

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

**PROPOSED  
HIGHWAY PLANS**

FAI ROUTE 24 (I-24)  
SECTION D9 CM BRIDGE REPAIR 2014-1

BRIDGE REPAIRS  
MASSAC COUNTY

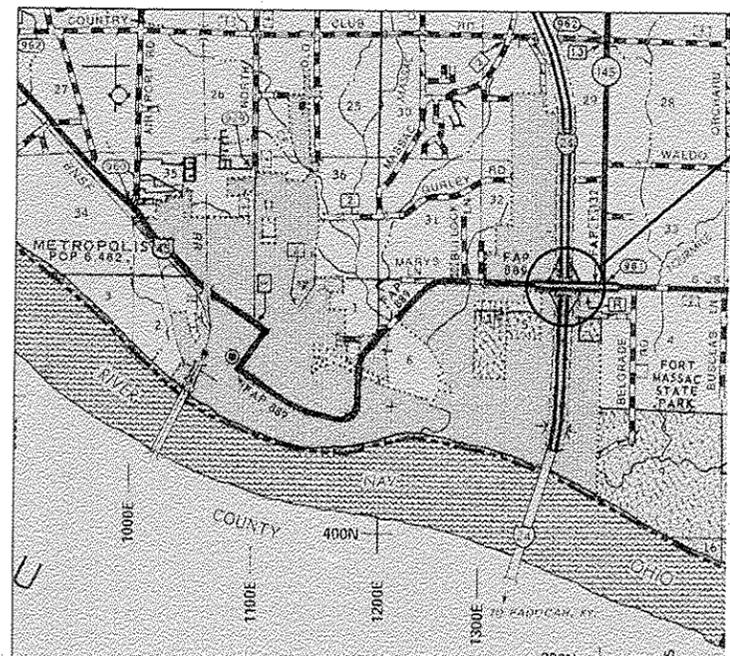
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24		MASSAC	16	1
		ILLINOIS	CONTRACT NO. 78249	

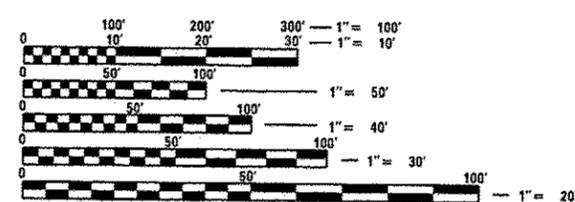
• 09 CM BRIDGE REPAIR 2014-1

FOR INDEX OF SHEETS, SEE SHEET NO. 2

**TRAFFIC DATA**  
2011 ADT = 11,850  
WITH 0.5% TRUCKS  
POSTED 45 MPH



IMPROVEMENT LOCATION  
STRUCTURE NO. 064-0029  
U.S. 45 OVER I-24



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: ADRIAN ADAMS (618) 351-5262  
PROJECT MANAGER: DAVID PICHE (618) 351-5227

GROSS LENGTH = 193.84 FT. = 0.0367 MILE  
NET LENGTH = 193.84 FT. = 0.0367 MILE

CONTRACT NO. 78249

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

SUBMITTED Oct 16 2013

*Jeffrey J. Keim*  
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

Dec 6 2013  
*John D. Baranzelle, P.E.*  
ENGINEER OF DESIGN AND ENVIRONMENT

Dec 6 2013  
*Omer Osman, P.E.*  
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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OF THE STATE OF ILLINOIS**

**GENERAL NOTES**

- 1) THE THICKNESS OF HOT-MIX ASPHALT MIXTURE SHOWN ON THE PLANS IS THE NOMINAL THICKNESS. DEVIATIONS FROM THE NOMINAL THICKNESS WILL BE PERMITTED WHEN SUCH DEVIATIONS OCCUR DUE TO IRREGULARITIES IN THE EXISTING SURFACE OR BASE ON WHICH THE HOT-MIX ASPHALT MIXTURE IS PLACED.
- 2) FACTORS USED FOR ESTIMATING PLAN QUANTITIES ARE AS FOLLOWS AND SHALL NOT BE USED FOR THE BASIS OF FINAL QUANTITIES:  

ALL HOT MIX ASPHALT	2.016 TONS/CU YD
BITUMINOUS MATERIALS ON PAVEMENT:	0.09 GAL /50 YD
- 3) AT ALL LOCATIONS WHERE PROPOSED HOT-MIX ASPHALT OR CONCRETE PAVEMENT JOINS AN EXISTING HOT-MIX ASPHALT OR CONCRETE PAVEMENT, A FULL DEPTH SAWED JOINT SHALL BE CONSTRUCTED. THE COST OF THIS JOINT WILL BE INCLUDED IN THE COST OF THE TYPE OF PAVEMENT BEING CONSTRUCTED.
- 4) SAW CUTS FOR PAVEMENT BUTT JOINTS SHALL BE INCLUDED IN THE COST OF HMA SURFACE REMOVAL - BUTT JOINT.
- 5) PRIOR TO PLACEMENT OF FINAL PAVEMENT MARKINGS THE RESIDENT ENGINEER SHALL CONTACT THE BUREAU OF OPERATIONS AND ARRANGE FOR INSPECTION AND APPROVAL OF THE PAVEMENT MARKING LAYOUT.
- 6) IF THE CONTRACTOR ELECTS TO USE P.C.C. BASE COURSE WIDENING, SUCH WIDENING SHALL BE ACCORDING TO ARTICLE 406.02. HOWEVER THIS WORK WILL NOT BE PAID FOR SEPARATELY AND SHALL BE INCLUDED IN THE COST OF THE WIDENING.
- 7) IN ADDITION TO THE REQUIREMENTS OF ARTICLE 107.16 THE CONTRACTOR SHALL PROTECT THE SURFACE OF ALL BRIDGE DECKS AND BRIDGE APPROACH PAVEMENTS IN A MANNER SATISFACTORY TO THE ENGINEER BEFORE ANY EQUIPMENT IS ALLOWED TO CROSS THE STRUCTURE. PROTECTION SHALL BE PROVIDED FOR ALL EQUIPMENT AS DEFINED IN ARTICLE 101.16 REGARDLESS IF TRACK MOUNTED OR WHEELED.
- 8) ANY TIME THE CONCRETE BARRIER IS NOT IN THE PROPER POSITION, FLAGGERS SHALL BE IN PLACE TO CONTROL TRAFFIC.
- 9) PATCHING QUANTITIES ARE FOR ESTIMATED. THE FINAL LOCATIONS AND QUANTITIES WILL BE DETERMINED BY THE ENGINEER.
- 10) COMMITMENTS: NONE AS OF OCTOBER 18, 2013.

**INDEX OF SHEETS**

- |    |   |
|----|---|
| 1  | COVER SHEET   |
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**STANDARDS**

- |           |   |
|-----------|---|
| 000001-06 | STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS                                |
| 001001-02 | AREAS OF REINFORCEMENT BARS   |
| 001006    | DECIMAL OF AN INCH AND OF A FOOT  |
| 420001-07 | PAVEMENT JOINTS   |
| 643001-02 | SAND MODULE IMPACT ATTENUATORS  |
| 701421-06 | LANE CLOSURE, MULTILANE, DAY OPERATIONS ONLY, FOR SPEEDS ≥ 45 MPH TO 55 MPH |
| 701423-07 | LANE CLOSURE, MULTILANE, WITH BARRIER, FOR SPEEDS ≥ 45 MPH TO 55 MPH        |
| 701426-06 | LANE CLOSURE, MULTILANE, INTERMITTENT OR MOVING OPER., FOR SPEEDS ≥ 45 MPH  |
| 701901-03 | TRAFFIC CONTROL DEVICES   |
| 704001-07 | TEMPORARY CONCRETE BARRIER  |
| 780001-04 | TYPICAL PAVEMENT MARKINGS   |
| 781001-03 | TYPICAL APPLICATIONS RAISED REFLECTIVE PAVEMENT MARKERS                     |
| 701101-04 | OFF-RD OPERATIONS, MULTILANE, 15' TO 24" FROM PAVEMENT EDGE                 |
| 701106-02 | OFF-RD OPERATIONS, MULTILANE, MORE THAN 15' AWAY                            |

**MIXTURE REQUIREMENTS**

LOCATION(S):	HOT-MIX ASPHALT SURFACE COURSE
MIXTURE USE(S):	POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N90
AC/PG:	SBS PG76-22
RAP % (MAX):	SEE SPECIAL PROVISION
DESIGN AIR VOIDS:	4.0%, 90 GYRATION DESIGN
MIXTURE COMPOSITION: (GRADATION MIXTURE):	IL-19.5 mm
FRICTION AGGREGATE:	D SURFACE

LOCATION(S):	HOT-MIX ASPHALT SHOULDERS
MIXTURE USE(S):	HOT-MIX ASPHALT SHOULDERS, N30
AC/PG:	PG58-22
RAP % (MAX):	50
DESIGN AIR VOIDS:	2.0%, 30 GYRATION DESIGN
MIXTURE COMPOSITION: (GRADATION MIXTURE):	HMA SHOULDER
FRICTION AGGREGATE:	NONE

Prepared By:	<i>Joe Blankiewicz</i> DISTRICT STUDIES & PLANS ENGINEER
Examined By:	<i>J. James</i> DISTRICT LAND ACQUISITION ENGINEER
Examined By:	<i>Carrie Nelson</i> DISTRICT PROGRAM DEVELOPMENT ENGINEER
Examined By:	<i>Val Nely</i> DISTRICT OPERATIONS ENGINEER
Examined By:	<i>[Signature]</i> DISTRICT PROJECT IMPLEMENTATION ENGINEER
Examined By:	<i>Douglas</i> DISTRICT CONSTRUCTION ENGINEER
Examined By:	<i>Bruce</i> DISTRICT MATERIALS ENGINEER

FILE NAME *	USER NAME * adonson	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>GENERAL NOTES, INDEX OF SHEETS, STANDARDS, AND MIXTURE REQUIREMENTS</b>	P.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0:\pwork\pwork\adonson\0825203\064-0029-sh1.dgn		DRAWN -	REVISED -			24		MASSAC	16	2
#MODELNAME*	PLOT SCALE * 1/8" = 1'-0"	CHECKED -	REVISED -							
	PLOT DATE * 10/10/2013	DATE -	REVISED -							
						SCALE: _____ SHEET _____ OF _____ SHEETS STA. _____ TO STA. _____		CONTRACT NO. 78249		

		SN 064-0029	
		100% STATE	
		MASSAC COUNTY	
		CONSTRUCTION TYPE CODE - 0014	
CODE NUMBER	PAY ITEM	UNIT	TOTAL QUANTITY
35600716	HOT-MIX ASPHALT BASE COURSE WIDENING, 10' '	SQ YD	463
40600100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	56
40600982	HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT	SQ YD	604
40603545	POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N90	TON	218
48203100	HOT-MIX ASPHALT SHOULDERS	TON	20
50102400	CONCRETE REMOVAL	CU YD	18.2
50300255	CONCRETE SUPERSTRUCTURES	CU YD	20.9
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	4830
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	2940
50800515	BAR SPLICERS	EACH	48
52000110	PREFORMED JOINT STRIP SEAL	FOOT	182
52100010	ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	24
52100520	ANCHOR BOLTS, 1' '	EACH	48
58100200	WATERPROOFING MEMBRANE SYSTEM	SQ YD	2004

		SN 064-0029	
		100% STATE	
		MASSAC COUNTY	
		CONSTRUCTION TYPE CODE - 0014	
CODE NUMBER	PAY ITEM	UNIT	TOTAL QUANTITY
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	2
67100100	MOBILIZATION	L SUM	1
70100310	TRAFFIC CONTROL AND PROTECTION, STANDARD 701421	L SUM	1
70100325	TRAFFIC CONTROL AND PROTECTION, STANDARD 701423	EACH	4
70106800	CHANGEABLE MESSAGE SIGN	CAL MO	2
70300100	SHORT TERM PAVEMENT MARKING	FOOT	72
70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ FT	30
70400100	TEMPORARY CONCRETE BARRIER	FOOT	813
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	788
70600250	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2
70600350	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2
* 78001110	PAINT PAVEMENT MARKING - LINE 4' '	FOOT	1564
* 78100100	RAISED REFLECTIVE PAVEMENT MARKER	EACH	2
* 78100105	RAISED REFLECTIVE PAVEMENT MARKER - BRIDGE	EACH	6

\* SPECIALTY ITEM

FILE NAME *	USER NAME * USER*	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>SUMMARY OF QUANTITIES</b>			F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
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MODELNAME*	PLOT DATE * 10/15/2013	CHECKED -	REVISED -		SCALE:	SHEET	OF	SHEETS	STA.	TO STA.	ILLINOIS FED. AID PROJECT CONTRACT NO. 78249		
		DATE -	REVISED -		* 09 CM BRIDGE REPAIR 2014-1								

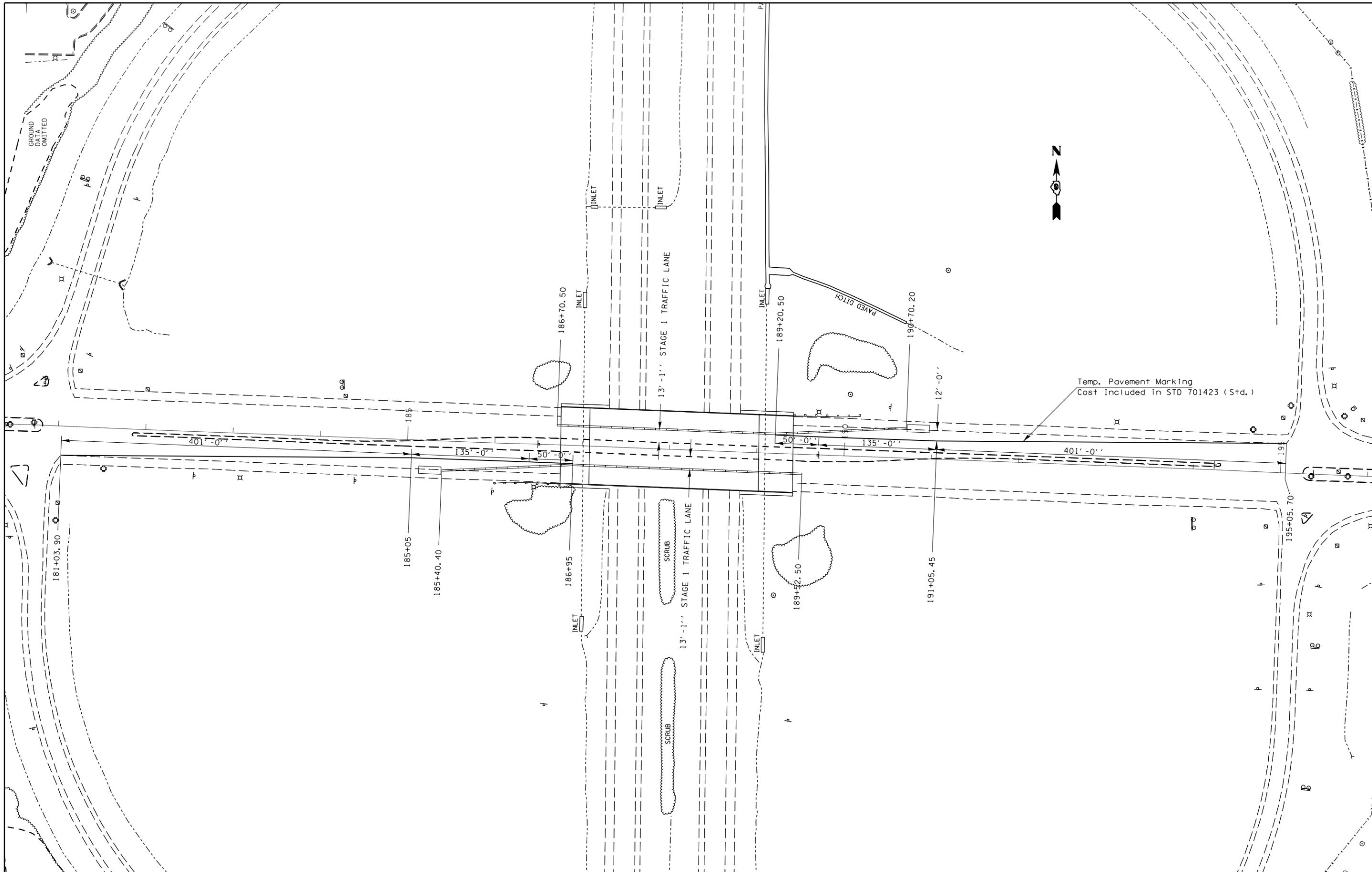
CODE NUMBER	PAY ITEM	SN 064-0029	
		100% STATE	
		MASSAC COUNTY	
CONSTRUCTION TYPE CODE - 0014			
		UNIT	TOTAL QUANTITY
78300200	RAISED REFLECTIVE PAVEMENT MARKER REMOVAL	EACH	8
Z0001899	JACK AND REMOVE EXISTING BEARINGS	EACH	24
Z0012754	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	62
Z0012500	CONCRETE CURB REPAIR	FOOT	22
Z0016200	DECK SLAB REPAIR (PARTIAL)	SQ YD	6

PAVING SCHEDULE										
STATION				WATERPROOF MEMBRANE SYSTEM	HMA SURFACE COURSE	HMA SHOULDERS	HMA BASE COURSE WIDENING, 10'	HMA SURFACE REMOVAL - BUTT JOINT	PRIME COAT	
				SQ YD	TON	TON	SQ YD	SQ YD	GALLON	
185+05.00	RT	TO	186+35.38	RT			145			
186+35.38	LT	TO	186+75.38	LT		12	45	151	14	
186+35.38	RT	TO	186+75.38	RT		12	45	151	14	
186+75.38	LT	TO	187+09.08	LT	130	11				
186+75.38	RT	TO	187+09.08	RT	130	11				
187+12.21	LT	TO	188+98.21	LT	718	61				
187+12.21	RT	TO	188+98.21	RT	718	61				
189+01.34	LT	TO	189+41.29	LT	154	13				
189+01.34	RT	TO	189+41.29	RT	154	13				
189+41.29	LT	TO	189+81.29	LT		12	45	151	14	
189+41.29	RT	TO	189+81.29	RT		12	45	151	14	
189+81.29	LT	TO	191+05.50	LT			138			
TOTAL					2004	218	20	463	604	56

PAVEMENT MARKING SCHEDULE									
STATION				PAINT PAVEMENT MARKING - LINE 4'			SHORT TERM PAVEMENT MARKING	WORK ZONE PAVEMENT MARKING REMOVAL	
				4' SOLID YELLOW	4' WHITE SKIP DASH	4' SOLID WHITE			
				FOOT	FOOT	FOOT			
186+35.38	LT	TO	186+75.38	LT	40.00	10	40.00	4	2
186+35.38	RT	TO	186+75.38	RT	40.00	10	40.00	4	2
186+75.38	LT	TO	187+08.29	LT	32.91	10	32.91	4	2
186+75.38	RT	TO	187+08.29	RT	32.91	10	32.91	4	2
187+08.29	LT	TO	189+02.13	LT	193.84	50	193.84	20	7
187+08.29	RT	TO	189+02.13	RT	193.84	50	193.84	20	7
189+02.13	LT	TO	189+41.29	LT	39.16	10	39.16	4	2
189+02.13	RT	TO	189+41.29	RT	39.16	10	39.16	4	2
189+41.29	LT	TO	189+81.29	LT	40.00	10	40.00	4	2
189+41.29	RT	TO	189+81.29	RL	40.00	10	40.00	4	2
SUBTOTAL					692	180	692	72	30
TOTAL					1564			72	30

STRUCTURAL REPAIR OF CONCRETE SCHEDULE			
WEST ABUTMENT			
LOCATION	SIZE	AREA (SQ FT)	NOTES
SW CORNER	2' X 1'	2	
NW CORNER	5' X 1'	5	
NW CORNER	2.5' X 2'	5	
NW CORNER	5' X 1'	5	CURTAIN WALL
TOTAL		17	
EAST ABUTMENT			
LOCATION	SIZE	AREA (SQ FT)	NOTES
SE CORNER	3' X 5'	15	
SE CORNER	2.5' X 1'	2.5	
SE CORNER	5' X 1'	5	CURTAIN WALL
SE CORNER	2' X 2.5'	5	ABUT CAP
SE CORNER	1' X 2'	2	FACE ABUT CAP
NE CORNER	5' X 1'	5	
NE CORNER	1' X 2.5'	2.5	
NE CORNER	5' X 1'	5	CURTAIN WALL
NE CORNER	2.5' X 1'	2.5	
TOTAL		45	

FILE NAME *	USER NAME = *USER*	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUMMARY OF QUANTITIES AND SCHEDULES			F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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PLOT SCALE = 100.0000' / in.		CHECKED -	REVISED -		CONTRACT NO. 78249							
PLOT DATE = 10/15/2013		DATE -	REVISED -		SCALE:	SHEET	OF	SHEETS	STA.	TO	STA.	



Temp. Pavement Marking  
Cost Included in STD 701423 (Std.)

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USER NAME = \$USER\$  
PLOT SCALE = 100.0000' / in.  
PLOT DATE = 10/15/2013

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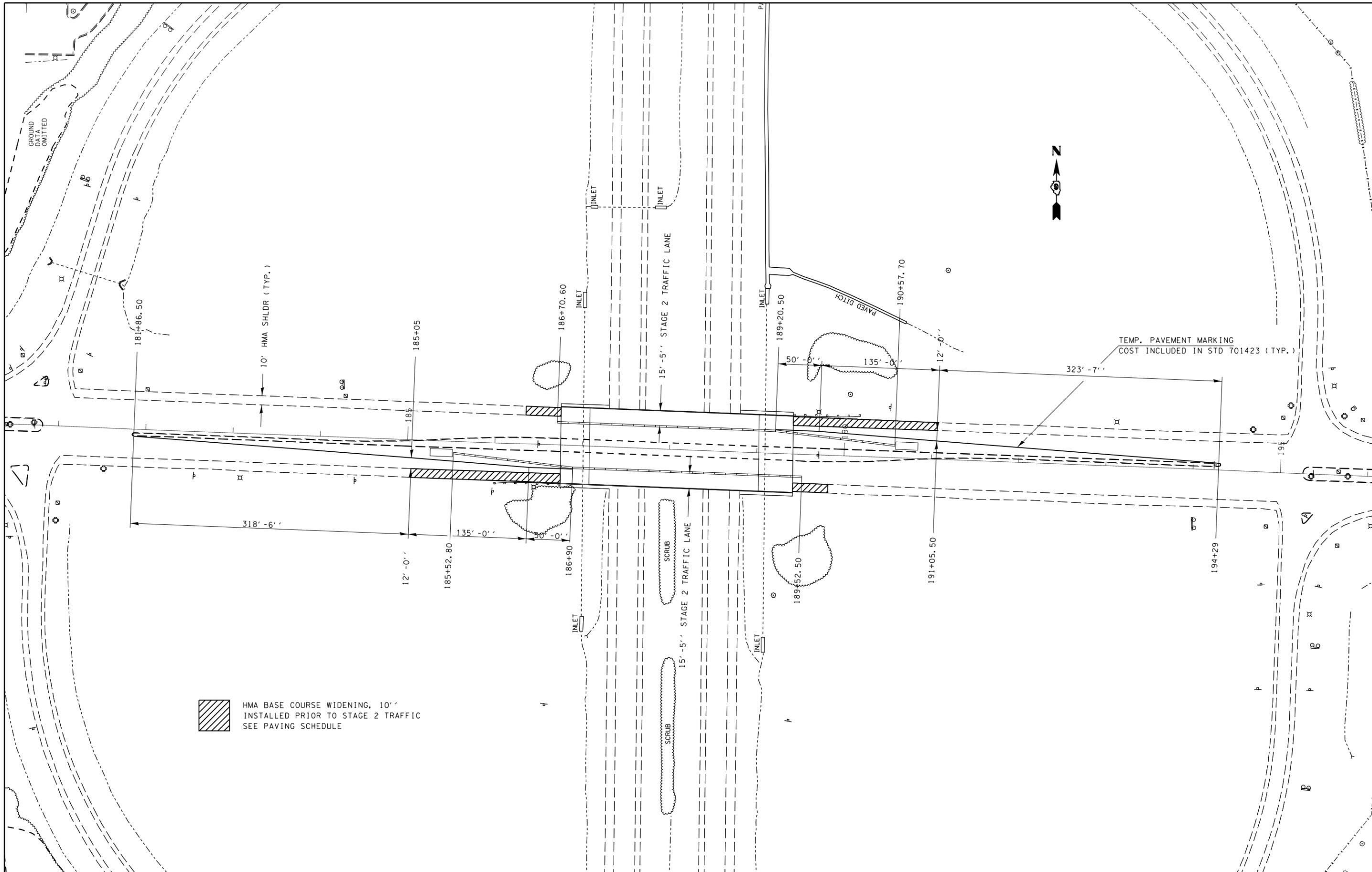
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**STAGE 1 TRAFFIC  
CONTROL PLAN**

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	.	MASSAC	16	5
<b>CONTRACT NO. 78249</b>				

ILLINOIS FED. AID PROJECT  
D9 CM BRIDGE REPAIR 2014-1




 HMA BASE COURSE WIDENING, 10' INSTALLED PRIOR TO STAGE 2 TRAFFIC SEE PAVING SCHEDULE

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 PLOT DATE = 10/15/2013

DESIGNED -  
 DRAWN -  
 CHECKED -  
 DATE -

REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

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

**STAGE 2 TRAFFIC**  
**CONTROL PLAN**

SCALE: SHEET OF SHEETS STA. TO STA.

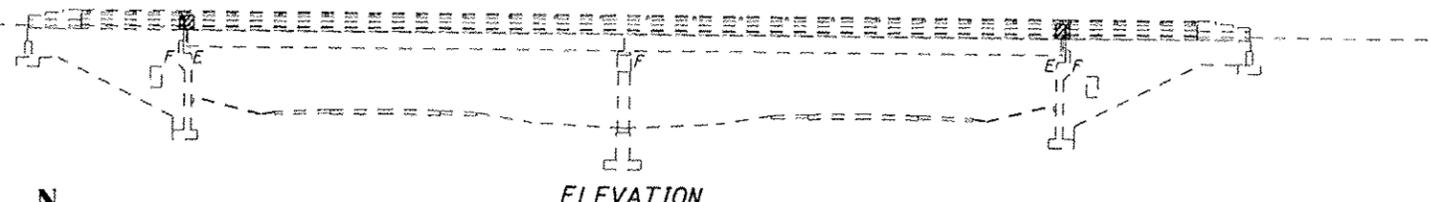
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	.	MASSAC	16	6
CONTRACT NO. 78249				

ILLINOIS FED. AID PROJECT

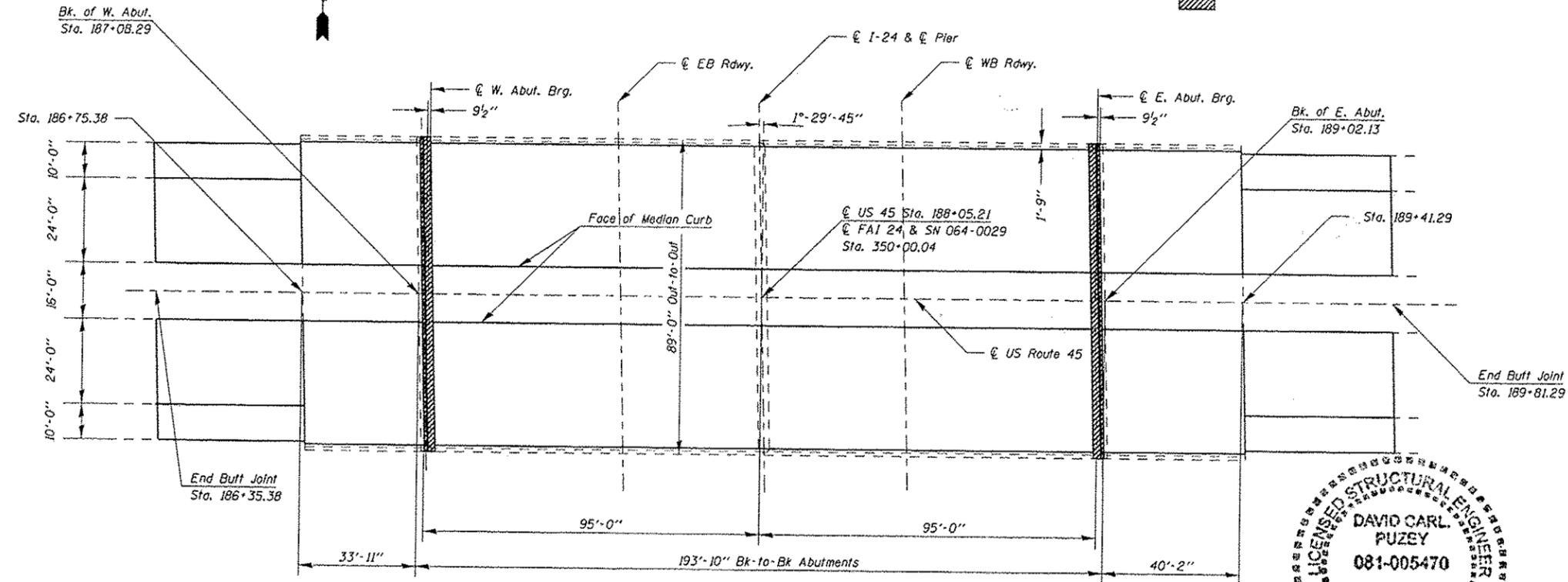
09 CM BRIDGE REPAIR 2014-1

**GENERAL NOTES**

The deck surface shall have its final finish tined according to Article 420.09(e)(1) of the Standard Specifications. Cost included with CONCRETE SUPERSTRUCTURES. Reinforcement bars designated (E) shall be epoxy coated. All structural steel shall be AASHTO M 270 Grade 36 unless otherwise noted. No field welding is permitted except as specified in the contract documents. Prior to pouring the new concrete section, 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 CONCRETE REMOVAL. 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 in CONCRETE REMOVAL. Joint openings shall be adjusted according to Article 520.04 of the Std. Specs. when the deck is poured at an ambient temperature other than 50°F. The Contractor shall use extreme care during concrete removal so as not to damage the PPC Deck Beam. Existing structural steel shall only be cleaned and painted as required by the Special Provision "Cleaning and Painting Adjacent Areas of Existing Steel Structures." The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project. Fasteners shall be AASHTO M164 Type I, mechanically galvanized bolts. Bolts - 3/4" φ, holes - 7/8" φ, unless otherwise noted.



**ELEVATION**



**PLAN**



**TOTAL BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Polymerized HMA Surface Course, Mix 'D', N90	Ton	218
HMA Shoulders	Ton	20
Concrete Removal	Cu. Yd.	18.2
Concrete Superstructures	Cu. Yd.	20.9
Furnishing and Erecting Structural Steel	Pound	4830
Reinforcement Bars, Epoxy Coated	Pound	2940
Bar Splicers	Each	48
Preformed Joint Strip Seal	Foot	182
Elastomeric Bearing Assembly, Type I	Each	24
Anchor Bolts, 1"	Each	48
Waterproofing Membrane System	Sq. Yd.	1437
Jack and Remove Existing Bearings	Each	24
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	62
Deck Slab Repair (Partial)	Sq. Yd.	6

**DESIGN STRESSES**

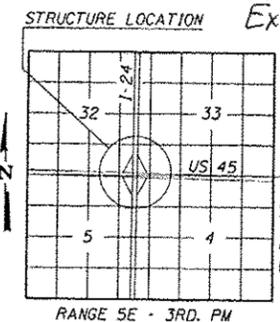
**NEW CONSTRUCTION**  
FIELD UNITS  
f<sub>c</sub> = 3500 psi  
f<sub>y</sub> = 60,000 psi (reinforcement)

**ORIGINAL CONSTRUCTION**  
FIELD UNITS  
Concrete (Cast-in-place)  
f<sub>c</sub> = 3,500 psi  
f<sub>c</sub> = 1,200 psi (deck)  
f<sub>c</sub> = 1,400 psi (substructure)  
f<sub>c</sub> = 1,000 psi (with earth pressure)  
v = 75 psi (footings)  
n = 10

Reinforcing Steel  
f<sub>s</sub> = 20,000 psi  
Structural Steel  
f<sub>s</sub> = 20,000 psi (A36)  
Live Loading HS20-44  
Dead Loading = 25 psf

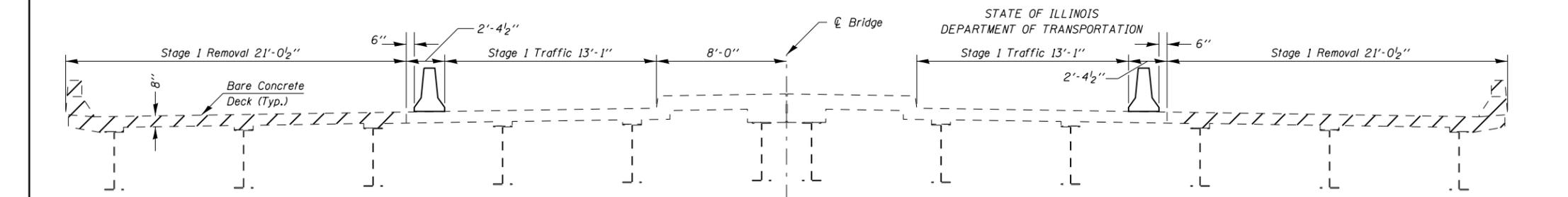
**SCOPE OF WORK**

- 1) Setup TC&P 701423 with barrier for Stage I work in the EB & WB driving lanes of US 45.
- 2) Perform joint reconstruction, bearing replacement, deck repair, waterproofing membrane system, and HMA overlay.
- 3) Adjust TC&P 701423 for Stage II with barrier work in the EB & WB passing lanes of US 45 as well as the turn lanes onto I-24 ramps.
- 4) Perform joint reconstruction, bearing replacement, deck repair, waterproofing membrane system, and HMA overlay.
- 5) Remove TC&P 701423.

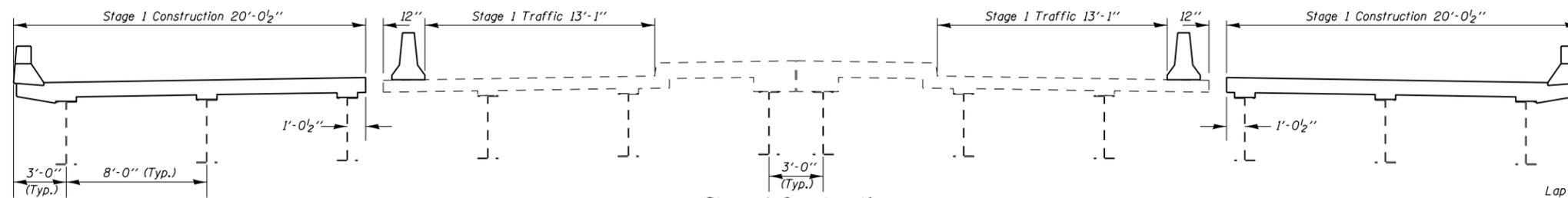


**LOCATION SKETCH**

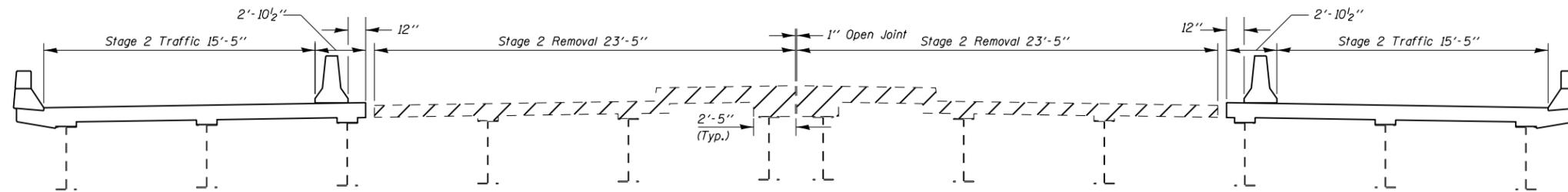
**GENERAL PLAN**  
**US 45 OVER FAI 24**  
**SECTION D9 CM BRIDGE REPAIR 2014-1**  
**MASSAC COUNTY**  
**STRUCTURE NUMBER 064-0029**



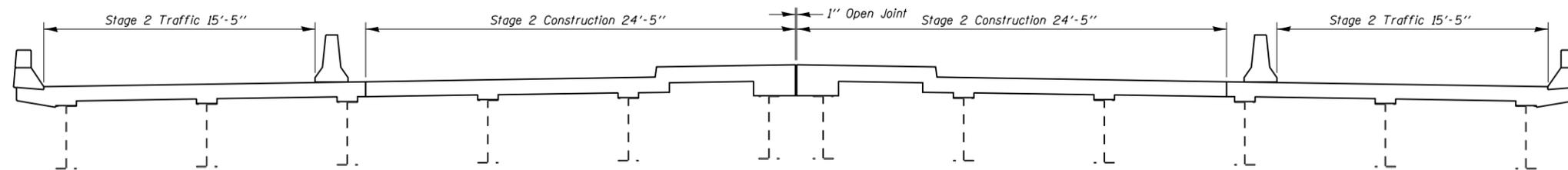
**Stage 1 Removal**



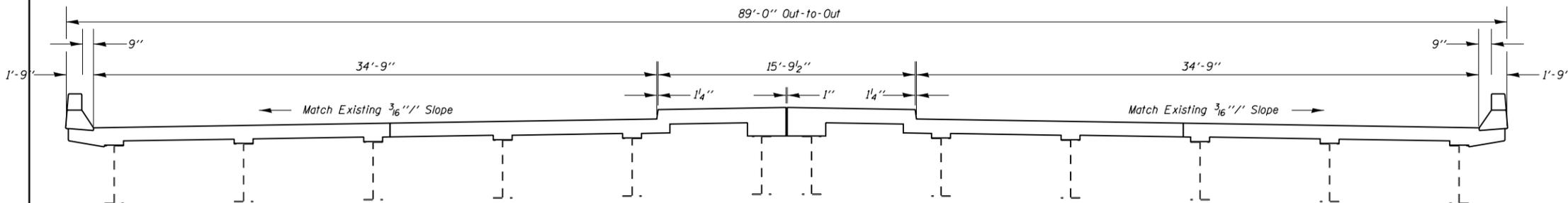
**Stage 1 Construction**



**Stage 2 Removal**

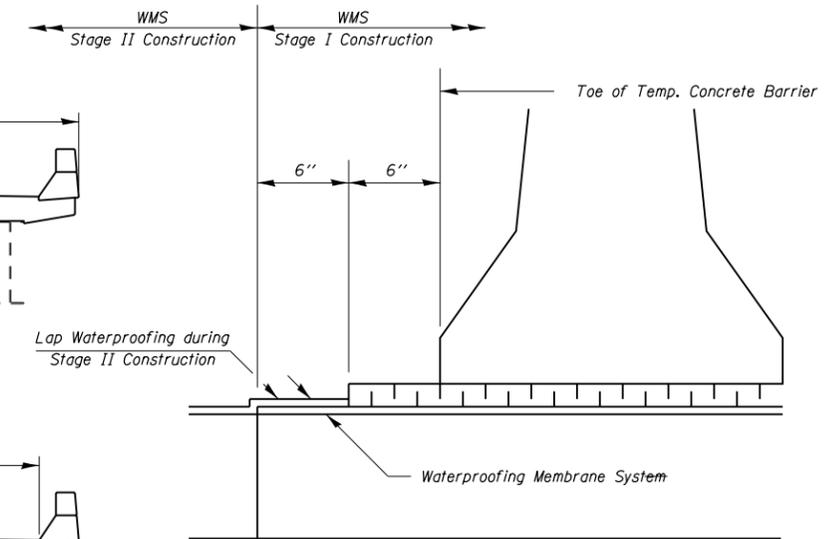


**Stage 2 Construction**



**Section Through Structure at Joint Replacements**

All Sections Looking East.

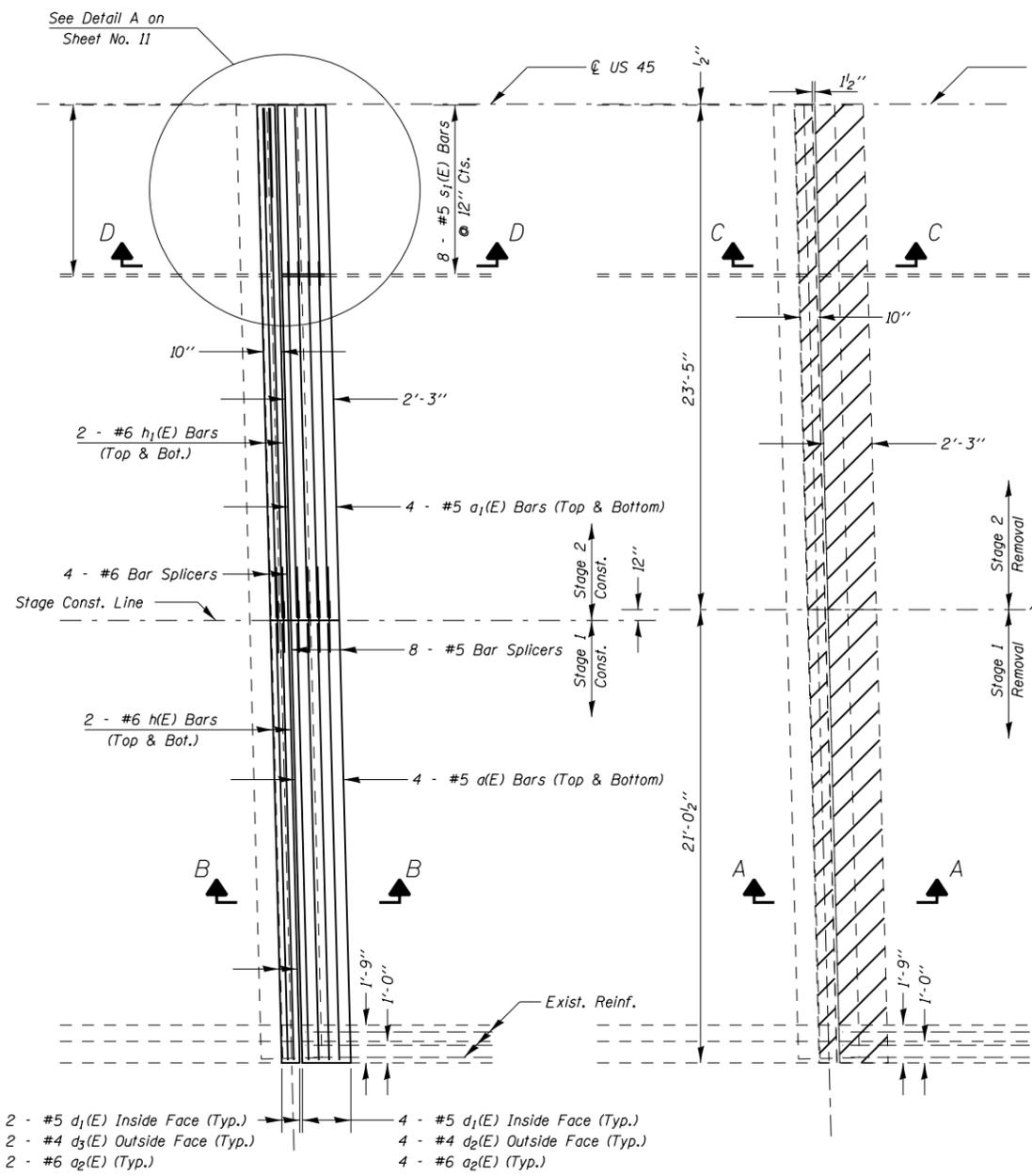


**Waterproofing Treatment at Stage Construction**

Concrete Removal at joint replacements

**STAGING DETAILS  
STRUCTURE NO. 064-0029**

FILE NAME =	USER NAME = \$USER\$	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>STAGING DETAILS</b>			F.A.I. RTÉ.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
et:\pw\work\p\dot\adamsem\d0253203\064-0029-sh.t.dgn		DRAWN -	REVISED -					24	.	MASSAC	16	8
\$MODELNAME\$	PLOT SCALE = 8.0000' / in.	CHECKED -	REVISED -		CONTRACT NO. 78249							
	PLOT DATE = 10/15/2013	DATE -	REVISED -		SCALE:	SHEET	OF	SHEETS	STA.	TO	STA.	ILLINOIS FED. AID PROJECT

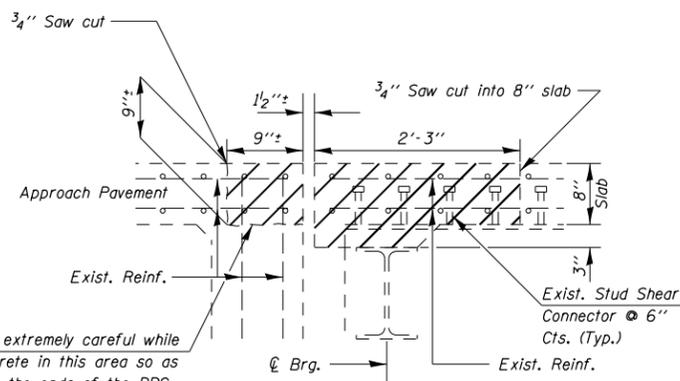


Concrete Removal

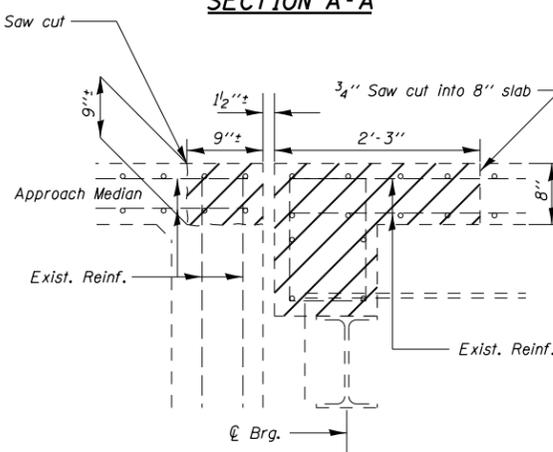
Contractor must be extremely careful while removing concrete in this area so as not to damage the ends of the PPC deck beams. Any damage to the beams is to be repaired at the expense of the contractor.

Note: Horizontal dimensions in sections A-A, B-B, C-C, & D-D are at right angles.  
Dimensions are based on a rolled rail strip joint. If the contractor elects to use welded rail strip seal joint deck dimensions may require adjustments to satisfy the details on base sheet EJ-SSJ.

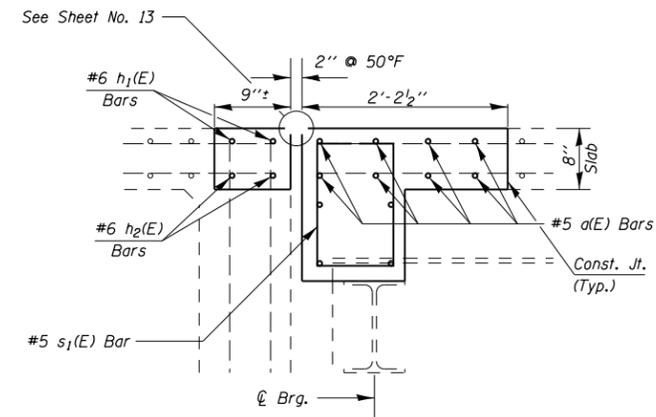
Existing shear stud connectors shall remain in place during joint reconstruction. Any shear stud connectors damaged shall be replaced at the expense of the contractor.



SECTION A-A

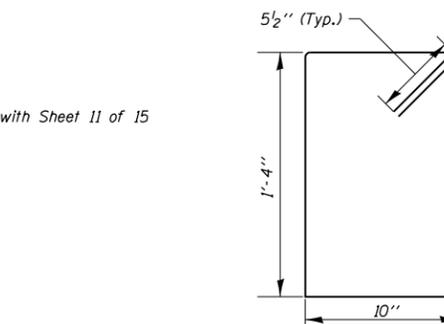


SECTION B-B



SECTION C-C

SECTION D-D

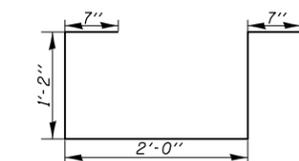


Bar s1(E)

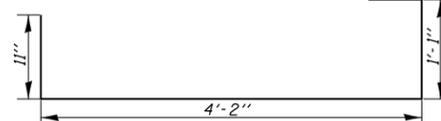
Work this sheet with Sheet 11 of 15

JOINT @ ABUTMENT HALF PLAN  
SHOWING NEW CONCRETE

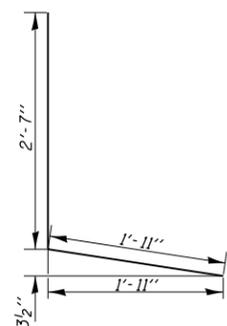
JOINT @ ABUTMENT HALF PLAN  
SHOWING CONCRETE REMOVAL



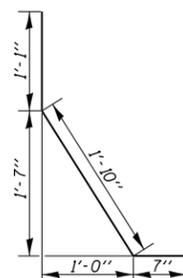
Bar u1(E)



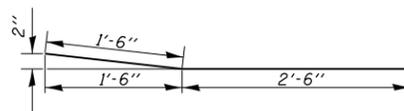
Bar u2(E)



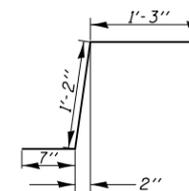
Bar d2(E)



Bar d1(E)



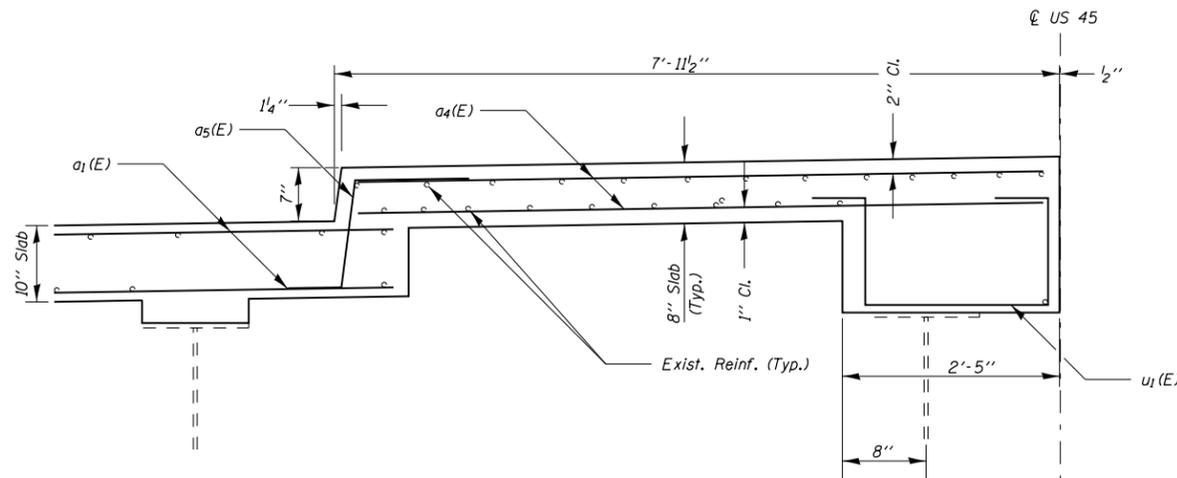
Bar a2(E)



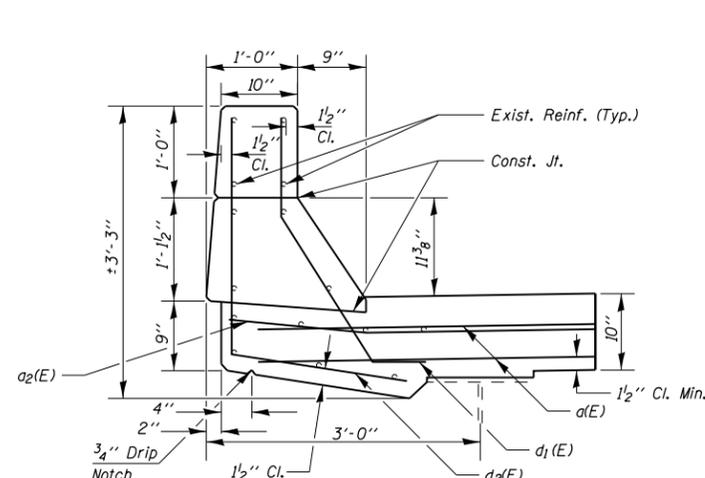
Bar a5(E)

JOINT REPLACEMENT &  
REINFORCEMENT DETAILS  
STRUCTURE NO. 064-0029

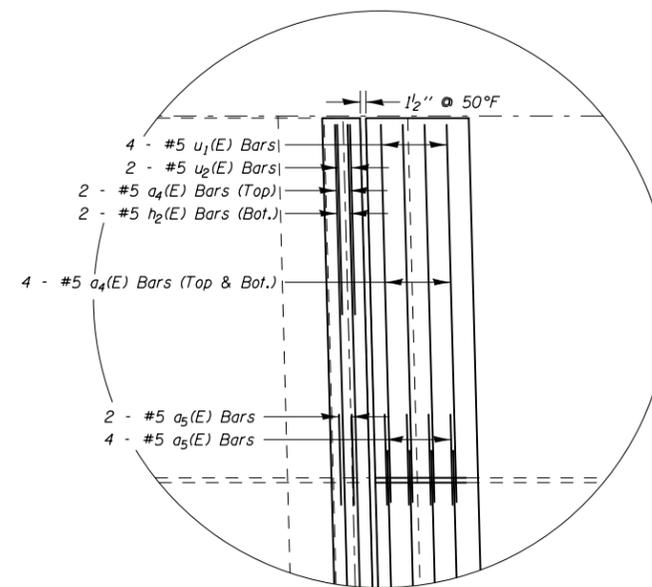
FILE NAME =	USER NAME = \$USER\$	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	JOINT REPLACEMENT AND REINFORCEMENT DETAILS	F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
ei:\pwwork\pwwork\adamsam\d0253203\064-0029-sh.t.dgn		DRAWN -	REVISED -			24	.	MASSAC	16	9	
\$MODELNAME\$	PLOT DATE = 10/15/2013	CHECKED -	REVISED -			CONTRACT NO. 78249					
		DATE -	REVISED -			ILLINOIS FED. AID PROJECT					



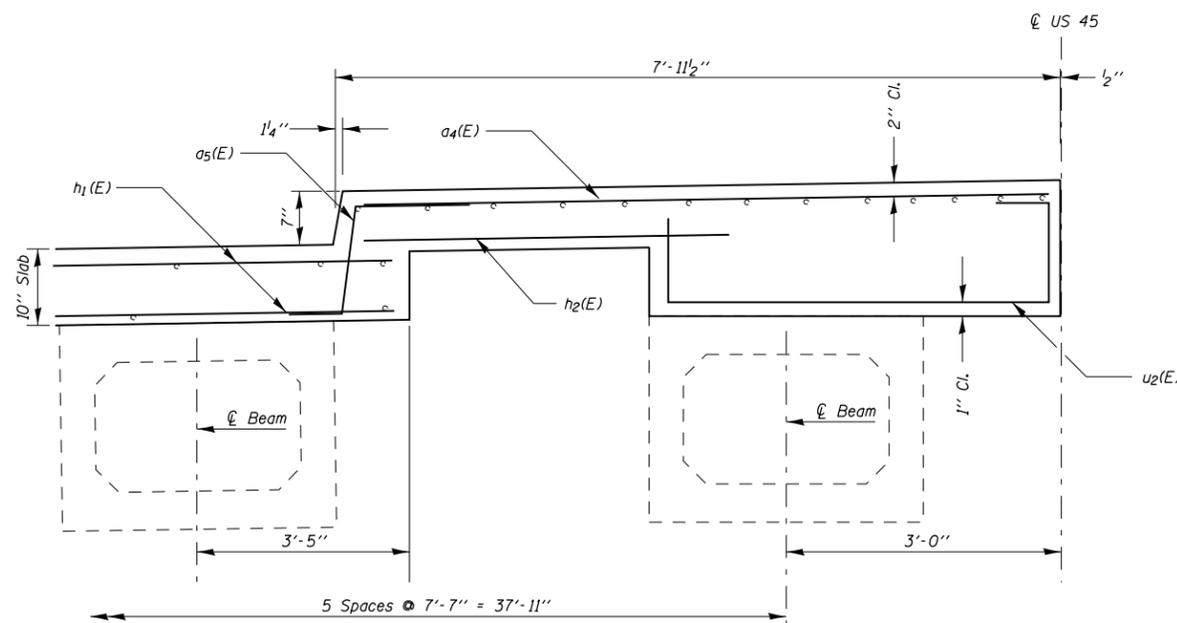
**HALF-SECTION THROUGH  
MEDIAN ON STRUCTURE**



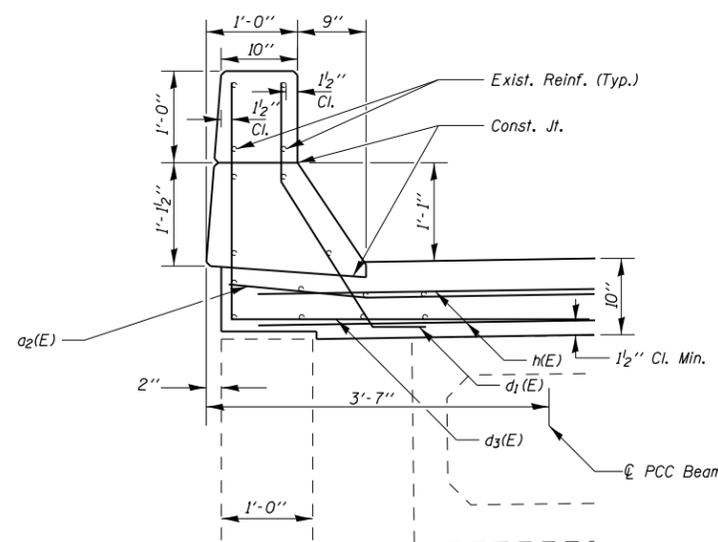
**SECTION THROUGH PARAPET  
ON STRUCTURE**



**DETAIL A**



**HALF-SECTION THROUGH  
MEDIAN ON APPROACH PAVEMENT**



**SECTION THROUGH PARAPET  
ON APPROACH PAVEMENT**

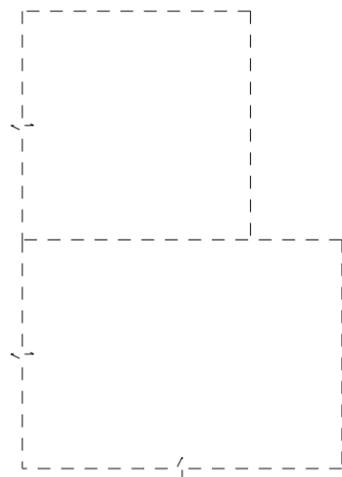
**BILL OF MATERIAL (2 ABUTMENTS)**

064-0029				
BAR	NO.	SIZE	LENGTH	SHAPE
a(E)	32	5	19'-5"	—
a1(E)	32	5	16'-9"	—
a2(E)	24	6	4'-0"	—
a4(E)	40	5	7'-6"	—
a5(E)	24	5	3'-0"	┌
d1(E)	24	5	3'-6"	L
d2(E)	16	4	4'-6"	└
d3(E)	8	4	6'-6"	L
h(E)	16	6	19'-5"	—
h1(E)	8	6	16'-9"	—
h2(E)	8	5	4'-0"	—
s1(E)	32	5	5'-3"	□
u1(E)	16	5	5'-6"	┌
u2(E)	8	5	6'-9"	└
CONCRETE SUPERSTRUCTURE		CU YD	20.9	
CONCRETE REMOVAL		CU YD	18.2	
BAR SPLICERS		EACH	48	
REINFORCEMENT BARS EPOXY COATED		POUND	2940	

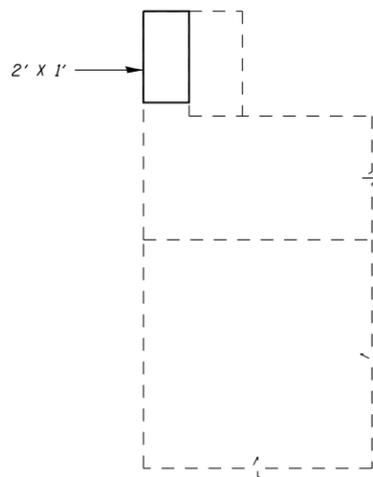
**JOINT REPLACEMENT &  
REINFORCEMENT DETAILS  
STRUCTURE NO. 064-0029**

FILE NAME =	USER NAME = \$USER\$	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>PARAPET AND MEDIAN DETAILS</b>			F.A.I. R.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
ci:\pw\work\p\midot\adamson\d0253203\064-0029-sh.t.dgn		DRAWN -	REVISED -					24	.	MASSAC	16	10
\$MODELNAME\$	PLOT SCALE = 8.0000' / in.	CHECKED -	REVISED -		CONTRACT NO. 78249							
	PLOT DATE = 10/15/2013	DATE -	REVISED -		ILLINOIS FED. AID PROJECT							

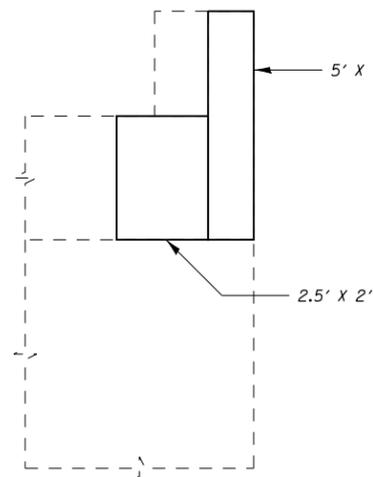




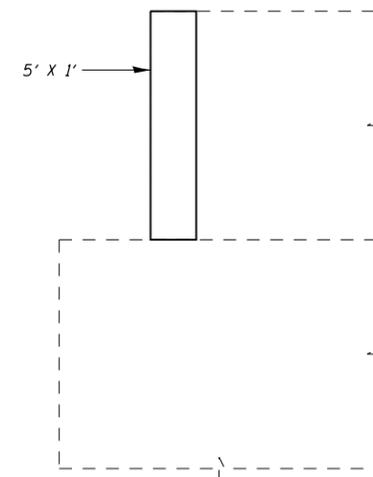
SW Corner  
Looking North



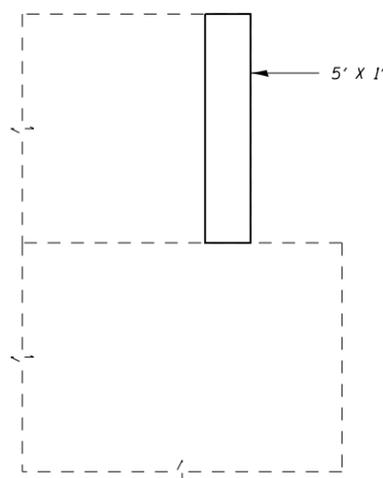
SW Corner  
Looking West



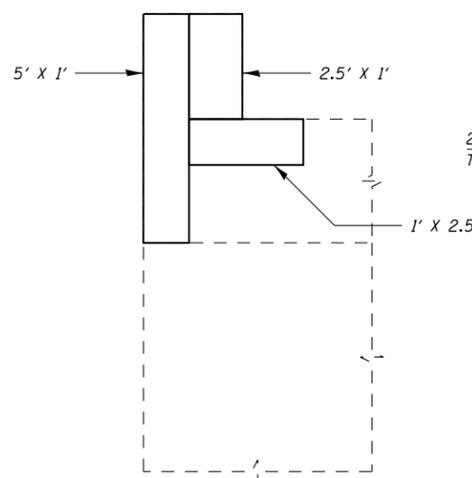
NW Corner  
Looking West



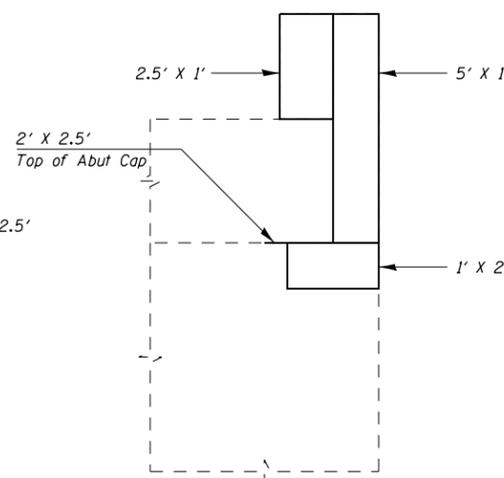
NW Corner  
Looking South



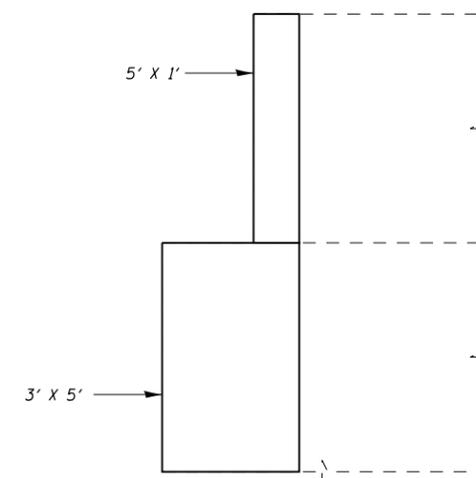
NE Corner  
Looking South



NE Corner  
Looking East



SE Corner  
Looking East



SE Corner  
Looking North

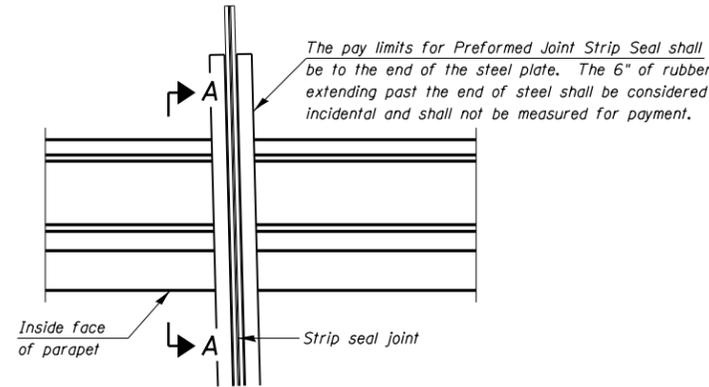
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\$MODELNAME*	PLOT SCALE = 8.0000 ' / in.	CHECKED -	REVISED -
	PLOT DATE = 10/15/2013	DATE -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

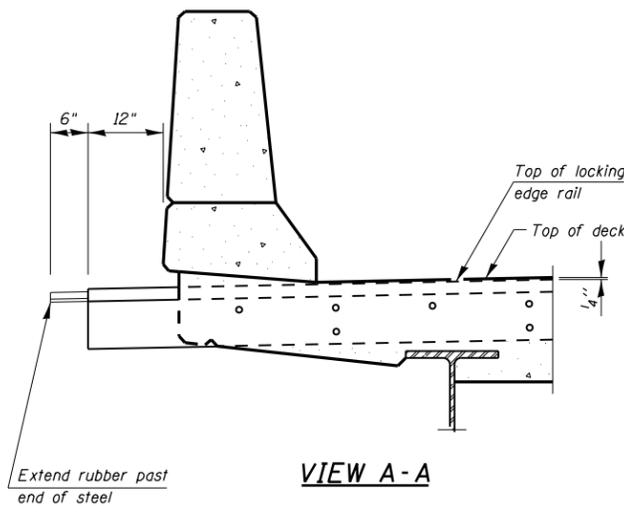
**STRUCTURAL REPAIR  
OF CONCRETE DETAILS**

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	•	MASSAC	16	12
CONTRACT NO. 78249				



**PLAN THROUGH PARAPET**



**VIEW A-A**

**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.

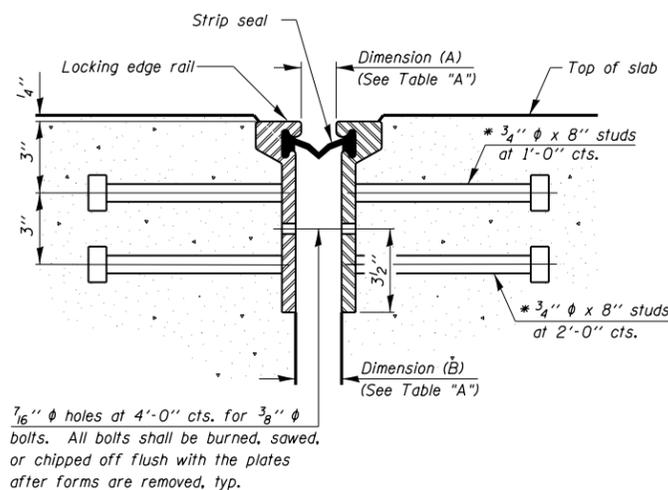
**TABLE "A"**

(All dimensions @ 50° F)

Joint	A	B	C
W. Abut.	1 1/2"	2"	2 3/4"
E. Abut.	1 1/2"	2"	2 3/4"

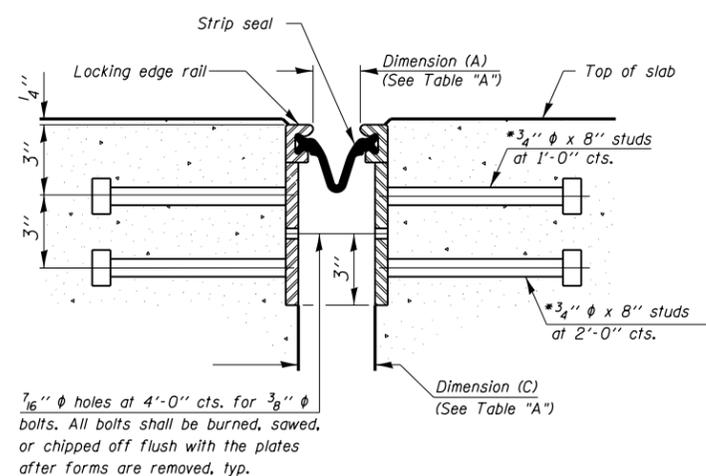
**BILL OF MATERIAL**

Item	Unit	Total
Preformed Joint Strip Seal	Foot	182



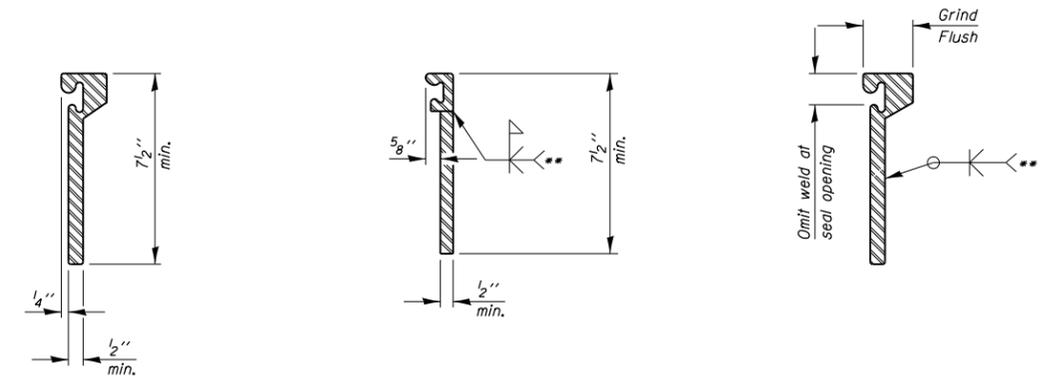
**SECTION THRU ROLLED RAIL JOINT**

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



**SECTION THRU WELDED RAIL JOINT**

**LOCKING EDGE RAILS**



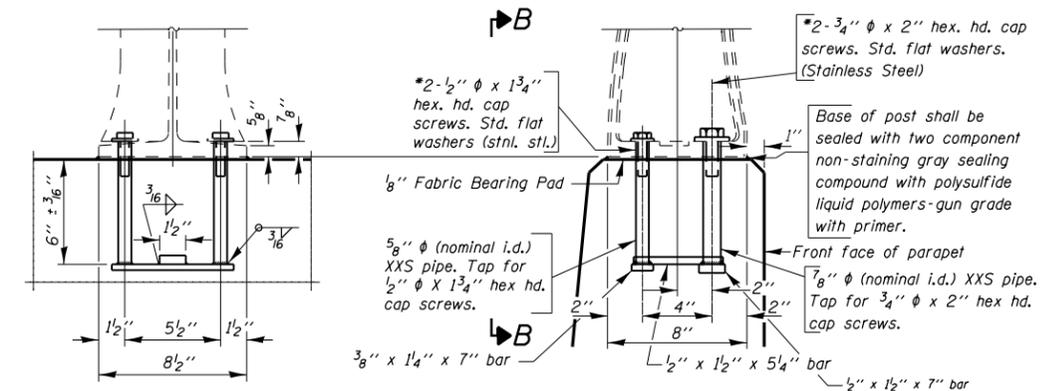
**ROLLED EXTRUDED RAIL**

**WELDED RAIL**

**LOCKING EDGE RAIL SPLICE**

The inside of the locking edge rail groove shall be free of weld residue. Rolled rail shown, welded rail similar.  
\*\* Back gouge not required if complete joint penetration is verified by mock-up.

**Notes:**  
Post shall be normal to the parapet.  
\* In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting stainless steel anchor rods of the same diameter and grade as the specified cap screws according to Article 509.06 of the Standard specifications. Embedment shall be according to the manufacturers's specifications.  
Removal and re-erection of the existing aluminum handrail, rail post, and all new applicable hardware, including labor and installation shall be included in the cost of CONCRETE REMOVAL.



**VIEW B-B**

**RAIL POST DETAILS**

**PREFORMED JOINT STRIP SEAL AND RAIL POST DETAILS  
SN 064-0029**

**NOTES**

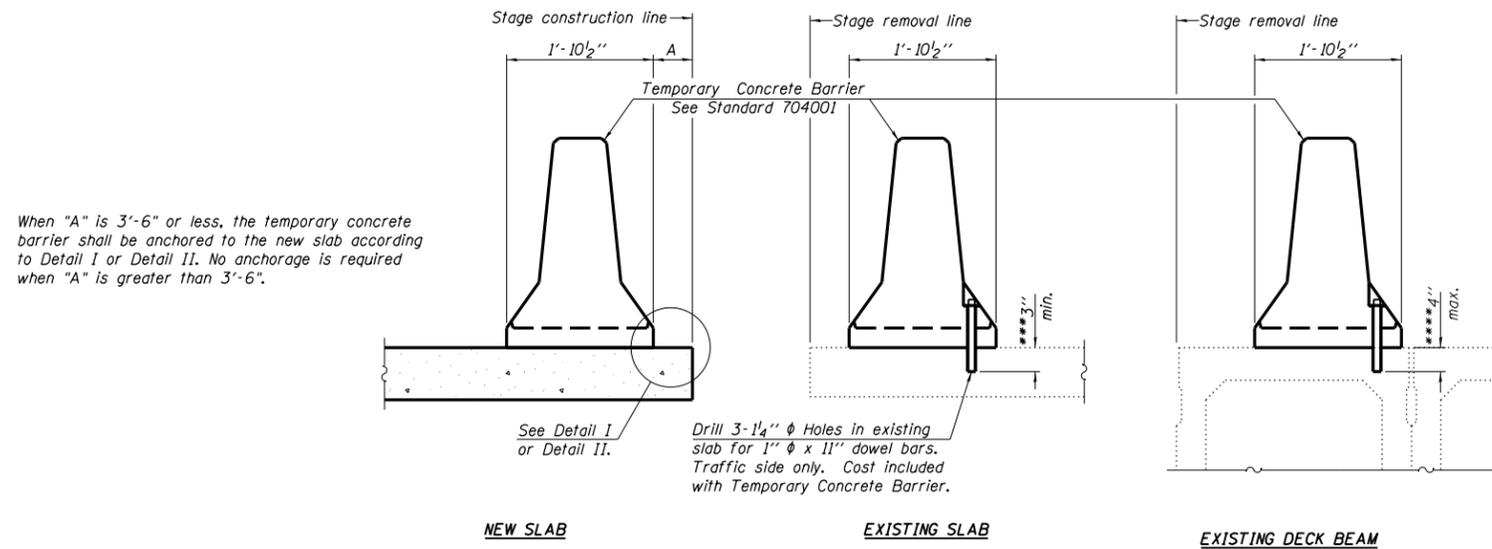
Detail I - With Bar Splicer or Couplers:  
Connect one (1) 1" x 7" x "W" steel  $\bar{r}$  to the top layer of couplers with 2-5/8"  $\phi$  bolts screwed to coupler at approximate  $\bar{c}$  of each barrier panel.

Detail II - With Extended Reinforcement Bars:  
Connect one (1) 1" x 7" x "W" steel  $\bar{r}$  to the concrete slab or concrete wearing surface with 2-5/8"  $\phi$  Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate  $\bar{c}$  of each barrier panel.

Cost of anchorage is included with Temporary Concrete Barrier.  
The 1" x 7" x "W" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

\*\*\* Dimension shown is minimum required embedment into concrete.  
If hot-mix asphalt wearing surface is present, minimum embedment shall be in addition to wearing surface depth.

\*\*\*\* If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



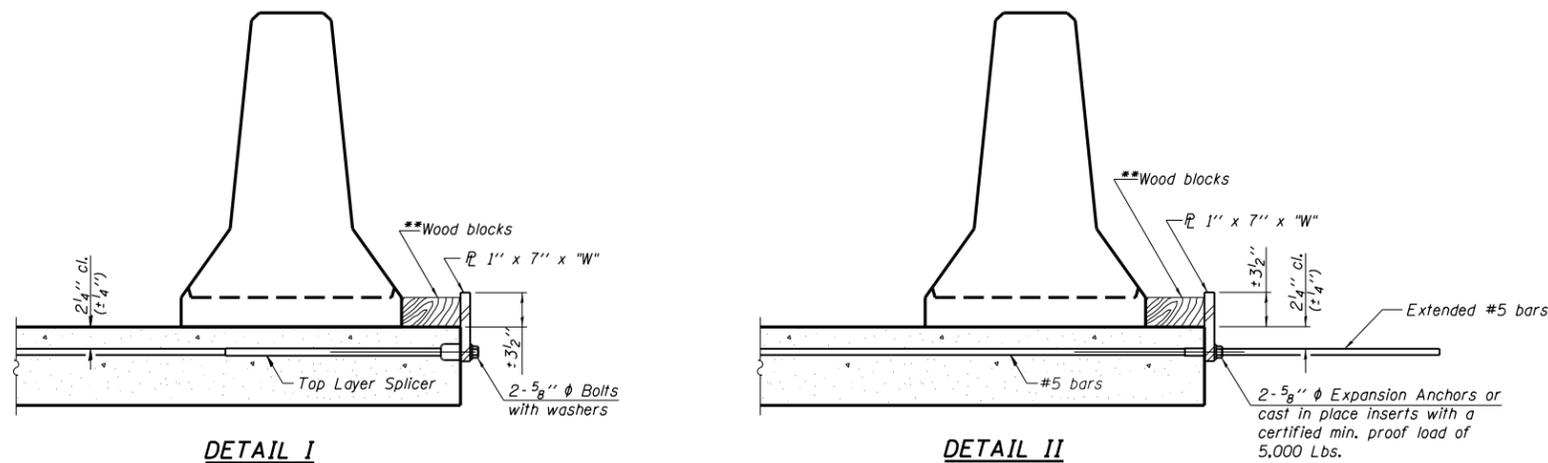
When "A" is 3'-6" or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-6".

NEW SLAB

EXISTING SLAB

EXISTING DECK BEAM

**SECTIONS THRU SLAB OR DECK BEAM**

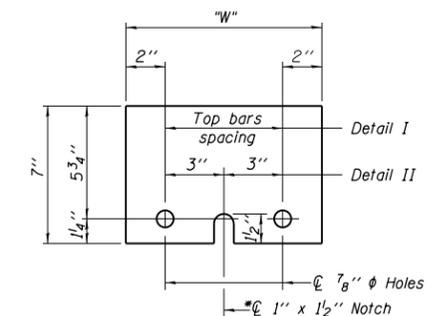


DETAIL I

DETAIL II

\*\*\* Wood blocks may be omitted when required to provide minimum stage traffic lane width. When the wood blocks are omitted, the concrete barrier shall be in direct contact with the steel retainer plate.

"W" = Top bars spacing + 4"



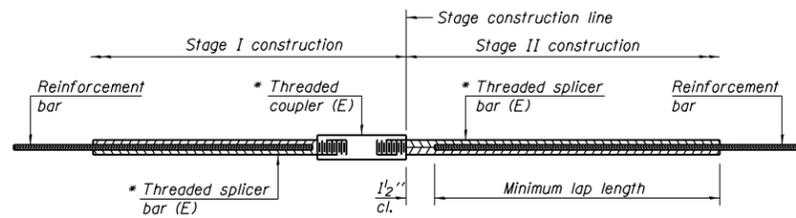
**STEEL RETAINER  $\bar{r}$  1" x 7" x "W"**

\* Required only with Detail II

R-27 7-1-10

**TEMPORARY CONCRETE BARRIER  
FOR STAGE CONSTRUCTION  
SN 064-0029**

FILE NAME =	USER NAME = \$USER*	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION</b>				F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
ct:\pw\work\p\dot\adamsem\d0253203\064-0029-sh.t.dgn		DRAWN -	REVISED -		24	.	MASSAC	16	14				
\$MODELNAME*	PLOT SCALE = 100.0000' / in.	CHECKED -	REVISED -		CONTRACT NO. 78249				ILLINOIS FED. AID PROJECT				
	PLOT DATE = 10/15/2013	DATE -	REVISED -		SCALE:	SHEET	OF	SHEETS	STA.	TO	STA.	* D9 CM BRIDGE REPAIR 2014-1	



**STANDARD BAR SPLICER ASSEMBLY**

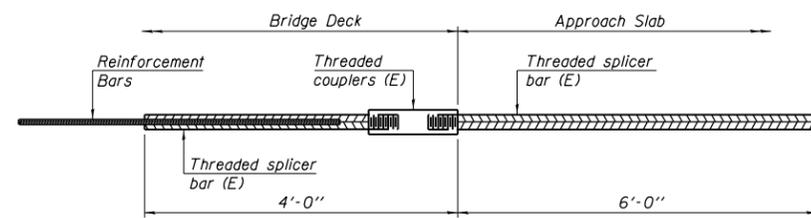
Bar size to be spliced	Minimum Lap Lengths					
	Table 1	Table 2	Table 3	Table 4	Table 5	Table 6
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-7"	2'-11"
5	1'-9"	2'-5"	2'-7"	2'-11"	3'-3"	3'-8"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-10"	4'-5"
7	2'-9"	3'-10"	4'-2"	4'-8"	5'-2"	5'-10"
8	3'-8"	5'-1"	5'-5"	6'-2"	6'-9"	7'-8"
9	4'-7"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

- 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, Class C
- Table 6: Epoxy bar, Top bar top, Class C

Threaded splicer bar length = min. lap length + 1/2" + thread length

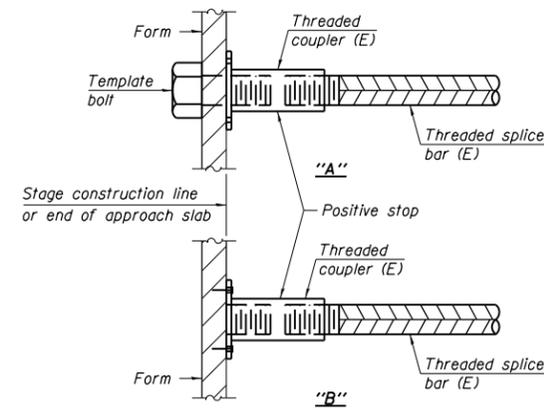
\* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
W. Abut. Joint	5	16	Table 3
W. Abut. Approach	6	8	Table 3
E. Abut. Joint	5	16	Table 3
E. Abut. Approach	6	8	Table 3



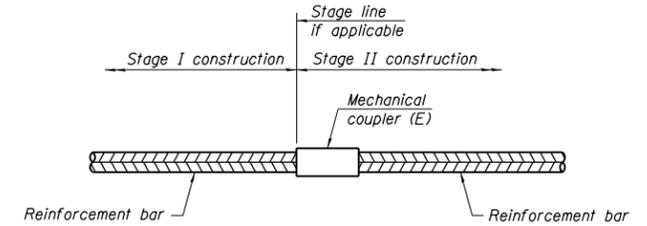
**BAR SPLICER ASSEMBLY FOR #5 BAR ON INTEGRAL OR SEMI-INTEGRAL ABUTMENTS**

No. required =



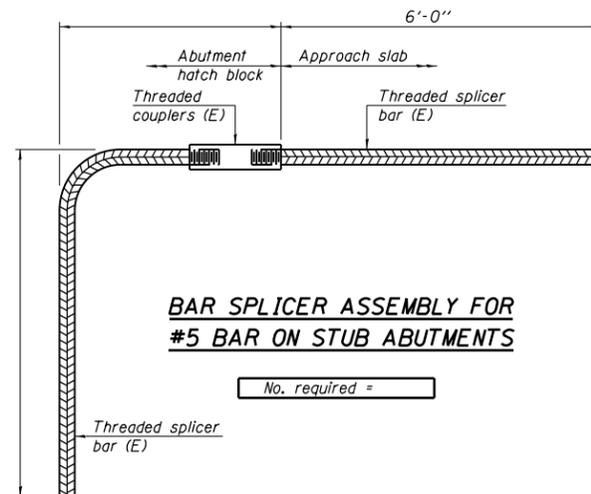
**INSTALLATION AND SETTING METHODS**

"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 STUB ABUTMENTS**

No. required =

**NOTES**

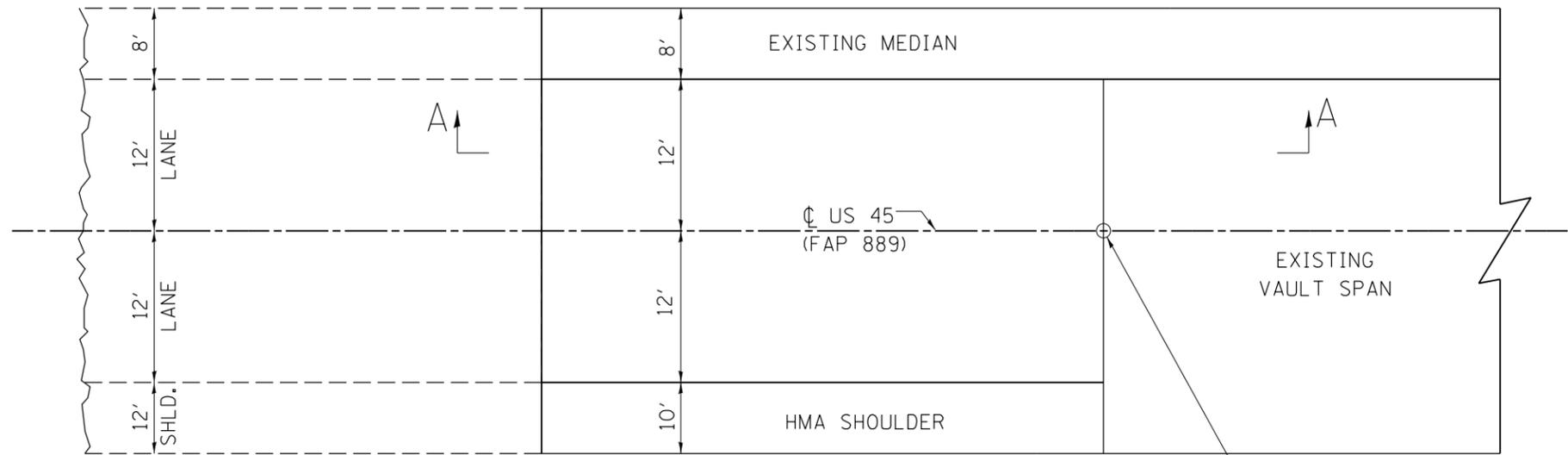
- Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.
- All reinforcement shall be lapped and tied to the splicer bars.
- Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.
- See approved list of bar splicer assemblies and mechanical splicers for alternatives.

**BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS**  
SN 064-0029

BSD-1 1-27-12

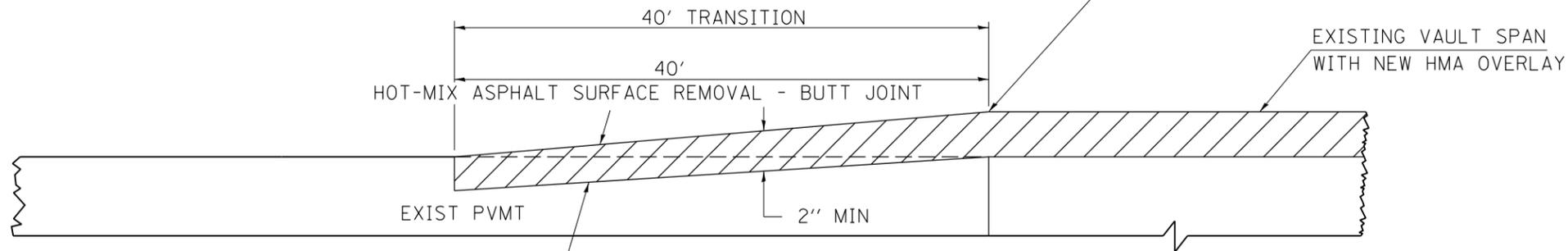
FILE NAME =	USER NAME = \$USER\$	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS</b>	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		DRAWN -	REVISED -			24		MASSAC	16	15	
		CHECKED -	REVISED -			CONTRACT NO. 78249					
		DATE -	REVISED -			ILLINOIS FED. AID PROJECT					
\$MODELNAME\$	PLOT DATE = 10/15/2013			SCALE:	SHEET OF SHEETS	STA.	TO STA.	D9 CM BRIDGE REPAIR 2014-1			

# BUTT JOINT



HALF PLAN

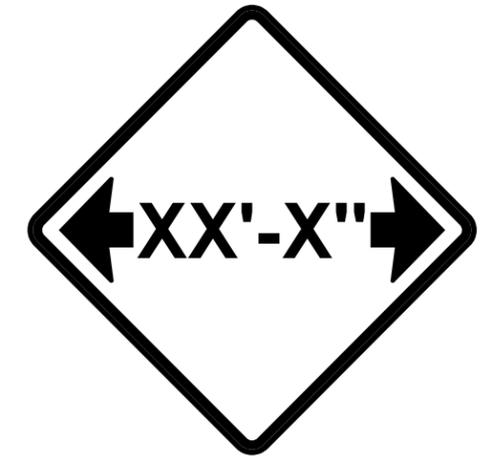
STA 186+75.38 LT & RT  
STA 189+41.29 LT & RT



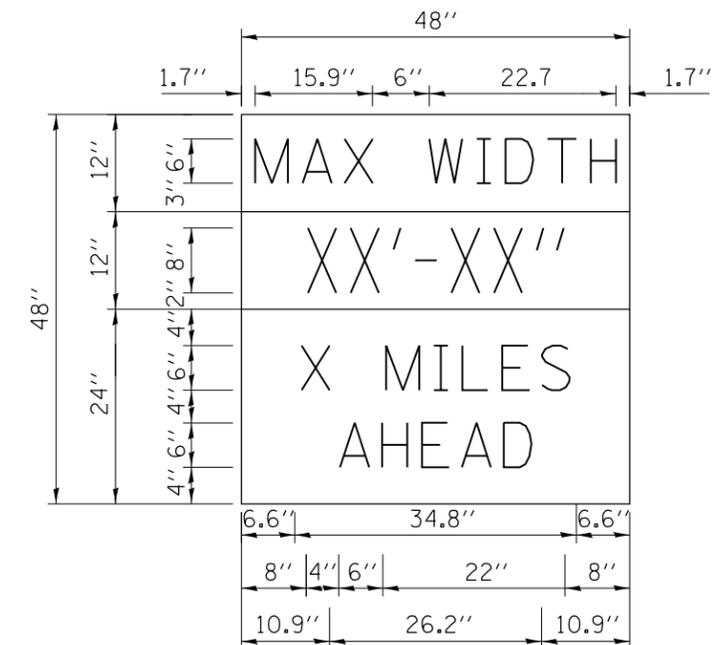
HOT-MIX ASPHALT SURF CSE  
MIX D, N90, 2"

SECTION A-A

# WIDTH RESTRICTION SIGNS



W12-I102



W12-I103

NOTE: THIS SIGN SHALL BE LOCATED AS DIRECTED BY THE ENGINEER. ONE SIGN SHALL BE PROVIDED FOR EACH APPROACH TO THE SITE.

W12-I103

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

FILE NAME =	USER NAME = \$USER\$	DESIGNED -	REVISED -
ci:\pw\work\p\dot\adamsem\d0253203\064-0029-sh.t.dgn		DRAWN -	REVISED -
\$MODELNAME\$	PLOT SCALE = 100.0000' / in.	CHECKED -	REVISED -
	PLOT DATE = 10/15/2013	DATE -	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BUTT JOINT DETAILS &  
WIDTH RESTRICTION SIGNS

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	.	MASSAC	16	16
CONTRACT NO. 78249				

ILLINOIS FED. AID PROJECT

D9 CM BRIDGE REPAIR 2014-1