

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
793	T-2BJR	MADISON	20	1
		ILLINOIS	CONTRACT NO. 76R63	

PROPOSED HIGHWAY PLANS

FAP ROUTE 793 (US 40)
SECTION T-2BJR
BRIDGE JOINT REPLACE/REPAIR – CM
MADISON COUNTY

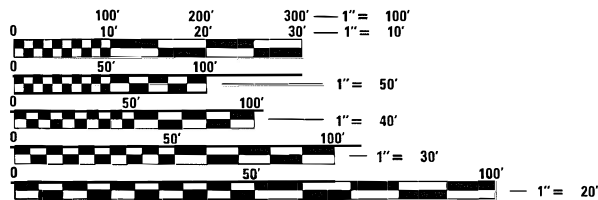
C-98-138-22

INDEX OF SHEETS

- 1 COVER
- 2 HIGHWAY STANDARDS, GENERAL NOTES, MIXTURE REQUIREMENTS AND COMMITMENTS
- 3-4 SUMMARY OF QUANTITIES
- 5 SCHEDULE OF QUANTITIES
- 6-19 BRIDGE REPAIR PLANS
- 20 WIDTH RESTRICTION SIGNING PLAN

ADT (US 40)

2021 ADT = 9,400 (ACTUAL)
2023 ADT = 9,500 (ESTIMATED)
2043 ADT = 11,300 (ESTIMATED)
SU = 4.0%, MU = 3.5%

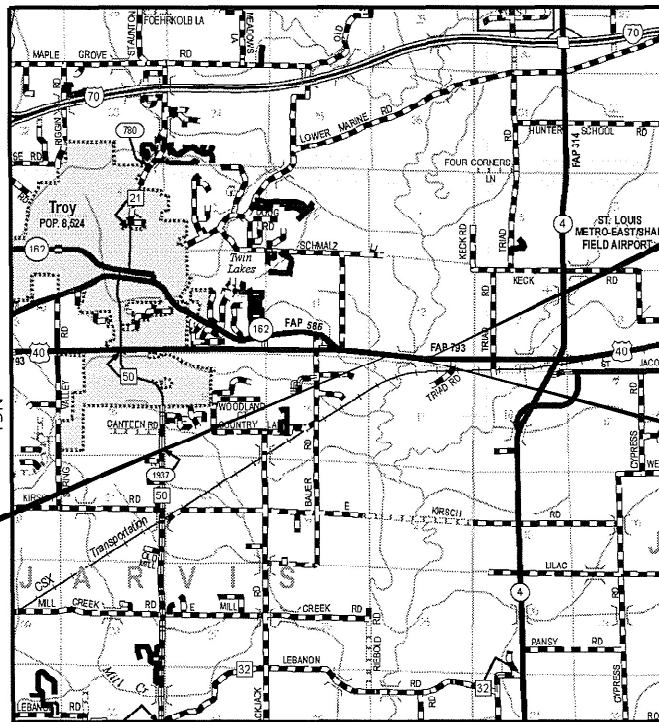


FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

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

PROJECT ENGINEER BILLIE OWEN
PROJECT MANAGER MEIWU AN

CONTRACT NO. 76R63



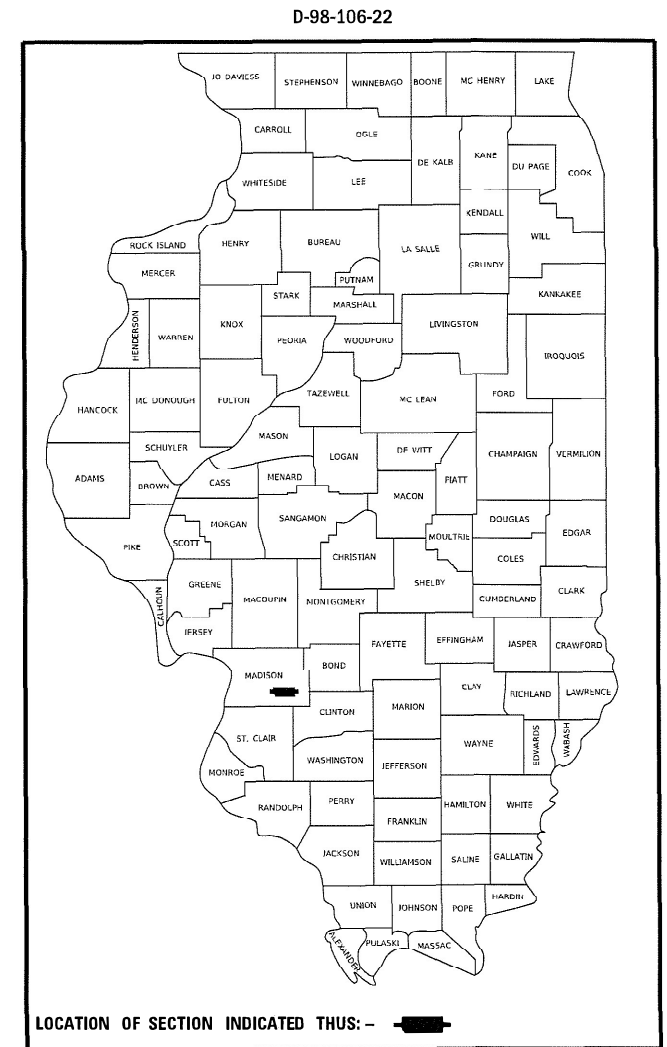
BEGIN IMPROVEMENTS
ALONG US 40
STA. 396+68.00
LAT: 38.716514°
LONG: -89.830108°

END IMPROVEMENTS
ALONG US 40
STA. 401+86.00
LAT: 38.716367°
LONG: -89.828344°

SN 060-0077
STA. 396+68.00 TO
STA. 401+86.00

NOT TO SCALE R7W R6W
LOCATION MAP

GROSS LENGTH = 518.00 FT. = 0.098 MILE
NET LENGTH = 518.00 FT. = 0.098 MILE



LOCATION OF SECTION INDICATED THUS: - [black rectangle]

FUNCTIONAL CLASSIFICATION
OTHER PRINCIPAL ARTERIAL

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED *Feb 7-2023*
Kurt H... REGIONAL ENGINEER

March 24, 2023 *S. E. A. E. T. S.*
ENGINEER OF DESIGN AND ENVIRONMENT

March 24, 2023 *Stephen M. ...*
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

**PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS**

HIGHWAY STANDARDS

000001-08	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF AN INCH AND OF A FOOT
701001-02	OFF-ROAD OPERATIONS, 2L, 2W, MORE THAN 15' AWAY
701006-05	OFF-ROAD OPERATIONS, 2L, 2W, 15' TO 24" FROM PAVEMENT EDGE
701301-04	LANE CLOSURE, 2L, 2W, SHORT TIME OPERATIN
701311-03	LANE CLOSURE, 2L, 2W, MOVING OPERATIN - DAY ONLY
701321-18	LANE CLOSURE, 2L,2W, BRIDGE REPAIR W/BARRIER
701901-08	TRAFFIC CONTROL DEVICES
704001-08	TEMPORARY CONCRETE BARRIER
780001-05	TYPICAL PAVEMENT MARKINGS
782006-01	GUARDRAIL AND BARRIER WALL REFLECTOR MOUNTING DETAILS

GENERAL NOTES

- UTILITIES KNOW TO HAVE FACILITIES WITHIN THE PROJECT AREA:

	AERIAL	BURIED
AMEREN ILLINOIS		X
AT&T ILLINOIS	X	X
BOND MADISON WATER COMPANY		X
CHARTER COMMUNICATIONS	X	X
CLEARWAVE FIBER LLC	X	X
DEPARTMENT OF CENTRAL MANAGEMENT SERVICES	X	X
CITY OF HIGHLAND	X	X
HOME TELEPHONE COMPANY	X	X
ZAYO GROUP LLC	X	X

- NO SURVEY WAS PERFORMED FOR THIS PROJECT AND THE PLANS WERE CREATED USING MICROFILM AND FIELD MEASUREMENTS.
- THE DEPARTMENT STRONGLY ENCOURAGES THE PRIME CONTRACTOR AND THEIR APPROVED SUB-CONTRACTORS TO HIRE MINORITY, WOMEN AND DISADVANTAGED INDIVIDUALS FROM ITS FEDERALLY FUNDED HIGHWAY CONSTRUCTION CAREERS TRAINING PROGRAM (HCCTP) TO HELP MEET WORKFORCE AND TRAINEE GOALS. THIS PROGRAM IS TRAINING MINORITIES, WOMEN AND DISADVANTAGED INDIVIDUALS IN HIGHWAY CONSTRUCTION-RELATED SKILLS, E.G., MATH FOR THE TRADES, JOB READINESS, TECHNICAL SKILLS COURSEWORK (CARPENTRY, CONCRETE FLATWORK, BLUEPRINT READING, SITE PLANS, SITE WORK, TOOLS USE, ETC.) AND OSHA 10 HOUR CERTIFICATION, TO PREPARE THEM FOR A CAREER IN THE HIGHWAY CONSTRUCTION TRADES. GRADUATES ARE WELL-TRAINED AND READY TO BECOME PRODUCTIVE ENTRY-LEVEL CONSTRUCTION WORKERS. CONTACT THE DISTRICT 8 EEO OFFICE AT 618-346-3360 AND/OR THE HCCTP COORDINATOR AT 618-874-6528 TO LEARN MORE ABOUT THE PROGRAM AND FOR ASSISTANCE IN MEETING WORKFORCE AND TRAINEE GOALS.
- TWO CHANGEABLE MESSAGE SIGNS SHALL BE REQUIRED FOR THIS PROJECT. THEY SHALL BE PLACED 2 WEEKS PRIOR TO ANY LANE CLOSURE AND SHALL REMAIN UP FOR THE DURATION OF THE PROJECT. THE CHANGEABLE MESSAGE SIGNS SHALL BE PLACED ALONG US 40 OR AT DIRECTION OF THE ENGINEER.

COMMITMENTS

NONE

REV. - MS

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DRAWN -	REVISED -	793			T-2BJR	MADISON	20	2		
PLOT SCALE = 100.0000' / in.	CHECKED -	REVISED -			CONTRACT NO. 76R63					
PLOT DATE = 2/7/2023	DATE -	REVISED -			ILLINOIS FED. AID PROJECT					
				SCALE:	SHEET 1	OF 1	SHEETS	STA.	TO STA.	

CONSTR. CODE
100% STATE

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	RURAL
				0047
				S.N. 060-0077
50102400	CONCRETE REMOVAL	CU YD	26.4	26.4
50300100	FLOOR DRAINS	EACH	60	60
50300255	CONCRETE SUPERSTRUCTURE	CU YD	26.4	26.4
50300300	PROTECTIVE COAT	SQ YD	2446.0	2446.0
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	15110	15110
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	4090	4090
50800515	BAR SPLICERS	EACH	54	54
52000110	PREFORMED JOINT STRIP SEAL	FOOT	166	166
52100010	ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	36	36
52100520	ANCHOR BOLTS, 1"	EACH	72	72
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	5	5
67100100	MOBILIZATION	L SUM	1	1
70100405	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321	EACH	1	1
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1	1

REV. - MS

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USER NAME = Nathan.Cox	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUMMARY OF QUANTITIES			F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLOT SCALE = 100.0000' / in.	DRAWN -	REVISED -					793	T-2BJR	MADISON	20	3
PLOT DATE = 2/8/2023	CHECKED -	REVISED -		SCALE:	SHEET 1	OF 2	SHEETS	STA.	TO STA.	ILLINOIS FED. AID PROJECT	
	DATE -	REVISED -									

STAGING SCHEDULE

LOCATION			LENGTH	TEMPORARY BRIDGE TRAFFIC SIGNALS	TEMPORARY RUMBLE STRIPS	PAVEMENT MARKING BLACKOUT TAPE, 5"	SHORT TERM PAVEMENT MARKING REMOVAL	TEMPORARY CONCRETE BARRIER	RELOCATE TEMPORARY CONCRETE BARRIER	IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE), TEST LEVEL 2	IMPACT ATTENUATORS, RELOCATE (FULLY REDIRECTIVE), TEST LEVEL 2
STA.	TO	STA.	FOOT	EACH	EACH	FOOT	SQFT	FOOT	FOOT	EACH	EACH
US 40											
374+39	TO	394+49	2010	1	3						
394+49	TO	395+93	144			36	15			1	1
395+93	TO	396+68	75			169	70	75.0	75.0		
396+68	TO	401+86	518			1166	486	512.5	512.5		
401+86	TO	402+61	75			169	70	75.0	75.0		
402+61	TO	403+61	100			25	10			1	1
403+61	TO	424+21	2060		3						
SUB TOTAL				1	6	1565	651	662.5	662.5	2	2
TOTAL				1	6	1565	651	662.5	662.5	2	2

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	DRAWN -	REVISED -
PLOT SCALE = 100,0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 2/8/2023	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SCHEDULE OF QUANTITIES			
SCALE:	SHEET 1	OF 1 SHEETS	STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
793	T-2BJR	MADISON	20	5
CONTRACT NO. 76R63				
ILLINOIS FED. AID PROJECT				

Existing Structure:
The bridge was built in 1981. It consists of 9 spans, 481'-1" back to back abutments 43'-2" out to out deck steel I-beam superstructure and reinforced concrete pile cap construction substructure.

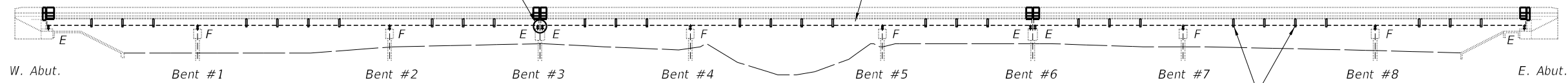
The bridge repairs shall be done under Staged Construction.

No Salvage.

Remove and replace exist. rocker bearings with elastomeric bearings at each abutment and pier bents #3 & #6

Exist. W27X94 steel beams

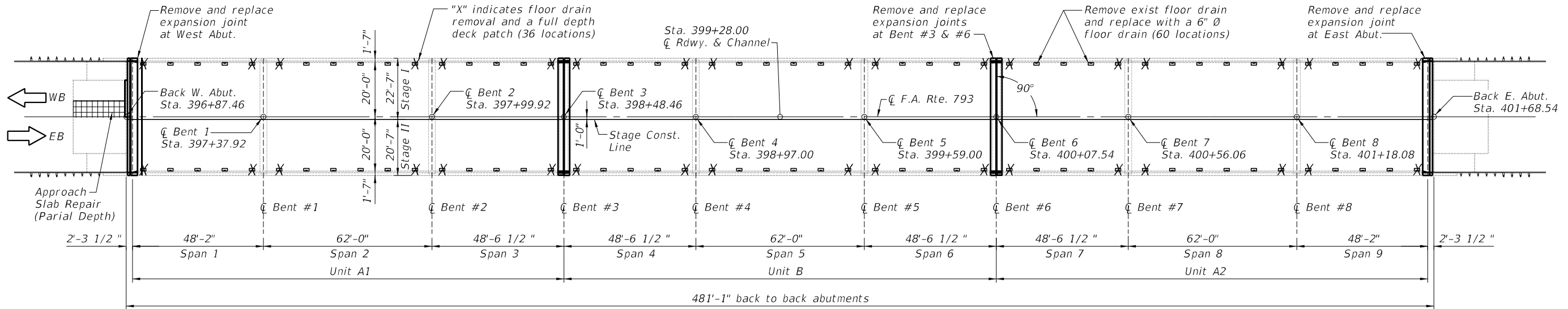
New 6" dia. Floor Drains



SCOPE OF WORK

1. Full depth concrete deck replacement at expansion joints and replace all expansion joints.
2. Beam repairs as detailed.
3. Patching on deck and West Appr Slab.
4. Remove and replace floor drains.
5. Remove and replace end diaphragms at joints
6. Replace all rocker bearings with elastomeric bearings at abutments and bents #3 & #6.

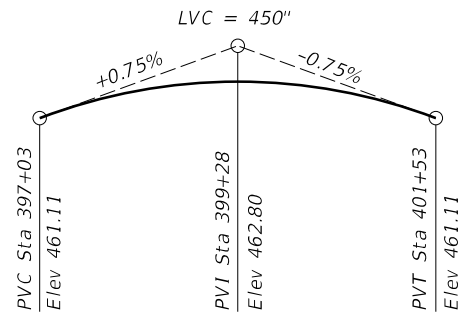
ELEVATION



PLAN

INDEX OF SHEETS

- 1 General Plan and Elevation
- 2 Construction Staging General Notes and Bill of Material
- 3 Deck Plan - Unit A1
- 4 Deck Plan - Unit B
- 5 Deck Plan - Unit A2
- 6 Framing Plan and Details
- 7 Steel Beam Repair Details
- 8 Bearing Details
- 9 Expansion Joint Replacement at Abutments
- 10 Expansion Joint Replacement at Pier Bents
- 11 Superstructure Details
- 12 Preformed Joint Strip Seal
- 13 Bar Splicer Assembly and Mechanical Splicer Details
- 14 Temporary Concrete Barrier for Stage Construction



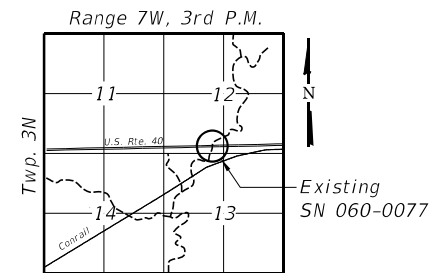
EXISTING PROFILE GRADE - F.A.I. RTE. 793

DESIGN SPECIFICATIONS
(New Construction) 2002 AASHTO Standard Specifications, 17th Edition

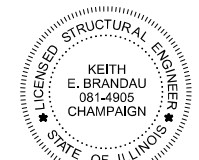
DESIGN STRESSES
FIELD UNITS

$f'_c = 4,000$ psi (Repair concrete)
 $f_y = 60,000$ psi (Reinforcement)
 $f_y = 50,000$ psi (M270 Grade 50)
 $f_y = 36,000$ psi (M270 structural steel)

LOADING HS 20-44
Original Construction



LOCATION SKETCH



Keith E. Brandau, S.E.
License Expires 11/30/24
Date 3/24/23

GENERAL PLAN AND ELEVATION
F.A. RTE. 793 (U.S. RTE. 40)
OVER SILVER CREEK
SECTION T-2BR
MADISON COUNTY
STATION 399+28
STRUCTURE NUMBER 060-0077

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USER NAME =	DESIGNED - KEB	REVISED -
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PLOT DATE =	CHECKED - KEB	REVISED -
	DATE - 10/4/22	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
STRUCTURE NO. 060-0077

SHEET 1 OF 14 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
793	T-2BJR	MADISON	20	6
CONTRACT NO. 76R63				
ILLINOIS FED. AID PROJECT				

GENERAL NOTES

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.

Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Bolts $\frac{3}{4}$ " \emptyset , holes $1\frac{1}{8}$ " \emptyset , unless otherwise noted.

Strengthening structural steel shall be AASHTO M 270 Grade 50. All other replacements of diaphragms, bearing assemblies, and steel extensions shall be AASHTO M 270, Grade 36 min

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

Expansion joints shall be fabricated and installed according to the Manufacturer's recommendations and as approved by the Engineer.

Expansion joints shall be fabricated to conform to the existing cross slopes of the bridge.

Existing structural steel that will be in contact with the new structural steel shall be cleaned and painted prior to erection as required by the Special Provision for "Cleaning and Painting Contact Surface Areas of Existing Steel Structures."

Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. 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 included in the pay item covering removal of the existing concrete.

Existing reinforcement extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal operations shall be replaced using an approved bar splicer or anchorage system. Cost included with Concrete Removal.

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

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.

All new structural steel and bearing assemblies shall be hot-dip galvanized. See Special Provisions for "Hot Dip Galvanizing for Structural Steel."

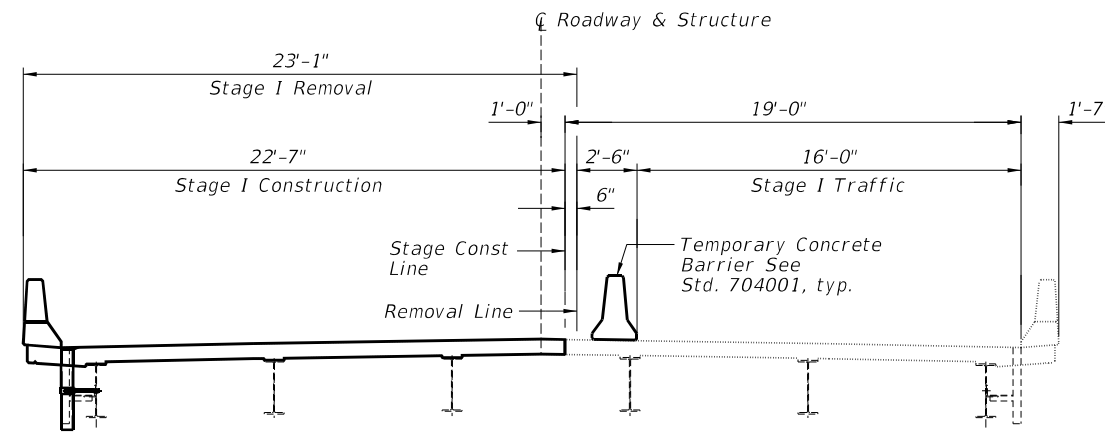
Diaphragm connection holes shall be $\frac{15}{16}$ dia. for $\frac{3}{4}$ dia. bolts. Two hardened washers shall be required at diaphragm connections.

Protective coat shall be applied to new concrete structure surfaces and to the top and front of new parapets.

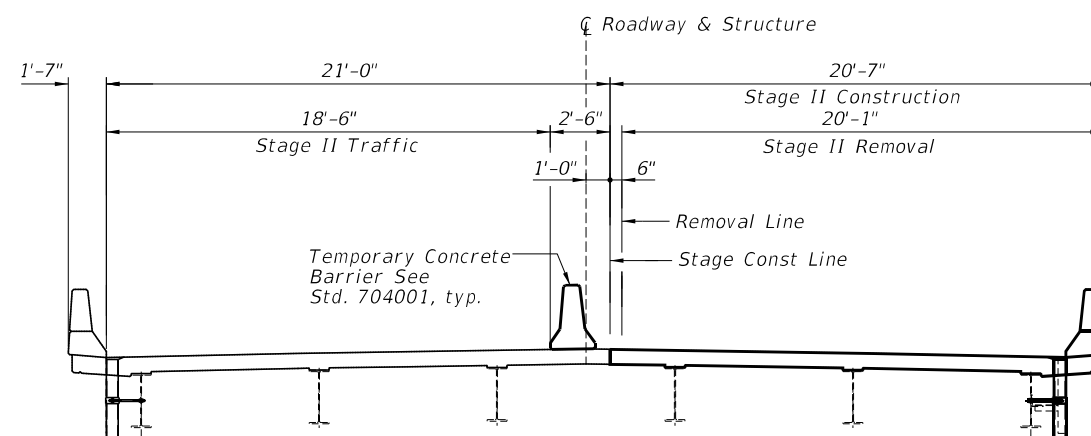
All new beam end repair and bolts not associated with diaphragm support are paid for as Structural Steel Repair.

All new diaphragms and diaphragm supporting angles and diaphragm bolts to be paid for as Furnishing and Erecting Structural Steel.

Removal of existing diaphragms and support angles to be paid for as Structural Steel Removal.



STAGE I LOOKING EAST



STAGE II LOOKING EAST

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	26.4
Concrete Superstructure	Cu. Yd.	26.4
Furnishing and Erecting Structural Steel	Pound	15,110
Preformed Joint Strip Seal	Foot	166
Bar Splicers	Each	54
Floor Drains	Each	60
Reinforcement Bars, Epoxy Coated	Pound	4,090
Deck Slab Repair (Partial)	Sq. Yd.	5.4
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	21.9
Anchor Bolts, 1" \emptyset	Each	72
Elastomeric Bearing Assembly, Type I	Each	36
Jack and Remove Existing Bearings	Each	36
Protective Coat	Sq Yd	2,446
Temporary Shoring and Cribbing	Each	1
Approach Slab Repair (Partial Depth)	Sq Yd	12.7
Structural Steel Removal	Pound	9,810
Structural Steel Repair	Pound	8,550

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CHASTAIN & ASSOCIATES LLC
CONSULTING ENGINEERS
184-001397

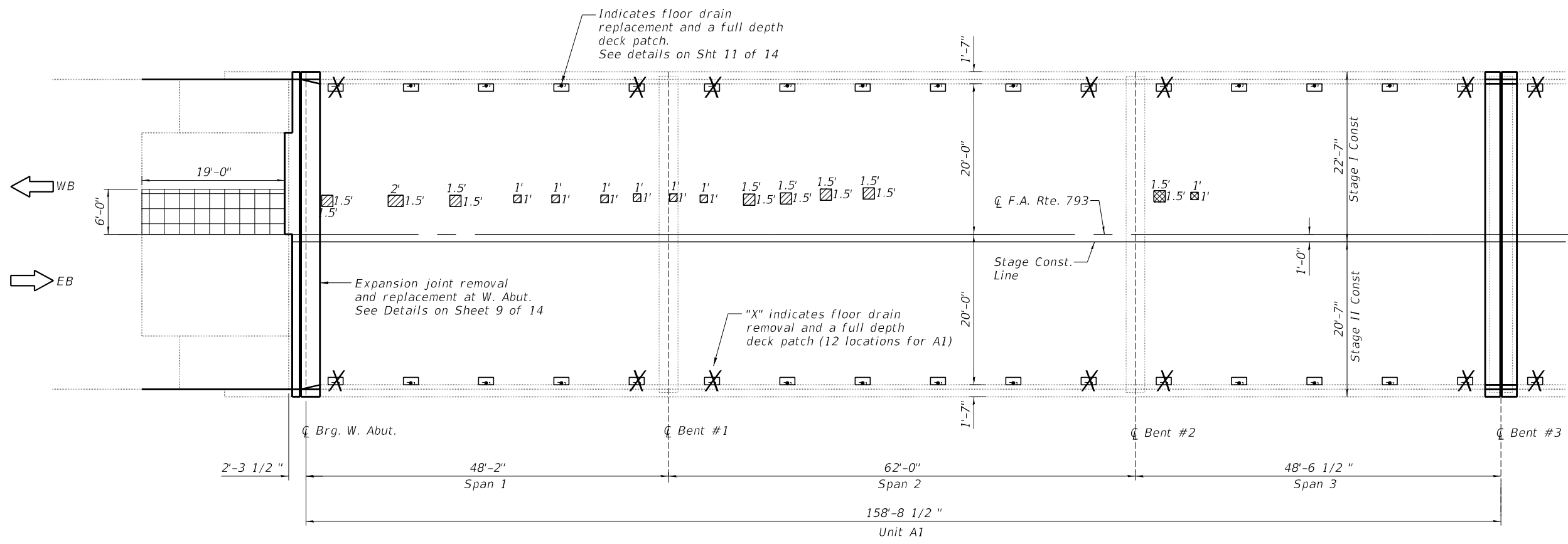
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PLOT DATE =	DATE - 10/4/22	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONSTRUCTION STAGING GENERAL NOTES AND BILL OF MATERIAL
STRUCTURE NO. 060-0077

SHEET 2 OF 14 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
793	T-2BJR	MADISON	20	7
ILLINOIS FED. AID PROJECT			CONTRACT NO. 76R63	



PLAN - UNIT A1

LEGEND

- Deck Slab Repair (Partial Depth)
- Deck Slab Repair (Full Depth, Type I)
- Approach Slab Repair (Partial Depth)

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CHASTAIN & ASSOCIATES LLC
CONSULTING ENGINEERS
184-001397

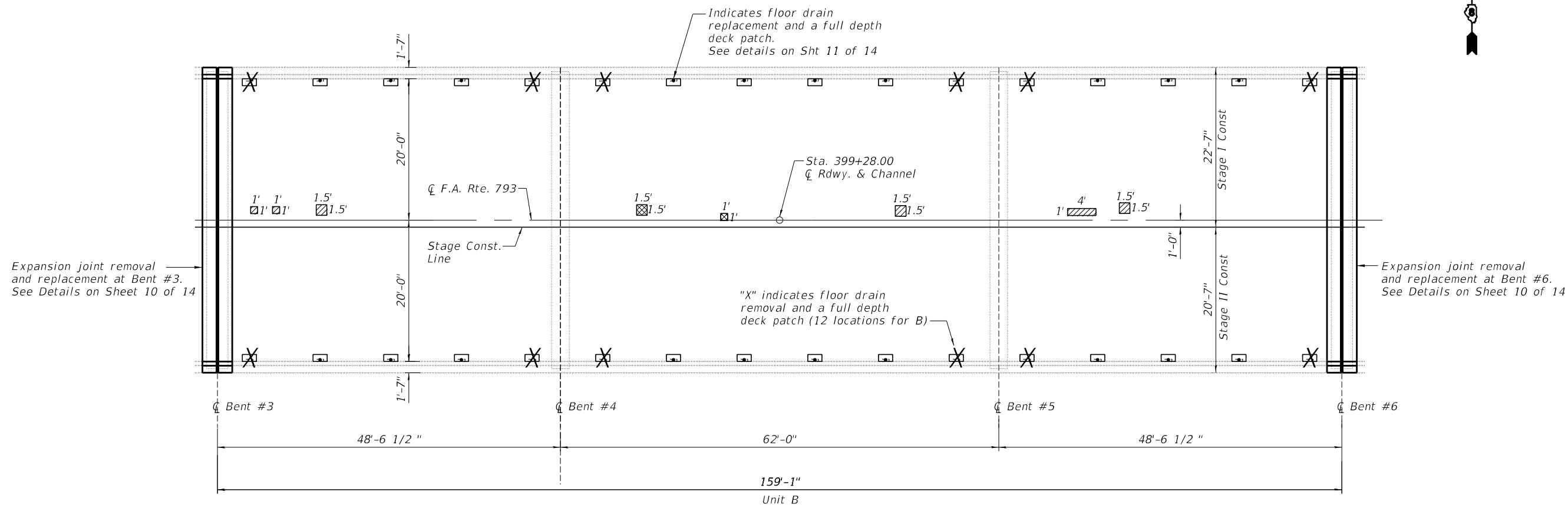
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PLOT DATE =	DATE - 10/4/22	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**DECK PLAN - UNIT A1
STRUCTURE NO. 060-0077**

SHEET 3 OF 14 SHEETS

F.A.I. RTE. 793	SECTION T-2BJR	COUNTY MADISON	TOTAL SHEETS 20	SHEET NO. 8
CONTRACT NO. 76R63				
ILLINOIS FED. AID PROJECT				



PLAN - UNIT B

LEGEND

- Deck Slab Repair (Partial Depth)
- Deck Slab Repair (Full Depth, Type I)

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CHASTAIN & ASSOCIATES LLC
CONSULTING ENGINEERS
184-001397

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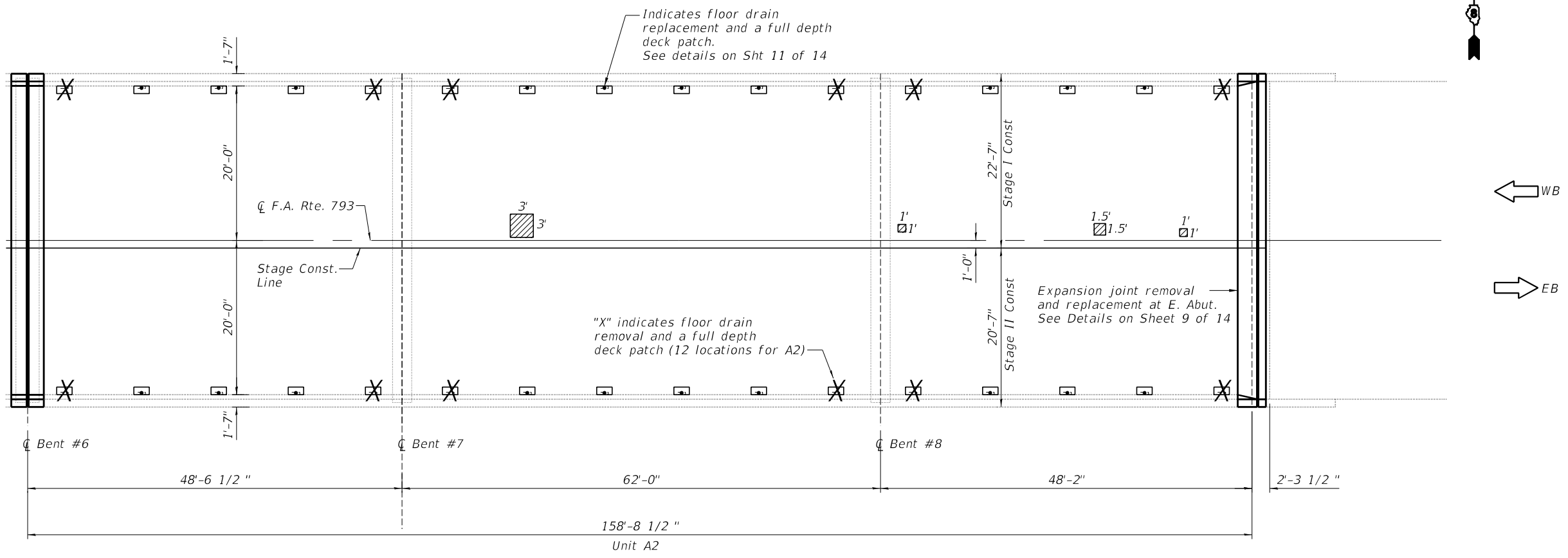
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**DECK PLAN - UNIT B
STRUCTURE NO. 060-0077**

SHEET 4 OF 14 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
793	T-2BJR	MADISON	20	9
CONTRACT NO. 76R63				
ILLINOIS FED. AID PROJECT				

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PLAN - UNIT A2

LEGEND

-  Deck Slab Repair (Partial Depth)
-  Deck Slab Repair (Full Depth, Type I)

CHASTAIN & ASSOCIATES LLC
 CONSULTING ENGINEERS
 184-001397

USER NAME =	DESIGNED - KEB	REVISED -
	DRAWN - RLK	REVISED -
PLOT SCALE =	CHECKED - KEB	REVISED -
PLOT DATE =	DATE - 10/4/22	REVISED -

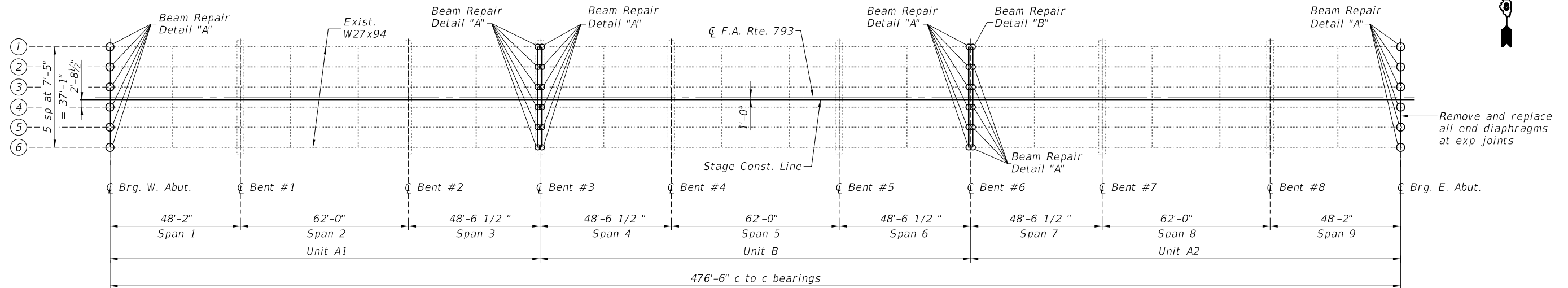
**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**DECK PLAN - UNIT A2
 STRUCTURE NO. 060-0077**

SHEET 5 OF 14 SHEETS

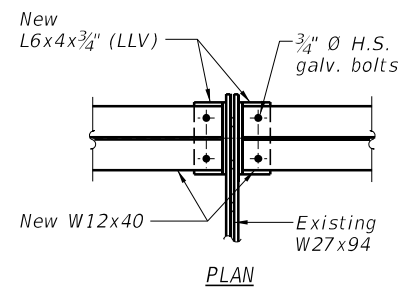
F.A.I. RTE. 793	SECTION T-2BJR	COUNTY MADISON	TOTAL SHEETS 20	SHEET NO. 10
CONTRACT NO. 76R63				
ILLINOIS FED. AID PROJECT				

Note:
For End of Beam Repair
Details "A" and "B"
See Sheet 7 of 14.

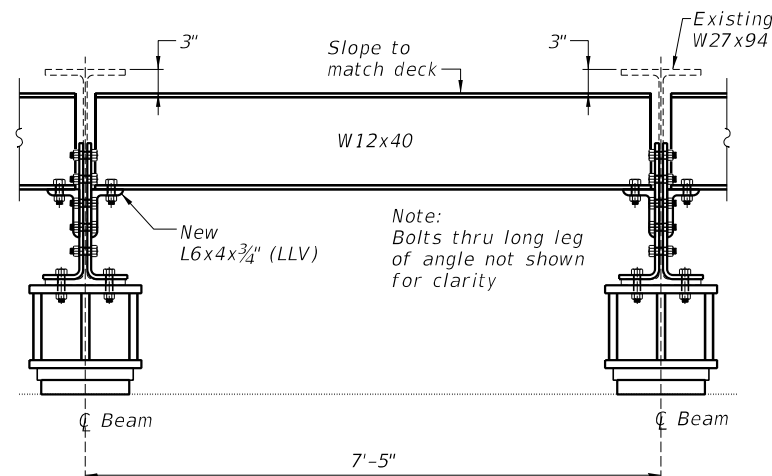


FRAMING PLAN

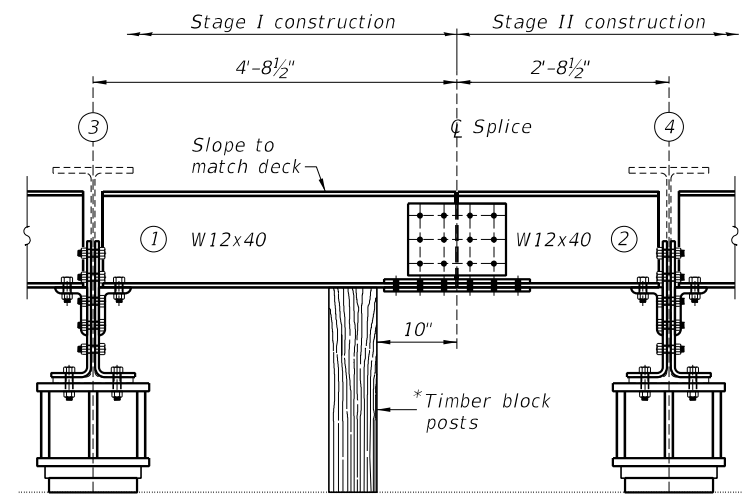
Note:
Existing clip angles to be
removed with air-arc method.



Note:
Two hardened washers shall be
required over all oversize holes for
diaphragms.



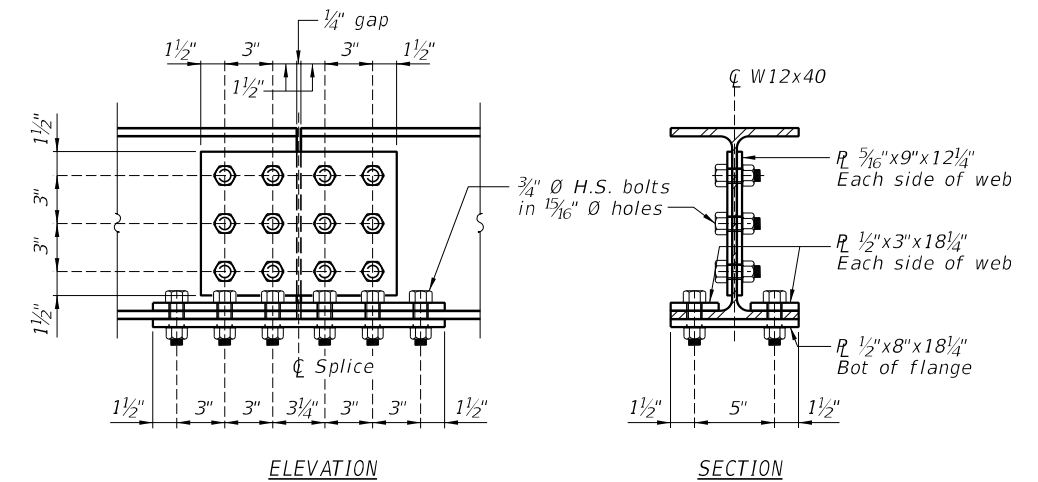
END DIAPHRAGM REPLACEMENT DETAIL
(24 Required)



* Cost of Timber Block Posts is
included with Structural Steel.

END DIAPHRAGM AT STAGED JOINT
(6 Required)

Note:
Contractor shall field measure
each diaphragm to be replaced
prior to ordering new diaphragms.



W12x40 SPLICE DETAIL

**END DIAPHRAGM STAGE
CONSTRUCTION SEQUENCE**

- 1.) Order diaphragm in two sections.
- 2.) Attach section ① of diaphragm to beam
- 3.) Place timber block posts between section ① of diaphragm and abutment or pier bearing section.
- 4.) Attach section ② of diaphragm to both beam and section ① of diaphragm during Stage II construction with splice plates.
- 5.) Remove timber block posts.

***BILL OF MATERIAL**

Item	Unit	Total
Furnishing and Erecting Structural Steel	Pound	10,170

*Diaphragms, clip angles and splice plates
and splice plate bolts.

MODEL: Default
FILE NAME: I:\DOTY1102_D8_VariW08 - US 40 over Silver Creek Bridge Repairs\CADD\Structural\Framing\06c-007.dgn



USER NAME =	DESIGNED - KEB	REVISED -
PLOT SCALE =	DRAWN - RLK	REVISED -
PLOT DATE =	CHECKED - KEB	REVISED -
	DATE - 10/4/22	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FRAMING PLAN AND DETAILS
STRUCTURE NO. 060-0077

SHEET 6 OF 14 SHEETS

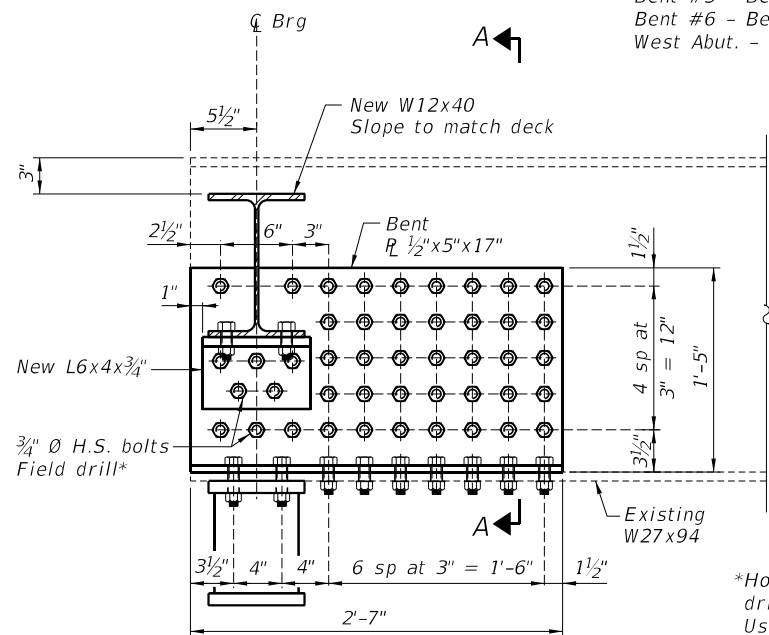
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
793	T-2BJR	MADISON	20	11
CONTRACT NO. 76R63				
ILLINOIS FED. AID PROJECT				

Location of Repairs:
 East Abut. - Beams 1-6
 Bent #3 - Beams 1-6 Each side of joint
 Bent #6 - Beams 1-6 (W) Beams 2-6 (E)
 West Abut. - Beams 1-6

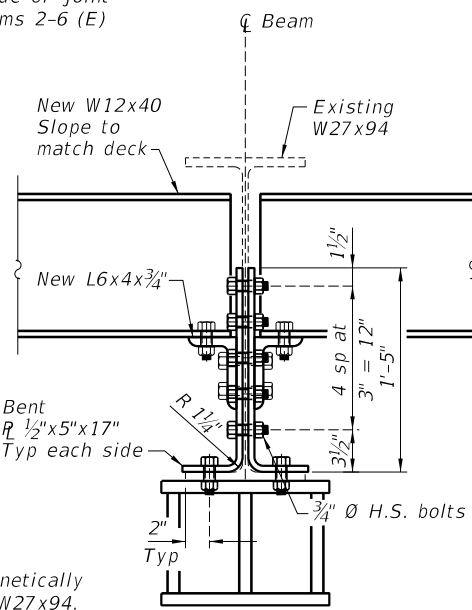
Note:
 Hatched area indicates removal of existing structural steel.
 Cost included with "Structural Steel Removal".

Contractor to field verify all dimensions.

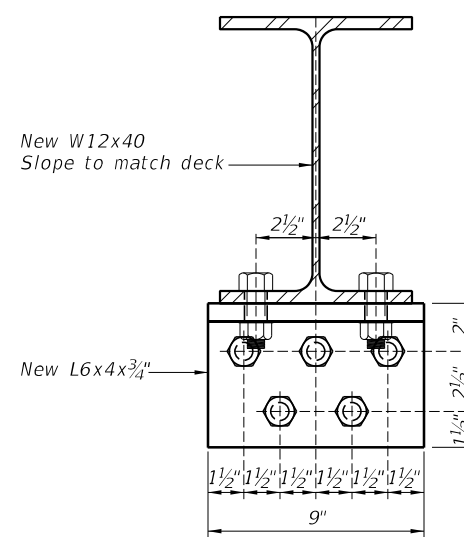
See Beam Reaction Table on Sheet 8 of 14 for use with
 Temporary Shoring and Cribbing.



ELEVATION AT END OF BEAM



SECTION A-A



DIAPHRAGM CONNECTION R

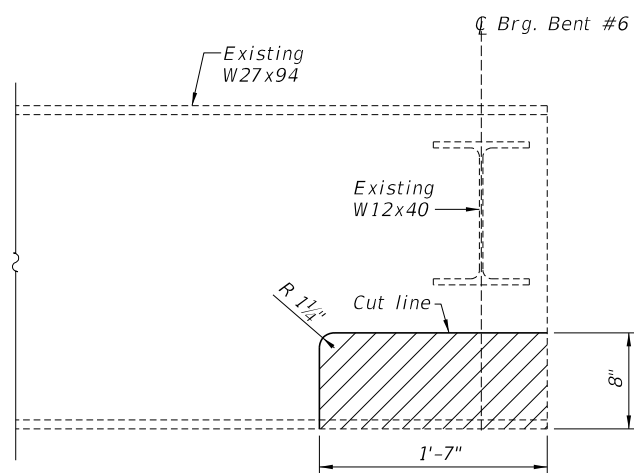
BILL OF MATERIAL

Item	Unit	Total
Structural Steel Repair	Pound	8,550
Structural Steel Removal	Pound	9,810
Temporary Shoring and Cribbing	Each	1

*Holes shall be magnetically drilled in existing W27x94.
 Use holes in new steel as a template to field drill holes in existing steel.

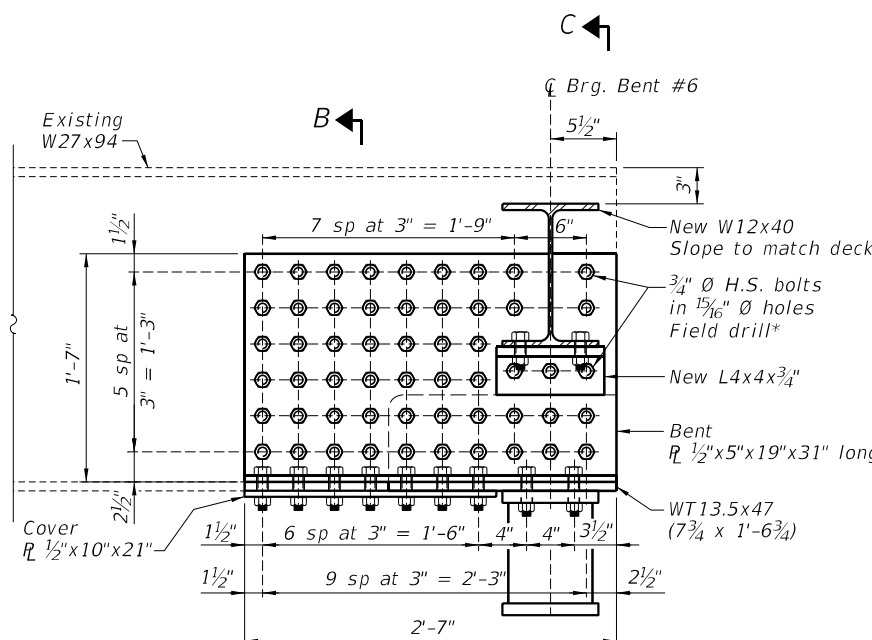
END OF BEAM REPAIR DETAIL "A"

(35 Locations)



END OF BEAM REMOVAL DETAIL

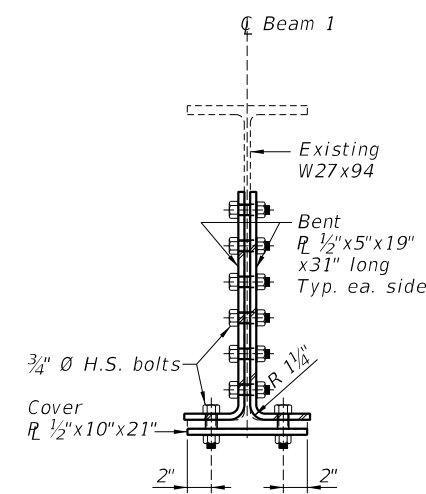
Note:
 Contractor shall provide support of beam paid for as "Temporary Shoring & Cribbing, 1 Each"



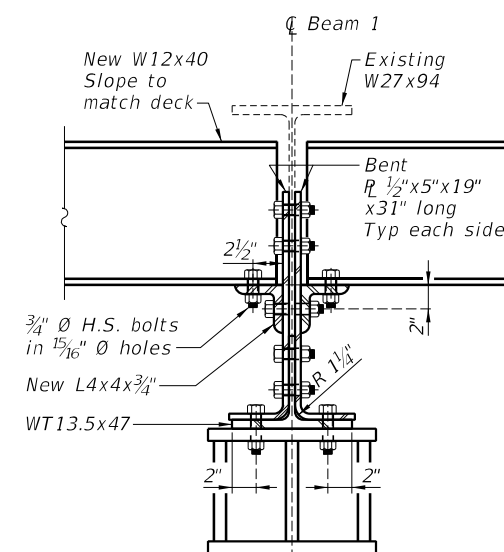
END OF BEAM REPAIR DETAIL "B"

END OF BEAM REPAIR DETAIL "B"

(1 Location)

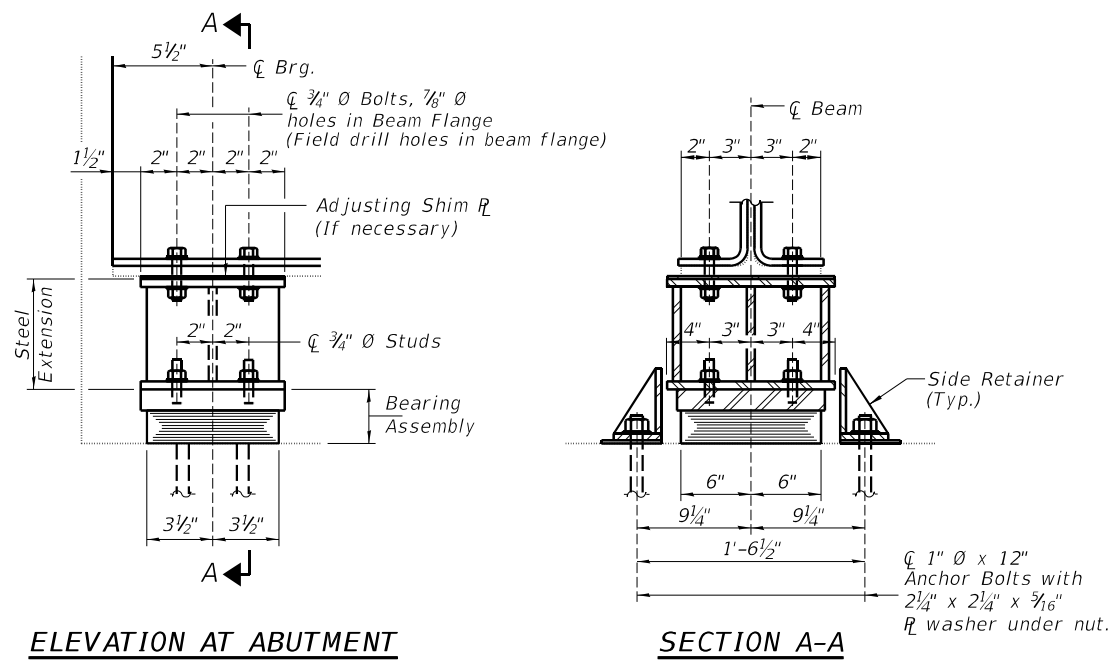


SECTION B-B



SECTION C-C

MODEL: Default
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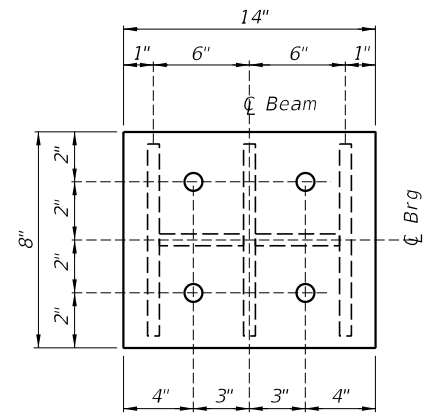


ELEVATION AT ABUTMENT

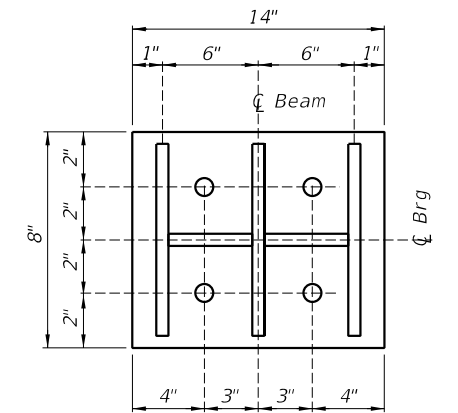
SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.

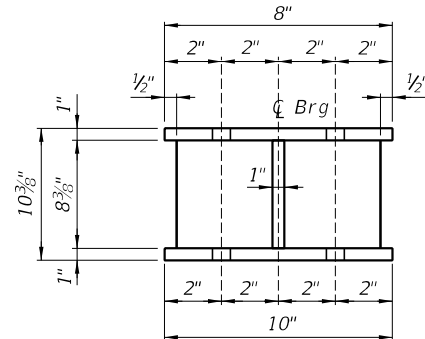
INTERIOR BEAM REACTIONS	
	Abut.
RDL	(k) 20.3
RLL	(k) 42.7
IMP	(k) 12.3
R _{Total}	(k) 75.3



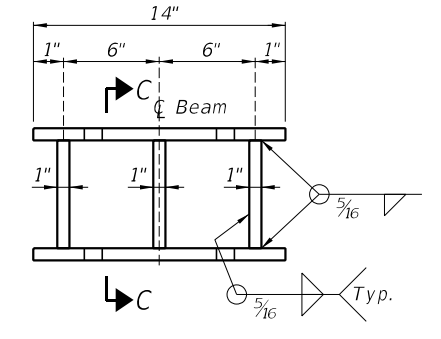
PLAN - TOP EXTENSION PLATE



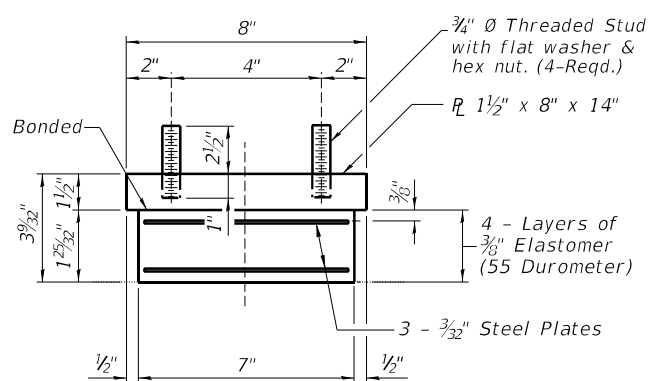
PLAN - BOTTOM EXTENSION PLATE



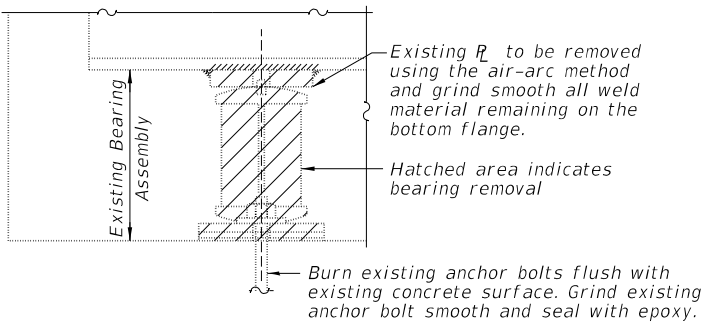
SECTION C-C



STEEL EXTENSION DETAIL



BEARING ASSEMBLY



EXISTING BEARING REMOVAL DETAIL

Cost included with Jack and Remove Existing Bearings.

JACK AND REMOVE EXISTING BEARING PROCEDURE

The Contractor shall submit for approval by the Engineer, plans for jacking existing girders and installing new bearings prior to commencing any related work. The maximum dead load reaction per girder (weight of steel only) is 20.3 k. Live load plus impact is 55.0 k. Minimum jack capacity is 40 T.

Prior to ordering any material, the Contractor shall verify steel extension and fill plate thickness required at each bearing.

Jacking and removing existing bearings shall be done after the existing deck is removed and prior to placing the new deck.

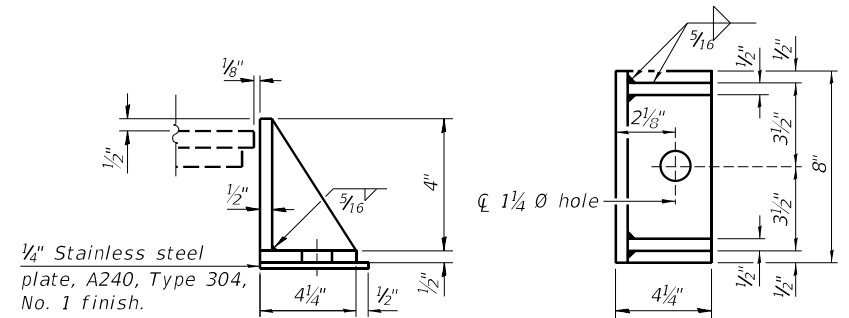
The new bearings, plates, and steel extensions shall be in place and the jack shall be lowered before the new concrete deck at repair areas is poured.

Notes:
 Side retainers and leveling pad required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type II.
 The 1/8" PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.
 Bonding of 1/8" PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.
 Anchor bolts and side retainers at all supports shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	36
Jack and Remove Existing Bearings	Each	36
Furnishing and Erecting Structural Steel	Pound	4940
Anchor Bolts 1" Ø	Each	72

Note:
 Shim plates shall not be placed under Bearing Assembly.



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

I-2E-1

6-15-2019

MODEL: Default; FILE NAME: I:\DOT\1102 D8 Var Var\W08 - US 40 over Silver Creek Bridge Repairs\CADD\CADD_Structural\brgs060-0077.dgn

CHASTAIN & ASSOCIATES LLC
 CONSULTING ENGINEERS
 184-001397

USER NAME =	DESIGNED - KEB	REVISED -
PLOT SCALE =	DRAWN - RLK	REVISED -
PLOT DATE =	CHECKED - KEB	REVISED -
	DATE - 10/4/22	REVISED -

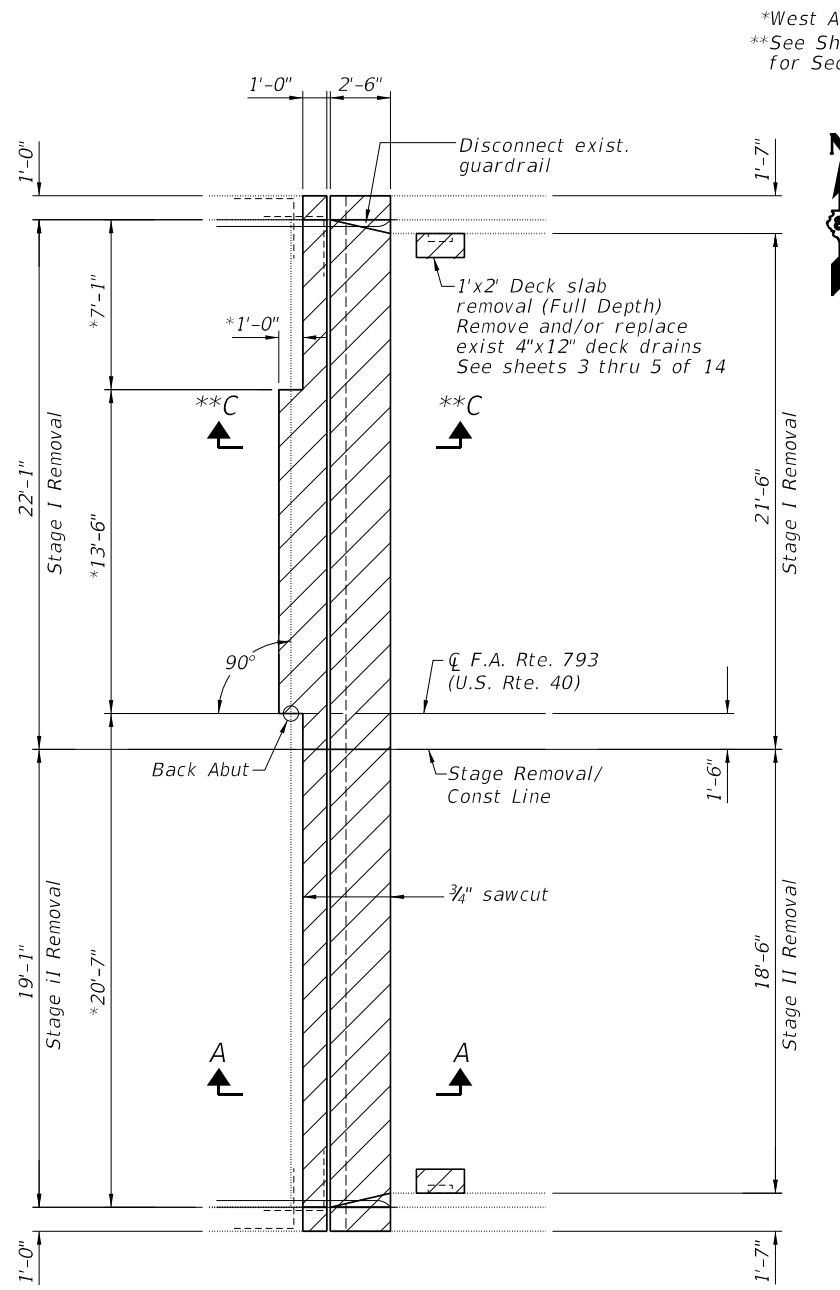
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

BEARING DETAILS
 STRUCTURE NO. 060-0077

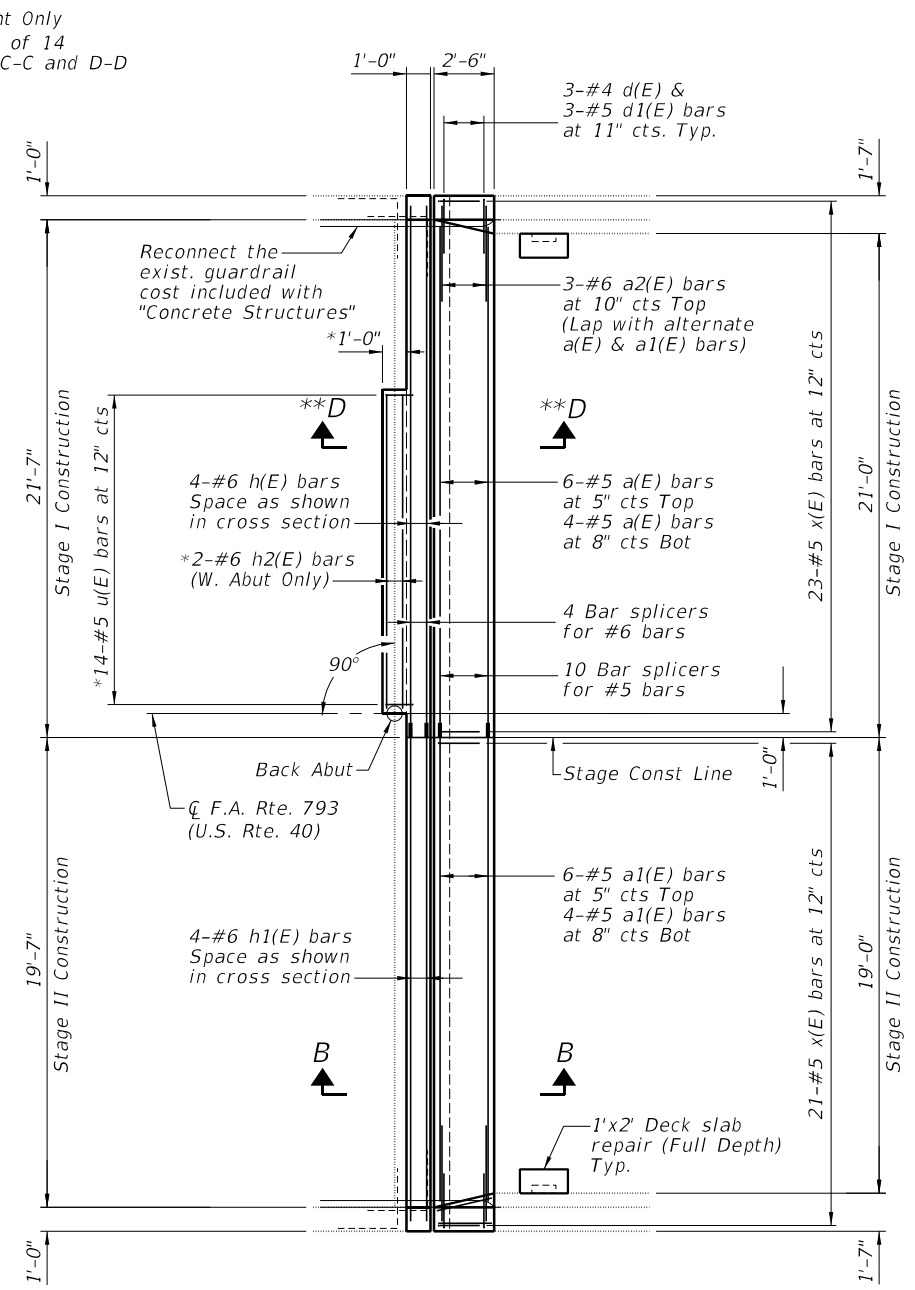
SHEET 8 OF 14 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
793	T-2BJR	MADISON	20	13
CONTRACT NO. 76R63				
ILLINOIS FED. AID PROJECT				

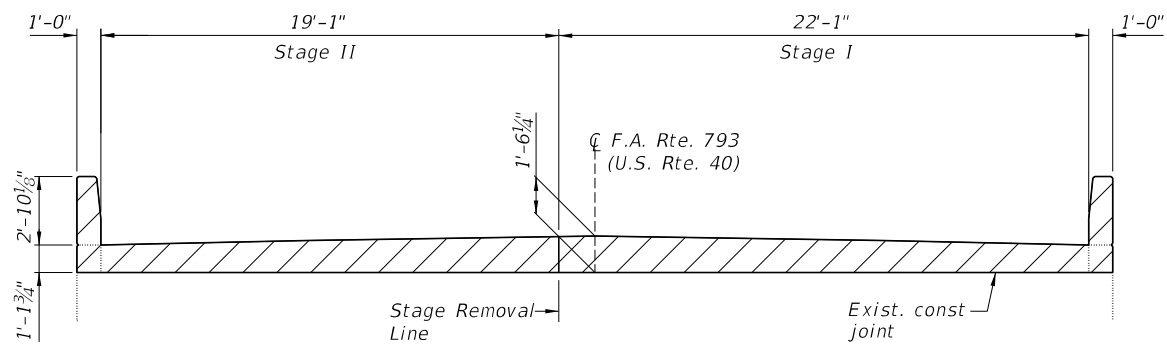
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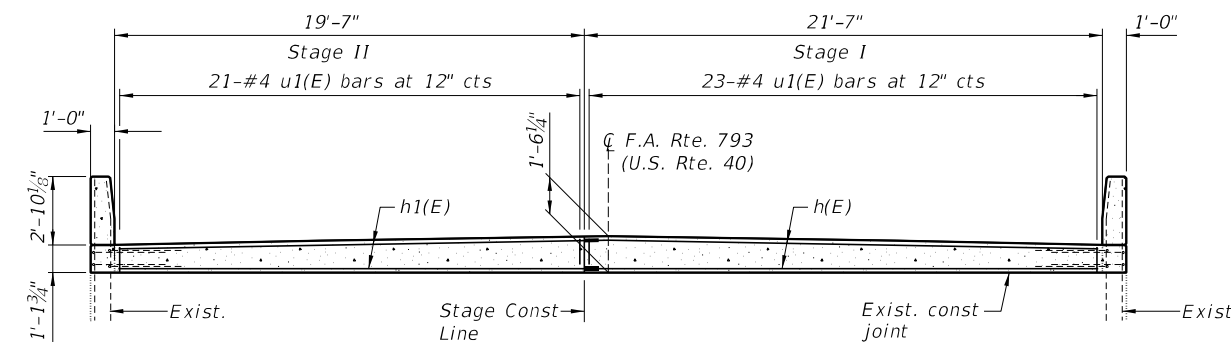
ABUTMENT PLAN SHOWING REMOVAL
 (West abutment shown East abutment similar)



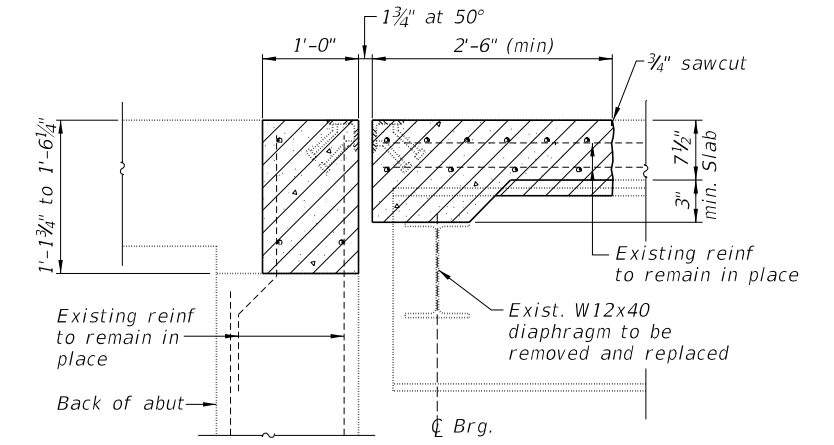
ABUTMENT PLAN SHOWING REPLACEMENT
 (West abutment shown East abutment similar)



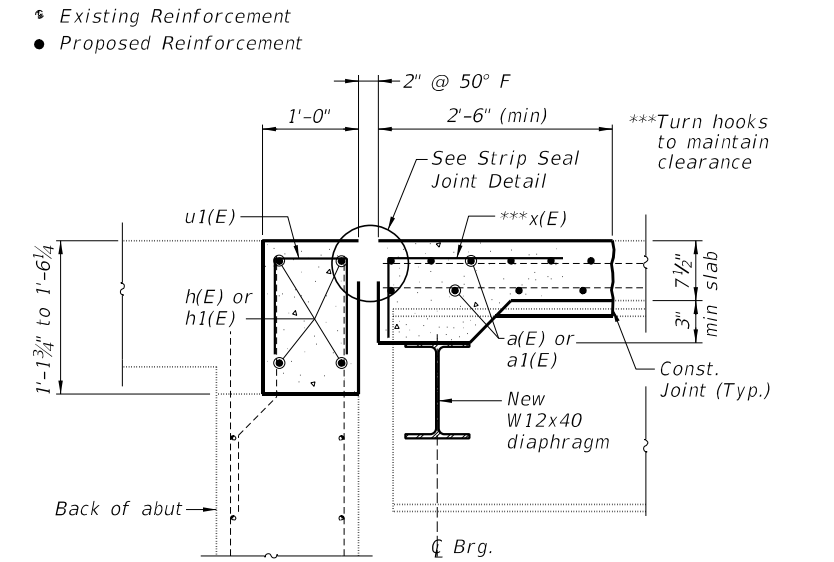
WEST ABUTMENT BACKWALL SHOWING REMOVAL
 (Looking West)



WEST ABUTMENT BACKWALL SHOWING REPLACEMENT
 (Looking West)



SECTION A-A



SECTION B-B

Existing Reinforcement
 Proposed Reinforcement

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

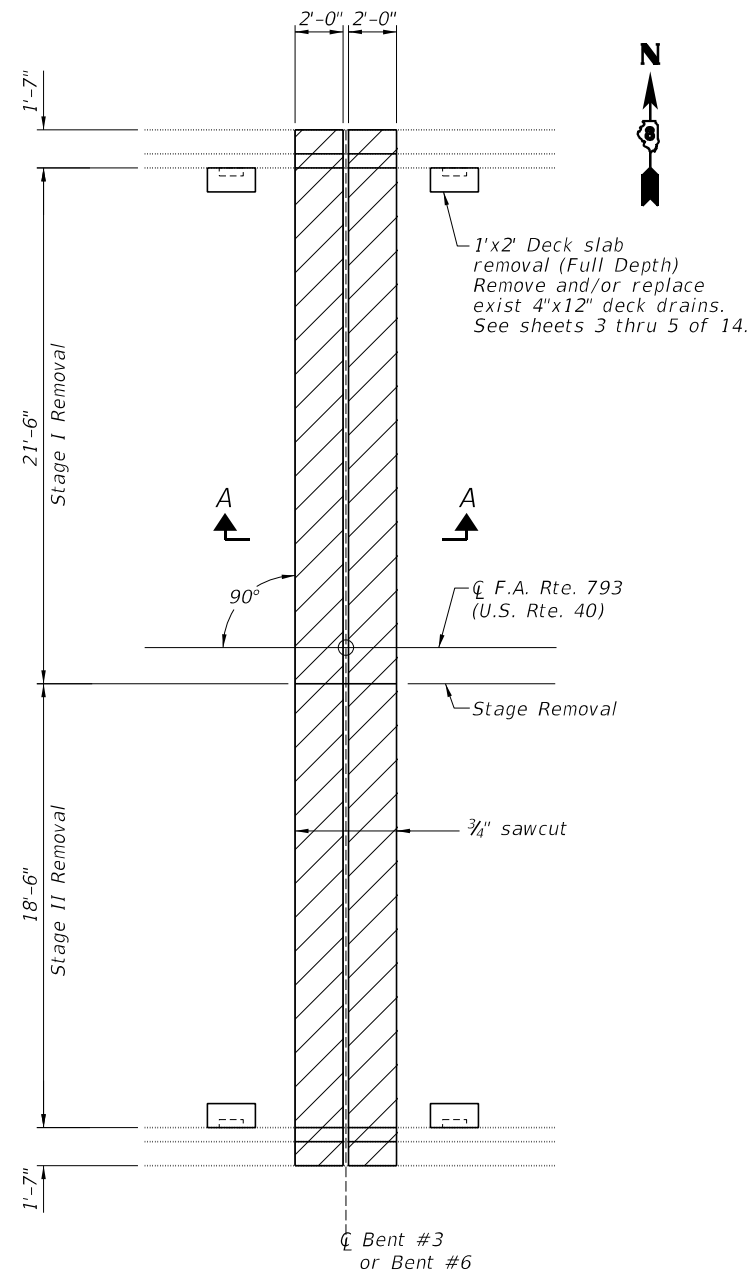
EXPANSION JOINT REPLACEMENT DETAILS AT ABUTMENTS
 STRUCTURE NO. 060-0077

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
793	T-2BJR	MADISON	20	14
CONTRACT NO. 76R63				

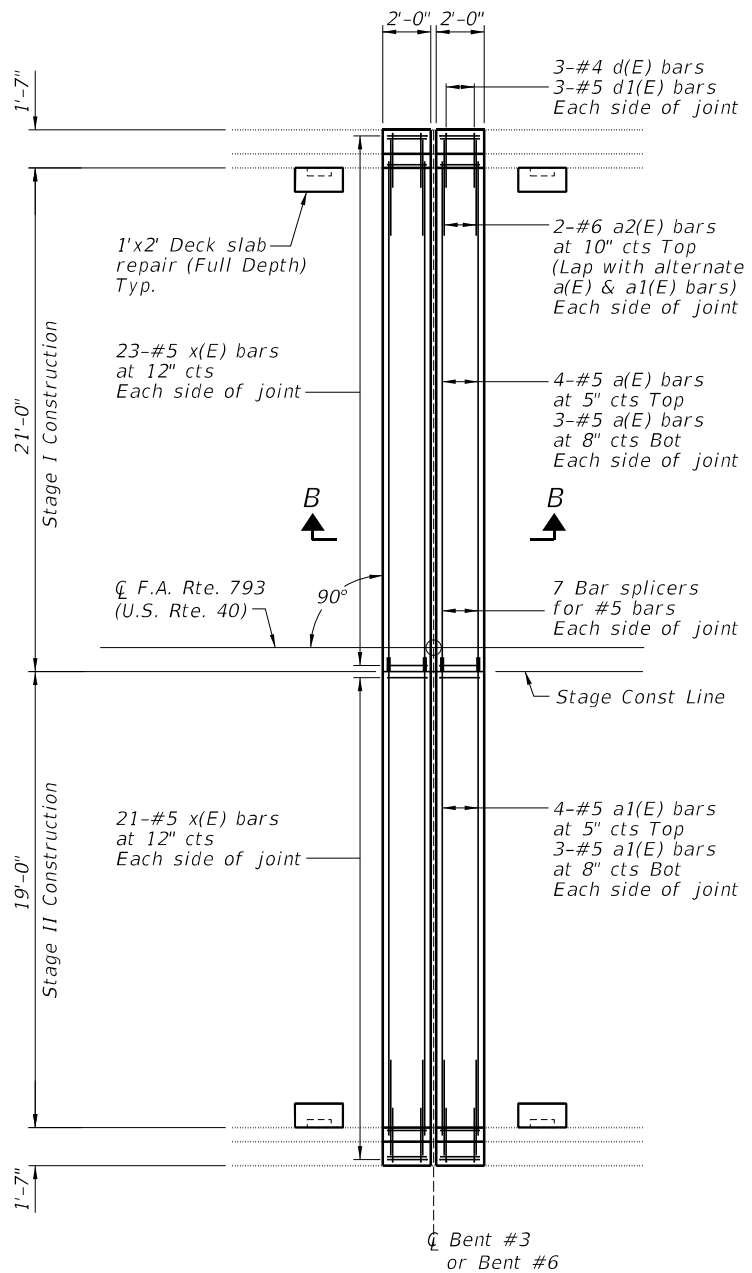
SHEET 9 OF 14 SHEETS

ILLINOIS FED. AID PROJECT

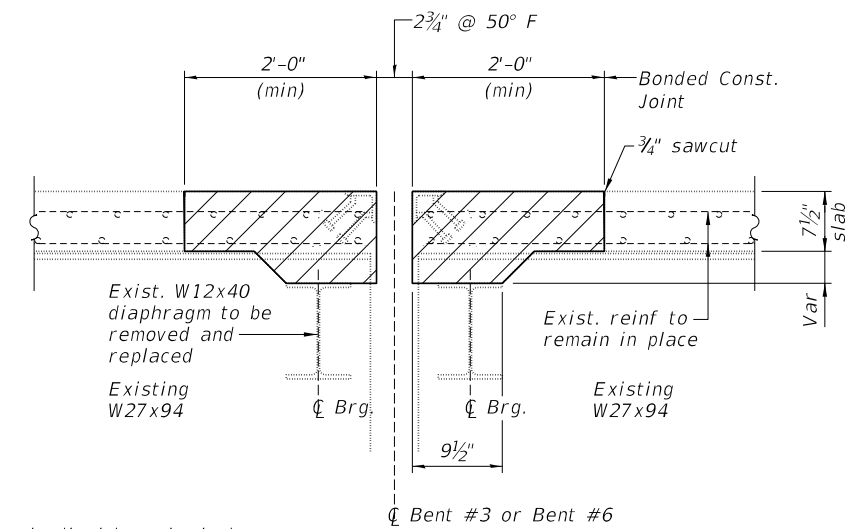
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PLOT SCALE =	DRAWN - RLK	REVISED -
PLOT DATE =	CHECKED - KEB	REVISED -
	DATE - 10/4/22	REVISED -



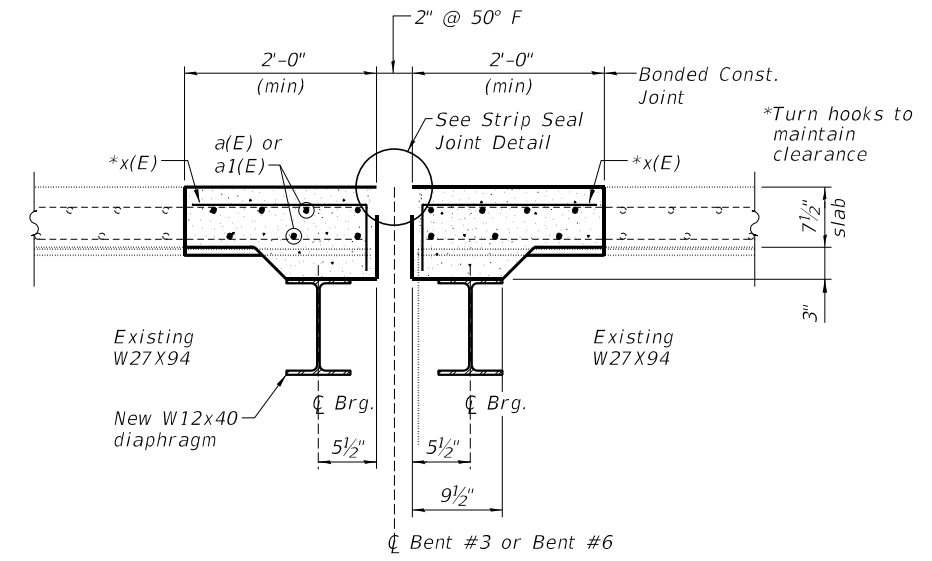
PILE BENT PLAN SHOWING REMOVAL
(Typical at Bent #3 and Bent #6)



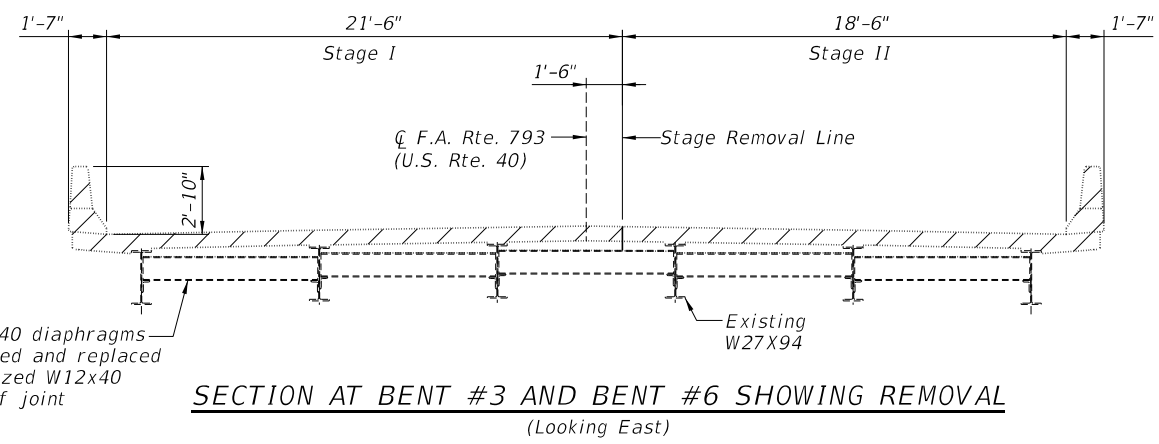
PILE BENT PLAN SHOWING REPLACEMENT
(Typical at Bent #3 and Bent #6)



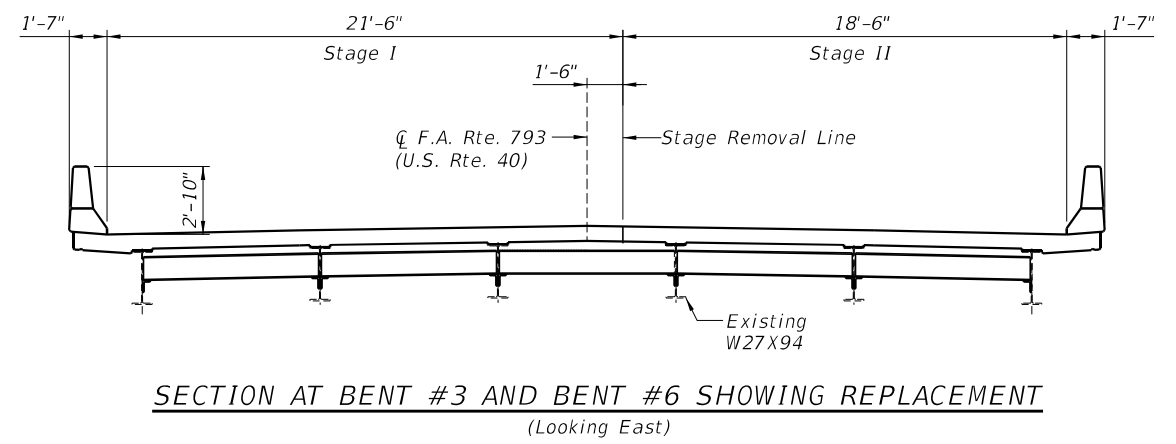
SECTION A-A



SECTION B-B



SECTION AT BENT #3 AND BENT #6 SHOWING REMOVAL
(Looking East)



SECTION AT BENT #3 AND BENT #6 SHOWING REPLACEMENT
(Looking East)

MODEL: Default
FILE NAME: I:\DOT\1102 D8 Var Var\W08 - US 40 over Silver Creek Bridge Repairs\CADD_Structural\p1erexp\060-0077.dgn

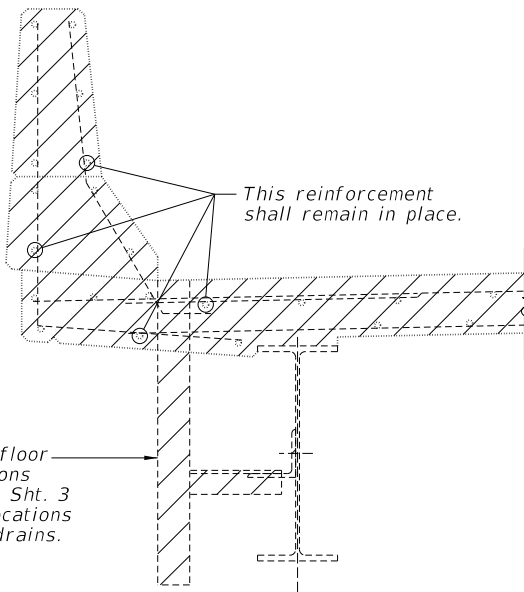
CHASTAIN & ASSOCIATES LLC
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184-001397

USER NAME =	DESIGNED - KEB	REVISED -
PLOT SCALE =	DRAWN - RLK	REVISED -
PLOT DATE =	CHECKED - KEB	REVISED -
	DATE - 10/4/22	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

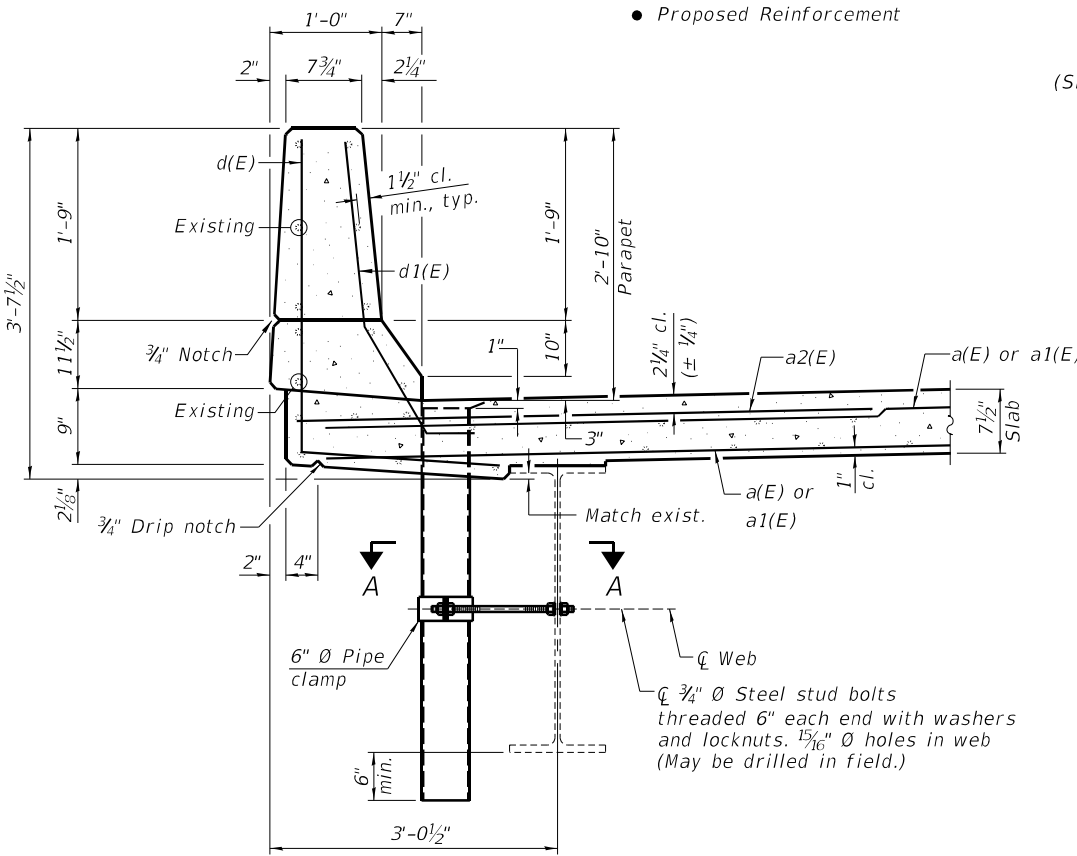
EXPANSION JOINT REPLACEMENT AT PILE BENTS
STRUCTURE NO. 060-0077

F.A.I. RTE. = 793	SECTION = T-2BJR	COUNTY = MADISON	TOTAL SHEETS = 20	SHEET NO. = 15
CONTRACT NO. 76R63				
ILLINOIS FED. AID PROJECT				

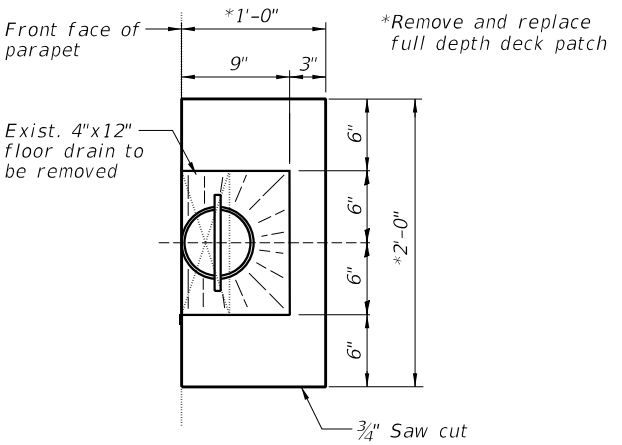


SECTION THRU EXISTING BRIDGE DECK PARAPET
(Showing removal)

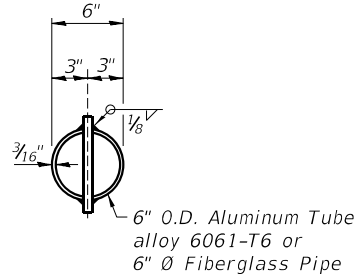
○ Existing Reinforcement
● Proposed Reinforcement



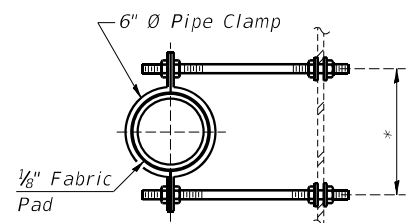
SECTION THRU PARAPET



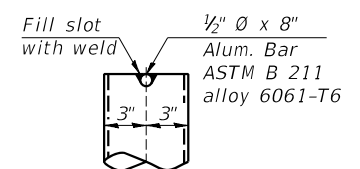
TOP PLAN AT FLOOR DRAIN
Floor drain elimination similar



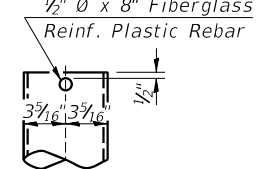
TOP PLAN
(Showing Aluminum Tube)



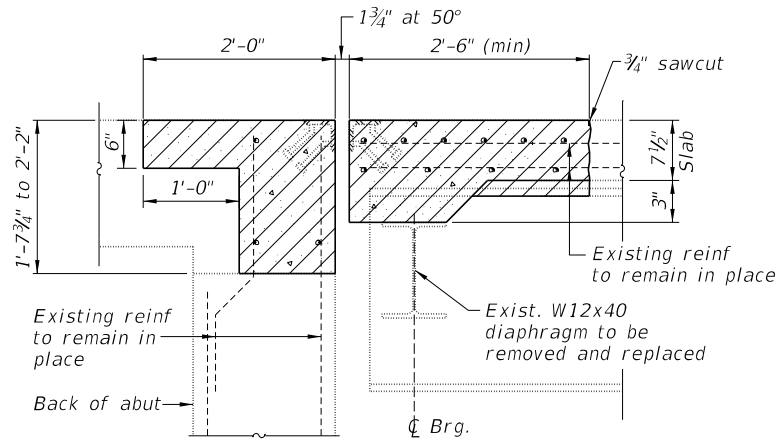
SECTION A-A



ALUMINUM TUBE

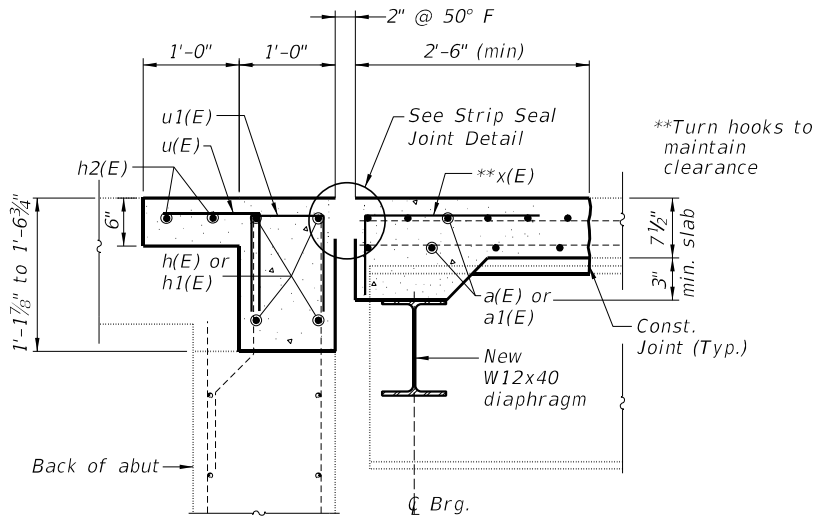


FIBERGLASS PIPE



SECTION C-C

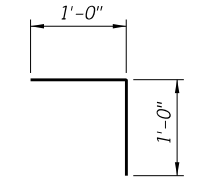
○ Existing Reinforcement
● Proposed Reinforcement



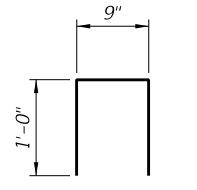
SECTION D-D

BILL OF MATERIAL

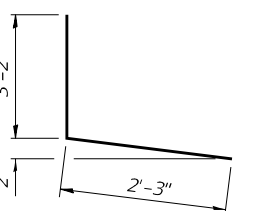
Bar	No.	Size	Length	Shape
a(E)	48	#5	22'-3"	—
a1(E)	48	#5	20'-3"	—
a2(E)	28	#6	6'-0"	—
d(E)	36	#4	5'-5"	└
d1(E)	36	#5	3'-11"	└
h(E)	8	#6	22'-3"	—
h1(E)	8	#6	20'-3"	—
h2(E)	2	#6	13'-0"	—
u(E)	14	#5	2'-0"	┌
u1(E)	88	#4	2'-9"	┌
x(E)	264	#5	2'-6"	┌
Concrete Removal			Cu. Yd.	26.4
Concrete Superstructure			Cu. Yd.	26.4
Reinforcement Bars, Epoxy Coated			Pound	4090
Bar Splicers			Each	54



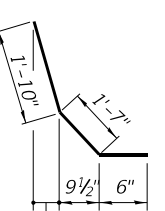
BAR u(E)



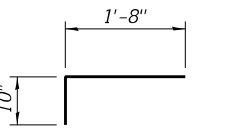
BAR u1(E)



BAR d(E)



BAR d1(E)



BAR x(E)

Notes:
 Fiberglass pipe shall conform to ASTM D2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.
 The exterior surfaces of the floor drains shall be painted according to Article 506 with the finish coat as specified. The exterior surfaces of the drains shall be cleaned according to the Society of Protective Coating's Spec. SSPC-SP1 prior to painting.
 The top portion of aluminum floor drains shall be coated to minimize reaction with wet concrete.
 The clamping device shall be galvanized according to AASHTO M 232. Cost of clamping device included with Floor Drains.
 The Polyurethane Sealant shall be according to Article 1050.04 of the Std. Spec. and the color shall be gray.
 Floor Drain concrete work shall be paid for as Concrete Removal and Deck Slab Repair (Full Depth, Type I). See Sheet 9 of 14 for Section C-C and D-D locations at West Abutment only.

MODEL: Default
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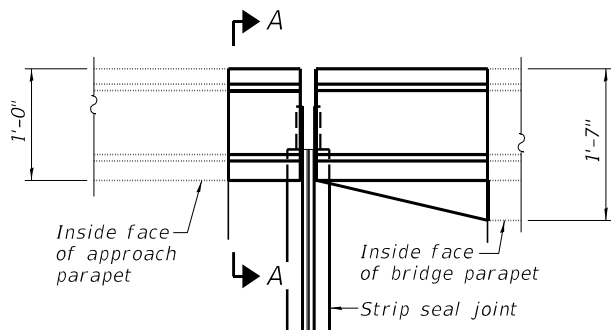
CHASTAIN & ASSOCIATES LLC
 CONSULTING ENGINEERS
 184-001397

USER NAME =	DESIGNED - KEB	REVISED -
PLOT SCALE =	DRAWN - RLK	REVISED -
PLOT DATE =	CHECKED - KEB	REVISED -
	DATE - 10/4/22	REVISED -

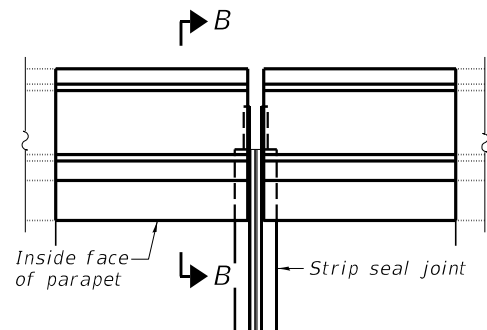
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 060-0077
 SHEET 11 OF 14 SHEETS

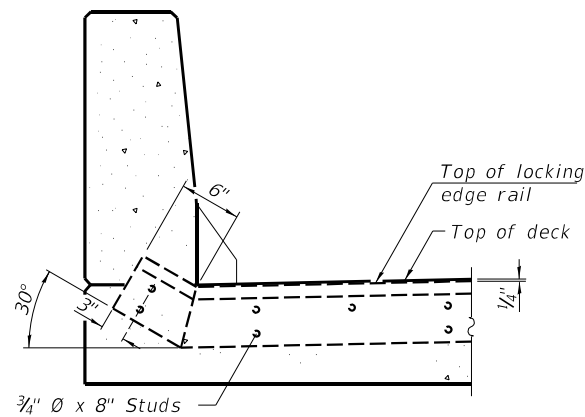
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
793	T-2BJR	MADISON	20	16
CONTRACT NO. 76R63				
ILLINOIS FED. AID PROJECT				



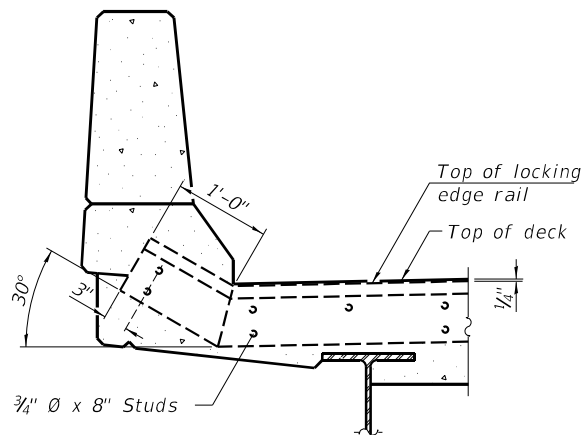
PLAN AT ABUTMENTS



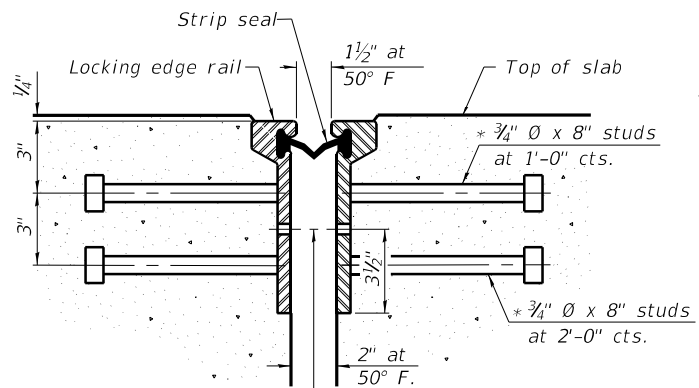
PLAN AT PIER BENT



SECTION A-A

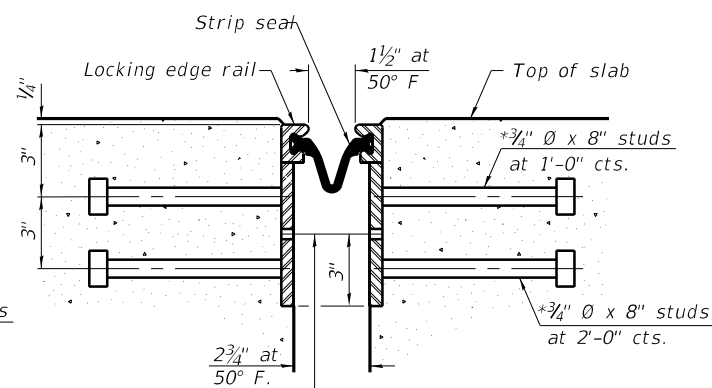


SECTION B-B



SECTION THRU ROLLED RAIL JOINT

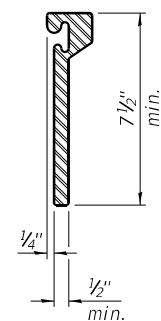
1/16" Ø holes at 4'-0" cts. for 3/8" Ø bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.



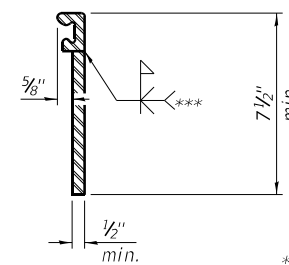
SECTION THRU WELDED RAIL JOINT

1/16" Ø holes at 4'-0" cts. for 3/8" Ø bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

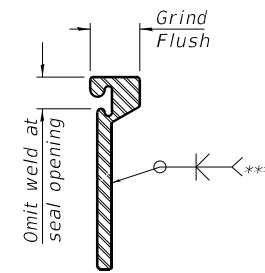
* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



ROLLED EXTRUDED RAIL



WELDED RAIL



LOCKING EDGE RAIL SPLICE

*** Back gouge not required if complete joint penetration is verified by mock-up.

The inside of the locking edge rail groove shall be free of weld residue. Rolled rail shown, welded rail similar.

LOCKING EDGE RAILS

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

The Locking Edge Rails depicted are conceptual only, except for the minimum dimensions shown. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities.

The manufacturer's recommended installation methods shall be followed.

The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State.

All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

Maximum space between rail segments shall be 3/16", sealed with a suitable sealant. Joints in rails within 10 ft. of curbs shall be welded.

Parapet plates and anchorage studs for skews > 30° included in the cost of Preformed Joint Strip Seal.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	166

MODEL: Default
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CHASTAIN & ASSOCIATES LLC
CONSULTING ENGINEERS
184-001397

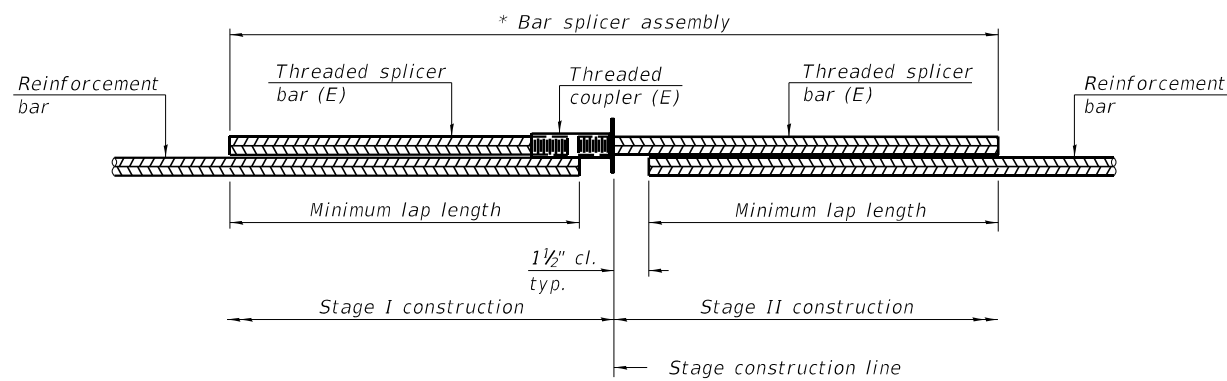
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 060-0077

SHEET 12 OF 14 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
793	T-2BJR	MADISON	20	17
CONTRACT NO. 76R63				
ILLINOIS FED. AID PROJECT				

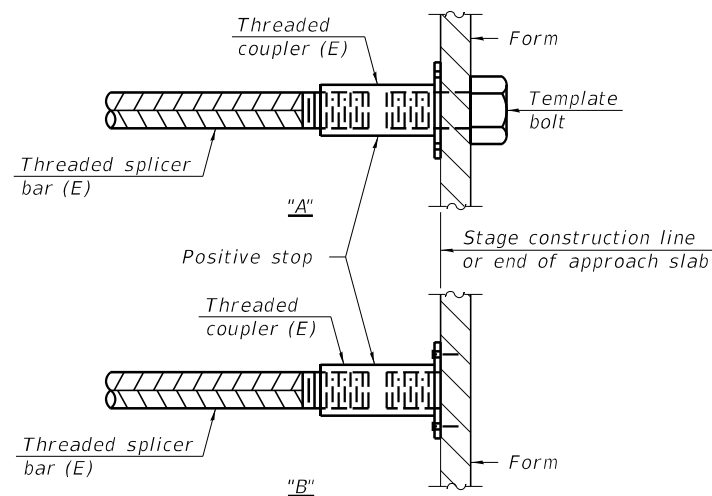


STANDARD BAR SPLICER ASSEMBLY PLAN
 (All components shall be provided from one supplier)

Threaded splicer bar length = min. lap length + 1 1/2" + 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
Abutments	#6	6	4'-0"
Piers	#5	48	3'-6"

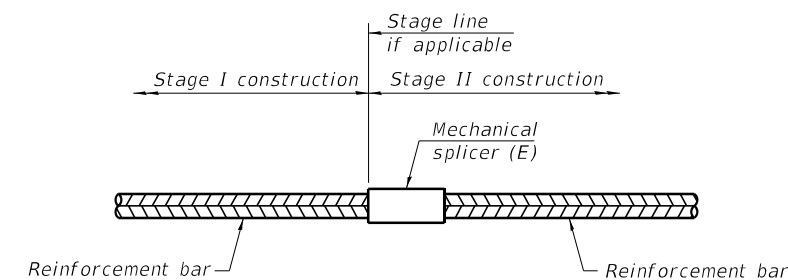


INSTALLATION AND SETTING METHODS

"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

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.

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BSD-1

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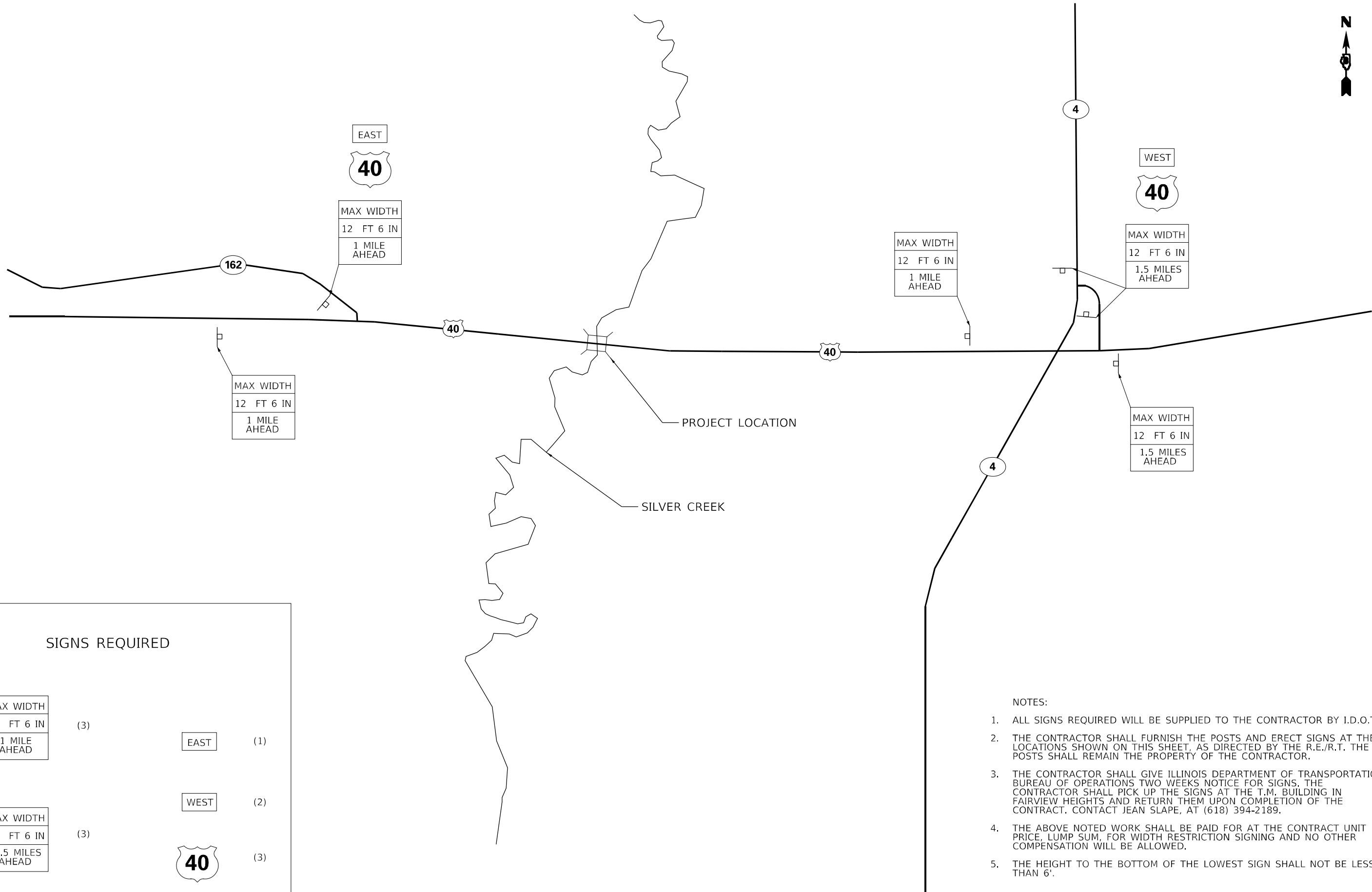
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PLOT DATE =	DATE - 10/4/22	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
 STRUCTURE NO. 060-0077

SHEET 13 OF 14 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
793	T-2BJR	MADISON	20	18
CONTRACT NO. 76R63				
ILLINOIS FED. AID PROJECT				



SIGNS REQUIRED

MAX WIDTH 12 FT 6 IN 1 MILE AHEAD	(3)	EAST	(1)
MAX WIDTH 12 FT 6 IN 1.5 MILES AHEAD	(3)	WEST	(2)
		40	(3)

NOTES:

1. ALL SIGNS REQUIRED WILL BE SUPPLIED TO THE CONTRACTOR BY I.D.O.T.
2. THE CONTRACTOR SHALL FURNISH THE POSTS AND ERECT SIGNS AT THE LOCATIONS SHOWN ON THIS SHEET, AS DIRECTED BY THE R.E./R.T. THE POSTS SHALL REMAIN THE PROPERTY OF THE CONTRACTOR.
3. THE CONTRACTOR SHALL GIVE ILLINOIS DEPARTMENT OF TRANSPORTATION, BUREAU OF OPERATIONS TWO WEEKS NOTICE FOR SIGNS. THE CONTRACTOR SHALL PICK UP THE SIGNS AT THE T.M. BUILDING IN FAIRVIEW HEIGHTS AND RETURN THEM UPON COMPLETION OF THE CONTRACT. CONTACT JEAN SLAPE, AT (618) 394-2189.
4. THE ABOVE NOTED WORK SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE, LUMP SUM, FOR WIDTH RESTRICTION SIGNING AND NO OTHER COMPENSATION WILL BE ALLOWED.
5. THE HEIGHT TO THE BOTTOM OF THE LOWEST SIGN SHALL NOT BE LESS THAN 6'.

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USER NAME = Nathan.Cox	DESIGNED -	REVISED -
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PLOT DATE = 2/8/2023	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

WIDTH RESTRICTION SIGNING PLAN

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

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
793	T-2BJR	MADISON	20	20
CONTRACT NO. 76R63				
ILLINOIS FED. AID PROJECT				