

DESIGNER: CLARK JONES  
PHONE: (309)671-3452

PROJECT ENGINEER: JIM MILLER  
PHONE: (309)671-3451

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

**PROPOSED  
HIGHWAY PLANS**

FAP 702 (IL.117)  
SECTION (114BR-1)I  
MISC. BRIDGE REPAIRS  
WOODFORD COUNTY  
C-94-155-09

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
702	(114BR-1)I	WOODFORD	23	1
FED. ROAD DIST. NO. 4		ILLINOIS	CONTRACT NO. 68928	

INDEX OF SHEETS:

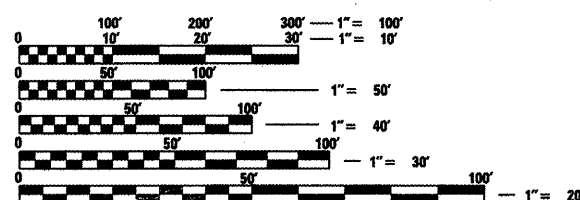
1. COVER SHEET
2. COMMITMENTS & GENERAL NOTES
3. SUMMARY OF QUANTITIES
- 4-5. SCHEDULE OF QUANTITIES
- 6-7.. PROPOSED TRAFFIC CONTROL
8. EXISTING PLAN & ELEVATION
- 9-10. EXISTING DETAILS
- 11-23. REPAIR DETAILS

STANDARDS:

- 701101-02
- 701106-02
- 701201-03
- 701321-10

DISTRICT STANDARDS:

- 630101-08
- 704001-06
- 780001-02

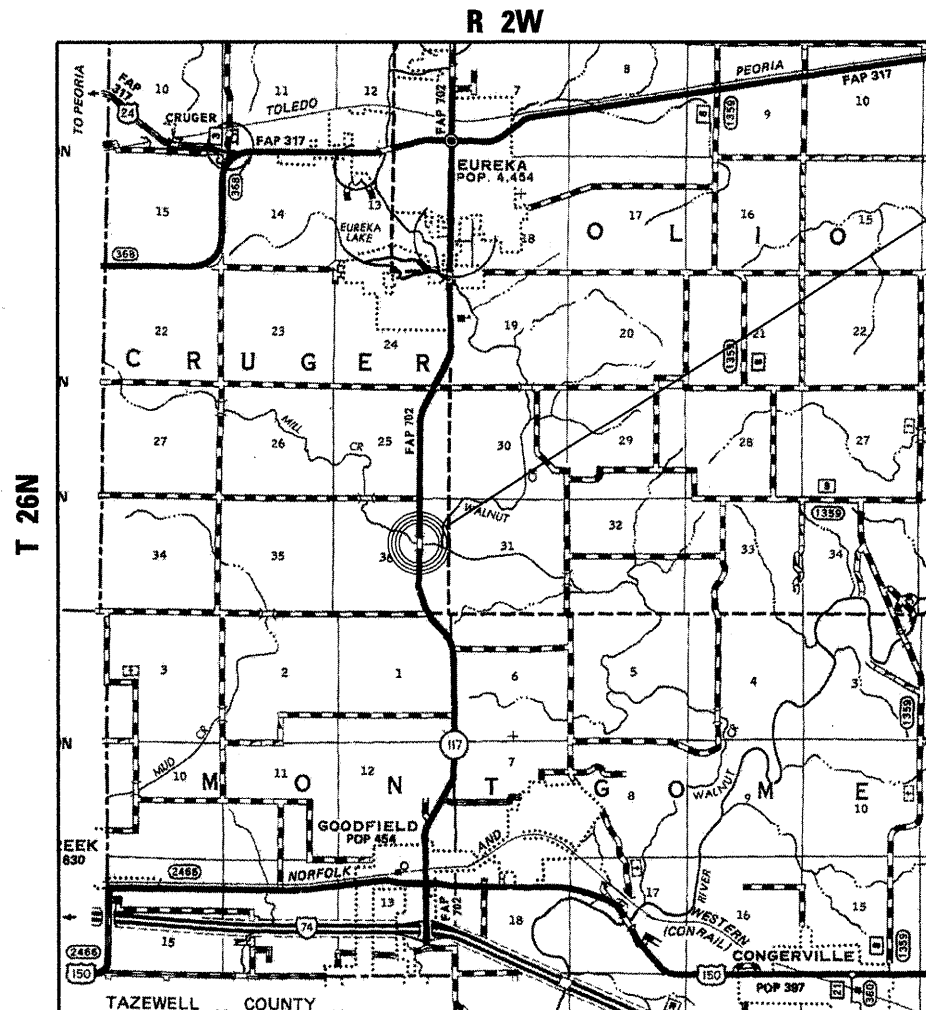


FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

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

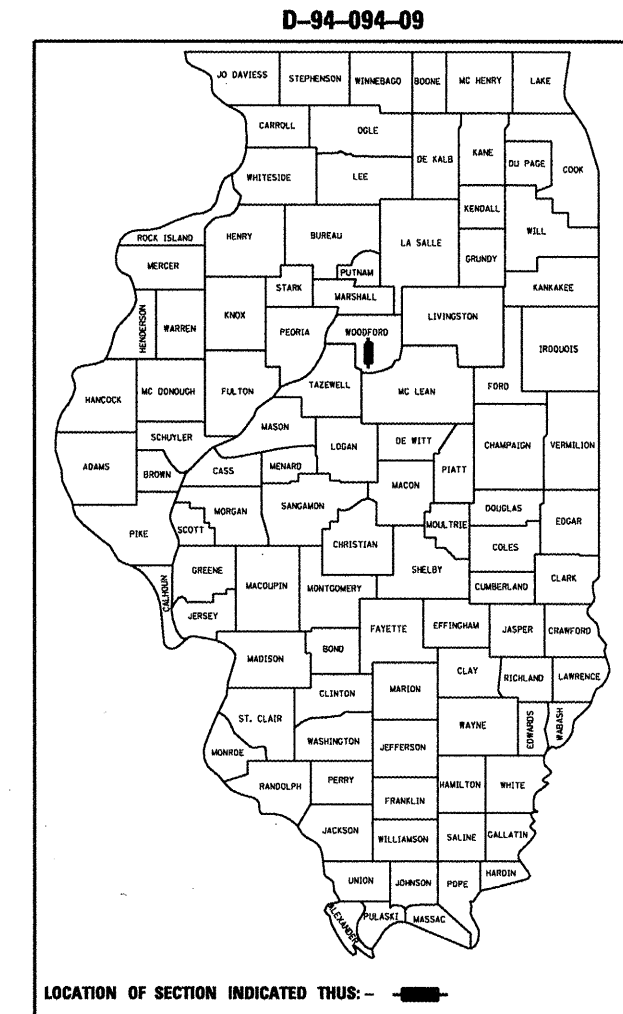
PROJECT ENGINEER- JIM MILLER

CONTRACT NO. 68928 CAT. NO. 034310-00D



LOCATION MAP

SN.102-0041



PROJECT CONSISTS OF MILL AND HYDROSCARIFY DECK, APPLY LATEX CONCRETE WEARING SURFACE, INSTALL STRIP SEAL, ABUT. BACKWALL REPAIR, AND CLEAN & SEAL PPC I-BEAM ENDS ON (SN.102-0041), STRUCTURE CARRYING IL.117 OVER MILL CREEK, 3.6 MILES SOUTH OF US24 IN EUREKA.

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

SUBMITTED 12/18/2009  
Joseph E. Crowe 070  
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

January 20 10  
Scott E. Stitt PE/EA  
Acting ENGINEER OF DESIGN AND ENVIRONMENT

January 20 10  
Christine M. Reed/EA  
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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OF THE STATE OF ILLINOIS



# SUMMARY OF QUANTITIES

100% STATE SAFETY-2A WOODFORD COUNTY				
CODE NO.	ITEM	UNIT	RURAL	TOTAL
20200500	EARTH EXCAVATION (WIDENING)	CUYD	57	57
35650400	BASE COURSE WIDENING 9"	SOYD	227	227
40603335	HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50	TON	15	15
40600115	POLYMERIZED BITUMINOUS MATERIALS (PRIME COAT)	GALLON	22	22
50300300	PROTECTIVE COAT	SOYD	327	327
44000915	HOT-MIX ASPHALT SURFACE REMOVAL (DECK)	SQ YD	261	261
40600982	HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT	SQ YD	2	2
50102400	CONCRETE REMOVAL	CUYD	13.5	13.5
50300255	CONCRETE SUPERSTRUCTURE	CUYD	13.6	13.6
50300260	BRIDGE DECK GROOVING	SOYD	258	258
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	1480	1480
50800515	BAR SPLICERS	EACH	17	17
50900905	REMOVING AND RE-ERECTING EXISTING RAILING	FOOT	88	88
67100100	MOBILIZATION	LSUM	1	1
70100405	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321	EACH	1	1
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	LSUM	1	1
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1	1
70106700	TEMPORARY RUMBLE STRIP	EACH	14	14
70106800	CHANGEABLE MESSAGE SIGN	CALMO	6	6
*70300520	PAVEMENT MARKING TAPE, TYPE III, 4"	FOOT	2114	2114
70301000	WORKZONE PAVEMENT MARKING REMOVAL	SOFT	705	705
70400100	TEMPORARY CONCRETE BARRIER	FOOT	322	322
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	298	298
78005110	EPOXY PAVEMENT MARKING-LINE 4"	FOOT	1290	1290

100% STATE SAFETY-2A WOODFORD COUNTY				
CODE NO.	ITEM	UNIT	RURAL	TOTAL
78300105	PAVEMENT MARKING REMOVAL	FOOT	1290	1290
X0325216	THERMAL SPRAYING (METALIZING) PPC BEAM ENDS	SOFT	414	414
X0325218	BLAST CLEANING PPC BEAM ENDS	FOOT	40	40
X0325305	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SOFT	18	18
*X7200201	WIDTH RESTRICTION SIGNING	LSUM	1	1
52000110	PREFORMED JOINT STRIP SEAL	FOOT	36	36
X0322185	BRIDGE DECK LATEX CONCRETE OVERLAY, 2 1/4 INCHES	SOYD	261	261
40600990	TEMPORARY RAMP	SQ YD	36	36
Z0006204	BRIDGE DECK HYDRO-SCARIFICATION 1/2"	SQ YD	261	261
Z0020800	EROSION CONTROL CURB	FOOT	925	925
Z0030250	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2	2
Z0030350	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2	2
X0320887	POLYMER CONCRETE	CU FT	1.7	1.7

\*SPECIALTY ITEM

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		DRAWN - CEJ	REVISED -
	PLOT SCALE = 103.9676 / IN.	CHECKED -	REVISED -
	PLOT DATE = 12/17/2009	DATE -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**SUMMARY OF QUANTITIES**

SCALE: \_\_\_\_\_ SHEET NO. \_\_\_\_ OF \_\_\_\_ SHEETS STA. \_\_\_\_\_ TO STA. \_\_\_\_\_

F.A.P. RTE. 702	SECTION (114BR-1)1	COUNTY WOODFORD	TOTAL SHEETS 23	SHEET NO. 3
MISC. BRIDGE REPAIRS		CONTRACT NO. 68928		
FED. ROAD DIST. NO. 4 ILLINOIS FED. AID PROJECT				

SN. 102-0041 IL.117 ovr  
MILL CRK. S. OF US24

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# SCHEDULE OF QUANTITIES

## EARTH EXCAVATION (WIDENING)

LOCATION	CUYD
Sta.155+86 Lt.13' to 158+82 Lt. 13'	16.6
Sta.156+36 Rt.13' to 158+82 Rt. 13'	13.8
Sta.159+62 Lt.13' to 162+00 Lt. 13'	13.3
Sta.159+62 Rt.13' to 162+00 Rt. 13'	13.3
<b>TOTAL</b>	<b>57</b>

## BASE COURSE WIDENING, 9"

LOCATION	SQYD
Sta.155+86 Lt.13' to 158+82 Lt. 13'	65.8
Sta.156+36 Rt.13' to 158+82 Rt. 13'	54.8
Sta.159+62 Lt.13' to 162+00 Lt. 13'	53.2
Sta.159+62 Rt.13' to 162+00 Rt. 13'	53.2
<b>TOTAL</b>	<b>227</b>

## HMA SURFACE COURSE MIX "D", N50

LOCATION	TON
Bridge Approach Transitions	15
<b>TOTAL</b>	<b>15</b>

## POLY. BIT. MAT. PRIME COAT

LOCATION	GAL
Bridge Approach Transitions	22
<b>TOTAL</b>	<b>22</b>

## PROTECTIVE COAT

LOCATION	SQYD
N. Joint, Parapet, Latex Overlay & S. Stop-Block	327
<b>TOTAL</b>	<b>327</b>

## HMA SURFACE REMOVAL DECK

LOCATION	SQYD
Jobsite - SN.102-0041	261
<b>TOTAL</b>	<b>261</b>

## CONCRETE REMOVAL

LOCATION	CUYD
North Joint & Parapets	13.5
<b>TOTAL</b>	<b>13.5</b>

## CONCRETE SUPERSTRUCTURE

LOCATION	CUYD
North Joint & Parapets	13.6
<b>TOTAL</b>	<b>13.6</b>

## BRIDGE DECK GROOVING

LOCATION	SQYD
Jobsite - SN.102-0041	258
<b>TOTAL</b>	<b>258</b>

## TEMPORARY RAMP

LOCATION	SQYD
Bridge Approach Transitions	36
<b>TOTAL</b>	<b>36</b>

## HMA SURFACE COURSE REMOVAL, 1 1/2"

LOCATION	SQYD
Bridge Approach Transitions	178
<b>TOTAL</b>	<b>178</b>

## STRUCTURAL REPAIR OF CONCRETE

LOCATION	SQFT
NE Backwall Corners	8.9
NW Backwall Corners	9.1
<b>TOTAL</b>	<b>18</b>

## REINFORCEMENT BARS, EPOXY COATED

LOCATION	POUND
N. Joint, Parapet	1480
<b>TOTAL</b>	<b>1480</b>

## BAR SPLICERS

LOCATION	EACH
North Joint	17
<b>TOTAL</b>	<b>17</b>

## REMOVING & RE-ERECTING EXISTING RAILING

LOCATION	FOOT
Parapets	88
<b>TOTAL</b>	<b>88</b>

## MOBILIZATION

LOCATION	LSUM
Jobsite - SN.102-0041	1
<b>TOTAL</b>	<b>1</b>

## T C & P. STANDARD 701321

LOCATION	EACH
Jobsite - SN.102-0041	1
<b>TOTAL</b>	<b>1</b>

## T. C. & P STANDARD 701201

LOCATION	LSUM
Jobsite - SN.102-0041	1
<b>TOTAL</b>	<b>1</b>

## TEMPORARY BRIDGE TRAFFIC SIGNALS

LOCATION	EACH
Jobsite - SN.102-0041	1
<b>TOTAL</b>	<b>1</b>

## TEMPORARY RUMBLE STRIP

LOCATION	EACH
Jobsite - SN.102-0041	14
<b>TOTAL</b>	<b>14</b>

## CHANGEABLE MESSAGE SIGN

LOCATION	CALMO
Jobsite - SN.102-0041	6
<b>TOTAL</b>	<b>6</b>

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SN. 102-0041 IL.117 ovr  
MILL CRK. S. of US24

FILE NAME =	USER NAME = *USER*	DESIGNED - CEJ	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>SCHEDULE OF QUANTITIES</b>	F.A.P. RTE. 702	SECTION (114BR-1)I	COUNTY WOODFORD	TOTAL SHEETS 23	SHEET NO. 4
#FILE#		DRAWN - CEJ	REVISED -			MISC. BRIDGE REPAIRS				CONTRACT NO. 68928
PLOT SCALE = *SCALE*		CHECKED -	REVISED -		SCALE:	SHEET NO. OF SHEETS	STA.	TO STA.		FED. ROAD DIST. NO. 4 [ILLINOIS] FED. AID PROJECT
PLOT DATE = *DATE*		DATE - 09/03/2009	REVISED -							

# SCHEDULE OF QUANTITIES

## PAVEMENT MARKING TAPE, TYPE III, 4"

LOCATION	FOOT
Adjacent to Work Area & Temporary Concrete Barrier Taper	2114
<b>TOTAL</b>	<b>2114</b>

## EPOXY MARKING LINE, 4"

LOCATION	FOOT
Jobsite Deck Surface	1290
<b>TOTAL</b>	<b>1290</b>

## THERMAL SPRAYING (METALLIZING) PPC BEAM ENDS

LOCATION	SQFT
Beams next to Abutments	414
<b>TOTAL</b>	<b>414</b>

## BRIDGE DECK HYDRO-SCARIFICATION (1/2")

LOCATION	SQYD
Jobsite - SN.102-0041 Deck	261
<b>TOTAL</b>	<b>261</b>

## WORKZONE PAVEMENT MARKING REMOVAL

LOCATION	SQFT
Adjacent to Work Area & Temporary Concrete Barrier Taper	705
<b>TOTAL</b>	<b>705</b>

## PAVEMENT MARKING REMOVAL

LOCATION	FOOT
Jobsite Deck Surface	1290
<b>TOTAL</b>	<b>1290</b>

## BLAST CLEANING PPC BEAM ENDS

LOCATION	FOOT
Beams next to Abutments	40
<b>TOTAL</b>	<b>40</b>

## EROSION CONTROL CURB

LOCATION	FOOT
Alongside Existing Bridge Railing	925
<b>TOTAL</b>	<b>925</b>

## TEMPORARY CONCRETE BARRIER

LOCATION	FOOT
Jobsite - SN.102-0041	322
<b>TOTAL</b>	<b>322</b>

## WIDTH RESTRICTION SIGNING

LOCATION	LSUM
Jobsite - SN.102-0041	1
<b>TOTAL</b>	<b>1</b>

## BRIDGE DECK LATEX CONCRETE OVERLAY

LOCATION	SQYD
Jobsite - SN.102-0041 Deck	261
<b>TOTAL</b>	<b>261</b>

## IMPACT ATTENUATORS, TEMP NRD TL 3

LOCATION	EACH
Traffic Control Standard 701321	2
<b>TOTAL</b>	<b>2</b>

## RELOCATE TEMPORARY CONCRETE BARRIER

LOCATION	FOOT
Jobsite - SN.102-0041	298
<b>TOTAL</b>	<b>298</b>

## PREFORMED JOINT STRIP SEAL

LOCATION	FOOT
North Deck Joint	36
<b>TOTAL</b>	<b>36</b>

## HMA SURF. REM. BUTT JOINT

LOCATION	SQYD
25' Back From Both Deck Joints	178
<b>TOTAL</b>	<b>178</b>

## IMPACT ATTENUATORS, RELOCATE NRD, TL 3

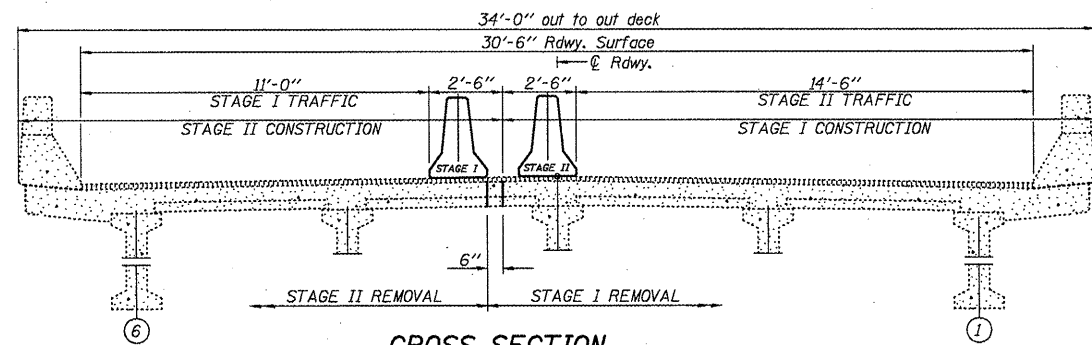
LOCATION	EACH
Traffic Control Standard 701321	2
<b>TOTAL</b>	<b>2</b>

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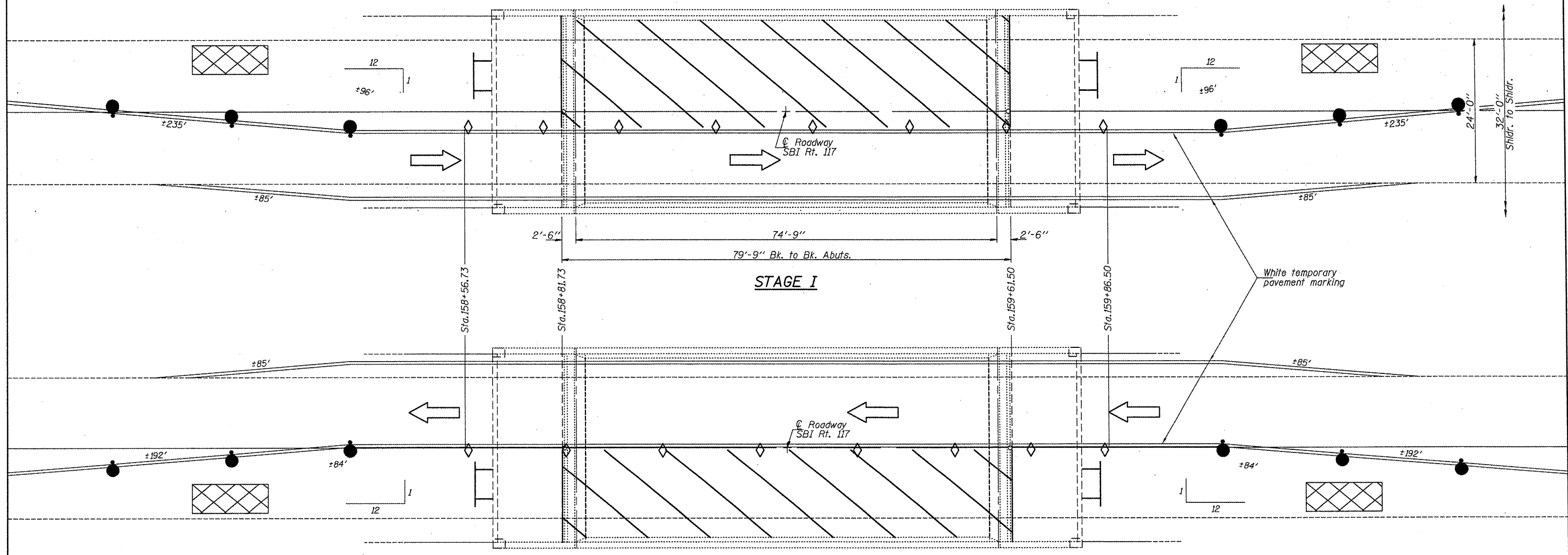
SN. 102-0041 IL.117 ovr  
MILL CRK. S. of US24

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#FILE#		DRAWN - CEJ	REVISED -			MISC. BRIDGE REPAIRS			CONTRACT NO. 68928	
		CHECKED -	REVISED -		SCALE:	SHEET NO. OF SHEETS	STA.	TO STA.	FED. ROAD DIST. NO. 4 ILLINOIS FED. AID PROJECT	
		DATE - 09/03/2009	REVISED -							








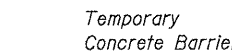



CROSS SECTION  
(Looking North)



STAGE I

STAGE II

SYMBOLS

-  Work Area
-  Barrier Wall Marker
-  Drum w/ steady burning light
-  Temporary Concrete Barrier
-  Permanent Concrete Barrier
-  Impact Attenuator
-  Type III Barricade

NOTES  
Refer to Highway Standards 701321/701201 in conjunction with this sheet for exact placement of traffic management devices and other clarifications as construction staging symbols and dimensioning were duplicated off of these standards. Traffic staging sequence shall be at the discretion of the Engineer for given field applications. Staging Lane widths recommended by the Bridge Office to prevent stage removal and construction lines conflicting with the underlying center PPC I-beam. There shall be one "BE PREPARED TO STOP" sign provided by the Contractor to be used in conjunction with the rumble strip for NB traffic providing added margin for sight distance safety. Cost incidental to Standard 701321.

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#FILE#		DRAWN - CEJ	REVISED -
	PLOT SCALE = *SCALE*	CHECKED -	REVISED -
	PLOT DATE = *DATE*	DATE - 08/01/2009	REVISED -

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

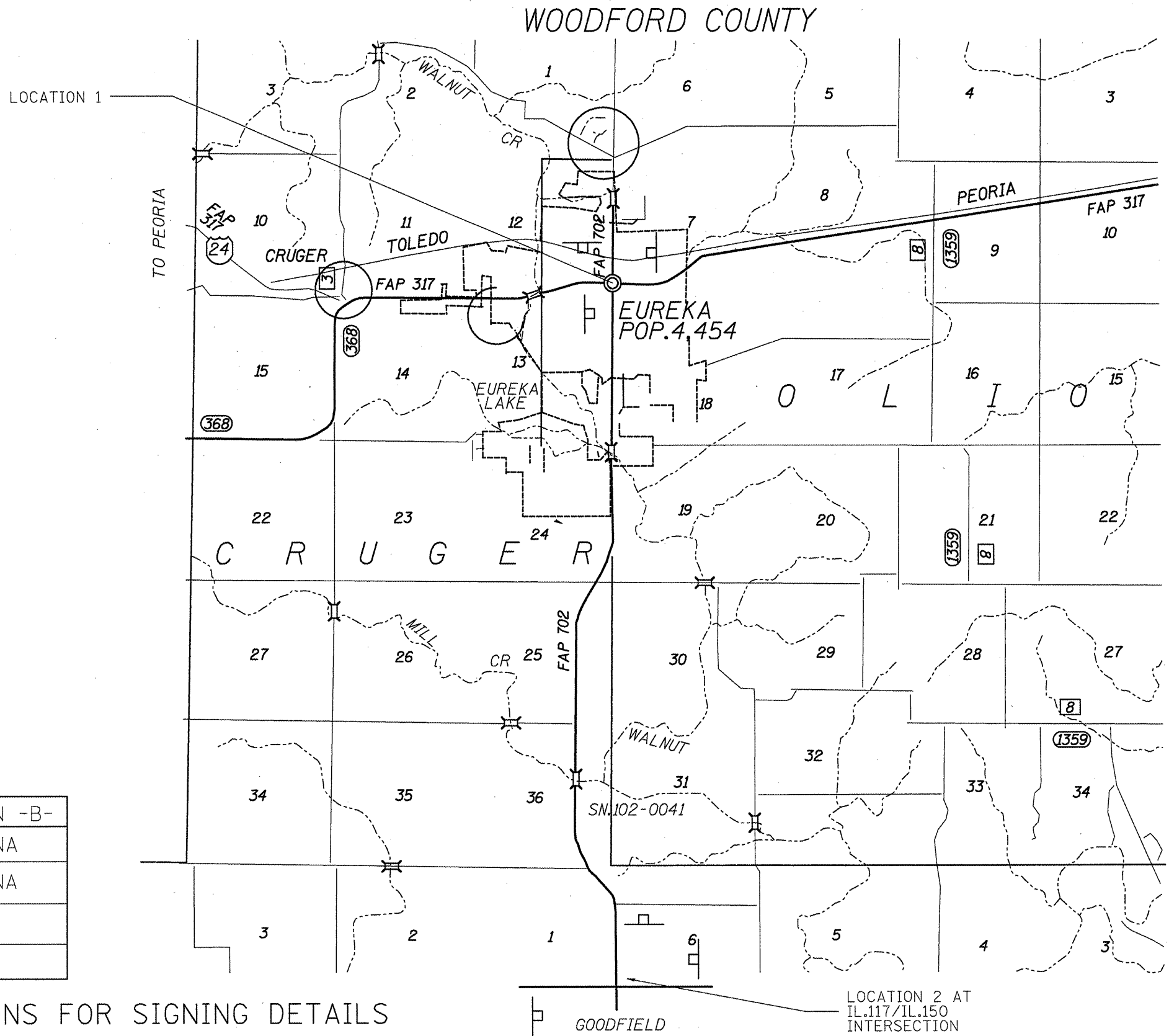
PROPOSED TRAFFIC CONTROL				
SCALE:	SHEET NO.	OF SHEETS	STA.	TO STA.

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
702	(114BR-1)I	WOODFORD	23	6
MISC. BRIDGE REPAIRS			CONTRACT NO. 68928	
FED. ROAD DIST. NO. 4 ILLINOIS FED. AID PROJECT				

SN. 102-0041 IL117 0vR  
MILL CRK. S. OF US24

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**NOTES**  
 Notification signs shall be posted where shown indicating maximum width ahead of 11'-0" for stage construction on IL. 117. Changeable Message Boards shall be placed facing SB traffic exiting Eureka and NB traffic exiting Goodfield one week prior to work start date for public safety and awareness.



**SN. 102-0041 SIGNING**

	SIGN -A-	SIGN -B-
LOCATION 1	3 EA.	NA
LOCATION 2	3 EA.	NA
LOCATION 3		
LOCATION 4		

SEE SPECIAL PROVISIONS FOR SIGNING DETAILS

CONTRACTOR PROVIDED SIGN  
-A-

MAX. WIDTH  
11'-0"  
XX MILES

IL. 117

LOCATION 2 AT  
IL.117/IL.150  
INTERSECTION

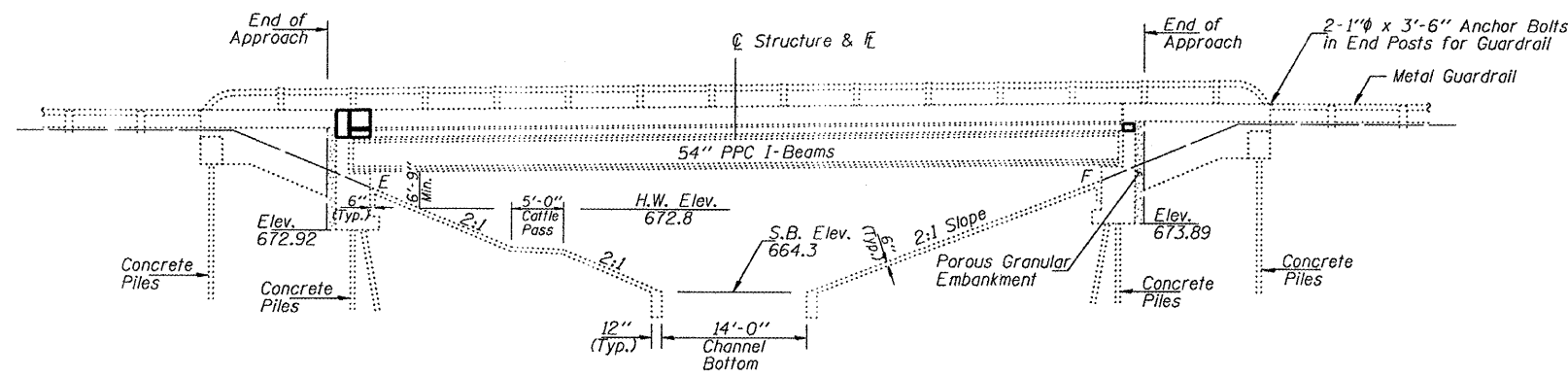
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MILL CRK. S. of US24

FILE NAME =	USER NAME = *USER*	DESIGNED - CEJ	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>WIDTH RESTRICTION SIGNING</b>			F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
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		CHECKED -	REVISED -						MISC. BRIDGE REPAIRS				
		DATE - 08/04/2009	REVISED -						FED. ROAD DIST. NO. 4	ILLINOIS	FED. AID PROJECT		

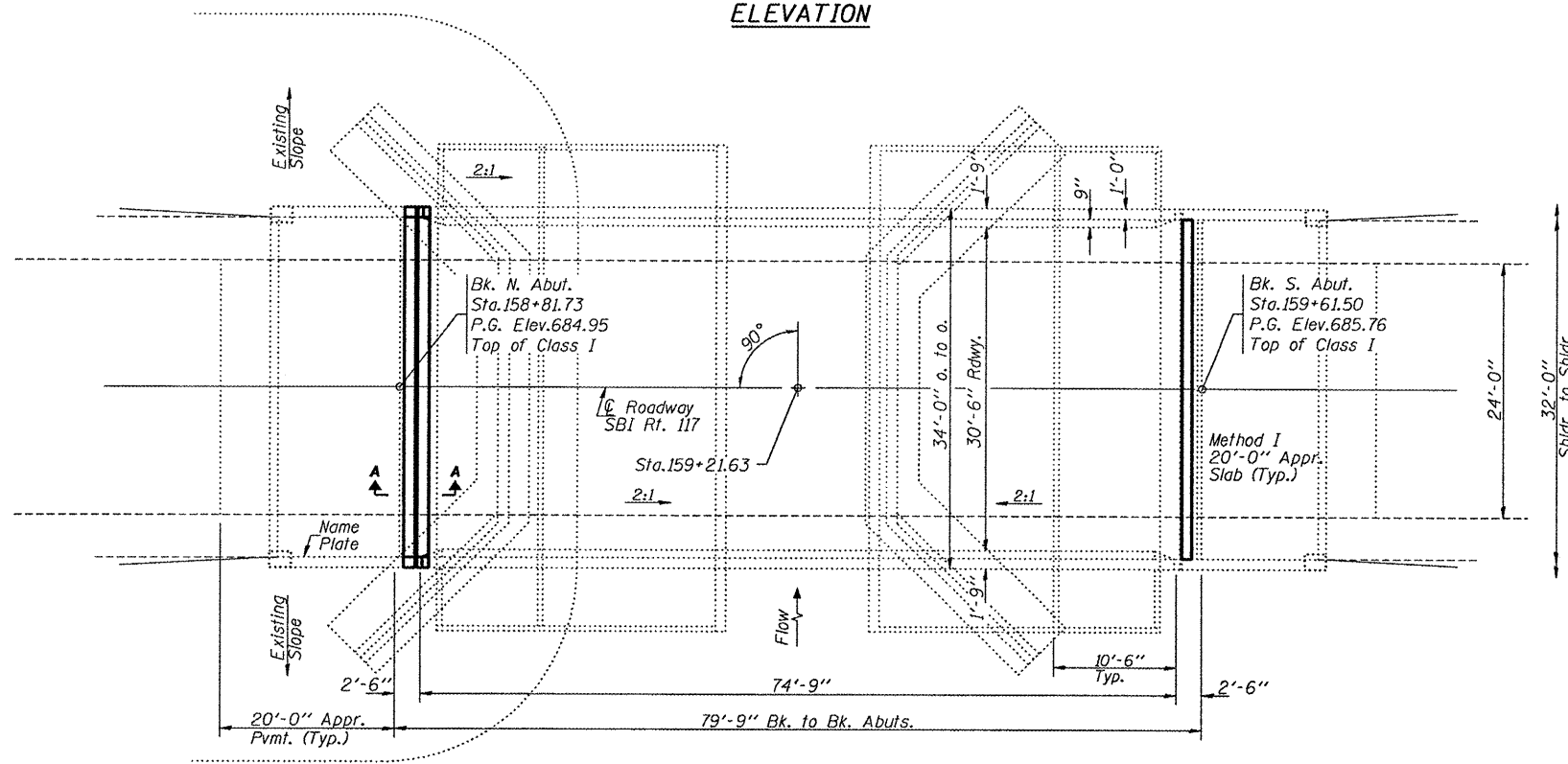
B.M. - Dept. of Interior BM. 32KED-1968; Brass Cap NE Wingwall - Elev. 684.677

Existing Structure - Structure Sta. 159+29 Built 1923  
Superstructure 43' RC thru Girder,

Substructure RC Abuts. - removed 1973 - new bridge



**ELEVATION**



**PLAN**

**GENERAL NOTES**

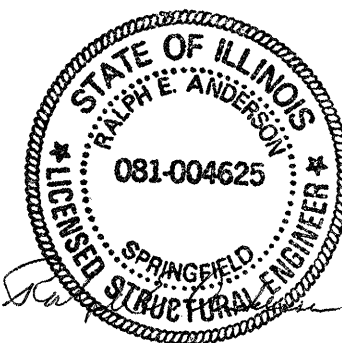
Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished based upon the unit price bid for the work.  
Drain Box elevations shall remain during milling process and application of new latex concrete. Existing drain edge tapers shall be duplicated in new wearing surface.  
All construction joints shall be bonded.  
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.  
Joint openings shall be adjusted according to Article 520.04 of the Standard Specifications when the deck is poured at an ambient temperature other than 50° F.

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Base Course Widening, 9"	Sq. Yd.	227
Polymerized Bituminous Materials (Prime Coat)	Gallon	22
HMA Surface Course, Mix "D", N50	Ton	15
Protective Coat	Sq. Yd.	327
Concrete Superstructure	Cu. Yd.	13.6
Bridge Deck Grooving	Sq. Yd.	258
Reinforcement Bars, Epoxy Coated	Pound	1480
Bar Splicers	Each	17
Thermal Spraying (Metallizing) PPC Beam Ends	Sq. Ft.	414
Blast Cleaning PPC Beam Ends	Foot	40
Structural Repair of Concrete	Sq. Ft.	18
Preformed Joint Strip Seal	Foot	36
Bridge Deck Latex Concrete Overlay, 2 1/4"	Sq. Yd.	261
HMA Surface Removal-Butt Joint	Sq. Yd.	178
Bridge Deck Hydro-Scarification, 1/2"	Sq. Yd.	261
Erosion Control Curb	Foot	925
Concrete Removal	Cu. Yd.	13.5
HMA Surface Removal Deck	Sq. Yd.	261
Removing and Re-erecting Existing Rail	Foot	88
Polymer Concrete	Cu. Ft.	1.7

**DESIGN STRESSES  
FIELD UNITS**

f<sub>y</sub> = 60,000 psi (Reinforcement)  
f'<sub>c</sub> = 3,500 psi (Concrete)



Expires Nov. 30, 2010

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FILE NAME =	USER NAME = *USER*	DESIGNED - CEJ	REVISED -
*FILEL*		DRAWN - CEJ	REVISED -
	PLOT SCALE = *SCALE*	CHECKED -	REVISED -
	PLOT DATE = *DATE*	DATE - 07/30/2009	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**GENERAL PLAN & ELEVATION**

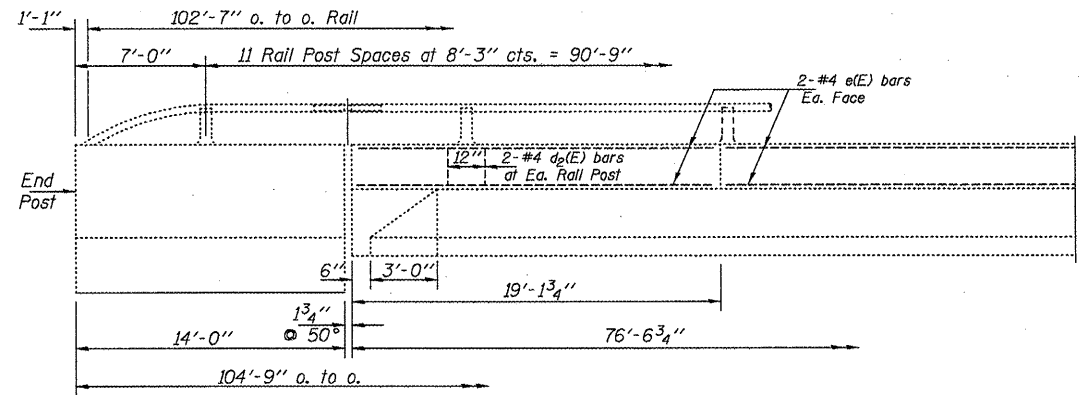
SCALE: SHEET NO. OF SHEETS STA. TO STA.

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
702	114BR-11I	WOODFORD	23	8
MISC. BRIDGE REPAIRS			CONTRACT NO. 68928	
FED. ROAD DIST. NO. 4 ILLINOIS FED. AID PROJECT				

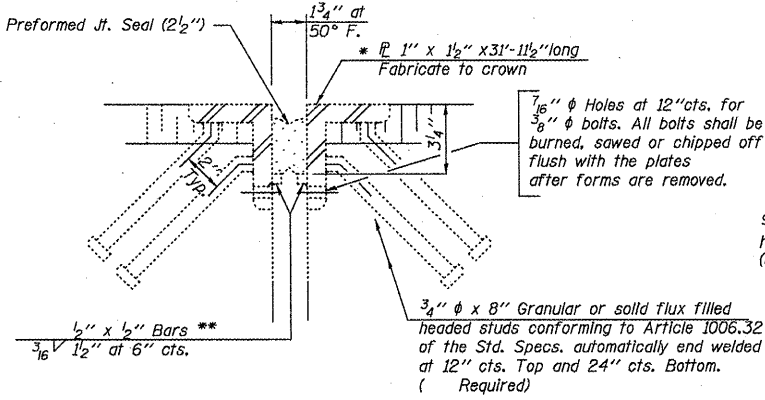
SN. 102-0041 IL.117 ovr  
MILL CRK. S. of US24







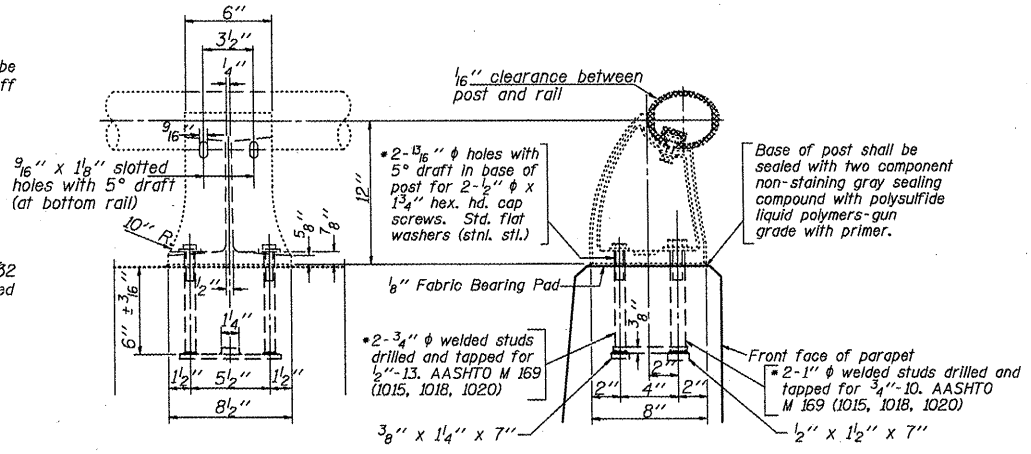
**ALUMINUM RAILING ELEVATION**



**DETAIL A**

Furnish in segments of 20 ft. maximum length. Maximum space between installed segments shall be 3/16". Seal space with Silicone Sealant suitable for Structural Steel.

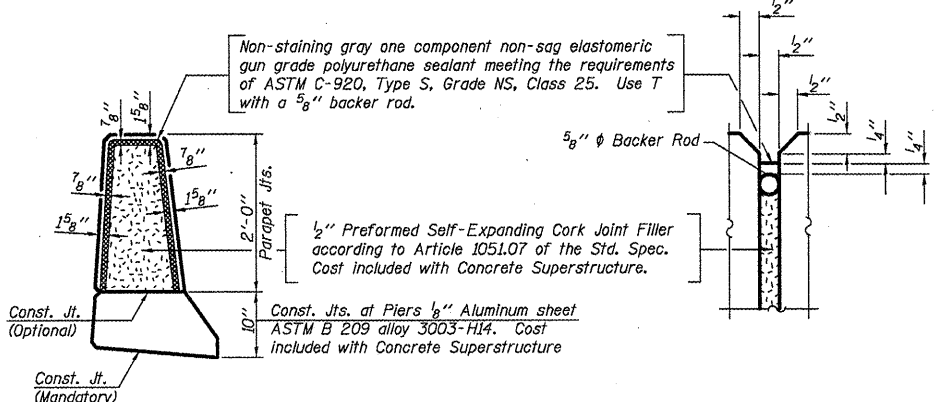
\*\* Cut retainer bars in sidewalk or median 6" short of the sidewalk or median face.



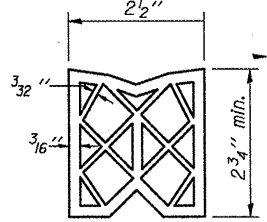
**RAIL POST DETAILS**

Existing Details

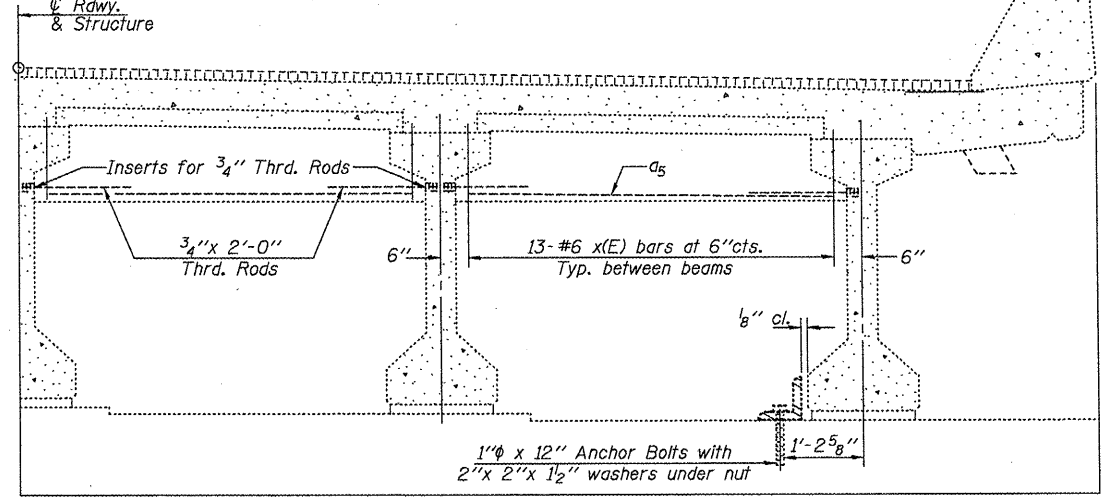
In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and epoxy grouting stainless steel anchor rods of the same diameter and grade as the specified cap screws. Embedment shall be according to the manufacturer's specifications.



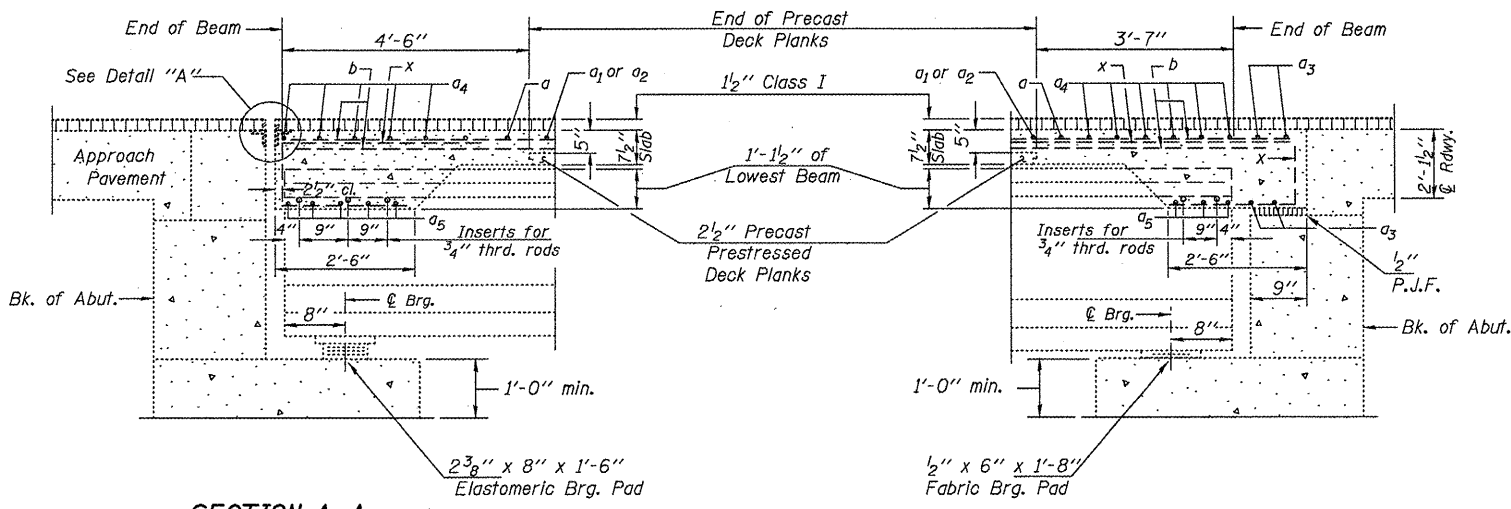
**PARAPET JOINT DETAILS**



**PREFORMED JOINT SEAL**



**DIAPHRAGM AT ABUTMENT**



**SECTION A-A (NORTH ABUT.)**

**SECTION B-B (SOUTH ABUT.)**

Note: Apply waterproofing continuous over joint.

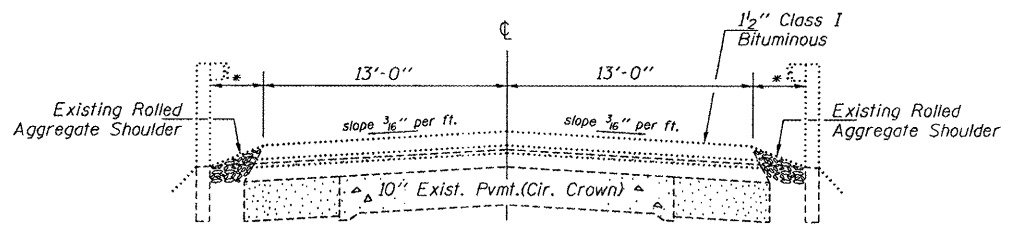
**FOR INFORMATION ONLY**

Note:  
 All aluminum Alloy Extruded Rail shall be supplied in modular lengths of 30 feet, except at the end of the bridge or over span joints in bridge deck where the rail shall be attached to a minimum of 2 posts. If the rail is on a horizontal curve of 2300 feet radius or less, the modular lengths may be reduced but shall be attached to a minimum of 2 posts.  
 All joints in Rail shall be spliced per detail.  
 Seal perimeter of base post-to-parapet with two component non-staining grey sealing compound with polysulfide liquid polymers, gun grade with primer. Fabric bearing pads shall have same dimensions as base of post.  
 Aluminum alloy rail shall conform to ASTM B 221 alloy 5061-T6 or 6351-T5 with min. yield 35 ksi, min. tensile 38ksi, and elongation of 10% or less in 2 inches.

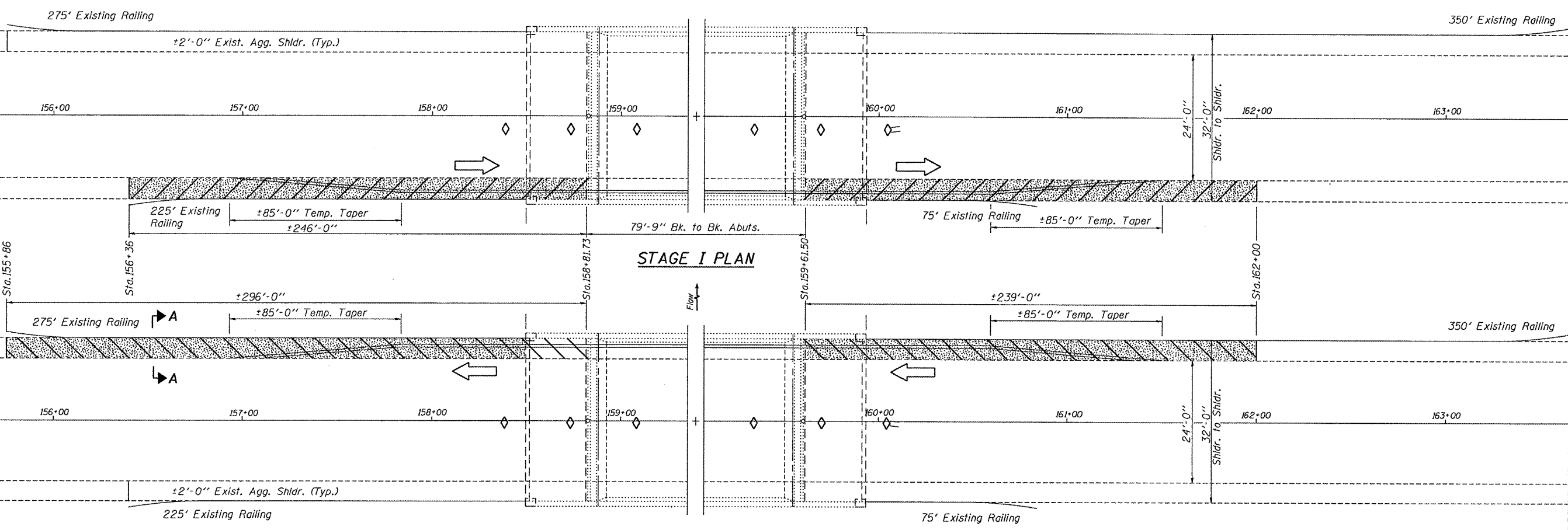
SN. 102-0041 IL.117 ovr MILL CRK. S. of US24

FILE NAME =	USER NAME = #USER*	DESIGNED - CEJ	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>EXISTING SUPERSTRUCTURE DETAILS</b>	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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PLOT DATE = #DATE*	CHECKED -	REVIS	REVISED -			MISC. BRIDGE REPAIRS		CONTRACT NO. 68928		
	DATE - 08/17/2009	REVISED -	REVISED -			FED. ROAD DIST. NO. 4 ILLINOIS FED. AID PROJECT				
						SCALE:	SHEET NO. OF SHEETS	STA.	TO STA.	

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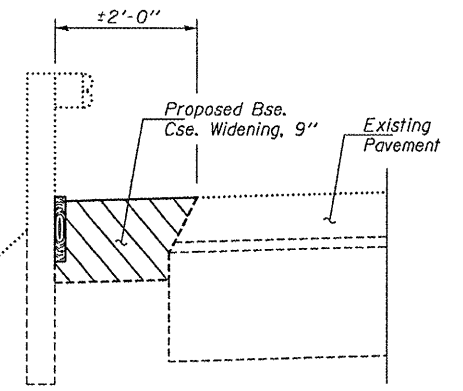


**EXISTING CROSS SECTION**  
 \* 2'-0" to 2'-6" Rolled Agg. Shldr.



**STAGE I PLAN**

**STAGE II PLAN**



**PROPOSED SECTION A-A**

- SYMBOLS**
- Shoulder Removal/Replacement
  - Temporary Concrete Barrier
  - Barrier Wall Marker
  - Pavement Marking Tape, Type III, 4"

**BILL OF MATERIAL**

Item	Unit	Total
Base Course Widening, 9"	Sq. Yd.	227
Erosion Control Curb	Foot	925

**NOTES**  
 Shoulder removal/replacement quantities calculated using existing ±2'-0" aggregate shoulder for existing lengths. Proposed shoulder length & width shall require existing material to be removed. Cost paid for as EARTH EXCAVATION (WIDENING).  
 Construction staging sequence shall be at the discretion of the Engineer for given field applications.

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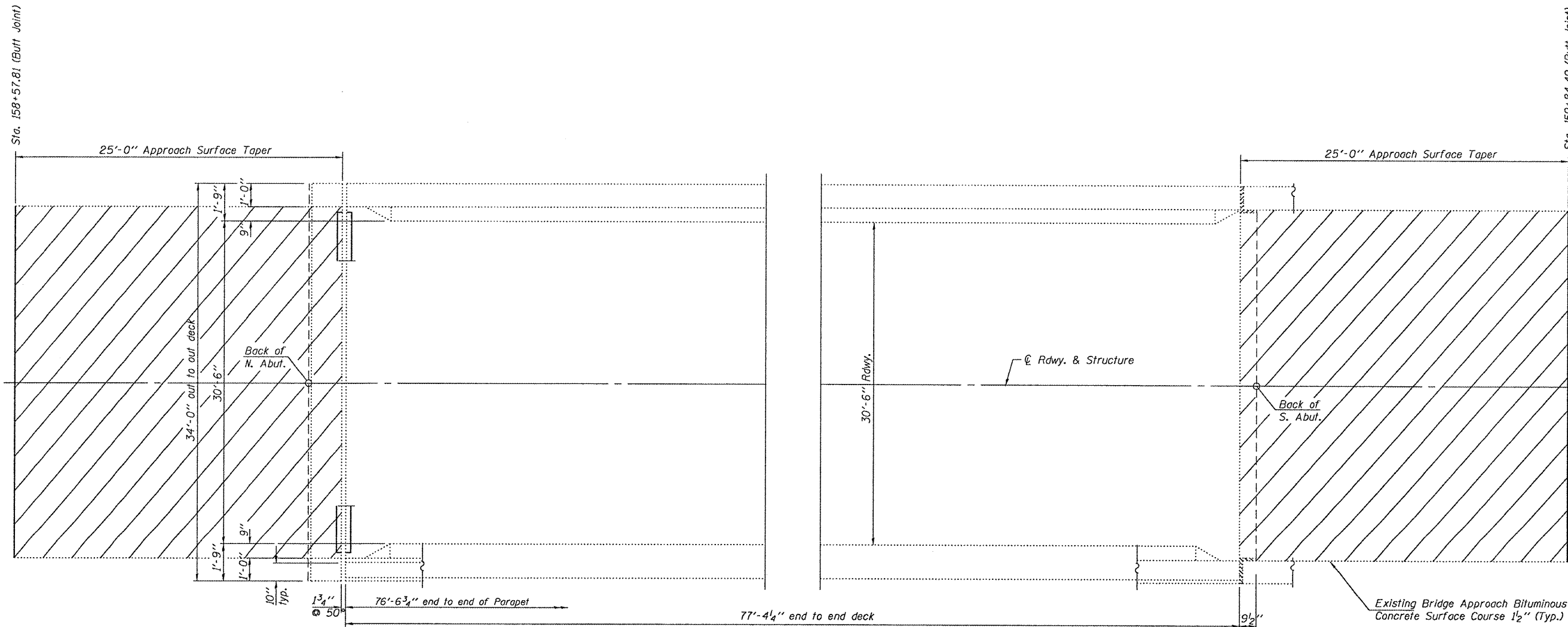
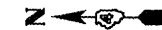
**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**BASE COURSE WIDENING DETAIL**

SCALE: SHEET NO. OF SHEETS STA. TO STA.

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
702	(114BR-1)I	WOODFORD	23	11
MISC. BRIDGE REPAIRS			CONTRACT NO. 68928	
FED. ROAD DIST. NO. 4 ILLINOIS FED. AID PROJECT				

SN. 102-0041 IL.117 ovr  
 MILL CRK. S. of US24



PLAN

PRIME COAT CONVERSION FACTORS		
SURFACE TYPE	BIT PR COAT	AGG PR COAT
	(GAL/SQ YD)	(LB/SQ YD)
COLD MILLED SURFACES	0.1	4
EXISTING PAVEMENT	0.05	4
NEW BITUMINOUS COURSES	0.03	2

BITUMINOUS & AGGREGATE CONVERSION FACTORS	
SURFACE TYPE	
BIT. SURF. COURSES	112 LB /SQ YD/IN
ALL OTHER BIT.	112 LB /SQ YD/IN
AGGREGATE SHOULDERS	2.05 TONS/CUYD

HMA Removal & Surface Course

**Bill of material**

ITEM	UNIT	QUANTITY
Hot-Mix Asphalt Surface Removal-Butt Joint	Sq. Yd.	178
Polymerized Bituminous Material (Prime Coat)	Gallon	22
Hot-Mix Asphalt Surface Course, Mix D, N50	Ton	15
Temporary Ramp	Sq. Yd.	36

FILE NAME =	USER NAME = #USER#	DESIGNED - CEJ	REVISED -
#FILE#		DRAWN - CEJ	REVISED -
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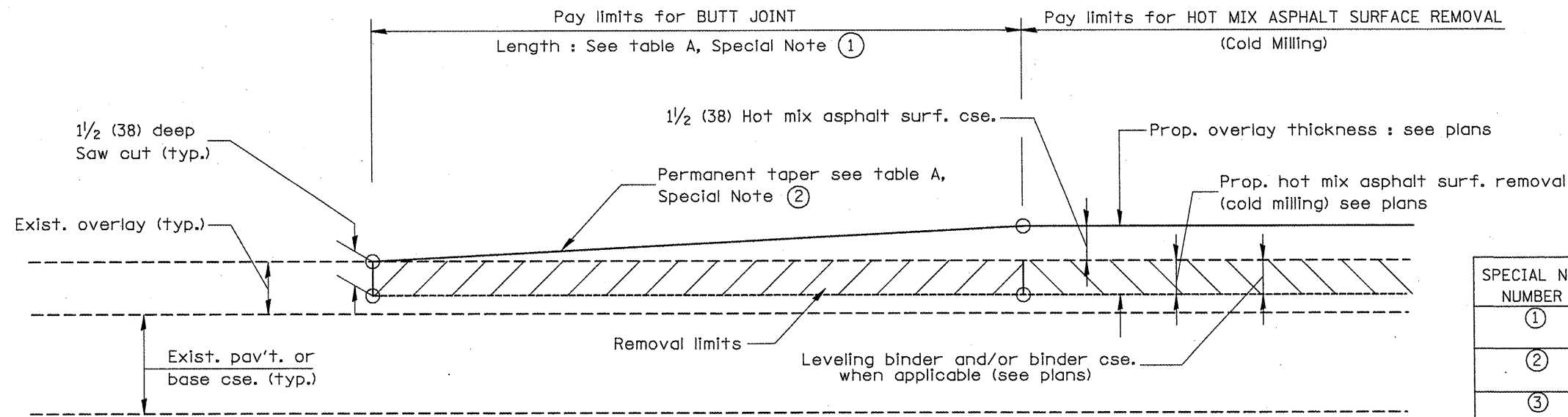
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

BUTT JOINTS			
SCALE:	SHEET NO.	OF SHEETS	STA. TO STA.

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
702	(114BR-1)I	WOODFORD	23	12
MISC. BRIDGE REPAIRS			CONTRACT NO. 68928	
FED. ROAD DIST. NO. 4 ILLINOIS FED. AID PROJECT				

SN. 102-0041 IL.117 ovr  
MILL CRK. S. of US24

DESIGNER NOTES:  
 1. Include District Special Provision for Butt Joints & for Hot Mix Asphalt Removal (Cold Milling).  
 2. The butt joints pay item includes the saw cut & temporary ramp. Payment for the Butt Joint applies whether or not the project features Hot Mix Asphalt Removal (Cold Milling).



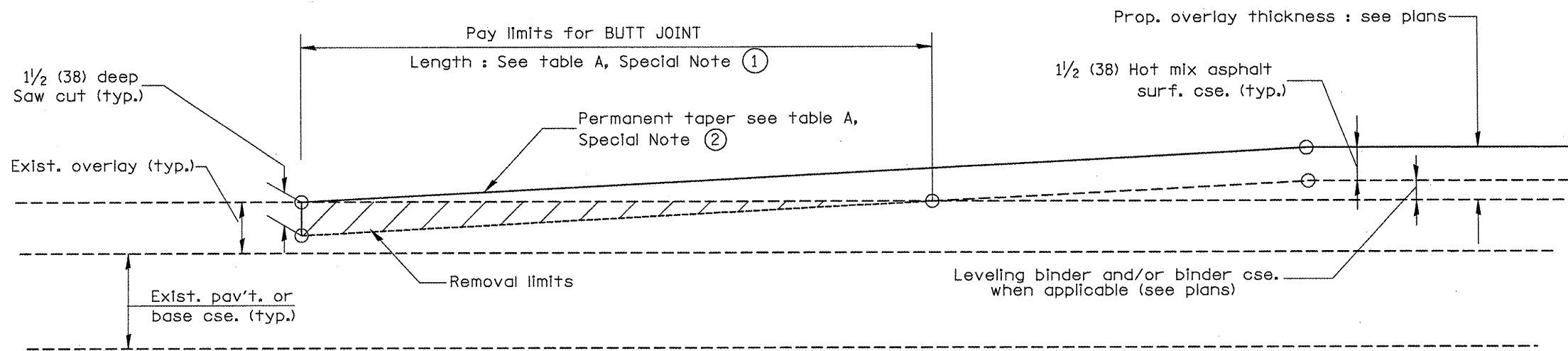
**CASE 1 : WITH HOT MIX ASPHALT SURFACE REMOVAL (COLD MILLING)**

**TABLE A**  
(LENGTHS AND TAPER RATES)

SPECIAL NOTE NUMBER	ELEMENT	MAINLINE INTERSTATES & 4-LANE EXPRESSWAYS	ALL OTHERS
①	LENGTH OF BUTT JOINT	60'(18.0 m)	30'(9.0 m)
②	PERMANENT TAPER RATE	1:480	1:240
③	TEMPORARY RAMP TAPER RATE	1:80	1:40
④	TEMPORARY RAMP LENGTH	10'(3.0 m)	5'(1.5 m)
⑤	LENGTH OF BUTT JOINT	10'(3.0 m)	10'(3.0 m)

**GENERAL NOTES**

- The work shall be done in accordance with Article 406.08 and the Special Provision for Butt Joints.
- The pavement surface to be removed may be either bituminous or P.C. concrete. The work shall be performed in accordance with Article 440.04 and the Special Provisions for Butt joints.
- The saw cut joints shall be primed just prior to the placing of bituminous material. The work will be in accordance with the applicable portions of Article 406.05.



**CASE 2 : NO HOT MIX ASPHALT SURFACE REMOVAL (COLD MILLING)**

All dimensions are in inches (millimeters) unless otherwise noted.

01-01-97	RENUM. C-23.01, NEW REVISION BOX	T.P.
04-01-97	CORRECTION TO DEPTH	J.A.
09-15-05	REVISED DESIGNER NOTE	M.M.A.
10-16-06	REVISED TO 2007 SPEC.	M.A.

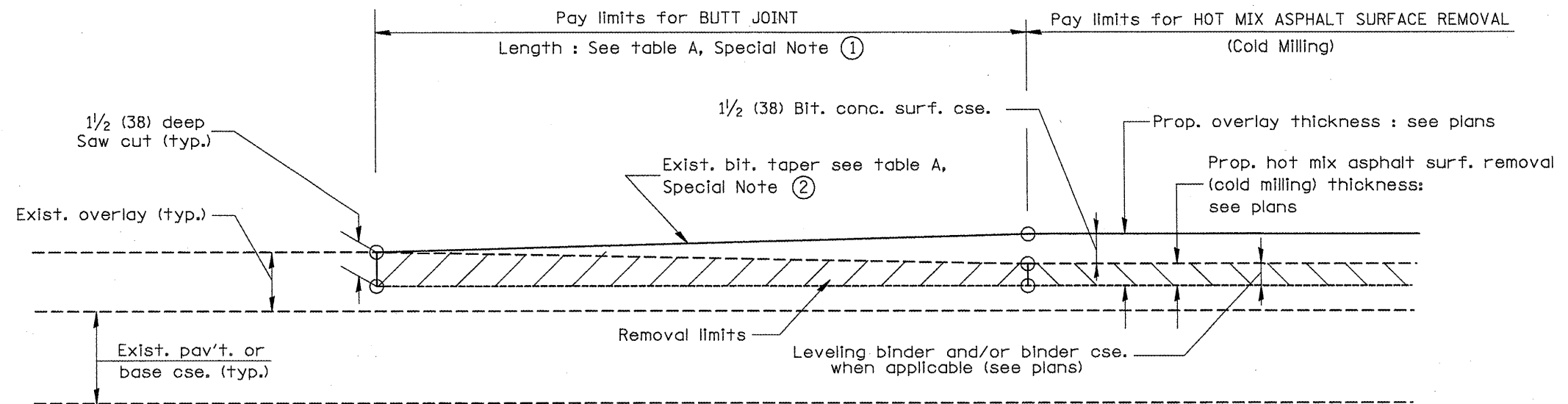
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**BUTT JOINTS**

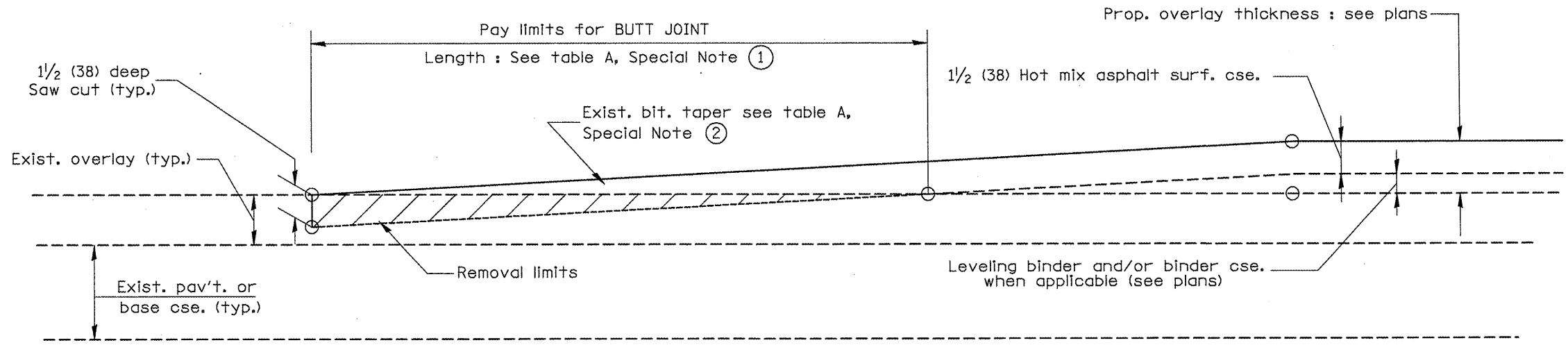
NOT TO SCALE

SHT. 1 OF 3  
CADD STD. 406101-D4

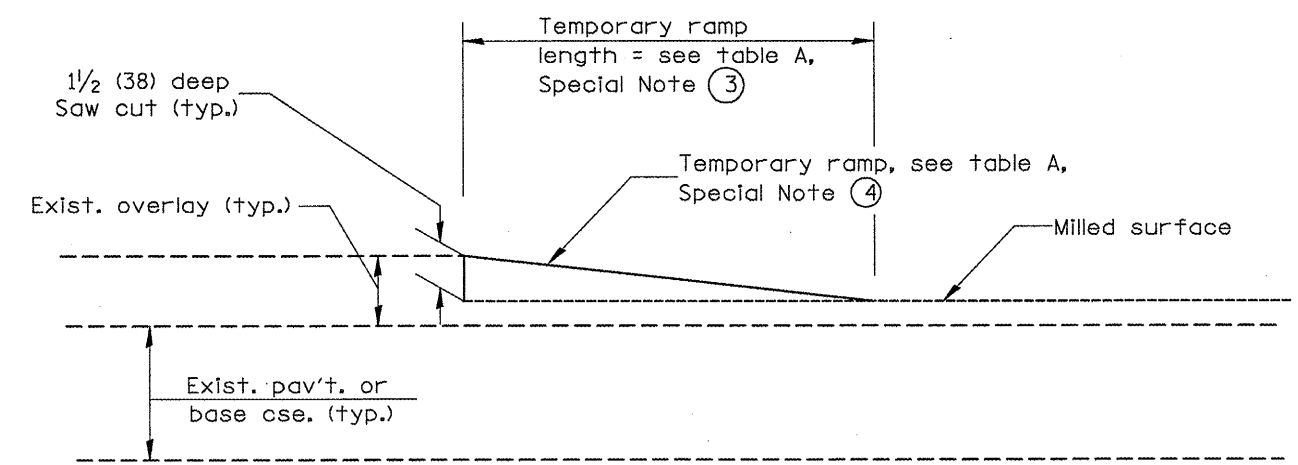
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
702	(114BR-1)I	WOODFORD	23	13
MISC. BRIDGE REPAIRS			CONTRACT NO. 68928	
FED. ROAD DIST. NO. 4 ILLINOIS FED. AID PROJECT				



**CASE 3 : WITH HOT MIX ASPHALT SURFACE REMOVAL (COLD MILLING)  
TIE-IN TO EXISTING BITUMINOUS TAPER**



**CASE 4 : NO HOT MIX ASPHALT SURFACE REMOVAL (COLD MILLING)  
TIE-IN TO EXISTING BITUMINOUS TAPER**



**DETAIL TEMPORARY RAMP**

All dimensions are in inches (millimeters) unless otherwise noted.

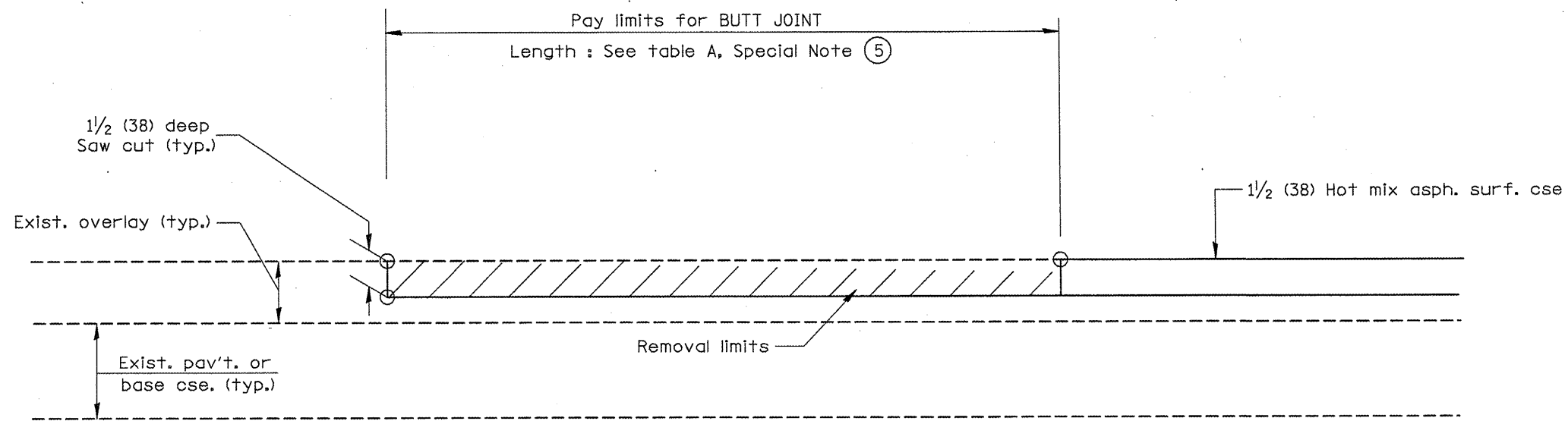
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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BUTT JOINTS  
SHT. 2 OF 3  
CADD STD. 406101-D4  
NOT TO SCALE

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
702	(114BR-1)I	WOODFORD	23	14
MISC. BRIDGE REPAIRS			CONTRACT NO. 68928	
FED. ROAD DIST. NO. 4 ILLINOIS FED. AID PROJECT				





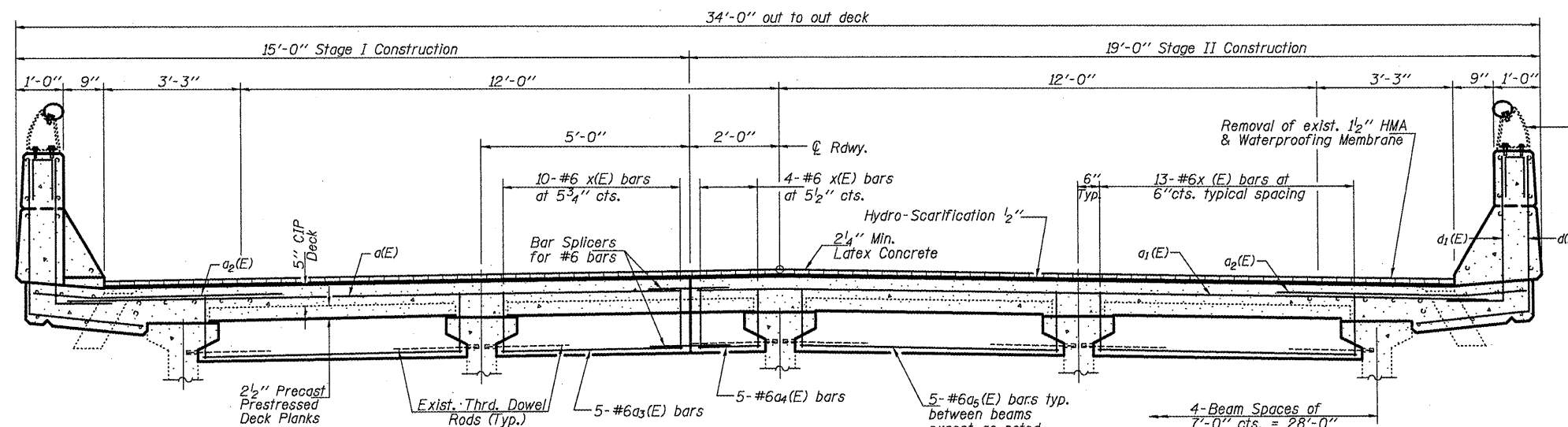
**CASE 5 : WITH HOT MIX ASPHALT SURFACE REMOVAL (COLD MILLING)  
TIE-IN TO EXISTING BITUMINOUS TAPER**

All dimensions are in inches (millimeters) unless otherwise noted.


**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

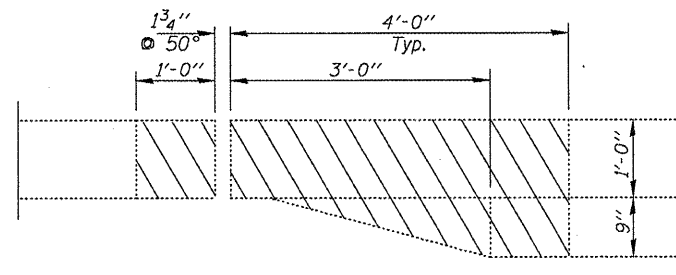
**BUTT JOINTS**  
SHT. 3 OF 3  
CADD STD. 406101-D4  
NOT TO SCALE

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
702	(114BR-1)I	WOODFORD	23	15
MISC. BRIDGE REPAIRS			CONTRACT NO. 68928	
FED. ROAD DIST. NO. 4 ILLINOIS FED. AID PROJECT				

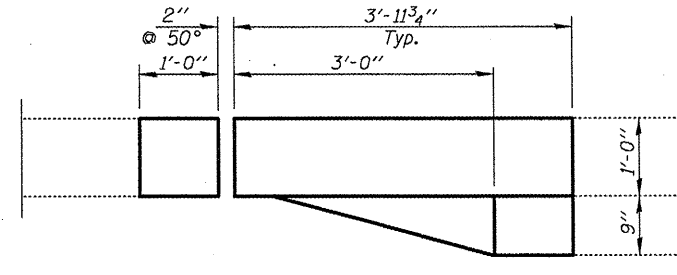


Note  
The Contractor shall use extreme caution during concrete removal so as not to damage the PPC I-Beam.

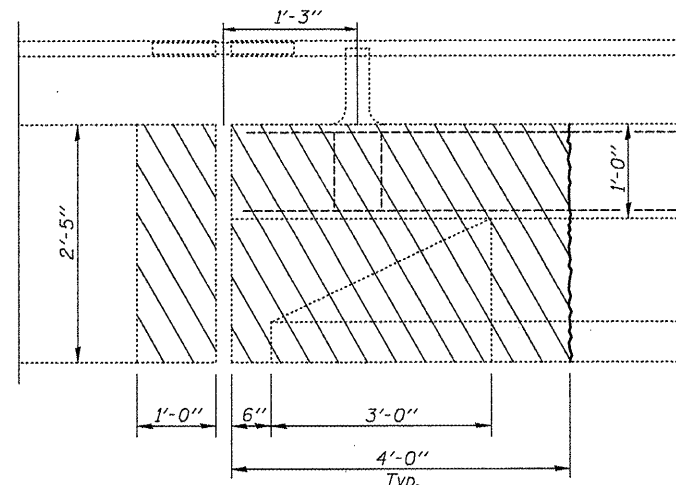
**CROSS SECTION**  
(Looking North)



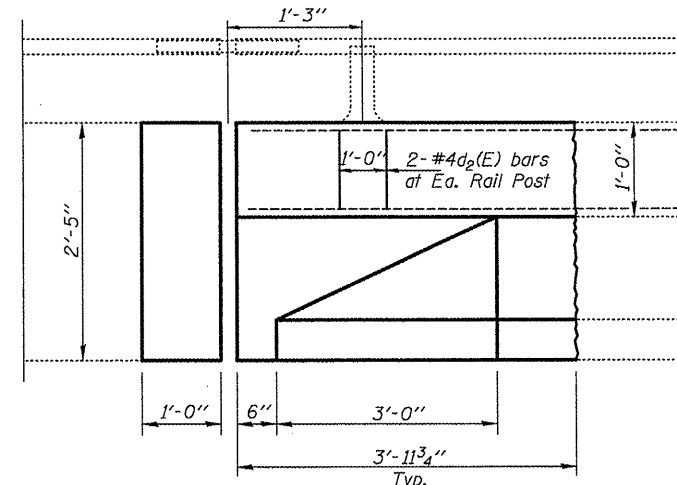
**PLAN PARAPET REMOVAL**  
(NE Parapet - mirror of NW)



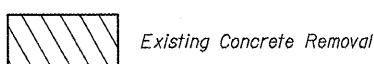
**PLAN PARAPET REPLACEMENT**  
(NE Parapet - mirror of NW)



**INSIDE ELEVATION OF PARAPET**  
(Facing NE Parapet Showing Removal)



**INSIDE ELEVATION OF PARAPET**  
(Facing NE Parapet Showing Replacement)



**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a(E)	8	#6	14'-0"	—
a1(E)	8	#6	18'-0"	—
a2(E)	8	#6	4'-9"	—
a3(E)	5	#6	4'-6"	—
a4(E)	5	#6	1'-6"	—
a5(E)	15	#6	6'-3"	—
d(E)	8	#4	4'-6"	L
d1(E)	8	#5	4'-3"	J
d2(E)	4	#4	2'-1"	n
h(E)	4	#6	14'-9"	—
h1(E)	4	#6	18'-9"	—
x(E)	53	#6	7'-5"	C
Bar Splicers			Each	17
Concrete Removal			Cu. Yd.	13.5
Concrete Superstructure			Cu. Yd.	13.6
Reinforcement Bars, Epoxy Coated			Pound	1480

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Notes  
Concrete quantity is included with Concrete Superstructure.  
Existing threaded rods to be incorporated into new construction.  
Cost included with concrete removal.

FILE NAME =	USER NAME = #USER#	DESIGNED - CEJ	REVISED -
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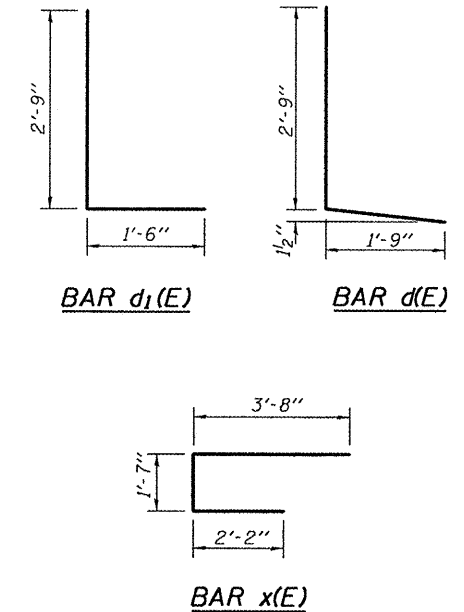
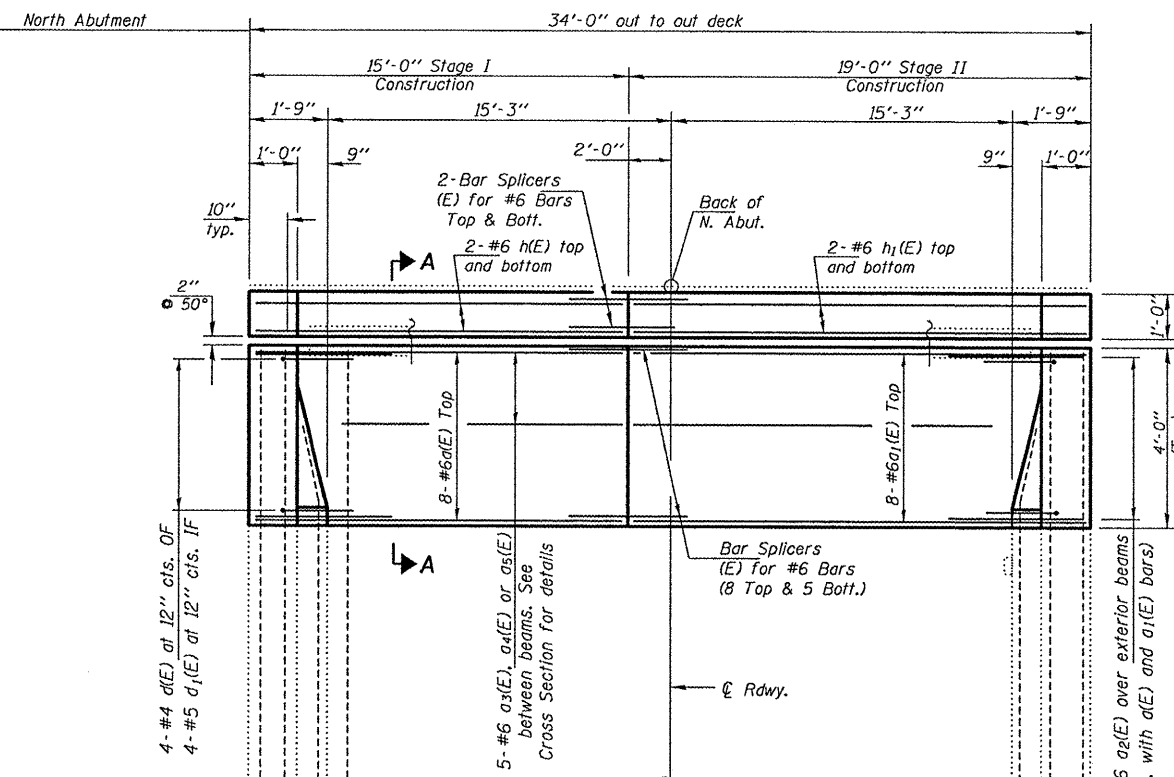
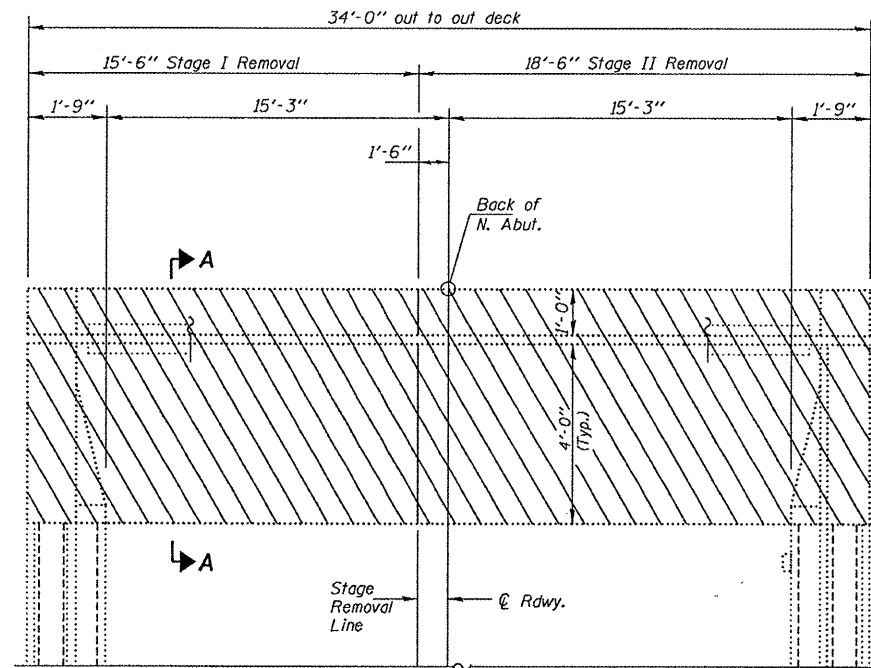
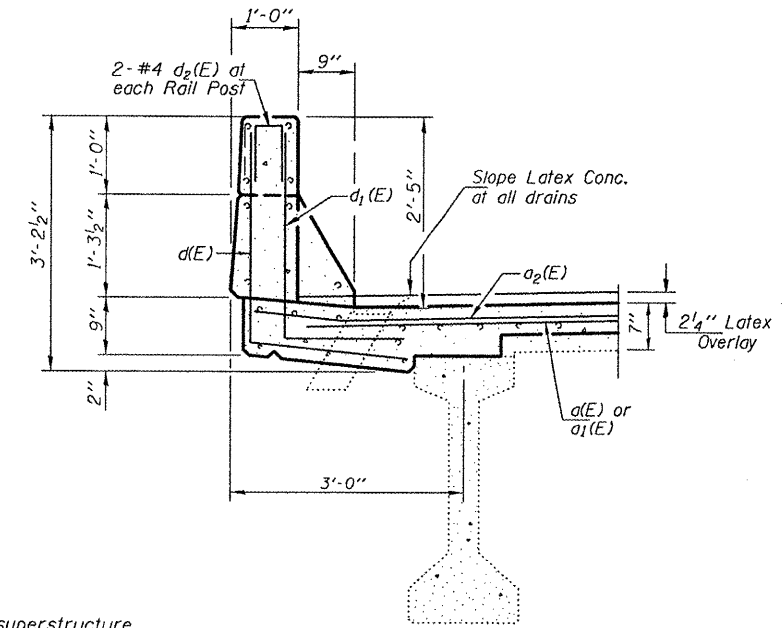
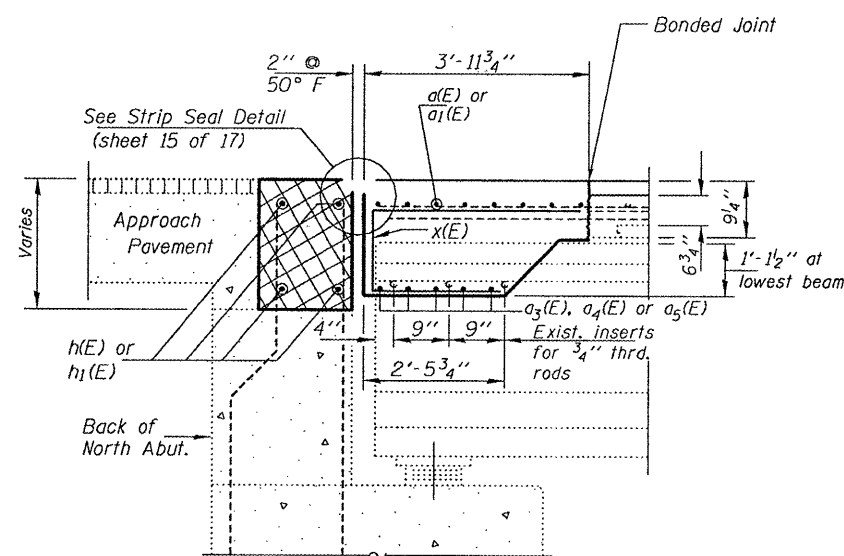
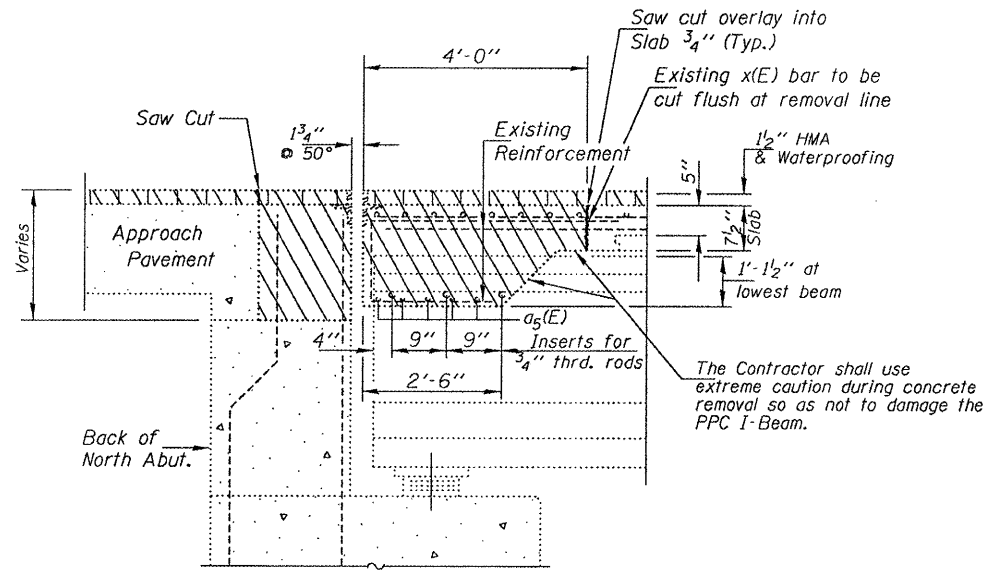
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**NORTH ABUTMENT JOINT DETAIL**

SCALE: SHEET NO. OF SHEETS STA. TO STA.

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
702	014BR-111	WOODFORD	23	16
MISC. BRIDGE REPAIRS			CONTRACT NO. 68928	
FED. ROAD DIST. NO. 4 [ILLINOIS] FED. AID PROJECT				

SN. 102-0041 IL.117 ovr  
MILL CRK. S. of US24



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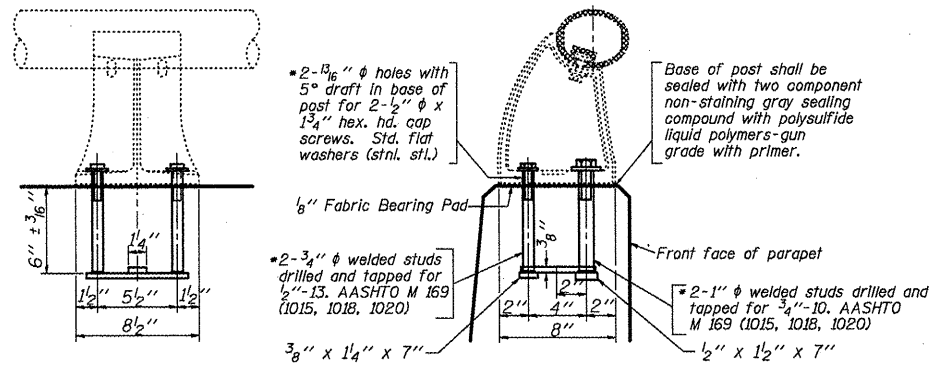
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**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

<b>NORTH ABUTMENT JOINT DETAIL</b>			
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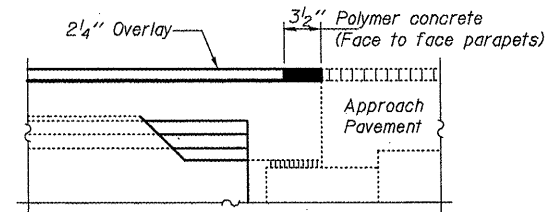
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702	(114BR-1)I	WOODFORD	23	17
MISC. BRIDGE REPAIRS			CONTRACT NO. 68928	
FED. ROAD DIST. NO. 4 [ILLINOIS] FED. AID PROJECT				

SN. 102-0041 IL.117 ovr  
MILL CRK. S. of US24



**RAIL POST DETAILS**

In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and epoxy grouting stainless steel anchor rods of the same diameter and grade as the specified cap screws. Embedment shall be according to the manufacturer's specifications.

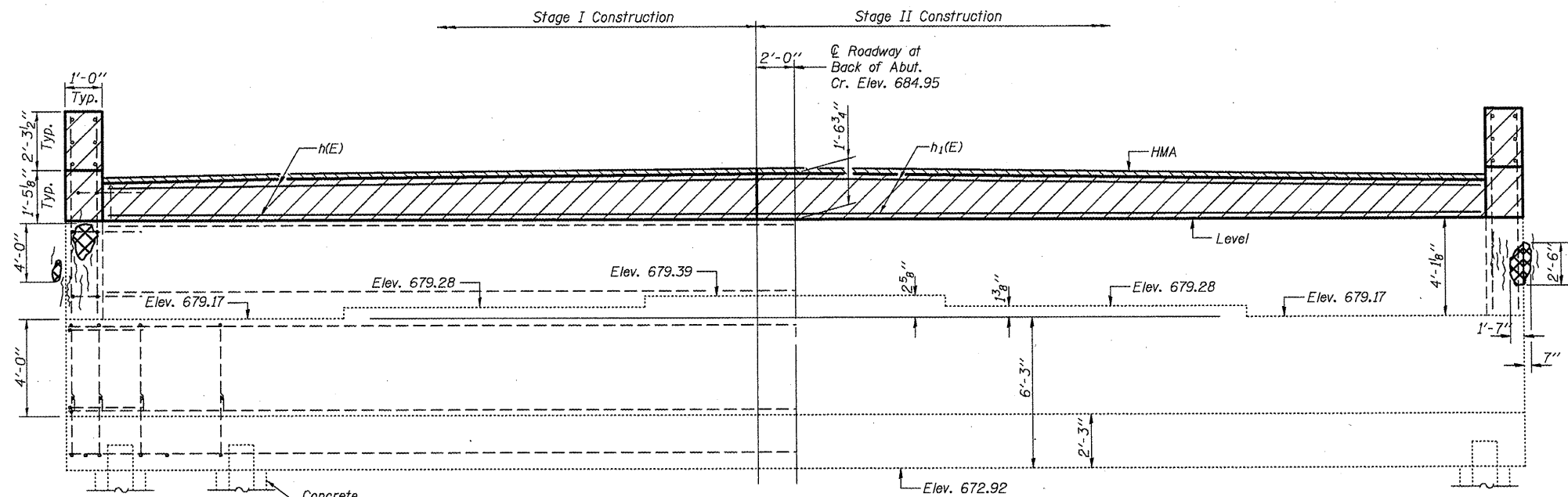


**SECTION AT SOUTH ABUTMENT**

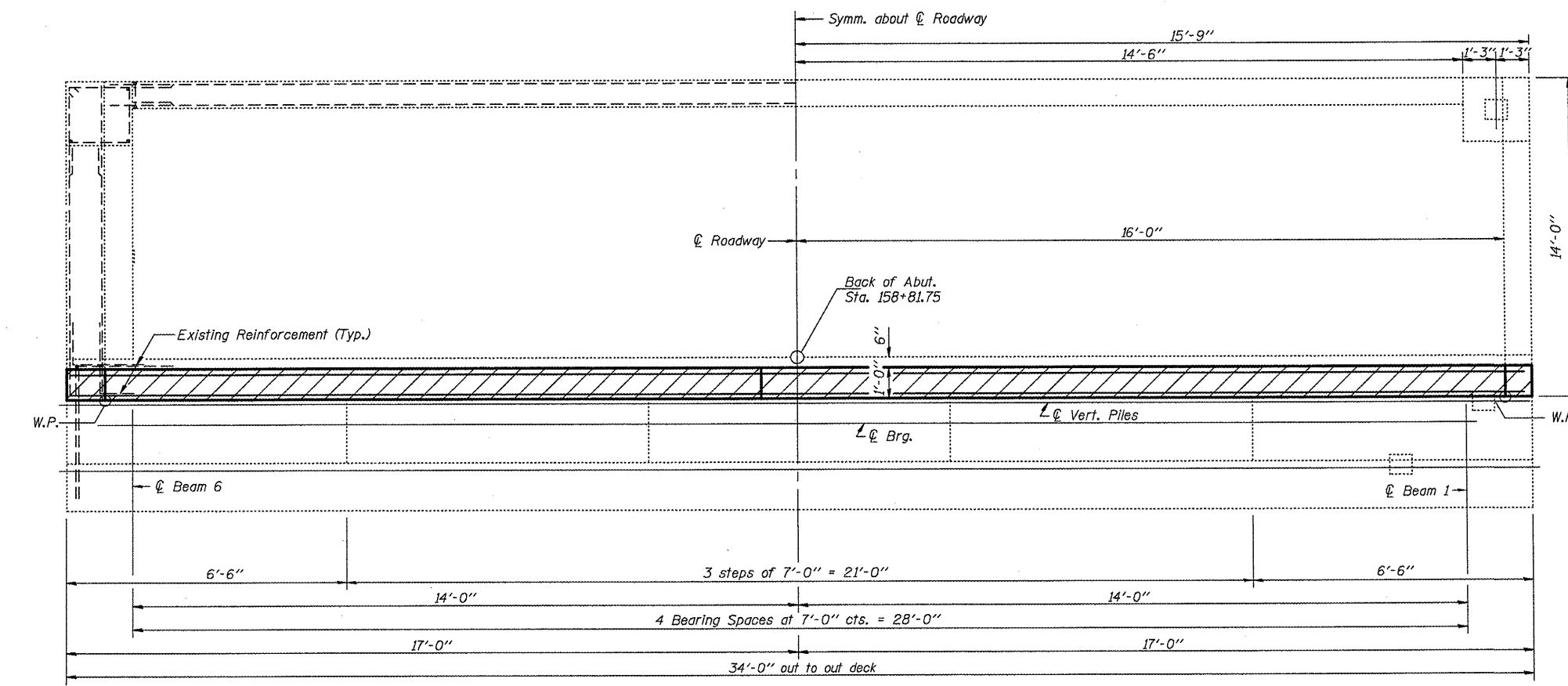
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SN. 102-0041 IL.117 ovr  
MILL CRK. S. OF US24

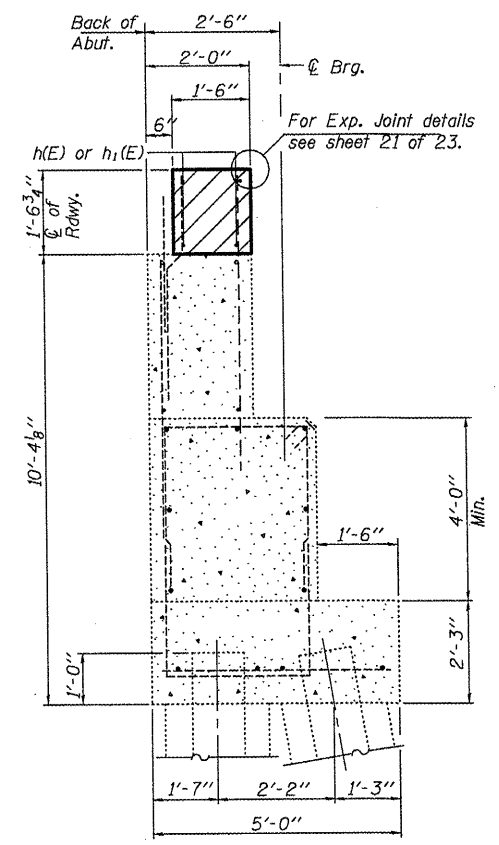
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PLOT DATE = #DATE#					FED. ROAD DIST. NO. 4 ILLINOIS FED. AID PROJECT							



**ELEVATION**  
(North Abutment,  
Looking North)



**PLAN**  
(North Abutment)



**SECTION THRU ABUT.**  
(North Abutment)

Delaminated Concrete Area

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal To or Less Than 5')	Sq. Ft.	18

SAVENIDRAFT ST&LINS SQUADIA BRIDGE CONTRACTS JOINTS JOINTS Over Lay 68928 SN102-0041 IL117 over Mill Crk.dgn

**NOTE**  
Hatched areas indicate Concrete Removal and Concrete Superstructure.  
Cross hatched areas indicate delaminated backwall concrete and Structural Repair of Concrete.  
When it is necessary to temporarily relocate fencing items at abutment corners, they shall be reinstalled as found at start of work. Any damaged items shall be replaced at Contractors expense. Costs shall be incidental to STRUCTURAL REPAIR OF CONCRETE.

FILE NAME =	USER NAME = *USER*	DESIGNED - CEJ	REVISED -
*FILE#		DRAWN - CEJ	REVISED -
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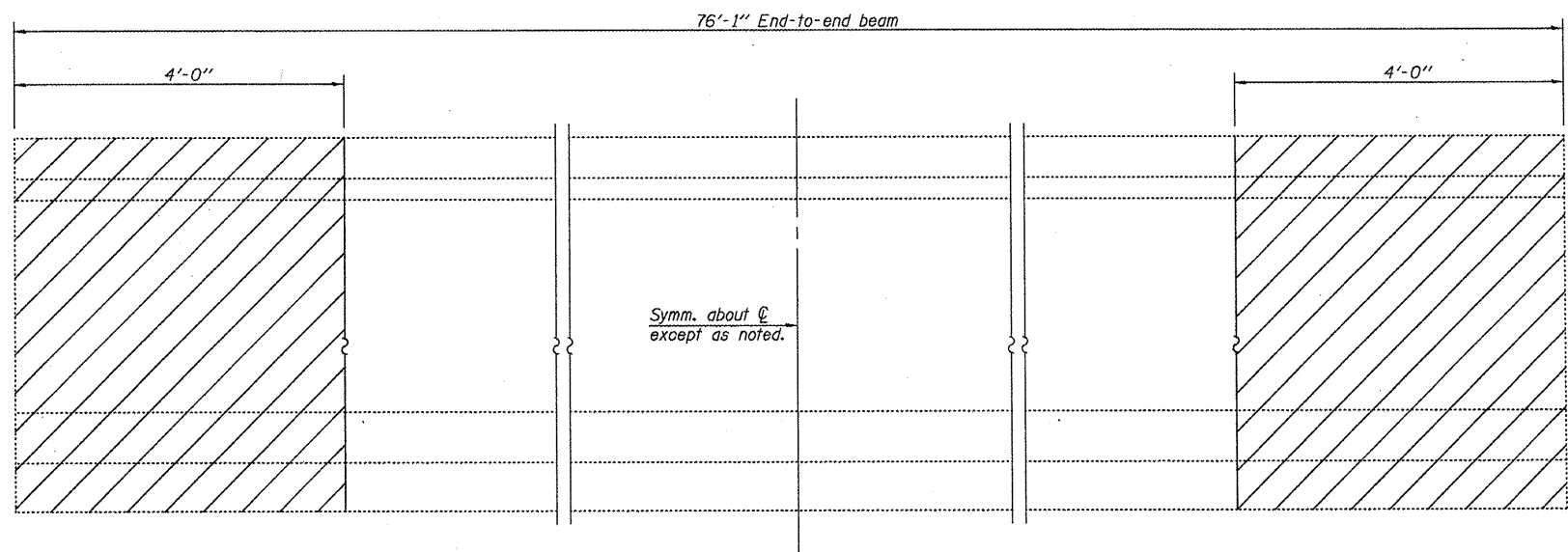
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**STRUCTURAL CONCRETE REPAIR DETAIL**

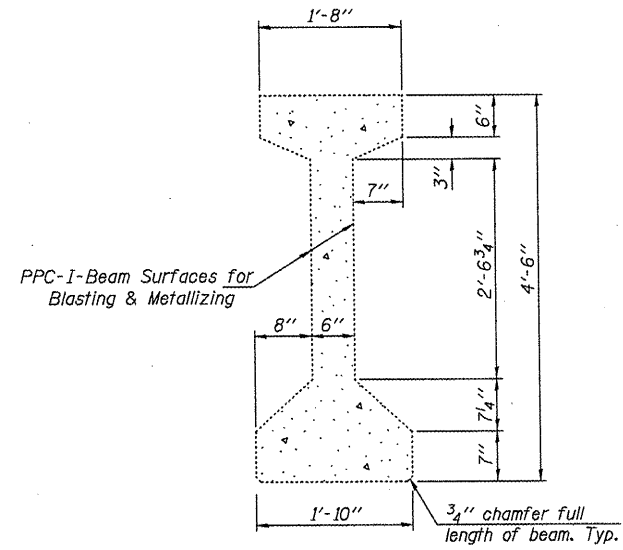
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RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
702	114BR-11	WOODFORD	23	19
MISC. BRIDGE REPAIRS			CONTRACT NO. 68928	
FED. ROAD DIST. NO. 4 (ILLINOIS FED. AID PROJECT)				

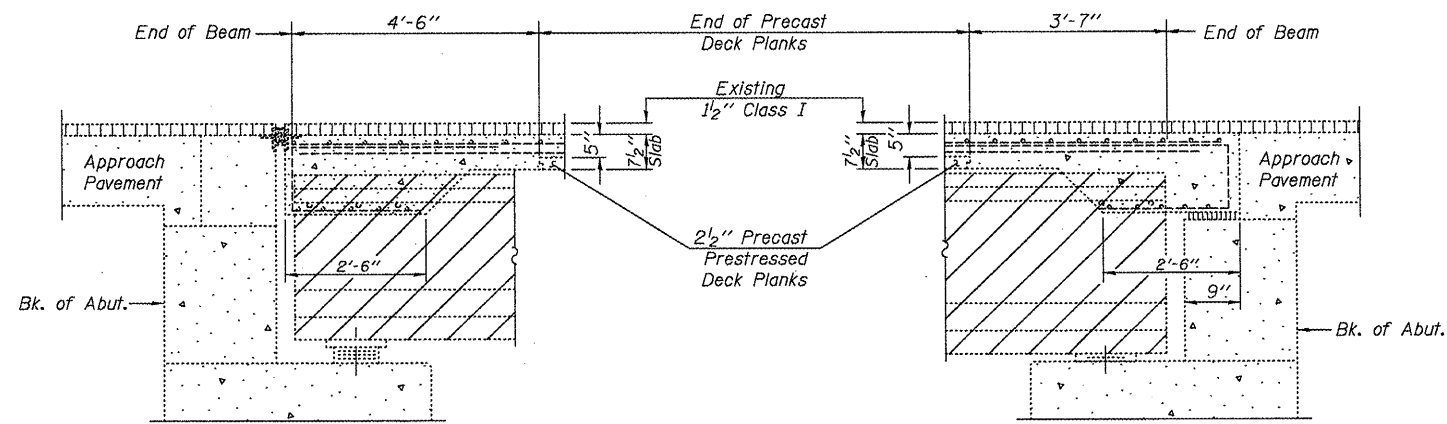
SN. 102-0041 IL117 over MILL CRK. S. of US24



**ELEVATION OF BEAM**  
(Showing blasting/Metallizing surface area)



**PPC I-BEAM CROSS-SECTION**  
(5 PPC I-Beams  
10 Beam Ends)



**PPC BEAM END-SECTION**  
(NORTH ABUT.)

**PPC BEAM END-SECTION**  
(SOUTH ABUT.)

**NOTE**  
All Horizontal dimensions are at right angles to beam ends.  
Beam length for Metallizing shall be measured four feet from each end and covers all visible side surfaces. Surface area of beam for blasting/spraying is 10.4 sq.ft. per lineal beam foot.  
All bearing plates shall have pack rust sand blasted clean prior to being metallized as beam ends are processed. Cost to be included in "Thermal Spraying (Metallizing) PPC Beam Ends."

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Thermal Spraying (Metallizing) PPC Beam Ends	Sq. Ft.	414

SN. 102-0041 IL.117 ovr  
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FILE NAME =	USER NAME = #USER#	DESIGNED - CEJ	REVISED -
#FILE#		DRAWN - CEJ	REVISED -
	PLOT SCALE = #SCALE#	CHECKED -	REVISED -
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**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

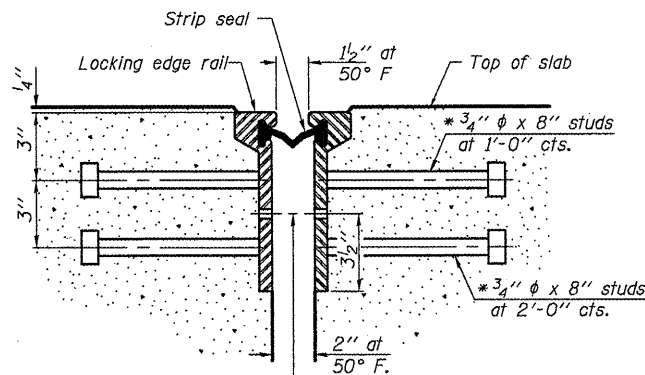
**PPC BEAM REPAIR DETAIL**

SCALE: SHEET NO. OF SHEETS STA. TO STA.

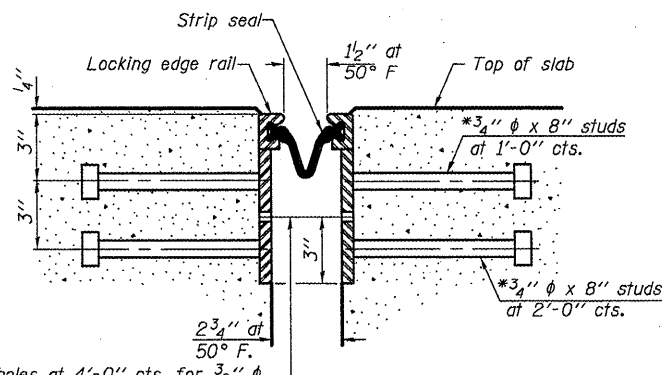
RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
702	(114BR-1)1	WOODFORD	23	20
MISC. BRIDGE REPAIRS			CONTRACT NO. 68928	
FED. ROAD DIST. NO. 4 ILLINOIS FED. AID PROJECT				



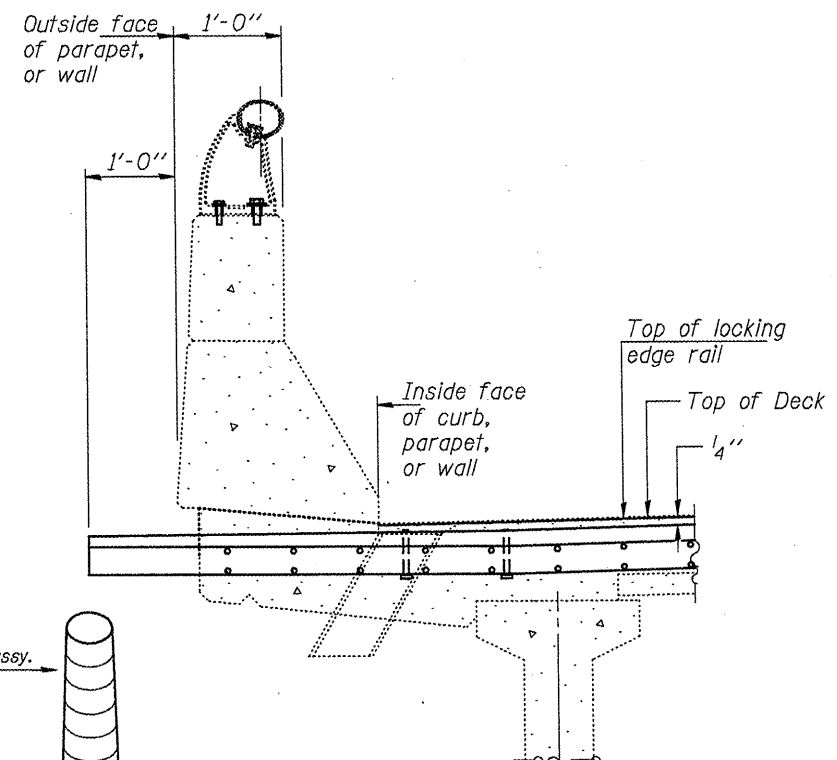
\* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



SECTION THRU ROLLED RAIL JOINT



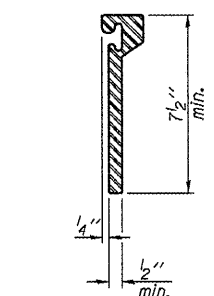
SECTION THRU WELDED RAIL JOINT



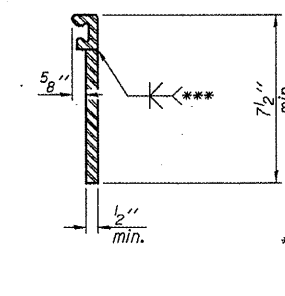
END TREATMENT AT CURB, PARAPET, OR WALL

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

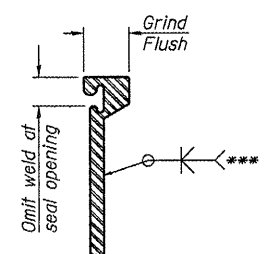
7/16" φ holes at 4'-0" cts. for 3/8" φ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.



ROLLED EXTRUDED RAIL



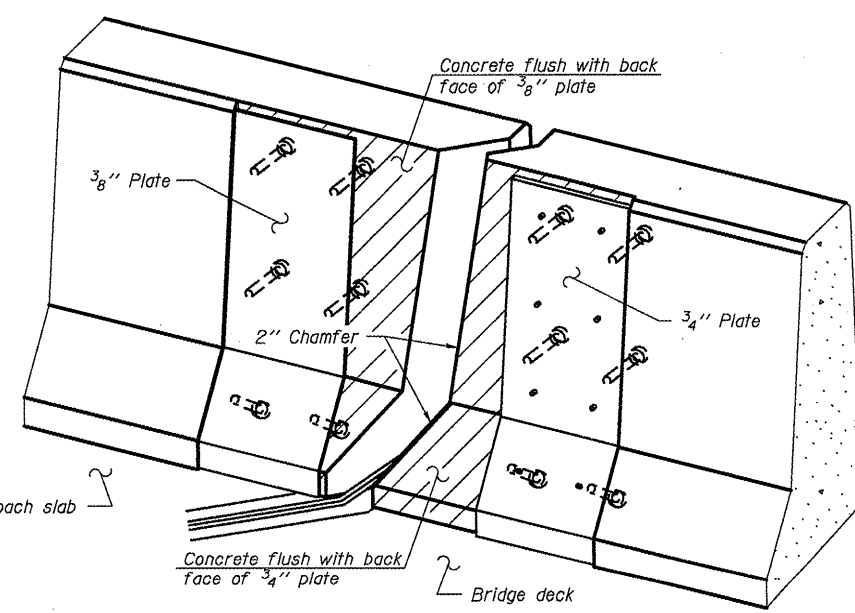
WELDED RAIL



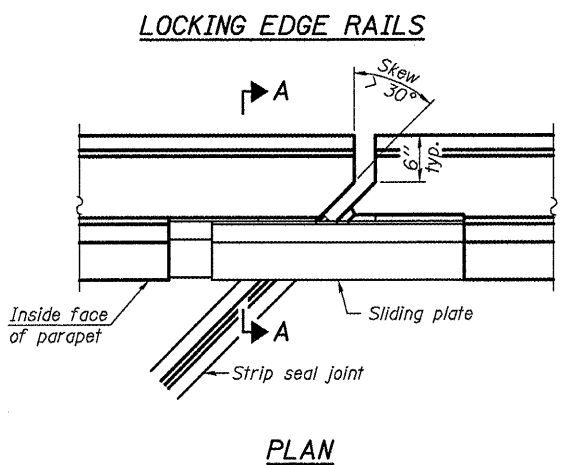
\*\*\* Back gouge not required if complete joint penetration is verified by mock-up.

LOCKING EDGE RAIL SPLICE

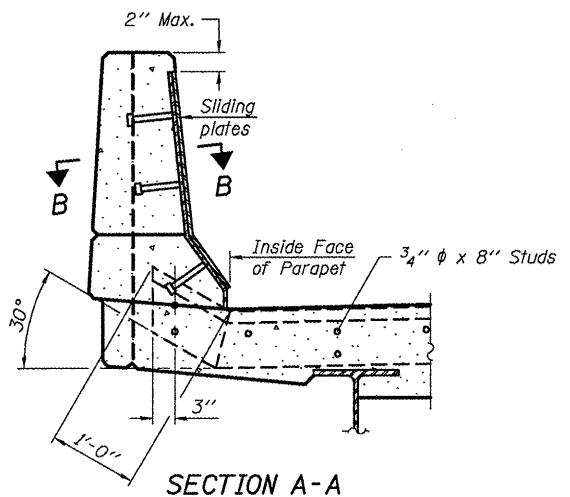
The inside of the locking edge rail groove shall be free of weld residue. Rolled rail shown, welded rail similar.



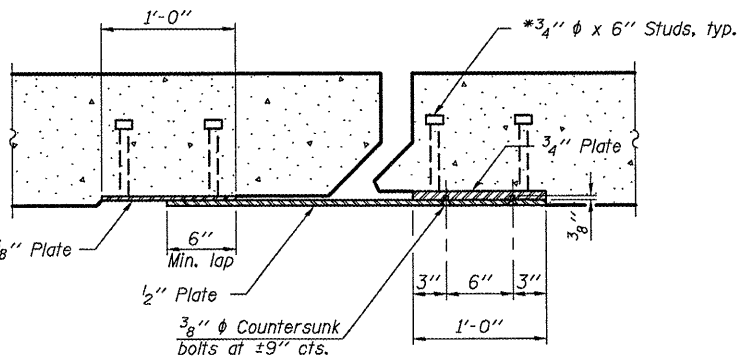
TRIMETRIC VIEW (Showing back plates only)



PLAN



POINT BLOCK DETAILS (for skews > 30°)



SECTION B-B

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.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Preformed Joint Strip Seal	Foot	36

PREFORMED JOINT STRIP SEAL STRUCTURE NO.

S:\GEN\DRAWING\STANDARD\BRIDGE CONTRACTS\JOINTS\JOINTS\11-1-09\11-1-09-MILC.dgn

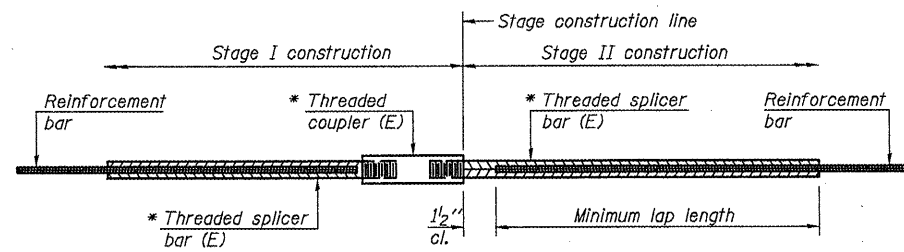
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	PLOT DATE = *DATE*	DATE - 11/18/2009	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

D4 REPLACEMENT STRIP SEAL DETAIL			
SCALE:	SHEET NO. OF SHEETS	STA.	TO STA.

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
702	114BR-1I	WOODFORD	23	21
MISC. BRIDGE REPAIRS			CONTRACT NO. 68928	
FED. ROAD DIST. NO. 4 ILLINOIS FED. AID PROJECT				

SN. 102-0041 IL-117 6VR  
 MILL CRK. S. OF US24



**STANDARD BAR SPLICER ASSEMBLY**

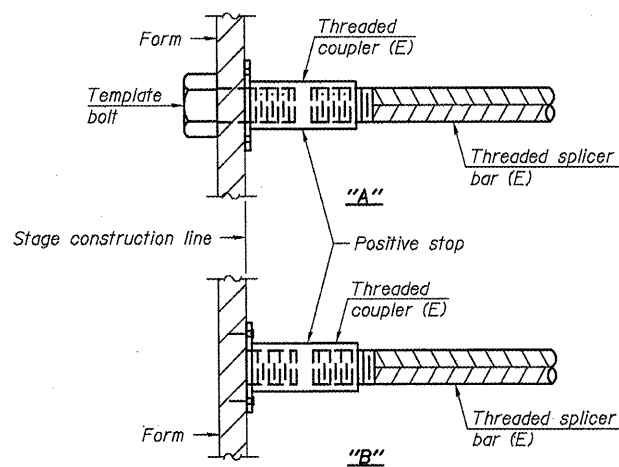
Bar size to be spliced	Minimum Lap Lengths			
	Table 1	Table 2	Table 3	Table 4
3, 4	1'-5"	1'-11"	2'-1"	2'-4"
5	1'-9"	2'-5"	2'-7"	2'-11"
6	2'-1"	2'-11"	3'-1"	3'-6"
7	2'-9"	3'-10"	4'-2"	4'-8"
8	3'-8"	5'-1"	5'-5"	6'-2"
9	4'-7"	6'-5"	6'-10"	7'-9"

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

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

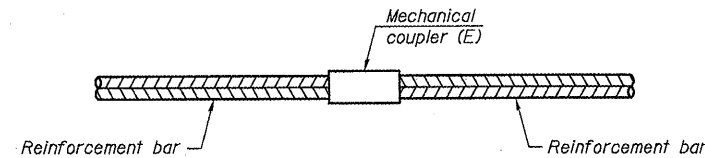
\* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
Deck	#6	13	3
N. Abutment	#6	4	3



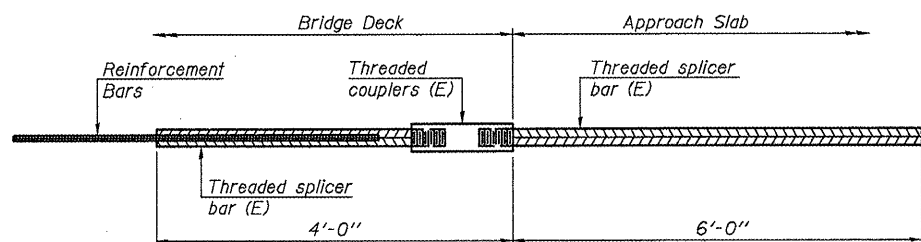
**INSTALLATION AND SETTING METHODS**

"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.



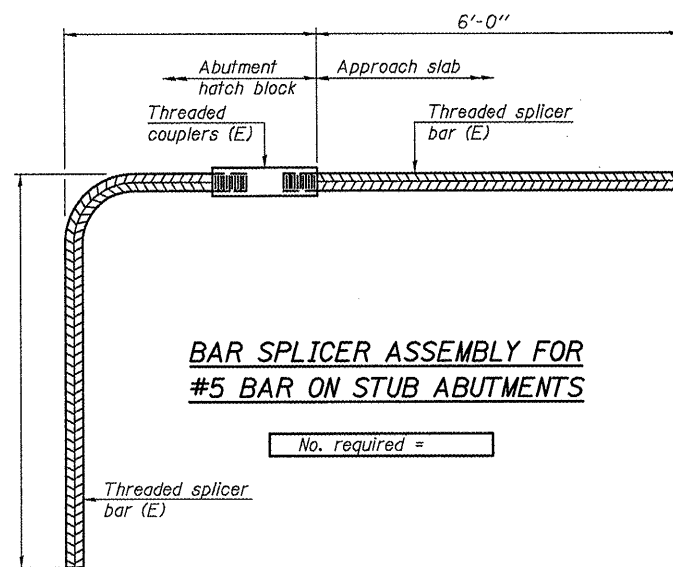
**STANDARD MECHANICAL SPLICER**

Location	Bar size	No. assemblies required



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

No. 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 special provision for Mechanical Splicers.  
 See approved list of bar splicer assemblies and mechanical splicers for alternatives.

**BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS**  
 STRUCTURE NO.

S:\ENGRDRAFT\STD&P\MSAS\BRIDGE CONTRACTS\JOINTS\JOINTS.dwg w-0-ver-1.dwg 11/7/09-MILLC-k-dgn

BSD-1

11-1-09

SN. 102-0041 IL.117 ovr  
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FILE NAME =	USER NAME = #USER#	DESIGNED -	REVISED -
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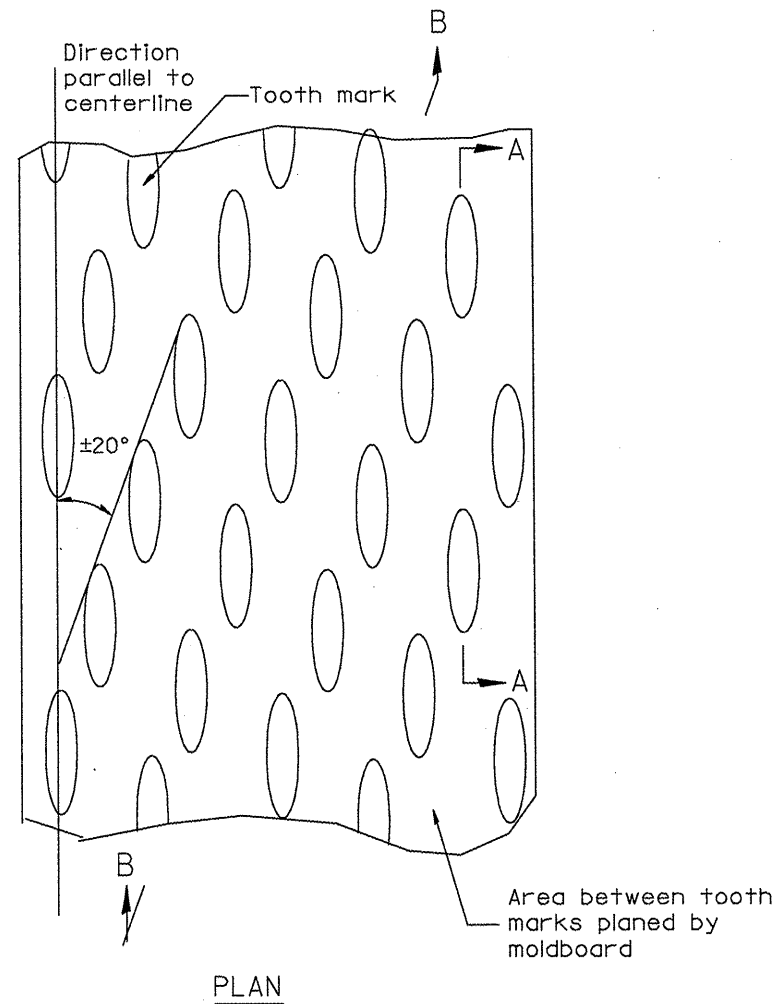
**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**BAR SPLICER DETAIL**

SCALE: SHEET NO. OF SHEETS STA. TO STA.

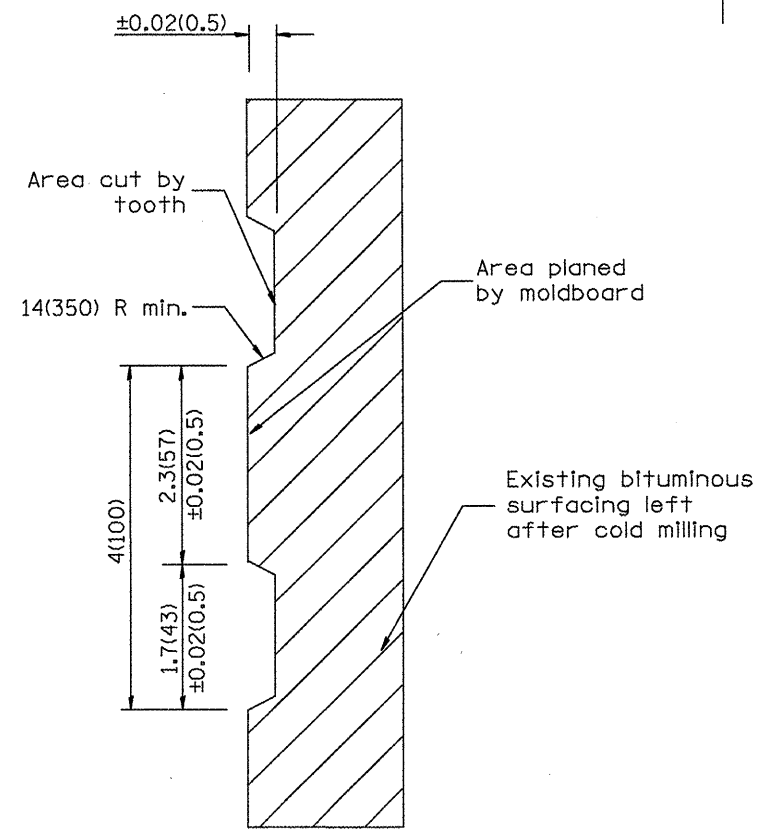
RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
702	(114BR-1)J	WOODFORD	23	22
MISC. BRIDGE REPAIRS			CONTRACT NO. 68928	
FED. ROAD DIST. NO. 4 (ILLINOIS) FED. AID PROJECT				

DESIGNER NOTES:  
1. INCLUDE DISTRICT SPECIAL PROVISION, IF APPLICABLE.

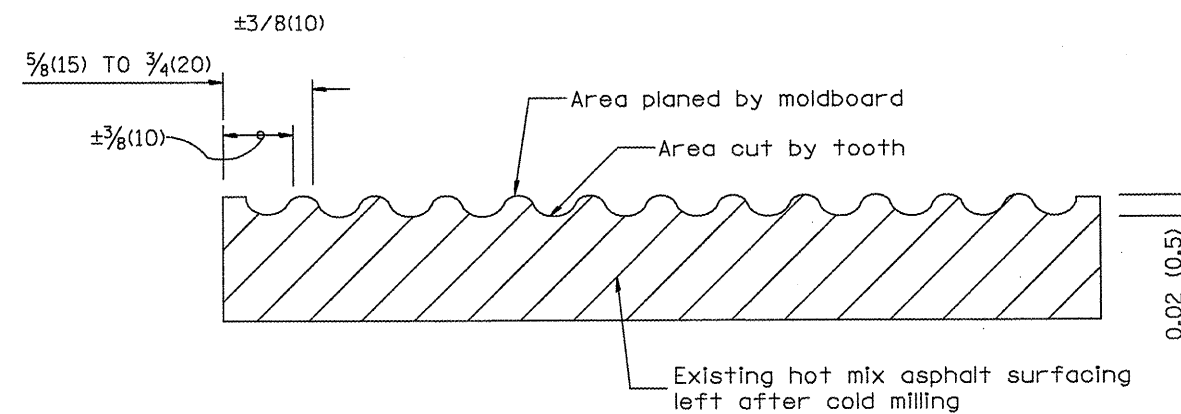


General notes:

1. Coldmilling shall consist of two processes: Cutting with carbide teeth mounted on a rotating drum, and planing with a moldboard mounted immediately behind the cutting drum.
2. Other similar patterns will be acceptable if they consist of a smooth, flat, planed surface interspersed with a pattern of discontinuous longitudinal striations.



SECTION A-A



SECTION B-B PROJECTED  
PERPENDICULAR TO CENTERLINE

All dimensions are in inches (millimeters) unless otherwise noted.

01-01-97	RENUM. C-104.01, NEW REVISION BOX	T.P.
04-20-98	REMOVED MILLING DETAIL FROM STANDARD	J.A.
09-08-98	CORRECT NOTE LEADER PLACEMENT	R.W.
10-16-06	REVISED TO 2007 SPEC.	M.A.

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

HOT MIX ASPHALT SURFACE REMOVAL (COLD MILLING)

NOT TO SCALE

CADD STD. 440001-D4

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
702	(114BR-1)I	WOODFORD	23	23
MISC. BRIDGE REPAIRS			CONTRACT NO. 68928	
FED. ROAD DIST. NO. 4 ILLINOIS FED. AID PROJECT				