FOR INDEX OF SHEETS AND HIGHWAY STANDARDS, SEE SHEET 2.

STATE OF ILLINOIS

DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

PROPOSED HIGHWAY PLANS

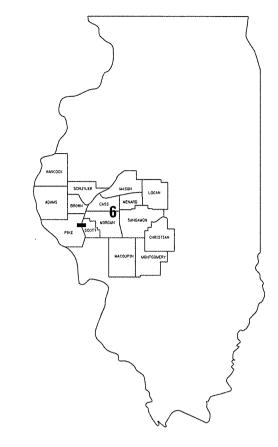
FAI ROUTE 72 (I-72)
SECTION (75,86)BJR-1
PIKE COUNTY
C96-096-011 / D96-096-011

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

BRIDGE INSPECTION ENGINEER: DAVE COPENBARGER PHONE: (217) 785–5306

NET LTH OF SEC 1,410.00 FT = 0.267 MILE

CONTRACT: 72E62 SHEET 1 OF 13



LOCATION OF SECTION INDICATED THUS:

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED APRIL 26

-0-100

20 11

DEPUTY PRECTOR OF HIGHWAYS, REGION FOUR ENGINEER

obor 14:

Scott t. Still P.C. Be

20/0600 14 20 1

Christine M. Rood or DIRECTOR, DIVISION OF RIGHWAYS

PRINTED BY AUTHORITY OF THE STATE OF ILLINOIS

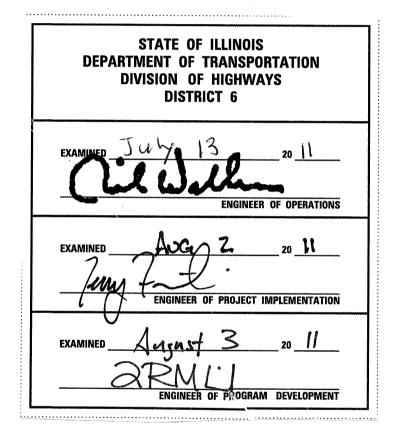
CONTRACT NO. 72E62

INDEX O	F SHEETS	STANDARDS
1	COVER SHEET	701101 -02 701106 -02
2	INDEX, STANDARDS, & GENERAL NOTES	701400 - 0 <b>5</b> 701402 - 0 <b>8</b>
3	SUMMARY OF QUANTITIES	~ 701901  - 01 ~704001  - 06
4	STAGING DETAILS	701406 - 06
5-13	BRIDGE PLANS & ELEVATION VIEWS	

#### GENERAL NOTES:

PRIOR TO POURING THE NEW CONCRETE JOINTS, 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 EXISTING CONCRETE.

THE DECK SURFACE SHALL HAVE ITS FINAL FINISH TINED ACCORDING TO ARTICLE 420.09(E)(1) OF THE STANDARD SPECIFICATIONS. COST INCLUDED WITH CONCRETE SUPERSTRUCTURE.



INDEX, STDS, & GENERAL NOTES

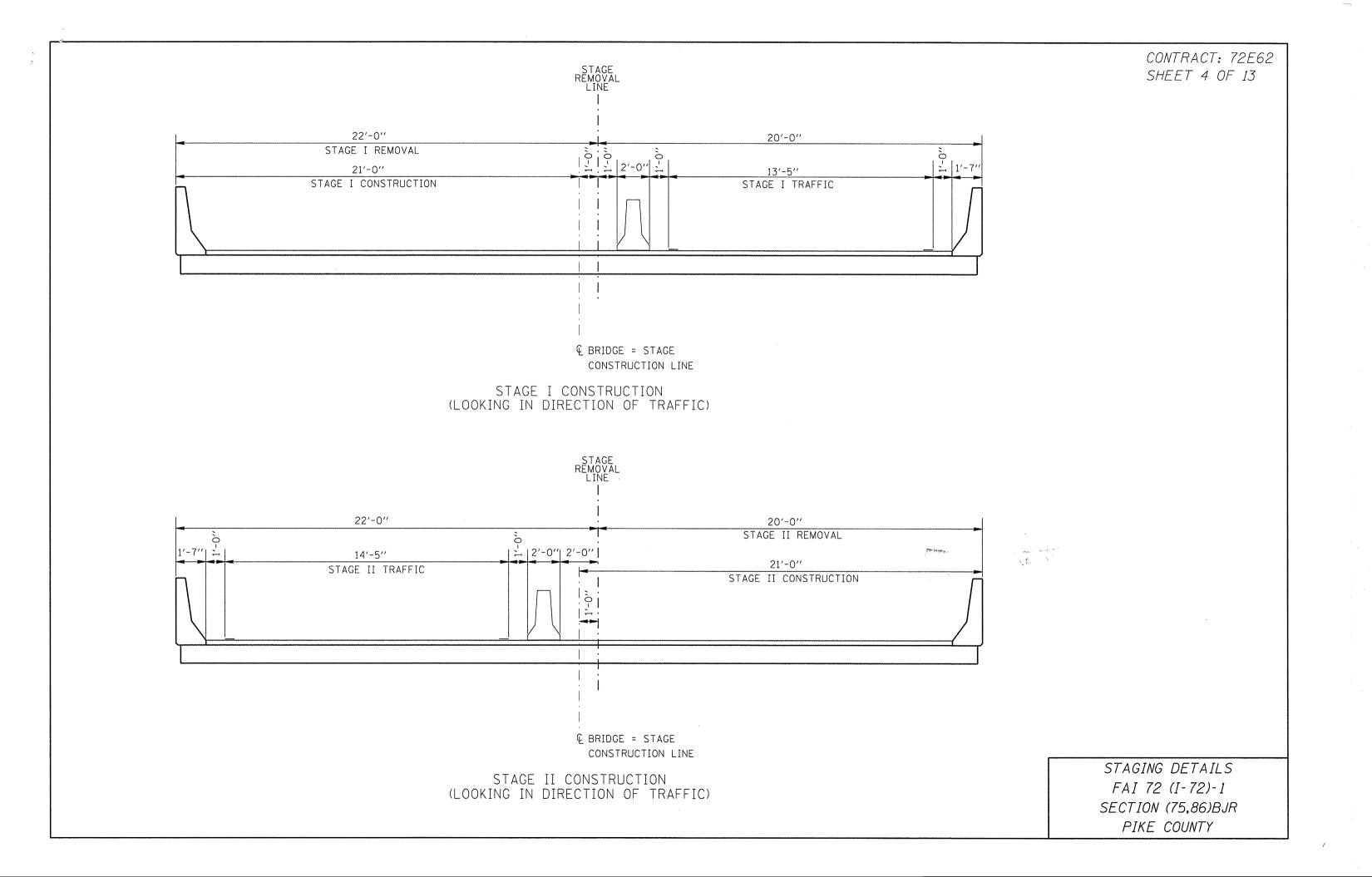
FAI 72 (I-72)

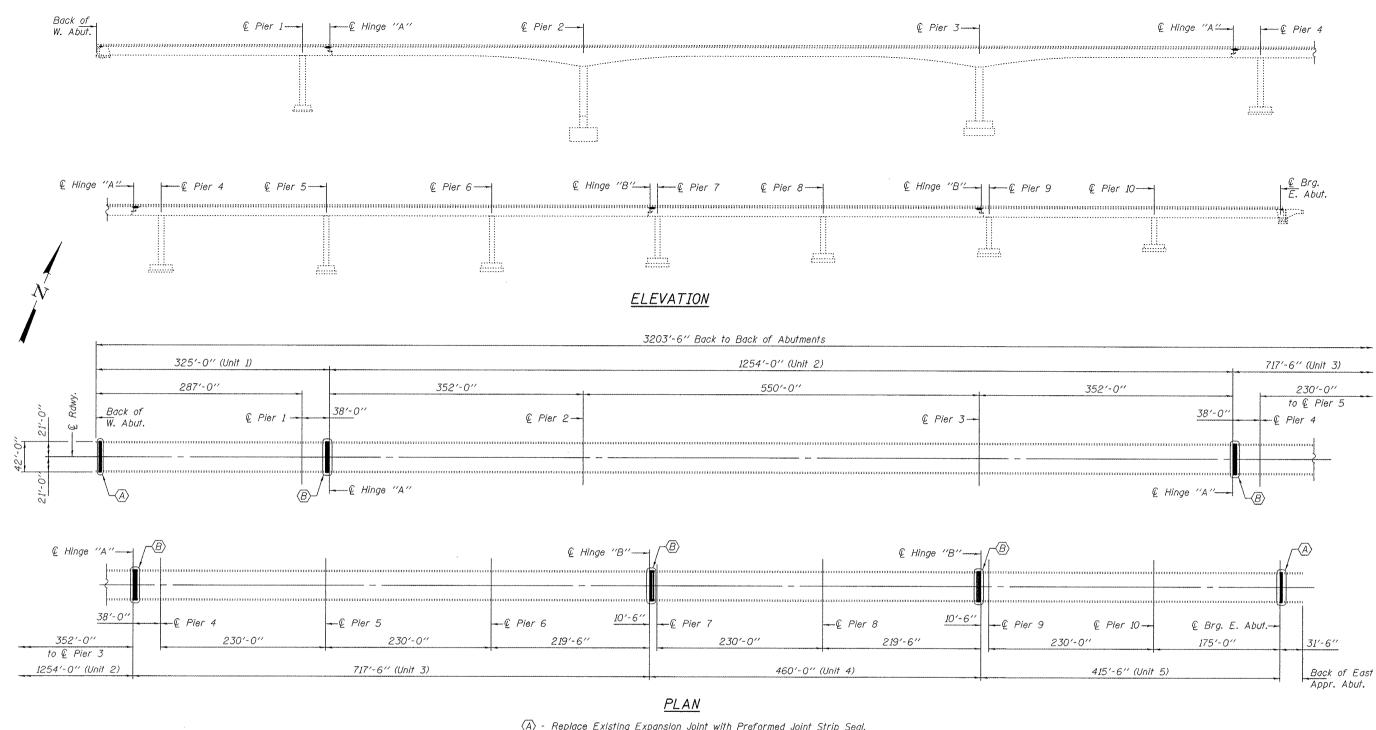
SECTION (75,86)BJR-1

PIKE COUNTY

			100% STATE
CODE NO.	ITEM	UNIT	0014
0002 7.0	<del>- · - · ·</del>		TOTAL QTY
50102400	CONCRETE REMOVAL	CU. YD.	39.3
50300255	CONCRETE SUPERSTRUCTURE	CU. YD.	33.4
50800205	REINFORCEMENT BARS - EPOXY COATED	POUND	3410
50800515	BAR SPLICERS	EACH	56
X7200201	WIDTH RESTRICTION SIGNING	L SUM	1
52000110	PREFORMED JOINT STRIP SEAL	FOOT	84
67100100	MOBILIZATION	L SUM	1
X7010208	TRAFFIC CONTROL AND PROTECTION, STANDARD 701402 (SPECIAL)	EACH	1
70100700	TRAFFIC CONTROL AND PROTECTION, STANDARD 701406	L SUM	1
Z0030250	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3	EACH	3
Z0034393		FOOT	84
Z0034398	MODULAR EXPANSION JOINT, 15"	FOOT	84
Z0030350	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3	EACH	3
70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ FT	270
70400100	TEMPORARY CONCRETE BARRIER	FDOT	2125
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	2125
78300100	PAVEMENT MARKING REMOVAL	SQ FT	3600
X7800620	URETHANE PAVEMENT MARKING-LINE 5"	FOOT	7769
70300100	SHORT TERM PAVEMENT MARKING	FDDT	648

QUANTITIES FAI 72 (I-72) SECTION (75,86)BJR-1 PIKE COUNTY





 $\langle A \rangle$  - Replace Existing Expansion Joint with Preformed Joint Strip Seal.  $\langle B \rangle$  - Replace Existing Expansion Joint with Modular Expansion Joint.

### GENERAL NOTES



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

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.

Reinforcement bars designated (E) shall be epoxy coated.

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.

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.

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.

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

Modular expansion joints shall be assembled in their final relative position with the ends in place for shop inspection and acceptance.

#### TOTAL BILL OF MATERIAL

UNIT	QUANTITY
Cu. Yd.	39.3
Cu. Yd.	33.4
Pound	3410
Each	56
Foot	84
Foot	84
Foot	84
	Cu. Yd. Cu. Yd. Pound Each Foot

Expires: November 30, 2012

DESIGNED - EXAMINED CHECKED - DATE - OCTOBER 7, 2011

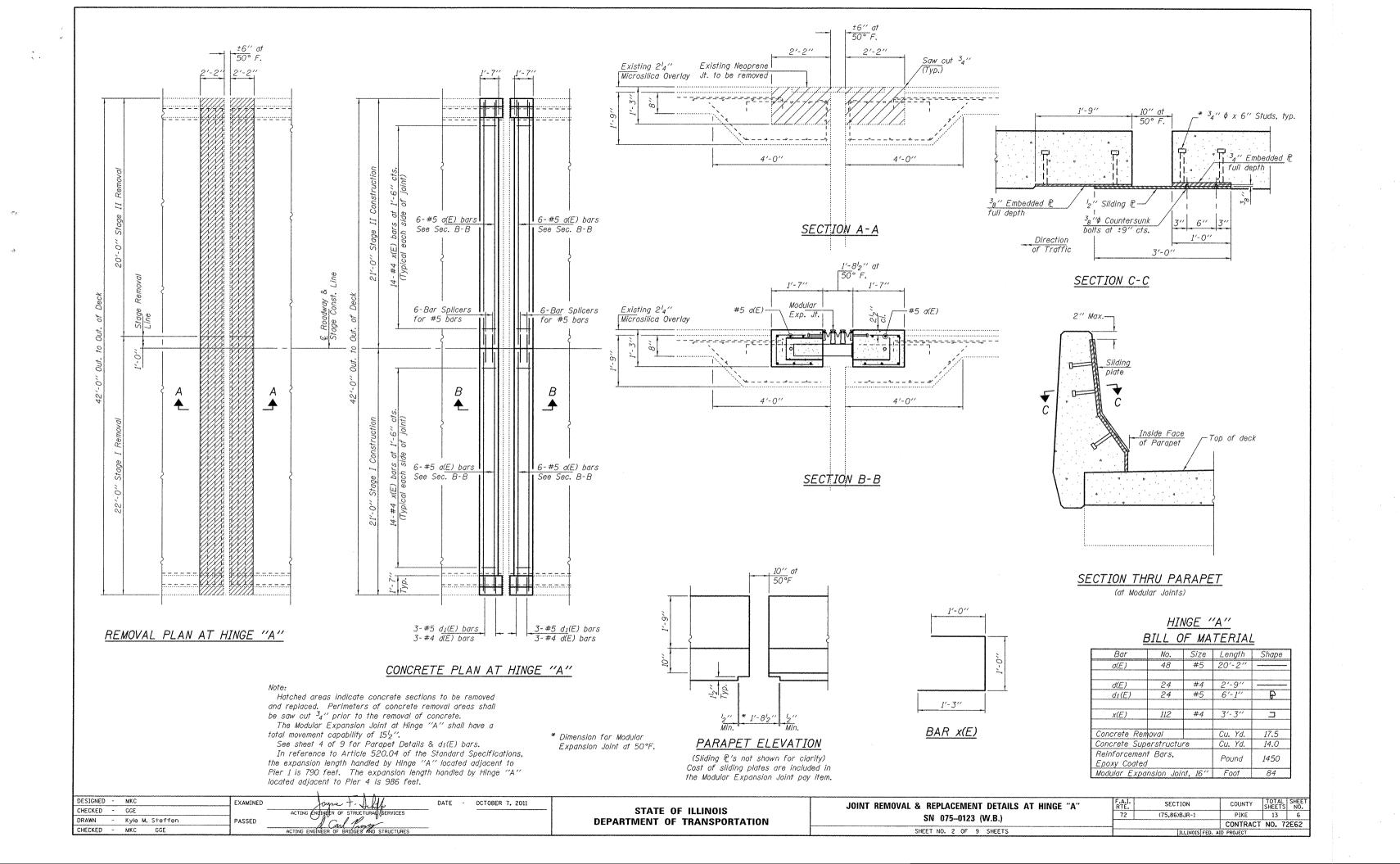
CHECKED - Keine M. Steffen PASSED CAN I TIME ENGINEER OF TRUCTURAL SERVICES

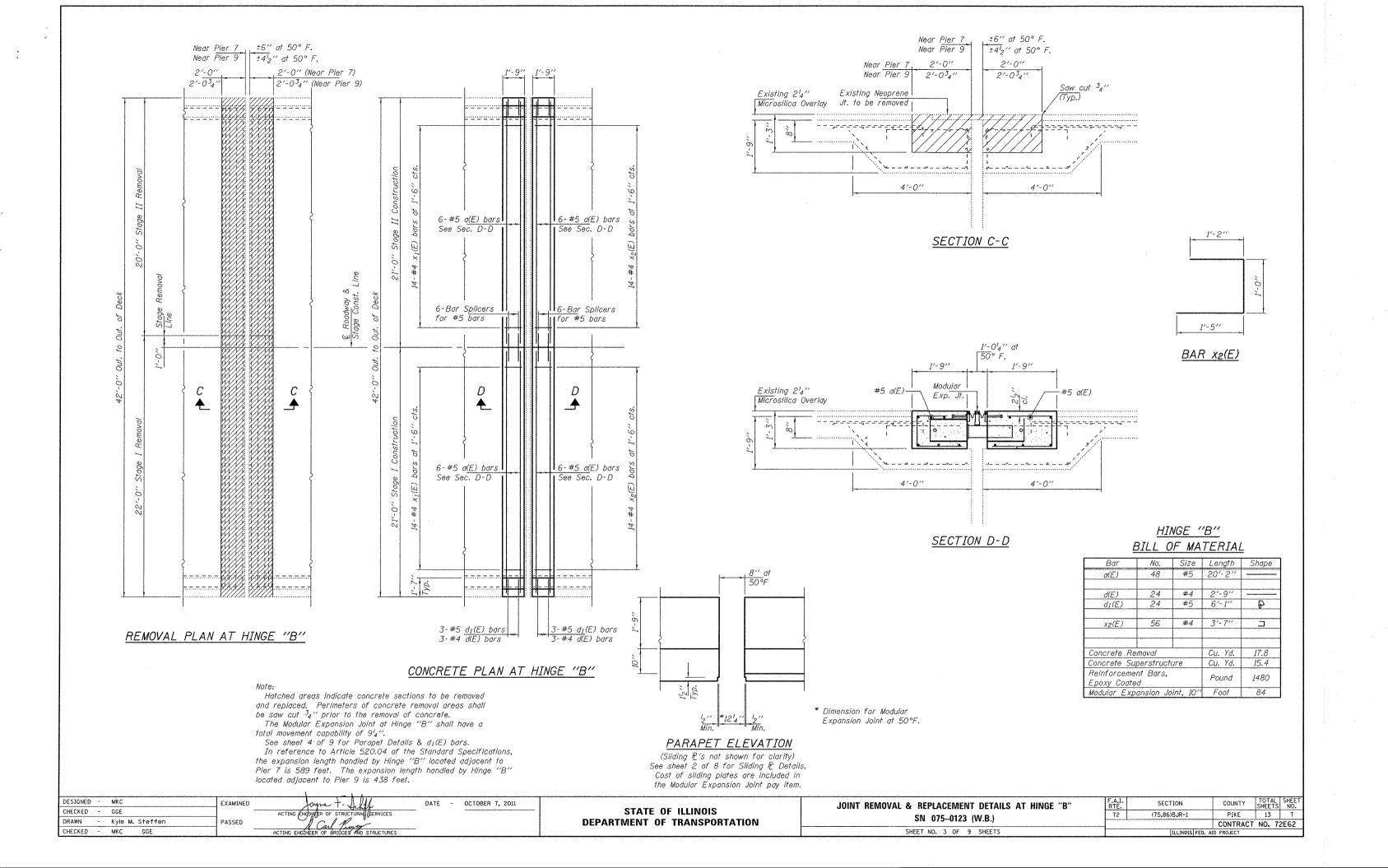
PASSED CAN I TIME ENGINEER OF TRUCTURAL SERVICES

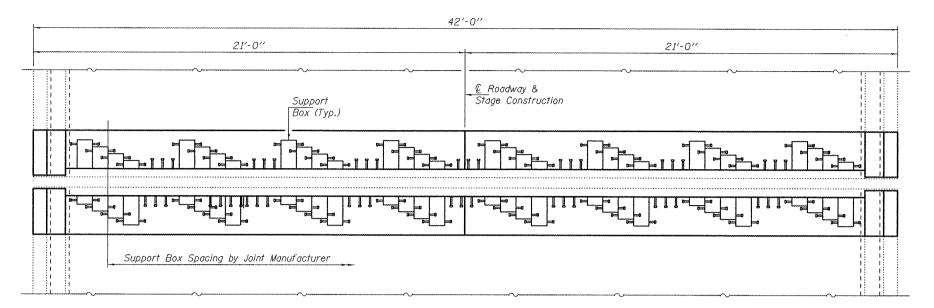
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

						LEVATIO	N
•••••						V.B.)	
	SHEET	NO.	1	OF	9	SHEETS	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.							
72	(75,86)BJR-1	PIKE	13	5							
	CONTRACT NO. 72E62										
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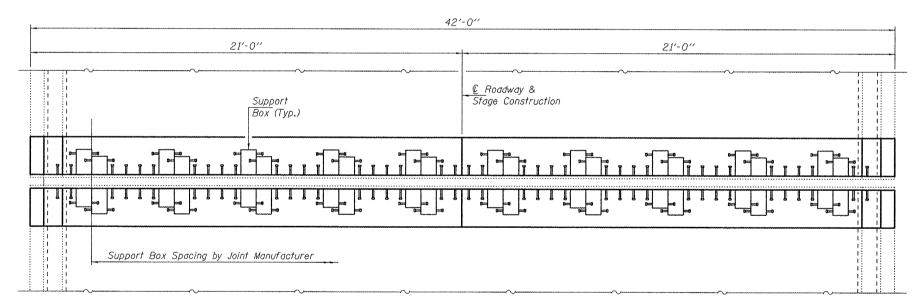






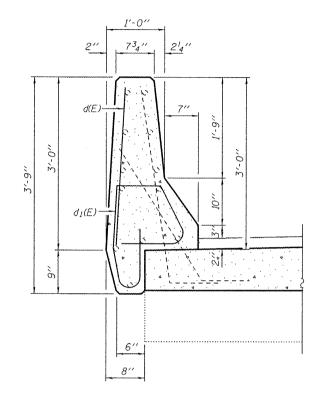
### PLAN AT HINGE "A"

Reinforcement not shown for clarity. See sheet 2 of 9 for Reinforcement details.

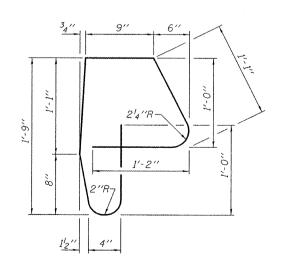


#### PLAN AT HINGE "B"

Reinforcement not shown for clarity. See sheet 3 of 9 for Reinforcement details.

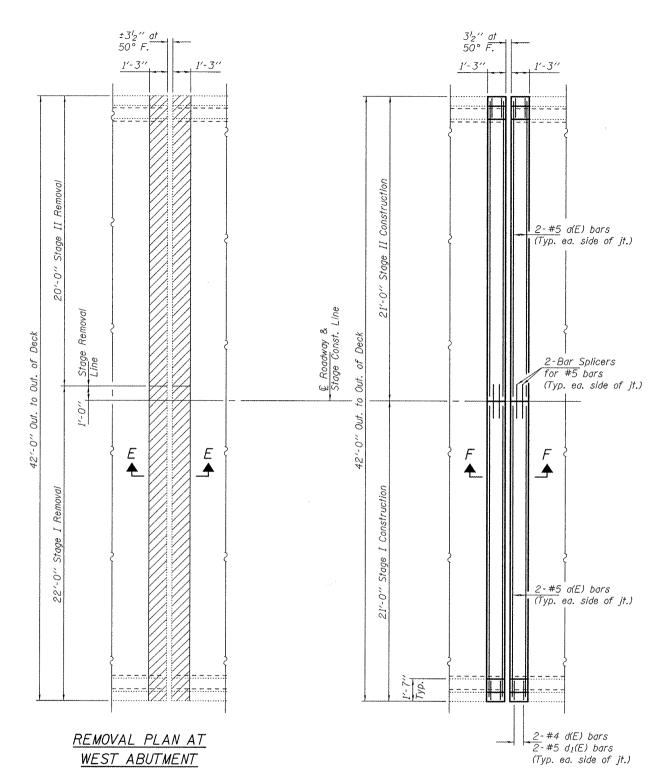


### TYPICAL PARAPET DETAILS



BAR d1(E)

DESIGNED - MKC CHECKED - GGE	EXAMINED Joyne + July	DATE - OCTOBER 7, 2011	STATE OF ILLINOIS	MODULAR EXPANSION JOINTS	F.A.I. RTE.	SECTION	COUNTY TOTAL SHEET NO.
	PASSED ACTING ENGINEER OF STRUCTURAL GERVICES		DEPARTMENT OF TRANSPORTATION	SN 0750123 (W.B.)	72	(75,86)BJR-1	PIKE 13 8  CONTRACT NO. 72E62
CHECKED - MKC GGE	ACTING ENGINEER OF BRIDGES AND STRUCTURES			SHEET NO. 4 OF 9 SHEETS		ILLINOIS FED.	AID PROJECT

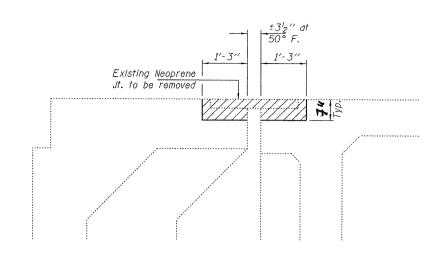


# REPLACEMENT PLAN AT WEST ABUTMENT

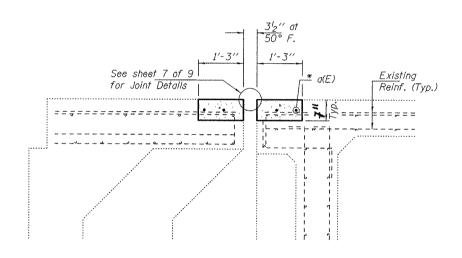
Notes:

Hatched areas indicate concrete sections to be removed and replaced. Perimeters of concrete removal areas shall be saw cut  $^3\!_4$ " prior to the removal of concrete.

Extreme care shall be exercised in the removal of concrete due to the shallow slab depth from the web of the box girder out to the parapet. See sheet 4 of 9 for Parapet Details &  $d_1(E)$  bars.



### SECTION E-E



# SECTION F-F

\* The a(E) bar closest to the expansion joint shall be placed a minimum of 5" away from the edge of the joint opening.

## <u>WEST ABUTMENT</u> BILL OF MATERIAL

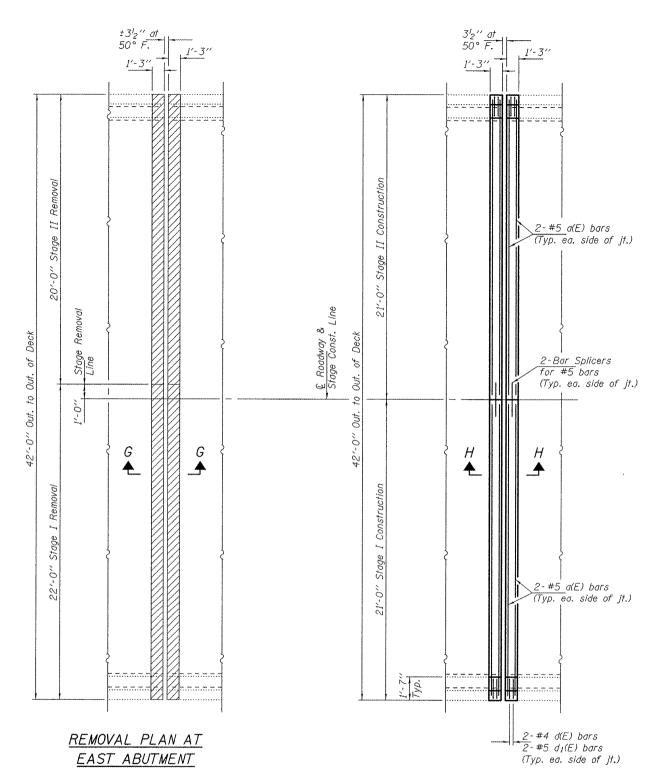
Bar	No.	Size	Length	Shape
a(E)	8	#5	20'-2"	
d(E)	8	#4	2'-9"	***************************************
d1(E)	8 #5		6'-1"	<del>Q</del>
Concrete	Removal		Cu. Yd.	2.0
Concrete	Superstru	icture	Cu. Yd.	2.0
Reinforce Epoxy Co		Pound	240	

				<u> </u>			
DESIGNED	-	MKC	EXAMINED	Journe F. A. H.	DATE	-	OCTOBER 7, 2011
CHECKED	-	GGE	ACTING EN	IGINEER OF STRUCTURAL SERVICES			
DRAWN	-	Kyle M. Steffen	PASSED	ACIN			
CHECKED	-	MKC GGE	ACTING ENG	NEER OF BRIDGES AND STRUCTURES			

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JOINT	REMOVAL	&	REPLA	CE	ИE	NT	DE	TAILS	ΑT	WEST	ABUT	MEN.	r	
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72	SECTION (75,86)BJR-1	PIKE	13	9
		CONTRACT	NO. 73	2E62

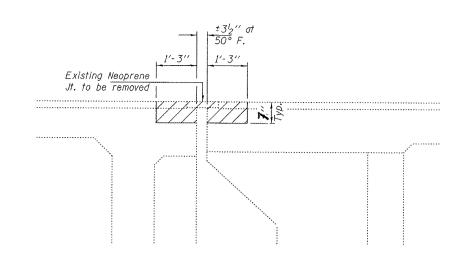


# REPLACEMENT PLAN AT EAST ABUTMENT

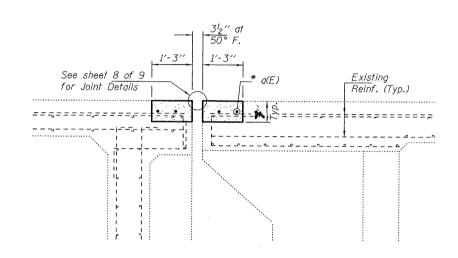
Notes:

Hatched areas indicate concrete sections to be removed and replaced. Perimeters of concrete removal areas shall be saw cut  $^34^{\prime\prime}$  prior to the removal of concrete.

Extreme care shall be exercised in the removal of concrete due to the shallow slab depth from the web of the box girder out to the parapet. See sheet 4 of 9 for Parapet Details &  $d_1(E)$  bars.



## SECTION G-G



# <u>SECTION H-H</u>

\* The a(E) bar closest to the expansion joint shall be placed a minimum of 5" away from the edge of the joint opening.

## EAST ABUTMENT BILL OF MATERIAL

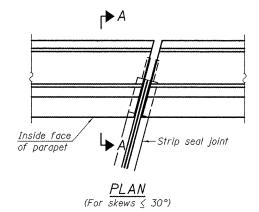
Bar	No.	Size	Length	Shape
a(E)	8	#5	20'-2"	
d(E)	8	#4	2'-9''	
d1(E)	ı(E) 8 #5		6'-1''	₽
Concrete			Cu. Yd.	2.0
Concrete	Superstru	ıcture	Cu. Yd.	2.0
Reinforce Epoxy Co		Pound	240	

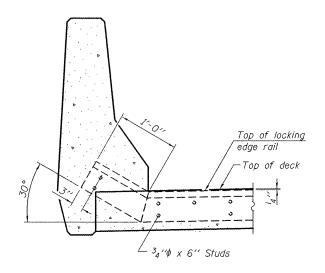
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DESIGNED	-	MKC	EXAMINED	Jame + A. Hd.	DATE	-	OCTOBER 7, 2011
CHECKED	-	GGE	ACTING &	NGINEER OF STRUCTURAL BERVICES			
DRAWN	-	Kyle M. Steffen	PASSED	DC IN			
CHECKED	-	MKC GGE	ACTING EN	INEER OF BRIDGES AND STRUCTURES			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

JOINT	REMOVAL	&	REPLA	CE	VIE	NT	DE	TAILS	AT	EAST	ABUTMENT	•
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			SHEET	NO.	6	OF	9	SHEETS				

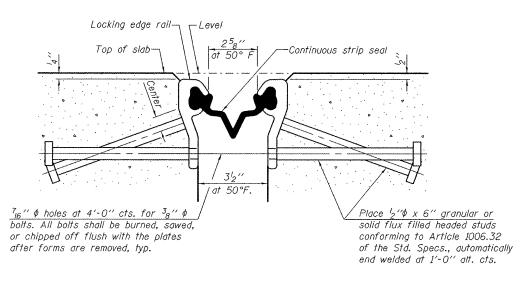
	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	72	(75,86)BJR-1	PIKE	13	10
_			CONTRACT	NO. 7	2E62
		ILLINOIS FED. A	ID PROJECT		



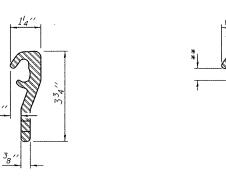


SECTION A-A

#### Direction of Traffic



#### SECTION THRU STRIP SEAL JOINT



LOCKING EDGE RAIL

LOCKING EDGE RAIL SPLICE

#### Note

The strip seal shall be made continuous and shall have a minimum thickness of  ${}^{l}_{4}$ ?. 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 5 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 at stage lines shall be  ${}^3_{16}$ ", sealed with a suitable sealant.

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

The inside of the Locking Edge Rail groove shall be free of weld residue.

When calculating the required joint opening (see Article 520.04 of the Standard Specifications) for the joint at the West Abutment, the expansion length is 287 feet for the joint calculations.

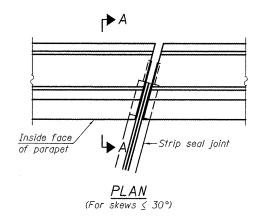
#### BILL OF MATERIAL

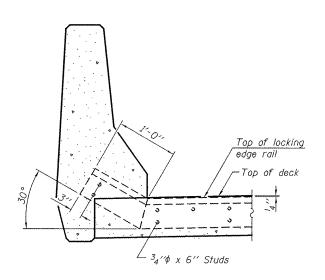
UNIT	l otal
Foot	42
	Foot

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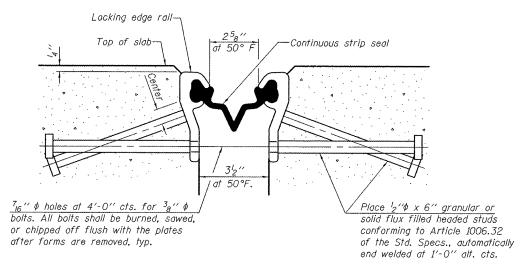
STATE	OI	F ILLINOIS
DEPARTMENT	0F	TRANSPORTATION

PREFORMED JOINT STRIP SEAL DETAILS AT WEST ABUTMENT	F.A.I. RTE.	
SN 075-0123 (W.B.)	72	(7
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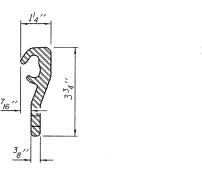




SECTION A-A



SECTION THRU STRIP SEAL JOINT



LOCKING EDGE RAIL

LOCKING EDGE RAIL SPLICE

#### Notes:

The strip seal shall be made continuous and shall have a minimum thickness of  ${}^{l}_{4}$ .'. 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 5 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 rall 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 at stage lines

shall be  $^{3}_{16}$  , sealed with a suitable sealant. Parapet plates and anchorage studs for skews > 30°

included in the cost of Preformed Joint Strip Seal.
The inside of the Locking Edge Rail groove shall be free of weld residue.

When calculating the required joint opening (see Article 520.04 of the Standard Specifications) for the joint at the East Abutment, the expansion length is 290 feet for the joint calculations.

#### BILL OF MATERIAL

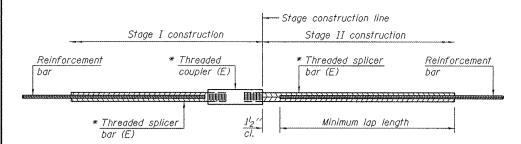
Item	Unit	Total
Preformed Joint Strip Seal	Foot	42

L								
DESIGNED	~	MKC	EXAMINED	Joune F. J. H.	DATE	-	OCTOBER 7, 2011	Т
CHECKED	-	GGE		ACTING ENGINEER OF STRUCTURAL SERVICES				į
DRAWN	-	Kyle M. Steffen	PASSED	Call				
CHECKED	-	MKC GGE		ACTING ENGINEER OF BRIDGES AND STRUCTURES				

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PREFORMED	JOINT	STRI	P	SEA	۱L	DEI	AILS	AT	EAST	ABUTME	ENT
		SN	0	75	012	23	(W.B.)				
		SHEET	NO.	8	OF	9	SHEE	TS	***************************************	~~~~	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(75,86)BJR-1	PIKE	13	12
		CONTRACT	NO. 7	2E62
	ILLINOIS FED. A	ID PROJECT		



#### STANDARD BAR SPLICER ASSEMBLY

	Minim	um Lap Leng	ıths		
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5
<i>3, 4</i>	1'-5''	1'-11''	2'-1"	2'-4"	2'-3"
5	1'-9''	2'-5"	2'-7"	2'-11''	2'-10"
6	2'-1"	2'-11''	3'-1"	3'-6"	3'-4"
7	2'-9"	3'-10''	4'-2"	4'-8''	4'-6"
8	3'-8''	5'-1''	5′-5′′	6'-2"	5'-10''
9	4'-7"	6'-5''	6'-10''	7'-9"	7'-5"

Table 1: Black bar, 0.8 Class C

Table 2: Black bar, Top bar lap, 0.8 Class C

Table 3: Epoxy bar, 0.8 Class C

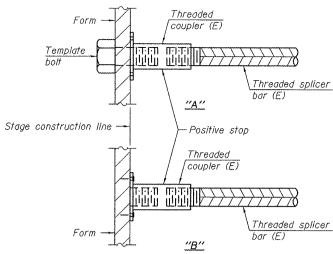
Table 4: Epoxy bar, Top bar lap, 0.8 Class C

Table 5: Epoxy bar, Top bar lap, Class B

Threaded splicer bar length = min. lap length +  $1\frac{1}{2}$ " + thread length

\* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

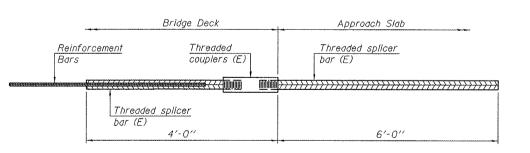
Location	Bar size	No. assemblies required	Table for minimum lap length		
Hinge ''A''	#5	24	3		
Hinge ''B''	#5	24	3		
West Abutment	#5	4	3		
East Abutment	#5	4	3		



#### INSTALLATION AND SETTING METHODS

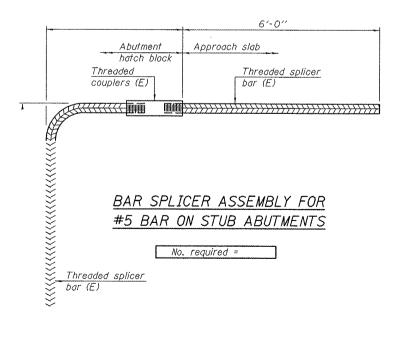
"A": Set bar splicer assembly by means of a template bolt.
"B": Set bar splicer assembly by nailing to wood forms or cementing to steel forms.

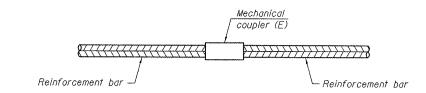
(E): Indicates epoxy coating.



# BAR SPLICER ASSEMBLY FOR #5 BAR ON INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

No. required =





#### 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 special provision for Mechanical Splicers. See approved list of bar splicer assemblies and mechanical splicers for alternatives.

BSD-1

7-1-10

DESIGNED	-	MKC	EXAMINED	Jame + 1 H1.	DATE	_	OCTOBER 7, 2011
CHECKED	-	GGE		ACTING ENGINEER OF STRUCTURAL BERVICES			
DRAWN	-	Kyle M. Steffen	PASSED	A C. I.A.			1
CHECKED	-	MKC GGE		ACTING ENGINEER OF BRIDGES AND STRUCTURES			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
SN 075-0123 (W.B.)

SHEET NO. 9 OF 9 SHEETS

	ILLINOIS FED. AID PROJECT						
4			CONTRACT NO. 72E62				
i	72	(75,86)BJR-1	PIKE	13	13		
	F.A.I. RTE.	SECTION	COUNTY	TOTAL	SHEET NO.		