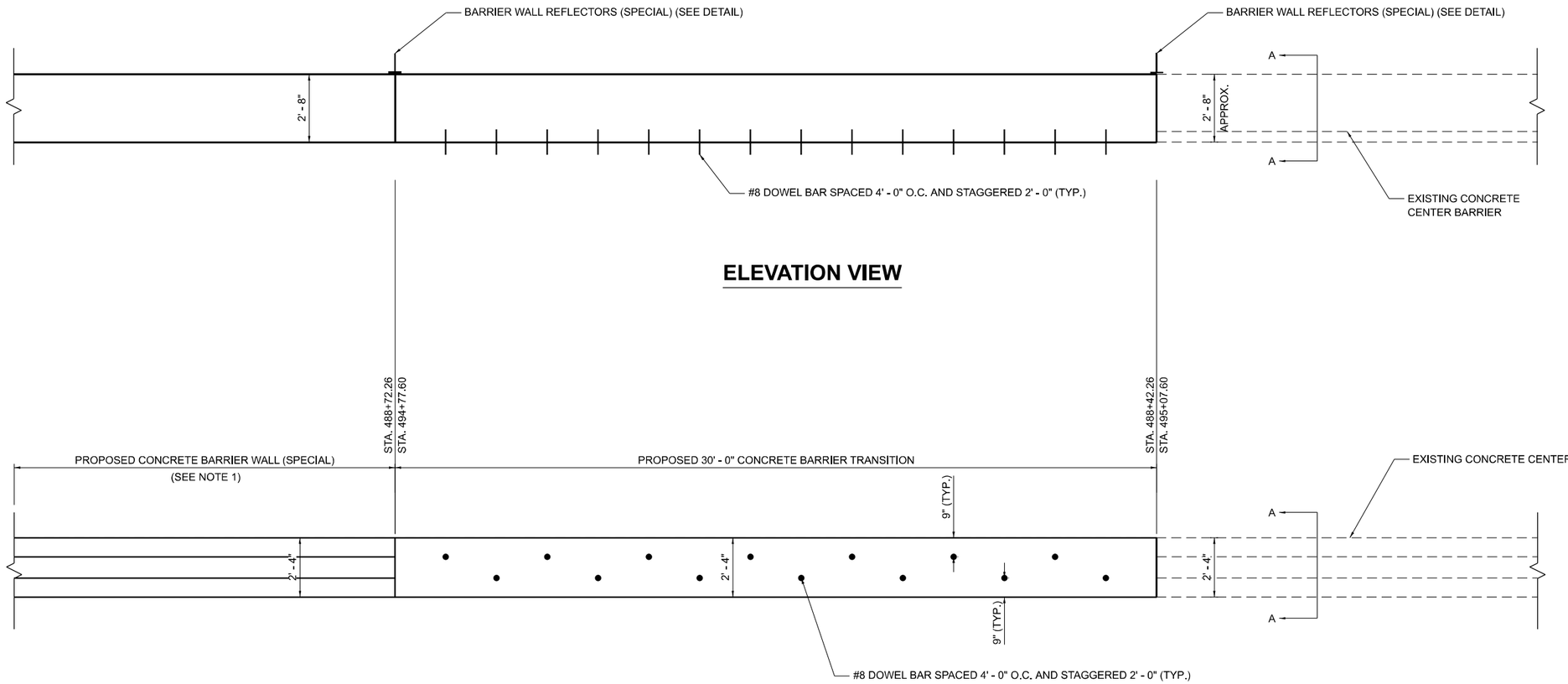
USER NAME = billhartz	DESIGNED - KMO	REVISED -	
	DRAWN - BAB	REVISED -	
PLOT SCALE = 2.000 ' / In.	CHECKED - TBP	REVISED -	
PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PARTIAL DEPTH PATCHING DETAIL

SCALE: N.T.S. | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	58A
		CONTRACT NO. 78972		
	ILLINOIS FED. AID PROJECT			

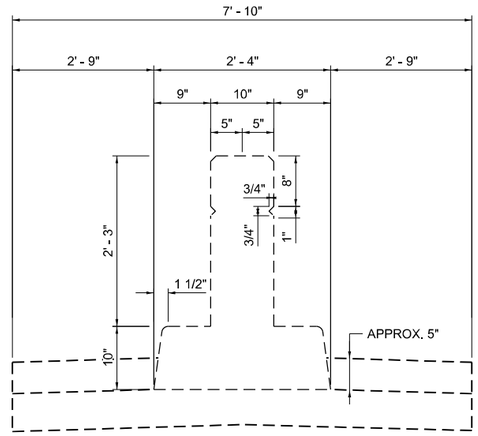


ELEVATION VIEW

PLAN VIEW

NOTES:

1. SEE CONCRETE BARRIER WALL (SPECIAL) DETAIL AND USE TYPE 14B.



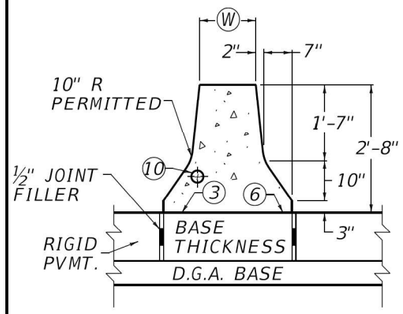
SECTION A-A

EXISTING BARRIER

MODEL: Default
FILE NAME: P:\2021\21059\Jbl. • FAI 24 Ohio River Bridge Painting\4 CADD • DWGs_7 Tran\CAD_Sheets\D97697-sht-h04-Concrete Barrier Transition Detail.dgn

TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = billhartz	DESIGNED - KMO	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	CONCRETE BARRIER TRANSITION DETAILS			F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			DRAWN - BAB	REVISED -					24	(64-3B) BP-1, BRR-1	MASSAC	236	59
		PLOT SCALE = 10.000 ' / In.	CHECKED - TBP	REVISED -							CONTRACT NO. 78972		
		PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -		SCALE: N.T.S.	SHEET 1 OF 1 SHEETS	STA. TO STA.		ILLINOIS	FED. AID PROJECT		

TYPE 9A, 12A OR 14A



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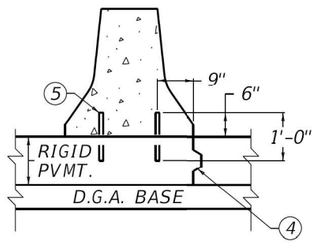
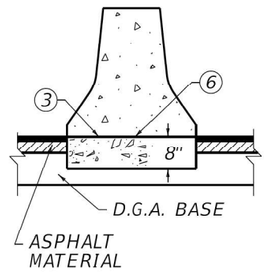
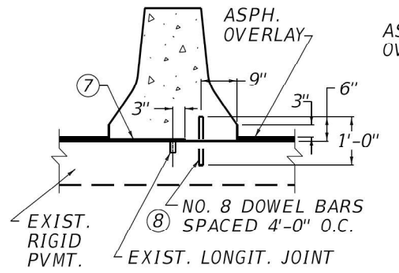


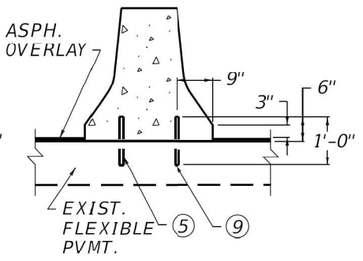
TYPE 9C, 12C OR 14C



TYPE 9D, 12D OR 14D



TYPE 9E, 12E OR 14E



NEW RIGID PAVEMENT

NEW FLEXIBLE PAVEMENT

NEW FLEXIBLE OVERLAY OVER EXISTING RIGID PAVEMENT

NEW FLEXIBLE OVERLAY OVER EXISTING FLEXIBLE PAVEMENT

~ NOTES ~

BID ITEM AND UNIT TO BID

CONC MEDIAN BARRIER TYPE ⊕ ⊕ LF

⊕ 9, 12, OR 14 DEPENDING ON W

⊕ A, B, C, D, OR E DEPENDING ON PAVEMENT TYPE.

1. FOR WALLS IN TRANSITION AND SEPARATE SEGMENT WALLS, SEE CUR. STD. DWG. RBM-015. FOR APPROPRIATE BID ITEMS.
2. ~~THE CONTRACT UNIT PRICE PER LINEAR FOOT FOR CONCRETE MEDIAN BARRIER INCLUDING THE BASE IN TYPES A AND C SHALL BE FULL COMPENSATION FOR ALL MATERIALS, EQUIPMENT, LABOR AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.~~
3. WHEN A CONSTRUCTION JOINT IS USED, DOWEL BARS WILL BE REQUIRED AS SHOWN WITH TYPE 9B, 12B, OR 14B BARRIER. SEE NOTE 5.
4. ~~LONGITUDINAL CONSTRUCTION JOINT WITHOUT TIE BARS IS REQUIRED AND SHALL BE PLACED AT THE LOCATION SHOWN OR MAY BE INSTALLED AT THE CORRESPONDING POINT ON THE OPPOSITE SIDE OF THE BARRIER, AT THE OPTION OF THE CONTRACTOR. IT SHALL BE REQUIRED ON THE LOW SIDE OF A SUPERELEVATED SECTION.~~
5. NO. 8 DOWEL BARS SPACED 4'-0" O.C. AND STAGGERED 2'-0".
6. CONSTRUCTION JOINT PERMITTED WHEN FIXED FORMS OR SLIP FORMS ARE USED.
7. POLYETHYLENE (6 MILS THICK) BOND BREAKER.
8. PAVEMENT SHALL BE DRILLED AND BARS GROUTED.
9. BARS SHALL BE EITHER DRILLED AND GROUTED OR DRIVEN.
10. 3" RACEWAY (TYPICAL) SEE ELSEWHERE IN THE PLANS FOR LOCATION AND PAYMENT FOR RACEWAY WHEN REQUIRED.

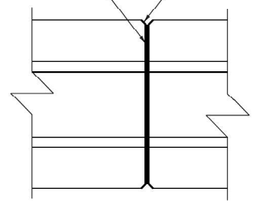
APPROXIMATE QUANTITIES PER LINEAR FOOT

TYPE	CONC.- CUYD (W)			STEEL - POUNDS (W)		
	9"	12"	14"	9"	12"	14"
A	0.18	0.20	0.21	▲ 1.34	▲ 1.34	▲ 1.34
B	0.13	0.15	0.16	1.34	1.34	1.34
C	0.18	0.20	0.21	▲ 1.34	▲ 1.34	▲ 1.34
D	0.14	0.16	0.17	0.67	0.67	0.67
E	0.14	0.16	0.17	1.34	1.34	1.34

▲ WHEN REQUIRED

CONCRETE QUANTITIES SHOWN INCLUDE 8" BASE THICKNESS FOR TYPE A, BUT DO NOT INCLUDE QUANTITIES NECESSARY FOR ASPHALT OVERLAY THICKNESS SHOWN FOR TYPE D AND E.

½" EXPANSION JOINT MATERIAL — ⅞" BEVEL



EXPANSION JOINT DETAIL

~~USE WITH CUR. STD. DWG. RBM-015~~

KENTUCKY
DEPARTMENT OF HIGHWAYS

CONCRETE MEDIAN BARRIER
FIXED-FORM OR SLIP-FORM
(PERMANENT)

STANDARD DRAWING NO. RBM-001-11

SUBMITTED — DIRECTOR DIVISION OF DESIGN — 02-26-20 DATE

APPROVED — STATE HIGHWAY ENGINEER — 02-26-20 DATE

MODEL: Default
FILE NAME: P:\2021\210593.J&L - FA124 Ohio River Bridge Paintsyst CADD - DWGs\7 Tran\CAD_Sheets\D97897-sht-ed-Concrete Barrier Wall (Special) Detail.dgn

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

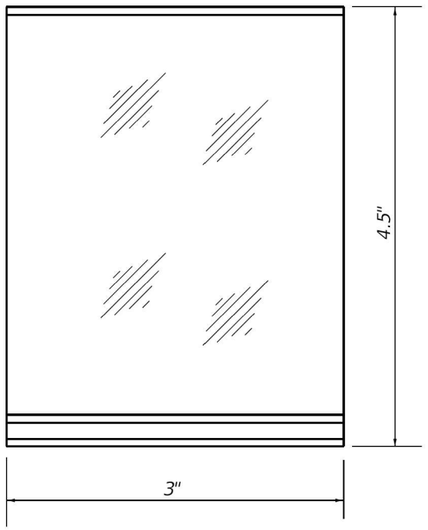
USER NAME = bbillhartz	DESIGNED - KMO	REVISED -	
	DRAWN - BAB	REVISED -	
PLOT SCALE = 10.000 ' / In.	CHECKED - TBP	REVISED -	
PLOT DATE = 8/16/2024	DATE - 6/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

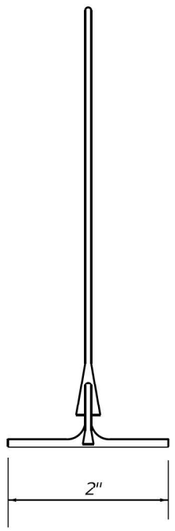
CONCRETE BARRIER WALL (SPECIAL)

SCALE: N.T.S. | SHEET 1 OF 2 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	60
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



FRONT ELEVATION



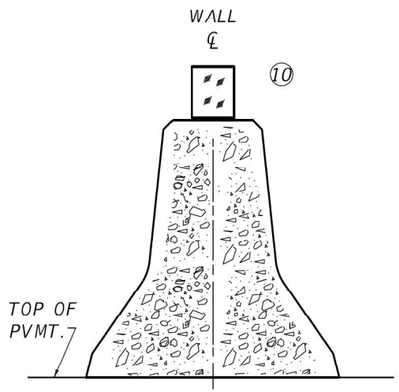
SIDE ELEVATION

~ NOTES ~

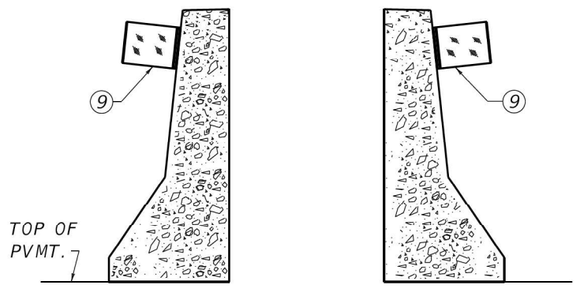
BID ITEM AND UNIT TO BID

DELINEATOR FOR BARRIER WALL – M/W	EACH
DELINEATOR FOR BARRIER WALL – M/Y	EACH
DELINEATOR FOR BARRIER WALL – B/Y	EACH
DELINEATOR FOR BARRIER WALL – B/W	EACH

1. BARRIER WALL DELINEATORS SHALL BE REQUIRED ON ALL BARRIER WALLS.
2. ~~DELINEATORS SHALL BE MEASURED AND PAID FOR AT THE CONTRACT UNIT PRICE EACH, AND SHALL INCLUDE ALL MATERIALS AND LABOR NECESSARY FOR ONE COMPLETE INSTALLATION.~~
3. THE COLOR OF DELINEATORS SHALL MATCH THE COLOR OF THE EDGELINE THAT THEY SUPPLEMENT. IN GENERAL, DELINEATORS ON BARRIER WALL ALONG THE LEFT SIDE OF DRIVING LANES SHALL BE YELLOW, AND DELINEATORS ON BARRIER WALL ALONG THE RIGHT SIDE OF DRIVING LANES SHALL BE WHITE. DELINEATORS IN BOTH DIRECTIONS ON A TWO-LANE, TWO-WAY ROADWAY SHALL BE BI-DIRECTIONAL WHITE.
4. TYPES OF DELINEATORS PERMITTED SHALL BE FROM THE LIST OF APPROVED MATERIALS. THE DELINEATOR SHAPE AND DIMENSIONS ARE FOR ILLUSTRATION PURPOSES ONLY.
5. THE DELINEATOR UNIT SHALL HAVE THE REFLECTIVE SURFACE INSTALLED FACING TRAFFIC.
6. DELINEATORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMENDATION.
7. DELINEATORS SHALL BE ATTACHED TO CONCRETE MEDIAN BARRIER WITH AN APPROVED ADHESIVE.
8. DELINEATOR SHEETING SHALL BE TYPE IX, YELLOW OR WHITE.
9. DELINEATORS SHOULD BE MOUNTED AT A HEIGHT OF APPROXIMATELY 4' ABOVE PAVEMENT. WHEN CONCRETE BARRIERS EXTEND ACROSS BRIDGE STRUCTURES IN LIEU OF STEEL BEAM GUARDRAIL, DELINEATORS SHALL BE INSTALLED AT THE SAME VERTICAL ALIGNMENT AS ON THE GUARDRAIL.
10. FOR BARRIER WALLS 50" OR LESS IN HEIGHT, DELINEATORS MAY BE INSTALLED ON TOP OF THE BARRIER WALL. FOR MEDIAN BARRIER WALLS 50" OR LESS IN HEIGHT THAT SEPARATE TWO-WAY TRAFFIC, BI-DIRECTIONAL YELLOW DELINEATORS MAY BE INSTALLED ON THE TOP OF THE BARRIER WALL IN LIEU OF SIDE-MOUNTED MONO-DIRECTIONAL YELLOW DELINEATORS.



NORMAL (SOLID) WALL SECTION



(SEPARATE SEGMENT) WALL SECTION

APPROXIMATE DELINEATOR SPACING	
TANGENT	100'
CURVE	50'

SPACING SHOULD BE ADJUSTED IN CURVES SO THAT SEVERAL DELINEATORS ARE ALWAYS SIMULTANEOUSLY VISIBLE TO THE ROAD USER.

KENTUCKY
DEPARTMENT OF HIGHWAYS

DELINEATORS FOR CONCRETE BARRIERS

STANDARD DRAWING NO. RBM-020-09

SUBMITTED _____ DIRECTOR, DIVISION OF DESIGN — DATE 12-01-15

APPROVED _____ STATE HIGHWAY ENGINEER — DATE 12-01-15

MODEL: Default
FILE NAME: P:\2021\2-10569.J&L - FAI 24 Ohio River Bridge Painting\4 CADD - DWGs\4.7 Tran\CAD_Sheets\D978972.xsl\34-Concrete Barrier Wall (Special) Detail.dgn

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = bblhartz		DESIGNED - KMO		REVISED -	
		DRAWN - BAB		REVISED -	
PLOT SCALE = 10.000 ' / In.		CHECKED - TBP		REVISED -	
PLOT DATE = 8/16/2024		DATE - 6/2024		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

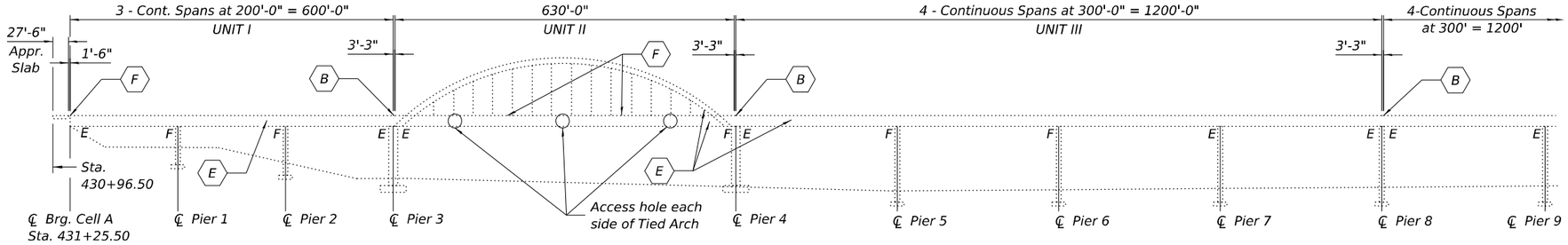
CONCRETE BARRIER WALL (SPECIAL)

SCALE: N.T.S. | SHEET 2 OF 2 SHEETS | STA. | TO STA.

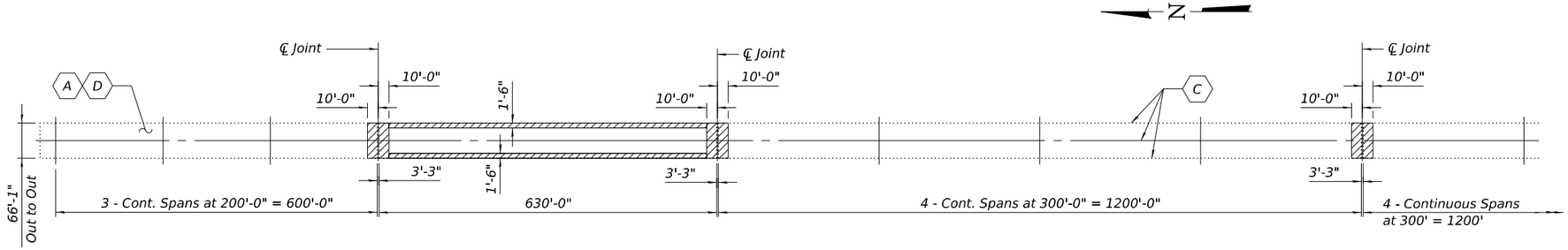
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B) BP-1, BRR-1	MASSAC	236	61
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

Traffic to be maintained utilizing stage construction.

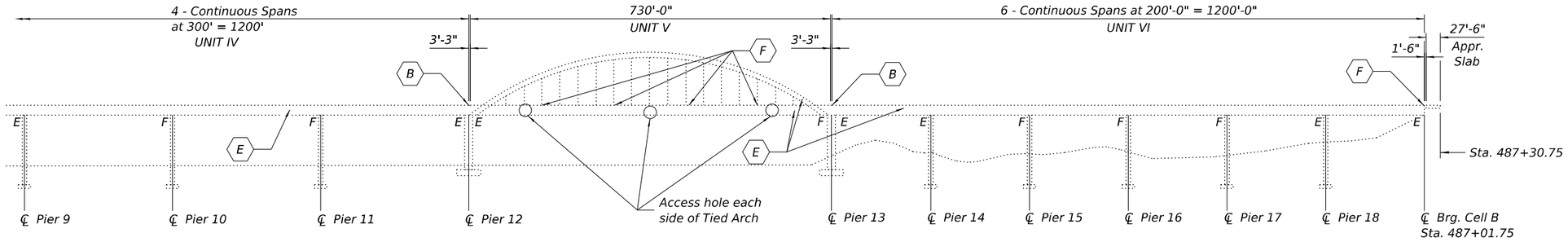
No salvage.



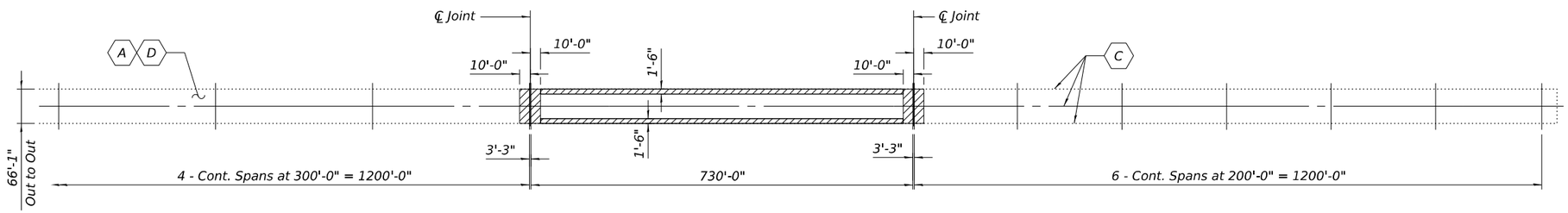
PARTIAL ELEVATION - 1



PARTIAL PLAN - 1



PARTIAL ELEVATION - 2



PARTIAL PLAN - 2

SCOPE OF WORK

Repair	Member	Location	Proposed Repair
A	Overlay	Throughout	1½" HMA Surface Removal
			½" Waterproofing Membrane System Removal
			Bridge Deck Scarification, ¾"
			Bridge Deck Microsilica Concrete Overlay, 3"
			¼" Diamond Grinding
B	Exp. Joint 3	Pier 3	Remove existing Finger Plate Expansion Joints and install new Modular Expansion Joints
	Exp. Joint 4	Pier 4	
	Exp. Joint 8	Pier 8	
	Exp. Joint 12	Pier 12	
	Exp. Joint 13	Pier 13	
C	Parapets & Median Barrier	See Sheets 17-23 of 162	Structural Repair of Concrete (Depth Equal to or Less than 5")
		Throughout	Retrofit Concrete Parapet
D	Deck Slab Repair	See Sheet 24-27 of 162	Deck Slab Repair (Full Depth)
E	See General Notes	See General Notes	Cleaning and painting steel
F	Relief Joints & Modular Exp. Joints at Cells A & B	See Sheet 15 of 162	Replace steel sliding plate

LICENSED STRUCTURAL ENGINEER
BRANDON W POITER
081-006327
STATE OF ILLINOIS

Brandon W. Poiter

EXPIRES: 11/30/2024
DATE: 08/16/2024

Sheets 1 thru 27 and Sheets 41 thru 175 of 175.

Limits of Protective Shield

Notes:
See Sheet 2 of 162 for General Notes
All new structural steel shall be galvanized.

GENERAL PLAN & ELEVATION
I-24 OVER THE OHIO RIVER (PUBLIC WATER)
F.A.I. RTE. 24-SEC. (64-3B)BP-1,BRR-1
MASSAC (IL) AND McCRACKEN (KY) COUNTIES
STRUCTURE NO. 064-0035

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TWM, INC.
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION
STRUCTURE NO. 064-0035
SHEET 1 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	62
		CONTRACT NO. 78972		
	ILLINOIS FED. AID PROJECT			

GENERAL NOTES

All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.

Fasteners shall be ASTM F 3125 Grade A325 Type 1. Fasteners shall be hot dip galvanized. See Special Provision for "Hot Dip Galvanizing for Structural Steel." Bolts $^{3}/_{4}$ in. diameter, holes $^{15}/_{16}$ in. diameter, unless otherwise noted.

All new structural steel shall be AASHTO M270 Grade 50 and shall be galvanized. See Special Provision for "Hot Dip Galvanizing for Structural Steel".

No field welding is permitted except as specified in the contract documents.

Reinforcement bars designated (E) shall be epoxy coated.

Protective Coat shall be applied to the top and inslde faces of the parapet extensions, inside faces of existing parapets and brush crubs, top and both faces of median barrier, brush curb, and concrete glare screen, new concrete bridge joints, and new microsilica concrete overlay.

Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose detrimental foreign material shall be removed from the surfaces in contact with concrete (SSPC – SP3 standards). Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be paid for according to Article 109.04 of the Standard Specifications.

As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding ¼ in. deep shall be identified and reported to the Bureau of Bridges & Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

Joint openings shall be adjusted according to Article 520.04 of the Std. Specs. when the deck is poured at an ambient temperature other than 50° F.

Plan dimensions and details relative to the existing structure have been taken from existing plans are subject to nominal construction variations. The Contactor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

Cost of removal and re-installation of all members necessary to complete the work as detailed on the plans and as specified in the Special Provisions shall be included with Furnishing and Erecting Structural Steel or Structural Steel Repairs.

Existing reinforcement bars extending into the removal area shall be cleaned, straightened, and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system at the contractor's expense.

The Contractor is advised that navigational illumination is present on this structure. All cable or conduit is to remain in service. Any cable or conduit which is damaged as a result of the Contractor's operations shall be replaced by the Contractor at the Contractor's expense. Replacement material and methods shall meet or exceed the original specifications for the wiring. Splicing will not be permitted.

The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to address the presence of lead on this project.

Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures", and the Standard Specifications. The color of the final finish coat shall be Gray, Munsell No. 5B 7/1. Cost included with Furnishing and Erecting Structural Steel.

Cleaning and painting of the existing structural steel shall be as specified in the special provision for "Cleaning and Painting Existing Steel Structures". All structural steel within 6 ft. (measured along the beam) of either side of deck joints shall be cleaned per Near White Blast Cleaning - SSPC-SP10.

The designated areas cleaned per Near White Blast Cleaning and per Commercial Grade Power Tool Cleaning shall be painted according to the requirements of the Organic Zinc-Rich/Epoxy paint system. The color of the final finish coat for all steel surfaces shall be Gray, Munsell No 5B 7/1.

The Contractor shall submit calculations and details demonstrating the structural integrity of the bridge is maintained under the additional imposed loads of the containment system. See special provisions.

SSPC QP1 and QP2 Contractor Certification is required for this Contract.

The Contractor shall submit to the Illinois Department of Transportation a work plan that includes a work schedule and containment details for each painting location over water. No work will be permitted prior to approval of the plan by the United States Coast Guard. For questions about the Coast Guard requirements, contact Mr. Eric Washburn, Commander, Eighth Coast Guard District, 1222 Spruce Street, St. Louis, Missouri, 63103; telephone (571) 607-2270.

Structural steel shall be cleaned and painted at the following locations and as directed by the Engineer:

1. At thirteen deck expansion joints, all structural steel below the elevation of the top of the stiffening truss and within six feet of the joint opening shall be cleaned and painted. Inspection walks and handrail around the top of piers is included.

2. A total of twelve access holes in the arch ties shall be uncovered and interior surfaces cleaned and painted from diaphragm to diaphragm (a length of approximately eleven feet at each hole). The interior surface of the East arch tie in Span 13 located at the center opening between arch hangers T10 & T11 for a length extending to the nearest stiffener in each direction shall be cleaned and painted. The interior surface of the West arch tie in Span 13 located 5 feet north of arch hanger T15 for a length extending to the nearest stiffener in each direction. The bottom plates shall be painted, and the web plates shall be cleaned and painted up to a minimum height of six inches. The cover plates shall be cleaned and painted and re-installed. All debris shall be removed from the arch ties at the hole locations. Power Tool – Commercial Grade cleaning must be used inside the ties. Post-tensioning cables are located inside the arch ties. The Contractor shall protect the cable coatings from any potential damage during the Contractor's operations. The Contractor shall obtain the Engineer's approval of the protection method before beginning work inside the arch ties.

3. The exterior surfaces and bottoms of the bottom flanges of the girders, all exposed surfaces of the fascia stringers, and the floor beam surfaces from each end of the floor beam to the exterior face of the girder shall be cleaned and painted in Units I, III, IV, and VI.

4. All exposed surfaces of the lower chord, stiffening truss, and fascia stringers, the exterior surfaces of Stringers 2 and 6, the floor beam surfaces from each end of the floor beam to Stringers 2 and 6, the arch up to the top of the first "Bow Tie", and the "Bow Tie" shall be cleaned and painted in Units II, and V.

CONCRETE GLARE SCREEN

(PRE-STAGE B-1)

LOCATION		CONCRETE GLARE SCREEN
STATION TO STATION		FOOT
430+96.50	431+22.75	26.25
431+25.93	437+20.38	594.45
437+33.88	443+54.88	621.00
443+65.88	455+56.13	1190.25
455+71.13	467+59.63	1188.50
467+74.13	474+94.13	720.00
475+06.13	487+00.98	1194.85
487+04.50	487+30.75	26.25
	TOTAL:	5562

Note:
Concrete Glare Screen station limits are set 6" beyond the concrete removal limits at Piers 3, 4, 8, 12, and 13 for the modular joint replacements. The concrete removal limits are based on the minimum modular joint widths at each pier. If the actual joint widths are wider than these values, adjustments to the Concrete Glare Screen station limits may be required. See Sheets 9 thru 13 of 162 for concrete removal limits and minimum joint widths.

INDEX OF SHEETS

1	General Plan and Elevation
2	General Data
3	Staging Details at Expansion Joint
4	Staging Details for Overlay
5	Temporary Concrete Barrier
6-8	Retrofit Concrete Parapet Details
9-14	Joint Replacement Details
15	Modified Sliding Plate Details
16	Miscellaneous Repair Details
17-23	Parapet & Median Barrier Repair Details
24-27	Deck Repair Details
28-40	Structural Steel Repair
41	Modified Bar Splicer Assembly and Mechanical Splicer Details
42-175	Existing Structure Plans

TOTAL BILL OF MATERIAL

	ITEM	UNIT	TOTAL
**	Polymerized Bituminous Materials (Tack Coat)	Pound	1641
**	Polymerized Hot-Mix Asphalt Surface Course, Il-9.5, Mix "E", N90	Ton	409
*****	Concrete Removal	Cu. Yd.	118.7
	Protective Shield	Sq. Yd.	1176
	Concrete Superstructure	Cu. Yd.	208.2
*	Protective Coat	Sq. Yd.	50014
	Furnishing And Erecting Structural Steel	Pound	27900
	Reinforcement Bars, Epoxy Coated	Pound	45120
	Bar Splicers	Each	552
	Mechanical Splicers	Each	1356
	Concrete Glare Screen	Foot	5562
	Strip Seal Gland Replacement	Foot	330
	Bridge Deck Grooving (Longitudinal)	Sq. Yd.	29999
	Bar Terminators	Each	640
***	Structural Steel Removal	Pound	76620
	Structural Steel Repair	Pound	7500
****	Hot-Mix Asphalt Surface Removal (Deck)	Sq. Yd.	40843
	Containment And Disposal Of Lead Paint Cleaning Residues No. 1	L Sum	1
	Cleaning And Painting Steel Bridge No. 1	L Sum	1
	Bridge Deck Scarification $^{3}/_{4}$"	Sq. Yd.	36837
	Bridge Deck Scarification $2^{3}/_{4}$"	Sq. Yd.	302
	Bridge Deck Microsilica Concrete Overlay 3"	Sq. Yd.	37140
	Structural Repair Of Concrete (Depth Equal To Or Less Than 5 Inches)	Sq. Ft.	6894
	Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	2
	Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	329
	Diamond Grinding (Bridge Section)	Sq. Yd.	32499
	Joint Repair	Each	1
	Modular Expansion Joint 6"	Foot	66
	Modular Expansion Joint 9"	Foot	66
	Modular Expansion Joint 15"	Foot	66
	Modular Expansion Joint 18"	Foot	66
	Modular Expansion Joint 21"	Foot	66
	Retrofit Concrete Parapet	Foot	11162

* Apply as described in General Notes

** Quantity provided for HMA patching. Location of patching to be determined by the engineer.

*** Includes removal of existing diaphragms, connection plates, support brackets, bent plates and fabric reinforced elastomeric mats at Finger ℄ expansion joints.

**** Includes 3,646 Sq. Yd. of removal for HMA patching. Location of patching to be determined by the engineer.

***** Cost of removal of existing Finger ℄ joint, expansion dam, expansion dam supports and all associated hardware, brackets and shims included with Concrete Removal.

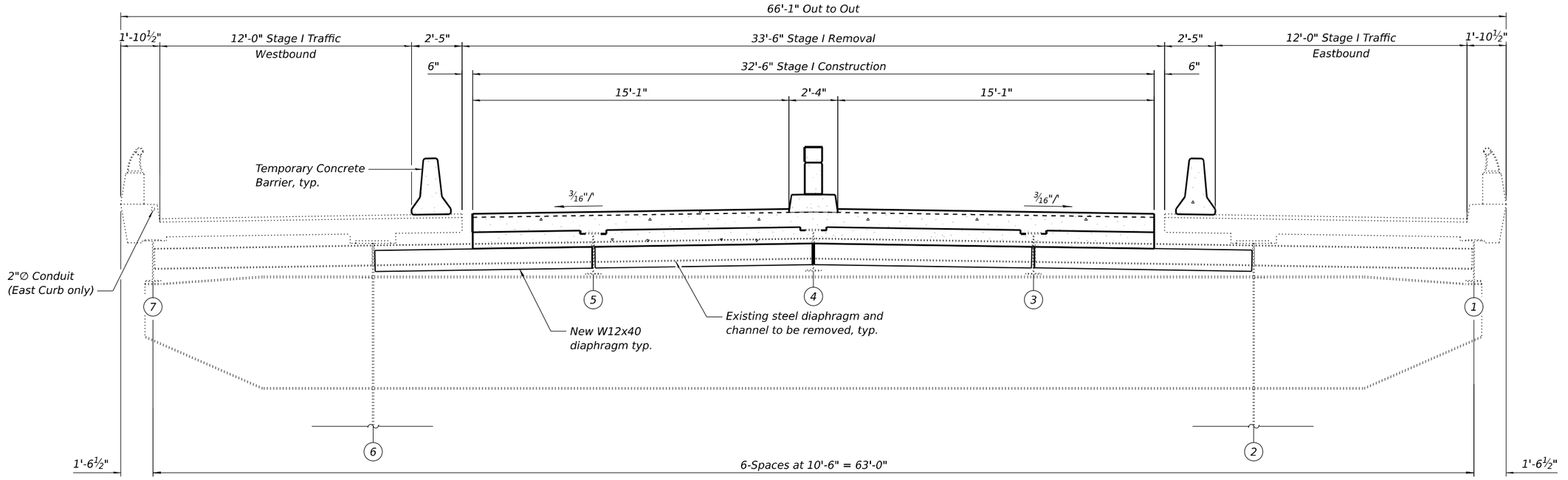
CONSTRUCTION REQUIREMENTS

Current Ratings on File for Existing Structure
Inventory: HS 0.50
Operating: HS 1.48
Live Load Restrictions: None

1. Inventory and Operating Ratings and Live Load Restrictions are provided for information only. Inventory and Operating Ratings are based on HS loading and configuration. Live Load Restrictions are based on Illinois legal loads and configurations. The Ratings and Live Load Restrictions are not necessarily representative of capacities to support the Contractor's equipment.

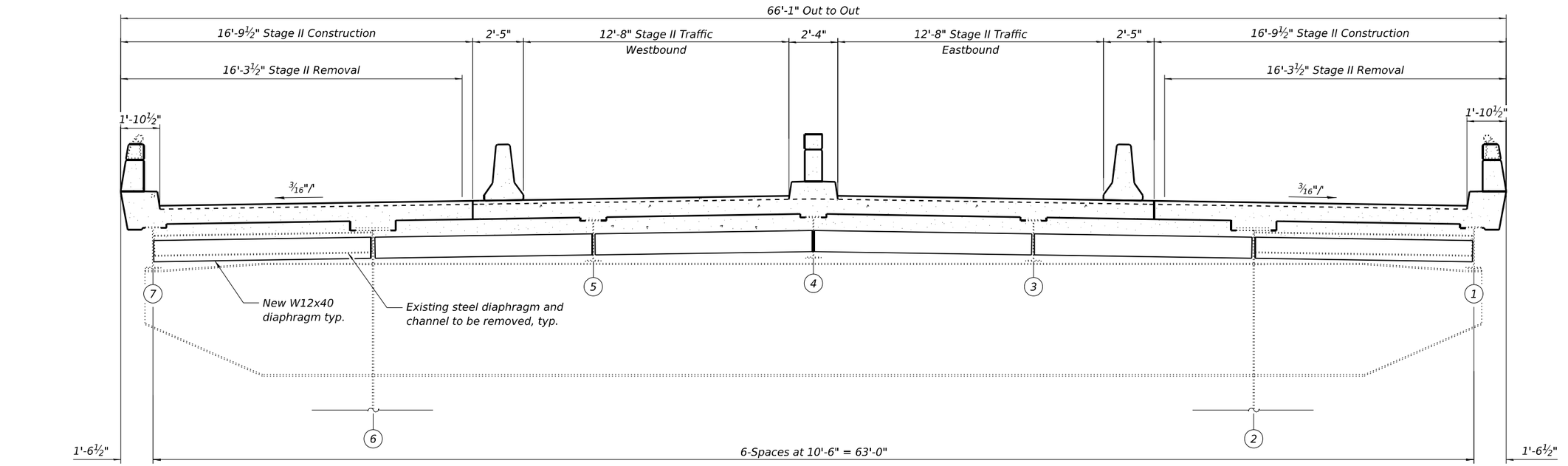
2. The Contractor is advised that the existing structure contains members that are in a deteriorated condition with reduced load carrying capacity. It is the Contractor's responsibility to account for the condition of the existing structure when developing construction procedures for the complete or partial removal, or replacement of the structure. An Existing Structure Information Package is available upon request as noted in the special provisions.

3. The Contractor shall retain the services of an engineering firm, prequalified in the IDOT consultant selection category of Major River Bridges, for preparation of the Structural Assessment Report(s). Contractor's pre-approval shall not be applicable for this project. See Special Provision.



STAGE I CROSS SECTION AT EXPANSION JOINT

(Looking South)



STAGE II CROSS SECTION AT EXPANSION JOINT

(Looking South)

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IL DESIGN FIRM LICENSE NO: 184-001220

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGING DETAILS AT EXPANSION JOINTS
STRUCTURE NO. 064-0035
SHEET 3 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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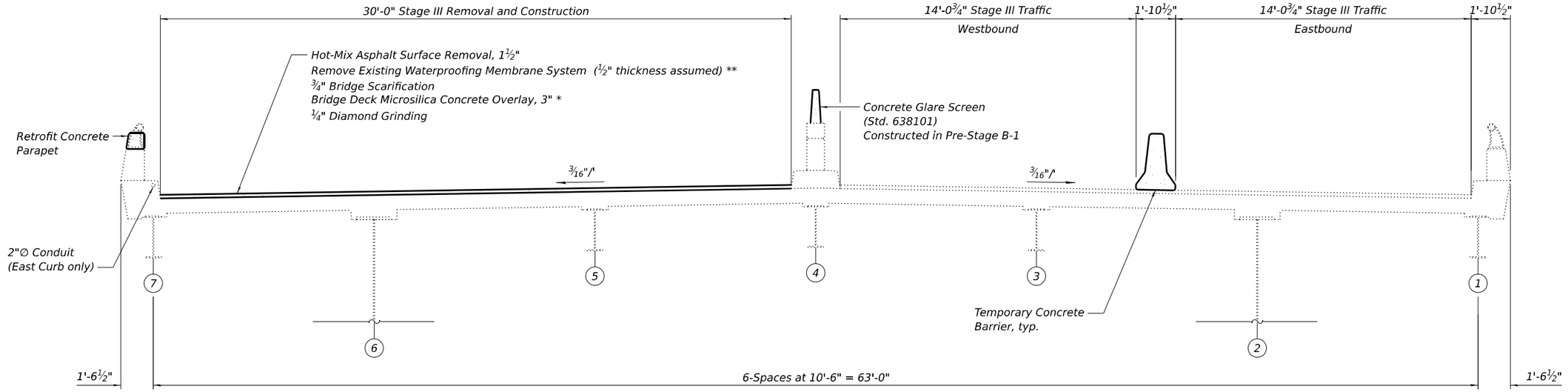
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

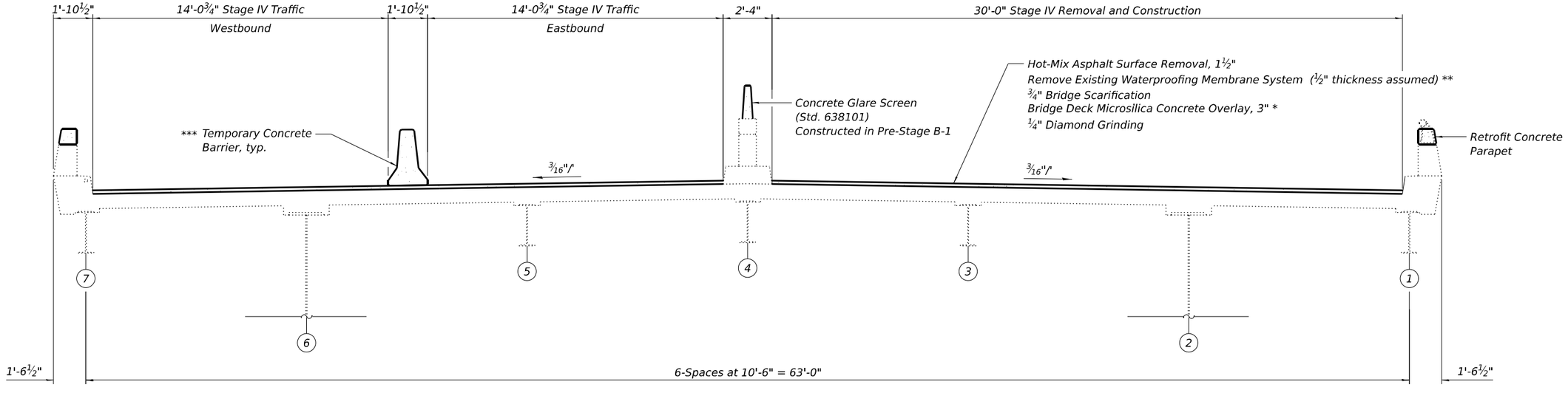


* Prior to grinding

** Included in the cost of Hot-Mix Asphalt Surface Removal, 1½".
An existing diamond ground deck surface is present beneath
the Waterproofing Membrane System that is to be removed.

STAGE III CROSS SECTION AT MID-SPAN

(Looking South)



* Prior to grinding

** Included in the cost of Hot-Mix Asphalt Surface Removal, 1½".
An existing diamond ground deck surface is present beneath
the Waterproofing Membrane System that is to be removed.

*** Drilling holes in the proposed Microsilica Concrete Overlay for
pinning the Temporary Concrete Barrier is not allowed.

STAGE IV CROSS SECTION AT MID-SPAN

(Looking South)

Note:
Longitudinal joints in Bridge Deck Microsilica Concrete Overlay are not allowed in Stages III and IV.
The Bridge Deck Microsilica Concrete Overlay shall be poured in a single pour from modular joint to modular joint with no transverse joints allowed.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGING DETAILS FOR OVERLAY
STRUCTURE NO. 064-0035
SHEET 4 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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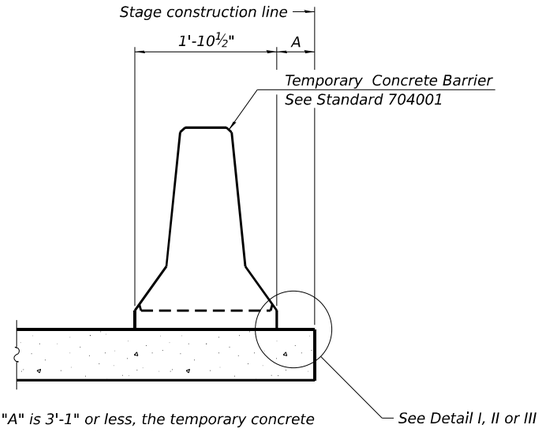
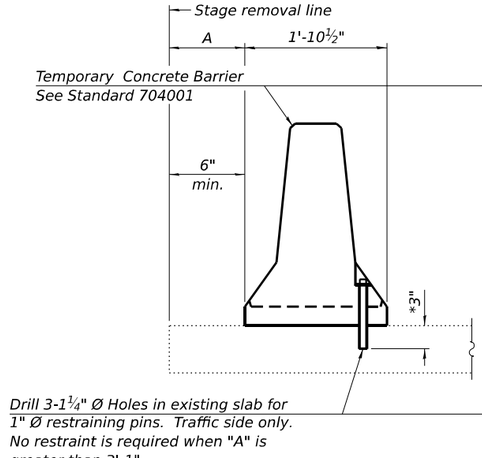
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



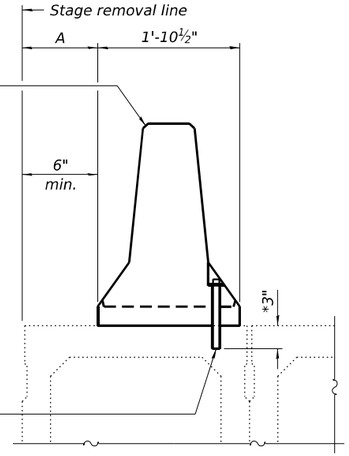
When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

NEW SLAB OR NEW DECK BEAM



Drill 3-1¼" Ø Holes in existing slab for 1" Ø restraining pins. Traffic side only. No restraint is required when "A" is greater than 3'-1".

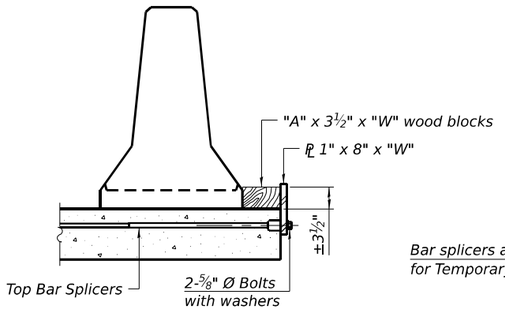
EXISTING SLAB



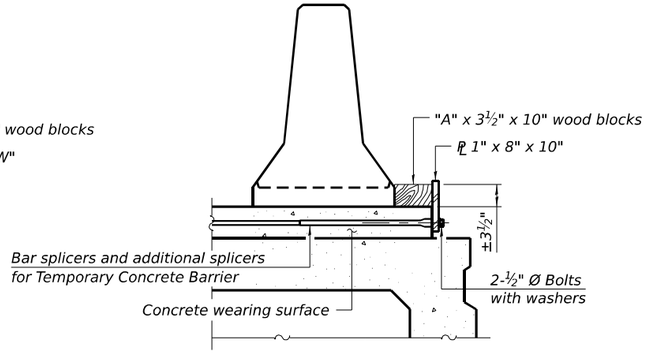
* When hot-mix asphalt wearing surface is present, embedment shall be 3" plus the wearing surface depth.

EXISTING DECK BEAM

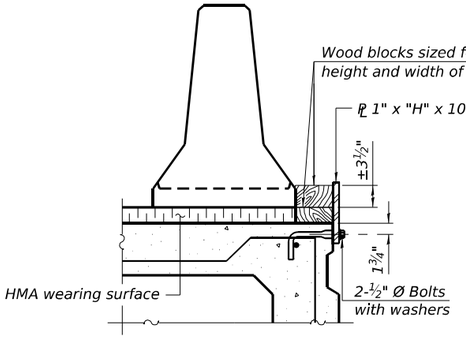
SECTIONS THRU SLAB OR DECK BEAM



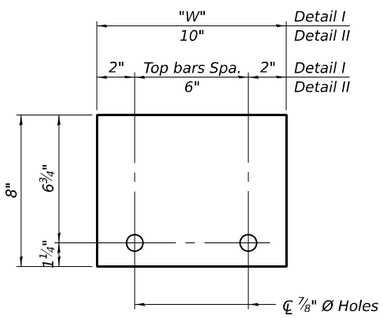
DETAIL I



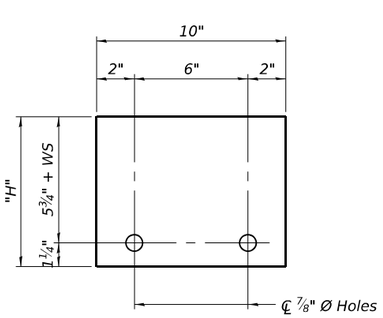
DETAIL II



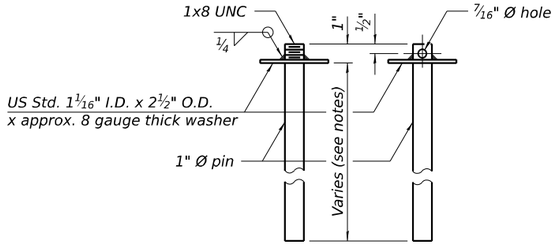
DETAIL III



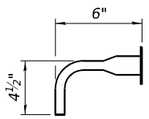
STEEL RETAINER ℄ 1" x 8" x "W"
(Detail I and II)



STEEL RETAINER ℄ 1" x "H" x 10"
(Detail III)



RESTRAINING PIN



BAR SPLICER FOR #4 BAR - DETAIL III

RAILING CRITERIA

NCHRP 350 Test Level	3
Railing Weight (plf)	440

Notes:
Cost of retainer assembly is included with Temporary Concrete Barrier.
A retainer assembly shall be located at the approximate ℄ of each temporary concrete barrier.
The retainer plate shall not be removed until the concrete on the adjacent stage is ready to be poured. For Detail III applications the retainer plate shall not be removed until just prior to placing the adjacent beam.
When the 'A' dimension is less than 1½", the wood block shall be omitted and the barrier shall be placed in direct contact with the steel retainer plate. For deck beam applications the minimum required 'A' distance is 6" to accommodate the shear key clamping device.

Detail I - Installation for a new bridge deck or bridge slab.

Detail II - Installation for a new deck beam with an initial concrete wearing surface. Additional bar splicers shall be provided at 6'-0" centers and paired with the bar splicers of the concrete wearing surface reinforcement to accommodate the installation of the retainer assemblies. The cost of the additional bar splicers is included with the concrete wearing surface.

Detail III - Installation for a new deck beam with no initial wearing surface or with an initial hot-mix asphalt (HMA) wearing surface present. The deck beam directly beneath the temporary concrete barrier shall be fabricated with bar splicer inserts in the side of the beam, as detailed, to accommodate the installation of the retainer assemblies. A pair of bar splicers, 6" apart, shall be placed at 6'-0" centers along the length of the beam. The cost of the bar splicers is included with the deck beam.

MODEL: Default
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8/16/2024 11:11:40 AM

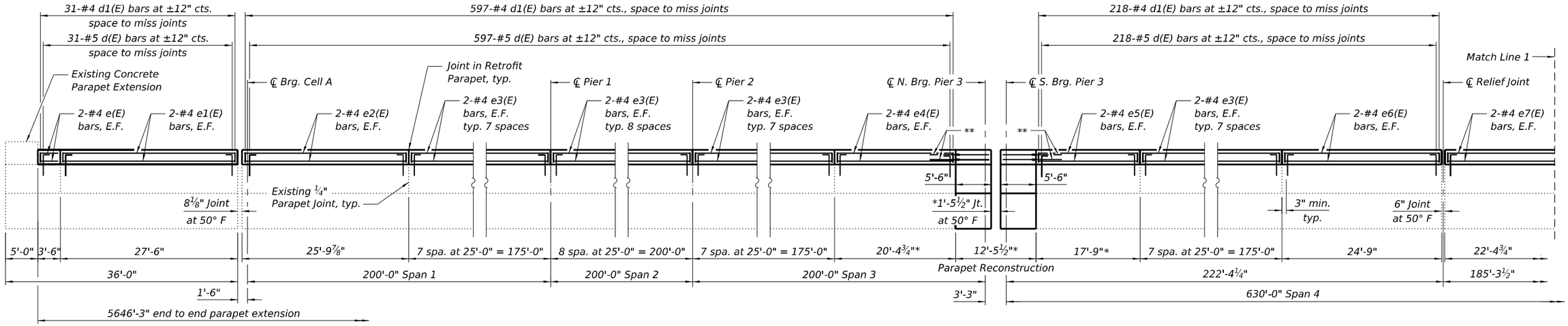
TWM ENGINEERING & GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = Jesker	DESIGNED - JBE	REVISED -		
	CHECKED - BWP	REVISED -		
PLOT SCALE = 0.167 ' / in.	DRAWN - JBE	REVISED -		
PLOT DATE = 8/16/2024	CHECKED - BWP	REVISED -		

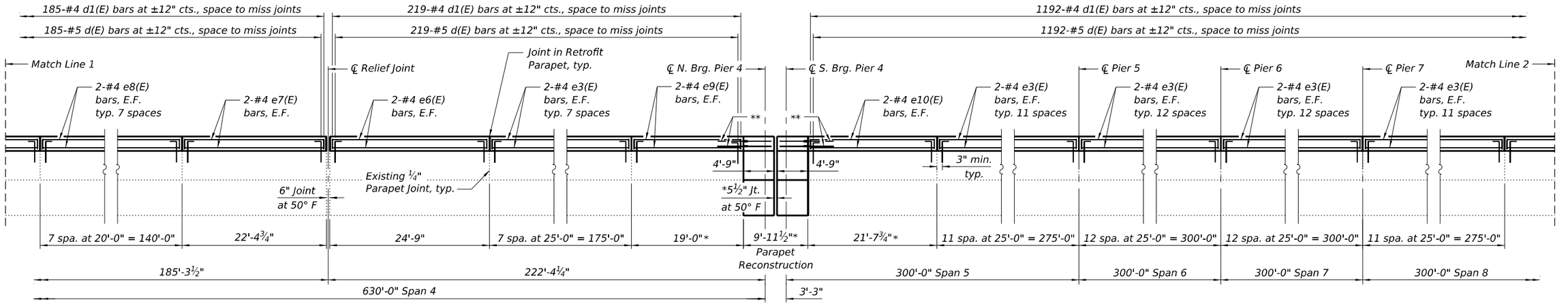
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIER
STRUCTURE NO. 064-0035
SHEET 5 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	66
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



ELEVATION OF PARAPET



ELEVATION OF PARAPET (CONT.)

Notes:

E.F. denotes Each Face.

See Sheets 7 and 8 of 162 for Elevation of Parapet (Cont.).

See Sheet 8 of 162 for Joint Details, Section Thru Parapet, Bar List, and Bill of Material.

See Sheets 9 thru 14 of 162 for Parapet Reconstruction details.

Existing parapet railing not shown for clarity.

** Dimensions are based on minimum joint widths shown on Sheets 9 thru 13 of 162. If the actual joint widths are wider than these values, dimensional adjustments may be required.*

*** 4-#4 Threaded splicer bars (E) at Const. Jt. with Parapet Reconstruction, typ. See Sheet 28 of 162 for Parapet Bar Splicer Detail.*

MODEL: Default
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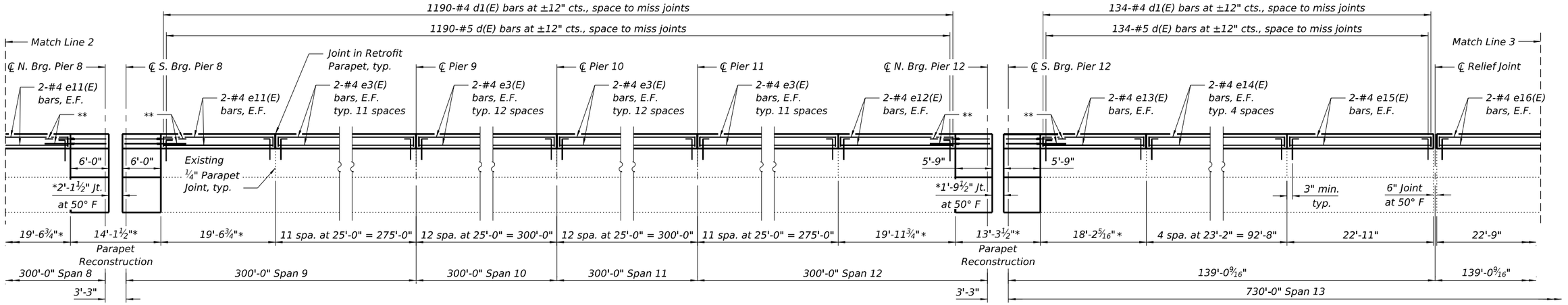
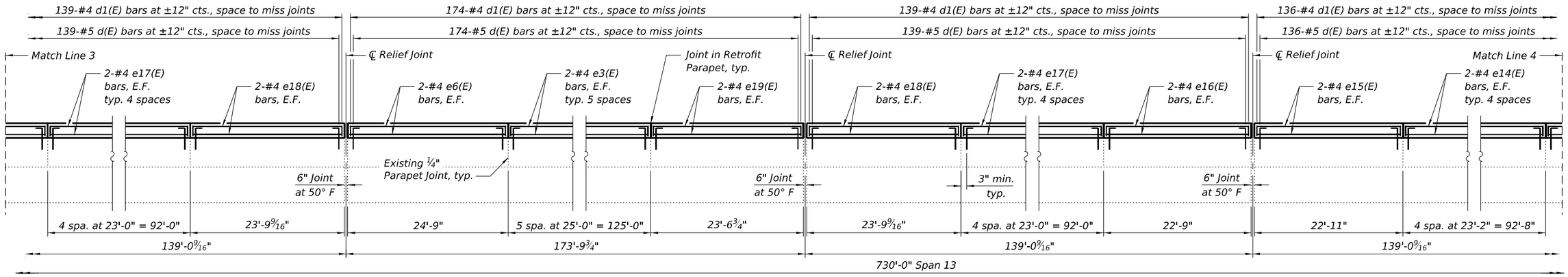
TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC.
WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = jesker	DESIGNED - JBE	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	RETROFIT CONCRETE PARAPET DETAILS STRUCTURE NO. 064-0035
	CHECKED - BWP	REVISED -		
PLOT SCALE = 0.167 ' / in.	DRAWN - JBE	REVISED -		SHEET 6 OF 175 SHEETS
PLOT DATE = 8/16/2024	CHECKED - BWP	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	67
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



ELEVATION OF PARAPET (CONT.)



ELEVATION OF PARAPET (CONT.)

Notes:
E.F. denotes Each Face.
See Sheet 8 of 162 for Elevation of Parapet (Cont.).
See Sheet 8 of 162 for Joint Details, Section Thru Parapet, Bar List, and Bill of Material.
See Sheets 9 thru 14 of 162 for Parapet Reconstruction details.
Existing parapet railing not shown for clarity.

* Dimensions are based on minimum joint widths shown on Sheets 9 thru 13 of 162. If the actual joint widths are wider than these values, dimensional adjustments may be required.

** 4-#4 Threaded splicer bars (E) at Const. Jt. with Parapet Reconstruction, typ.
See Sheet 28 of 162 for Parapet Bar Splicer Detail.

MODEL: Default
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TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC.
WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

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	CHECKED - BWP	REVISED -	
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PLOT DATE = 8/16/2024	CHECKED - BWP	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RETROFIT CONCRETE PARAPET DETAILS
STRUCTURE NO. 064-0035
SHEET 7 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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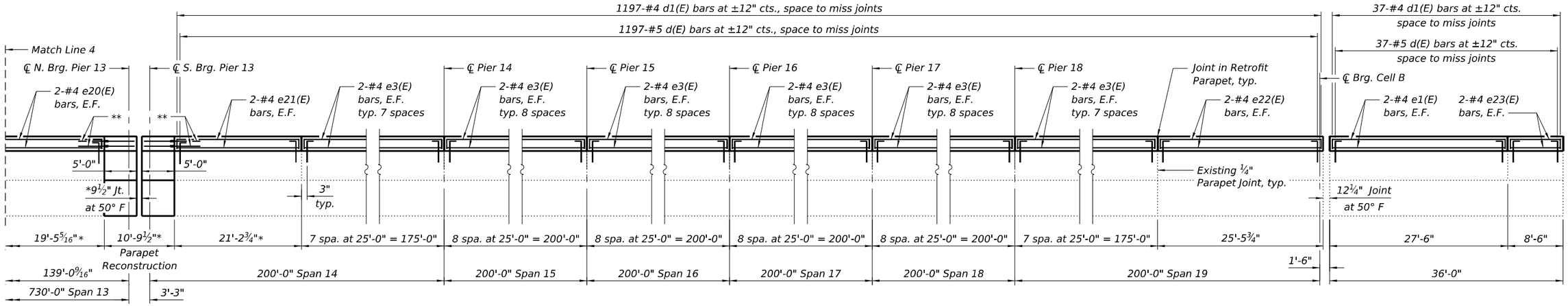
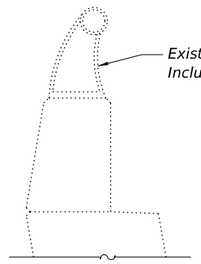
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



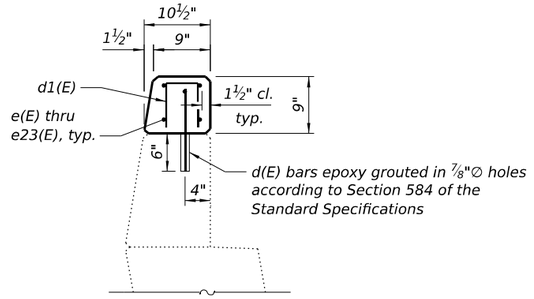
ELEVATION OF PARAPET (CONT.)

* *Dimensions are based on minimum joint widths shown on Sheets 9 thru 13 of 162. If the actual joint widths are wider than these values, dimensional adjustments may be required.*

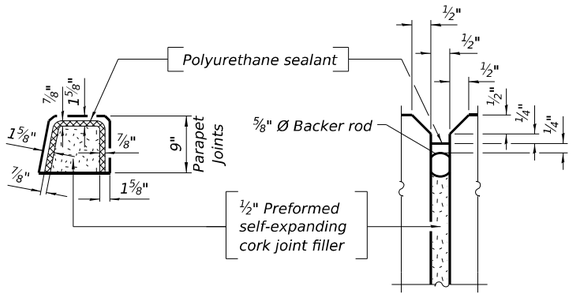
** *4-#4 Threaded splicer bars (E) at Const. Jt. with Parapet Reconstruction, typ. See Sheet 28 of 162 for Parapet Bar Splicer Detail.*



EXISTING SECTION



SECTION THRU PARAPET



PARAPET JOINT DETAILS

Notes:

E.F. denotes Each Face

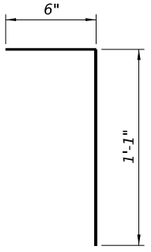
All exposed edges shall be chamfered ¾".

See Sheets 9 thru 14 of 162 for Parapet Reconstruction details.

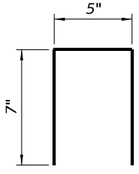
Cost of all materials, labor, and equipment to complete the work as detailed and as specified in the Special Provisions shall be included in the cost of "Retrofit Conrete Parapet".

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Protective Coat	Sq. Yd.	1,770
Retrofit Concrete Parapet	Foot	11,162



BAR d(E)

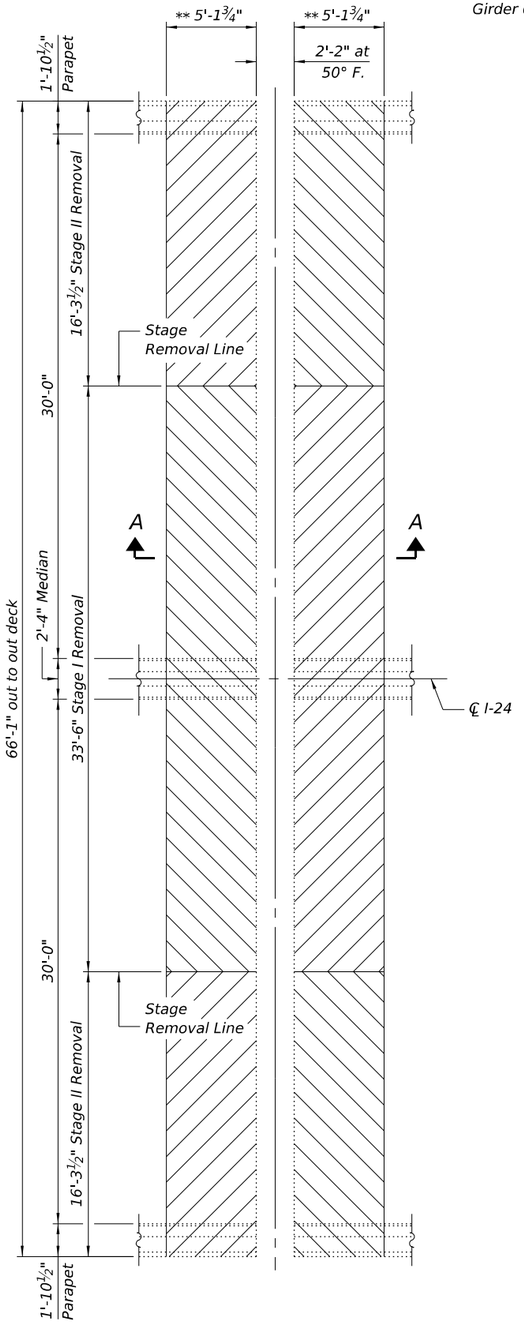


BAR d1(E)

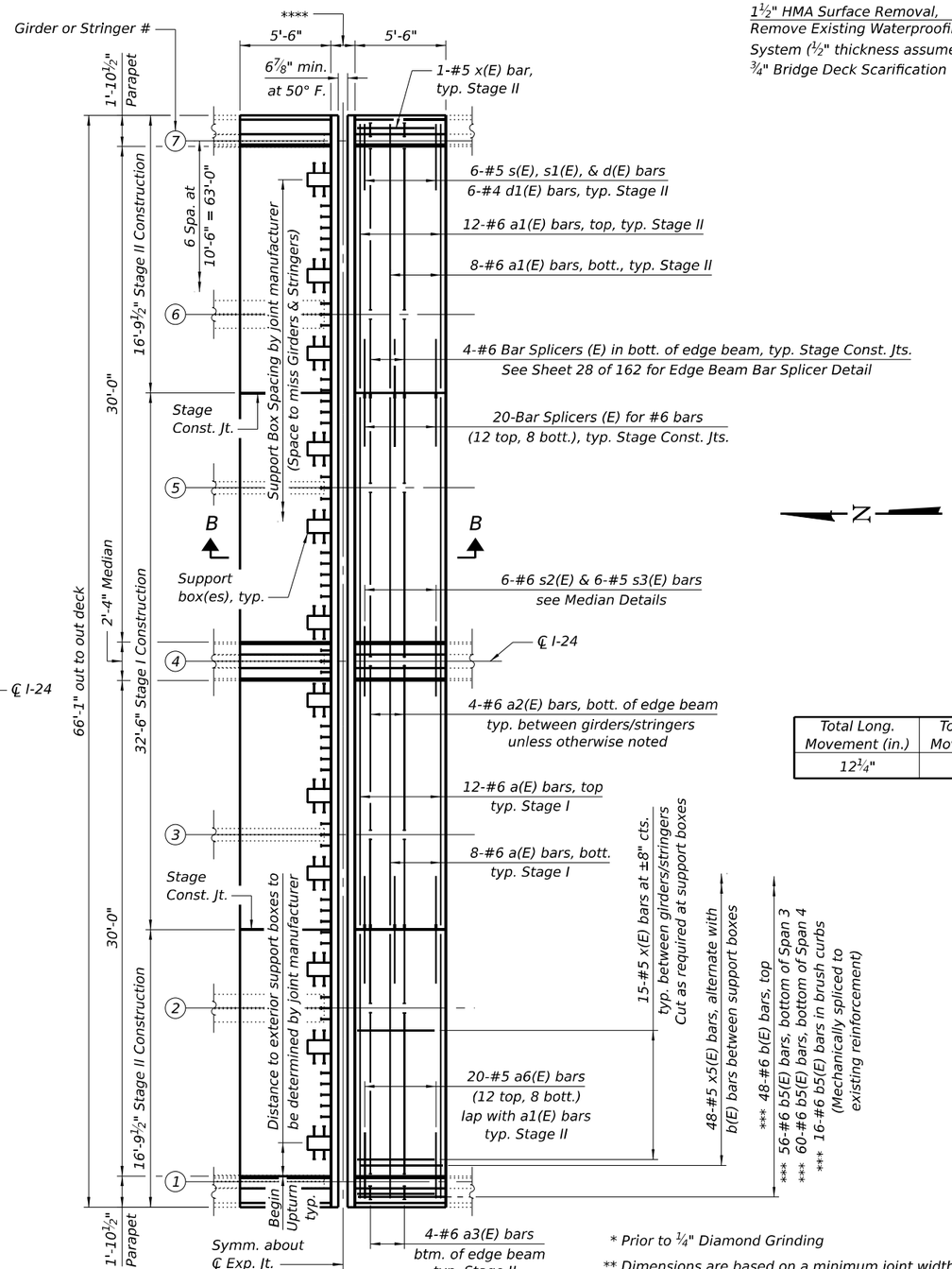
BAR LIST

(For Informational use only)

Bar	No.	Size	Length	Shape
e(E)	8	#4	3'-2"	
e1(E)	16	#4	27'-2"	
e2(E)	8	#4	25'-6"	
e3(E)	1,432	#4	24'-8"	
e4(E)	8	#4	20'-1"	
e5(E)	8	#4	17'-5"	
e6(E)	24	#4	24'-5"	
e7(E)	16	#4	22'-1"	
e8(E)	56	#4	19'-8"	
e9(E)	8	#4	18'-8"	
e10(E)	8	#4	21'-4"	
e11(E)	16	#4	19'-3"	
e12(E)	8	#4	19'-7"	
e13(E)	8	#4	17'-10"	
e14(E)	64	#4	22'-10"	
e15(E)	16	#4	22'-7"	
e16(E)	16	#4	22'-5"	
e17(E)	64	#4	22'-8"	
e18(E)	16	#4	23'-5"	
e19(E)	8	#4	23'-3"	
e20(E)	8	#4	19'-1"	
e21(E)	8	#4	20'-11"	
e22(E)	8	#4	25'-2"	
e23(E)	8	#4	8'-2"	
d(E)	11,176	#5	1'-7"	⌐
d1(E)	11,176	#4	1'-7"	⊓



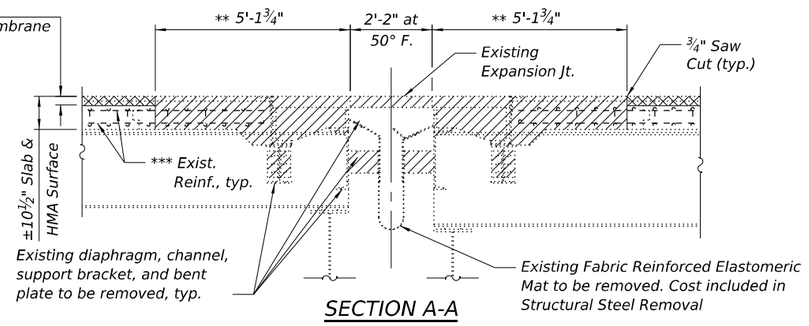
CONCRETE REMOVAL PLAN



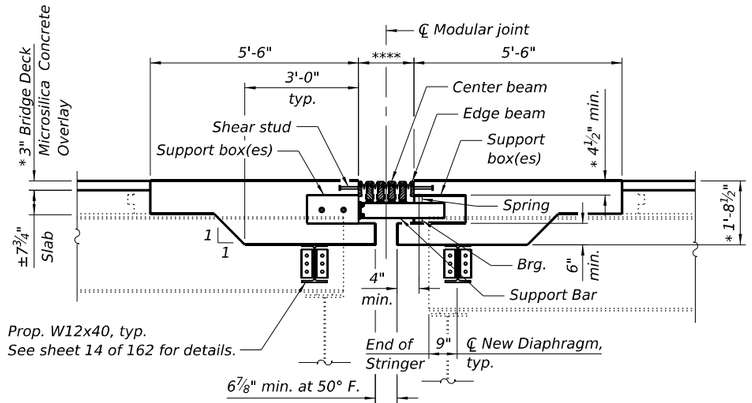
SHOWING JOINT DETAILS SHOWING REINFORCEMENT

CONCRETE REPLACEMENT PLAN

Total Long. Movement (in.)	Total Lateral Movement (in.)	Joint Size (in.)
12¼"	0"	15"

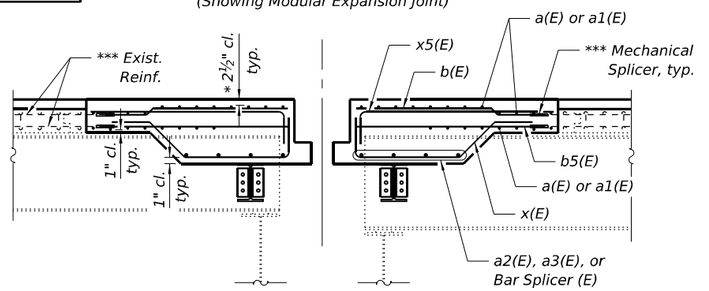


SECTION A-A



SECTION B-B

(Showing Modular Expansion Joint)



SECTION B-B

(Showing reinforcement)

(See Section B-B showing Modular Expansion Joint for information not shown)

* Prior to ¼" Diamond Grinding

** Dimensions are based on a minimum joint width of 1'-5½". If the actual joint width is wider than this value, dimensional adjustments may be required.

*** Cut existing reinforcement 6" from removal line to facilitate installation of Mechanical Splicers.

**** Joint width, per manufacturer. Minimum of 1'-5½"

Notes:

Hatched areas indicate Concrete Removal. Cross hatched areas indicate Overlay Removal.

Actual dimensions may vary depending on modular joint manufacturer's design.

Modular expansion joints shall be adjusted for temperature prior to placing concrete.

Modular joint assemblies shall be temporarily supported off beam ends until the concrete is placed. Additional supports, if required by design, shall be detailed on the shop drawings to connect to proposed W12 diaphragms.

Bars may be adjusted in the field if necessary to miss joint support boxes, as approved by the Engineer.

See Sheet 14 of 162 for Section at Modular Joint, Parapet & Median Details, Reinforcement Details, and Bill of Material.

See Sheet 16 of 162 for Miscellaneous Repair Details.

The number, location, and orientation of support boxes shall be determined by the manufacturer. All boxes shall be located to miss the top flanges of the girders. Modular expansion joints shall be assembled in their final relative position with ends in place for shop inspection and acceptance.

MODEL: Default
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8/16/2024 11:11:44 AM

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME =	Jesker	DESIGNED -	JBE	REVISED -	
		CHECKED -	CDK/BWP	REVISED -	
PLOT SCALE =	0.167 ' / in.	DRAWN -	JBE	REVISED -	
PLOT DATE =	8/16/2024	CHECKED -	CDK/BWP	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

JOINT REPLACEMENT DETAILS - PIER 3
STRUCTURE NO. 064-0035

SHEET 9 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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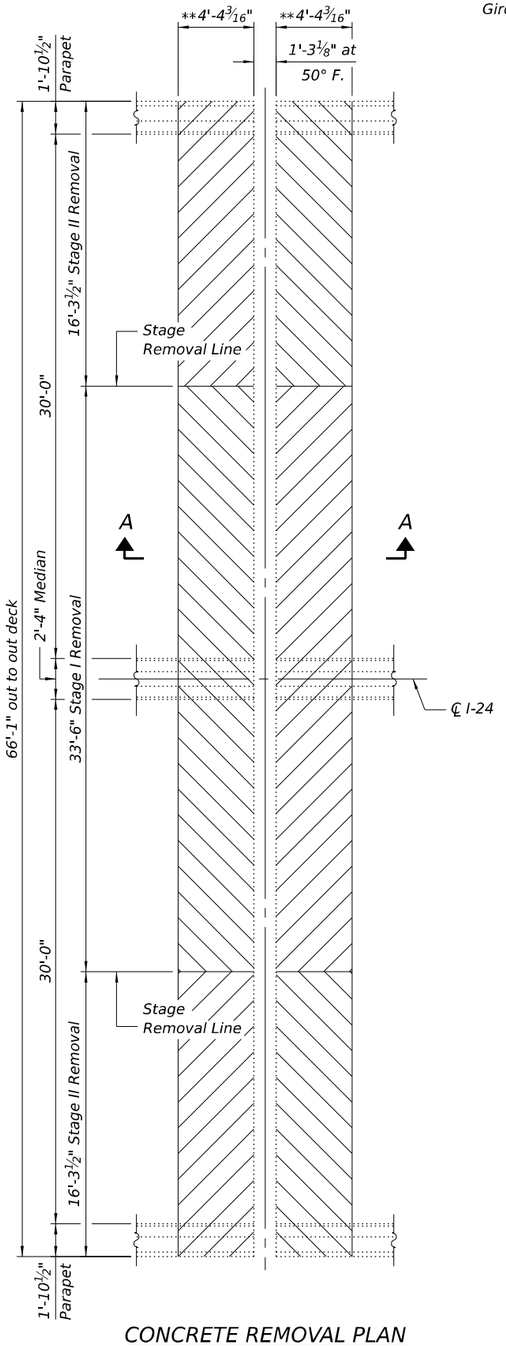
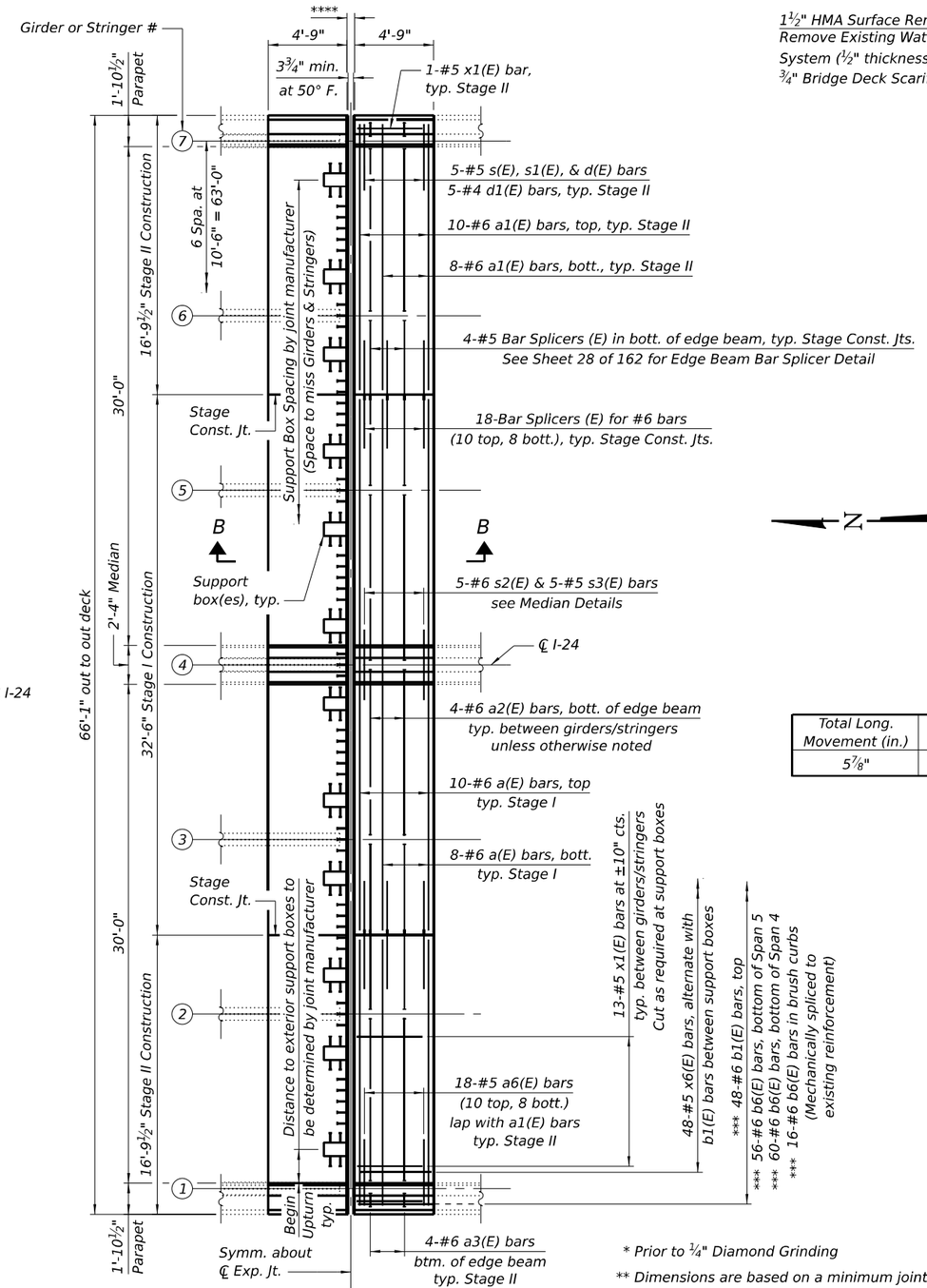
		CONTRACT NO. 78972		
ILLINOIS	FED. AID PROJECT			

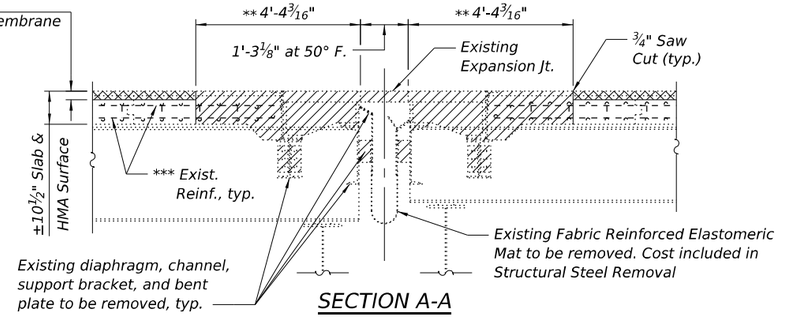


CONCRETE REMOVAL PLAN

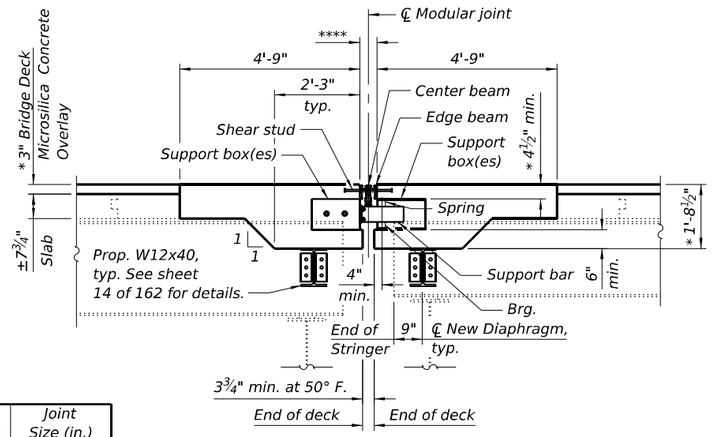


CONCRETE REPLACEMENT PLAN

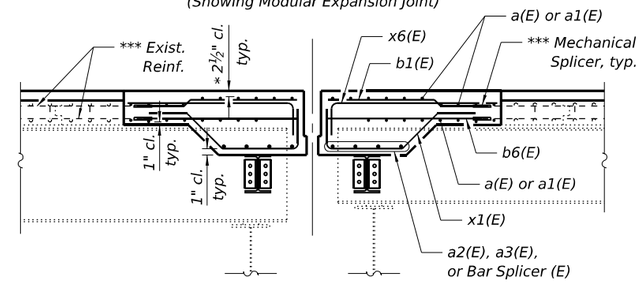
1½" HMA Surface Removal,
Remove Existing Waterproofing Membrane
System (½" thickness assumed)
¾" Bridge Deck Scarification



SECTION A-A



SECTION B-B
(Showing Modular Expansion Joint)



SECTION B-B
(Showing reinforcement)
(See Section B-B showing Modular Expansion Joint for information not shown)

Total Long. Movement (in.)	Total Lateral Movement (in.)	Joint Size (in.)
5 7/8"	0"	6"

* Prior to ¼" Diamond Grinding

** Dimensions are based on a minimum joint width of 5½". If the actual joint width is wider than this value, dimensional adjustments may be required.

*** Cut existing reinforcement 6" from removal line to facilitate installation of Mechanical Splicers.

**** Joint width, per manufacturer. Minimum of 5½"

Notes:
Hatched areas indicate Concrete Removal. Cross hatched areas indicate Overlay Removal.
Actual dimensions may vary depending on modular joint manufacturer's design.
Modular expansion joints shall be adjusted for temperature prior to placing concrete.
Modular joint assemblies shall be temporarily supported off beam ends until the concrete is placed. Additional supports, if required by design, shall be detailed on the shop drawings to connect to proposed W12 diaphragms.
Bars may be adjusted in the field if necessary to miss joint support boxes, as approved by the Engineer.
See Sheet 14 of 162 for Section at Modular Joint, Parapet & Median Details, Reinforcement Details, and Bill of Material.
See Sheet 16 of 162 for Miscellaneous Repair Details.
The number, location, and orientation of support boxes shall be determined by the manufacturer. All boxes shall be located to miss the top flanges of the girders. Modular expansion joints shall be assembled in their final relative position with ends in place for shop inspection and acceptance.

MODEL: Default
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8/16/2024 11:11:46 AM

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

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PLOT DATE =	8/16/2024	CHECKED -	CDK/BWP	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

JOINT REPLACEMENT DETAILS - PIER 4
STRUCTURE NO. 064-0035
SHEET 10 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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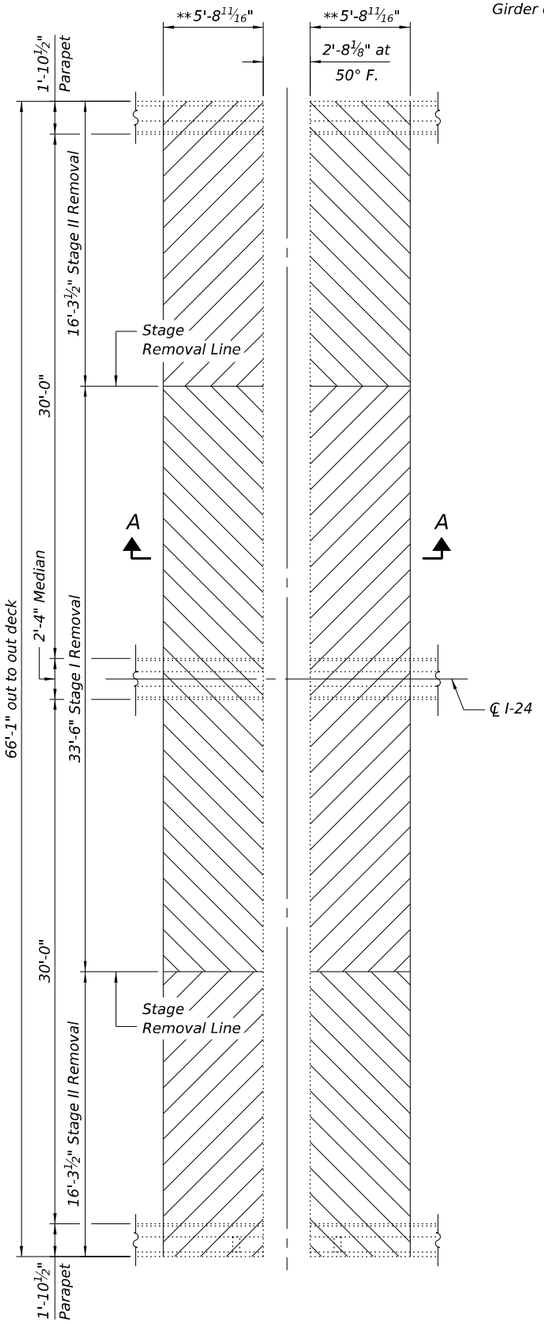
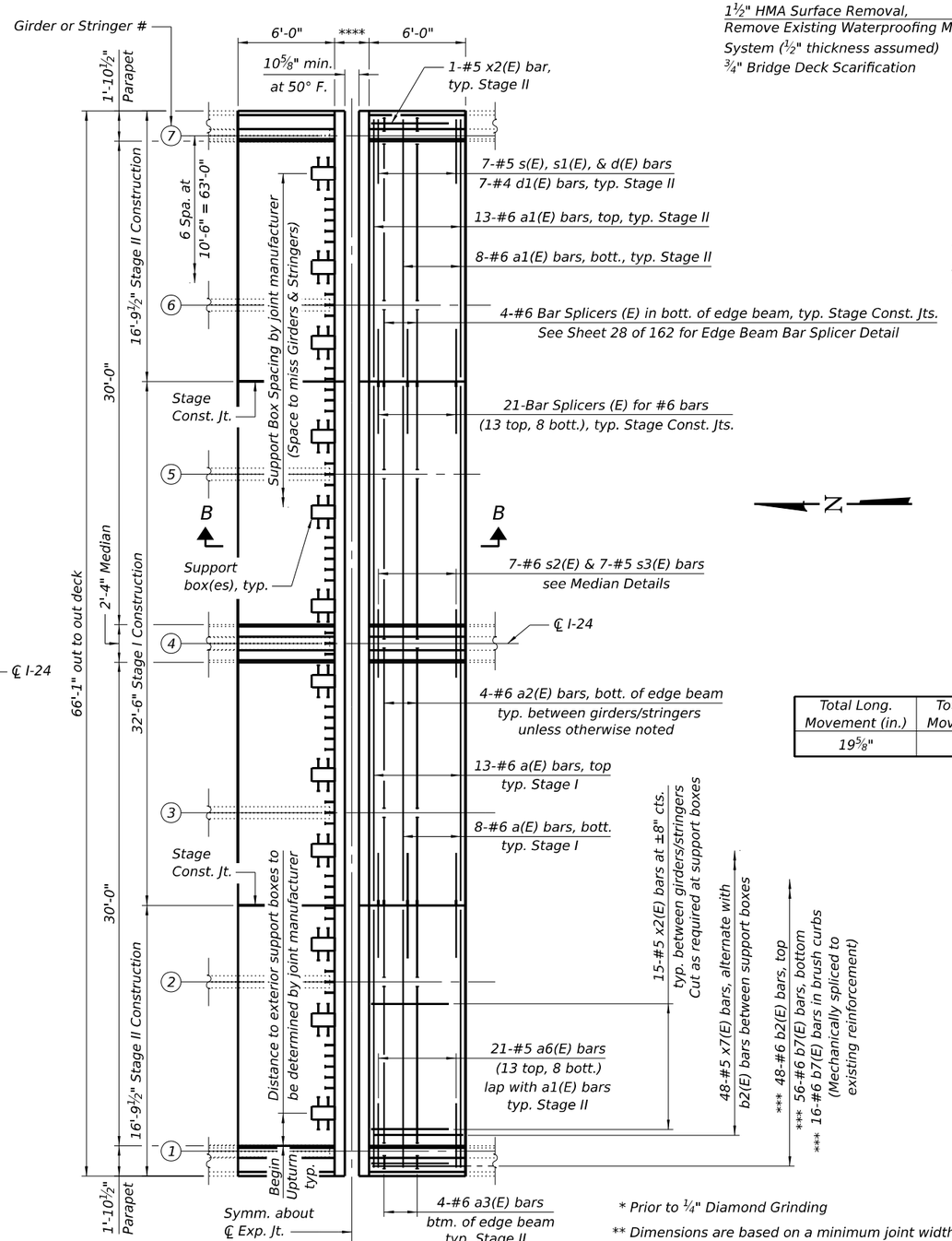
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

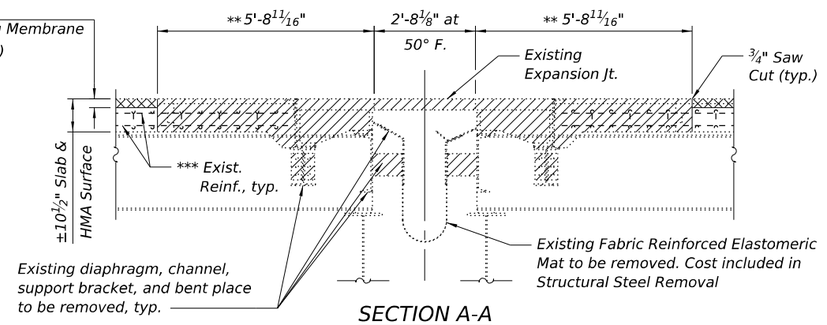


CONCRETE REMOVAL PLAN

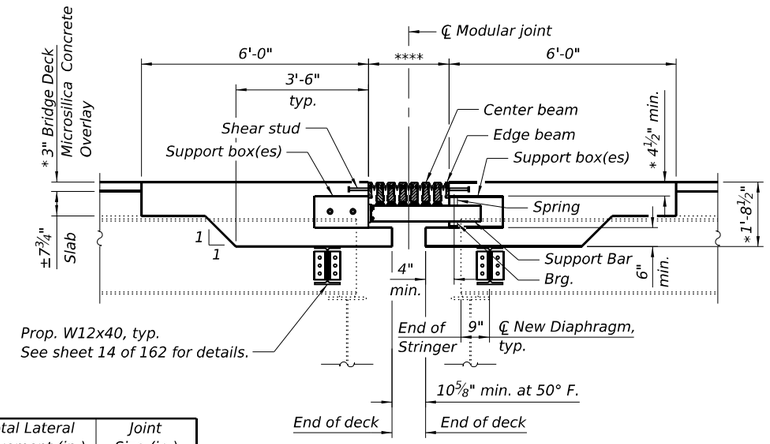


SHOWING JOINT DETAILS SHOWING REINFORCEMENT

CONCRETE REPLACEMENT PLAN



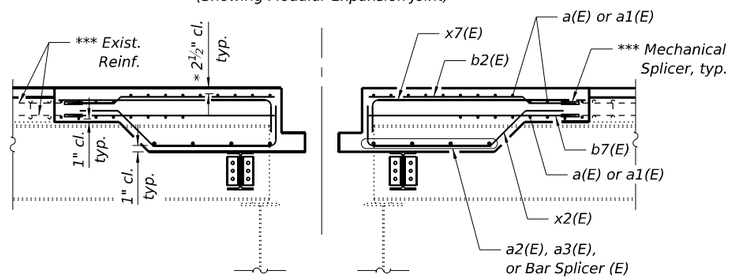
SECTION A-A



SECTION B-B

(Showing Modular Expansion Joint)

Total Long. Movement (in.)	Total Lateral Movement (in.)	Joint Size (in.)
19 5/8"	0"	21"



SECTION B-B

(Showing reinforcement)

(See Section B-B showing Modular Expansion Joint for information not shown)

* Prior to ¼" Diamond Grinding

** Dimensions are based on a minimum joint width of 2'-1½". If the actual joint width is wider than this value, dimensional adjustments may be required.

*** Cut existing reinforcement 6" from removal line to facilitate installation of Mechanical Splicers.

**** Joint width, per manufacturer. Minimum of 2'-1½"

Notes:

Hatched areas indicate Concrete Removal. Cross hatched areas indicate Overlay Removal.

Actual dimensions may vary depending on modular joint manufacturer's design.

Modular expansion joints shall be adjusted for temperature prior to placing concrete.

Modular joint assemblies shall be temporarily supported off beam ends until the concrete is placed. Additional supports, if required by design, shall be detailed on the shop drawings to connect to proposed W12 diaphragms.

Bars may be adjusted in the field if necessary to miss joint support boxes, as approved by the Engineer.

See Sheet 14 of 162 for Section at Modular Joint, Parapet & Median Details, Reinforcement Details, and Bill of Material.

See Sheet 16 of 162 for Miscellaneous Repair Details.

The number, location, and orientation of support boxes shall be determined by the manufacturer. All boxes shall be located to miss the top flanges of the girders. Modular expansion joints shall be assembled in their final relative position with ends in place for shop inspection and acceptance.

MODEL: Default
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8/16/2024 11:11:47 AM

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

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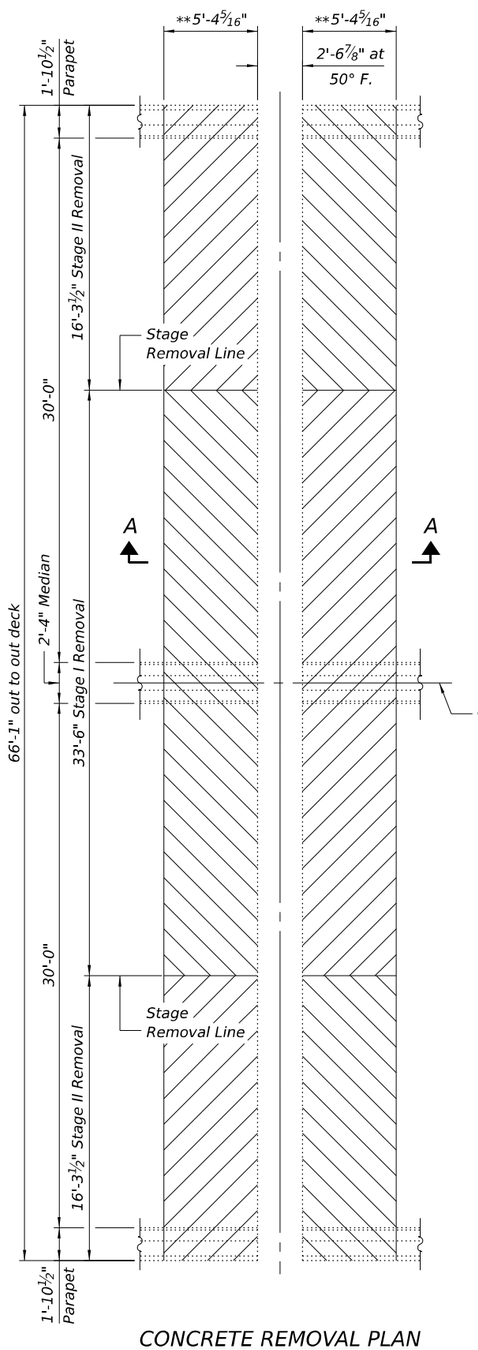
		CHECKED -	CDK/BWP	REVISED -	
PLOT SCALE =	0.167 ' / in.	DRAWN -	JBE	REVISED -	
PLOT DATE =	8/16/2024	CHECKED -	CDK/BWP	REVISED -	

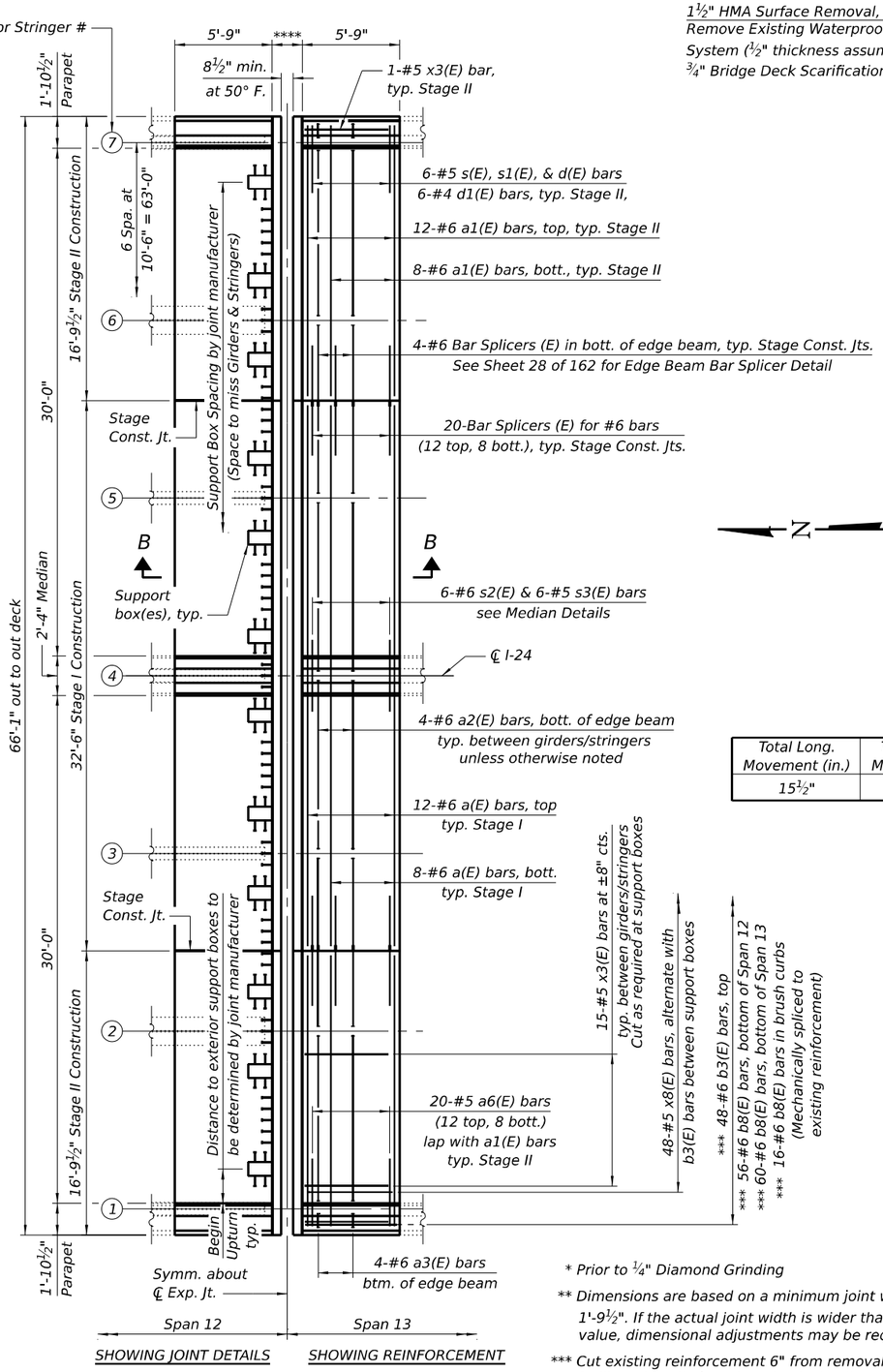
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

JOINT REPLACEMENT DETAILS - PIER 8
STRUCTURE NO. 064-0035
SHEET 11 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	72
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



CONCRETE REMOVAL PLAN



CONCRETE REPLACEMENT PLAN

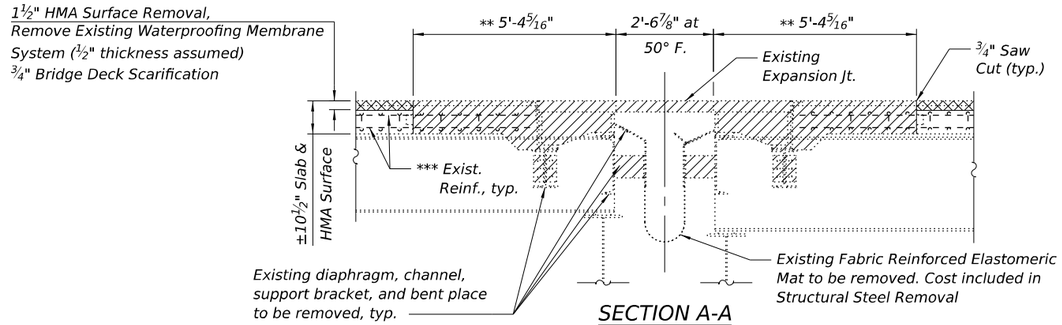
Total Long. Movement (in.)	Total Lateral Movement (in.)	Joint Size (in.)
15 1/2"	0"	18"

* Prior to 1/4" Diamond Grinding

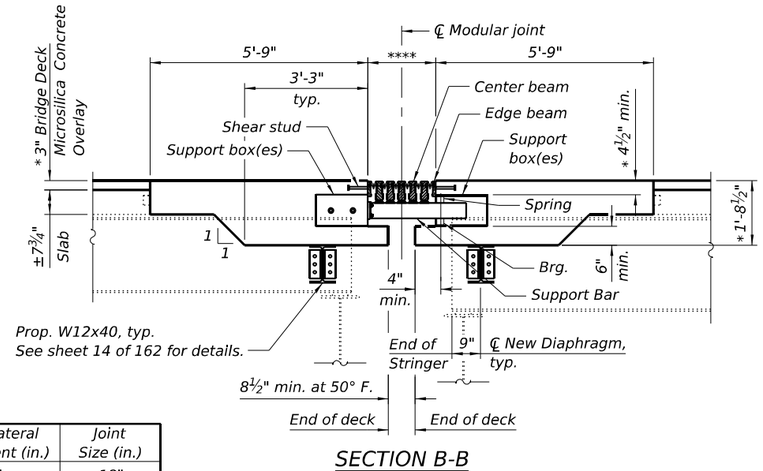
** Dimensions are based on a minimum joint width of 1'-9 1/2". If the actual joint width is wider than this value, dimensional adjustments may be required.

*** Cut existing reinforcement 6" from removal line to facilitate installation of Mechanical Splicers.

**** Joint width, per manufacturer. Minimum of 1'-9 1/2"

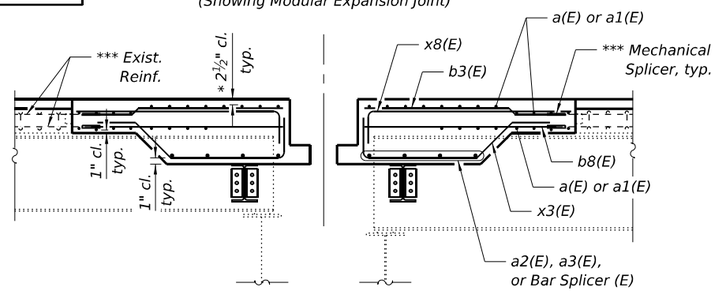


SECTION A-A



SECTION B-B

(Showing Modular Expansion Joint)



SECTION B-B

(Showing reinforcement)

(See Section B-B showing Modular Expansion Joint for information not shown)

Notes:

Hatched areas indicate Concrete Removal. Cross hatched areas indicate Overlay Removal.

Actual dimensions may vary depending on modular joint manufacturer's design.

Modular expansion joints shall be adjusted for temperature prior to placing concrete.

Modular joint assemblies shall be temporarily supported off beam ends until the concrete is placed. Additional supports, if required by design, shall be detailed on the shop drawings to connect to proposed W12 diaphragms.

Bars may be adjusted in the field if necessary to miss joint support boxes, as approved by the Engineer. See Sheet 14 of 162 for Section at Modular Joint, Parapet & Median Details, Reinforcement Details, and Bill of Material.

See Sheet 16 of 162 for Miscellaneous Repair Details.

The number, location, and orientation of support boxes shall be determined by the manufacturer. All boxes shall be located to miss the top flanges of the girders. Modular expansion joints shall be assembled in their final relative position with ends in place for shop inspection and acceptance.

MODEL: Default
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8/16/2024 11:11:48 AM

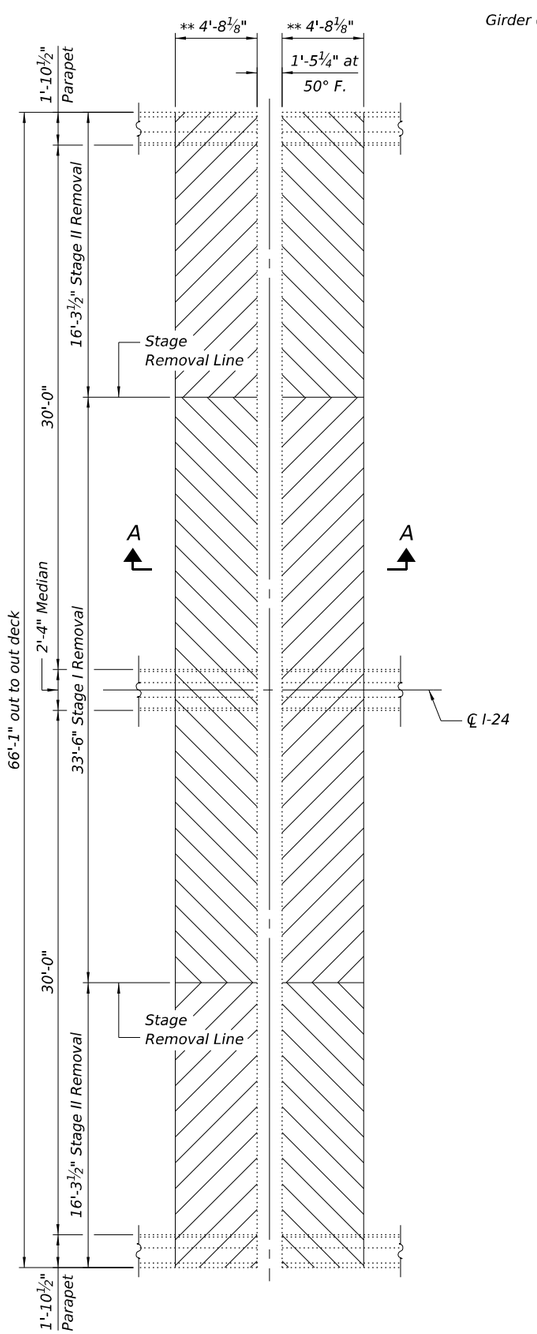
TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME =	Jesker	DESIGNED -	JBE	REVISED -	
		CHECKED -	CDK/BWP	REVISED -	
PLOT SCALE =	0.167 ' / in.	DRAWN -	JBE	REVISED -	
PLOT DATE =	8/16/2024	CHECKED -	CDK/BWP	REVISED -	

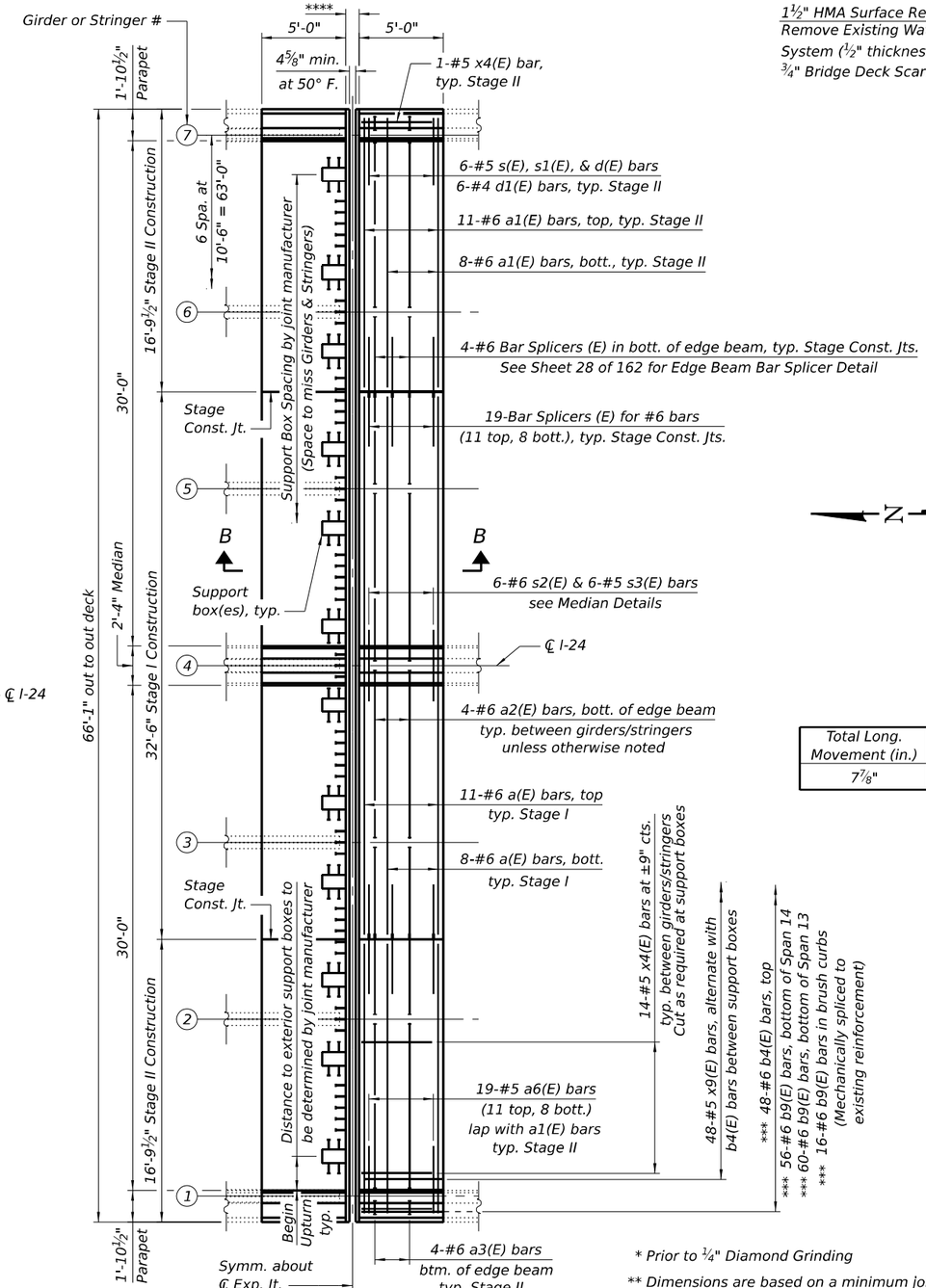
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

JOINT REPLACEMENT DETAILS - PIER 12
STRUCTURE NO. 064-0035
SHEET 12 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	73
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

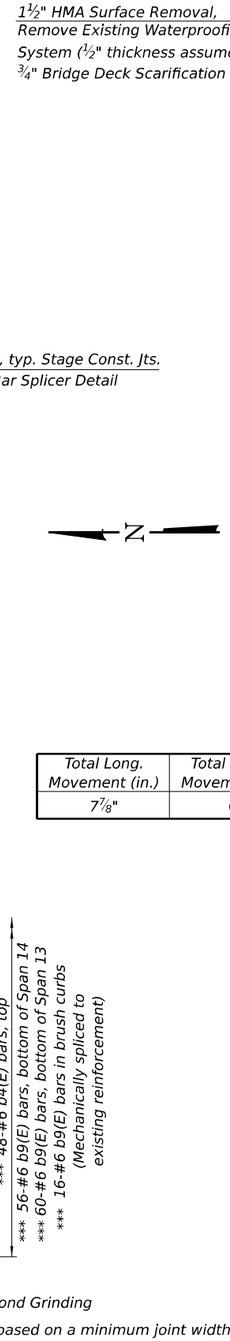


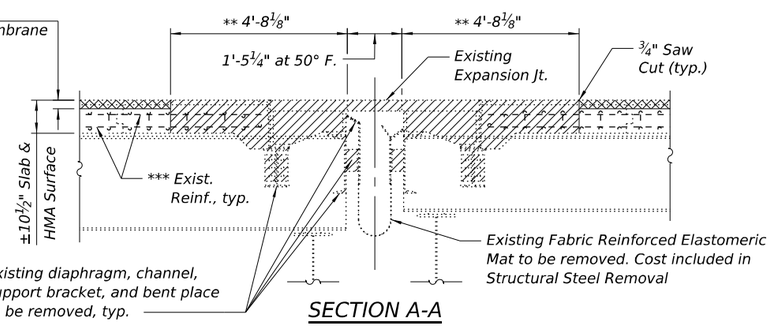
CONCRETE REMOVAL PLAN



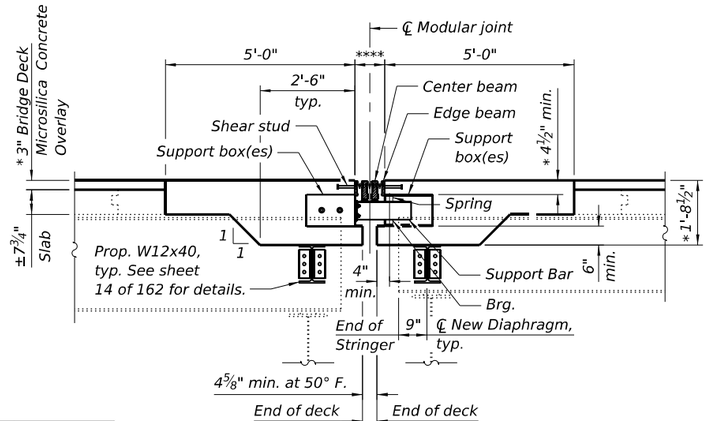
SHOWING JOINT DETAILS SHOWING REINFORCEMENT

CONCRETE REPLACEMENT PLAN





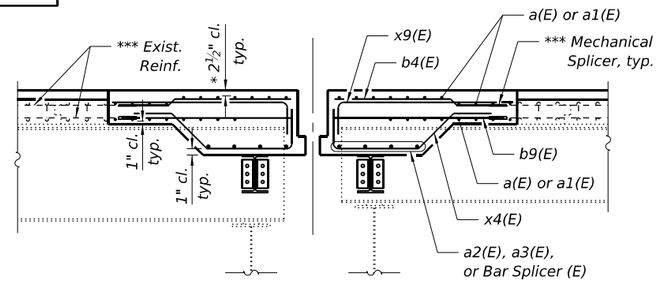
SECTION A-A



SECTION B-B

(Showing Modular Expansion Joint)

Total Long. Movement (in.)	Total Lateral Movement (in.)	Joint Size (in.)
7⅞"	0"	9"



SECTION B-B

(Showing reinforcement)

(See Section B-B showing Modular Expansion Joint for information not shown)

* Prior to ¼" Diamond Grinding

** Dimensions are based on a minimum joint width of 9½". If the actual joint width is wider than this value, dimensional adjustments may be required.

*** Cut existing reinforcement 6" from removal line to facilitate installation of Mechanical Splicers.

**** Joint width, per manufacturer. Minimum of 9½"

Notes:

Hatched areas indicate Concrete Removal. Cross hatched areas indicate Overlay Removal.

Actual dimensions may vary depending on modular joint manufacturer's design.

Modular expansion joints shall be adjusted for temperature prior to placing concrete.

Modular joint assemblies shall be temporarily supported off beam ends until the concrete is placed. Additional supports, if required by design, shall be detailed on the shop drawings to connect to proposed W12 diaphragms.

Bars may be adjusted in the field if necessary to miss joint support boxes, as approved by the Engineer.

See Sheet 14 of 162 for Section at Modular Joint, Parapet & Median Details, Reinforcement Details, and Bill of Material.

See Sheet 16 of 162 for Miscellaneous Repair Details.

The number, location, and orientation of support boxes shall be determined by the manufacturer. All boxes shall be located to miss the top flanges of the girders. Modular expansion joints shall be assembled in their final relative position with ends in place for shop inspection and acceptance.

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8/16/2024 11:11:50 AM

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

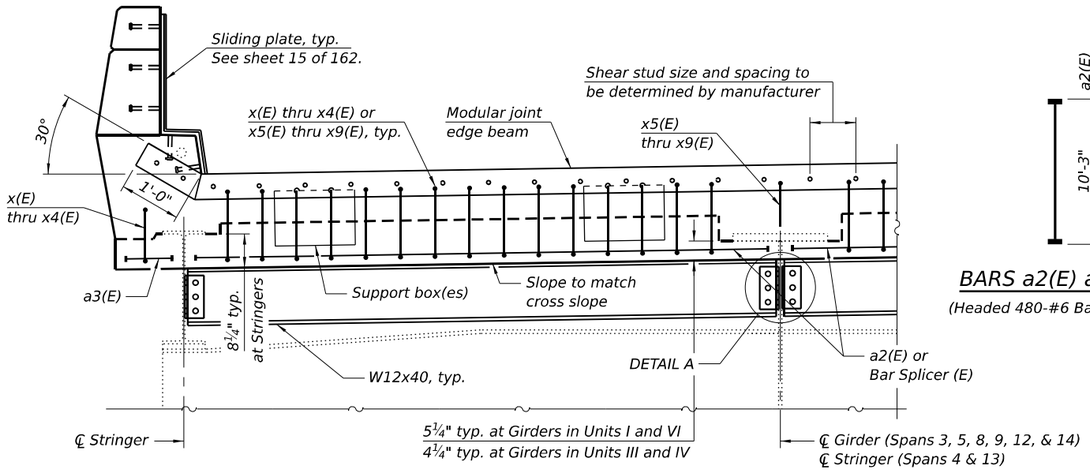
USER NAME =	jesker	DESIGNED -	JBE	REVISED -	
		CHECKED -	CDK/BWP	REVISED -	
PLOT SCALE =	0.167 ' / in.	DRAWN -	JBE	REVISED -	
PLOT DATE =	8/16/2024	CHECKED -	CDK/BWP	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

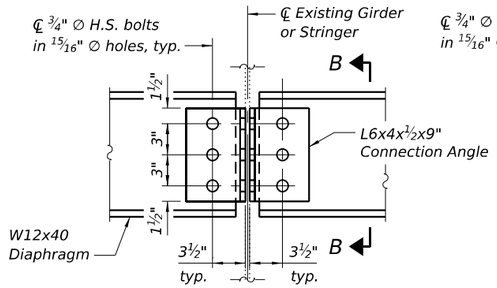
JOINT REPLACEMENT DETAILS - PIER 13
STRUCTURE NO. 064-0035
SHEET 13 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	74

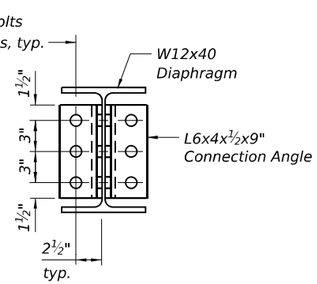
CONTRACT NO. 78972
ILLINOIS FED. AID PROJECT



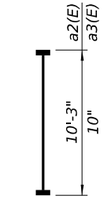
SECTION AT MODULAR JOINT



DETAIL A

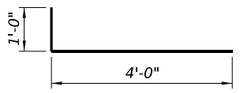


SECTION B-B

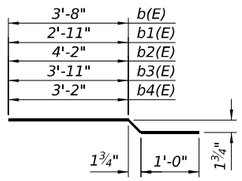


BARS a2(E) and a3(E)

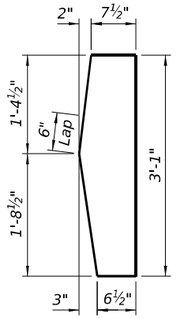
(Headed 480-#6 Bar Terminators)



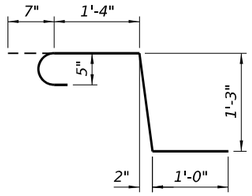
BAR a6(E)



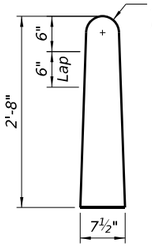
BARS b(E) thru b4(E)



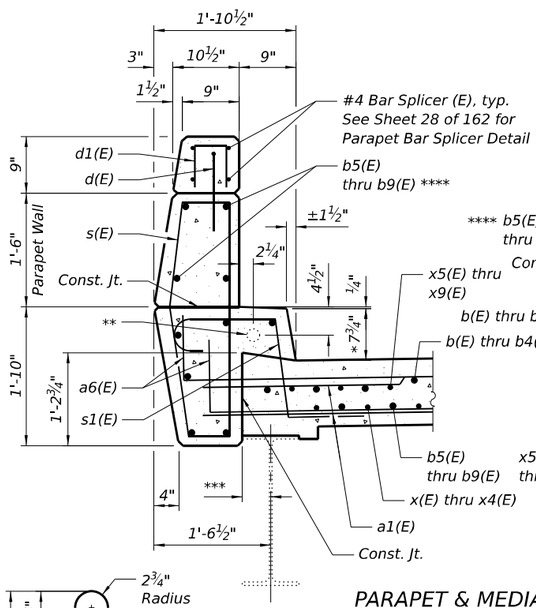
BAR s(E)

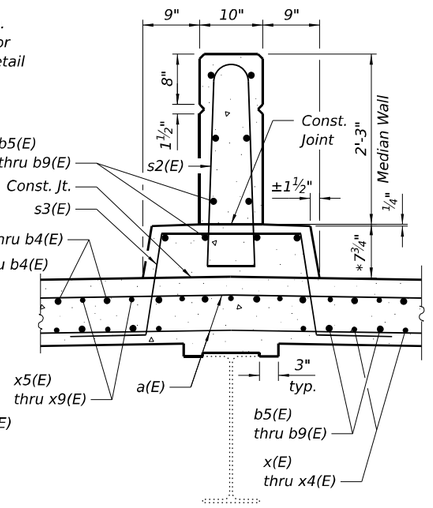


BAR s1(E)



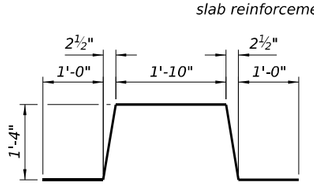
BAR s2(E)



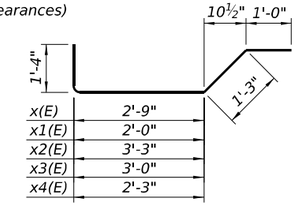


PARAPET & MEDIAN DETAILS

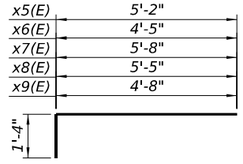
(See Joint Replacement sheets for slab reinforcement clearances)



BAR s3(E)



BARS x(E) thru x4(E)



BARS x5(E) thru x9(E)

BILL OF MATERIAL - PIER 3

Bar	No.	Size	Length	Shape
a(E)	40	#6	32'-2"	
a1(E)	80	#6	16'-1"	
a2(E)	32	#6	10'-3"	
a3(E)	16	#6	0'-10"	
a6(E)	80	#5	5'-0"	
b(E)	96	#6	4'-11"	
b5(E)	176	#6	4'-10"	
d(E)	24	#5	1'-7"	
d1(E)	24	#4	1'-7"	
s(E)	24	#5	7'-11"	
s1(E)	24	#5	4'-3"	
s2(E)	12	#6	7'-1"	
s3(E)	12	#5	6'-7"	
x(E)	184	#5	6'-4"	
x5(E)	96	#5	6'-6"	
Concrete Removal			Cu. Yd.	24.3
Concrete Superstructure			Cu. Yd.	42.4
Reinforcement Bars, Epoxy Coated			Pound	9230
Furnishing and Erecting Structural Steel			Pound	5580
Modular Expansion Joint, 15"			Foot	66

BILL OF MATERIAL - PIER 4

Bar	No.	Size	Length	Shape
a(E)	36	#6	32'-2"	
a1(E)	72	#6	16'-1"	
a2(E)	32	#6	10'-3"	
a3(E)	16	#6	0'-10"	
a6(E)	72	#5	5'-0"	
b1(E)	96	#6	4'-2"	
b6(E)	176	#6	4'-1"	
d(E)	20	#5	1'-7"	
d1(E)	20	#4	1'-7"	
s(E)	20	#5	7'-11"	
s1(E)	20	#5	4'-3"	
s2(E)	10	#6	7'-1"	
s3(E)	10	#5	6'-7"	
x1(E)	160	#5	5'-7"	
x6(E)	96	#5	5'-9"	
Concrete Removal			Cu. Yd.	20.3
Concrete Superstructure			Cu. Yd.	34.8
Reinforcement Bars, Epoxy Coated			Pound	8040
Furnishing and Erecting Structural Steel			Pound	5580
Modular Expansion Joint, 6"			Foot	66

BILL OF MATERIAL - PIER 8

Bar	No.	Size	Length	Shape
a(E)	42	#6	32'-2"	
a1(E)	84	#6	16'-1"	
a2(E)	32	#6	10'-3"	
a3(E)	16	#6	0'-10"	
a6(E)	84	#5	5'-0"	
b2(E)	96	#6	5'-5"	
b7(E)	172	#6	5'-4"	
d(E)	28	#5	1'-7"	
d1(E)	28	#4	1'-7"	
s(E)	28	#5	7'-11"	
s1(E)	28	#5	4'-3"	
s2(E)	14	#6	7'-1"	
s3(E)	14	#5	6'-7"	
x2(E)	184	#5	6'-10"	
x7(E)	96	#5	7'-0"	
Concrete Removal			Cu. Yd.	26.8
Concrete Superstructure			Cu. Yd.	47.9
Reinforcement Bars, Epoxy Coated			Pound	9860
Furnishing and Erecting Structural Steel			Pound	5580
Modular Expansion Joint, 21"			Foot	66

BILL OF MATERIAL - PIER 12

Bar	No.	Size	Length	Shape
a(E)	40	#6	32'-2"	
a1(E)	80	#6	16'-1"	
a2(E)	32	#6	10'-3"	
a3(E)	16	#6	0'-10"	
a6(E)	80	#5	5'-0"	
b3(E)	96	#6	5'-2"	
b8(E)	176	#6	5'-1"	
d(E)	24	#5	1'-7"	
d1(E)	24	#4	1'-7"	
s(E)	24	#5	7'-11"	
s1(E)	24	#5	4'-3"	
s2(E)	12	#6	7'-1"	
s3(E)	12	#5	6'-7"	
x3(E)	184	#5	6'-7"	
x8(E)	96	#5	6'-9"	
Concrete Removal			Cu. Yd.	25.3
Concrete Superstructure			Cu. Yd.	45.4
Reinforcement Bars, Epoxy Coated			Pound	9400
Furnishing and Erecting Structural Steel			Pound	5580
Modular Expansion Joint, 18"			Foot	66

BILL OF MATERIAL - PIER 13

Bar	No.	Size	Length	Shape
a(E)	38	#6	32'-2"	
a1(E)	76	#6	16'-1"	
a2(E)	32	#6	10'-3"	
a3(E)	16	#6	0'-10"	
a6(E)	76	#5	5'-0"	
b4(E)	96	#6	4'-5"	
b9(E)	176	#6	4'-4"	
d(E)	24	#5	1'-7"	
d1(E)	24	#4	1'-7"	
s(E)	24	#5	7'-11"	
s1(E)	24	#5	4'-3"	
s2(E)	12	#6	7'-1"	
s3(E)	12	#5	6'-7"	
x4(E)	172	#5	5'-10"	
x9(E)	96	#5	6'-0"	
Concrete Removal			Cu. Yd.	22.0
Concrete Superstructure			Cu. Yd.	37.7
Reinforcement Bars, Epoxy Coated			Pound	8590
Furnishing and Erecting Structural Steel			Pound	5580
Modular Expansion Joint, 9"			Foot	66

* Prior to grinding

** 2"∅ Conduit at East Curb only. Care should be taken not to damage existing utility conduits. Any damage to the conduits shall be repaired at the Contractor's expense

*** 4½" at Units I, III, IV, and VI, 5¼" at Units II and V

**** See Sheet 16 of 162 for Typical Parapet & Median Wall Elevation

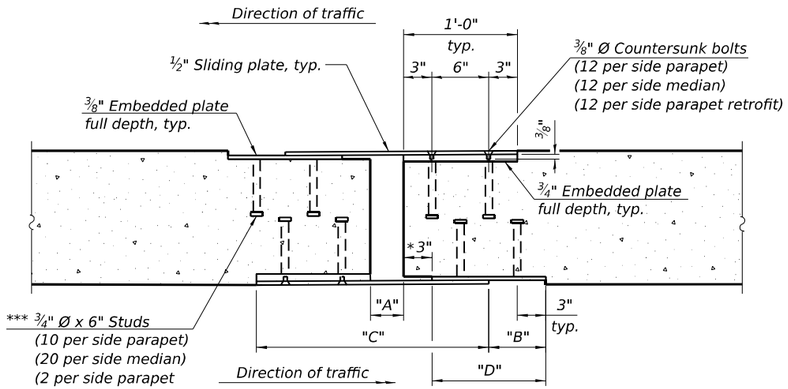
Notes:

Two hardened washers required for each set of oversized holes.

All diaphragms and connection angles shall be AASHTO M270, Grade 50.

Bar terminators, paid for separately. See Total Bill of Material.

See Sheet 8 of 162 for d(E) and d1(E) reinforcement bar details.

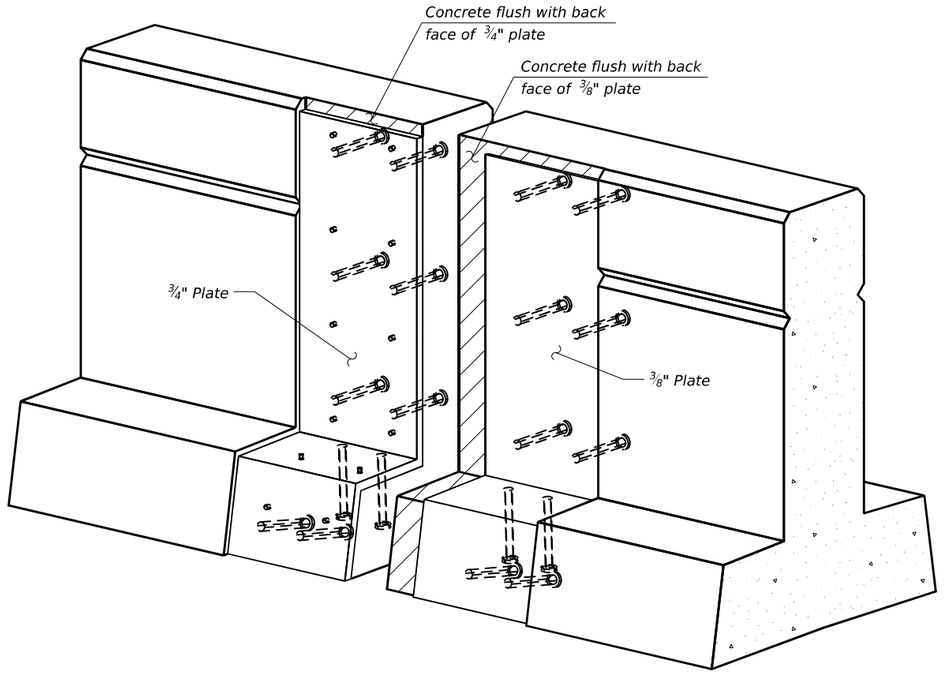


SECTION B-B

(Showing detail at Median, omit outside Sliding P̲L's at Parapet)

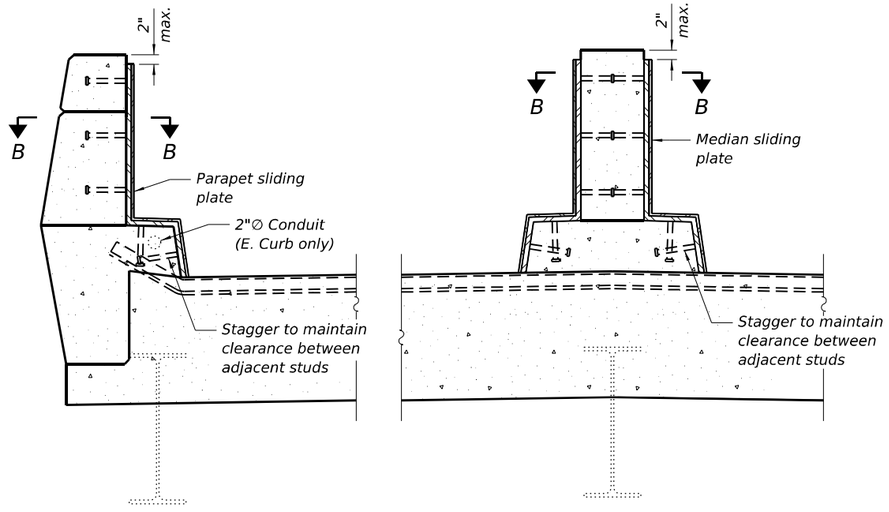
SLIDING P̲L TABLE OF DIMENSIONS

Location	Dim. "A" at 50° F.	Dim. "B" at 50° F.	Dim. "C" (P̲L Length)	Dim. "D" (P̲L Length)
Relief Joints	6"	2"	2'-4"	1'-0"
Cell A	8⅛"	2⅛"	2'-6"	1'-0"
Cell B	1'-0¼"	4¼"	2'-8"	1'-0"
Pier 3	** 1'-5½"	6⅞"	** 3'-3⅜"	1'-1¾"
Pier 4	** 5½"	3¾"	** 2'-2½"	9¾"
Pier 8	** 2'-1½"	10⅝"	** 4'-3⅛"	1'-9¼"
Pier 12	** 1'-9½"	8½"	** 3'-9"	1'-5"
Pier 13	** 9½"	4⅝"	** 2'-6½"	10⅝"



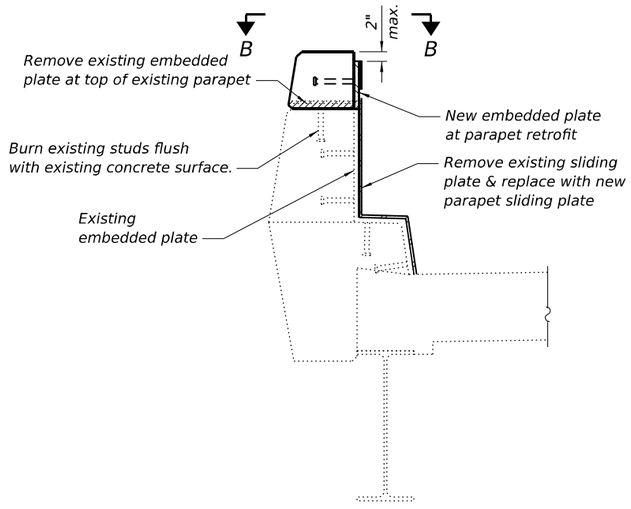
TRIMETRIC VIEW

(Showing median)
(Showing embedded plates only)



SECTION AT PARAPET & MEDIAN

(At Piers 3, 4, 8, 12, & 13)



SECTION AT PARAPET

(At Cells A & B and Relief Joints)

Notes:
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.
Cost of parapet and median sliding plates, embedded plates, and anchorage studs at Piers 3, 4, 8, 12, and 13 is included with Modular Expansion Joints of the size specified.
Actual dimension of joint opening may vary based on modular joint manufacturer's design.
Cost of removing existing sliding and embedded plates, new parapet sliding plates, new embedded plates, and new anchorage studs at Cells A & B and Relief Joints is included with Retrofit Concrete Parapet.

* Omit at Relief Joints, Cell A, and Cell B

** Dimensions are based on minimum joint widths shown on Sheets 9 through 13 of 162. If the actual joint widths are wider than this value, dimensional adjustments may be required.

*** Granular or solid flux filled headed studs conforming to Article 1006.32 of the Standard Specifications, automatically end welded.

MODEL: Default
FILE NAME: P:\2021\210593\I&L - FAI 24 Ohio River Bridge Painting\4 CADD - DWG\4.4 Struc\0640035-78972-015-Modified Sliding Plate Details.dgn
8/16/2024 11:11:52 AM

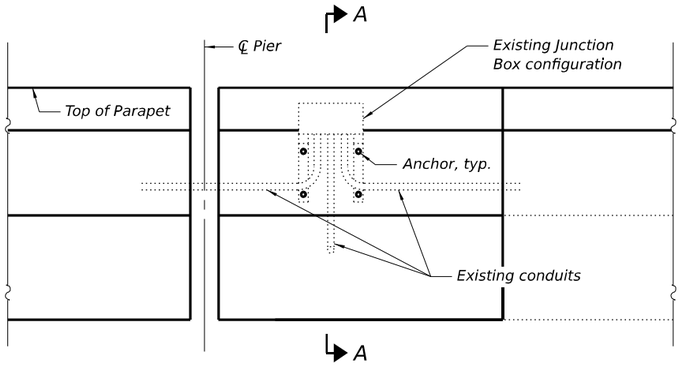
TWM ENGINEERING & GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME =	jesker	DESIGNED -	JBE	REVISED -	
		CHECKED -	CDK/BWP	REVISED -	
PLOT SCALE =	0.167 ' / in.	DRAWN -	JBE	REVISED -	
PLOT DATE =	8/16/2024	CHECKED -	CDK/BWP	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

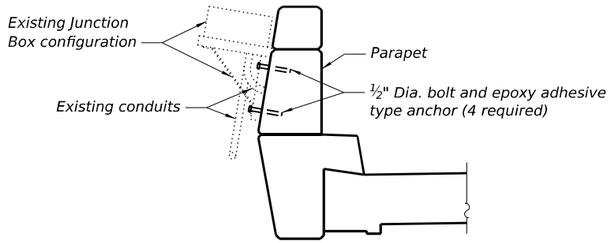
MODIFIED SLIDING PLATE DETAILS
STRUCTURE NO. 064-0035
SHEET 15 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	76
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

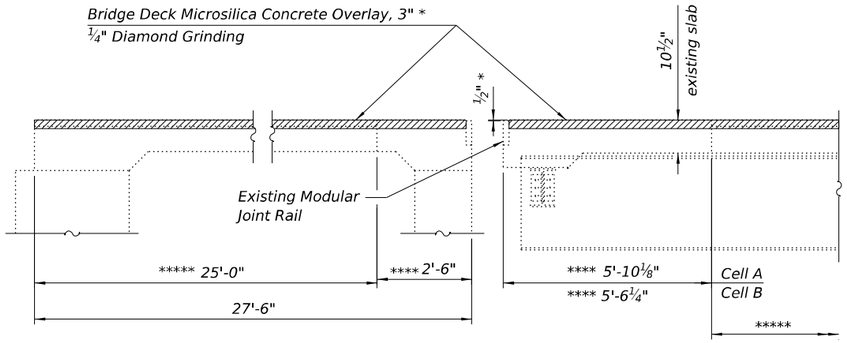


EXISTING JUNCTION BOX DETAIL (REMOVE & REINSTALL)

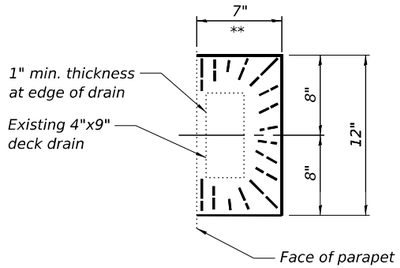
(Typical for Piers 3 through 13, and Units 3 and 13)
(Showing detail at joint replacement, similar at other locations)



SECTION A-A



OVERLAY DETAILS AT CELLS A & B

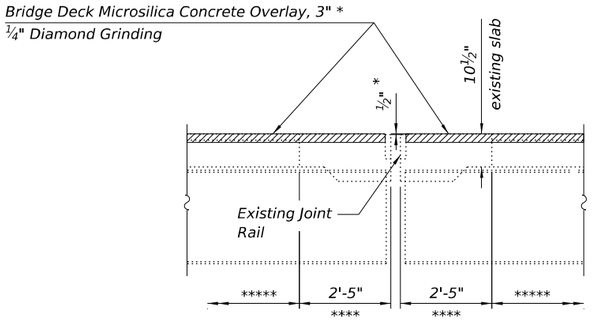


EXISTING DECK DRAIN

** Slope to drain

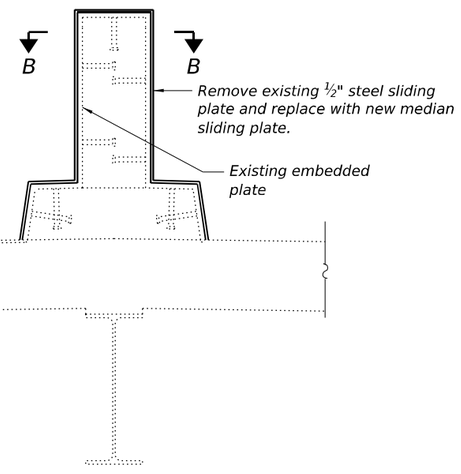
PARAPET & MEDIAN WALL BAR TABLE

Location	Bar
Pier 3	b5(E)
Pier 4	b6(E)
Pier 8	b7(E)
Pier 12	b8(E)
Pier 13	b9(E)

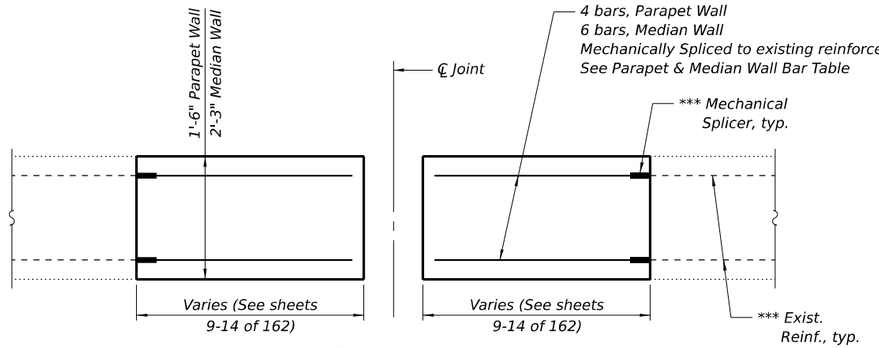


OVERLAY DETAILS AT RELIEF JOINTS

(6 Locations, See Sheet 1 of 162)



SECTION AT MEDIAN OF CELL B



TYPICAL PARAPET & MEDIAN WALL ELEVATION

(See Sheet 14 of 162 for Bill of Material and information not shown)

*** Cut existing reinforcement 6" from removal line to facilitate installation of Mechanical Splicers

* Prior to grinding
**** 2¾" Bridge Deck Scarification
***** 1½" HMA Surface Removal, Remove Existing Waterproofing Membrane System (½" thickness assumed), ¾" Bridge Deck Scarification

Note:
Cost of removal and reinstallation of existing junction boxes shall be included in the cost of "Concrete Removal".
Cost of removing and replacing median sliding plate at Cell B is paid for as Joint Repair.
Steel sliding plate shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.
See Sheet 15 of 162 for Section B-B.

MODEL: Default
FILE NAME: P:\2021210593\E&L - FAI 24 Ohio River Bridge Painting\4 CADD - DWG\4.4 Struc\0640035-78972-016-Repair Details.dgn
8/16/2024 11:11:53 AM

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC.
WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = Jesker	DESIGNED - JBE	REVISED -	
	CHECKED - CDK/BWP	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN - JBE	REVISED -	
PLOT DATE = 8/16/2024	CHECKED - CDK/BWP	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MISCELLANEOUS REPAIR DETAILS
STRUCTURE NO. 064-0035
SHEET 16 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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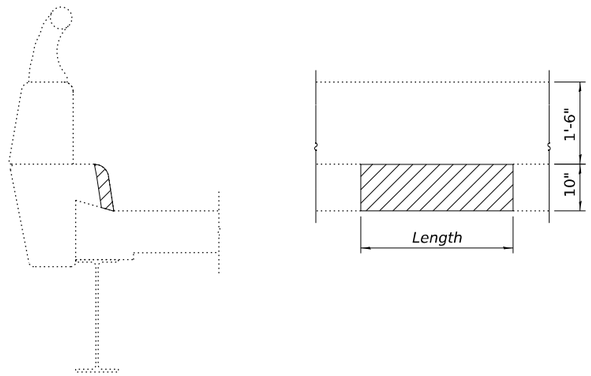
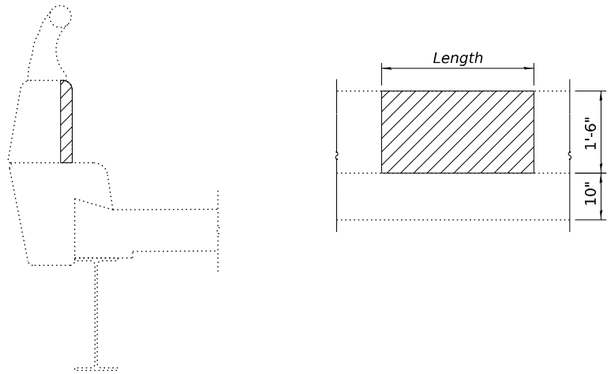
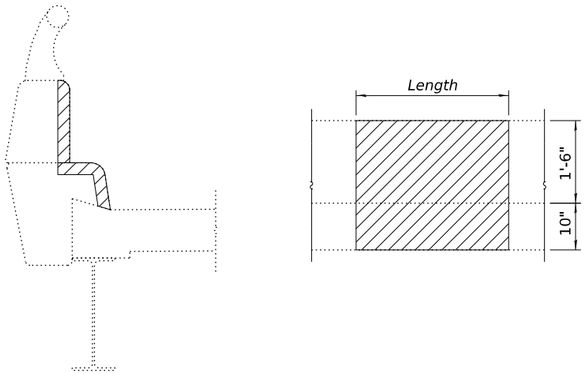
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



REPAIR 1

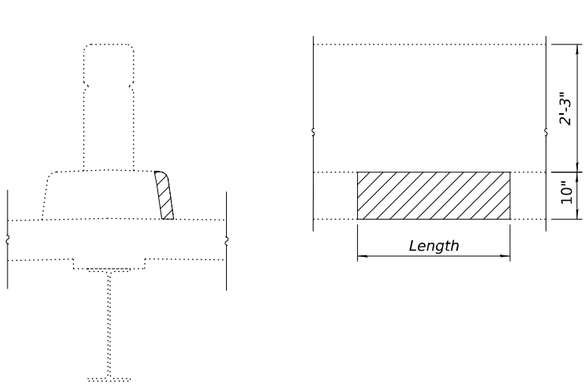


REPAIR 2

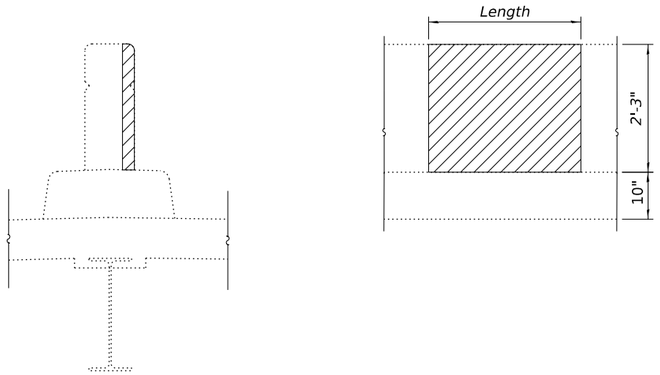


REPAIR 3

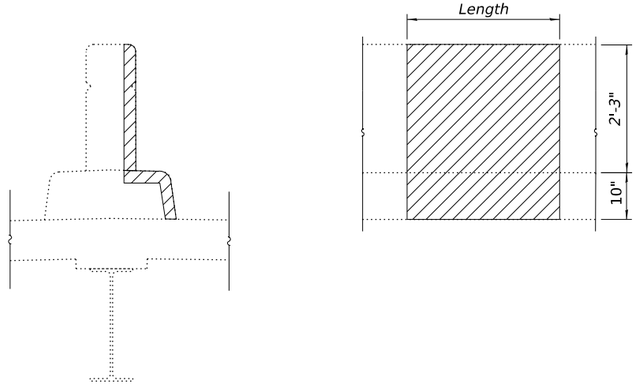
PARAPET REPAIRS



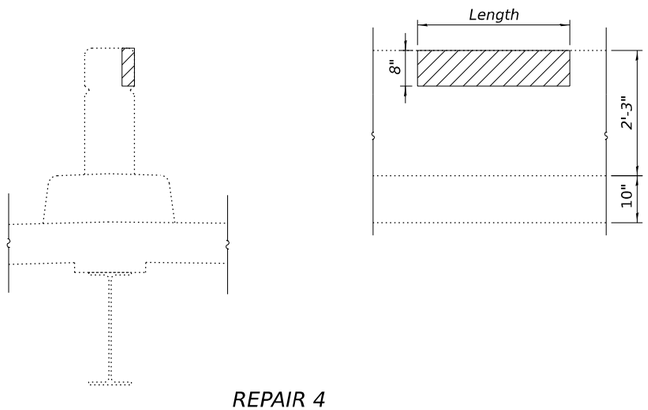
REPAIR 1



REPAIR 2



REPAIR 3



REPAIR 4

MEDIAN BARRIER REPAIRS

Note:
See Tables on Sheets 18 thru 23 of 162 for the repair length dimension and location.
See Sheet 4 of 162 for Retrofit Concrete Parapet and Concrete Glare Screen.

MODEL: Default
FILE NAME: P:\2021\210593\l6L - FAI 24 Ohio River Bridge Painting\4 CADD - DWG\4.4 Struc\0640035-78972-017-Parapet Patching Details.dgn
8/16/2024 11:11:54 AM

TWM ENGINEERING & GEOSPATIAL SERVICES
TWM, INC.
WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO. 184-001220

USER NAME =	jesker	DESIGNED -	TCS	REVISED -	
		CHECKED -	BWP	REVISED -	
PLOT SCALE =	0:2.0000 ':" / in.	DRAWN -	TCS	REVISED -	
PLOT DATE =	8/16/2024	CHECKED -	BWP	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PARAPET & MEDIAN BARRIER REPAIR DETAILS
STRUCTURE NO. 064-0035
SHEET 17 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	78
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

WB MEDIAN BARRIER												
	REPAIR #1			REPAIR #2			REPAIR #3			REPAIR #4		
STATION	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)
430+90							8	3.08	24.64			
431+14	24	0.83	19.92									
431+91	65	0.83	53.95									
433+42	130	0.83	107.9									
433+77	25	0.83	20.75									
435+03	3	0.83	2.49									
435+25	10	0.83	8.3									
435+79	28	0.83	23.24									
435+85							6	3.08	18.48			
436+22	25	0.83	20.75									
436+82							10	3.08	30.8			
437+17							30	3.08	92.4			
437+27							3	3.08	9.24			
437+28.20	℄ Pier 3											
437+61	4	0.83	3.32									
438+61	18	0.83	14.94									
438+77							2	3.08	6.16			
438+83							3	3.08	9.24			
438+97	10	0.83	8.3									
439+08	4	0.83	3.32									
439+37	15	0.83	12.45									
439+69	4	0.83	3.32									
439+78	3	0.83	2.49									
440+23	3	0.83	2.49									
440+67	22	0.83	18.26									
441+45	4	0.83	3.32									
441+61	5	0.83	4.15									
442+09	8	0.83	6.64									
443+19				2	2.25	4.5						
443+51							6	3.08	18.48			
443+59.54	℄ Pier 4											
443+71							14	3.08	43.12			
444+00	22	0.83	18.26									
444+08							8	3.08	24.64			
444+28	20	0.83	16.6									
444+31							3	3.08	9.24			
444+57	26	0.83	21.58									
444+79	3	0.83	2.49									
444+96				2	2.25	4.5						
446+66							3	3.08	9.24			
446+82	8	0.83	6.64									
447+13				3	2.25	6.75						
447+48	6	0.83	4.98									
447+65	5	0.83	4.15									
447+90	15	0.83	12.45									
448+86	90	0.83	74.7									
449+02	5	0.83	4.15									
449+39	13	0.83	10.79									
449+73	24	0.83	19.92									
450+11	20	0.83	16.6									
450+45	30	0.83	24.9									
450+52				2	2.25	4.5						
450+68	20	0.83	16.6									
450+78	2	0.83	1.66									
451+74	10	0.83	8.3									
452+32	6	0.83	4.98									
452+45	4	0.83	3.32									
452+85							4	3.08	12.32			
452+93							4	3.08	12.32			
453+11							3	3.08	9.24			
453+22				2	2.25	4.5						
453+34				2	2.25	4.5						

WB MEDIAN BARRIER												
	REPAIR #1			REPAIR #2			REPAIR #3			REPAIR #4		
STATION	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)
453+45							3	3.08	9.24			
453+59							3	3.08	9.24			
453+90							10	3.08	30.8			
453+99				3	2.25	6.75						
454+10				6	2.25	13.5						
454+22				1	2.25	2.25						
454+54	8	0.83	6.64									
455+36	15	0.83	12.45									
455+37	5	0.83	4.15									
455+56							3	3.08	9.24			
455+63.63	℄ Pier 8											
455+71							7	3.08	21.56			
455+78	7	0.83	5.81									
455+89	4	0.83	3.32									
455+99	3	0.83	2.49									
456+27	11	0.83	9.13									
456+47	10	0.83	8.3									
456+60	6	0.83	4.98									
456+63							3	3.08	9.24			
456+72	9	0.83	7.47									
456+77				3	2.25	6.75						
456+86				2	2.25	4.5						
458+78	200	0.83	166									
458+94	12	0.83	9.96									
459+12	3	0.83	2.49									
459+19				3	2.25	6.75						
459+42	21	0.83	17.43									
459+82	30	0.83	24.9									
460+83	100	0.83	83									
460+87				1	2.25	2.25						
460+96	3	0.83	2.49									
461+16	2	0.83	1.66									
461+39	9	0.83	7.47									
461+50	5	0.83	4.15									
461+64							49	3.08	150.92			
461+66				2	2.25	4.5						
462+23	47	0.83	39.01									
462+27				2	2.25	4.5						
465+11	280	0.83	232.4									
465+20				2	2.25	4.5						
465+26	2	0.83	1.66									
465+92	12	0.83	9.96									
466+38	25	0.83	20.75									
466+73	15	0.83	12.45									
466+88	7	0.83	5.81									
467+14	3	0.83	2.49									
467+44	3	0.83	2.49									
467+60							3	3.08	9.24			
467+67.80	℄ Pier 12											
467+71				3	2.25	6.75						
468+51							2	3.08	6.16			
468+61	2	0.83	1.66									
468+68	3	0.83	2.49									
468+75	3	0.83	2.49									
468+92	10	0.83	8.3									
469+14	6	0.83	4.98									
469+22				8	2.25	18						
469+30							3	3.08	9.24			
469+34				5	2.25	11.25						
469+42	5	0.83	4.15									
469+53	3	0.83	2.49									
469+60				6	2.25	13.5						

WB MEDIAN BARRIER												
	REPAIR #1			REPAIR #2			REPAIR #3			REPAIR #4		
STATION	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)
469+69										10	0.67	6.7
469+80	20	0.83	16.6									
469+85							5	3.08	15.4			
469+88				4	2.25	9						
470+02	15	0.83	12.45									
470+06							4	3.08	12.32			
470+10										4	0.67	2.68
470+16	6	0.83	4.98									
470+41							13	3.08	40.04			
470+73	2	0.83	1.66									
470+79				2	2.25	4.5						
471+09	16	0.83	13.28									
471+33	20	0.83	16.6									
471+40	2	0.83	1.66									
471+78	36	0.83	29.88									
471+83	3	0.83	2.49									
471+88	2	0.83	1.66									
472+00	3	0.83	2.49									
472+03				2	2.25	4.5						
472+31				2	2.25	4.5						
472+35	3	0.83	2.49									
472+40	2	0.83	1.66									
472+52							3	3.08	9.24			
472+74				1	2.25	2.25						
472+89	3	0.83	2.49									
473+05							10	3.08	30.8			
473+17	4	0.83	3.32									
473+22	3	0.83	2.49									
473+35	3	0.83	2.49									
473+42	3	0.83	2.49									
473+86	26	0.83	21.58									
474+17	4	0.83	3.32									
474+86	65	0.83	53.95									
474+93							5	3.08	15.4			
474+98.97	℄ Pier 13											
476+26	55	0.83	45.65									
476+77	40	0.83	33.2									
477+04	30	0.83	24.9									
477+45	35	0.83	29.05									
477+58	5	0.83	4.15									
477+73	5	0.83	4.15									
478+33	34	0.83	28.22									
478+66	6	0.83	4.98									
478+92	20	0.83	16.6									
479+93	90	0.83	74.7									
480+31	31	0.83	25.73									
480+44	3	0.83	2.49									
481+32	5	0.83	4.15									
481+53	4	0.83	3.32									
481+87	25	0.83	20.75									
482+01							4	3.08	12.32			
482+04	3	0.83	2.49									
482+42	30	0.83	24.9									
483+25	60	0.83	49.8									
483+86	50	0.83	41.5									
483+90							4	3.08	12.32			
484+02	5	0.83	4.15									
484+15	6	0.83	4.98									
484+17							2	3.08	6.16			
484+57	35	0.83	29.05									
484+76	15	0.83	12.45									

WB MEDIAN BARRIER												
	REPAIR #1			REPAIR #2			REPAIR #3			REPAIR #4		
STATION	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)
484+94				4	2.25	9						
485+02	4	0.83	3.32									
485+07				1	2.25	2.25						
485+28	3	0.83	2.49									
485+55	15	0.83	12.45									
485+72	3	0.83	2.49									
485+90	3	0.83	2.49									
486+19	18	0.83	14.94									
486+82	57	0.83	47.31									
486+93							4	3.08	12.32			
WB Median Barrier Total			2128			171			761			9

WB PARAPET									
	REPAIR #1			REPAIR #2			REPAIR #3		
STATION	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)
431+70	2	0.83	1.66						
431+76	2	0.83	1.66						
433+02	1	0.83	0.83						
433+26	3	0.83	2.49						
433+51	3	0.83	2.49						
433+91	20	0.83	16.6						
434+14	6	0.83	4.98						
434+25	4	0.83	3.32						
434+35				2	1.5	3			
434+36	2	0.83	1.66						
434+75	4	0.83	3.32						
435+51				1	1.5	1.5			
437+01	3	0.83	2.49						
437+28.20	℄ Pier 3								
441+94	30	0.83	24.9						
442+34	50	0.83	41.5						
442+94	15	0.83	12.45						
443+26				1	1.5	1.5			
443+33							2	2.33	4.66
443+59.54	℄ Pier 4								
444+78	4	0.83	3.32						
445+39	2	0.83	1.66						
447+08	2	0.83	1.66						
448+83	4	0.83	3.32						
449+13	3	0.83	2.49						
450+10				1	1.5	1.5			
450+41				2	1.5	3			
450+68							1	2.33	2.33
450+88	4	0.83	3.32						
451+12	3	0.83	2.49						
451+20	2	0.83	1.66						
452+08	6	0.83	4.98						
452+55	4	0.83	3.32						
452+71	4	0.83	3.32						
452+96				2	1.5	3			
453+23	3	0.83	2.49						
453+65							3	2.33	6.99
453+68	4	0.83	3.32						
453+92	30	0.83	24.9						
454+33	17	0.83	14.11						
454+80							1	2.33	2.33
454+81	9	0.83	7.47						
455+05	32	0.83	26.56						
455+63.63	℄ Pier 8								
456+45	4	0.83	3.32						
457+24	2	0.83	1.66						
458+51	2	0.83	1.66						
459+00	2	0.83	1.66						
459+14	4	0.83	3.32						
459+23	3	0.83	2.49						
460+09	10	0.83	8.3						
460+78	15	0.83	12.45						
460+99	3	0.83	2.49						
462+63							1	2.33	2.33
462+72							1	2.33	2.33
463+16	6	0.83	4.98						
463+30	3	0.83	2.49						
463+51	4	0.83	3.32						
464+33	15	0.83	12.45						
464+43				1	1.5	1.5			

WB PARAPET									
	REPAIR #1			REPAIR #2			REPAIR #3		
STATION	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)
464+66	7	0.83	5.81						
465+06				1	1.5	1.5			
465+15	15	0.83	12.45						
465+63	11	0.83	9.13						
465+78	4	0.83	3.32						
466+15	6	0.83	4.98						
466+25	3	0.83	2.49						
466+44	12	0.83	9.96						
467+17	5	0.83	4.15						
467+46	5	0.83	4.15						
467+60	3	0.83	2.49						
467+67	10	0.83	8.3						
467+67.80	℄ Pier 12								
467+85	3	0.83	2.49						
467+93	8	0.83	6.64						
468+09	3	0.83	2.49						
468+61	15	0.83	12.45						
468+84	20	0.83	16.6						
469+55	1	0.83	0.83						
470+20	2	0.83	1.66						
470+42	12	0.83	9.96						
471+68	3	0.83	2.49						
473+25	3	0.83	2.49						
473+41	4	0.83	3.32						
473+61	8	0.83	6.64						
473+73	5	0.83	4.15						
474+50	2	0.83	1.66						
474+69							1	2.33	2.33
474+76							2	2.33	4.66
474+79	5	0.83	4.15						
474+98.97	℄ Pier 13								
475+21	3	0.83	2.49						
478+83				1	1.5	1.5			
479+33	10	0.83	8.3						
481+04							2	2.33	4.66
481+12							2	2.33	4.66
481+33				3	1.5	4.5			
482+10				1	1.5	1.5			
482+82	15	0.83	12.45						
483+17	4	0.83	3.32						
483+26	3	0.83	2.49						
483+46				2	1.5	3			
483+86				2	1.5	3			
484+09				3	1.5	4.5			
484+79	9	0.83	7.47						
486+59	4	0.83	3.32						
WB Parapet Total			476			35			37

EB MEDIAN BARRIER												
	REPAIR #1			REPAIR #2			REPAIR #3			REPAIR #4		
STATION	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)
430+93							4	3.08	12.32			
431+06	3	0.83	2.49									
431+34	16	0.83	13.28									
431+55	14	0.83	11.62									
432+01	90	0.83	74.7									
433+29	5	0.83	4.15									
433+53	8	0.83	6.64									
433+74	30	0.83	24.9									
434+15	50	0.83	41.5									
434+71	140	0.83	116.2									
436+11	3	0.83	2.49									
436+24	4	0.83	3.32									
436+46	2	0.83	1.66									
436+53	3	0.83	2.49									
436+73	4	0.83	3.32									
436+77							3	3.08	9.24			
436+80				5	2.25	11.25						
436+85										12	0.67	8.04
436+97				12	2.25	27						
437+09										15	0.67	10.05
437+24				2	2.25	4.5						
437+28.20	℄ Pier 3											
437+32							5	3.08	15.4			
438+02	3	0.83	2.49									
438+21	21	0.83	17.43									
438+52	3	0.83	2.49									
438+59	3	0.83	2.49									
438+76	4	0.83	3.32									
438+84	3	0.83	2.49									
438+95	3	0.83	2.49									
439+01	5	0.83	4.15									
439+27							3	3.08	9.24			
439+74	5	0.83	4.15									
439+94	4	0.83	3.32									
440+01	5	0.83	4.15									
440+53	3	0.83	2.49									
441+42	2	0.83	1.66									
441+46	5	0.83	4.15									
441+61							4	3.08	12.32			
441+96	5	0.83	4.15									
442+13							3	3.08	9.24			
442+17	5	0.83	4.15									
442+27	7	0.83	5.81									
442+53	3	0.83	2.49									
443+39							23	3.08	70.84			
443+59.54	℄ Pier 4											
443+71	35	0.83	29.05									
444+06							15	3.08	46.2			
444+21	6	0.83	4.98									
444+27				11	2.25	24.75						
444+38							5	3.08	15.4			
444+53	11	0.83	9.13									
444+64				2	2.25	4.5						
445+80				3	2.25	6.75						
445+89	3	0.83	2.49									
446+13				7	2.25	15.75						
446+38				2	2.25	4.5						
446+62	4	0.83	3.32									
447+65	3	0.83	2.49									
447+84	2	0.83	1.66									
448+09	5	0.83	4.15									

EB MEDIAN BARRIER												
	REPAIR #1			REPAIR #2			REPAIR #3			REPAIR #4		
STATION	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)
449+50										5	0.67	3.35
449+63	3	0.83	2.49									
449+66							2	3.08	6.16			
449+76	100	0.83	83									
450+86	10	0.83	8.3									
451+16							2	3.08	6.16			
451+18	3	0.83	2.49									
451+65	11	0.83	9.13									
451+83	7	0.83	5.81									
452+10	5	0.83	4.15									
452+41	16	0.83	13.28									
452+89	4	0.83	3.32									
452+97	135	0.83	112.05									
454+47	8	0.83	6.64									
454+55							1	3.08	3.08			
454+56	55	0.83	45.65									
455+18	5	0.83	4.15									
455+30	10	0.83	8.3									
455+40							2	3.08	6.16			
455+43	20	0.83	16.6									
455+63							3	3.08	9.24			
455+63.63	℄ Pier 8											
455+73							3	3.08	9.24			
455+90	3	0.83	2.49									
456+17	15	0.83	12.45									
456+41				4	2.25	9						
456+60	7	0.83	5.81									
456+70				4	2.25	9						
457+03	3	0.83	2.49									
457+69	8	0.83	6.64									
457+82	10	0.83	8.3									
458+19	9	0.83	7.47									
458+45	6	0.83	4.98									
458+53				6	2.25	13.5						
458+94	5	0.83	4.15									
459+66	5	0.83	4.15									
459+72				2	2.25	4.5						
460+67	32	0.83	26.56									
461+35	25	0.83	20.75									
461+61							2	3.08	6.16			
461+63	15	0.83	12.45									
461+90	33	0.83	27.39									
462+31	6	0.83	4.98									
462+37							4	3.08	12.32			
462+48	4	0.83	3.32									
462+55							4	3.08	12.32			
462+57	67	0.83	55.61									
463+33				2	2.25	4.5						
463+35	15	0.83	12.45									
463+62	45	0.83	37.35									
464+07				2	2.25	4.5						
464+13							10	3.08	30.8			
464+23	8	0.83	6.64									
464+44				2	2.25	4.5						
464+47	5	0.83	4.15									
464+67	31	0.83	25.73									
464+98							2	3.08	6.16			
465+00	16	0.83	13.28									
465+30				5	2.25	11.25						
465+41	3	0.83	2.49									
465+67				3	2.25	6.75						
465+71				8	2.25	18						

EB MEDIAN BARRIER												
	REPAIR #1			REPAIR #2			REPAIR #3			REPAIR #4		
STATION	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)
465+91				2	2.25	4.5						
465+97				3	2.25	6.75						
466+22				2	2.25	4.5						
466+24	4	0.83	3.32									
466+34	8	0.83	6.64									
466+55				2	2.25	4.5						
466+57	12	0.83	9.96									
466+66				2	2.25	4.5						
467+24	10	0.83	8.3									
467+52	7	0.83	5.81									
467+67.80	℄ Pier 12											
467+70							2	3.08	6.16			
467+83	5	0.83	4.15									
467+91	7	0.83	5.81									
468+00				2	2.25	4.5						
468+46				3	2.25	6.75						
468+66				5	2.25	11.25						
468+81							3	3.08	9.24			
468+83							3	3.08	9.24			
468+89				1	2.25	2.25						
468+93				2	2.25	4.5						
469+02	12	0.83	9.96									
469+23							15	3.08	46.2			
469+44										4	0.67	2.68
469+48							31	3.08	95.48			
469+85				4	2.25	9						
469+91							10	3.08	30.8			
470+05	10	0.83	8.3									
470+15										11	0.67	7.37
470+16	10	0.83	8.3									
470+31							5	3.08	15.4			
470+38				3	2.25	6.75						
470+43							11	3.08	33.88			
470+60										1	0.67	0.67
470+61	4	0.83	3.32									
470+73	15	0.83	12.45									
470+99	2	0.83	1.66									
471+06	3	0.83	2.49									
471+16	115	0.83	95.45									
472+35	20	0.83	16.6									
472+55				2	2.25	4.5						
472+57	108	0.83	89.64									
473+74	2	0.83	1.66									
473+82	14	0.83	11.62									
474+16				1	2.25	2.25						
474+25	25	0.83	20.75									
474+54	6	0.83	4.98									
474+75	20	0.83	16.6									
474+95							12	3.08	36.96			
474+98.97	℄ Pier 13											
475+22	5	0.83	4.15									
475+30	13	0.83	10.79									
475+59	12	0.83	9.96									
476+05	17	0.83	14.11									
476+30	40	0.83	33.2									
476+78							5	3.08	15.4			
476+85	4	0.83	3.32									
476+89							2	3.08	6.16			
477+12	5	0.83	4.15									
477+31	5	0.83	4.15									

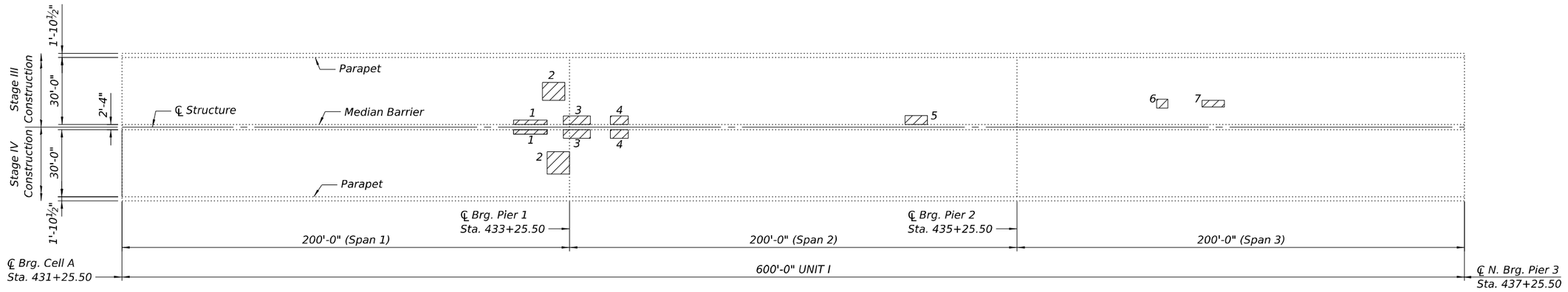
EB MEDIAN BARRIER												
	REPAIR #1			REPAIR #2			REPAIR #3			REPAIR #4		
STATION	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)
477+43	13	0.83	10.79									
477+56				2	2.25	4.5						
477+60	8	0.83	6.64									
477+86	15	0.83	12.45									
477+95	20	0.83	16.6									
478+15							1	3.08	3.08			
478+16	15	0.83	12.45									
478+31				2	2.25	4.5						
478+39				2	2.25	4.5						
478+45	51	0.83	42.33									
479+10	17	0.83	14.11									
479+23										10	0.67	6.7
479+31	5	0.83	4.15									
479+66	10	0.83	8.3									
479+88	3	0.83	2.49									
479+96	15	0.83	12.45									
480+43	30	0.83	24.9									
480+91	3	0.83	2.49									
481+11	6	0.83	4.98									
481+38	6	0.83	4.98									
481+56	9	0.83	7.47									
481+84	32	0.83	26.56									
482+39	160	0.83	132.8									
483+26				2	2.25	4.5						
483+96										10	0.67	6.7
484+17							2	3.08	6.16			
484+20	10	0.83	8.3									
484+30							3	3.08	9.24			
484+33	120	0.83	99.6									
485+66							4	3.08	12.32			
485+70	72	0.83	59.76									
486+56										5	0.67	3.35
486+61	30	0.83	24.9									
486+91				3	2.25	6.75						
486+98				3	2.25	6.75						
487+00	2	0.83	1.66									
487+06							3	3.08	9.24			
EB Median Barrier Total			2050			293			653			49

EB PARAPET									
	REPAIR #1			REPAIR #2			REPAIR #3		
STATION	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)
433+94	8	0.83	6.64						
435+10	3	0.83	2.49						
435+50	7	0.83	5.81						
437+10				1	1.5	1.5			
437+15				2	1.5	3			
437+28.20	℄ Pier 3								
437+32							2	2.33	4.66
439+10	2	0.83	1.66						
440+77	2	0.83	1.66						
443+59.54	℄ Pier 4								
446+56	2	0.83	1.66						
449+65	3	0.83	2.49						
450+46	1	0.83	0.83						
452+42	2	0.83	1.66						
454+16	4	0.83	3.32						
455+63.63	℄ Pier 8								
455+75				1	1.5	1.5			
455+96	3.5	0.83	2.905						
456+19	10	0.83	8.3						
457+03	3.5	0.83	2.905						
457+75	6	0.83	4.98						
457+97	8	0.83	6.64						
458+39				2	1.5	3			
458+73	8	0.83	6.64						
459+12	10	0.83	8.3						
459+45	3	0.83	2.49						
459+50	3	0.83	2.49						
459+70	3	0.83	2.49						
460+02	2	0.83	1.66						
460+17	5	0.83	4.15						
460+94	4	0.83	3.32						
460+99	9	0.83	7.47						
461+14	3	0.83	2.49						
462+95	3	0.83	2.49						
463+00	2	0.83	1.66						
463+26	2	0.83	1.66						
463+31	4	0.83	3.32						
464+44	3	0.83	2.49						
464+69	3	0.83	2.49						
464+74	5	0.83	4.15						
464+96	5	0.83	4.15						
465+16	5	0.83	4.15						
466+60	5	0.83	4.15						
467+67.80	℄ Pier 12								
467+75							2	2.33	4.66
467+82							2	2.33	4.66
468+95	2	0.83	1.66						
473+02				2	1.5	3			
473+30				2	1.5	3			
473+39				1	1.5	1.5			
473+55				3	1.5	4.5			
474+98.97	℄ Pier 13								
475+10							2	2.33	4.66
475+17				1	1.5	1.5			
476+15	1	0.83	0.83						
476+98	2	0.83	1.66						
477+67	9	0.83	7.47						
477+84	9	0.83	7.47						
478+14	6	0.83	4.98						
478+66	3	0.83	2.49						
478+91	5	0.83	4.15						

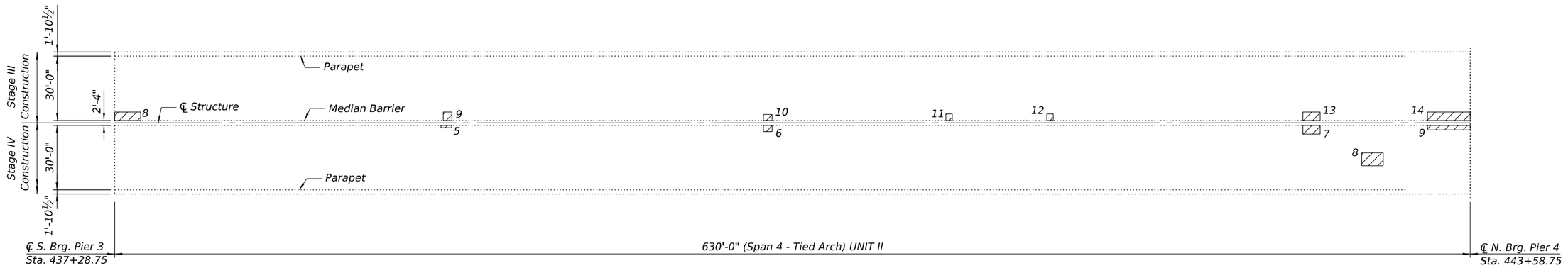
EB PARAPET									
	REPAIR #1			REPAIR #2			REPAIR #3		
STATION	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)
480+67	7	0.83	5.81						
482+28	4	0.83	3.32						
484+68	3	0.83	2.49						
485+52	3	0.83	2.49						
486+45							3	2.33	6.99
486+97	15	0.83	12.45						
487+60									
EB Parapet Total			183			23			26

BILL OF MATERIAL

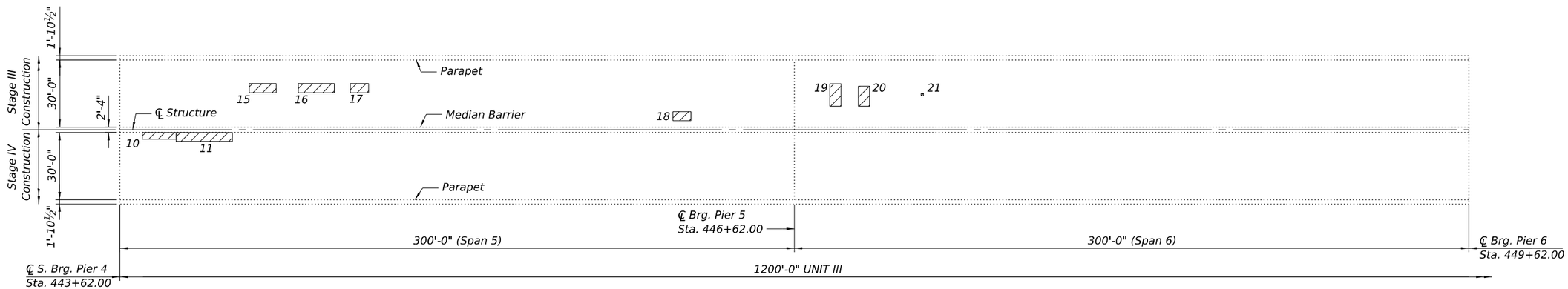
DESCRIPTION	UNIT	TOTAL
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	6894



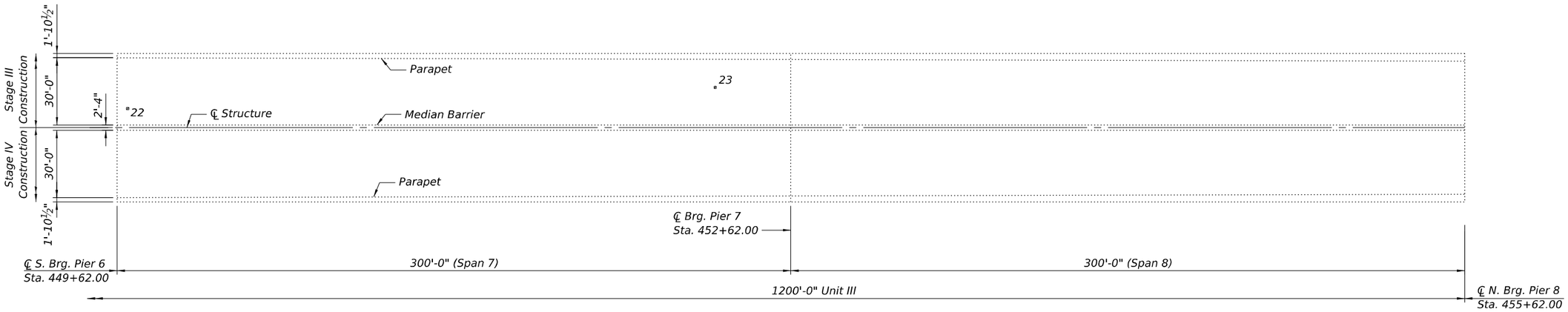
PARTIAL DECK PLAN - SPANS 1 THRU 3



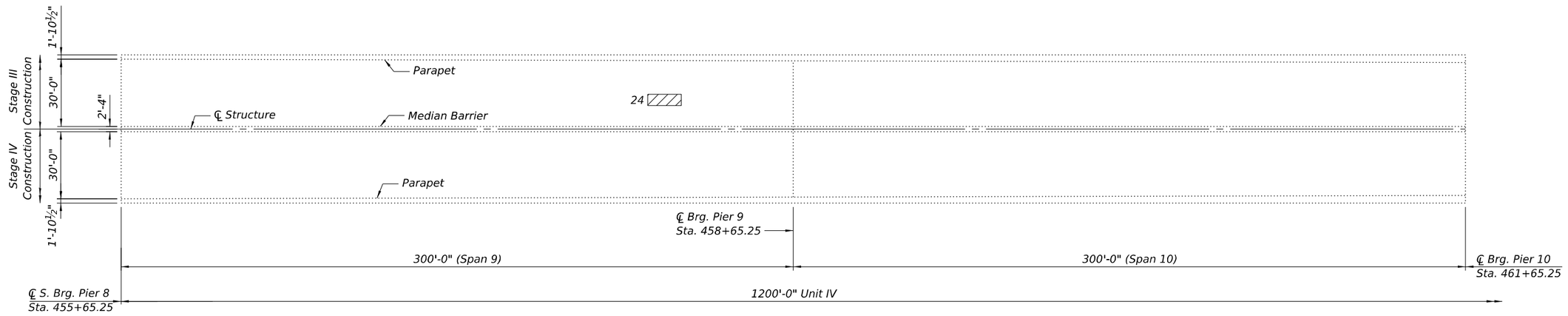
PARTIAL DECK PLAN - SPAN 4



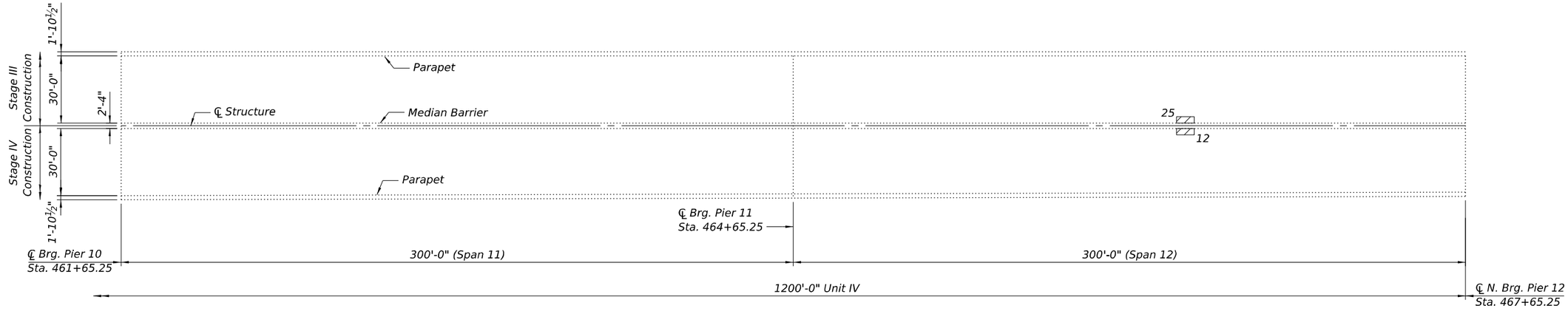
PARTIAL DECK PLAN - SPANS 5 & 6



PARTIAL DECK PLAN - SPANS 7 & 8



PARTIAL DECK PLAN - SPANS 9 & 10



PARTIAL DECK PLAN - SPANS 11 & 12

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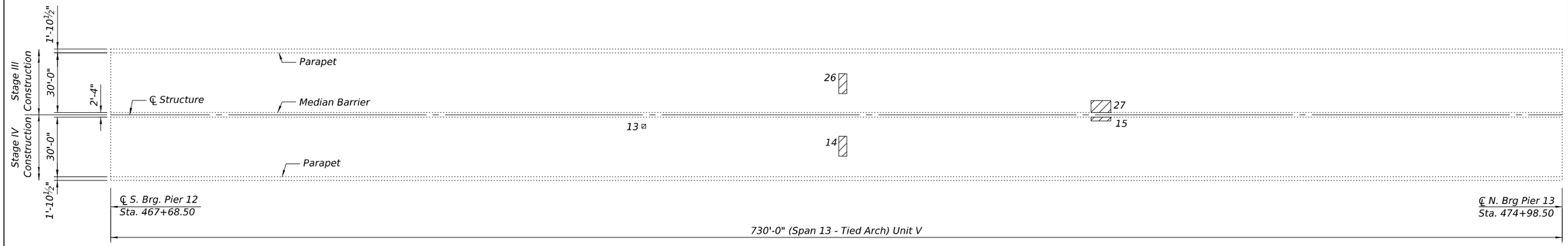
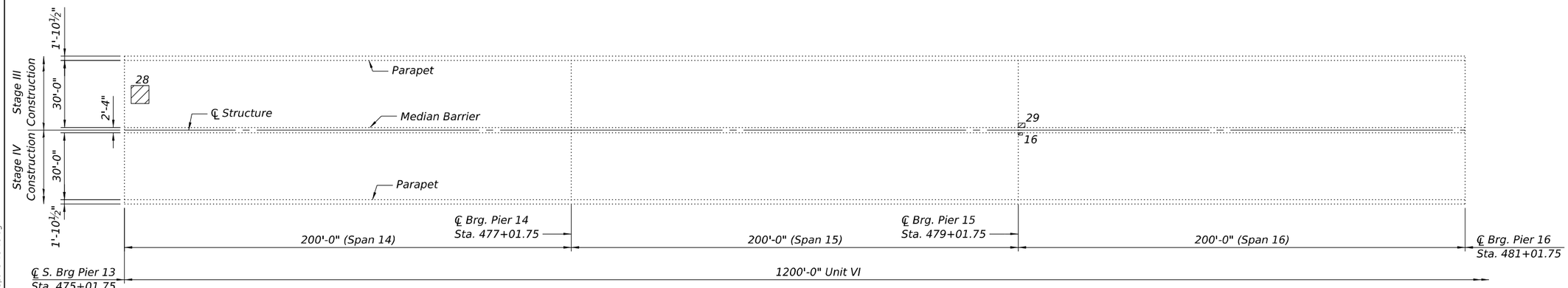
TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = jesker	DESIGNED - TCS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
			CHECKED - BWP	REVISED -	
		PLOT SCALE = 0.167 ' / in.	DRAWN - TCS	REVISED -	
		PLOT DATE = 8/16/2024	CHECKED - BWP	REVISED -	

DECK REPAIR DETAILS
STRUCTURE NO. 064-0035
SHEET 25 OF 175 SHEETS

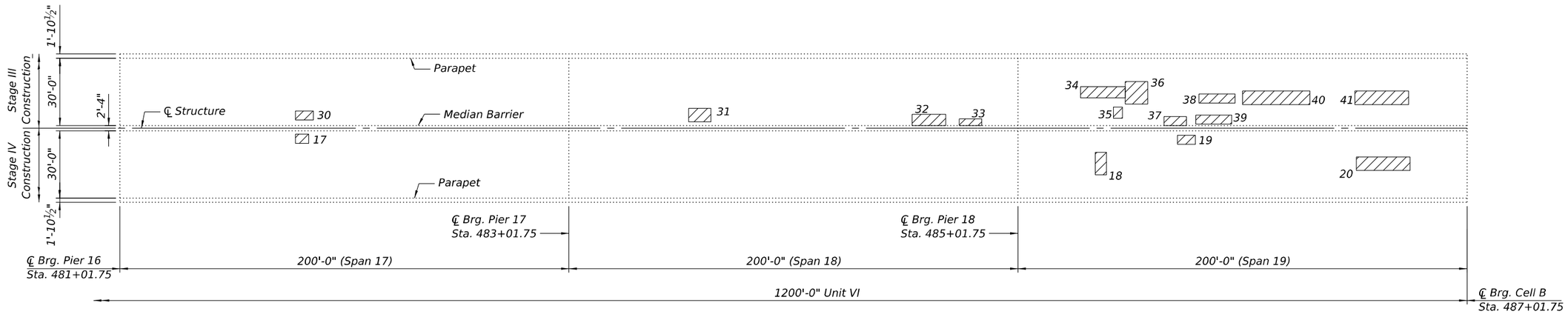
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	86
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



PARTIAL DECK PLAN - SPAN 13



PARTIAL DECK PLAN - SPANS 14 THRU 16



PARTIAL DECK PLAN - SPANS 17 THRU 19

MODEL: Default
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TWM ENGINEERING GEOSPATIAL SERVICES — TWM, INC. WWW.TWM-INC.COM — IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = Jesker	DESIGNED - TCS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		CHECKED - BWP	REVISED -	
	PLOT SCALE = 0.167 ' / in.	DRAWN - TCS	REVISED -	
	PLOT DATE = 8/16/2024	CHECKED - BWP	REVISED -	

DECK REPAIR DETAILS
STRUCTURE NO. 064-0035
SHEET 26 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	87
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

DECK REPAIR			
STAGE 3			
PATCH NO.	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)
1	15	6	90
2	10	8	80
3	12	5	60
4	8	5	40
5	10	4	40
6	5	4	20
7	10	3	30
8	12	4	48
9	4	4	16
10	4	4	16
11	3	2	6
12	3	3	9
13	8	4	32
14	20	4	80
15	12	4	48
16	16	4	64
17	8	4	32
18	8	4	32
19	5	10	50
20	4	10	40
21	1	1	1
22	1	1	1
23	1	1	1
24	15	5	75
25	8	4	32
26	4	10	40
27	10	6	60
28	8	8	64
29	2	3	6
30	8	4	32
31	10	6	60
32	15	5	75
33	10	3	30
34	20	5	100
35	4	4	16
36	10	10	100
37	10	4	40
38	16	4	64
39	16	4	64
40	40	6	240
41	24	6	144
Totals			2078

DECK REPAIR			
STAGE 4			
PATCH NO.	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)
1	15	4	60
2	10	10	100
3	12	5	60
4	8	5	40
5	5	1	5
6	4	4	16
7	8	4	32
8	10	6	60
9	20	2	40
10	15	3	45
11	25	4	100
12	8	4	32
13	2	2	4
14	3	10	30
15	10	2	20
16	2	1	2
17	6	4	24
18	5	10	50
19	8	4	32
20	24	6	144
Totals			896

Notes:
Areas of deck repairs shown are estimated.
The Engineer shall show actual locations and size of deck repairs on As-built Plans.

BILL OF MATERIAL

DESCRIPTION	UNIT	TOTAL
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	2
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	329

MODEL: Default
FILE NAME: P:\2021\2105931\I&L - FAI 24 Ohio River Bridge Painting\4 CADD - DWG\4.4 Struc\06400035-78972-4027 Deck Repair Table.dgn

TWM ENGINEERING & GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = Jesker	DESIGNED - TCS	REVISED -	
	CHECKED - BWP	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN - TCS	REVISED -	
PLOT DATE = 8/16/2024	CHECKED - BWP	REVISED -	

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK REPAIR DETAILS
STRUCTURE NO. 064-0035
SHEET 27 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	88
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

GENERAL NOTES

All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.

Fasteners shall be ASTM F 3125 Grade A325 Type 1, mechanically galvanized bolts. Bolts $\frac{3}{4}$''Ø, holes $\frac{13}{16}$''Ø, unless otherwise noted.

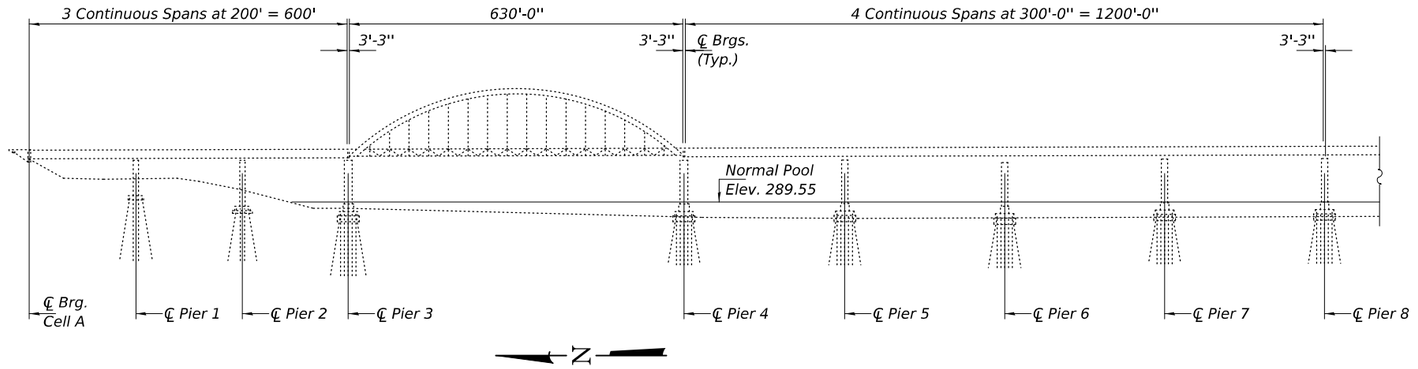
Plan dimensions and details relative to the existing structure have been taken from existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

Cost of removal and re-installation of all members necessary to complete the work as detailed on the plans and as specified in the Special Provisions shall be included with Furnishing and Erecting Structural Steel or Structural Steel Repairs.

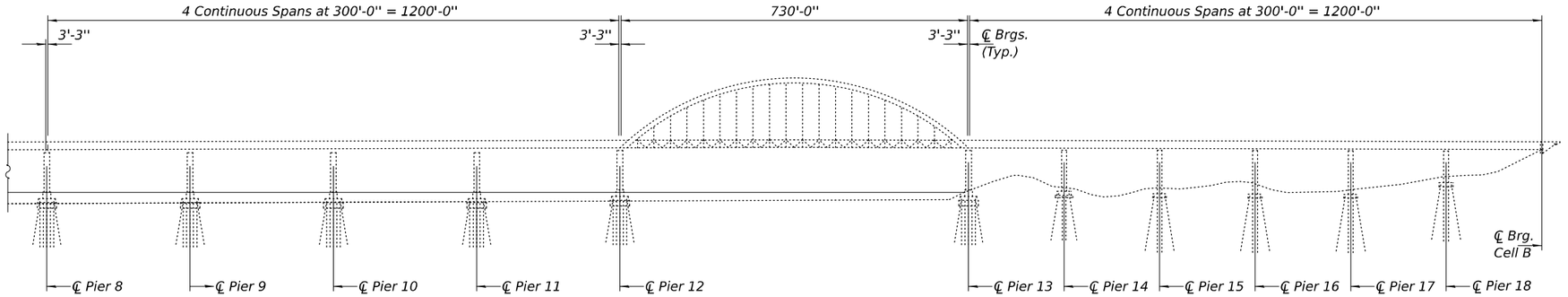
The Inorganic Zinc Rich Primer / Acrylic / Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final finish coat shall be Gray, Munsell No. 5B 7/1.

Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures", and the Standard Specifications. The color of the final finish coat shall be Gray, Munsell No. 5B 7/1.

The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.



PARTIAL ELEVATION



PARTIAL ELEVATION

Note:
For Scope of Work & Repair Locations see sheets 2 & 3 of 13.
For Framing Plans see sheets 4 thru 6 of 13.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Steel Repair	Pound	7500
Strip Seal Gland Replacement	Foot	320

LICENSED STRUCTURAL ENGINEER
JAYME F. SCHIFF
081-005540
STATE OF ILLINOIS

EXPIRES 11-30-2024

DESIGNED - Jeffrey S. Burke	EXAMINED	DATE - AUGUST 16, 2024	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**
CHECKED - Victor H. Veliz			
DRAWN - STEFFEN	PASSED	REVISED -	
CHECKED - JSB VHV	ENGINEER OF STRUCTURAL SERVICES / ENGINEER OF BRIDGES AND STRUCTURES	REVISED -	

ELEVATION & REPAIR DETAILS
F.A.I. 24 OVER THE OHIO RIVER AT METROPOLIS
SN 064-0035
SHEET 1 OF 13 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	89
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

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SCOPE OF WORK - TABLE OF REPAIRS

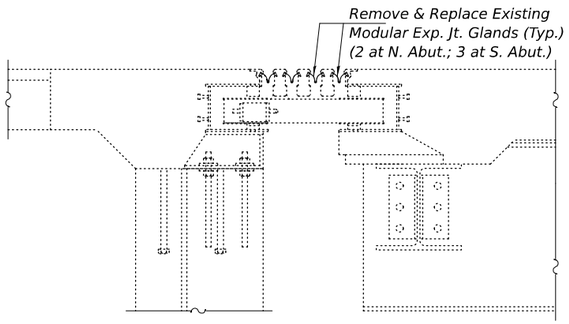
Span	NBIS Item #	Member	Location	Deficiency	Proposed Repair	See sheet
Multiple	*	*	*	Broken, Loose & Missing Bolts	*	3 of 13
1 & 19	283	Modular Exp. Joint	East & West Abutments	Leaking Joints	Replace Mod. Exp. Jt. Glands	2 of 13
3	228	Catwalk	at Floorbeam 25	S.L. in Catwalk ℄; unsecured ℄	Repair grated catwalk floor	2 of 13
	145	Diaphragm	at FB 25 btwn. Stringers 4 & 5 at 4	Full Crack in Conn. ∠; Hole in web.	Replace Conn. ∠'s	7 of 13
	229	Diaphragm	at FB 25 btwn. Stringers 5 & E. Gir. at 5	2" Crack in Conn. ∠	Replace Conn. ∠'s	7 of 13
4	146	East Arch	at end of East Arch 4' N. of FB 26	1" x 42" holes Inside & Outside Web ℄'s	Repair Plating Inside & Outside	12 of 13
	175	West Arch	at end West Arch at Pier 3	1" x 55" hole in Inside Web ℄	Repair Plating Inisde	12 of 13
	176	Top Lateral Brace	3' from West Arch at R1	Hole bott. horiz. stiffener; S.L. Bott. Flange	Repair Plating	8 of 13
	239	Lateral Brace	at Floorbeam 27, East End	S.L.; 2"x8" hole S. Web, 2"x4" hole N. Web	Repair Plating	9 of 13
	286	Top Lateral Brace	3' from East Arch at R1	S.L.; 2"x3" hole Bottom Horiz. stiffener	Repair Plating	8 of 13
	241	Lateral Brace	at Floorbeam 28, East End	S.L.; 12"x1" hole Bottom ℄	Repair Plating	9 of 13
	288	East Tie	3' South of T6 at Splice	Missing Lower Cover ℄	Replace Cover ℄	7 of 13
	243	Diaphragm	at FB 37, Pan. 36 btwn. Stringer 1 & 2 at 1	Crack in Diaph. Conn. ∠ to Brg. Stiffener	Install Repair ∠	7 of 13
	101	East Arch	2' N. of R13 top, upper chamber, inside	4" Crack in weld btwn. Top ℄ & Web	Repair ∠	10 of 13
	215	West Arch	1st Diaph. S. of R15, upper chamber, outside	¼" crack in weld btwn. Diaph. & Stiffener	Repair ∠	7 of 13
	182	Top Lateral Brace	3' from West R16	S.L.; 2"x5" bott. long. stffnr, 2" hole horiz. stffnr	Repair ∠	8 of 13
	247	Floorbeam 43	at Midspan	1¼" Crack at Bottom of Web stiffener	Drill Crack Arrestor Hole	2 of 13
	294	Top Lateral Brace	East Arch at R17	S.L.; 4" area on lower vertical stiffener	Repair ∠	8 of 13
	295	Diaphragm	Floorbeam 43 at Stringer 7	4" Crack in Web under Conn. ∠	Install Bent ℄'s	10 of 13
	153	East Arch	4' South of FB 43 at End of East Arch	1" x 55" holes inside & outside ℄'s	Repair Plating Inside & Outside	12 of 13
	154	West Arch	4' South of FB 43 at End of West Arch	1"x53" hole in outside Web ℄, 1"x22" hole End ℄	Repair Plating Outside	12 of 13
5	105	Lateral Brace	at Floorbeam 54, West Girder	S.L.; Bolts: 1-Missing; 7-Loose	Repair Plating & New Bolts	13 of 13
8	220	Stringer 7	at Floorbeam 92	100% S.L. at End of Top Flange	Repair ∠	10 of 13
12	259	Diaphragm	Btwn. E. Gir. & Stringer 7 at E. Gir. at FB 141	7½" Crack in North Connection ∠	Replace Conn. ∠'s	7 of 13
13	223	Floorbeam 146	East of Stringer 5 under Brg. ℄	17% S.L. in Top Flange	Repair ∠	11 of 13
	307	East Tie	1' North of T5	2" gap weld btwn. E. Web & Top ℄, standing water	Remove water & Caulk/Seal	-
	114	East Tie	at T8	2" gap in weld btwn. Top ℄ & Inisde Web ℄	Caulk / Seal gap	-
	266	Stringer 7	at Floorbeam 150, Panel 150	3" Crack in weld at Diaph. Conn. to Brg. stiffener	Repair ∠	7 of 13
	270	Stringer 7	at Floorbeam 155, Panel 156	3" Crack in weld at Diaph. Conn. to Brg. stiffener	Repair ∠	7 of 13
	272	East Tie	at T15	1" gap in weld btwn. Top ℄ & Outside Web ℄	Caulk / Seal gap	-
	273	Floorbeam 159	at Midpoint	¾" Crack at Bottom of Web stiffener	Drill Crack Arrestor Holes	2 of 13
	274	Floorbeam 160	at Midpoint	½" Crack at Bottom of Web stiffener	Drill Crack Arrestor Holes	2 of 13
	199	Lateral Brace	Panel 162 at Floorbeam 161, East End	S.L.; 2"x8" hole in Bottom Flange	Repair Plating	9 of 13
	122	Floorbeam 163	Midspan Bottom Flange	S.L.; 40"x9" area	Repair Plating	11 of 13
14	204	Catwalk	Conn. to support channel, W. Side at FB 164	S.L. in Web & Top Flange, Bent Conn. ℄	Repair Plating	13 of 13
14	140	Stringer 7	8' from Floorbeam 164	S.L. in Top & Bottom Flange and Web	Repair Plating & ∠'s	11 of 13
19	208	Floorbeam 212	Full Length	S.L. in Top & Bottom Flange	Repair ∠	12 of 13

* See Table of Bolts on sheet 3 of 13.

Repair grated Catwalk flooring.

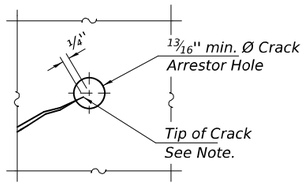
ITEM 228 REPAIR DETAIL

2023 NBIS Photo #29



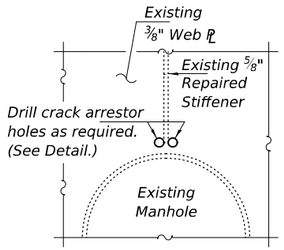
ITEM 283 - MODULAR EXP. JOINT GLAND REMOVAL & REPLACEMENT AT EAST & WEST ABUTMENT

(Paid for as Strip Seal Gland Replacement.)



CRACK ARRESTOR HOLE DETAIL

Note:
Locate crack tip using liquid dye penetrant or magnetic particle testing. Drill 13/16" min. Ø Crack Arrestor hole at the crack tip. After crack arrestor hole has been drilled, dye penetrant or magnetic particle testing shall be used to verify that the drilled hole has captured the crack tip. Cost shall be included with Structural Steel Repair.



ITEMS 247, 273 & 274 REPAIR DETAIL

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DESIGNED - JSB	EXAMINED	ENGINEER OF STRUCTURAL SERVICES	DATE - AUGUST 16, 2024	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SCOPE OF WORK & REPAIR DETAILS SN 064-0035
CHECKED - VHV	PASSED	Joyce F. Dolliff	REVISED -		SHEET 2 OF 13 SHEETS
DRAWN - Steffen		ENGINEER OF BRIDGES AND STRUCTURES	REVISED -		
CHECKED - JSB VHV					

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	90
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

TABLE OF BROKEN, LOOSE & MISSING BOLTS

Span	NBIS Item #	Member	Location	Deficiency	Proposed Repair
1	172	Stringer 7	at FB 4	1-Broken Bolt	Install New Bolt(s) as Required. (Field Verify Length & Ø.)
1-2	173	Stringer 7	at FB 9	1-Broken Bolt	
3	4	Finger Jt. Support	at FB 25	8-Broken Bolts	
	230	Stringer 7	at FB 25, Panel 25	1-Broken Bolt	
4	232	Stringer 1	at FB 26, Panel 26	Bolts - 2-Loose; 1-Missing	
	233	Diaphragm	at FB 26, btwn. Stringers 1-2	2-Broken Bolts	
	126	Stringer 4	at FB 26, Panel 26	3-Broken Bolts	
	234	Stringer 5	at FB 26, Panel 26	1-Broken Bolt	
	235	Diaphragm	at FB 26, btwn. Stringers 5-6	6-Broken Bolts	
	236	Stringer 7	at FB 26, Panel 26	Bolts - 2-Broken; 1-Loose	
	237	Finger Jt. Support	at FB 26, btwn. Stringers 3-4	2-Broken Bolts	
	238	Diaphragm	at FB 26, btwn. Stringers 3-4	2-Broken Bolts	
	8	Floorbeam 29	at West Tie	1-Missing Bolt	
	289	East Arch	4' N. of R6, Low Chmbr, Inside Web	1-Loose Bolt	
	69	Catwalk	Conn. ℄ & Lat. Brace N. of FB 35	1-Loose Bolt	
	291	Lateral Bracing	at W. End of FB 36	1-Loose Bolt	
	244	Stringer 5	at FB 37, Panel 37	2-Broken Bolts	
	293	Stringer 2	at FB 37, Panel 36	Bolts - 1-Missing; 1-Loose	
	180	Stringer 3	at FB 37, Panel 38	1-Broken Bolt	
	213	Stringer 5	at FB 37, Panel 38	1-Broken Bolt	
	151	Stringer 6	at FB 37, Panel 38	2-Broken Bolts	
	214	West Truss	at West Tie, Panel 39	4-Misdrilled Holes	
	20	West Tie	at T14, W. Conn. ℄ to FB 40	1-Missing Bolt	
	246	West Arch	at South End Access Hatch	3-Sheared Bolts	
	248	Stringer 1	at FB 43, Panel 43	2-Broken Bolts	
	249	Diaphragm	at FB 43 btwn. Stringers 1 & 2	4-Broken Bolts	
	250	Stringer 4	at FB 43, Panel 43	1-Broken Bolt	
	251	Finger Jt. Support	at FB 43	2-Broken Bolts	
	252	Stringer 5	at FB 43, Panel 43	3-Broken Bolts	
	253	Stringer 6	at FB 43, Panel 43	1-Broken Bolt	
	254	Stringer 7	at FB 43, Panel 43	2-Broken Bolts	
	298	West Tie	5' North of Southwest Brg.	1-Loose Bolt	
5	105	Lateral Brace	at FB 54, West Girder	Bolts - 1-Missing; 7-Loose	
7	300	Cantilever FB 72	West Side, Bottom Flange	4-Loose Bolts	
8	73	Finger Jt. Support	at P8, btwn. Stringer 3 & 4	5-Broken Bolts	
9	258	Stringer 4	at FB 93, Panel 93	1-Broken Bolt	
	284	Exp. Jt. Support	at FB 93, Panel 93 near Stringer 4	3-Broken Bolts	
	221	Lateral Brace	at West Girder, FB 103	1-Broken Bolt	
10	131	Lateral Brace	at West Grider, under FB 115	4-Loose Bolts	

TABLE OF BROKEN, LOOSE & MISSING BOLTS (CONT.)

Span	NBIS Item #	Member	Location	Deficiency	Proposed Repair
12	74	East Girder	Bottom Splice btwn. FB 131 & 132	3-Loose Bolts	Install New Bolt(s) as Required. (Field Verify Length & Ø.)
	29	Finger Jt. Support	at FB 141	5-Broken Bolts	
	301	Stringer 5	at FB 141, Panel 140	1-Broken Bolt	
13	222	Stringer 1	at Pier 12	1-Broken Guide Bolt (W. side)	
	262	Finger Jt. Support	at FB 142 btwn. Stringer 1 & 2	10-Broken Bolts	
	132	Stringer 3	at FB 142, Panel 142	3-Broken Bolts	
	185	Stringer 4	at FB 142, Panel 142	2-Broken Bolts; 1-Extra hole	
	186	Stringer 5	at FB 142, Panel 142	2-Broken Bolts; 1-Extra hole	
	187	Stringer 6	at FB 142, Panel 142	2-Broken Bolts; 1-Extra hole	
	263	Diaphragm	at FB 142 btwn. Stringers 6 & 7	3-Broken Bolts	
	134	West Tie	at T3 Bott. Bracket at FB Conn.	1-Missing Bolt	
	264	Stringer 6	at FB 146, Panel 146	1-Bolt w/ Missing Nut	
	305	Stringer 6	at FB 146, Panel 146	1-Broken Bolt	
	306	Stringer 4	at FB 146, Panel 146	1-Broken Bolt	
	190	Stringer 2	at FB 150, Panel 150	2-Broken Bolts	
	224	Stringer 3	at FB 150, Panel 150	1-Broken Bolt	
	191	Stringer 4	at FB 150, Panel 150	2-Broken Bolts	
	265	Stringer 5	at FB 150, Panel 150	1-Broken Bolt	
	267	Stringer 4	at FB 150, Panel 151	1-Broken Bolt	
	78	West Tie	Tie Reinf. ℄ at T10	1-Missing Bolt	
	268	Stringer 5	at FB 155, Panel 155	1-Broken Bolt	
	269	Stringer 6	at FB 155, Panel 155	1-Broken Bolt	
	194	Stringer 5	at FB 155, Panel 156	2-Broken Bolts; Shifted Brg. ℄	
	197	Catwalk	℄ FB 160 to T17E at FB 160	2-Loose Bolts	
	81	West Tie	at T18 Bracket Conn. FB to W. Tie	1-Missing Bolt	
	167	Stringer 1	at FB 163, Panel 163	Bolts - 1-Loose; 1-Broken	
	275	Diaphragm	at FB 163 btwn. Stringers 1 & 2	1-Broken Bolt	
	276	Stringer 2	at FB 163, Panel 163	1-Broken Bolt	
	277	Diaphragm	at FB 163 btwn. Stringers 2 & 3	1-Broken Bolt	
	201	Stringer 3	at FB 163, Panel 163	4-Broken Bolts	
	202	Stringer 4	at FB 163, Panel 163	2-Broken Bolts	
	203	Stringer 5	at FB 163, Panel 163	2-Broken Bolts	
	278	Diaphragm	at FB 163 btwn. Stringers 6 & 7	1-Broken Bolt	
	205	Finger Jt. Support	at FB 163 btwn. Stringers 6 & 7	1-Missing Bolt	
14	280	Finger Jt. Support	at FB 164 btwn. Stringers 4 & 5	4-Missing Bolts	
	281	Stringer 4	at FB 164, Panel 164	1-Broken Bolt	
	139	Diaphragm	at FB 164 btwn. E. Gir. & Strngr 7	2-Missing Bolts & S.L.	
18	142	Lateral Brace	at West Girder under FB 201	1-Loose Bolt	
19	282	Lateral Brace	FB 205, Panel 206 at Catwalk	4-Loose Bolts	

MODEL: 78972-091
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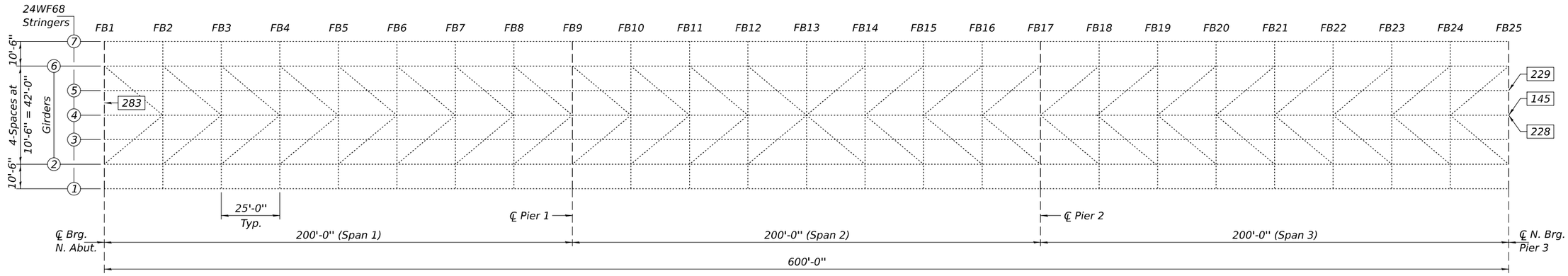
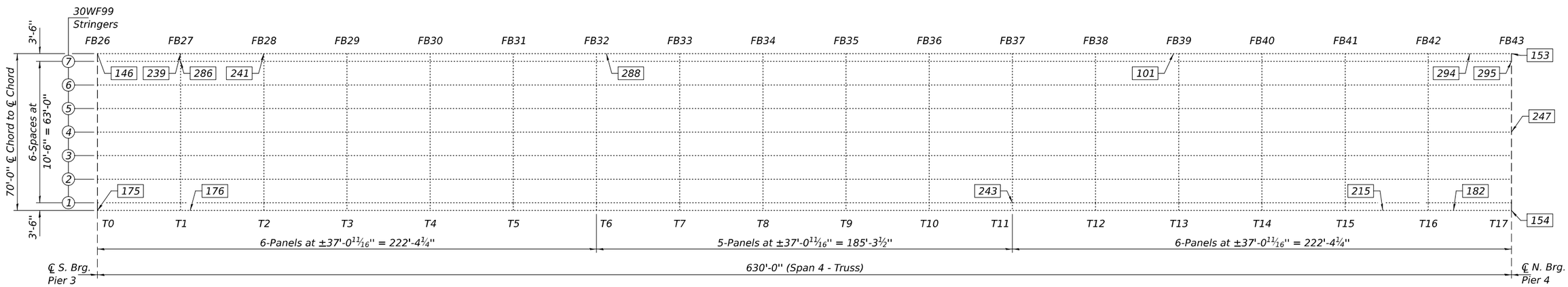
8/16/2024 11:02:14 AM

DESIGNED - JSB	EXAMINED	DATE - AUGUST 16, 2024	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**
CHECKED - VHV	ENGINEER OF STRUCTURAL SERVICES	REVISED -	
DRAWN - Steffen	PASSED	REVISED -	**REPAIR DETAILS SN 064-0035**
CHECKED - JSB VHV	ENGINEER OF BRIDGES AND STRUCTURES		SHEET 3 OF 13 SHEETS

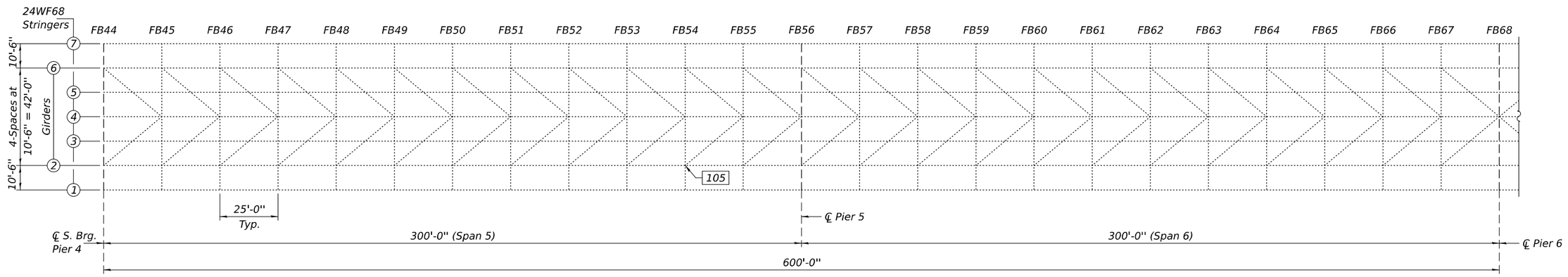
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	91
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



FRAMING PLAN - SPANS 1 THRU 3



FRAMING PLAN - SPAN 4 (TRUSS)



FRAMING PLAN - SPANS 5 & 6

000 - NBIS Item # (2023)

MODEL: 76972-092
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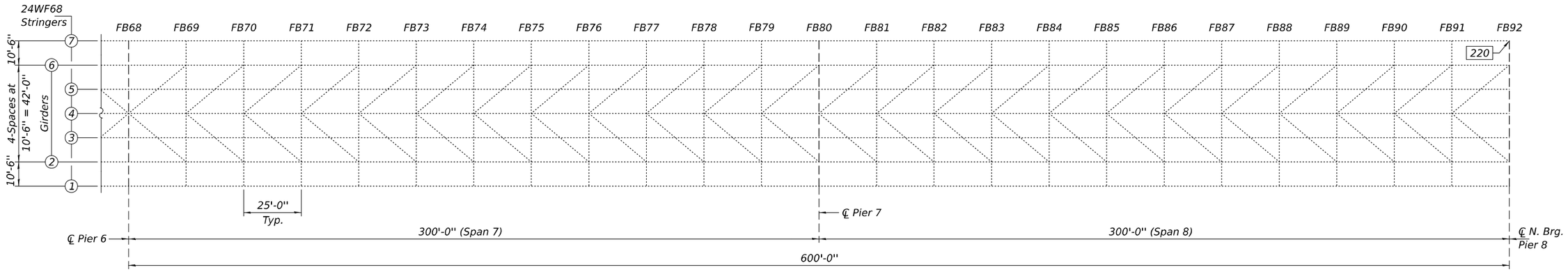
8/16/2024 11:02:19 AM

DESIGNED - JSB	EXAMINED	ENGINEER OF STRUCTURAL SERVICES	DATE - AUGUST 16, 2024	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**	**FRAMING PLAN - SPANS 1 THRU 6 SN 064-0035**	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED - VHV						24	(64-3B)BP-1,BRR-1	MASSAC	236	92
DRAWN - Steffen	PASSED	ENGINEER OF BRIDGES AND STRUCTURES	REVISED -		SHEET 4 OF 13 SHEETS			CONTRACT NO. 78972		
CHECKED - JSB VHV			REVISED -				ILLINOIS	FED. AID PROJECT		



FRAMING PLAN - SPANS 7 & 8

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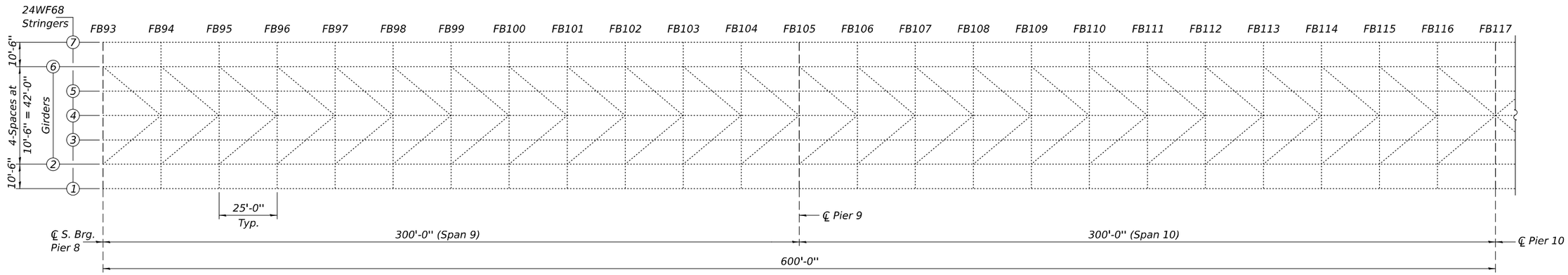
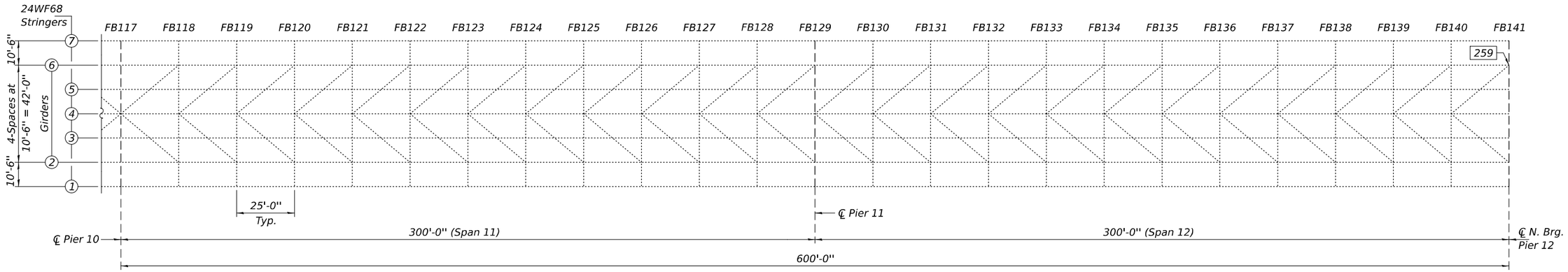


FRAMING PLAN - SPANS 9 & 10



FRAMING PLAN - SPANS 11 & 12

000 - NBIS Item # (2023)

MODEL: 76972-093
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DESIGNED - JSB	EXAMINED		DATE - AUGUST 16, 2024	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**	**FRAMING PLAN - SPANS 7 THRU 12 SN 065-0034**	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED - VHV		ENGINEER OF STRUCTURAL SERVICES				24	(64-3B)BP-1,BRR-1	MASSAC	236	93
DRAWN - Steffen	PASSED		REVISED -		SHEET 5 OF 13 SHEETS			CONTRACT NO. 78972		
CHECKED - JSB VHV		ENGINEER OF BRIDGES AND STRUCTURES	REVISED -					ILLINOIS	FED. AID PROJECT	
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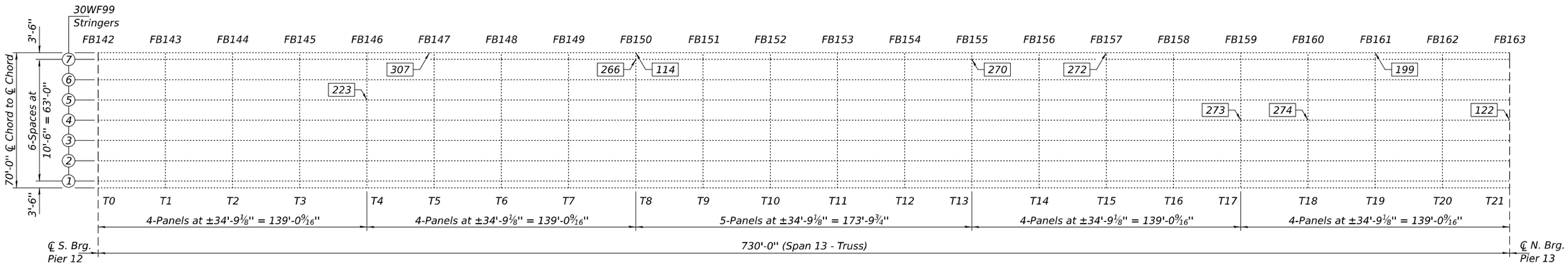

FRAMING PLAN - SPAN 13 (TRUSS)

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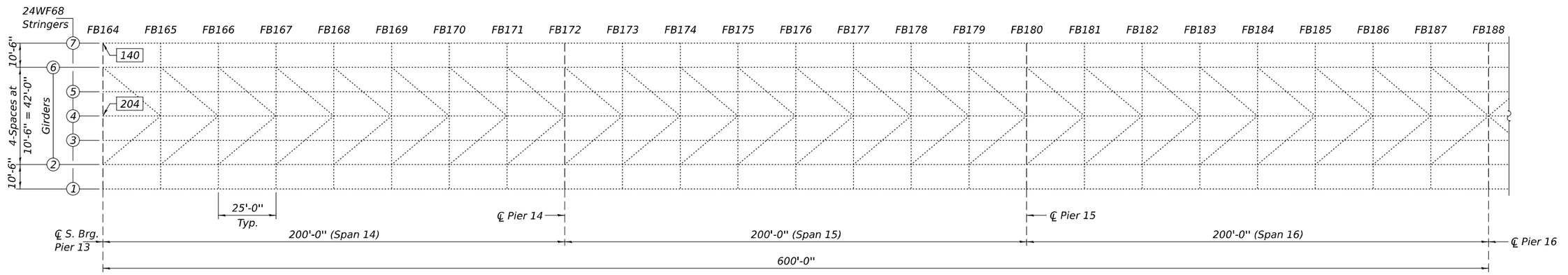
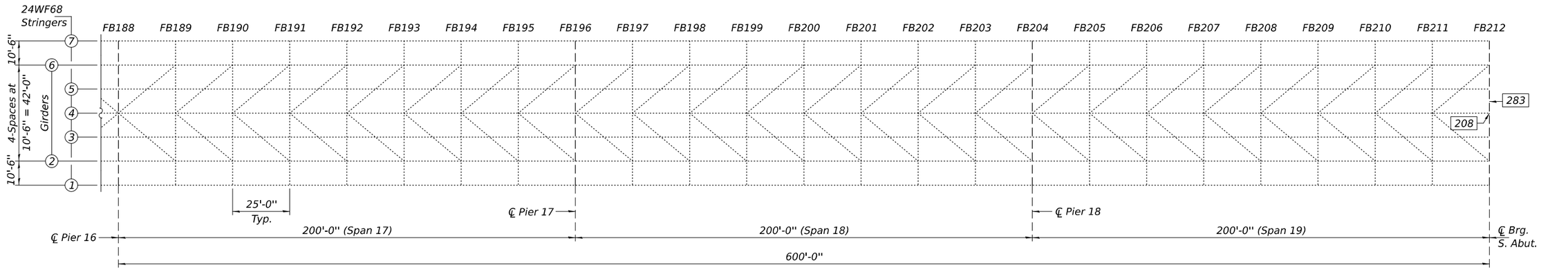


FRAMING PLAN - SPANS 14 THRU 16



FRAMING PLAN - SPANS 17 THRU 19

000 - NBIS Item # (2023)

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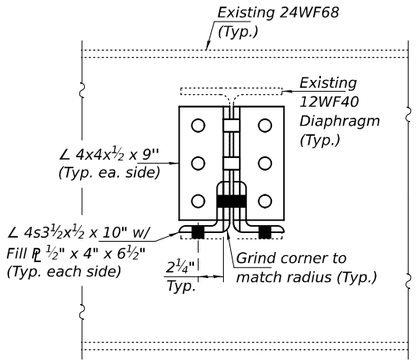
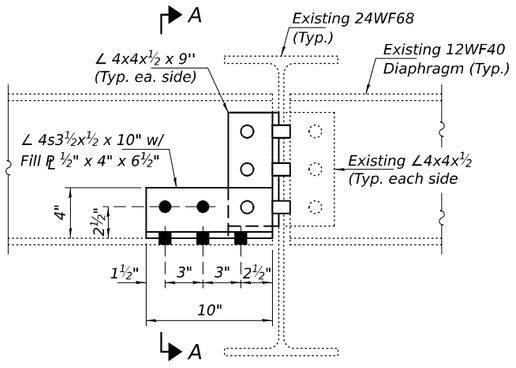
DESIGNED - JSB	EXAMINED		DATE - AUGUST 16, 2024	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	FRAMING PLAN - SPANS 13 THRU 19 SN 064-0035	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED - VHV	PASSED	ENGINEER OF STRUCTURAL SERVICES	REVISED -		SHEET 6 OF 13 SHEETS	24	(64-3B)BP-1,BRR-1	MASSAC	236	94
DRAWN - Steffen		Joyce F. Dickhoff	REVISED -					CONTRACT NO. 78972		
CHECKED - JSB VHV		ENGINEER OF BRIDGES AND STRUCTURES						ILLINOIS FED. AID PROJECT		
8/16/2024 11:02:25 AM										

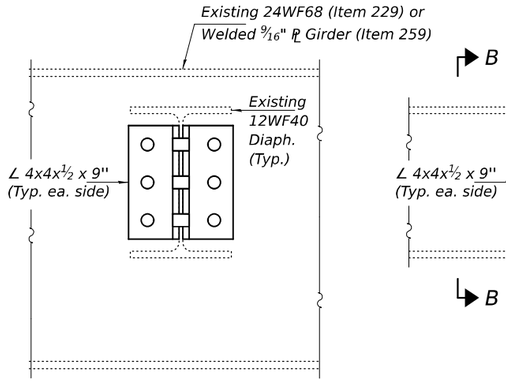


ITEM 145 REPAIR DETAILS

(Looking ------)

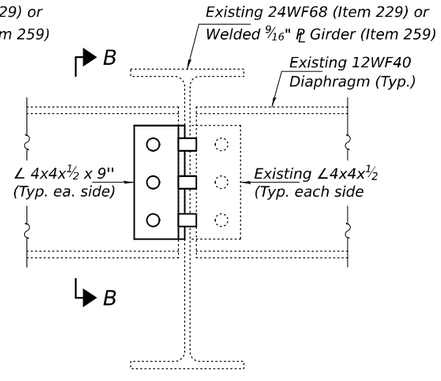


SECTION A-A

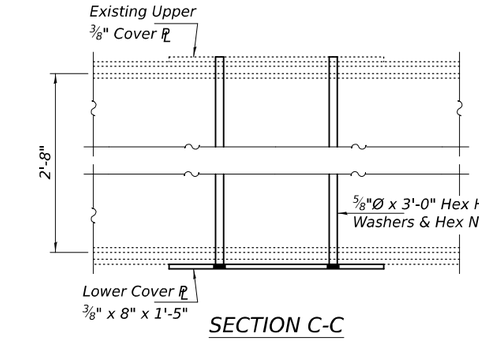


ITEM 229 & 259 REPAIR DETAILS

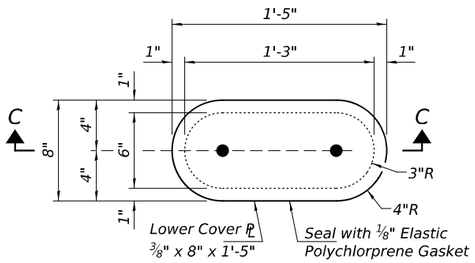
(Looking ------)



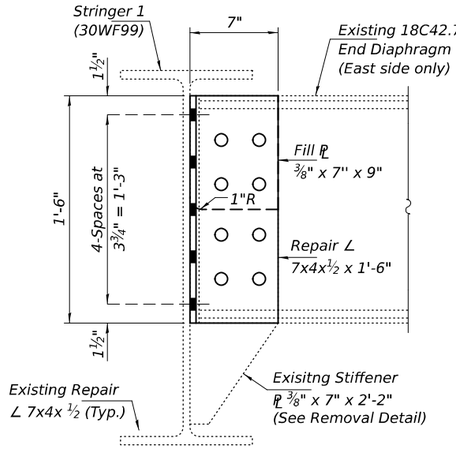
SECTION B-B



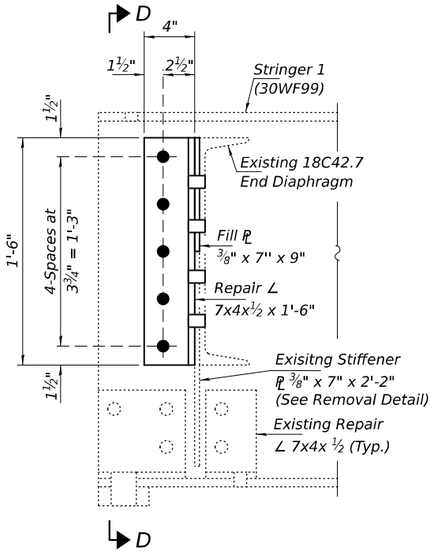
SECTION C-C



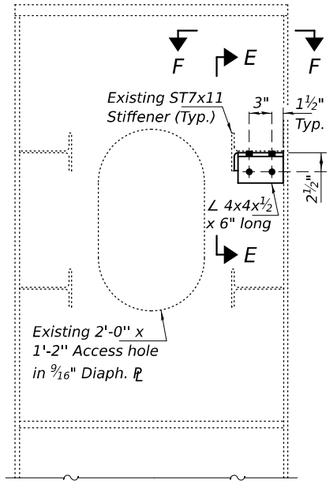
ITEM 288 REPAIR DETAILS
COVER PLATE REPLACEMENT



SECTION D-D

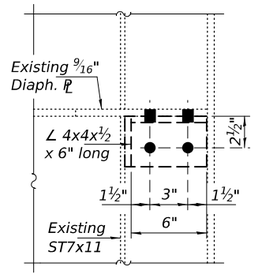


ITEM 243, 266 & 270 REPAIR DETAILS

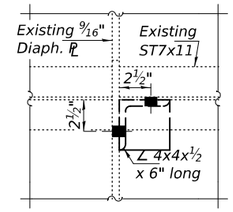


ITEM 215 REPAIR DETAILS

(Looking --)



SECTION F-F



SECTION E-E

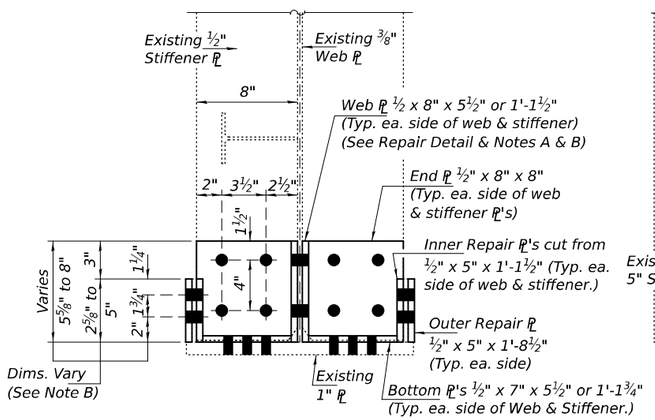
STIFFENER REMOVAL DETAILS

Hatched area indicates steel removal.
Cost included with Structural Steel Repair.

MODEL: 78972-095
FILE NAME: pw://idot-pw.bentley.com:PWIDOT\Documents\IDOT O ces\Bureau of Bridges and Structures\OBM Projects\0640035\CADData\Bridge\0640035.dgn
8/16/2024 11:02:28 AM

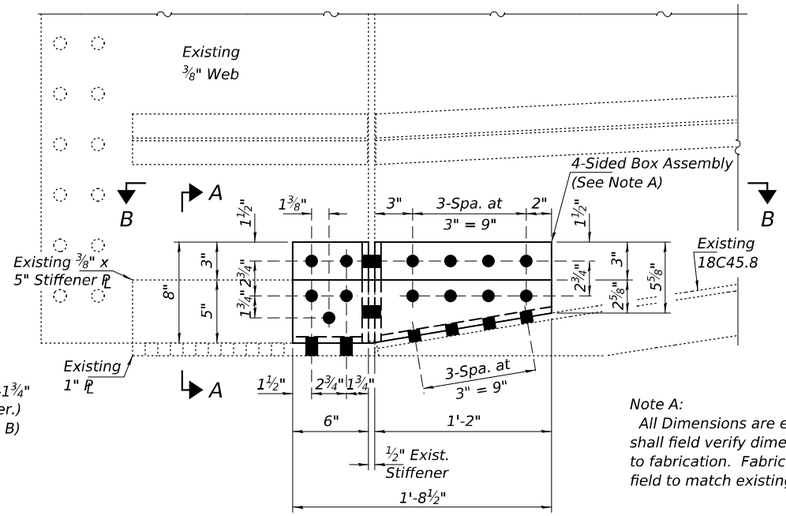
DESIGNED - JSB	EXAMINED	ENGINEER OF STRUCTURAL SERVICES	DATE - AUGUST 16, 2024	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	REPAIR DETAILS SN 064-0035
CHECKED - VHV	PASSED	ENGINEER OF BRIDGES AND STRUCTURES	REVISED -		SHEET 7 OF 13 SHEETS
DRAWN - Steffen			REVISED -		
CHECKED - JSB VHV					

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	95
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



SECTION A-A

Grind all corners to miss existing welds as required.

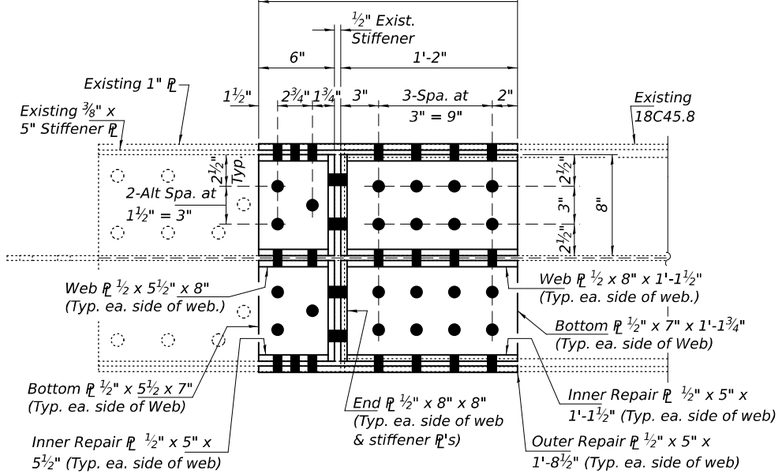


ITEM 176, 182, 286 & 294 REPAIR DETAIL

(See Note A)

Note A:
All Dimensions are estimated. The Contractor shall field verify dimensions at each location prior to fabrication. Fabrication shall be completed in the field to match existing conditions at each location.

Note B:
Inner & Outer Vertical stiffener repair PL's and Web PL's to be trimmed as required to fit each location. See Repair Detail for approximate dimensions.



SECTION B-B

MODEL: 78972-096
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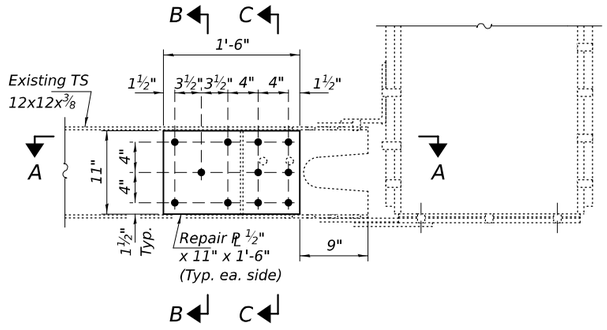
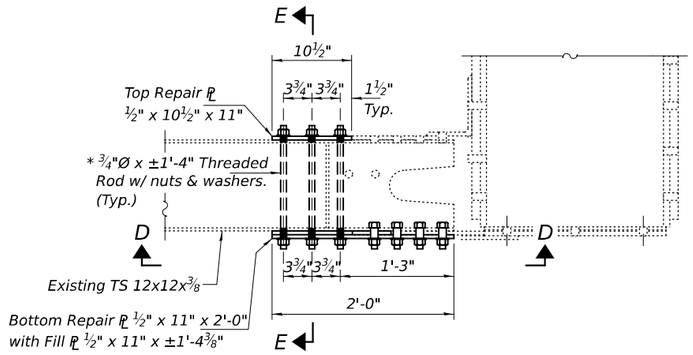
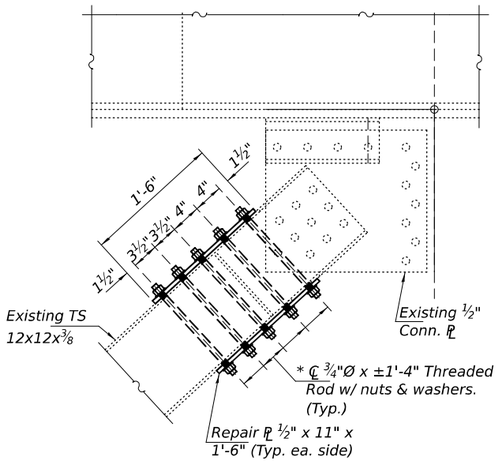
DESIGNED - JSB	EXAMINED	DATE - AUGUST 16, 2024	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	REPAIR DETAILS SN 064-0035	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED - VHV	ENGINEER OF STRUCTURAL SERVICES				24	(64-3B)BP-1,BRR-1	MASSAC	236	96
DRAWN - Steffen	PASSED	REVISED -		SHEET 8 OF 13 SHEETS			CONTRACT NO. 78972		
CHECKED - JSB VHV	ENGINEER OF BRIDGES AND STRUCTURES	REVISED -					ILLINOIS FED. AID PROJECT		



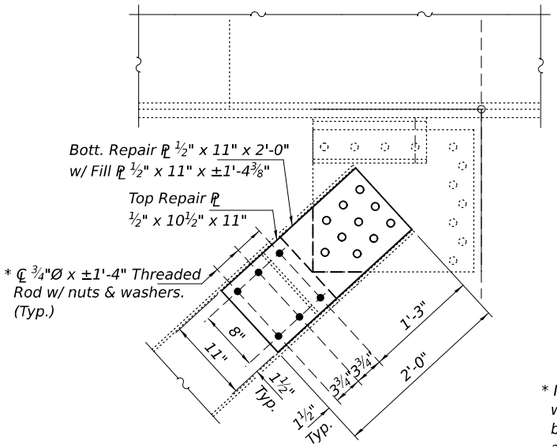
ITEM 239 REPAIR DETAILS



ITEM 241 & 199 REPAIR DETAILS

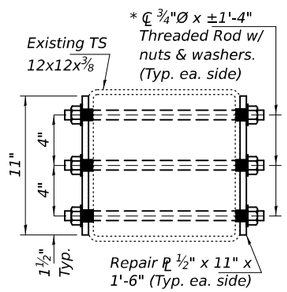


SECTION A-A

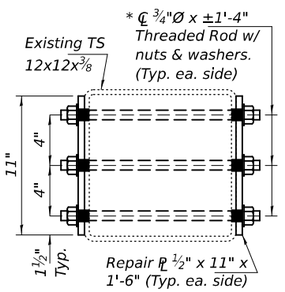


VIEW D-D

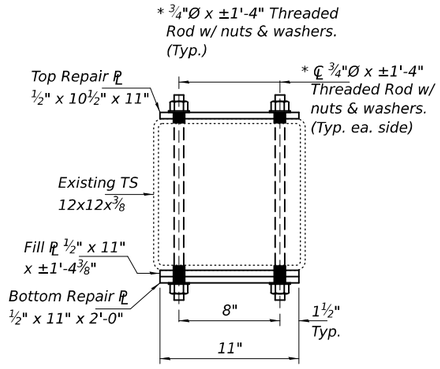
* In lieu of using all-threads in locations where the interior of the member can be reached, the Contractor may use approved H.S. bolts.



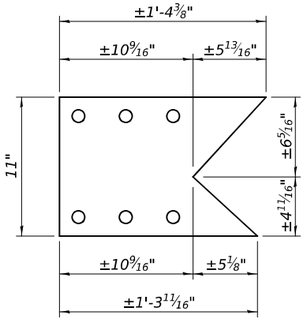
SECTION B-B



SECTION C-C



SECTION E-E



FILL PLATE FOR ITEMS 241 & 199

(Fill Plate dimensions to be field varified at both locations prior to fabrication.)

DESIGNED - JSB	EXAMINED		DATE - AUGUST 16, 2024	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	REPAIR DETAILS SN 064-0035	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED - VHV	PASSED	ENGINEER OF STRUCTURAL SERVICES ENGINEER OF BRIDGES AND STRUCTURES	REVISED -			24	(64-3B)BP-1,BRR-1	MASSAC	236	97
DRAWN - Steffen			REVISED -		SHEET 9 OF 13 SHEETS			CONTRACT NO. 78972		
CHECKED - JSB VHV							ILLINOIS	FED. AID PROJECT		

MODEL: 78972-097
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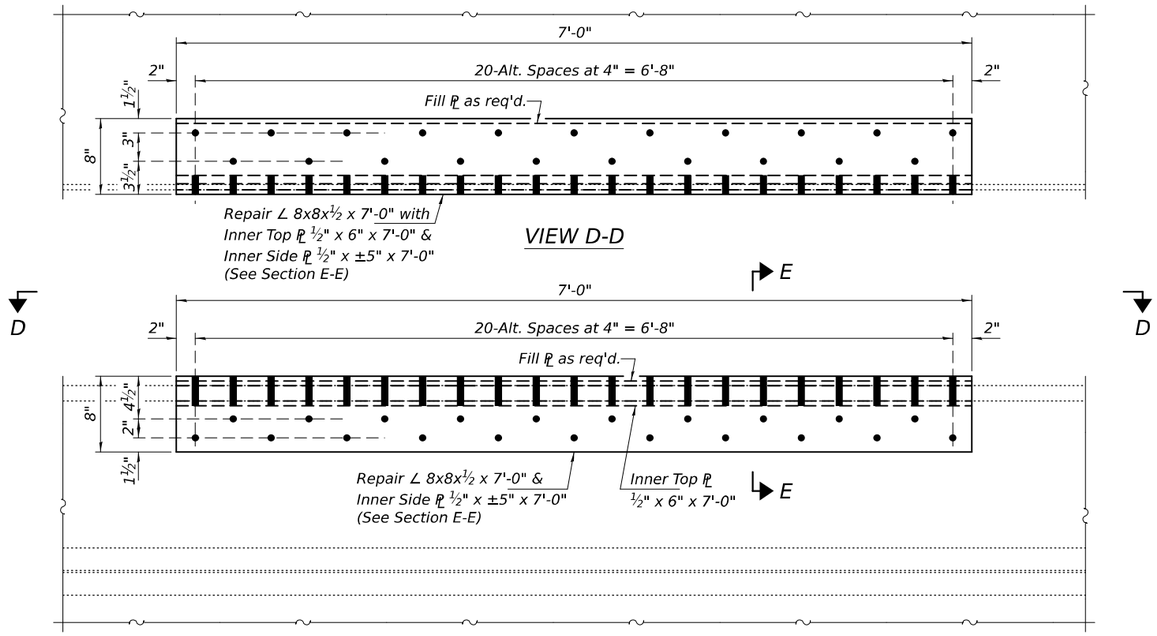
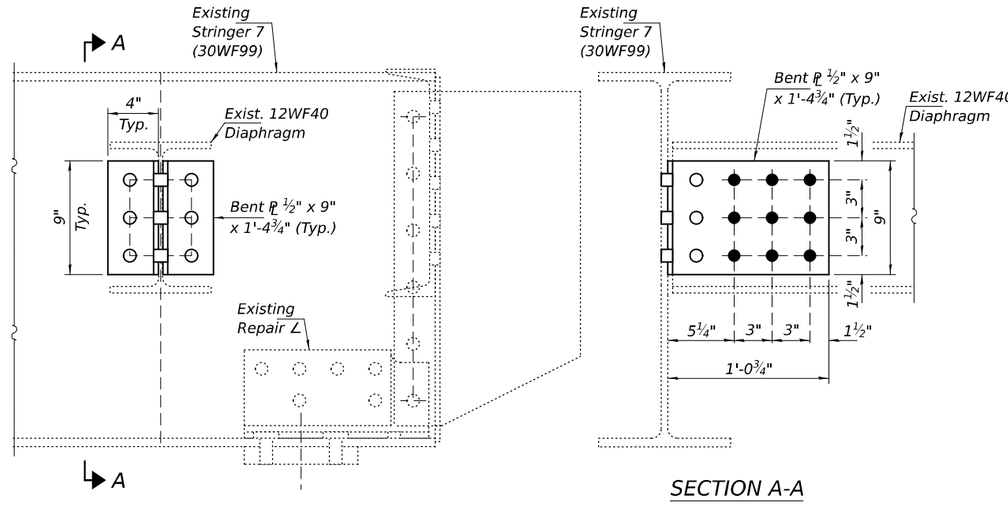
8/16/2024 11:02:34 AM



ITEM 101

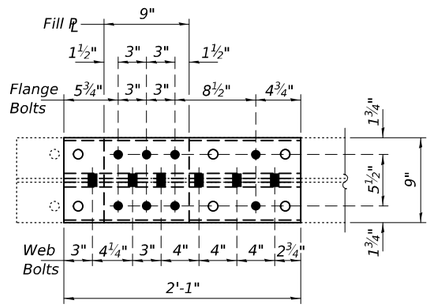
SECTION E-E



SECTION A-A

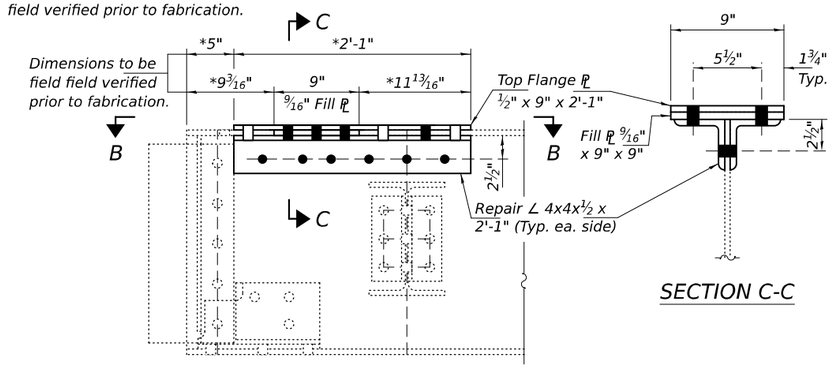
ITEM 295 REPAIR DETAILS

(Looking East)



VIEW B-B

* Fill ℄ location and dimensions to be field verified prior to fabrication.



SECTION C-C

ITEM 220 REPAIR DETAILS

(See View B-B for bolt spacing.)
Expansion Joint not shown, existing
Exp. Joint holes to be field verified.

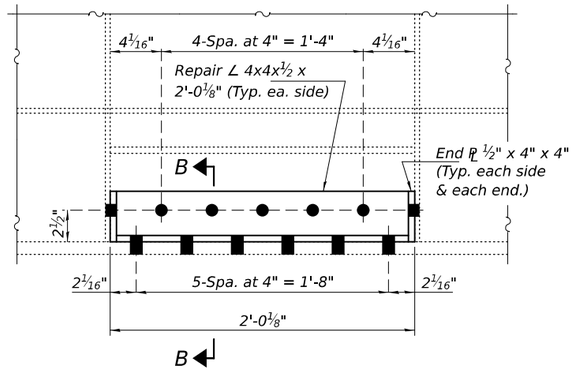
MODEL: 76972-098
FILE NAME: pw:\\fdot-pw.bentley.com:PWIDOT\Documents\IDOT O ces\Bureau of Bridges and Structures\OBM Projects\0640035\CADData\Bridge\0640035.dgn
8/16/2024 11:02:37 AM

DESIGNED - JSB	EXAMINED	DATE - AUGUST 16, 2024	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	REPAIR DETAILS SN 064-0035	
CHECKED - VHV	ENGINEER OF STRUCTURAL SERVICES				
DRAWN - Steffen	PASSED	REVISED -		SHEET 10 OF 13 SHEETS	
CHECKED - JSB VHV	ENGINEER OF BRIDGES AND STRUCTURES	REVISED -			

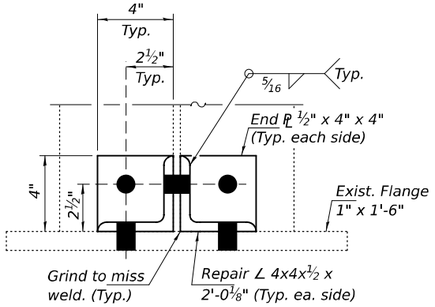
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	98
		CONTRACT NO. 78972		
		ILLINOIS	FED. AID PROJECT	

ITEM 223 REPAIR DETAILS

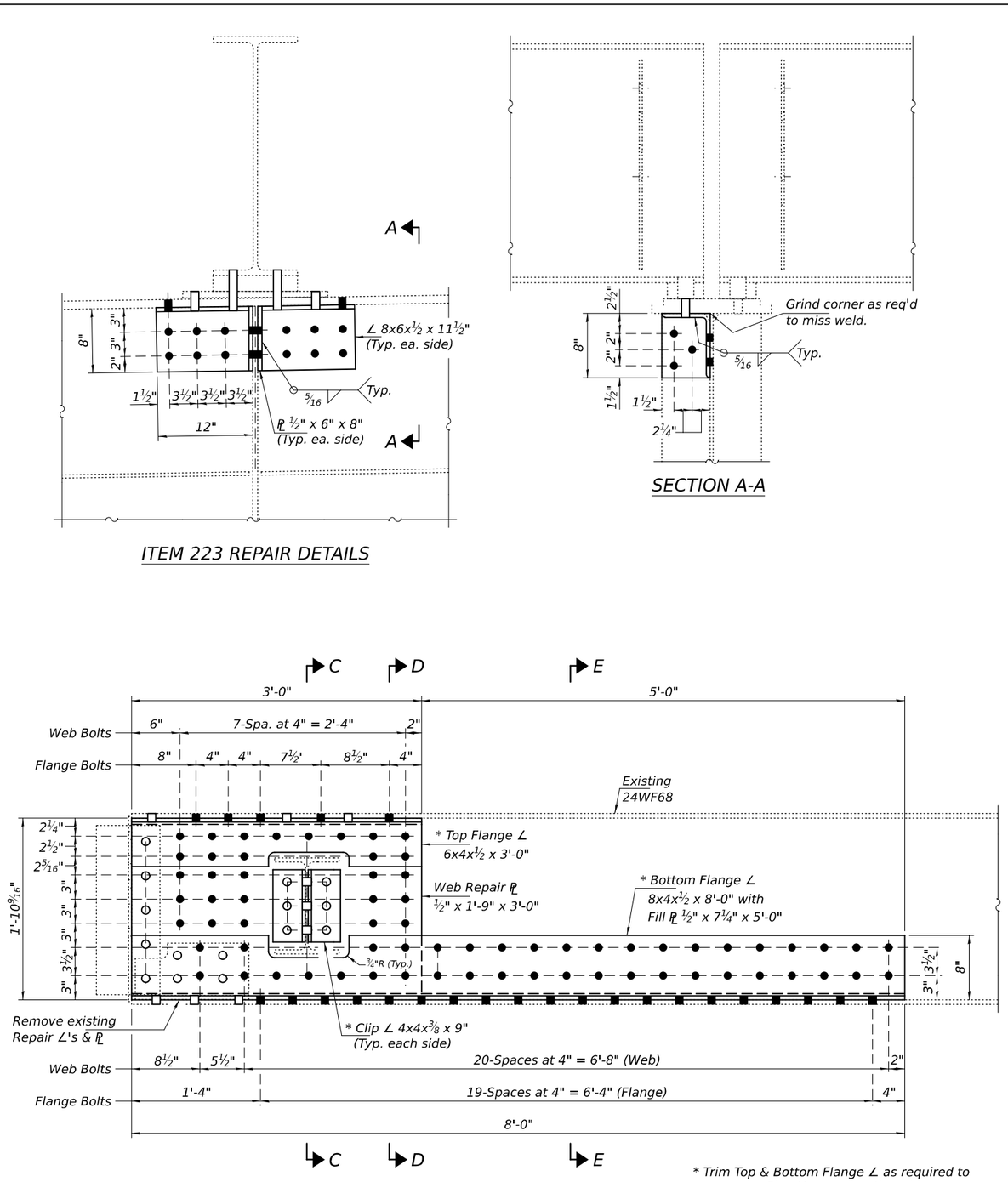
SECTION A-A



ITEM 122 REPAIR DETAILS

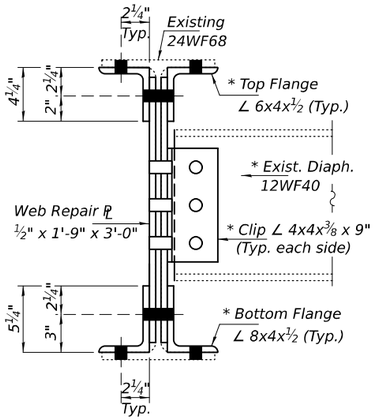


SECTION B-B



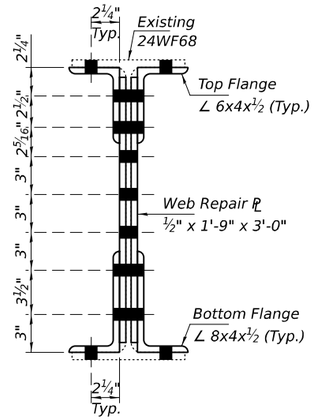
ITEM 140 REPAIR DETAILS

* Trim Top & Bottom Flange ∠ as required to clear new Clip ∠'s and existing diaphragm. Trim existing diaphragm as required to facilitate installation of Web Repair PL's.



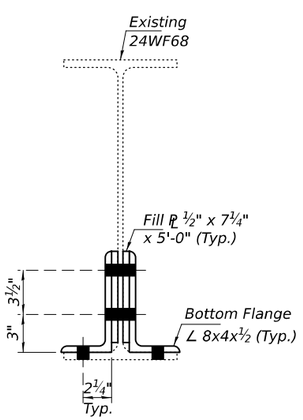
SECTION C-C

Grind all corners to clear existing welds as req'd.



SECTION D-D

Grind all corners to clear existing welds as req'd.



SECTION E-E

Grind all corners to clear existing welds as req'd.

DESIGNED - JSB	EXAMINED		DATE - AUGUST 16, 2024	**STATE OF ILLINOIS**	**REPAIR DETAILS**		
CHECKED - VHV		ENGINEER OF STRUCTURAL SERVICES		**DEPARTMENT OF TRANSPORTATION**	**SN 064-0035**		
DRAWN - Steffen	PASSED	Joyce F. Duff	REVISED -		SHEET 11 OF 13 SHEETS		
CHECKED - JSB VHV		ENGINEER OF BRIDGES AND STRUCTURES	REVISED -				

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	99
		CONTRACT NO. 78972		
	ILLINOIS FED. AID PROJECT			

MODEL: 78972-099
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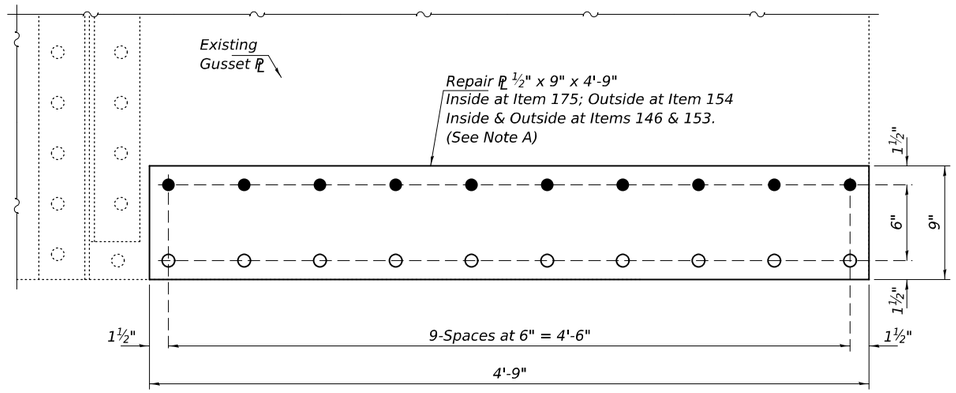
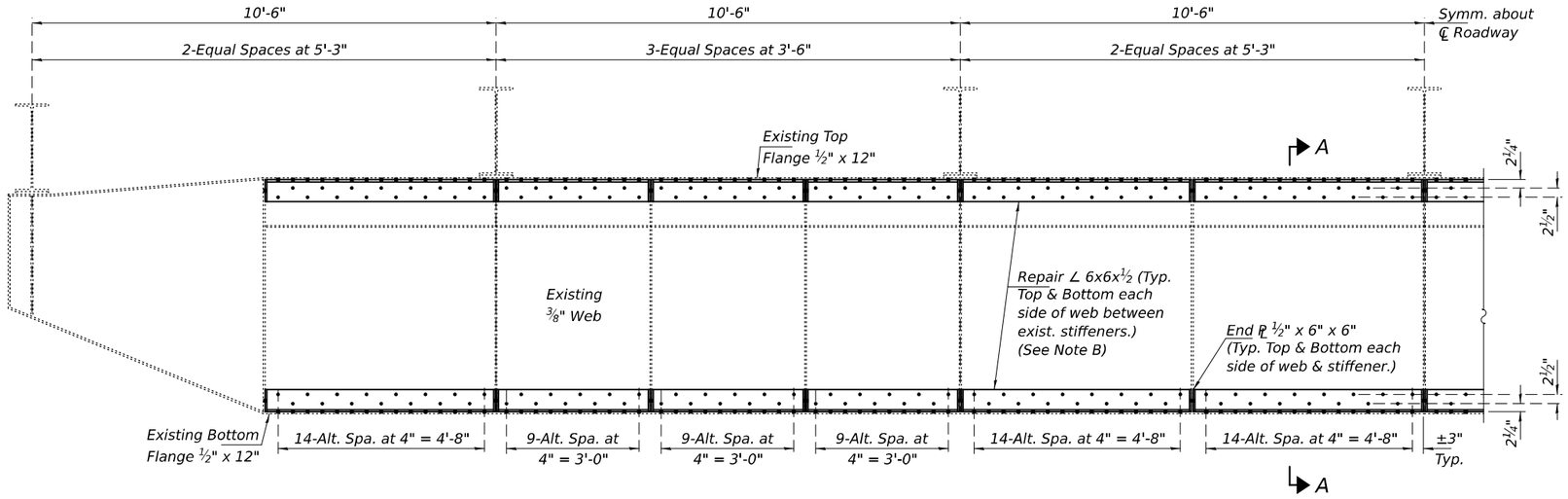


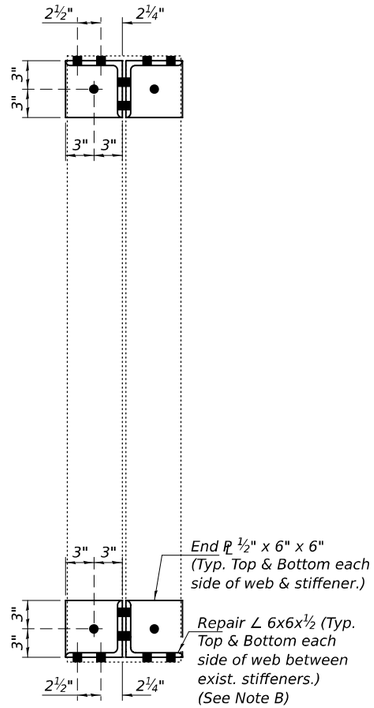
ITEM 146, 153, 154 & 175 REPAIR DETAIL

Note A:
Repair PL dimensions and existing bolt spacing is estimated. The Contractor shall field verify required PL size and bolt spacing prior to fabrication at all 4 locations.



ITEM 208 REPAIR DETAIL

Note B:
The Contractor shall field verify dimensions between stiffeners and existing bolt spacing in top & bottom flange prior to fabrication.



SECTION A-A

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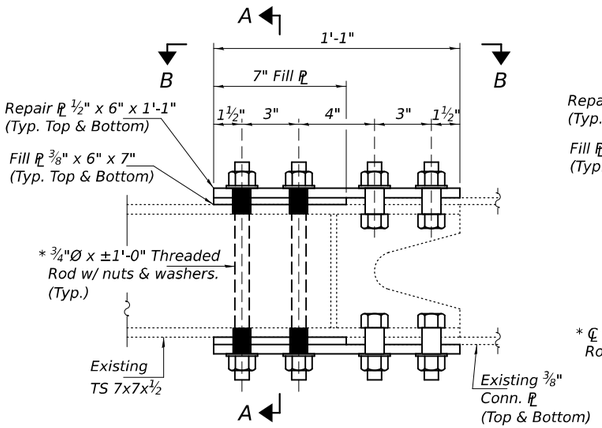
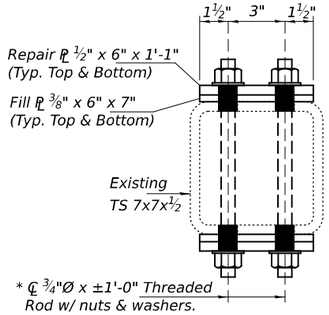
CHECKED - VHV		ENGINEER OF STRUCTURAL SERVICES				24	(64-3B)BP-1,BRR-1	MASSAC	236	100
DRAWN - Steffen	PASSED		REVISED -		SHEET 12 OF 13 SHEETS			CONTRACT NO. 78972		
CHECKED - JSB VHV		ENGINEER OF BRIDGES AND STRUCTURES	REVISED -					ILLINOIS	FED. AID PROJECT	

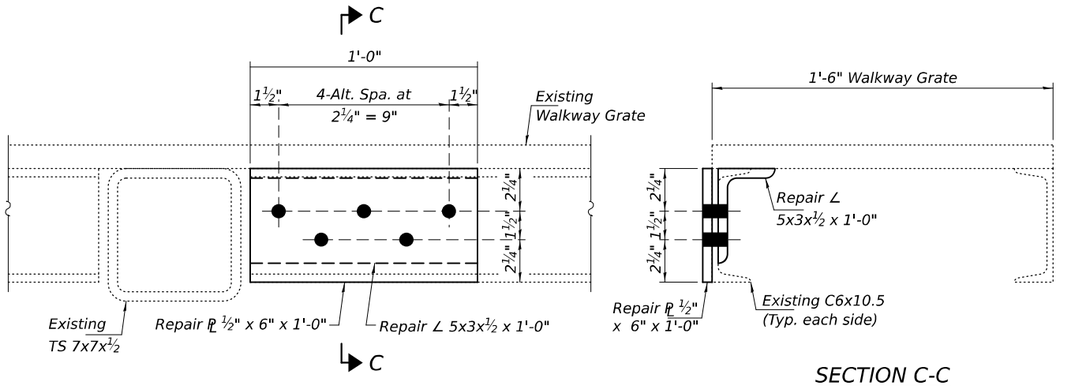


ITEM 105 REPAIR DETAILS



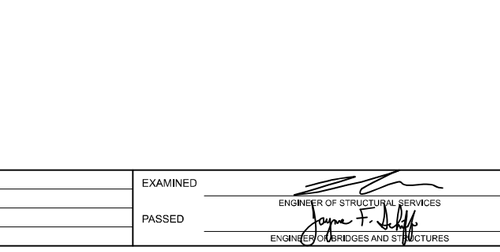
SECTION A-A

* In lieu of using all-threads in locations where the interior of the member can be reached, the Contractor may use approved H.S. bolts.



ITEM 204 REPAIR DETAIL

SECTION C-C



SECTION B-B

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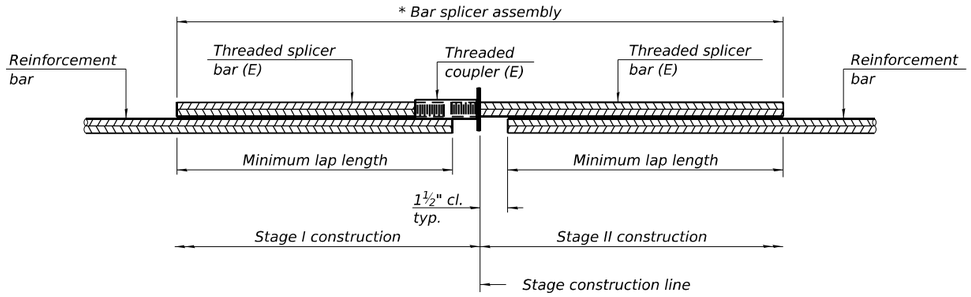
CHECKED - VHV					CONTRACT NO. 78972
DRAWN - Steffen	PASSED	REVISED -		SHEET 13 OF 13 SHEETS	ILLINOIS | FED. AID PROJECT
CHECKED - JSB VHV	ENGINEER OF STRUCTURAL SERVICES ENGINEER OF BRIDGES AND STRUCTURES	REVISED -			



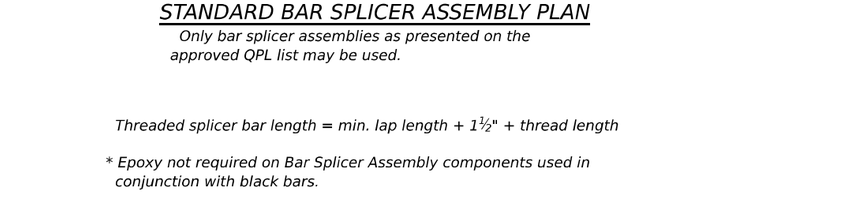
STANDARD BAR SPLICER ASSEMBLY PLAN

Only bar splicer assemblies as presented on the approved QPL list may be used.

Threaded splicer bar length = min. lap length + 1½" + thread length

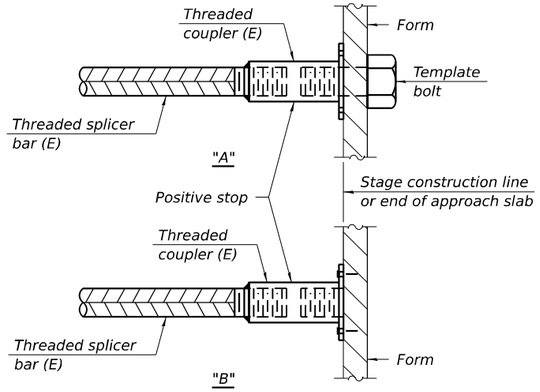
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar Size	No. Assemblies Required	Minimum lap length
Exp. Jt. 3 Top of Slab	#6	48	5'-0''
Exp. Jt. 3 Bot. of Slab	#6	32	4'-5''
Exp. Jt. 3 Bot. of Edge Beam	#6	16	See Edge Beam Bar Splicer Detail
Exp. Jt. 3 Top of Parapet	#4	16	See Parapet Bar Splicer Detail
Exp. Jt. 4 Top of Slab	#6	40	5'-0''
Exp. Jt. 4 Bot. of Slab	#6	32	4'-5''
Exp. Jt. 4 Bot. of Edge Beam	#6	16	See Edge Beam Bar Splicer Detail
Exp. Jt. 4 Top of Parapet	#4	16	See Parapet Bar Splicer Detail
Exp. Jt. 8 Top of Slab	#6	52	5'-0''
Exp. Jt. 8 Bot. of Slab	#6	32	4'-5''
Exp. Jt. 8 Bot. of Edge Beam	#6	16	See Edge Beam Bar Splicer Detail
Exp. Jt. 8 Top of Parapet	#4	16	See Parapet Bar Splicer Detail
Exp. Jt. 12 Top of Slab	#6	48	5'-0''
Exp. Jt. 12 Bot. of Slab	#6	32	4'-5''
Exp. Jt. 12 Bot. of Edge Beam	#6	16	See Edge Beam Bar Splicer Detail
Exp. Jt. 12 Top of Parapet	#4	16	See Parapet Bar Splicer Detail
Exp. Jt. 13 Top of Slab	#6	44	5'-0''
Exp. Jt. 13 Bot. of Slab	#6	32	4'-5''
Exp. Jt. 13 Bot. of Edge Beam	#6	16	See Edge Beam Bar Splicer Detail
Exp. Jt. 13 Top of Parapet	#4	16	See Parapet Bar Splicer Detail



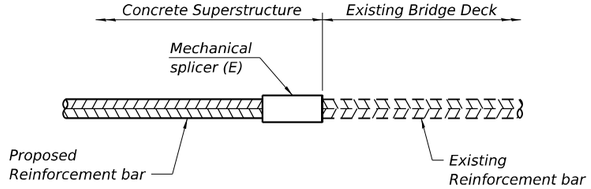
EDGE BEAM BAR SPLICER DETAIL

(Headed 160-#6 Bar Terminators)
(All components shall be provided from one supplier)



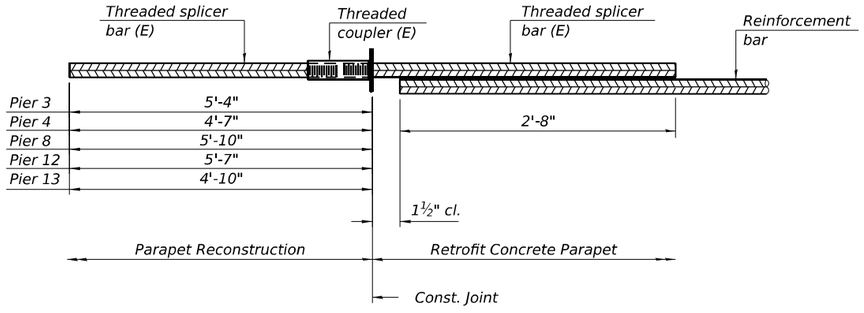
INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
(E) : Indicates epoxy coating.



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required
Exp. Jt. 3	#6	272
Exp. Jt. 4	#6	272
Exp. Jt. 8	#6	268
Exp. Jt. 12	#6	272
Exp. Jt. 13	#6	272



PARAPET BAR SPLICER DETAIL

Notes:

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.

All reinforcement shall be lapped and tied to the splicer bars.

Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.

See approved list of bar splicer assemblies and mechanical splicers for alternatives.

Bar terminators, paid for separately. See Total Bill of Material.

MODEL: Default
FILE NAME: P:\2021\2105\0593\I&L - FAI 24 Ohio River Bridge Painting\4 CADD - DWG\4.4 Struc\0640035-78972-041-Bar Splicer Details.dgn
8/16/2024 11:12:03 AM

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC.
WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

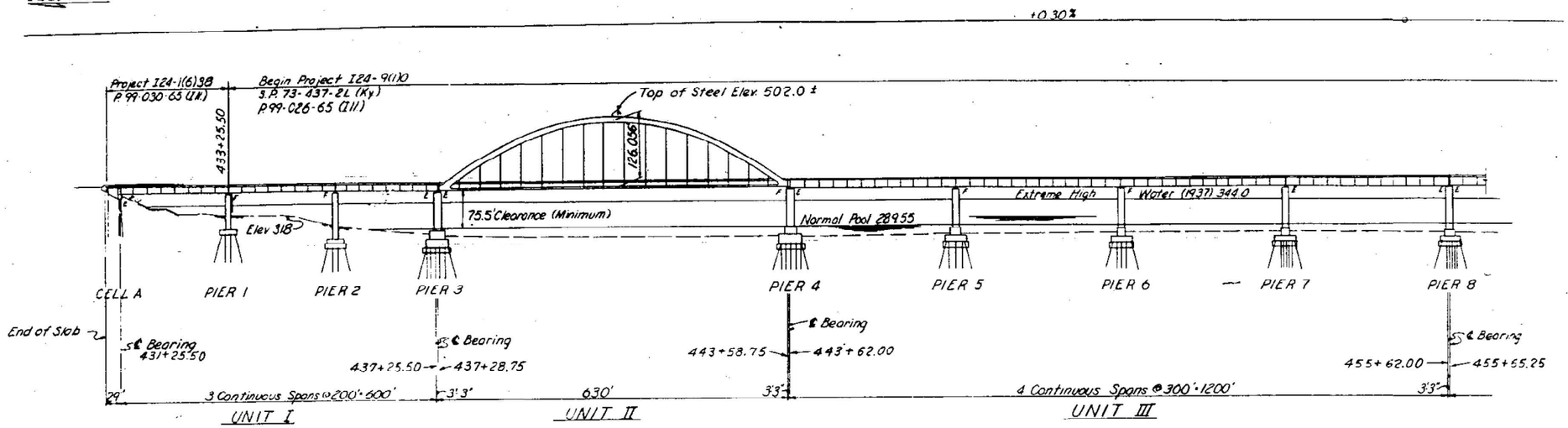
USER NAME = Jesker	DESIGNED - JBE	REVISED -	
	CHECKED - CDK/BWP	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN - JBE	REVISED -	
PLOT DATE = 8/16/2024	CHECKED - CDK/BWP	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

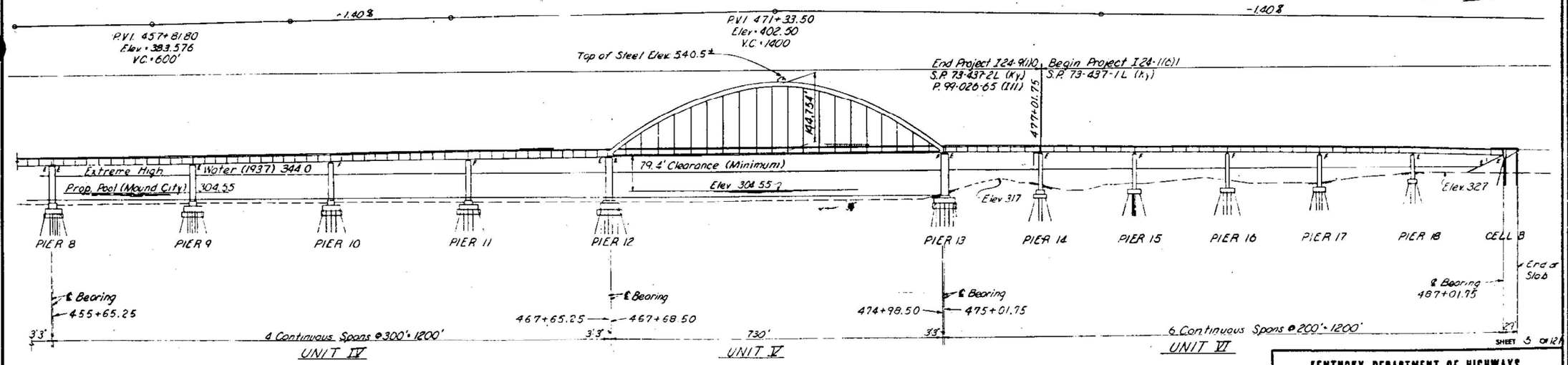
MODIFIED BAR SPLICER ASSEMBLY AND MECH. SPLICER DETAILS
STRUCTURE NO. 064-0035
SHEET 41 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	102
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

ILLINOIS



KENTUCKY



Note: Substructure construction (all piers and cells to underside of roadway deck) is by others.

FOR INFORMATION ONLY

COMPOSITE ELEVATION
UNITS I THRU VI

SHEET 5 OF 12 SHEETS

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS

PROJECTS I 24-1(6)38, I 24-9(1)0, I 24-1(6)1
BRIDGE OVER OHIO RIVER ON I 24
BETWEEN McCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

HAZELET & ERDAL Consulting Engineers File No. 848	BRIDGE NUMBER	DRAWING NO. 17471	INDEX

MODEL: Default
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8/16/2024 11:12:04 AM

TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM	USER NAME = Jesker	DESIGNED -	REVISED -
	IL DESIGN FIRM LICENSE NO: 184-001220		CHECKED -	REVISED -
		PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -
		PLOT DATE = 8/16/2024	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 42 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	103
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

P.O.T. Sta. 416+00
Elev. 371.031

℄ Brg
431+25.500
Elev. 375.607

433+25.500
Elev. 376.207

452+25.500
Elev. 376.807

℄ Brg
437+25.500
Elev. 377.407

P.V.I Sta. 457+81.800
Elev. 383.576

Sta. 430+96.500

Embankment shall be in place a minimum of twelve months prior to driving Piles

Project I 24-1(6)38
P 99-030-65 (Ill.)

+0.3%

To ILLINOIS

Begin Project I 24-9(1)0
SP 73-437-2L (Ky.)
P 99-026-65 (Ill.)
Toothed Exp. Joint

Toothed Exp. Dam
Top of Substructure at Cell A

Pier Light
(Red 180°)

Exp.

Fix

Fix

Exp.

Elev. 358.393 (Brg. Pad)

Elev. 358.633

Elev. 359.233

Extreme High Water
Elev. 344.0 (1937)

Berm Elev. 338.0

SPAN 1

SPAN 2

SPAN 3

Existing Ground

Crushed Aggregate Slope Protection (See Roadway Plans for details)

Est Elev 267.0

CELL A

Dry Cyclopean Stone Riprap (See Roadway Plans for details)

Berm Elev 338.0 for Sand Fill.

Elev. 284.05?

Est Elev 235.0

Dry Cyclopean Stone Riprap

Proposed Pool (Mound City) Elev. 304.55

Normal Pool (Dam 53) Elev. 289.65

Elev. 265.15

Est. Elev. 210.0

PIER 1

PIER 2

PIER 3

Spur Dike - see Roadway Plans

Guard Rail to be attached to each wing of Cell A. For details see Sheet 80 and Ill. Std. Drawing 2230, current edition.

Riprap to Elev. 344.0'

Toe of Slope

3:1 (Typ)

ELEVATION

Three Span Continuous Unit (598.200') Welded Plate Girders

NOTE:
Cells, Riprap, Pier Substructure, etc. are not a part of this contract.

DESIGN LOAD

HS 20-44 Loading as specified in 1965 AASHO Specifications for Highway Bridges, or alternate loading of two 24 Kip axles spaced 4' apart, whichever produces the greater stress.

DESIGN ROADWAY

Two - 30'-0" Roadways with a 2'-4" Median and two 1'-6" Brush Curbs.

5634.25 Lin. Ft. Out to Out of Bridge Roadway Slabs

3 Span Continuous Unit - 604.803'

200.000'

200.000'

200.000'

2.703'

End of Cell A
Sta 430+96.50

Edge of Shoulder
40'-0" Guard Rail Transition

Fascia Line
1:6 Typ

Limits of 12" of Crushed Aggregate Slope Protection

℄ Brg.

℄ Brg.

℄ Brg.

Stabilized Shoulder*

℄ Bearing Cell A
Sta 431+25.500

Concrete Median

5'-0" Berm

30' Berm

℄ Pier 1
Sta 433+25.500

℄ Pier 2
Sta 452+25.500

℄ Pier 3
Sta 437+28.203

S 17°44'23" W

℄ I 24 & Construction ℄

Limits of Riprap (Typ)

Edge of Water

Ohio River

35'-0"

35'-0"

Guard Rail*

Approach Slabs*

*Indicates Construction by Others

Riprap

Toe of Slope

PLAN

Superstructure Removed

66:1

30'-0" Roadway

2'-4"

30'-0" Roadway

10'

3:3

3:3

28'-0"

2'-9"

2'-9"

Profile Grade

Profile Grade

High Strength Handrail, see Std H117 or Std H150, current edition.

36" wf Stringers (typ)

Bracing at Piers Only
4 Spaces @ 10'-6" = 42'-0"

10'-6"

10'-6"

TYPICAL SECTION
(Looking Forward)

UNIT 1 (Approach) LAYOUT

Elevation Datum: U.S.C. & G.S. 1929 Adjusted
B.M.: See Roadway Plans, Sheets 2 & 5.

SHEET 6 OF 121

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
PROJECTS I 24-1(6)38, I 24-9(1)0, I 24-1(6)1
BRIDGE OVER OHIO RIVER ON I 24
BETWEEN MCCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

DRAWING NO. 17491

FOR INFORMATION ONLY

MODEL: Default
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8/16/2024 11:12:07 AM

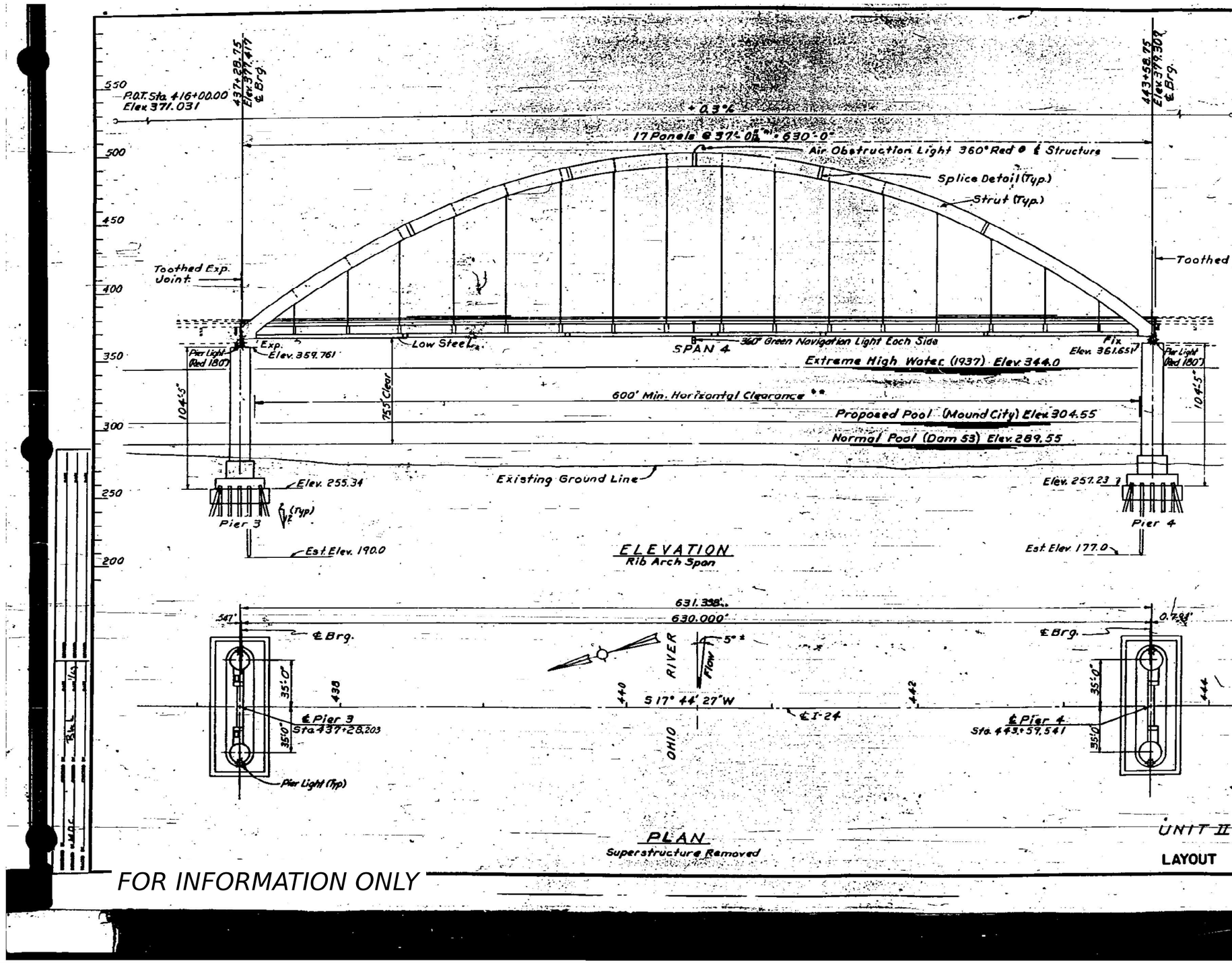
TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC.
WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = Jesker	DESIGNED -	REVISED -	
	CHECKED -	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 43 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	104
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



FOR INFORMATION ONLY

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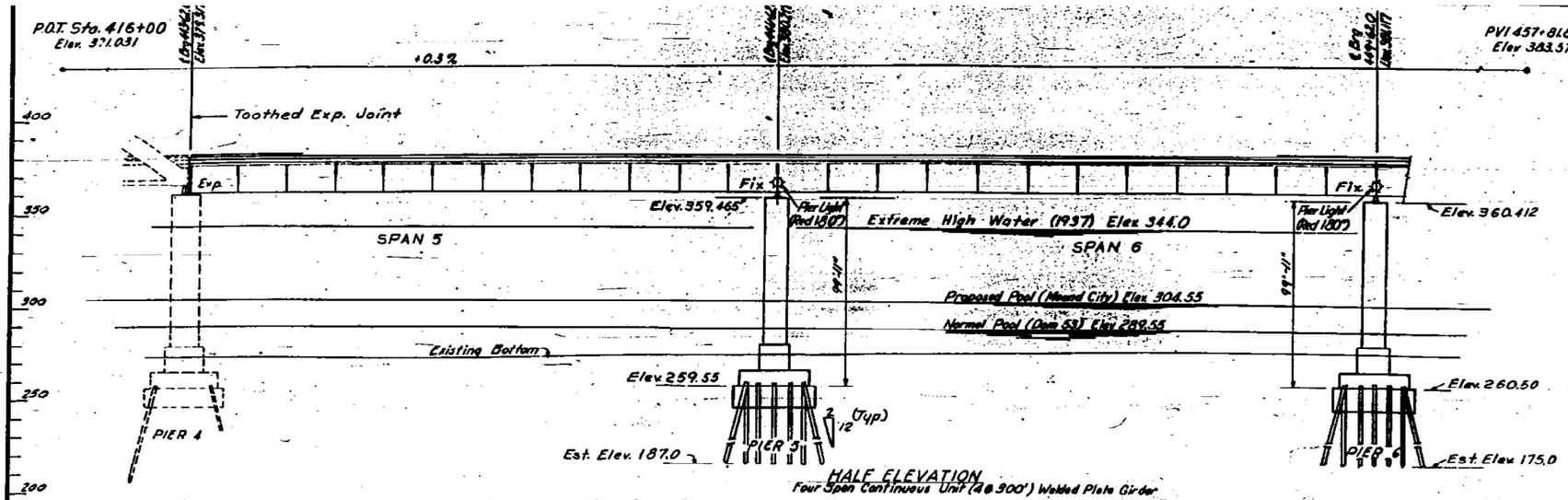
8/16/2024 11:12:10 AM

TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = Jesker	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
			CHECKED -	REVISED -	
		PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
		PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 44 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	105
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



SHEET 8 OF 121

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
PROJECTS I 24-1(5)130, I 24-8(110) ,I 24-1(6)1
BRIDGE OVER OHIO RIVER ON I 24
BETWEEN MASSAC COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

HALBERT & BRYAN, INC. Consulting Engineers File No. 869	DESIGN NUMBER	DRAWING NO. 17471	SHEET

FOR INFORMATION ONLY

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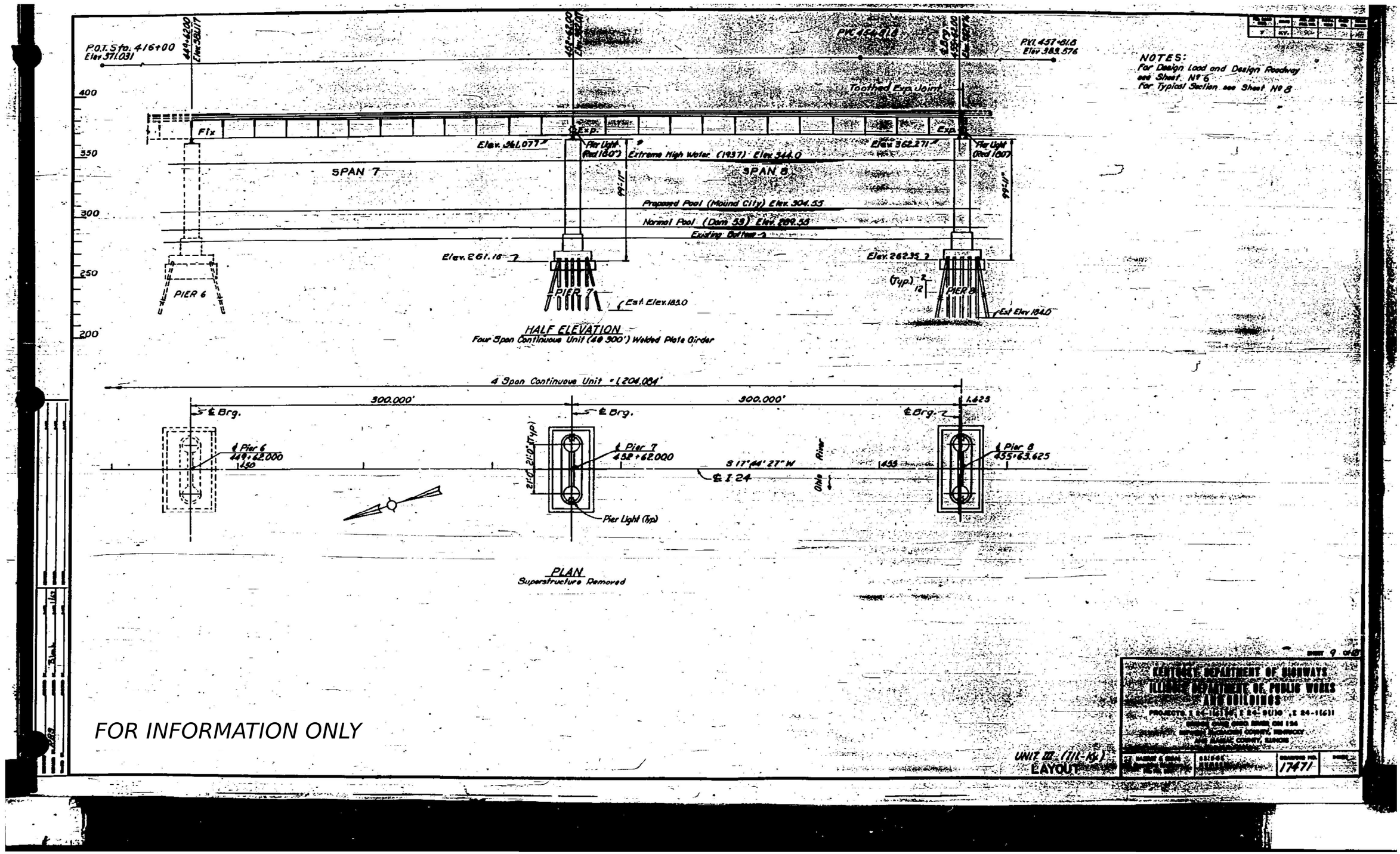
		PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -
		PLOT DATE = 8/16/2024	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 45 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	106
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



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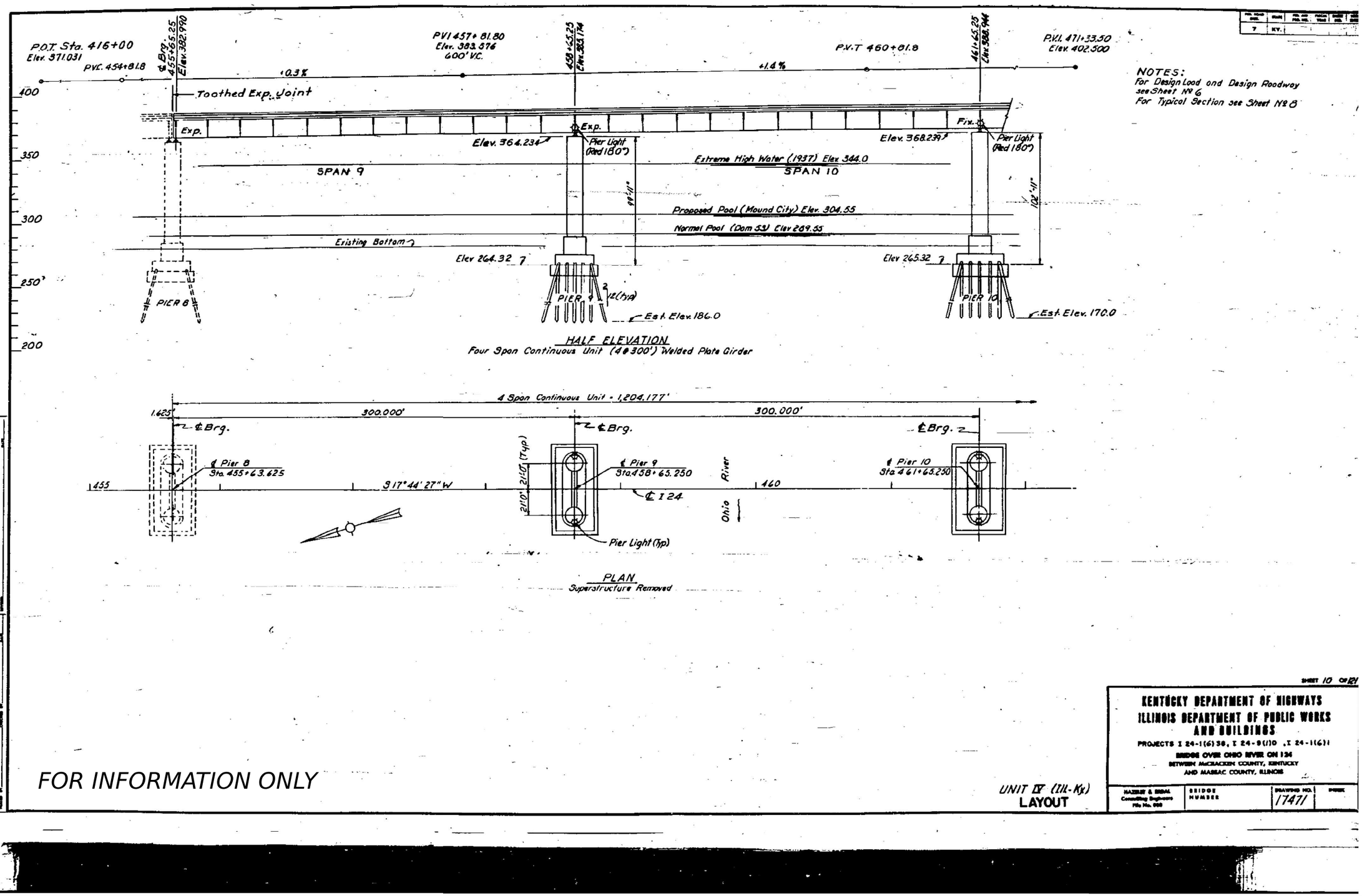
			CHECKED -	REVISED -	
		PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
		PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 46 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	107
		CONTRACT NO. 78972		
	ILLINOIS FED. AID PROJECT			



FOR INFORMATION ONLY

UNIT IV (Ill.-Ky.)
LAYOUT

SHEET 10 OF 21

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
PROJECTS I 24-1(6)38, I 24-9(10) ,I 24-1(6)1
BRIDGE OVER OHIO RIVER ON I 24
BETWEEN McCRACKEN COUNTY, KENTUCKY
AND MASSAC COUNTY, ILLINOIS

HAZELET & ERDAL Consulting Engineers File No. 000	BRIDGE NUMBER	DRAWING NO. 17471	SHEET

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TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

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	CHECKED -	REVISED -	
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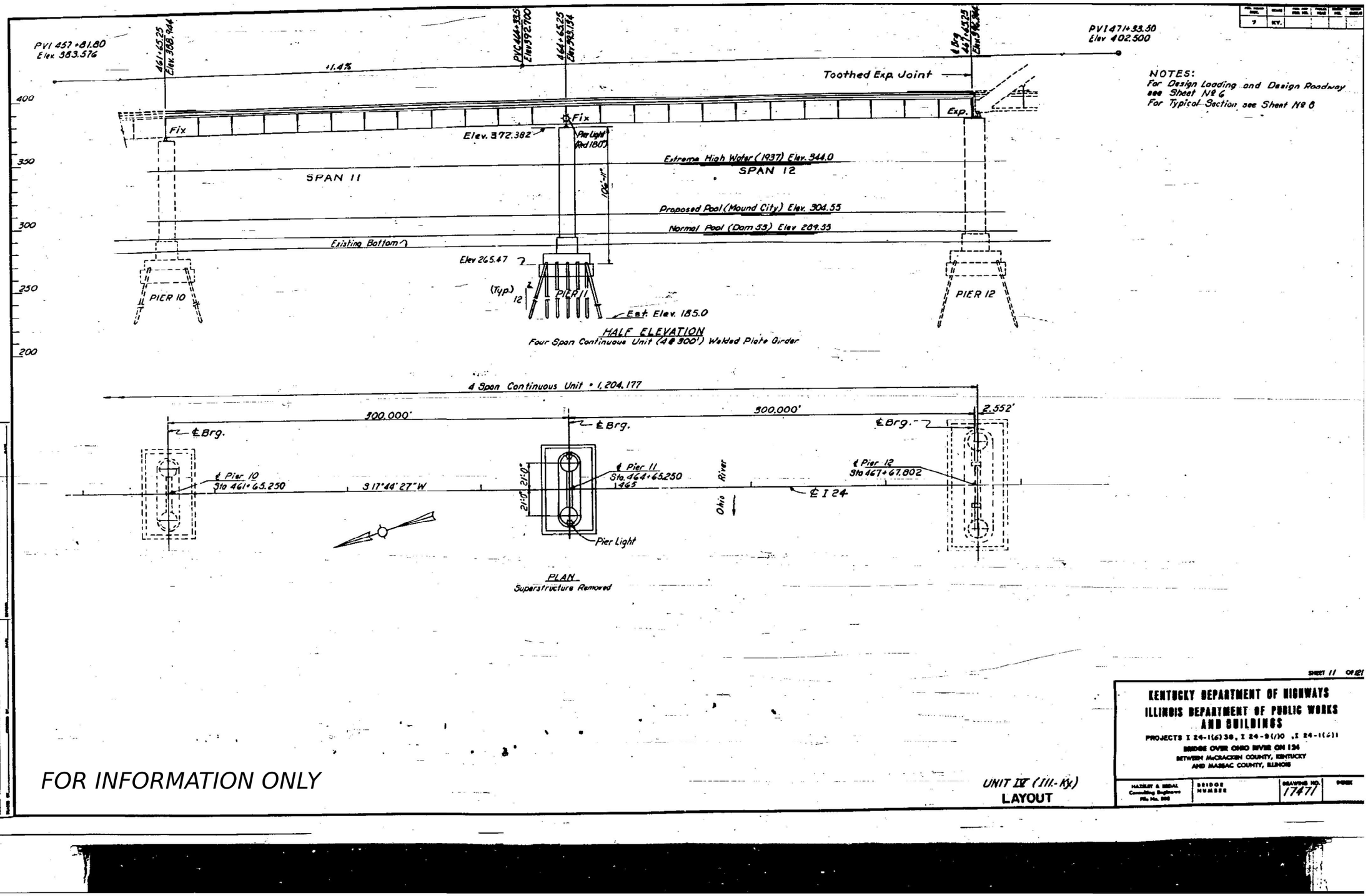
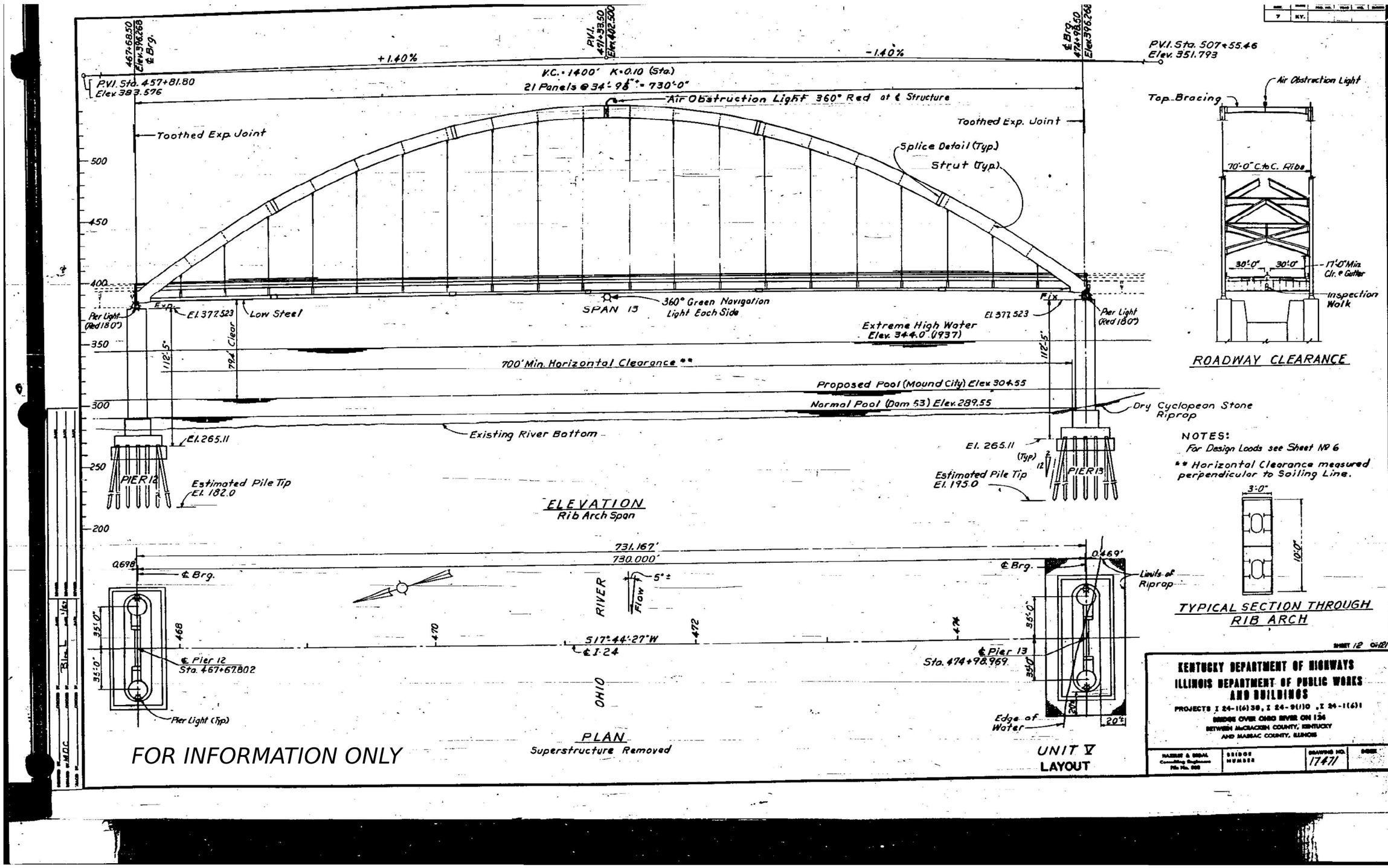
PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 47 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	108
		CONTRACT NO. 78972		
	ILLINOIS FED. AID PROJECT			


PVI 457+81.80
Elev. 383.576
461+65.25
Elev. 368.944
+1.4%
PVC 464+33.35
Elev 392.700
464+65.25
Elev 393.134
Toothed Exp. Joint
PVI 471+33.50
Elev 402.500
NOTES:
For Design Loading and Design Roadway see Sheet No 6
For Typical Section see Sheet No 8
Fix
Fix
Exp.
Elev. 372.382
Pier Light (Red 180°)
Extreme High Water (1937) Elev. 344.0
SPAN 11
SPAN 12
106'-11"
Proposed Pool (Mound City) Elev. 304.55
Normal Pool (Dam 53) Elev 289.33
Existing Bottom
Elev 265.47
(Typ.) 2:1
PIER 10
PIER 11
PIER 12
Est. Elev. 185.0
HALF ELEVATION
Four Span Continuous Unit (4 @ 300') Welded Plate Girder
400
350
300
250
200
4 Span Continuous Unit = 1,204.177
300.000'
300.000'
2.552'
℄ Brg.
℄ Brg.
℄ Brg.
℄ Pier 10
Sta 461+65.250
S 17°44'27" W
2:1
2:1
℄ Pier 11
Sta 464+65.250
1965
Ohio River
℄ Pier 12
Sta 467+67.802
℄ I 24
Pier Light
PLAN
Superstructure Removed
FOR INFORMATION ONLY
UNIT IV (III-Ky)
LAYOUT
SHEET 11 OF 121
KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
PROJECTS I 24-1(6)30, I 24-9(10) ,I 24-1(5)1
BRIDGE OVER OHIO RIVER ON I24
BETWEEN McCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS
HAZELET & ERDAL Consulting Engineers File No. 598
BRIDGE NUMBER
DRAWING NO. 17477
INDEX



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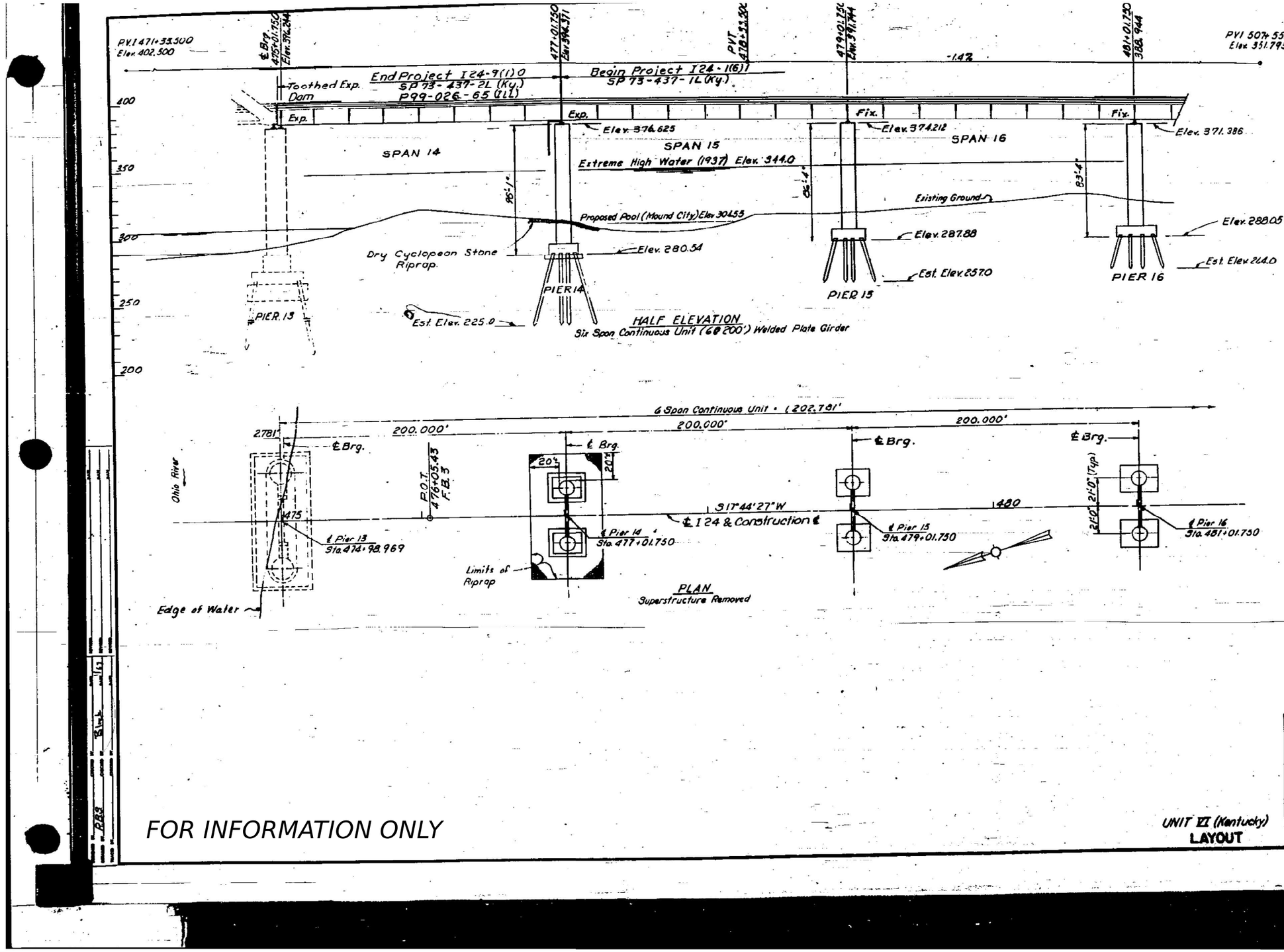
	IL DESIGN FIRM LICENSE NO: 184-001220		CHECKED -	REVISED -	
		PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
		PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 49 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	110
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



NOTES:
For Design Load, Design Roadway, and Typical Section see Sheet 6

SHEET 13 OF 21

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
PROJECTS I 24-1(6)130, I 24-9(1)0 , I 24-1(6)1
BRIDGE OVER OHIO RIVER ON I 24
BETWEEN McCRACKEN COUNTY, KENTUCKY
AND MASSAC COUNTY, ILLINOIS

MAURER & BRAM, Consulting Engineers	BRIDGE NUMBER	DRAWING NO. 17471	SHEET

UNIT VI (Kentucky)
LAYOUT

FOR INFORMATION ONLY

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			CHECKED -	REVISED -
	IL DESIGN FIRM LICENSE NO: 184-001220	PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -
		PLOT DATE = 8/16/2024	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 50 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	111
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

PVI 471+33.500
Elev 402.500

481+01.750
Elev. 388.944

483+01.750
Elev. 386.442

485+01.750
Elev. 383.944

℄ Brg.
487+01.750
Elev. 380.944

PVI 507+55.46
Elev 351.793

Sta. 487+30.75

-1.4%

To KENTUCKY

Toothed Exp. Dam

Top of Substructure at Cell B

Fix.

Fix.

Exp.

Exp.

Elev. 366.612

Elev. 365.598 (Brg Pad) Elev. 363.309

Elev. 362.040

SPAN 17

SPAN 18

SPAN 19

Extreme High Water (1937) Elev 344.0

Existing Ground

Dry Cyclopean Stone Riprap

Elev. 288.53

Est Elev. 265.0

Elev. 306.26

Est Elev. 277.0

Dry Cyclopean Stone Riprap

Embankment shall be in place a minimum of twelve months prior to driving piles.

Crushed Aggregate Slope Protection

CELL B

Est Elev. 301.0

PIER 16

PIER 17

PIER 18

400
350
300
250
200

NOTES:
For Design Load, Design Roadway, and Typical Section, see Sheet 6
*Indicates Construction By Others

HALF ELEVATION
Six Span Continuous Unit (6@200') Welded Plate Girder

5634.25 Lin. Ft. Out to Out of Bridge Roadway Slabs.
6 Span Continuous Unit = 1202.781

200.000'

200.000'

200.000'

℄ Brg.

℄ Brg.

℄ Brg.

Limits of Riprap (Typ.)

20'±

20'±

2:1 (Typ.)

2:1 (Typ.)

S 12°44'27" W

℄ I 24
& Construction ℄

483

℄ Pier 16
Sta. 481+01.750

℄ Pier 17
Sta. 483+01.750

℄ Pier 18
Sta. 485+01.750

PLAN
Superstructure Removed

Spur Dike - See Roadway Plans

15' Berm

Riprap to Elev. 344.0

Fence

Note:
Guardrail to be attached to Each Wing of Cell B.
For details see Sheet 81 and Std. Drawing 17.40, current edition.

End of Cell B
Sta 487+30.750

12'-6" Guard Rail Transition

Limits of 12" of Crushed Agg. Slope Protection

Fascia Line

Shoulder Line

2'

10'

Paved Shoulder *

℄ Edge of Pmt

24'

Concrete Median*

2'

10'

2:1

5'-0" Berm

℄ Bearing Cell B
Sta. 487+01.750

3'-0"

Slope Paving*

Guard Rail*

Integral Curb* Curb Gutter Box Inlet type "D" *

Riprap to Elev. 344.0

Toe of Slope

Fence

Riprap

FOR INFORMATION ONLY

UNIT II (Kentucky)
LAYOUT

SHEET 14 OF 121

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
PROJECTS I 24-1(6)38, I 24-9(1)10 ,I 24-1(6)1
BRIDGE OVER OHIO RIVER ON I 24
BETWEEN MCCRACKEN COUNTY, KENTUCKY
AND MASSAC COUNTY, ILLINOIS

HAZELET & ERDAL Consulting Engineers File No. 886

BRIDGE NUMBER

DRAWING NO. 17471

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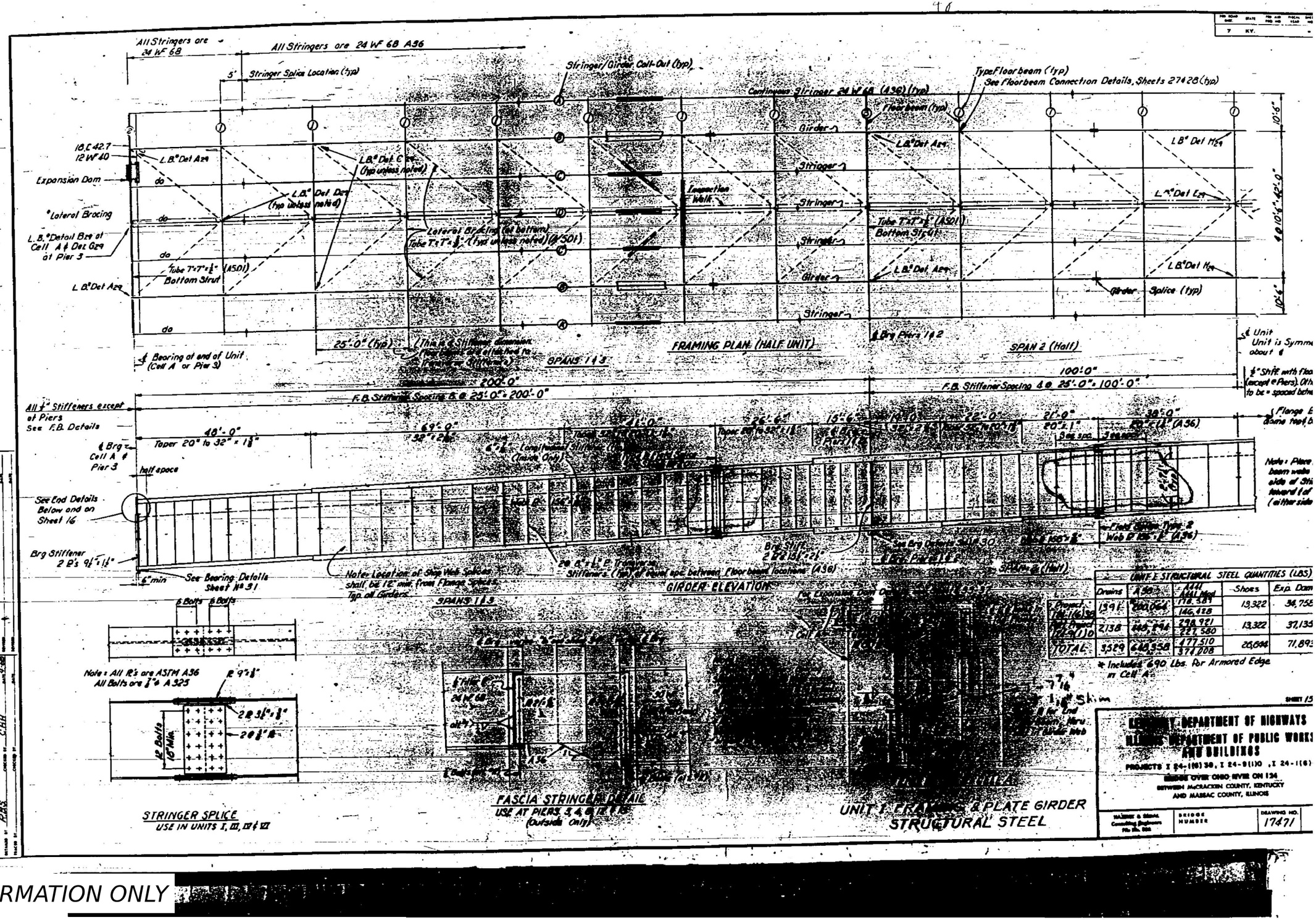
TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC.
WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO. 184-001220

USER NAME = jesker	DESIGNED -	REVISED -	
	CHECKED -	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

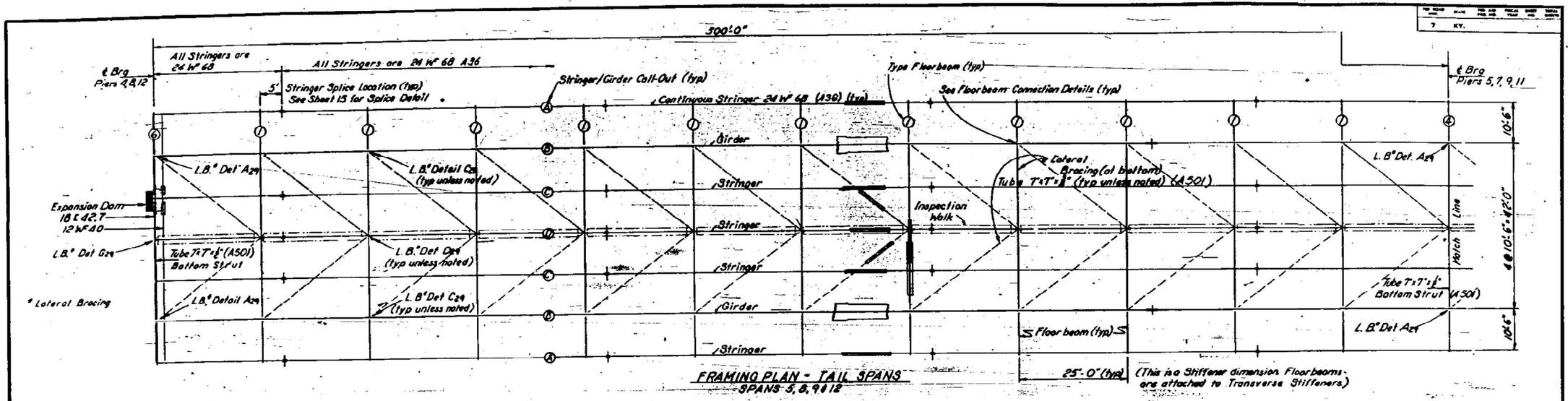
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 51 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	112
		CONTRACT NO. 78972		
	ILLINOIS FED. AID PROJECT			



FOR INFORMATION ONLY



Part Project I 24-9(1) 36	STRUCTURAL STEEL QUANTITIES (lbs)				
	Divins	A36	A 441 A 709 Mod.	Shoes	Exp. Dam
Unit III	6,794	1,253,587	1,410,860 1,268,788	64,798	70,190
Unit IV	6,619	1,253,663	1,410,748 1,268,738	64,822	62,309

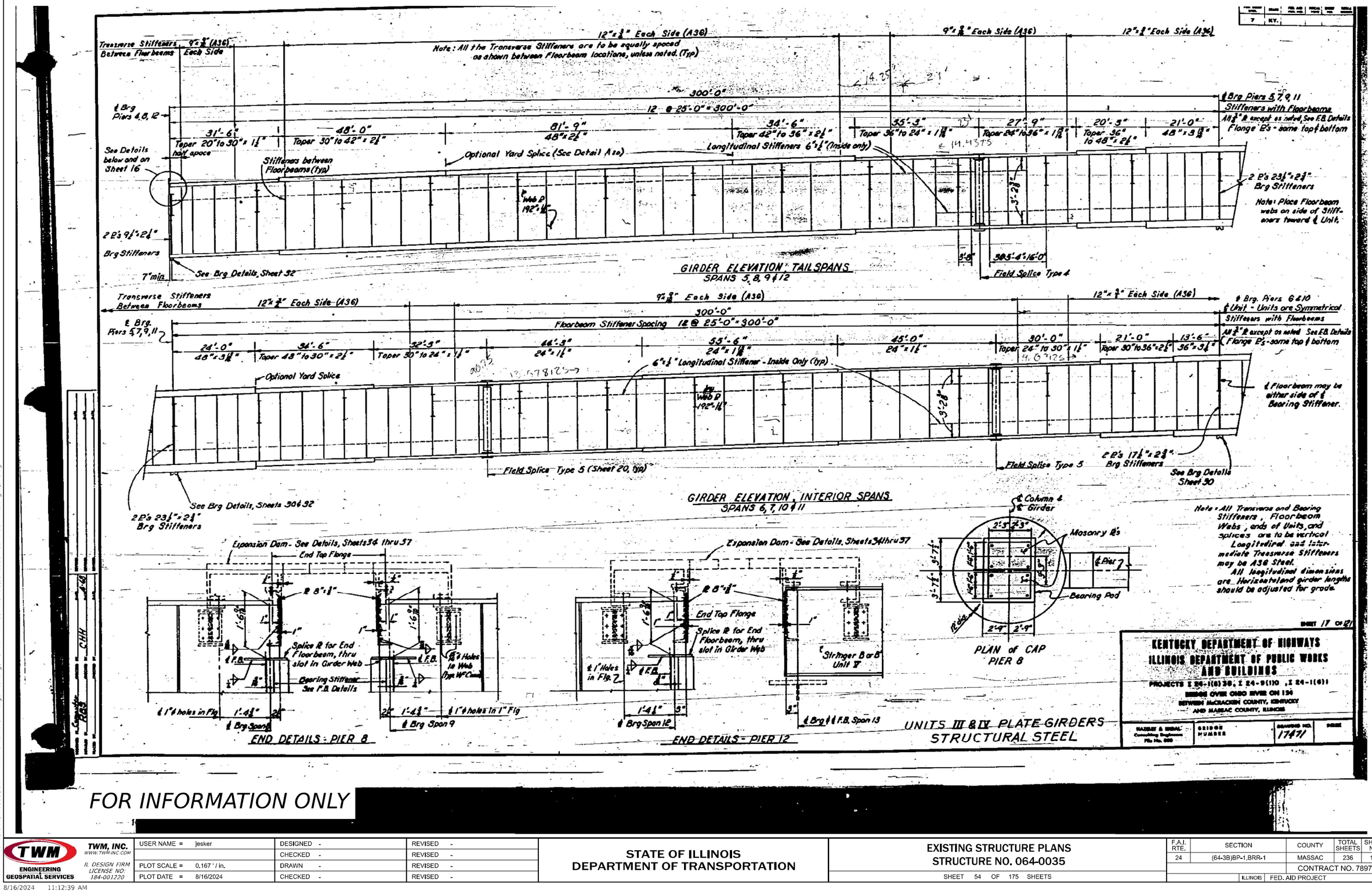
UNITS III & IV FRAMING STRUCTURAL STEEL

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
PROJECTS I 24-1(16)38, I 24-9(11)0 , I 24-1(16)1
BRIDGE OVER OHIO RIVER ON I-24
BETWEEN McCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

HARRIS & SPIDAL Consulting Engineers File No. 220 | BRIDGE NUMBER | DRAWING NO. 17471 | INDEX

SHEET 16 OF 121

FOR INFORMATION ONLY



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TWM, INC. WWW.TWM-INC.COM
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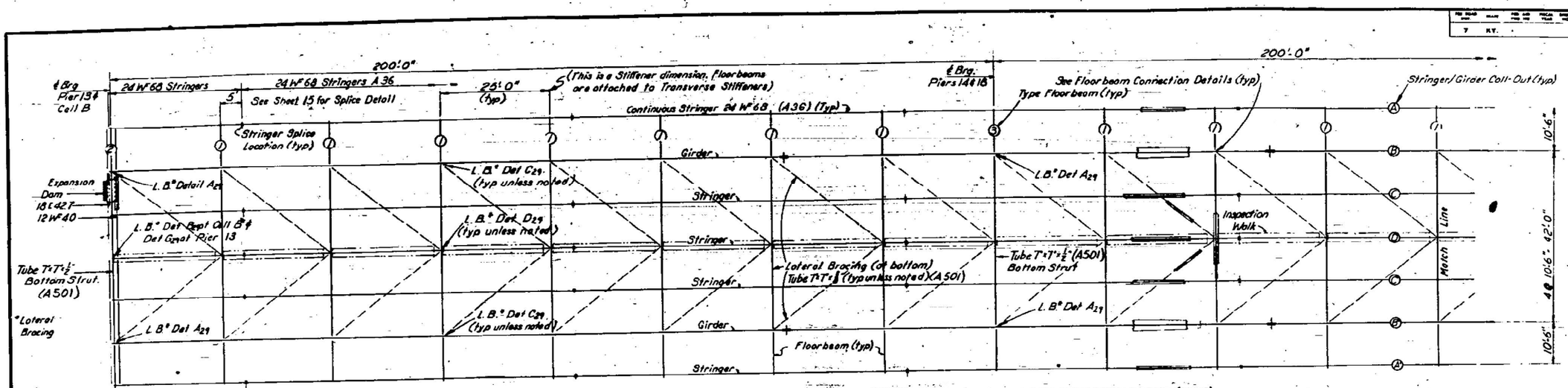
PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 54 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	115
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



UNIT VI STRUCTURAL STEEL QUANTITIES (LBS)					
	Drains	A36	A441 / A441 Mod.	Shoes	Exp. Dam
Part Project I 24-9(11)0	1069	174,442	178,654 / 144,582	6,508	30,297
Project I 24-1(6)1	5665	*949,945	863,641 / 569,678	57,270	41,676
TOTAL	6,734	1,124,387	1,042,295 / 708,260	63,778	719 73

* Includes 690 lbs for Armored Edge at Cell B.

UNIT VI FRAMING PLAN
STRUCTURAL STEEL

SHEET 18

KENTUCKY DEPARTMENT OF HIGHWAYS &
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS

PROJECTS I 24-1(6)58, I 24-9(11)0, I 24-1(6)-1
BRIDGE OVER OHIO RIVER ON I 24
BETWEEN MCCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

HAZELET & ERDAL Consulting Engineers File No. 888 | BRIDGE NUMBER | DRAWING NO. 17471

FOR INFORMATION ONLY

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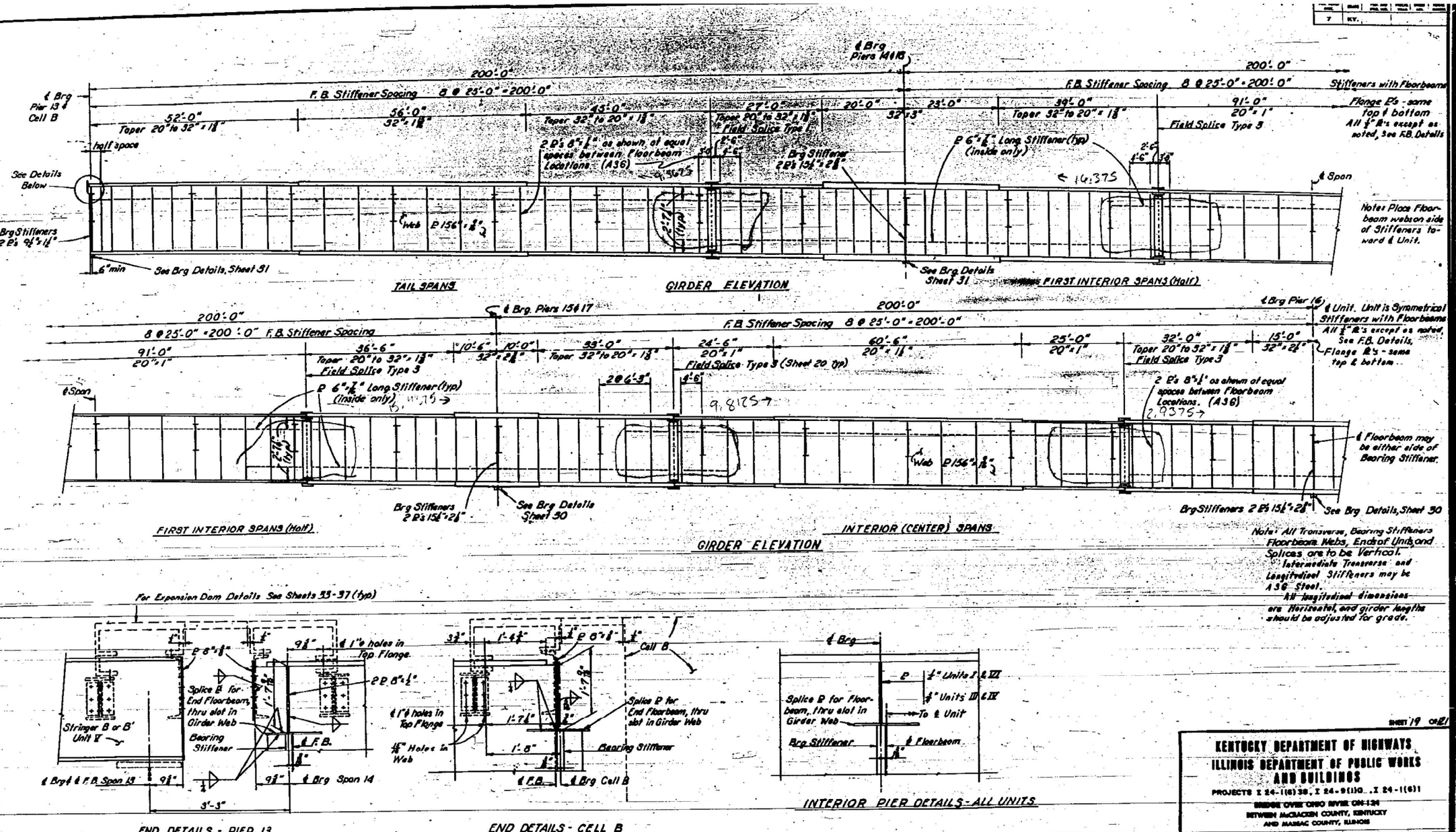

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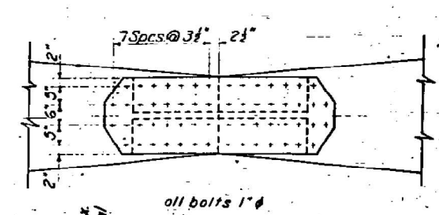

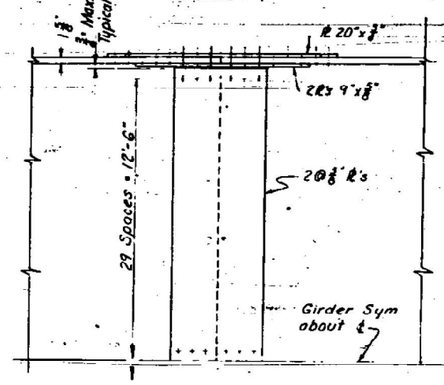

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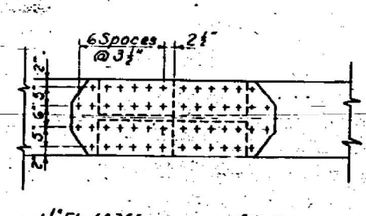

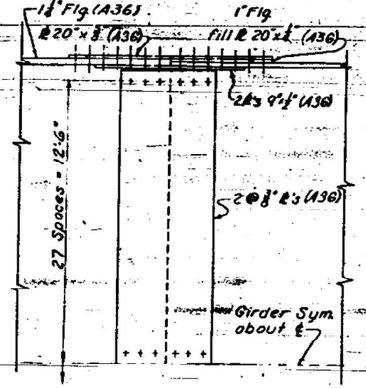

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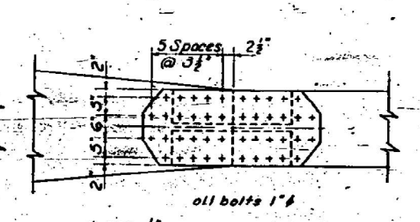

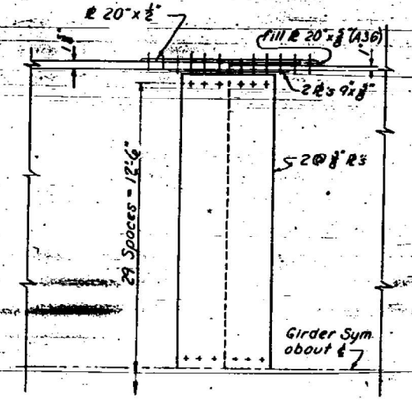

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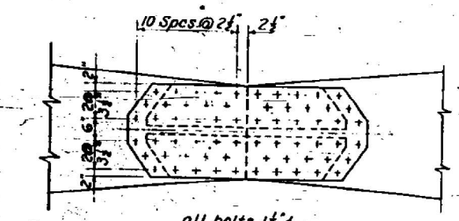

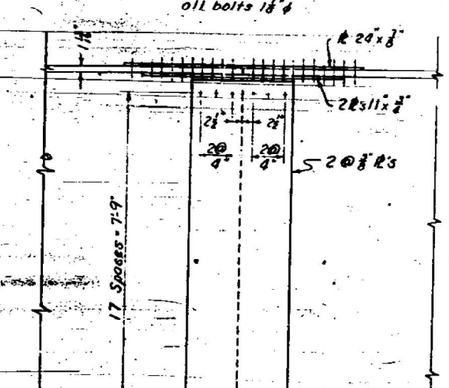

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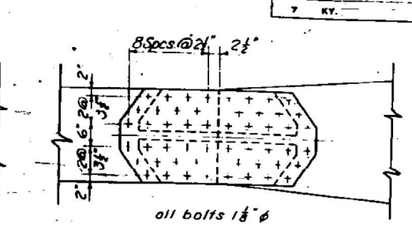
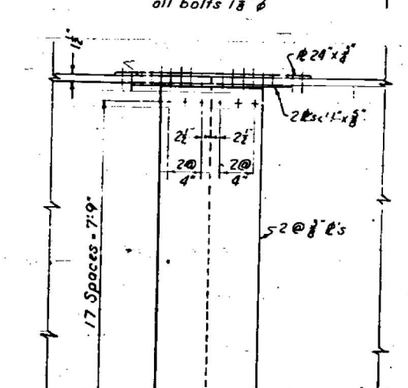
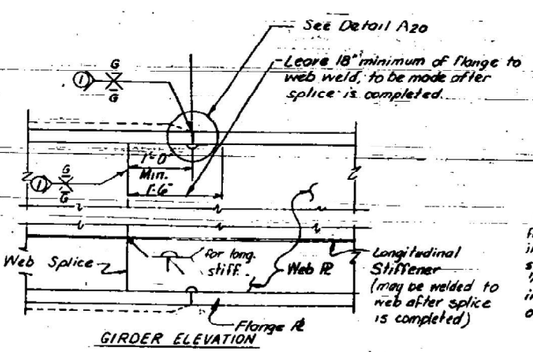


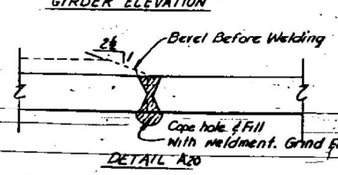


TYPE 5

GIRDER SPLICE DETAILS

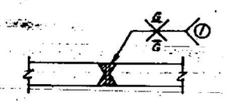


GIRDER ELEVATION



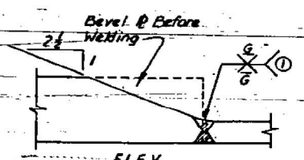
DETAIL A20

TYPICAL YARD SPLICE DETAIL

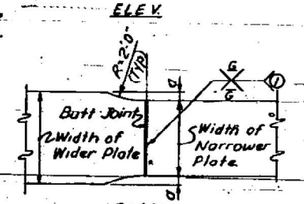


SHOP WEB SPLICE

① Groove welds shall be finished smooth by grinding in the direction of applied stress to a tolerance of plus 1/32 inch and minus zero inches in relation to the face of the basemetal, each face.



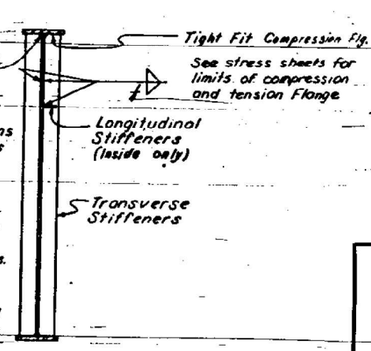
ELEV.



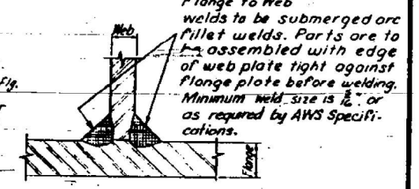
PLAN

SHOP FLANGE SPLICE TRANSITION (Except for tapered plates)

Note: G Weld may be substituted in Shop & Yard Splice Butt Welds.



TYPICAL SECTION ALL GIRDERS



FLANGE TO WEB WELD

GIRDER SPLICE DETAILS STRUCTURAL STEEL

SHEET 20 OF 121

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS - AND BUILDINGS

PROJECTS I 24-1(6)118, I 24-9(10), I 24-1(6)1

BRIDGE OVER OHIO RIVER ON I 24
BETWEEN McCRACKEN COUNTY, KENTUCKY
AND MASSAC COUNTY, ILLINOIS

HAZELET & ERDAL, Consulting Engineers File No. 000	BRIDGE NUMBER	DRAWING NO. 17471	INDEX

FOR INFORMATION ONLY

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8/16/2024 11:12:48 AM

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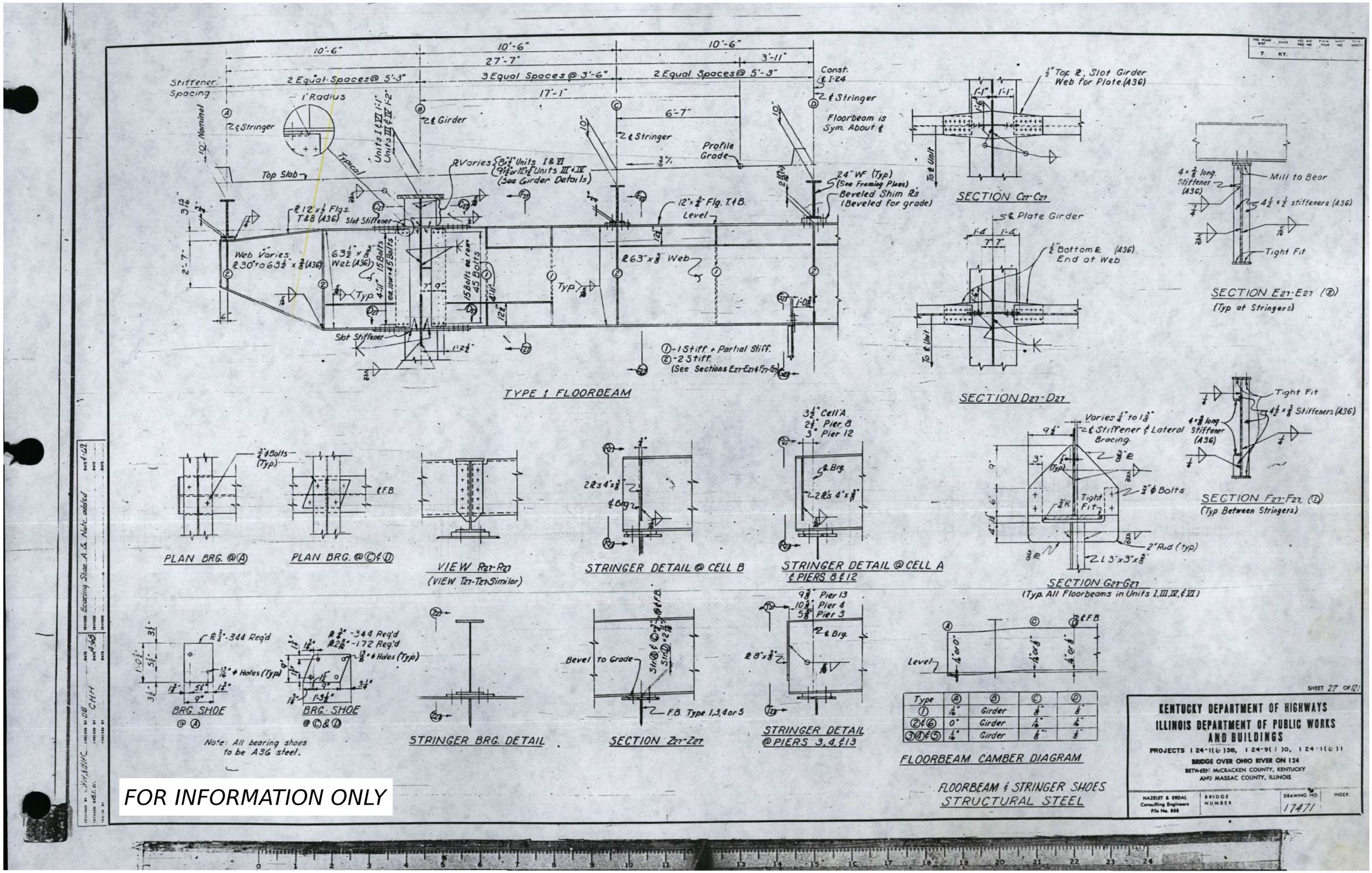
			CHECKED -	REVISED -
		PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -
		PLOT DATE = 8/16/2024	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 57 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	118
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



TWM, INC. WWW.TWM-INC.COM ENGINEERING GEOSPATIAL SERVICES	USER NAME = jesker	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
IL DESIGN FIRM LICENSE NO: 184-001220	PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	EXISTING STRUCTURE PLANS STRUCTURE NO. 064-0035
	PLOT DATE = 8/16/2024	CHECKED -	REVISED -	SHEET 58 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	119
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

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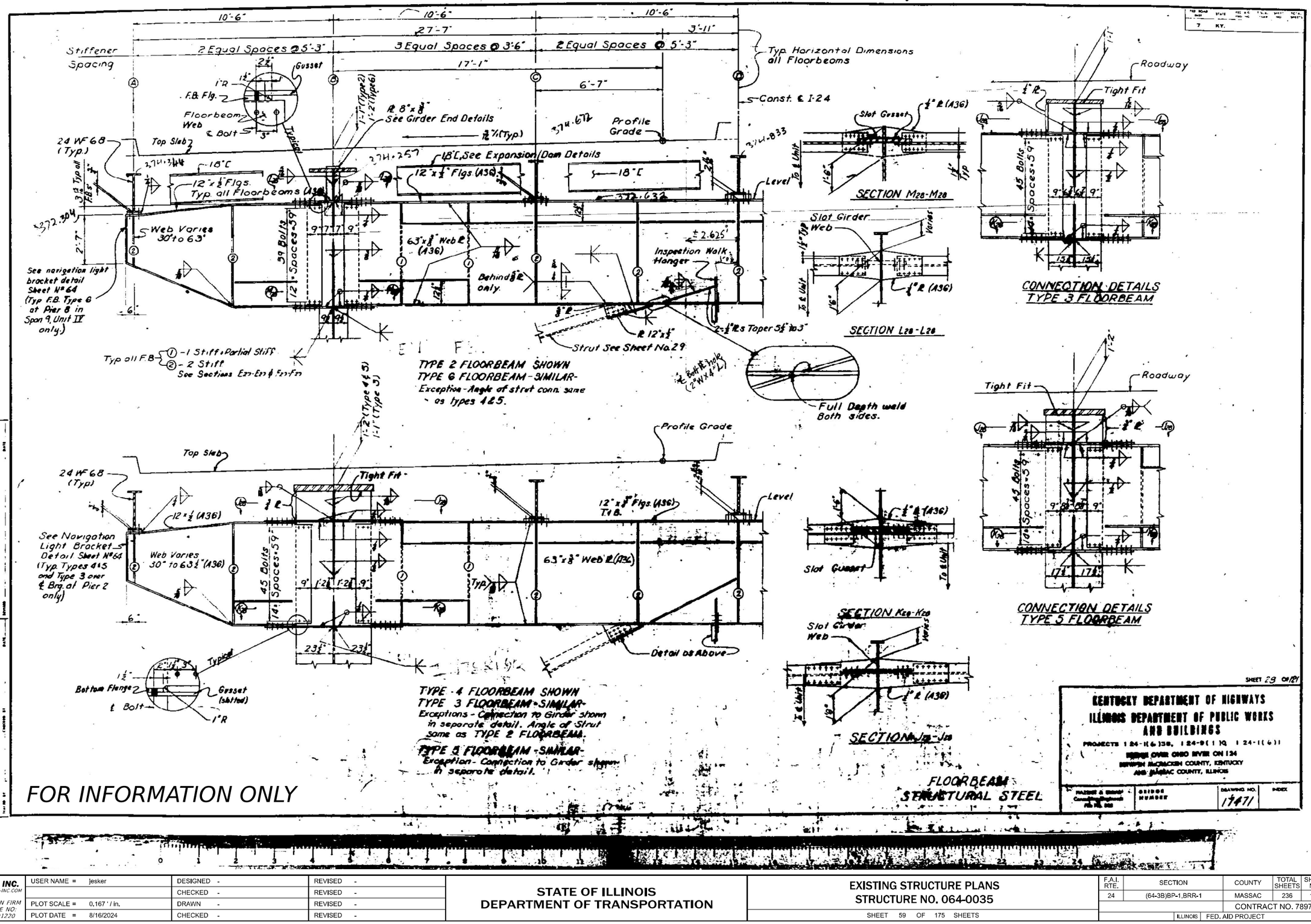
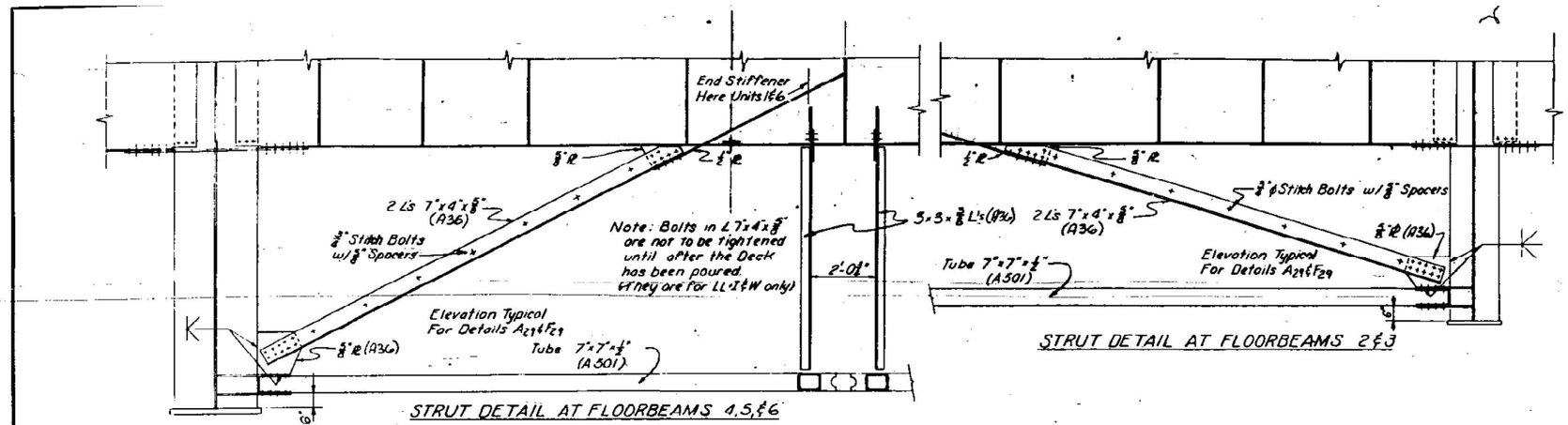
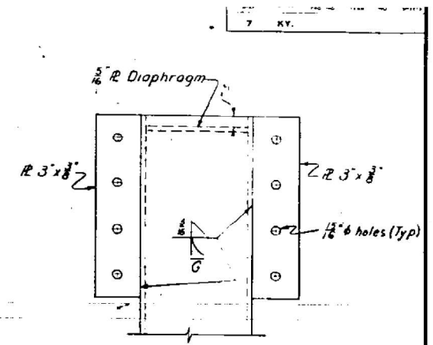

Stiffener Spacing
2 Equal Spaces @ 5'-3"
3 Equal Spaces @ 3'-6"
2 Equal Spaces @ 5'-3"
10'-6"
10'-6"
10'-6"
27'-7"
3'-11"
17'-1"
6'-7"
Typ. Horizontal Dimensions all Floorbeams
Const. ℄ I-24
Gusset
1"R
F.B. Flg.
Floorbeam Web ℄ Bolt
Typical
1'-7" (Type 2) 1'-2" (Type 6)
PL 8"x⅜" See Girder End Details
½"% (Typ.)
Profile Grade
24 WF 68 (Typ.)
Top Slab
18'-0" ℄
12"x½" Flgs. Typ. all Floorbeams (A36)
12"x½" Flgs. (A36)
Level
3'½ Typ all
2'-8"
2'-7"
Web Varies 30" to 63"
39 Bolts 12 Spaces @ 3'-0"
9" 7 @ 9"
63"x⅜" Web PL (A36)
Behind ℄ only.
±2.625"
Inspection Walk Hanger
See navigation light bracket detail Sheet No 64 (Typ F.B. Type G at Pier 8 in Span 9, Unit II only.)
6"
PL 12"x1"
Strut See Sheet No. 29
2-¾" PLs Taper 5½" to 3"
Typ all F.B. ① - 1 Stiff + Partial Stiff ② - 2 Stiff See Sections E29-E29 & F29-F29
TYPE 2 FLOORBEAM SHOWN
TYPE G FLOORBEAM - SIMILAR - Exception - Angle of strut conn. same as types 4 & 5.
Full Depth weld Both sides.
SECTION M28-M28
Slot Gusset
PL ½" (A36)
To ℄ Unit
1'-6"
1'-6" Typ
SECTION L28-L28
Slot Girder Web
Varies
1'-6" Typ
To ℄ Unit
1'-6"
PL ½" (A36)
CONNECTION DETAILS TYPE 3 FLOORBEAM
Roadway
Tight Fit
45 Bolts 14 Spaces @ 3'-0"
9" 5 @ 9"
13½"
13½"
Profile Grade
Top Slab
24 WF 68 (Typ)
Tight Fit
12"x½" (A36)
See Navigation Light Bracket & Detail Sheet No 64 (Typ. Types 4 & 5 and Type 3 over ℄ Brg. at Pier 2 only)
Web Varies 30" to 63½" (A36)
45 Bolts 14 Spaces @ 3'-0"
9" 5 @ 9"
12"x⅜" Flgs. (A36) T & B.
63"x⅜" Web PL (A36)
Typ.
Level
Detail as Above
23½"
23½"
1'-2" (Type 4 & 5) 1'-1" (Type 5)
Typical
1½"
Bottom Flange
℄ Bolt
Grosset (bolted)
1"R
TYPE 4 FLOORBEAM SHOWN
TYPE 5 FLOORBEAM - SIMILAR - Exceptions - Connection to Girder shown in separate detail. Angle of Strut same as TYPE 2 FLOORBEAM.
TYPE 5 FLOORBEAM - SIMILAR - Exception - Connection to Girder shown in separate detail.
PL ½" (A36)
Slot Gusset
To ℄ Unit
SECTION K26-K26
Slot Girder Web
Varies
1'-8" Typ
To ℄ Unit
1'-8"
PL ½" (A36)
SECTION J28-J28
CONNECTION DETAILS TYPE 5 FLOORBEAM
Roadway
Tight Fit
45 Bolts 14 Spaces @ 3'-0"
9" 5 @ 9"
17½"
17½"
FOR INFORMATION ONLY
FLOORBEAM STRUCTURAL STEEL
SHEET 29 OF 121
KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
PROJECTS I 24-1(6)138, I 24-9(11)0, I 24-1(6)1
BRIDGE OVER OHIO RIVER ON I 24
BETWEEN McCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS
DRAWING NO. 17471
INDEX

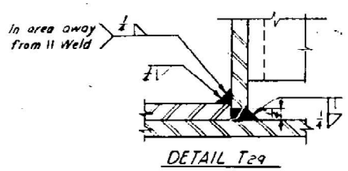


STRUT DETAIL AT FLOORBEAMS 1,5, & 6

STRUT DETAIL AT FLOORBEAMS 2 & 3

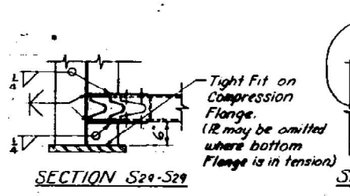


END OF SECTION DETAIL L29
(Use at Details A29 & F29)

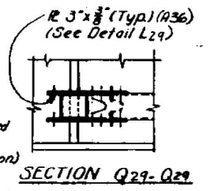


DETAIL T29

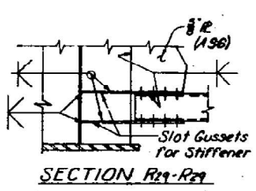
TABLE S		
Unit	Pier	Dist.
I	3	2'-0"
III	4	2'-0"
III & IV	8	1'-3"
IV	12	2'-0"
VI	13	2'-0"



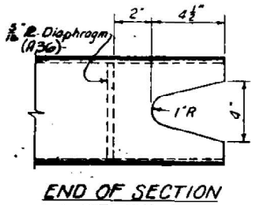
SECTION S29-S29



SECTION Q29-Q29



SECTION R29-R29



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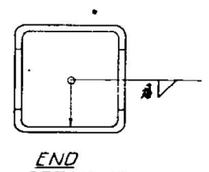

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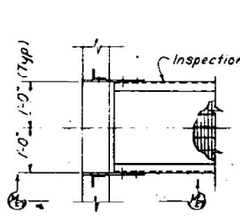
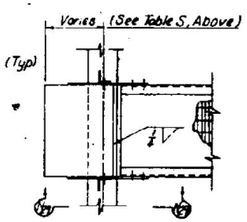
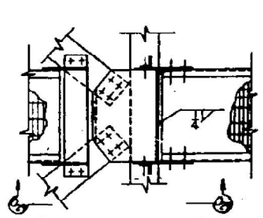


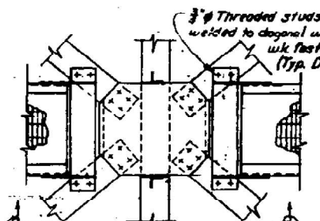
DETAIL B29



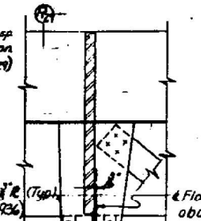
DETAIL G29



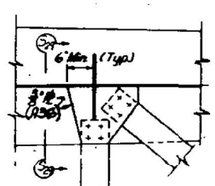
DETAIL D29



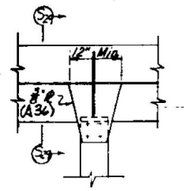
DETAIL E29



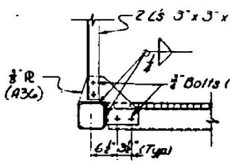
DETAIL A29



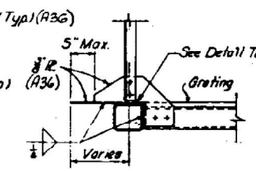
DETIAL C29



DETAIL H29



SECTION M29-M29



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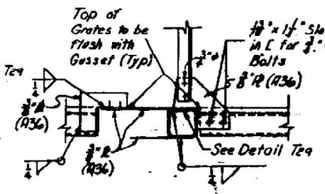

SECTION O29-O29
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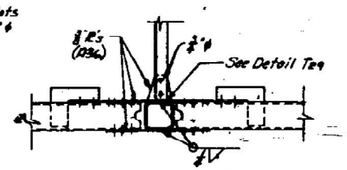

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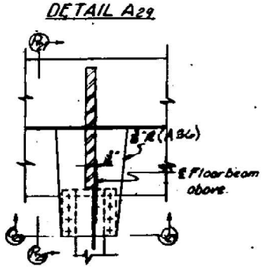


DETAIL F29

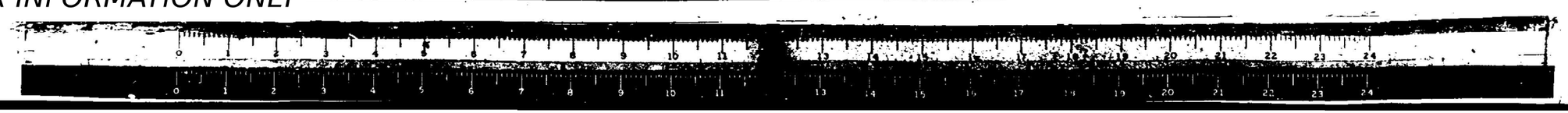
LATERAL BRACING STRUCTURAL STEEL

SHEET 29 OF 121

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
PROJECTS I 24-1(6)138, I 24-9( )0, I 24-1(6)1
BRIDGE OVER OHIO RIVER ON I 24
BETWEEN McCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

NAZLET & ERDAL Consulting Engineers File No. 888	BRIDGE NUMBER	DRAWING NO. 17471	INDEX

FOR INFORMATION ONLY



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8/16/2024 11:12:57 AM

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = Jesker	DESIGNED -	REVISED -	
	CHECKED -	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 60 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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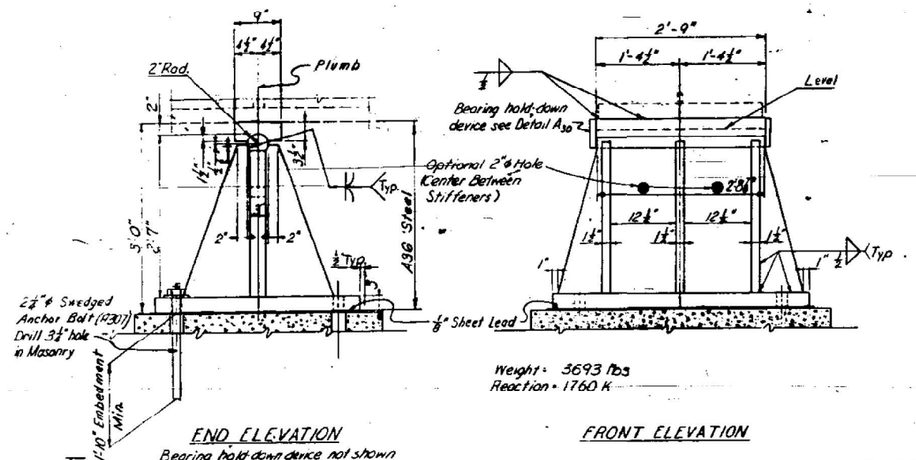
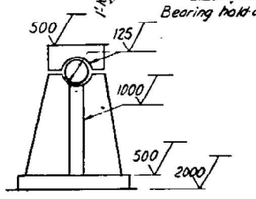
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



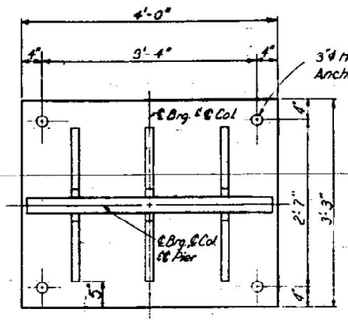
END ELEVATION
Bearing hold-down device not shown



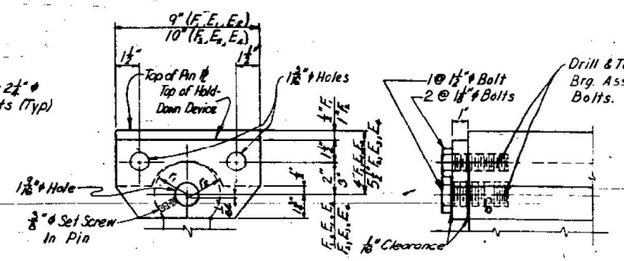
KEY TO FINISHED SURFACES
ALL FIXED BEARING
See KHD Specs. Sec 408.3.1.H.3

Weight = 3693 lbs
Reaction = 1760 K

FRONT ELEVATION



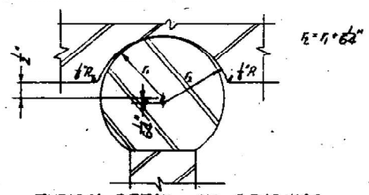
PLAN BOTTOM PLATE



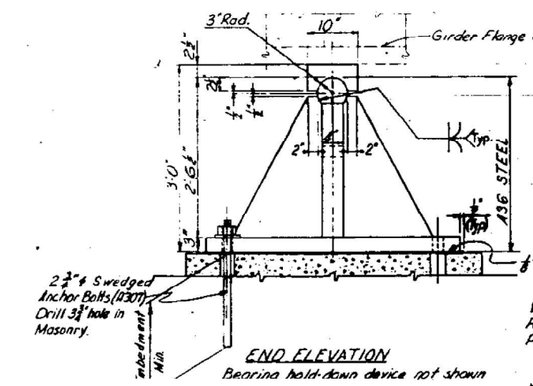
END VIEW

FRONT ELEV

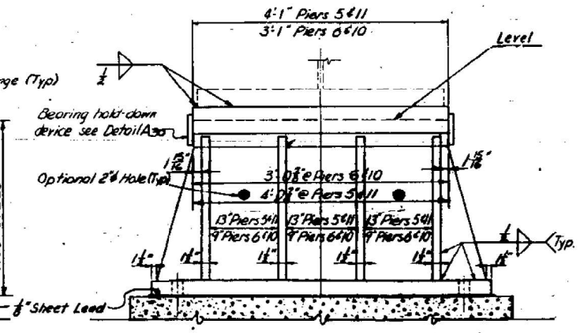
DETAIL A30
Bearing Hold-Down Device



TYPICAL DETAIL – ALL BEARINGS



END ELEVATION
Bearing hold-down device not shown

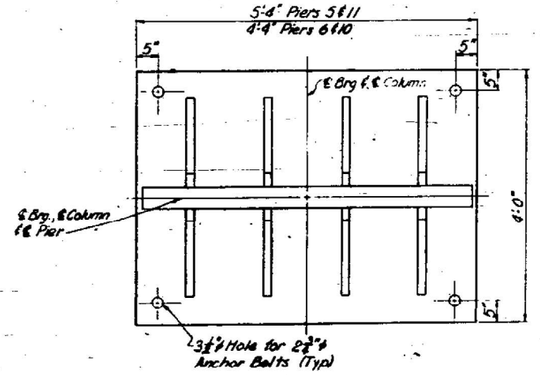


Weight = 6325 lbs
Reaction = 2857 K
Piers 5℄11

Weight = 5243 lbs
Reaction = 2243 K
Piers 6℄10

FRONT ELEVATION

BEARING TYPE F2
USE AT PIERS 5,6,10 ℄11
8 REQUIRED



PLAN BOTTOM PLATE

FIXED BEARINGS
STRUCTURAL STEEL

WHITE LEAD AND TALLOW: Pins, bearing surfaces, rockers, and rocker bearing surfaces shall be coated with white lead and tallow in accordance with current specifications.

WELDING: All plates shall be joined with continuous fillet welds of the size governed by plate thicknesses, except as noted (See Special Notes.) All welds are subject to Magnetic Particle Inspection.

ANCHOR BOLTS: Prior to drilling holes for setting anchor bolts, the Contractor shall establish the exact location of centerline of Piers and adjust the location of masonry plates from dimensions shown on the details, if necessary. Holes of depth and dimensions shown shall be drilled for anchor bolts by the Superstructure Contractor, who shall be responsible for keeping holes dry in freezing weather. After anchor bolts are in place and properly aligned, the holes shall be filled completely with an expandable cement grout in accordance with the specifications. The cost of drilling anchor bolt holes and filling holes with grout shall be incidental to and included in the lump sum bid for Structural Steel.

SETTING MASONRY PLATES: The masonry plates shall be set level in exact position and have full and even bearing under the masonry plate.

MATERIAL: All material shall be as noted on the plans.

Note – Swedge Anchor Bolts are ASTM A307. Bolts in Brg. Hold Down Device are ASTM A325.

SHEET 30 OF 121

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS

PROJECTS I 24-1(6)138, I 24-9(1)0, I 24-1(6)11
BRIDGE OVER OHIO RIVER ON I 24
BETWEEN McCRACKEN COUNTY, KENTUCKY
AND MASSAC COUNTY, ILLINOIS

HAZELET & ERDAL Consulting Engineers File No. 888	BRIDGE NUMBER	DRAWING NO. 17471	INDEX

FOR INFORMATION ONLY

TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM IL DESIGN FIRM LICENSE NO. 184-001220	USER NAME = jesker	DESIGNED -	REVISED -
			CHECKED -	REVISED -
		PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -
		PLOT DATE = 8/16/2024	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 61 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	122
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
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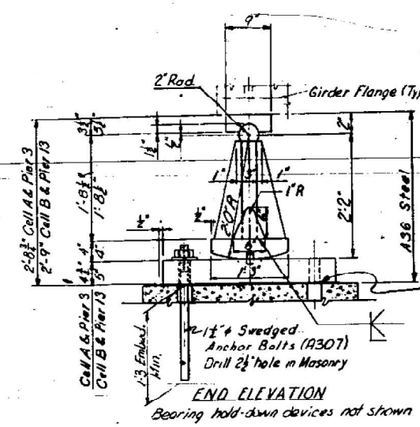
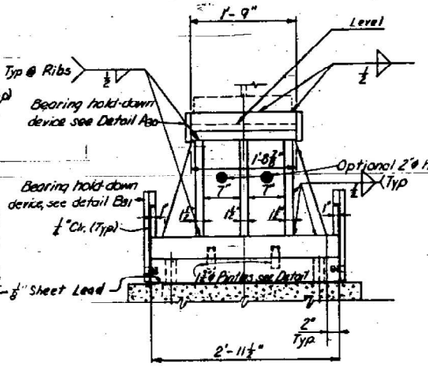
8/16/2024 11:13:00 AM



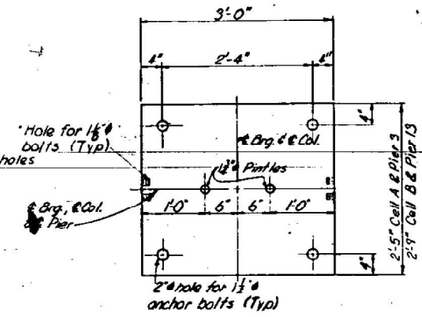
END ELEVATION
Bearing hold-down devices not shown



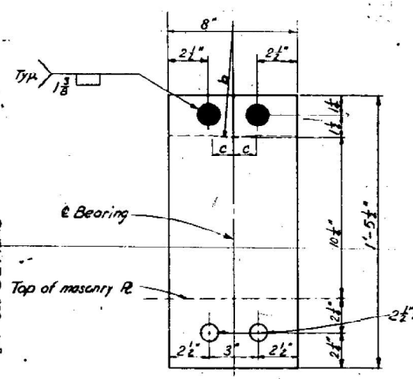
FRONT ELEVATION

Weight = 2968 lbs
Reaction = 706 K
Cell A & Pier 3

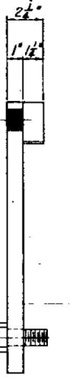
Weight = 3254 lbs
Reaction = 706 K
Pier 13 & Cell B



PLAN BOTTOM PLATE



FRONT ELEV



END VIEW

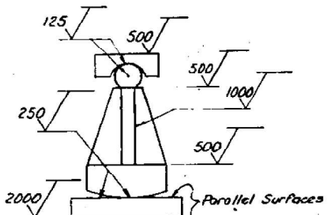
DETAIL B31
Exp. Bearing hold-down device

BEARING TYPE E1
USE AT CELLS A & B & PIERS 3 & 13
8 REQUIRED

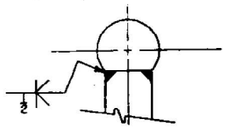
	TYPE		
	E1	E2	E3 or E4
b	6⅜"	7⅛	5½"
c	2⅜"	1¼"	1¾"

Table for Detail B31

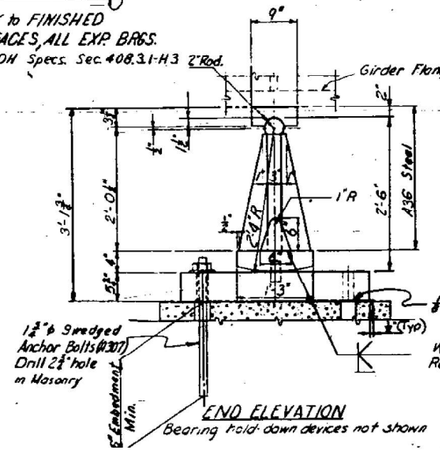
TABLE D for SETTING EXPANSION SHOES								
Temp / Brg	-20°	0°	20°	40°	60°	80°	100°	120°
A	1.66"	1.24"	.83"	.41"	0	.41"	.83"	1.24"
3	2.01"	1.51"	1.01"	.50"	0	.50"	1.01"	1.51"
13	3.83"	2.87"	1.92"	.96"	0	.96"	1.92"	2.87"
14	2.58"	1.94"	1.29"	.64"	0	.64"	1.29"	1.94"
18	2.41"	1.81"	1.20"	.61"	0	.61"	1.20"	1.81"
B	3.66"	2.74"	1.83"	.91"	0	.91"	1.83"	2.74"



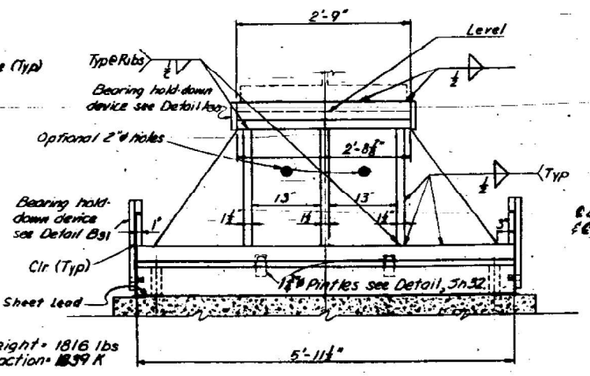
KEY to FINISHED SURFACES, ALL EXP. BRGS.
See KDH Specs. Sec. 408.3.1-H.3



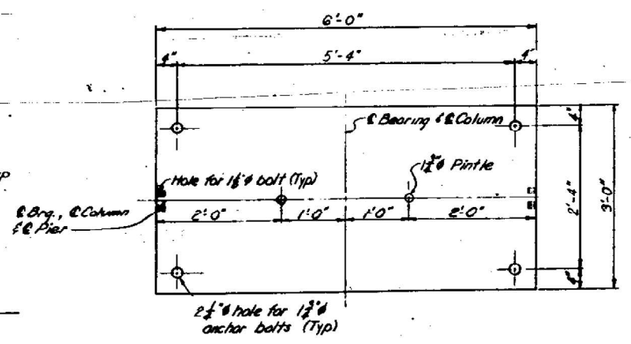
TYPICAL PIN TO WEB CONNECTION AT ALL SHOES



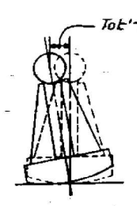
END ELEVATION
Bearing hold-down devices not shown



FRONT ELEVATION



PLAN BOTTOM PLATE



BEARING TYPE E2
USE AT PIERS 14 & 18
4 REQUIRED

EXPANSION BEARINGS
STRUCTURAL STEEL

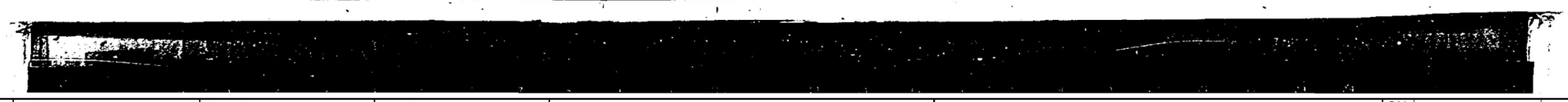
SHEET 31 OF 121

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS

PROJECTS I 24-1(6)38, I 24-8(10), I 24-1(61)
BRIDGE OVER OHIO RIVER ON I 24
BETWEEN McCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

HAZLET & DAVIS Consulting Engineers File No. 865 | BRIDGE NUMBER | DRAWING NO. 17471 | INDEX

FOR INFORMATION ONLY



TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = Jesker	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
			CHECKED -	REVISED -	
		PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
		PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 62 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	123
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
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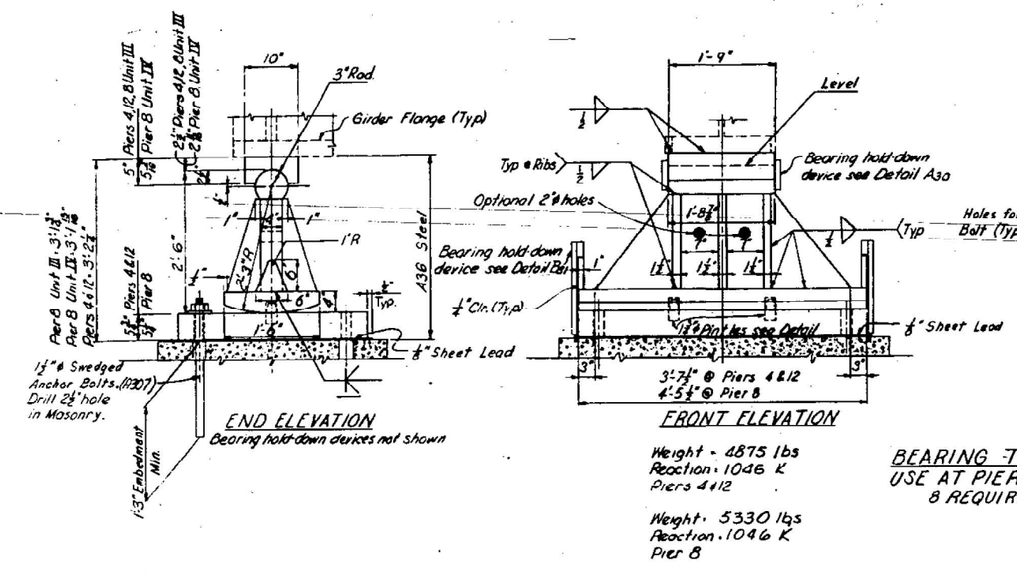
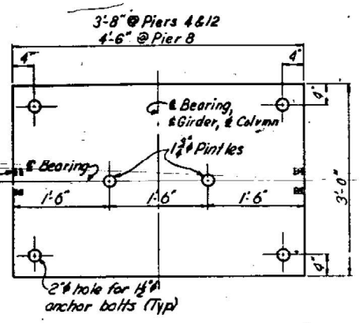


END ELEVATION
Bearing hold-down devices not shown

FRONT ELEVATION

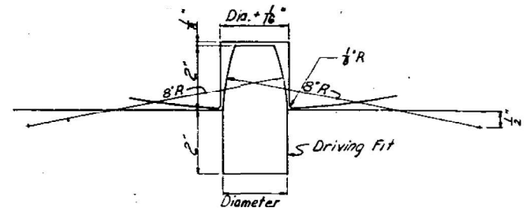
Weight = 4875 lbs
Reaction = 1046 K
Piers 4&12

Weight = 5330 lbs
Reaction = 1046 K
Pier 8



PLAN BOTTOM PLATE

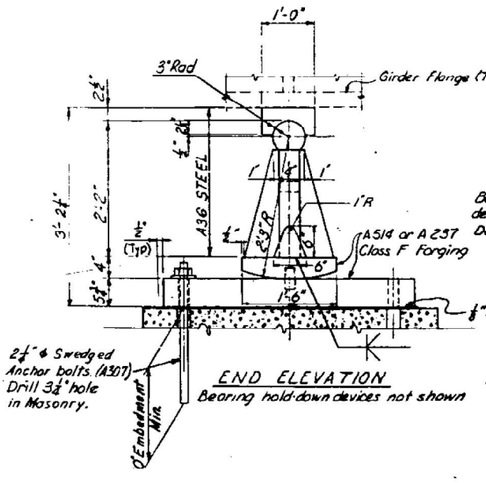
BEARING TYPE E3
USE AT PIERS 4,8&12
8 REQUIRED



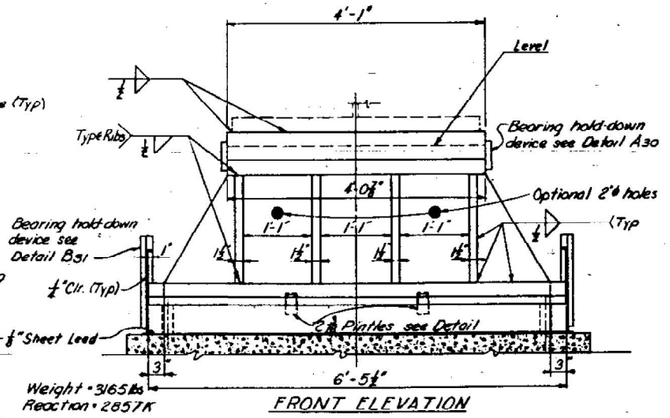
PINTLE DETAIL

TABLE E for SETTING EXPANSION SHOES

Brg / Temp	-20°	0°	20°	40°	60°	80°	100°	120°
4	2.81"	2.12"	1.41"	.70"	0	.70"	1.41"	2.12"
7	2.81"	2.12"	1.41"	.70"	0	.70"	1.41"	2.12"
8 III	4.68"	3.51"	2.34"	1.17"	0	1.17"	2.34"	3.51"
8 IV	4.68"	3.51"	2.34"	1.17"	0	1.17"	2.34"	3.51"
9	2.81"	2.12"	1.41"	.70"	0	.70"	1.41"	2.12"
12	2.81"	2.12"	1.41"	.70"	0	.70"	1.41"	2.12"



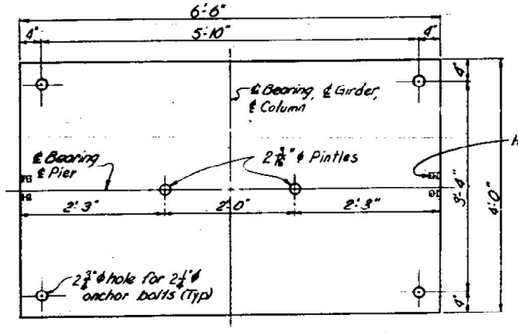
END ELEVATION
Bearing hold-down devices not shown



Weight = 3165 lbs
Reaction = 2857 K

FRONT ELEVATION

BEARING TYPE E4
USE AT PIERS 7&9
4 REQUIRED



PLAN BOTTOM PLATE

NOTE:
For Surface Finishes see Sh. U931

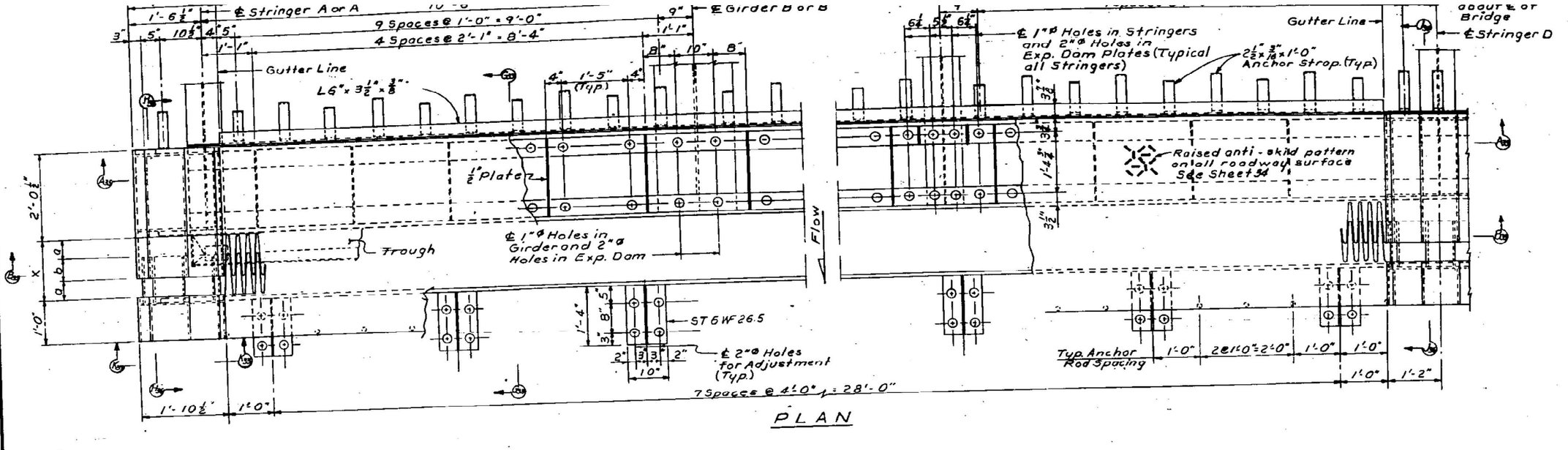
EXPANSION BEARINGS
STRUCTURAL STEEL

SHEET 92 OF 121

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
PROJECTS I 24-1(6138), I 24-9(110), I 24-1(61)1
BRIDGE OVER OHIO RIVER ON I 24
BETWEEN McCRACKEN COUNTY, KENTUCKY
AND MASSAC COUNTY, ILLINOIS

HAZELET & ERDAL Consulting Engineers File No. 268 | BRIDGE NUMBER | DRAWING NO. 17471 | SHEET

FOR INFORMATION ONLY



LOCATION	DIMENSION AT TEMPERATURE (F)																				
	-20°			0°			20°			40°			60°			80°			100°			120°		
	a	b	x	a	b	x	a	b	x	a	b	x	a	b	x	a	b	x	a	b	x	a	b	x
CELL-A	5 7/8"	2 3/8"	1'-2 3/8"	5 3/8"	3 1/8"	1'-1 3/8"	4 15/16"	3 9/16"	1'-1 7/16"	4½"	4"	1'-1"	4"	4½"	1'-0½"	3½"	5"	1'-0"	3 1/16"	5 7/16"	1'-1 3/16"	2 3/16"	5 15/16"	1'-1 7/16"
CELL-B	9"	2½"	1'-8½"	8 1/16"	3 7/16"	1'-7 3/16"	7 1/16"	4 3/8"	1'-6 5/8"	6 3/16"	5 5/16"	1'-5 11/16"	5 1/16"	6¼"	1'-4 3/8"	4 5/16"	7 1/16"	1'-3 13/16"	3 3/8"	8 5/8"	1'-2 7/8"	2 7/16"	9 1/16"	1'-1 15/16"

EXPANSION DAM WEIGHT	
CELL A	34,758 Lbs.
CELL B	41,676 Lbs.

EXPANSION DAMS AT CELLS A & B
STRUCTURAL STEEL

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
PROJECTS I 24-1(6)138, I 24-9(10), I 24-1(6)1
BRIDGE OVER OHIO RIVER ON I 24
BETWEEN McCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

MADER & BRAM Consulting Engineers File No. 000	BRIDGE NUMBER	DRAWING NO. 17471	SHEET

FOR INFORMATION ONLY

TWM ENGINEERING GEOSPATIAL SERVICES — TWM, INC. WWW.TWM-INC.COM — IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = Jesker	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING STRUCTURE PLANS STRUCTURE NO. 064-0035
		CHECKED -	REVISED -		SHEET 64 OF 175 SHEETS
	PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -		
	PLOT DATE = 8/16/2024	CHECKED -	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	125
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

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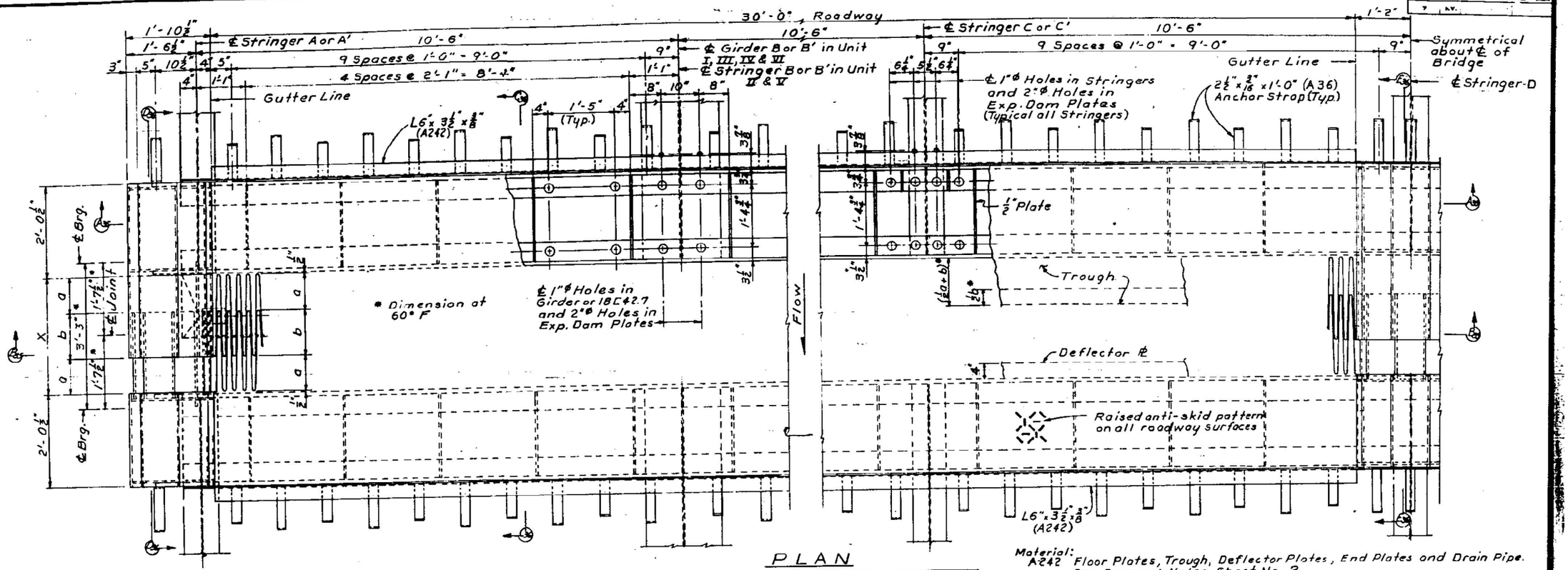
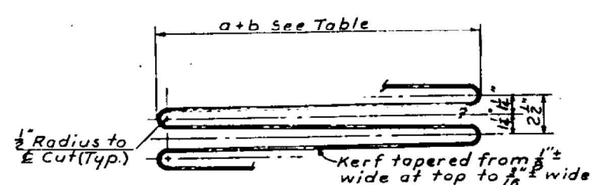


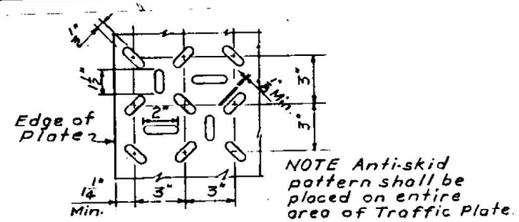
PLAN

LOCATION	DIMENSION AT TEMPERATURE (F)																							
	-20°			0°			20°			40°			60°			80°			100°			120°		
	a	b	x	a	b	x	a	b	x	a	b	x	a	b	x	a	b	x	a	b	x	a	b	x
PIER No. 3	1'-2 2/16"	2 2/16"	2'-7 1/16"	1'-0 13/16"	3 15/16"	2'-5 9/16"	11 3/16"	5 3/16"	2'-4 5/8"	9 15/16"	6 13/16"	2'-2 1/8"	8½"	8 1/4"	2'-1 1/4"	7 1/16"	9 11/16"	1'-11 1/8"	5 9/16"	11 3/16"	1'-10 5/8"	4 1/8"	1'-0 5/8"	1'-8 7/8"
PIER No. 4	7 9/16"	2 2/16"	1'-5 9/16"	6 13/16"	3 3/16"	1'-4 13/16"	6 1/8"	3 3/8"	1'-4 5/8"	5 7/16"	4 9/16"	1'-3 7/16"	4 3/4"	5 1/4"	1'-2 3/4"	4 1/16"	5 15/16"	1'-2 1/16"	3 5/16"	6 11/16"	1'-1 5/16"	2 5/8"	7 3/8"	1'-0 5/8"
PIER No. 8	1'-6 3/8"	2 5/8"	3'-4 3/8"	1'-4½"	5"	3'-2"	1'-2 1/4"	7 1/4"	2'-11 3/4"	11 7/8"	9 5/8"	2'-9 3/8"	9½"	12"	2'-7"	7 7/8"	1'-2 3/8"	2'-4 5/8"	4 13/16"	1'-4 11/16"	2'-2 5/8"	2 7/16"	1'-7 1/16"	1'-11 5/16"
PIER No. 12	1'-5 5/8"	2 5/8"	3'-1 3/8"	1'-3 5/16"	4 7/16"	2'-11 1/16"	1'-1 11/16"	6 5/16"	2'-9 11/16"	11 3/8"	8 1/8"	2'-7 7/8"	10"	10"	2'-6"	8 1/8"	11 3/8"	2'-4 1/8"	6 5/16"	1'-1 11/16"	2'-2 5/8"	4 7/16"	1'-3 9/16"	2'-0 7/16"
PIER No 13	9"	2½"	1'-8½"	8 1/16"	3 7/16"	1'-7 1/16"	7 7/8"	4 3/8"	1'-6 5/8"	6 3/8"	5 5/16"	1'-5 11/16"	5 1/4"	6 1/4"	1'-4 3/4"	4 5/16"	7 1/16"	1'-3 13/16"	3 3/8"	8 5/8"	1'-2 7/8"	2 7/16"	9 1/16"	1'-1 7/16"



FOR INFORMATION ONLY

"H DETAIL



NOTE Anti-skid pattern shall be placed on entire area of Traffic Plate.

DETAIL OF ANTI-SKID PATTERN

Material:
A242 Floor Plates, Trough, Deflector Plates, End Plates and Drain Pipe. See General Notes, Sheet No. 2
A 36 Shims, Stiffening Plates, Parapet, Curb and Median Plates, and other material.
A325 All bolts shall be ⅞" Diameter high strength bolts unless noted.
See Standard Specifications Article 408.3.1 H-2 regarding gas cutting of toothed plates. All dimensions for cuts are to centerline of cut. The toothed plates shall be match-marked to maintain the same relative position after cutting.
Drain Pipe, pipe supports, connections and fittings are to be included in the unit price bid for Drain Pipe.
Field welding of armored edge support angles shall be performed only after armored edge is completely erected and adjusted for crown and grade.
Expansion Dams are to be assembled in the shop in their relative erected positions and inspected for fit.
Painting: Surface in contact with Concrete shall not be painted or oiled. All inaccessable surfaces of the expansion joints and drainage troughs shall be completely field painted before erection.
Payment: The cost of Expansion Dams shall be included in the lump sum bid for Structural Steel. Such payment shall be complete compensation for all materials, equipment, tools, labor and incidentals to complete the work.

SHEET 34 OF 121

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
PROJECTS I 24-1(6)38, I 24-9(11)0, I 24-1(6)1
BRIDGE OVER OHIO RIVER ON I 24
BETWEEN McCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

HAZELET & ERDAL Consulting Engineers File No. 886 | BRIDGE NUMBER | DRAWING NO. 17471 | INDEX

EXPANSION DAMS AT PIERS
STRUCTURAL STEEL

MODEL: Default
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8/16/2024 11:13:11 AM

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

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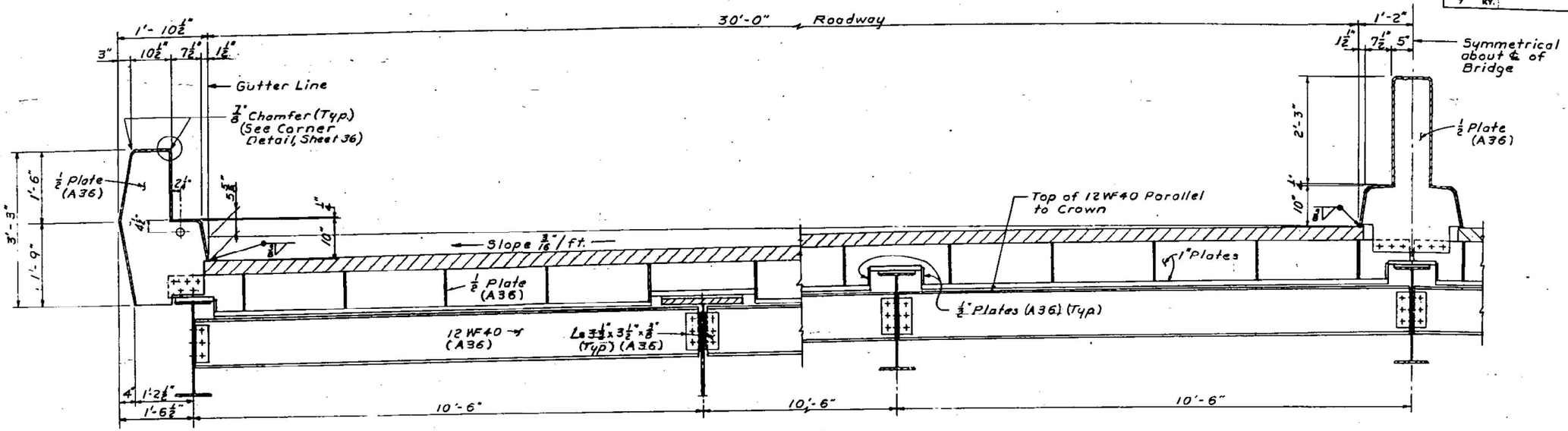
	CHECKED -	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

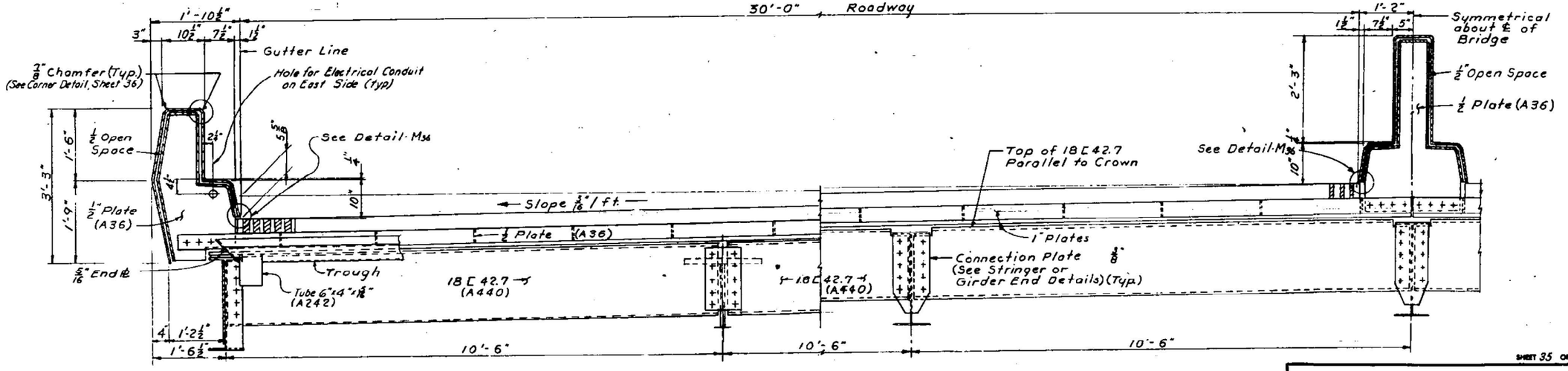
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 65 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	126
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



SECTION A35-A35



SECTION B35-B35

FOR INFORMATION ONLY

EXPANSION DAM SECTIONS
STRUCTURAL STEEL

SHEET 35 OF 171

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS

PROJECTS I 24-1(6)38, I 24-9(1)0 ,I 24-1(6)1
BRIDGE OVER OHIO RIVER ON I-24
BETWEEN McCRACKEN COUNTY, KENTUCKY
AND MASSAC COUNTY, ILLINOIS

HARDESTY & HANOVER Consulting Engineers File No. 2010	BRIDGE NUMBER	DRAWING NO. 1747	INDEX

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		CHECKED -	REVISED -	
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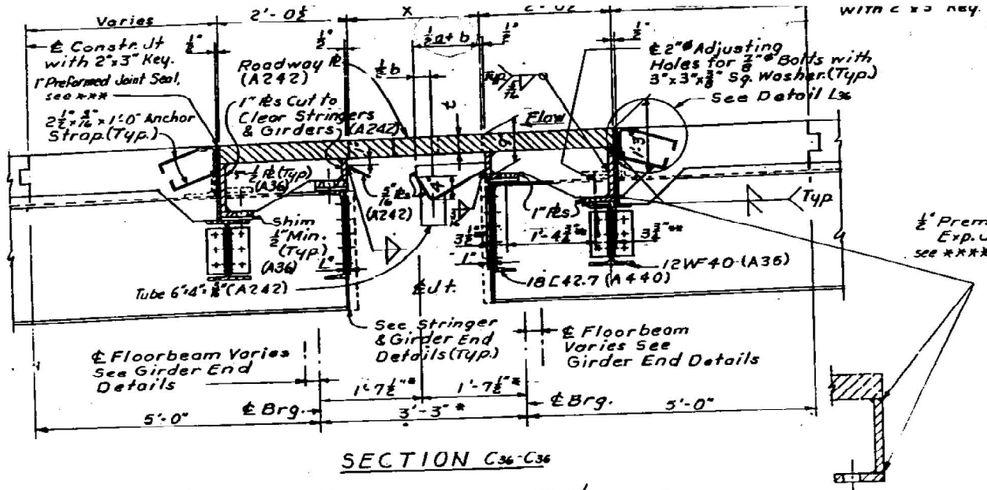
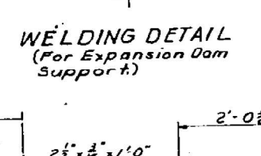
	PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

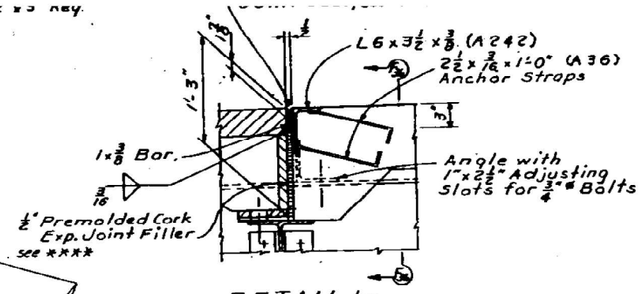
EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 66 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	127
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

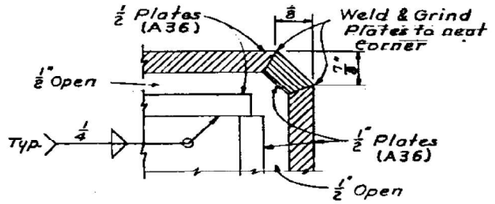


SECTION C36-C36

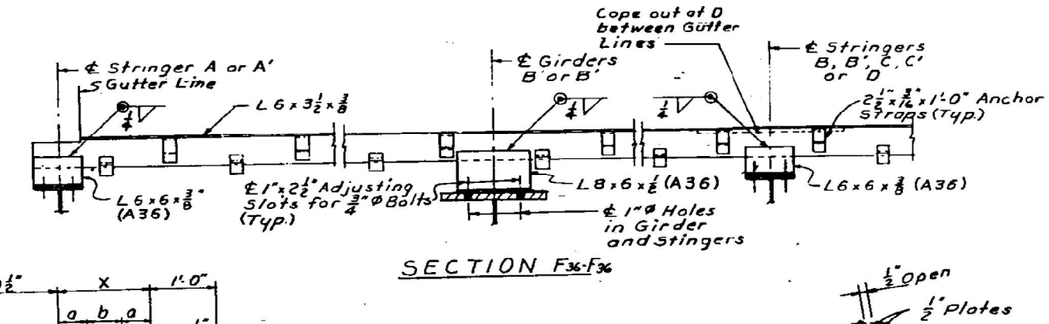




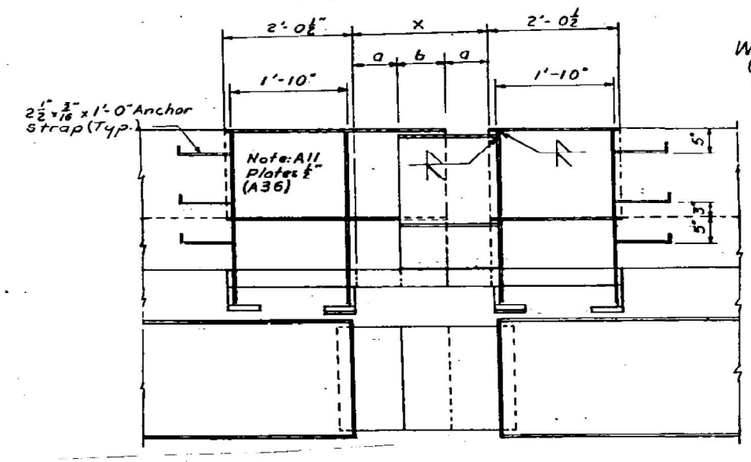
DETAIL L36



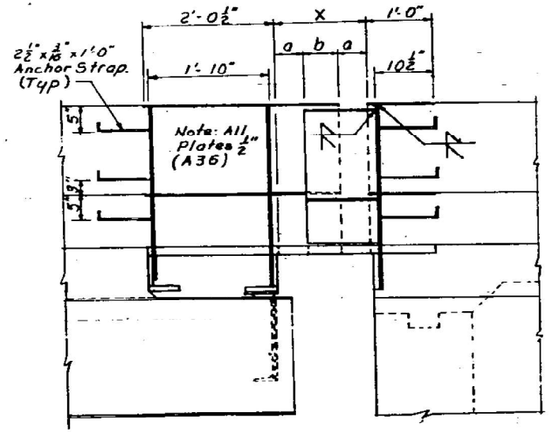
CORNER DETAIL



SECTION F36-F36

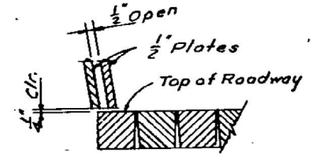


SECTION D36-D36
(SECTION E36-E36 Opposite Hand)



SECTION H36-H36
(SECTION J36-J36 Opposite Hand)

EXPANSION DAM WEIGHTS ℄ ⅛		
	PLATE THICKNESS "℄"	WEIGHT LBS.
PIER No. 3	3"	74,270.
PIER No. 4	1⅞"	55,702.
PIER No. 8	3⅛"	84558.
PIER No. 12	3⅛"	80060.
PIER No. 13	2⅜"	60,594.



DETAIL M36

Notes:
* Dimensions at 60°F.
℄ Symmetrical about ℄
See Sheet 34 for a, b & x.
*** "Preformed Joint Seal Details for Concrete Bridge Floors" G353, current edition.
**** "Premolded Cork Expansion Joint Material Details For Concrete Bridge Floors" G354, current edition.

SHEET 36 OF 175

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
PROJECTS I 24-1(6)38, I 24-9(10), I 24-1(6)1
BRIDGE OVER OHIO RIVER ON I-24
BETWEEN McCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

HARLEY E. BRIAL, Consulting Engineer, File No. 888 | BRIDGE NUMBER | DRAWING NO. 17471 | INDEX

EXPANSION DAM DETAILS
STRUCTURAL STEEL

FOR INFORMATION ONLY

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TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

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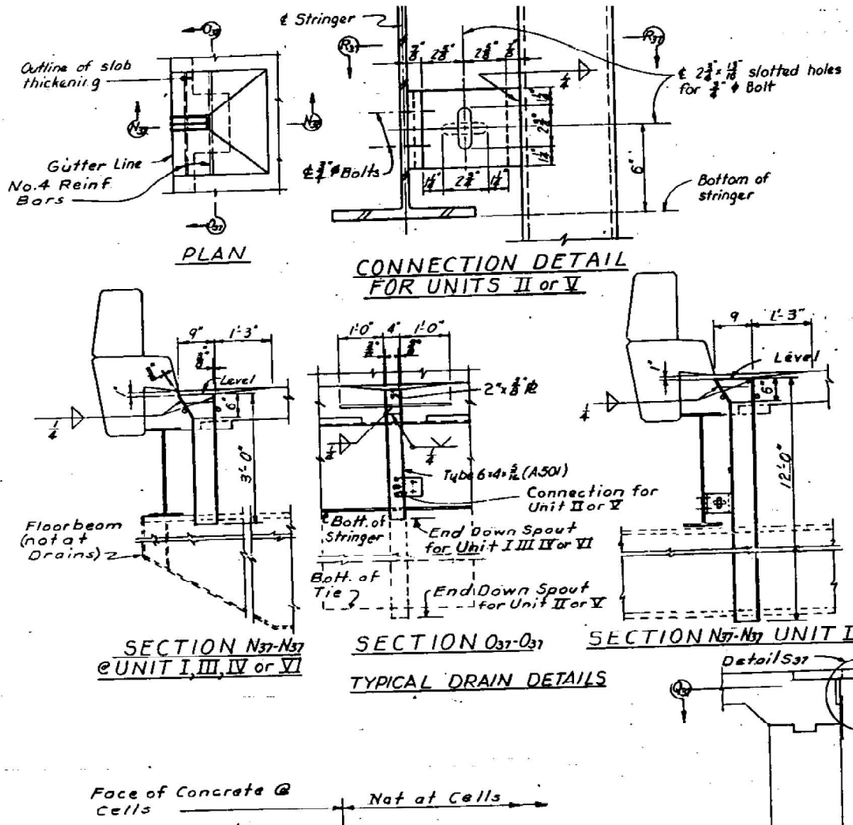
PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

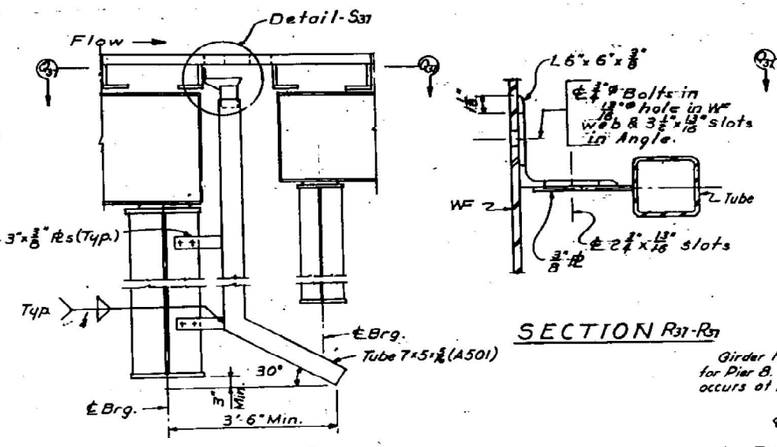
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

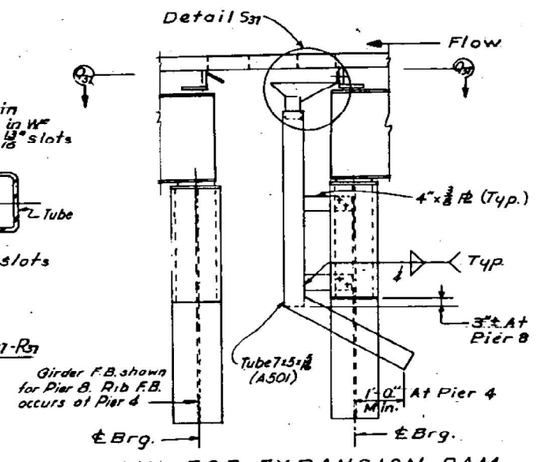
EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 67 OF 175 SHEETS

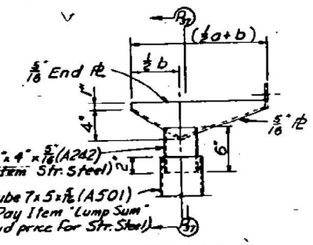
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	128
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

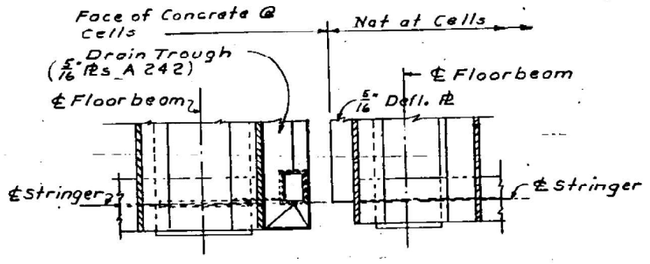


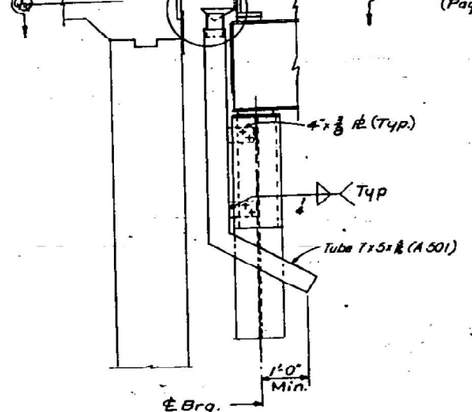
TYPICAL DRAIN DETAILS

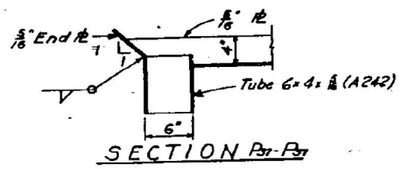












DRAIN DETAILS STRUCTURAL STEEL

All A501 Tubing and fixtures are to be galvanized

SHEET 37 OF 121

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS

PROJECTS I 24-1(6)136, I 24-9(10), I 24-1(61)
BRIDGE OVER OHIO RIVER ON I 24
BETWEEN McCRACKEN COUNTY, KENTUCKY
AND MASSAC COUNTY, ILLINOIS

HAZELET & ERDAL Consulting Engineers File No. 000	BRIDGE NUMBER	DRAWING NO. 17671	INDEX

FOR INFORMATION ONLY

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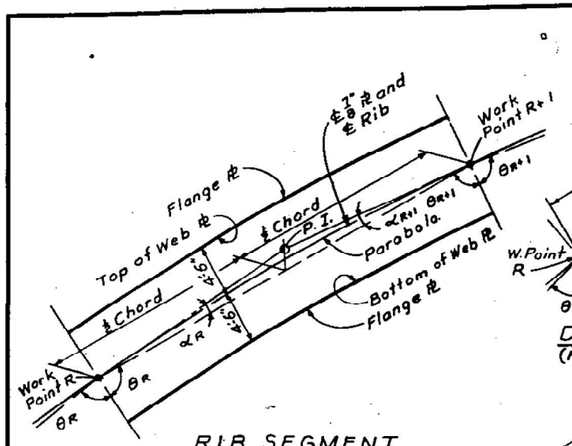
		PLOT DATE = 8/16/2024	CHECKED -	REVISED -

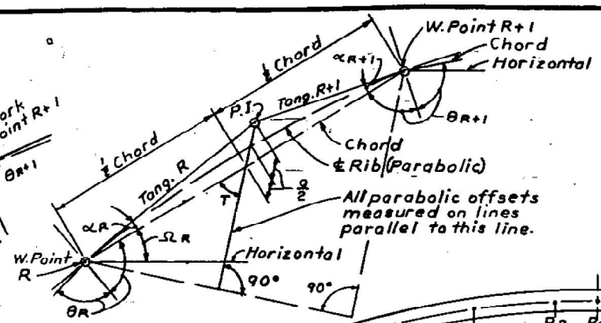
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 68 OF 175 SHEETS

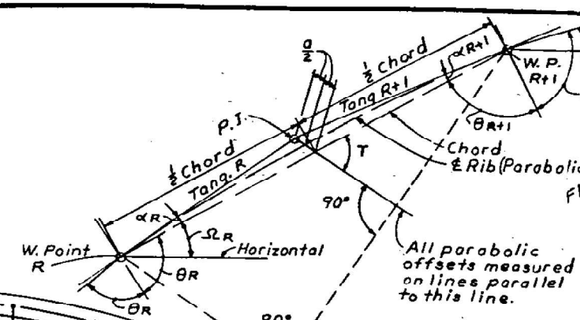
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	129
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



RIB SEGMENT
DETAIL NO.1



DETAIL NO. 2
(For $\alpha_R < \alpha_{R+1}$)



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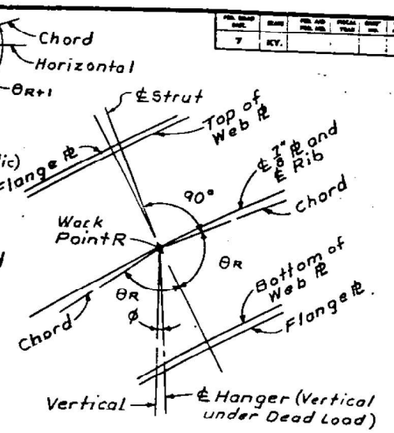
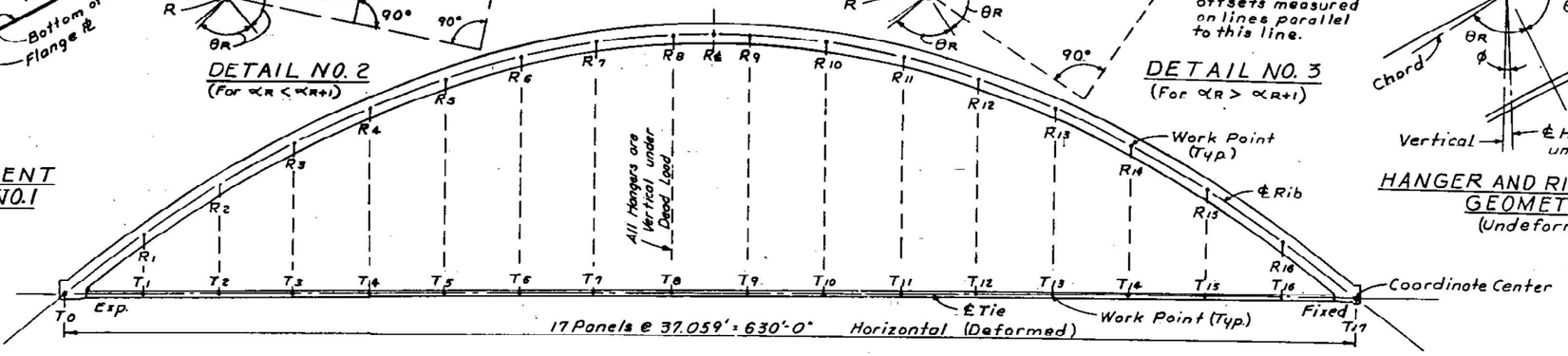


HANGER AND RIB BRACING
GEOMETRICS
(Undeformed)



UNDEFORMED ARCH

Work Point	Horiz. Dist. From Coord. Center Ft.	Elevation at Arch Axis Ft.	Angle Ω	Angle θ	Angle α	Angle ϕ *	Work Point	Horiz. Dist. From Coord. Center Ft.	Member	Chord Length Ft.	Angle "T"	a/2 Ft.
T0	629.135	366.407	37°-50'-31"	87°-59'-07"	2°-00'-53"	+ 0°-15'-18"	T0	629.135	T0 - R1	46.788	90°-00'-00"	0.411
R1	592.186	395.111	33°-48'-45"	87°-59'-07"	2°-00'-53"	+ 0°-15'-33"	T1	592.127	R1 - R2	44.485	74°-37'-56"	0.402
R2	555.225	419.866	29°-51'-34"	88°-01'-25"	1°-58'-35"	+ 0°-15'-48"	T2	555.119	R2 - R3	42.637	36°-51'-25"	0.643
R3	518.248	441.094	25°-30'-22"	87°-49'-24"	2°-10'-36"	+ 0°-15'-45"	T3	518.111	R3 - R4	40.989	68°-22'-07"	0.425
R4	481.254	458.744	21°-01'-02"	87°-45'-20"	2°-14'-40"	+ 0°-15'-27"	T4	481.103	R4 - R5	39.649	27°-23'-30"	0.913
R5	444.243	472.964	15°-43'-46"	87°-21'-22"	2°-38'-38"	+ 0°-15'-00"	T5	444.095	R5 - R6	38.470	23°-14'-17"	1.016
R6	407.214	483.393	11°-22'-37"	87°-49'-25"	2°-10'-35"	+ 0°-14'-21"	T6	407.087	R6 - R7	37.787	17°-57'-15"	1.319
R7	370.169	490.847	5°-41'-32"	87°-09'-28"	2°-50'-32"	+ 0°-13'-36"	T7	370.079	R7 - R8	37.244	29°-28'-08"	0.864
R8	333.109	494.541	0°-51'-22"	87°-34'-55"	2°-25'-05"	+ 0°-12'-50"	T8	333.071	R8 - R&	18.538	1°-55'-15"	2.584
R&	314.573	494.818		89°-18'-44"	0°-41'-16"	** 0°-12'-35"						
R9	296.035	494.650	0°-31'-09"	87°-35'-01"	2°-24'-59"	- 0°-13'-05"	T9	296.064	R& - R9	18.539	1°-55'-17"	2.583
R10	258.974	491.178	5°-21'-07"	87°-09'-07"	2°-50'-53"	- 0°-13'-47"	T10	259.056	R9 - R10	37.223	29°-04'-42"	0.874
R11	221.930	483.945	11°-02'-54"	87°-49'-06"	2°-10'-54"	- 0°-14'-26"	T11	222.048	R10 - R11	37.744	18°-00'-55"	1.316
R12	184.899	473.737	15°-24'-41"	87°-20'-50"	2°-39'-10"	- 0°-15'-01"	T12	185.040	R11 - R12	38.412	23°-11'-28"	1.020
R13	147.888	459.739	20°-43'-02"	87°-44'-49"	2°-15'-11"	- 0°-15'-26"	T13	148.032	R12 - R13	39.570	27°-32'-45"	0.910
R14	110.893	442.312	25°-13'-24"	87°-48'-45"	2°-11'-15"	- 0°-15'-41"	T14	111.024	R13 - R14	40.894	69°-06'-17"	0.424
R15	73.915	421.307	29°-35'-54"	88°-00'-51"	1°-59'-09"	- 0°-15'-41"	T15	74.016	R14 - R15	42.527	36°-56'-20"	0.643
R16	36.951	396.776	33°-34'-12"	87°-58'-26"	2°-01'-34"	- 0°-15'-26"	T16	37.008	R15 - R16	44.363	74°-00'-28"	0.404
T17	0.000	368.297	37°-37'-20"	87°-58'-26"	2°-01'-34"	- 0°-15'-08"	T17	0.000	R16 - T17	46.652	90°-00'-00"	0.413

DEFORMED ARCH

Work Point	Horiz. Dist. From Coord. Center	Elevation at Arch Work Point	Point	Horiz. Dist. From Coord. Center	Elevation at Tie Work Point
T0	630.000	366.407	T0	630.000	366.407
R1	592.941	394.932	T1	592.941	366.518
R2	555.882	419.507	T2	555.882	366.629
R3	518.824	440.557	T3	518.824	366.741
R4	481.765	458.032	T4	481.765	366.852
R5	444.706	472.082	T5	444.706	366.963
R6	407.647	482.349	T6	407.647	367.074
R7	370.588	489.649	T7	370.588	367.185
R8	333.529	493.199	T8	333.529	367.296
R&	315.000	493.407	—		
R9	296.471	493.310	T9	296.471	367.407
R10	259.412	489.983	T10	259.412	367.519
R11	222.353	482.905	T11	222.353	367.630
R12	185.294	472.860	T12	185.294	367.741
R13	148.235	459.032	T13	148.235	367.852
R14	111.176	441.779	T14	111.176	367.963
R15	74.118	420.952	T15	74.118	368.074
R16	37.059	396.599	T16	37.059	368.185
T17	0.000	368.297	T17	0.000	368.297

NOTES:
Details No. 1, 2 & 3 show a proposed method for obtaining a theoretical smooth curve for the rib. The Contractor may submit an alternate method for approval by the Engineer.
All steel shall be fabricated for a normal temperature of 60°F.
Deformed Arch Geometrics are given for full dead load including Future Wearing Surface. Tie shall be fabricated to Undeformed Horizontal Coordinates and Deformed Vertical Elevation. Tie is straight between Work Points. Rib shall be fabricated to Undeformed Coordinates and Elevations.

* Plus indicates a clockwise rotation.
* Minus indicates a counter clockwise rotation.

**R& End of Member R16 R& rotates pos.
**R& End of Member R& R11 rotates neg.

FOR INFORMATION ONLY

RIB ARCH GEOMETRICS UNIT II

SHEET 38 OF 121

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
PROJECTS I 24-1(6)38, I 24-9(1)0, I 24-1(6)1
BRIDGE OVER OHIO RIVER ON I 24
BETWEEN McCRACKEN COUNTY, KENTUCKY
AND MASSAC COUNTY, ILLINOIS

HARRIS & BRAL Consulting Engineers File No. 868	BRIDGE NUMBERS	DRAWING NO. 17471	INDEX

TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = Jesker	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
			CHECKED -	REVISED -	
		PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
		PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 69 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	130
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
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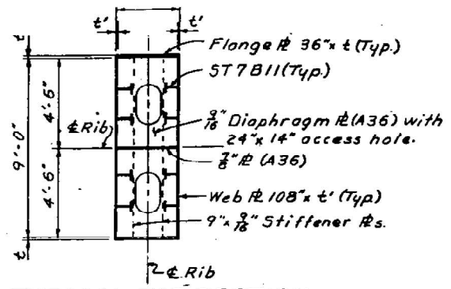
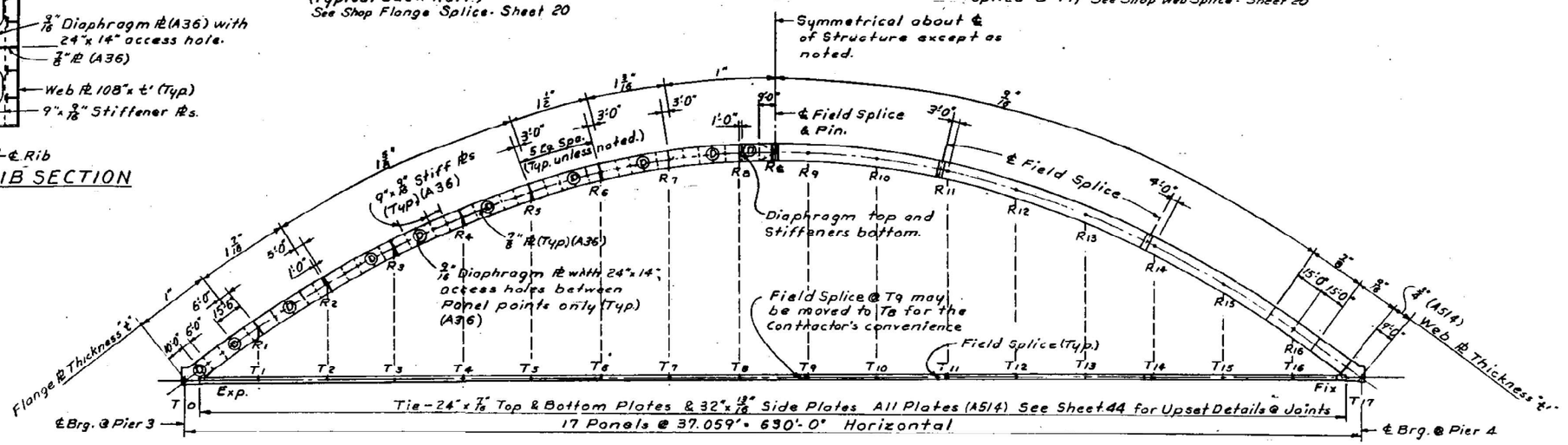


TYPICAL RIB SECTION

Half Rib Elevation Showing Flange Thickness and Length Plus Diaphragm and Stiffener Location. (Typical each Half.) See Shop Flange Splice - Sheet 20

Half Rib Elevation Showing Web Plate Thickness and Field Splice Location (Typical Each Half Except for Field Splice @ T9) See Shop Web Splice - Sheet 20



MEMBER FORCES

Member	Joint	Dead Load-Steel Axial Force	Dead Load-Steel Bending Moment	Dead Load-Conc. Axial Force	Dead Load-Conc. Bending Moment	Future Wear. Surf. Axial Force	Future Wear. Surf. Bending Moment	Live Load Axial Force	Live Load Bending Moment	Impact Axial Force	Impact Bending Moment	Total (DL,FWS,LL&I) Axial Force	Total (DL,FWS,LL&I) Bending Moment	10%(DL+FWS) Axial Force	10%(DL+FWS) Bending Moment	Design Total-10% Axial Force	Design Total-10% Bending Moment
T0-T17	T0	+ 1,064	- 136	+ 1,715	- 178	+ 234	- 33	+ 469	- 78	+ 31	- 5	+ 3,513	- 430	+ 301	- 35	+ 3,212	- 395
T0-T17	T17	+ 1,064	+ 136	+ 1,715	+ 178	+ 234	+ 33	+ 469	+ 78	+ 31	+ 5	+ 3,513	+ 430	+ 301	+ 35	+ 3,212	+ 395
T0-R1	T0	- 1,337	+ 136	- 2,155	+ 178	- 295	+ 33	- 391	- 1968	- 35	- 185	- 4,193	- 1806	- 379	+ 35*	- 3,814	- 1,806
T0-R1	R1	- 1,337	- 744	- 2,155	- 2,051	- 295	+ 137	- 189	+ 52,220	- 27	+ 7,520	- 4,003	+ 57,082	- 379	- 266*	- 3,624	+ 57,082
R1-R2	R1	- 1,277	+ 744	- 2,050	+ 2,051	- 280	- 137	- 183	- 52,220	- 26	- 7,520	- 3,816	- 57,082	- 361	+ 266*	- 3,455	- 57,082
R1-R2	R2	- 1,277	+ 2,396	- 2,050	- 4,370	- 280	+ 187	- 204	+ 86,301	- 29	+ 12,427	- 3,840	+ 96,941	- 361	- 179*	- 3,479	+ 96,941
R2-R3	R2	- 1,221	- 2,396	- 1,969	+ 4,370	- 269	- 187	- 163	- 86,301	- 24	- 12,427	- 3,646	- 96,941	- 346	+ 179*	- 3,300	- 96,941
R2-R3	R3	- 1,221	+ 4,388	- 1,969	- 3,058	- 269	+ 704	- 228	+ 104,658	- 30	+ 13,606	- 3,717	+ 120,298	- 346	+ 203	- 3,371	+ 120,095
R3-R4	R3	- 1,175	- 4,388	- 1,897	+ 3,058	- 259	- 704	- 192	- 104,658	- 25	- 13,606	- 3,548	- 120,298	- 333	- 203	- 3,215	- 120,095
R3-R4	R4	- 1,175	+ 3,342	- 1,897	- 1,552	- 259	+ 1,160	- 209	+ 109,671	- 27	+ 14,257	- 3,567	+ 126,878	- 333	+ 295	- 3,234	+ 126,583
R4-R5	R4	- 1,136	- 3,342	- 1,837	+ 1,552	- 251	- 1,160	- 181	- 109,671	- 24	- 14,257	- 3,429	- 126,878	- 322	- 295	- 3,107	- 126,583
R4-R5	R5	- 1,136	+ 1,763	- 1,837	+ 1,307	- 251	+ 1,779	- 240	+ 103,015	- 29	+ 12,259	- 3,493	+ 120,123	- 322	+ 485	- 3,171	+ 119,638
R5-R6	R5	- 1,105	- 1,763	- 1,779	- 1,307	- 243	- 1,779	- 218	- 103,015	- 26	- 12,259	- 3,371	- 120,123	- 313	- 485	- 3,058	- 119,638
R5-R6	R6	- 1,105	+ 5,599	- 1,779	+ 438	- 243	+ 1,806	- 229	+ 86,265	- 27	+ 10,266	- 3,383	+ 102,374	- 313	+ 584	- 3,070	+ 101,790
R6-R7	R6	- 1,082	- 5,599	- 1,750	- 438	- 239	- 1,806	- 218	- 86,265	- 26	- 10,266	- 3,315	- 102,374	- 307	- 584	- 3,008	- 101,790
R6-R7	R7	- 1,082	- 1,737	- 1,750	+ 3,886	- 239	+ 2,394	- 265	+ 66,942	- 32	+ 7,966	- 3,368	+ 79,451	- 307	+ 454	- 3,061	+ 78,997
R7-R8	R7	- 1,069	+ 1,737	- 1,723	- 3,886	- 235	- 2,394	- 259	- 66,942	- 31	- 7,966	- 3,317	- 79,451	- 303	- 454	- 3,014	- 78,997
R7-R8	R8	- 1,069	- 888	- 1,723	+ 3,143	- 235	+ 2,345	- 225	+ 52,840	- 36	+ 8,507	- 3,288	+ 65,947	- 303	+ 460	- 2,985	+ 65,487
R8-R8	R8	- 1,064	+ 888	- 1,715	- 3,143	- 234	- 2,345	- 223	- 52,840	- 36	- 8,509	- 3,272	- 65,947	- 301	- 460	- 2,971	- 65,487
R8-R8	**R8	- 1,064	0	- 1,715	0	- 234	+ 1,907	- 227	+ 46,600	- 37	+ 7,503	- 3,277	+ 56,010	- 301	+ 191	- 2,976	+ 55,819

NOTES

All Dimensions are measured along chord.

Sign Convention:
Axial Load in kips: neg. = Compression pos. = Tension
Bending Moment in inch-kips.
neg. Rotates Joint Counter Clockwise
pos. Rotates Joint Clockwise.

*10% Reduction not used because it increases stress.

**Live Load + Impact and Future Wearing Surface are applied when ℄ joint is in a fixed condition. The Dead Load of the Concrete and Steel is applied when the ℄ joint is in a pinned condition.

Rib forces are symmetrical about ℄ span for all practical purposes.

RIB STRESS UNIT II

FOR INFORMATION ONLY

SHEET 39 OF 121

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
PROJECTS I 24-1(6)30, I 24-9(1)0, I 24-11(6)1
BRIDGE OVER OHIO RIVER ON I 24
BETWEEN McCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

HAZELET & ERDAL Consulting Engineers File No. 888 | BRIDGE NUMBER | DRAWING NO. 17471 | SHEET

TWM ENGINEERING GEOSPATIAL SERVICES — TWM, INC. WWW.TWM-INC.COM — IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = Jesker	DESIGNED -	REVISED -	
	CHECKED -	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 70 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	131
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
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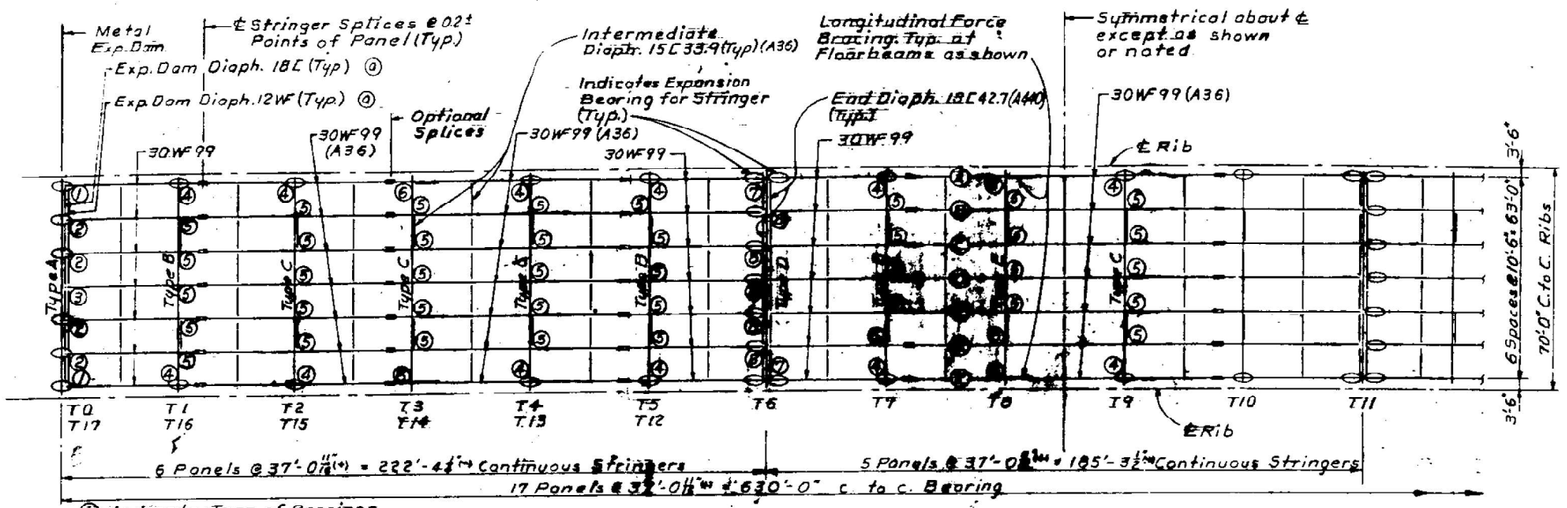
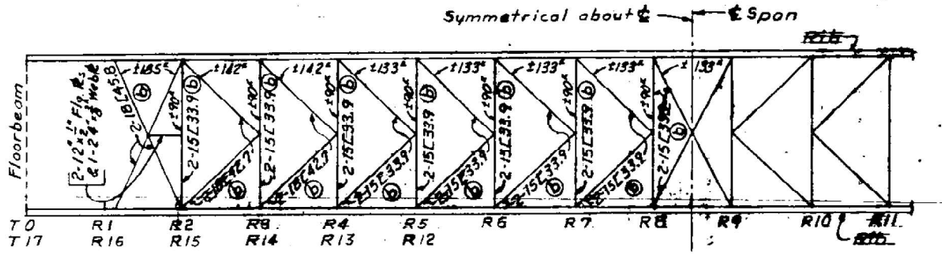
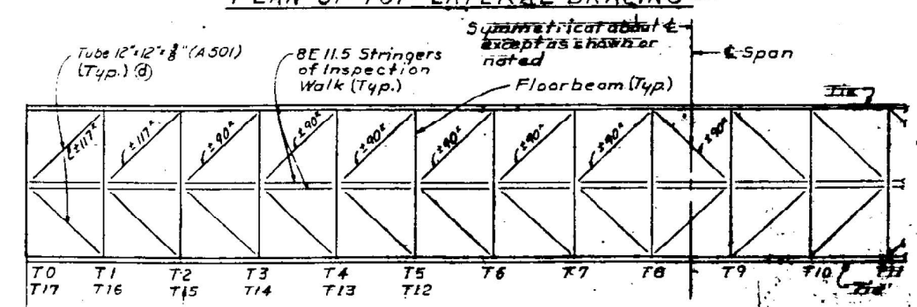


FLOOR SYSTEM FRAMING PLAN

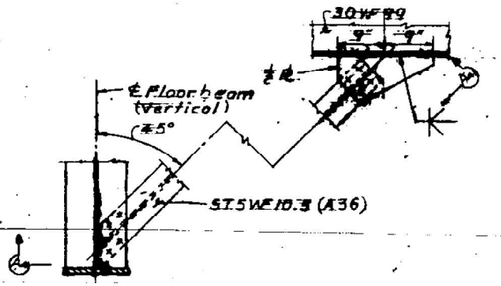


PLAN OF TOP LATERAL BRACING ③

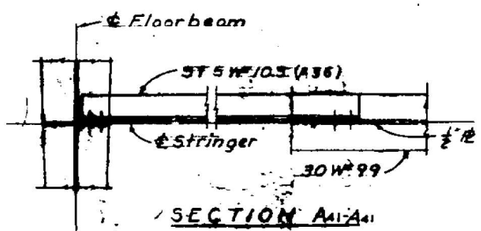


FOR INFORMATION ONLY

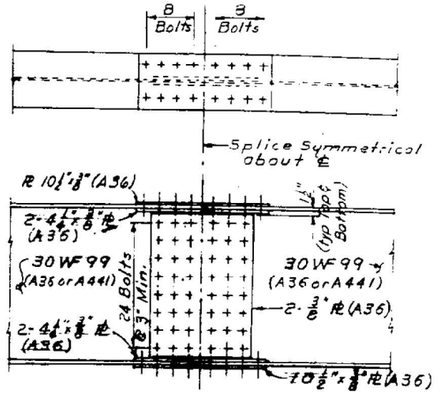
BOTTOM LATERAL BRACING ③



LONGITUDINAL FORCE BRACING AT STRINGERS A AND A1



SECTION A41-A41



FIELD SPLICE FOR 30WF99 STRINGER

NOTE:

④ See Expansion Dam Detail, Sheet for Details.

⑤ See Sheet 46 for details of Stiffeners and ½" Web Plates.

⑥ All bracing shall be A36 Steel and shall be detailed to the deformed length of the Tie or Rib.

⑦ Camber the Tubes 12"x12"x⅜" up 8" For 30WF Stringers turn any natural camber up.

For Diaphragm Details see Sheet 56

UNIT II STRUCTURAL STEEL QUANTITIES (LBS)

Part of Project	Drains	Cable Stayed	A36	A440	A441	Shoes	Fix. Bgs.
121-9(1)10	16,605	109,[illegible]	[illegible],503	10[illegible]	[illegible],[illegible]	57,814	64,986

FRAMING PLAN FOR UNIT II STRUCTURAL STEEL

SHEET 41 OF 121

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
PROJECTS I 24-1(46)36, I 24-9(110), I 24-1(611)
BRIDGE OVER OHIO RIVER CH 134
BETWEEN McCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

HAZELET & ERDAL Consulting Engineers File No. 595 | BRIDGE NUMBER | DRAWING NO. 17471 | INDEX

TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = jesker	DESIGNED -	REVISED -	
			CHECKED -	REVISED -	
		PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
		PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 71 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	132
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
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8/16/2024 11:13:29 AM

DETAIL Gaz
(In Section)

SECTION Eaz-Eaz

SECTION Faz-Faz

SECTION Gaz-Gaz

SECTION Haz-Haz
(Normal Tie Section)

SECTION Caz-Caz

TOP VIEW

SECTION Baz-Baz

Undeformed (No Load)
Deformed (DL+FWS)

JOINT GEOMETRY

Note: See Sh. No. 62 for size and type of rail and post plus other details not shown.

SECTION Jaz-Jaz

END VIEW

ELEVATION

SAFETY RAIL AND CAGE AT END OF RIBS
(8 Required)

ELEVATION
UNIT II RIB
STRUCTURAL STEEL

SHEET 42 OF 171

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS

PROJECTS I 24-1(6)388, I 24-9(10), I 24-1(6)1

BRIDGE OVER OHIO RIVER ON I-24
BETWEEN McCRACKEN COUNTY, KENTUCKY
AND MASSAC COUNTY, ILLINOIS

DRAWING NO. 17471

FOR INFORMATION ONLY

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TWM, INC.
WWW.TWM-INC.COM
ENGINEERING GEOSPATIAL SERVICES
IL DESIGN FIRM LICENSE NO: 184-001220

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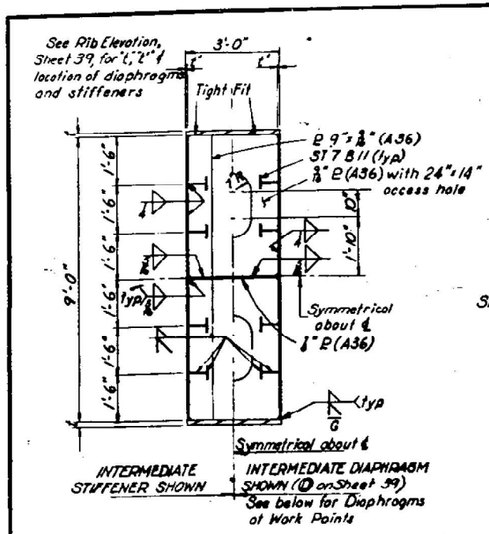
	CHECKED -	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

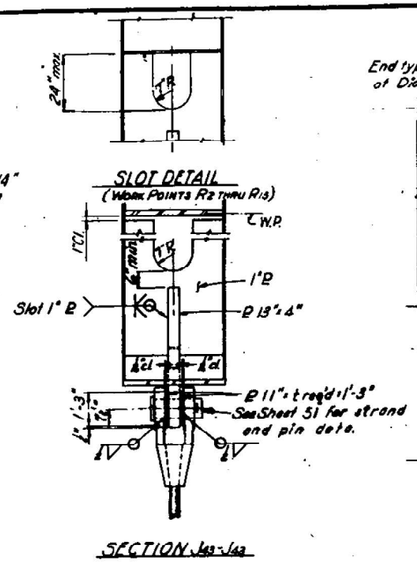
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 72 OF 175 SHEETS

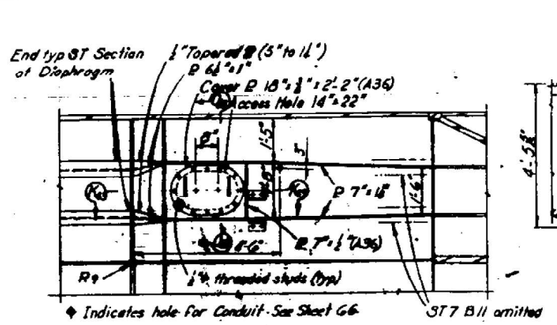
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	133
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



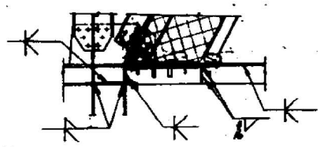
TYPICAL SECTION



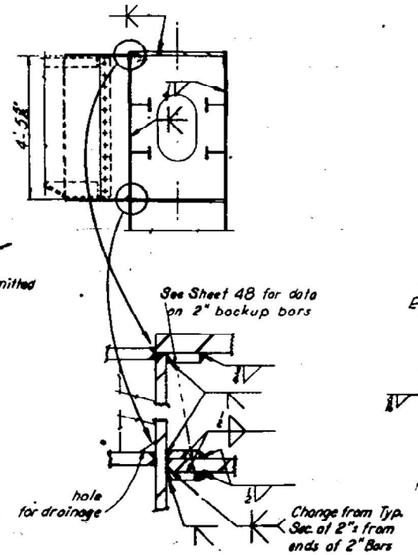
SECTION J₄₃-J₄₃



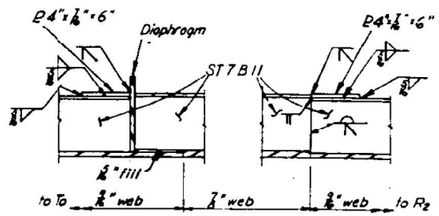
SPECIAL DETAIL AT INSPECTION WALK
(South Half of East Rib Only - Inside face)



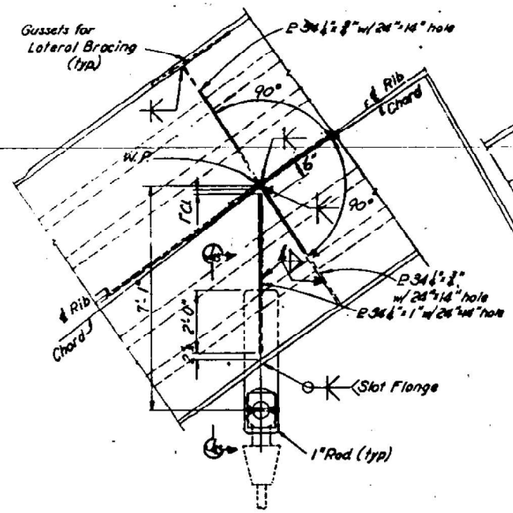
SECTION K₄₃-K₄₃



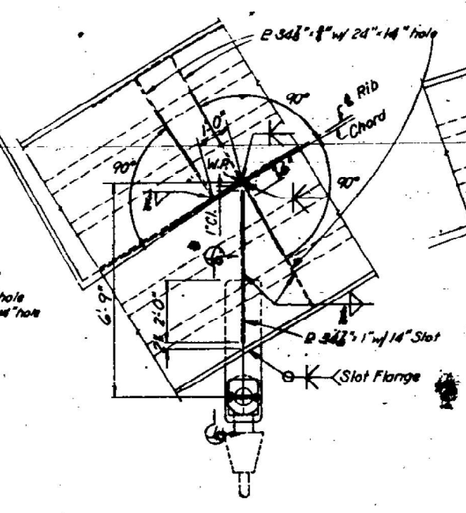
DETAILS FOR BACK-UP OF LATERAL BRACING GUSSETS



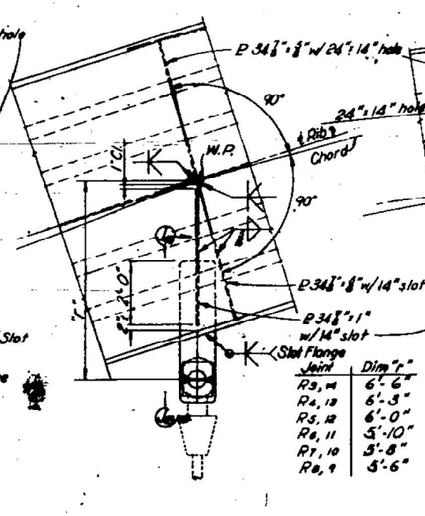
LONGITUDINAL STIFFENER WEB TRANSITION DETAIL



R1

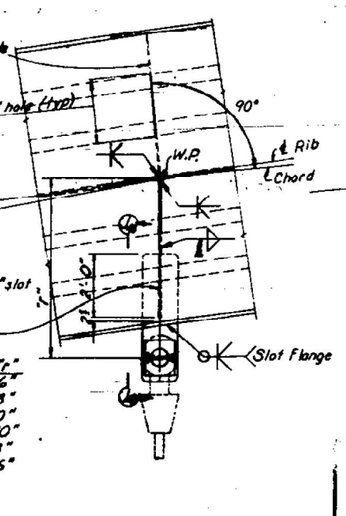


R2

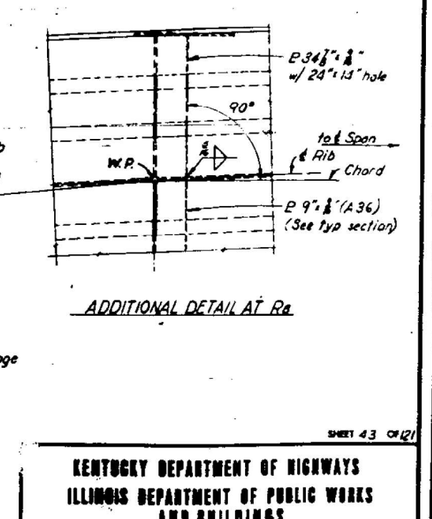


Joint	Dim "c"
R3, M	6'-6"
R4, 13	6'-3"
R5, 12	6'-0"
R6, 11	5'-10"
R7, 10	5'-8"
R8, 9	5'-6"

R3 thru R6



R7 & R8



ADDITIONAL DETAIL AT R8

DETAILS AT WORK POINTS
Rib is Symmetrical About ℄ Span

UNIT ℄ RIB DETAILS
STRUCTURAL STEEL

FOR INFORMATION ONLY

SHEET 43 OF 121

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
PROJECTS I 24-1(6)138, I 24-9(10), I 24-1(6)1
BRIDGE OVER OHIO RIVER ON I 24
BETWEEN McCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

HARNER & BIBAL Consulting Engineers File No. 000 | BRIDGE NUMBER | DRAWING NO. 17471 | INDEX

TWM ENGINEERING & GEOSPATIAL SERVICES
TWM, INC. www.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

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	CHECKED -	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 73 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	134
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
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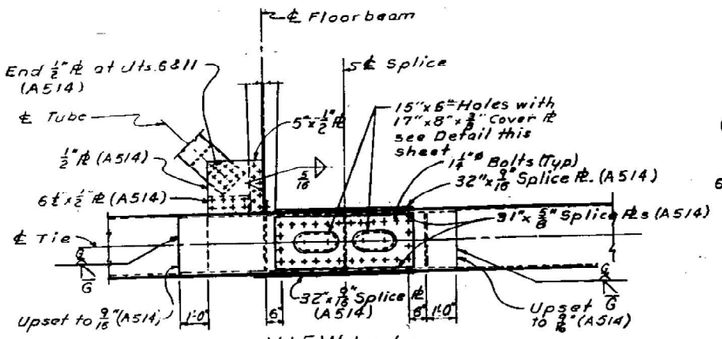
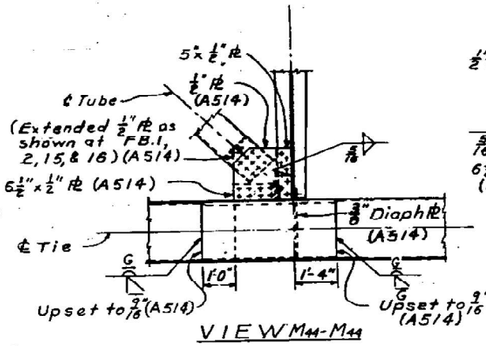


VIEW L44-L44



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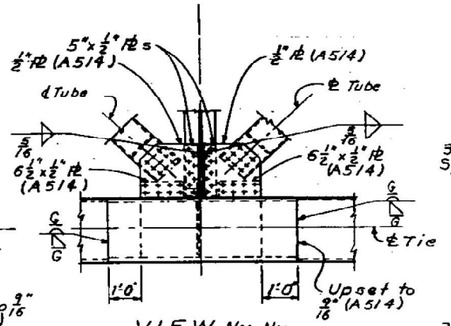
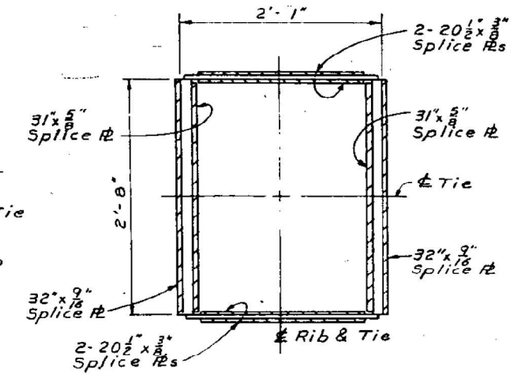
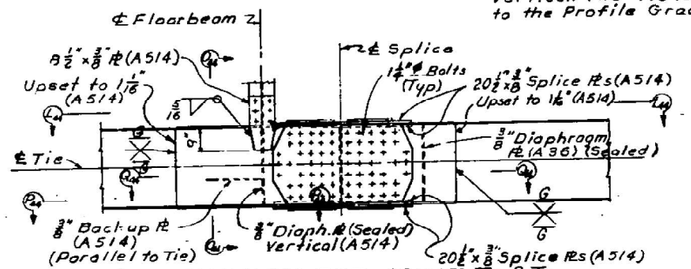


VIEW N44-N44

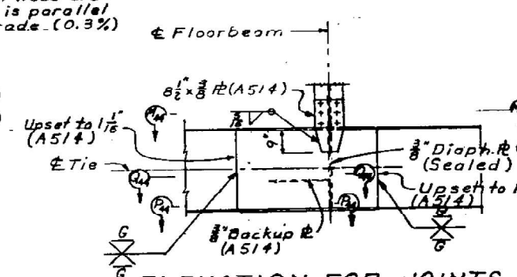


TYPICAL SECTION THRU SPLICE

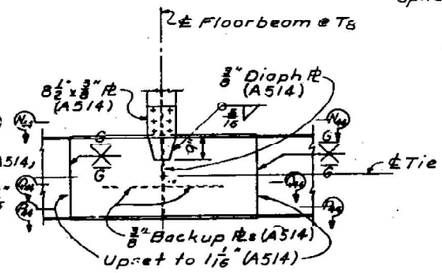
Note: All Floorbeam webs are vertical. The Tie is parallel to the Profile Grade. (0.3%)



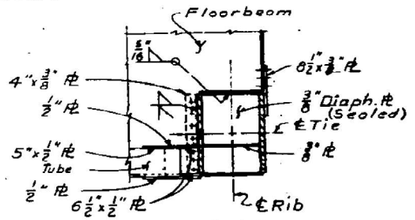
ELEVATION FOR JOINT T3 & T6
(Opp. Hand For Joints T9, T11 & T14)



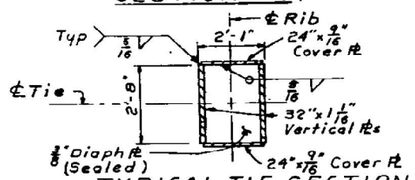
ELEVATION FOR JOINTS
(T1, T2, T4, T5 And T7
Opp. Hand For Joints T10, T12, T13 T15 and T16)



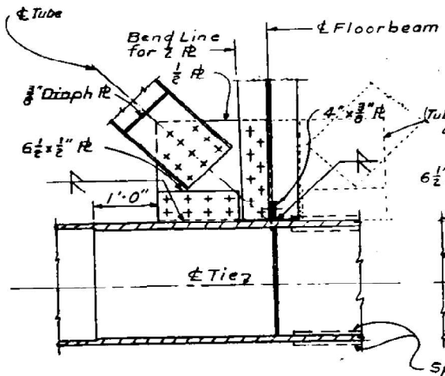
ELEVATION FOR JOINT T8



SECTION Q44-Q44

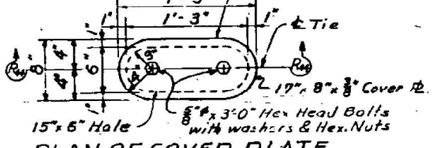


TYPICAL TIE SECTION AT SPLICE JOINTS

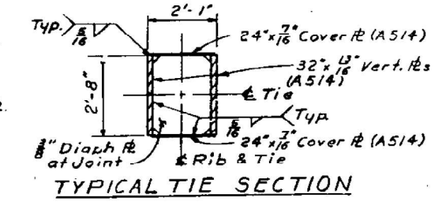


SECTION P44-P44

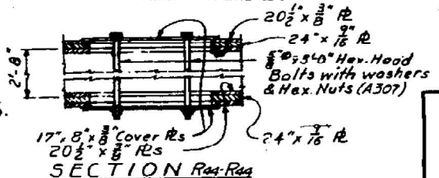
SECTION Q44-Q44



PLAN OF COVER PLATE



TYPICAL TIE SECTION



SECTION R44-R44

TIE SPLICE DETAILS FOR UNIT II STRUCTURAL STEEL

SHEET 44 OF 171

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
PROJECTS I 24-1(6)38, I 24-9(10), I 24-1(6)11
BRIDGE OVER OHIO RIVER ON I-24
BETWEEN McCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

HAZELET & ERDAL Consulting Engineers File No. 886	BRIDGE NUMBER	DRAWING NO. 17471	INDEX

FOR INFORMATION ONLY

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	CHECKED -	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 74 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	135
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

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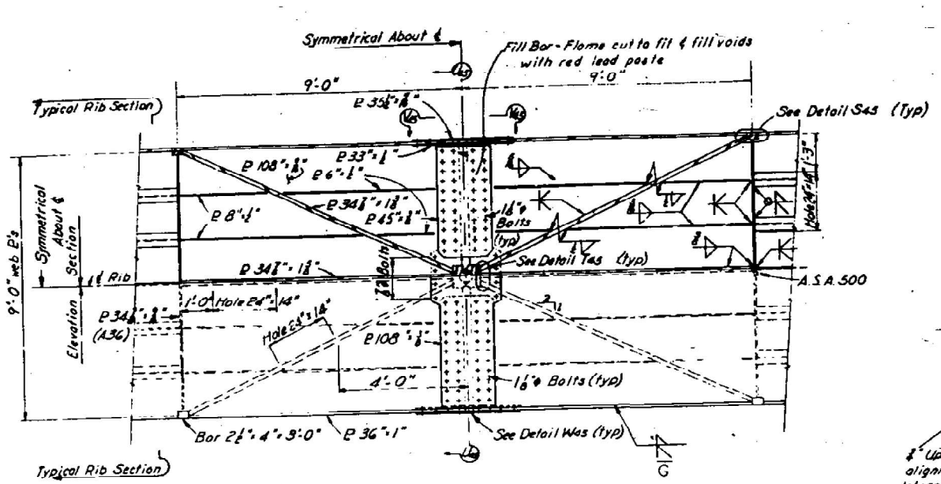
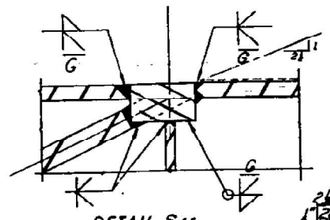
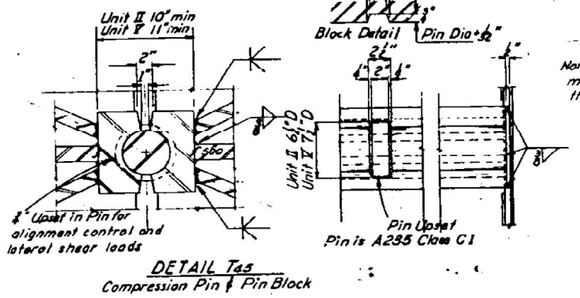


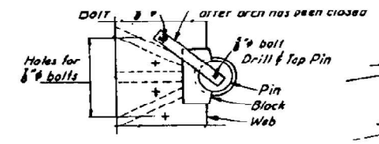
℄ JOINT - UNIT II



DETAIL S43

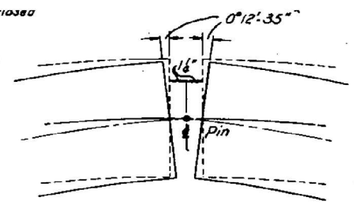


DETAIL Ta5
Compression Pin & Pin Block



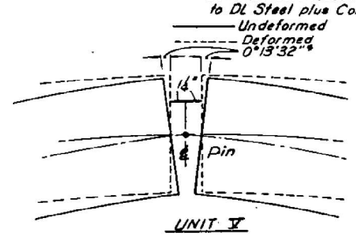
ERECTION DETAIL for PIN

Note the Radius in the pin block may be no greater than 1/32" over the Radius of the pin.



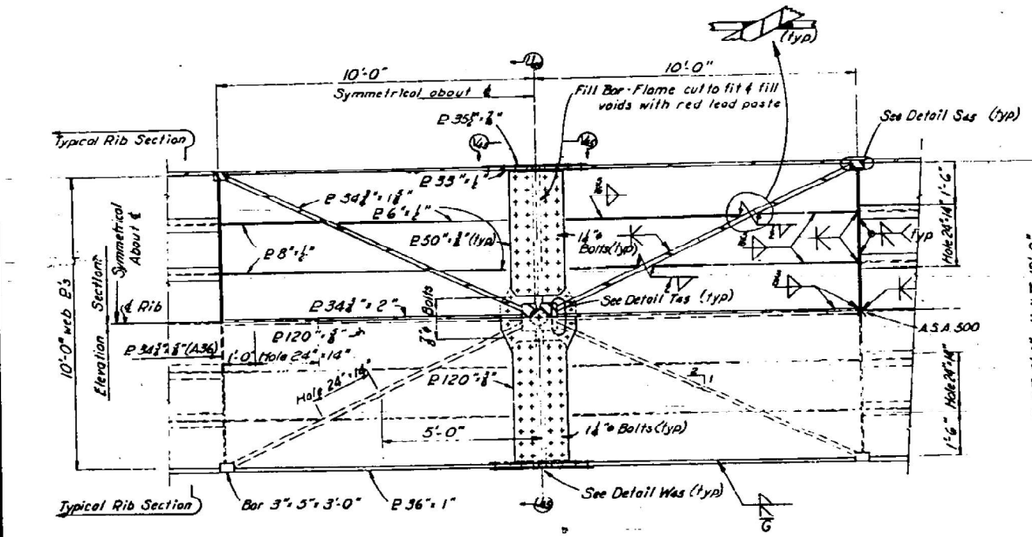
UNIT II

* Joint Rotation (each side) due to DL Steel plus Concrete.

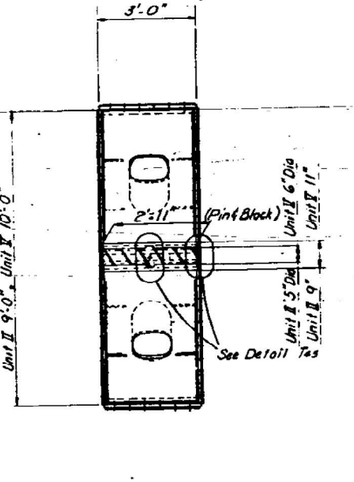


UNIT V

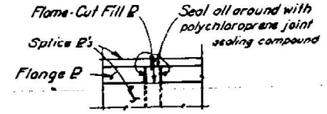
JOINT ROTATIONS



℄ JOINT - UNIT V

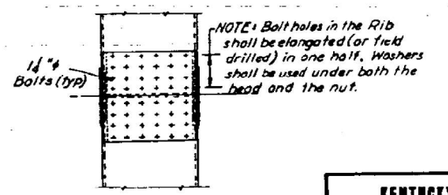


SECTION Va5-Va5



DETAIL Wa6

Note: The arch ribs are to be three hinged during all erection. After the concrete has all been placed the ℄ Joint Splice Plates shall be bolted in place, converting the ribs to two hinged arches.
The opening has been increased to accommodate the rotation due to the construction loading sequence.



VIEW Va5-Va5

TOP ℄ JOINT DETAILS - II & V
STRUCTURAL STEEL

SHEET 45 OF 121

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
PROJECTS I 24-1(6 138), I 24-9(I)0, I 24-1(6)1
BRIDGE OVER OHIO RIVER ON I 24
BETWEEN McCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

HAZELET & ERDAL Consulting Engineers File No. 3-98 | BRIDGE NUMBER | DRAWING NO. 17471 | INDEX

FOR INFORMATION ONLY

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8/16/2024 11:13:40 AM

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			CHECKED -	REVISED -	
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		PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 75 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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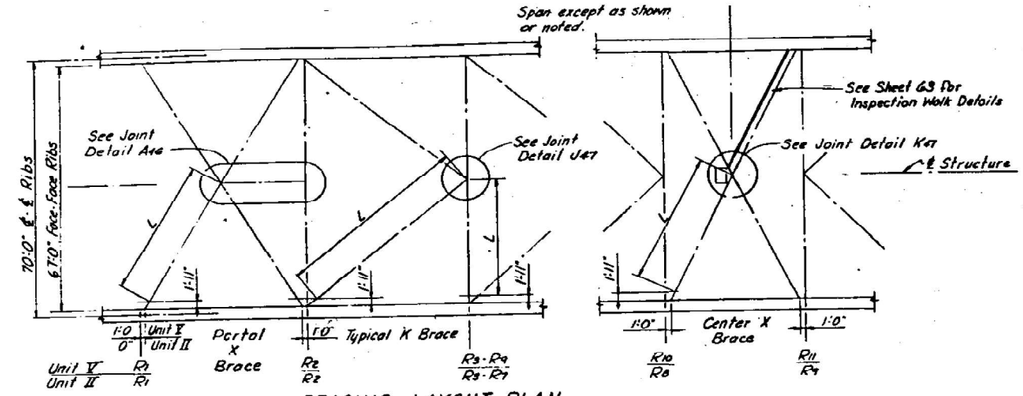
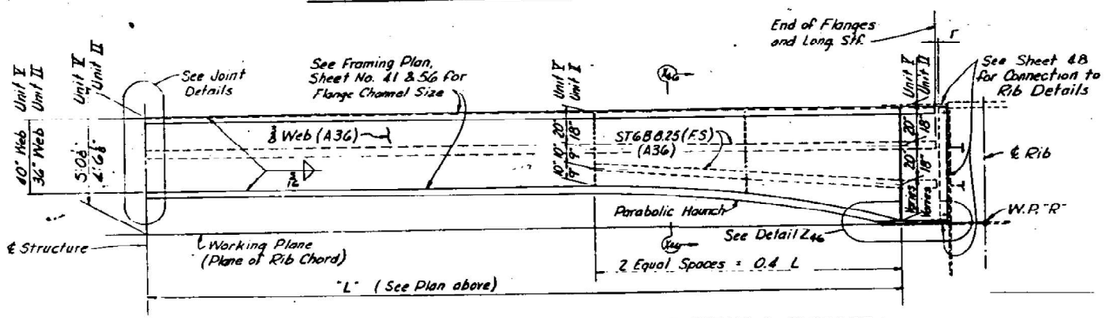
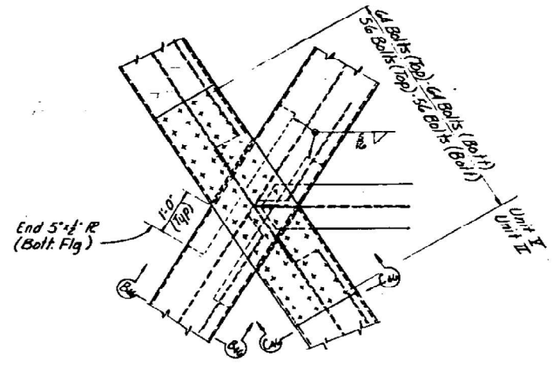
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



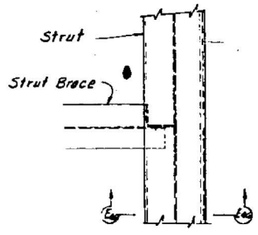
BRACING LAYOUT PLAN

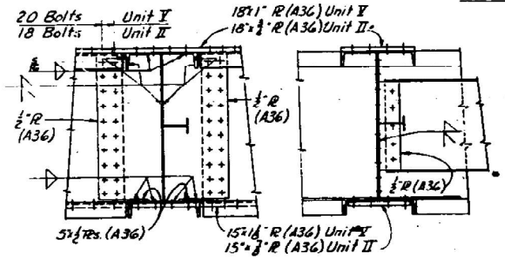


ELEVATION OF K-BRACE AND HALF-ELEVATION OF STRUT & X-BRACE
(Looking toward ℄ Span)



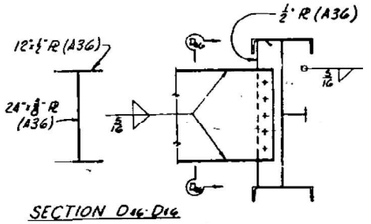
JOINT DETAIL A-46





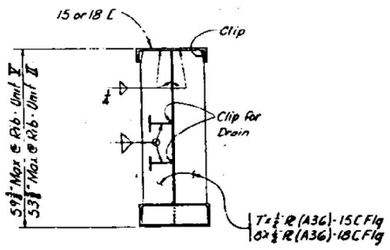
SECTION B46-B46

SECTION C46-C46



SECTION D46-D46

SECTION E46-E46



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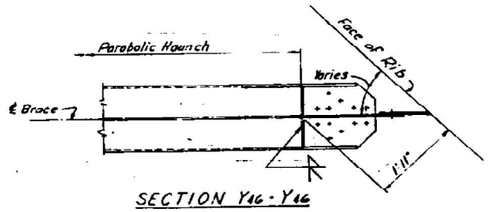
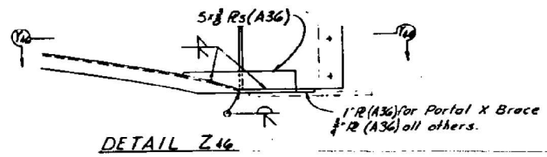


SECTION Y46-Y46



DETAIL Z46

NOTES:
All pockets to be provided with effective drain holes.
All bracing members are to be fabricated to the Deformed Arch coordinate lengths. See Rib Arch Geometrics sheets 38 & 53.

Camber Unit V Portal X Members ⅜" at ℄ Structure.
Camber Unit II Portal X Members ½" at ℄ Structure.
Camber all Struts ½" at ℄ Structure.
Camber all K-Brace Legs 0".

SHEET 46 OF 121

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS

PROJECT I 24-(6)38, I 24-9(1), I 24-1(6)I
BRIDGE OVER OHIO RIVER ON I-24
BETWEEN McCRACKEN COUNTY, KENTUCKY
AND MASSAC COUNTY, ILLINOIS

HAZELET & ERDAL Consulting Engineers File No. 000 | ESIDS NUMBER | DRAWING NO. 17471 | INDEX

RIB BRACING - UNITS II & V
STRUCTURAL STEEL

FOR INFORMATION ONLY

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TWM, INC. WWW.TWM-INC.COM
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	CHECKED -	REVISED -	
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PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 76 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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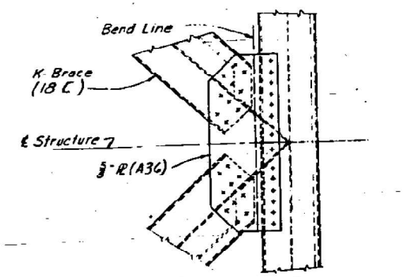
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



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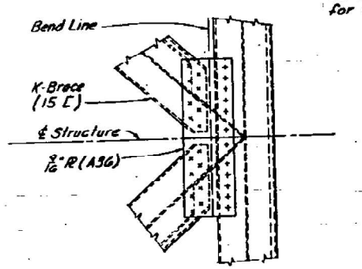

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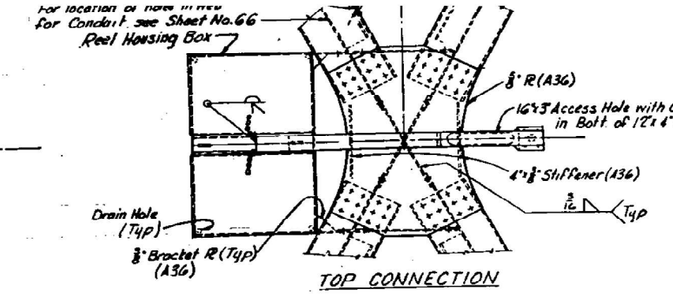

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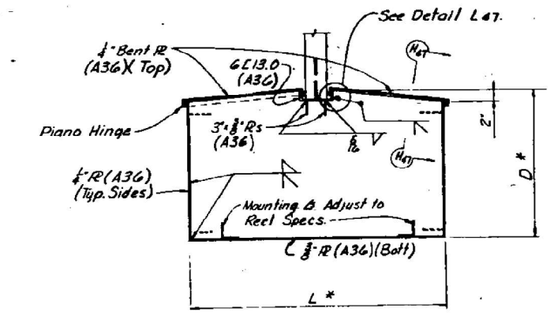
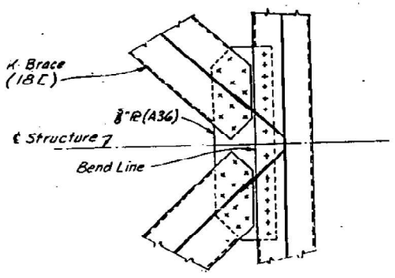


SECTION G47 - G47



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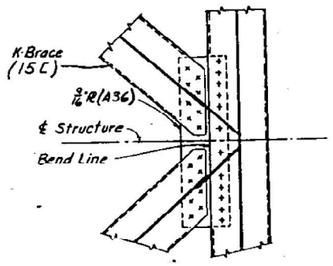

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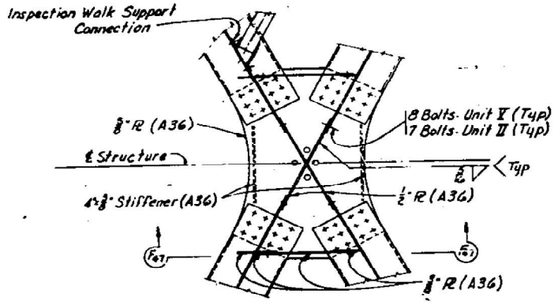

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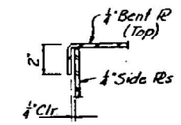
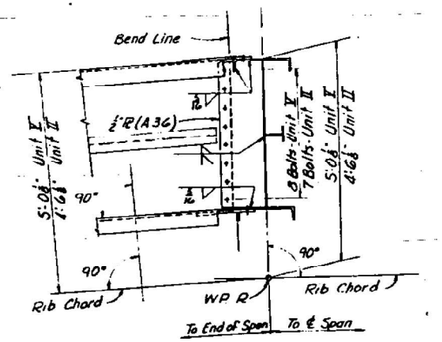
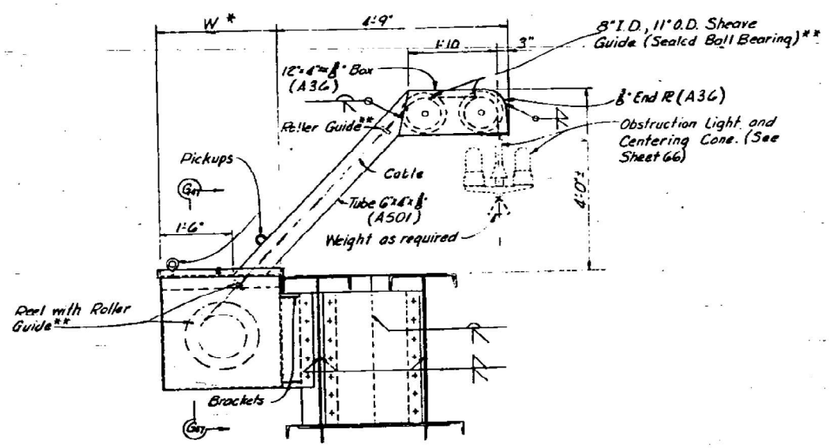


SECTION H47 - H47

DETAIL L47



JOINT DETAIL J47
(K Connections same for Unit V and Unit II except as shown)



SECTION F47 - F47
JOINT DETAIL K47

* L, W, & D dimensions to fit manufacturer's reel dimensions.
** Roller and Sheave Guides incidental to "Lump Sum" Structural Steel Quantity.

RIB BRACING UNITS II & V
STRUCTURAL STEEL

SHEET 47 OF 12

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
PROJECTS I 24-1( ):138, I 24-9( )10, I 24-1( )11
BRIDGE OVER OHIO RIVER ON I-24
BETWEEN McCRACKEN COUNTY, KENTUCKY
AND MASSAC COUNTY, ILLINOIS

HAZELET & ERDAL Consulting Engineers File No. 5055	BRIDGE NUMBER	DRAWING NO. 17471	INDEX

FOR INFORMATION ONLY

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		PLOT DATE = 8/16/2024	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 77 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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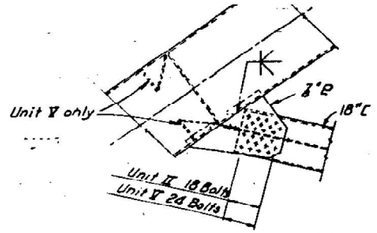
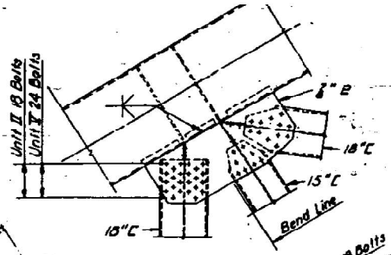
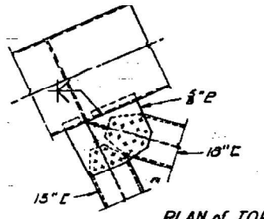
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		







PLAN of TOP CONNECTION
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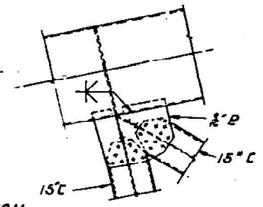
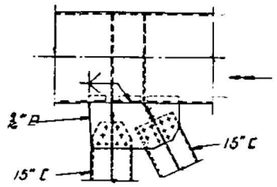
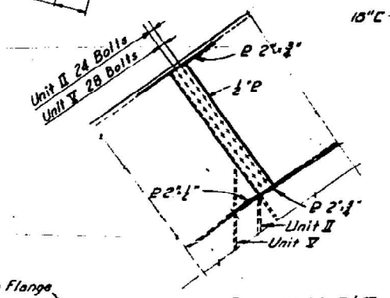
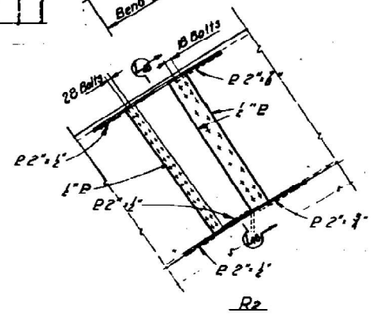


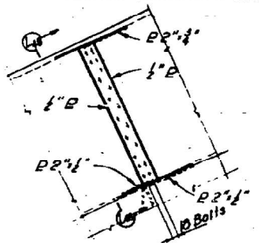




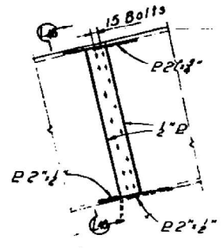
R1 - UNITS II & V



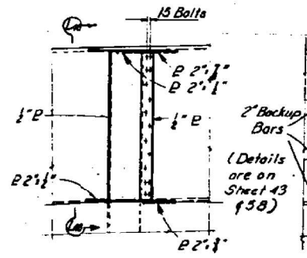
R2



R3 & R4



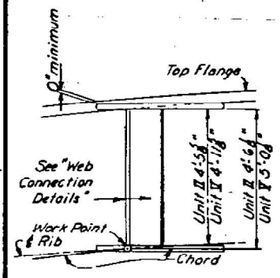
R5 thru R9



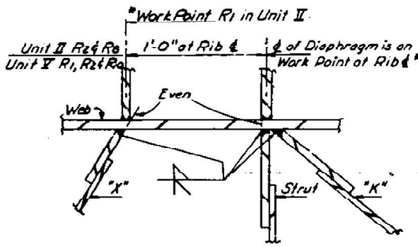
R10

SECTION L48-L48

UNIT V ELEVATIONS R2 thru R10



GUSSET LOCATION
Unit II R2 thru R8
Unit V R2 thru R10



WEB CONNECTION DETAILS

NOTE: Ultrasonic Inspection shall be performed wherever the connection plates are butt welded to the web. See Special Notes.

R2

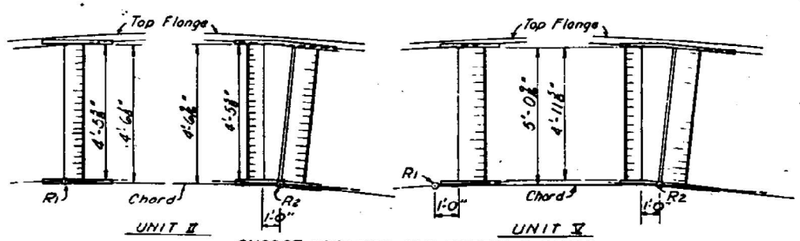
R3

R6 thru R7

R8

Note: The Ribs are symmetrical about ℄ Span and ℄ Bridge.

UNIT II ELEVATIONS R2 thru R8



GUSSET LOCATION FOR PORTAL X BRACE

SHEET 48 OF 121

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
PROJECTS I 24-1(6)36, I 24-9(10), I 24-1(6)11
BRIDGE OVER OHIO RIVER ON I 24
BETWEEN McCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

HAZELY & BIRAL Consulting Engineers File No. 000 | BRIDGE NUMBER | DRAWING NO. 17471 | INDEX

RIB BRACING - UNITS II & V
STRUCTURAL STEEL

FOR INFORMATION ONLY

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TWM, INC. WWW.TWM-INC.COM
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DESIGNED - | CHECKED - | DRAWN - | CHECKED -
REVISED - | REVISED - | REVISED - | REVISED -
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 78 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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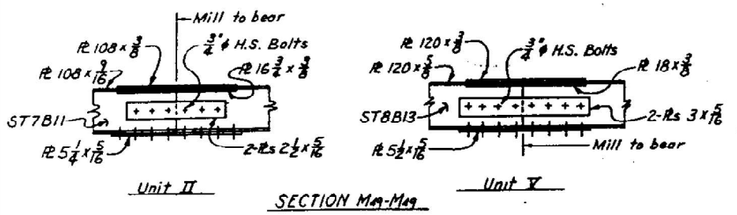
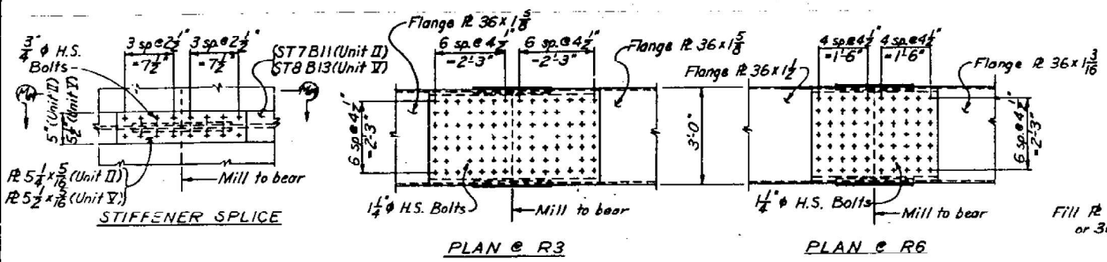
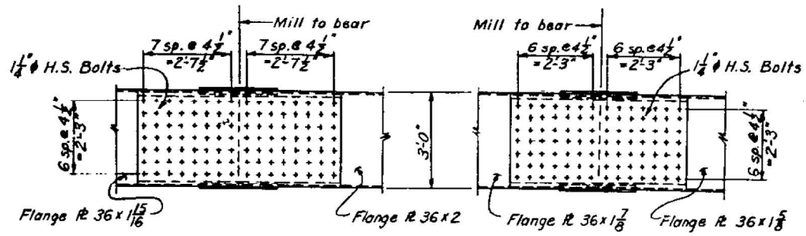
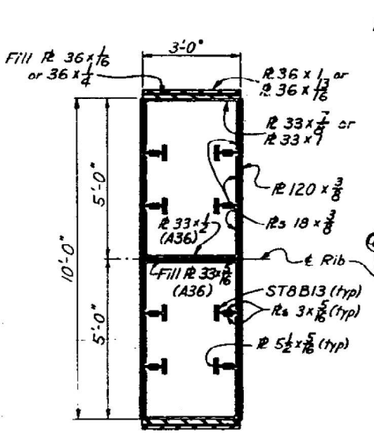
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



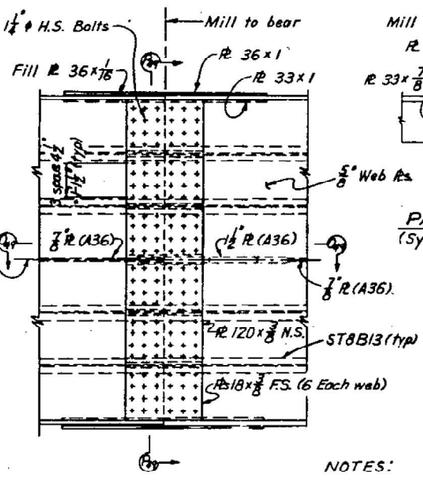
SECTION M49-M49



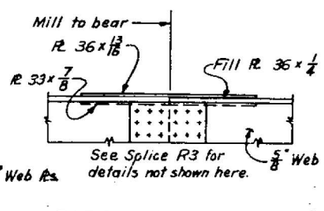




SECTION P49-P49
Symmetrical about ℄ Rib
& ℄ of section



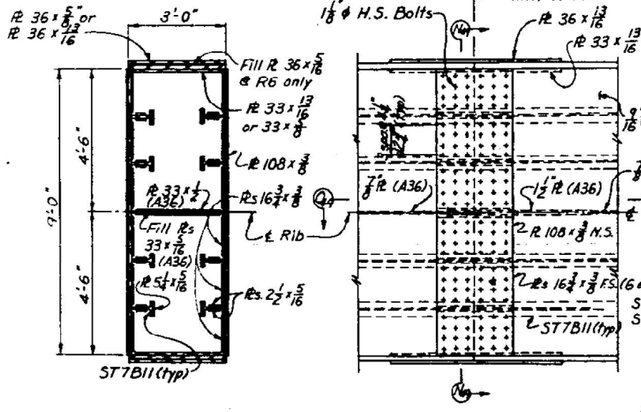
ELEVATION @ R3
(Symmetrical about ℄ Rib)



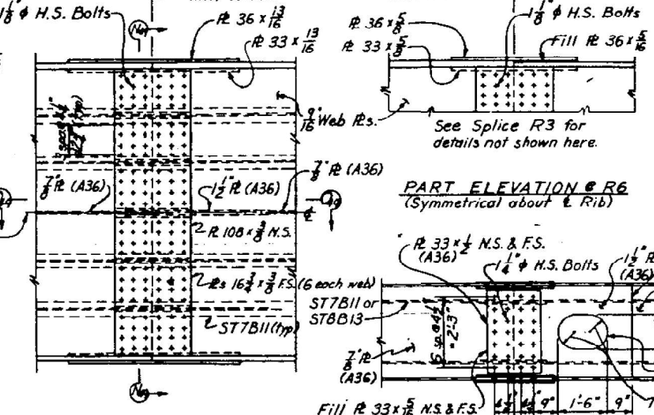
PART ELEVATION @ R7
(Symmetrical about ℄ Rib)

NOTES:

Splice location shown on Sheet Nos 39 & 54



SECTION N49-N49
Symmetrical about ℄ Rib
and ℄ of section



ELEVATION @ R3

SECTION Q49-Q49

PART ELEVATION @ R6
(Symmetrical about ℄ Rib)

UNIT II ARCH RIB SPLICE

UNIT V ARCH RIB SPLICE

FOR INFORMATION ONLY

RIB SPLICE DETAILS
STRUCTURAL STEEL

SHEET 49 OF 121

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS

PROJECTS I 24-1(6)38, I 24-9(10), I 24-1(6)11
BRIDGE OVER OHIO RIVER ON I 24
BETWEEN McCRACKEN COUNTY, KENTUCKY
AND MASSAC COUNTY, ILLINOIS

HAZEN & SAWYER, Consulting Engineers	BRIDGE NUMBERS	DRAWING NO. 17471	INDEX

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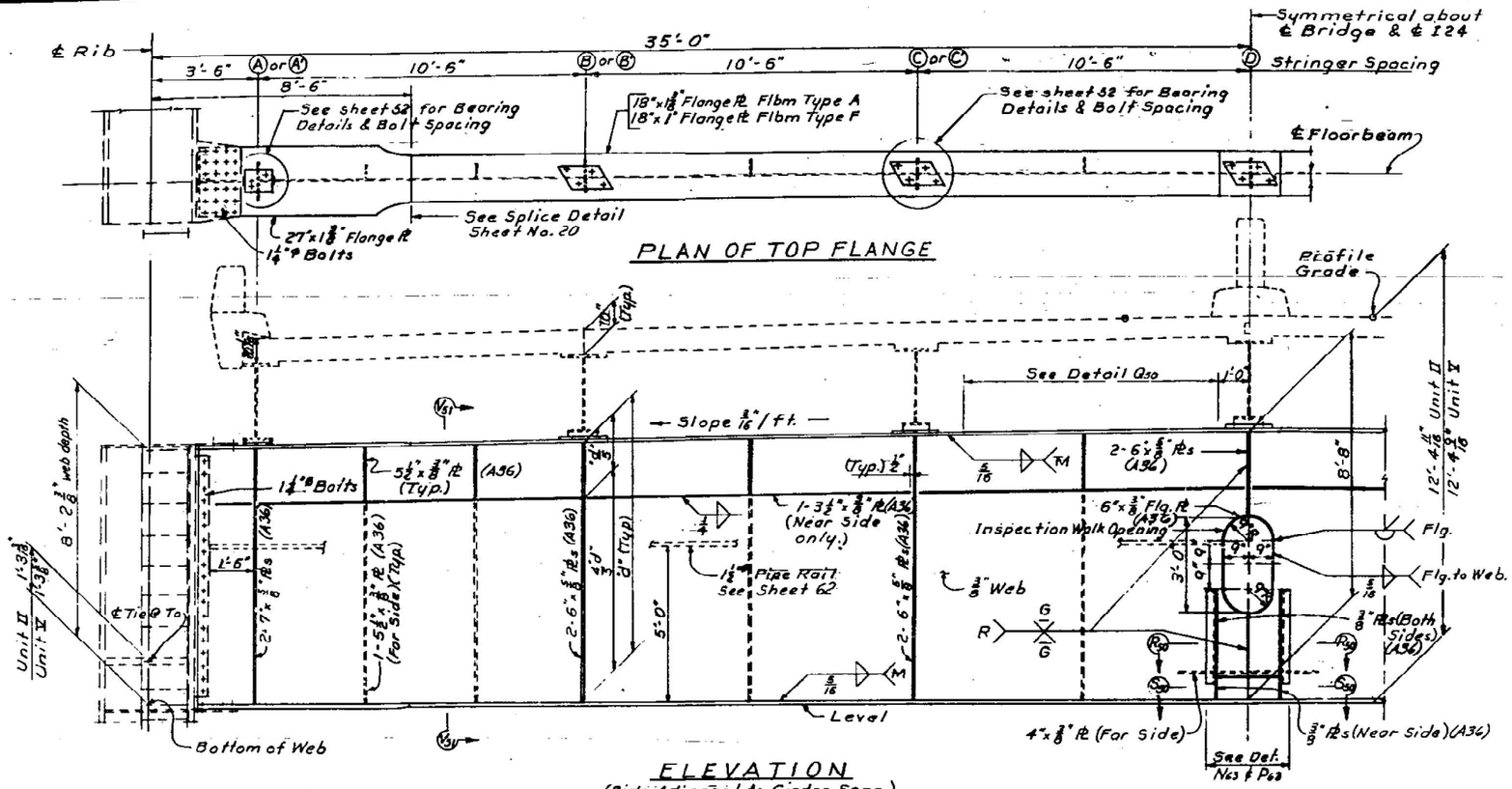
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 79 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	140
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



SHEET 50 OF 121

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS

PROJECTS I 24-1(6)36, I 24-9(10), I 24-1(11)

BRIDGE OVER OHIO RIVER ON I 24
BETWEEN McCRACKEN COUNTY, KENTUCKY
AND MASSAC COUNTY, ILLINOIS

HAZELET & ERDAL Consulting Engineers File No. 886	BRIDGE NUMBER	DRAWING NO. 17471	INDEX

UNITS II & V
FLOORBEAM A & F DETAILS
STRUCTURAL STEEL

TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM	USER NAME = Jesker	DESIGNED -	REVISED -
	IL DESIGN FIRM LICENSE NO: 184-001220		CHECKED -	REVISED -
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		PLOT DATE = 8/16/2024	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 80 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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	ILLINOIS	FED. AID PROJECT		

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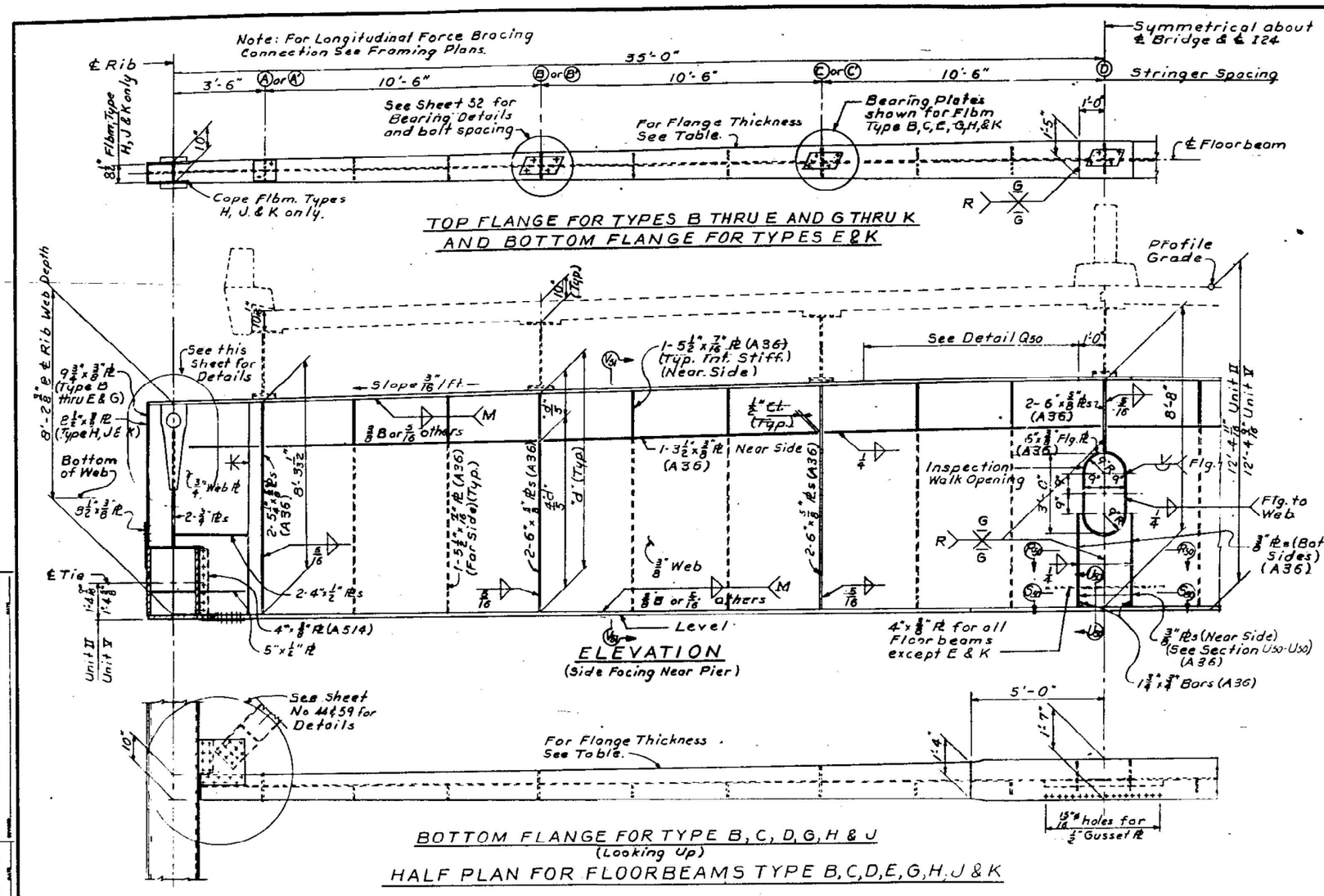

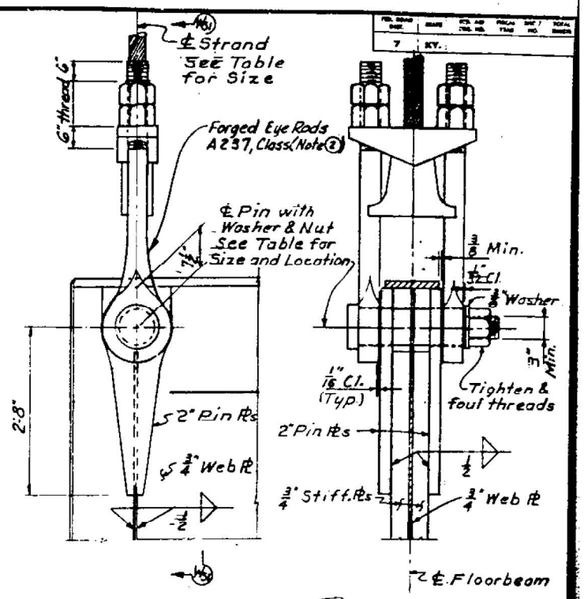

BRIDGE STRAND AND PIN SIZE TABLE					
STRAND SIZE	MINIMUM BREAKING STR-TONS	PIN SIZE ① MIN.	PIN SIZE ① MAX.	UNIT II PANEL POINTS	UNIT V PANEL POINTS
3" ø	538	6 "ø	6 3/8"ø		T2,4,6,8,10,11,13,15,17,19
3 1/8"ø	584	6 "ø	7"ø	T2,3,4,5,6,8,7,11,13,14,15	
3 1/4"ø	625	6 1/2"ø	7"ø	T1,3,5,7,10,12,16	T1,3,5,7,9,12,14,16,18,20

① Pin shall be A 237 Class B Steel. Diameter of Pin hole shall be 1/32" (Max.) larger than the Pin Diameter. The outside Diameter of 3/8" Washer shall be 1" greater than the Pin Diameter.

② Forged Eye rods size and Class shall be selected to be compatible with size and strength of strand and socket furnished.

HANGER ASSEMBLY

FLANGE PLATE THICKNESS								
FLOORBEAM TYPE	B	C	D	E	G	H	J	K
THICKNESS	9/16"	7/16"	1"	7/16"	1 1/2"	5/16"	1"	5/16"

FOR INFORMATION ONLY

UNITS II & V
INTERIOR FLOORBEAM DETAILS
STRUCTURAL STEEL

SHEET 51 OF 121

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
PROJECTS 124-11( ) 138, 124-9( ) 10, 124-11(&)1
BRIDGE OVER OHIO RIVER ON 124
BETWEEN McCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

NAZZELT & BEDAL Consulting Engineers File No. 868 | BRIDGE NUMBER | DRAWING NO. 17471 | INDEX

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 81 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

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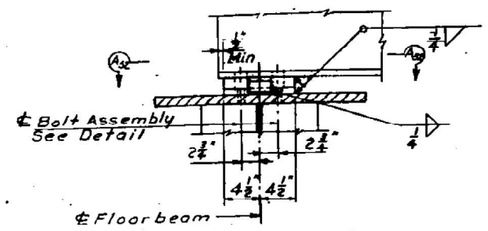

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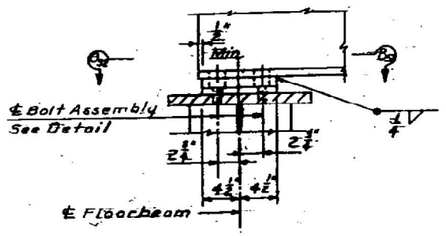
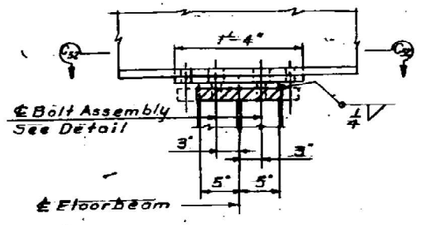
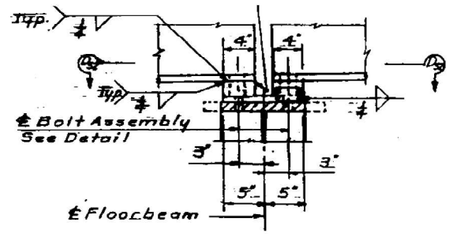


TYPE ② or ③



TYPE ④ or ⑥



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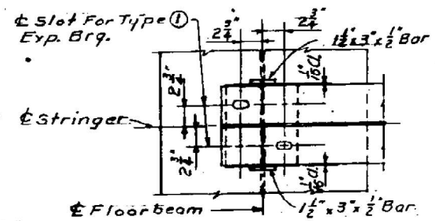

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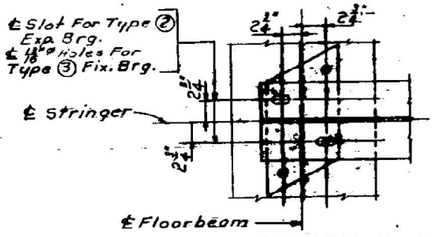

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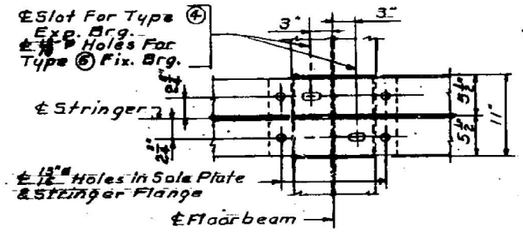

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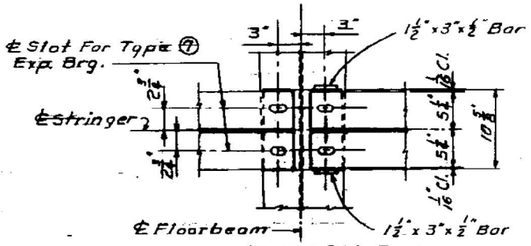

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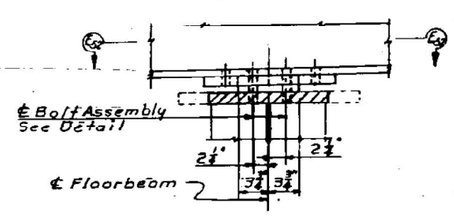

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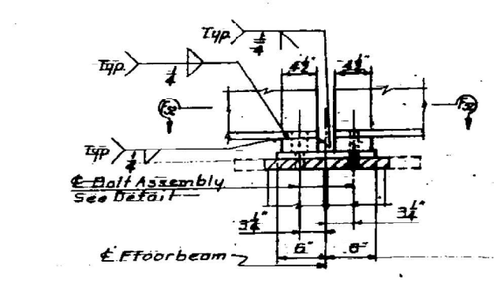

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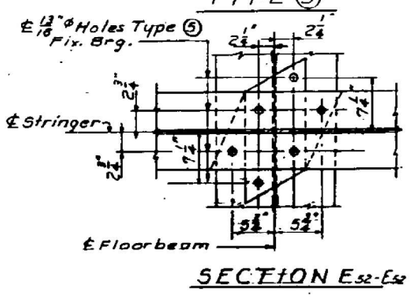
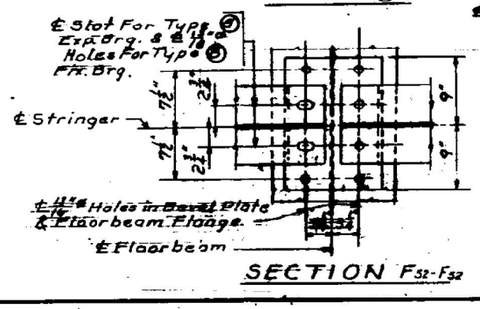
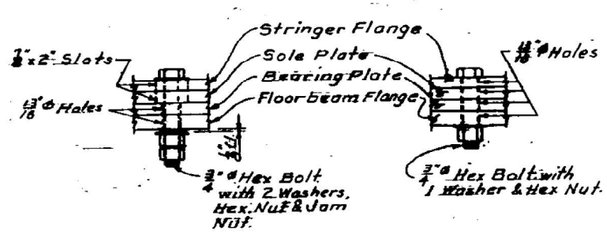


SECTION E_{S2}-E_{S2}

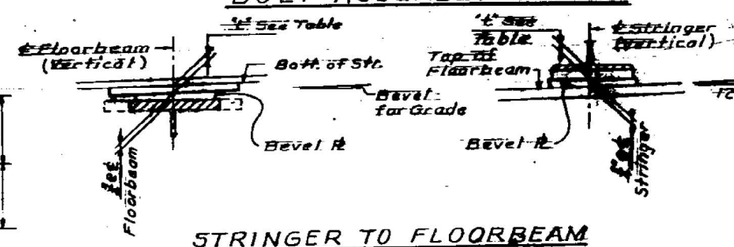


SECTION F_{S2}-F_{S2}



EXPANSION BEARING FIXED BEARING

BOLT ASSEMBLY DETAILS



STRINGER TO FLOORBEAM CONNECTION DETAILS

UNITS II & IV

BEARING DETAILS FOR STRINGERS STRUCTURAL STEEL

TABLE OF SOLE PLATES THICKNESS "t"

FLOORBEAM TYPE	STRINGERS A or A*	B, C, C' or B*	D
A, H or K	1 5/8"	1 5/8"	2 1/16"
B or G	1"	1"	1 7/16"
C or E	1 1/4"	1 1/4"	2 1/16"
D	1 5/8"	1 5/8"	2 1/16"
F	1 5/8"	2"	2 1/16"
J	2"	2"	2 1/16"

NOTE:
All Bolts are 3/4" ϕ this sheet
All Sole Plates and Bearing Plates to be A36 steel.

SHEET 52 OF 127

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS

PROJECTS: I 24-1(16)118, I 24-8(17)10, I 24-1(16)11
BRIDGE OVER OHIO RIVER ON I-24
BETWEEN MCCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

HAMLETT & BRAAL Consulting Engineers File No. 865

DESIGNED NUMBERS

DRAWING NO. 17471

PAGES

FOR INFORMATION ONLY

MODEL: Default
FILE NAME: P:\2021\21059\16L - Fal 24 Ohio River Bridge Painting\4 CADD - DWG\4.4 Struc\064035-78972-082-Existing Plans.dgn

8/16/2024 11:14:01 AM

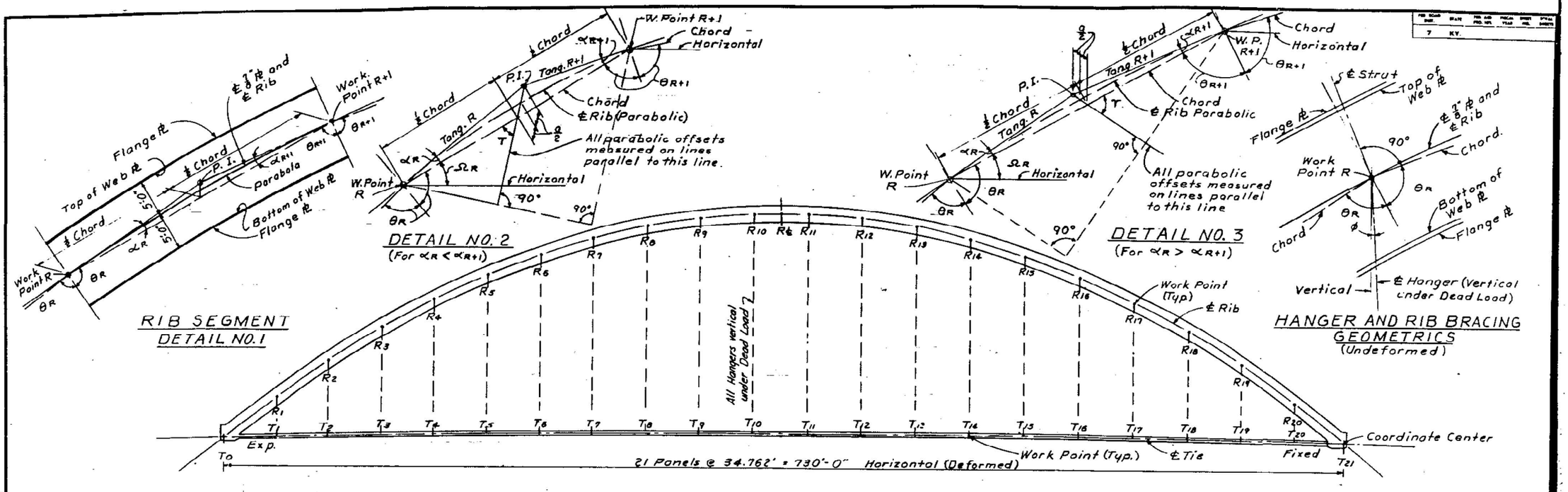
TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = Jesker		DESIGNED -		REVISED -
		CHECKED -		REVISED -
PLOT SCALE = 0.167 ' / in.		DRAWN -		REVISED -
PLOT DATE = 8/16/2024		CHECKED -		REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 82 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	143
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



UNDEFORMED ARCH												
Work Point	Horiz. Dist. From Coord. Center-Ft.	Elevation at Arch Axis-Ft.	Angle Ω	Angle θ	Angle α	Angle φ *	Work Point	Horiz. Dist. From Coord. Center-Ft.	Member	Chord Length Ft.	Angle T	Q/2 Ft.
To	728.996	385.273	38°-05'-14"	88°-22'-44"	1°-37'-16"	+0°-15'-22"	To	728.996	To-R1	44.033	90°-00'-00"	0.312
R1	694.339	412.435	34°-50'-41"	88°-22'-44"	1°-37'-16"	+0°-15'-32"	T1	694.282	R1-R2	42.242	49°-50'-14"	0.382
R2	659.671	436.570	31°-45'-00"	88°-27'-10"	1°-32'-50"	+0°-15'-44"	T2	659.568	R2 R3	40.782	20°-06'-55"	0.865
R3	624.992	458.030	28°-07'-12"	88°-11'-06"	1°-48'-54"	+0°-15'-41"	T3	624.854	R3 R4	39.336	22°-39'-15"	0.752
R4	590.299	476.570	24°-58'-07"	88°-25'-27"	1°-34'-33"	+0°-15'-30"	T4	590.140	R4 R5	38.283	14°-10'-28"	1.207
R5	555.594	492.730	20°-56'-23"	87°-59'-08"	2°-00'-52"	+0°-15'-18"	T5	555.426	R5 R6	37.170	44°-18'-50"	0.452
R6	520.879	506.014	17°-10'-56"	88°-07'-17"	1°-52'-43"	+0°-15'-03"	T6	520.711	R6 R7	36.352	21°-37'-28"	0.882
R7	486.149	516.753	12°-40'-50"	88°-44'-57"	2°-15'-03"	+0°-14'-47"	T7	485.997	R7 R8	35.611	18°-37'-00"	0.982
R8	451.407	524.570	9°-01'-47"	88°-10'-29"	1°-49'-31"	+0°-14'-30"	T8	451.283	R8 R9	35.190	17°-18'-01"	1.050
R9	416.653	530.093	4°-26'-26"	87°-42'-20"	2°-17'-40"	+0°-14'-11"	T9	416.569	R9 R10	34.872	18°-58'-29"	0.962
R10	381.886	532.793	0°-43'-06"	88°-08'-20"	1°-51'-40"	+0°-13'-39"	T10	381.855	R10 R℄	17.389	2°-20'-16"	1.928
R℄	364.498	533.011		89°-16'-54"	0°-43'-06"	**0°-13'-32"						
R11	347.110	532.793	0°-43'-06"	88°-08'-20"	1°-51'-40"	-0°-13'-39"	T11	347.141	R℄ R11	17.389	2°-20'-16"	1.928
R12	312.343	530.093	4°-26'-26"	87°-42'-20"	2°-17'-40"	-0°-14'-11"	T12	312.427	R11 R12	34.872	18°-58'-29"	0.962
R13	277.589	524.570	9°-01'-47"	88°-10'-29"	1°-49'-31"	-0°-14'-30"	T13	277.712	R12 R13	35.190	17°-18'-01"	1.050
R14	242.847	516.753	12°-40'-50"	88°-44'-57"	2°-15'-03"	-0°-14'-47"	T14	242.999	R13 R14	35.611	18°-37'-00"	0.982
R15	208.117	506.014	17°-10'-56"	88°-07'-17"	1°-52'-43"	-0°-15'-03"	T15	208.285	R14 R15	36.352	21°-37'-28"	0.882
R16	173.402	492.730	20°-56'-23"	87°-59'-08"	2°-00'-52"	-0°-15'-18"	T16	173.570	R15 R16	37.170	44°-18'-50"	0.452
R17	138.697	476.570	24°-58'-07"	88°-25'-27"	1°-34'-33"	-0°-15'-30"	T17	138.856	R16 R17	38.283	14°-10'-28"	1.207
R18	104.004	458.030	28°-07'-12"	88°-11'-06"	1°-48'-54"	-0°-15'-41"	T18	104.142	R17 R18	39.336	22°-39'-15"	0.752
R19	69.325	436.570	31°-45'-00"	88°-27'-10"	1°-32'-50"	-0°-15'-44"	T19	69.428	R18 R19	40.782	20°-06'-55"	0.865
R20	34.657	412.435	34°-50'-41"	88°-22'-44"	1°-37'-16"	-0°-15'-32"	T20	34.714	R19 R20	42.242	49°-50'-14"	0.382
T21	0.000	385.273	38°-05'-14"	88°-22'-44"	1°-37'-16"	-0°-15'-22"	T21	0.000	R20 T21	44.033	90°-00'-00"	0.312

DEFORMED ARCH					
Work Point	Horiz. Dist. From Coord. Center	Elevation at Arch Work Point	Work Point	Horiz. Dist. From Coord. Center	Elevation at Tie Work Point
To	730.000	385.273	To	730.000	385.273
R1	696.238	412.265	T1	695.238	385.514
R2	660.476	436.231	T2	660.476	385.732
R3	625.714	457.523	T3	625.714	385.925
R4	590.952	475.898	T4	590.952	386.094
R5	556.190	491.898	T5	556.190	386.239
R6	521.429	505.023	T6	521.429	386.360
R7	486.667	515.606	T7	486.667	386.457
R8	451.905	523.273	T8	451.905	386.529
R9	417.143	528.648	T9	417.143	386.578
R10	382.381	531.206	T10	382.381	386.602
R℄	365.000	531.356			
R11	347.619	531.206	T11	347.619	386.602
R12	312.857	528.648	T12	312.857	386.578
R13	278.095	523.273	T13	278.095	386.529
R14	243.333	515.606	T14	243.333	386.457
R15	208.571	505.023	T15	208.571	386.360
R16	173.810	491.898	T16	173.810	386.239
R17	139.048	475.898	T17	139.048	386.094
R18	104.286	457.523	T18	104.286	385.925
R19	69.524	436.231	T19	69.524	385.732
R20	34.762	412.265	T20	34.762	385.514
T21	0.000	385.273	T21	0.000	385.273

NOTES:

Details No. 1, 2 & 3 show a proposed method for obtaining a theoretical smooth curve for the rib. The Contractor may submit an alternate method for approval by the Engineer.

All steel shall be fabricated for a normal temperature of 50°F

Deformed Arch Geometrics are given for full dead load including Future Wearing Surface. Tie shall be fabricated to Undeformed Horizontal Coordinates and Deformed Vertical Elevation. Tie is straight between Work Points. Rib shall be fabricated to Undeformed Coordinates and Elevations.

* Plus indicates a clockwise rotation,
* Minus indicates a counter-clockwise rotation.

** R℄ End of Member R10 R℄ rotates pos.
** R℄ End of Member R℄ R11 rotates Neg.

FOR INFORMATION ONLY

RIB ARCH-GEOMETRICS UNIT V

SHEET 53 OF 121

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
PROJECTS I 24-K(6)38, I 24-9(10), I 24-1((6))
BRIDGE OVER OHIO RIVER ON I 24
BETWEEN McCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

HAZELET & ERDAL Consulting Engineers File No. 886 | BRIDGE NUMBER | DRAWING NO. 17471 | SHEET

TWM, INC. WWW.TWM-INC.COM — ENGINEERING GEOSPATIAL SERVICES — IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = Jesker	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING STRUCTURE PLANS STRUCTURE NO. 064-0035
	CHECKED -	REVISED -		
PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -		SHEET 83 OF 175 SHEETS
PLOT DATE = 8/16/2024	CHECKED -	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	144
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

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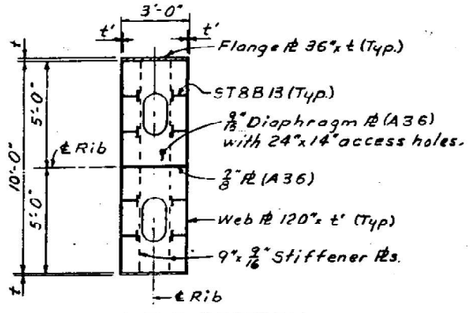
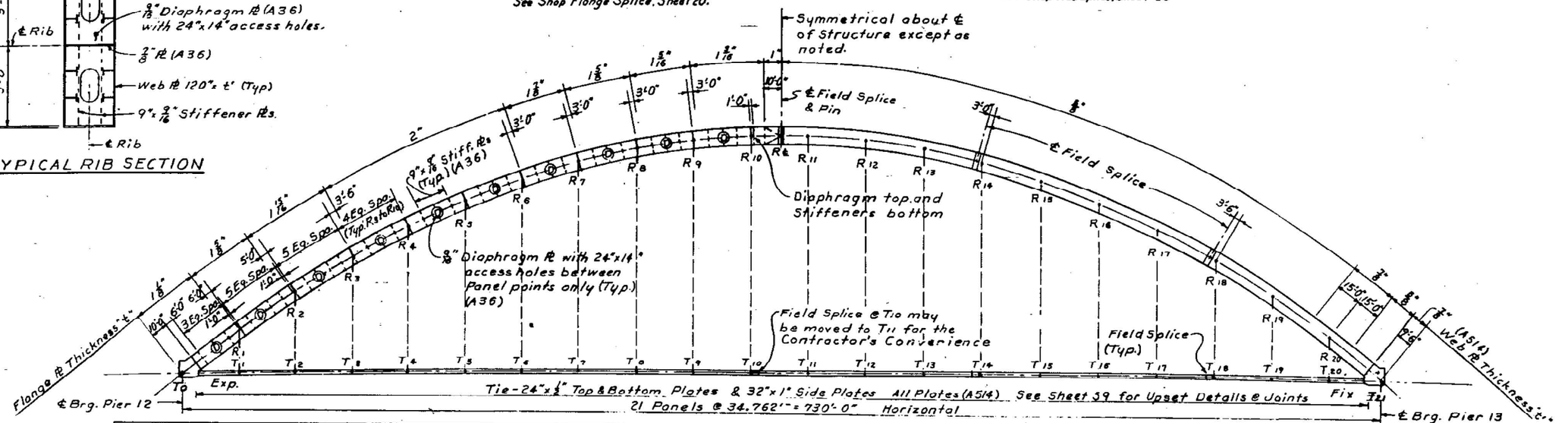


TYPICAL RIB SECTION

Half Rib Elevation Showing Flange Thickness and Length Plus Diaphragm and Stiffener Location. (Typical each Half.) See Shop Flange Splice, Sheet 20.

Half Rib Elevation Showing Web Plate Thickness and Field Splice Location (Typical Each Half Except for Field Splice @ T10) See Shop Web Splice, Sheet 20



MEMBER FORCES

Member	Joint	Dead Load-Steel Axial Force	Dead Load-Steel Bending Moment	Dead Load-Conc. Axial Force	Dead Load-Conc. Bending Moment	Future Wear. Surf. Axial Force	Future Wear. Surf. Bending Moment	Live Load Axial Force	Live Load Bending Moment	Impact Axial Force	Impact Bending Moment	Total (DL,FWS,(L&I)) Axial Force	Total (DL,FWS,(L&I)) Bending Moment	10% (DL+FWS) Axial Force	10% (DL+FWS) Bending Moment	Design Total-10% Axial Force	Design Total-10% Bending Moment
To-T21	To	+ 1,370	- 172	+ 2,009	- 152	+ 272	- 29	+ 539	- 59	+ 32	- 3	+ 4,222	- 415	+ 365	- 35	+ 3,857	- 380
To-T21	T21	+ 1,370	+ 172	+ 2,009	+ 152	+ 272	+ 29	+ 539	+ 59	+ 32	- 3	+ 4,222	+ 415	+ 365	+ 35	+ 3,857	+ 380
To-R1	To	- 1,737	+ 172	- 2,537	+ 152	- 343	+ 29	- 388	+ 2,266	- 41	+ 240	- 5,046	+ 2,859	- 462	+ 35	- 4,584	+ 2,824
To-R1	R1	- 1,737	+ 1,998	- 2,539	- 4,663	- 343	- 72	- 252	+57,042	- 34	+ 7,758	- 4,903	+ 62,063	- 462	- 274*	- 4,441	+ 62,063
R1-R2	R1	- 1,672	- 1,998	- 2,434	+ 4,663	- 330	+ 72	- 202	-57,042	- 27	- 7,758	- 4,665	- 62,063	- 444	+ 274*	- 4,221	- 62,063
R1-R2	R2	- 1,672	+ 7,928	- 2,434	- 9,226	- 330	- 203	- 223	+97,985	- 30	+13,326	- 4,689	+109,810	- 444	- 150*	- 4,245	109,810
R2-R3	R2	- 1,610	- 7,928	- 2,357	+ 9,226	- 320	+ 203	- 182	-97,985	- 25	-13,326	- 4,494	-109810	- 429	+ 150*	- 4,065	-109,810
R2-R3	R3	- 1,610	+ 11,347	- 2,357	- 8,706	- 320	+ 309	- 245	+126,371	- 30	+15,670	- 4,562	+144,991	- 429	+ 295	- 4,133	+144,696
R3-R4	R3	- 1,551	- 11,347	- 2,270	+ 8,706	- 307	- 309	- 201	-126,371	- 25	-15,670	- 4,354	-144,991	- 413	- 295	- 3,941	-144,696
R3-R4	R4	- 1,551	+ 12,523	- 2,270	- 10,864	- 307	+ 378	- 221	+139,435	- 27	+17,290	- 4,376	+158,762	- 413	+ 204	- 3,963	+158,558
R4-R5	R4	- 1,504	- 12,523	- 2,217	+ 10,864	- 300	- 378	- 193	-139,435	- 24	-17,290	- 4,238	-158,762	- 402	- 204	- 3,836	-158,558
R4-R5	R5	- 1,504	+ 8,602	- 2,217	- 6,149	- 300	+ 1,363	- 252	+144,051	- 29	+16,422	- 4,302	+164,289	- 402	+ 382	- 3,900	+163,907
R5-R6	R5	- 1,463	- 8,602	- 2,149	+ 6,149	- 291	- 1,363	- 223	-144,051	- 25	-16,422	- 4,151	-164289	- 390	- 382	- 3,761	-163,907
R5-R6	R6	- 1,463	+ 6,806	- 2,149	- 5,108	- 291	+ 1,771	- 236	+136,748	- 27	+15,589	- 4,166	+155,806	- 390	+ 347	- 3,776	+155,459
R6-R7	R6	- 1,430	- 6,806	- 2,102	+ 5,108	- 284	- 1,771	- 216	-136,748	- 26	-15,589	- 4,058	-155,806	- 382	- 347	- 3,676	-155,459
R6-R7	R7	- 1,430	+ 4,274	- 2,102	- 2,194	- 284	+ 2,387	- 270	+122,735	- 27	+13,010	- 4,113	+140,212	- 382	+ 447	- 3,731	+139,765
R7-R8	R7	- 1,402	- 4,274	- 2,058	+ 2,194	- 278	- 2,387	- 254	-122,735	- 27	-13,010	- 4,019	-140,212	- 374	- 447	- 3,645	-139,765
R7-R8	R8	- 1,402	+ 2,711	- 2,058	- 1,957	- 278	+ 2,561	- 303	+100,850	- 30	+ 9,934	- 4,071	+114,099	- 374	+ 332	- 3,697	+113,767
R8-R9	R8	- 1,384	- 2,711	- 2,035	+ 1,957	- 275	- 2,561	- 294	-100,850	- 29	- 9,934	- 4,017	-114,099	- 369	- 332	- 3,648	-113,767
R8-R9	R9	- 1,384	+ 1,478	- 2,035	+ 3,021	- 275	+ 3,357	- 320	+ 79,398	- 36	+ 9,051	- 4,050	+ 93,349	- 369	+ 490	- 3,681	+ 92,859
R9-R10	R9	- 1,374	+ 1,478	- 2,015	- 3,021	- 272	- 3,357	- 313	-79,398	- 36	- 9,051	- 4,010	- 93,349	- 366	- 490	- 3,664	- 92,859
R9-R10	R10	- 1,374	- 338	- 20,15	+ 3,617	- 272	+ 3,495	- 285	+ 67,133	- 39	+ 9,130	- 3,985	+ 83,037	- 366	+ 677	- 3619	+ 82,360
R10-R℄	R10	- 1,370	+ 338	- 2,009	- 3,617	- 272	- 3,495	- 284	-67,133	- 39	- 9,130	- 3,974	- 83,037	- 365	- 677	- 3609	- 82,360
R10-R℄	R℄	- 1,370	0	- 2,009	0	- 272	+ 3,006	- 286	+ 61,047	- 39	+ 8,350	- 3,976	+ 72,403	- 365	+ 301	- 3,611	+ 72,102

RIB STRESS UNIT V

NOTE

All Dimensions are measured along chord.

Sign Convention:

Axial Load in kips: neg. = Compression pos. = Tension

Bending Moment in inch kip neg. - Rotates Joint Counter Clockwise pos. - Rotates Joint Clockwise

*10% Reduction not used because it increases stress.

** Live Load + Impact and Future Wearing Surface are applied when joint is in a fixed condition. The Dead Load of the Concrete and Steel is applied when the joint is in a pinned condition.

SHEET 34 OF 121

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
PROJECTS I 24-1(6138), I 24-9(110), I 24-1(611)
BRIDGE OVER OHIO RIVER ON I 24
BETWEEN McCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

HAZELET & ERDAL Consulting Engineers File No. 965	BRIDGE NUMBER	DRAWING NO. 17471	INDEX

FOR INFORMATION ONLY

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8/16/2024 11:14:06 AM

TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM	USER NAME = jesker	DESIGNED -	REVISED -
	IL DESIGN FIRM LICENSE NO: 184-001220	PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -
		PLOT DATE = 8/16/2024	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 84 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	145
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

PANEL POINT LOADS (IN KIPS)

	Panel Point	0	1	2	3	4	5	6	7	8	9	10	11
Rib Joint	Steel ①	31.1	64.1	64.8	70.5	63.0	61.2	59.0	61.5	52.9	50.5	57.5	57.5
Tie Joint ④	Steel ②	27.6	46.1	41.6	49.8	42.8	47.0	42.9	51.1	43.7	47.7	47.8	44.1
	Concrete	59.6	175.0	142.4	175.0	120.8	175.0	142.4	175.0	121.1	173.3	149.3	149.3
	F.W.S ⑭	8.2	24.2	19.7	24.2	16.7	24.2	19.7	24.2	16.8	24.0	20.7	20.7
	Sub-Total("X")	95.3	245.3	203.7	249.0	180.3	246.2	205.0	250.3	181.6	245.0	217.8	214.1
Rib + Tie	D.L. Total	126.4	309.4	273.5	319.5	243.3	307.4	264.0	311.8	234.5	295.5	275.3	271.6
	Live Load	85.4	113.1	109.6	113.1	91.0	113.1	109.6	113.1	91.0	113.1	109.6	109.6
	Impact (30%)	25.6	33.9	32.9	33.9	27.3	33.9	32.9	33.9	27.3	33.9	32.9	32.9
	L.L. + I ③	111.0	147.0	142.5	147.0	118.3	147.0	142.5	147.0	118.3	147.0	142.5	142.5
D.L. + LL+I Total		237.4	456.4	416.0	466.5	361.6	454.4	406.5	458.8	352.8	442.5	417.8	414.1

① Includes weight of Rib, Rib Bracing, and incidental details.
② Includes weight of Tie, Tie Bracing, Floorbeam, Inspection Walk Stringers, Diaphragms, Expansion Dams, Cable (includes two sockets) and incidental details.
③ Maximum for Floorbeam in question.
④ Total includes 2.6 Kips per panel point due to the Vertical Component of the Tie Stress (added proportionally to Dead Load items)
⑭ Future Wearing Surface applied after hinge at crown has been fixed.

HANGER ASSEMBLIES (FT.)

Panel	Deformed Length Rib to Tie ⑤	Deformed Length C-C Pins ⑥	Strand Elongation ⑦ Steel	Conc.	F.W.S.	Total
1	26.751	12.688	.003	.010	.001	.014
2	50.499	36.702	.010	.035	.005	.050
3	71.598	58.035	.018	.062	.009	.089
4	89.804	76.533	.024	.067	.009	.100
5	105.659	92.596	.027	.101	.014	.142
6	118.663	105.783	.033	.110	.015	.158
7	129.149	116.419	.037	.128	.018	.183
8	136.744	124.223	.040	.111	.015	.166
9	142.070	129.674	.039	.142	.020	.201
10	144.604	132.307	.047	.146	.020	.213
11	144.604	132.307	.043	.146	.020	.209

⑤ Vertical Distance from Work Point of Rib to Work Point of Tie
⑥ Vertical Distance from ℄ Pin at Rib to ℄ Pin at Tie. (See Line "x" Panel Point Loads)
⑦ Modulus of Elasticity used for Strand Elongation = 24,000,000 psi. For other "E"s, adjust deformation.

STRINGER "C" MOMENTS AND REACTIONS

	Max. Pos. Mom. @ 0.4 Pt. End Span (Ft Kips)	Max. Pos. Mom @ ℄ Interior Span (Ft. Kips)	Max. Neg. Mom. @ 1st Int. Support (Ft. Kips)	Max. Neg. Mom @ Interior Support (Ft. Kips)	End Reactions (Kips) @ End Support One Brg.	@ 1st Interior Support	@ 2nd Interior Support
D.L.	139	65	194	129	23.4	59.9	48.6
L.L.	283	234	208	193	46.6	61.7	59.8
I (30%)	85	70	63	58	14.0	18.5	18.0
Total	507	369	465	380	84.0	140.1	126.4
⑩ Type Steel	A441	A36	A441	A36	A441	A441	A36

⑩ All Stringers are 30WF99 A441 or A36

STRINGER	A	B	D
D.L. Coef.	.987	.973	1.336
L.L. Coef.	.830	1.000	.865

Note: To produce Moment and/or Reaction for Stringers A, B, or D; multiply coefficient in above table by the corresponding load for Stringer "C".

DEAD LOAD VERTICAL DEFLECTION

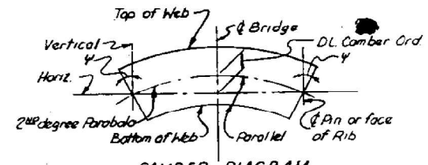
	Panel Point	0	1	2	3	4	5	6	7	8	9	10	11
Rib	Steel ⑪		.080	.156	.226	.286	.337	.382	.421	.457	.491	.526	
	Concrete		.076	.155	.239	.331	.429	.531	.636	.742	.849	.953	
	Sub Total		.156	.311	.465	.617	.766	.913	1.057	1.199	1.340	1.479	
	F.W.S.		.014	.027	.041	.054	.067	.079	.090	.098	.105	.108	
Deck	⑥		.014	.050	.089	.100	.142	.158	.183	.166	.201	.213	
Total	Rib + Deck		.184	.388	.595	.771	.975	1.150	1.330	1.463	1.646	1.800	

⑥ See Strand Elongation of Hanger Assemblies.
⑪ Steel deflections, as given, are the average between a North Panel Point and the corresponding South Panel Point

FLOORBEAM MOMENTS, REACTIONS AND CAMBER

Floorbeam Type	⑧ Maximum Moment (Ft Kips) D.L.	L.L.	I	Total	⑨ End Reaction (Kips) D.L.	L.L.	I	Total	Dead Load Camber (inches)	Ψ Radians
F	1655	1470	440	3563	98.0	85.4	25.6	209.0	5/16	.00119
G	4175	2080	620	6875	229.9	113.3	33.8	377.0	11/16	.00287
H	3588	2020	600	6208	197.3	110.0	32.9	340.2	11/16	.00274
J	3018	1675	500	5193	165.5	91.2	27.4	284.1	11/16	.00273
K	3588	2020	600	6208	197.3	110.0	32.9	340.2	11/16	.00274

⑧ Moment at ℄ Floorbeam
⑨ Does not include Reaction due to Tie, Cable, Socket and "K" Bracing.



CAMBER DIAGRAM
(Camber for D.L. Deflection & End Rotation)

LOAD SHEET
UNIT V

FOR INFORMATION ONLY

SHEET 55 OF

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
PROJECTS I 24-1(6)38, I 24-9( ) 10, I 24-1(6)11
BRIDGE OVER OHIO RIVER ON I 24
BETWEEN MCCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

HAZELET & ERDAL Consulting Engineers File No. 880 | BRIDGE NUMBER | DRAWING NO. 17471 | INDEX

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8/16/2024 11:14:09 AM

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TWM, INC. WWW.TWM-INC.COM
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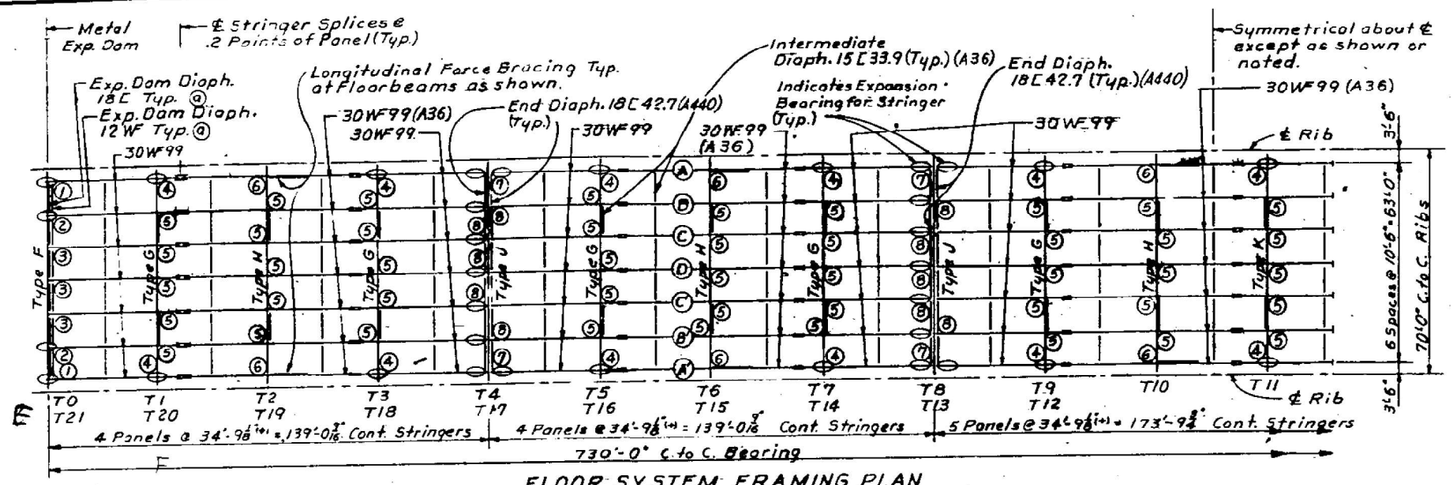
PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

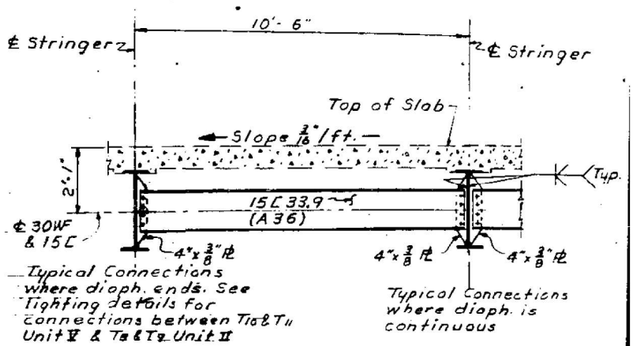
EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 85 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	146
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



FLOOR SYSTEM FRAMING PLAN

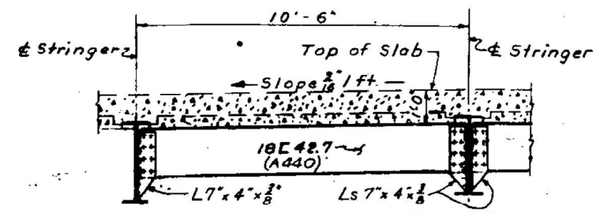
① Indicates Type of Bearings (See Sheet 52)



Typical Connections where diaph. ends. See Tightning details for connections between T10 & T11 Unit V & T9 & T12 Unit II

Typical Connections where diaph. is continuous

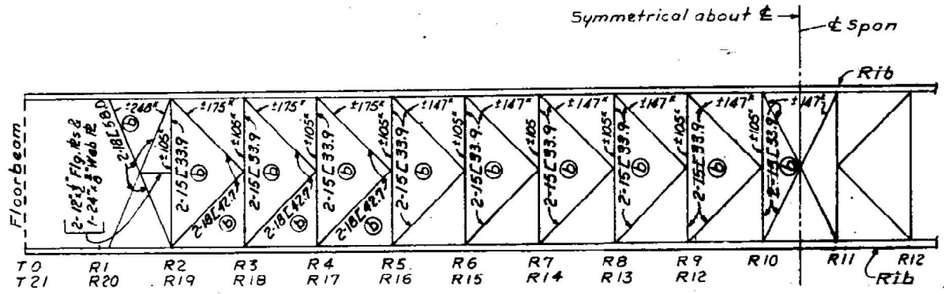
INTERMEDIATE DIAPHRAGM DETAILS



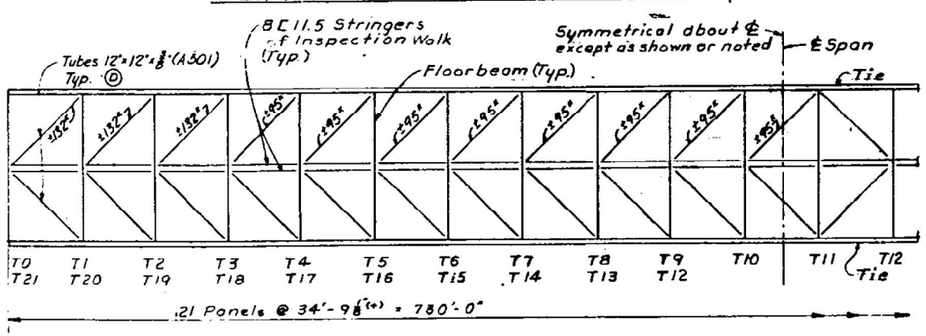
Typical Connections where diaph. ends.

Typical Connections where diaph. is continuous.

END DIAPHRAGM DETAILS



PLAN OF TOP LATERAL BRACING ©



BOTTOM LATERAL BRACING ©

NOTE:
- ⓐ See Expansion Dam Detail Sheet for Details.
- ⓑ See Sheet 46 for details of Stiffeners and 1/2" Web Plates.
- ⓒ All bracing shall be A36 Steel and shall be detailed to the deformed length of the Tie or Rib.
- ⓓ Camber Tubes 3/16" up. For Longitudinal Force Bracing and Stringer Field Splice see Sheet 41

UNIT V STRUCTURAL STEEL QUANTITIES (LBS)

Part of Project 124-9(1)0	Drains	Cable Strand	A36	A440	A441 / A441 Weld	A514	Shoes	Exp. Dam
	20,951	139,012	1,729,990	21,500	1,496,470 / 1,013,893	583,318	77,922	70,327

FRAMING PLAN FOR UNIT V STRUCTURAL STEEL

SHEET 56 OF 121

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
PROJECTS I 24-1(6136), I 24-9(110), I 24-116(3)
BRIDGE OVER OHIO RIVER ON I 24
BETWEEN McCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

HAZELET & ERDAL Consulting Engineers File No. 868 | BRIDGE NUMBER | DRAWING NO. 1747

FOR INFORMATION ONLY

Steel Quantities, Added to Note 8. — DATE 5-9-68 REVISED BY CHH
DC 9/67 CHECKED BY — DATE REVISED — DATE REVISED

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 86 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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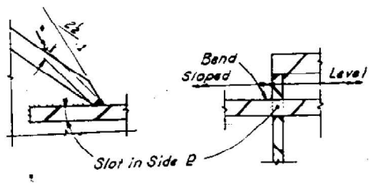
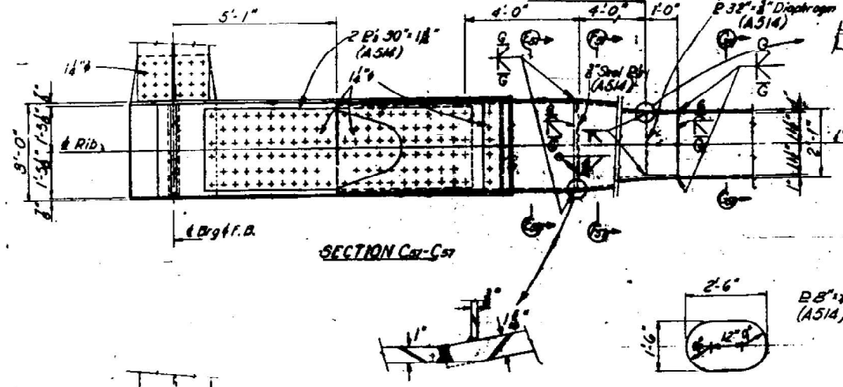
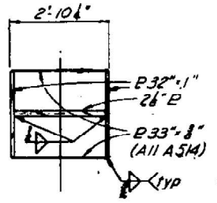
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



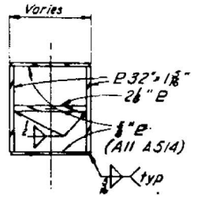
DETAIL A57



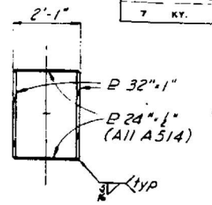
SECTION C57-C57



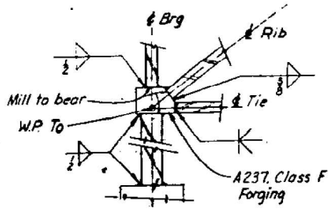
SECTION E57-E57



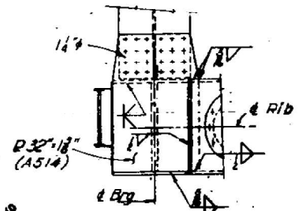
SECTION F57-F57



SECTION G57-G57
(Normal Tie Section)

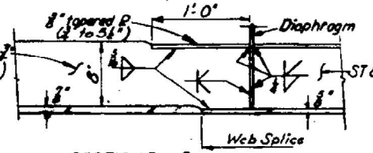


WELD DETAIL B57



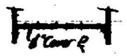
TOP VIEW

HOLE DETAIL

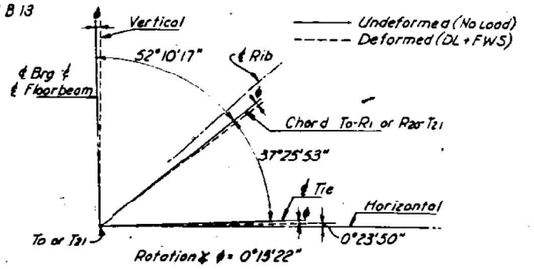


SECTION D52-D57

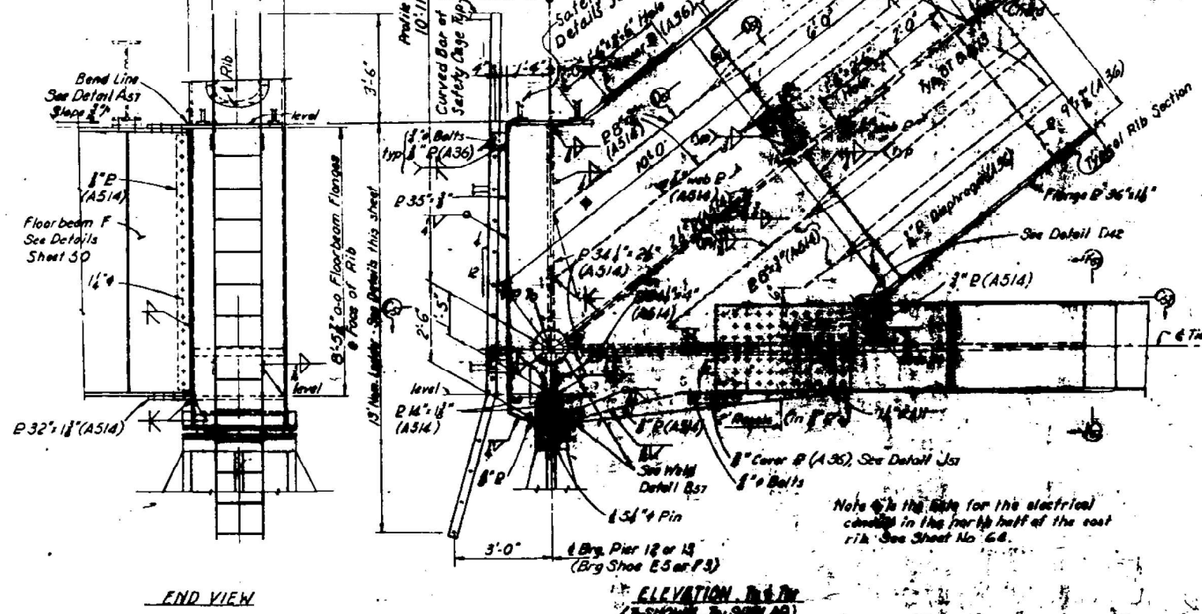
COVER PLATE DETAIL



SECTION H57-H57

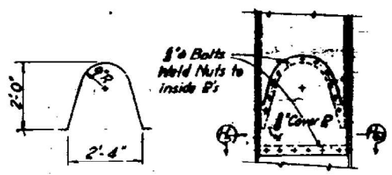


JOINT GEOMETRY



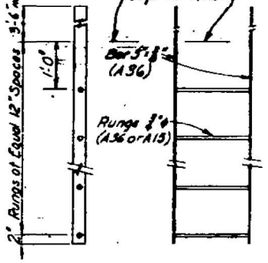
END VIEW

ELEVATION - 11 & 13

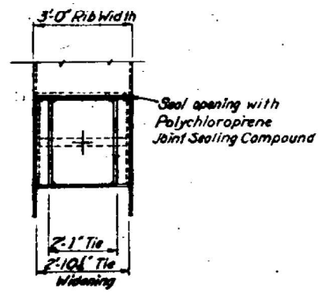


2' RECESS

DETAIL J57



TYPICAL LADDER DETAILS



SECTION K57-K57

LOAD FACTOR STRUCTURAL STEEL

SHEET 57 OF 87

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
PROJECTS I 24-1(6 136, I 24-9(1 10, I 24-1(6))1
BRIDGE OVER OHIO RIVER ON I 24
BETWEEN McCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

HAZELET & ERDAL Consulting Engineers File No. 886	BRIDGE NUMBER	DRAWING NO. 17471	INDEX

FOR INFORMATION ONLY

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 87 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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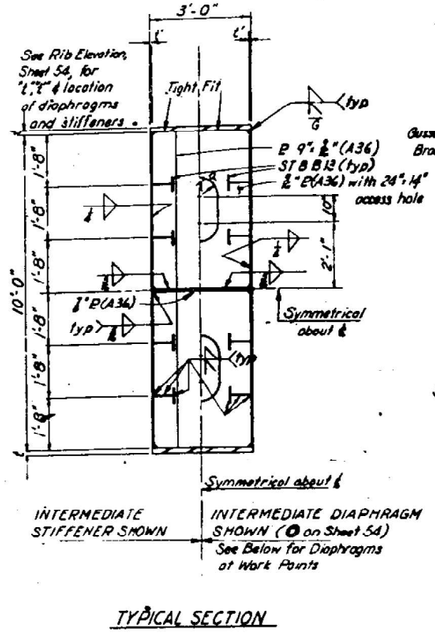
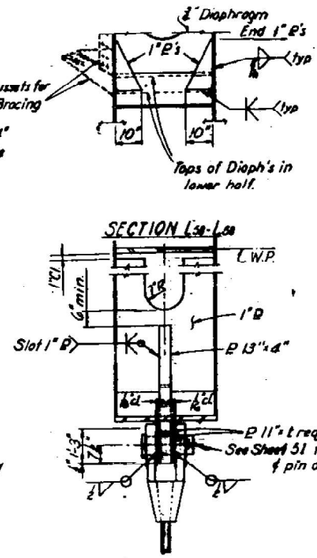
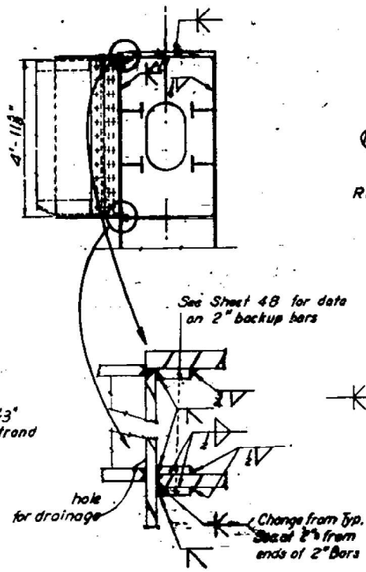
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



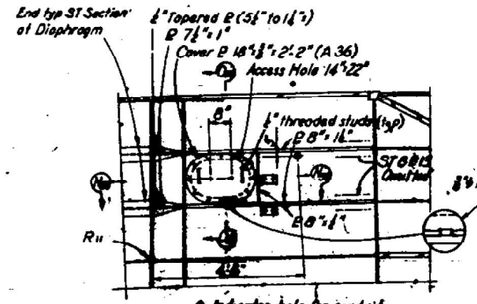
TYPICAL SECTION



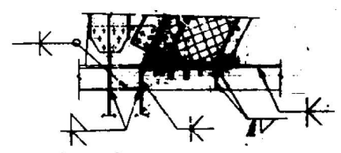
SECTION M58-M58



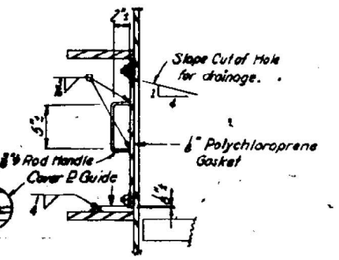
DETAILS FOR BACK-UP OF LATERAL BRACING GUSSETS



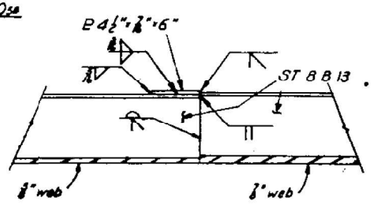
SPECIAL DETAIL AT INSPECTION WALK
(South Half of East Rib, Other - Mirror Image)



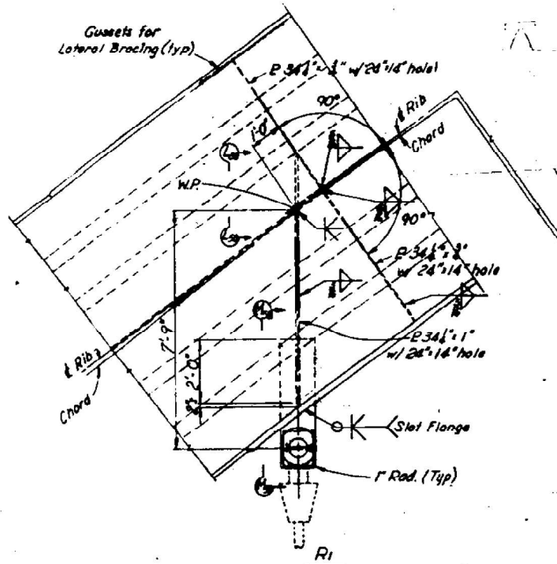
SECTION N58-N58

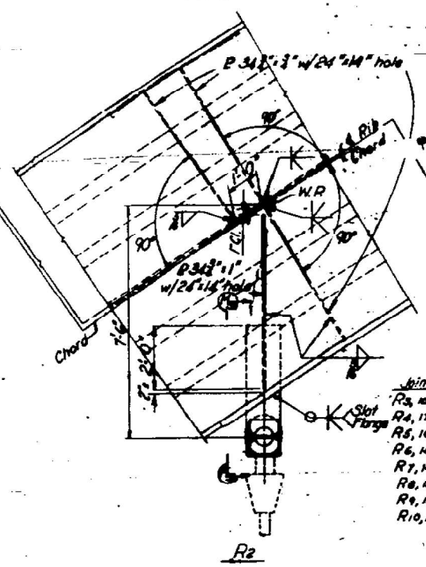


SECTION O58-O58

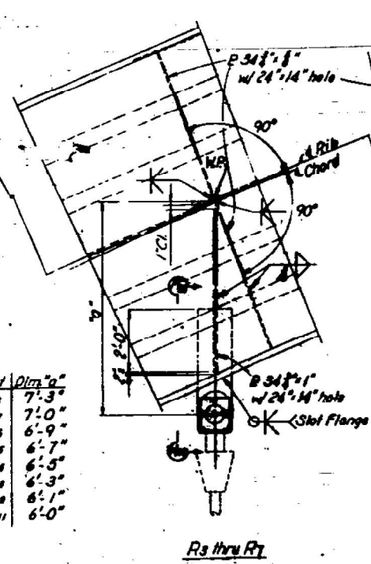


LONGITUDINAL STIFFENER WEB TRANSITION DETAIL

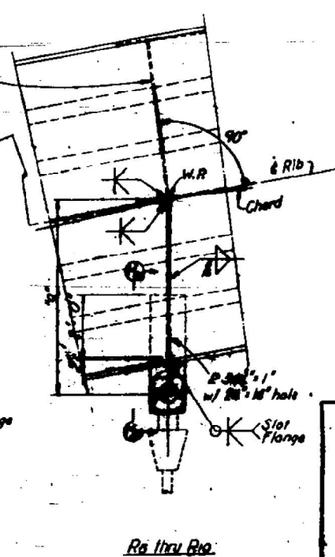




Joint	Dim "a"
R3, 15	7'-3"
R4, 17	7'-0"
R5, 16	6'-9"
R6, 15	6'-7"
R7, 14	6'-5"
R8, 13	6'-3"
R9, 12	6'-1"
R10, 11	6'-0"



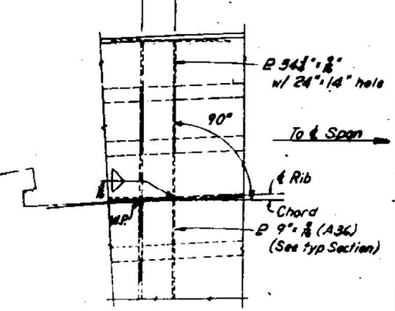
R3 thru R7



R8 thru R10

DETAILS AT WORK POINTS
Radius Perpendicular About ℄

UNIT 'I' RIB DETAILS
SHEET 58 OF 121

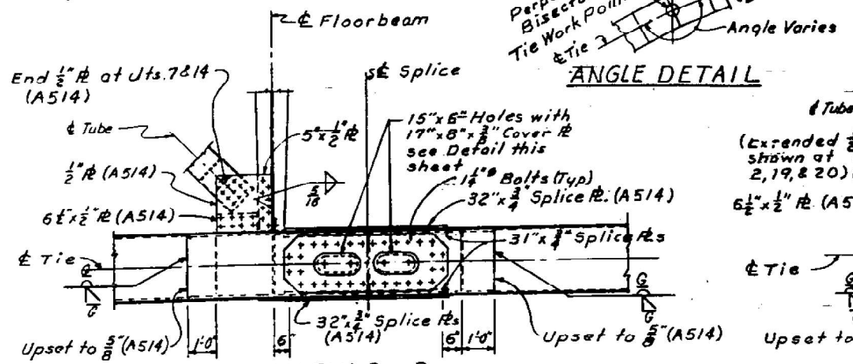


ADDITIONAL DETAIL AT R10

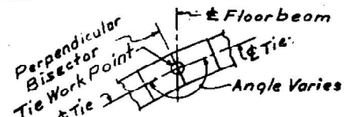
KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
PROJECTS I 24-1(6 138, I 24-1( )0, I 24-1(6)1
BRIDGE OVER OHIO RIVER ON I 24
BETWEEN McCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

HAZELET & ERDAL Consulting Engineers Ills No. 035	STATE PROJECT NUMBER	DRAWING NO. 1747	INDEX

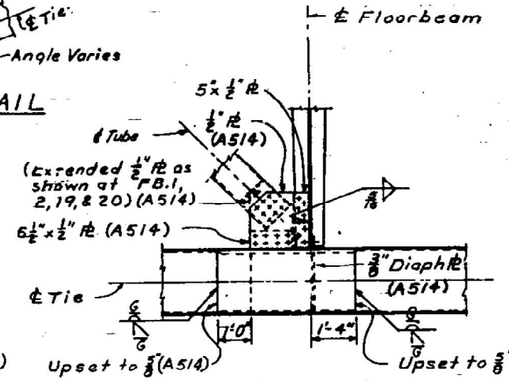
FOR INFORMATION ONLY



VIEW P_{59}-P_{59}

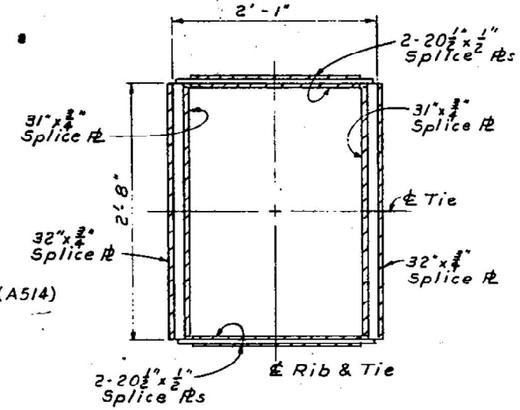


ANGLE DETAIL

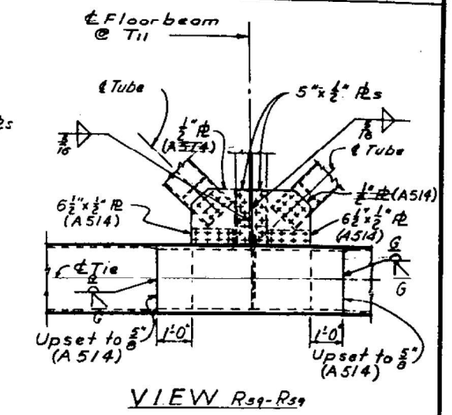


VIEW Q_{59}-Q_{59}

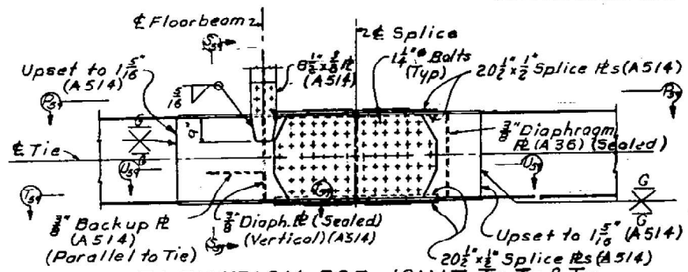
Note: All Floorbeam webs are vertical. The angle between the Floorbeam and Tie varies



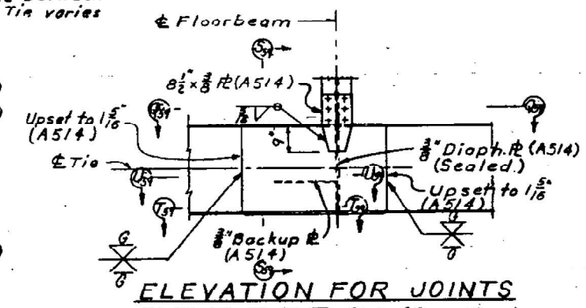
TYPICAL SECTION THRU SPLICE



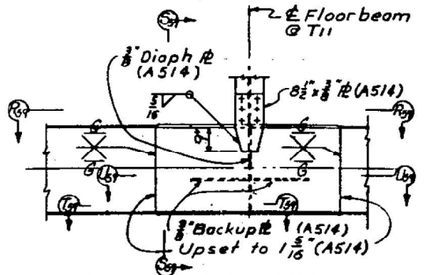
VIEW R_{59}-R_{59}



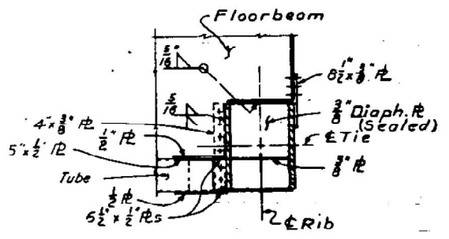
ELEVATION FOR JOINT T_3, T_2 & T_{10}
(Opp. Hand For Joints T_{14} & T_{16})



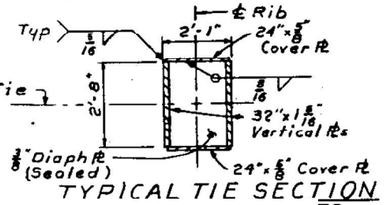
ELEVATION FOR JOINTS
T_1, T_2, T_4, T_5, T_6, T_8 & T_9. (Opp. Hand for T_{12}, T_{13}, T_{15}, T_{16}, T_{17}, T_{19}, & T_{20})



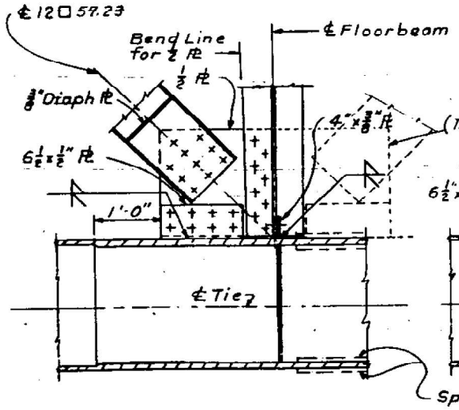
ELEVATION FOR JOINT T11



SECTION S_{59}-S_{59}



TYPICAL TIE SECTION



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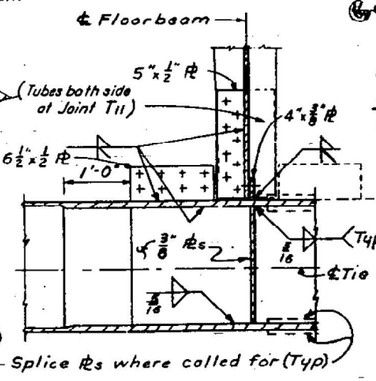
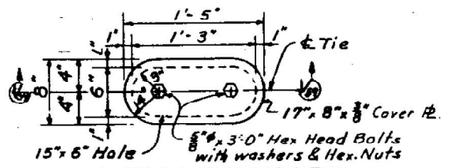
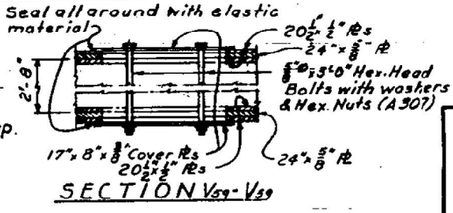


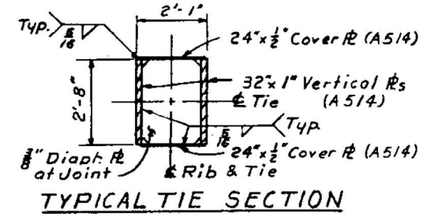
SECTION U_{59}-U_{59}



PLAN OF COVER PLATE



SECTION V_{59}-V_{59}



TYPICAL TIE SECTION

TIE SPLICE DETAILS FOR UNIT V

STRUCTURAL STEEL

SHEET 59 OF 121

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
PROJECTS I 24-1(6 138, I 24-9(1)0, I 24-1(6)1
BRIDGE OVER OHIO RIVER ON I 24
BETWEEN McCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

HAZELET & ERDAL Consulting Engineers File No. 898 | BRIDGE NUMBER | DRAWING NO. 17471 | INDEX

FOR INFORMATION ONLY

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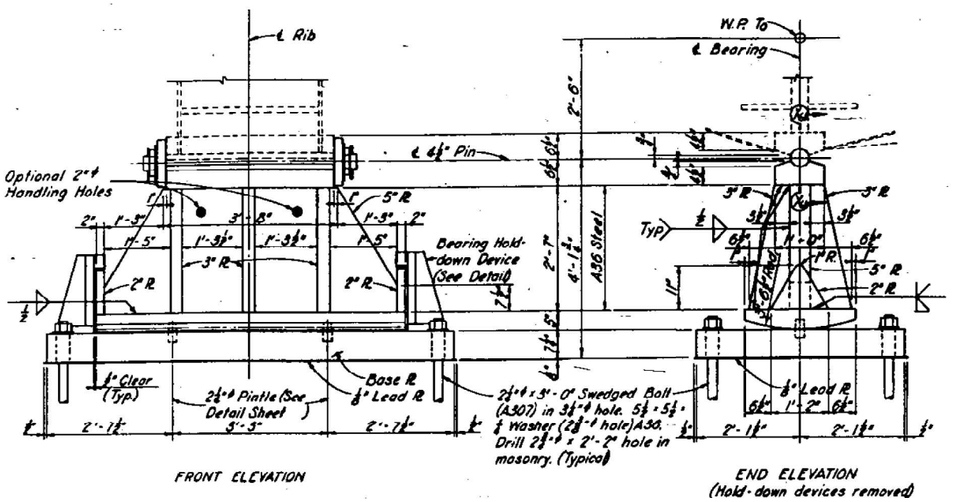
		PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -
		PLOT DATE = 8/16/2024	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

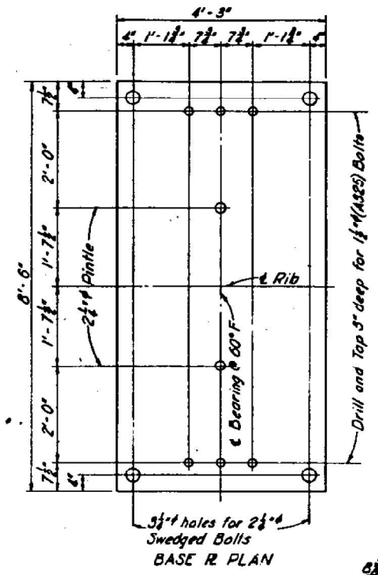
EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 89 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	150
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

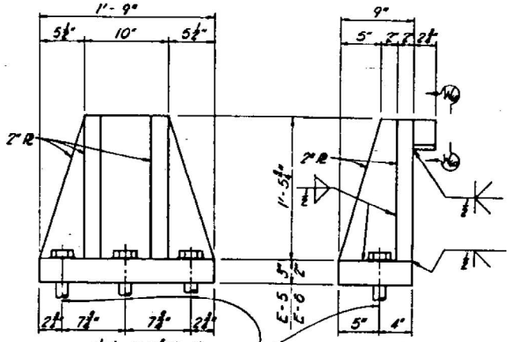


BEARING TYPE E-6

Use at Pier 3 - 2 Req'd

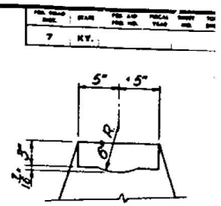


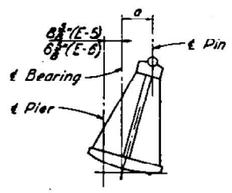
BASE R PLAN



HOLD-DOWN DEVICE DETAIL

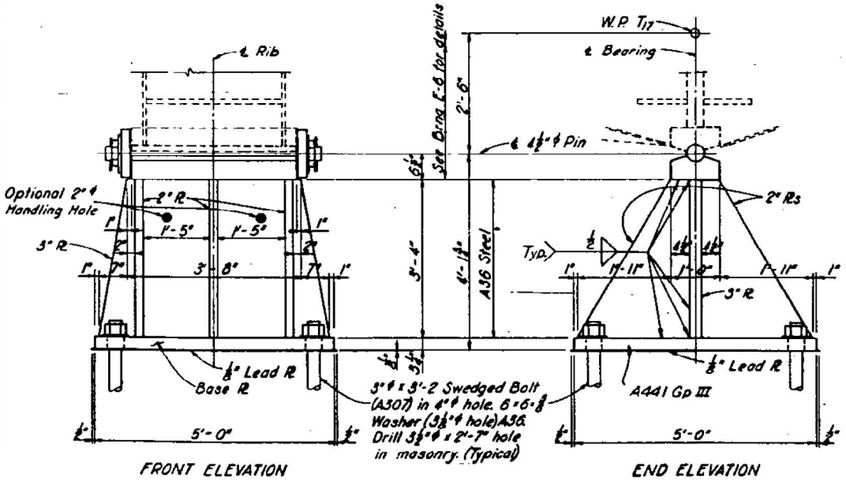
(A36 Steel except as noted)





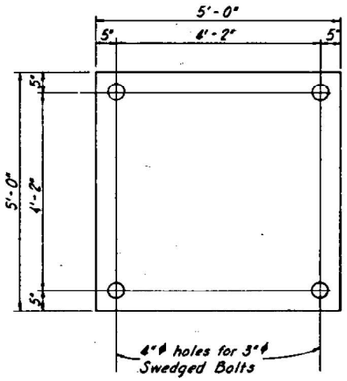
Temperature	a	
	E-5	E-6
-20	-4 3/16"	-3 9/16"
0	-3 1/8"	-2 13/16"
20	-2 1/16"	-1 15/16"
40	-1 1/16"	-1"
60	-	-
80	1 1/16"	1"
100	2 1/16"	1 15/16"
120	3 1/16"	2 13/16"
F.W.S. Elevation	1 1/2"	1 1/2"

Shoes shall be vertical at 60°F after all dead load (including Future Wearing Surface) has been applied.
For Surface Finishes see sheet 31 for Expansion Bearing and sheet 30 for Fixed Bearing.
See sheet 30 for White Lead & Tallow, Welding, Anchor Bolts and Setting Masonry Plates Notes.



BEARING TYPE F-4

Use at Pier 4 - 2 Req'd.



BASE R PLAN

Bearing	E-5	F-3	E-6	F-4
D.L.	3044 k	3044 k	2492 k	2492 k
L.L.	455 k	455 k	401 k	401 k
Impact	27 k	27 k	27 k	27 k
Total	3526 k	3528 k	2920 k	2920 k
Max. Ecc.	6.31 in.	-	5.86 in.	-
Weight	26,295 lbs	12,666 lbs	20,139 lbs	9,518 lbs

FOR INFORMATION ONLY

BEARING DETAILS
UNIT II
STRUCTURAL STEEL

SHEET 60 OF 121

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS

PROJECTS I 24-1(6)38, I 24-9(1)10, I 24-E(6)11

BRIDGE OVER OHIO RIVER ON I-24
BETWEEN McCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

HAZELET & ERDAL Consulting Engineers File No. 000 | BRIDGE NUMBER | DRAWING NO. 17477 | INDEX

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TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

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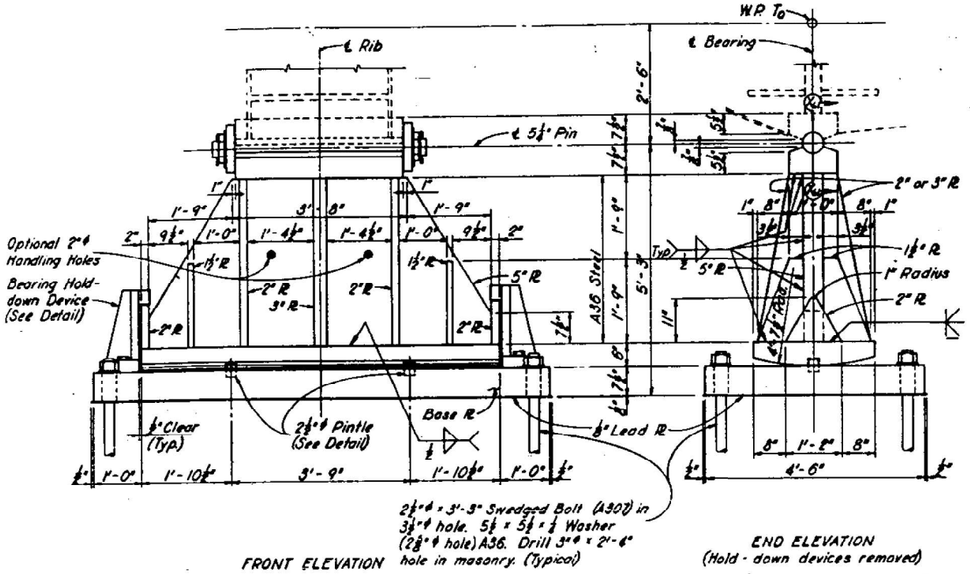
	CHECKED -	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 90 OF 175 SHEETS

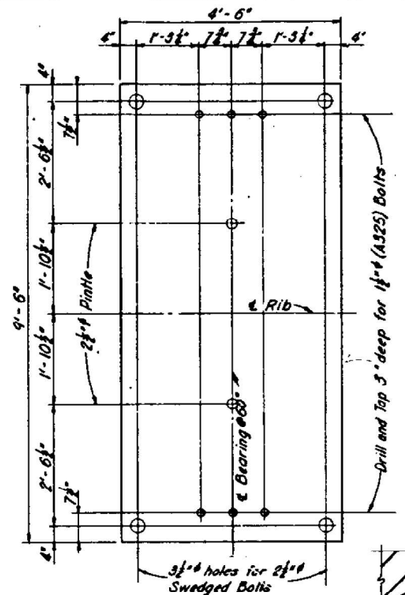
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	151
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



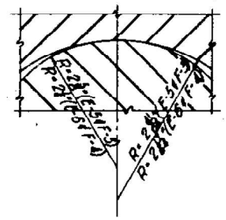
FRONT ELEVATION

END ELEVATION
(Hold-down devices removed)

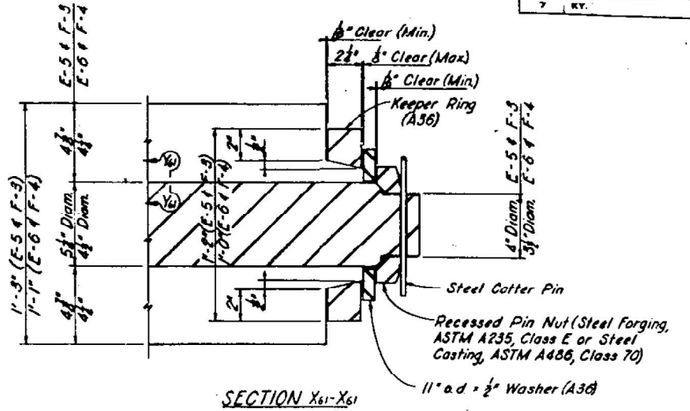
BEARING TYPE E-5
Use at Pier 12 - 2 Req'd.



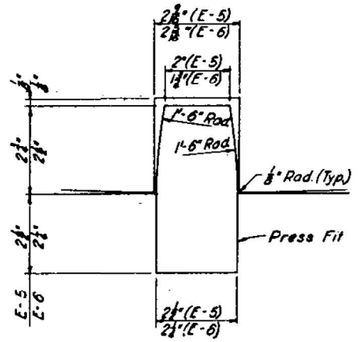
BASE R PLAN



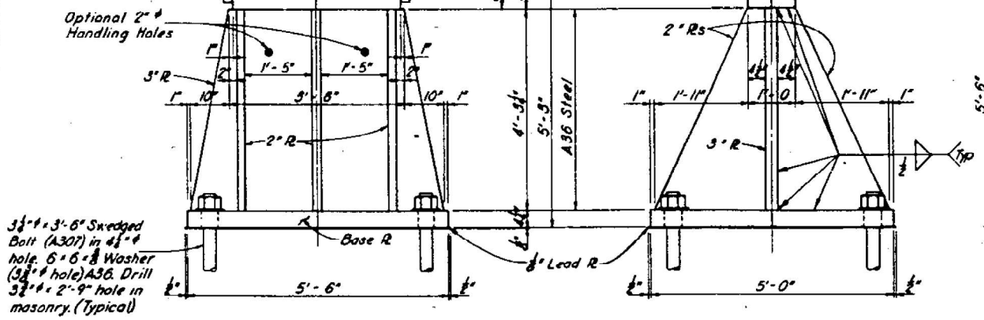
SECTION Y61-Y61



SECTION X61-X61



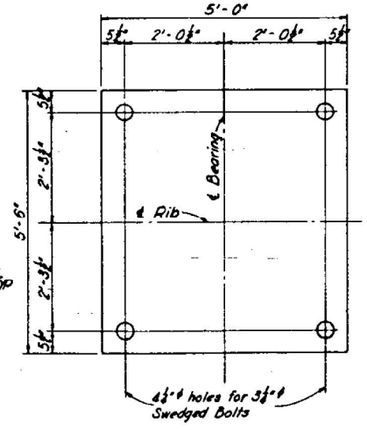
PINTLE DETAIL



FRONT ELEVATION

END ELEVATION

BEARING TYPE F-3
Use at Pier 13 - 2 Req'd



BASE R PLAN

Shoes shall be vertical at 60°F after all dead load (including Future Wearing Surface) has been applied. See Sh 60.
For Surface Finishes see sheet 31 for Expansion Bearing and sheet 30 for Fixed Bearing.
See sheet 30 for "White Lead & Tallow", "Welding", "Anchor Bolts" and "Setting Masonry Plates" Notes.

BEARING DETAILS
UNIT V
STRUCTURAL STEEL

SHEET 61 OF 121

KENTUCKY DEPARTMENT OF HIGHWAYS
ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
PROJECTS I 24-1(46)38, I 24-9(11)0, I 24-1(61)
BRIDGE OVER OHIO RIVER ON I 24
BETWEEN McCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

MAZZET & BALDAL Consulting Engineers File No. 908	BRIDGE NUMBERS	DRAWING NO. 17471	INDEX

FOR INFORMATION ONLY

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		PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -
		PLOT DATE = 8/16/2024	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 91 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	152
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

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8/16/2024 11:14:27 AM

PROJECT AND ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
24	64-3B-I-2	MASSAC, ILL. McCRACKEN, KY.	32	1
FED. ROAD DIV. NO. 8	ILLINOIS	PROJECT EACI-24-9(7)0		

INDEX

Sheet No	Title
1	Cover Sheet
1A	Summary of Quantities
1B	General Notes
1C	Composite Elevation - Units I thru VI
2 - 4	Key Sheets - Unit II
5	Units II & V - Access to Joints thru Bolted Field Splice
6 - 11	Unit II Bolted Splice for Tie Girder, (Incl. Sh 7a & 8a)
12	Miscellaneous Details
13 - 15	Key Sheets - Unit V
16 - 21	Unit V Bolted Splice for Tie Girder, (Incl. Sh 15a & 16a)
22 - 24	Bolted Splice for Tie Girder with 4" Cores
25	Floorbeam - Tie Girder Connection PL 4 Weatherproofing @ Field Splice Jt.
26	Work to be Performed and Existing Conditions
27 - 28	Table of Quantities
29 - 32	Traffic Control Details

STANDARDS

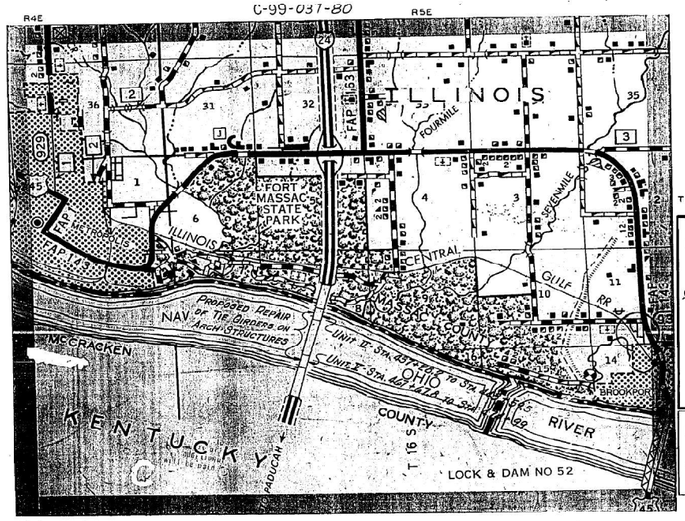
2298-4
2299-8
2300-1
2307-4
2314-3
2315-4

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED FEDERAL AID INTERSTATE HIGHWAY

F.A.I. ROUTE 24
SECTION 64-3B-I-2
McCRACKEN CO., KY. & MASSAC CO., ILL.
PROJECT EACI-24-9(7)0

C-99-037-80



1 MI. 0 ½ MI. 0 ½ MI.
APPROX. SCALE 1" = ½ MILE

P-99-031-79

LOCATION OF SECTION INDICATED THUS: —

KENTUCKY
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS
APPROVED July 8 1980
STATE HIGHWAY ENGINEER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
EXAMINED July 9 1980 — J. F. Newton, DISTRICT ENGINEER
EXAMINED July 16 1980 — ENGINEER OF PLANS AND CONTRACTS
PASSED July 16 1980 — ENGINEER OF DESIGN
APPROVED July 16 1980 — DIRECTOR, BUREAU OF HIGHWAYS

U.S.
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED
DIVISION ADMINISTRATOR DATE

PLANS PREPARED BY
HAZELET AND ERDAL
CONSULTING ENGINEERS
BY
DATE 24 June 1980

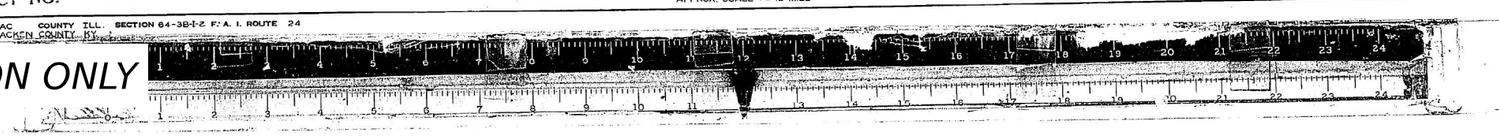
STATE OF ILLINOIS — FRANK B. WYLIE, JR. — 81-4041 — LOUISVILLE, KY

CONTRACT NO. 34626

MASSAC COUNTY ILL. SECTION 64-3B-I-2 F.A.I. ROUTE 24
McCRACKEN COUNTY KY.

ILLINOIS STRUCTURE NUMBER - 064-0035

FOR INFORMATION ONLY



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		CHECKED -	REVISED -	
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	PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 92 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	153
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

UPDATE DATE
LETTING DATE

DIETGEN 11-78

DATE	BY	REVISED
7-7-80	EBR	Revised: Table of Quantities, added a note to No. 2 of Rem. Exist. Gusset Pls. & Summary of Quantities
7-30-80	EBR	revised original date

DESIGNED BY EBR
DETAILED BY EBR
CHECKED BY
CHECKED BY

GENERAL NOTES:

The Standard Specifications for Road and Bridge Construction adopted October 1, 1978, by the Illinois Department of Transportation shall apply to all work except as modified by these Notes, the Plans or Special Provisions.

All structural steel shall be AASHTO M244 steel, unless noted, including Supplementary Requirement S3 for Notch Toughness Zone 2.

Where ASTM A588 steel (AASHTO M222) is called for in the Plans, the Contractor may use AASHTO M223, Grade 50 in lieu thereof. The shop drawings shall identify the steel in all details. Fill plate material may be ASTM A607, Grade 50 *or ASTM A588 (M222), except where specified otherwise on the plans.*

All bolts thru the tie splice plates shall be new 1 1/4" ϕ AASHTO M253 Type I unless noted. All other bolts shall be new 7/8" ϕ AASHTO M164, unless noted. Existing bolts shall not be reused.

All existing hand hole cover plates that are removed and replaced shall be replaced using new 1/8" thick elastomeric gaskets. The new access hole in the top or bottom horizontal plate of the tie girder at the existing field splice shall be installed with a 1/8" elastomeric gasket.

The existing part designations (200P2, ϕ= 201 etc.) are taken from the Shop Drawings - Nashville Bridge Company Contract C8737, copies of which will be furnished the Contractor on request.

See the Special Provisions for cleaning the contact surfaces and drilling and reaming the holes.

No field welding will be permitted except as shown in the Plans or as approved by the Engineer.

Method of access to interior of Tie Girder for retrofitting joints. *

1. Remove existing hand hole cover plate at existing field bolted splices. Note these plates are held in place by bolts extending thru the tie.
2. Cut access hole in the top or bottom of tie girder as called for in the plans. See Sh No 5. (No flame cutting will be allowed.)
3. Cut holes in the existing diaphrams for access to the joint to be retrofitted. See Special Provisions for temperature control and grinding the flame cut edges. See Sh No 5, Section A-A and B-B.
4. The tie girder shall be thoroughly cleaned of all loose material (dirt, metal, etc.)

Sequence for retrofitting the existing tie girder joints. *(Desired)*

The sequence of retrofitting each joint shall be as called for in the Special Provisions.

The preferred sequence of retrofitting the plates in any specific joint is the following. If the Contractor desires a different sequence, he may submit same to the Engineer for review and approval. Prior to working on any joint the tie girder and wind bracing shall be supported in a manner acceptable to the Engineer.

A. Typical interior joints
   1. Remove connection plates welded to the existing inside vertical plate.
   2. Install inside retrofit vertical splice plate with connections to floor beam and wind bracing.
   3. Install outside retrofit vertical splice plate.
   4. Remove bracing connection plate welded to the edge of the existing bottom horizontal plate.
   5. Install bottom retrofit horizontal splice plate with connections to the wind bracing.
   6. Install tie girder support, labeled "Tee" in plans and detailed on Sheet No 10.
   7. Install top retrofit horizontal splice plate.

B. Joint at existing field splices: Note the stick-out of the bolts will require grinding flush with the nuts to clear the retrofit splice plates. Procedure is written for access hole cut in bottom of tie girder. If access hole is cut in the top the order of installation for the top and bottom retrofit splice plates must be reversed. In each case the "Tee" shall be installed immediately following the installation of the bottom retrofit splice plate.
   1. Remove connection plates welded to the existing inside vertical plate.
   2. Install inside retrofit vertical splice plate with connections to floor beam and wind bracing.
   3. Install outside retrofit vertical splice plate.
   4. Replace hand hole cover plates on top (use existing plates with new bolts).
   5. Install top retrofit horizontal splice plate.
   6. Install bottom retrofit horizontal splice plate with connections to the wind bracing.
   7. Install bottom access hole cover plate.
   8. Install tie girder support, labeled "Tee" in plans and detailed on Sheet No 10.

C. End joints (adjacent to piers) **
   1. Remove existing hand access hole cover plate in the bottom at the end of the tie girder.
   2. Cut access hand holes in the tie girder flange plates (Two in the top and one in the bottom).
   3. Install inside retrofit vertical splice plate.
   4. Install outside retrofit vertical splice plate.
   5. Install top retrofit horizontal splice plate.
   6. Install bottom retrofit horizontal splice plate.
   7. Install three new cover plates over new access holes.
   8. Replace existing access hand hole cover plate in the bottom at the end of the tie girder.

* Work performed under previous contract.
** Work to be performed under Phase A.

In the above operations each retrofit splice plate shall be completely bolted prior to drilling holes for the next retrofit plate.

Where serious weld defects occur and as directed by the Engineer the above sequence may be altered so as to install the first retrofit splice plate on the side with the weld defect.

The above sequence does not include all of the detailed operations which are to be performed by the Contractor.

No flame cutting of the tie girder plates will be permitted. This applies to all four sides.

Wind Bracing

The Contractor shall not remove any bolts from the bolted joints in the horizontal wind bracing truss when winds are anticipated to be 30 mph or greater. For winds less than 50 mph the Contractor shall remove no more than half of the bolts (top gusset or bottom gusset plate) at any one time, or shall provide temporary wind bracing similar to that shown on Sh No 10. If the temporary wind bracing is used the Contractor shall submit details for connecting the cables or other bracing for review by the Engineer. At the Contractor's option other temporary wind bracing may be used if acceptable to the Engineer. The Contractor shall support all members undergoing alterations by cables or other methods subject to review by the Engineer.

The temporary wind bracing will not be paid for separately but the cost therefor shall be included in the unit price bid for "Area Tie Field Bolted Splices."

CAULK

Caulking compound called for in the drawings shall be Thiokol Sealant as manufactured by The Euclid Chemical Company, Silicone Construction Sealant as manufactured by the General Electric Company, Sikadur Gel as manufactured by Sika Chemical Corporation or an approved equal.

The above desired sequence for retrofitting existing tie girder joints is to be used as guide only. Installation of the retrofit plates is to be completed in two phases (A and B) as called for on Sheet 10 and 10a or as directed by the Engineer

SPECIAL NOTES FOR DIMENSIONS:

Longitudinal dimensions shown on the ties are taken from the original fabricator's shop details and represent lengths of the ties before they were stressed by dead load. Erection marks and shop assembly piece marks were copied from the original fabricator's shop details and their accuracy can not be guaranteed.

Plan dimensions and details relative to the existing structure have been taken from existing shop plans and are subject to nominal and abnormal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering 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.

Grinding

In all cases where grinding on the 100,000 psi yield strength steel the following precautions shall be taken:

1. Final grinding shall be parallel to the direction of stress.
2. A minimum amount of the metal shall be removed.
3. The surface shall be no rougher than 500 MU inches (as defined by ANSI B46.1).

Removing Existing Gusset Plates

1. Plates pad, pak and pat may be removed by gas or flame cutting. This work must be performed with care and in accordance with recommendations of the manufacturer of the steels. In no case shall the temperature of the existing or new 100,000 psi yield strength steel exceed 1100 deg. F. as measured by temperature indicating crayons or paint one-half inch from the cut edge. Following gas cutting, the resulting edges shall be ground. See note on this sheet on "Grinding".

2. Plate pab may be removed by grinding. The final grinding shall be in the direction of stress. Care shall be taken in order to remove as little of the parent metal as possible. Plate pab may be removed by milling or other methods approved by the Engineer but in no case will flame or gas cutting will be permitted.

TABLE OF QUANTITIES (PHASEING)

ITEM	UNITS	UNIT II PHASE A	UNIT II PHASE B	UNIT V PHASE A	UNIT V PHASE B
Typical Inside Web Splice	Each	16	14	10	17
Typical Outside Web Splice	Each	7	12	11	15
Typical Top Flange Splice	Each	-	1	1	8
Typical Bottom Flange Splice	Each	-	4	5	12
Inside Web Splice at Existing Bolted Splice	Each	-	10	3	7
Outside Web Splice at Existing Bolted Splice	Each	1	9	6	2
Top Flange Splice at Existing Bolted Splice	Each	1	2	-	3
Bottom Flange Splice at Existing Bolted Splice	Each	2	-	2	5
End Connection, Tie to Rib	Each	4	-	4	-
Tie Support Tees (New)	Each	-	32	-	40
Cleaning and Painting	L.S.	-	1	-	1
Remove Existing Tees	Each	-	6	-	10
(1) Grind Weldment	Each	44	228	68	268

(1) Grinding Longitudinal Fillet Welds at Existing Butt Welds-See Special Provisions.

NOTE: See Special Provisions for Extra Work.

TOTAL BILL OF MATERIALS

Code No.	Item / Construction Type Code	Unit	Total
1	Typical Inside Web Splice, Unit II, Phase B	Each	14
	Typical Inside Web Splice, Unit V, Phase B	Each	17
	Typical Outside Web Splice, Unit II, Phase B	Each	12
	Typical Outside Web Splice, Unit V, Phase B	Each	15
	Typical Top Flange Splice, Unit II, Phase B	Each	1
	Typical Top Flange Splice, Unit V, Phase B	Each	8
	Typical Bottom Flange Splice, Unit II, Phase B	Each	4
	Typical Bottom Flange Splice, Unit V, Phase B	Each	12
	Inside Web Splice At Existing Bolted Splice, Unit II, Phase B	Each	10
	Inside Web Splice At Existing Bolted Splice, Unit V, Phase B	Each	7
	Outside Web Splice At Existing Bolted Splice, Unit II, Phase B	Each	9
	Outside Web Splice At Existing Bolted Splice, Unit V, Phase B	Each	2
	Top Flange Splice At Existing Bolted Splice, Unit II, Phase B	Each	2
	Top Flange Splice At Existing Bolted Splice, Unit V, Phase B	Each	3
	Bottom Flange Splice At Existing Bolted Splice, Unit V, Phase B	Each	5
	Tie Support Tees, Unit II, Phase B	Each	32
	Tie Support Tees, Unit V, Phase B	Each	40
509004	Cleaning and Painting	L.Sum	1
	Remove Existing Tees, Unit II, Phase B	Each	6
	Remove Existing Tees, Unit V, Phase B	Each	10
	Grind Weldment, Unit II, Phase B	Each	228
	Grind Weldment, Unit V, Phase B	Each	268

Note:
Phase A should have been completed prior to the contractor starting work on Phase B.

REPAIR CONT. BY ILLINOIS D.O.T. IN CO-OPERATION WITH KENTUCKY D.O.T.

GENERAL NOTES

SHEET No 1a

COMMONWEALTH OF KENTUCKY
BUREAU OF HIGHWAYS
ILLINOIS DEPARTMENT OF TRANSPORT.
BRIDGE OVER OHIO RIVER ON I24
BETWEEN McCRACKEN COUNTY, KENTUCKY
AND MASSAC COUNTY, ILLINOIS

CONSTRUCTION PROJECT NO.	MAINTENANCE PROJECT NO.	DRAWING NO.

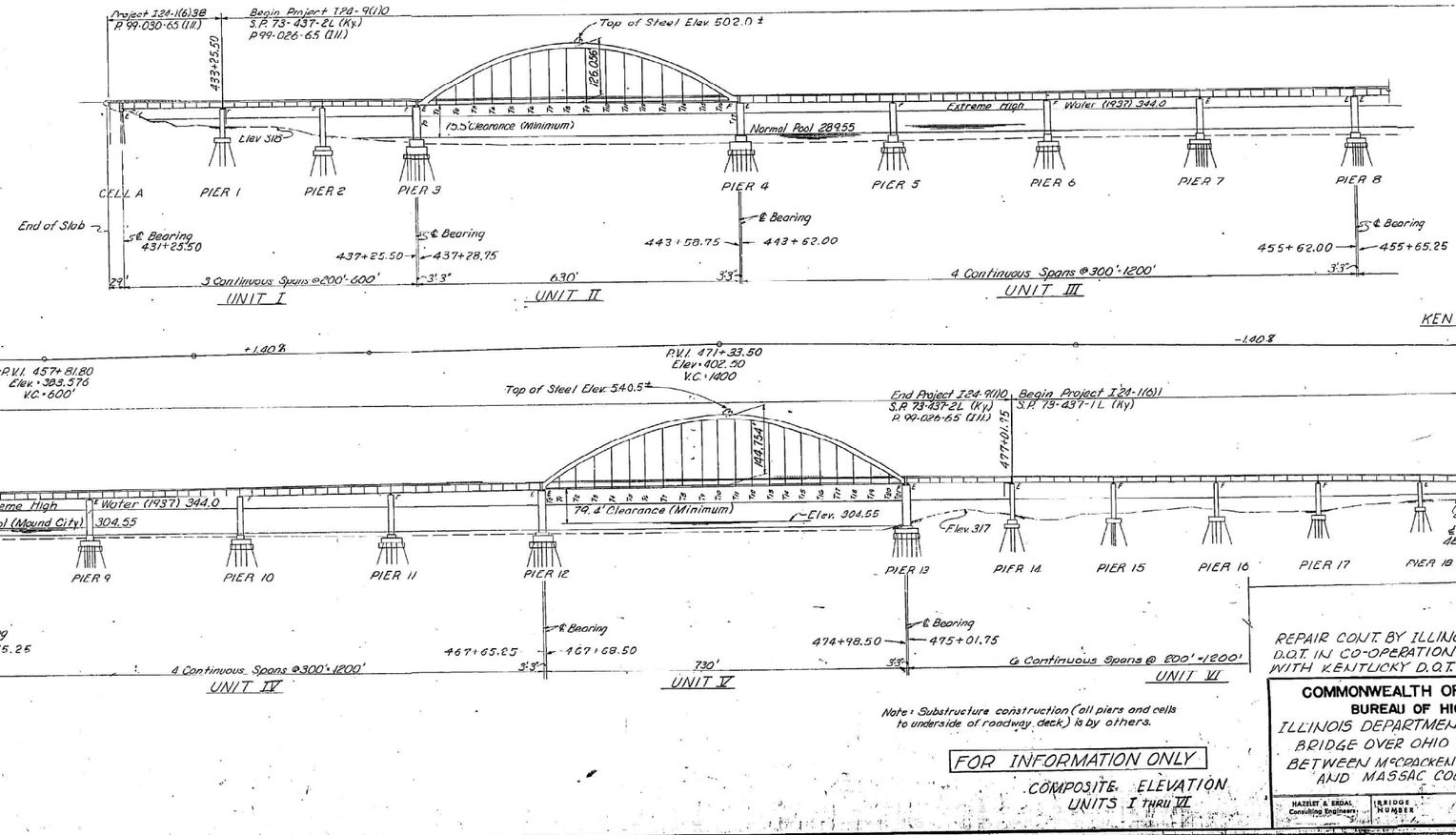
E&LD	DIST.	COUNTY	SHEET NO.	TOTAL SHEETS
24	6-38	MCCRACKEN KY. MASSAC ILL.	32	10

F.A.P. RTE. PROJECT NO. | TRAFFIC CONTROL PLANS

FOR INFORMATION ONLY

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	12-3B; F-2	MCCRACKEN KY MASSAC, ILL	32	1C

ILLINOIS



REPAIR CONT. BY ILLINOIS D.O.T. IN CO-OPERATION WITH KENTUCKY D.O.T.

SHEET 1b

Note: Substructure construction (all piers and cells to underside of roadway deck) is by others.

FOR INFORMATION ONLY

COMPOSITE ELEVATION
UNITS I THRU VI

COMMONWEALTH OF KENTUCKY
BUREAU OF HIGHWAYS
ILLINOIS DEPARTMENT OF TRANSPORT.
BRIDGE OVER OHIO RIVER ON I24
BETWEEN McCRACKEN COUNTY, KENTUCKY
AND MASSAC COUNTY, ILLINOIS

HAZLET & ERDAL Consulting Engineers	BRIDGE NUMBER	DRAWING NO.	INDEX

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TWM, INC.
WWW.TWM-INC.COM
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PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 94 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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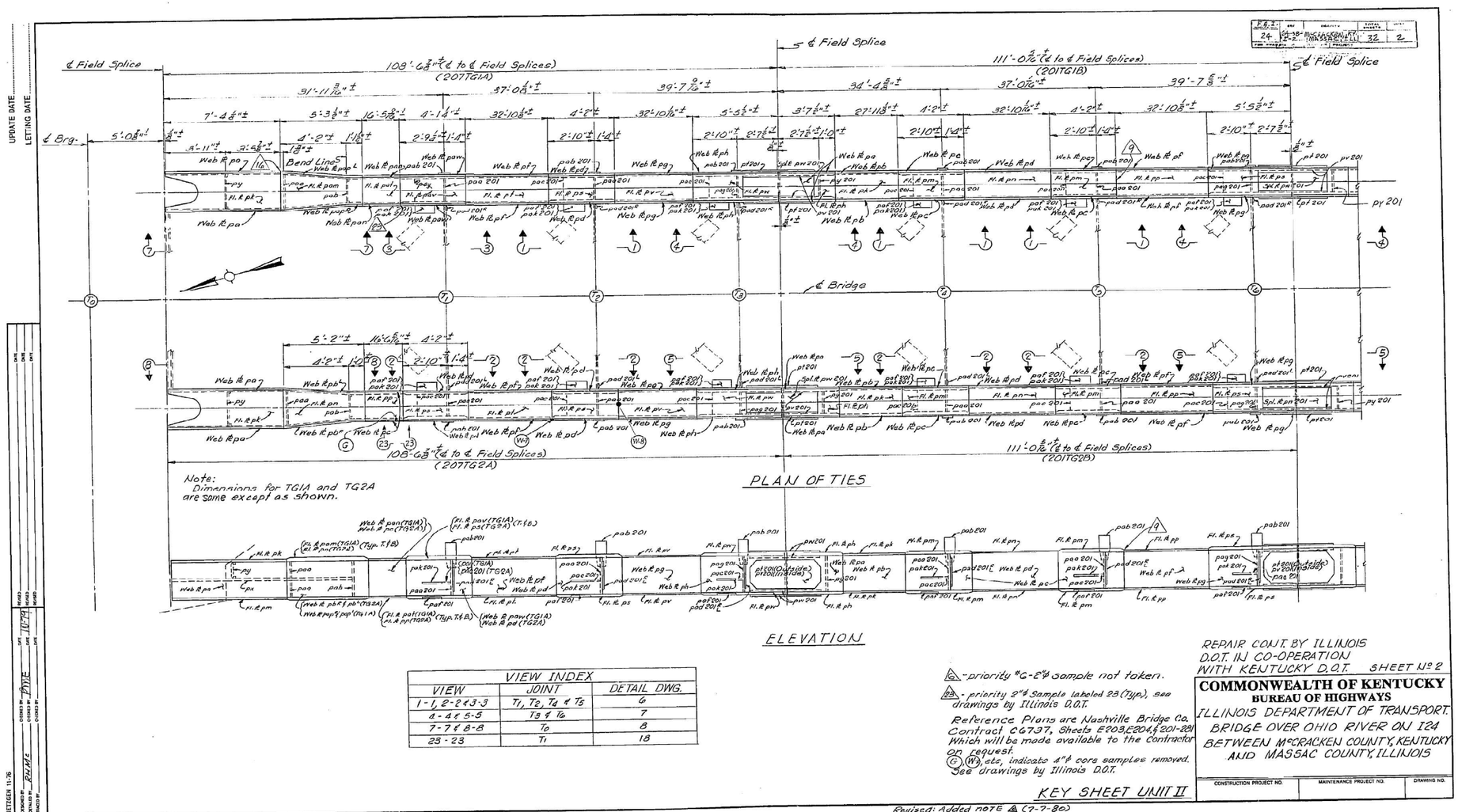
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



VIEW INDEX		
VIEW	JOINT	DETAIL DWG.
1-1, 2-2 & 3-3	T1, T2, T4 & T5	6
4-4 & 5-5	T3 & T6	7
7-7 & 8-8	T6	8
23-23	T1	18

A - priority "G-2" sample not taken.

23 - priority 2nd Sample labeled 23 (Typ), see drawings by Illinois D.O.T.

Reference Plans are Nashville Bridge Co. Contract C6737, Sheets E203, E204 & 201-228 Which will be made available to the Contractor on request.

(G) (W) etc. indicate 4" ϕ core samples removed. See drawings by Illinois D.O.T.

KEY SHEET UNIT II

Revised: Added note A (7-7-80)

REPAIR CONT. BY ILLINOIS D.O.T. IN CO-OPERATION WITH KENTUCKY D.O.T. SHEET No. 2

COMMONWEALTH OF KENTUCKY
BUREAU OF HIGHWAYS
ILLINOIS DEPARTMENT OF TRANSPORT.
BRIDGE OVER OHIO RIVER ON I24
BETWEEN McCRACKEN COUNTY, KENTUCKY
AND MASSAC COUNTY, ILLINOIS

CONSTRUCTION PROJECT NO.	MAINTENANCE PROJECT NO.	DRAWING NO.

UPDATE DATE.....
LETTING DATE.....

DESIGNED BY RM MS DATE 10-79
DETAILED BY DATE
CHECKED BY DATE
TRACED BY DATE

DIETZGEN 11-76

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ENGINEERING GEOSPATIAL SERVICES		CHECKED -	REVISED -		SHEET 95 OF 175 SHEETS
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	156
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

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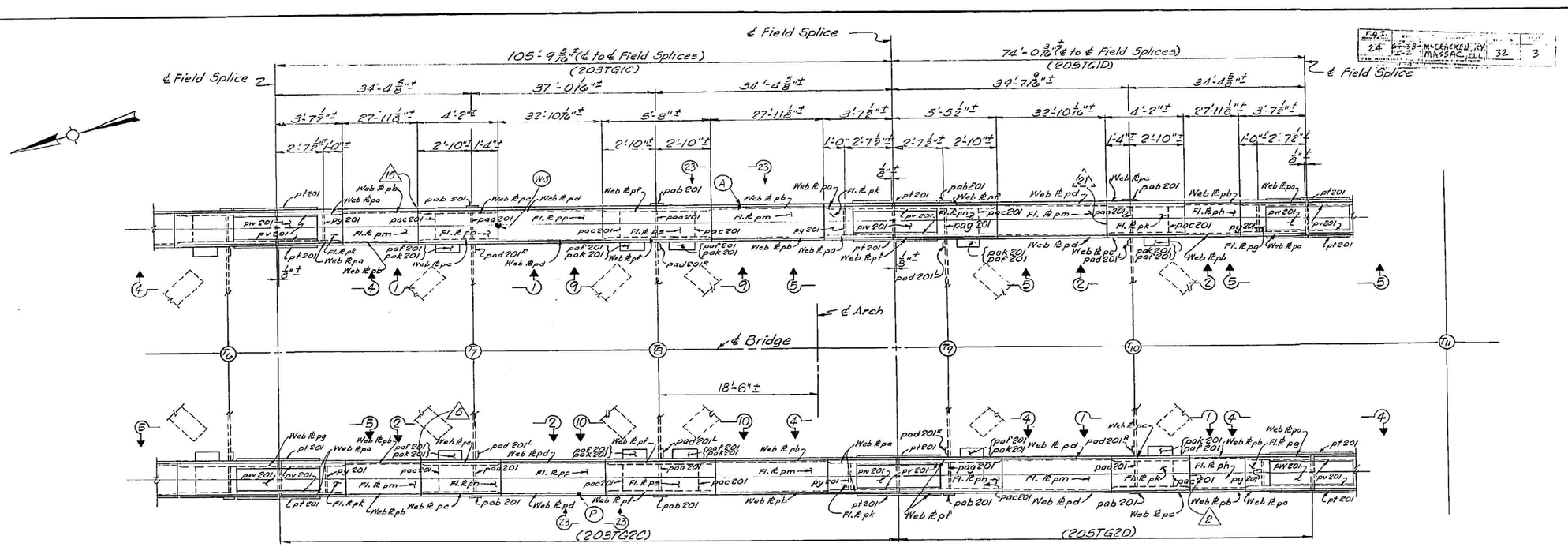
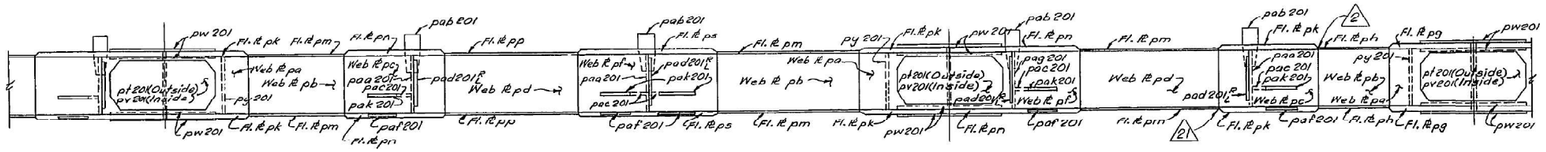


PLAN OF TIES



ELEVATION

VIEW INDEX		
VIEW	JOINT	DETAIL DWG.
1-1 & 2-2	T7 & T10	6
4-4 & 5-5	T6, T9 & T11	7
9-9 & 10-10	T8	9
23-23	T8	18

For notes see Sheet 2.

KEY SHEET UNIT II

REPAIR CONT. BY ILLINOIS D.O.T. IN CO-OPERATION WITH KENTUCKY D.O.T. SHEET Nº 3

COMMONWEALTH OF KENTUCKY
BUREAU OF HIGHWAYS
ILLINOIS DEPARTMENT OF TRANSPORT.

BRIDGE OVER OHIO RIVER ON I24
BETWEEN McCRACKEN COUNTY, KENTUCKY
AND MASSAC COUNTY, ILLINOIS

CONSTRUCTION PROJECT NO.	MAINTENANCE PROJECT NO.	DRAWING NO.

FOR INFORMATION ONLY

UPDATE DATE
LETTING DATE

	DATE	DATE	DATE
DESIGNED BY			
DRAWN BY			
CHECKED BY	PWE		
QUANTITIES BY			
SCALED BY	RHC		
CHECKED BY			
DETTGEN 11-76			

REVISED	DATE	REVISED	DATE	REVISED	DATE
	10-24				

USER NAME = Jesker	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING STRUCTURE PLANS STRUCTURE NO. 064-0035
	CHECKED -	REVISED -		
PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -		
PLOT DATE = 8/16/2024	CHECKED -	REVISED -		SHEET 96 OF 175 SHEETS

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC.
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IL DESIGN FIRM LICENSE NO: 184-001220

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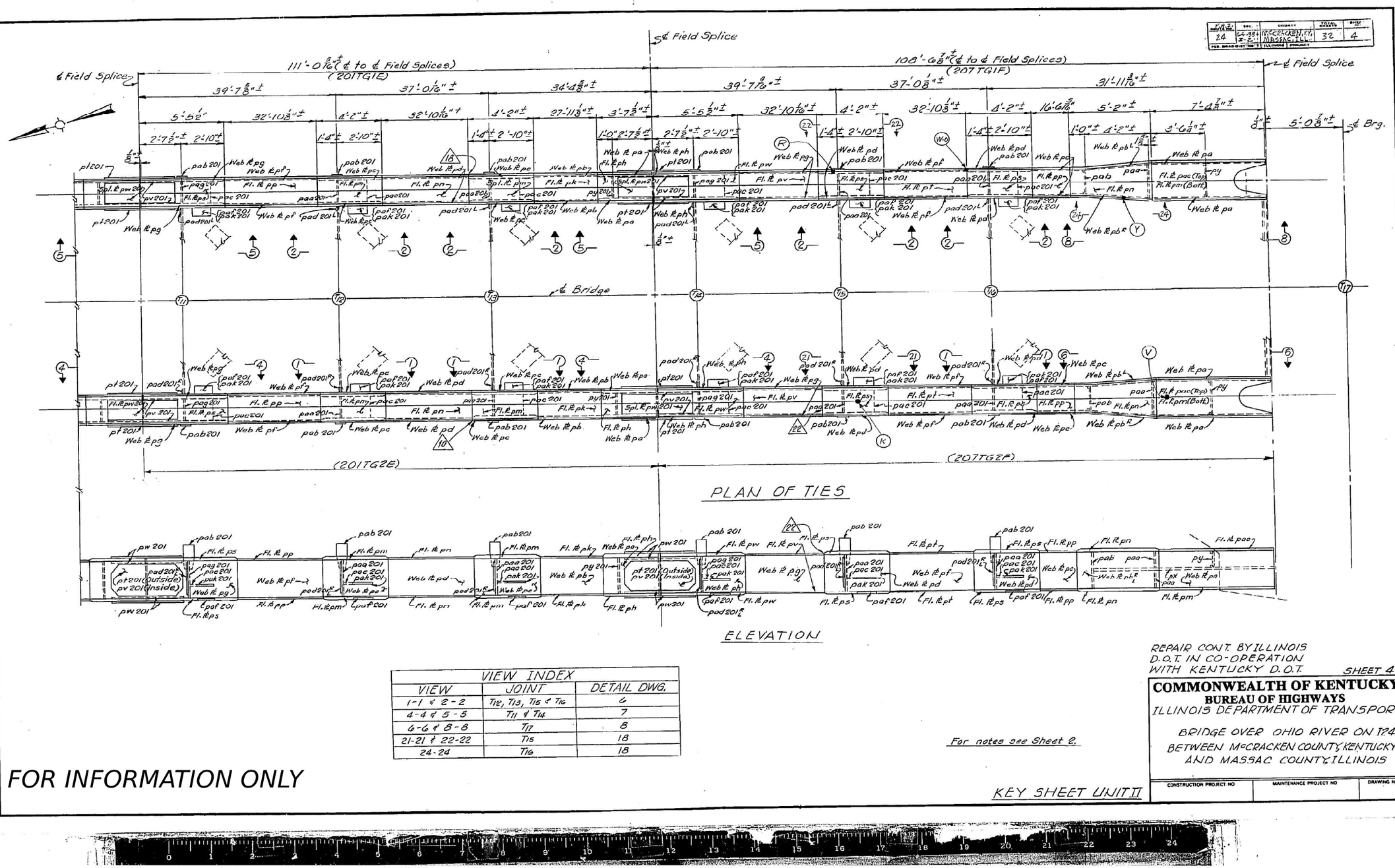
F.A.I. RTE.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
24	64-3B	MCCRACKEN CTY.	32	4
	64-2-1	MASSAC CTY.		
FED. ROAD DIST. NO. 1	ILLINOIS	PROJECT		

UPDATE DATE

LETTING DATE



VIEW INDEX		
VIEW	JOINT	DETAIL DWG.
1-1 & 2-2	T12, T13, T15 & T16	6
4-4 & 5-5	T11 & T14	7
6-6 & 8-8	T17	8
21-21 & 22-22	T15	18
24-24	T16	18

For notes see Sheet 2.

KEY SHEET UNIT II

REPAIR CONT. BY ILLINOIS D.O.T. IN CO-OPERATION WITH KENTUCKY D.O.T.

SHEET 4

COMMONWEALTH OF KENTUCKY
BUREAU OF HIGHWAYS
ILLINOIS DEPARTMENT OF TRANSPORT.

BRIDGE OVER OHIO RIVER ON I-24
BETWEEN McCRACKEN COUNTY, KENTUCKY
AND MASSAC COUNTY, ILLINOIS

CONSTRUCTION PROJECT NO	MAINTENANCE PROJECT NO	DRAWING NO

FOR INFORMATION ONLY

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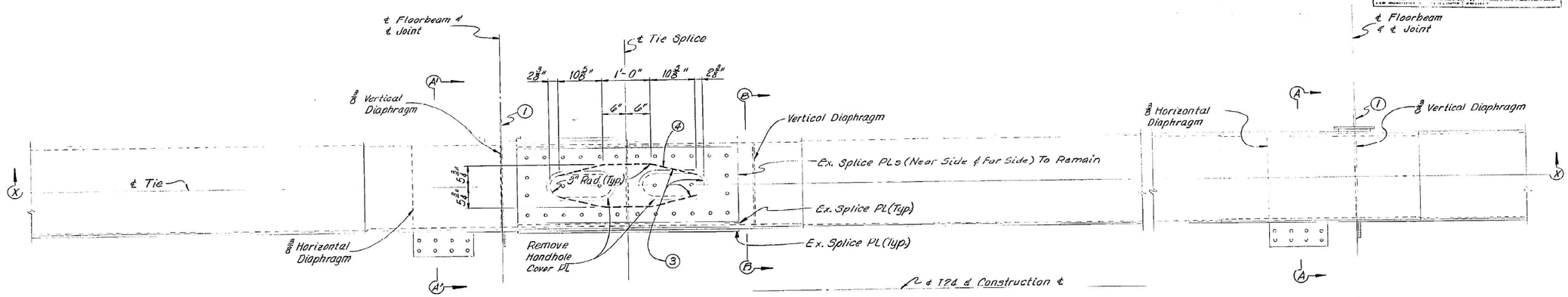
ENGINEERING GEOSPATIAL SERVICES		CHECKED -	REVISED -	
IL DESIGN FIRM LICENSE NO: 184-001220	PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	EXISTING STRUCTURE PLANS STRUCTURE NO. 064-0035
	PLOT DATE = 8/16/2024	CHECKED -	REVISED -	SHEET 97 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	158
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

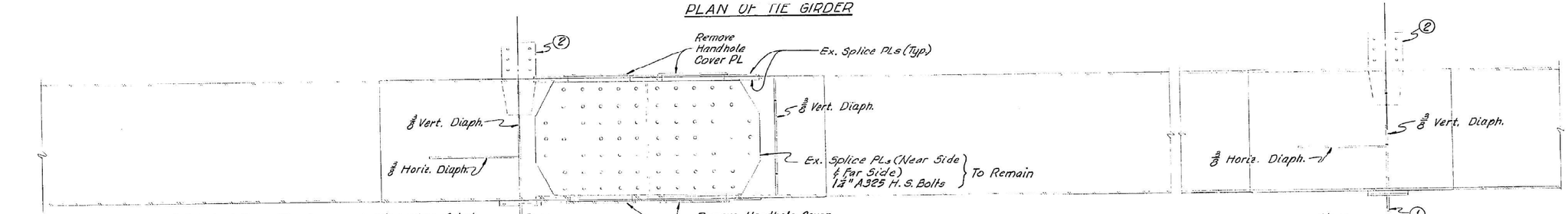
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	62-3B-1	McCRACKEN Ky. MASSAC ILL.	32	5

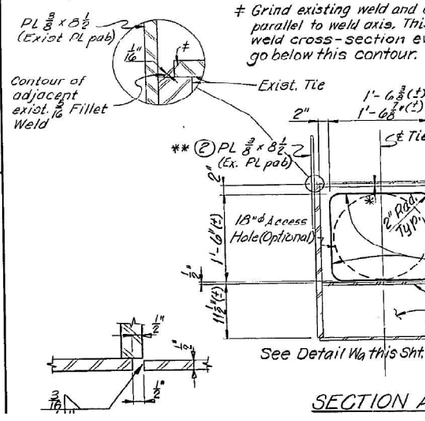
UPDATE DATE

LETTING DATE



PLAN OF TIE GIRDER





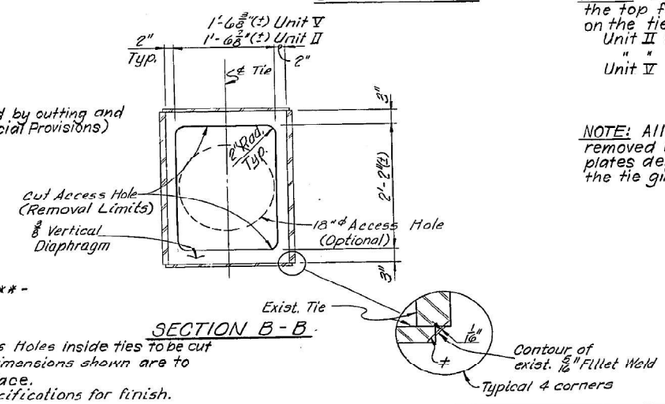
* Grind existing weld and corners to this contour. Grind parallel to weld axis. This grinding is to provide a smooth weld cross-section even if it is necessary to go below this contour.

* = ½" for Sect. A-A
0" for Sect. A'-A'

** - to be removed by cutting and grinding. (See Special Provisions)

SECTION A-A

SECTION X - X



SECTION B-B

Note: Access Holes inside ties to be cut using a jig. Dimensions shown are to finished surface. See Specifications for finish.

NOTE: Access holes have been cut in the top flange at the following locations on the tie girder:
Unit II Upstream - T3, T6 & T11.
" " Downstream - T9 & T14.
Unit V Upstream & Downstream - T3, T10 & T18.

NOTE: All vertical access holes have been removed under prior contract except for plates designated "paa" near the ends of the tie girders.

UNITS II AND V
ACCESS TO JOINTS THRU
BOLTED FIELD SPLICE

NOTES

④ - For Closure PL details see "PLAN, Sht. 7a and "ANCHORAGE FOR ⅜ COVER PLATE", Sheet 10.

① - Existing "Tee" tie support (by others) which may or may not be installed.

② - Original tie support which may or may not have been removed by others.

It is the contractors responsibility to check the status of ① & ② prior to submitting bid.

③ - New access hole shall be cut in top or bottom flange splice. Hole shown in bottom. For details see Sht. 7, 7A, 15 & 15A.

REPAIR CONT. BY ILLINOIS D.O.T. IN CO-OPERATION WITH KENTUCKY D.O.T. SHEET No. 5

COMMONWEALTH OF KENTUCKY
BUREAU OF HIGHWAYS
ILLINOIS DEPARTMENT OF TRANSPORT.

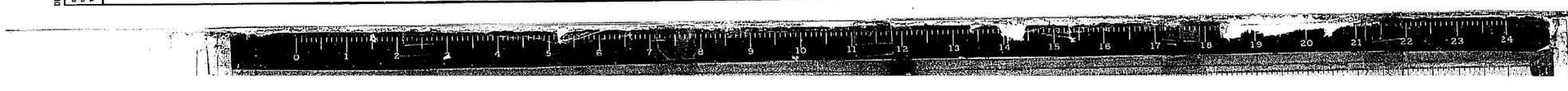
BRIDGE OVER OHIO RIVER ON 124 BETWEEN McCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

CONSTRUCTION PROJECT NO.	MAINTENANCE PROJECT NO.	DRAWING NO.

DESIGNED BY
DETAILED BY
CHECKED BY
CHECKED BY

DIETZGEN 11-76

FOR INFORMATION ONLY



TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM	USER NAME = Jesker	DESIGNED -	REVISED -
	IL DESIGN FIRM LICENSE NO: 184-001220		CHECKED -	REVISED -
		PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -
		PLOT DATE = 8/16/2024	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 98 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	159
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

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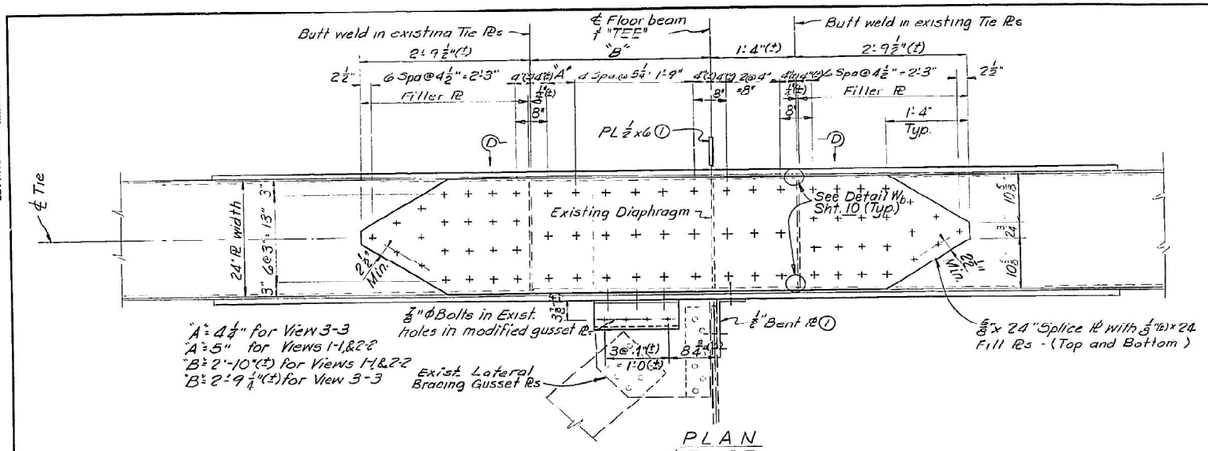
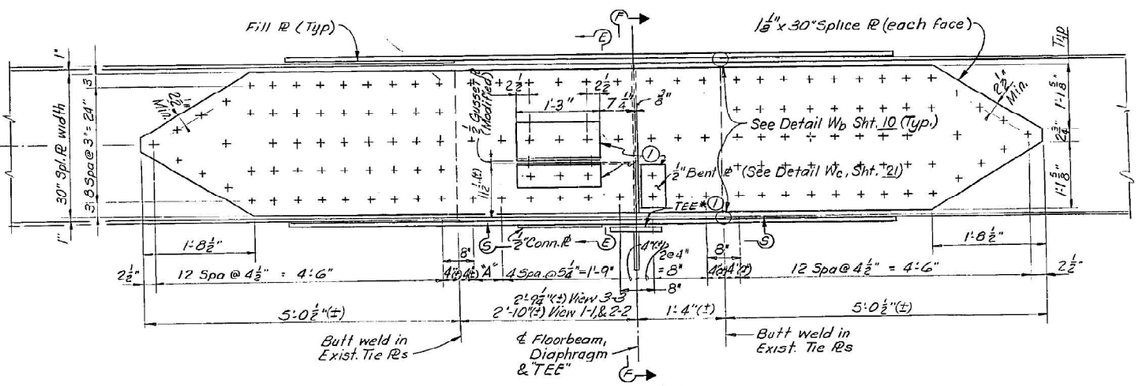
8/16/2024 11:14:41 AM

UPDATE DATE

LETTING DATE

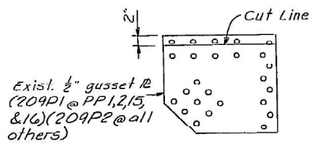


PLAN
at Top of Tie

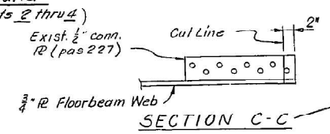


ELEVATION

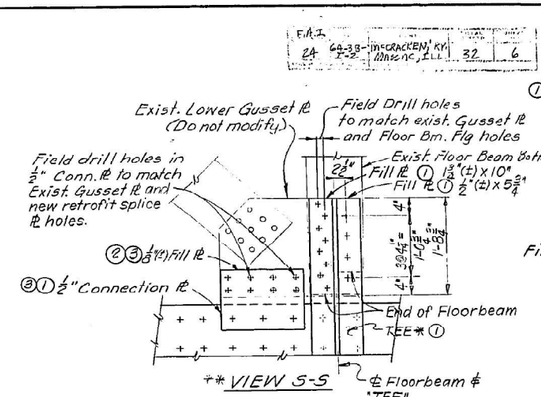
VIEW 1-1, & 3-3
VIEW 2-2 Opp. Hand
(For locations see Shts 2 thru 4)



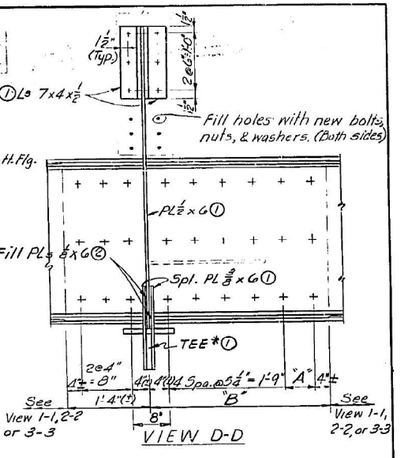
GUSSET PLATE MODIFICATION
(209P2 Shown)

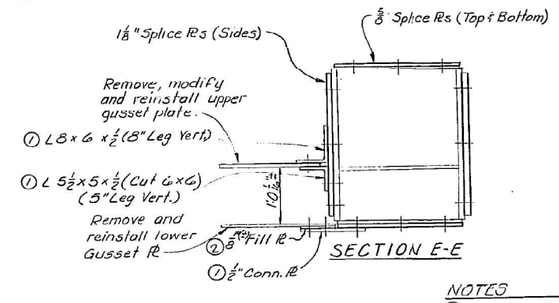


SECTION C-C



** Dimensions in "View S-S" are for "Tees" being newly installed. For existing "Tees" locate and drill holes according to field conditions.





NOTES

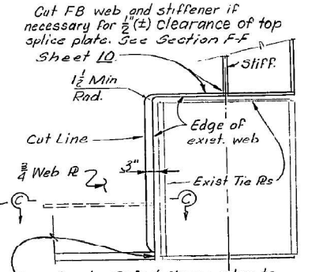
③ If new bottom splice Pl is not installed see Detail A, Sheet 7a.

② May be either AASHTO M222 or ASTM A607, Grade 50 steel.

Work this sheet with Sheets 5 and 10.

* - See "TEE" DETAIL, Sheet 10.

① AASHTO M-222 Steel



FLOORBEAM WEB MODIFICATION

UNIT II
BOLTED SPLICE FOR TIE GIRDER

REPAIR CONT. BY ILLINOIS D.O.T. IN CO-OPERATION WITH KENTUCKY D.O.T. SHEET NO. 6

COMMONWEALTH OF KENTUCKY
BUREAU OF HIGHWAYS
ILLINOIS DEPARTMENT OF TRANSPORT.

BRIDGE OVER OHIO RIVER ON 124
BETWEEN McCRACKEN COUNTY, KENTUCKY
AND MASSAC COUNTY, ILLINOIS

CONSTRUCTION PROJECT NO.	MAINTENANCE PROJECT NO.	DRAWING NO.

DETZGEN 11-76

	DESIGNED BY	DRAWN BY	CHECKED BY	DETAILED BY	TRACED BY
DATE	Last 22				
REVISED					

Revised: Changed Dimension in View 3-3 from 1 7/8" to 1 3/4" (7-7-84)

FOR INFORMATION ONLY

TWM ENGINEERING GEOSPATIAL SERVICES — TWM, INC. WWW.TWM-INC.COM — IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = Jesker	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		CHECKED -	REVISED -	
	PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
	PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 99 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1, BRR-1	MASSAC	236	160
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: P:\2021\210593\E&L - FAI 24 Ohio River Bridge Painting\4 CADD - DWG\4.4 Struc\0640035-78972-099-Existing Plans.dgn

8/16/2024 11:14:42 AM

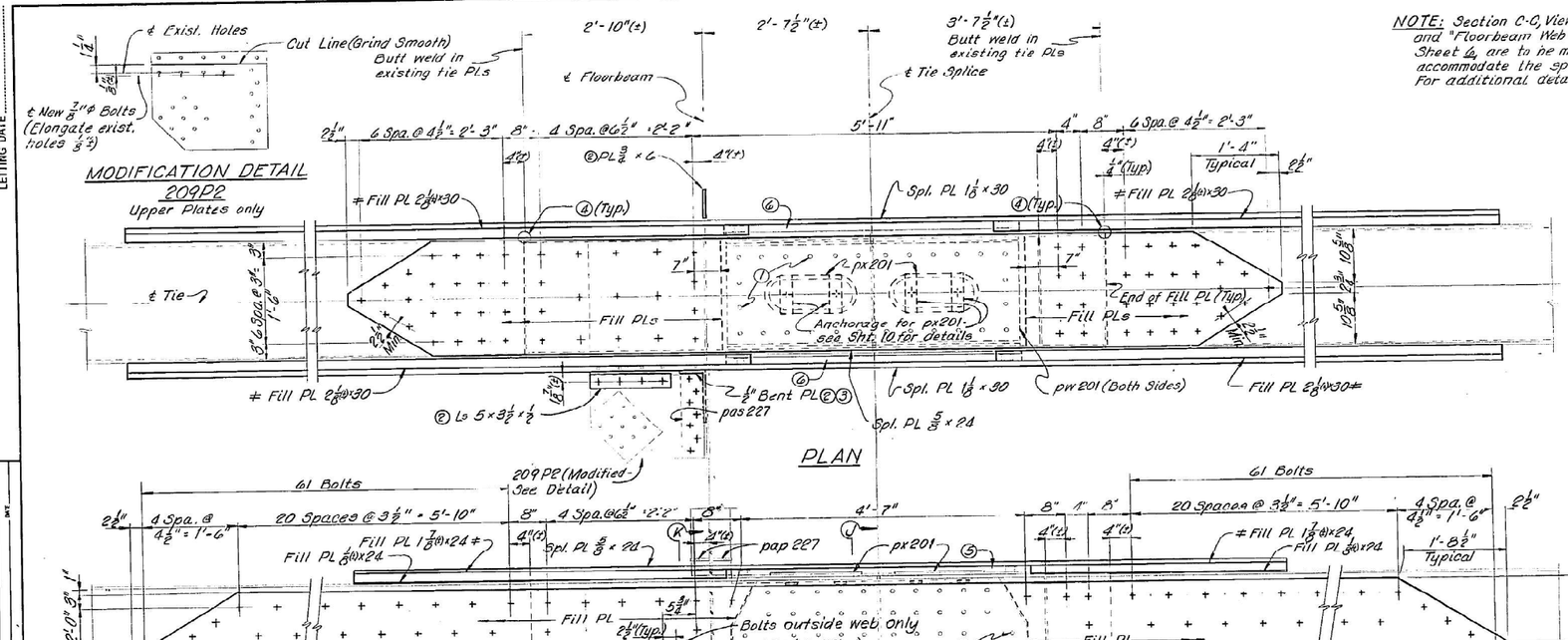
UPDATE DATE.....
LETTING DATE.....

E.A.P.	SEC.	COUNTIES	SHEETS	SHEET
24	24-3B 2-2	McCRACKEN, KY. MASSAC, ILL.	32	7

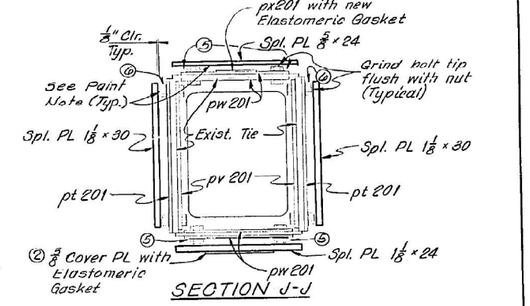
FED. ROAD DIST. NO. 1 | ILLINOIS | FED. AID PROJ.

△ - This sheet to be used when the new access hole is in the bottom flange. See Sheet 7u when the new access hole is in the top flange.

NOTE: Section C-C, View D-D, Section E-E, View S-S and "Floorbeam Web Modification" as shown on Sheet 4 are to be modified where required to accommodate the splice shown on this sheet. For additional details see Sheet 10.



= Fill PL sized assuming existing splice bolts have nut and washer on outside of splice and bolt projection is ground flush with nut; for other splice bolt arrangements, Fill PL thickness shall be adjusted to maintain ⅛" minimum clear to bolts.



PAINT NOTE

The inaccessible areas shall be painted with all coats of paint as called for in the Special Provisions prior to the final bolting of the splice.

NOTES:-

④ - See Detail W4, Sheet 10.
⑤ - See Detail W5, Sheet 21.
⑥ - See Detail W9, Sheet 21.
③ - For details see Detail W3, Sheet 21. Work this sheet with Sheets 5 and 10.
① - Existing bolts, far side of new Splice Plates, to remain in place.
* - See "TEE" DETAIL, Sheet 10.
② - AASHTO M-222 Steel

REPAIR CONT. BY ILLINOIS D.O.T. IN CO-OPERATION WITH KENTUCKY D.O.T.

SHEET No. 7

COMMONWEALTH OF KENTUCKY
BUREAU OF HIGHWAYS
ILLINOIS DEPARTMENT OF TRANSPORT.

BRIDGE OVER OHIO RIVER ON I24 BETWEEN McCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

CONSTRUCTION PROJECT NO.	MAINTENANCE PROJECT NO.	DRAWING NO.

△ UNIT II
BOLTED SPLICE FOR TIE GIRDER

FOR INFORMATION ONLY

DATE | CHKD BY | DRWN BY
REVISED 10-27-23 | PWE | EJA
REVISED 10-27-23 | PWE | EJA
REVISED 11-7-23 | PWE | EJA
DESIGNED BY | DRAWN BY | CHECKED BY
TEEN 11-76

MODEL: Default
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8/16/2024 11:14:44 AM

TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM	USER NAME = jesker	DESIGNED -
	IL DESIGN FIRM LICENSE NO: 184-001220		CHECKED -
		PLOT SCALE = 0.167 ' / in.	DRAWN -
		PLOT DATE = 8/16/2024	CHECKED -

REVISED	-
REVISED	-
REVISED	-
REVISED	-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 100 OF 175 SHEETS

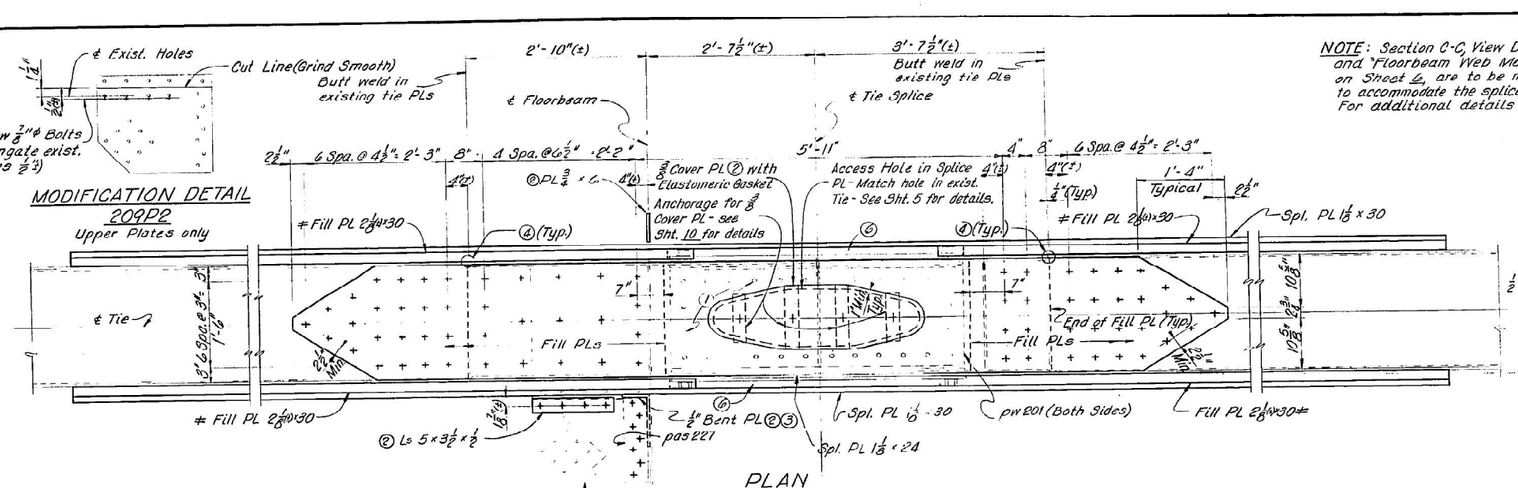
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	161
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

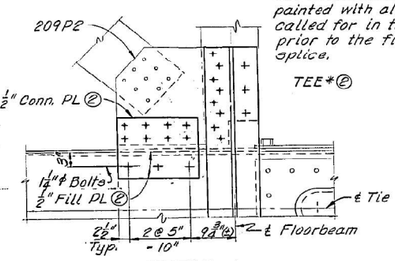
F.A.I. RTE.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	McCRACKEN, KY. MASSAC, ILL.	32	8

FED. ROAD DIST. NO. 1 | ILLINOIS | PROJECT

△ - This sheet to be used when the new access hole is in the top flange. See Sheet 7 when the new access hole is in the bottom flange.

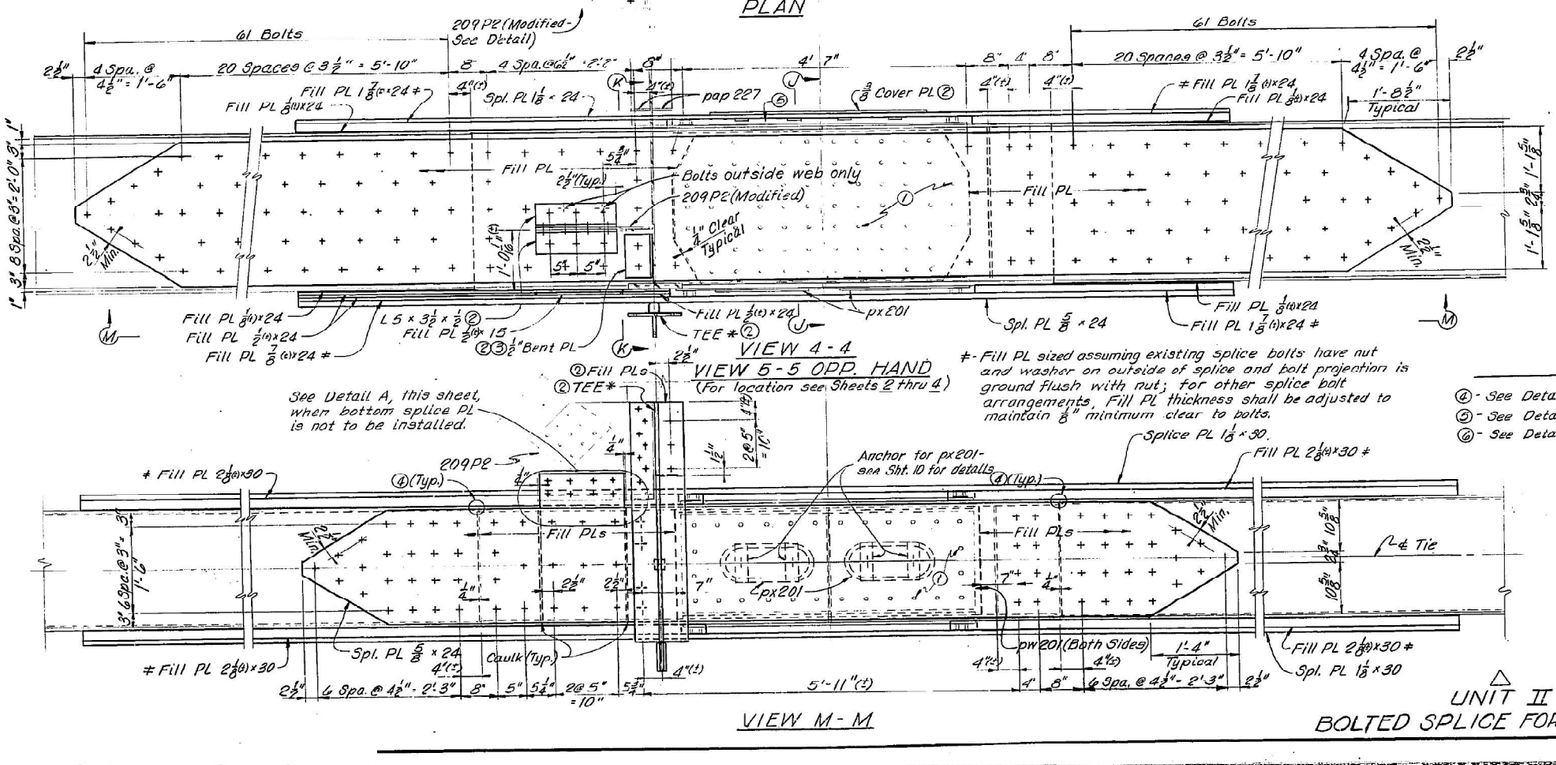
NOTE: Section C-C, View D-D Section E-E View S-S and "Floorbeam Web Modifications" as shown on Sheet 6, are to be modified where required to accommodate the splice shown on this sheet. For additional details see Sheet 10.



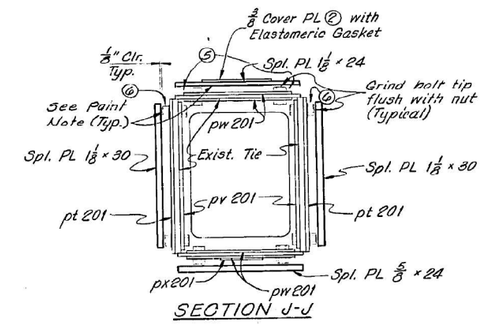


PAINT NOTE

The inaccessible areas shall be painted with all coats of paint as called for in the Special Provisions prior to the final bolting of the splice.



≠ - Fill PL sized assuming existing splice bolts have nut and washer on outside of splice and bolt projection is ground flush with nut; for other splice bolt arrangements, Fill PL thickness shall be adjusted to maintain ⅛" minimum clear to bolts.



NOTES:-

④ - See Detail W4, Sheet 10.
② - See Detail W4, Sheet 21.
⑥ - See Detail W9, Sheet 21.
③ - For details see Detail W9, Sheet 21. Work this sheet with Sheets 5 and 10.
① - Existing bolts, for side of new Splice Plates, to remain in place.
* - See "TEE" DETAIL, Sheet 10.
② - AASHTO M-222 Steel

REPAIR CONT. BY ILLINOIS D.O.T. IN CO-OPERATION WITH KENTUCKY D.O.T.

SHEET No. 7a

COMMONWEALTH OF KENTUCKY
BUREAU OF HIGHWAYS
ILLINOIS DEPARTMENT OF TRANSPORT.

BRIDGE OVER OHIO RIVER ON I24 BETWEEN McCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

CONSTRUCTION PROJECT NO.	MAINTENANCE PROJECT NO.	DRAWING NO.

△ UNIT II
BOLTED SPLICE FOR TIE GIRDER

FOR INFORMATION ONLY

DATE	REVISED BY	DATE	REVISED BY	DATE	REVISED BY
11-14	PWE				

ETIGEN 11-76

UPDATE DATE
LETTING DATE

MODEL: Default
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8/16/2024 11:14:46 AM

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ENGINEERING GEOSPATIAL SERVICES		CHECKED -	REVISED -
IL DESIGN FIRM LICENSE NO: 184-001220	PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -
	PLOT DATE = 8/16/2024	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

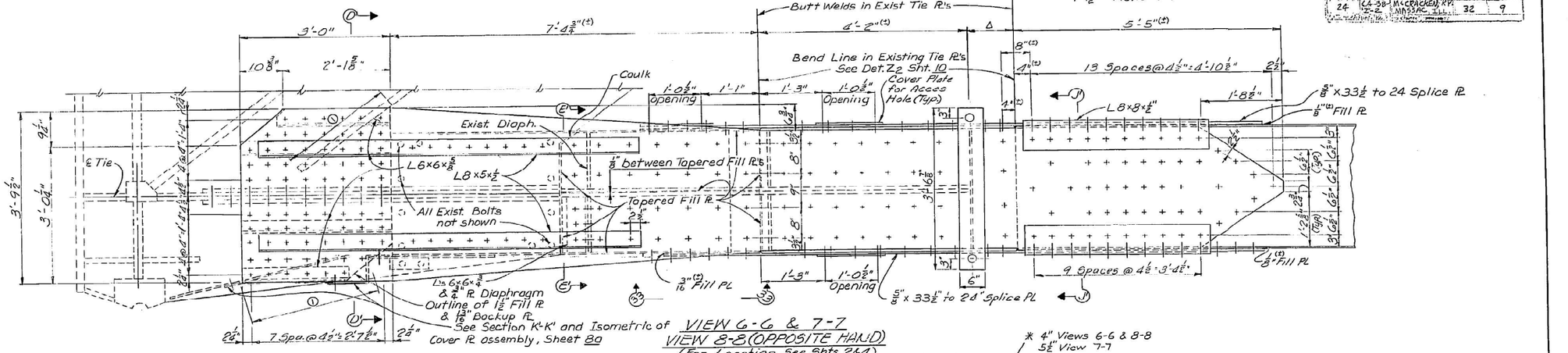
EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 101 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	162
		CONTRACT NO. 78972		
		ILLINOIS	FED. AID PROJECT	

UPDATE DATE.....
LETTING DATE.....

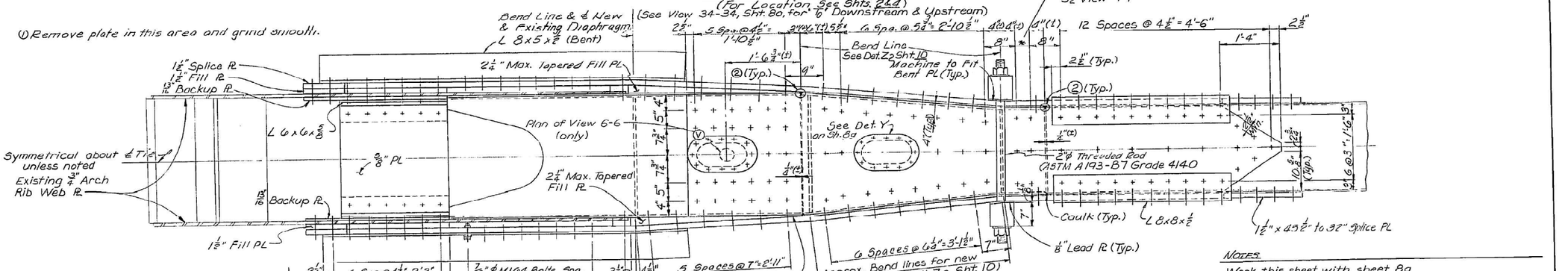
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	McCRACKEN, KY. MASSAC, ILL.	32	9

Δ 1'-0"(±) Views 6-6 & 8-8
1'-1½"(±) Views 7-7

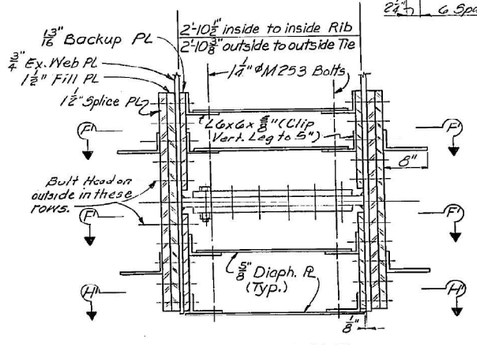


VIEW 6-6 & 7-7
VIEW 8-8 (OPPOSITE HAND)
(For Location, See Shts. 24a)

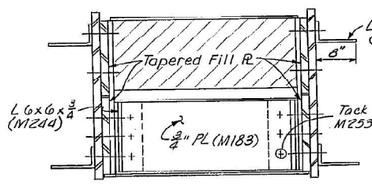
① Remove plate in this area and grind smooth.



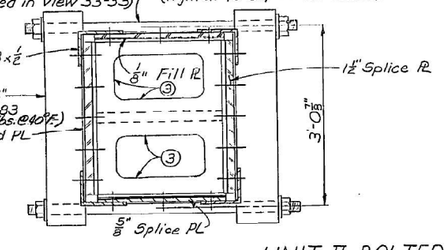
* 4" Views 6-6 & 8-8
5½" View 7-7



SECTION D'-D'



SECTION E'-E'



SECTION J'-J'

NOTES.
Work this sheet with sheet 8a
② See Detail W8, Sheet 10
③ Hole cut in Diaphragm under previous contract

PLAN (TOP VIEW)
(See View 35-35, Sht. 8a, for 10' Downstream & Upstream)
(Bottom View similar except as noted in View 33-33)

UNIT II BOLTED SPLICE FOR TIE GIRDER

FOR INFORMATION ONLY

REPAIR CONT. BY ILLINOIS D.O.T. IN CO-OPERATION WITH KENTUCKY D.O.T. Sheet No. 8

COMMONWEALTH OF KENTUCKY
BUREAU OF HIGHWAYS

ILLINOIS DEPARTMENT OF TRANSPORT.
BRIDGE OVER OHIO RIVER ON I-24
BETWEEN McCRACKEN COUNTY, KY.
AND MASSAC COUNTY, ILLINOIS

CONSTRUCTION PROJECT NO.	MAINTENANCE PROJECT NO.	DRAWING NO.

FOR INFORMATION ONLY

Revised: Added CVN Requirement: 25ft/lbs. @40°F to Bar 7×6" (7-7-80)
Revised: Changed L 8×8×½ to 8×6×½

TIGER 11-76

DATE	REVISED BY	CHECKED BY
6/2/80	RHJ/KLC	EDU

MODEL: Default
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8/16/2024 11:14:48 AM

TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM	USER NAME = jesker	DESIGNED -	REVISED -
	IL DESIGN FIRM LICENSE NO: 184-001220		CHECKED -	REVISED -
		PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -
		PLOT DATE = 8/16/2024	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 102 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	163
		CONTRACT NO. 78972		
		ILLINOIS	FED. AID PROJECT	

UPDATE DATE
LETTING DATE

Typical L 5×8×½ Splice Pl. 1⅛ Fill Pl. 1⅛ Backup Pl. L 6×5×⅝ Arch Rib Web Pl. 2¼" Spa. with Bolts in Splice Pl's 2¼"

SECTION F'-F'

Bolt Pattern Outside of Web Only
For Inside of Web see Sheet 8, Views 6-6 & 7-7
Bolt Pattern Typ. Outside & Inside Web
Match Bolts to Existing holes in Outside Pl of Tie as shown by ⊕
Butt Weld
8" 3½" 9" 8" 3½"
Existing hole in Side Pl of Tie covered by Splice Pl (No Bolts)
2½" (Typ.) 6¾" 6¾" 4@4½"=1'-6" 2½" 6'-2"(±)

VIEW 34-34
(Webs of "To" downstream and upstream)

E.A.I. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	64-3B-1, BRR-1 & 2	McCRACKEN KY. MASSAC, ILL.	32	10

4½" 7" Match Existing holes in Top Pl 5'-2¾" 2@ 4½" · 9" 6¾" 3@4½"=1'-1½" 2½"

VIEW 35-35
("To" downstream & upstream)

Arch Rib Web Pl X K K ℄ Tie ⅞"φ Bolts Spa. with Exist. Bolts

SECTION H'-H'

X- ⅞"φ Bolts spaced with existing ⅞"φ Bolts in access cover Pl

Cut new Access Hole in Existing Tie. Flame Cut Not Allowed
6¼" ¾" R. (AASHTO M222) R=5⅝" R=3⅛" ℄ Tie 45° ¼" ¼" 1'-5½" ⅞"φ Bolt (May Be A307) Drill and tap into New Splice Pl

DETAIL Y
(Location shown on Sh.8)
(Contractor's Option)

Note: Work this sheet with sheet 8

FOR INFORMATION ONLY

REPAIR CONT. BY ILLINOIS D.O.T. IN CO-OPERATION WITH KENTUCKY D.O.T. Sht. No. 8a

COMMONWEALTH OF KENTUCKY
BUREAU OF HIGHWAYS
ILLINOIS DEPARTMENT OF TRANSPORT.

BRIDGE OVER OHIO RIVER ON I24 BETWEEN McCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

CONSTRUCTION PROJECT NO.	MAINTENANCE PROJECT NO.	DRAWING NO.

13/16" Backup Pl. ⅝" Seal Pl. (bend) 5/8" Pl. Diaphragm 8½"(±) ⅝"φ Z Pl.-weld ⅝" Nuts on Top for ⅞"φ Machine Bolts

SECTION K'-K'

2'-8½" 2'-10½" 2'-10½" Cut Exist. access cover Pl. to clear 13/16" Backup Pl. and drill holes for ⅞"φ Bolts as shown in Section H'-H' & Section K'-K'

ISOMETRIC OF COVER PLATE ASSEMBLY

4½" 4 Spa.@4½"=2'-1" 4½" 4 Spa.@4½"=1'-6" 3" 2½"

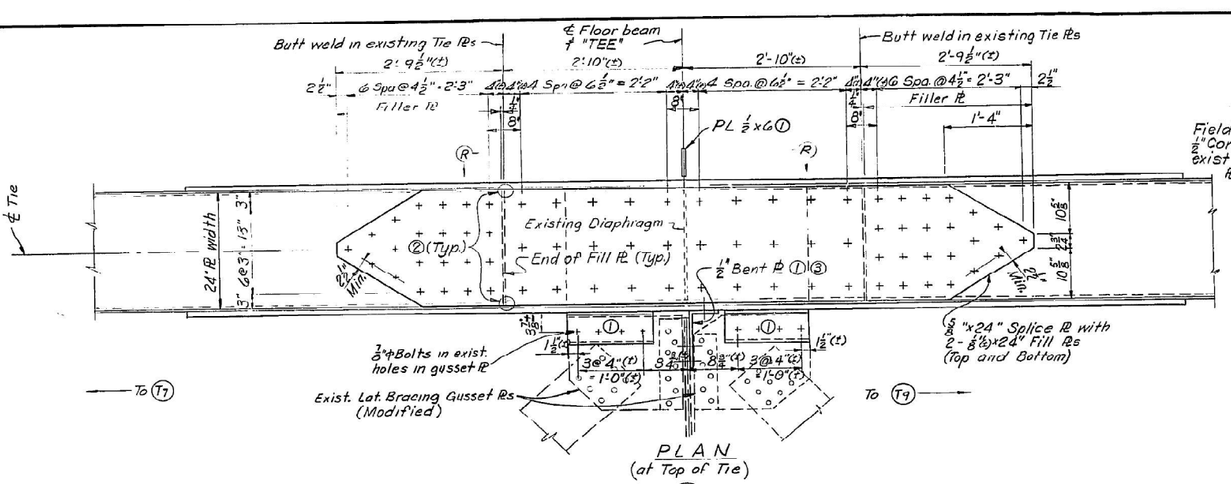
VIEW 33-33

UNIT II BOLTED SPLICE FOR TIE GIRDER

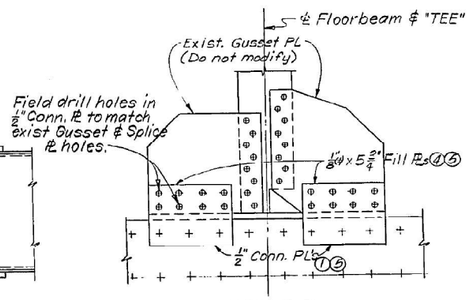
FOR INFORMATION ONLY

UPDATE DATE

LETTING DATE

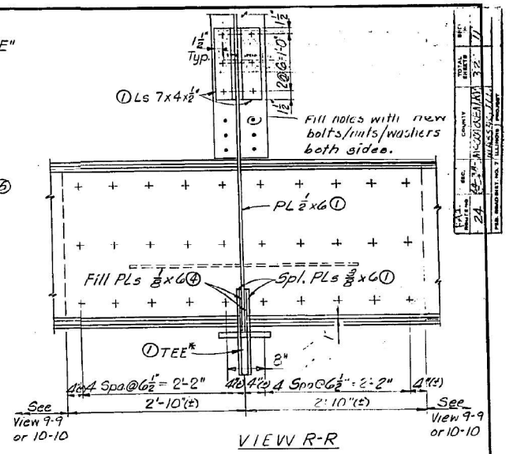


PLAN
(at Top of Tie)

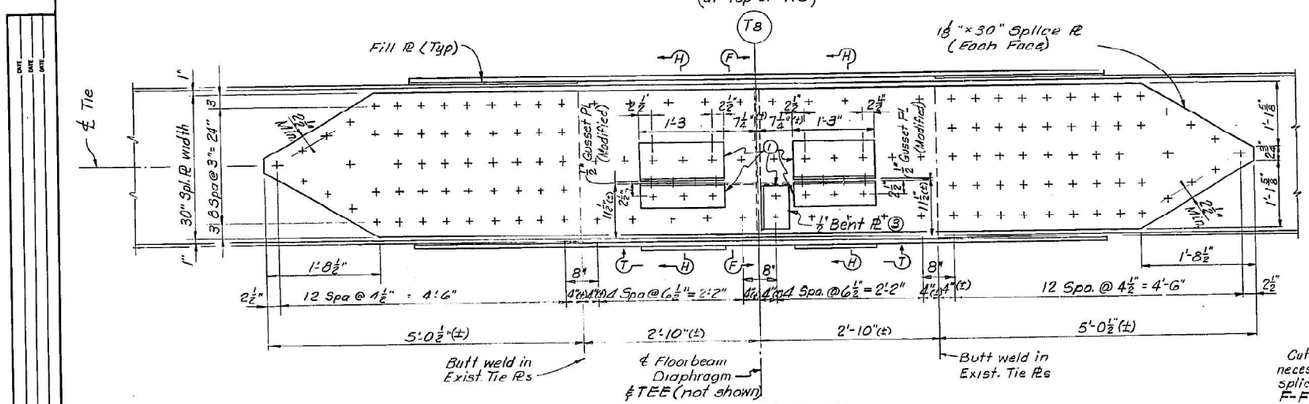


VIEW T-T

"TEE" not shown. See View S-S Sht. 6 for similar details and dimensions.



VIEW R-R

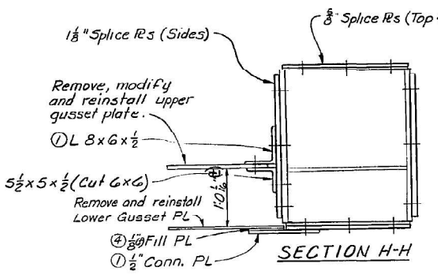


ELEVATION

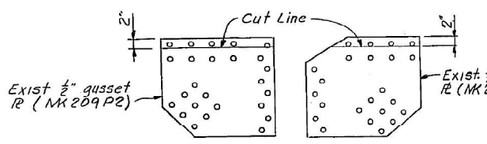
VIEW 9-9

VIEW 10-10 OPPOSITE HAND

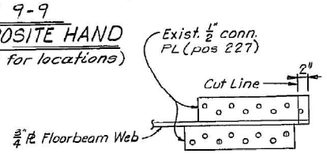
(See Sheet 3 for locations)



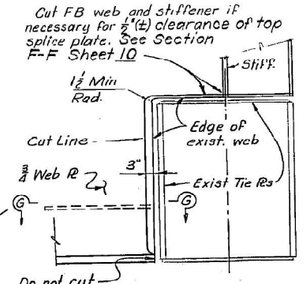
SECTION H-H



GUSSET PLATE MODIFICATION



SECTION G-G



FLOORBEAM WEB MODIFICATION

NOTES

⑤ If new bottom splice PL is not installed see Detail A, Sheet 7a.

④ May be either AASHTO M-222 or ASTM A607 Grade 50 steel.

Work this sheet with Sheets 5 and 10.

* - See "TEE" DETAILS, Sheet 10.

① AASHTO M-222

② See Detail We, Sht. 10

③ See Detail We, Sht. 21

REPAIR CONT. BY ILLINOIS D.O.T. IN CO-OPERATION WITH KENTUCKY D.O.T. SHEET NO. 9

COMMONWEALTH OF KENTUCKY
BUREAU OF HIGHWAYS
ILLINOIS DEPARTMENT OF TRANSPORT.

BRIDGE OVER OHIO RIVER ON 124
BETWEEN McCRACKEN COUNTY, KENTUCKY
AND MASSAC COUNTY, ILLINOIS

CONSTRUCTION PROJECT NO.	MAINTENANCE PROJECT NO.	DRAWING NO.

UNIT II
BOLTED SPLICE FOR TIE GIRDER

FOR INFORMATION ONLY

TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM	USER NAME = Jesker	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	IL DESIGN FIRM LICENSE NO: 184-001220		CHECKED -	REVISED -	
		PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
		PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 104 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	165
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

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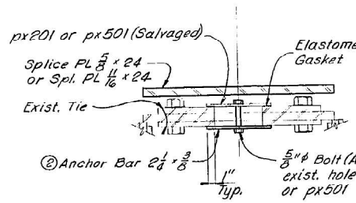
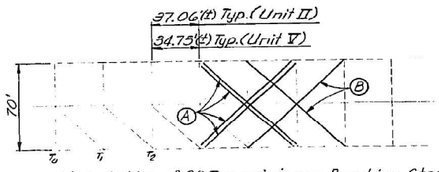
8/16/2024 11:14:52 AM



ANCHORAGE FOR px201 OR px501

(For location see "PLAN", Sheet 7 or 15 or "VIEW M-M," Sheet 7a, or "VIEW m-m", Sheet 15a.)

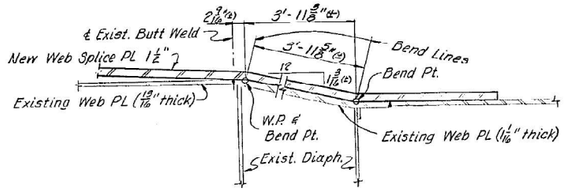


Use Cables of 28 Ton minimum Breaking Strength when repairing Joints (Based on 50 mph wind);

Ⓐ { T1 thru T4 and T13 thru T16 (Unit II) / T1 thru T3 and T16 thru T20 (Unit V) } Use 2 Cables

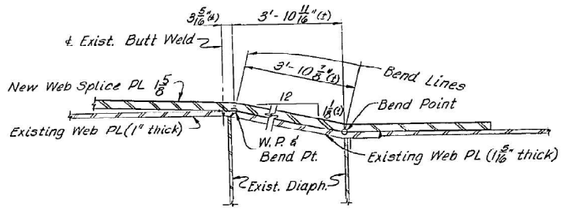
Ⓑ All other Joints - Use 1 Cable

TEMPORARY LATERAL BRACING



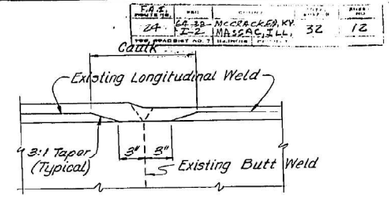
DETAIL Z2

(Taken from original Shop Plans) (UNIT II)



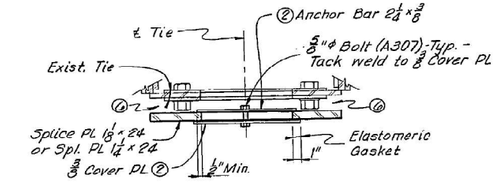
DETAIL Z5

(Taken from original Shop Plans) (UNIT V)



DETAIL W6

Grind all longitudinal weldments 3" on either side of the apparent existing butt weld ℄. Taper ends as shown. Grind welds after Splice Plates are installed. Clean, prime, paint and caulk to the limits indicated. Typical at all locations of Units II and V.



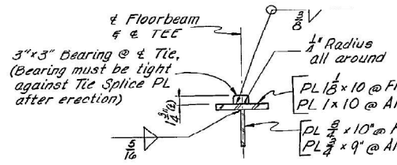
ANCHORAGE FOR 3/8 COVER PLATE

(For location see "VIEW M-M" Sheet 7, "VIEW m-m, Sheet 15 or "PLAN", Sheet 7a or 15a.)

7 - If new bottom horizontal splice PL is not installed see Detail A, Sheet 7a.

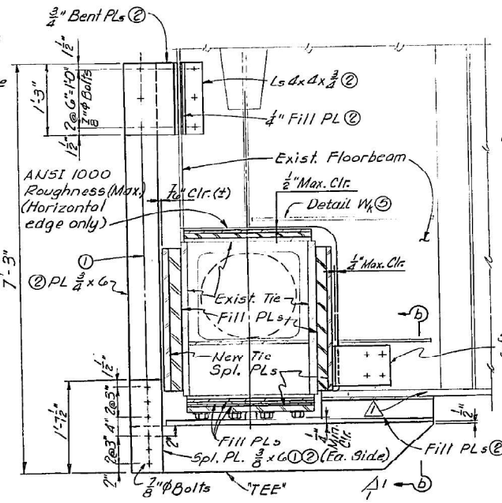
8 - If new bottom horizontal splice PL is not installed, Fill PLs called for in 3 shall be 1 1/4 x 10.

9 - May be either AASHTO M-222 or ASTM A607, Grade 50 steel.



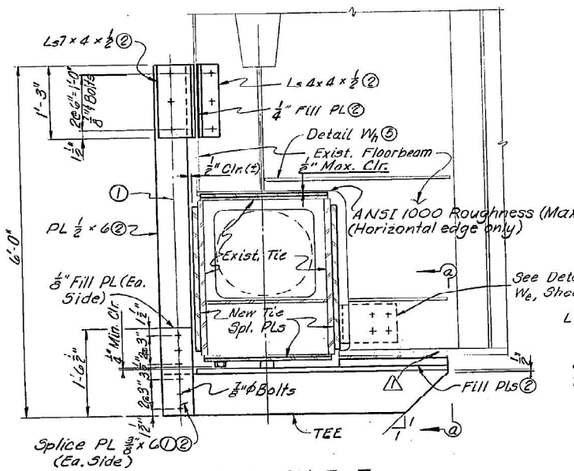
"TEE" DETAIL

(2)

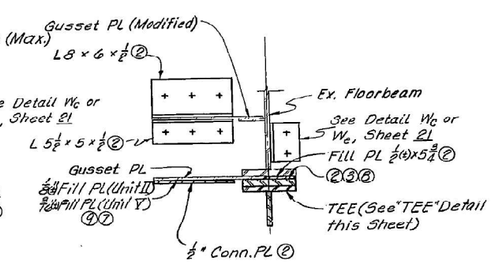


SECTION K-K

(If new bottom horizontal splice PL is not installed see Section F-F for tie girder support details.)

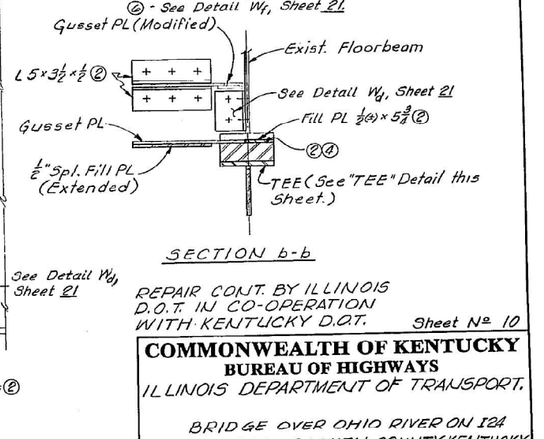


SECTION F-F



SECTION a-a

⚠ - See Retrofit Details of Contract № 93488, now in progress



SECTION b-b

REPAIR CONT. BY ILLINOIS D.O.T. IN CO-OPERATION WITH KENTUCKY D.O.T.

Sheet № 10

NOTES

Work this sheet with Sheets 6 thru 9 and 14 thru 17.

1 - Field drilling holes in each end of 6" plate is optional.

2 - AASHTO M-222 Steel.

3 - Fill PL 1 3/4(±) x 10 (Unit II) or Fill PL 1 15/16 x 10 (Unit V)

4 - For access to Tie Girder thru Bottom Flange - Sheets 7 and 15 details: Fill PL 4 3/4(±) x 10 (Unit II) or Fill PL 4 1/2(±) x 10 (Unit V). For access to Tie Girder thru Top Flange - Sheets 7a and 15a details: Fill PL 3 3/4(±) x 10 (Unit II) or Fill PL 3 15/16(±) x 10 (Unit V).

5 - For Detail W6 & Detail W8 see Sheet 21.

6 - See Detail W7, Sheet 21.

COMMONWEALTH OF KENTUCKY
BUREAU OF HIGHWAYS
ILLINOIS DEPARTMENT OF TRANSPORT.

BRIDGE OVER OHIO RIVER ON I24 BETWEEN McCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

CONSTRUCTION PROJECT NO.	MAINTENANCE PROJECT NO.	DRAWING NO.

MISCELLANEOUS DETAILS

FOR INFORMATION ONLY

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	166
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 105 OF 175 SHEETS

USER NAME = Jesker	DESIGNED -	REVISED -
	CHECKED -	REVISED -
PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -
PLOT DATE = 8/16/2024	CHECKED -	REVISED -

TWM, INC. WWW.TWM-INC.COM
ENGINEERING GEOSPATIAL SERVICES
IL DESIGN FIRM LICENSE NO: 184-001220

UPDATE DATE
LETTING DATE

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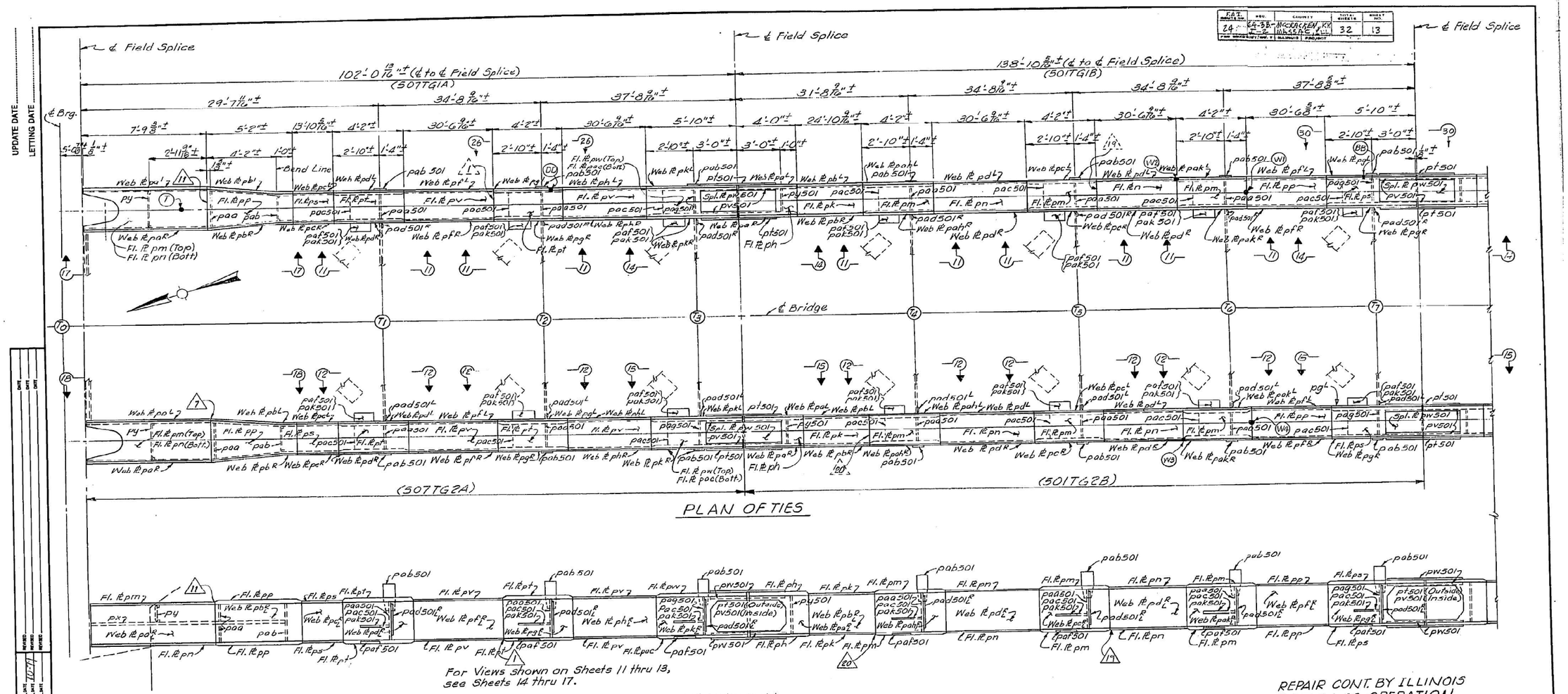
8/16/2024 11:14:54 AM

FAI ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1, BRR-1	McCRACKEN, KY & MASSAC, IL	32	13
F.A.P. NO.	WIDTH	LOADING	PROJECT	

UPDATE DATE

LETTING DATE



PLAN OF TIES

For Views shown on Sheets 11 thru 13, see Sheets 14 thru 17.

ELEVATION

VIEW INDEX		
VIEW	JOINT	DETAIL DWG.
11-11 & 12-12	T1, T2, T4, T5 & T6	14
14-14 & 15-15	T3 & T7	15
17-17 & 18-18	T0	16
26-26	½	19
30-30	T7	19

(T) (W-2), etc. indicate 4"ϕ core samples removed, See Dwgs by Ill. D.O.T.

(11) priority 2"ϕ Sample labeled 11 (typ.), see Dwgs by Ill. D.O.T.

NOTE

Reference Plans are Nashville Bridge Co. Contract CG737, Sheets E503, E504, & 501 thru 593 which will be made available to the Contractor on request.

KEY SHEET UNIT V

REPAIR CONT. BY ILLINOIS D.O.T. IN CO-OPERATION WITH KENTUCKY D.O.T.

SHEET 11

COMMONWEALTH OF KENTUCKY
BUREAU OF HIGHWAYS
ILLINOIS DEPARTMENT OF TRANSPORT.
BRIDGE OVER OHIO RIVER ON I24
BETWEEN McCRACKEN COUNTY, KENTUCKY
AND MASSAC COUNTY, ILLINOIS

CONSTRUCTION PROJECT NO.	MAINTENANCE PROJECT NO.	DRAWING NO.

FOR INFORMATION ONLY

EN 11-76

	DATE	REVISED BY

CHECKED BY: RH MC

DATE 10-11

DATE

DATE

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8/16/2024 11:14:55 AM

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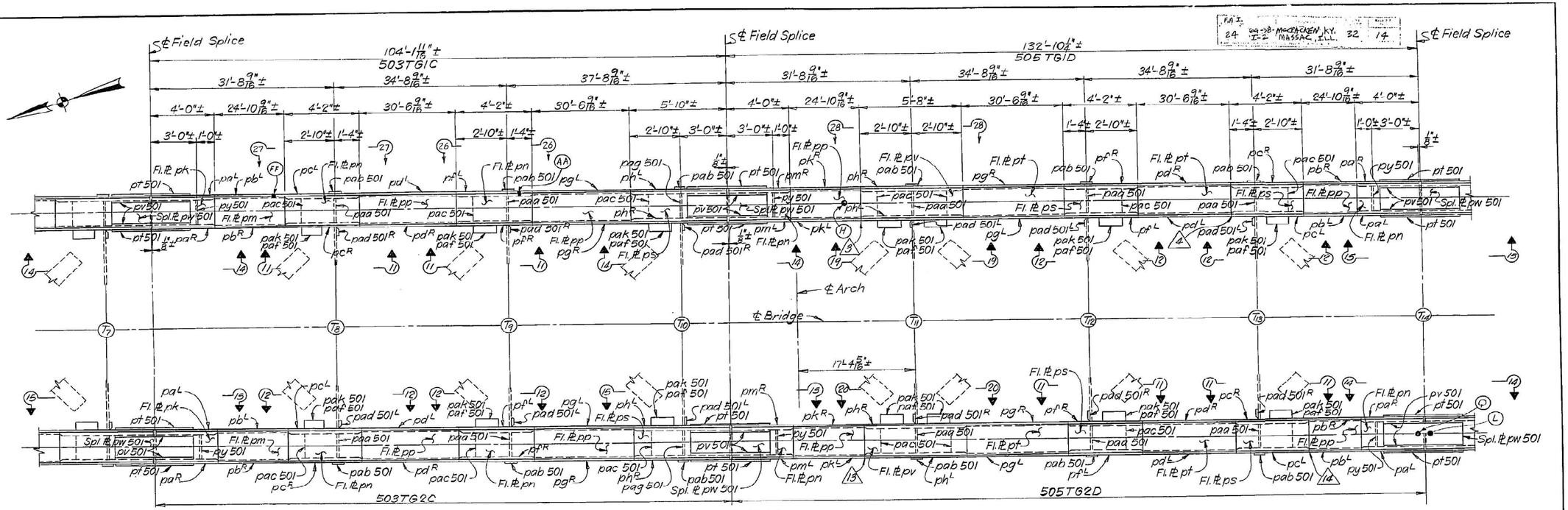
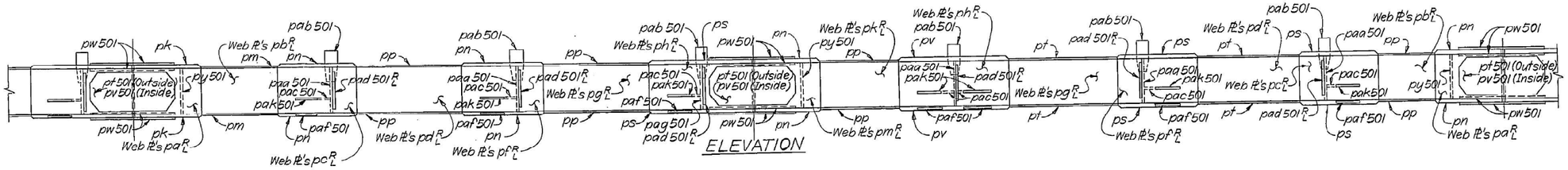
IL DESIGN FIRM LICENSE NO: 184-001220		CHECKED -	REVISED -	
	PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
	PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 106 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	167
		CONTRACT NO. 78972		
		ILLINOIS	FED. AID PROJECT	



PLAN OF TIES



ELEVATION

VIEW INDEX		
VIEW	JOINT	DETAIL DWG.
11-11 & 12-12	T8, T9, T12 & T13	14
14-14 & 15-15	T7, T10 & T14	15
19-19 & 20-20	T11	17
26-26	T9	19
27-27	T8	19
28-28	T11	19

For notes see Sheet 11.

KEY SHEET UNIT V

REPAIR CONT. BY ILLINOIS D.O.T. IN CO-OPERATION WITH KENTUCKY D.O.T.

SHEET 12

COMMONWEALTH OF KENTUCKY
BUREAU OF HIGHWAYS
ILLINOIS DEPARTMENT OF TRANSPORT.

BRIDGE OVER OHIO RIVER ON I24 BETWEEN McCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

CONSTRUCTION PROJECT NO.	MAINTENANCE PROJECT NO.	DRAWING NO.

FOR INFORMATION ONLY

TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = jesker	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
			CHECKED -	REVISED -	
		PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
		PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 107 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	168
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

UPDATE DATE
LETTING DATE

DETGEN 11-76

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F.A.I. ROUTE NO.	SEC.	COUNTIES	TOTAL SHEETS	SHEET NO.
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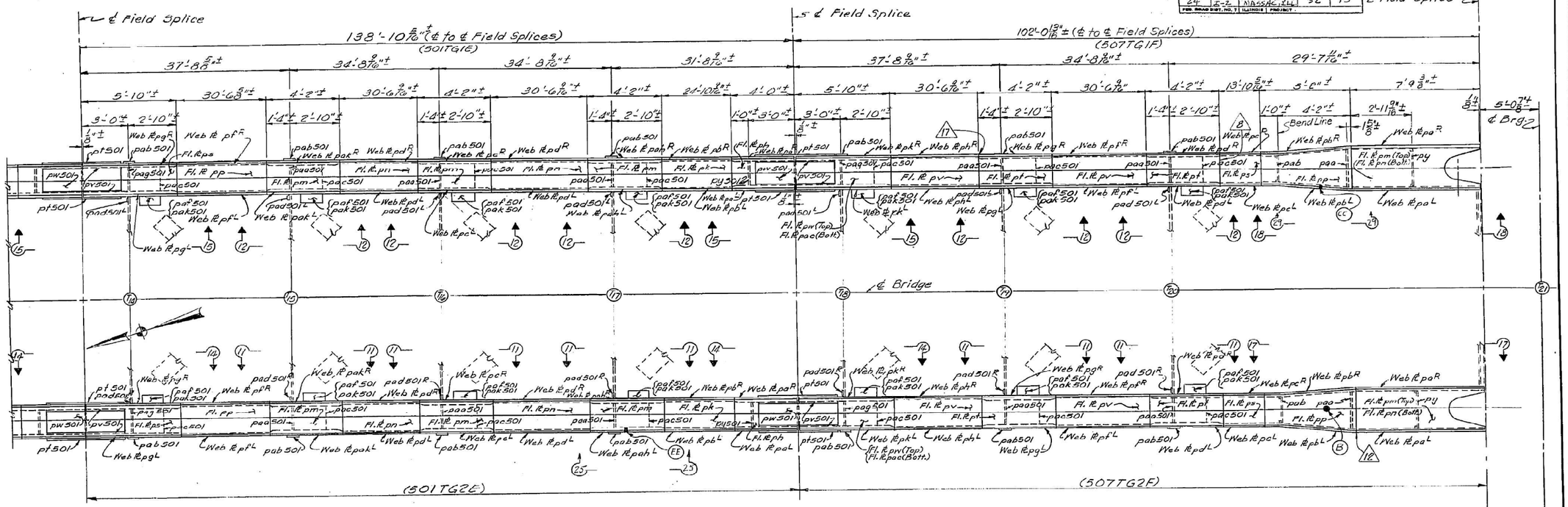
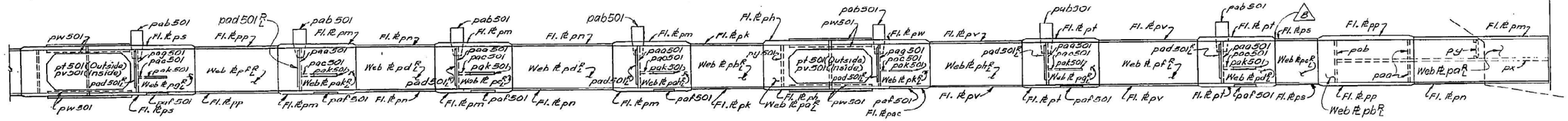
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

UPDATE DATE

LETTING DATE



PLAN OF TIES



ELEVATION

VIEW INDEX

VIEW	JOINT	DETAIL DWG.
11-11 & 12-12	T16, T16, T17, T19 & T20	14
14-14 & 15-15	T14 & T18	15
17-17 & 18-18	T21	16
25-25	T11	19
29-29	T20	19

For notes see Sheet 11.

REPAIR CONT. BY ILLINOIS D.O.T. IN CO-OPERATION WITH KENTUCKY D.O.T.

SHEET 13

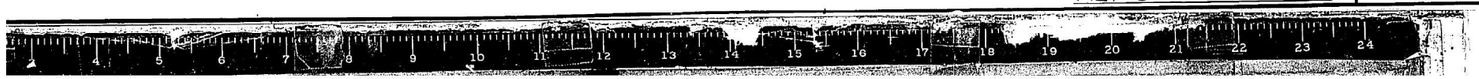
COMMONWEALTH OF KENTUCKY
BUREAU OF HIGHWAYS
ILLINOIS DEPARTMENT OF TRANSPORT.

BRIDGE OVER OHIO RIVER ON I24
BETWEEN McCRACKEN COUNTY, KENTUCKY
AND MASSAC COUNTY, ILLINOIS

CONSTRUCTION PROJECT NO.	MAINTENANCE PROJECT NO.	DRAWING NO.

KEY SHEET UNIT V

FOR INFORMATION ONLY



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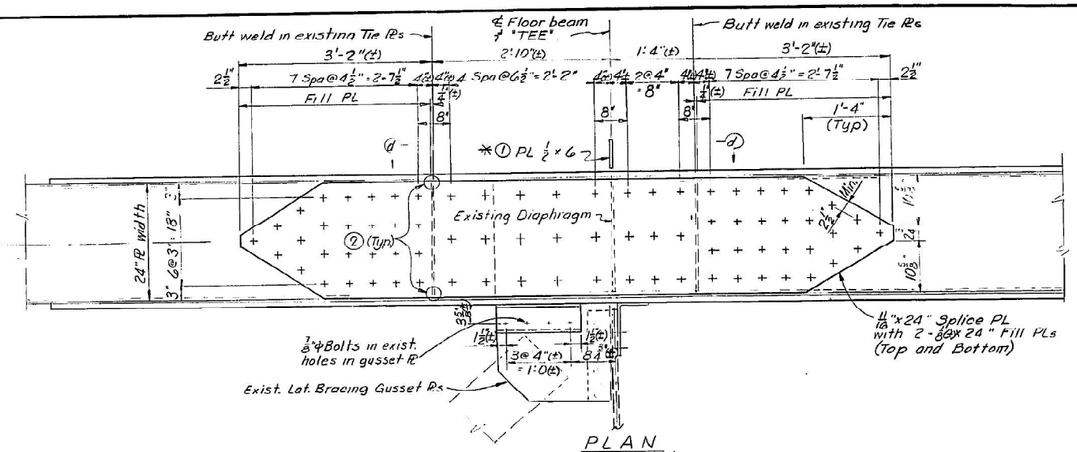
TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM	USER NAME = Jesker	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	IL DESIGN FIRM LICENSE NO: 184-001220		CHECKED -	REVISED -	
		PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
		PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

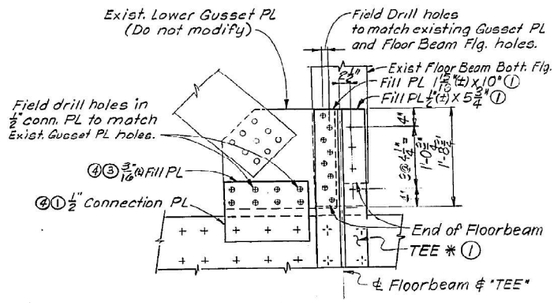
EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 108 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	169
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

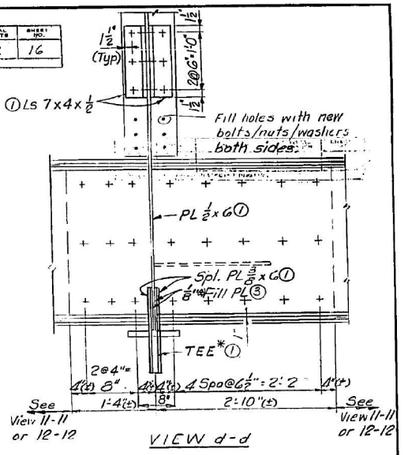
UPDATE DATE

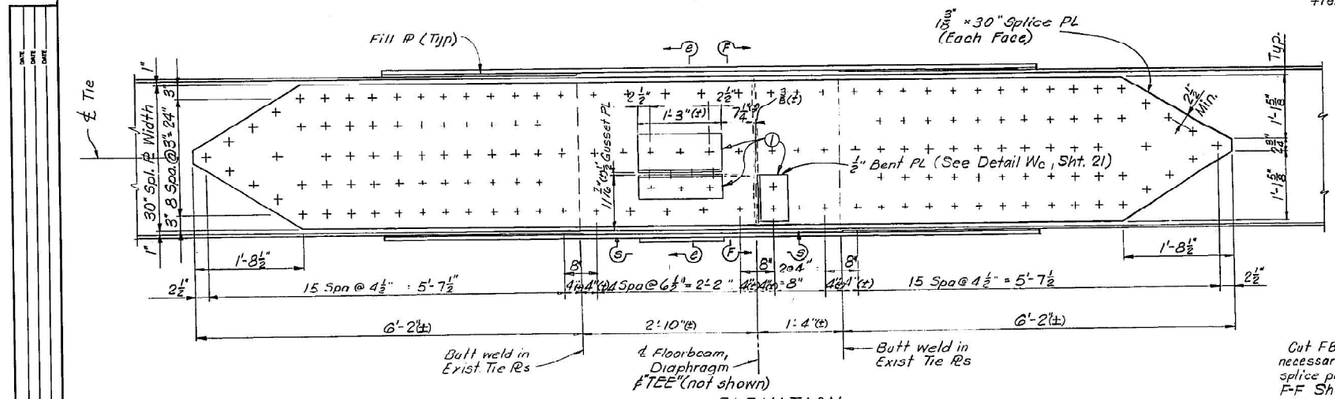
LETTING DATE

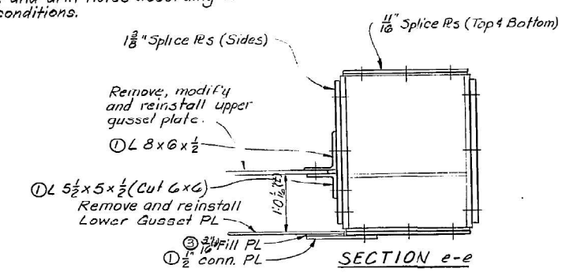


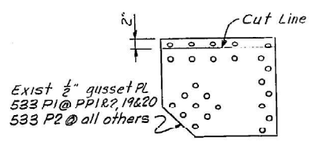


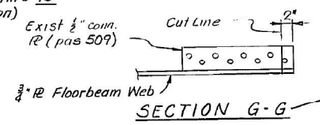
** Dimensions in "View S-S" are for "Tees" being newly installed. For existing "Tees" locate and drill holes according to field conditions.

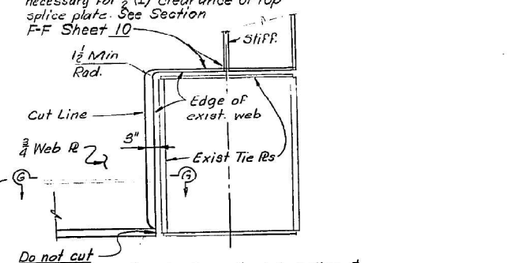












NOTES

Work this sheet with Sheets 5 and 10.

* - See "TEE" DETAIL, Sheet 10
① - AASHTO M-222, Steel
② - See Detail Wb Sht. 10
③ - May be either AASHTO M222 or ASTM A607 Grade 50 steel.
④ - If new bottom splice PL is Not installed see Detail A, Sheet 7a.

REPAIR CONT. BY ILLINOIS D.O.T. IN CO-OPERATION WITH KENTUCKY D.O.T. SHEET NO. 14

COMMONWEALTH OF KENTUCKY
BUREAU OF HIGHWAYS
ILLINOIS DEPARTMENT OF TRANSPORT.

BRIDGE OVER OHIO RIVER ON 124
BETWEEN McCRACKEN COUNTY, KENTUCKY
AND MASSAC COUNTY, ILLINOIS

CONSTRUCTION PROJECT NO.	MAINTENANCE PROJECT NO.	DRAWING NO.

UNIT V
BOLTED SPLICE FOR TIE GIRDER

F.A.P. RTE.	DIST.	COUNTY	TOTAL SHEETS	SHEET NO.
24	64-38	McCRACKEN/MASSAC	32	16
FED. ROAD DIST. NO. 1	ILLINOIS	PROJECT		

FOR INFORMATION ONLY

DATE DESIGNED DATE DRAWN DATE CHECKED

REVISED REVISED REVISED REVISED

DESIGNED - EWE DRAWN - MKT CHECKED - MKT

DATE 10-7-24 DATE 10-7-24

DATE DATE

DESIGN F... DESIGN S... DESIGN ST...

REVISED REVISED REVISED

DATE DATE DATE

APPROVED 11-76

TWM, INC. WWW.TWM-INC.COM	USER NAME = jesker	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING STRUCTURE PLANS STRUCTURE NO. 064-0035	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
ENGINEERING GEOSPATIAL SERVICES		CHECKED -	REVISED -			24	(64-3B)BP-1,BRR-1	MASSAC	236	170
IL DESIGN FIRM LICENSE NO: 184-001220	PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -		SHEET 109 OF 175 SHEETS				CONTRACT NO. 78972	
	PLOT DATE = 8/16/2024	CHECKED -	REVISED -					ILLINOIS	FED. AID PROJECT	

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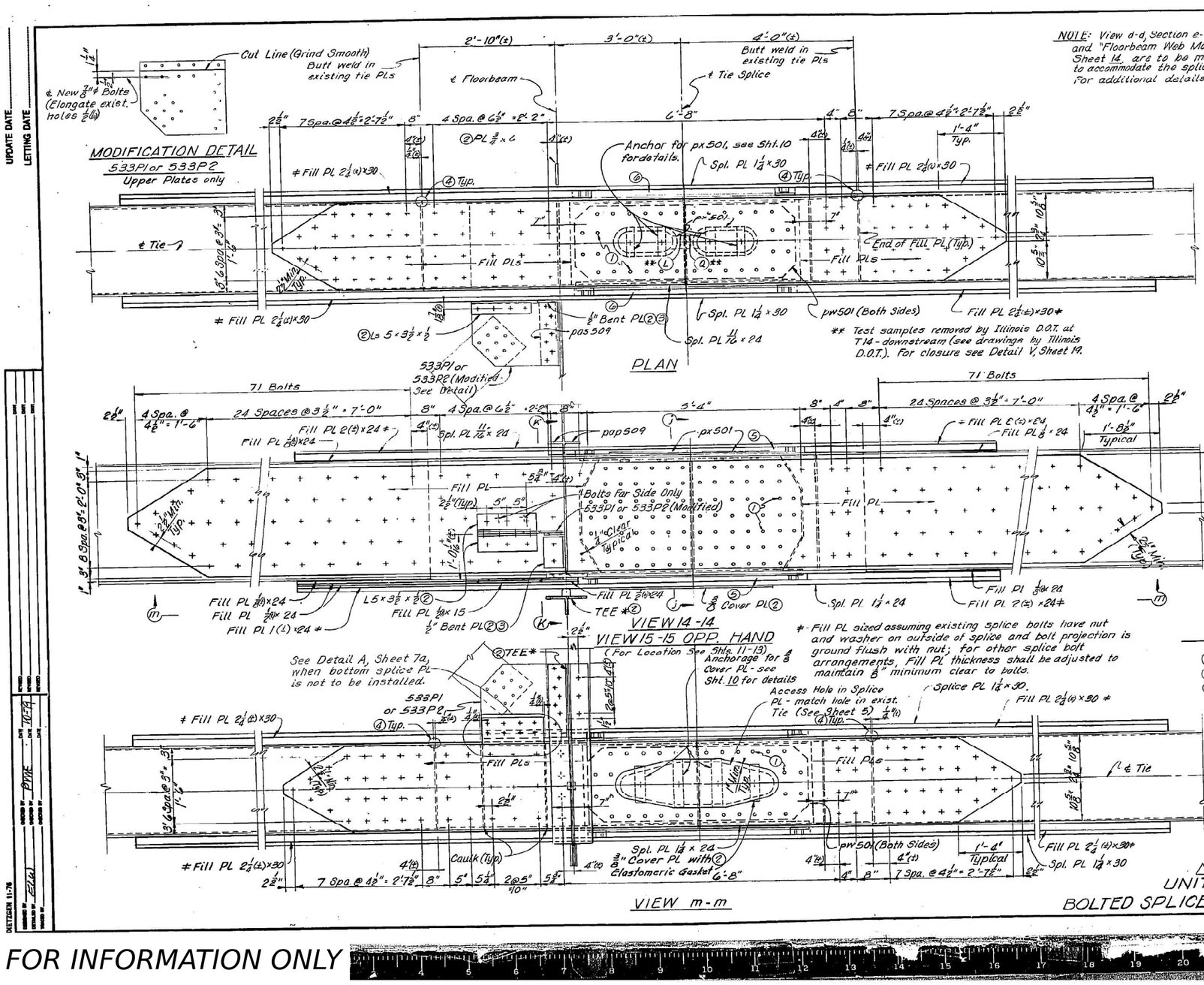
8/16/2024 11:15:01 AM

UPDATE DATE

LETTING DATE

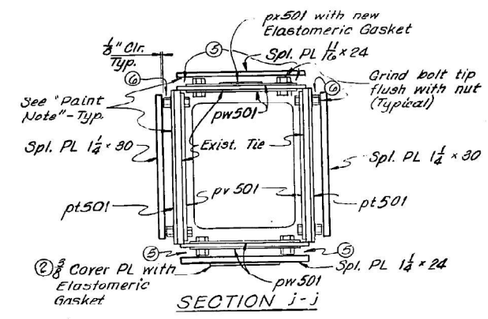


NOTE: View d-d, Section e-e, Section G-G, View s-s and "Floorbeam Web Modification" as shown on Sheet 14, are to be modified where required to accommodate the splice shown on this Sheet. For additional details see Sheet 10.

△ This sheet to be used when the new access hole is in the bottom flange. See Sheet 15a when the new access hole is in the top flange.

FA RTE.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
24	64-3B-BP-1, BRR-1	MCCRACKEN, KY. (MASSAC, ILL.)	32	17
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

PAINT NOTE: The inaccessible areas shall be painted with all coats of paint as called for in the Special Provisions prior to the final bolting of the splice.



NOTES:-

④ - See Detail W6, Sht. 10.
⑤ - See Detail W7, Sheet 21.
⑥ - See Detail W9, Sheet 21.
* See "TEE" DETAILS, Sheet 10.
③ - For details see Detail W4, Sheet 21.
① Existing bolts, for side of new Splice Plates, to remain in place.

Work this sheet with Sheets 5 & 10.
② - AASHTO M-222 Steel.
REPAIR CONT. BY ILLINOIS D.O.T. IN CO-OPERATION WITH KENTUCKY D.O.T.

SHEET No. 15

COMMONWEALTH OF KENTUCKY
BUREAU OF HIGHWAYS
ILLINOIS DEPARTMENT OF TRANSPORT.

BRIDGE OVER OHIO RIVER ON I24 BETWEEN McCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

CONSTRUCTION PROJECT NO.	MAINTENANCE PROJECT NO.	DRAWING NO.

DETAILED BY BYNE DATE 10-24
CHECKED BY EHW
QUANTITIES BY
CHECKED BY
DESIGNED BY

FOR INFORMATION ONLY

MODEL: Default
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8/16/2024 11:15:03 AM

TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM	USER NAME = Jesker	DESIGNED -	REVISED -
	IL DESIGN FIRM LICENSE NO: 184-001220		CHECKED -	REVISED -
		PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -
		PLOT DATE = 8/16/2024	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 110 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1, BRR-1	MASSAC	236	171
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

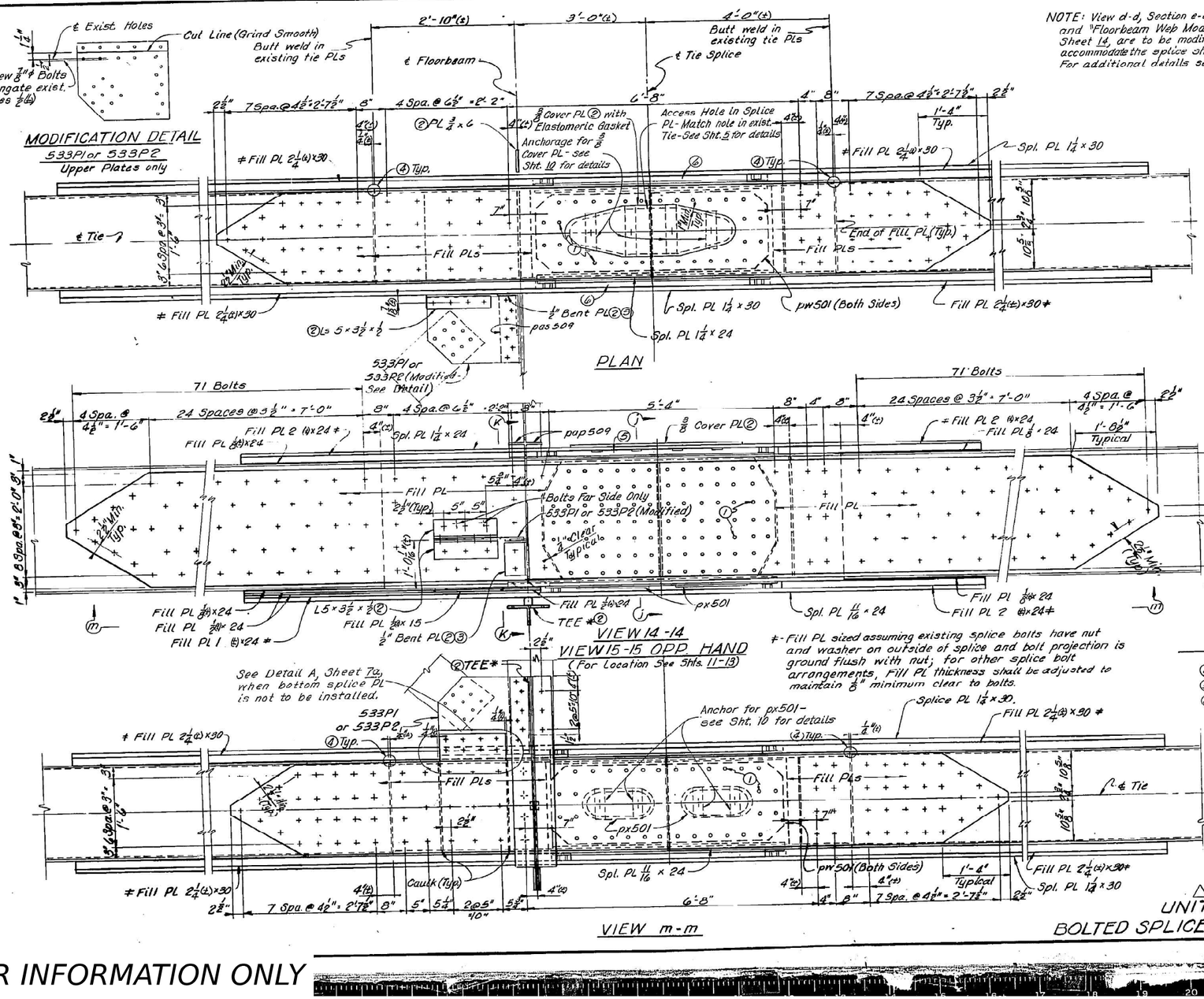
UPDATE DATE

LETTING DATE

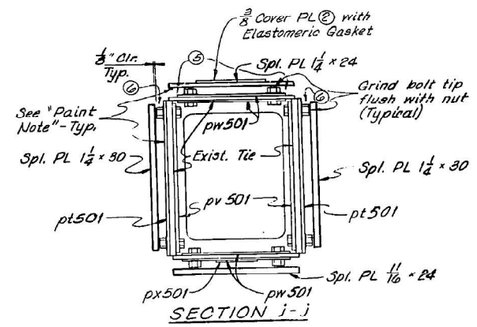
F.A.I. RTE.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1, BRR-1	MCCRACKEN, KY. MASSAC, ILL.	32	16
CONTRACT NO. 78972	ILLINOIS	FED. AID PROJECT		

△ - This sheet to be used when the new access hole is in the top flange. See Sheet 2 when the new access hole is in the bottom flange.

NOTE: View d-d, Section e-e, Section G-G, View S-S and "Floorbeam Web Modification" as shown on Sheet 14, are to be modified where required to accommodate the splice shown on this sheet. For additional details see Sheet 10.



PAINT NOTE: The inaccessible areas shall be painted with all coats of paint as called for in the Special Provisions prior to the final bolting of the splice.



NOTES:-

④ - See Detail W4, Sht. 10.
⑤ - See Detail W5, Sht. 21.
⑥ - See Detail W3, Sht. 21.

* See "TEE" DETAILS, Sheet 10.
③ - For details see Detail W4, Sheet 21.
① - Existing bolts, for side of new splice plates, to remain in place.

Work this sheet with Sheets 5 & 10.
② - AASHTO M-222 Steel.
REPAIR CONT. BY ILLINOIS D.O.T. IN CO-OPERATION WITH KENTUCKY D.O.T.

SHEET No. 15a

COMMONWEALTH OF KENTUCKY
BUREAU OF HIGHWAYS
ILLINOIS DEPARTMENT OF TRANSPORT.

BRIDGE OVER OHIO RIVER ON I24 BETWEEN McCRACKEN COUNTY, KENTUCKY AND MASSAC COUNTY, ILLINOIS

CONSTRUCTION PROJECT NO.	MAINTENANCE PROJECT NO.	DRAWING NO.

△ UNIT V
BOLTED SPLICE FOR TIE GIRDER

FOR INFORMATION ONLY

DIETGEN 11-76

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	IL DESIGN FIRM LICENSE NO: 184-001220		CHECKED -	REVISED -
		PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -
		PLOT DATE = 8/16/2024	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

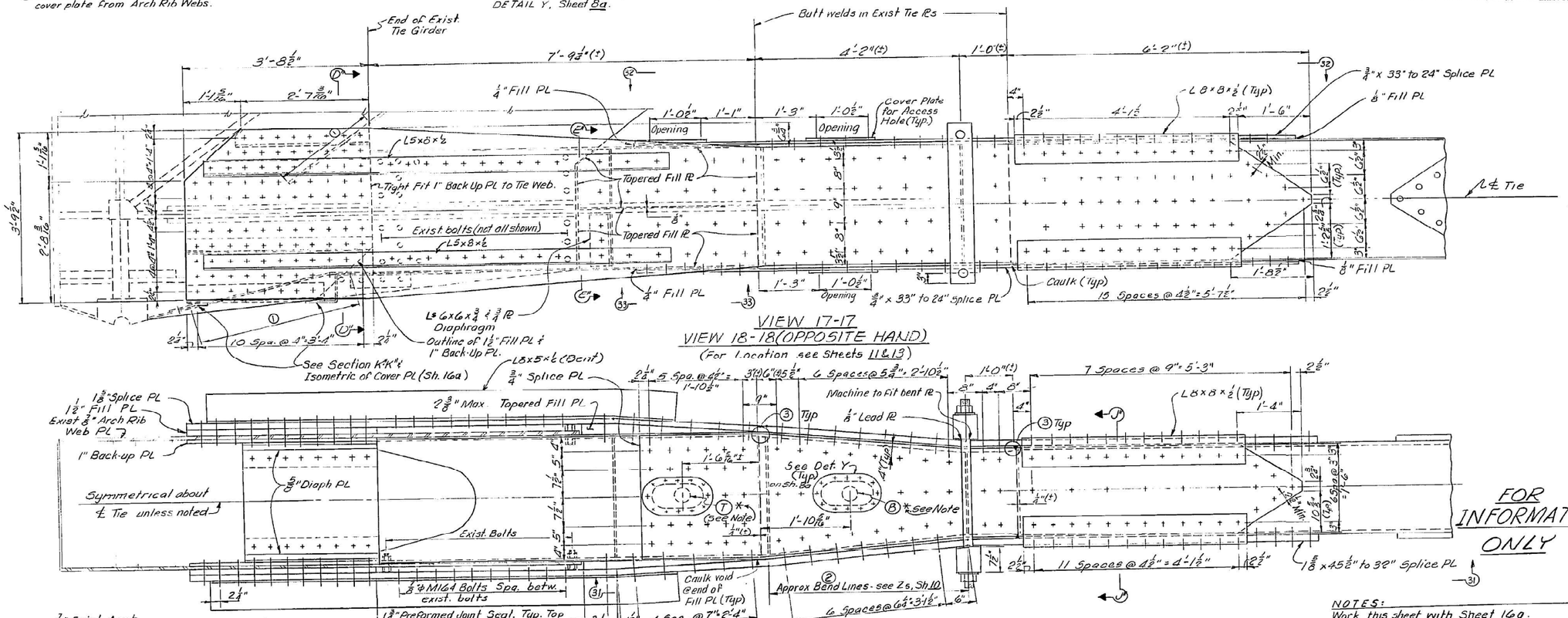
EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 111 OF 175 SHEETS

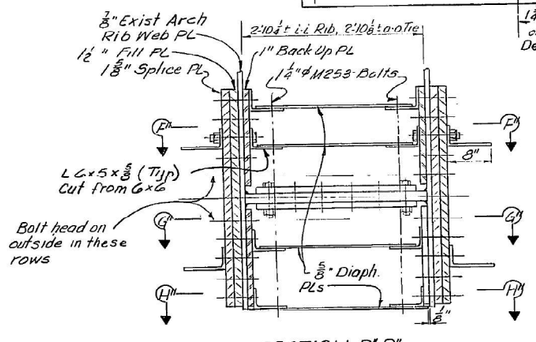
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	173
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

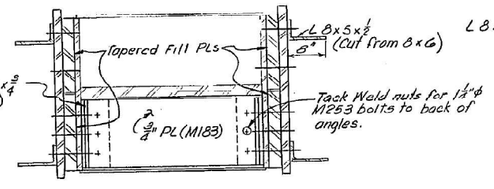
UPDATE DATE.....
LETTING DATE.....

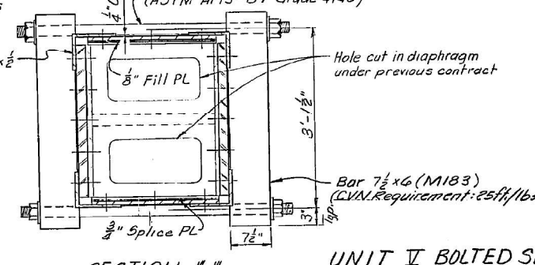
① Cut and grind to remove stiffener and bottom cover plate from Arch Rib Webs.

* Location of 4"ϕ Sample previously removed - see dwgs. by Ill. D.O.T. Sample Ⓣ @ T. U.S. and Sample Ⓑ @ T.o. D.S. Contractor shall check size and location prior to fabricating plate shown in DETAIL Y, Sheet 8a.









NOTES:
Work this sheet with Sheet 16a.
For DETAIL Y and SECTION 33-33 see Sheet 8a.
② BEND LINES and Angles shall be accurately located and measured from existing tie and splice plates fabricated to fit.
③ See DETAIL W6, Sheet 10.
REPAIR CONT. BY ILLINOIS D.O.T. IN CO-OPERATION WITH KENTUCKY D.O.T.

SHEET NO. 16

COMMONWEALTH OF KENTUCKY
BUREAU OF HIGHWAYS
ILLINOIS DEPARTMENT OF TRANSPORT.

BRIDGE OVER OHIO RIVER ON I-24 BETWEEN McCRACKEN COUNTY, KY. AND MASSAC COUNTY, ILLINOIS

CONSTRUCTION PROJECT NO.	MAINTENANCE PROJECT NO.	DRAWING NO.

UNIT V BOLTED SPLICE FOR TIE GIRDER

Revised: Added CVN Requirement: 25 ft/lbs @ 40°F to Bar 7x6 (7-7-80)

FOR INFORMATION ONLY

TZGEN 11-76
DRAWN BY ZLMF CHECKED BY
TRACED BY DATE
DESIGN BY DATE
ADD'L DESIGN BY DATE
REVISED
REVISED
REVISED

TWM ENGINEERING GEOSPATIAL SERVICES — TWM, INC. WWW.TWM-INC.COM — IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = jesker	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		CHECKED -	REVISED -	
	PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
	PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 112 OF 175 SHEETS

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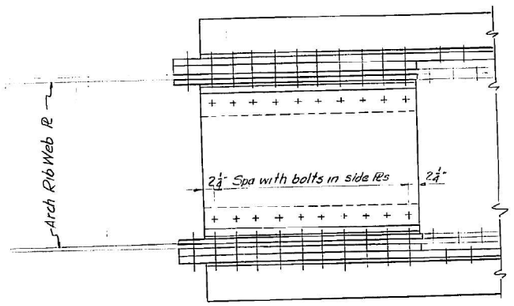
UPDATE DATE.....
LETTING DATE.....

DATE	BRS	DATE

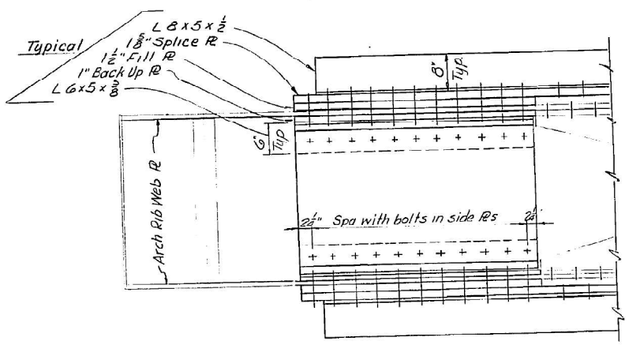
DESIGNED BY	DATE	REVISED
DRAWN BY		REVISED
CHECKED BY		REVISED
DETAILED BY		REVISED
TRACED BY		REVISED

DIETZGEN 11-76

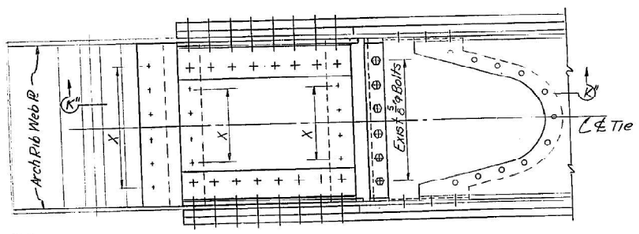
(A) This top diaphragm is missing at Joint "To" Downstream. Install new diaphragm with details similar to those shown in SECTION E-E Sheet 16, using $\frac{3}{4}$" Bent Pl instead of L 6×6×$\frac{3}{8}$ if necessary. Extra bolt each side shown by ⊠ required at new diaphragm.



SECTION F"-F"

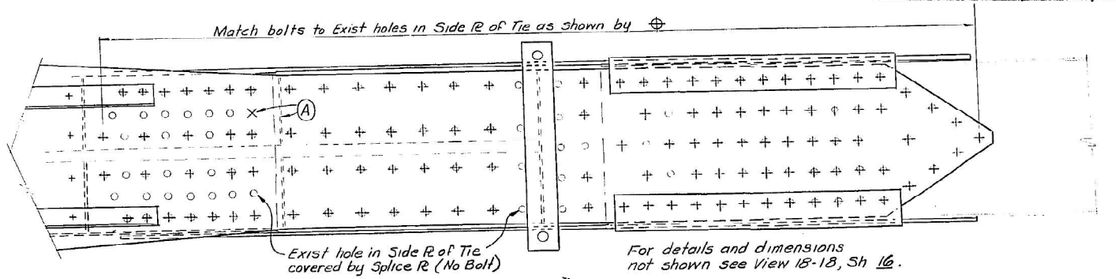


SECTION G"-G"



X = ⅝" ϕ Bolts, space with exist ⅝" ϕ Bolts.

SECTION H"-H"

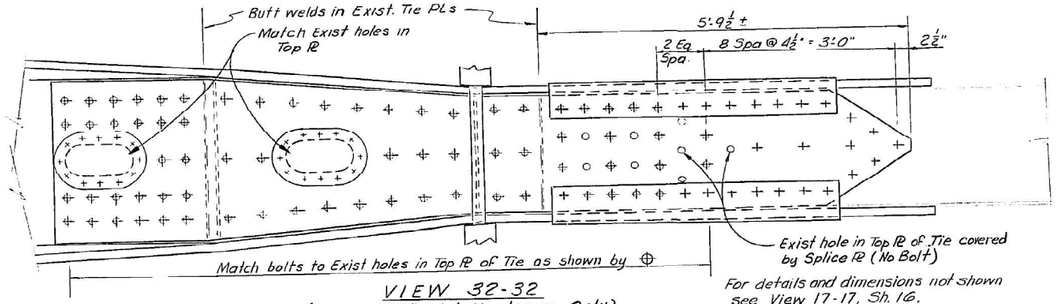


For details and dimensions not shown see View 18-18, Sh 16.

VIEW 31-31

(Inside web at "To" Joint Downstream ⊛ Outside web at "To" Joint Downstream ⊛ Only)

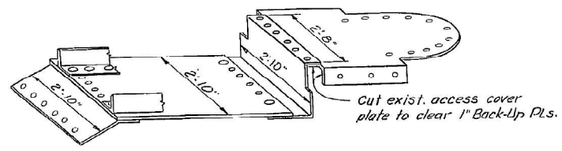
⊛ Opposite hand from orientation on Key Sheets 11 & 13



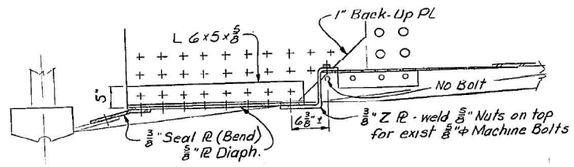
For details and dimensions not shown see View 17-17, Sh. 16.

VIEW 32-32

(Top Flg @ "To" Joint Upstream Only)



ISOMETRIC OF COVER PLATE ASSEMBLY



SECTION K"-K"

UNIT V BOLTED SPLICE FOR TIE GIRDER

Note:- Work this sheet with Sheet 16.

FOR INFORMATION ONLY

REPAIR CONT. BY ILLINOIS D.O.T. IN CO-OPERATION WITH KENTUCKY D.O.T.

SHEET NO. 16a

COMMONWEALTH OF KENTUCKY
BUREAU OF HIGHWAYS
ILLINOIS DEPARTMENT OF TRANSPORT.

BRIDGE OVER OHIO RIVER ON I-24 BETWEEN McCRACKEN COUNTY, KY. AND MASSAC COUNTY, ILLINOIS

CONSTRUCTION PROJECT NO.	MAINTENANCE PROJECT NO.	DRAWING NO.

FOR INFORMATION ONLY

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	174
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 113 OF 175 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

USER NAME =	jesker	DESIGNED -	REVISED -
		CHECKED -	REVISED -
PLOT SCALE =	0.167 ' / in.	DRAWN -	REVISED -
PLOT DATE =	8/16/2024	CHECKED -	REVISED -

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

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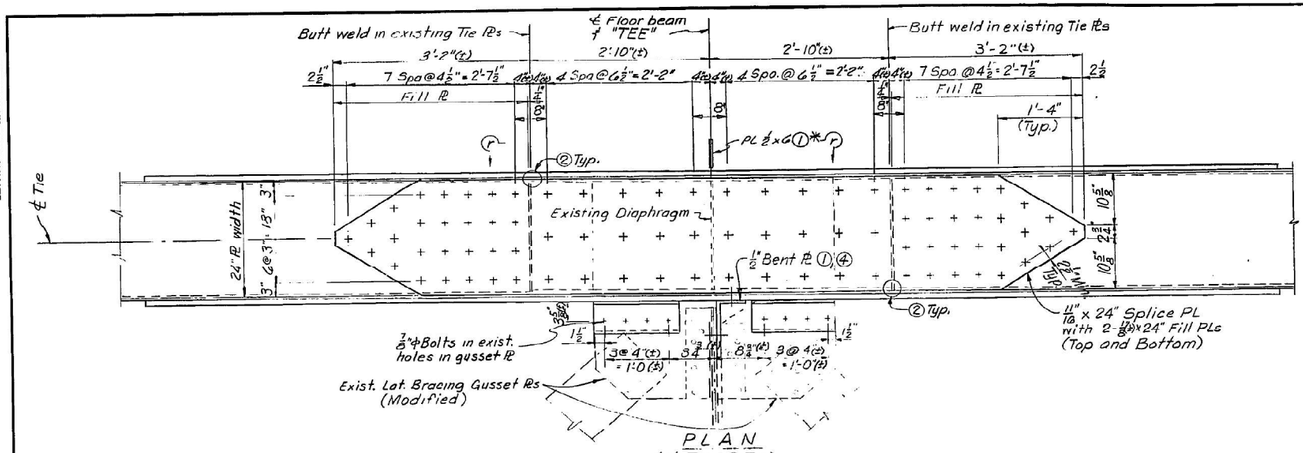
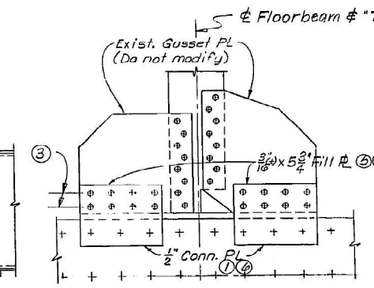
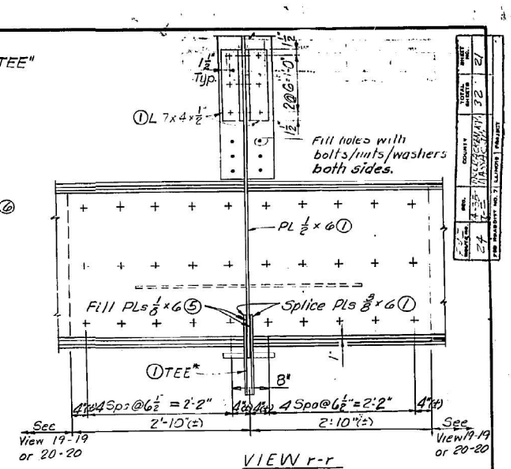
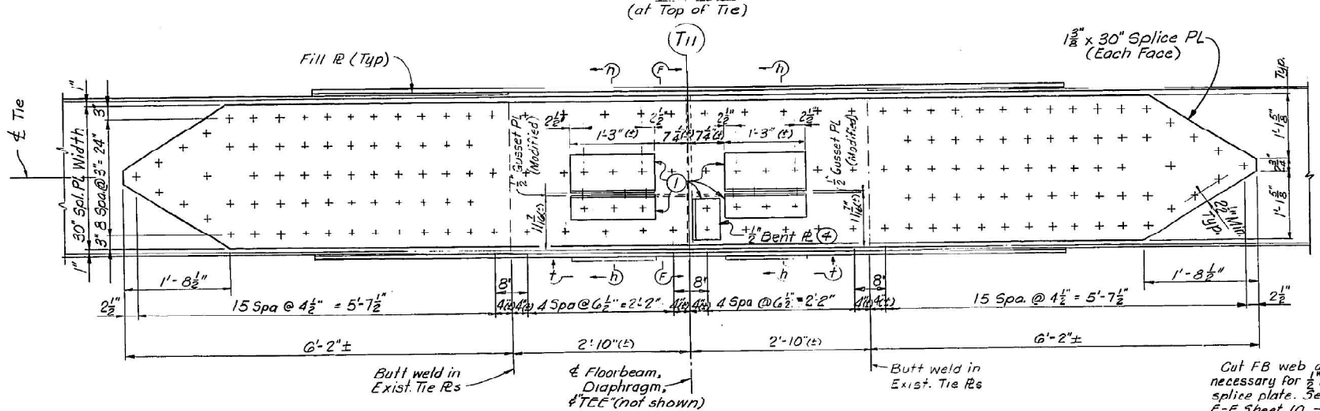
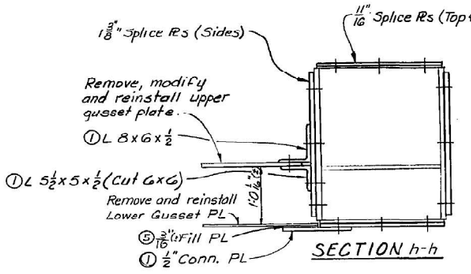
LETTING DATE.....

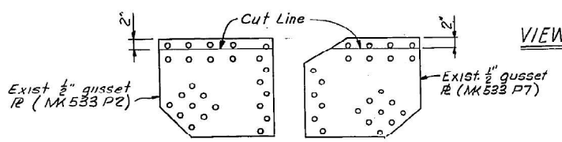




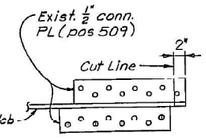




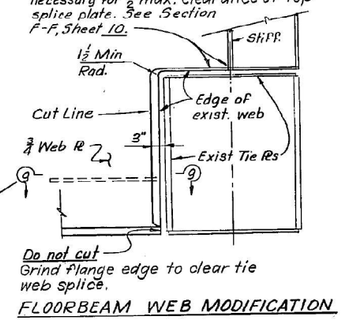




GUSSET PLATE MODIFICATION



SECTION g-g



FLOORBEAM WEB MODIFICATION

NOTES

Work this sheet with Sheets 5 and 10.
① AASHTO M-222
* - See "TEE" Details, Sheet 10.
② See Detail W_b Sht. 10 (Typ.)
③ Field drill holes in ½" conn. Pl to match existing gusset Pl & splice Pl holes.
④ See Detail W_e, Sht. 21.
⑤ May be either AASHTO M222 or ASTM A607 Grade 50 steel.
⑥ If new bottom splice PL is not installed see Detail "A", Sheet 7a.

REPAIR CONT. BY ILLINOIS D.O.T. IN CO-OPERATION WITH KENTUCKY D.O.T. SHEET NO. 17

COMMONWEALTH OF KENTUCKY
BUREAU OF HIGHWAYS
ILLINOIS DEPARTMENT OF TRANSPORT.

BRIDGE OVER OHIO RIVER ON I24
BETWEEN McCRACKEN COUNTY, KENTUCKY
AND MASSAC COUNTY, ILLINOIS

CONSTRUCTION PROJECT NO.	MAINTENANCE PROJECT NO.	DRAWING NO.

UNIT V
BOLTED SPLICE FOR TIE GIRDER

DIETZGEN 11-76 Rev. L Rev. K & WRT
DESIGNED BY ... CHECKED BY ... DETAILED BY ... CHECKED BY ... TRACED BY ...
REVISED ... REVISED ... REVISED ... REVISED ...
10-A

FOR INFORMATION ONLY

TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = jesker	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
			CHECKED -	REVISED -	
		PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
		PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 114 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	175
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

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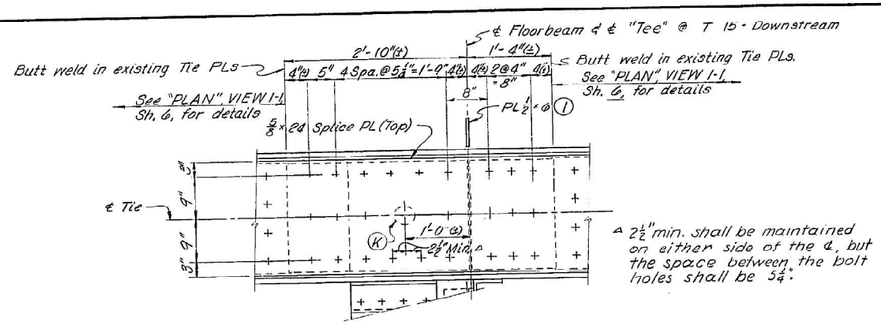
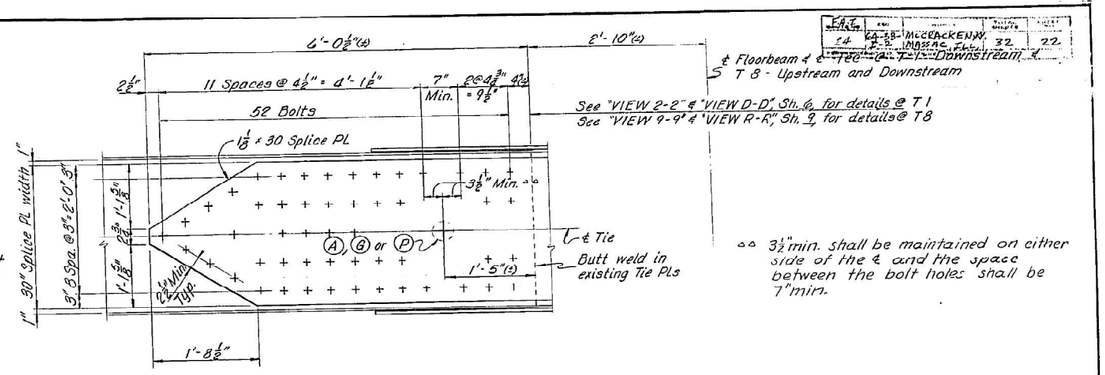


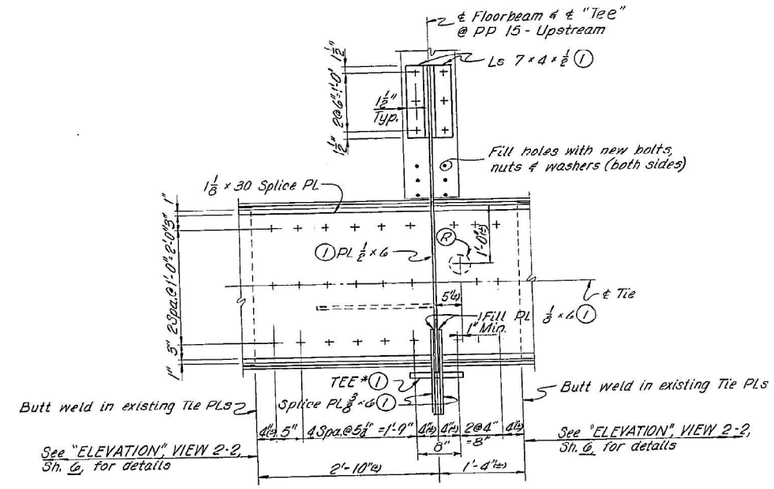
PLAN OF
VIEW 21-21

(For details of side and bottom splice PLs and other work see VIEW 1-1, Sheet 6)



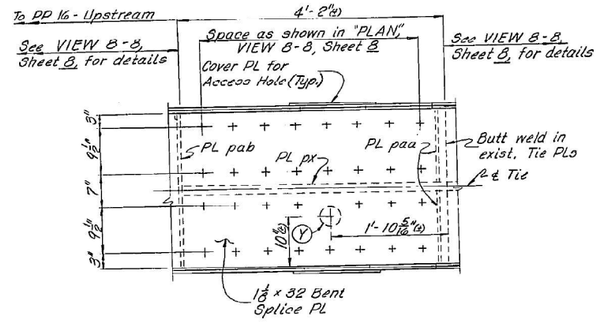
VIEW 23-23

(For details of top, bottom and upstream side splice PLs and other work see VIEW 2-2, Sheet 6, for T1 or VIEW 9-9, Sheet 9, for T8.)



VIEW 22-22

(For details of top, bottom and downstream side splice PLs and other work see VIEW 2-2, Sheet 6.)



VIEW 24-24

(For details of top, bottom and upstream side splice PLs and other work see VIEW 8-8, Sheet 8.)

NOTES:

Ⓘ - AASHTO M-222 Steel

* - See "TEE" DETAILS, Sheet 10.

Ⓐ - Indicates 1" Sample labeled "A" (Typical) - see drawings by Illinois D.O.T. Sample has been previously removed. Contractor shall verify location and size prior to fabricating splice PLs. A "Temporary Closure Plate" has been installed. (See Sh. 4 of 11 by IDOT) Remove before installing splice plates.

REPAIR CONT. BY ILLINOIS D.O.T. IN CO-OPERATION WITH KENTUCKY D.O.T.

SHEET No. 18

COMMONWEALTH OF KENTUCKY
BUREAU OF HIGHWAYS

ILLINOIS DEPARTMENT OF TRANSPORT.

BRIDGE OVER OHIO RIVER ON I-24
BETWEEN McCRACKEN COUNTY, KY.
AND MASSAC. COUNTY, ILLINOIS

CONSTRUCTION PROJECT NO.	MAINTENANCE PROJECT NO.	DRAWING NO.

UNIT II
BOLTED SPLICE FOR TIE GIRDER
WITH 4" CORES

FOR INFORMATION ONLY

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	176
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 115 OF 175 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = Jesker	DESIGNED -	REVISED -
	CHECKED -	REVISED -
PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -
PLOT DATE = 8/16/2024	CHECKED -	REVISED -

DIETZGEN 11-76
DESIGNED BY
DETAILED BY
CHECKED BY
REVISED
DATE

UPDATE DATE
LETTING DATE

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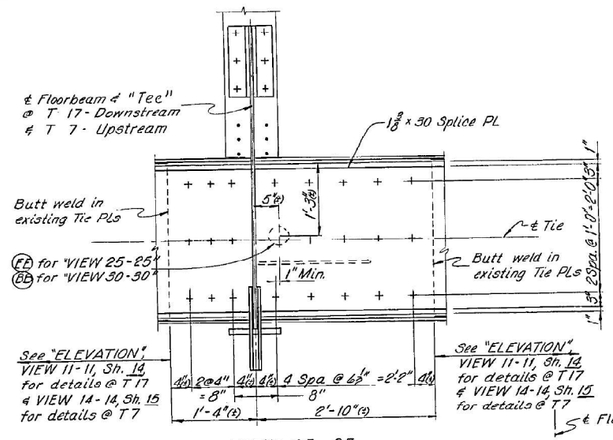
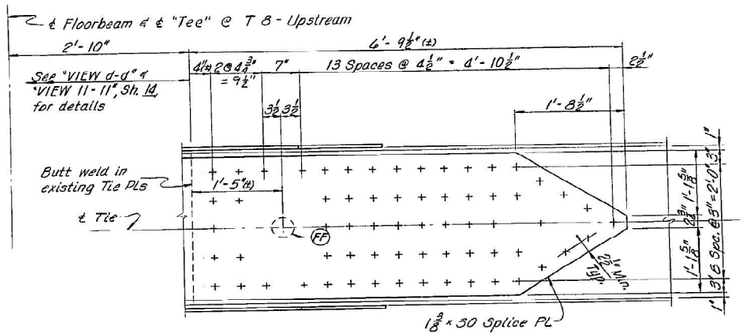
8/16/2024 11:15:13 AM

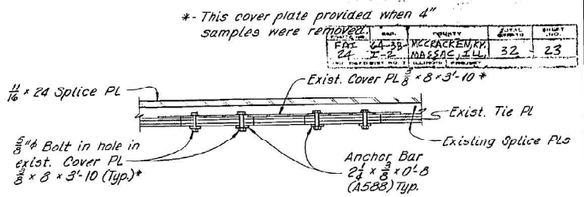
UPDATE DATE
LETTING DATE



VIEW 25 - 25
(For details not shown see VIEW d-d, Sheet 14.)
VIEW 30-30 SIMILAR
(For details not shown see VIEW 14-14, Sheet 15.)

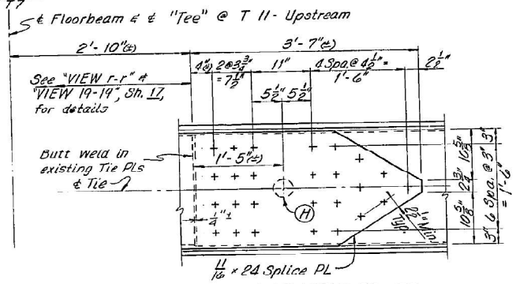


VIEW 27-27
(For details not shown see VIEW 11-11, Sheet 14.)

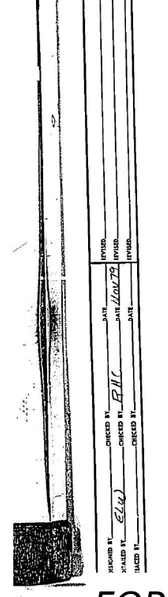


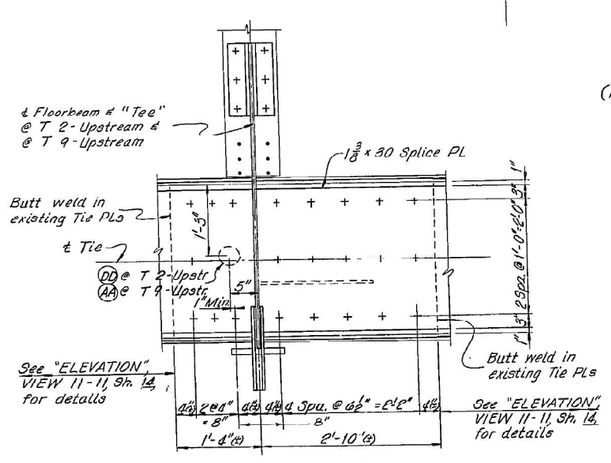
DETAIL V
(For location see ** in Plan, Sheet 15.)

NOTE: The above is detailed for entrance into the Tie Girder thru the bottom, for entrance thru the top see Sheet 15a.

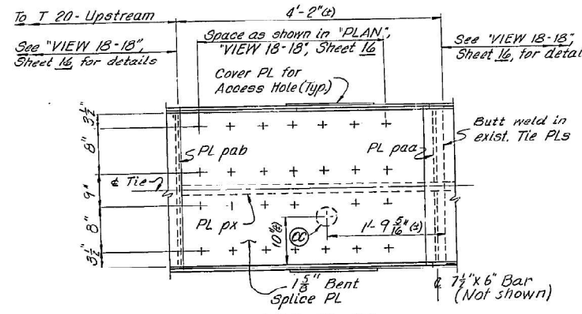


PLAN OF VIEW 28 - 28
(For details not shown see VIEW 19-19, Sheet 17.)





VIEW 26 - 26
(For details not shown see VIEW d-d, Sheet 14.)



VIEW 29 - 29
(For details not shown see VIEW 18-18, Sheet 16.)

For NOTES see Sheet 18.

REPAIR CONT. BY ILLINOIS D.O.T. IN CO-OPERATION WITH KENTUCKY D.O.T.

SHEET No. 19

COMMONWEALTH OF KENTUCKY
BUREAU OF HIGHWAYS

ILLINOIS DEPARTMENT OF TRANSPORT.
BRIDGE OVER OHIO RIVER ON I-24
BETWEEN McCRACKEN COUNTY, KY.
AND MASSAC COUNTY, ILLINOIS

CONSTRUCTION PROJECT NO.	MAINTENANCE PROJECT NO.	DRAWING NO.

UNIT V
BOLTED SPLICE FOR TIE GIRDER
WITH 4" CORES

FOR INFORMATION ONLY

DIST.	COUNTY	TOTAL SHEETS	SHEET NO.
8	MASSAC	236	177
	CONTRACT NO. 78972		
	ILLINOIS FED. AID PROJECT		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	177
		CONTRACT NO. 78972		
		ILLINOIS	FED. AID PROJECT	

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 116 OF 175 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

USER NAME = jesker	DESIGNED -	REVISED -
	CHECKED -	REVISED -
PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -
PLOT DATE = 8/16/2024	CHECKED -	REVISED -

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC.
WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

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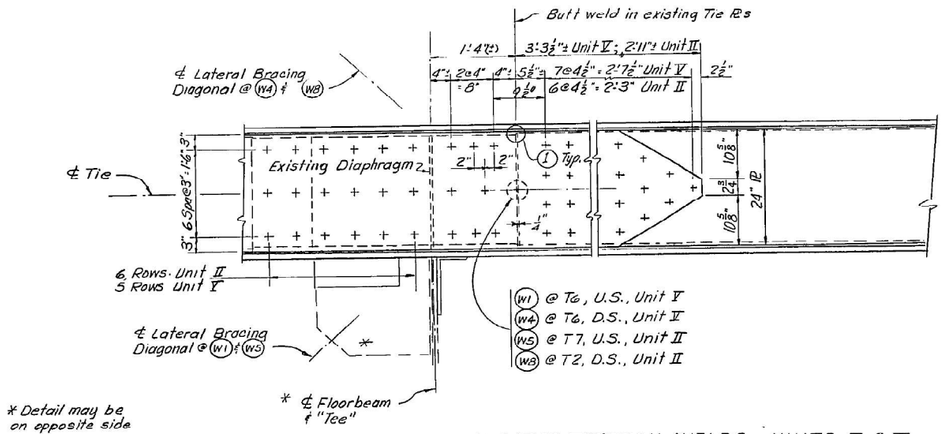
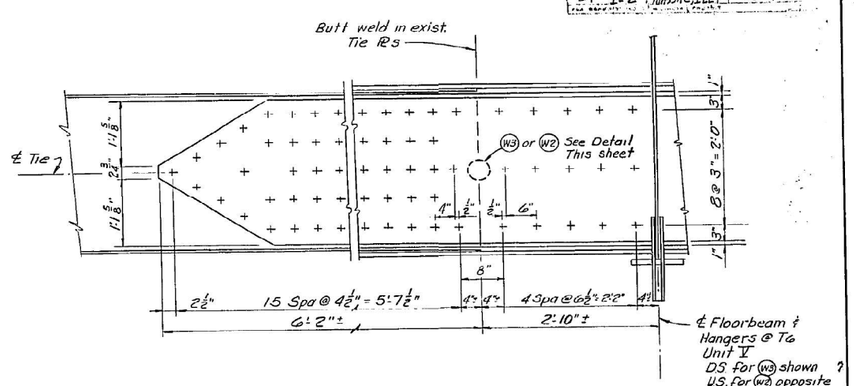


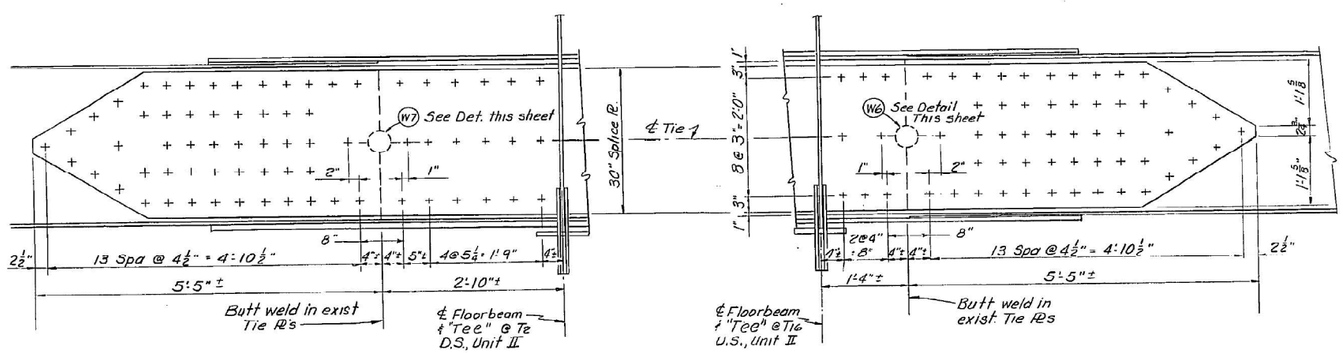
PLAN OF 4" CORES THROUGH WELDS - UNITS II & V

For additional details & dimensions see View 1-1 and 2-2 (Sh. 6) and View 11-11 and 12-12 (Sh. 14)



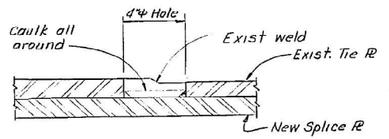
ELEVATION OF 4" CORES THROUGH WELDS - UNIT V

For additional details & dimensions see View 11-11 and 12-12 (Sh. 14)



ELEVATION OF 4" CORES THROUGH WELDS - UNIT II

For additional details & dimensions see View 1-1 and 2-2 (Sh. 6)



DETAIL FOR SEALING CORE HOLES THROUGH WELDS IN VERTICAL PLATES

NOTES:

(W1) Indicates 4" Sample labeled W1 (Typ) - see drawings by Ill. D.O.T. Sample has been previously removed. Contractor shall verify location and size prior to fabricating splice PLs.

For orientation of 4" Cores see Key Sheets Unit II and Key Sheets Unit V.

(1) See Detail W6 Sh. 10 (Typ)

REPAIR CONT. BY ILLINOIS D.O.T. IN CO-OPERATION WITH KENTUCKY D.O.T.

SHEET No. 20

COMMONWEALTH OF KENTUCKY
BUREAU OF HIGHWAYS

ILLINOIS DEPARTMENT OF TRANSPORT.
BRIDGE OVER OHIO RIVER ON I-24
BETWEEN McCRACKEN COUNTY, KY.
AND MASSAC COUNTY, ILLINOIS

CONSTRUCTION PROJECT NO.	MAINTENANCE PROJECT NO.	DRAWING NO.

UNITS II & V
BOLTED SPLICE FOR
TIE GIRDER WITH 4" CORES

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	178
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

F.A.I. RTE.	SEC.	COUNTY	STATE	SHEET NO.
24	I-2	McCRACKEN, KY. MASSAC, ILL.	32	24

UPDATE DATE
LETTING DATE

REVISED	DATE	CHECKED BY	CHECKED BY	CHECKED BY
REVISED	Nov 23	RHC		
REVISED				

11-76

FOR INFORMATION ONLY

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

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	CHECKED -	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 117 OF 175 SHEETS

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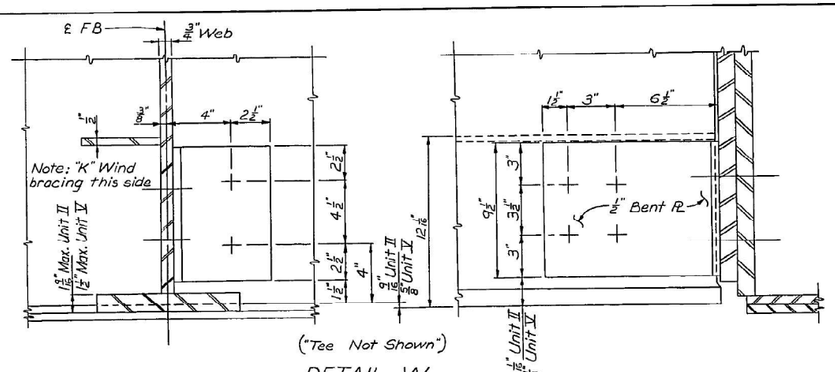
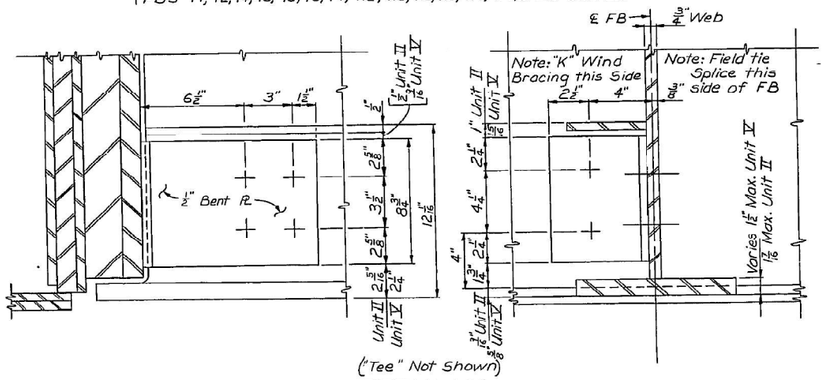
UPDATE DATE

LETTING DATE



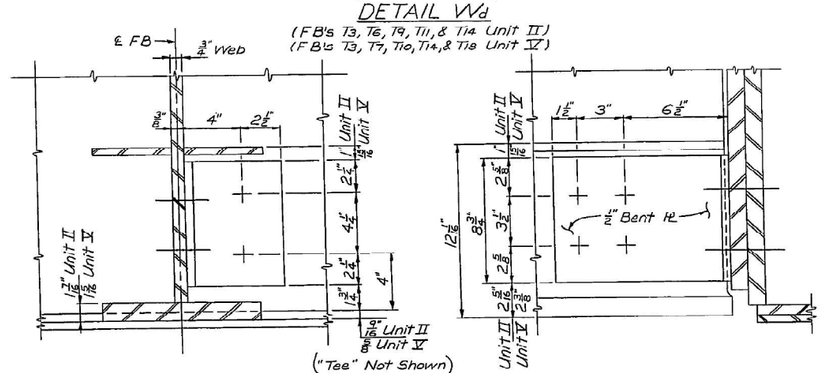
DETAIL Wc

(F B's T1, T2, T4, T5, T7, T10, T12, T13, T15, & T16 Unit III)
(FB's T1, T2, T4, T5, T6, T8, T9, T12, T13, T15, T16, T17, T19, & T20 Unit V)



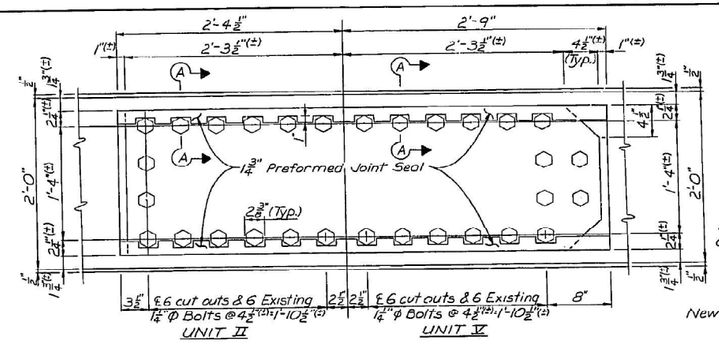
DETAIL Wd

(FB's T3, T6, T9, T11, & T14 Unit III)
(FB's T3, T7, T10, T14, & T18 Unit V)

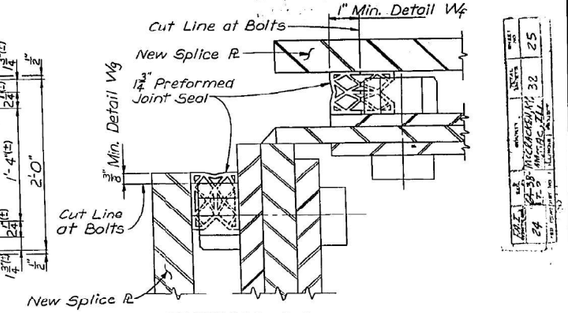


DETAIL We

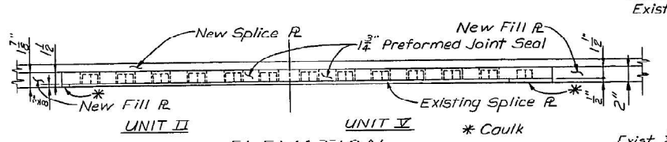
(FB's T3, T8 Unit II & T11 Unit V)



PLAN



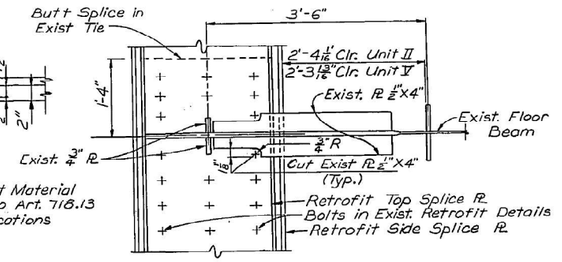
SECTION A-A



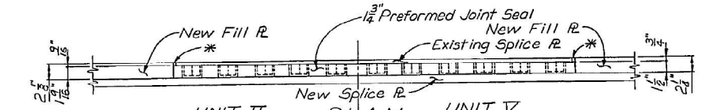
ELEVATION

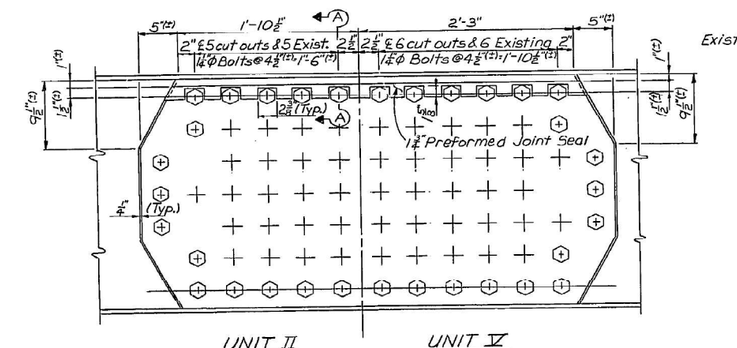
DETAIL Wf

Note: Preformed Joint Material shall conform to Art. 718.13 of the specifications



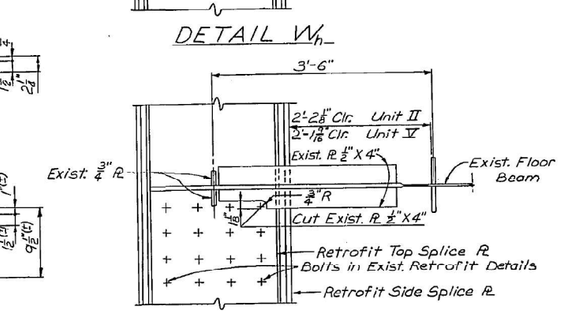
DETAIL Wh





ELEVATION

DETAIL Wg



DETAIL Wk

REPAIR CONT. BY ILLINOIS D.O.T. IN CO-OPERATION WITH KENTUCKY D.O.T.

SHEET No. 21

COMMONWEALTH OF KENTUCKY
BUREAU OF HIGHWAYS

ILLINOIS DEPARTMENT OF TRANSPORT.
BRIDGE OVER OHIO RIVER ON I-24
BETWEEN McCRACKEN COUNTY, KY.
AND MASSAC COUNTY, ILLINOIS

CONSTRUCTION PROJECT NO.	MAINTENANCE PROJECT NO.	DRAWING NO.

FLOORBEAM - TIE GIRDER CONNECTION PL & WEATHERPROOFING @ FIELD SPLICE JT.

FOR INFORMATION ONLY

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TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME =	Jesker	DESIGNED -		REVISED -	
		CHECKED -		REVISED -	
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PLOT DATE =	8/16/2024	CHECKED -		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 118 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	179
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

833 4411

AS BUILT 6-5-90 JLENZINI

INDEX OF DRAWINGS	
SHEET NO.	TITLE
1	TITLE SHEET
2	GENERAL ELEVATION
3	GENERAL NOTES
4	SUMMARY OF QUANTITIES
5	UNIT II - GENERAL PLAN AND ELEVATION
6	UNIT II - TRUSS DETAILS 1
7	UNIT II - TRUSS DETAILS 2
8	UNIT II - TRUSS DETAILS 3
9	UNIT II - TRUSS DETAILS 4
10	UNIT V - GENERAL PLAN AND ELEVATION
11	UNIT V - TRUSS DETAILS 1
12	UNIT V - TRUSS DETAILS 2
13	UNIT V - TRUSS DETAILS 3
14	UNIT V - TRUSS DETAILS 4
15	POST-TENSIONING DETAILS 1
16	POST-TENSIONING DETAILS 2
17	POST-TENSIONING DETAILS 3
18	FLOORBEAM RETROFIT LOCATIONS
19	RETROFIT DETAILS - 1
20	RETROFIT DETAILS - 2
21	RETROFIT DETAILS - 3
22	RETROFIT DETAILS - 4
23	ARCH TIE RETROFIT
24	UNIT II - ERECTION SEQUENCE 1
25	UNIT II - ERECTION SEQUENCE 2
26	UNIT II - ERECTION SEQUENCE 3
27	UNIT V - ERECTION SEQUENCE 1
28	UNIT V - ERECTION SEQUENCE 2
29	UNIT V - ERECTION SEQUENCE 3
30	UNIT II - MAINTENANCE AND PROTECTION OF TRAFFIC
31	UNIT V - MAINTENANCE AND PROTECTION OF TRAFFIC
32	STRESS SHEET

ILLINOIS STATE STANDARDS
2298-7
2299-10
2300-3
2307-6
2308-4
2316-11
2383-1
2409-1

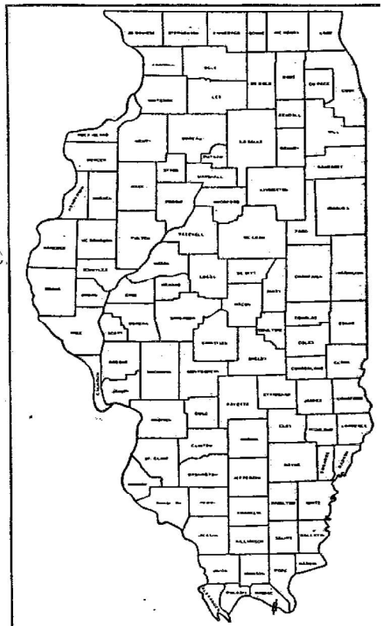
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

ALTERATIONS TO F A I 24 BRIDGE
OVER OHIO RIVER
NEAR PADUCAH, KY.

F A I ROUTE 24
PROJECT IR-024-9 (9)38
SECTION 64-3B-I-3
MASSAC CO., IL. & McCRACKEN CO., KY.
C99-064-88

FAI RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	64-3B-1-3	*	32	1
F.H.W.A. REG.	ILLINOIS	INDEXET 5-R -24-4(9)38		

*MASSAC, IL. & McCRACKEN, KY.
P99-033-85



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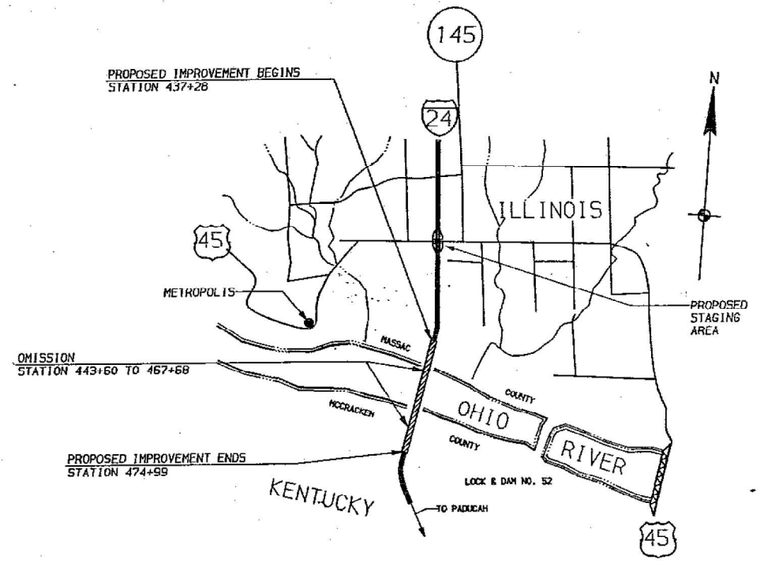

NET LENGTH OF PROJECT = 1363 FT. = 0.258 MI.

SUBMITTED BY: John M. Kulicki
REGISTERED CIVIL ENGINEER
ILLINOIS NO. 81-004512

JOHN M. KULICKI 81-004512 REGISTERED STRUCTURAL ENGINEER OF ILLINOIS

PREPARED BY: MODJESKI AND MASTERS

CONTRACT NO. 98023

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
James J. Taylburn
Engineer of Bridges and Structures

FOR INFORMATION ONLY

STATE OF KENTUCKY
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

APPROVED _____ 19__

STATE HIGHWAY ENGINEER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED 10-12 1988
T.L. Jennings
DISTRICT ENGINEER

EXAMINED 10-24 1988
ENGINEER OF PLANS AND CONTRACTS

PASSED 10-27 1988
ENGINEER OF DESIGN

APPROVED 10-27 1988
DIRECTOR OF DIVISION OF HIGHWAYS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED

DIVISION ADMINISTRATOR DATE

⚠ REVISED 10/28/88

Revised Set 11-18-88

TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM	USER NAME = jesker	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	IL DESIGN FIRM LICENSE NO: 184-001220		CHECKED -	REVISED -	EXISTING STRUCTURE PLANS STRUCTURE NO. 064-0035
		PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	SHEET 119 OF 175 SHEETS
		PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	180
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
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8/16/2024 11:15:20 AM

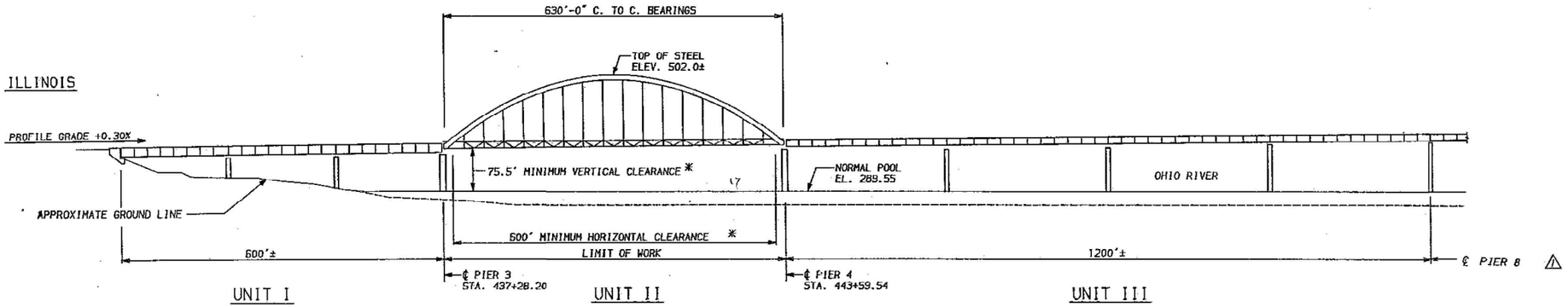
ADDITIONAL LADDERS AND TRANSVERSE CATWALKS ADDED FOR IMPROVED ACCESS

SAFETY CABLE PROVIDED U/S & D/S OF EACH ARCH SPAN THROUGH TRUSS VERTICALS

SEE ATTACHED DRAWINGS FOR MORE INFORMATION

FAI RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	64-3B-1-3	*	32	2
P.N.V.A. NOS.	ILLINOIS PROJECT			

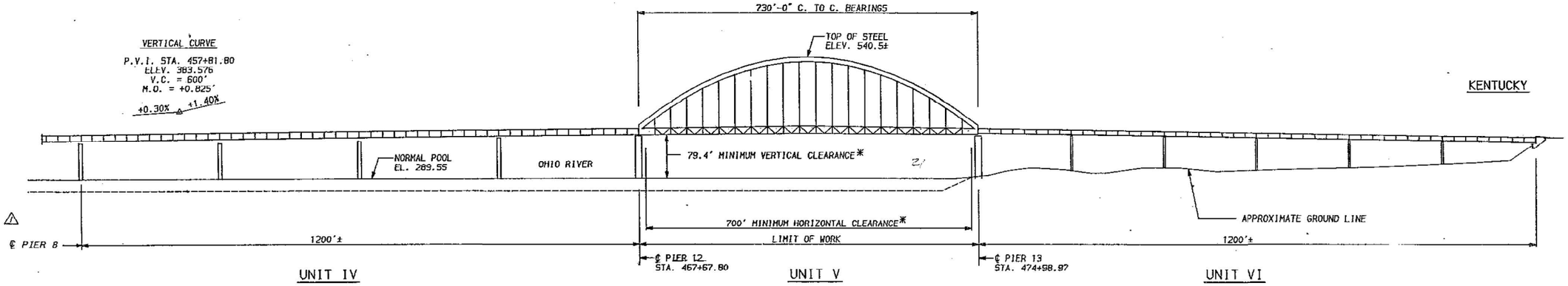
*MASSAC, IL. & McCRACKEN, KY.



VERTICAL CURVE

P.V.I. STA. 471+33.50
ELEV. 402.50
V.C. = 1400'
M.O. = -4.90'

+1.40% ∧ -1.40%



NOTES:

* CONTRACT WILL NOT ALTER THESE EXISTING CLEARANCES.
FOR GENERAL NOTES, SEE SHEET 3.

PREPARED BY
MODJESKI AND MASTERS
CONSULTING ENGINEERS

DRAWN: CWH,ELS

FOR INFORMATION ONLY

REV.NO	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
1	JPS	REM	JEP	MISCELLANEOUS	10/25/8

F A I ROUTE 24 (INTERSTATE 24)
OVER OHIO RIVER
MASSAC COUNTY ILLINOIS

SN 064-0035
GENERAL ELEVATION

Revised 11-18-88

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC.
WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME =	jesker	DESIGNED -		REVISED -	
		CHECKED -		REVISED -	
PLOT SCALE =	0.167 ' / in.	DRAWN -		REVISED -	
PLOT DATE =	8/16/2024	CHECKED -		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 120 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	181
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

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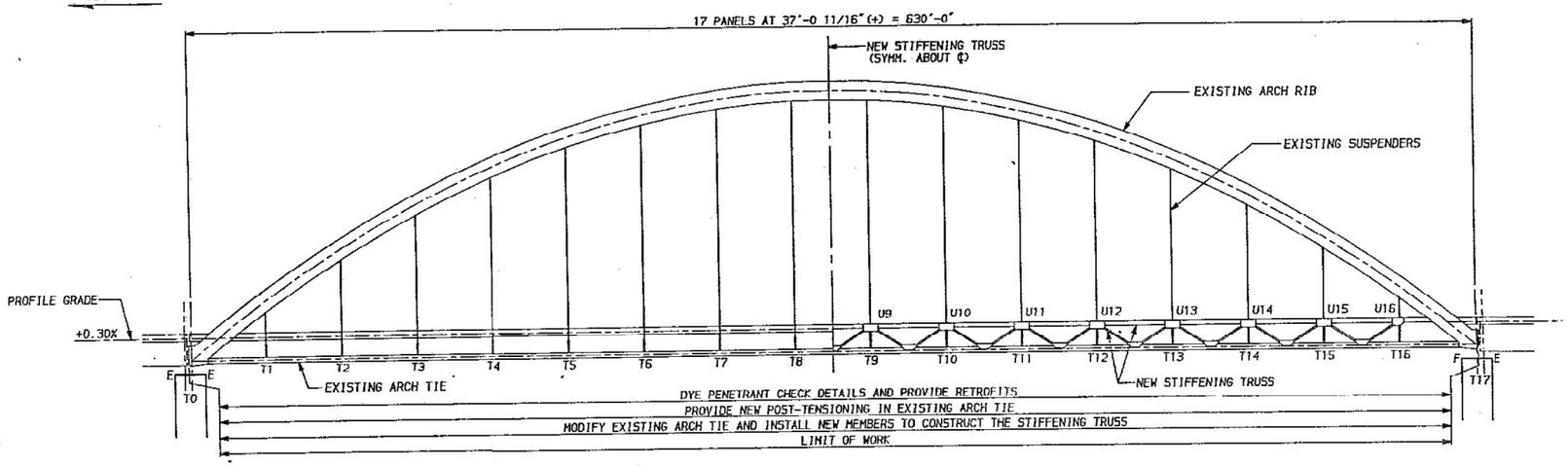
8/16/2024 11:15:23 AM

FAI RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	64-3B-1-3	M	32	5
F.H.W.A. RTE.	ILLINOIS PROJECT			

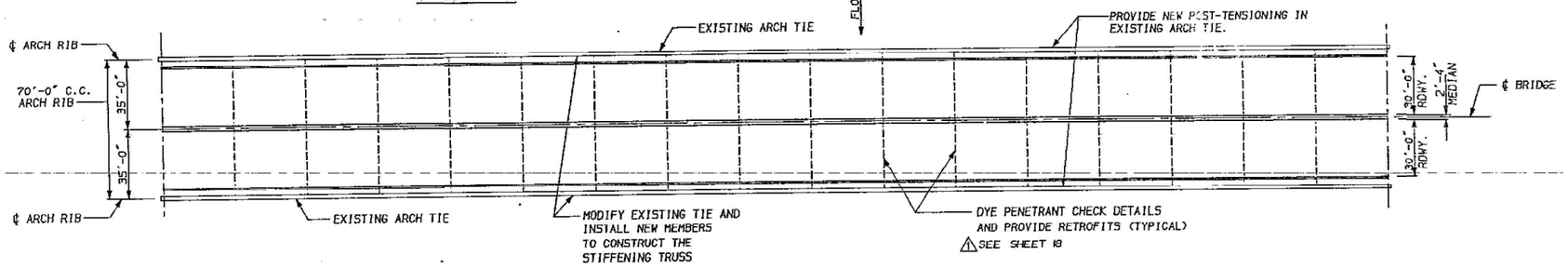
MASSAC, IL. & McCRACKEN, KY.

ILLINOIS

KENTUCKY

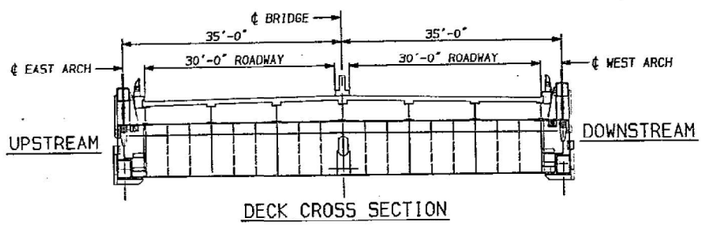


HALF ELEVATION EXISTING



HALF ELEVATION MODIFIED

PLAN



DECK CROSS SECTION

PREPARED BY
MODJESKI AND MASTERS
CONSULTING ENGINEERS
DRAWN: CWH, ELS

FOR INFORMATION ONLY

NOTE:
TWO WAY TRAFFIC WILL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION EXCEPT AS ALLOWED FOR BY THESE CONTRACT DOCUMENTS.
FOR GENERAL NOTES, SEE SHEET 3.
FOR MAINTENANCE AND PROTECTION OF TRAFFIC DETAILS, SEE SHEETS 30 AND 31.

REV.NO	DRAWN	CHKD.	APPD.	DESCRIPTION	DA
⚠	JPS	REM	JEP	MISCELLANEOUS	10/2

F A I ROUTE 24 (INTERSTATE 24)
OVER OHIO RIVER
MASSAC COUNTY ILLINOIS

UNIT II
GENERAL PLAN AND ELEVATION

Revised 11-18-88

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8/16/2024 11:15:26 AM

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = jesker		DESIGNED -		REVISED -	
		CHECKED -		REVISED -	
PLOT SCALE = 0.167 ' / in.		DRAWN -		REVISED -	
PLOT DATE = 8/16/2024		CHECKED -		REVISED -	

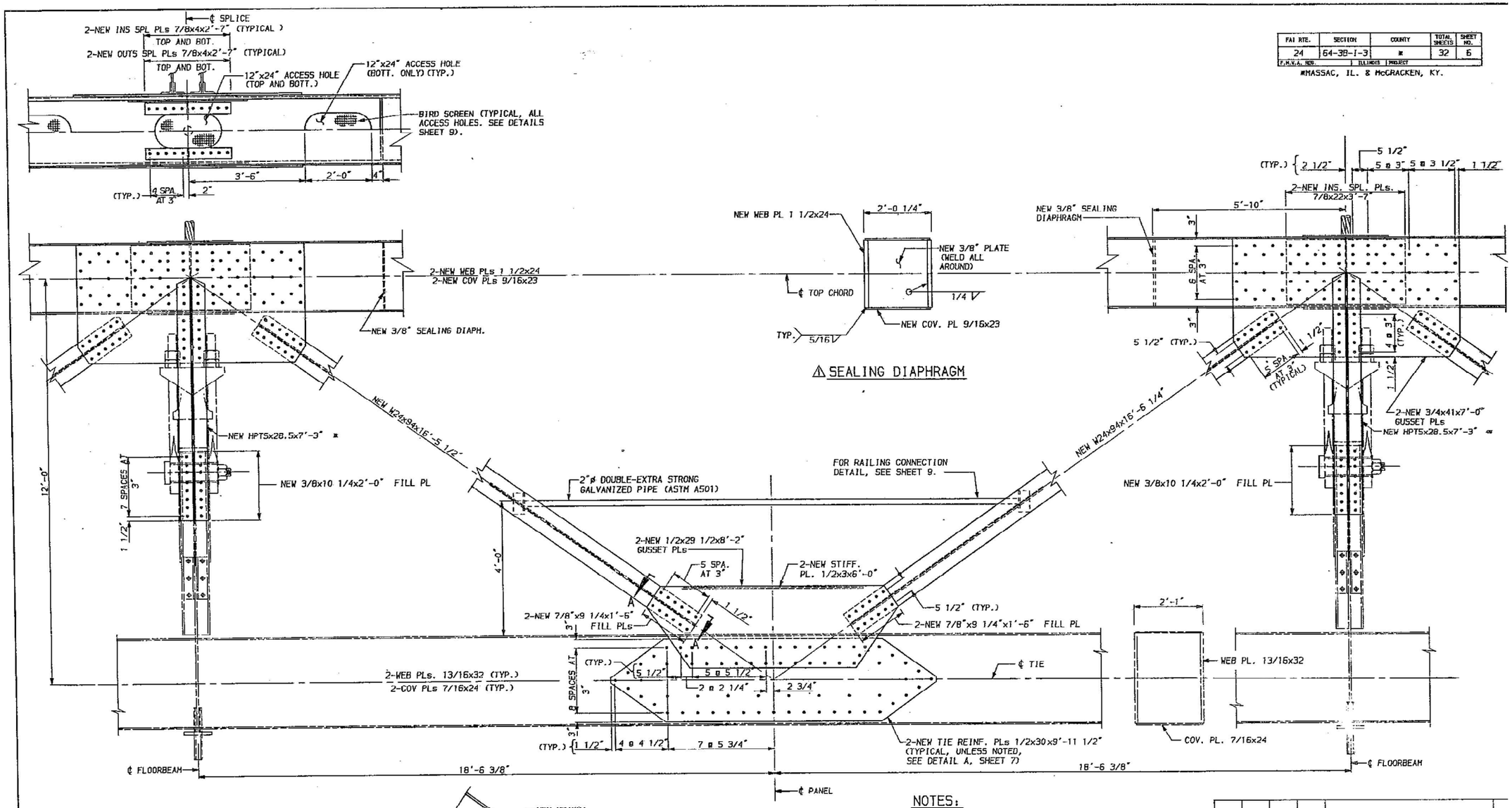
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 121 OF 175 SHEETS

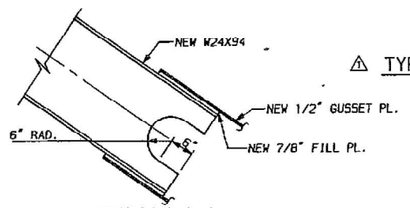
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	182
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

FAI RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	64-3B-1-3	*	32	6
F.H.W.A. REG.	ILLINOIS	PROJECT		

*MASSAC, IL. & McCRACKEN, KY.



⚠ SEALING DIAPHRAGM



SECTION A-A

⚠ TYPICAL PANEL ELEVATION

NOTES:

FOR GENERAL NOTES, SEE SHEET 3.
◆ DENOTES EXISTING 7/8"ø H.S. BOLT IN EXISTING HOLE.
* NEW VERTICAL MEMBERS SHALL BE TRULY VERTICAL.
• DENOTES NEW 7/8"ø H.S. BOLT (M164) IN NEW HOLE.
FOR SECTIONS, SEE SHEETS 7 AND 9.
ALL NEW STRUCTURAL STEEL SHOWN SHALL MEET NOTCH TOUGHNESS REQUIREMENTS (N.T.R.) EXCEPT 2" Ø PIPE, 3/8" SEALING DIAPHRAGM PLATE, FILL PLATES, AND STIFFENERS.

REV. NO	DRAWN	CHKD.	APPD.	DESCRIPTION	DA
⚠	SLH	REH	JEP	MISCELLANEOUS	10/2

F A I ROUTE 24 (INTERSTATE 24)
OVER OHIO RIVER
MASSAC COUNTY ILLINOIS

UNIT II
TRUSS DETAILS - 1

Revised 11-18-85

PREPARED BY
MODJESKI AND MASTERS
CONSULTING ENGINEERS

FOR INFORMATION ONLY

TDI.2

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TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = jesker	DESIGNED -	REVISED -	
	CHECKED -	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

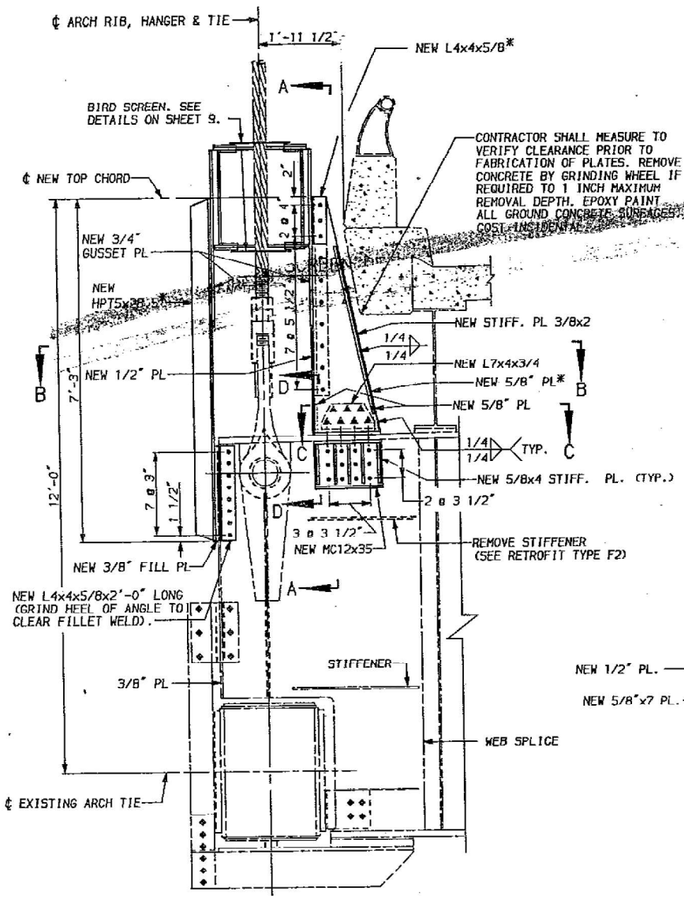
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 122 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	183
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

FAI RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	64-38-1-3	*	32	7
F.H.W.A. REG.	ILLINOIS	PROJECT		

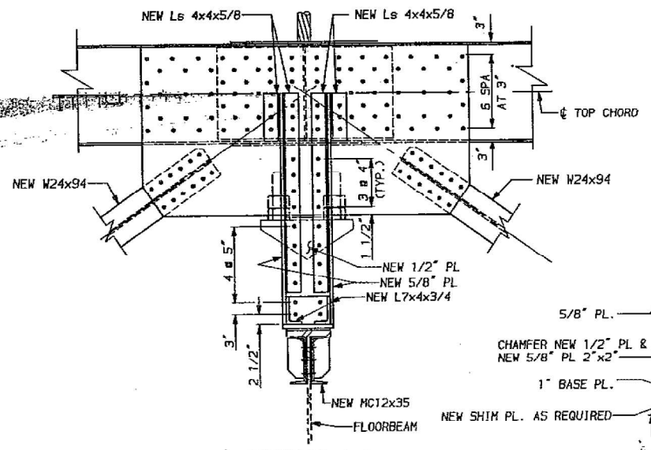
*MASSAC, IL. & McCRACKEN, KY.



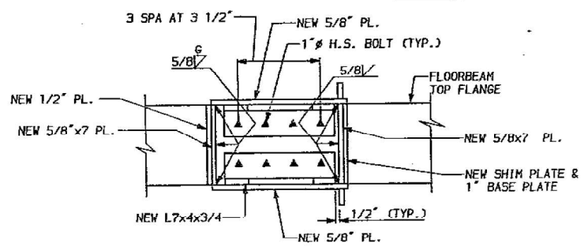
⚠ TYPICAL SECTION AT FLOORBEAM (T2 SHOWN)

◆ DENOTES EXISTING 7/8"ø H.S. BOLT IN EXISTING HOLE.

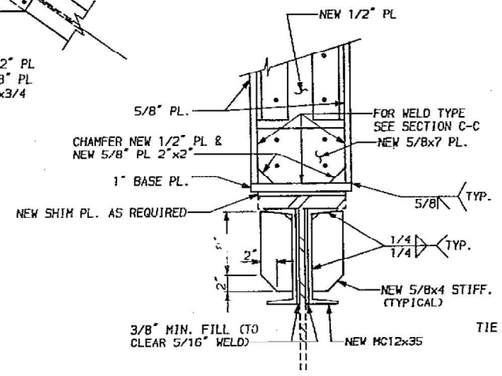
⚠ NOTE: FOR BOLT SPACING NOT SHOWN, SEE TYPICAL DETAIL SHEET 6.



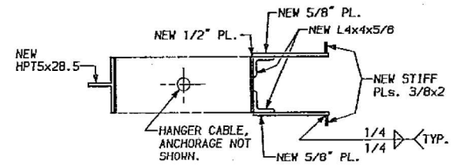
⚠ SECTION A-A



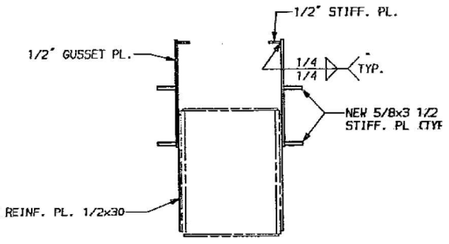
⚠ SECTION C-C



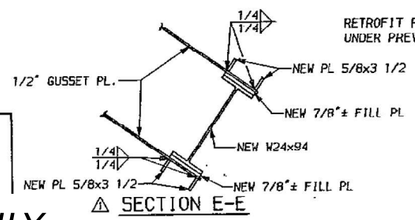
⚠ SECTION D-D



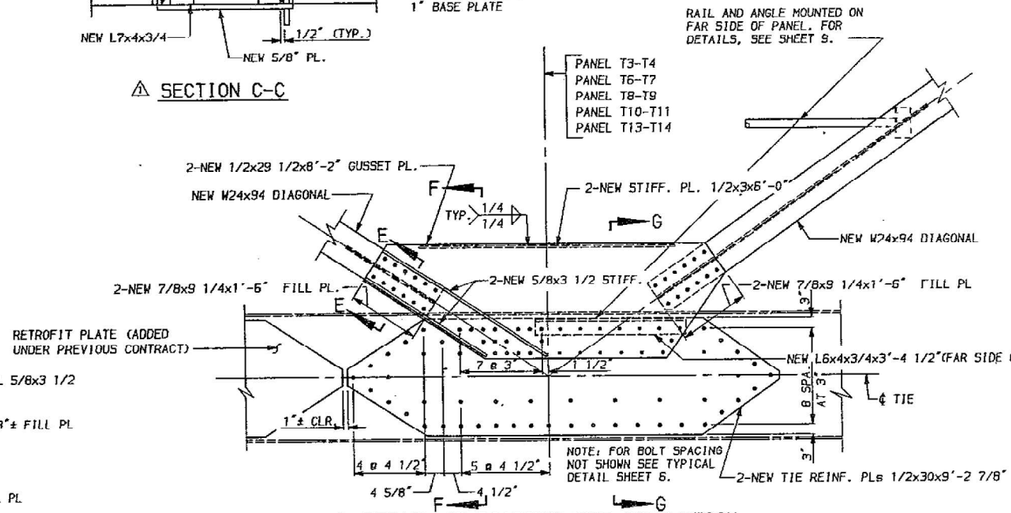
SECTION B-B



⚠ SECTION F-F



⚠ SECTION E-E



⚠ DETAIL AT DIAGONAL/TIE CONNECTION

PANEL T6-T7 (WEST ARCH SHOWN) FOR TYPICAL DETAILS SEE SHEETS 6 AND 9

NOTES:

FOR GENERAL NOTES, SEE SHEET 3.
• DENOTES NEW 7/8"ø H.S. BOLT IN NEW HOLE.
* VERTICAL MEMBERS SHALL BE TRULY VERTICAL.
FOR RETROFIT TYPE F2, SEE SHEET 19.
▲ DENOTES NEW 1"ø H.S. BOLT (AASHTO M 164) IN NEW HOLE.
⚠ ALL NEW STRUCTURAL STEEL SHOWN SHALL MEET NOTCH TOUGHNESS REQUIREMENTS (N.T.R.) EXCEPT RAIL, STIFFENERS AND ANGLE SHOWN ON DETAIL AT DIAGONAL/TIE CONNECTION.
⚠ FOR SECTION G-G, SEE SHEET 9.

REV.NO	DRAWN	CHKD.	APPD.	DESCRIPTION
⚠	SLH	REM	JEP	MISCELLANEOUS

F A I ROUTE 24 (INTERSTATE 24)
OVER OHIO RIVER
MASSAC COUNTY ILLINOIS

UNIT II

TRUSS DETAILS - 2

REV. 1&2 11-15-96

PREPARED BY
MODJESKI AND MASTERS
CONSULTING ENGINEERS
DRAWN: CWH

FOR INFORMATION ONLY

SEC1.1.2

MODEL: Default
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8/16/2024 11:15:32 AM

TWM, INC. WWW.TWM-INC.COM	USER NAME = jesker	DESIGNED -	REVISED -
ENGINEERING GEOSPATIAL SERVICES		CHECKED -	REVISED -
IL DESIGN FIRM LICENSE NO: 184-001220	PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -
	PLOT DATE = 8/16/2024	CHECKED -	REVISED -

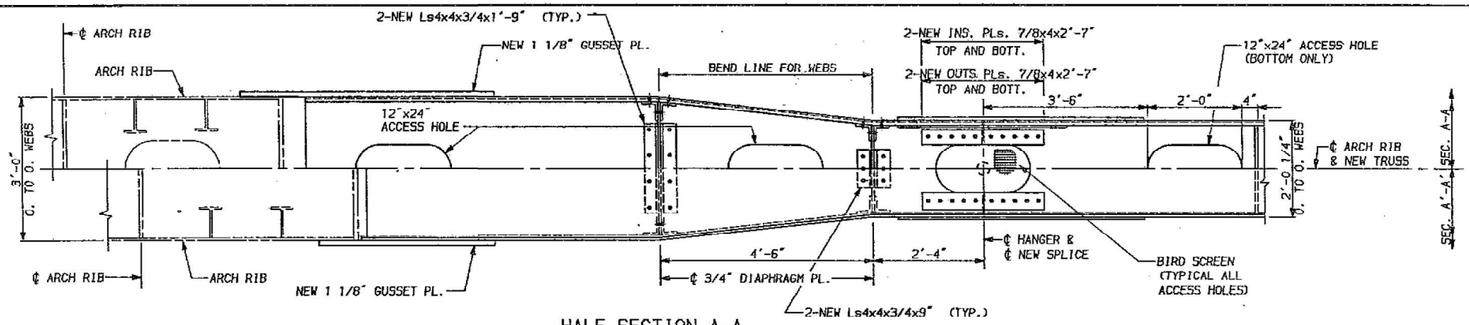
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 123 OF 175 SHEETS

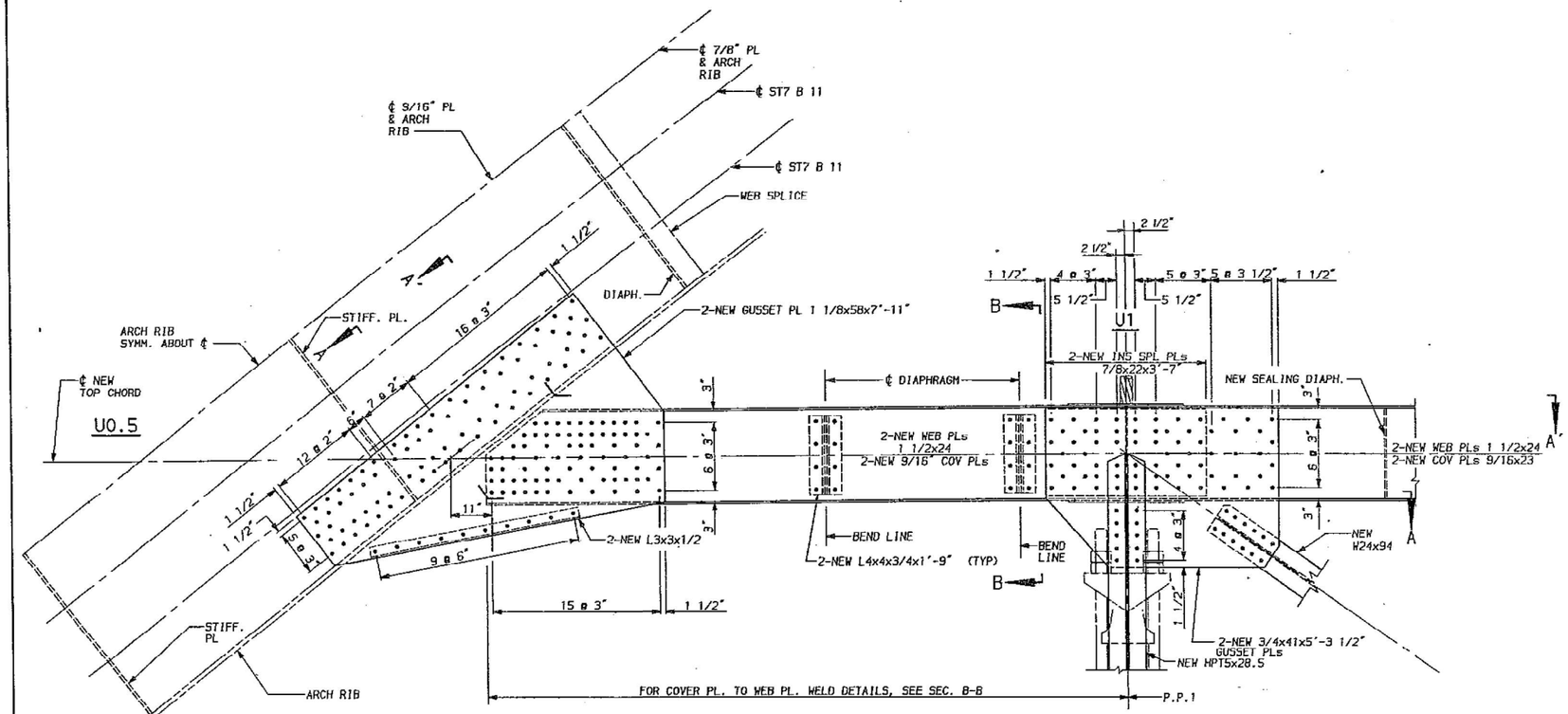
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	184
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

FAI RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	64-3B-1-3	M	32	8
F.H.W.A. REG.	ILLINOIS	PROJECT		

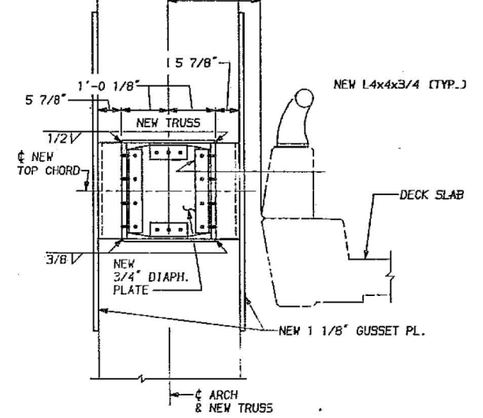
MASSAC, IL. & McCRACKEN, KY.



⚠ HALF SECTION A-A
HALF SECTION A'-A'



⚠ END PANEL ELEVATION - U0.5 TO U1



⚠ SECTION B-B

NOTES:
FOR GENERAL NOTES, SEE SHEET 3.
⚠ ● INDICATES NEW 7/8"ø H.S. BOLT (M164) IN NEW HOLE.
FOR BIRD SCREEN DETAILS, SEE SHEET 9.
⚠ ALL NEW STRUCTURAL STEEL SHOWN SHALL MEET NOTCH TOUGHNESS REQUIREMENTS (N.T.R.) EXCEPT L4x4x3/4, L3x3x1/2, AND 3/4" DIAPHRAGM PLATE.

PREPARED BY
MODJESKI AND MASTERS
CONSULTING ENGINEERS
DRAWN: SLH, CWH, DTP

FOR INFORMATION ONLY

REV.NO	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
⚠	SLH	REH	JEP	MISCELLANEOUS	10/27/

F A I ROUTE 24 (INTERSTATE 24)
OVER OHIO RIVER
MASSAC COUNTY ILLINOIS

UNIT II
TRUSS DETAILS - 3

Revised 11-15-89

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TWM, INC. WWW.TWM-INC.COM
ENGINEERING GEOSPATIAL SERVICES
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = jesker	DESIGNED -	REVISED -	
	CHECKED -	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

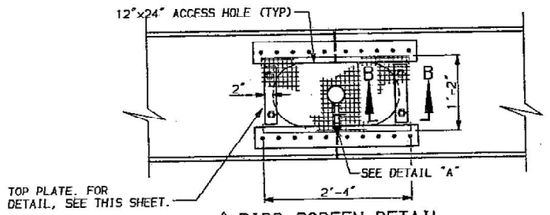
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 124 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	185
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

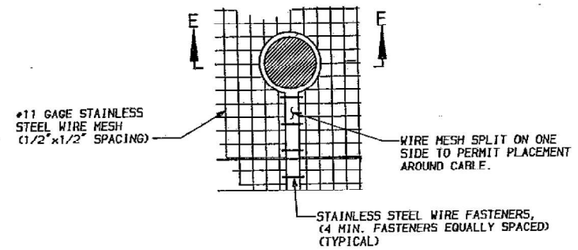
FAI RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	64-38-1-3	*	32	9
F.H.W.A. REG.	ILLINOIS	PROJECT		

*MASSAC, IL. & McCRACKEN, KY.

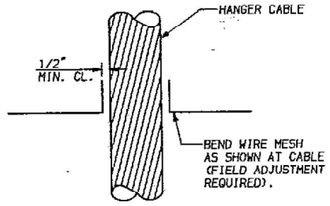


⚠ BIRD SCREEN DETAIL

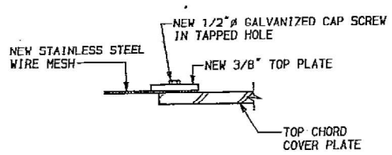
NOTE: BIRD SCREENS SHALL BE INSTALLED AFTER STRUCTURAL BOLTING IS COMPLETED.



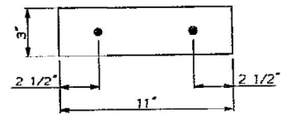
DETAIL A



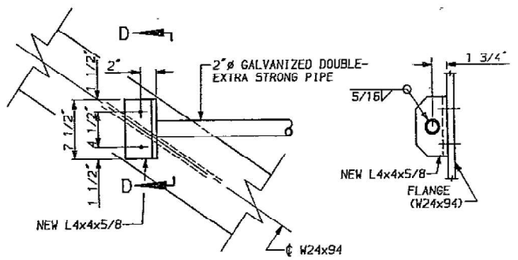
SECTION E-E



⚠ SECTION B-B

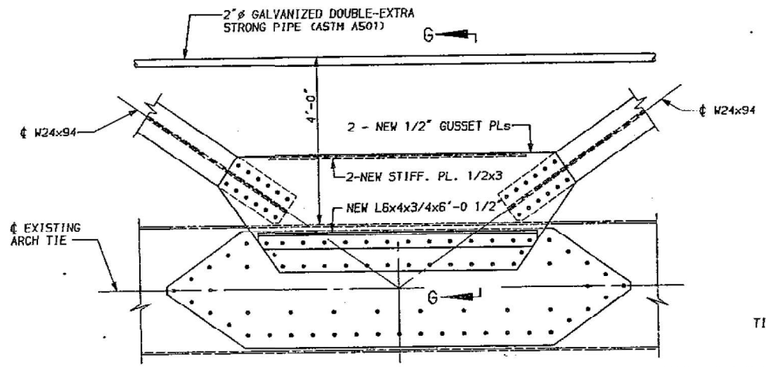


⚠ 3/8" TOP PLATE DETAIL



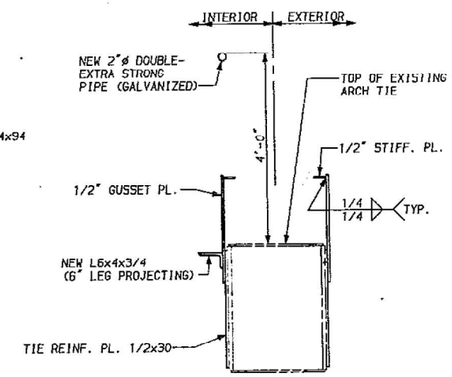
RAIL DETAIL
(INTERIOR FACE OF STIFFENING TRUSS SHOWN)

SECTION D-D



⚠ TYPICAL DETAIL AT DIAGONAL/TIE CONNECTION
(INTERIOR FACE OF STIFFENING TRUSS SHOWN)

NOTE: FOR BOLT SPACING NOT SHOWN, SEE SHEET 6.



⚠ SECTION G-G

NOTES:

FOR GENERAL NOTES, SEE SHEET 3.

⚠ • DENOTES NEW 7/8"ø H.S. BOLT (M164) IN NEW HOLE.

PREPARED BY
MODJESKI AND MASTERS
CONSULTING ENGINEERS

FOR INFORMATION ONLY

REV.NO	DRAWN	CHKD.	APPD.	DESCRIPTION
⚠	SLH	REH	JEP	MISCELLANEOUS

F A I ROUTE 24 (INTERSTATE 24)
OVER OHIO RIVER
MASSAC COUNTY ILLINOIS

UNIT II
TRUSS DETAILS - 4

Revised 11-19-99

TRUSS4.2

MODEL: Default
FILE NAME: P:\2021\210593\6L - FAI 24 Ohio River Bridge Painting\4 CADD - DWG\4.4 Struc\0640035-78972-125-Existing Plans.dgn
8/16/2024 11:15:38 AM

TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM	USER NAME = jesker	DESIGNED -	REVISED -
	IL DESIGN FIRM LICENSE NO: 184-001220		CHECKED -	REVISED -
		PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -
		PLOT DATE = 8/16/2024	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 125 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	186
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

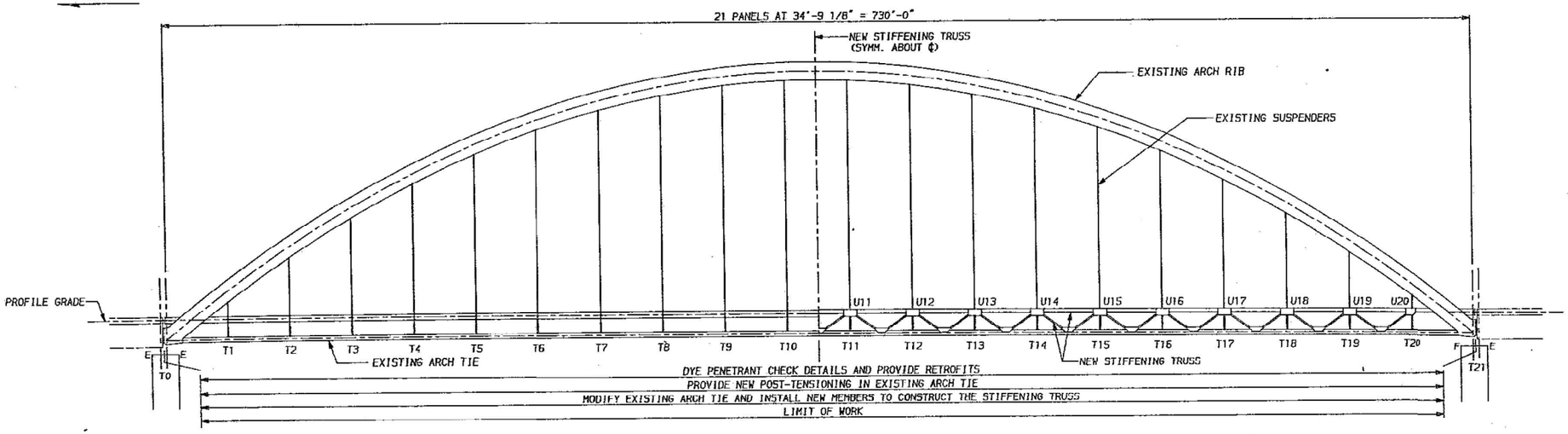
FAI RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	64-3B-1-3	※	32	10
F.H.W.A. REG.	ILLINOIS	PROJECT		

※MASSAC, IL. & McCRACKEN, KY.

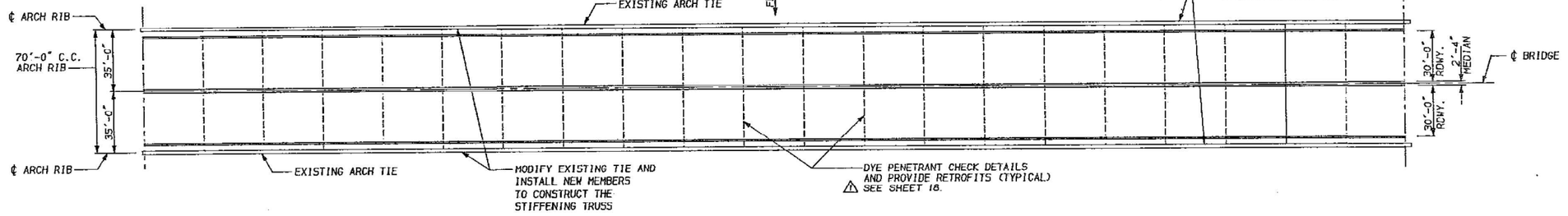
P.V.I. STA. 471+33.50
ELEV. 402.50
V.C. = 1400.00'
+1.40% -1.40%

ILLINOIS KENTUCKY

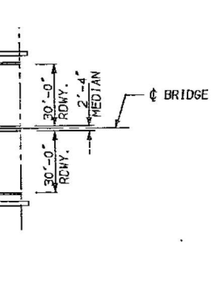
21 PANELS AT 34'-9 1/8" = 730'-0"



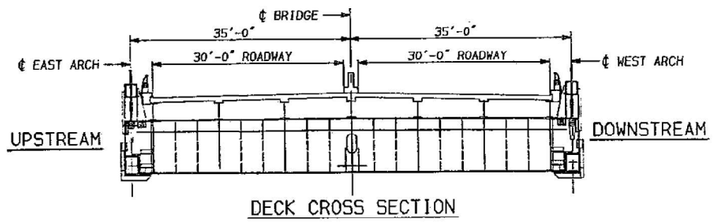
HALF ELEVATION
EXISTING



HALF ELEVATION
MODIFIED



PLAN



DECK CROSS SECTION

NOTE:
TWO WAY TRAFFIC WILL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION EXCEPT AS ALLOWED FOR BY THESE CONTRACT DOCUMENTS.
FOR GENERAL NOTES, SEE SHEET 3.
FOR MAINTENANCE AND PROTECTION OF TRAFFIC DETAILS, SEE SHEETS 30 AND 31.

PREPARED BY
MODJESKI AND MASTERS
CONSULTING ENGINEERS

FOR INFORMATION ONLY

REV.NO	DRAWN	CHKD.	APPD.	DESCRIPTION
⚠	SLH	REM	JEP	MISCELLANEOUS

F A I ROUTE 24 (INTERSTATE 24)
OVER OHIO RIVER
MASSAC COUNTY ILLINOIS

UNIT V
GENERAL PLAN AND ELEVATION

Revised 11-19-25

MODEL: Default
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8/16/2024 11:15:41 AM

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = Jesker	DESIGNED -	REVISED -	
	CHECKED -	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

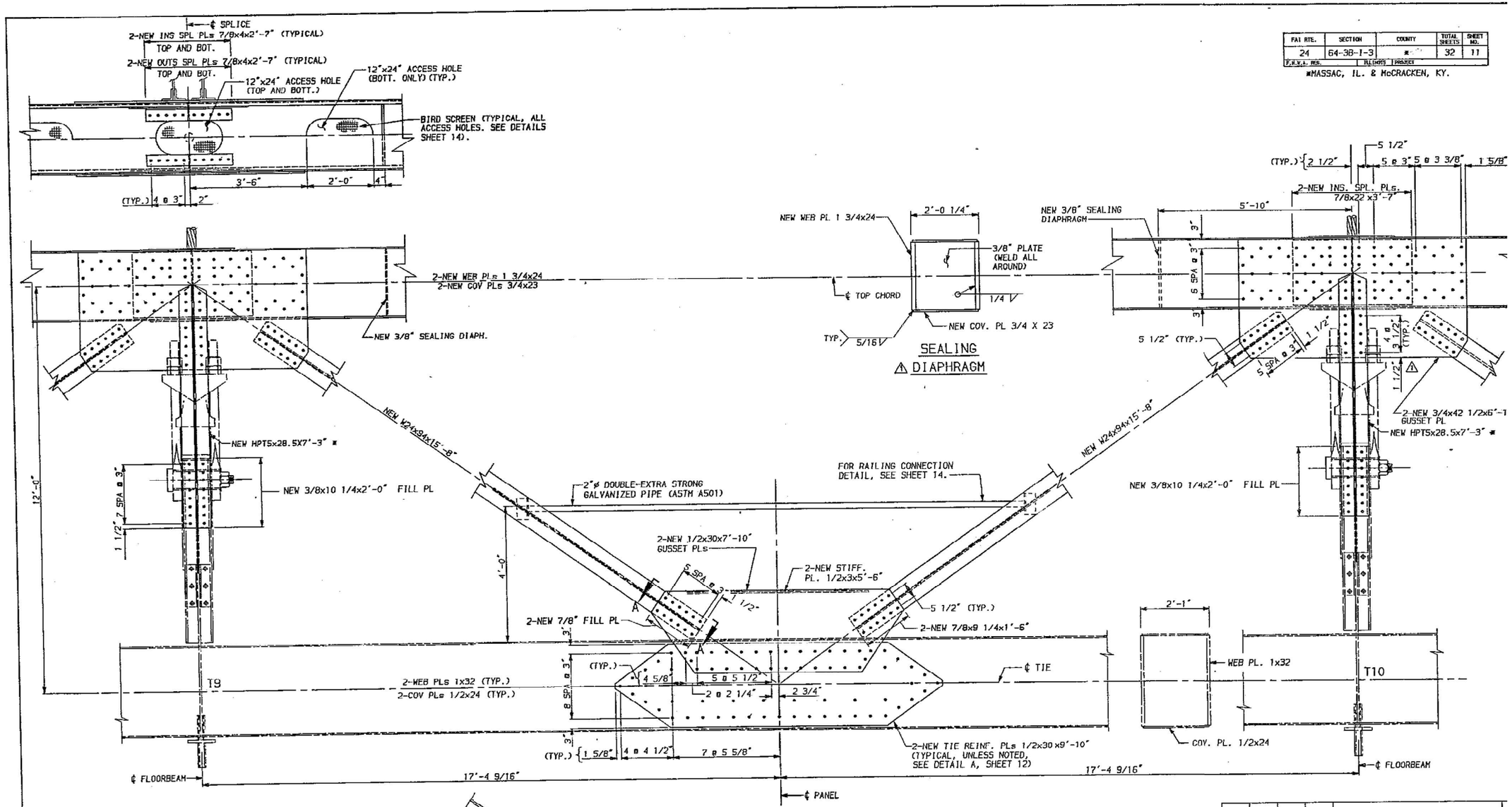
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 126 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	187
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

FAI RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	64-3B-1-3	*	32	11
F.A.P.R.A. RTE.	ILLINOIS PROJECT			

*MASSAC, IL. & McCRACKEN, KY.



TYPICAL PANEL ELEVATION ⚠
(T9-T10 SHOWN)

NOTES:

FOR GENERAL NOTES, SEE SHEET 3.
◆ DENOTES EXISTING 7/8"ø H.S. BOLT IN EXISTING HOLE.
* NEW VERTICAL MEMBERS SHALL BE TRULY VERTICAL.
⚠ • DENOTES NEW 7/8"ø.H.S. BOLT (M 164) IN NEW HOLE.
FOR SECTIONS, SEE SHEETS 12 AND 14.
⚠ ALL NEW STRUCTURAL STEEL SHOWN SHALL MEET NOTCH TOUGHNESS REQUIREMENTS (N.T.R.) EXCEPT 2"ø PIPE, 3/8" SEALING DIAPHRAGM PLATE, STIFFENERS AND FILL PLATES.

PREPARED BY
MODJESKI AND MASTERS
CONSULTING ENGINEERS
DRAWN: CVH, ELS

FOR INFORMATION ONLY

REV. NO	DRAWN	CHKD.	APPD.	DESCRIPTION
⚠	SLH	REH	JEP	MISCELLANEOUS

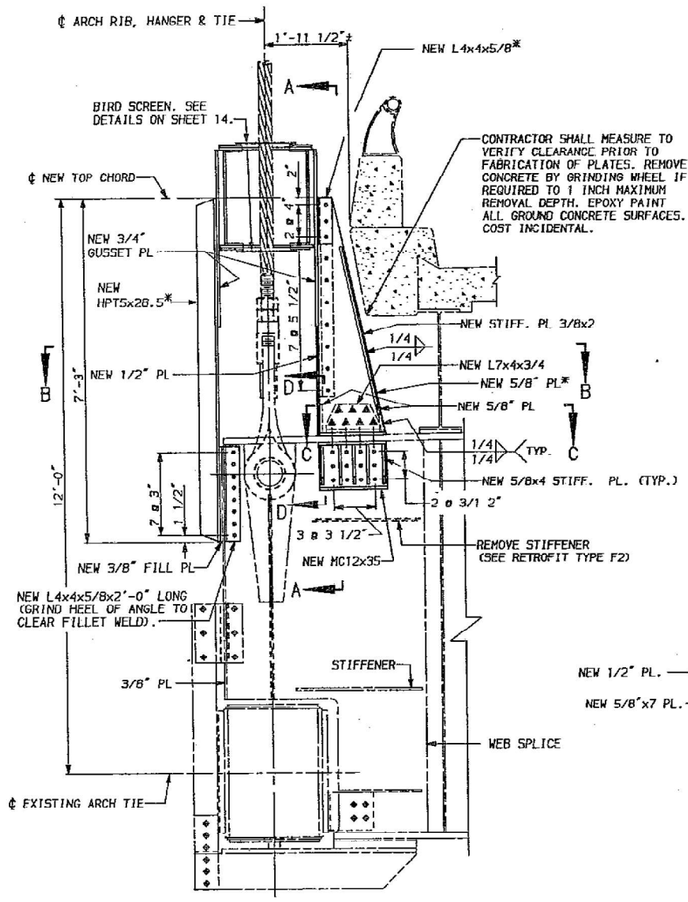
F A I ROUTE 24 (INTERSTATE 24)
OVER OHIO RIVER
MASSAC COUNTY ILLINOIS

UNIT V
TRUSS DETAILS - 1

Revised 11-15-88

FAI RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	64-3B-1-3	*	32	12
F.H.W.A. REG.	ILLINOIS	PROJECT		

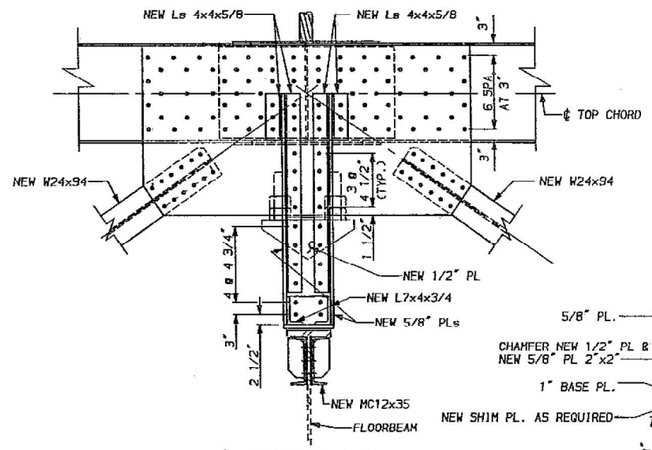
*MASSAC, IL. & McCRACKEN, KY.



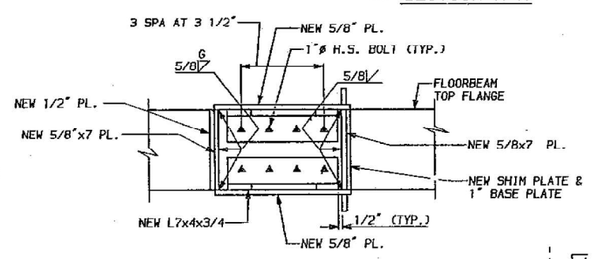
⚠ TYPICAL SECTION AT FLOORBEAM (T9 SHOWN)

◆ DENOTES EXISTING 7/8"ø H.S. BOLT IN EXISTING HOLE.

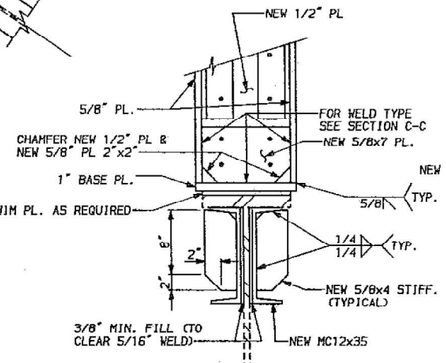
NOTE: FOR BOLT SPACING NOT SHOWN, SEE TYPICAL DETAIL SHEET 11.



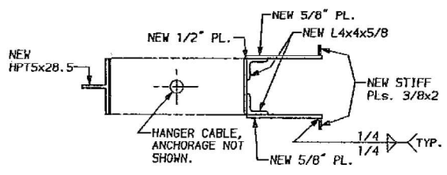
⚠ SECTION A-A



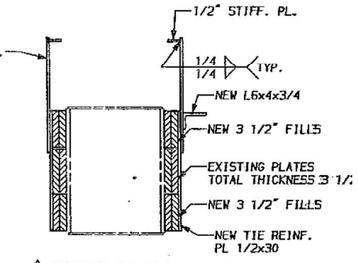
⚠ SECTION C-C



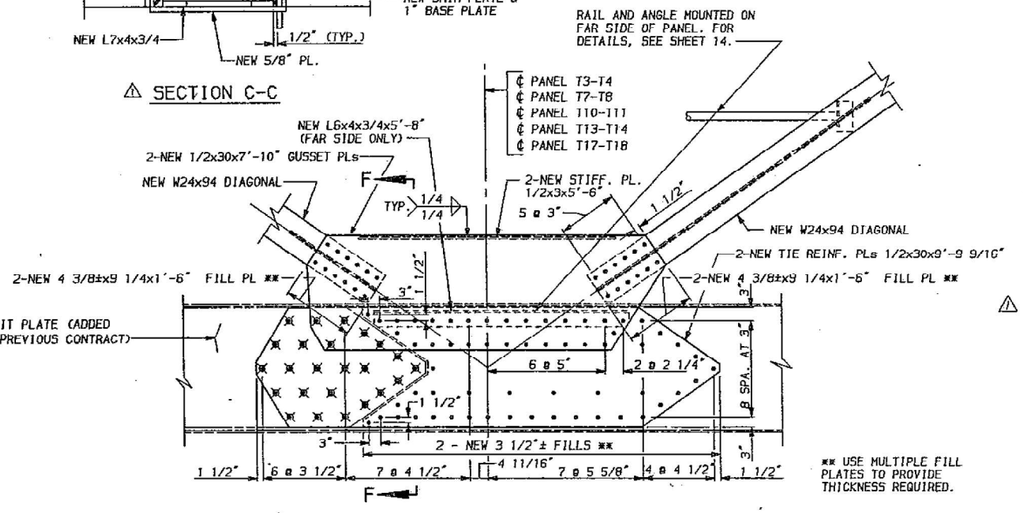
⚠ SECTION D-D



SECTION B-B



⚠ SECTION F-F



⚠ DETAIL AT DIAGONAL/TIE CONNECTION

PANEL T10-T11 (WEST ARCH SHOWN) FOR TYPICAL DETAILS SEE SHEETS 11 & 14

** USE MULTIPLE FILL PLATES TO PROVIDE THICKNESS REQUIRED.

NOTES:

FOR GENERAL NOTES, SEE SHEET 3.
* DENOTES NEW 1 1/4" ø H.S. BOLT (AASHTO M 253) IN EXISTING HOLE.
• DENOTES NEW 7/8"ø H.S. BOLT IN NEW HOLE.
* VERTICAL MEMBERS SHALL BE NEARLY VERTICAL.
FOR RETROFIT TYPE F2, SEE SHEET 19.
▲ DENOTES NEW 1"ø H.S. BOLT (AASHTO M 164) IN NEW HOLE.
ALL NEW STRUCTURAL STEEL SHOWN SHALL MEET NOTCH TOUGHNESS REQUIREMENTS (N.T.R.) EXCEPT RAIL. STIFFENERS AND ANGLE SHOWN ON DETAIL AT DIAGONAL/TIE CONNECTION.

REV.NO	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
⚠	SLH	REN	JEP	MISCELLANEOUS	10/2

F A I ROUTE 24 (INTERSTATE 24)
OVER OHIO RIVER
MASSAC COUNTY ILLINOIS

UNIT V
TRUSS DETAILS - 2

PREPARED BY
MODJESKI AND MASTERS
CONSULTING ENGINEERS

FOR INFORMATION ONLY

MODEL: Default
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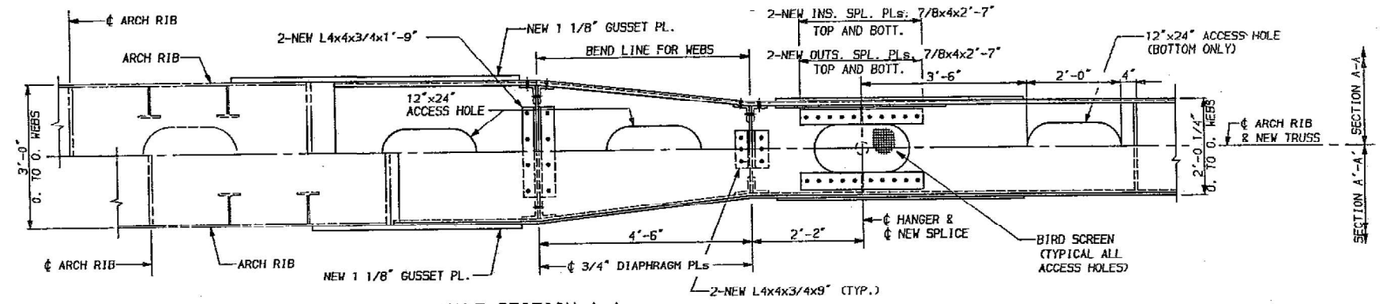
		CHECKED -	REVISED -	
	PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
	PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 128 OF 175 SHEETS

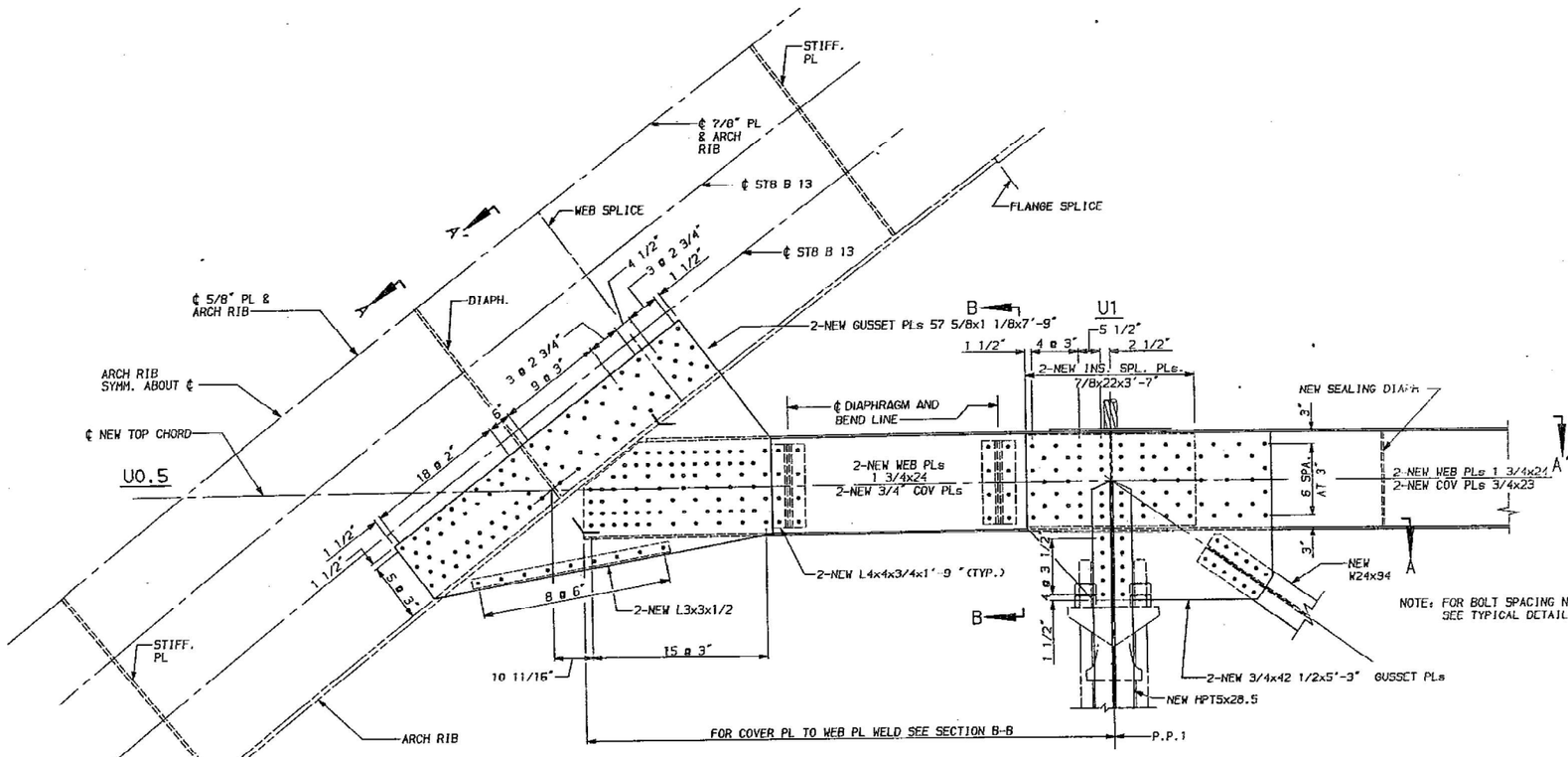
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	189
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

FAI RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	64-3B-1-3	*	32	13
F.H.W.A. REG.	ILLINOIS	PROJECT		

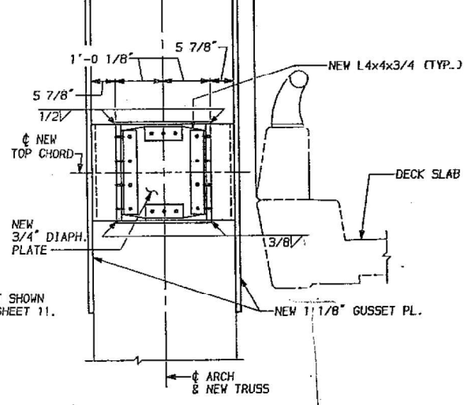
*MASSAC, IL. & McCRACKEN, KY.



⚠ HALF SECTION A-A
HALF SECTION A'-A'



⚠ END PANEL ELEVATION - U0.5 TO U1



⚠ SECTION B-B

NOTES:
FOR GENERAL NOTES, SEE SHEET 3.
⚠ • INDICATES NEW 7/8"ø H.S. BOLT (M164) IN NEW HOLE.
FOR BIRD SCREEN DETAILS, SEE SHEET 14.
ALL NEW STRUCTURAL STEEL SHALL MEET NOTCH
⚠ TOUGHNESS REQUIRMENTS (N.T.R.) EXCEPT L4x4x3/4, L3x3x1/2 AND 3/4" DIAPHRAGM PLATE.

REV. NO	DRAWN	CHKD.	APPD.	DESCRIPTION	DA
⚠	SLH	REH	JEP	MISCELLANEOUS	10/

F A I ROUTE 24 (INTERSTATE 24)
OVER OHIO RIVER
MASSAC COUNTY ILLINOIS

UNIT V
TRUSS DETAILS - 3

Revised 11-15-85

PREPARED BY
MODJESKI AND MASTERS
CONSULTING ENGINEERS
DRAWN: SLH, CWH, DTP

FOR INFORMATION ONLY

MODEL: Default
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TWM ENGINEERING & GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

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	CHECKED -	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

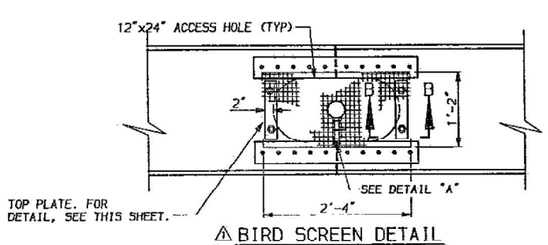
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 129 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	190
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

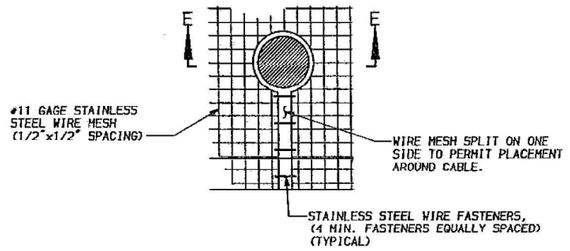
FAI RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	64-3B-1-3	*	32	14
F.H.W.A. REG.	1 ILLINOIS PROJECT			

*MASSAC, IL. & McCRACKEN, KY.

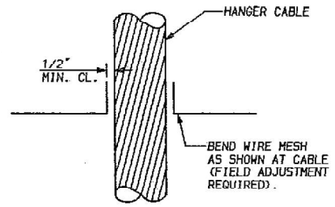


⚠ BIRD SCREEN DETAIL

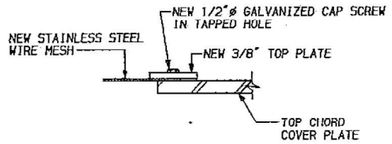
NOTE: BIRD SCREENS SHALL BE INSTALLED AFTER STRUCTURAL BOLTING IS COMPLETED.



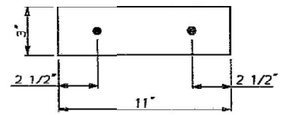
DETAIL A



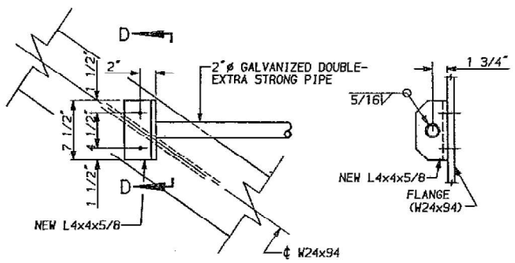
SECTION E-E



⚠ SECTION B-B

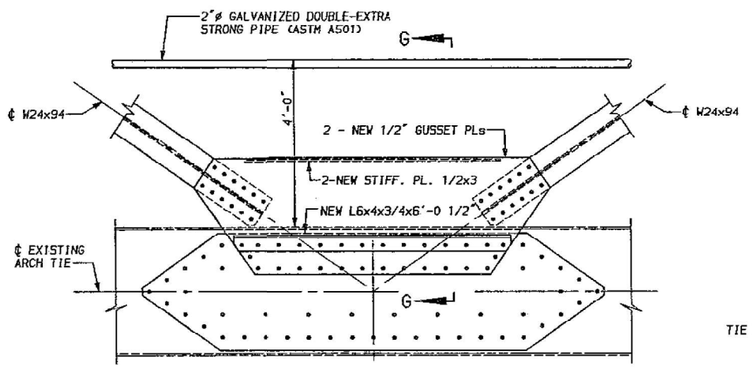


⚠ 3/8" TOP PLATE DETAIL



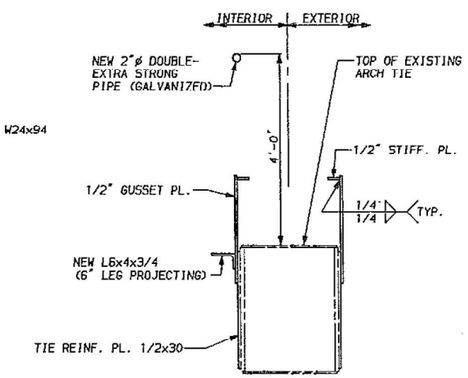
RAIL DETAIL
(INTERIOR FACE OF STIFFENING TRUSS SHOWN)

SECTION D-D



⚠ TYPICAL DETAIL AT DIAGONAL/TIE CONNECTION
(INTERIOR FACE OF STIFFENING TRUSS SHOWN)

NOTE: FOR BOLT SPACING NOT SHOWN SEE SHEET 11.



⚠ SECTION G-G

NOTES:

⚠ FOR GENERAL NOTES, SEE SHEET 3.
* DENOTES NEW 7/8"ø H.S. BOLT (M164) IN NEW HOLE.

REV.NO	DRAWN	CHKD.	APPD.	DESCRIPTION	DA
⚠	SLH	REM	JEP	MISCELLANEOUS	10/2

F A I ROUTE 24 (INTERSTATE 24)
OVER OHIO RIVER
MASSAC COUNTY ILLINOIS

UNIT V
TRUSS DETAILS - 4

Revised 11-15-23

PREPARED BY
MODJESKI AND MASTERS
CONSULTING ENGINEERS
DRAWN: DTP

FOR INFORMATION ONLY

TRUSS4

MODEL: Default
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8/16/2024 11:15:53 AM

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC.
WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME =	Jesker	DESIGNED -		REVISED -	
		CHECKED -		REVISED -	
PLOT SCALE =	0.167 ' / in.	DRAWN -		REVISED -	
PLOT DATE =	8/16/2024	CHECKED -		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

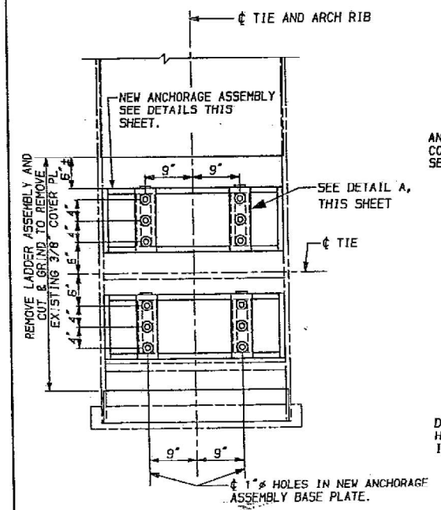
EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 130 OF 175 SHEETS

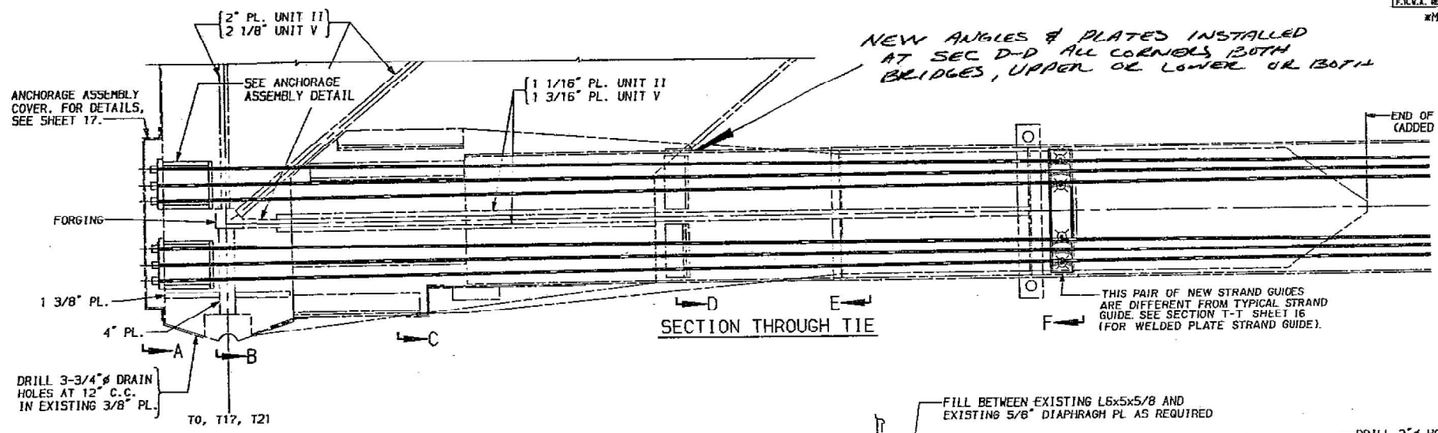
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	191
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

AUXILIARY ANCHOR CLAMPS 2 PER CABLE END (TYP)
SEE ATTACHED DRAWING

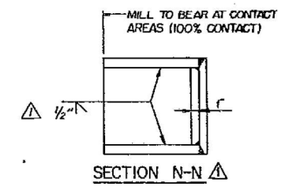
FAI RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	64-3B-1-3	*	32	15
F.H.W.A. REG.	ILLINOIS PROJECT			

*MASSAC, IL. & McCRACKEN, KY.



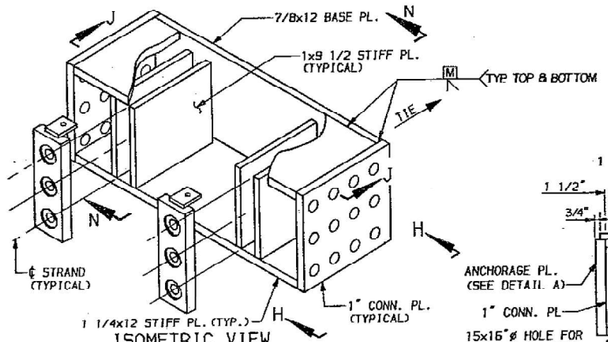


SECTION THROUGH TIE

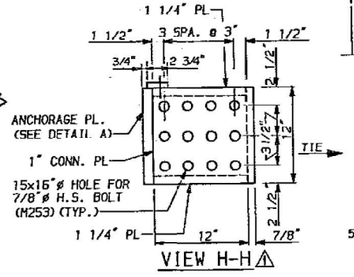


SECTION N-N ⚠

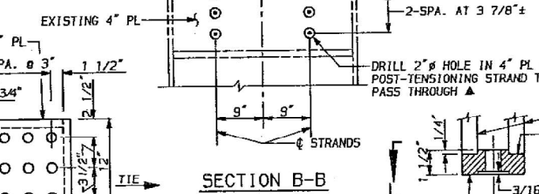
SECTION A-A ⚠



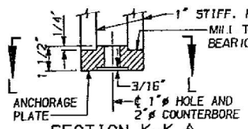
ISOMETRIC VIEW
ANCHORAGE ASSEMBLY DETAIL ⚠



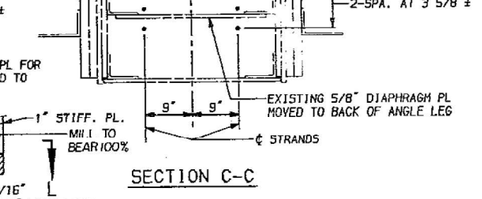
VIEW H-H ⚠



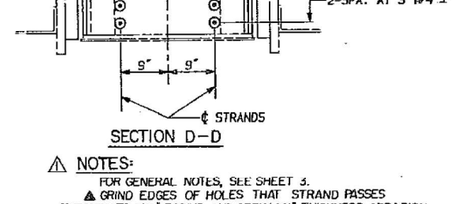
SECTION B-B



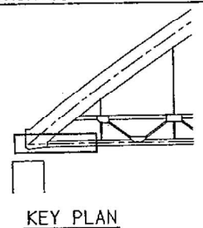
SECTION K-K ⚠



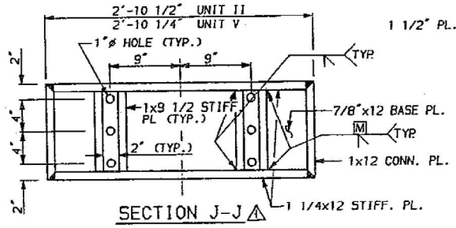
SECTION C-C



SECTION D-D

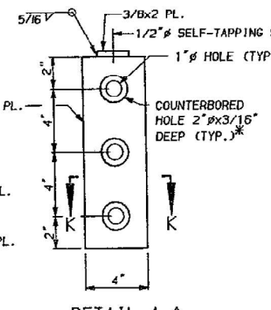


KEY PLAN



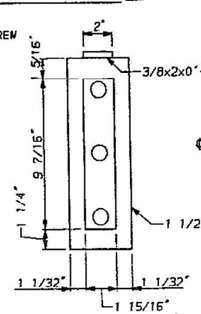
SECTION J-J ⚠

ALL PLATES SHALL BE CONNECTED USING WELDS SHOWN. GRIND WELDS IF REQUIRED AT INSIDE CORNERS TO CLEAR BOLT HEADS.

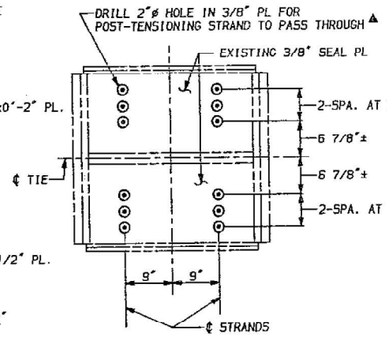


DETAIL A ⚠

* HOLE DIAMETER BASED ON 1 7/8" BARREL ANCHOR FOR STRAND. FOR STRAND ANCHORAGE DETAIL SEE SHEET 17.



SECTION L-L ⚠



SECTION E-E

⚠ NOTES:

FOR GENERAL NOTES, SEE SHEET 3.

▲ GRIND EDGES OF HOLES THAT STRAND PASSES THROUGH TO 1/16" RADIUS AND APPLY 1/4" THICKNESS ABRASION RESISTANT ELASTOMERIC MOLDABLE URETHANE COMPOUND.

⊗ EXISTING 1 1/4"ø H.S. BOLT TO BE REPLACED WITH NEW 1 1/4"ø (M253) H.S. BOLT.
FOR SECTION F-F, SEE SHEET 16.
POST-TENSIONING STRAND SHALL BE 0.6 INCH DIAMETER GRADE 270, LOW ⚠ RELAXATION, POLYMER COATED, 7 WIRE STRAND.
FOR ADDITIONAL DETAILS, SEE SHEETS 16 AND 17.
ALL NEW STRUCTURAL STEEL FOR ANCHORAGE ASSEMBLY SHALL MEET NOTCH TOUGHNESS REQUIREMENTS (N.T.R.).
ALL MILLED FACES SHALL HAVE A MAXIMUM SURFACE ROUGHNESS OF 32.

REV. NO	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
⚠	JPS	REM	JEP	MISCELLANEOUS	10/2

F A I ROUTE 24 (INTERSTATE 24)
OVER OHIO RIVER
MASSAC COUNTY ILLINOIS

POST-TENSIONING DETAILS 1

11-15-22

PREPARED BY
MODJESKI AND MASTERS
CONSULTING ENGINEERS
DRAWN: CWH,ELS,DTP

FOR INFORMATION ONLY

MODEL: Default
FILE NAME: P:\2021\21059\I&L - FAI 24 Ohio River Bridge Painting\4 CADD - DWG\4.4 Struc\064035-78972-131-Existing Plans.dgn

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			CHECKED -	REVISED -
		PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -
		PLOT DATE = 8/16/2024	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 131 OF 175 SHEETS

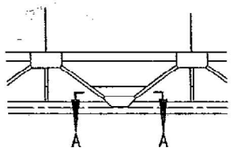
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	192
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

8/16/2024 11:15:56 AM

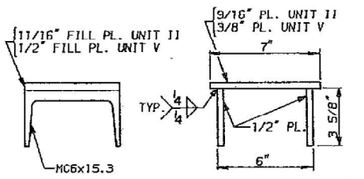
TO PREVENT CABLE NEAR TOP BAR & CLAMP MAY EITHER BE LOOSENED OR REMOVED ENTIRELY.

FAI RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	64-3B-1-3	*	32	16
F.H.W.A. RES.	ILLINOIS	PROJECT		

*MASSAC, IL. & McCRACKEN, KY.



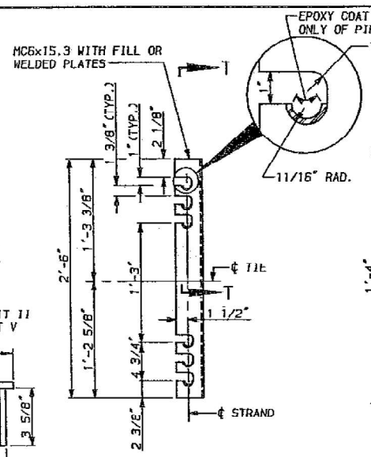
PARTIAL TRUSS ELEVATION
MODIFIED



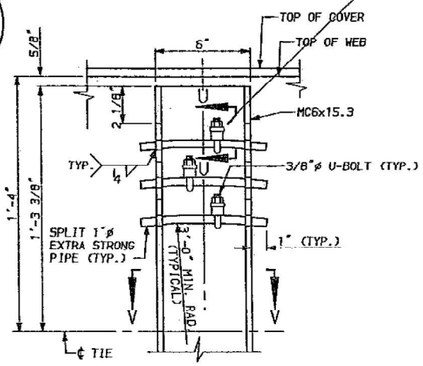
CHANNEL (TYPICAL)

WELDED PLATES ⚠ (SECTION F-F ONLY)

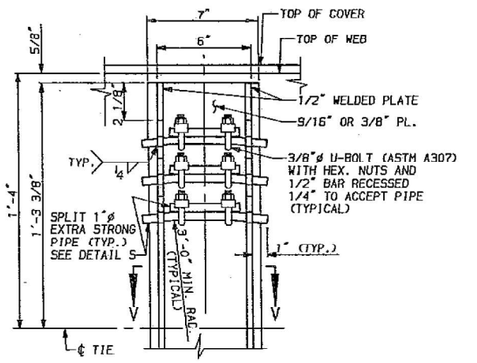
SECTION V-V



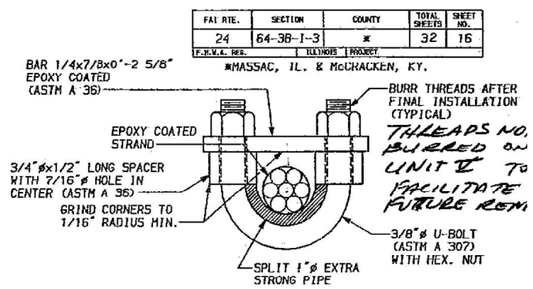
STRAND GUIDE DETAIL ⚠
(CHANNEL SHOWN; WELDED PLATES SIMILAR)



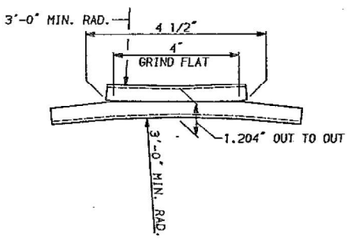
SECTION T-T ⚠
(FOR CHANNEL STRAND GUIDE)
(UNIT II - 60 REQ'D, UNIT V - 76 REQ'D)



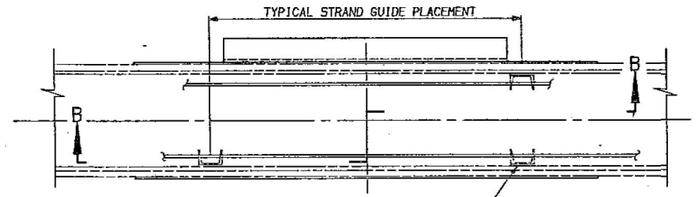
SECTION T-T ⚠
(FOR WELDED PLATE STRAND GUIDE)
(UNIT II - 8 REQ'D, UNIT V - 8 REQ'D)



SECTION U-U

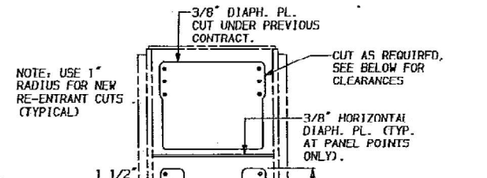


DETAIL S



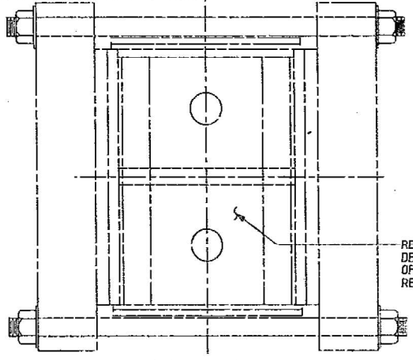
SECTION A-A

SET GUIDES DIRECTLY OPPOSITE EACH OTHER AT LOCATIONS SHOWN ON DETAIL A, SHEETS 7 AND 12, AND SECTION F-F.

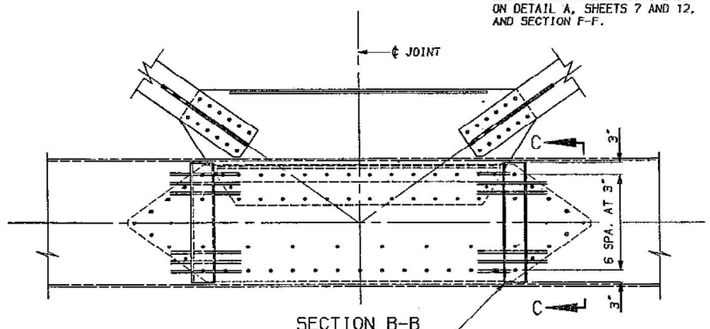


*TYP. AT PANEL POINTS. CUT SLOTS TO DIMENSIONS SHOWN TO PERMIT PASSAGE OF POST-TENSIONING STRANDS.

DETAIL AT PANEL POINTS ⚠



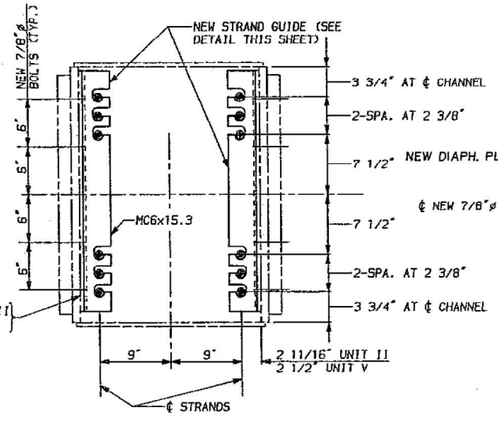
SECTION F-F
EXISTING CONDITION



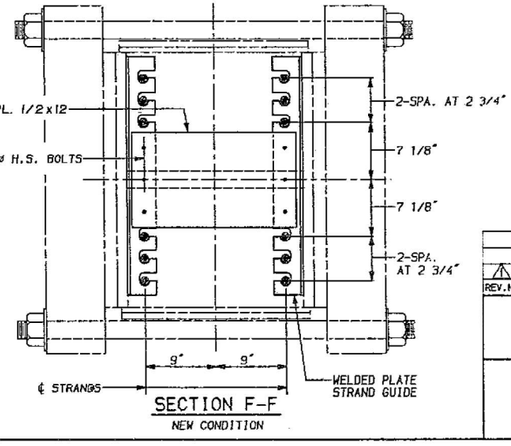
SECTION B-B

11/16" FILL PL. UNIT II
1/2" FILL PL. UNIT V

TYPICAL STRAND GUIDE. SEE SECTION T-T, THIS SHEET (FOR CHANNEL STRAND GUIDE).



SECTION C-C



SECTION F-F
NEW CONDITION

NOTES:
FOR GENERAL NOTES, SEE SHEET 3.
FOR ADDITIONAL DETAILS, SEE SHEETS 15 AND 17.
FOR LOCATION OF SECTION F-F, SEE SHEET 15.

PREPARED BY
MODJESKI AND MASTERS
CONSULTING ENGINEERS
DRAWN: DTP

REV.NO	DRAWN	CHK'D.	APP'D.	DESCRIPTION	DATE
⚠	JPS	REM	JEP	MISCELLANEOUS	10/22/24

F A I ROUTE 24 (INTERSTATE 24)
OVER OHIO RIVER
MASSAC COUNTY ILLINOIS

POST-TENSIONING DETAILS 2

FOR INFORMATION ONLY

TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM	USER NAME = jesker	DESIGNED -	REVISED -
	IL DESIGN FIRM LICENSE NO: 184-001220		CHECKED -	REVISED -
		PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -
		PLOT DATE = 8/16/2024	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 132 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	193
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

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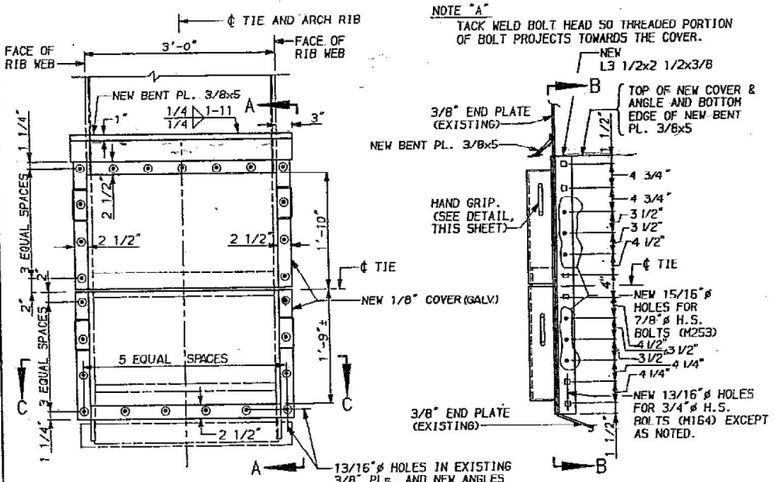
8/16/2024 11:15:59 AM

OBSOLETE REFER TO ANCHORAGE ASSEMBLY DETAIL ATTACHED DRAWING

FAI RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	64-3B-1-3	*	32	17
F.H.W.A. REG.	ILLINOIS	PROJECT		

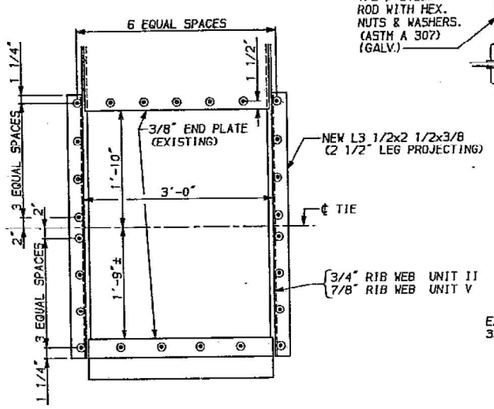
*MASSAC, IL. & McCRACKEN, KY.



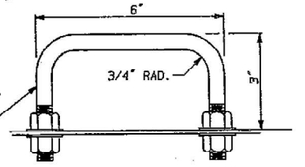
ANCHORAGE ASSEMBLY COVER DETAIL ⚠

NOTE "A"
TACK WELD BOLT HEAD SO THREADED PORTION OF BOLT PROJECTS TOWARDS THE COVER.

VIEW A-A ⚠

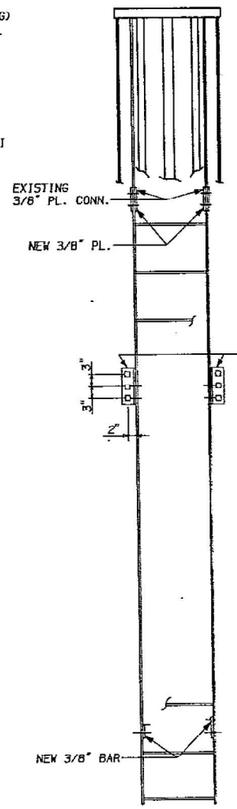


VIEW B-B ⚠

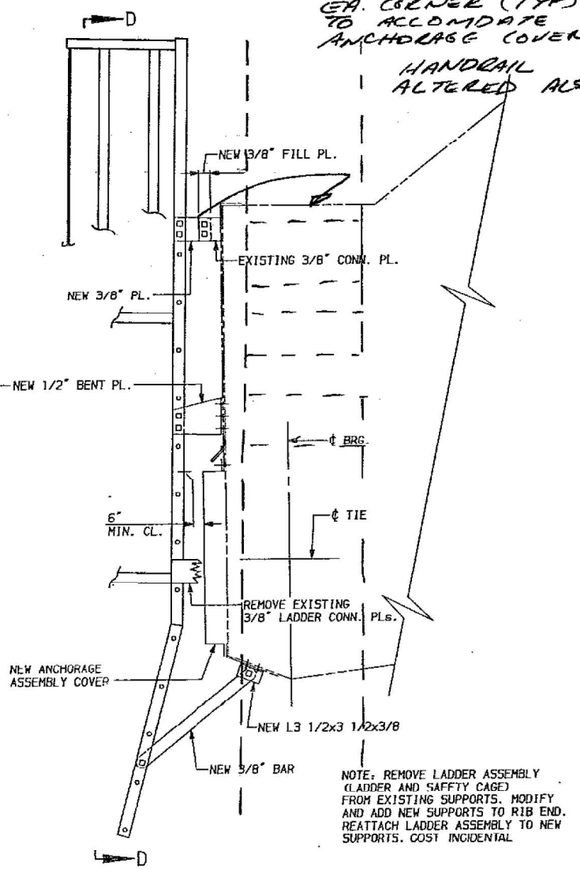


HAND GRIP DETAIL ⚠

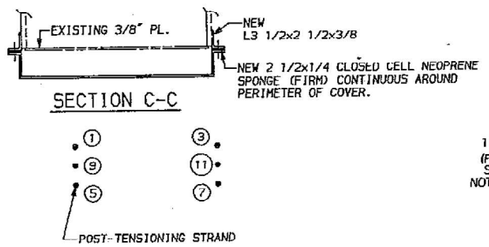
LADDER RELOCATED EA. CORNER (TYP) TO ACCOMODATE ANCHORAGE COVER
HANDRAIL ALTERED ALSO



VIEW D-D ⚠

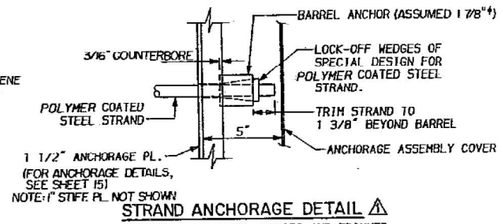


LADDER SUPPORT MODIFICATION ⚠



SECTION C-C

STRAND TENSIONING SEQUENCE



STRAND ANCHORAGE DETAIL ⚠

PAINT BARREL ANCHOR, WEDGES AND TRIMMED STRAND WITH AN APPROVED EPOXY PAINT BEFORE PLACING COVER.

CABLES NOT CUT OFF
EXTRA LENGTH IS PROVIDED FOR FUTURE DE TENSIONING IF NECESSARY

STRAND DATA: 0.6 INCH DIAMETER, (AREA=0.217 IN²) POLYMER COATED SEVEN-WIRE LOW RELAXATION STEEL STRAND CONFORMING TO ASTM A416, GRADE 270. ⚠

	UNIT II	UNIT V
FSU	270,000 PSI	270,000 PSI
FS'I	158,000 PSI	202,500 PSI
FS'A	153,000 PSI	193,500 PSI

UNIT II FINAL LOADS 173,500 PSI AVERAGE

WHERE FS'I = MAXIMUM INITIAL LOAD AFTER ANCHORAGE
FS'A = DESIGN LOAD

NOTES: ⚠
FOR GENERAL NOTES, SEE SHEET 3.
NEW GALVANIZED ANCHORAGE ASSEMBLY COVER SHALL ALSO BE PAINTED WITH THE SAME INTERMEDIATE COAT AND TOP COAT AS USED IN THE THREE COAT PAINT SYSTEM.
⊕13/16"ϕ HOLE IN EXISTING 3/8" PL OR NEW ANGLE AND 7/8"ϕ HOLE IN NEW 1/8" COVER FOR 3/4"ϕ H.S. BOLT (M164)
□NEW 13/16"ϕ HOLES FOR 3/4"ϕ H.S. BOLTS (M164).
⚠ PREPARE GALVANIZED SURFACES BY USING WASH COAT AFTER CLEANING.

QUANTITIES			
ITEM	UNIT	UNIT II	UNIT V
POST-TENS. STRAND	L.F.	15,120	17,520
STRUCTURAL STEEL	LBS.	10,300	10,900

PREPARED BY
MODJESKI AND MASTERS
CONSULTING ENGINEERS
DRAWN: DTP

REV. NO	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
⚠	JPS	REM	JEP	MISCELLANEOUS	10/28/

F A I ROUTE 24 (INTERSTATE 24)
OVER OHIO RIVER
MASSAC COUNTY ILLINOIS

POST-TENSIONING DETAILS 3

FOR INFORMATION ONLY

TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM IL DESIGN FIRM LICENSE NO. 184-001220	USER NAME = jesker	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
			CHECKED -	REVISED -	
		PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
		PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 133 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	194
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

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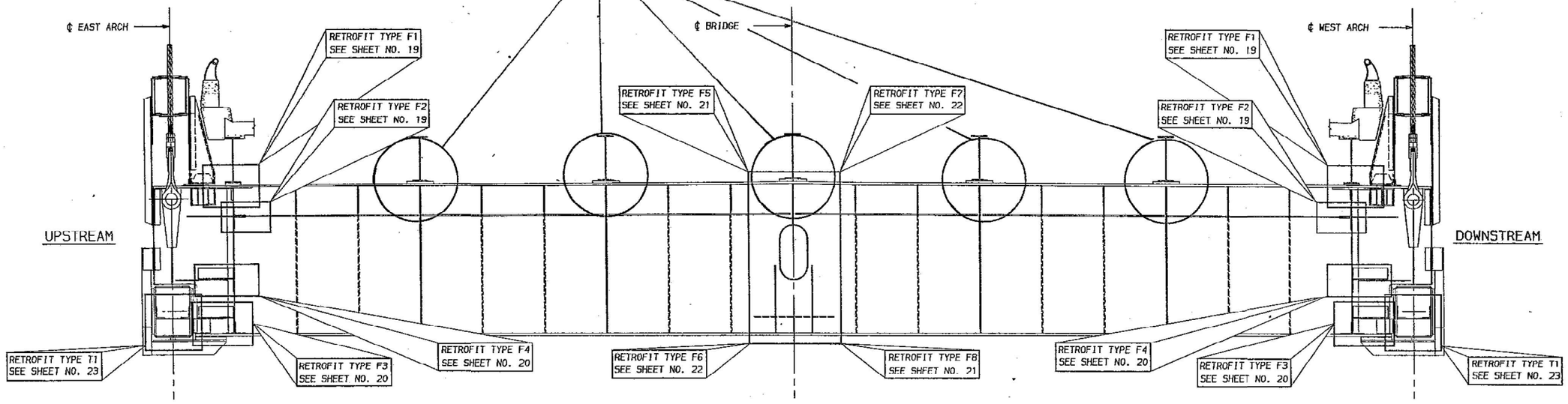
8/16/2024 11:16:02 AM

FAI RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	64-38-1-3	*	32	18
F.H.W.A. REG.	ILLINOIS	PROJECT		

*MASSAC, IL. & McCRACKEN, KY.

RETROFIT TYPE F1 UNDER EACH FLOOR STRINGER
FLOOR BEAM 8 UNIT II ARCH ONLY



FLOORBEAM ELEVATION

RETROFIT LOCATIONS - UNIT II

PANEL POINT	RETROFIT TYPE													
	F1	F1	F2	F2	F3	F3	F4	F4	F5	F6	F7	F8	T1	T1
	US	DS	US	DS	US	DS	US	DS					US	DS
0											●			
1	●	●	●	●	●	●	●	●			●		●	●
2	●	●	●	●	●	●	●	●		●			●	●
3	●	●	●	●	●	●	●	●				●	●	●
4	●	●	●	●	●	●	●	●				●	●	●
5	●	●	●	●	●	●	●	●				●	●	●
6	●	●	●	●	●	●	●	●				●	●	●
7	●	●	●	●	●	●	●	●				●	●	●
8	●	●	●	●	▲	●					●		●	●
9	●	●	●	●	●	●	●	●					●	●
10	●	●	●	●	●	●	●	●			●		●	●
11	●	●	●	●	●	●	●	●			●		●	●
12	●	●	●	●	●	●	●	●				●	●	●
13	●	●	●	●	●	●	●	●				●	●	●
14	●	●	●	●	●	●	●	●				●	●	●
15	●	●	●	●	●	●	●	●		●			●	●
16	●	●	●	●	●	●	●	●				●	●	●
17											●			
NUMBER OF EACH	16	16	16	16	15	15	16	16	15	1	2	7	8	~~16~~ 17	~~16~~ 17

RETROFIT LOCATIONS - UNIT V

PANEL POINT	RETROFIT TYPE													
	F1	F1	F2	F2	F3	F3	F4	F4	F5	F6	F7	F8	T1	T1
	US	DS	US	DS	US	DS	US	DS					US	DS
0											●			
1	●	●	●	●	●	●	●	●			●		●	●
2	●	●	●	●	●	●	●	●		●			●	●
3	●	●	●	●	●	●	●	●			●		●	●
4	●	●	●	●	●	●	●	●				●	●	●
5	●	●	●	●	●	●	●	●	●				●	●
6	●	●	●	●	●	●	●	●				●	●	●
7	●	●	●	●	●	●	●	●				●	●	●
8	●	●	●	●	●	●	●	●				●	●	●
9	●	●	●	●	●	●	●	●	●				●	●
10	●	●	●	●	●	▲	●				●	X	●	●
11	●	●	●	●			●	●			●		●	●
12	●	●	●	●	●	●	●	●			●		●	●
13	●	●	●	●	●	●	●	●			●		●	●
14	●	●	●	●	●	●	●	●				●	●	●
15	●	●	●	●	●	●	●	●				●	●	●
16	●	●	●	●	●	●	●	●	●				●	●
17	●	●	●	●	●	●	●	●				●	●	●
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19	●	●	●	●	●	●	●	●		●			●	●
20	●	●	●	●	●	●	●	●				●	●	●
21												●		
NUMBER OF EACH	20	20	20	20	19	19	20	19	3	2	9	8	~~20~~ 21	~~20~~ 21

NOTES:

FOR GENERAL NOTES, SEE SHEET 3.
FOR RETROFIT DETAILS, SEE SHEETS 19 THRU 23.
▲ DENOTES MODIFIED RETROFIT TYPE F3.
SEE GENERAL PROCEDURE NO. [illegible] SHEET 20.
DS DENOTES DOWNSTREAM
US DENOTES UPSTREAM

* AT MIDSPAN IN EACH ARCH IN EACH TIE 2 TYPE T1 RETROFITS WERE CONSTRUCTED. K-BRACING ATTACHES TO TIE FROM EACH DIRECTION AT THAT POINT.

PREPARED BY
MODJESKI AND MASTERS
CONSULTING ENGINEERS

DRAWN: CWH

FOR INFORMATION ONLY

REV. NO	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE

F A I ROUTE 24 (INTERSTATE 24)
OVER OHIO RIVER
MASSAC COUNTY ILLINOIS

RETROFIT LOCATIONS

11-18-55

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME =	jesker	DESIGNED -		REVISED -	
		CHECKED -		REVISED -	
PLOT SCALE =	0.167 ' / in.	DRAWN -		REVISED -	
PLOT DATE =	8/16/2024	CHECKED -		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 134 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	195
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

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8/16/2024 11:16:05 AM

FAI RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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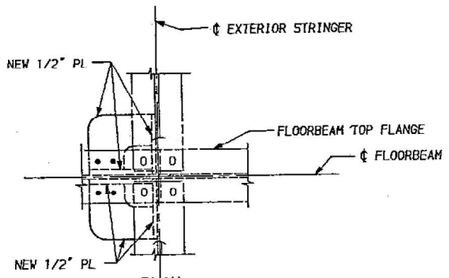
F.H.W.A. REG.	ILLINOIS	PROJECT		

*MASSAC, IL. & McCRACKEN, KY.



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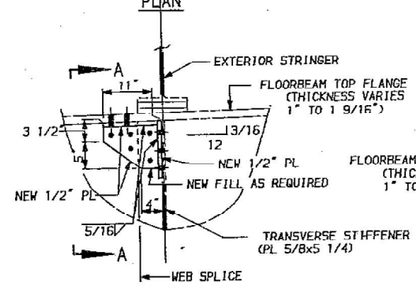
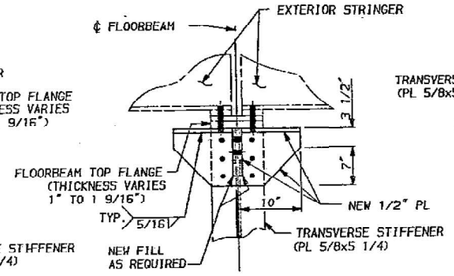


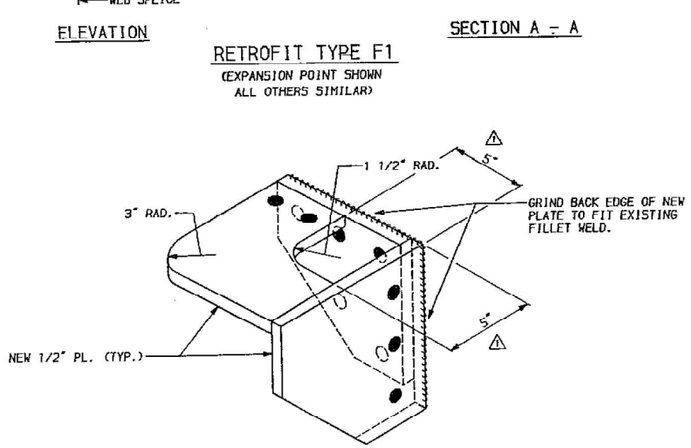
ELEVATION



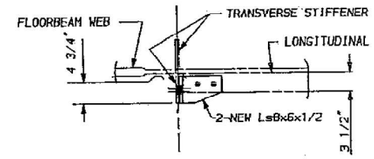
SECTION A - A

RETROFIT TYPE F1

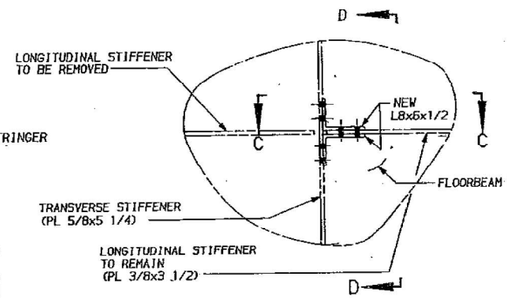
(EXPANSION POINT SHOWN
ALL OTHERS SIMILAR)



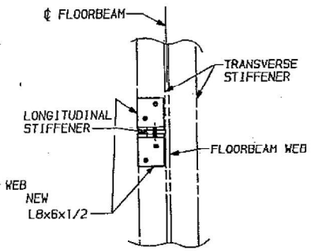
ISOMETRIC VIEW
RETROFIT TYPE F1



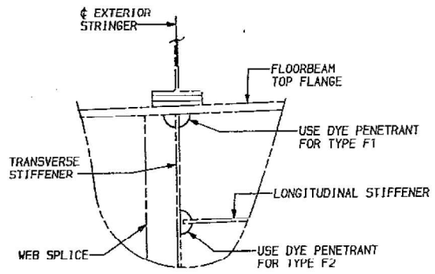
SECTION C - C



RETROFIT TYPE F2



SECTION D - D



DYE PENETRANT AREAS

QUANTITIES				
RETROFIT	ITEM	UNIT	UNIT II	UNIT V
TYPE F1	STRUCTURAL STEEL	LBS.	2,100	2,600
TYPE F2	STRUCTURAL STEEL	LBS.	600	700

NOTES:

FOR GENERAL NOTES, SEE SHEET 3.
FOR RETROFIT LOCATIONS, SEE SHEET 18.
⚠ ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
• DENOTES NEW 7/8"ø H.S. BOLT IN NEW HOLE.

RETROFIT TYPE F1

GENERAL PROCEDURE:

1. SANDBLAST TO REMOVE PAINT FROM THE UNDERSIDE OF THE TOP FLANGE AND THE CONTACT SURFACE ON THE TRANSVERSE STIFFENER. PAINT SHOULD BE REMOVED FROM THE TOP FLANGE APPROXIMATELY 15" FROM THE TRANSVERSE STIFFENER AND FROM THE TRANSVERSE STIFFENER APPROXIMATELY 12" FROM THE TOP FLANGE ON BOTH SIDES OF THE WEB.

⚠ 2. USE DYE PENETRANT TO CHECK THE FLOORBEAM WEB FOR CRACKS IN THE GAP BETWEEN THE END OF THE TRANSVERSE STIFFENER AND THE TOP FLANGE (SEE DYE PENETRANT AREAS). IF THE WEB IS CRACKED, DRILL A 15/16" DIAMETER HOLE AT THE CRACK TIP AND DEBURR HOLE. USE DYE PENETRANT ON THE NEWLY EXPOSED (DRILLED) SURFACE OF THE FLOORBEAM WEB TO ENSURE THAT THE CRACK DOES NOT EXTEND PAST THE HOLE. IF THE CRACK EXTENDS PAST THE HOLE, GRIND TO REMOVE CRACK OR DRILL ANOTHER HOLE. REPEAT DYE PENETRANT CHECK.

3. SECURE HORIZONTAL PLATE OF WELDMENT TO TOP FLANGE IN ITS FINAL POSITION SO THAT THE VERTICAL PLATE IS TIGHT AGAINST THE TRANSVERSE STIFFENER. USING THE NEW PLATES AS A TEMPLATE, DRILL HOLES IN THE TOP FLANGE, TRANSVERSE STIFFENER AND WEB.

4. SECURE WELDMENT TO OTHER SIDE OF WEB USING HOLES IN WEB. DRILL HOLES IN TRANSVERSE STIFFENER AND TOP FLANGE USING THE WELDMENT AS A TEMPLATE.

⚠ 5. REMOVE WELDMENT AND SOLVENT CLEAN ENTIRE RETROFIT AREA TO REMOVE CUTTING OIL. ALSO REMOVE OIL FROM FAYING SURFACES OF WELDMENT.

6. PLACE WELDMENTS IN THEIR FINAL POSITION AND INSTALL BOLTS.

7. PAINT ENTIRE RETROFIT AREA.

RETROFIT TYPE F2

GENERAL PROCEDURE:

⚠ 1. CUT PORTION OF LONGITUDINAL STIFFENER BETWEEN SUSPENDER AND EXTERIOR STRINGER. REMOVE REMAINING WELD MATERIAL BY GRINDING TO SMOOTH FINISH (ANSI 125 MIN.)

2. SANDBLAST TO REMOVE PAINT FROM BOTH SIDES OF THE LONGITUDINAL STIFFENER AND THE ADJACENT SIDE OF THE TRANSVERSE STIFFENER.

⚠ 3. USE DYE PENETRANT TO CHECK THE FLOORBEAM WEB FOR CRACKS IN THE GAP BETWEEN THE END OF THE LONGITUDINAL STIFFENER AND THE TRANSVERSE STIFFENER. IF THE WEB IS CRACKED, DRILL A 15/16" DIAMETER HOLE AT THE CRACK TIP AND DEBURR HOLE. USE DYE PENETRANT ON THE NEWLY EXPOSED (DRILLED) SURFACE OF THE FLOORBEAM WEB TO ENSURE THAT THE CRACK DOES NOT EXTEND PAST THE HOLE. IF THE CRACK EXTENDS PAST THE HOLE, GRIND TO REMOVE CRACK OR DRILL ANOTHER HOLE. REPEAT DYE PENETRANT CHECK.

4. SECURE ONE ANGLE IN ITS FINAL POSITION AND DRILL HOLES IN THE TRANSVERSE AND LONGITUDINAL STIFFENER USING THE ANGLE AS A TEMPLATE.

5. REMOVE THE FIRST ANGLE AND PLACE THE REMAINING ANGLE IN ITS FINAL POSITION. USE BOLT HOLES IN LONGITUDINAL STIFFENER TO SECURE ANGLE AND DRILL HOLES INTO THE TRANSVERSE STIFFENER.

⚠ 6. REMOVE BOTH ANGLES AND SOLVENT CLEAN THE ENTIRE RETROFIT AREA TO REMOVE CUTTING OIL. ALSO REMOVE OIL FROM FAYING SURFACES OF THE ANGLES.

7. INSTALL ANGLES AND TIGHTEN BOLTS.

8. PAINT ENTIRE RETROFIT AREA.

REV. NO	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
⚠	SLH	REM	JEP	MISCELLANEOUS	10/24

F A I ROUTE 24 (INTERSTATE 24)
OVER OHIO RIVER
MASSAC COUNTY ILLINOIS

RETROFIT DETAILS 1

11-16-55

PREPARED BY
MODJESKI AND MASTERS
CONSULTING ENGINEERS

DRAWN: CWH

FOR INFORMATION ONLY

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8/16/2024 11:16:08 AM

TWM ENGINEERING & GEOSPATIAL SERVICES
TWM, INC.
WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = Jesker	DESIGNED -	REVISED -	
	CHECKED -	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

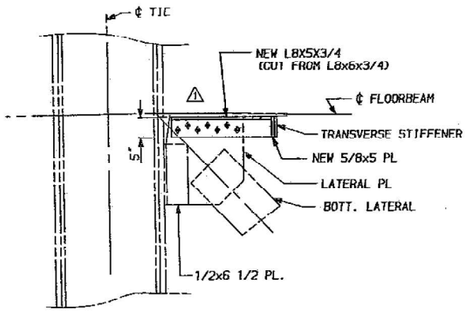
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 135 OF 175 SHEETS

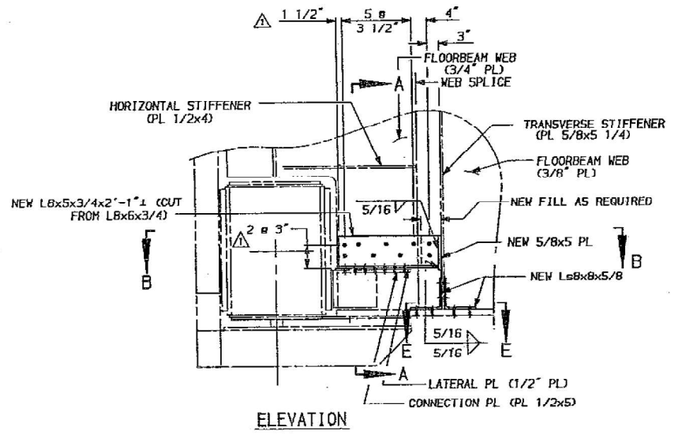
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	196
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

FAI RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	64-3B-1-3	*	32	20
F.H.W.A. REG.	ILLINOIS	PROJECT		

*MASSAC, IL. & McCRACKEN, KY.

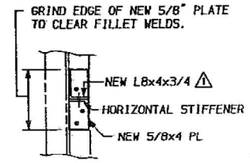


SECTION B - B

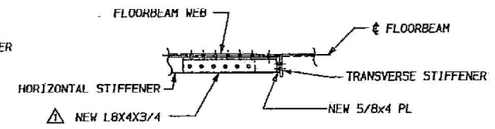


ELEVATION

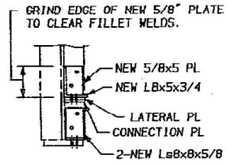
RETROFIT TYPE F3



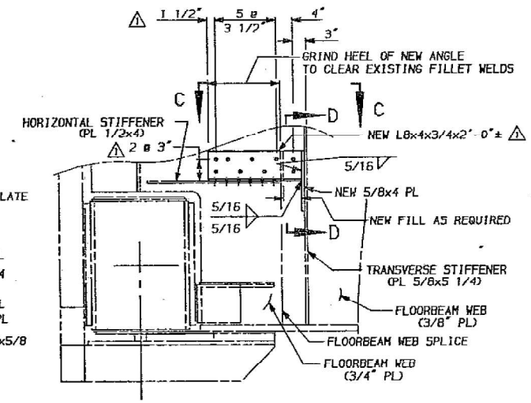
SECTION D - D



SECTION C - C

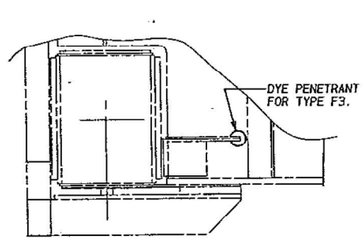


SECTION A - A

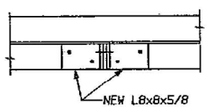


ELEVATION

RETROFIT TYPE F4



DYE PENETRANT AREA



SECTION E - E

(NOTE: USE EXISTING HOLES FOR UNIT II, P.P. 8 DOWNSTREAM AND UNIT V, P.P. 10 DOWNSTREAM)

QUANTITIES				
RETROFIT	ITEM	UNIT	UNIT II	UNIT V
TYPE F3	STRUCTURAL STEEL	LBS.	3,400	4,100
TYPE F4	STRUCTURAL STEEL	LBS.	2,000	2,500

RETROFIT TYPE F4

1. SECURE NEW WELDMENT IN PLACE SO THAT THE VERTICAL LEG OF THE ANGLE IS TIGHT AGAINST THE FLOORBEAM WEB, THE HORIZONTAL LEG OF THE ANGLE IS TIGHT AGAINST THE HORIZONTAL STIFFENER AND THE END PLATE IS TIGHT AGAINST THE TRANSVERSE STIFFENER. DRILL HOLES IN THE FLOORBEAM WEB, THE TRANSVERSE STIFFENER AND THE HORIZONTAL STIFFENER USING THE NEW WELDMENT AS A TEMPLATE.
2. ⚠ REMOVE NEW WELDMENT. SOLVENT CLEAN TO REMOVE CUTTING OIL AND SANDBLAST TO REMOVE PAINT FROM FAYING SURFACES OF NEW WELDMENT AND FLOORBEAM WEB.
3. PLACE NEW WELDMENT IN FINAL POSITION AND INSTALL BOLTS.
4. PAINT ENTIRE RETROFIT AREA.

NOTES:

⚠ FOR GENERAL NOTES SEE SHEET 3.
FOR RETROFIT LOCATIONS SEE SHEET 18.
ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
• DENOTES NEW 7/8"ø H.S. BOLT IN NEW HOLE.
⚠ ♦ DENOTES NEW 7/8"ø H.S. BOLT IN EXISTING HOLE.

RETROFIT TYPE F3

GENERAL PROCEDURE:

⚠ (PROCEED TO STEP 14 FOR RETROFIT LOCATIONS AT UNIT II, PANEL POINT 8 DOWNSTREAM AND UNIT V, PANEL POINT 10 DOWNSTREAM)

1. SANDBLAST TO REMOVE PAINT FROM THE FLOORBEAM WEB IN AN AREA APPROXIMATELY 6" IN DIAMETER CENTERED ON THE LATERAL PLATE (SEE DYE PENETRANT AREA).
2. ⚠ USE DYE PENETRANT TO CHECK THE FLOORBEAM WEB FOR CRACKS AT THE END OF THE LATERAL PLATE. IF THE WEB IS CRACKED, DRILL A 15/16" DIAMETER HOLE AT THE CRACK TIP AND DEBURR HOLE. USE DYE PENETRANT ON THE NEWLY EXPOSED (DRILLED) SURFACE OF THE FLOORBEAM WEB TO ENSURE THAT THE CRACK DOES NOT EXTEND PAST THE HOLE. IF THE CRACK EXTENDS PAST THE HOLE, GRIND TO REMOVE CRACK OR DRILL ANOTHER HOLE. REPEAT DYE PENETRANT CHECK. SOLVENT CLEAN AREA TO REMOVE CUTTING OIL.
3. ⚠ REMOVE BOLTS FROM LATERAL PLATE TO FLOORBEAM CONNECTION. MAKE TEMPLATE OF HOLES IN EXISTING LATERAL PLATE. SANDBLAST TO REMOVE PAINT FROM ALL NEW FAYING SURFACES ON FLOORBEAM WEB AND EXISTING LATERAL PLATE.
4. DRILL UNDERSIZED HOLES IN NEW WELDMENT USING TEMPLATE.
5. SECURE NEW WELDMENT IN PLACE SO THAT THE VERTICAL LEG OF THE ANGLE IS TIGHT AGAINST THE FLOORBEAM WEB, THE HORIZONTAL LEG OF THE ANGLE IS TIGHT AGAINST THE LATERAL PLATE AND THE END PLATE OF THE NEW WELDMENT IS TIGHT AGAINST THE TRANSVERSE STIFFENER. DRILL HOLES IN THE FLOORBEAM WEB AND THE TRANSVERSE STIFFENER USING THE NEW WELDMENT AS A TEMPLATE. REAM HOLES IN THE NEW WELDMENT THROUGH LATERAL PLATE.
6. ⚠ REMOVE NEW WELDMENT AND SOLVENT CLEAN ENTIRE RETROFIT AREA TO CLEAN AND REMOVE CUTTING OIL FROM FAYING SURFACES. SOLVENT CLEAN AND REMOVE CUTTING OIL FROM FAYING SURFACES OF WELDMENT.
7. PLACE WELDMENT IN THE FINAL POSITION AND INSTALL BOLTS.
8. SECURE ONE NEW ANGLE TO BOTTOM OF TRANSVERSE STIFFENER AND TO THE BOTTOM FLANGE.
9. DRILL HOLES IN TRANSVERSE STIFFENER AND BOTTOM FLANGE USING THE NEW ANGLE AS A TEMPLATE. REMOVE NEW ANGLE.
10. SECURE SECOND NEW ANGLE TO BOTTOM OF TRANSVERSE STIFFENER AND BOTTOM FLANGE. REAM UNDERSIZED HOLES IN VERTICAL LEG OF NEW ANGLE TO HOLES IN TRANSVERSE STIFFENER. DRILL HOLES IN BOTTOM FLANGE USING NEW ANGLE AS A TEMPLATE. REMOVE NEW ANGLE.
11. ⚠ USE SOLVENT TO CLEAN AND REMOVE CUTTING OIL FROM ALL FAYING SURFACES. SOLVENT CLEAN TO REMOVE CUTTING OIL FROM FAYING SURFACES OF NEW ANGLES.
12. PLACE BOTH ANGLES IN FINAL POSITION AND INSTALL BOLTS.
13. PAINT ENTIRE RETROFIT AREA.
14. REMOVE EXISTING BENT PLATES CONNECTING TRANSVERSE STIFFENER ANGLE TO FLOORBEAM BOTTOM FLANGE. SECURE ONE NEW ANGLE TO BOTTOM OF TRANSVERSE STIFFENER AND TO THE BOTTOM FLANGE.
15. DRILL HOLES IN NEW ANGLES USING EXISTING HOLES IN TRANSVERSE STIFFENER AND BOTTOM FLANGE AS TEMPLATE. REMOVE NEW ANGLE.
16. SECURE SECOND NEW ANGLE TO BOTTOM OF TRANSVERSE STIFFENER AND TO THE BOTTOM FLANGE. USE EXISTING HOLES IN TRANSVERSE STIFFENER AND BOTTOM FLANGE AS A TEMPLATE TO DRILL HOLES IN NEW ANGLE. REMOVE NEW ANGLE.
17. ⚠ PROCEED WITH STEPS 11 THRU 13 ABOVE.

REV.NO	DRAWN	CHKD.	APPD.	DESCRIPTION	DAT
⚠	SLH	REM	JEP	MISCELLANEOUS	10/24

F A I ROUTE 24 (INTERSTATE 24)
OVER OHIO RIVER
MASSAC COUNTY ILLINOIS

RETROFIT DETAILS 2

Revised 11-18-99

PREPARED BY
MODJESKI AND MASTERS
CONSULTING ENGINEERS

DRAWN: CWH

FOR INFORMATION ONLY

MET2

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = jesker	DESIGNED -	REVISED -	
	CHECKED -	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 136 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	197
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

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FAI RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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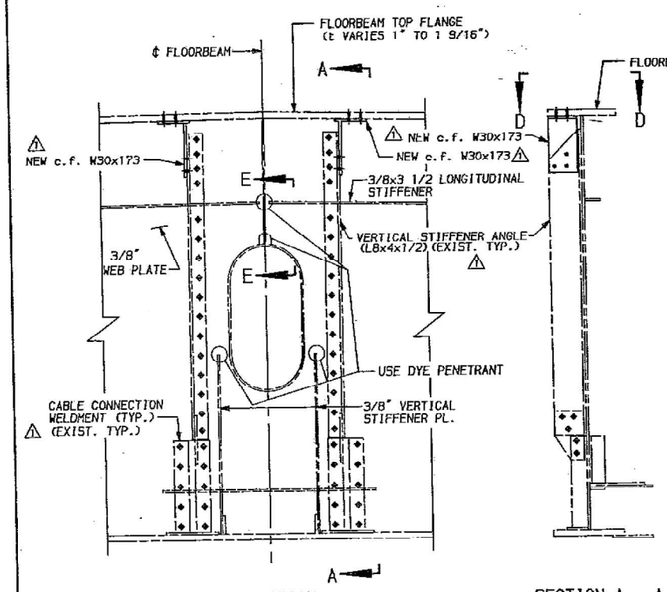
F.H.W.A. REG.	ILLINOIS	PROJECT		

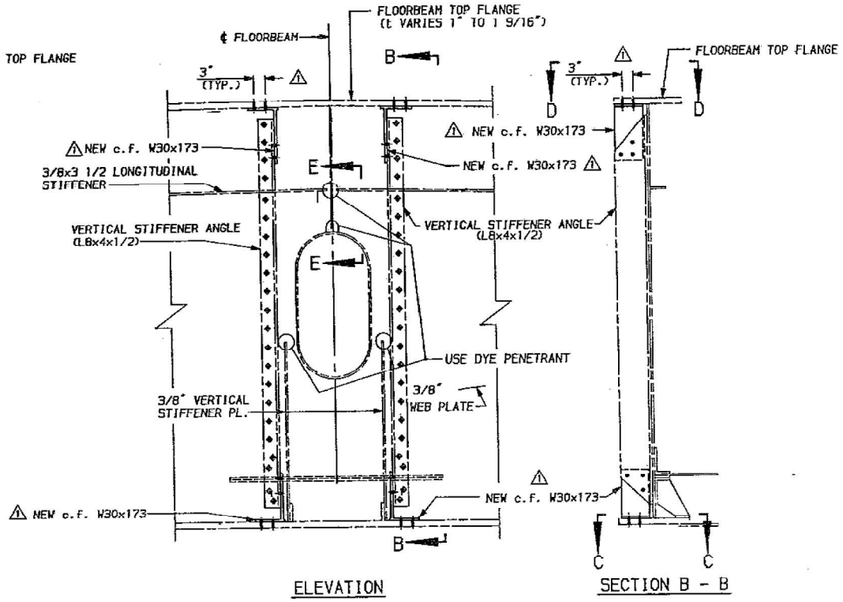
*MASSAC, IL. & McCRACKEN, KY.



ELEVATION

SECTION A - A

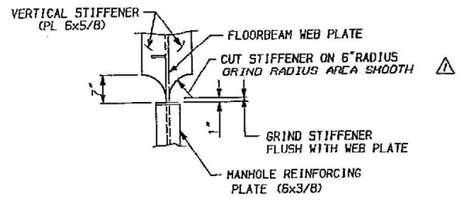
RETROFIT TYPE F5



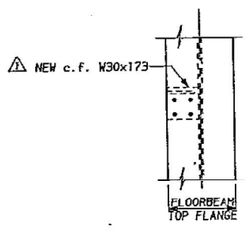
ELEVATION

SECTION B - B

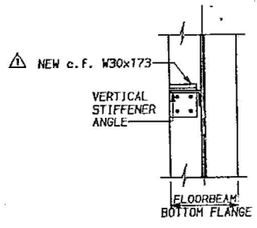
RETROFIT TYPE F8



SECTION E - E



SECTION D-D



SECTION C-C

RETROFIT TYPE F5 AND TYPE F8

GENERAL PROCEDURE:

1. CUT VERTICAL STIFFENER ON BOTH SIDES OF THE FLOORBEAM AS SHOWN IN SECTION E - E. GRIND CUT SURFACE TO SMOOTH FINISH.

⚠ 2. SANDBLAST CLEAN TO REMOVE PAINT FROM THE FLOORBEAM WEB AND TOP OF MANHOLE STIFFENER WITHIN 6" OF EACH SIDE OF CENTER LINE OF FLOORBEAM.

⚠ 3. USE DYE PENETRANT TO CHECK THE FLOORBEAM WEB FOR CRACKS AT THE LOCATIONS SHOWN ON THE SHORT TRANSVERSE STIFFENER ABOVE THE ACCESS HOLE. IF THE WEB IS CRACKED, DRILL A 15/16" DIAMETER HOLE AT THE CRACK TIP AND DEBURR HOLE. USE DYE PENETRANT ON THE NEWLY EXPOSED (DRILLED) SURFACE OF THE FLOORBEAM WEB TO ENSURE THAT THE CRACK DOES NOT EXTEND PAST THE HOLE. IF THE CRACK EXTENDS PAST THE HOLE, GRIND TO REMOVE CRACK OR DRILL ANOTHER HOLE. REPEAT DYE PENETRANT CHECK.

4. BLAST CLEAN TO REMOVE PAINT FROM FLOORBEAM WEB WITHIN AN AREA 6" IN DIAMETER AND CENTERED AT THE TOP OF THE EXISTING CUT SHORT TRANSVERSE STIFFENERS ON BOTH SIDES OF THE MANHOLE.

⚠ 5. USE DYE PENETRANT TO CHECK THE FLOORBEAM WEB FOR CRACKS AT THE TOP OF THE EXISTING CUT SHORT TRANSVERSE STIFFENERS ON BOTH SIDES OF THE MANHOLE. IF THE WEB IS CRACKED, DRILL A 15/16" DIAMETER HOLE AT THE CRACK TIP AND DEBURR HOLE. USE DYE PENETRANT ON THE NEWLY EXPOSED (DRILLED) SURFACE OF THE FLOORBEAM WEB TO ENSURE THAT THE CRACK DOES NOT EXTEND PAST THE HOLE. IF THE CRACK EXTENDS PAST THE HOLE, GRIND TO REMOVE CRACK OR DRILL ANOTHER HOLE. REPEAT DYE PENETRANT CHECK.

6. REPEAT STEPS 2, 3, 4 AND 5 FOR THE OPPOSITE SIDE OF THE FLOORBEAM WEB.

7. SECURE NEW WELDMENT TO THE TOP FLANGE SO THAT THE VERTICAL LEG IS TIGHT AGAINST THE OUTSTANDING LEG OF THE EXISTING VERTICAL STIFFENER ANGLE. USING THE NEW WELDMENT AS A TEMPLATE, DRILL HOLES IN THE TOP FLANGE AND THE OUTSTANDING LEG OF THE VERTICAL ANGLE.

⚠ 8. REMOVE WELDMENT AND SOLVENT CLEAN ALL FAYING SURFACES. REMOVE CUTTING OIL FROM FAYING SURFACES ON EXISTING VERTICAL, FLOORBEAM FLANGE AND WELDMENT. SANDBLAST TO REMOVE PAINT FROM ALL NEW FAYING SURFACES.

9. PLACE WELDMENT IN FINAL POSITION AND INSTALL BOLTS.

10. PAINT RETROFIT AREA.

RETROFIT F8 ONLY

11. REPEAT STEPS 7, 8, 9 AND 10 FOR ATTACHING WELDMENT TO BOTTOM FLANGE.

NOTES:

FOR GENERAL NOTES, SEE SHEET 3.
FOR RETROFIT LOCATIONS, SEE SHEET 18.
⚠ ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
• DENOTES EXISTING 7/8"ø H.S. BOLT IN EXISTING HOLE.
• DENOTES NEW 7/8"ø H.S. BOLT IN NEW HOLES.

QUANTITIES				
RETROFIT	ITEM	UNIT	UNIT II	UNIT V
TYPE F5	STRUCTURAL STEEL	LBS.	100	200
TYPE F8	STRUCTURAL STEEL	LBS.	900	900

PREPARED BY
MODJESKI AND MASTERS
CONSULTING ENGINEERS

FOR INFORMATION ONLY

REV. NO	DRAWN	CHKD.	APPD.	DESCRIPTION	DA
⚠	SLH	REM	JEP	MISCELLANEOUS	10/2

F A I ROUTE 24 (INTERSTATE 24)
OVER OHIO RIVER
MASSAC COUNTY ILLINOIS

RETROFIT DETAILS 3

Revised 11-15-22

TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM	USER NAME = Jesker	DESIGNED -	REVISED -
	IL DESIGN FIRM LICENSE NO: 184-001220		CHECKED -	REVISED -
		PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -
		PLOT DATE = 8/16/2024	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 137 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	198
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

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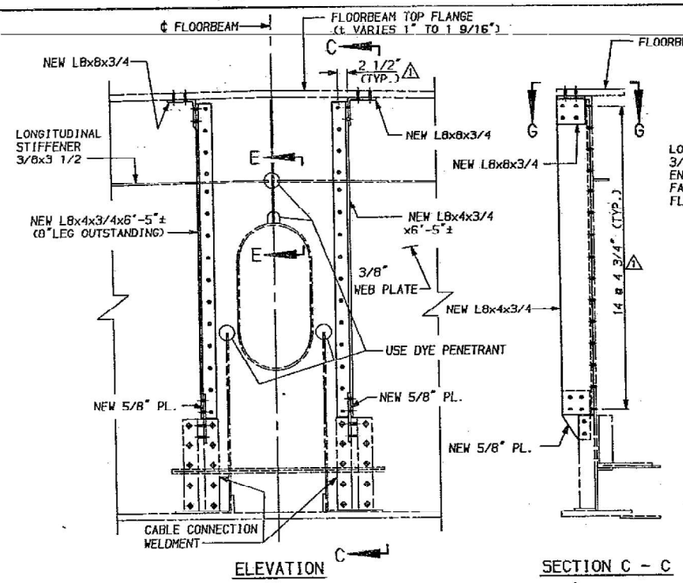
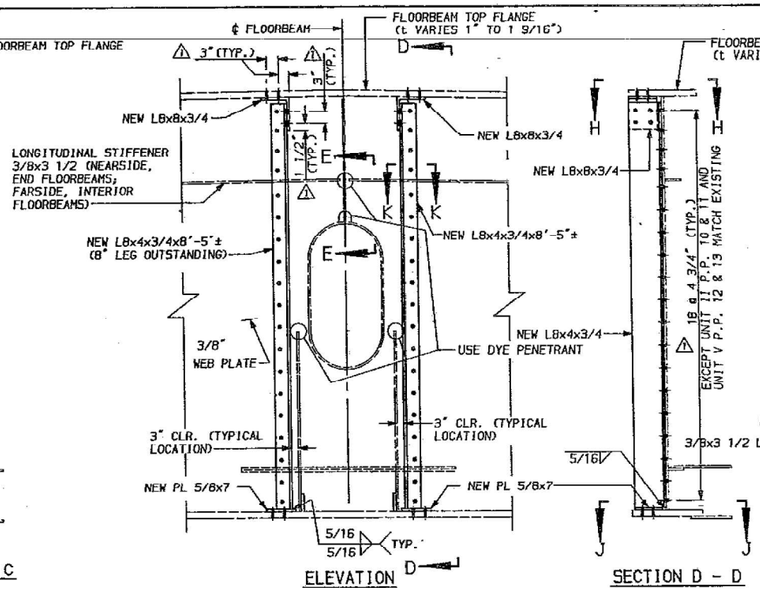
8/16/2024 11:16:14 AM

FAI RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	64-3B-1-3	MASSAC	32	22
F.H.W.A. REG.	ILLINOIS	PROJECT		

MASSAC, IL. & McCRACKEN, KY.

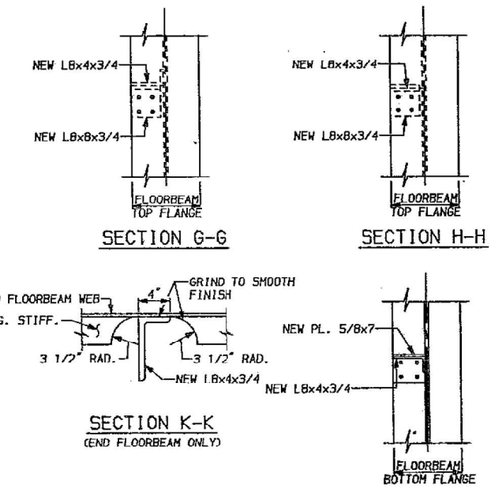


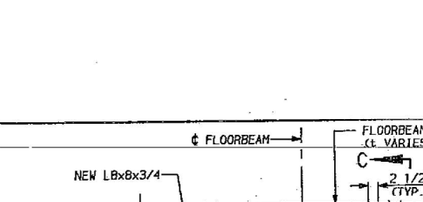
RETROFIT TYPE F6



RETROFIT TYPE F7

TYPICAL LOCATION SHOWN; SEE GENERAL PROCEDURE; STEP 8B., BELOW FOR LOCATIONS AT PANEL POINTS 10 AND 11, UNIT II AND PANEL POINTS 12 AND 13, UNIT V.





SECTION E - E

QUANTITIES				
RETROFIT	ITEM	UNIT	UNIT II	UNIT V
TYPE F6	STRUCTURAL STEEL	LBS.	900	900
TYPE F7	STRUCTURAL STEEL	LBS.	3,900	5,000

RETROFIT TYPE F6 AND TYPE F7

GENERAL PROCEDURE:

1. CUT VERTICAL STIFFENER ON BOTH SIDES OF THE FLOORBEAM AS SHOWN IN SECTION E - E. GRIND CUT SURFACE TO A SMOOTH FINISH.
2. SANDBLAST TO REMOVE PAINT FROM THE FLOORBEAM WEB AND TOP OF MANHOLE STIFFENER WITHIN 6" OF EACH SIDE OF CENTER LINE OF FLOORBEAM.
3. USE DYE PENETRANT TO CHECK THE FLOORBEAM WEB FOR CRACKS AT THE LOCATIONS SHOWN ON THE SHORT TRANSVERSE STIFFENER ABOVE THE ACCESS HOLE. IF THE WEB IS CRACKED, DRILL A 15/16" DIAMETER HOLE AT THE CRACK TIP AND DEBURR HOLE. USE DYE PENETRANT ON THE NEWLY EXPOSED (DRILLED) SURFACE OF THE FLOORBEAM WEB TO ENSURE THAT THE CRACK DOES NOT EXTEND PAST THE HOLE. IF THE CRACK EXTENDS PAST THE HOLE, GRIND TO REMOVE CRACK OR DRILL ANOTHER HOLE. REPEAT DYE PENETRANT CHECK. SOLVENT CLEAN TO REMOVE CUTTING OIL AND GREASE.
4. BLAST CLEAN TO REMOVE PAINT FROM FLOORBEAM WEB WITHIN AN AREA 6" IN DIAMETER AND CENTERED AT THE TOP OF THE EXISTING CUT SHORT TRANSVERSE STIFFENERS ON BOTH SIDES OF THE MANHOLE.
5. USE DYE PENETRANT TO CHECK THE FLOORBEAM WEB FOR CRACKS AT THE TOP OF THE EXISTING CUT SHORT TRANSVERSE STIFFENERS ON BOTH SIDES OF THE MANHOLE. IF THE WEB IS CRACKED, DRILL A 15/16" DIAMETER HOLE AT THE CRACK TIP AND DEBURR HOLE. USE DYE PENETRANT ON THE NEWLY EXPOSED (DRILLED) SURFACE OF THE FLOORBEAM WEB TO ENSURE THAT THE CRACK DOES NOT EXTEND PAST THE HOLE. IF THE CRACK EXTENDS PAST THE HOLE, GRIND TO REMOVE CRACK OR DRILL ANOTHER HOLE. REPEAT DYE PENETRANT CHECK. SOLVENT CLEAN TO REMOVE CUTTING OIL AND GREASE.
6. REPEAT STEPS 2, 3, 4 AND 5 FOR THE OPPOSITE SIDE OF THE FLOORBEAM WEB.
7. AT END FLOORBEAMS ONLY, CUT LONGITUDINAL STIFFENER AS SHOWN IN SECTION K-K. GRIND CUT SURFACE TO A SMOOTH FINISH.
8A. SECURE NEW VERTICAL STIFFENER ANGLES IN PLACE ON THE FLOORBEAM WEB SO THAT THE NEW ANGLE IS TIGHT AGAINST THE EXISTING WELDMENT (TYPE F6) OR SECURE NEW VERTICAL STIFFENER ANGLE AND PLATE SO THAT THE NEW PLATE IS TIGHT AGAINST THE BOTTOM FLANGE (TYPE F7). USING THE NEW ANGLE AND PLATE AS A TEMPLATE, DRILL HOLES IN FLOORBEAM WEB (TYPE F6 AND F7) AND IN THE BOTTOM FLANGE (TYPE F7 ONLY).

RETROFIT TYPE F6 AND TYPE F7

GENERAL PROCEDURE: (CONTINUED)

8B. REMOVE EXISTING VERTICAL STIFFENER ANGLES, SIMILAR TO EXISTING ANGLES SHOWN ON RETROFIT TYPE 8, SHEET 21. SECURE NEW VERTICAL STIFFENER ANGLE AND PLATE SO THAT THE NEW PLATE FITS TIGHT AGAINST THE BOTTOM FLANGE (TYPE F7). USE EXISTING HOLES IN FLOORBEAM WEB AS A TEMPLATE TO DRILL HOLES IN NEW VERTICAL STIFFENER ANGLE. USE NEW PLATE AS A TEMPLATE TO DRILL HOLES IN THE BOTTOM FLANGE (TYPE F7).
9. REMOVE NEW ANGLES AND PLATES AND SOLVENT CLEAN FAYING SURFACES ON FLOORBEAM WEB AND BOTTOM FLANGE TO CLEAN AND REMOVE CUTTING OIL. ALSO SOLVENT CLEAN AND REMOVE CUTTING OIL FROM FAYING SURFACES ON NEW ANGLES AND PLATES. SANDBLAST FAYING SURFACES ON FLOORBEAM WEB AND FLANGES TO REMOVE PAINT.
10. PLACE ANGLES ON FLOORBEAM WEB AND INSTALL BOLTS (TYPE F6) OR PLACE ANGLES ON FLOORBEAM WEB AND PLATE ON BOTTOM FLANGE AND INSTALL BOLTS (TYPE F7).
11. SECURE NEW ANGLES AGAINST OUTSTANDING LEG OF NEW VERTICAL STIFFENER ANGLES AND TOP FLANGE. DRILL HOLES IN THE OUTSTANDING LEG OF NEW STIFFENER ANGLE AND TOP FLANGE USING NEW ANGLE AS A TEMPLATE.
12. REMOVE NEW ANGLES AND SOLVENT CLEAN FAYING SURFACES ON OUTSTANDING LEG OF NEW VERTICAL STIFFENER AND TOP FLANGE TO CLEAN AND REMOVE CUTTING OIL. ALSO SOLVENT CLEAN AND REMOVE CUTTING OIL FROM SURFACES OF NEW ANGLE.
13. POSITION NEW ANGLE ON FLOORBEAM AND INSTALL BOLTS.

RETROFIT TYPE F6 ONLY

14. SECURE NEW PLATE TO BOTTOM OF OUTSTANDING LEG OF NEW VERTICAL STIFFENER ANGLE AND TO OUTSTANDING LEG OF EXISTING CABLE CONNECTION WELDMENT. DRILL HOLES IN OUTSTANDING LEG OF NEW VERTICAL STIFFENER ANGLE AND OUTSTANDING LEG OF EXISTING CABLE CONNECTION WELDMENT USING THE NEW PLATE AS A TEMPLATE.

RETROFIT TYPE F6 AND TYPE F7

GENERAL PROCEDURE: (CONTINUED)

15. REMOVE NEW PLATE AND SOLVENT CLEAN FAYING SURFACES ON OUTSTANDING LEGS OF NEW VERTICAL STIFFENER ANGLE AND EXISTIN CABLE CONNECTION WELDMENT TO CLEAN AND REMOVE CUTTING OIL. ALSO SOLVENT CLEAN AND REMOVE CUTTING OIL FROM FAYING SURFAC ON NEW PLATE. SANDBLAST FAYING SURFACE ON LEG OF EXISTING VERTICAL TO REMOVE PAINT.
16. PLACE NEW PLATE IN FINAL POSITION AND INSTALL NEW BOLTS.
17. PAINT ENTIRE RETROFIT AREA.

NOTES:

FOR GENERAL NOTES SEE SHEET 3.
FOR RETROFIT LOCA... SEE SHEET 18.
ALL WORK SHALL BE D... IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
◆ DENOTES EXISTING 7/8"ø H.S. BOLT IN EXISTING HOLE.
• DENOTES NEW 7/8"ø H.S. BOLT IN NEW HOLE, EXCEPT AS NOTED.

PREPARED BY
MODJESKI AND MASTERS
CONSULTING ENGINEERS

FOR INFORMATION ONLY

REV.NO	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
1	SLH	REH	JEP	MISCELLANEOUS	10/24

F A I ROUTE 24 (INTERSTATE 24)
OVER OHIO RIVER
MASSAC COUNTY ILLINOIS

RETROFIT DETAILS 4

Revised 11-15-24

RET4

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8/16/2024 11:16:17 AM

TWM ENGINEERING GEOSPATIAL SERVICES — TWM, INC. WWW.TWM-INC.COM — IL DESIGN FIRM LICENSE NO: 184-001220

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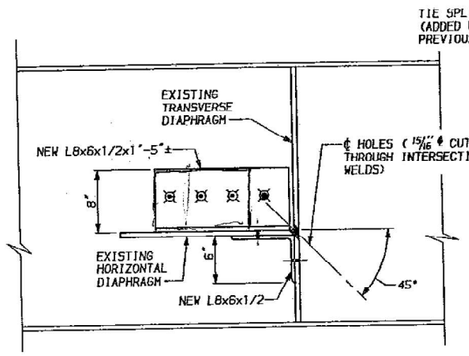
	CHECKED -	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

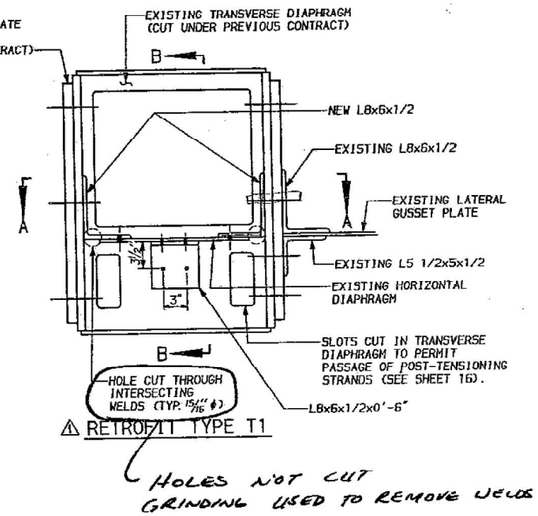
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 138 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	199
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

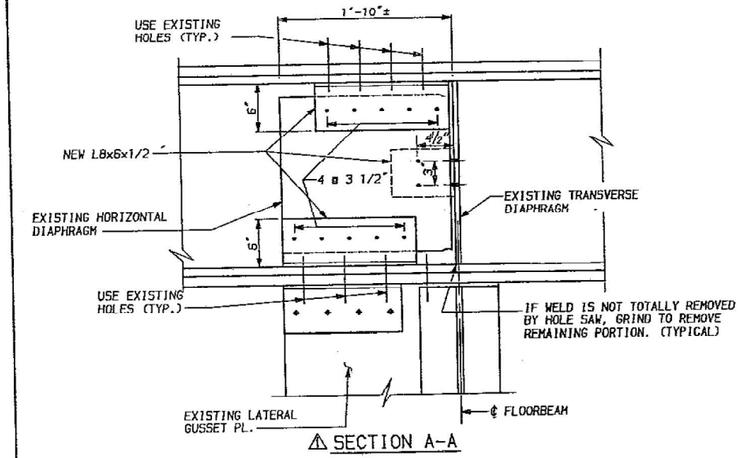


⚠ SECTION B-B



⚠ RETROFIT TYPE T1

HOLES NOT CUT
GRINDING USED TO REMOVE WELDS



⚠ SECTION A-A

RETROFIT TYPE T1

GENERAL PROCEDURE

1. REMOVE EXISTING BOLTS FROM TIE WEB PLATES AT LOCATIONS SHOWN ON DETAIL TO PERMIT PLACEMENT OF NEW ANGLES.

2. SECURE NEW ANGLES TO TIE WEB AND TRANSVERSE DIAPHRAGM SO THAT THE HORIZONTAL LEG IS TIGHT AGAINST THE HORIZONTAL DIAPHRAGM. USE EXISTING HOLES IN WEB AS A TEMPLATE TO DRILL HOLES IN NEW ANGLE. USE NEW ANGLE AS A TEMPLATE TO DRILL NEW HOLES IN THE HORIZONTAL AND TRANSVERSE DIAPHRAGMS.

⚠ 3. CUT 15/16" ϕ HOLES AS CLOSE AS POSSIBLE TO THE INTERSECTION OF THE HORIZONTAL DIAPHRAGM PLATE AND TRANSVERSE DIAPHRAGM PLATE ADJACENT TO THE TIE WEB PLATE. GRIND EDGES OF HOLES AS REQUIRED TO REMOVE THE INTERSECTIONS OF THE HORIZONTAL DIAPHRAGM-TO-WEB WELD, THE TRANSVERSE DIAPHRAGM-TO-WEB WELD, AND HORIZONTAL DIAPHRAGM-TO-TRANSVERSE DIAPHRAGM WELD. GRINDING SHALL NOT NICK OR GOUGE TIE WEB PLATES.

4. REMOVE THE HORIZONTAL DIAPHRAGM PLATE BY CUTTING THE PLATE AS CLOSE TO THE WEB AND TRANSVERSE DIAPHRAGM PLATES AS POSSIBLE WITHOUT NICKING, GOUGING, OR OVERHEATING THE WEB PLATES.

⚠ 5. GRIND TO REMOVE THE WELD MATERIAL REMAINING ON THE WEB PLATES. WEB PLATES SHOULD BE GROUND TO A SMOOTH FINISH AND BE FULL-THICKNESS (ANSI 125 MIN.)

6. USE A POWER TOOL TO REMOVE PAINT FROM THE TOP FACE OF THE HORIZONTAL DIAPHRAGM PLATE AND FROM THE INSIDE FACE OF THE TIE WEB PLATES. PAINT SHOULD BE REMOVED FROM THE WEB PLATES FROM THE LOCATION OF THE HORIZONTAL DIAPHRAGM PLATE TO APPROXIMATELY 10 INCHES ABOVE THE DIAPHRAGM BY THE ENTIRE LENGTH OF THE HORIZONTAL DIAPHRAGM. PAINT SHOULD ALSO BE REMOVED FROM THE TOP OF THE HORIZONTAL DIAPHRAGM PLATE APPROXIMATELY 10 INCHES FROM THE WEB BY THE ENTIRE LENGTH OF THE HORIZONTAL DIAPHRAGM PLATE. REMOVE PAINT FROM THE BOTTOM FACE OF THE HORIZONTAL DIAPHRAGM PLATE APPROXIMATELY 4 INCHES LEFT AND RIGHT OF CENTERLINE TIE AND 10 INCHES OUT FROM THE TRANSVERSE DIAPHRAGM. REMOVE PAINT FROM TRANSVERSE DIAPHRAGM APPROXIMATELY 8 INCHES FROM THE BOTTOM OF THE HORIZONTAL DIAPHRAGM AND 4 INCHES LEFT AND RIGHT OF CENTERLINE.

7. USE DYE PENETRANT TO CHECK THE TIE WEB PLATES FOR CRACKS IN THE AREA WHERE THE HORIZONTAL DIAPHRAGM PLATE HAD BEEN WELDED TO THE WEB. IF A CRACK EXISTS, REMOVE CRACK BY GRINDING. ALL CRACKS IDENTIFIED SHOULD BE REPORTED TO THE ENGINEER.

8. USE A CHEMICAL CLEANING AGENT TO REMOVE DYE PENETRANT, CUTTING OIL AND OTHER DEBRIS FROM THE FAYING SURFACES ON THE WEB PLATES, THE TRANSVERSE DIAPHRAGM, THE HORIZONTAL DIAPHRAGM AND THE NEW ANGLES.

9. RE-INSTALL HORIZONTAL DIAPHRAGM WITH THREE NEW ANGLES AS SHOWN IN THE DETAIL.

10. PAINT ENTIRE RETROFIT AREA.

FAI RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	64-3B-1-3	*	32	23
F.H.W.A. REG.	ILLINOIS	PROJECT		

*MASSAC, IL. & McCRACKEN, KY.

NOTES:

FOR GENERAL NOTES, SEE SHEET 3.
FOR RETROFIT LOCATIONS, SEE SHEET 18.
⚠ ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
◆ DENOTES EXISTING 7/8"ø H.S. BOLT IN EXISTING HOLE.
• DENOTES NEW 7/8"ø H.S. BOLT IN NEW HOLES.
⊠ DENOTES NEW 1 1/4"ø H.S. BOLT (AASHTO M 253) IN EXISTING HOLE.

PREPARED BY
MODJESKI AND MASTERS
CONSULTING ENGINEERS

QUANTITIES				
RETROFIT	ITEM	UNIT	UNIT T1	UNIT V
TYPE T1	STRUCTURAL STEEL	LBS.	2,500	3,100

FOR INFORMATION ONLY

REV.NO	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
⚠	SLH	REM	JEP	MISCELLANEOUS	10/24

F A I ROUTE 24 (INTERSTATE 24)
OVER OHIO RIVER
MASSAC COUNTY ILLINOIS

ARCH TIE RETROFIT

Revised 11-15-24

ARCHTIE

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = jesker	DESIGNED -	REVISED -	
	CHECKED -	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 139 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	200
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

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257

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 24	*	MASSAC	24	1
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT -	

* 64-3B-I-5

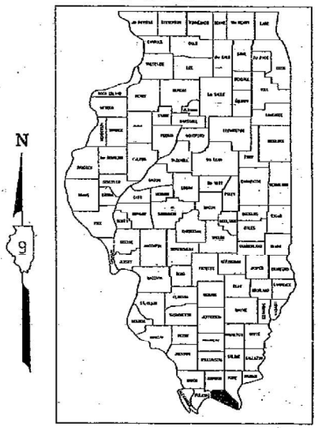
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED HIGHWAY PLANS

F.A.I. ROUTE 24 (I-24)
SECTION 64-3B-I-5
C-99-030-03

MASSAC COUNTY, ILLINOIS
McCRACKEN COUNTY, KENTUCKY

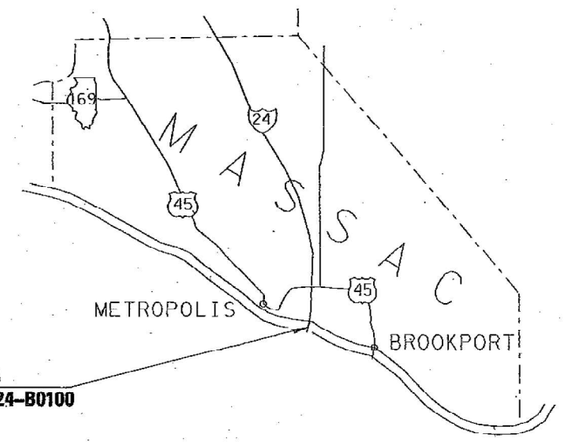
D-99-028-01



FOR INDEX OF SHEETS, SEE SHEET NO. 2
FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 2

ILLINOIS TOWNSHIP: METROPOLIS
2002 ADT = 26,400
POSTED SPEED = 65 MPH
INVENTORY RATING HS 20.0
OPERATING RATING HS 30.0

AS-BUILT PLANS



PROPOSED IMPROVEMENT
ILLINOIS STRUCTURE NO. 064-0035
KENTUCKY STRUCTURE NO. 073-0024-B0100
STRUCTURAL STEEL REPAIR

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED Nov 4 2002
DISTRICT ENGINEER
May 9 2003
ENGINEER OF DESIGN AND ENVIRONMENT
May 9 2003
DIRECTOR, DIVISION OF HIGHWAYS

PLAN DRAWINGS ARE NOT TO SCALE.

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123

MAP NOT TO SCALE
STRUCTURE LENGTH: 5,634 FT.

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

DEPT. ENGINEER: KAREN RICHARDSON PHONE: (618) 549-2171
LEADER: RITA GAUTHEY CENTREX: 782-4554

FOR INFORMATION ONLY

MODEL: Default
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TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC.
WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = Jesker	DESIGNED -	REVISED -	
	CHECKED -	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 140 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	201
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 24	*	MASSAC	24	2
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT-		

* 64-3B-I-5

SEE SHEET 2 FOR

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	COVER SHEET, SIGNATURES
2	INDEX OF SHEETS, SUMMARY OF QUANTITIES, STANDARDS
3	GENERAL NOTES, TOTAL BILL OF MATERIAL, STRUCTURE ELEVATION,
4-11	FRAMING PLANS
12	ANGLE LOCATION TABLES AND MISCELLANEOUS DETAILS
13	REPAIR DETAILS "A" AND "B" AND MISCELLANEOUS DETAILS
14	REPAIR DETAIL "C" AND "D"
15	REPAIR DETAILS "E" AND "F"
16	REPAIR DETAIL "G" AND "H"
17	REPAIR DETAIL "I" AND "J"
18	REPAIR DETAILS "K" AND "L"
19	REPAIR DETAILS "M" AND "N"
20	REPAIR DETAIL "P"
21	REPAIR DETAILS "Q"-ABUTMENT BEARINGS
22	REPAIR DETAIL "Q"-BEARING DETAILS
23	REPAIR DETAIL "R"
24	ANCHOR BOLT DETAILS

SUMMARY OF QUANTITIES

CONSTRUCTION TYPE CODE: SFTY-2A		50% ILLINOIS 50% KENTUCKY	
CODE NO.	ITEM DESCRIPTION	UNIT	QUANTITY
X5005700	FLOATING BEARINGS, GUIDED EXPANSION, 700 K	EACH	4
X0322556	STIFFENER INTERSECTION MODIFICATION	EACH	1055
X0323392	POST-TENSION CABLE RETROFIT	EACH	912
Z0031200	JACKING AND CRIBBING	EACH	4
50104710	REMOVAL OF EXISTING BEARINGS	EACH	4
50300225	CONCRETE STRUCTURES	CU. YD.	3.4
50501130	STRUCTURAL STEEL REPAIR	POUND	11,070
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	450
70100205	TRAFFIC CONTROL AND PROTECTION	EACH	1
"	STANDARD 701401		
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL. MO.	9
67100100	MOBILIZATION	L. SUM	1
70100700	TRAFFIC CONTROL AND PROTECTION STANDARD 701406	L. SUM	1
X7015000	CHANGEABLE MESSAGE SIGN	CAL. MO.	10

STANDARDS

701101
701401
701406-02
702001-03

PREPARED BY: _____ DISTRICT STUDIES & PLANS ENGINEER
EXAMINED BY: _____ DISTRICT LAND ACQUISITION ENGINEER
EXAMINED BY: _____ DISTRICT PROGRAM DEVELOPMENT ENGINEER
EXAMINED BY: _____ DISTRICT OPERATIONS ENGINEER
EXAMINED BY: _____ DISTRICT CONSTRUCTION ENGINEER
EXAMINED BY: _____ DISTRICT MATERIALS ENGINEER
EXAMINED BY: _____ DISTRICT PROJECT IMPLEMENTATION ENGINEER
APPROVED BY: _____ DISTRICT ENGINEER
DATE 11-4 2002

DESIGNED
CHECKED
DR
CH

FOR INFORMATION ONLY

INDEX OF SHEETS, STANDARDS, SUMMARY OF QUANTITIES

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TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC.
WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

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PLOT SCALE = 0.167 ' / in.		DRAWN -		REVISED -	
PLOT DATE = 8/16/2024		CHECKED -		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

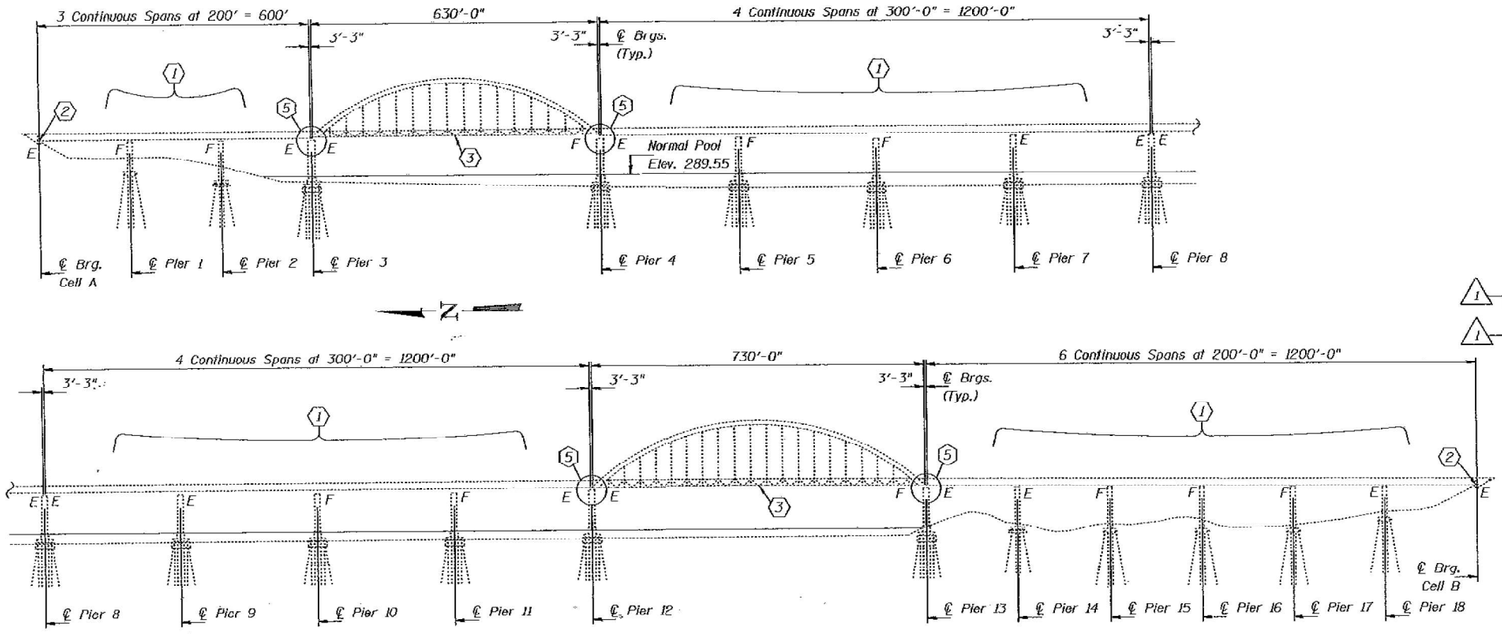
EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 141 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	202
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
-	-	Massac	24	3
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

SHEET NO. 1
22 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION

(1) Core drill longitudinal stiffeners. See repair detail "P" on sheet 18 of 22. See framing plans on sheets 2 thru 9 of 22 for exact locations and quantity.

(2) Remove and replace existing Rocker Bearings with Pot Bearings and Concrete Podestals. See repair detail "Q" on Sheets 19 and 20 of 22.

(3) Cable retrofit in bottom chord of arched spans. See repair detail "R" on Sheet 21 of 22.

(4A Thru 4M) Stringer end repairs. See framing plans on sheets 2 thru 9 of 22 for specific repair types and locations

(5) Remove and Replace broken bolts at finger plates. See Repair Detail "S" on this sheet.

GENERAL NOTES

All new structural steel shall conform to AASHTO Classification M-270 Gr. 36. Unless otherwise noted.

All new fasteners shall be high strength bolts. Holes shall be $^{13}/_{16}$"ϕ for $^{3}/_{4}$"ϕ high strength bolts (except as noted on the plans).

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make 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.

The existing structural steel coating contains lead. The Contractor should take appropriate precautions to deal with the presence of lead on this project.

Existing Structural steel shall only be cleaned and painted as required by the Special Provision "Cleaning and Painting Adjacent Areas of Existing Steel Structures".

(1) All stringer end repairs shall be considered to be primary connections.

(1)

The Contractor shall ensure that no infringement of the navigational underclearance or channel occurs while doing the work. Any infringement shall be approved by the Coast Guard. The Contractor shall contact Mr. Roger Wiebusch, Eighth Coast Guard District, 1222 Spruce Street, St. Louis, Mo. 63103, (314)-539-3900 for requirements needed to obtain the necessary permits.

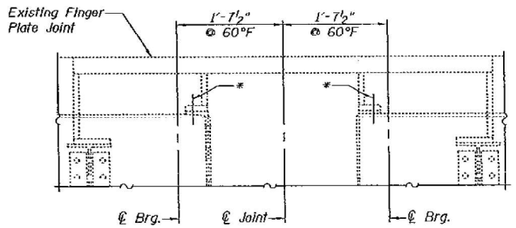
Contractor must ensure that no debris remains inside the bottom chords after the Post-Tension Cable Retrofit work is completed.

Direction indicator barricades shall be required on all lane closure tapers.

The inorganic zinc rich primer / acrylic / acrylic paint system shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final finish coat shall be Gray, Munsell No. 5B 7/1. See special provisions for Cleaning and Painting New Metal Structures. Cost included with Structural Steel Repair.

(1)

* Missing or broken $^{7}/_{8}$" ϕ bolts at these locations shall be replaced. Contractor must verify shim pack thickness in order to determine appropriate bolt length at each location. (Estimated number of bolts required = 35). Cost included with Structural Steel Repair.



REPAIR DETAIL "S"

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Steel Repair	Pound	11070
Stiffener Intersection Modification	Each	1055
Post-Tension Cable Retrofit	Each	912
Concrete Structures	Cu. Yd.	3.4
Reinforcement Bars, Epoxy Coated	Pound	450
Removal of Existing Bearings	Each	4
Jacking and Cribbing	Each	4
Floating Bearings, Guided Exp. 700 K.	Each	4

DESIGNED Paul D. Ostmann
CHECKED VICTOR H. VELIZ
March 27, 2003
EXAMINED John A. Morris
BRIDGE & STRUCTURES

FOR INFORMATION ONLY

REVISED PLAN SHEETS

M.A.C. V.H.V. 5/30/03

ELEVATION
F.A.I. 24 OVER OHIO RIVER
MASSAC COUNTY
S.N. 064-0035

TWM, INC. ENGINEERING GEOSPATIAL SERVICES — WWW.TWM-INC.COM — IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = jesker	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
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	PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 142 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	203
		CONTRACT NO. 78972		
		ILLINOIS	FED. AID PROJECT	

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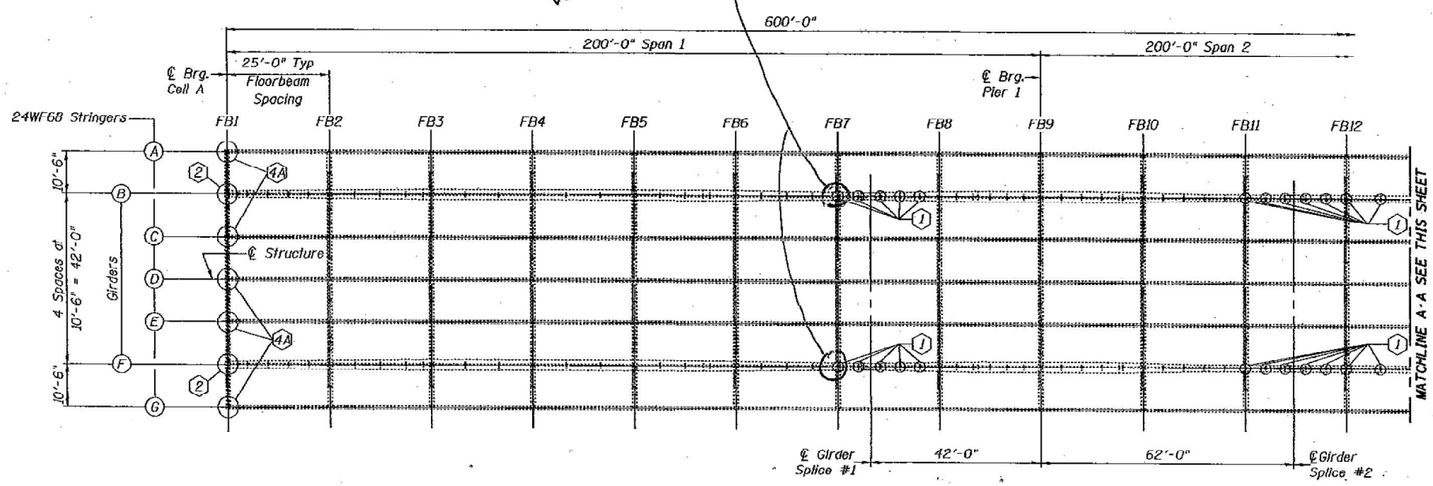
Top. Long. Stiffener - deleted N. side of vert. stiffener

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 24	*	Massac	24	4
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 2
22 SHEETS

*64-3B-I-5



PARTIAL FRAMING PLAN
SPANS 1 AND 2

Notes:

FB*** = Floor Beam Number

(1) Core drill longitudinal stiffeners. See repair detail "P" on sheet 18 of 22.

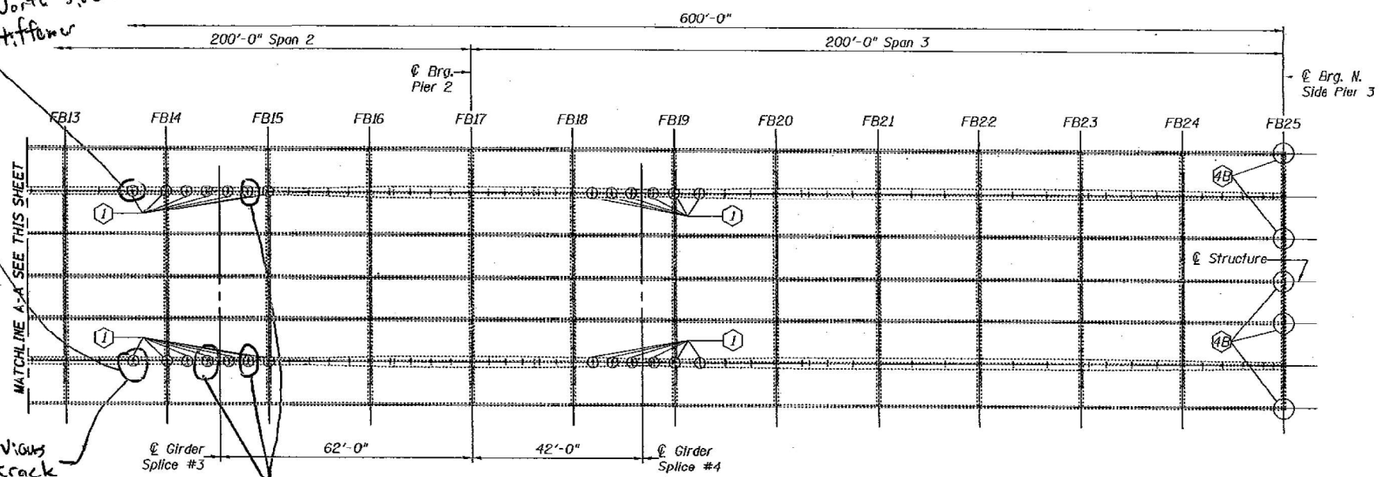
(2) Remove and replace existing Rocker Bearings with Pot Bearings and Concrete Pedestals. See repair detail "O" on sheets 19 and 20 of 22.

* (4A) Stringer end repair. See repair detail "A" on sheet 11 of 22.

* (4B) Stringer end repair. See repair detail "B" on sheet 11 of 22.

* Before installing angles, grind stringer end (See Detail on Sheet 10 of 22).

Top Long. Stiffener - Stiffener Mod. work deleted on North side of Vertical Stiffener



PARTIAL FRAMING PLAN
SPANS 2 AND 3

previous crack December 6, 2002 Repair on bottom long. Stiffener

Cracks Repaired adjacent to existing vertical stiffeners. 1'x1' plates used for repairs

DESIGNED	P.S.J.
CHECKED	V.H.V.
DRAWN	Drew Christopher
EXAMINED	John A. Morris ENGINEER OF STRUCTURAL SERVICES
PASSED	

FOR INFORMATION ONLY

FRAMING PLANS
F.A.I. 24 OVER OHIO RIVER
MASSAC COUNTY
S.N. 064-0035

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PLOT DATE =	8/16/2024	CHECKED -		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 143 OF 175 SHEETS

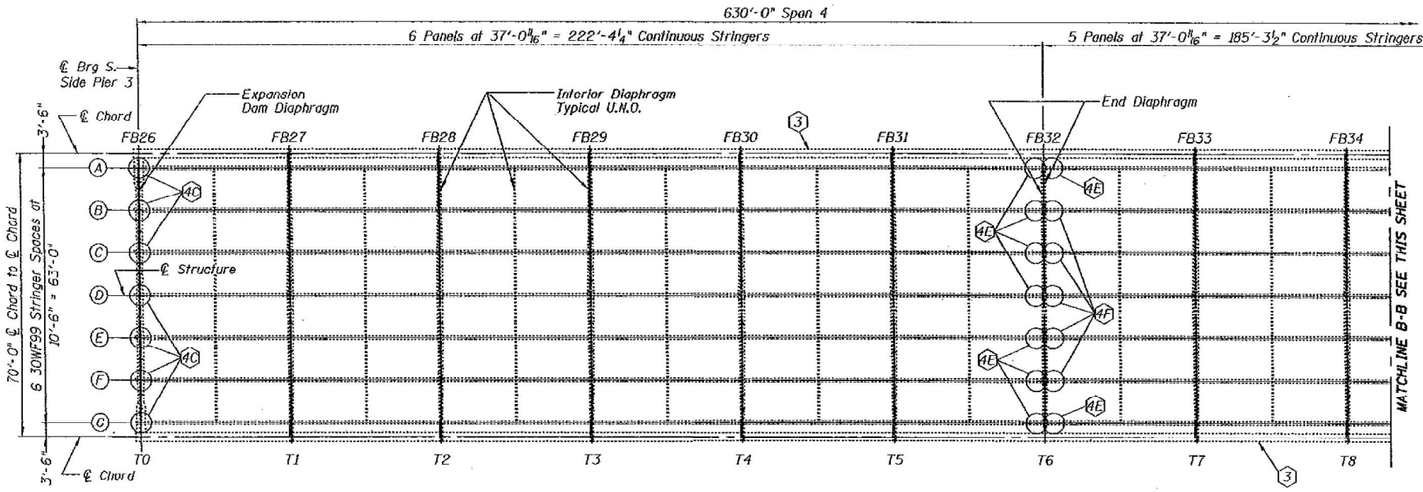
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	204
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 24	*	Massac	24	5
F.A.I. ROUTE		ILLINOIS	F.A.I. PROJECT	

SHEET NO. 3
22 SHEETS

*64-3B-I-5



PARTIAL FRAMING PLAN
SPAN 4

Notes:

FB*** = Floor Beam Number
T** = Tie Down Point Number

(3) Cable retrofit in bottom chord of arched spans. See repair detail "A" on sheet 21 of 22.

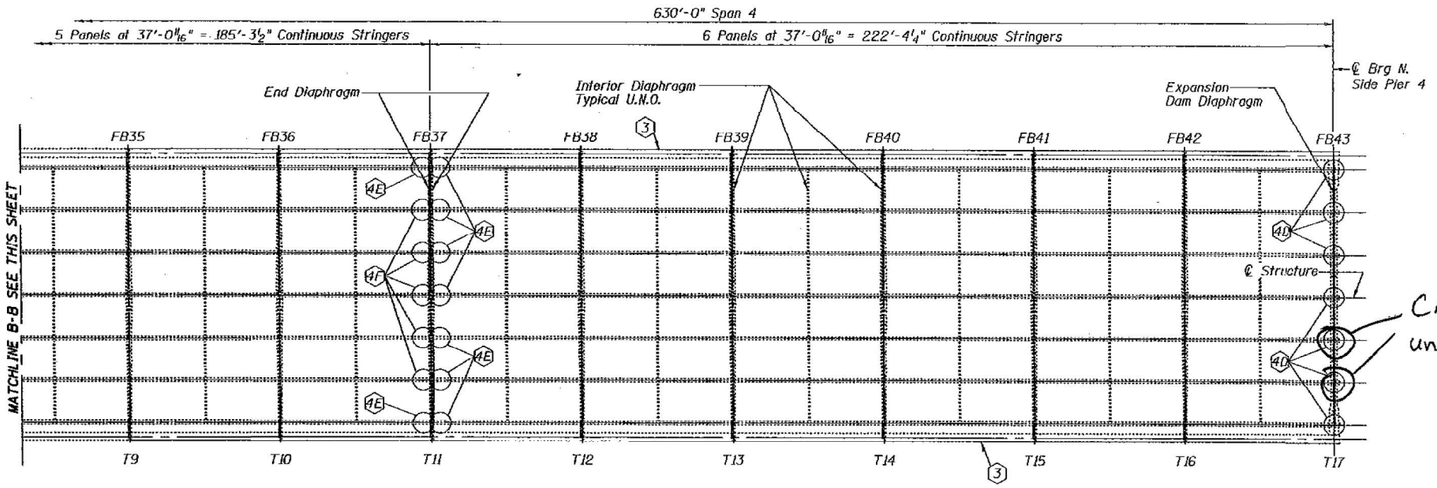
*(4C) Stringer end repair. See repair detail "C" on sheet 12 of 22.

*(4D) Stringer end repair. See repair detail "D" on sheet 12 of 22.

*(4E) Stringer end repair. See repair detail "E" on sheet 13 of 22.

*(4F) Stringer end repair. See repair detail "F" on sheet 13 of 22.

* Before installing angles, grind stringer end (See Detail on Sheet 10 of 22).



PARTIAL FRAMING PLAN
SPAN 4

FRAMING PLANS
F.A.I. 24 OVER OHIO RIVER
MASSAC COUNTY
S.N. 064-0035

DESIGNED	P.S.J.
CHECKED	V.H.V.

December 6, 2002
EXAMINED John A. Morris
ENGINEER OF STRUCTURAL SERVICES
PASSED

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PLOT DATE =	8/16/2024	CHECKED	-	REVISED	-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 144 OF 175 SHEETS

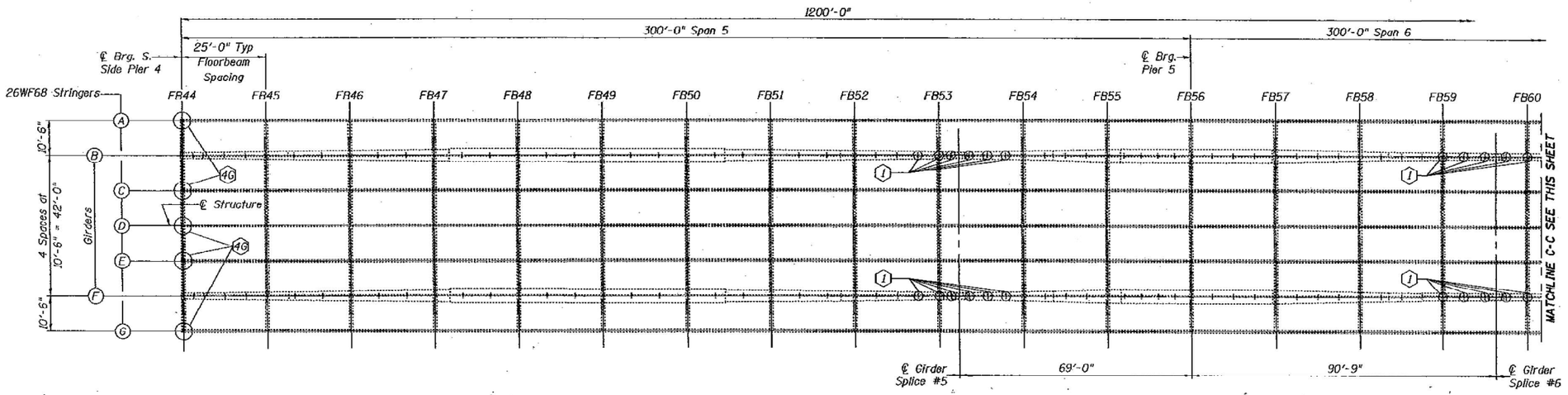
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	205
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 24	*	Massac	24	6
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

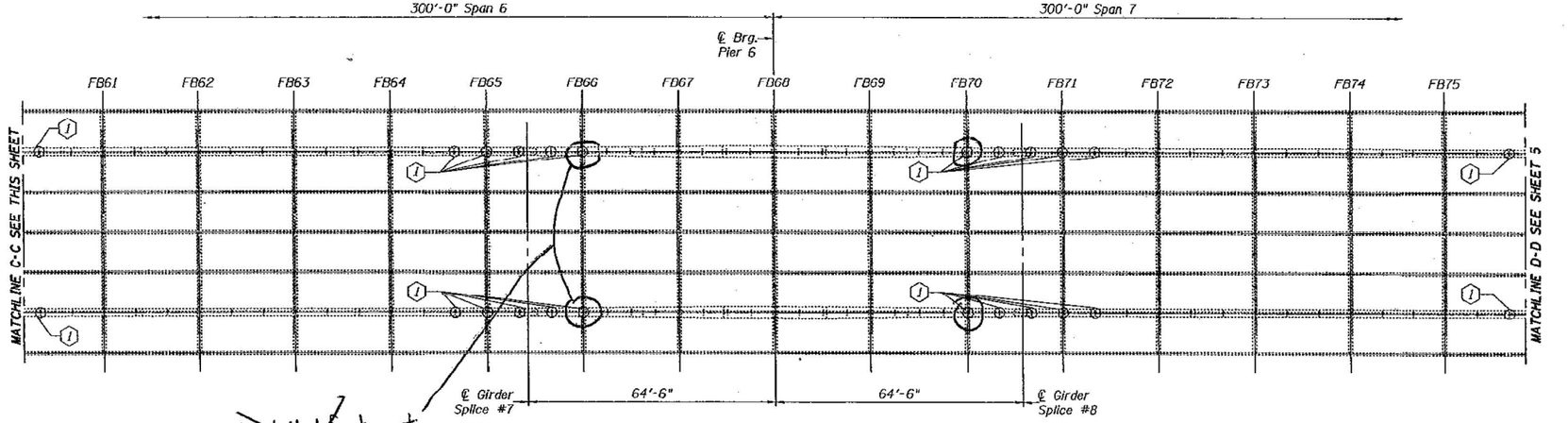
SHEET NO. 4
22 SHEETS

*64-3B-I-5



PARTIAL FRAMING PLAN
SPANS 5 AND 6

Z



Deleted Modification at top horiz. Stiffener, South side FB66. NONE THERE, OK

PARTIAL FRAMING PLAN
SPANS 6 AND 7

Notes:

FB*** = Floor Beam Number

(I) Core drill longitudinal stiffeners. See repair detail "P" on sheet 18 of 22.

*(AG) Stringer end repair. See repair detail "G" on sheet 14 of 22.

* Before installing angles, grind stringer end (See Detail on Sheet 10 of 22).

DESIGNED	P.S.J.
CHECKED	V.H.V.
DRAWN	Drew Christopher

December 6, 2002
EXAMINED John A. Morris
ENGINEER OF STRUCTURAL SERVICES
PASSED

FOR INFORMATION ONLY

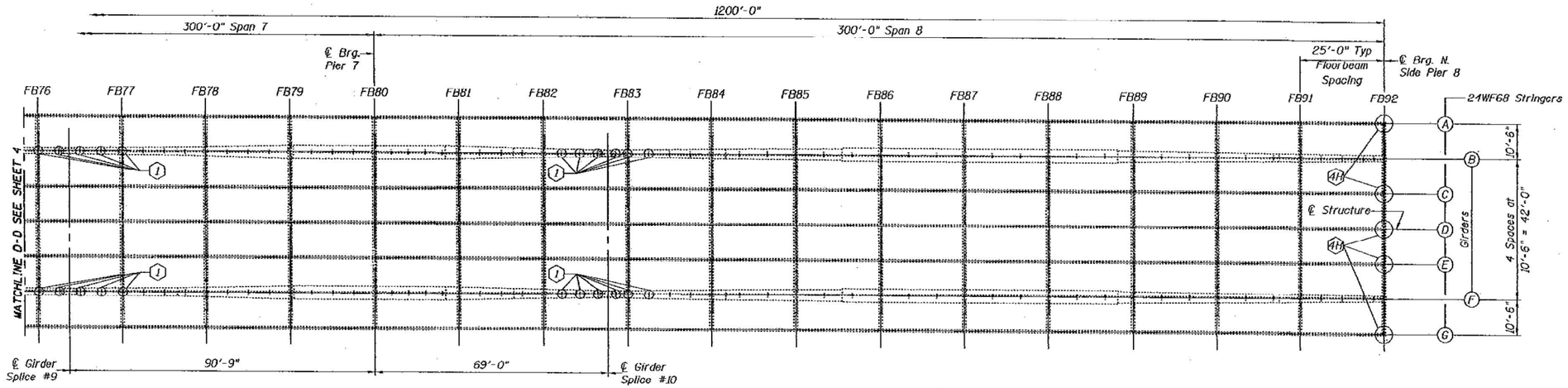
FRAMING PLANS
F.A.I. 24 OVER OHIO RIVER
MASSAC COUNTY
S.N. 064-0035

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 24	*	Massac	24	7
FED.ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

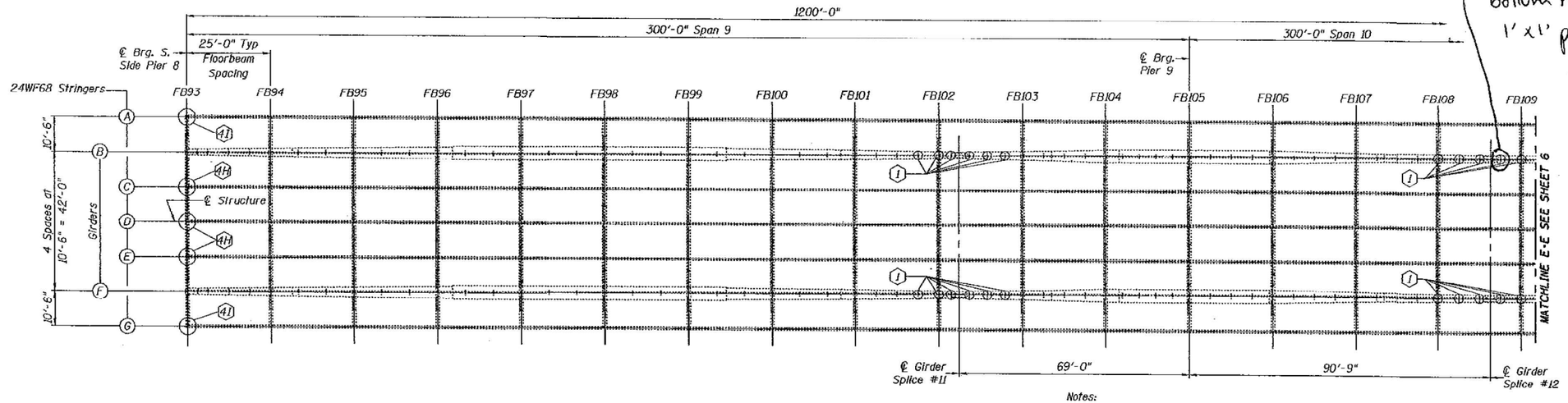
SHEET NO. 5
22 SHEETS

*64-3B-I-5



PARTIAL FRAMING PLAN
SPANS 7 AND 8

Z
Crack repair - bottom horiz. stiffener 1'x1' plate



PARTIAL FRAMING PLAN
SPANS 9 AND 10

Notes:

FB*** = Floor Beam Number

(1) Core drill longitudinal stiffeners. See repair detail "P" on sheet 18 of 22.

* (4H) Stringer end repair. See repair detail "H" on sheet 14 of 22.

* (4J) Stringer end repair. See repair detail "J" on sheet 15 of 22.

* Before installing angles, grind stringer end (See Detail on Sheet 10 of 22).

DESIGNED	P.S.J.
CHECKED	V.H.V.
EXAMINED	December 6, 2002
PASSED	John A. Morris, ENGINEER OF STRUCTURAL SERVICES

FOR INFORMATION ONLY

FRAMING PLANS
F.A.I. 24 OVER OHIO RIVER
MASSAC COUNTY
S.N. 064-0035

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IL DESIGN FIRM LICENSE NO: 184-001220

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PLOT DATE =	8/16/2024	CHECKED -		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 146 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	207
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

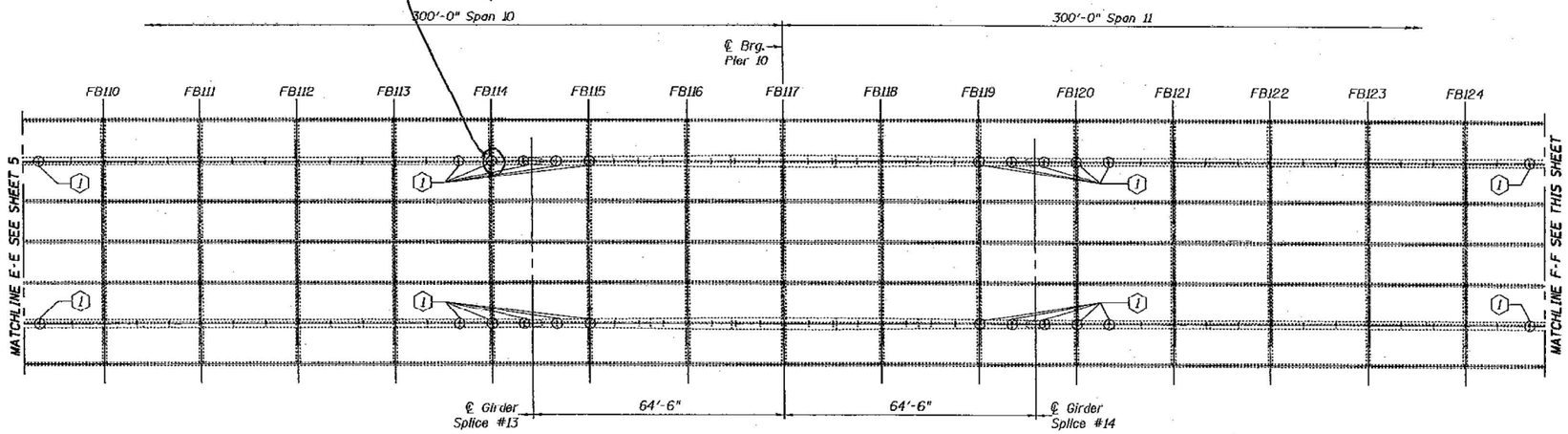
Crack Repair at Bottom horiz. stiffener 1'x1' plate

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

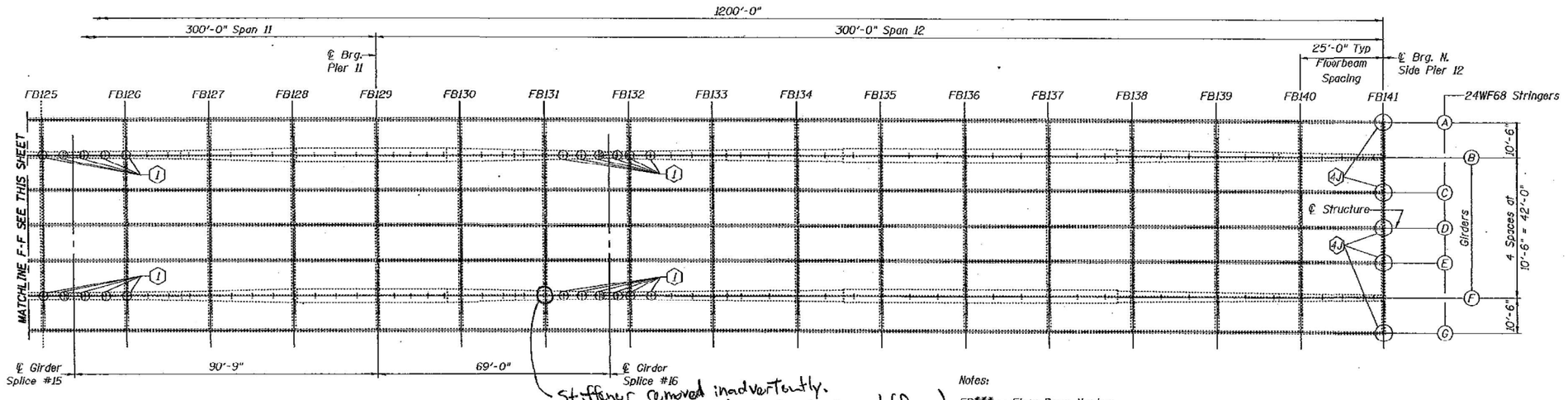
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 24	*	Massac	24	8
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

SHEET NO. 6
22 SHEETS

*64-3B-I-5



PARTIAL FRAMING PLAN
SPANS 10 AND 11



Stiffener removed inadvertently. Welds not removed. (Bottom horiz. stiffener)

PARTIAL FRAMING PLAN
SPANS 11 AND 12

Notes:

FB*** = Floor Beam Number

(I) Core drill longitudinal stiffeners. See repair detail "P" on sheet 18 of 22.

* (4J) Stringer end repair. See repair detail "J" on sheet 15 of 22.

* Before installing angles, grind stringer end (See Detail on Sheet 10 of 22).

DESIGNED	P.S.J.
CHECKED	V.H.V.
DRAWN	Drew Christopher

EXAMINED John A. Morris — December 6, 2002
ENGINEER OF STRUCTURAL SERVICES
PASSED

FOR INFORMATION ONLY

FRAMING PLANS
F.A.I. 24 OVER OHIO RIVER
MASSAC COUNTY
S.N. 064-0035

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IL DESIGN FIRM LICENSE NO: 184-001220

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		CHECKED	-	REVISED	-
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PLOT DATE =	8/16/2024	CHECKED	-	REVISED	-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 147 OF 175 SHEETS

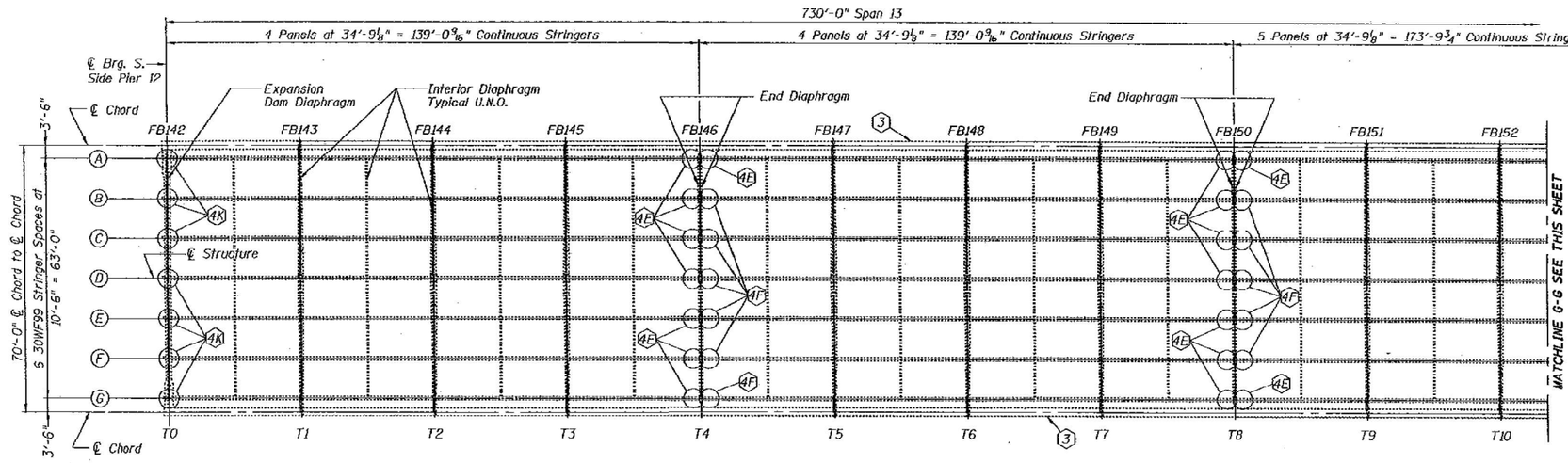
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	208
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 24	*	Massac	24	9
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 7
22 SHEETS

*64-3B-I-5



PARTIAL FRAMING PLAN
SPAN 13

Notes:

FB*** = Floor Beam Number
T** = Tie Down Point Number

(3) Strand repair in bottom chord of arched spans. See repair detail "R" on Sheet 21 of 22.

*(4E) Stringer end repair. See repair detail "E" on sheet 13 of 22.

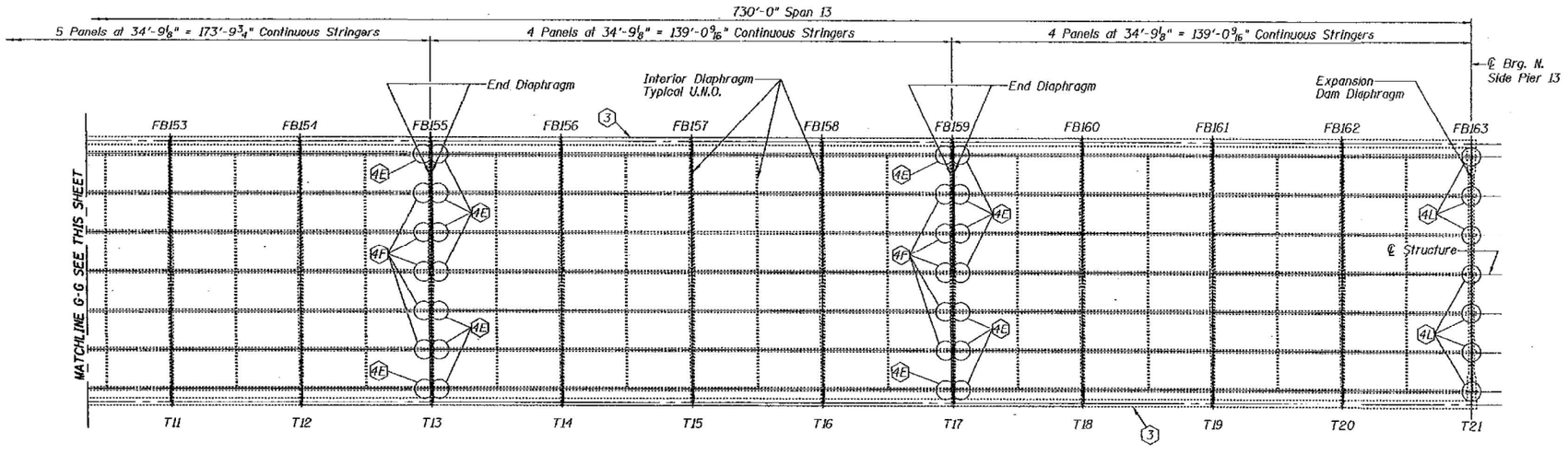
*(4F) Stringer end repair. See repair detail "F" on sheet 13 of 22.

*(4K) Stringer end repair. See repair detail "K" on sheet 16 of 22.

*(4L) Stringer end repair. See repair detail "L" on sheet 16 of 22.

* Before installing angles, grind stringer end (See Detail on Sheet 10 of 22).

N



PARTIAL FRAMING PLAN
SPAN 13

DESIGNED	P.S.J.
CHECKED	V.H.V.

December 6, 2002
EXAMINED John A. Morris
ENGINEER OF STRUCTURAL SERVICES
PASSED

FOR INFORMATION ONLY

FRAMING PLANS
F.A.I. 24 OVER OHIO RIVER
MASSAC COUNTY
S.N. 064-0035

MODEL: Default
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TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM	USER NAME = Jesker	DESIGNED -	REVISED -
	IL DESIGN FIRM LICENSE NO: 184-001220		CHECKED -	REVISED -
		PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -
		PLOT DATE = 8/16/2024	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 148 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	209
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

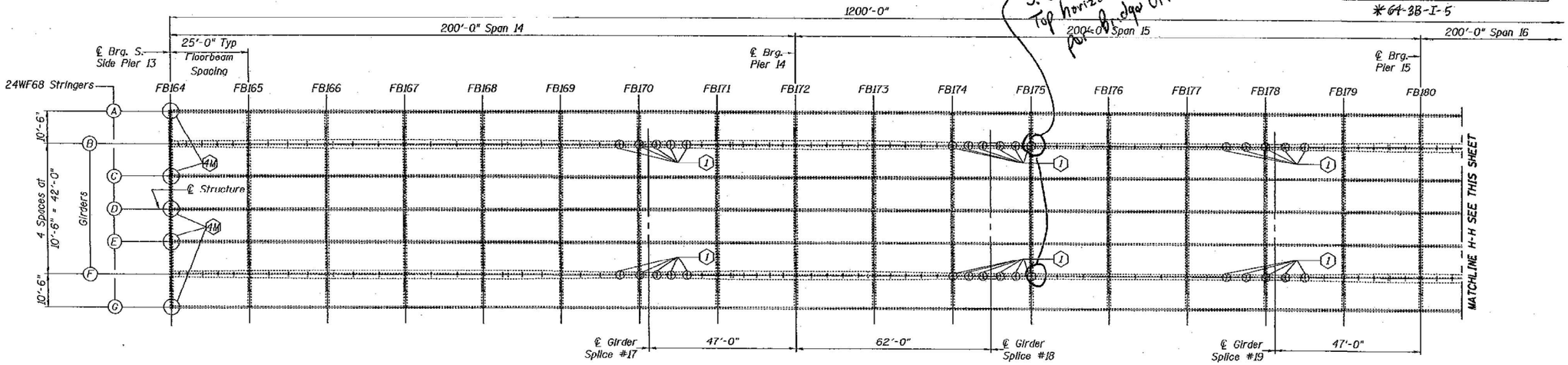
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Deleted work @ S. Side Top horizontal per Bridge Office

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 24	*	Massac	24	10
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

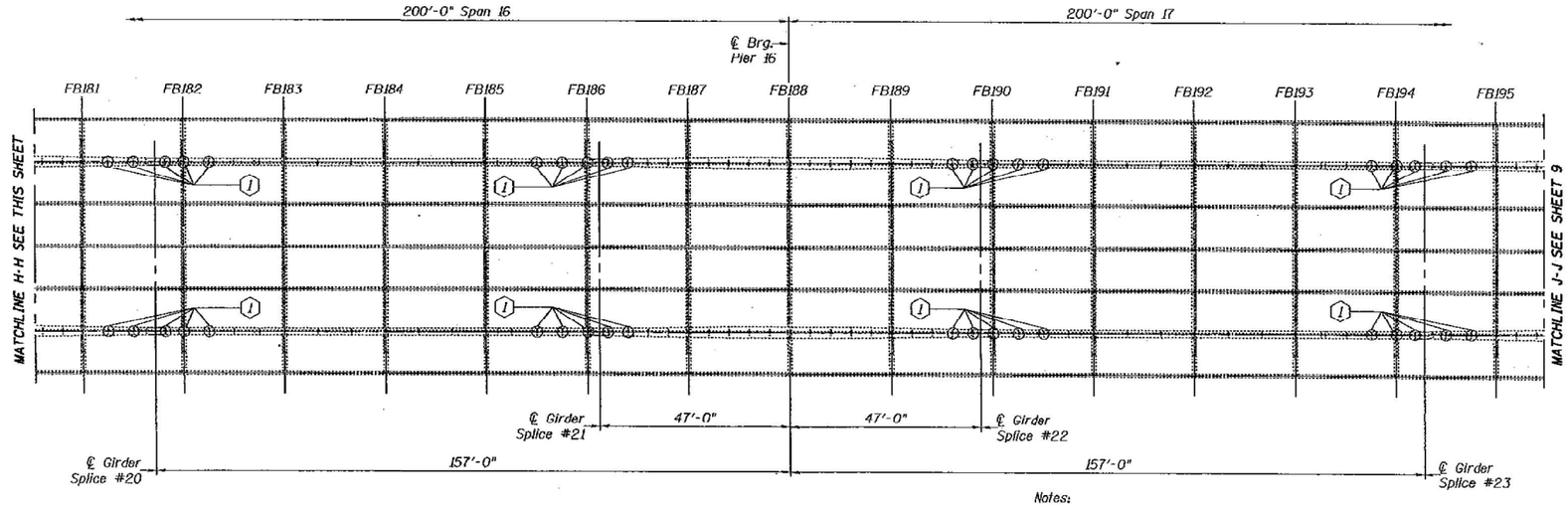
SHEET NO. 8
22 SHEETS

*64-3B-I-5



PARTIAL FRAMING PLAN
SPANS 14, 15 AND 16

N



DESIGNED	P.S.J.
CHECKED	V.H.V.
DRAWN	Drew Christopher

EXAMINED December 6, 2002
John A. Morris
ENGINEER OF STRUCTURAL SERVICES
PASSED

FOR INFORMATION ONLY

PARTIAL FRAMING PLAN
SPANS 16 AND 17

* Before installing angles, grind stringer end (See Detail on Sheet 10 of 22).

Notes:

FB*** = Floor Beam Number

(1) Core drill longitudinal stiffeners. See repair detail "P" on sheet 18 of 22.

*4M Stringer end repair. See repair detail "M" on sheet 17 of 22.

FRAMING PLANS
F.A.I. 24 OVER OHIO RIVER
MASSAC COUNTY
S.N. 064-0035

TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = Jesker	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
			CHECKED -	REVISED -	
		PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
		PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 149 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	210
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

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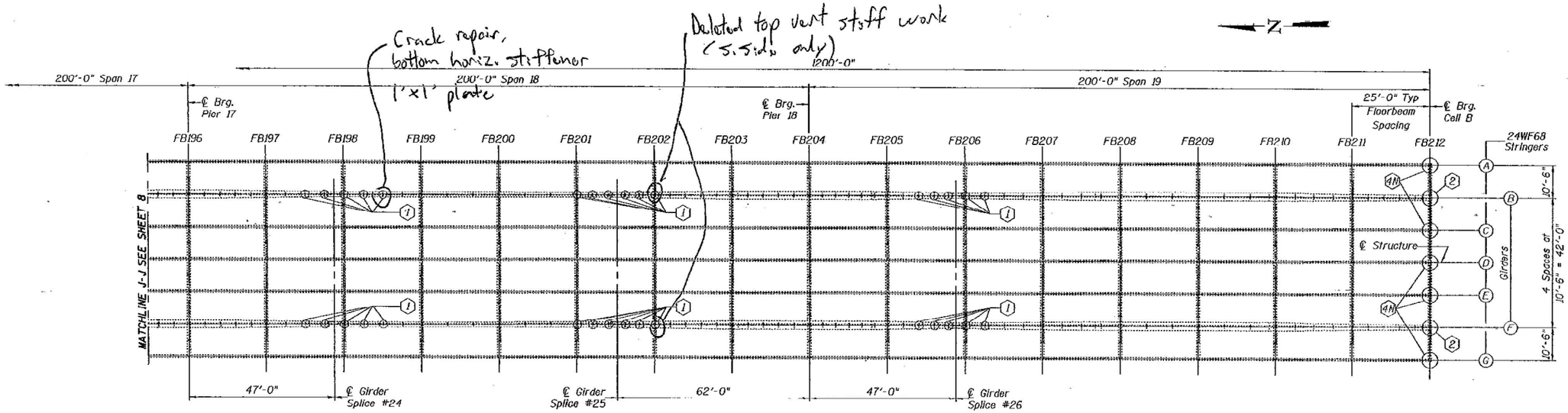
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 24	*	Massac	24	11
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT=	

SHEET NO. 9
22 SHEETS

*64-3B-I-5



PARTIAL FRAMING PLAN
SPANS 17, 18 AND 19

Notes:

FB*** = Floor Beam Number

(1) Core drill longitudinal stiffeners. See repair detail "P" on sheet 18 of 22.

(2) Remove and replace existing Rocker Bearings with Pot Bearings and Concrete Pedestals. See repair detail "Q" on sheets 19 and 20 of 22.

* (4M) Stringer end repair. See repair detail "N" on sheet 17 of 22.

* Before installing angles, grind stringer end (See Detail on Sheet 10 of 22).

DESIGNED	P.S.J.
CHECKED	V.H.V.
EXAMINED	December 6, 2002 John A. Mouris ENGINEER OF STRUCTURAL SERVICES
PASSED	

FOR INFORMATION ONLY

FRAMING PLAN
F.A.I. 24 OVER OHIO RIVER
MASSAC COUNTY
S.N. 064-0035

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TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC.
WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME =	jesker	DESIGNED	-	REVISED	-
		CHECKED	-	REVISED	-
PLOT SCALE =	0.167 ' / in.	DRAWN	-	REVISED	-
PLOT DATE =	8/16/2024	CHECKED	-	REVISED	-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 150 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	211
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 24	*	Massac	24	12
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT NO.		

SHEET NO. 10
22 SHEETS

*64-3B-1-5

Location of Stringer End Repairs on Bridge	Stringer Identification	Location of Angle on Stringer	Angle and Plate ID Numbers
Repair Detail "A" on Page 11 Cell A Span 1 Looking South	East Fascia Stringer A	East Side	A1
		West Side	A2
	Stringer C	East Side	A1
		West Side	A2
	Stringer D	East Side	A1
		West Side	A2
	Stringer E	East Side	A1
		West Side	A2
	West Fascia Stringer G	East Side	A1
		West Side	A2
Repair Detail "B" on Page 11 North Side of Pier 3, Span 3 Looking North	East Fascia Stringer A	East Side	B2 & P1
		West Side	B1
	Stringer C	East Side	B4
		West Side	B3
	Stringer D	East Side	B4
		West Side	B3
	Stringer E	East Side	B4
		West Side	B3
	West Fascia Stringer G	East Side	B6
		West Side	B5 & P1
Repair Detail "C" on Page 12 South Side of Pier 3, Span 4 TO Looking South	East Fascia Stringer A	East Side	C1 & P2
		West Side	C2
	Stringer B	East Side	C3
		West Side	C4
	Stringer C	East Side	C3
		West Side	C4
	Stringer D	East Side	C5
		West Side	C6
	Stringer E	East Side	C3
		West Side	C4
	Stringer F	East Side	C3
		West Side	C4
	West Fascia Stringer G	East Side	C7
		West Side	C8 & P2
Repair Detail "E" on Page 13 North Side of T6 Span 4 Looking North	East Fascia Stringer A	East Side	E3
		West Side	E1 & E2
	Stringer B	East Side	E5 & E6
		West Side	E1 & E2
	Stringer C	East Side	E5 & E6
		West Side	E1 & E2
	Stringer D	East Side	E5 & E6
		West Side	E1 & E2
	Stringer E	East Side	E5 & E6
		West Side	E1 & E2
	Stringer F	East Side	E5 & E6
		West Side	E1 & E2
	West Fascia Stringer G	East Side	E5 & E6
		West Side	E4
Repair Details "E" and "F" on Page 13 South Side of T6 Span 4 Looking South	East Fascia Stringer A	East Side	E4
		West Side	E5 & E6
	Stringer B	East Side	E1 & F1
		West Side	F2 & E6
	Stringer C	East Side	E1 & F1
		West Side	F2 & E6
	Stringer D	East Side	E1 & F1
		West Side	F2 & E6
	Stringer E	East Side	E1 & F1
		West Side	F2 & E6
	Stringer F	East Side	E1 & F1
		West Side	F2 & E6
	West Fascia Stringer G	East Side	E1 & E2
		West Side	E3

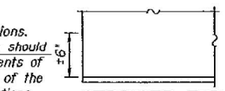
Location of Stringer End Repairs on Bridge	Stringer Identification	Location of Angle on Stringer	Angle and Plate ID Numbers
Repair Details "E" and "F" on Page 13 North Side of T11 Span 4 Looking North	East Fascia Stringer A	East Side	E3
		West Side	E1 & E2
	Stringer B	East Side	F2 & E6
		West Side	E1 & F1
	Stringer C	East Side	F2 & E6
		West Side	E1 & F1
	Stringer D	East Side	F2 & E6
		West Side	E1 & F1
	Stringer E	East Side	F2 & E6
		West Side	E1 & F1
	Stringer F	East Side	F2 & E6
		West Side	E1 & F1
	West Fascia Stringer G	East Side	E5 & E6
		West Side	E4
Repair Detail "E" on Page 13 South Side of T11 Span 4 Looking South	East Fascia Stringer A	East Side	E4
		West Side	E5 & E6
	Stringer B	East Side	E1 & E2
		West Side	E5 & E6
	Stringer C	East Side	E1 & E2
		West Side	E5 & E6
	Stringer D	East Side	E1 & E2
		West Side	E5 & E6
	Stringer E	East Side	E1 & E2
		West Side	E5 & E6
	Stringer F	East Side	E1 & E2
		West Side	E5 & E6
	West Fascia Stringer G	East Side	E1 & E2
		West Side	E3
Repair Detail "D" on Page 12 North Side of Pier 4, Span 4 T17 Looking North	East Fascia Stringer A	East Side	D2 & P3
		West Side	D1
	Stringer B	East Side	D4
		West Side	D3
	Stringer C	East Side	D4
		West Side	D3
	Stringer D	East Side	D6
		West Side	D5
	Stringer E	East Side	D4
		West Side	D3
	Stringer F	East Side	D4
		West Side	D3
	West Fascia Stringer G	East Side	D8
		West Side	D7 & P3
Repair Detail "G" on Page 14 South Side of Pier 4, Span 5 Looking South	East Fascia Stringer A	East Side	G1 & P4
		West Side	G2
	Stringer C	East Side	G3
		West Side	G2
	Stringer D	East Side	G3
		West Side	G2
	Stringer E	East Side	G3
		West Side	G2
	West Fascia Stringer G	East Side	G3
		West Side	G4 & P4
Repair Detail "H" on Page 14 North Side of Pier 8, Span 8 Looking North	East Fascia Stringer A	East Side	H2 & P5
		West Side	H1
	Stringer C	East Side	H4
		West Side	H3
	Stringer D	East Side	H4
		West Side	H3
	Stringer E	East Side	H4
		West Side	H3
	West Fascia Stringer G	East Side	H6
		West Side	H5 & P5
Repair Details "H" and "I" on Pages 14 & 15 South Side of Pier 8, Span 9 Looking South	East Fascia Stringer A	East Side	I1 & P6
		West Side	H6
	Stringer C	East Side	H3
		West Side	H4
	Stringer D	East Side	H3
		West Side	H4
	Stringer E	East Side	H3
		West Side	H4
	West Fascia Stringer G	East Side	H1
		West Side	I2 & P6

Location of Stringer End Repairs on Bridge	Stringer Identification	Location of Angle on Stringer	Angle and Plate ID Numbers
Repair Detail "J" on Page 15 North Side of Pier 12, Span 12 Looking North	East Fascia Stringer A	East Side	J2 & P7
		West Side	J1
	Stringer C	East Side	J4
		West Side	J3
	Stringer D	East Side	J4
		West Side	J3
	Stringer E	East Side	J4
		West Side	J3
	West Fascia Stringer G	East Side	J6
		West Side	J5 & P7
Repair Detail "K" on Page 16 South Side of Pier 12, Span 13 TO Looking South	East Fascia Stringer A	East Side	K1
		West Side	K2
	Stringer B	East Side	K3
		West Side	K4
	Stringer C	East Side	K5
		West Side	K6
	Stringer D	East Side	K5
		West Side	K6
	Stringer E	East Side	K5
		West Side	K6
	Stringer F	East Side	K3
		West Side	K4
	West Fascia Stringer G	East Side	K1
		West Side	K2
Repair Detail "E" on Page 13 North Side of T4 Span 13 Looking North	East Fascia Stringer A	East Side	E3
		West Side	E1 & E2
	Stringer B	East Side	E5 & E6
		West Side	E1 & E2
	Stringer C	East Side	E5 & E6
		West Side	E1 & E2
	Stringer D	East Side	E5 & E6
		West Side	E1 & E2
	Stringer E	East Side	E5 & E6
		West Side	E1 & E2
	Stringer F	East Side	E5 & E6
		West Side	E1 & E2
	West Fascia Stringer G	East Side	E5 & E6
		West Side	E4
Repair Details "E" and "F" on Page 13 South Side of T4 Span 13 Looking South	East Fascia Stringer A	East Side	E4
		West Side	E5 & E6
	Stringer B	East Side	E1 & F1
		West Side	F2 & E6
	Stringer C	East Side	E1 & F1
		West Side	F2 & E6
	Stringer D	East Side	E1 & F1
		West Side	F2 & E6
	Stringer E	East Side	E1 & F1
		West Side	F2 & E6
	Stringer F	East Side	E1 & F1
		West Side	F2 & E6
	West Fascia Stringer G	East Side	E1 & E2
		West Side	E3
Repair Detail "E" on Page 13 North Side of T8 Span 13 Looking North	East Fascia Stringer A	East Side	E3
		West Side	E1 & E2
	Stringer B	East Side	E1 & F1
		West Side	F2 & E6
	Stringer C	East Side	E1 & F1
		West Side	F2 & E6
	Stringer D	East Side	E1 & F1
		West Side	F2 & E6
	Stringer E	East Side	E1 & F1
		West Side	F2 & E6
	Stringer F	East Side	E1 & F1
		West Side	F2 & E6
	West Fascia Stringer G	East Side	E1 & E2
		West Side	E3

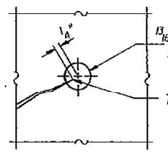
Location of Stringer End Repairs on Bridge	Stringer Identification	Location of Angle on Stringer	Angle and Plate ID Numbers
Repair Details "E" and "F" on Page 13 South Side of T13 Span 13 Looking South	East Fascia Stringer A	East Side	E4
		West Side	E5 & E6
	Stringer B	East Side	E1 & F1
		West Side	F2 & E6
	Stringer C	East Side	E1 & F1
		West Side	F2 & E6
	Stringer D	East Side	E1 & F1
		West Side	F2 & E6
	Stringer E	East Side	E1 & F1
		West Side	F2 & E6
	Stringer F	East Side	E1 & F1
		West Side	F2 & E6
	West Fascia Stringer G	East Side	E1 & E2
		West Side	E3
Repair Details "E" and "F" on Page 13 North Side of T13 Span 13 Looking North	East Fascia Stringer A	East Side	E3
		West Side	E1 & E2
	Stringer B	East Side	F2 & E6
		West Side	E1 & F1
	Stringer C	East Side	F2 & E6
		West Side	E1 & F1
	Stringer D	East Side	F2 & E6
		West Side	E1 & F1
	Stringer E	East Side	F2 & E6
		West Side	E1 & F1
	Stringer F	East Side	F2 & E6
		West Side	E1 & F1
	West Fascia Stringer G	East Side	E5 & E6
		West Side	E4
Repair Detail "E" on Page 13 South Side of T13 Span 13 Looking South	East Fascia Stringer A	East Side	E4
		West Side	E5 & E6
	Stringer B	East Side	E1 & E2
		West Side	E5 & E6
	Stringer C	East Side	E1 & E2
		West Side	E5 & E6
	Stringer D	East Side	E1 & E2
		West Side	E5 & E6
	Stringer E	East Side	E1 & E2
		West Side	E5 & E6
	Stringer F	East Side	E1 & E2
		West Side	E5 & E6
	West Fascia Stringer G	East Side	E1 & E2
		West Side	E3
Repair Details "E" and "F" on Page 13 South Side of T4 Span 13 Looking South	East Fascia Stringer A	East Side	E3
		West Side	F1 & F2
	Stringer B	East Side	F2 & E6
		West Side	E1 & F1
	Stringer C	East Side	F2 & E6
		West Side	E1 & F1
	Stringer D	East Side	F2 & E6
		West Side	E1 & F1
	Stringer E	East Side	F2 & E6
		West Side	E1 & F1
	Stringer F	East Side	F2 & E6
		West Side	E1 & F1
	West Fascia Stringer G	East Side	E5 & E6
		West Side	E4
Repair Detail "E" on Page 13 South Side of T17 Span 13 Looking South	East Fascia Stringer A	East Side	E4
		West Side	E5 & E6
	Stringer B	East Side	E1 & E2
		West Side	E5 & E6
	Stringer C	East Side	E1 & E2
		West Side	E5 & E6
	Stringer D	East Side	E1 & E2
		West Side	E5 & E6
	Stringer E	East Side	E1 & E2
		West Side	E5 & E6
	Stringer F	East Side	E1 & E2
		West Side	E5 & E6
	West Fascia Stringer G	East Side	E1 & E2
		West Side	E3

Location of Stringer End Repairs on Bridge	Stringer Identification	Location of Angle on Stringer	Angle and Plate ID Numbers
Repair Detail "L" on Page 16 North Side of Pier 13, Span 13 T21 Looking North	East Fascia Stringer A	East Side	L2 & P8
		West Side	L1
	Stringer B	East Side	L4
		West Side	L3
	Stringer C	East Side	L6
		West Side	L5
	Stringer D	East Side	L6
		West Side	L5
	Stringer E	East Side	L6
		West Side	L5
	Stringer F	East Side	L4
		West Side	L3
	West Fascia Stringer G	East Side	L8
		West Side	L7 & P8
Repair Detail "M" on Page 17 South Side of Pier 13, Span 14 Looking South	East Fascia Stringer A	East Side	M1 & P9
		West Side	M2
	Stringer C	East Side	M3
		West Side	M4
	Stringer D	East Side	M3
		West Side	M4
	Stringer E	East Side	M3
		West Side	M4
	West Fascia Stringer G	East Side	M5
		West Side	M6 & P9
Repair Detail "N" on Page 17 Cell B Span 19 Looking North	East Fascia Stringer A	East Side	N2
		West Side	N1
	Stringer C	East Side	N2
		West Side	N1
	Stringer D	East Side	N2
		West Side	N1
	Stringer E	East Side	N2
		West Side	N1
	West Fascia Stringer F	East Side	N2
		West Side	N1

Grind end of web smooth at all locations. Surface roughness should meet the requirements of Article 505.04 (k) of the Standard Specifications.



STRINGER END GRINDING DETAIL
(Cost included with "Structural Steel Repair")



CRACK ARRESTOR HOLE DETAIL
(Typ. at all stringer ends with cracks as req'd)

Note: Locate crack tip using liquid dye penetrant or magnetic particle testing. Drill 13/16" min. ϕ Crack Arrestor hole at the crack tip. After crack arrestor hole has been drilled, dye penetrant or magnetic particle testing shall be used to verify that the drilled hole has captured the crack tip. Cost shall be included with Structural Steel Repair.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Steel Repair	Pound	6430

DESIGNED	Drew Christopher
CHECKED	V.H.V.
DRAWN	Drew Christopher

December 6, 2002
EXAMINED John A. Morris ENGINEER OF STRUCTURAL SERVICES
PASSED

FOR INFORMATION ONLY

Revised Stringer End Grinding Detail
Revised Angle Location Tables

ANGLE LOCATION TABLES AND GENERAL DETAILS
F.A.I. 24 OVER OHIO RIVER
MASSAC COUNTY
S.N. 064-0035

Work this sheet with sheets 11 thru 17 of 22.

MODEL: Default
FILE NAME: P:\2021\21059316L - FAI 24 Ohio River Bridge Painting\4 CADD - DWG\4.4 Struc\064035-78972-151-Existing Plans.dgn
8/16/2024 11:16:56 AM

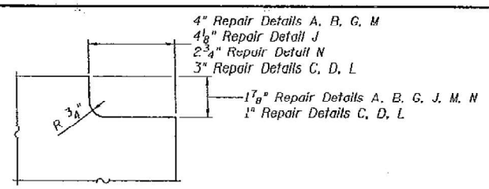
TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME =	Jesker	DESIGNED -	REVISED -
		CHECKED -	REVISED -
PLOT SCALE =	0.167 ' / in.	DRAWN -	REVISED -
PLOT DATE =	8/16/2024	CHECKED -	REVISED -

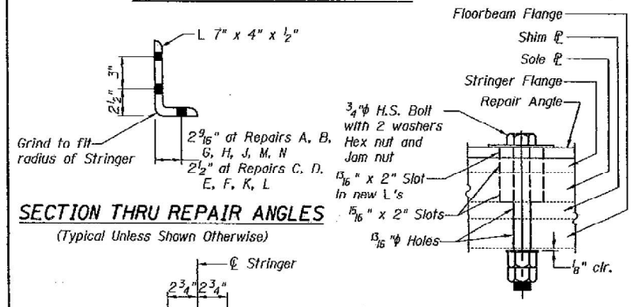
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 151 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	212
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

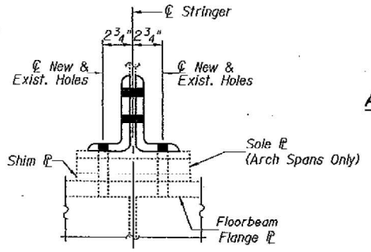


REPAIR ANGLE COPE DETAIL



SECTION THRU REPAIR ANGLES
(Typical Unless Shown Otherwise)

TYPICAL SECTION AT SLOTTED HOLES



TYPICAL END VIEW OF STRINGERS

Notes:
Thickness of floorbeam flange ℄ varies by location. In calculating required bolt length, allow ½" flange ℄ thickness for all locations in the girder spans (Repairs A, B, G, H, I, J, M, N). See Table for locations in the arch spans.

Thickness of shim ℄ varies by location. In calculating required bolt length, allow 2¾" shim ℄ thickness at Stringer D of the girder spans (Repairs A, B, G, H, J, M, N). Allow 13/16" for shim ℄ thickness at all other locations.

Thickness of sole ℄ varies by location. See table.

Span ID	Repair	Stringer	Flange ℄ Thickness	Sole ℄ Thickness
4	C, D	A,B,C,E,F,G D	1 3/8" 1 5/8"	1 3/8" 2 5/16"
	E, F	A,B,C,E,F,G D	1⅛" 1⅛"	1 7/8" 2 13/16"
13	E, F	A,B,C,E,F,G D	1" 1"	2" 2 13/16"
	K, L	A,G B,F C,D,E	1 5/8" 1" 1"	1 5/8" 2" 2 5/16"

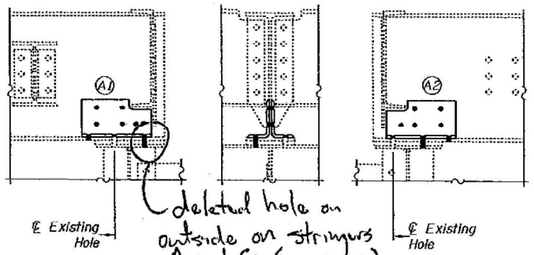
DESIGNED Drew Christopher
CHECKED V.H.V.
December 6, 2002
EXAMINED John A. Morris ENGINEER OF STRUCTURAL SERVICES
PASSED

FOR INFORMATION ONLY

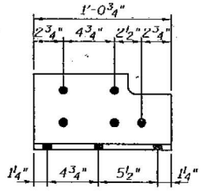
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 24	*	Massac	24	13
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

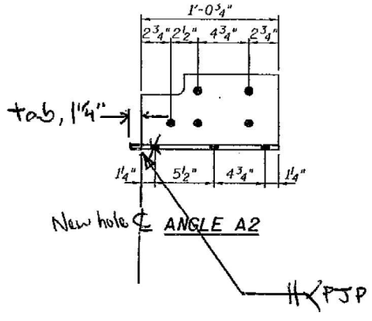
SHEET NO. 11
22 SHEETS
*64-3B-1-5



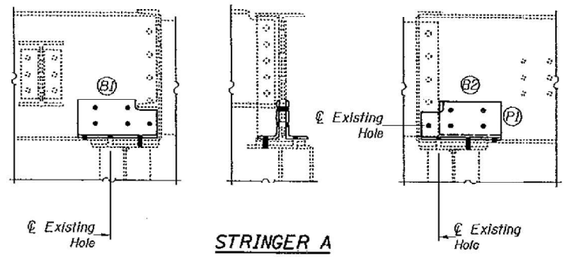
STRINGERS C, D & E
(Stringers A & G Similar)



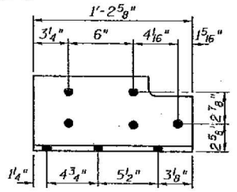
ANGLE A1



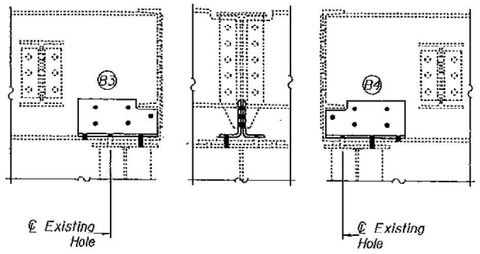
REPAIR DETAIL "A"



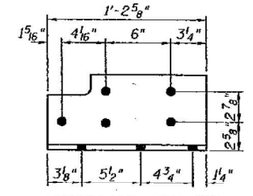
STRINGER A



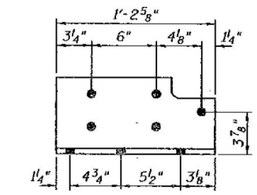
ANGLE B1 AND B5



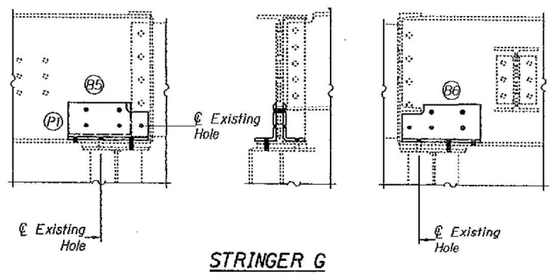
STRINGERS C, D & E



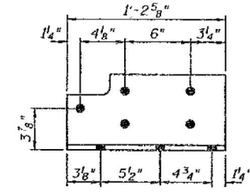
ANGLE B2 AND B6



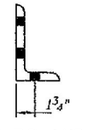
ANGLE B3



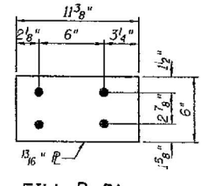
STRINGER G



ANGLE B4



ANGLE B2 AND B5



FILL ℄ P1

REPAIR DETAIL "B"

STRINGER END GENERAL DETAILS
REPAIR DETAIL "A" AND "B"
F.A.I. 24 OVER OHIO RIVER
MASSAC COUNTY
S.N. 064-0035

Work this sheet with sheet 10 of 22.

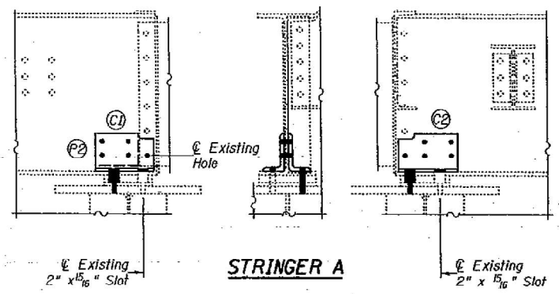
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 24	*	Massac	24	14
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT=		

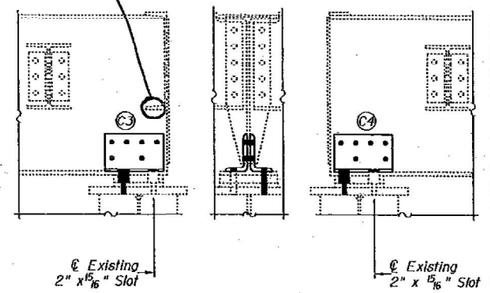
SHEET NO. 12
22 SHEETS

*64-3B-I-5

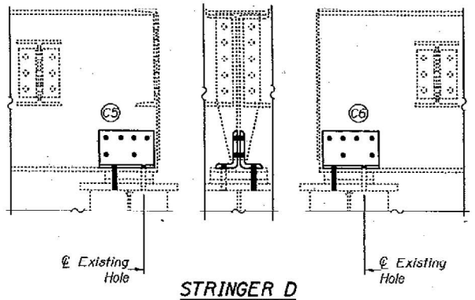
.5" of channel flange removed over new exp. holes.



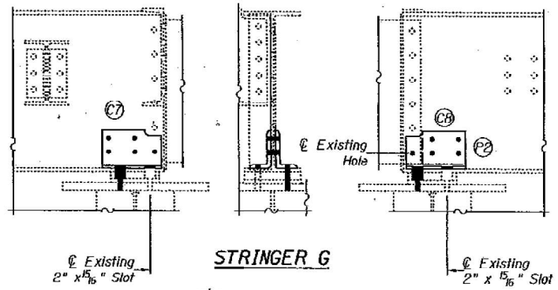
STRINGER A



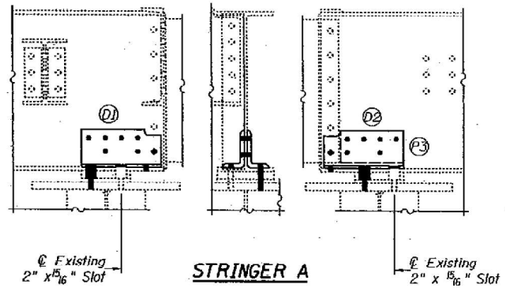
STRINGERS B, C, E, AND F



STRINGER D

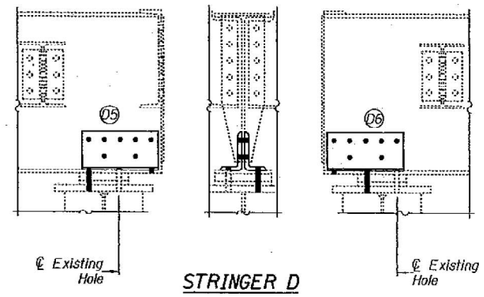


STRINGER G



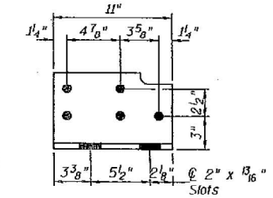
STRINGER A

STRINGERS B, C, E, AND F

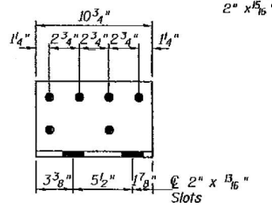


STRINGER D

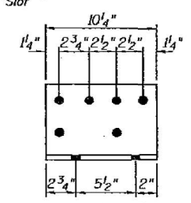
STRINGER G



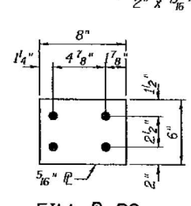
ANGLE C1 AND C7



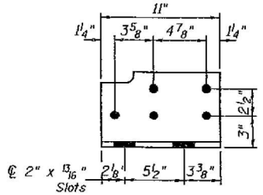
ANGLE C3



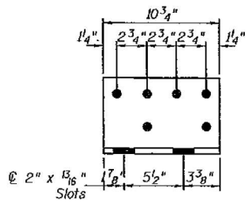
ANGLE C5



FILL ℄ P2



ANGLE C2 AND C8



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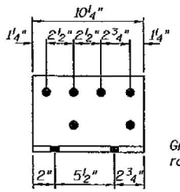

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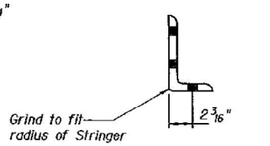
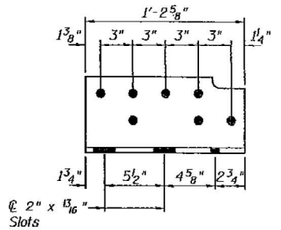
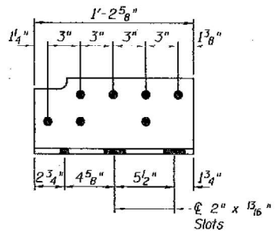


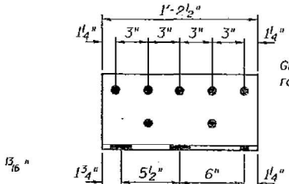
ANGLE C1 AND C8



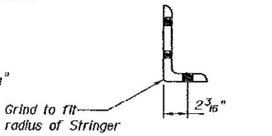
ANGLE D1 AND D7



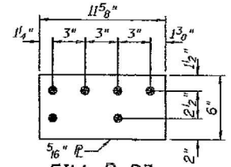
ANGLE D2 AND D8



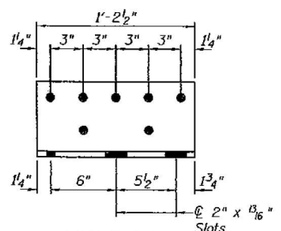
ANGLE D3



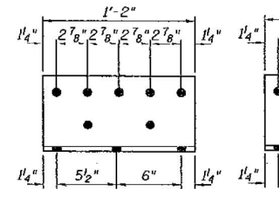
ANGLE D2 AND D7



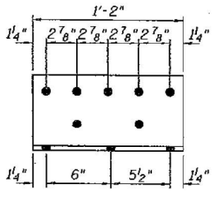
FILL ℄ P3



ANGLE D4



ANGLE D5



ANGLE D6

REPAIR DETAIL "D"

REPAIR DETAILS "C" AND "D"
F.A.I. 24 OVER OHIO RIVER
MASSAC COUNTY
S.N. 064-0035

Work this sheet with sheets 10 and 11 of 22.

DESIGNED	Drew Christopher
CHECKED	V.H.V.
DRAWN	Drew Christopher

December 6, 2002
EXAMINED John A. Morris ENGINEER OF STRUCTURAL SERVICES
PASSED

REPAIR DETAIL "C"

FOR INFORMATION ONLY

MODEL: Default
FILE NAME: P:\2021\21059\l6L - FAI 24 Ohio River Bridge Painting\4 CADD - DWG\4.4 Struc\064003S-78972-153-Existing Plans.dgn
8/16/2024 11:17:02 AM

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC.
WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME =	Jesker	DESIGNED	-	REVISED	-
		CHECKED	-	REVISED	-
PLOT SCALE =	0.167 ' / in.	DRAWN	-	REVISED	-
PLOT DATE =	8/16/2024	CHECKED	-	REVISED	-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 153 OF 175 SHEETS

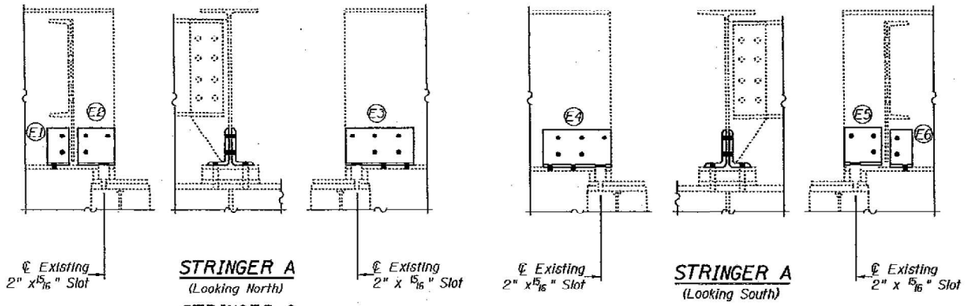
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	214
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

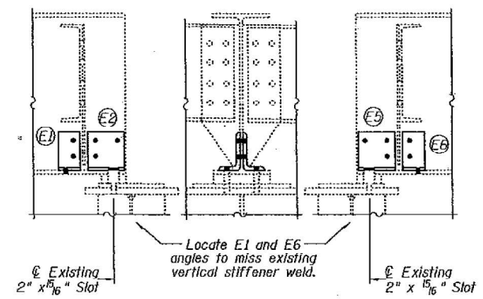
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 24	*	Massac	24	15
F.A.S. ROAD DIST. NO. 7	ILLINOIS	F.A.S. NO. PROJECT=		

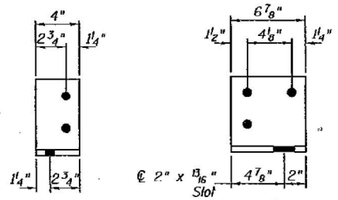
SHEET NO. 13
22 SHEETS

*64-3B-I-5



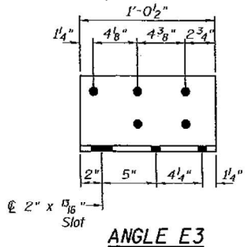


STRINGERS B, C, D, E AND F

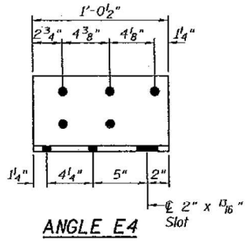


ANGLE E1

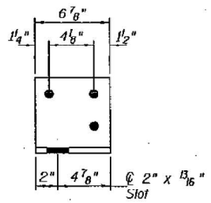
ANGLE E2



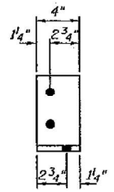
ANGLE E3



ANGLE E4



ANGLE E5



ANGLE E6

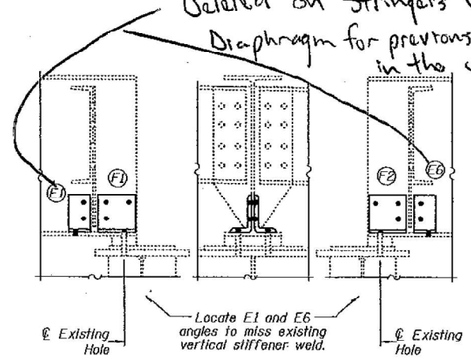
REPAIR DETAIL "E"

DESIGNED	Drew Christopher
CHECKED	V.H.V.
DRAWN	Drew Christopher

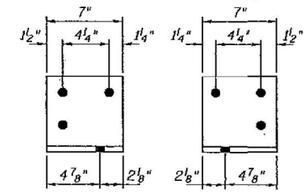
December 6, 2002
EXAMINED John A. Morris
ENGINEER OF STRUCTURAL SERVICES
PASSED

FOR INFORMATION ONLY

Deleted on Stringers C, D, E (S. Side)
Diaphragm for previous seismic retrofit is in the way



STRINGERS B, C, D, E AND F



ANGLE F1 ANGLE F2

REPAIR DETAIL "F"

REPAIR DETAIL "E" AND "F"
F.A.I. 24 OVER OHIO RIVER
MASSAC COUNTY
S.N. 064-0035

Work this sheet with sheets 10 and 11 of 22.

TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM IL DESIGN FIRM LICENSE NO: 184-001220	USER NAME = Jesker	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
			CHECKED -	REVISED -	
		PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
		PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 154 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	215
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
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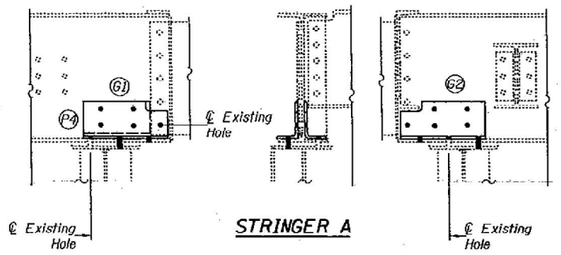
8/16/2024 11:17:05 AM

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

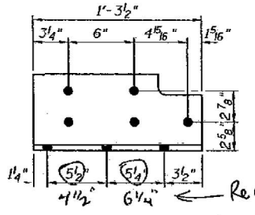
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 24	*	Massac	24	16
FED. HIGHWAY SYST. NO. ?		ILLINOIS	FED. AID PROJECT	

SHEET NO. 14
22 SHEETS

*64-3B-I-5

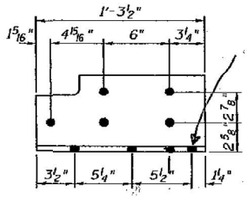


STRINGER A

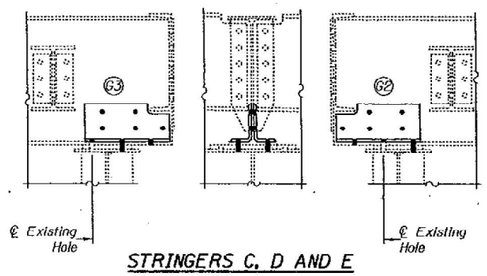


ANGLE G1 AND G3 field to match existing (Stringer D, S. Side P4)

Redrilled in

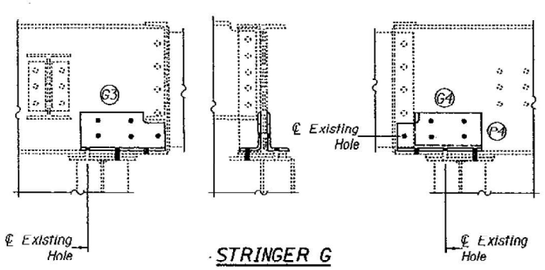


ANGLE G2 AND G4

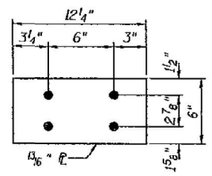


STRINGERS C, D AND E

ANGLE G1 AND G4



STRINGER G



FILL ℄ P4

REPAIR DETAIL "G"

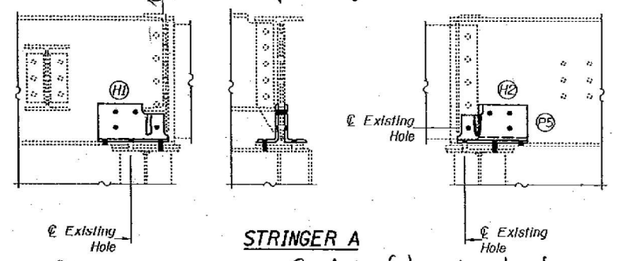
DESIGNED	Drew Christopher
CHECKED	V.H.V.

December 6, 2002
EXAMINED John A. Morris
ENGINEER OF STRUCTURAL SERVICES
PASSED

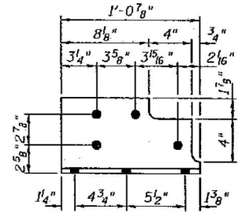
FOR INFORMATION ONLY

3" off

Slot cut in angle to fit around diaphragm gusset plate

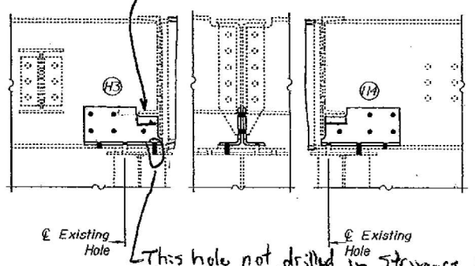


STRINGER A



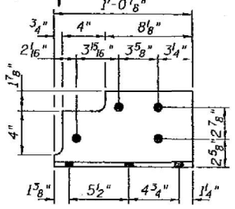
ANGLE H1 AND H5

Cope cut in field to fit under diaphragm

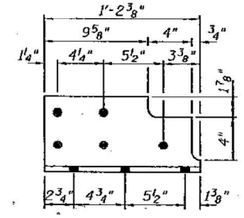


This hole not drilled in Stringers C, D, E due to lack of access for drill.

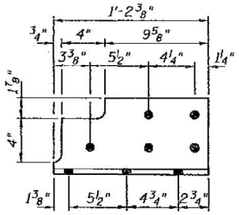
STRINGER C, D AND E



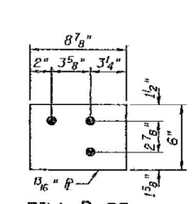
ANGLE H2 AND H6



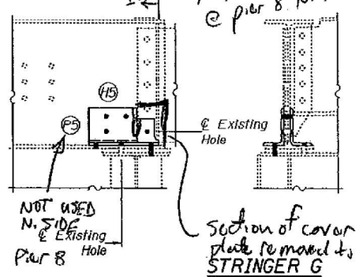
ANGLE H3

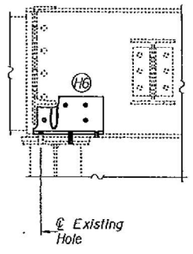


ANGLE H4



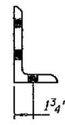
FILL ℄ P5





REPAIR DETAIL "H"

¾" Radius on all re-entrant cuts.



ANGLE H2 AND H5

REPAIR DETAIL "G" AND "H"
F.A.I. 24 OVER OHIO RIVER
MASSAC COUNTY
S.N. 064-0035

Work this sheet with sheets 10 and 11 of 22.

MODEL: Default
FILE NAME: P:\2021\21059\U6L - FAI 24 Ohio River Bridge Painting\4 CADD - DWG\4.4 Struc\064035-78972-155-Existing Plans.dgn

TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM	USER NAME = Jesker	DESIGNED -	REVISED -
	IL DESIGN FIRM LICENSE NO: 184-001220		CHECKED -	REVISED -
		PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -
		PLOT DATE = 8/16/2024	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

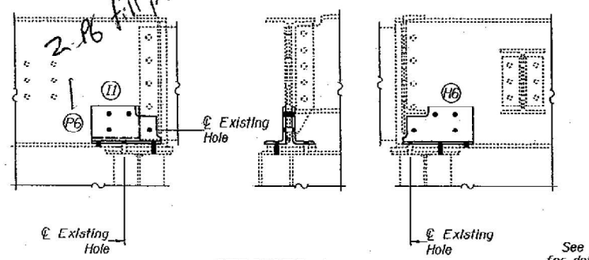
EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 155 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	216
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

8/16/2024 11:17:08 AM

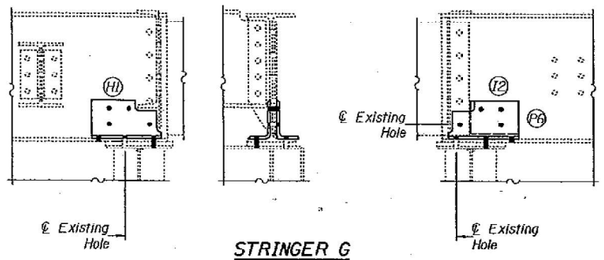
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

2-P6 Fill plates used

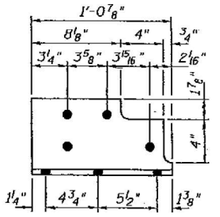


STRINGER A

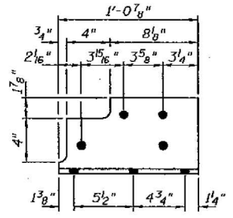
See sheet 14 of 22 for details of H1 and H6



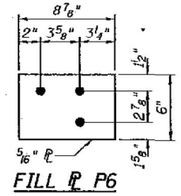
STRINGER G



ANGLE I1



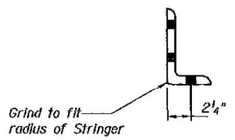
ANGLE I2



FILL ℄ P6

REPAIR DETAIL "I"

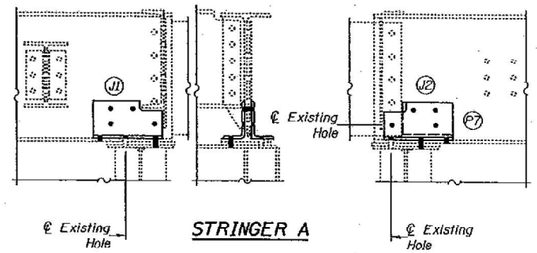
3/4" Radius on all re-entrant cuts.



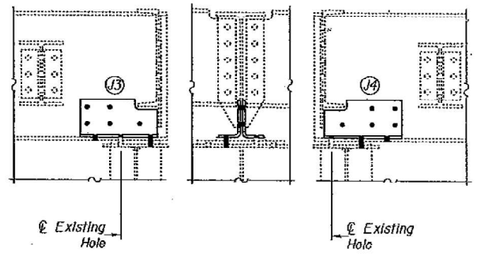
ANGLE I1 AND I2

DESIGNED	Drew Christopher	December 6, 2002
CHECKED	V.H.V.	EXAMINED John A. Morris ENGINEER OF STRUCTURAL SERVICES
DRAWN	Drew Christopher	PASSED

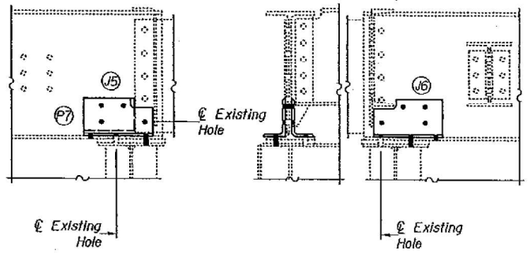
FOR INFORMATION ONLY



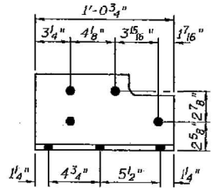
STRINGER A



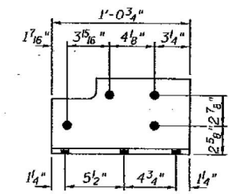
STRINGERS C, D AND E



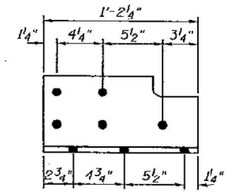
STRINGER G



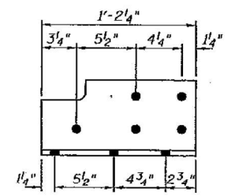
ANGLE J1 AND J5



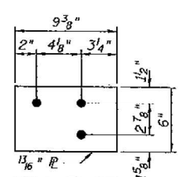
ANGLE J2 AND J6



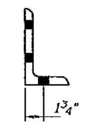
ANGLE J3



ANGLE J4



FILL ℄ P7



ANGLE J2 AND J5

REPAIR DETAIL "J"

REPAIR DETAILS "I" AND "J"
F.A.I. 24 OVER OHIO RIVER
MASSAC COUNTY
S.N. 064-0035

Work this sheet with sheets 10 and 11 of 22.

MODEL: Default
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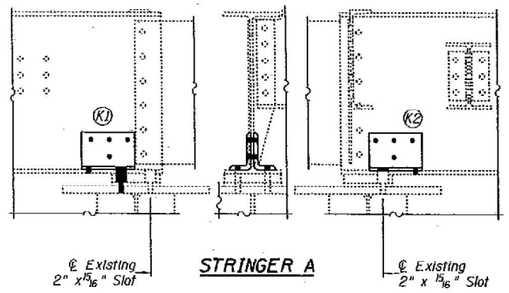
8/16/2024 11:17:11 AM

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

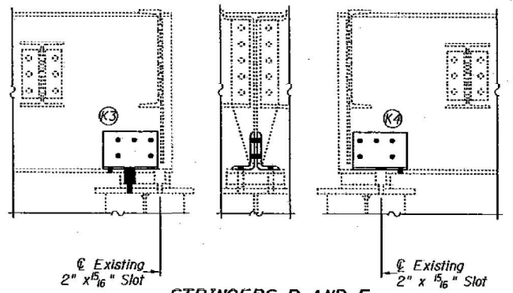
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 24	*	Massac	24	18
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 16
22 SHEETS

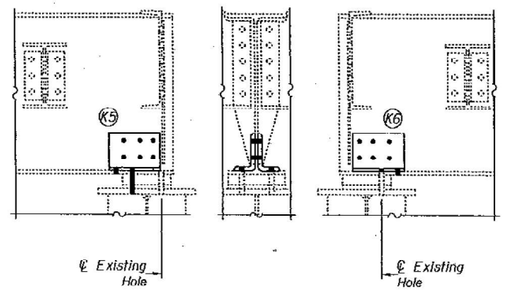
*64-3B-I-5



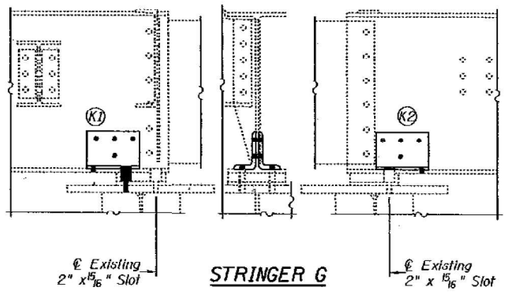
STRINGER A



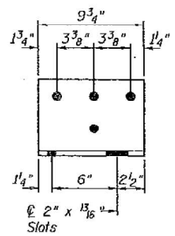
STRINGERS B AND F



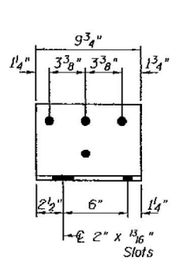
STRINGERS C, D AND E



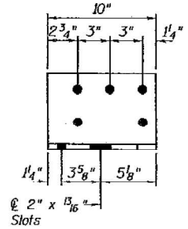
STRINGER G



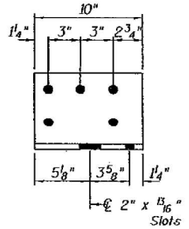
ANGLE K1



ANGLE K2



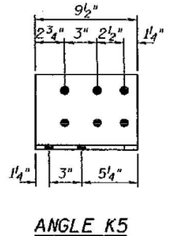
ANGLE K3



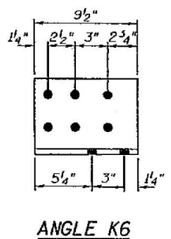
ANGLE K4

Provide cope (1 3/4" x 3" w/ 3/4" r.) in horizontal leg to clear existing bolt on angles K3 and K5.

REPAIR DETAIL "K"



ANGLE K5

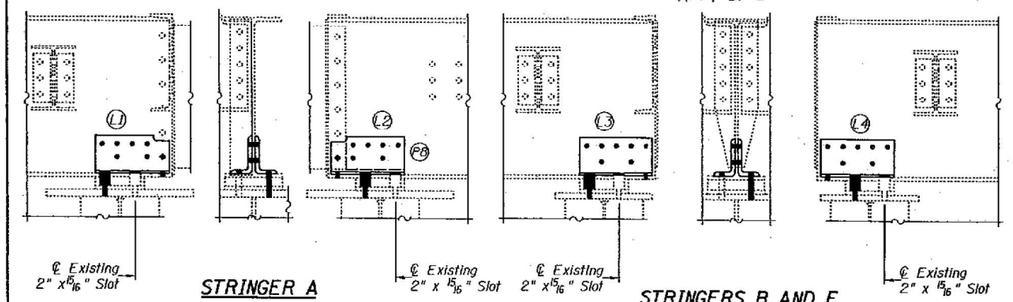


ANGLE K6

DESIGNED	Drew Christopher
CHECKED	V.H.V.
DRAWN	Drew Christopher

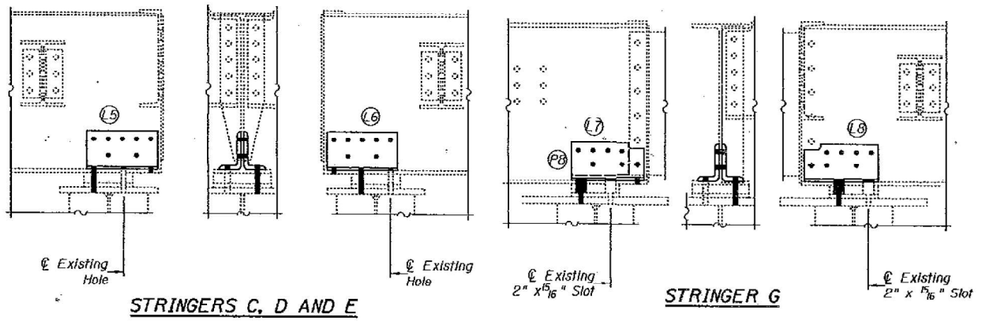
December 6, 2002
EXAMINED John A. Morris
ENGINEER OF STRUCTURAL SERVICES
PASSED

FOR INFORMATION ONLY



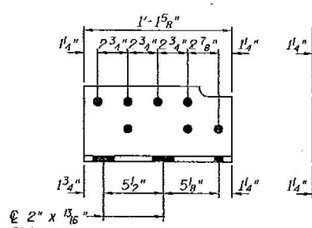
STRINGER A

STRINGERS B AND F

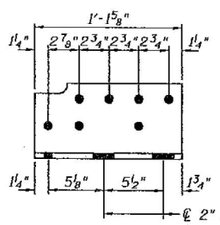


STRINGERS C, D AND E

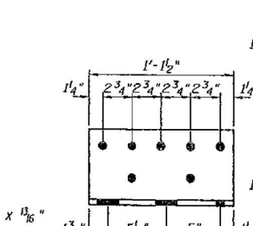
STRINGER G



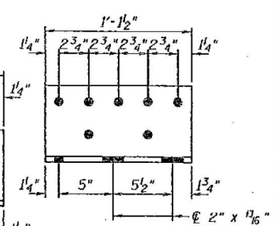
ANGLE L1 AND L7



ANGLE L2 AND L8

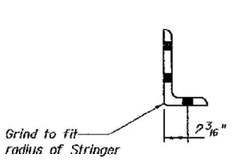


ANGLE L3

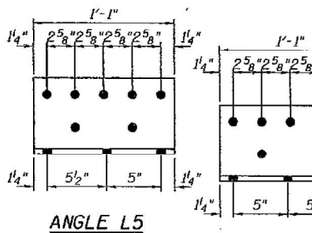


ANGLE L4

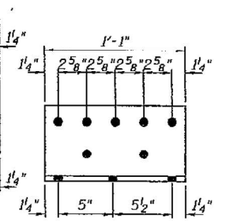
REPAIR DETAIL "L"



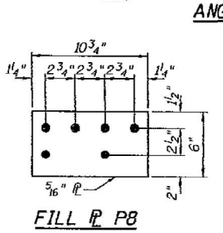
ANGLE L2 AND L7



ANGLE L5



ANGLE L6



FILL R P8

REPAIR DETAILS "K" AND "L"
F.A.I. 24 OVER OHIO RIVER
MASSAC COUNTY
S.N. 064-0035

Work this sheet with sheets 10 and 11 of 22.

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TWM ENGINEERING GEOSPATIAL SERVICES	TWM, INC. WWW.TWM-INC.COM	USER NAME = jesker	DESIGNED -	REVISED -
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		PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -
		PLOT DATE = 8/16/2024	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 157 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	218
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

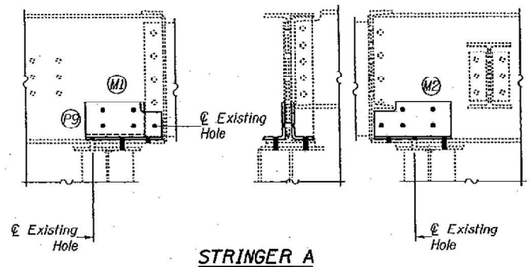
8/16/2024 11:17:14 AM

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 24	*	MASSAC	24	19
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 17
22 SHEETS

*64-3B-I-5



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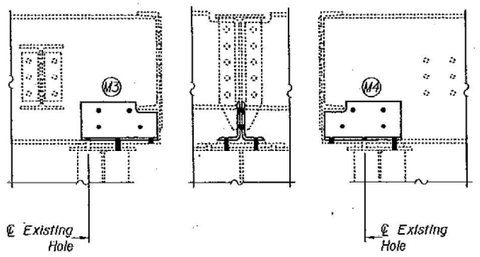
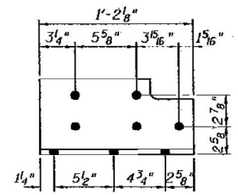
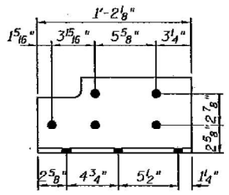


STRINGERS C, D AND E

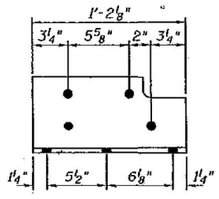
STRINGER G



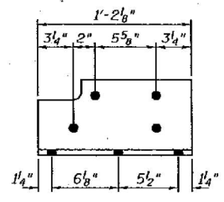
ANGLE M1 AND M5



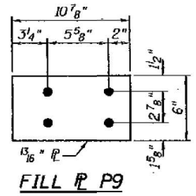
ANGLE M2 AND M6



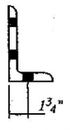
ANGLE M3



ANGLE M4

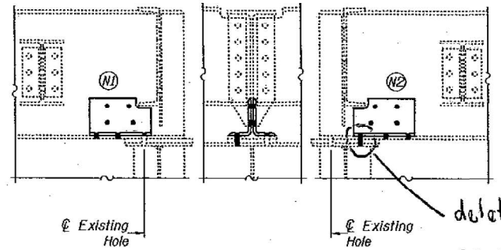


FILL ℄ P9



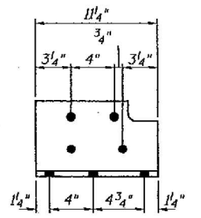
ANGLE M1 AND M6

REPAIR DETAIL "M"

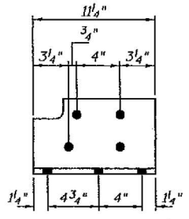


deleted hole on outside on Stringers A and G (no access)

STRINGERS C, D AND E
(Stringers A and G Similar)



ANGLE N1



ANGLE N2

REPAIR DETAIL "N"

DESIGNED	Drew Christopher
CHECKED	V.H.V.
DRAWN	Drew Christopher

December 6, 2002
EXAMINED John A. Morris
ENGINEER OF STRUCTURAL SERVICES
PASSED
ENGINEER OF BRIDGES AND STRUCTURES

FOR INFORMATION ONLY

REPAIR DETAILS "M" AND "N"
F.A.I. 24 OVER OHIO RIVER
MASSAC COUNTY
S.N. 064-0035

Work this sheet with sheets 10 and 11 of 22.

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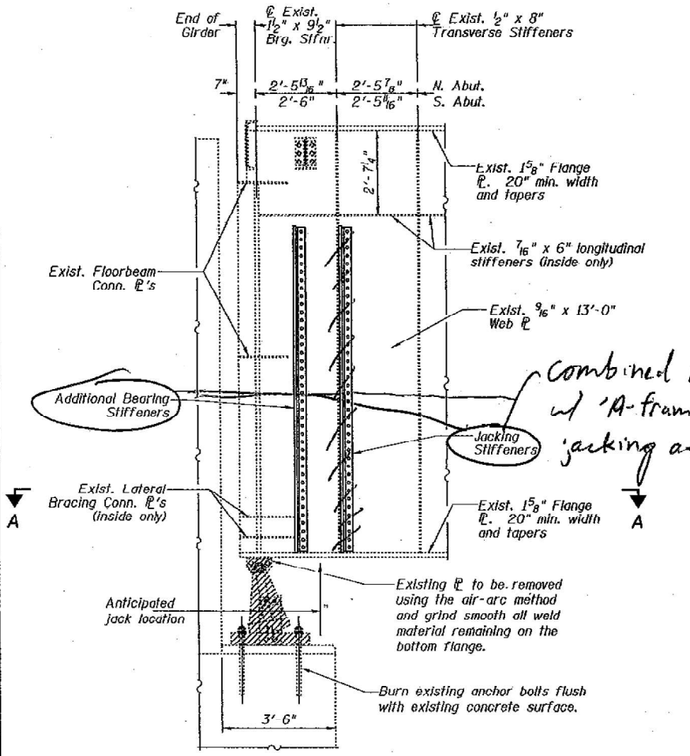
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 24	*	Massac	24	21
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

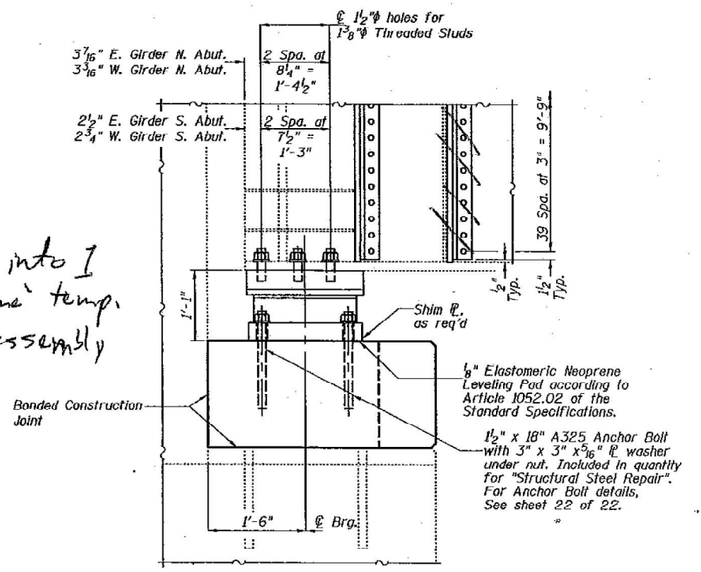
SHEET NO. 19
22 SHEETS

*64-3B-I-5

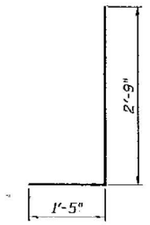


BEARING REMOVAL

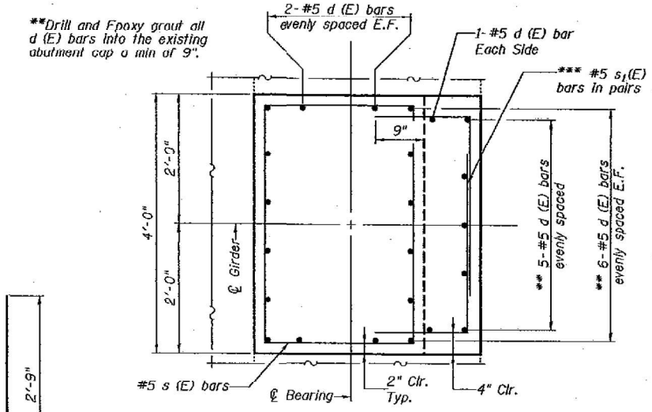
Install Additional bearing stiffeners and jacking stiffeners prior to jacking operations. Additional bearing stiffeners included in quantity for "Structural Steel Repair". Cost for Jacking stiffeners included with "Jacking and Cribbing".



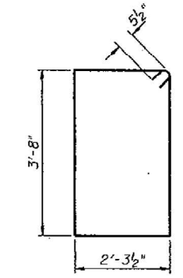
ABUTMENT ELEVATION



BAR s_1(E)



ABUTMENT PEDESTAL PLAN



BAR s (E)

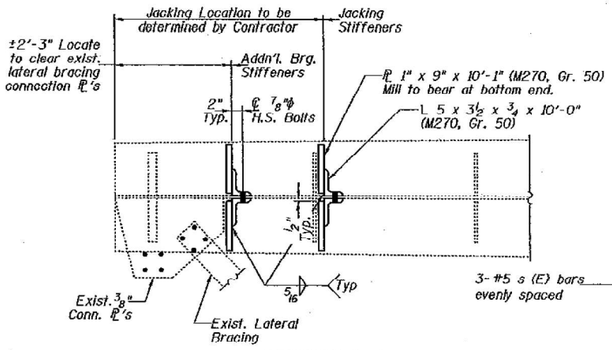
Min Bar Lap
#5 = 2'-2"

BILL OF MATERIAL
(Two Abutments)

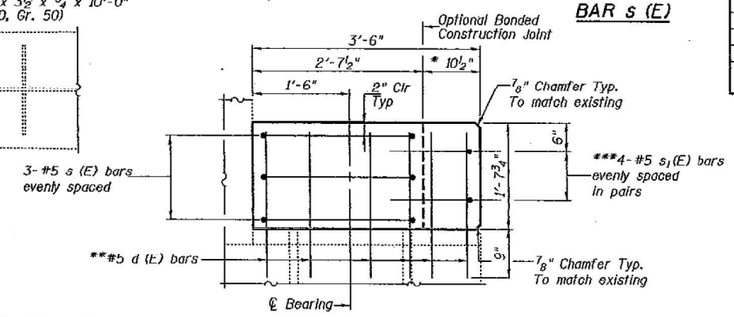
Bar	No.	Size	Length	Shape
d (E)	92	#5	2'-3"	———
s (E)	12	#5	12'-10"	□
s_1(E)	16	#5	4'-2"	⌊
Concrete Structures			Cu. Yd.	3.4
Structural Steel Repair			Pounds	4640
Reinforcement Bars, Epoxy Coated			Pound	450

Reinforcement bars designated (E) shall be epoxy coated.

Epoxy grout bars in accordance with Article 584 of the Standard Specifications. Cost is included in cost of Reinforcement Bars, Epoxy Coated.



SECTION A-A



***Drill and Epoxy grout all s_1(E) bars into the new pedestal a min. of 9".

ABUTMENT PEDESTAL ELEVATION

* This portion of the concrete pedestal is to be poured after the new bearing is installed and the jack has been removed.

DESIGNED	P.S.J.
CHECKED	V.H.V.
DRAWN	Drew Christopher

December 6, 2002
EXAMINED John A. Morris ENGINEER OF STRUCTURAL SERVICES
PASSED
ENGINEER OF BRIDGES AND STRUCTURES

REPAIR DETAIL "Q"
ABUTMENT BEARING REPLACEMENT
F.A.I. 24 OVER OHIO RIVER
MASSAC COUNTY
S.N. 064-0035

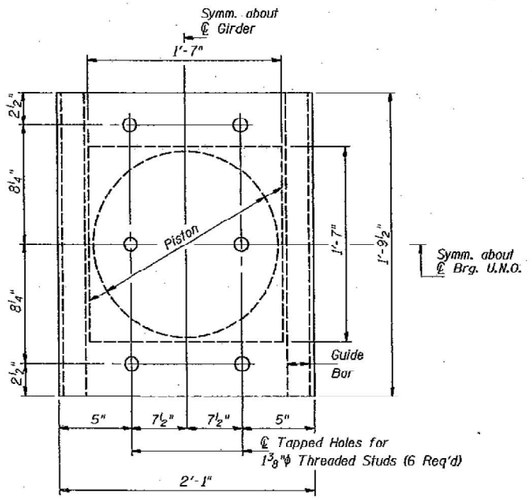
FOR INFORMATION ONLY

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

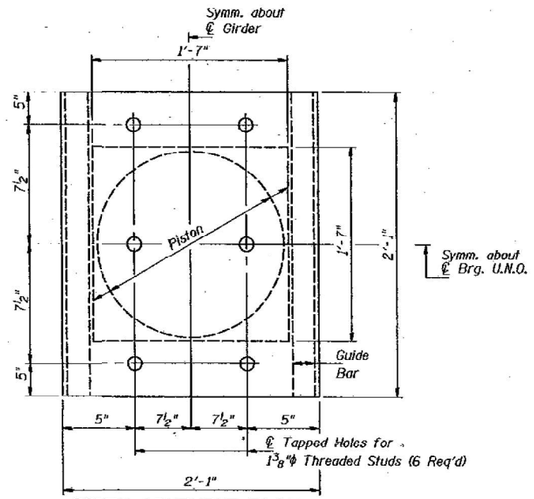
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 24	*	Massac	24	22
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT*		

SHEET NO. 20
22 SHEETS

*64-3B-I-5

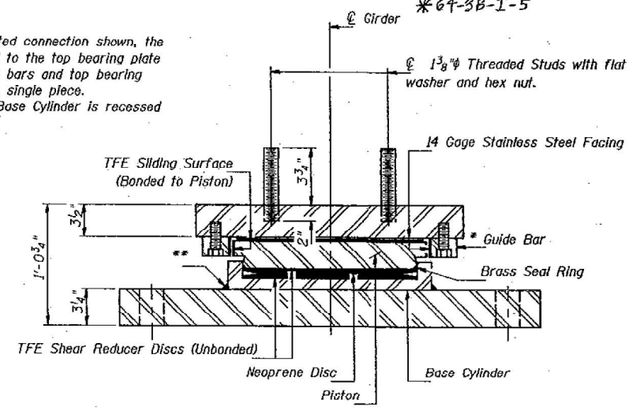


NORTH ABUTMENT PLAN
TOP BEARING PLATE AND PISTON



SOUTH ABUTMENT PLAN
TOP BEARING PLATE AND PISTON

* As an alternate to the bolted connection shown, the guide bars may be connected to the top bearing plate by groove welds or the guide bars and top bearing plate may be fabricated as a single piece.
** Weld may be omitted if Base Cylinder is recessed into Bottom Plate.



BEARING ASSEMBLY

BEARING DATA		N. Abut.	S. Abut.
R_D	(K)	508.0	490.8
R_L	(K)	171.5	170.0
R_{LMP}	(K)	26.5	26.7
R_D+L+I	(K)	706.0	687.5
Expansion Length		300'-0"	600'-0"

Notes: Provide 2-⅛" x 1'-9" x 2'-11" adjusting shims per Bearing. Included in quantity for "Structural Steel Repair" on sheet 19 of 22.
The Contractor is responsible for adjusting dimensions as required in the field for the actual floating bearing used. Dimensions to be adjusted shall be submitted to the Engineer for approval prior to fabrication of bearings.
Bottom bearing plate thickness was determined by using a pot diameter of 19 inches.
Cost of field drilling is included with Structural Steel Repair.
For Anchor Bolt installation details, see sheet 22 of 22.
Minimum combined jack capacity = 500 Tons

DESIGNED	P.S.J.
CHECKED	V.H.V.
DRAWN	Drew Christopher

December 6, 2002
EXAMINED John A. Morris ENGINEER OF STRUCTURAL SERVICES
PASSED

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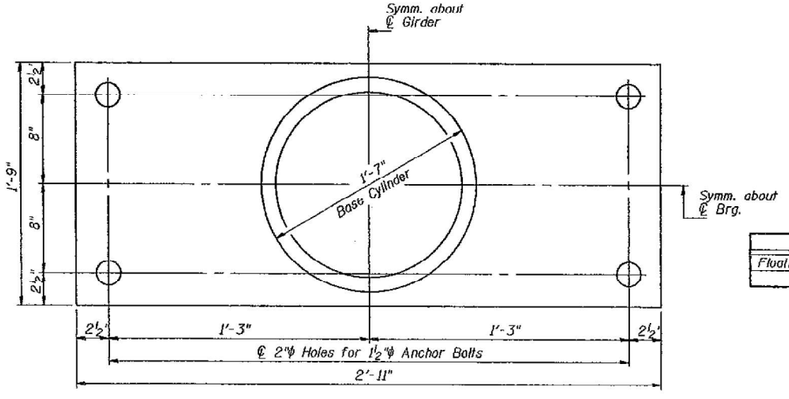

PLAN - BOTTOM BEARING PLATE

BILL OF MATERIAL

Item	Unit	Total
Floating Bearings, Guided Expansion, 700 k	Each	4

REPAIR DETAIL "Q"
FLOATING BEARINGS
F.A.I. 24 OVER OHIO RIVER
MASSAC COUNTY
S.N. 064-0035

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TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

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		CHECKED	-	REVISED	-
PLOT SCALE =	0.167 ' / in.	DRAWN	-	REVISED	-
PLOT DATE =	8/16/2024	CHECKED	-	REVISED	-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 160 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	221
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS
I-24	(64-3B)I-7	MASSAC	18
	ILLINOIS	CONTRACT NO.	

* 18+6 = 24 TOTAL SHEETS (2)

D-99-008-15

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED
HIGHWAY PLANS

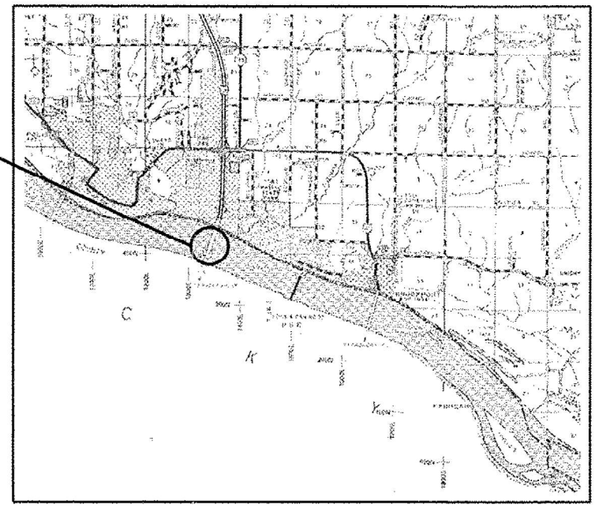
FAI ROUTE 24 (I-24)
SECTION (64-3B)I-7

BEARING REPLACEMENT
MASSAC COUNTY, ILLINOIS
McCRACKEN COUNTY, KENTUCKY

C-99-013-15

LOCATION OF SECTION INDICATED THUS:- ■

EXISTING STRUCTURE NO.
064-0035 ILLINOIS
073-0024-B0100 KENTUCKY
FAI 24 OVER THE OHIO RIVER



STRUCTURE LENGTH = 5,634 FT.

N

FOR INDEX OF SHEETS, SEE SHEET NO. 2

FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 3-4

TRAFFIC DATA

I-24 TRAFFIC DATA

2014 ADT = 29,600 (TWO WAY)
20% TRUCKS

TOWNSHIPS:

COUNTY UNIT ROAD DISTRICT

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123
OR 811

FOR INFORMATION ONLY 351-5227

CONTRACT NO. 78440

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED Dec 16 20 14
Jeffrey L Keirn
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER
Jan 30 20 15
John D. Baranzelli P.E.
acting ENGINEER OF DESIGN AND ENVIRONMENT
Jan 30 20 15
Omer Osman, P.E.
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

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	CHECKED -	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 161 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	222
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

GENERAL NOTES

1) IN ADDITION TO THE REQUIREMENTS OF ARTICLE 107.16 THE CONTRACTOR SHALL PROTECT THE SURFACE OF ALL BRIDGE DECKS AND BRIDGE APPROACH PAVEMENTS IN A MANNER SATISFACTORY TO THE ENGINEER BEFORE ANY EQUIPMENT IS ALLOWED TO CROSS THE STRUCTURE. PROTECTION SHALL BE PROVIDED FOR ALL EQUIPMENT AS DEFINED IN ARTICLE 101.16 REGARDLESS IF TRACK MOUNTED OR WHEELED.

2) IF THE CONTRACTOR CHOOSES TO MODIFY THE SUGGESTED SEQUENCE OF CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT A REVISED SEQUENCE OF CONSTRUCTION AND TRAFFIC CONTROL LAYOUT DETAILS FOR REVIEW AND ACCEPTANCE BY THE ENGINEER.

3) COMMITMENTS: NONE AS OF MARCH 20, 2015.

INDEX OF SHEETS

	1	COVER SHEET
	2	INDEX OF SHEETS, GENERAL NOTES, STANDARDS
	3-4	SUMMARY OF QUANTITIES
	5	WIDE LOAD SIGNING PLAN
*	6-18	BRIDGE DETAILS

2

* INCLUDES SHEETS 18A - 18F.

ILLINOIS HIGHWAY STANDARDS

000001-06	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
701101-04	OFF-ROAD, MULTILANE 15' TO PAVEMENT EDGE
701400-08	APPROACH TO LANE CLOSURE FREEWAY/EXPRESSWAY
701401-09	LANE CLOSURE FREEWAY/EXPRESSWAY
701402-10	LANE CLOSURE FREEWAY/EXPRESSWAY, WITH BARRIER
701901-04	TRAFFIC CONTROL DEVICES
704001-07	TEMPORARY CONCRETE BARRIER

701428

Prepared By: Joe Stanfield, DISTRICT STUDIES & PLANS EN

Examined By: DISTRICT LAND ACQUISITION E

Examined By: DISTRICT PROGRAM DEVELOPMENT

Examined By: DISTRICT OPERATIONS ENGINEER

Examined By: DISTRICT PROJECT IMPLEMENTATIO

Examined By: DISTRICT CONSTRUCTION ENGIN

Examined By: DISTRICT MATERIALS ENGINEER

FOR INFORMATION ONLY

2 REVISED 4-7-15

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		DRAWN -	REVISED -
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STATE OF ILLINOIS

INDEX OF SHEETS, GENERAL NOTES, STANDARDS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS
24	(64-3B)BP-1,BRR-1	MASSAC	236

TWM, INC. WWW.TWM-INC.COM
ENGINEERING GEOSPATIAL SERVICES
IL DESIGN FIRM LICENSE NO: 184-001220

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		CHECKED -	REVISED -
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PLOT DATE = 8/16/2024		CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 162 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	223
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

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8/16/2024 11:17:29 AM

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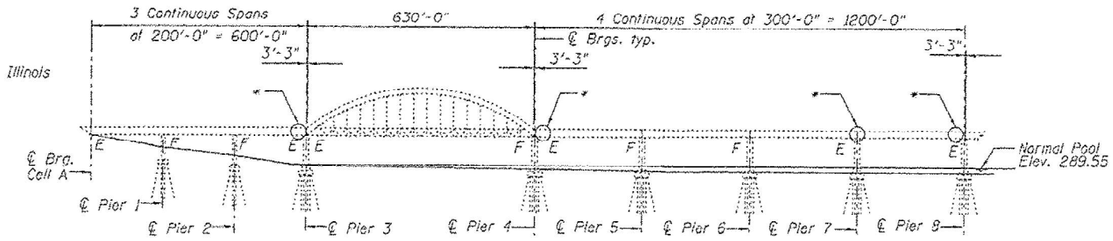
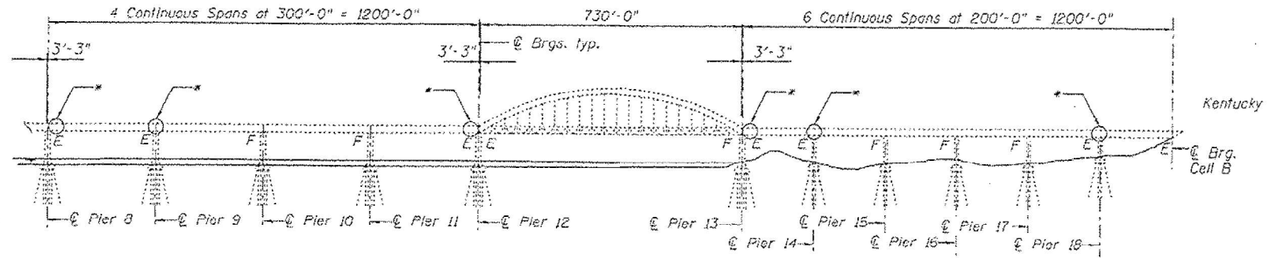
Salvage: No Salvage.





ELEVATION

(Looking East)

*Remove and replace existing rocker bearings with HLMR Expansion Bearings and Concrete Pedestals. Existing tied arch span rocker bearings are not to be replaced.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu. Yd.	——	1.1	1.1
Concrete Structures	Cu. Yd.	——	46.7	46.7
Reinforcement Bars, Epoxy Coated	Pound	——	5,130	5,130
Anchor Bolts, 1¼"	Each	16	——	16
Anchor Bolts, 1½"	Each	32	——	32
Anchor Bolts, 2"	Each	40	——	40
High Load Multi-Rotational Bearings, Guided Expansion, 750K	Each	4	——	4
Structural Steel Repair	Pound	23,750	——	23,750
Removal of Existing Bearings	Each	20	——	20
Jacking and Cribbing	Each	20	——	20
High Load Multi-Rotational Bearings, Guided Expansion, 1100K	Each	8	——	8
High Load Multi-Rotational Bearings, Guided Expansion, 2000K	Each	4	——	4
High Load Multi-Rotational Bearings, Guided Expansion, 3100K	Each	4	——	4

GENERAL NOTES

Except as otherwise specified, fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Bolts $\frac{7}{8}$ in. ϕ, open holes $\frac{15}{16}$ in. ϕ, unless otherwise noted.

All structural steel shall be AASHTO M 270, Grade 50. Steel used in the jacking and cribbing shall be AASHTO M 270, Grade 50 unless otherwise noted.

No field welding is permitted except as specified in the contract documents.

Reinforcement bars designated (E) shall be epoxy coated.

Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of $\frac{1}{8}$ inch (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.

The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.

The Inorganic Zinc Rich Primer / Acrylic / Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final finish coat shall be Gray, Munsell No. 5B 7/1. Cost included with Structural Steel Repair.

Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".

The Contractor shall perform the work with care, so that any materials which are to remain in place shall not be damaged. If the Contractor damages any materials which are to remain in place, the damaged materials shall be replaced or repaired in a manner satisfactory to the Engineer at the expense of the Contractor.

The Contractor shall ensure that no infringement of the navigational underclearance or channel occurs while doing the work. Any infringement shall be approved by the United States Coast Guard. The Contractor shall contact Mr. Eric Washburn, Coast Guard 8th District, 1222 Spruce Street, St. Louis, MO 63103, (314) 269-2378 for requirements needed to obtain the necessary permits. Emergency Contact U.S.C.G. 24-Hour Watch Center (502) 779-5422.

The combined weight of construction vehicles, construction equipment including work platforms (excluding temporary concrete barrier for stage construction), and stockpiled materials, shall not exceed 40 tons at any given time at each bearing replacement location. The Contractor shall submit construction weights and associated sequencing to the Engineer for approval.

LOADING HS20-44 (NEW CONSTRUCTION)

Allow 0#/sq. ft. for future wearing surface.

DESIGN TRAFFIC LANES

HLMR Expansion Bearings: Four lanes, max. loading configuration
Jacking and Cribbing: Three lanes, staged configuration

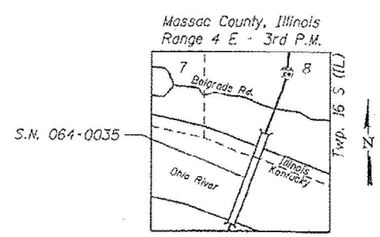
DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition and the AASHTO Manual for Bridge Evaluation, 2nd Edition, with 2011 and 2013 Interims.

DESIGN STRESSES (NEW CONSTRUCTION)

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50 Structural Steel)



McCracken County, Kentucky

LOCATION SKETCH

LICENSED STRUCTURAL ENGINEER
RACHEL L. MERTZ
081.006526
STATE OF ILLINOIS

4/6/15

RACHEL L. MERTZ
EDWARDSVILLE, ILLINOIS
ILLINOIS LICENSED STRUCTURAL ENGINEER NO. 081-006526
EXPIRES 11/30/2015

INDEX OF SHEETS

1 General Elevation
2 Typical Stage Construction Details and Sequence of Construction
3 Temporary Concrete Barrier for Stage Construction
4 Bearing Removal and Jacking Stiffener Details - 1
5 Bearing Removal and Jacking Stiffener Details - 2
6 Bearing Removal and Jacking Stiffener Details - 3
7 Jacking and Concrete Pedestal Details - Piers 3N and 13S
8 Jacking and Concrete Pedestal Details - Piers 4S and 12N
9 Cribbing Details - Piers 3N, 4S, 12N and 13S
10 Jacking and Concrete Pedestal Details - Piers 7 and 9
11 Jacking and Concrete Pedestal Details - Pier 8
12 Jacking and Concrete Pedestal Details - Piers 14 and 18
13 Temporary Bearing Details
14 High Load Multi-Rotational Bearings - 1
15 High Load Multi-Rotational Bearings - 2

GENERAL ELEVATION

F.A.I. ROUTE 24 - SEC. (64-3B)I-

MASSAC COUNTY

STRUCTURE NO. 064-0035

FOR INFORMATION ONLY

MODJESKI and MASTERS
Experience great bridges.

DESIGNED - APL		REVISED
CHECKED - MEL		REVISED
PLOT SCALE =	DRAWN - EAR	REVISED
PLOT DATE = 11/27/2015	CHECKED - APL	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-24	(64-3B)I-7	MASSAC	18	
		CONTRACT NO. 78		

2 REVISED 4-7-15

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TWM, INC.
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IL DESIGN FIRM LICENSE NO. 184-001220

USER NAME = jesker		DESIGNED -		REVISED -	
		CHECKED -		REVISED -	
PLOT SCALE = 0.167 ' / in.		DRAWN -		REVISED -	
PLOT DATE = 8/16/2024		CHECKED -		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 163 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	224
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

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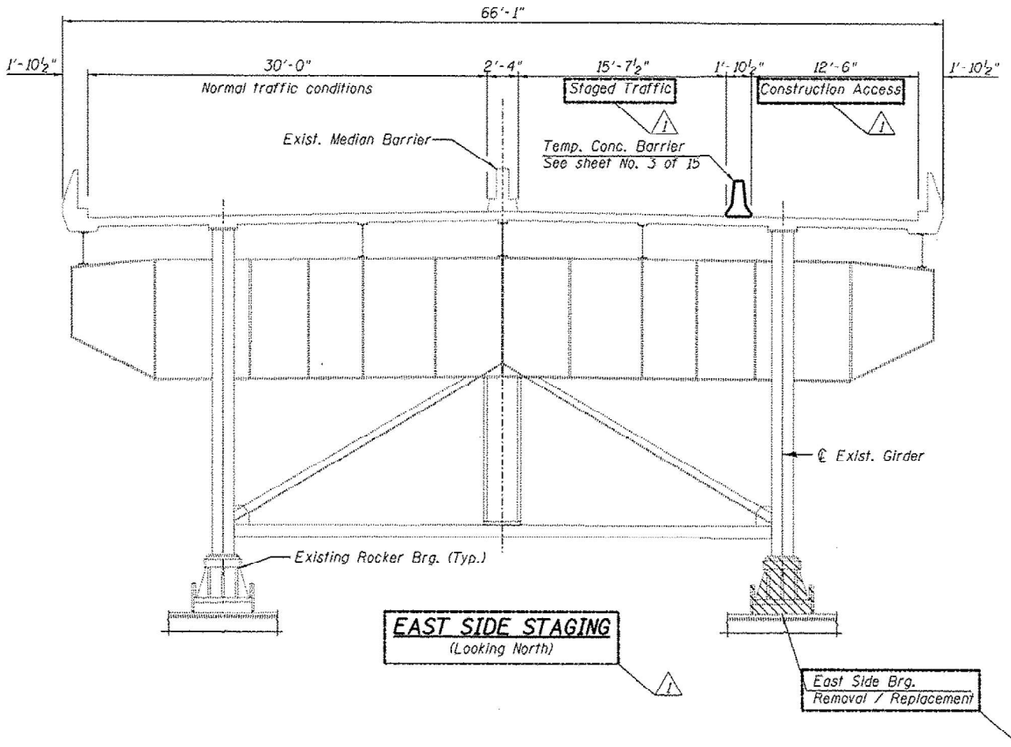

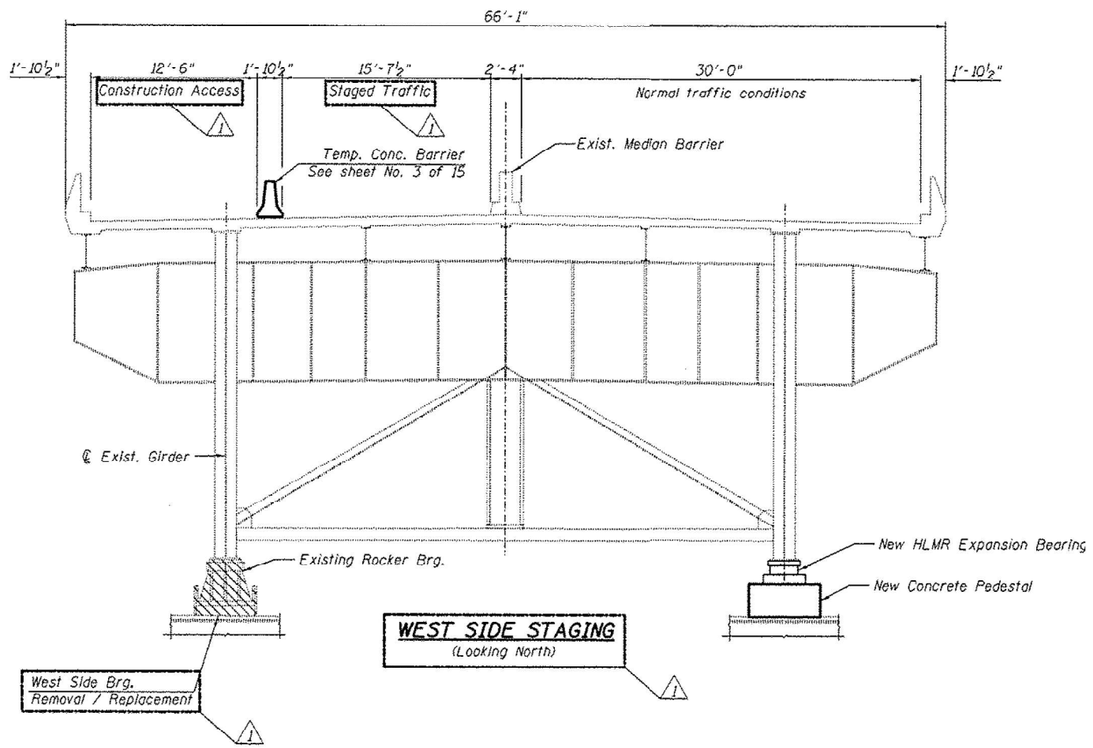

CONSTRUCTION SEQUENCE

Traffic will be maintained utilizing stage construction. All lanes will be open to traffic during holiday periods as defined in Article 107.09 of the Standard Specifications.

Jacking and cribbing have been designed to support only three lanes of staged traffic. Bearing replacements must be phased so the structure is not supported by jacking and cribbing when the bridge is fully opened during holiday periods.

Traffic shall be removed from the portion of the structure to be jacked prior to and during the entire time the load is supported by the hydraulic pressure of the jacks. See Special Provisions.

Bearing replacements shall be phased such that adjacent piers will not be supported by jacking and cribbing at the same time.

The Contractor shall sequence construction as follows:

Phase I: Perform west side bearing replacements at Piers 4S, 8N, 8S and 12N.

Phase II: Perform east side bearing replacements at Piers 4S, 8N, 8S and 12N.

Phase III: Perform east side bearing replacements at Piers 3N, 9, 13S and 18.

Phase IV: Perform east side bearing replacements at Piers 7 and 14.

Phase V: Perform west side bearing replacements at Piers 9, 13S and 18.

Phase VI: Perform west side bearing replacements at Piers 3N, 7 and 14.

The Contractor shall remove the jacking and cribbing and all elements required for the jacking operation when the bearing replacement is complete. Anchor rods and anchor bolts required for jacking and cribbing shall be burned flush with the concrete surface. Jacking and cribbing including temporary bearings and jacking plates, beams and brackets shall be reused for bearing replacements at similar locations. At the Contractor's discretion, jacking stiffeners and connection angles may be left in-place or reused for bearing replacements at similar locations. Open holes in the existing girder shall be filled with A325 bolts of the same diameter as the removed bolt.

BEARING REPLACEMENT PROCEDURE

1. Lay out the new bearing and jacking stiffeners for both temporary and permanent bearing locations. Ensure that bearing plates bear fully and evenly on the top of girder bottom flanges and that connection angles lie flat against the girder webs. Using the holes in the pre-drilled connection angles as a template, drill holes in the girder webs. Verify full bearing of the new stiffeners on the bottom flanges and fasten the stiffeners to the girder webs.

2. As required at each location, install the jacking and cribbing and temporary bearings in accordance with the plans.

3. Using a manifold, extend the jacks at a given location until the temporary bearings bear snugly and evenly on the girder bottom flange. Fasten the top assembly of the temporary bearings to the girder bottom flange.

4. Raise the girders ($\frac{1}{8}$" max), lock the jacks and remove the existing bearings.

5. Where required, remove portions of concrete as indicated in the drawings, being careful not to damage concrete th is to remain in place. Prepare the exposed concrete surface for bonding with new concrete. Form the new concrete pedestals, set the anchor bolts and reinforcement, and place the new pedestal concrete. Forms may be removed and l applied to the new bearing pedestals per the Standard Specifications.

6. Install the new HLMR bearings, including any necessary shim plates. Position the bearings appropriately for the temperature at the time of initial loading.

7. Lower the girder onto the new bearing. Verify the location of the upper bearing plate on the girder, and fasten the upper plate to the girder bottom flange.

8. Disconnect and remove jacking stiffeners, temporary bearings, jacking and cribbing, and where applicable, jacking brackets. Fill all open holes in the girder web and bottom flange with appropriately sized bolts, complete with washer and nut tightened by the turn of the nut method.

FOR INFORMATION ONLY

	USER NAME =	DESIGNED - APL	REVISED 03/17/2015 RLM
		CHECKED - MEL	REVISED

STATE OF ILLINOIS

TYPICAL STAGE CONSTRUCTION DETAILS AND SEQUENCE OF CONSTRUCTION

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.

TWM ENGINEERING & GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME =	Jesker	DESIGNED -		REVISED -	
		CHECKED -		REVISED -	
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PLOT DATE =	8/16/2024	CHECKED -		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 164 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	225
		CONTRACT NO. 78972		
		ILLINOIS	FED. AID PROJECT	

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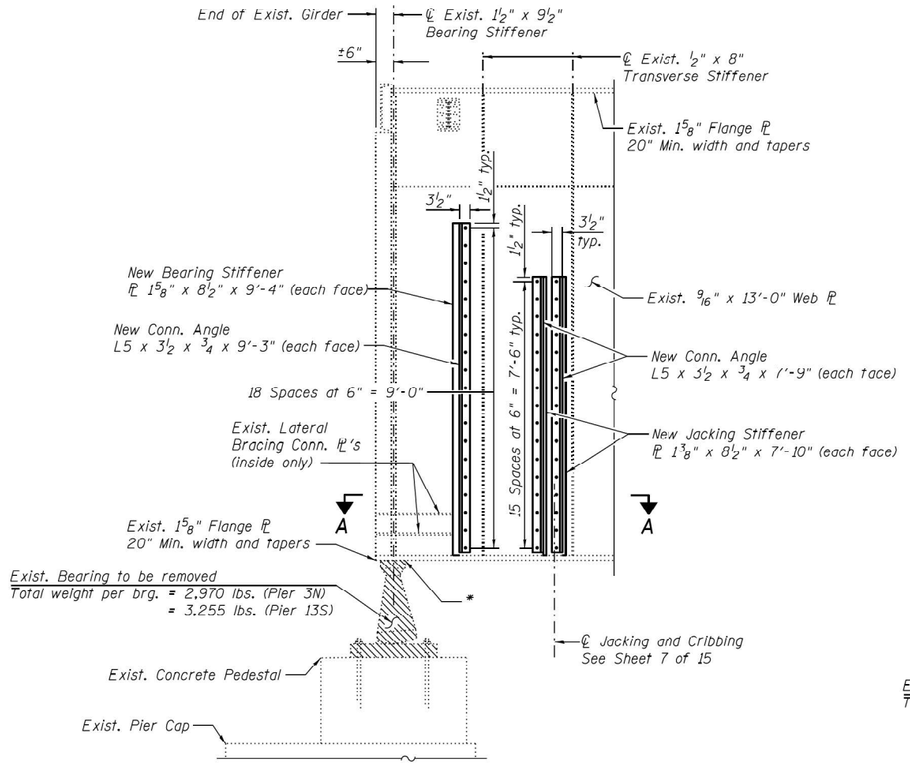
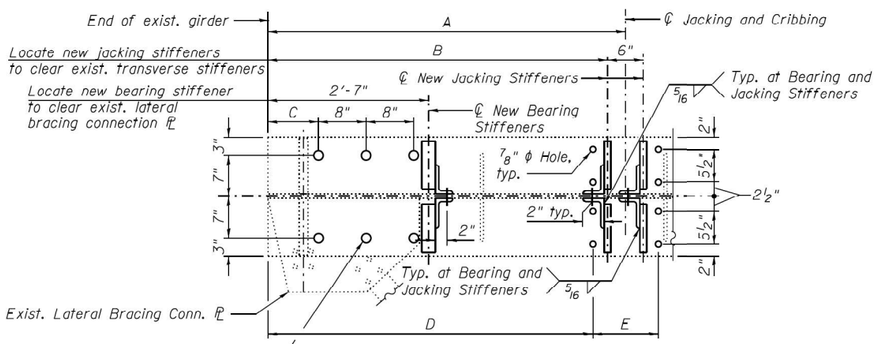


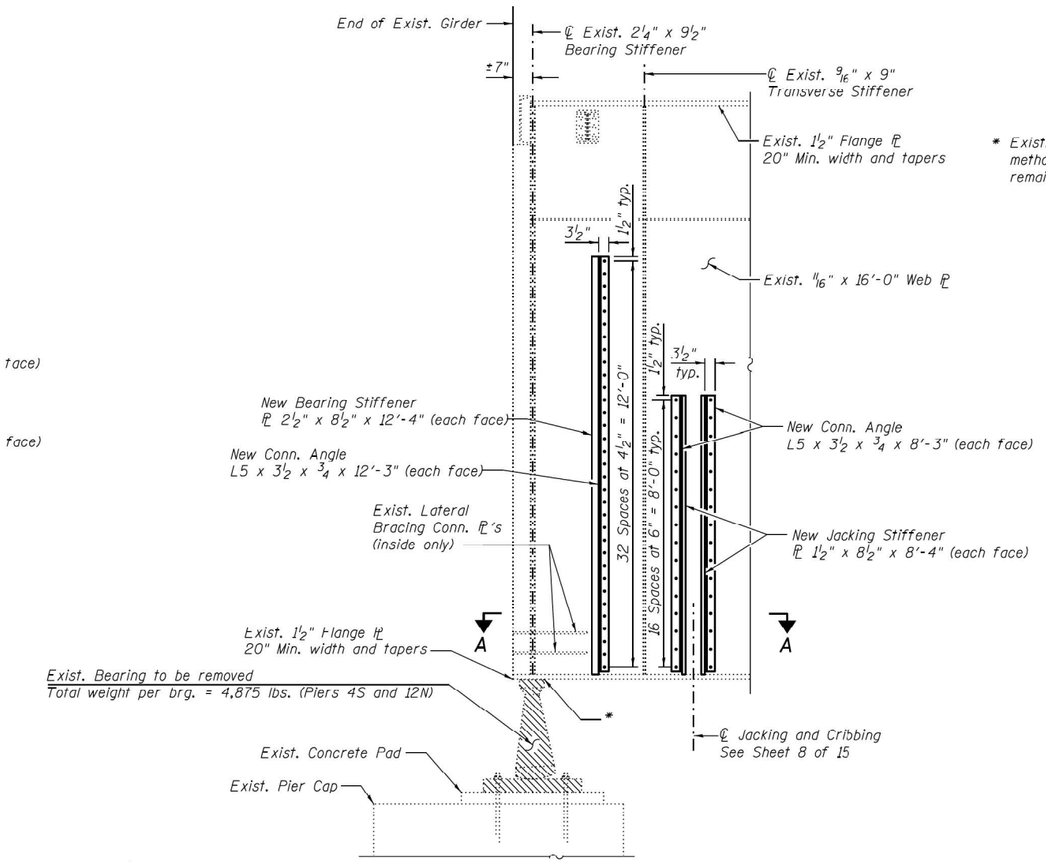
BEARING / JACKING STIFFENER DETAILS AND BEARING REMOVAL PIERS 3N AND 13S



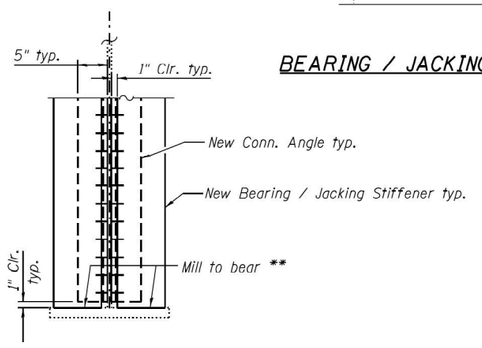
SECTION A-A

TABLE OF DIMENSIONS

Location	A	B	C	D	E
Pier 3N	4'-6 3/8"	4'-3 3/8"	8 1/2"	3'-11 7/8"	13"
Pier 13S	4'-5 1/8"	4'-2 1/8"	8 1/2"	3'-10 5/8"	13"
Pier 4S	4'-10 1/8"	4'-7 1/8"	11 3/4"	4'-2 5/8"	15"
Pier 12N	4'-9 1/4"	4'-6 1/4"	11 3/4"	4'-1 3/4"	15"



BEARING / JACKING STIFFENER DETAILS AND BEARING REMOVAL PIERS 4S AND 12N



STIFFENER DETAIL

** Stiffener plate shall fit within 10/1000" for a minimum 75% of bearing area

BILL OF MATERIAL

Item	Unit	Total
Structural Steel Repair	Pound	14,430
Removal of Existing Bearings	Each	8

Notes:

Install additional bearing stiffeners and jacking stiffeners prior to jacking operations.

Additional bearing stiffeners and associated connection angles inclu in quantity for Structural Steel Repair.

Cost for jacking stiffeners and associated connection angles includ with Jacking and Cribbing.

FOR INFORMATION ONLY

DESIGNED - APL		REVISED
CHECKED - MEL		REVISED
DRAWN - EAR		REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEARING REMOVAL
AND JACKING STIFFENER DETAILS – 1
STRUCTURE NO. 064-0035

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-24	(64-3B)I-7	MASSAC	18	
		CONTRACT NO.		

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		CHECKED -		REVISED -	
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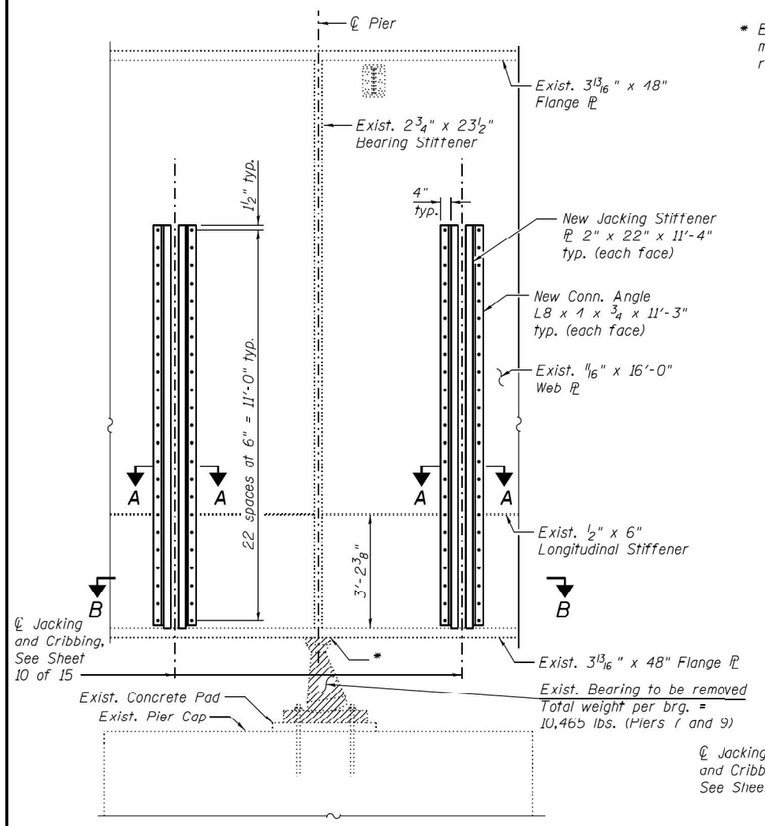
PLOT DATE =	8/16/2024	CHECKED -		REVISED -	

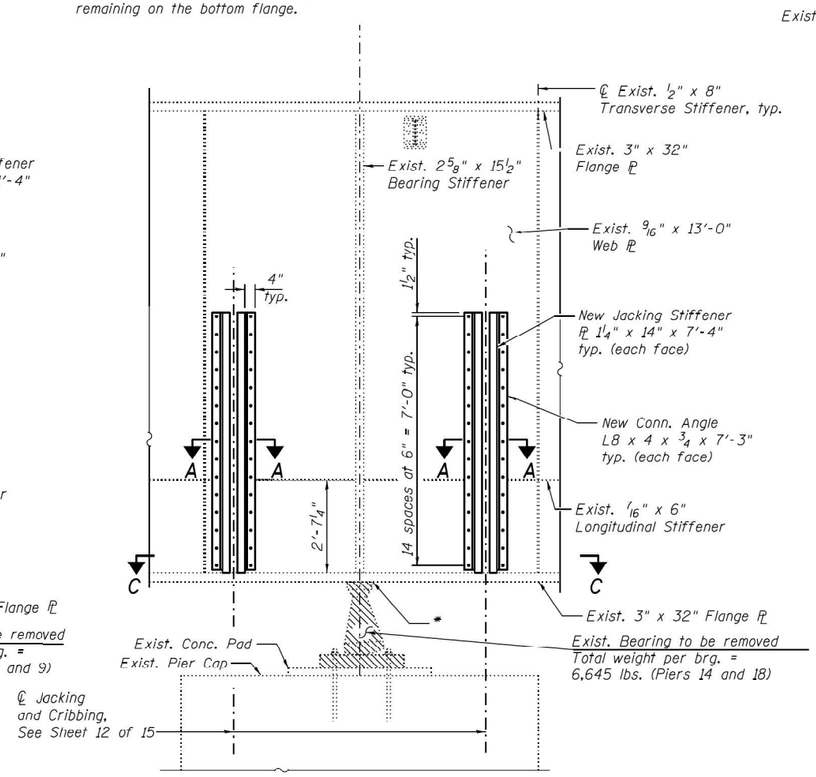
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 165 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	226
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

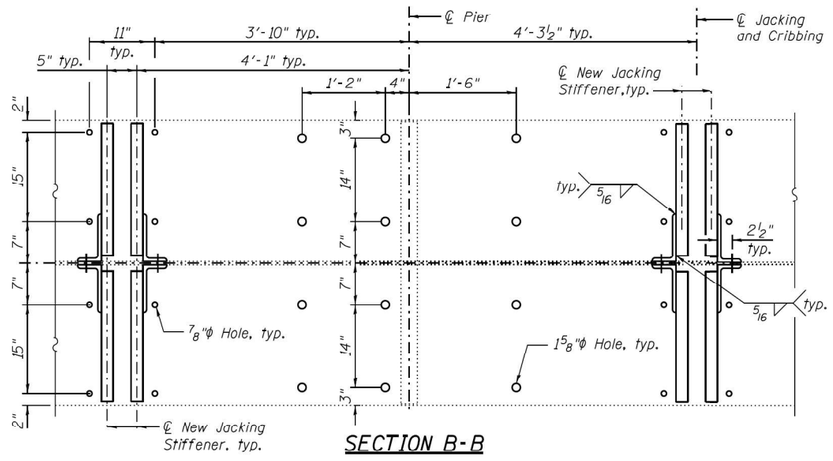


* Existing PL to be removed using the air-arc method and grind smooth all weld material remaining on the bottom flange.

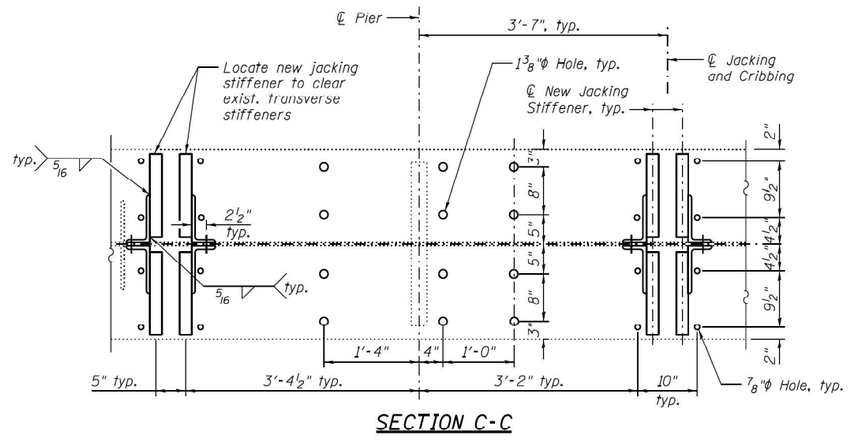


JACKING STIFFENER DETAILS AND BEARING REMOVAL PIERS 7 AND 9

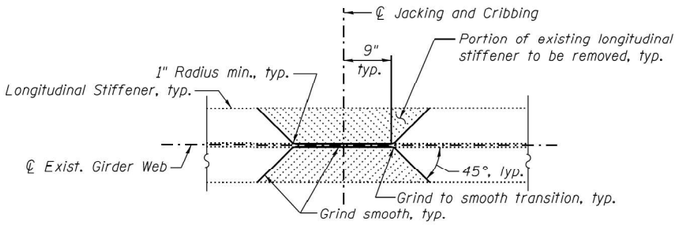
JACKING STIFFENER DETAILS AND BEARING REMOVAL PIERS 14 AND 18



SECTION B-B



SECTION C-C



SECTION A-A

New jacking stiffeners and connection angles not shown for clarity.

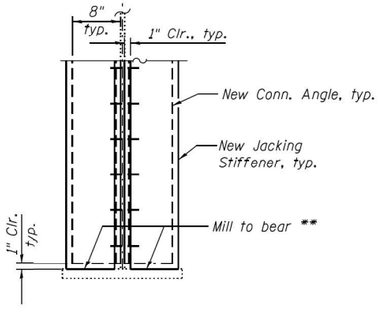
Cut existing longitudinal stiffeners along web as shown, keeping a minimum distance of 1/4" between the cut and the face of the web with removal of remaining material by grinding as described below. The cut adjacent to the face of the web shall be made with a 1" minimum radius at the web. The cut shall be made parallel to the web without angling the cut towards the web. Equipment and method of cutting shall be approved by the Engineer. Any method of removal to be used shall ensure that no damage is done to the existing web. Cutting shall be done in a manner such that the paint on the opposite face of the web is not damaged. If damage to the paint occurs due to cutting, the damaged area shall be repainted at the Contractor's expense and procedures shall be modified to prevent damage at subsequent removal locations.

Remove material between cut and web by grinding and grind smooth at web surface and cut edges of stiffener. Web plate surfaces and cut edges of stiffeners shall have a roughness average (Ra) of 250 µin. or less. Grinding equipment shall be approved by the Engineer. The grinding operation should not gouge the girder web plate.

The web surface at the modification shall be inspected using dye penetrant or magnetic particle (MT) methods. Any cracks found shall be identified and reported to the Bureau of Bridges and Structures for further disposition.

The exposed steel surfaces shall be cleaned and painted using an aluminum epoxy mastic primer according to Article 506.05 of the Standard Specifications.

Cost of partial stiffener removal, including grinding, testing, and cleaning and painting is included with Jacking and Cribbing.



STIFFENER DETAIL

** Stiffener plate shall fit within 10/1000" for a minimum 75% of bearing area

BILL OF MATERIAL

Item	Unit	Total
Removal of Existing Bearings	Each	8

Notes:

Install jacking stiffeners prior to jacking operations. Cost for jacking stiffeners and associated connection angles included with Jacking and Cribbing.

FOR INFORMATION ONLY

	DESIGNED - APL	REVISED
	CHECKED - MEL	REVISED
	DRAWN - EAR	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEARING REMOVAL AND JACKING STIFFENER DETAILS – 2
STRUCTURE NO. 064-0035

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS
I-24	(64-3B)I-7	MASSAC	18
		CONTRACT NO.	

MODEL: Default
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TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

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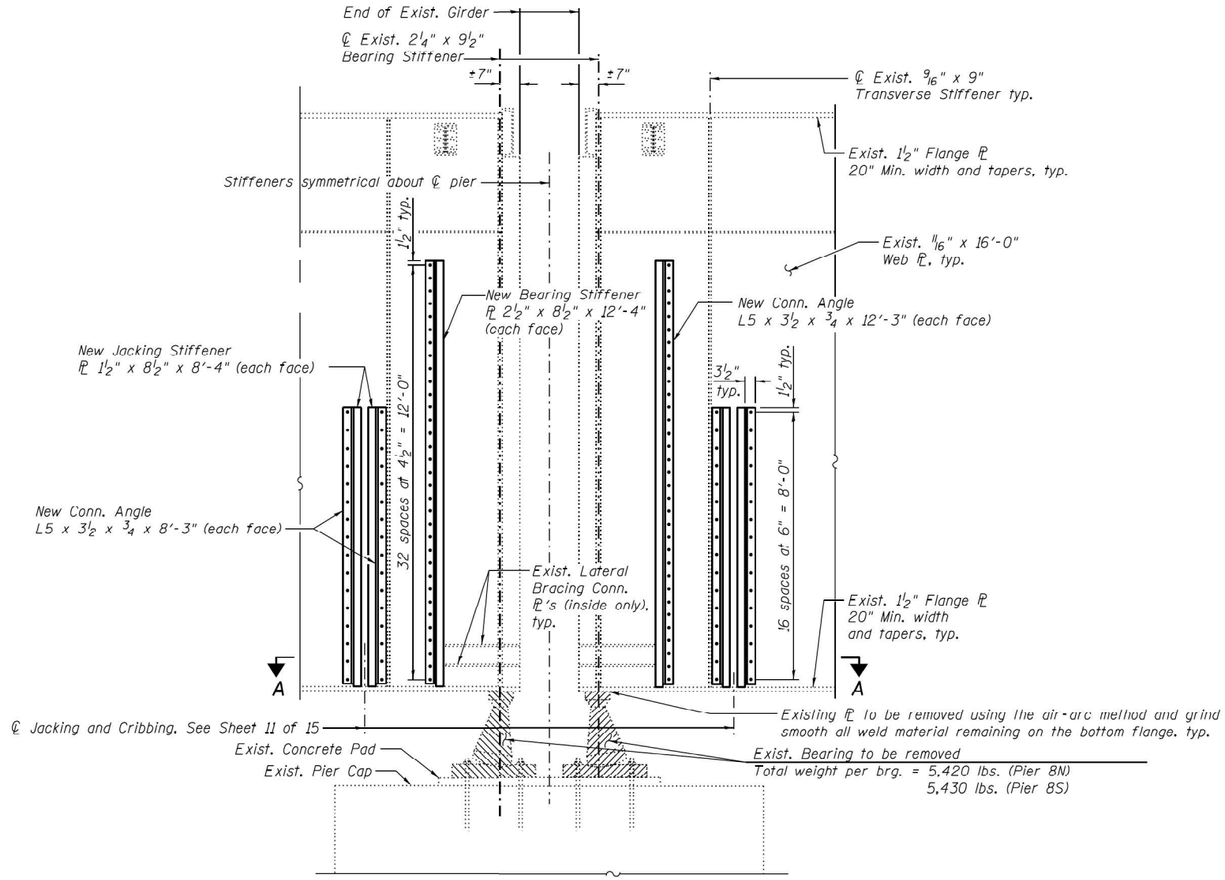
		CHECKED -		REVISED -	
PLOT SCALE =	0.167 ' / in.	DRAWN		REVISED -	
PLOT DATE =	8/16/2024	CHECKED -		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

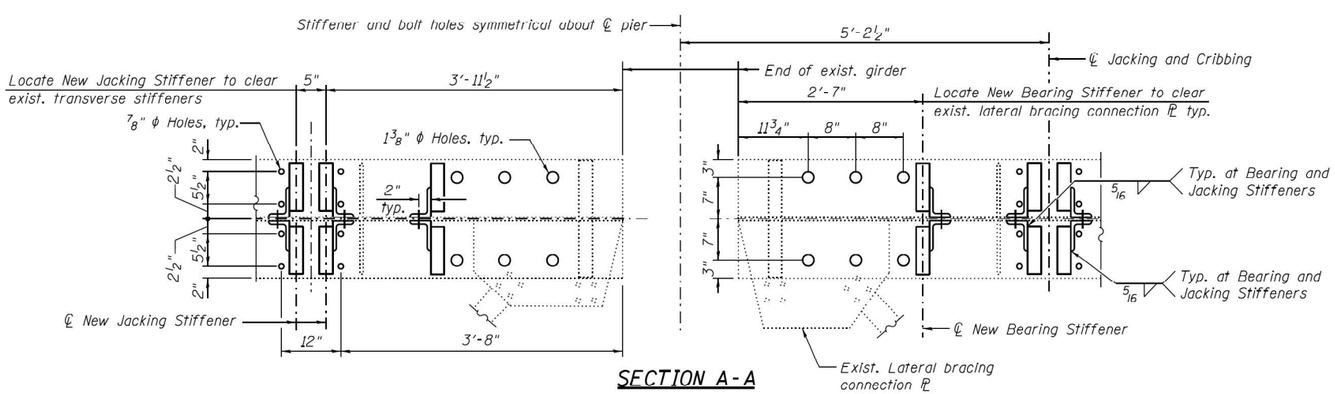
EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 166 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	227
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

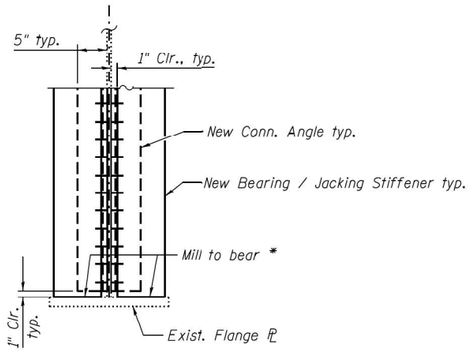
8/16/2024 11:17:41 AM



BEARING / JACKING STIFFENER DETAILS AND BEARING REMOVAL PIERS 8N AND 8S



SECTION A-A



STIFFENER DETAIL

* Stiffener plate shall fit within 10/1000" for a minimum 75% of bearing area

BILL OF MATERIAL

Item	Unit	Total
Structural Steel Repair	Pound	9,320
Removal of Existing Bearings	Each	4

Notes:

Install additional bearing stiffeners and jacking stiffeners prior to jacking operations.

Additional bearing stiffeners and associated connection angles included in quantity for Structural Steel Repair.

Cost for jacking stiffeners and associated connection angles included with Jacking and Cribbing.

FOR INFORMATION ONLY

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	CHECKED - MEL	REVISED
	DRAWN - EAR	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEARING REMOVAL AND JACKING STIFFENER DETAILS – 3
STRUCTURE NO. 064-0035

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-24	(64-3B)I-7	MASSAC	18	
		CONTRACT NO.		

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TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO. 184-001220

USER NAME =	jesker	DESIGNED -		REVISED -	
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PLOT DATE =	8/16/2024	CHECKED -		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 167 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	228
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

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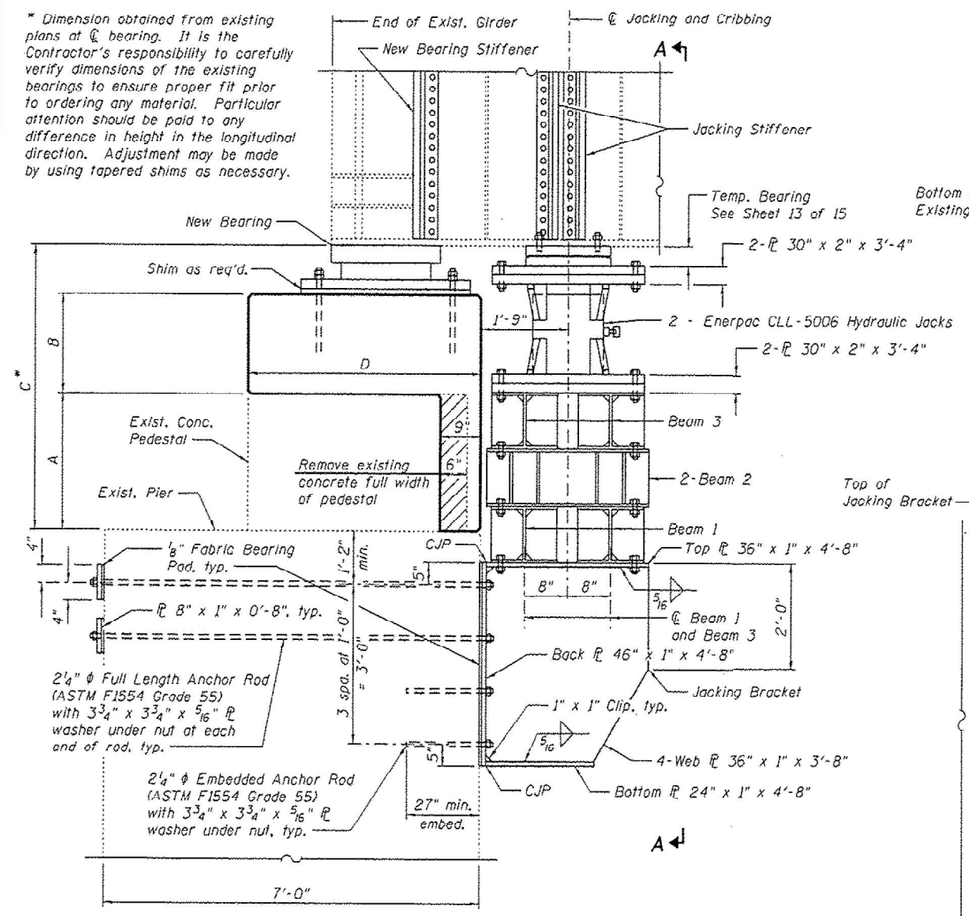
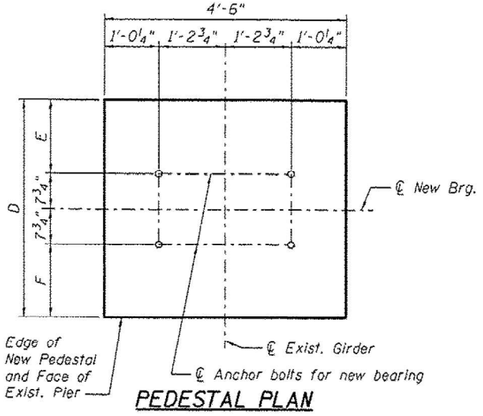
8/16/2024 11:17:44 AM

* Dimension obtained from existing plans at ℄ bearing. It is the Contractor's responsibility to carefully verify dimensions of the existing bearings to ensure proper fit prior to ordering any material. Particular attention should be paid to any difference in height in the longitudinal direction. Adjustment may be made by using tapered shims as necessary.



ELEVATION

Jack and Cribbing for Pier 3N shown.
Jack and Cribbing for Pier 13S similar (See Sheet 9 of 15)



PEDESTAL PLAN

LEGEND

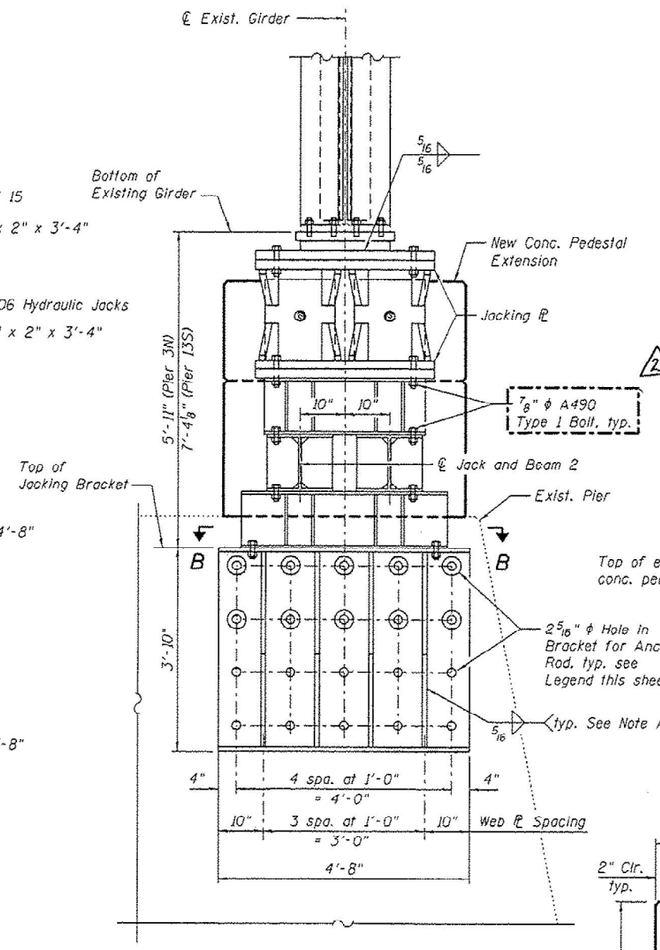
(Jacking Bracket)

○ Hole with threaded anchor rod, 27" embedment

◎ Hole with threaded anchor rod, full length

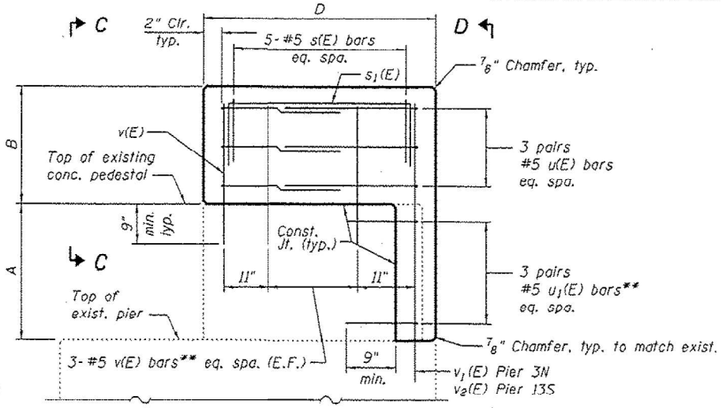
TABLE OF DIMENSIONS

Dim.	Pier 3N	Pier 13S
A	2'-5 1/4"	3'-10 1/8"
B	1'-10 7/8"	1'-11 1/8"
C	5'-2"	6'-7 1/8"
D	4'-4"	4'-1 5/8"
E	2'-3 3/8"	9 1/8"
F	2'-2 1/4"	7 7/8"



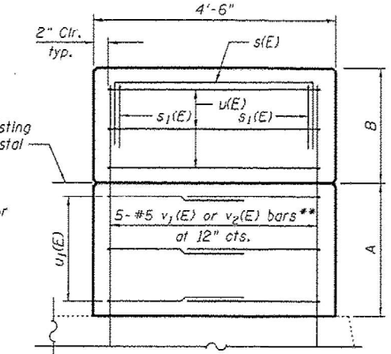
VIEW A-A

Note A:
A PJP weld on one side may be substituted for the shown fillet weld on both sides.

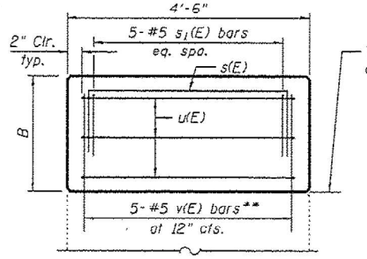


PEDESTAL ELEVATION

** Drill and Epoxy Grout



VIEW D-D



VIEW C-C

BILL OF MATERIAL FOR PIERS 3N AND 13S (BOTH ENDS)

Bar	No.	Size	Length	Shape
s(E)	20	#5	6'-6"	
s_1(E)	20	#5	6'-2"	
u(E)	24	#5	11'-6"	
u_1(E)	24	#5	5'-1"	
v(E)	44	#5	2'-7"	—
v_1(E)	10	#5	5'-0"	—
v_2(E)	10	#5	6'-5"	—
Concrete Removal			Cu. Yd.	1.1
Concrete Structures			Cu. Yd.	7.0
Reinforcement Bars, Epoxy Coated			Pound	920
Jacking and Cribbing			Each	4

Notes:

Epoxy grout vertical bars in concrete pedestal in accordance with Article 584 of the Standard Specifications. Cost is included with Reinforcement Bars, Epoxy Coated.

Space reinforcement in pedestal to miss new anchor bolts for bearings.

CJP corner welds between top and bottom plates and back plate shall be 100% UT tested in accordance with AASHTO/AWS D1.5 Bridge Welding Code. Acceptance criteria shall be for "tension welds".

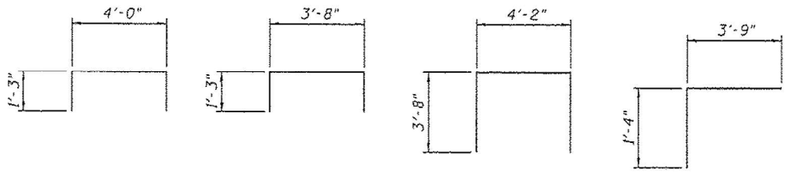
Install full length and embedded anchor rods using an IDOT approved non-shrink grout. Drill and set full length and embedded anchor rods per the jacking bracket installation procedures and the manufacturer's directions.

Provide a fabric bearing pad at the concrete and steel interfaces shown on the plans in accordance with Article 1082 of the Standard Specifications. Cost is included with Jacking and Cribbing.

Expected jacking load per jack = 375 Kips for Pier 3N and 365 Kips for Pier 13S.

Calculated weight of structural steel required for one Jacking and Cribbing (Each) detailed on this sheet = 12,110 lbs. for Pier 3N and 14,000 lbs. for Pier 13S (includes weight of jacking stiffeners and connection angles, temporary bearing, jacking plates, beams and bracket, fasteners, and full length and embedded anchor rods).

For additional details including Section B-B, see Sheet 9 of 15.



BAR s(E) BAR s_1(E) BAR u(E) BAR u_1(E)

2 REVISED 4-7-15

FOR INFORMATION ONLY

DESIGNED - COB		REVISED
CHECKED - ACK		REVISED
DRAWN - PRC		REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

JACKING AND CONCRETE PEDESTAL DETAILS – PIERS 3N AND 13S
STRUCTURE NO. 064-0035

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	S
I-24	(64-3B)I-7	MASSAC	18	
		CONTRACT NO. 78		

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

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		CHECKED -		REVISED -	
PLOT SCALE = 0.167 ' / in.		DRAWN -		REVISED -	
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 168 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	229
		CONTRACT NO. 78972		
	ILLINOIS FED. AID PROJECT			

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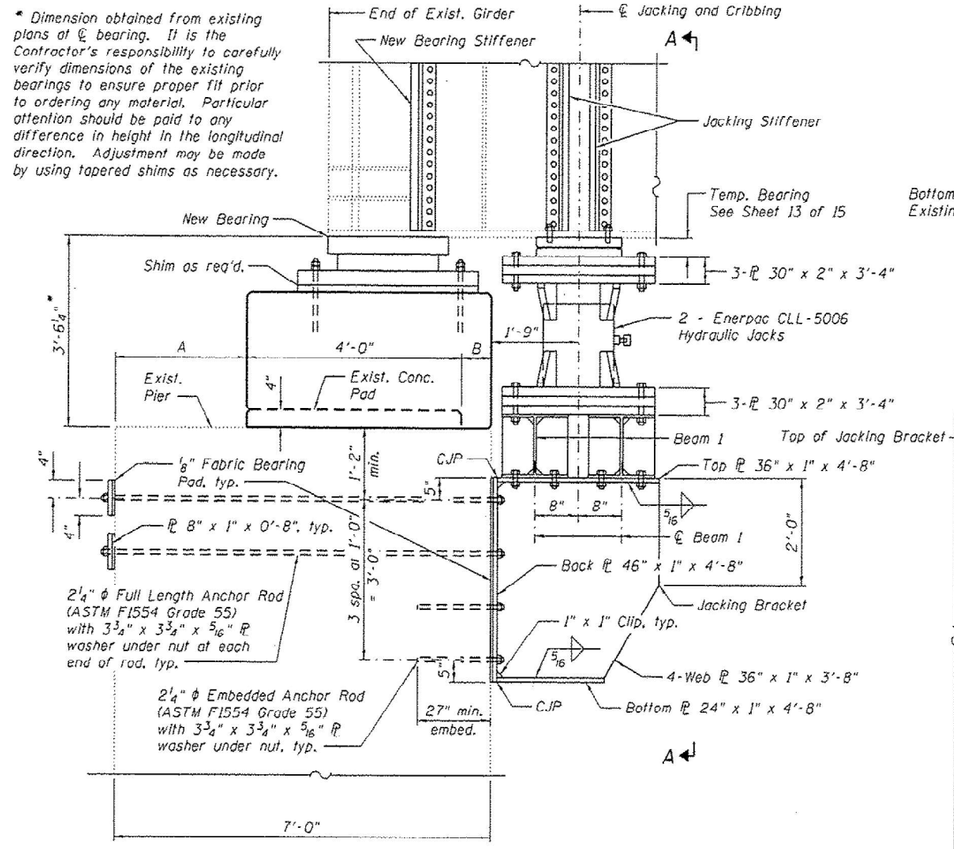
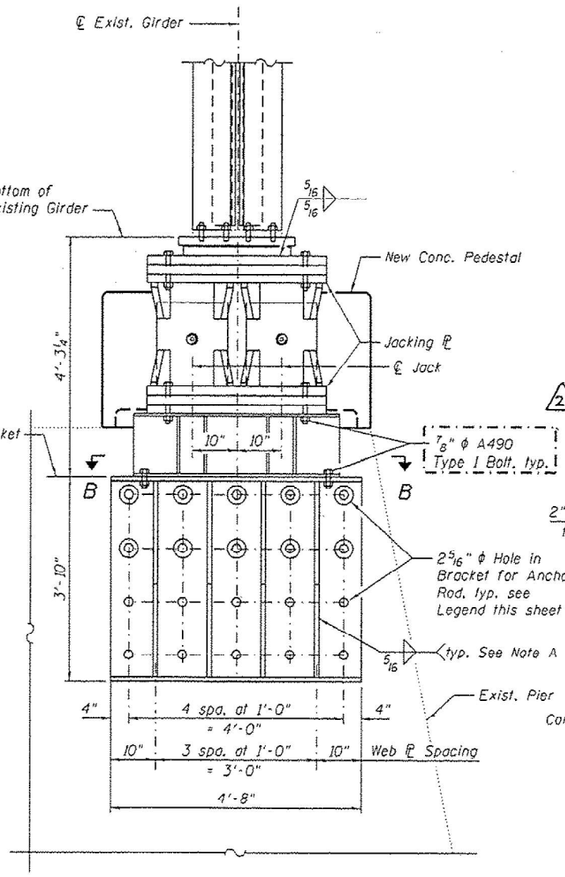
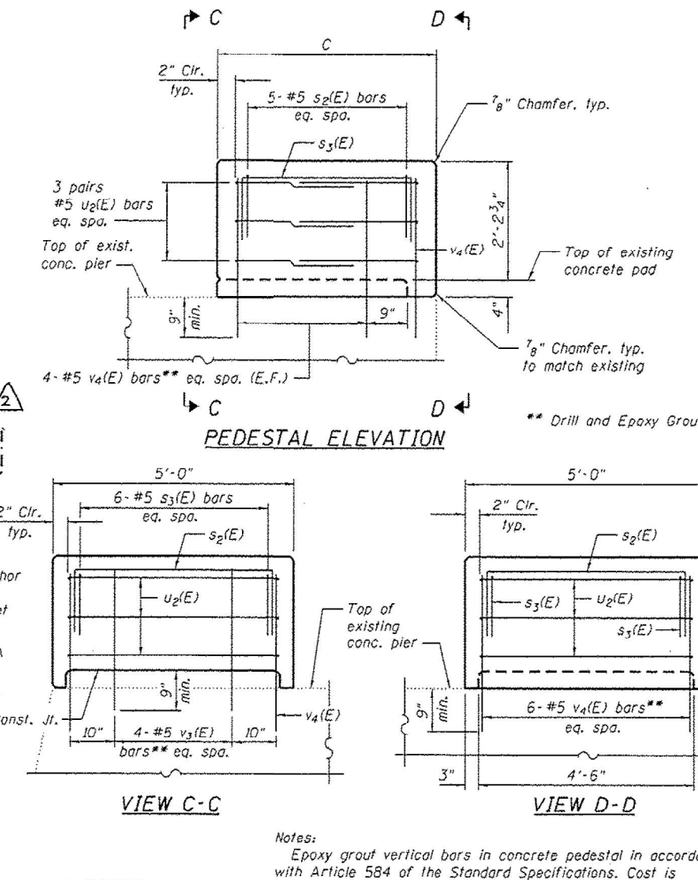


ELEVATION

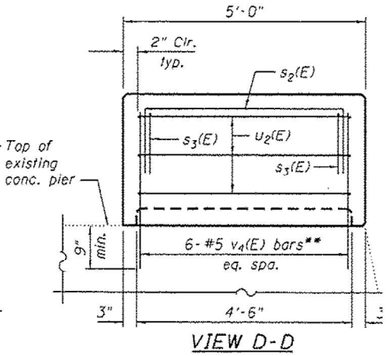


VIEW A-A

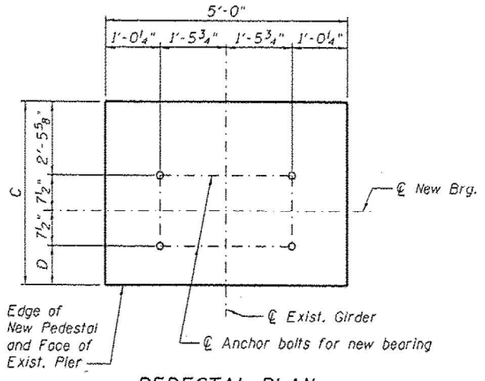


PEDESTAL ELEVATION

VIEW C-C



VIEW D-D

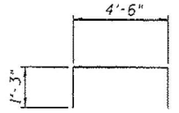


PEDESTAL PLAN

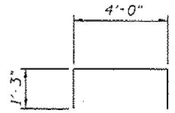
TABLE OF DIMENSIONS

Dim.	Pier 4S	Pier 12N
A	2'-5 1/2"	2'-6 3/8"
B	6 1/2"	5 5/8"
C	4'-6 1/2"	4'-5 5/8"
D	9 7/8"	9"

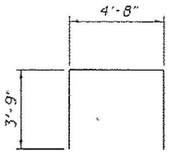
Note A:
A PJP weld on one side may be substituted for the shown fillet welds on both sides.



BAR s2(E)



BAR s3(E)



BAR u2(E)

LEGEND
(Jacking Bracket)

- ○ Hole with threaded anchor rod, 27" embedment
- ◎ Hole with threaded anchor rod, full length

BILL OF MATERIAL
FOR PIERS 4S AND 12N (BOTH ENDS)

Bar	No.	Size	Length	Shape
$s_2(E)$	20	#5	7'-0"	⊓
$s_3(E)$	24	#5	6'-6"	⊓
$u_2(E)$	24	#5	12'-2"	⊓
$v_3(E)$	16	#5	2'-10"	—
$v_4(E)$	56	#5	3'-2"	—
Concrete Structures			Cu. Yd.	7.7
Reinforcement Bars, Epoxy Coated			Pound	850
Jacking and Cribbing			Each	4

Notes:

Epoxy grout vertical bars in concrete pedestal in accordance with Article 584 of the Standard Specifications. Cost is included with Reinforcement Bars, Epoxy Coated.

Space reinforcement in pedestal to miss new anchor bolts fo bearings.

CJP corner welds between top and bottom plates and back plate shall be 100% UT tested in accordance with AASHTO/AW: D1.5 Bridge Welding Code. Acceptance criteria shall be for "tension welds".

Install full length and embedded anchor rods using an IDOT approved non-shrink grout. Drill and set full length and embedded anchor rods per the jacking bracket installation procedures and the manufacturer's directions.

Provide a fabric bearing pad at the concrete and steel interfaces shown on the plans in accordance with Article 1082 of the Standard Specifications. Cost is included with Jacking and Cribbing.

Expected jacking load per jack = 550 Kips.

Calculated weight of structural steel required for one Jacking and Cribbing (Each) detailed on this sheet = 12,770 lbs. (includes weight of jacking stiffeners and connection angles, temporary bearing, jacking plates, beams and bracket, fastener and full length and embedded anchor rods).

Pressure transducer piping and timber protection are mounte to the east end of Pier 12 in the vicinity of the bearing replacement. This equipment is essential for the automatic control of the navigation lights which are to remain operational at all times during construction. The Contractor shall perform the bearing replacement with care to ensure the existing equipment is not damaged during construction.

For additional details including Section B-B, see Sheet 9 of 15.

2 REVISED 4-7-15

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DESIGNED - COB	REVISED
CHECKED - ACK	REVISED
DRAWN - PRC	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

JACKING AND CONCRETE PEDESTAL DETAILS – PIERS 4S AND 12N
STRUCTURE NO. 064-0035

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SI
I-24	(64-3B)I-7	MASSAC	18	
		CONTRACT NO. 78		

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TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC.
WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 169 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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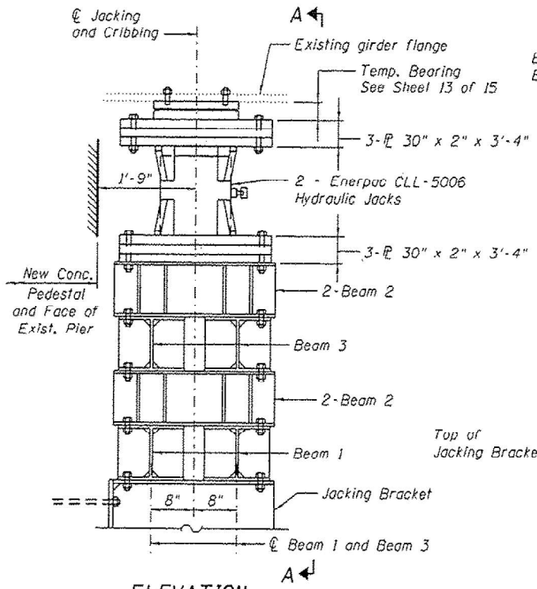
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		



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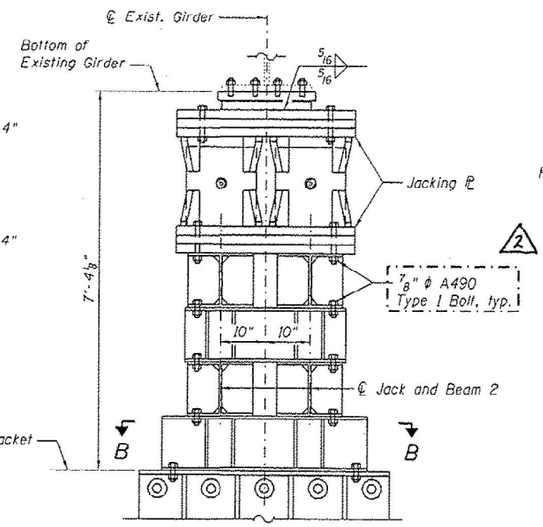
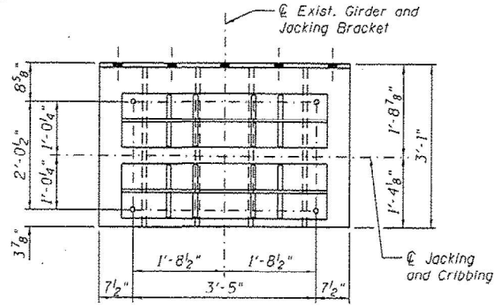


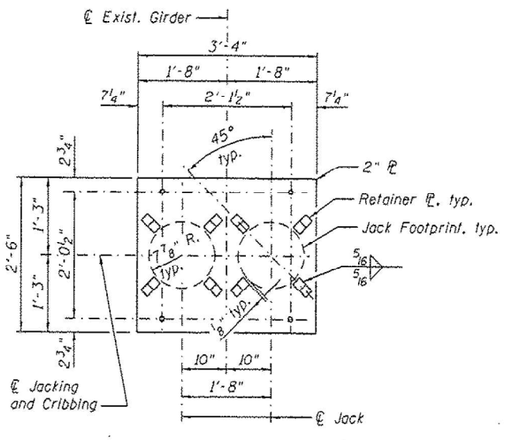
VIEW A-A

JACKING AND CRIBBING AT PIER 13S

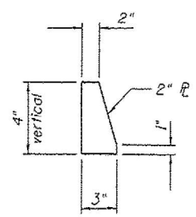
For additional details, see Sheet 7 of 15.



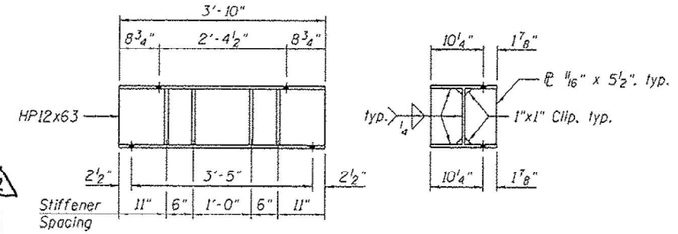
SECTION B-B



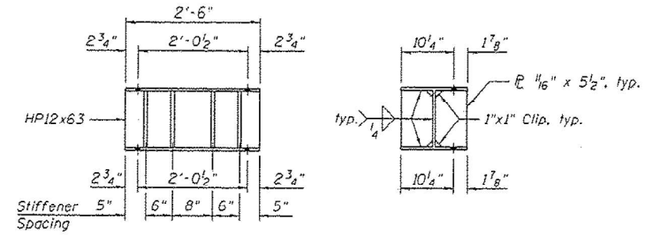
JACKING PLATE



RETAINER PLATE



BEAM 1



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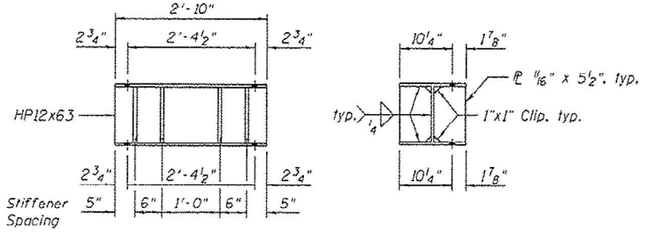


BEAM 3

JACKING BRACKET INSTALLATION

1. Prior to drilling holes through existing concrete, locate existing reinforcing bars within concrete using rebar detection equipment. Mark locations of existing reinforcing bars near proposed holes to ensure that existing reinforcing bars are not damaged during drilling.

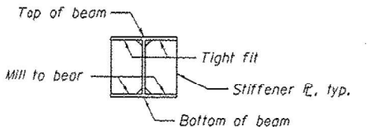
2. Using a template, pre-drill anchor holes in the piers as indicated in the plans. Holes for the anchor rods shall be in accordance with the non-shrink grout manufacturer's recommendations.

3. Using another template at the bracket side of the pier, insert the through-rods, leaving the appropriate projection at both the front and back faces of the concrete pier. Center the rods within the holes and verify that the rods are aligned so that the top plate of the jacking bracket will sit level. Grout the annulus around the rods using an approved non-shrink grout.

4. After the grout has taken initial set, install fabric bearing pads, backing plates and plate washers at the back-side of the pier. Secure the plate with snug tightened nuts.

5. Install the fabric bearing pad and jacking bracket at the front face of the pier, place washers, and snug tighten the nuts on the through-rods to secure the bracket.

6. Install the embedded anchor rods using an approved non-shrink grout. Install plate washers and hand tighten the nuts for the embedded anchor rods.



TYPICAL STIFFENER DETAIL

2 REVISED 4-7-15

FOR INFORMATION ONLY

DESIGNED - CDB	REVISED	
CHECKED - ACK	REVISED	
DRAWN - PRC	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CRIBBING DETAILS – PIERS 3N, 4S, 12N AND 13S
STRUCTURE NO. 064-0035

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SI
I-24	(64-3B)I-7	MASSAC	18	
		CONTRACT NO. 78		

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = Jesker	DESIGNED -	REVISED -	
	CHECKED -	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 170 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	231
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
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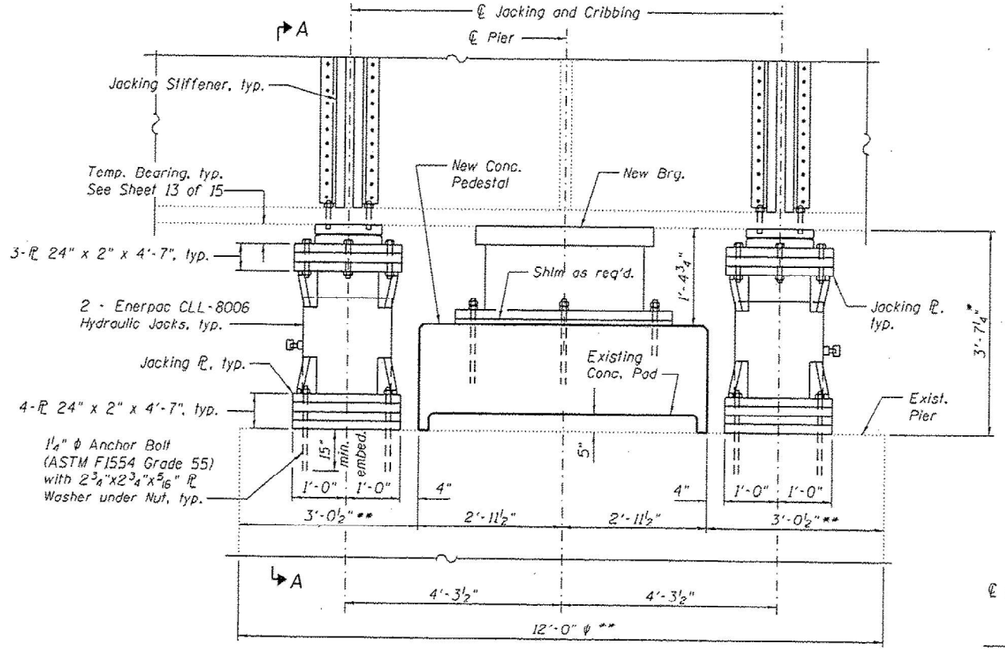
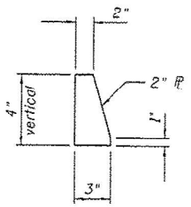
8/16/2024 11:17:52 AM

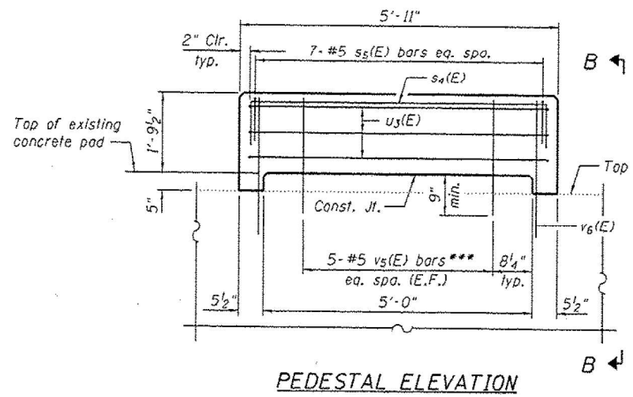


ELEVATION

** Measured at centerline of girder

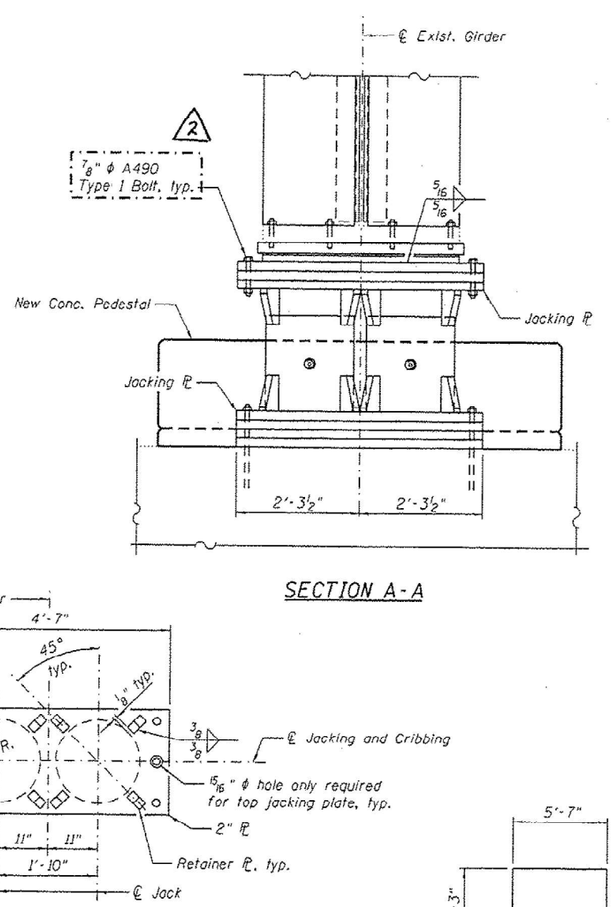


RETAINER PLATE

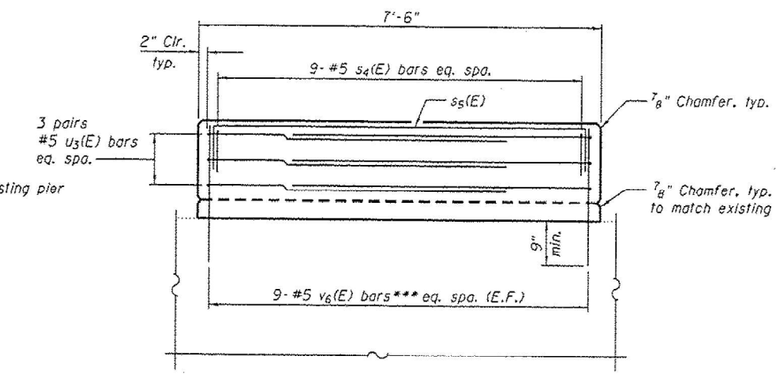


PEDESTAL ELEVATION

*** Drill and Epoxy Grout

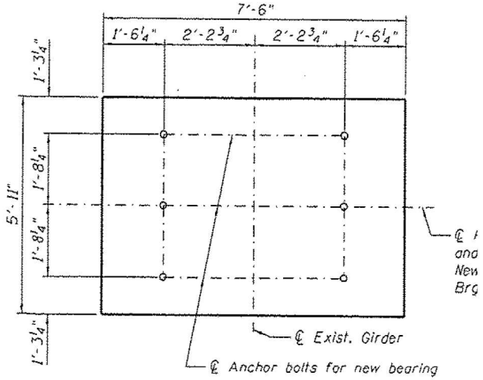


JACKING PLATE



VIEW B-B

SECTION A-A

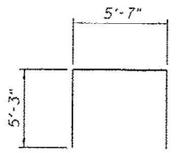


PEDESTAL PLAN

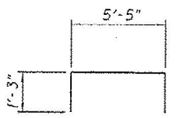
* Dimension obtained from existing plans at ℄ bearing. It is the Contractor's responsibility to carefully verify dimensions of the existing bearings to ensure proper fit prior to ordering any material. Particular attention should be paid to any difference in height in the longitudinal direction. Adjustment may be made by using tapered shims as necessary.

BILL OF MATERIAL FOR PIERS 7 AND 9 (BOTH ENDS)

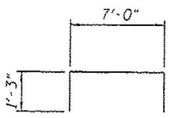
Bar	No.	Size	Length	Shape
$s_4(E)$	36	#5	7'-11"	⊓
$s_5(E)$	28	#5	9'-6"	⊓
$u_3(E)$	24	#5	16'-1"	⊓
$v_5(E)$	40	#5	2'-5"	—
$v_6(E)$	72	#5	2'-10"	—
Concrete Structures			Cu. Yd.	12.3
Reinforcement Bars, Epoxy Coated			Pound	1,300
Jacking and Cribbing			Each	4



BAR $u_3(E)$



BAR $s_4(E)$



BAR $s_5(E)$

Notes:

Epoxy grout vertical bars in concrete pedestal in accordance with Article 584 of the Standard Specifications. Cost is included with Reinforcement Bars, Epoxy Coated.

Space reinforcement in pedestal to miss new anchor bolts for bearings.

Jacking plate anchor bolts shall be installed in accordance with Article 521.06 of the Standard Specifications. Cost is included with Jacking and Cribbing.

Expected jacking load per jack = 760 Kips.

Calculated weight of structural steel required for one Jacking and Cribbing (Each) detailed on this sheet = 29,110 lbs. (includes weight of jacking stiffeners and connection angles, temporary bearing, jacking plates, fasteners, and jacking plate anchor bolts).

FOR INFORMATION ONLY

DESIGNED - APL		REVISED
CHECKED - ACK		REVISED
DRAWN - PRC		REVISED

2 REVISED 4-7-15

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

JACKING AND CONCRETE PEDESTAL DETAILS – PIERS 7 AND 9
STRUCTURE NO. 064-0035

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-24	064-3811-7	MASSAC	18	

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME =	Jesker	DESIGNED -		REVISED -	
		CHECKED -		REVISED -	
PLOT SCALE =	0.167 ' / in.	DRAWN -		REVISED -	
PLOT DATE =	8/16/2024	CHECKED -		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 171 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	232
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
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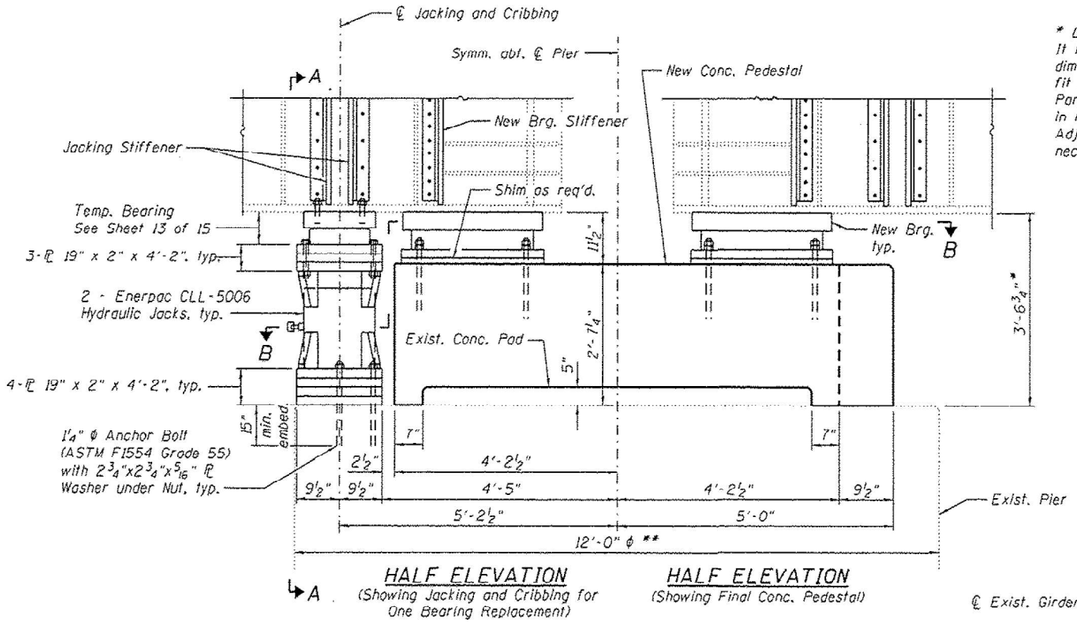
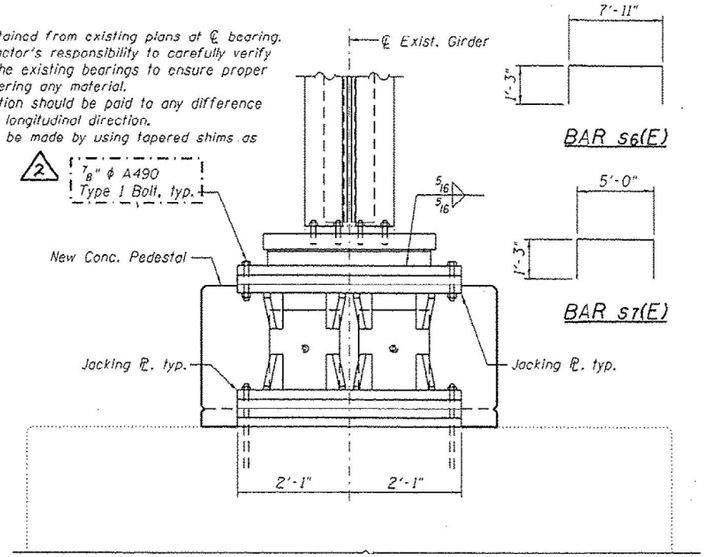


* Dimension obtained from existing plans at ℄ bearing. It is the Contractor's responsibility to carefully verify dimensions of the existing bearings to ensure proper fit prior to ordering any material. Particular attention should be paid to any difference in height in the longitudinal direction. Adjustment may be made by using tapered shims as necessary.

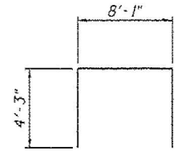


BAR $s_6(E)$

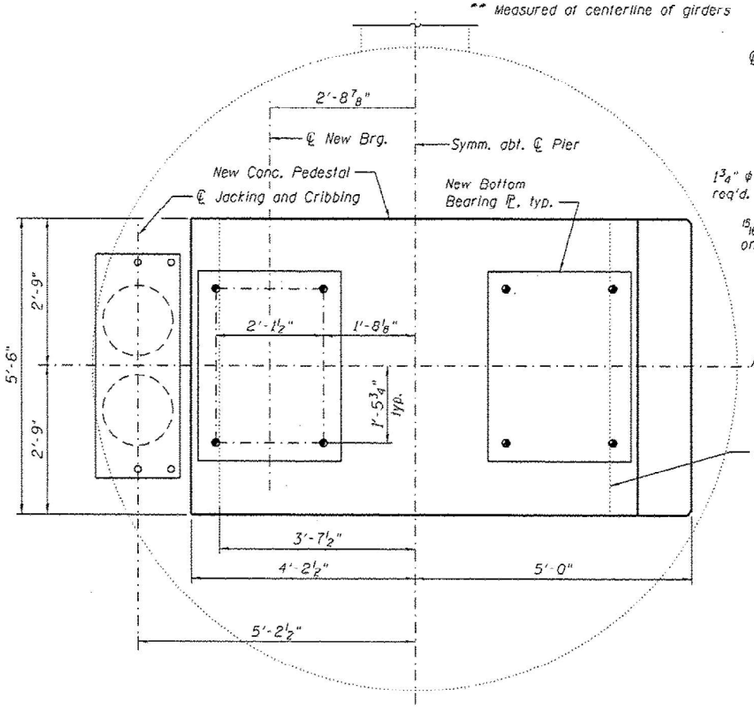
BAR $s_7(E)$

BILL OF MATERIAL FOR PIER 8 (BOTH ENDS)

Bar	No.	Size	Length	Shape
$s_6(E)$	14	#5	10'-5"	⌐
$s_7(E)$	22	#5	7'-6"	⌐
$u_4(E)$	12	#5	16'-7"	⌐
$u_5(E)$	24	#5	5'-8"	⌐
$v_7(E)$	28	#5	2'-10"	—
$v_8(E)$	56	#5	3'-3"	—
Concrete Structures			Cu. Yd.	9.4
Reinforcement Bars, Epoxy Coated			Pound	950
Jacking and Cribbing			Each	4

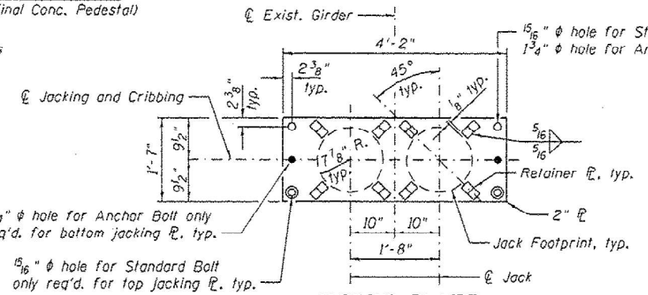


BAR $u_4(E)$

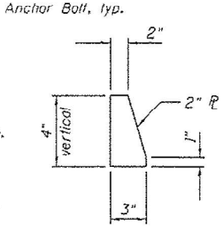


HALF SECTION B-B
(Showing Jack Placement)

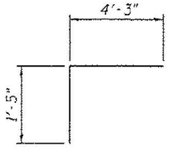
HALF SECTION B-B
(Showing Final Conc. Pedestal)



JACKING PLATE



RETAINER PLATE



BAR $u_5(E)$

Notes:

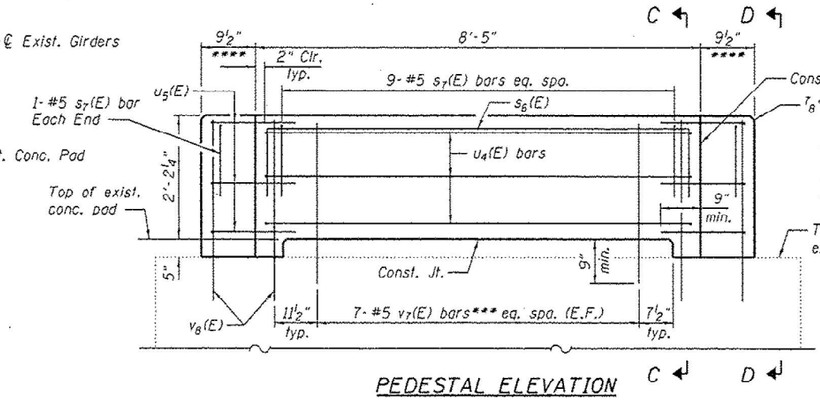
Epoxy grout vertical bars in concrete pedestal in accordance with Article 584 of the Standard Specifications. Cost is included with Reinforcement Bars, Epoxy Coated.

Space reinforcement in pedestal to miss new anchor bolts for bearings.

Jacking plate anchor bolts shall be installed in accordance with Article 521.06 of the Standard Specifications. Cost is included with Jacking and Cribbing.

Expected jacking load per jack = 550 Kips.

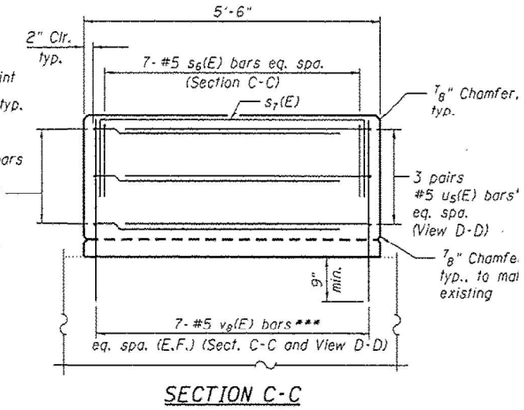
Calculated weight of structural steel required for one Jacking and Cribbing (Each) detailed on this sheet = 7,250 lbs. (includes weight of jacking stiffeners and connection angles, temporary bearing, jacking plates, fasteners, and jacking plate anchor bolts).



PEDESTAL ELEVATION

**** This portion of the concrete pedestal is to be poured after the new bearing is installed and the jacking and cribbing has been removed.

*** Drill and Epoxy Grout



SECTION C-C
VIEW D-D

Space $u_5(E)$ bars to miss $u_4(E)$ bars in pedestal

SECTION A-A

2 REVISED 4-7-15

FOR INFORMATION ONLY

DESIGNED - APL	REVISED	
CHECKED - ACK	REVISED	
DRAWN - PRC	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

JACKING AND CONCRETE PEDESTAL DETAILS – PIER 8
STRUCTURE NO. 064-0035

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	S
I-24	(64-3BI)-7	MASSAC	18	
		CONTRACT NO. 78		

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC.
WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME =	Jesker	DESIGNED -		REVISED -	
		CHECKED -		REVISED -	
PLOT SCALE =	0.167 ' / in.	DRAWN -		REVISED -	
PLOT DATE =	8/16/2024	CHECKED -		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 172 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	233
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
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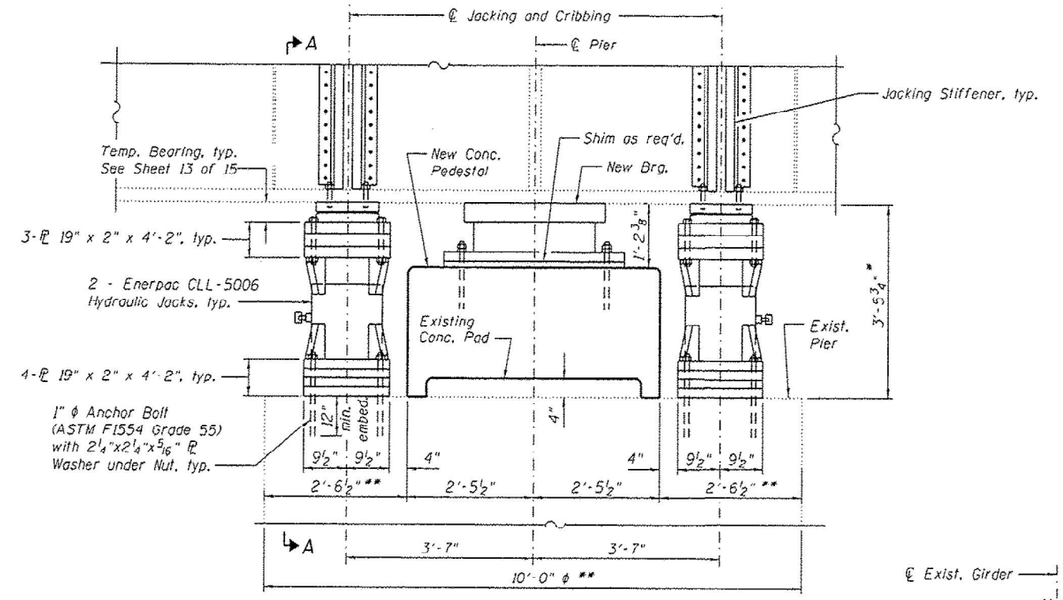
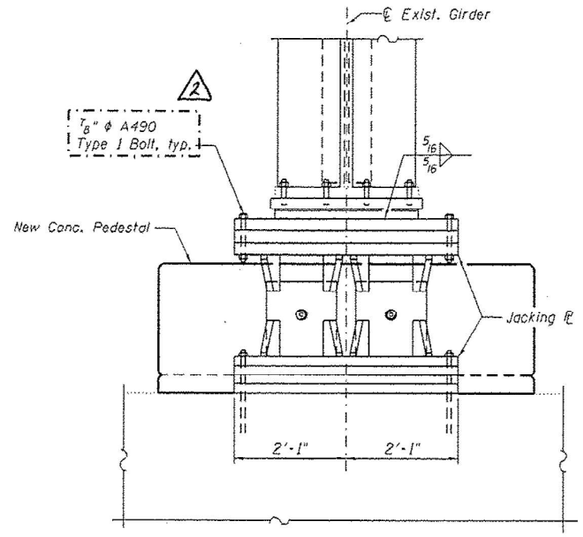
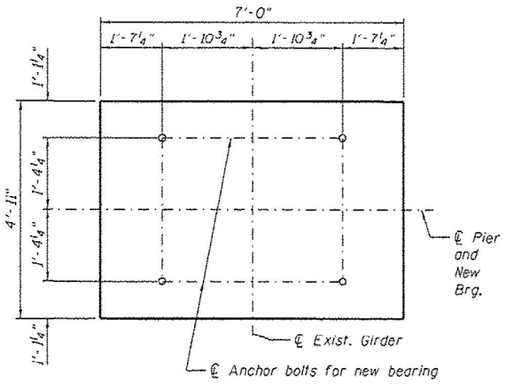


ELEVATION

** Measured at centerline of girder

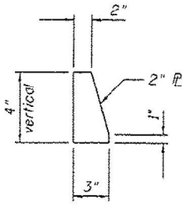


SECTION A-A

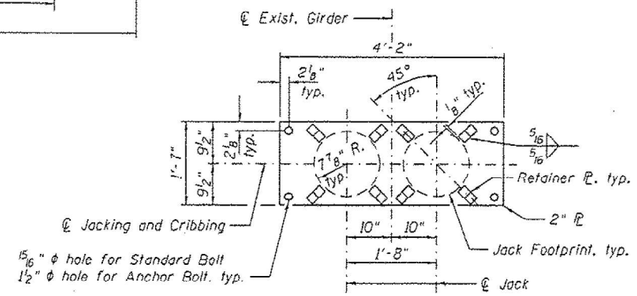


PEDESTAL PLAN

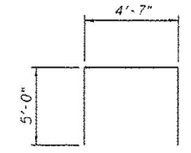
* Dimension obtained from existing plans at ℄ bearing.
It is the Contractor's responsibility to carefully verify dimensions of the existing bearings to ensure proper fit prior to ordering any material.
Particular attention should be paid to any difference in height in the longitudinal direction.
Adjustment may be made by using tapered shims as necessary.



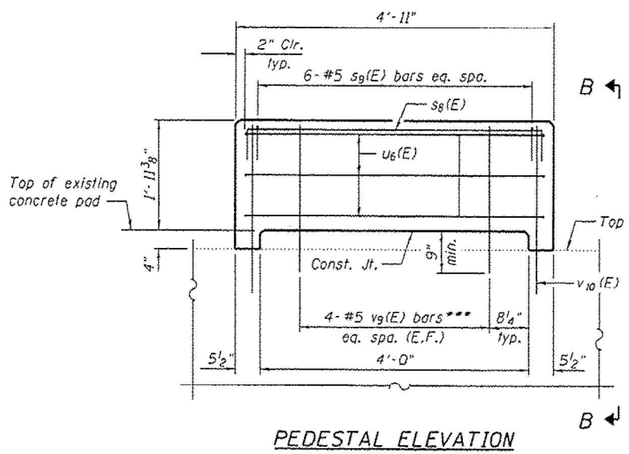
RETAINER PLATE



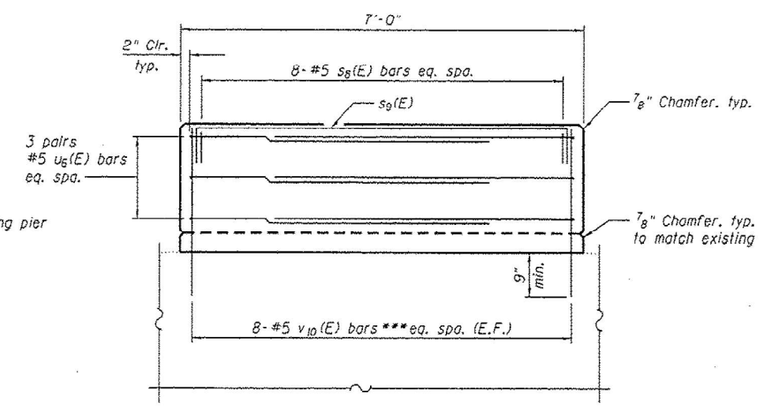
JACKING PLATE



BAR $u_6(E)$

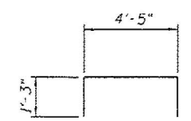


PEDESTAL ELEVATION

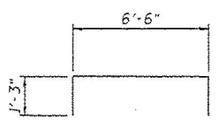


VIEW B-B

*** Drill and Epoxy Grout



BAR $s_8(E)$



BAR $s_9(E)$

BILL OF MATERIAL
FOR PIERS 14 AND 18 (BOTH ENDS)

Bar	No.	Size	Length	Shape
$s_8(E)$	32	#5	6'-11"	⌐¬
$s_9(E)$	24	#5	9'-0"	⌐¬
$u_6(E)$	24	#5	14'-7"	⌐¬
$v_9(E)$	32	#5	2'-7"	—
$v_{10}(E)$	64	#5	2'-11"	—
Concrete Structures			Cu. Yd.	10.3
Reinforcement Bars, Epoxy Coated			Pound	1,110
Jacking and Cribbing			Each	4

Notes:
Epoxy grout vertical bars in concrete pedestal in accordance with Article 584 of the Standard Specifications. Cost is included with Reinforcement Bars, Epoxy Coated.
Space reinforcement in pedestal to miss new anchor bolts for bearings.
Jacking plate anchor bolts shall be installed in accordance with Article 521.06 of the Standard Specifications. Cost is included with Jacking and Cribbing.
Expected jacking load per jack = 480 Kips.
Calculated weight of structural steel required for one Jacking and Cribbing (Each) detailed on this sheet = 14,520 lbs. (includes weight of jacking stiffeners and connection angles, temporary bearing, jacking plates, fasteners, and jacking plate anchor bolts).

2 REVISED 4-7-15

FOR INFORMATION ONLY

DESIGNED - APL		REVISED
CHECKED - ACK		REVISED
DRAWN - PRC		REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

JACKING AND CONCRETE PEDESTAL DETAILS – PIERS 14 AND 18
STRUCTURE NO. 064-0035

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	S
I-24	164-3811-7	MASSAC	18	
		CONTRACT NO. 78		

TWM ENGINEERING & GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME =	Jesker	DESIGNED -		REVISED -	
		CHECKED -		REVISED -	
PLOT SCALE =	0.167 ' / in.	DRAWN -		REVISED -	
PLOT DATE =	8/16/2024	CHECKED -		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 173 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	234
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: P:\2021\210593\L - FAI 24 Ohio River Bridge Painting\4 CADD - DWG\4.4 Struc\064003S-78972-173-Existing Plans.dgn
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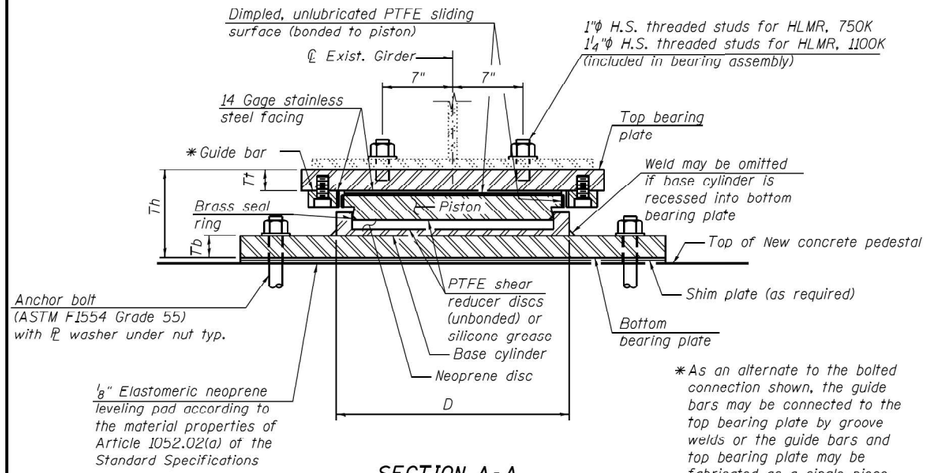
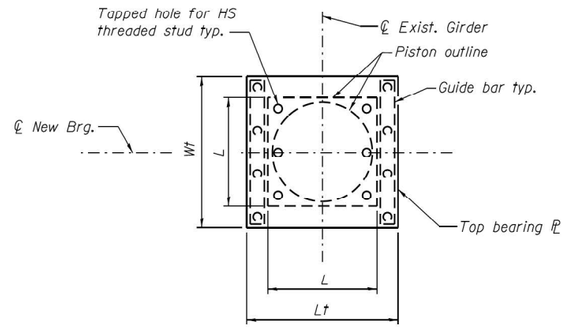
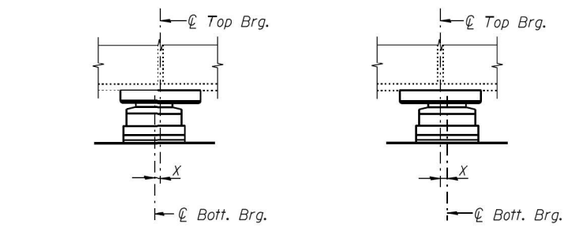


SECTION A-A

*As an alternate to the bolted connection shown, the guide bars may be connected to the top bearing plate by groove welds or the guide bars and top bearing plate may be fabricated as a single piece.



TOP BEARING ℄ AND PISTON PLAN



SETTING ANCHOR BOLTS AT HLMR EXP. BRG.

X=⅛" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

Notes:

All steel for bearings shall conform to the requirements of AASHTO M27 Grade 50, unless otherwise noted.

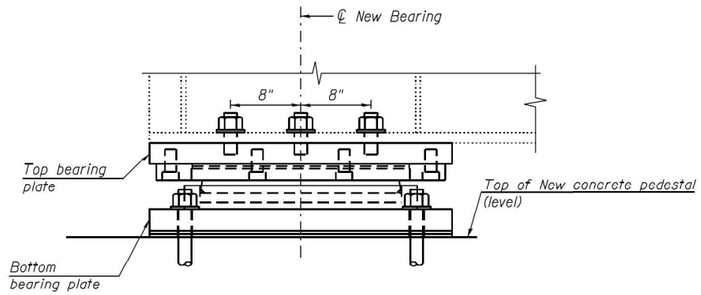
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554. Anchor bolts may be either cast in place or installed in holes drilled after the supported member is in place. Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

Total bearing height is estimated based on manufacturer data. Actual bearing height may differ from contract plans. The Contractor shall be responsible for verifying bearing heights and adjusting seat elevations, if required, prior to placing pedestal concrete. Total bearing height is taken the ℄ of bearing for beveled top plates.

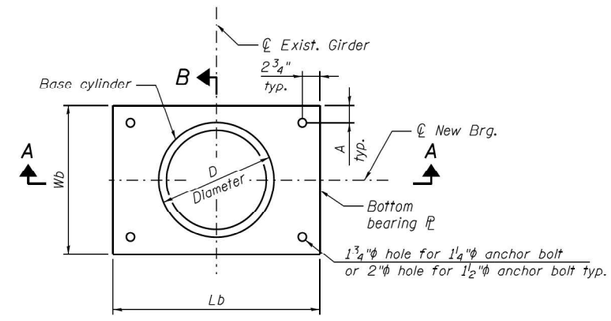
Bearing assemblies shall be designed and assembled to allow for replacer by jacking the superstructure.

Two ⅛ in. adjusting shims shall be provided for each bearing in addition all other plates.

The anchor bolt sizes and grades shown constitute a calculated seismic structural fuse. Substitution of higher diameter and/or grade anchor bolts will not be allowed.



SECTION B-B



BOTTOM BEARING ℄ AND BASE CYLINDER PLAN

BILL OF MATERIAL

Item	Unit	Total
High Load Multi-Rotational Bearings, Guided Expansion, 750K	Each	4
High Load Multi-Rotational Bearings, Guided Expansion, 1100K	Each	8
Anchor Bolts, 1 1/4"	Each	16
Anchor Bolts, 1 1/2"	Each	32

BEARING DESIGN DATA

Type	Location	Vertical Design Load ** (kips)	Horizontal Design Load ** (kips)	Required Rotation Range *** (radians)	Maximum Theoretical Thermal Movement**** from 50°F	Length of Piston, L	Outside Pot Diameter, D	Thickness of Top Plate, Tl	Thickness of Bottom Plate, Tb	Total Height Bearing Assembly, Th	Longitudinal Length of Top Plate, Wt	Transverse Length of Top Plate, Lt	Longitudinal Length of Bottom Plate, Wb	Transverse Length of Bottom Plate, Lb	Anchor Bolt Diameter and Embedment	Plate Washer Size	A
HLMR, Guided Expansion, 750K	Piers 3N & 13S	717	143	0.009	3¾"	1'-11⅛"	2'-⅛"	2⅝"	1⅜"	9⅞"	2'-9"	2'-5"	2'-2½"	2'-11"	1¼"ϕ x 15"	2¾" x 2¾" x 5/16"	5½"
HLMR, Guided Expansion, 1100K	Piers 4S, 8N, 8S & 12N	1083	217	0.012	4¾"	2'-3⅞"	2'-4⅞"	3¼"	1⅝"	11½"	3'-3½"	2'-10"	2'-7"	3'-5"	1½"ϕ x 18"	3" x 3" x 5/16"	2¾" (Piers 8N & 8S) 8" (Piers 4S & 12N)

** Design Loads are the governing service loads with no dynamic load allowance.
*** Rotation allowances for fabrication tolerances (0.005 radians), installation uncertainties (0.005 radians) are excluded.
**** Total required movement is based on one way expansion (or contraction) of the superstructure along the centerline of girder when bearings are set at 50°F. Bearing movement tolerances are excluded.

FOR INFORMATION ONLY

	DESIGNED - APL	REVISED
	CHECKED - MEL	REVISED
	DRAWN - EAR	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HIGH LOAD MULTI-ROTATIONAL BEARINGS - 1
STRUCTURE NO. 064-0035

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-24	(64-3BI)I-7	MASSAC	18	
		CONTRACT NO.		

TWM ENGINEERING GEOSPATIAL SERVICES
TWM, INC. WWW.TWM-INC.COM
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = jesker	DESIGNED -	REVISED -	
	CHECKED -	REVISED -	
PLOT SCALE = 0.167 ' / in.	DRAWN -	REVISED -	
PLOT DATE = 8/16/2024	CHECKED -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035
SHEET 174 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	235
		CONTRACT NO. 78972		
	ILLINOIS	FED. AID PROJECT		

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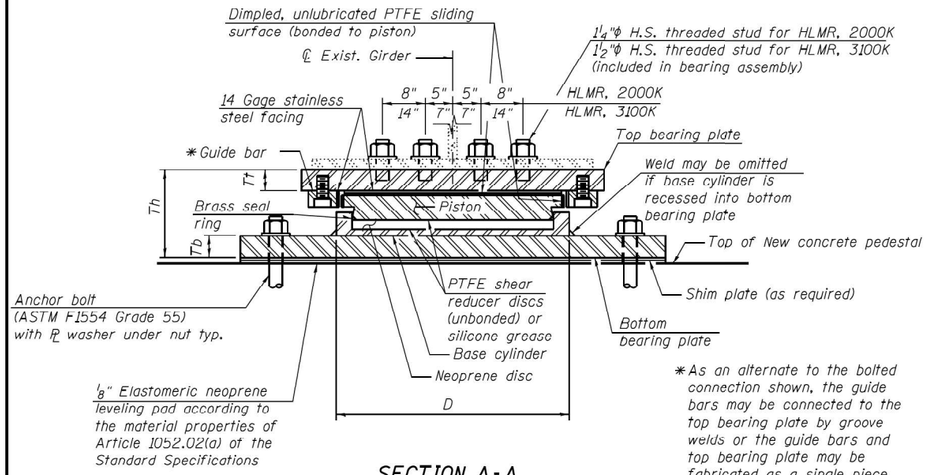
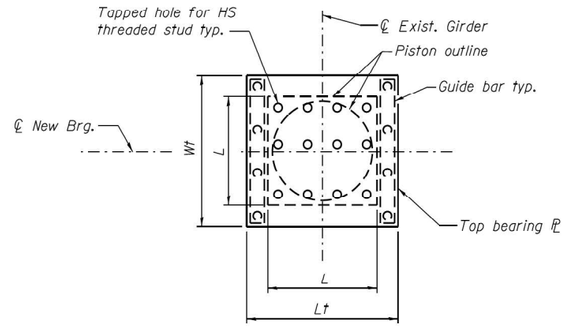
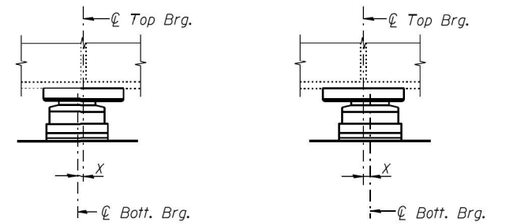


SECTION A-A

*As an alternate to the bolted connection shown, the guide bars may be connected to the top bearing plate by groove welds or the guide bars and top bearing plate may be fabricated as a single piece.

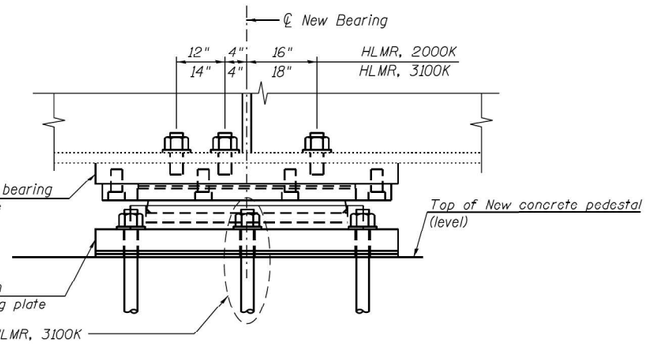


TOP BEARING ℙ AND PISTON PLAN

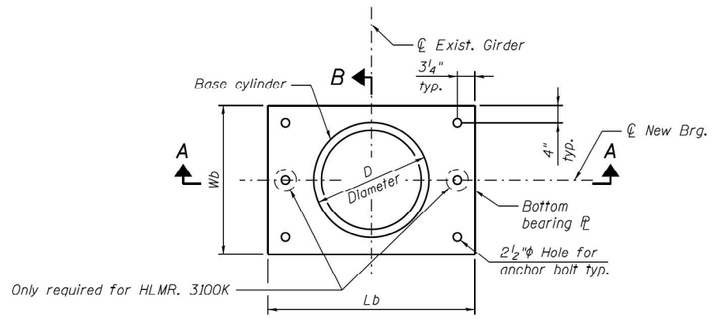


SETTING ANCHOR BOLTS AT HLMR EXP. BRG.

X=⅛" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.



SECTION B-B



BOTTOM BEARING ℙ AND BASE CYLINDER PLAN

Notes:

All steel for bearings shall conform to the requirements of AASHTO M27 Grade 50, unless otherwise noted.

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554. Anchor bolts may be either cast in place or installed in holes drilled after the supported member is in place. Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

Total bearing height is estimated based on manufacturer data. Actual bearing height may differ from contract plans. The Contractor shall be responsible for verifying bearing heights and adjusting seat elevations, if required, prior to placing pedestal concrete. Total bearing height is taken the ℄ of bearing for bevelled top plates.

Bearing assemblies shall be designed and assembled to allow for replacement by jacking the superstructure.

Two ⅛ in. adjusting shims shall be provided for each bearing in addition all other plates.

The anchor bolt sizes and grades shown constitute a calculated seismic structural fuse. Substitution of higher diameter and/or grade anchor bolts will not be allowed.

BILL OF MATERIAL

Item	Unit	Total
High Load Multi-Rotational Bearings, Guided Expansion, 2000K	Each	4
High Load Multi-Rotational Bearings, Guided Expansion, 3100K	Each	4
Anchor Bolts, 2"	Each	40

BEARING DESIGN DATA

Type	Location	Vertical Design Load ** (kips)	Horizontal Design Load ** (kips)	Required Rotation Range *** (radians)	Maximum Theoretical Thermal Movement **** from 50°F	Length of Piston, L	Outside Pot Diameter, D	Thickness of Top Plate, Tt	Thickness of Bottom Plate, Th	Total Height Bearing Assembly, Th	Longitudinal Length of Top Plate, Wt	Transverse Length of Top Plate, lt	Longitudinal Length of Bottom Plate, Wb	Transverse Length of Bottom Plate, lb	Anchor Bolt Diameter and Embedment	Plate Washer Size
HLMR, Guided Expansion, 2000K	Piers 14 & 18	1914	383	0.003	2½"	3'-1⅛"	3'-2⅛"	4⅝"	1⅞"	14⅜"	3'-8½"	3'-7"	3'-4½"	4'-4"	2"ϕ x 24"	3½" x 3½" x 5/16"
HLMR, Guided Expansion, 3100K	Piers 7 & 9	3052	610	0.004	2⅞"	3'-9¼"	3'-10¼"	5⅞"	2"	16¾"	4'-5"	4'-3"	4'-½"	5'-0"	2"ϕ x 24"	3½" x 3½" x 5/16"

** Design Loads are the governing service loads with no dynamic load allowance.

*** Rotation allowances for fabrication tolerances (0.005 radians), installation uncertainties (0.005 radians) are excluded.

**** Total required movement is based on one way expansion (or contraction) of the superstructure along the centerline of girder when bearings are set at 50°F. Bearing movement tolerances are excluded.

FOR INFORMATION ONLY

	DESIGNED - APL	REVISED
	CHECKED - MEL	REVISED
	DRAWN - EAR	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HIGH LOAD MULTI-ROTATIONAL BEARINGS – 2
STRUCTURE NO. 064-0035

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-24	(64-3B)I-7	MASSAC	18	
		CONTRACT NO.		

TWM, INC. WWW.TWM-INC.COM
ENGINEERING GEOSPATIAL SERVICES
IL DESIGN FIRM LICENSE NO: 184-001220

USER NAME = jesker		DESIGNED -		REVISED -	
		CHECKED -		REVISED -	
PLOT SCALE = 0.167 ' / in.		DRAWN -		REVISED -	
PLOT DATE = 8/16/2024		CHECKED -		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS
STRUCTURE NO. 064-0035

SHEET 175 OF 175 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3B)BP-1,BRR-1	MASSAC	236	236
		CONTRACT NO. 78972		
	ILLINOIS FED. AID PROJECT			

MODEL: Default
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8/16/2024 11:18:08 AM