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File Name: p:\p\teraeng_gw_bentley.com\teraeng_gw_01\Documents\Projects\2024\24-206-010 US 150 over Mud Creek\CADD Data\Sheets\24-206-010-SHT-500-002.dgn

				CONSTR. CODE
				100% STATE
				BRIDGE
				0047
ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	090-0043
50800515	BAR SPLICERS	EACH	24	24
52000110	PREFORMED JOINT STRIP SEAL	FOOT	72	72
52100010	ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	12	12
52100510	ANCHOR BOLTS, 3/4"	EACH	24	24
52100520	ANCHOR BOLTS, 1"	EACH	24	24
59000200	EPOXY CRACK INJECTION	FOOT	93	93
*	63000001	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	FOOT	638
*	63100085	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	4
*	63100169	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) FLARED	EACH	4
	63200310	GUARDRAIL REMOVAL	FOOT	804
	67100100	MOBILIZATION	L SUM	1
	70100405	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321	EACH	1
	70100500	TRAFFIC CONTROL AND PROTECTION, STANDARD 701326	L SUM	1
	70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1
	70106700	TEMPORARY RUMBLE STRIPS	EACH	6
	70107025	CHANGEABLE MESSAGE SIGN	CAL DA	14

*= SPECIALTY ITEM



USER NAME	■ RundD
PLOT SCALE	■ 20,000' / in.
PLOT DATE	■ 1/22/2025

DESIGNED	-	XEL
DRAWN	-	XEL
CHECKED	-	CEM
DATE	-	

REVISED	-
REVISED	-
REVISED	-
REVISED	-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES
US 150 OVER MUD CREEK

SCALE:	SHEET	OF	SHEETS	STA.	TO STA.
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F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2466	(6BR-1)BRR	TAEWELL	37	4
CONTRACT NO. 68J42				
ILLINOIS FED. AID PROJECT				

Model: Default
File Name: p:\terraeng-pw-bentley.com\terraeng-pw-01\Documents\Projects\2024\24-206-010 US 150 over Mud Creek\CADD Data\Sheet24-206-010-SHT-500-003.dgn

				CONSTR. CODE
				100% STATE
				BRIDGE
				0047
ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	090-0043
70400100	TEMPORARY CONCRETE BARRIER	FOOT	313	313
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	313	313
70600250	IMPACT ATTENUATORS, TEMPORARY (NON- REDIRECTIVE), TEST LEVEL 3	EACH	2	2
70600350	IMPACT ATTENUATORS, RELOCATE (NON- REDIRECTIVE), TEST LEVEL 3	EACH	2	2
* 72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4	4
* 78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	1,629	1,629
* 78200006	GUARDRAIL REFLECTORS, TYPE B	EACH	18	18
* 78200011	BARRIER WALL REFLECTORS, TYPE C	EACH	12	12
78300202	PAVEMENT MARKING REMOVAL - WATER BLASTING	SQ FT	543	543
X5015225	PIPE CULVERT REMOVAL (SPECIAL)	FOOT	24	24
X6050310	FILLING INLETS (SPECIAL)	EACH	2	2
Z0001002	GUARDRAIL AGGREGATE EROSION CONTROL	TON	210	210
Z0001899	JACK AND REMOVE EXISTING BEARINGS	EACH	12	12
X5051206	STRUCTURAL STEEL REPAIR	POUND	310	310

*= SPECIALTY ITEM



USER NAME = RundD	DESIGNED - XEL	REVISED -
	DRAWN - XEL	REVISED -
PLOT SCALE = 20.000 ' / in.	CHECKED - CEM	REVISED -
PLOT DATE = 3/10/2025	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

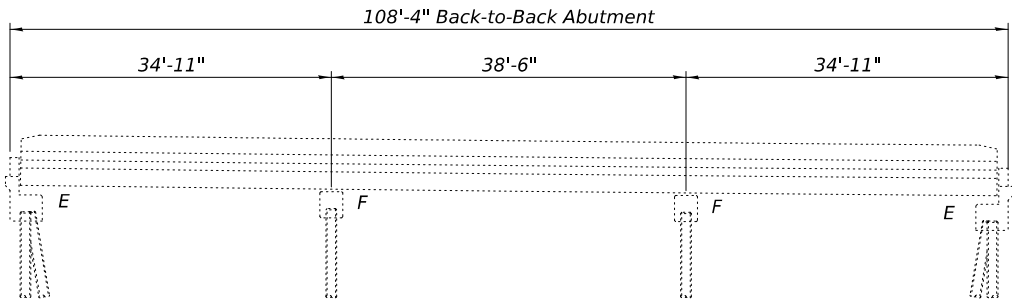
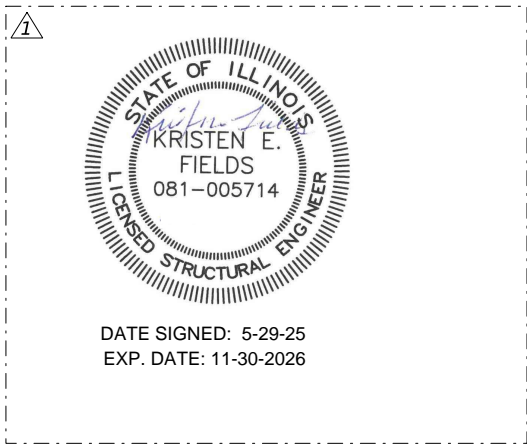
SUMMARY OF QUANTITIES
US 150 OVER MUD CREEK

SCALE: SHEET OF SHEETS STA. TO STA.

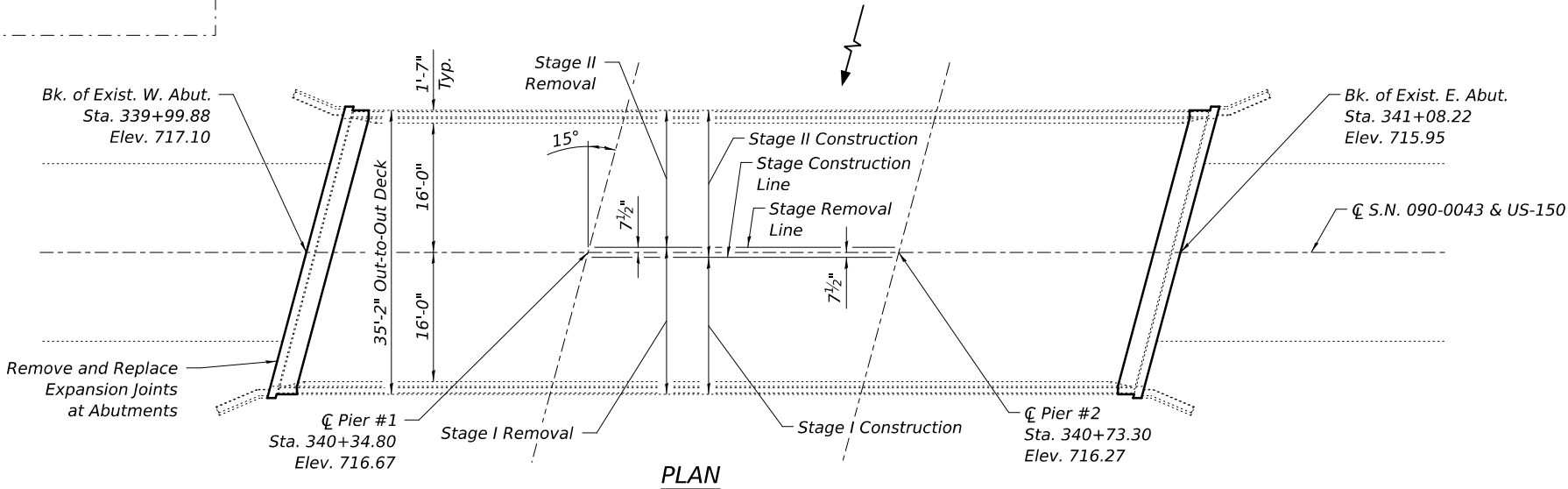
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2466	(BBR-1)BRR	TAZEWELL	37	5
CONTRACT NO. 68J42				
ILLINOIS FED. AID PROJECT				

Existing Structure: S.N. 090-0043 was originally constructed in 1955 as SBI Route 9, Section 6BR and the superstructure deck of the original structure was removed and replaced as Section 6BR-I in 1984. The existing structure consists of 3 spans and is a 7½" thick reinforced concrete deck supported by 6, W24x84 steel beams. Back-to-back of abutments is 108'-4" and out-to-out of deck is 35'-2". Traffic is to remain open with staged construction.

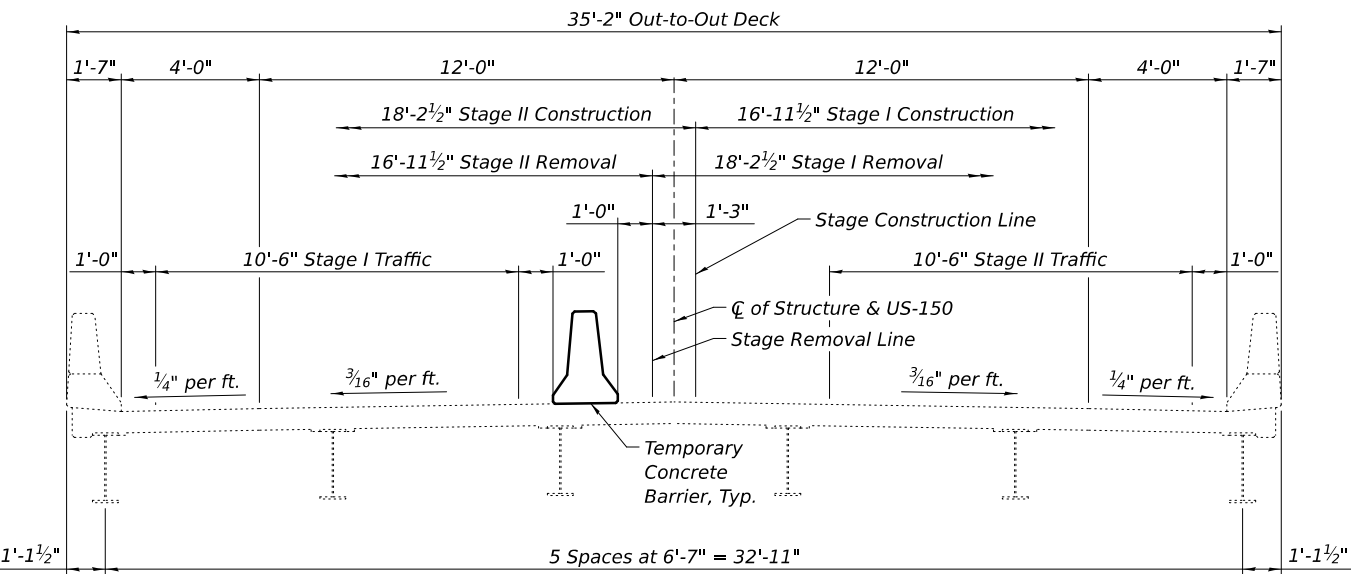
Salvage: None



ELEVATION



PLAN



CROSS SECTION
(Looking East)

GENERAL NOTES

All structural steel shall be AASHTO M 270 Grade 36 unless otherwise noted. Reinforcement bars designated (E) shall be epoxy coated. 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. 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. 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. 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° Fahrenheit.

INDEX OF SHEETS

- General Plan & Elevation
- West Abutment Expansion Joint Details
- East Abutment Expansion Joint Details
- Parapet Removal & Replacement Details
- Preformed Joint Strip Seal
- Bar Splicer Assembly & Mechanical Splicer Details
- Beam End Repairs
- Bearing Details
- West Abutment Substructure Repairs
- East Abutment Substructure Repairs
- West Pier Substructure Repairs
- East Pier Substructure Repairs

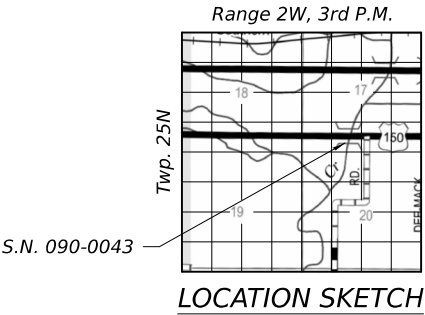
SCOPE OF WORK

- Remove and replace existing expansion joints with new preformed joint strip seals.
- Jack and crib existing steel beams as indicated in the plans. Perform beam end repairs as indicated in the plans. Remove and replace existing bearings with new elastomeric bearings at abutments.
- Apply Protective Coat to the top and inside faces of parapets, bridge deck, and hatch block.
- Perform substructure unit repairs as indicated in the plans.

TOTAL BILL OF MATERIAL

Item	Unit	Total
Concrete Removal	Cu Yd	10.7
Concrete Superstructure	Cu Yd	10.5
* Protective Coat	Sq Yd	27
Furnishing and Erecting Structural Steel	Pound	1,330
Reinforcement Bars, Epoxy Coated	Pound	1,500
Bar Splicers	Each	24
Preformed Joint Strip Seal	Foot	72
Elastomeric Bearing Assembly, Type I	Each	12
Anchor Bolts, 1"	Each	24
Epoxy Crack Injection	Foot	88
Jack and Remove Existing Bearings	Each	12
Structural Steel Repair	Pound	310
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq Ft	91
Temporary Shoring and Cribbing	Each	3

* Apply to new concrete only.



LOCATION SKETCH

GENERAL PLAN & ELEVATION

US 150 OVER MUD CREEK

US 150 (FAS 2466) - SECTION (6BR-1)BRR

TAZEWELL COUNTY

STATION 340+54.05

STRUCTURE NO. 090-0043



USER NAME =	DESIGNED - AJF	REVISED - 05/29/2025 LMR
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PLOT DATE =	CHECKED - DDB	REVISED -

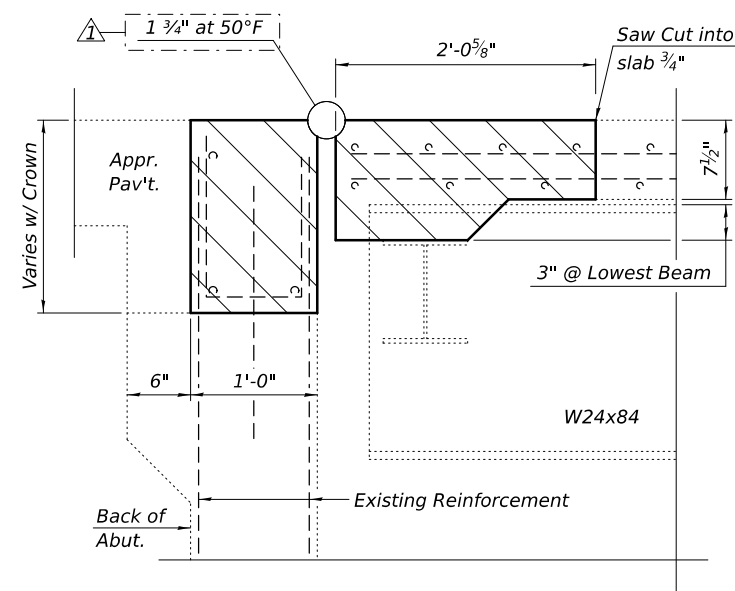
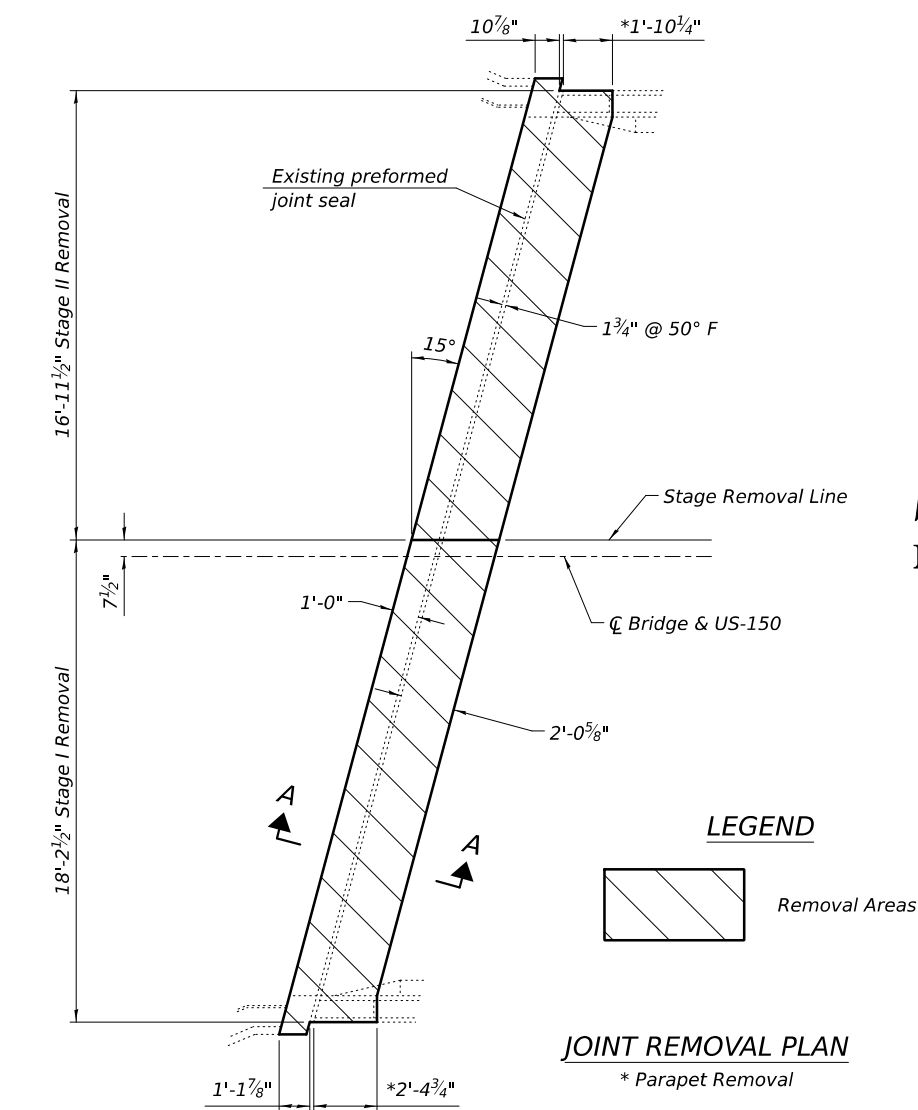
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
STRUCTURE NO. 090-0043

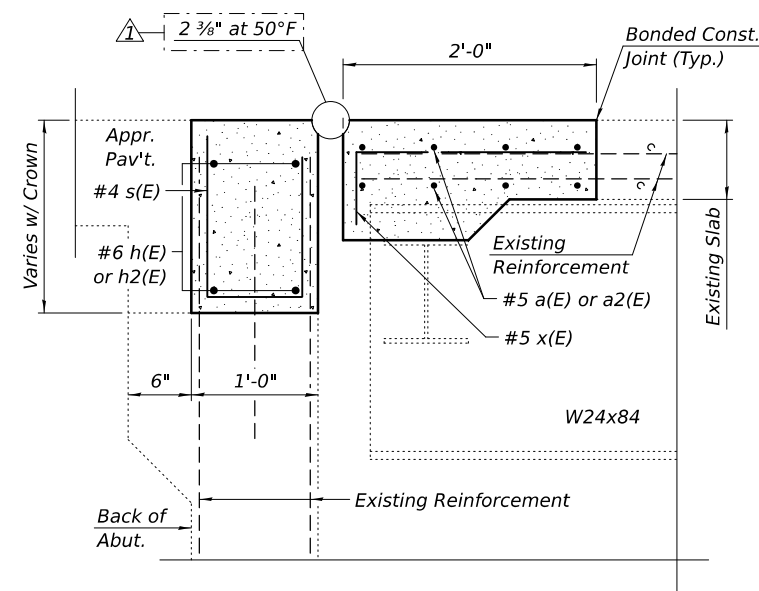
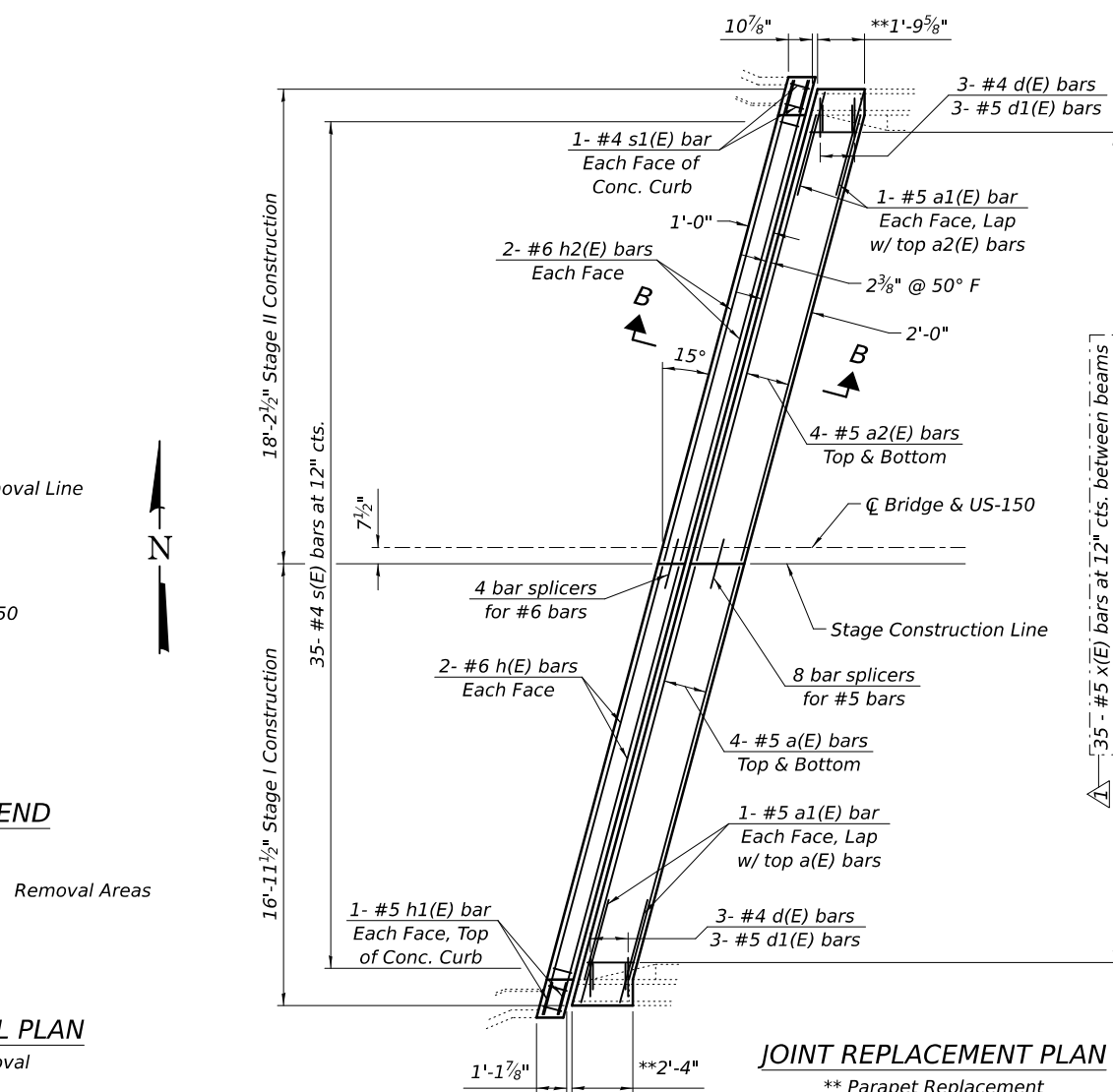
SHEET 1 OF 12 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2466	(6BR-1)BRR	TAZEWELL	37	15
CONTRACT NO. 68J42				
ILLINOIS FED. AID PROJECT				

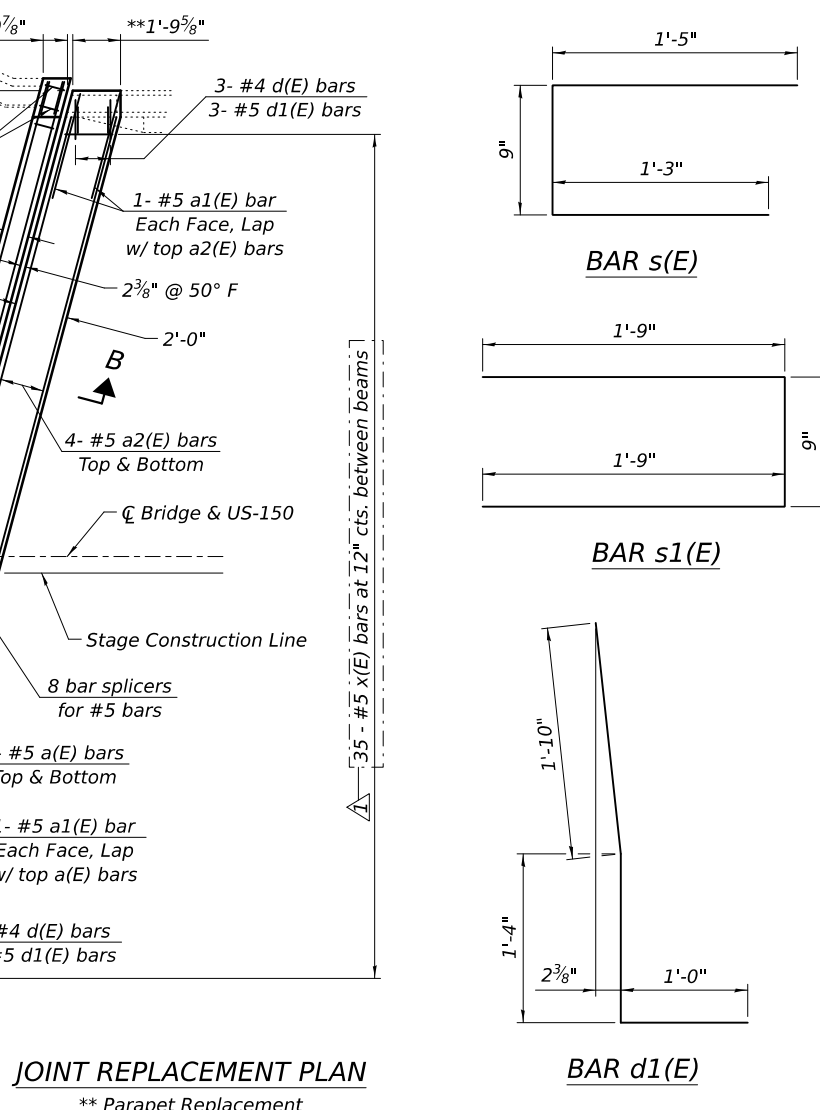
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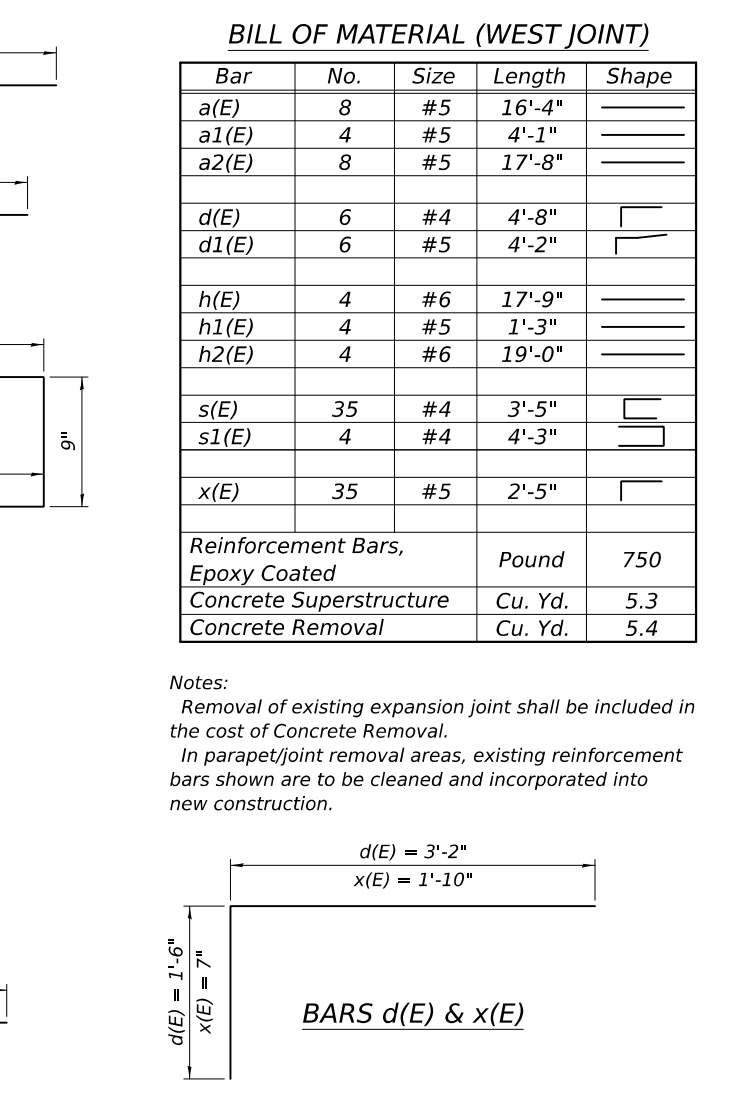
JOINT REMOVAL SECTION A-A



JOINT REPLACEMENT SECTION B-B



PARAPET REMOVAL CROSS-SECTION

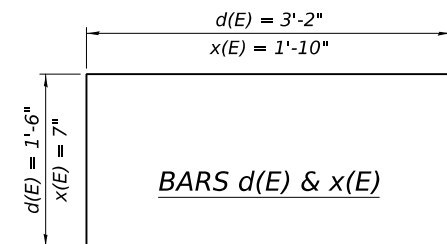


PARAPET REPLACEMENT CROSS-SECTION

BILL OF MATERIAL (WEST JOINT)

Bar	No.	Size	Length	Shape
a(E)	8	#5	16'-4"	
a1(E)	4	#5	4'-1"	
a2(E)	8	#5	17'-8"	
d(E)	6	#4	4'-8"	
d1(E)	6	#5	4'-2"	
h(E)	4	#6	17'-9"	
h1(E)	4	#5	1'-3"	
h2(E)	4	#6	19'-0"	
s(E)	35	#4	3'-5"	
s1(E)	4	#4	4'-3"	
x(E)	35	#5	2'-5"	
Reinforcement Bars, Epoxy Coated			Pound	750
Concrete Superstructure			Cu. Yd.	5.3
Concrete Removal			Cu. Yd.	5.4

Notes:
Removal of existing expansion joint shall be included in the cost of Concrete Removal.
In parapet/joint removal areas, existing reinforcement bars shown are to be cleaned and incorporated into new construction.



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PLOT DATE =	CHECKED - DDB	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

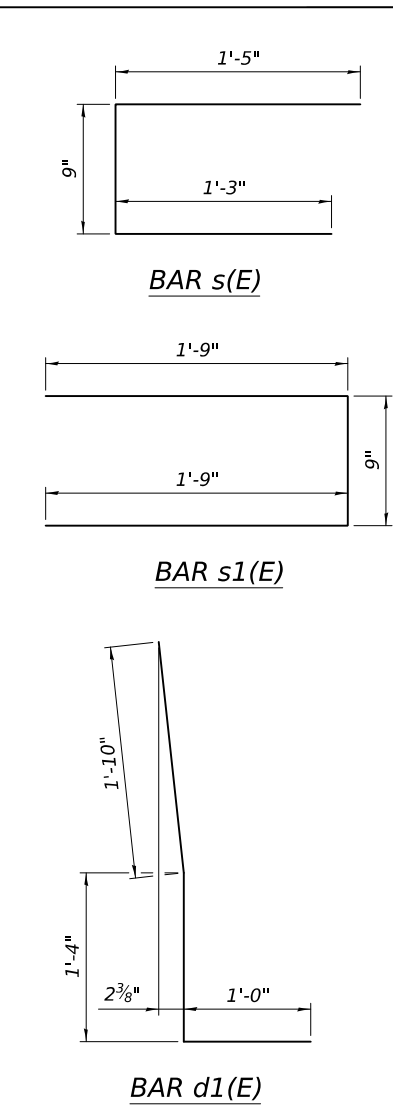
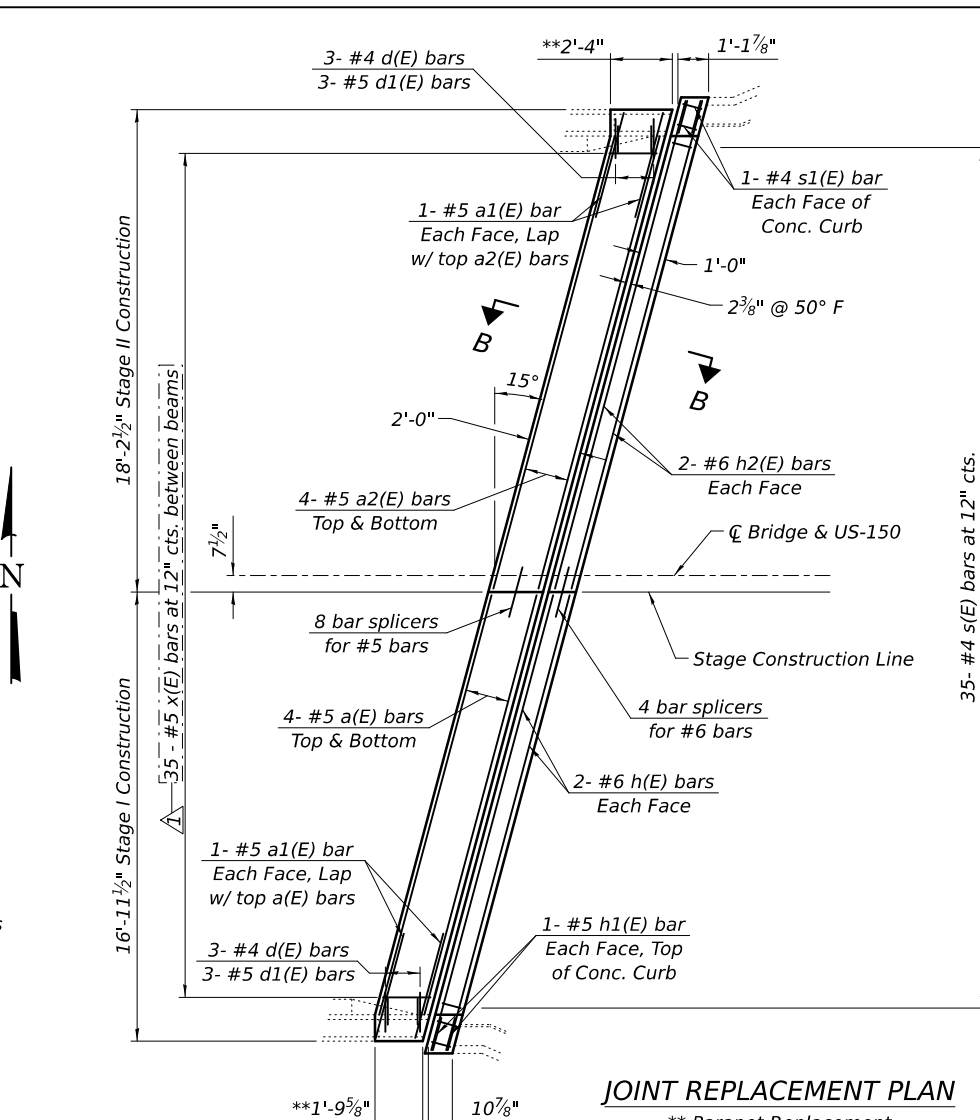
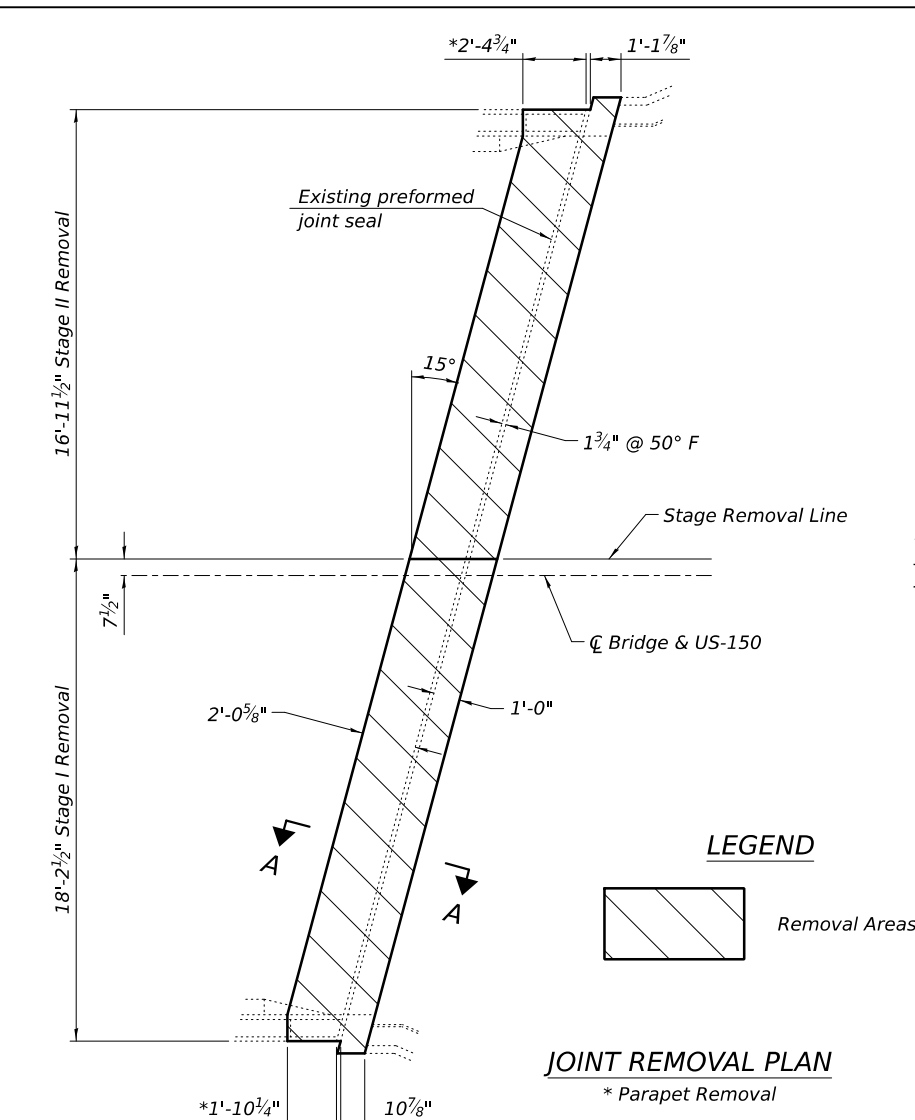
WEST ABUTMENT EXPANSION JOINT DETAILS
STRUCTURE NO. 090-0043

SHEET 2 OF 12 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2466	(6BR-1)BRR	TAZEWELL	37	16
CONTRACT NO. 68J42				
ILLINOIS FED. AID PROJECT				

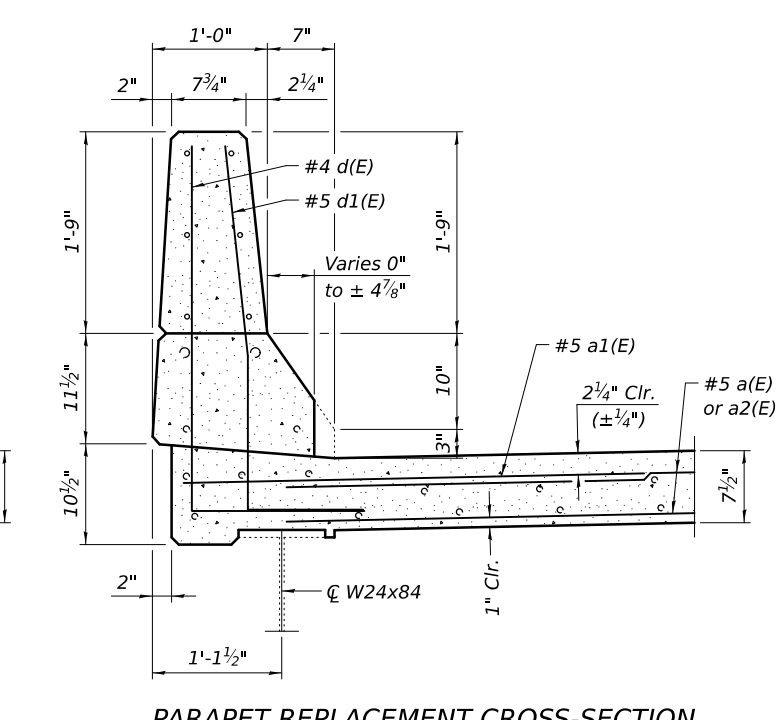
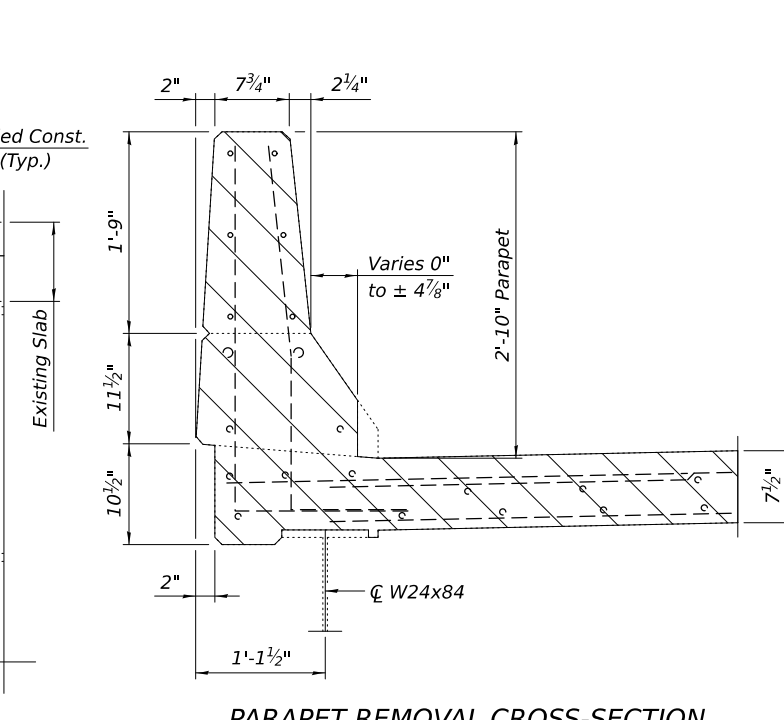
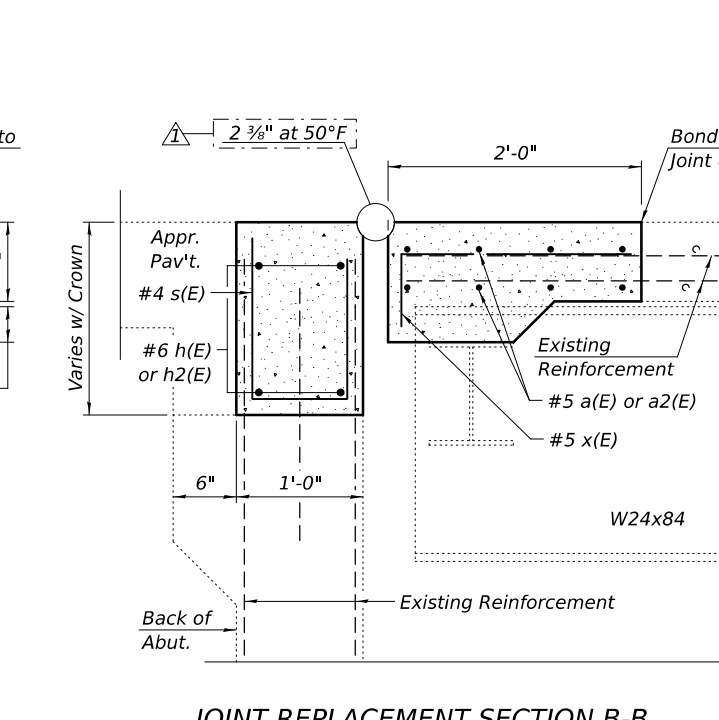
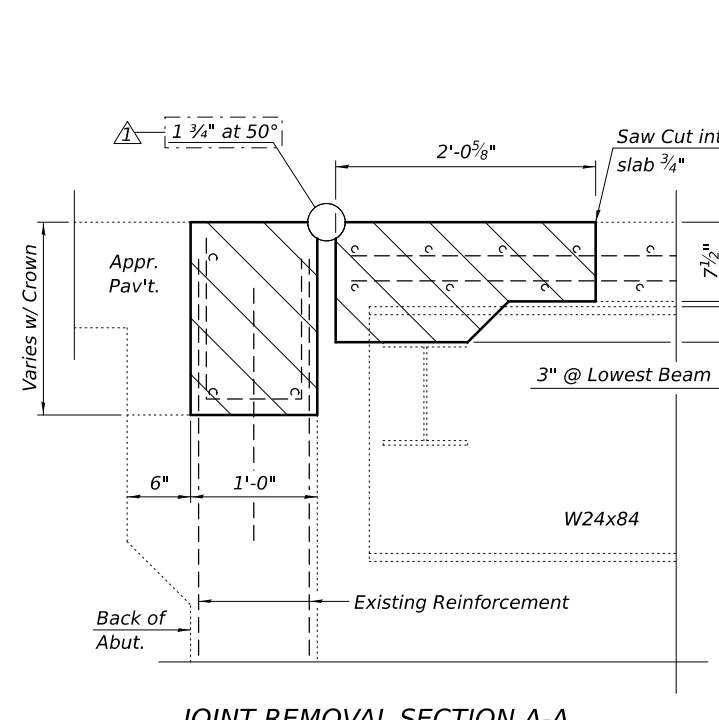
REV. 5/30/25

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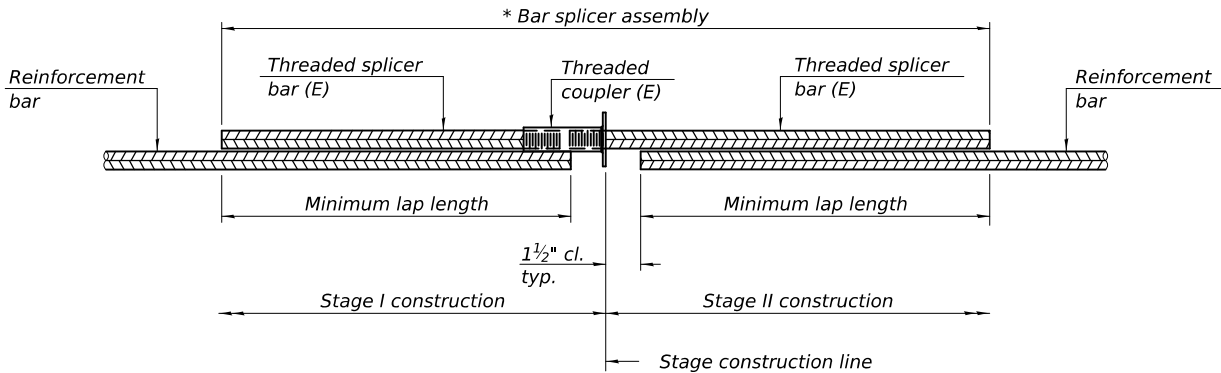


BILL OF MATERIAL (EAST JOINT)				
Bar	No.	Size	Length	Shape
a(E)	8	#5	16'-4"	
a1(E)	4	#5	4'-1"	
a2(E)	8	#5	17'-8"	
d(E)	6	#4	4'-8"	
d1(E)	6	#5	4'-2"	
h(E)	4	#6	17'-9"	
h1(E)	4	#5	1'-3"	
h2(E)	4	#6	19'-0"	
s(E)	35	#4	3'-5"	
s1(E)	4	#4	4'-3"	
x(E)	35	#5	2'-5"	
Reinforcement Bars, Epoxy Coated			Pound	750
Concrete Superstructure			Cu. Yd.	5.2
Concrete Removal			Cu. Yd.	5.3

Notes:
Removal of existing expansion joint shall be included in the cost of Concrete Removal.
In parapet/joint removal areas, existing reinforcement bars shown are to be cleaned and incorporated into new construction.



MODEL: Border
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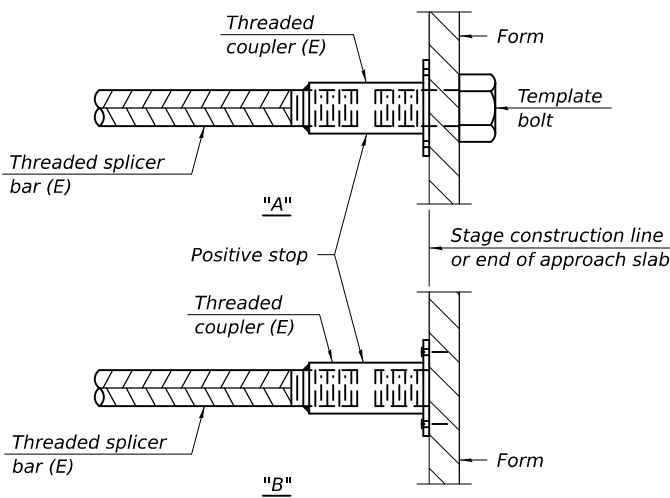
STANDARD BAR SPLICER ASSEMBLY PLAN

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
West Abutment	#5	8	3'-10"
West Abutment	#6	4	4'-5"
East Abutment	#5	8	3'-10"
East Abutment	#6	4	4'-5"

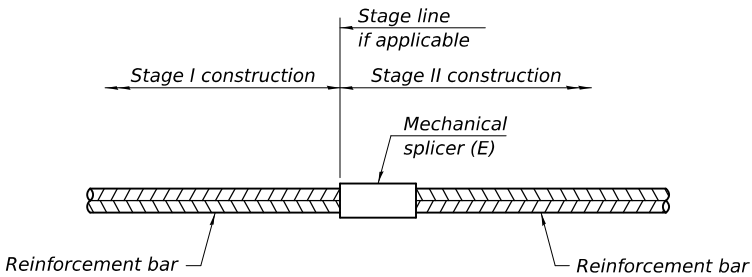


INSTALLATION AND SETTING METHODS

"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.

BSD-1

5-15-2023



USER NAME =	DESIGNED - AJF	REVISED - 05/29/2025 LMR
	CHECKED - DDB	REVISED -
PLOT SCALE =	DRAWN - AJF	REVISED -
PLOT DATE =	CHECKED - DDB	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

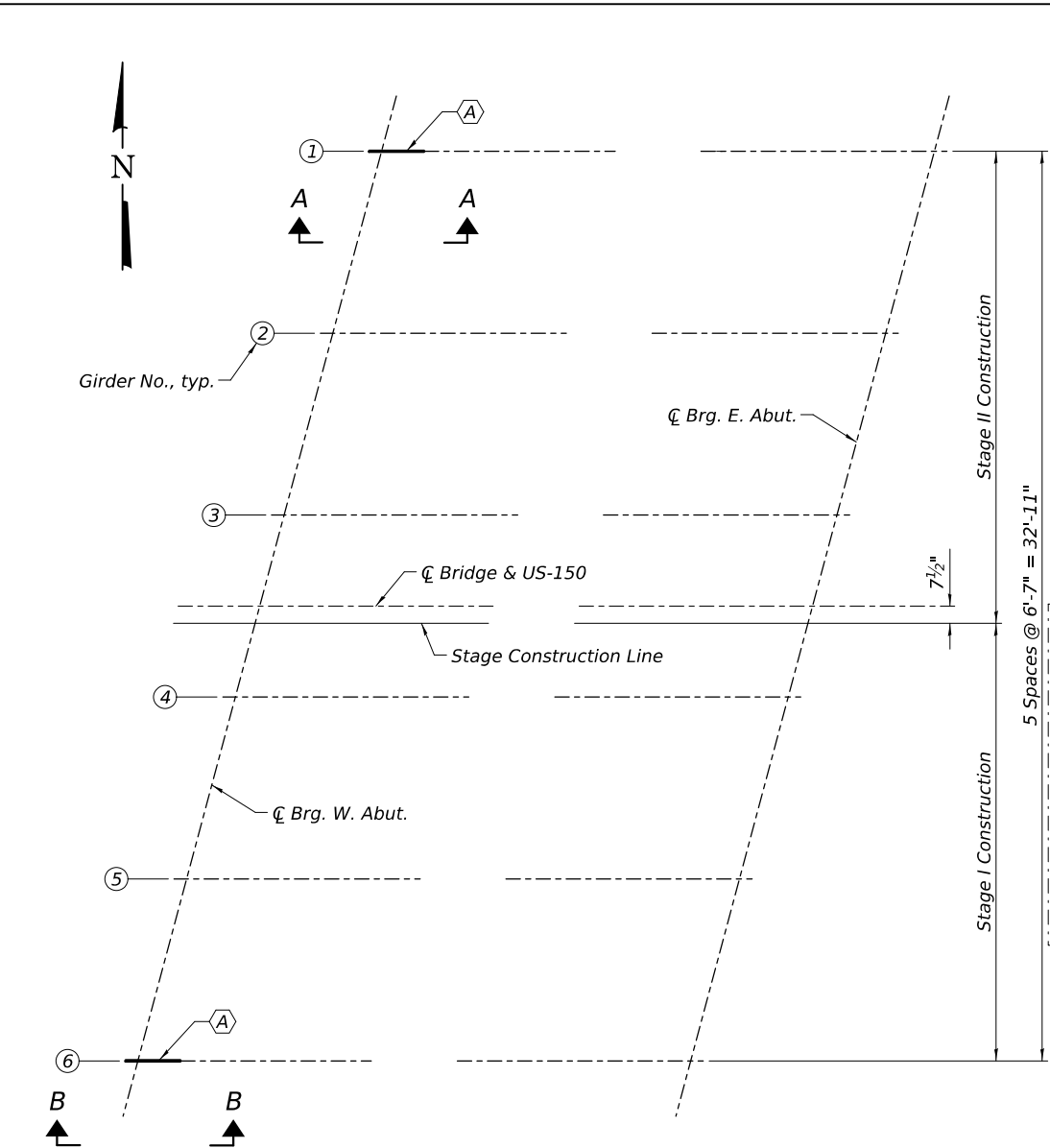
BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 090-0043

SHEET 6 OF 12 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2466	(6BR-1)BRR	TAZEWELL	37	20
CONTRACT NO. 68J42				
		ILLINOIS	FED. AID PROJECT	

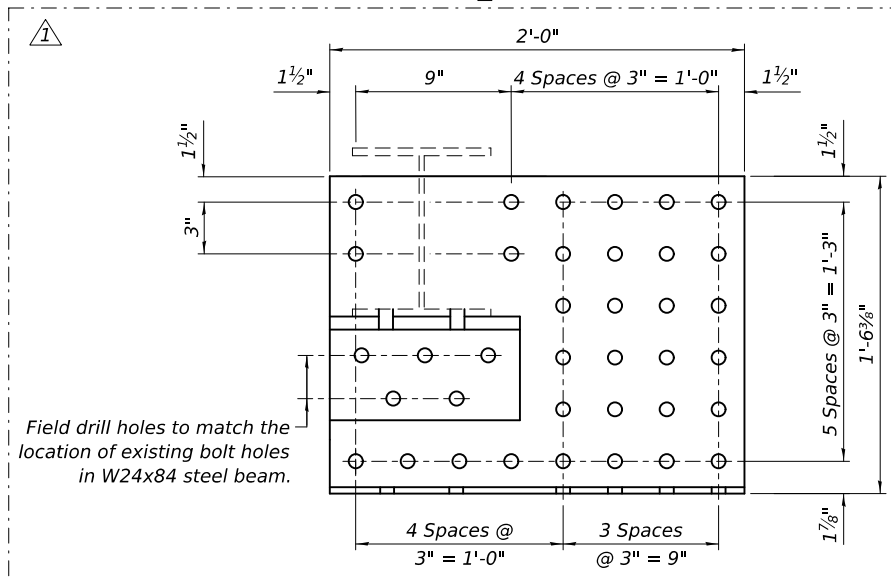
REV. 5/30/25

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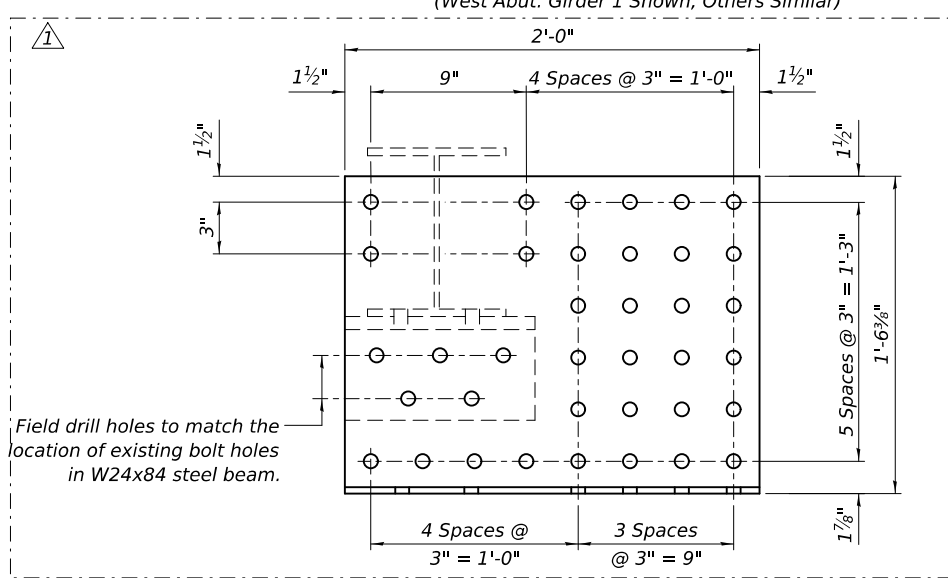
PARTIAL FRAMING PLAN

A - Beam End Repair



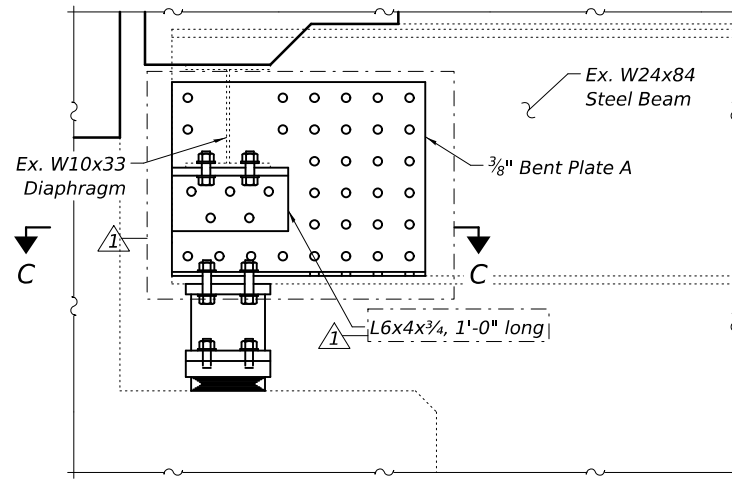
BENT PLATE A

(2 Required)

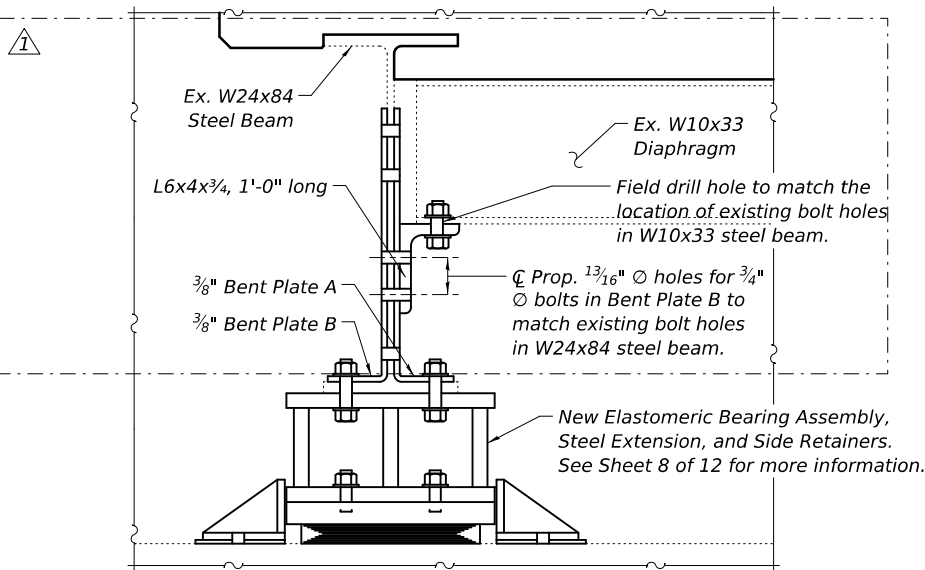


BENT PLATE B

(2 Required)

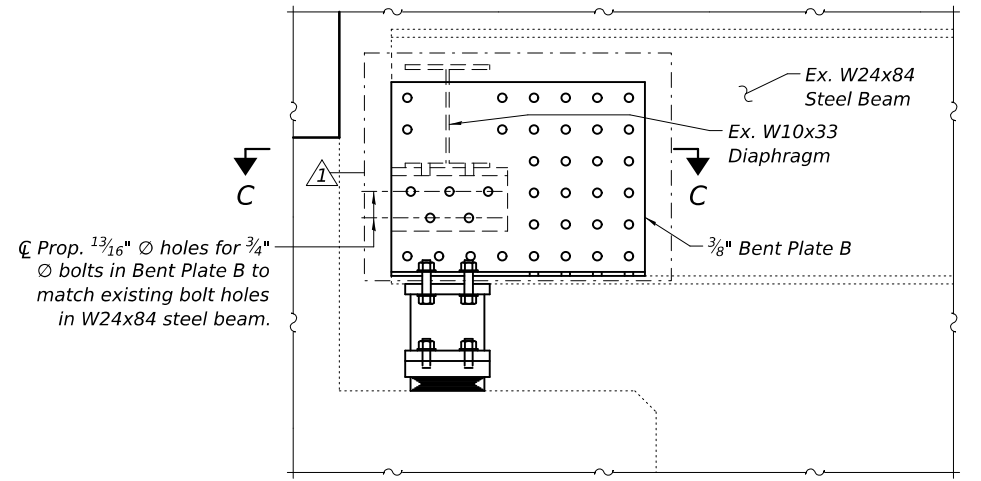


VIEW A-A

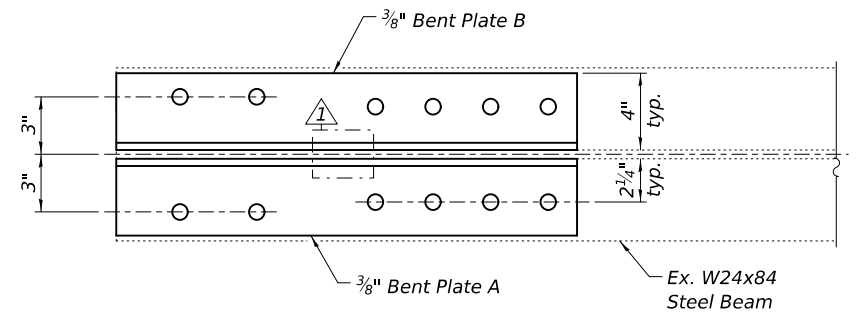


BEAM END REPAIR "A"

(West Abut. Girder 1 Shown, Others Similar)



VIEW B-B



SECTION C-C

(West Abut. Girder 1 Shown, Others Similar)

Notes:

All structural steel shall be AASHTO M 270 Grade 36, unless otherwise noted.

All repair materials including structural steel plates, bolts, nuts, and washers shall be galvanized per the special provision "Hot Dip Galvanizing for Structural Steel". Cost included in Structural Steel Repair.

Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts.

Bolts 3/4" O, holes 1 3/16" O, unless otherwise noted.

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".

Use holes in new steel as template to field drill holes in existing steel.

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

Structural Steel Repair quantity shown includes structural steel plates, angles, bolts, and nuts.

BILL OF MATERIAL

Item	Unit	Total
Structural Steel Repair	Pound	310



USER NAME =	DESIGNED - AJF	REVISED - 05/29/2025 LMR
PLOT SCALE =	CHECKED - DDB	REVISED -
PLOT DATE =	DRAWN - AJF	REVISED -
	CHECKED - DDB	REVISED -

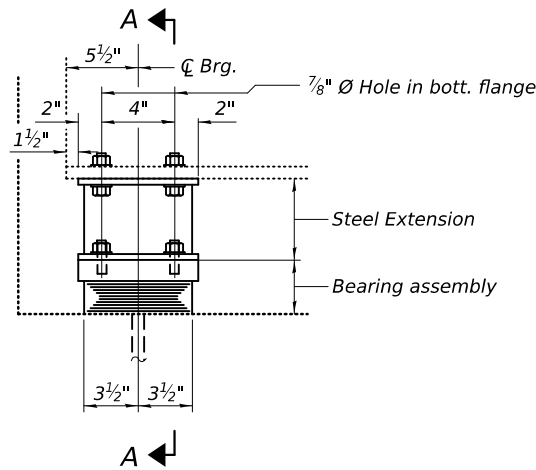
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**BEAM END REPAIRS
STRUCTURE NO. 090-0043**

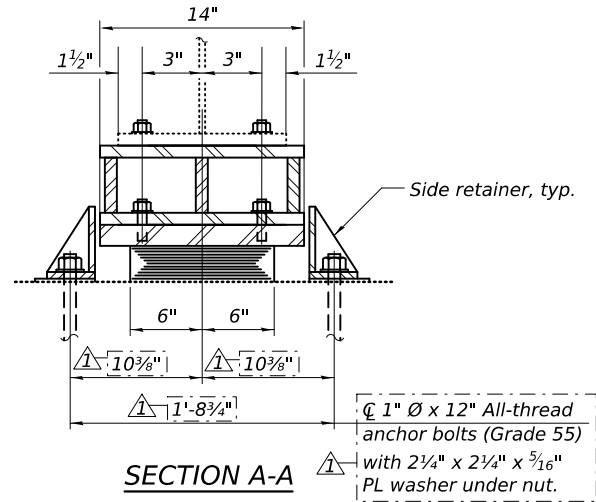
SHEET 7 OF 12 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2466	(6BR-1)BRR	TAZEWELL	37	21
CONTRACT NO. 68J42				
ILLINOIS FED. AID PROJECT				

MODEL: Border
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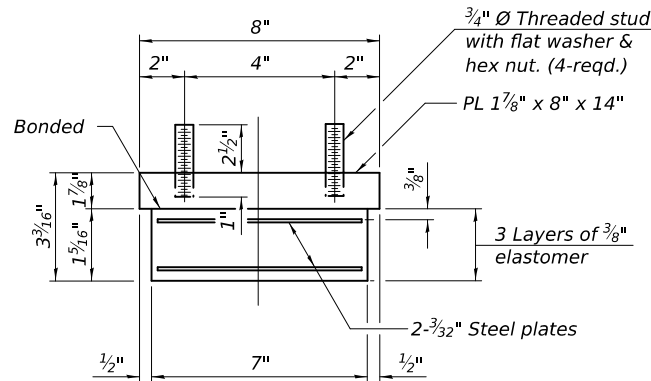


ELEVATION AT ABUT.



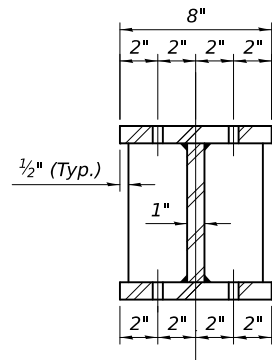
SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.

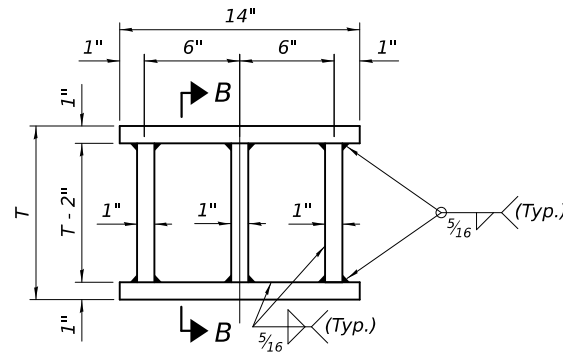


BEARING ASSEMBLY

Note:
Shim plates shall not be placed
under bearing assembly.

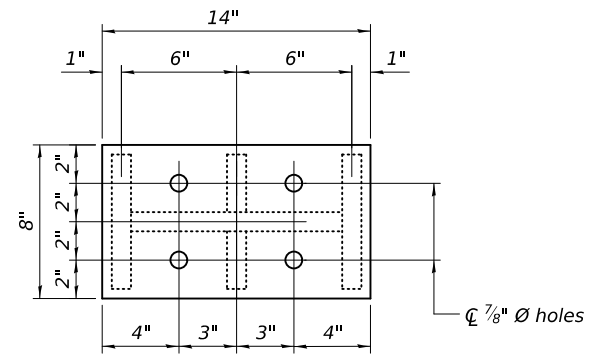


SECTION B-B



STEEL EXTENSION DETAIL

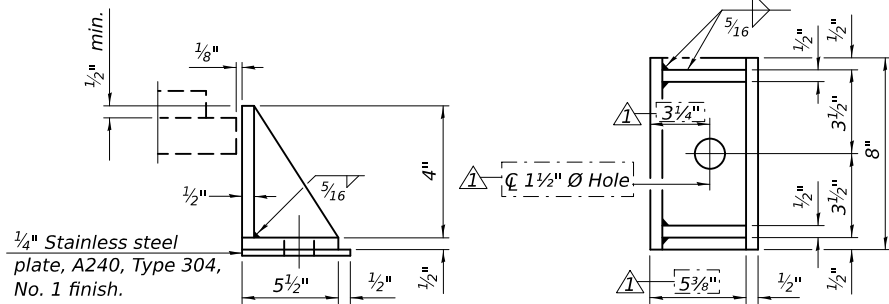
For dimension "T" see Steel Extension Height Table



PLAN TOP & BOTTOM PLATE

Notes:

Side retainers and stainless steel plates shall be included in the cost of Elastomeric Bearing Assembly, Type I.
Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates and shims and shall be placed as shown on the bearing details.
Adjusting shim plates, if necessary, shall be placed on top of the steel extension. No more than two shim plates may be used at each bearing.
Cost of shim plates, steel extensions and bolts included with Furnishing and Erecting Structural Steel.
Minimum jack capacity = 15 Tons (Includes weight of all steel, concrete, and HMA).
If the analysis submitted to the Contractor for the jacking/temporary support system to be used shows temporary stiffeners are required to prevent web crippling or buckling, the stiffeners shall be steel and bolted to the web. If stiffeners are not required, hardwood timbers shall be installed tightly between the top and bottom flange to prevent flange rotation.
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
All structural steel shall be AASHTO M 270 Grade 36, unless otherwise noted.
All steel included in Furnishing and Erecting Structural Steel including all steel bearing plates, steel extensions, filling Structural Steel including all steel bearing plates, steel extensions, and shim plates, side retainers, anchor bolts, nuts, washers, and pintles shall be galvanized according to AASHTO M111 or M232 as applicable.
Anchor bolts and side retainers at all supports shall be installed simultaneously with each new Elastomeric Bearing Assembly, Type I unless an equivalent temporary means of lateral restraint is used.



SIDE RETAINER

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

STEEL EXTENSION HEIGHT "T" TABLE

Location	Beams 1-3 and 6	Beam 4	Beam 5
West Abutment	6' 15/16"	7' 3/16"	7' 5/16"
East Abutment	6' 15/16"	7' 1/8"	7' 1/4"

Based on existing plan information. Contractor shall field verify
prior to fabrication.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INTERIOR BEAM REACTION TABLE

R ₀	(k)	14.8
R ₁	(k)	36.4
R ₂	(k)	10.9
R _{Total}	(k)	62.1

(Unfactored Loads)

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Jack and Remove Existing Bearings	Each	12
Elastomeric Bearing Assembly, Type I	Each	12
Furnishing and Erecting Structural Steel	Pound	1,330
Anchor Bolts, 1"	Each	24



USER NAME =	DESIGNED - KEF	REVISED - 05/29/2025 LMR
PLOT SCALE =	CHECKED - DDB	REVISED -
PLOT DATE =	DRAWN - TLH	REVISED -
	CHECKED - DDB	REVISED -

BEARING DETAILS
STRUCTURE NO. 090-0043

SHEET 8 OF 12 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2466	(6BR-1)BRR	TAZEWELL	37	22
CONTRACT NO. 68J42				
ILLINOIS FED. AID PROJECT				