

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
829	102BR-3-I	MONROE	6	1
		ILLINOIS	CONTRACT NO. 76E24	

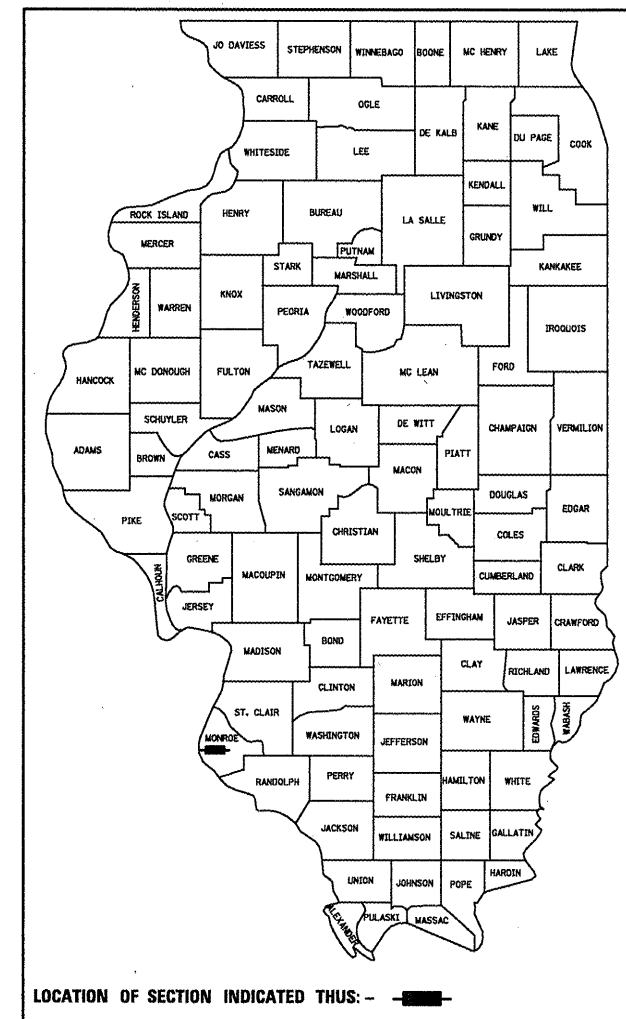
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

**PROPOSED  
HIGHWAY PLANS**

FAP ROUTE 829 (IL 156)  
SECTION 102BR-3-I  
**BRIDGE OVERLAY - CONTRACT MAINTENANCE  
MONROE COUNTY**

C-98-117-10

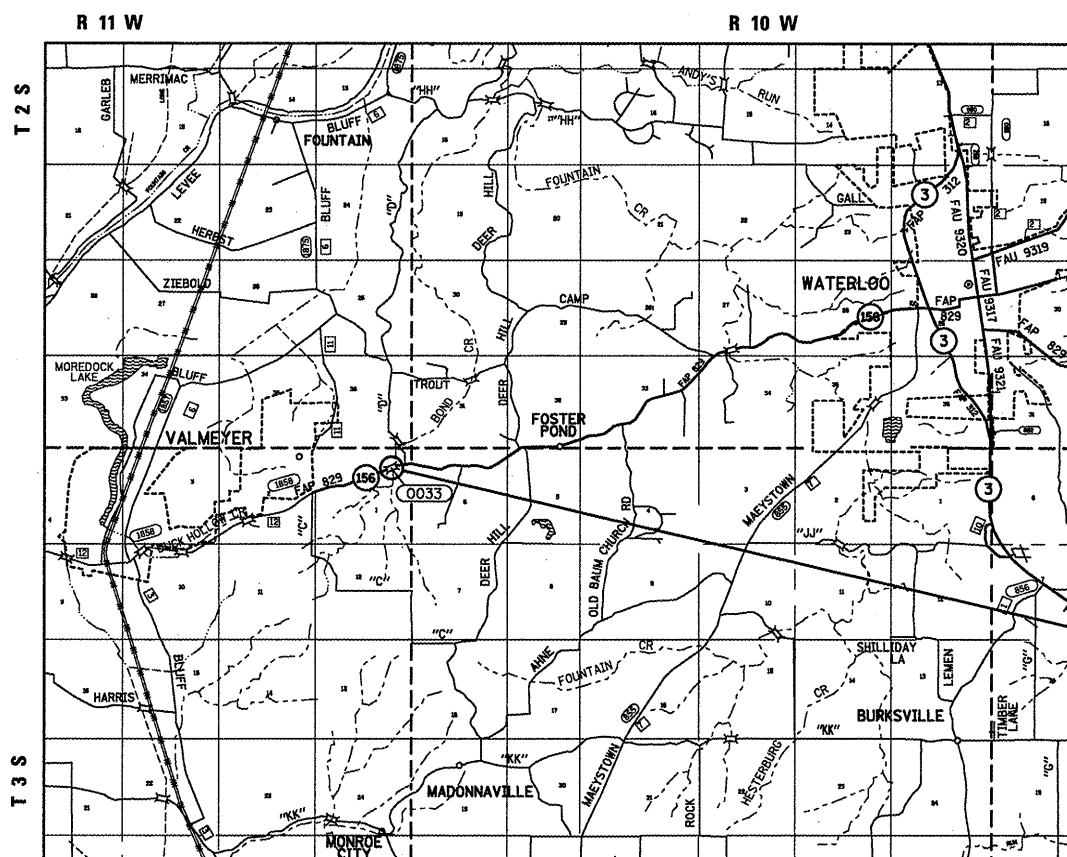
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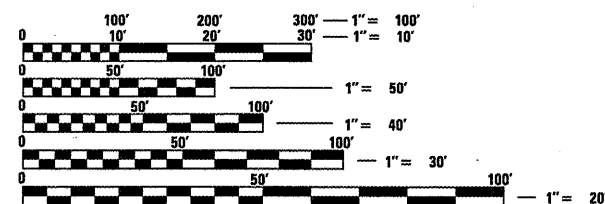
- INDEX OF SHEETS
- 1 COVER SHEET (INDEX OF SHEETS, HIGHWAY STANDARDS)
  - 2 SUMMARY OF QUANTITIES, GENERAL NOTES & COMMITMENTS
  - 3-6 BRIDGE REPAIR PLANS

HIGHWAY STANDARDS

- 000001-06
- 701311-03
- 701316-05
- 701901-01
- 780001-02
- 781001-03



OVERLAY REPLACEMENT OF  
SINGLE SPAN PPC DECK BEAM  
STRUCTURE OVER BOND CREEK  
SN 067-0033  
STA 405+29.25  
70'-6" BK TO BK ABUTMENTS

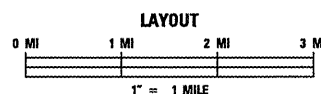


FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD  
ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT  
CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS  
ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

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

PROJECT ENGINEER PATTI LeBEAU 618-346-3179  
PROJECT MANAGER BILLIE OWEN 618-346-3189  
  
CONTRACT NO. 76E24

TRAFFIC DATA:  
ADT = 1550 (2011)  
ADT = 1900 (2031)  
SU = 4.0%  
MU = 3.3%



LATITUDE: 38.30945  
LONGITUDE: 90.25844

GROSS LENGTH = 0.01 MILE  
NET LENGTH = 0.01 MILE

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

SUBMITTED February 15 20 11

*Mary C. Jamel*  
DEPUTY DIRECTOR OF HIGHWAYS, REGION 5 ENGINEER

March 05 20 11  
*Scott E. Stett, P.E.*  
Acting ENGINEER OF DESIGN AND ENVIRONMENT

March 25 20 11  
*Christine M. Reed*  
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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

SUMMARY OF QUANTITIES			TOTAL QUANTITIES	CONSTRUCTION TYPE CODE		
CODE NO	ITEM	UNIT		0014 100% STATE		
XX008458	CONCRETE WEARING SURFACE, (VARIABLE DEPTH)	CU YD	34.4	34.4		
50102400	CONCRETE REMOVAL	CU YD	2.9	2.9		
50300260	BRIDGE DECK GROOVING	SQ YD	249	249		
50300300	PROTECTIVE COAT	SQ YD	249	249		
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	3530	3530		
50800515	BAR SPLICERS	EACH	77	77		
52000110	PREFORMED JOINT STRIP SEAL	FOOT	35	35		
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	3	3		
67100100	MOBILIZATION	L SUM	1	1		
70100100	TRAFFIC CONTROL AND PROTECTION, STANDARD 701316	EACH	1	1		
70103815	TRAFFIC CONTROL SURVEILLANCE	CAL DA	54	54		
70106600	TEMPORARY BRIDGE TRAFFIC SIGNALS (STATE FURNISHED CONTROLLER)	EACH	1	1		
70300100	SHORT TERM PAVEMENT MARKING	FOOT	84	84		
70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ FT	28	28		
X 78003110	PREFORMED PLASTIC PAVEMENT MARKING, TYPE B - LINE 4"	FOOT	1880	1880		
78100105	RAISED REFLECTIVE PAVEMENT MARKER (BRIDGE)	EACH	1	1		
78100300	REPLACEMENT REFLECTOR	EACH	5	5		
78300100	PAVEMENT MARKING REMOVAL	SQ FT	627	627		
78300200	RAISED REFLECTIVE PAVEMENT MARKER REMOVAL	EACH	6	6		
X7830070	GROOVING FOR RECESSED PAVEMENT MARKING 5"	FOOT	1880	1880		
Z0004540	HOT-MIX ASPHALT SURFACE REMOVAL COMPLETE	SQ YD	245	245		
Z0021904	SILICONE JOINT SEALER, 1"	FOOT	33	33		
Z0032700	KEYWAY REPAIR	FOOT	170	170		

GENERAL NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO CONSTRUCTION AND ORDERING MATERIALS.
2. ILLINOIS STATE LAW REQUIRES A 48-HOUR NOTICE BE GIVEN TO ALL UTILITIES BEFORE DIGGING. FIELD MARKING OF FACILITIES MAY BE OBTAINED BY CONTACTING J.U.L.I.E. OR FOR NON-MEMBERS, THE UTILITY COMPANY DIRECTLY. AGENCIES KNOWN TO HAVE FACILITIES WITHIN THE PROJECT AREA ARE AS FOLLOWS:
  - AMERENIP (GAS & ELECTRIC)
  - FOUNTAIN WATER DISTRICT
  - HARRISONVILLE TELEPHONE COMPANY
  - VERIZON BUSINESS
MEMBERS OF J.U.L.I.E. (800) 892-0123 OR 811 ARE INDICATED BY AN \*. NON-J.U.L.I.E. MEMBERS MUST BE NOTIFIED INDIVIDUALLY.
3. TEMPORARY PAVEMENT MARKINGS SHOWN ON TRAFFIC CONTROL AND PROTECTION, STANDARD 701316 SHALL BE PAVEMENT MARKING TAPE, TYPE III. THE COST OF PAVEMENT MARKING TAPE, TYPE III SHALL BE INCLUDED IN THE COST OF TRAFFIC CONTROL AND PROTECTION, STANDARD 701316 AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.

PERTINENT INFORMATION

THERE ARE TWO FIELD ENTRANCES LOCATED DIRECTLY TO THE WEST OF THE STRUCTURE. BOTH ENTRANCES ARE OWNED BY BLUFFSIDE DAIRY FARM. THE CONTRACTOR SHALL COORDINATE WITH BLUFFSIDE DAIRY FARM FOR ACCESS INTO THEIR FIELD ENTRANCES

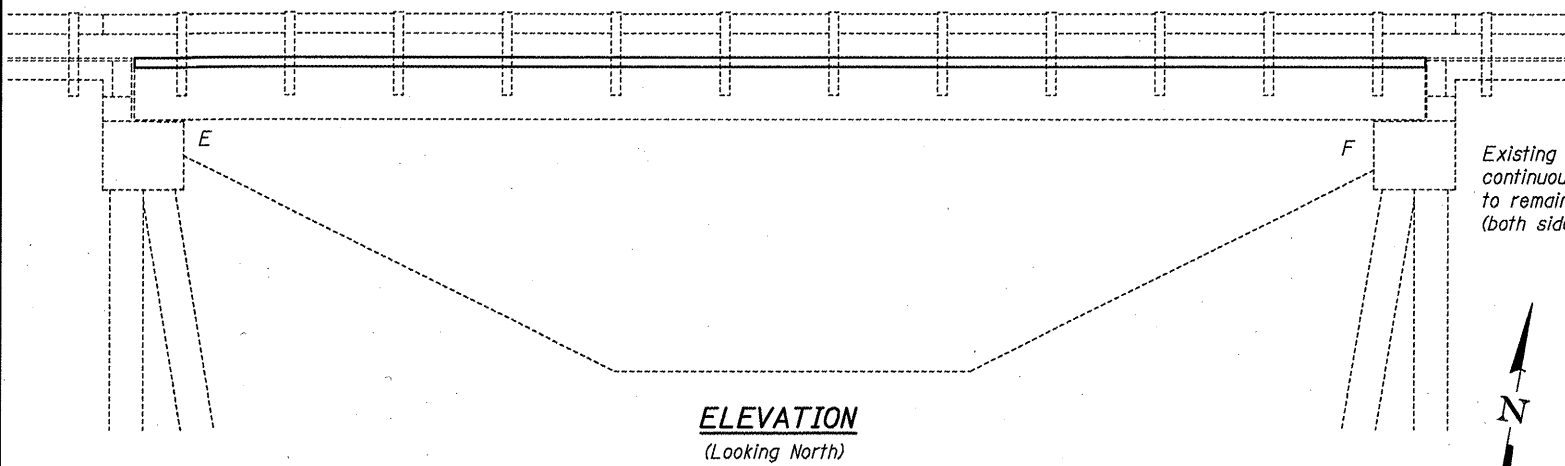
BLUFFSIDE DAIRY FARM, INC.  
2160 STATE ROUTE 156  
WATERLOO, IL 62298  
618-939-6069

COMMITMENTS

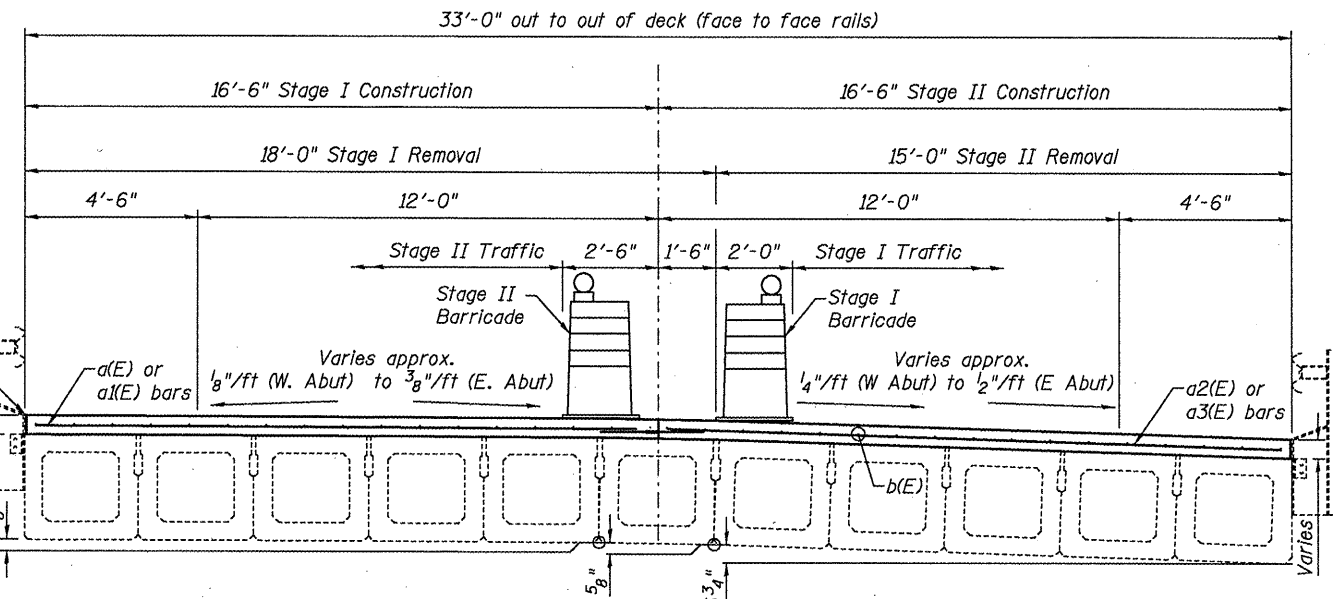
NONE

FILE NAME =	USER NAME = #USER#	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>SUMMARY OF QUANTITIES, GENERAL NOTES AND COMMITMENTS</b>	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
#FILE#		DRAWN -	REVISED -			829	102BR-3-1	MONROE	6	2	
	PLOT SCALE = #SCALE#	CHECKED -	REVISED -			CONTRACT NO. 76E24					
	PLOT DATE = #DATE#	DATE -	REVISED -			SCALE:	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT

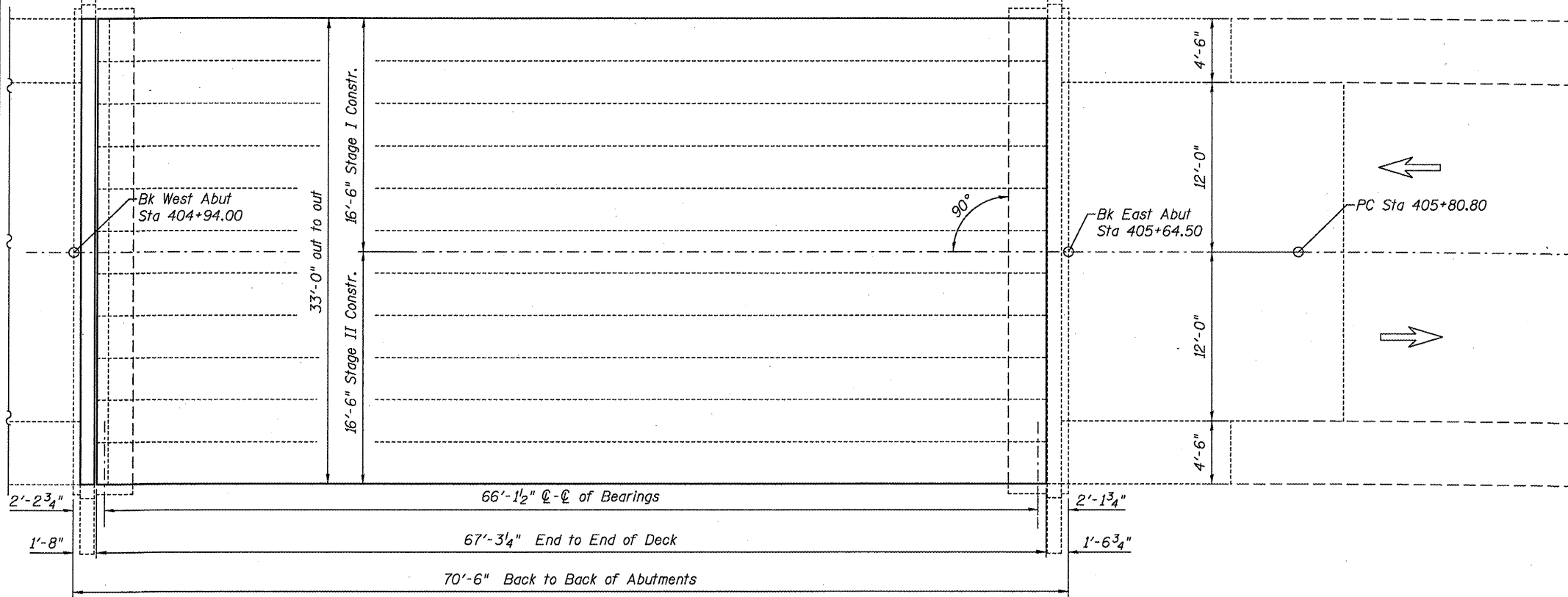
Existing Structure: SN 067-0033 was built in 1990 as FAP 829, Section 102BR-3.  
 It is a simple span structure consisting of 11-33"x36" PPC deck beams supported on pile bent abutments.  
 The existing variable depth HMA overlay shall be replaced with a variable depth reinforced concrete overlay.  
 One lane of traffic shall be maintained with staged construction.



**ELEVATION**  
(Looking North)



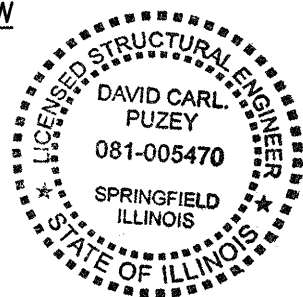
**CROSS SECTION**  
(Looking East)



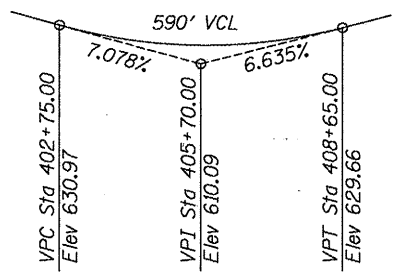
**PLAN**

**CURVE DATA**

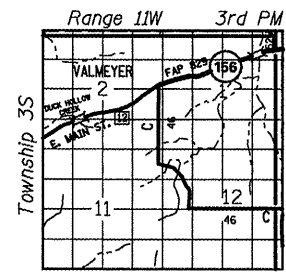
$\Delta = 30^{\circ}32'$   
 $D = 4^{\circ}10'$   
 $T = 375.4'$   
 $L = 732.96'$   
 $E = 50.3'$   
 $R = 1375.4'$   
 $S.E. = 0.08'/ft.$   
 $P.C. = Sta. 405+80.8$   
 $P.T. = Sta. 413+13.76$   
 $P.I. = Sta. 409+56.2$   
 $SE$  Attained: Sta 404+84.80 to Sta 406+28.80



Expires 11/30/2012



**PROFILE GRADE**



**LOCATION SKETCH**

**GENERAL NOTES**

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

Reinforcement bars designated (E) shall be epoxy coated.

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

The quantity for "Key Repair" has been estimated as 25% of all of the keyways. The Engineer shall determine the actual quantities after removal of the HMA wearing surface.

The existing 1/2"  $\bar{R}$ 's along the sides of the existing overlay, and both 1"  $\bar{R}$ 's at the east abutment, shall be cleaned prior to placement of the new concrete overlay. Since the existing  $\bar{R}$ 's along the sides of bridge are shorter than the overlay, the contractor shall not match the overlay with the height of the side  $\bar{R}$ 's. The contractor may taper the overlay down to the  $\bar{R}$ 's, or install forms above the  $\bar{R}$ 's.

The thickness of the existing HMA wearing surface shall be measured at each side and  $\bar{L}$ , along the 1/4 points of the bridge. The new concrete overlay shall match the thickness of the existing overlay to maintain the superelevation transition.

**TOTAL BILL OF MATERIAL**

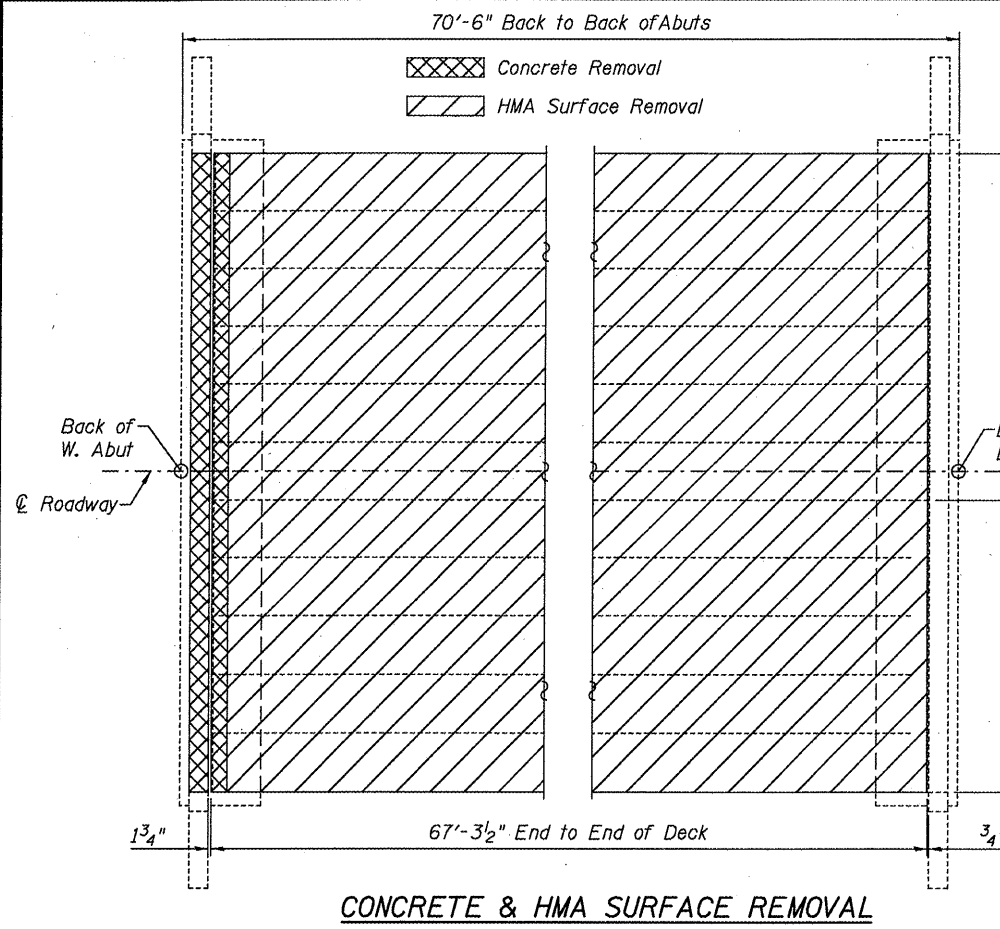
ITEM	UNIT	TOTAL
Concrete Removal	Cu. Yd.	2.9
Protective Coat	Sq. Yd.	249
Reinforcement Bars, Epoxy Coated	Pound	3,530
Bar Splicers	Each	77
Preformed Joint Strip Seal	Foot	35.0
Concrete Wearing Surface, Variable Depth	Cu. Yd.	34.4
Hot-Mix Asphalt Surface Removal Complete	Sq. Yd.	245
Silicone Joint Sealer, 1"	Foot	33.0
Keyway Repair	Foot	170
<b>Bridge Deck Grooving</b>	<b>Sq Yd</b>	<b>249</b>

DESIGNED Brad Williams	EXAMINED <i>Jan F. [Signature]</i>	DATE 3/16/11
CHECKED John Uehle	PASSED <i>John Uehle</i>	
DRAWN Brad Williams		
CHECKED John Uehle		

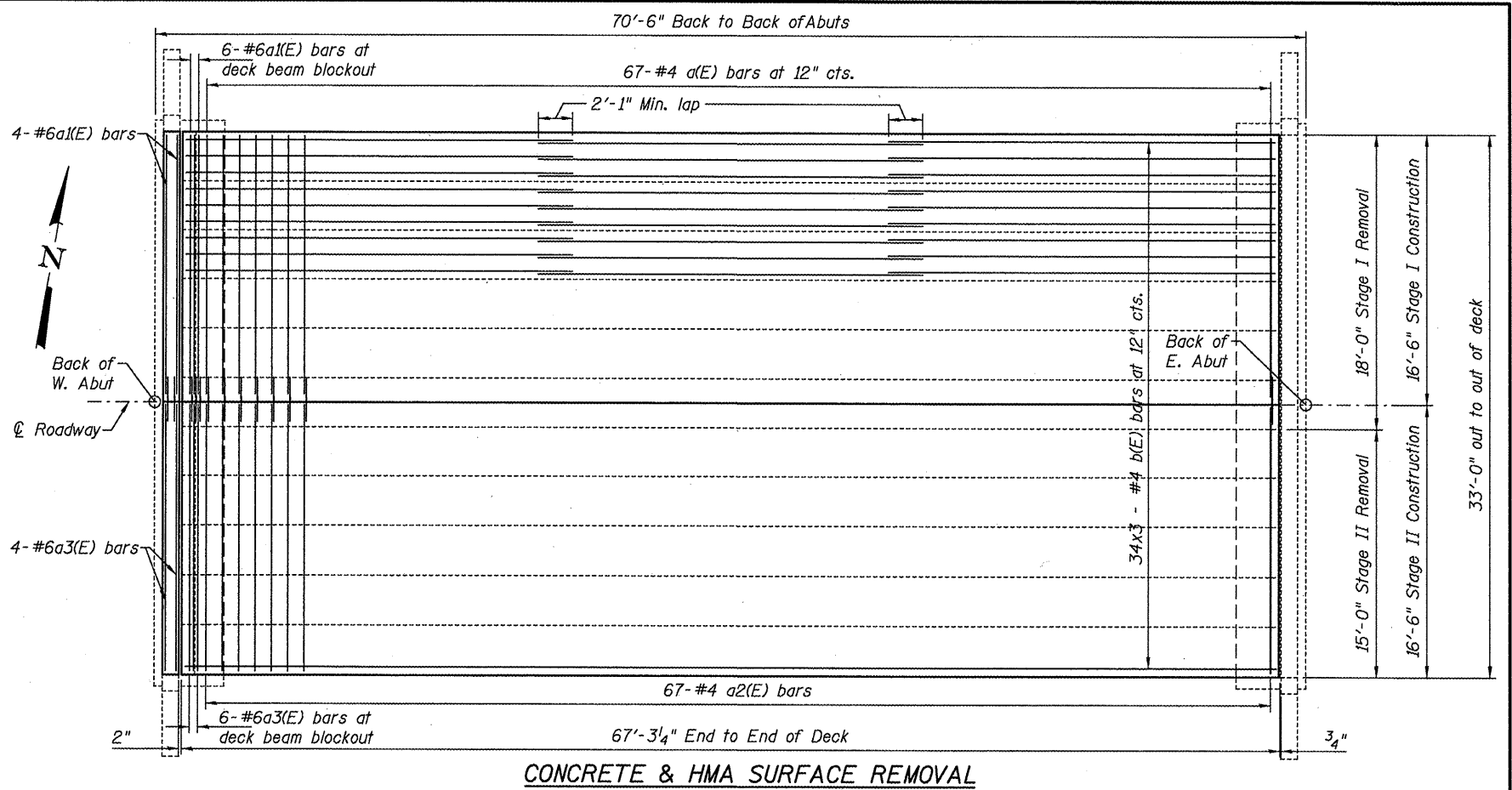
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION  
STRUCTURE NO. 067-0033  
SHEET NO. 1 OF 4 SHEETS

F.A.P. RTE. 829	SECTION 102BR-3-1	COUNTY MONROE	TOTAL SHEETS 6	SHEET NO. 3
				CONTRACT NO. 76E24
ILLINOIS FED. AID PROJECT				



**CONCRETE & HMA SURFACE REMOVAL**



**CONCRETE & HMA SURFACE REMOVAL**

**Notes:**  
 Existing reinforcement and coil loops shall be cleaned and incorporated into the new construction. Cost included with Concrete Removal.  
 Contractor should use extreme care during removal of the concrete in the PPC deck beam blockouts, to ensure the PPC deck beams are not damaged. Any damage to the PPC deck beams is to be repaired by the contractor at his expense.

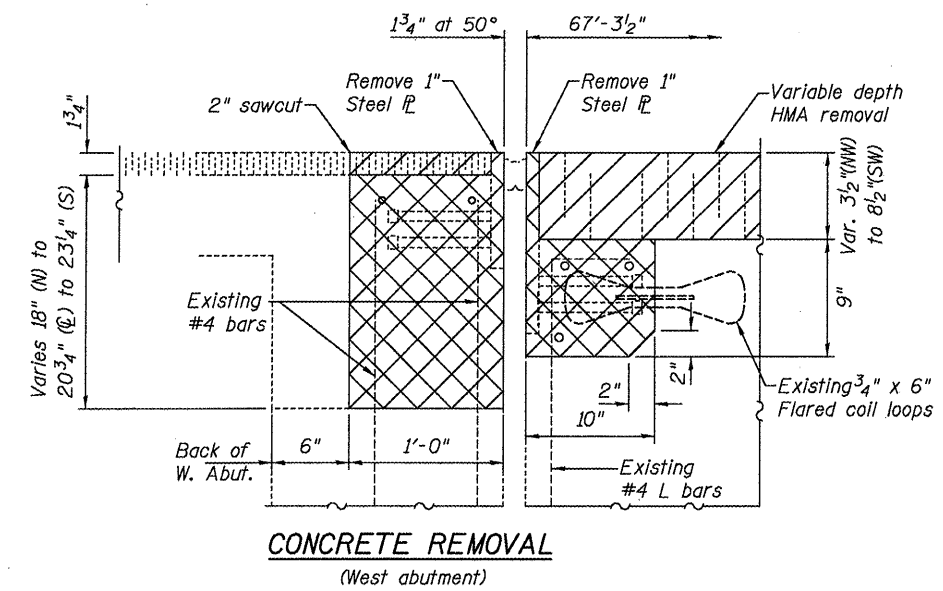
**FIELD MEASURED THICKNESS OF EXISTING HMA WEARING SURFACE (in.)**

	W. Abut	1/4 Point	Midpoint	3/4 Point	E. Abut
Left (N) edge	3.50	4.00	5.00	7.50	11.75
C.L.	3.50	3.75	4.00	4.75	5.00
Right (S) edge	8.50	6.25	5.00	4.50	6.00

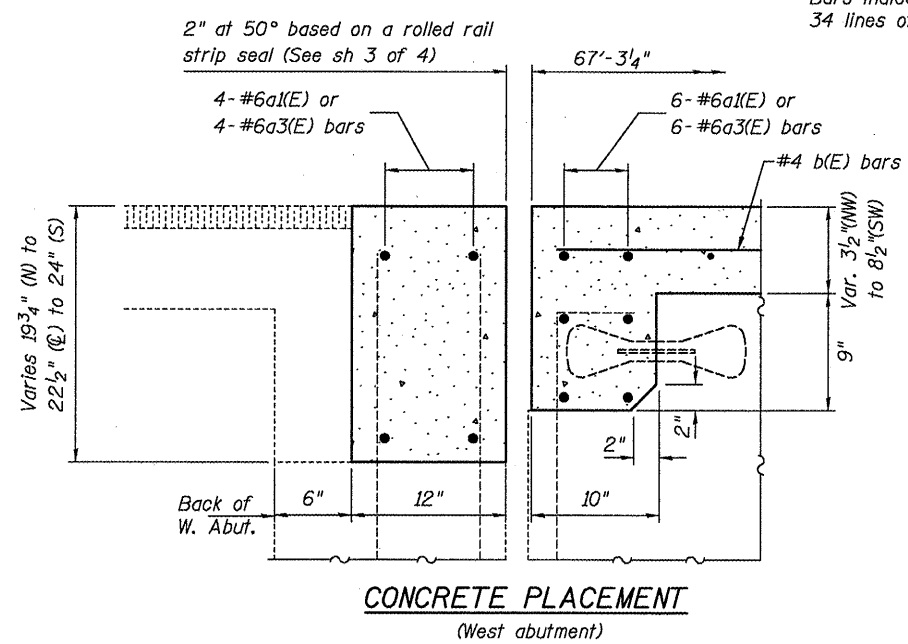
**REBAR BILL OF MATERIAL**

Bar	No.	Size	Length	Shape	
a(E)	67	#4	15'-10"	—	
a1(E)	10	#6	15'-10"	—	
a2(E)	67	#4	16'-2"	—	
a3(E)	10	#6	16'-2"	—	
b(E)	102	#4	23'-9"	—	
Reinforcement Bars, Epoxy Coated				Pound	3,530

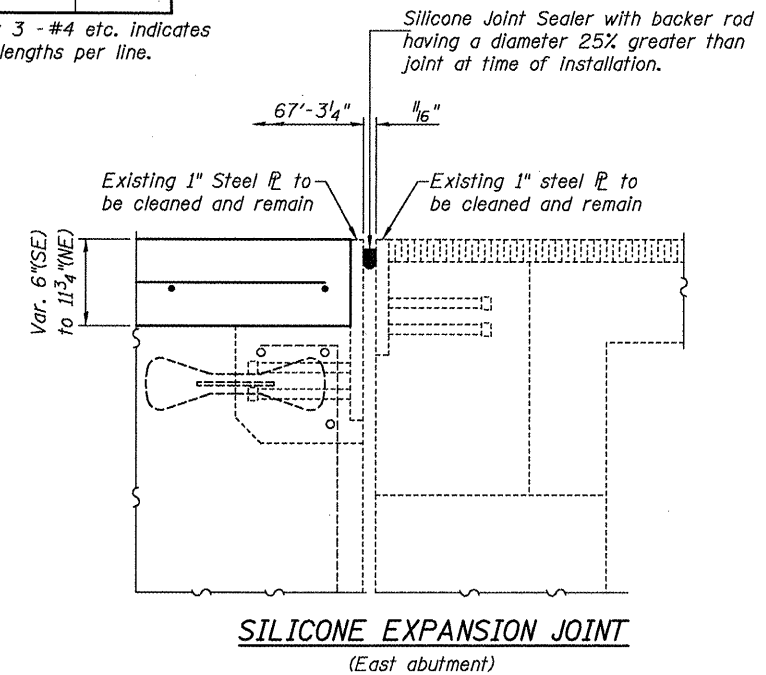
Bars indicated thus 34 x 3 - #4 etc. indicates 34 lines of bars with 3 lengths per line.



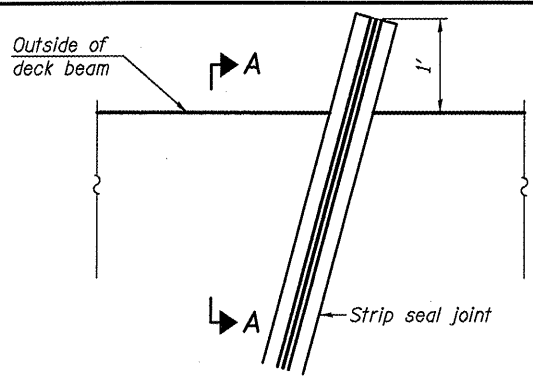
**CONCRETE REMOVAL**  
(West abutment)



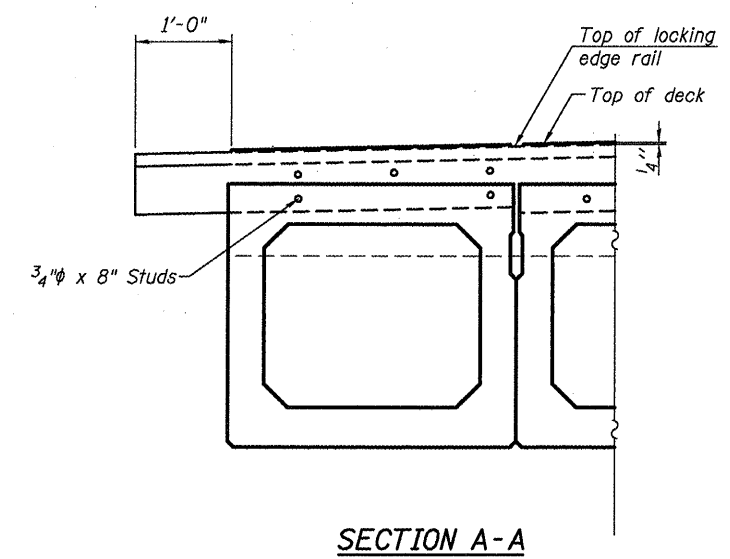
**CONCRETE PLACEMENT**  
(West abutment)



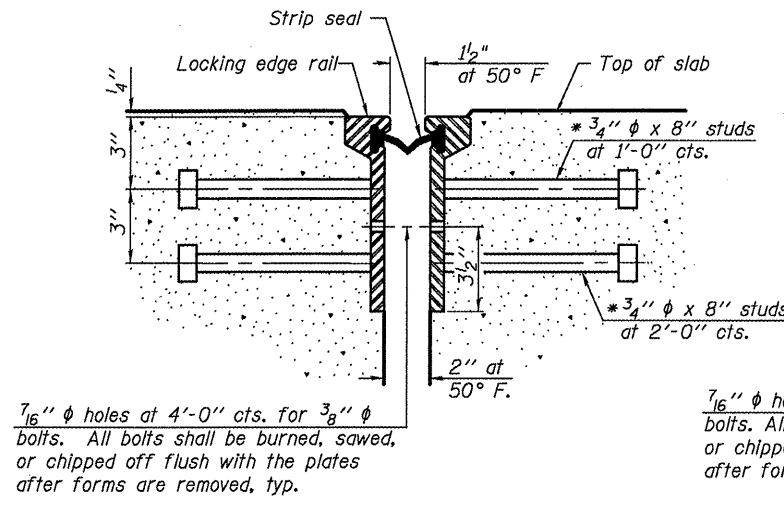
**SILICONE EXPANSION JOINT**  
(East abutment)



**PLAN**  
(For skews  $\leq 30^\circ$ )

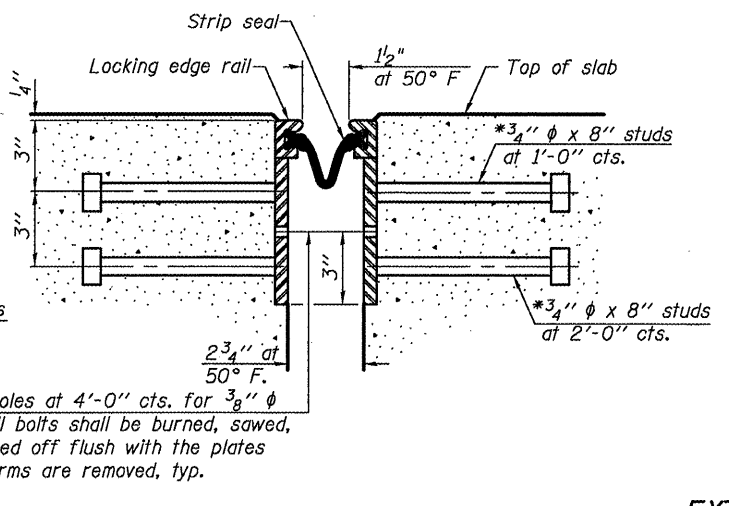


**SECTION A-A**



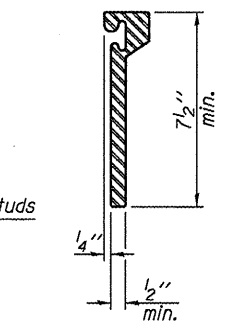
**SECTION THRU ROLLED RAIL JOINT**

$7/16''$   $\phi$  holes at 4'-0" cts. for  $3/8''$   $\phi$  bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

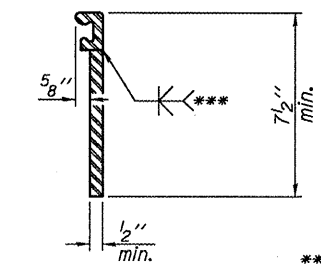


**SECTION THRU WELDED RAIL JOINT**

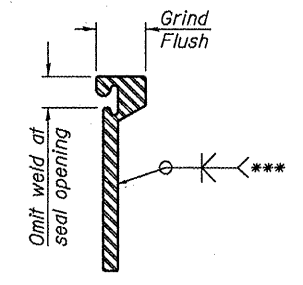
\* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



**ROLLED EXTRUDED RAIL**



**WELDED RAIL**



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

**LOCKING EDGE RAIL SPLICE**

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 at stage lines shall be  $3/16''$ , sealed with a suitable sealant.  
Parapet plates and anchorage studs for skews  $> 30^\circ$  included in the cost of Preformed Joint Strip Seal.

**BILL OF MATERIAL**

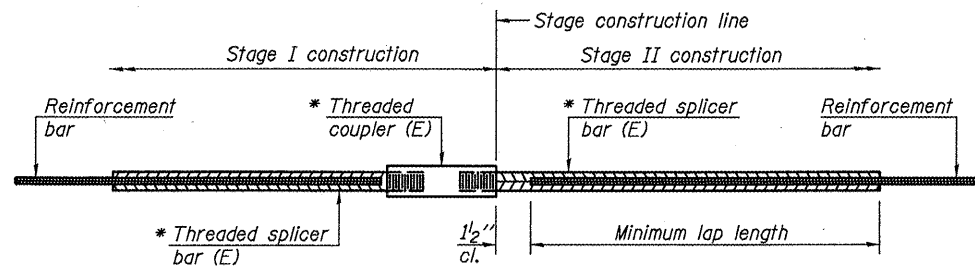
Item	Unit	Total
Preformed Joint Strip Seal	Foot	35.0

DESIGNED Brad Williams	EXAMINED <i>Jan F. J...</i>	DATE - 3/16/11
CHECKED John Uehle	PASSED <i>John Uehle</i>	
DRAWN Brad Williams		
CHECKED John Uehle		

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PREFORMED JOINT STRIP SEAL**  
**STRUCTURE NO. 067-0033**  
SHEET NO. 3 OF 4 SHEETS

F.A.P. RTE. 829	SECTION 102BR-3-1	COUNTY MONROE	TOTAL SHEETS 6	SHEET NO. 5
CONTRACT NO. 76E24				ILLINOIS FED. AID PROJECT



**STANDARD BAR SPLICER ASSEMBLY**

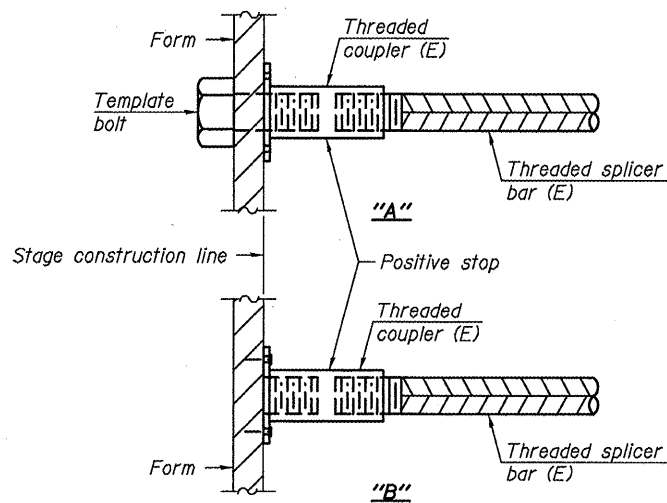
Bar size to be spliced	Minimum Lap Lengths				
	Table 1	Table 2	Table 3	Table 4	Table 5
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-3"
5	1'-9"	2'-5"	2'-7"	2'-11"	2'-10"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-4"
7	2'-9"	3'-10"	4'-2"	4'-8"	4'-6"
8	3'-8"	5'-1"	5'-5"	6'-2"	5'-10"
9	4'-7"	6'-5"	6'-10"	7'-9"	7'-5"

- 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 + 1/2" + thread length

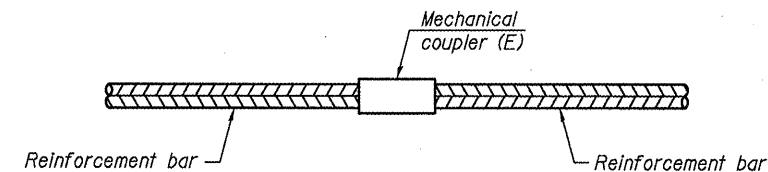
\* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
Stage Line	#4	67	2'-1"
West Abut	#6	6	3'-1"
Deck beam blockout	#6	4	3'-1"



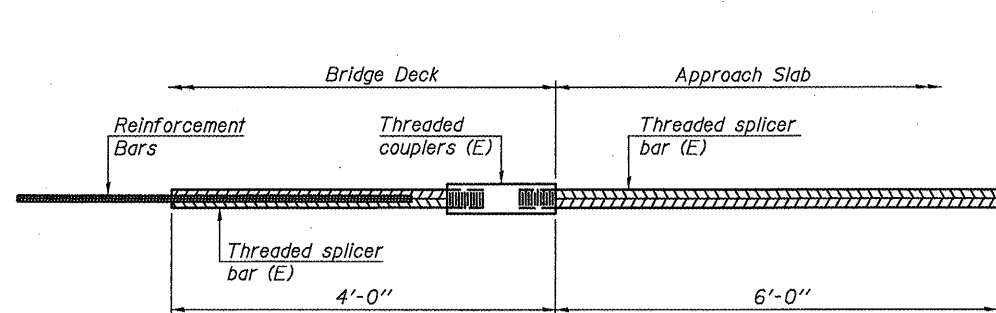
**INSTALLATION AND SETTING METHODS**

"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.



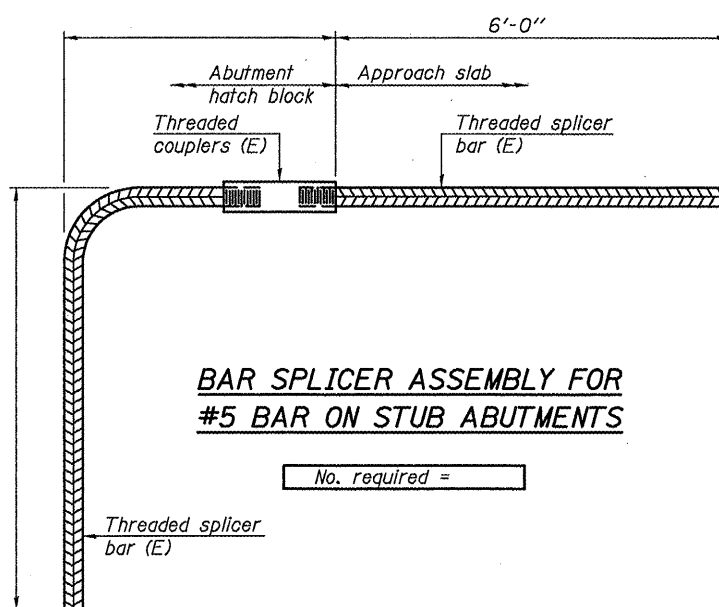
**STANDARD MECHANICAL SPLICER**

Location	Bar size	No. assemblies required



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

No. required = 77



**BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS**

No. 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 Brad Williams  
 CHECKED John Uehle  
 DRAWN Brad Williams  
 CHECKED John Uehle

EXAMINED  
 PASSED

John F. [Signature]  
 ENGINEER OF STRUCTURAL SERVICES  
 [Signature]  
 ENGINEER OF BRIDGES AND STRUCTURES

DATE 3/16/11

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS  
 STRUCTURE NO. 067-0033

SHEET NO. 4 OF 4 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
829	102BR-3-1	MONROE	6	6

CONTRACT NO. 76E24  
 ILLINOIS FED. AID PROJECT