6-11-10 LETTING ITEM 228

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BSMART 2010-2	PULASKI	14	1
	ILLINOIS	CONTRACT NO. 78174		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED
HIGHWAY PLANS

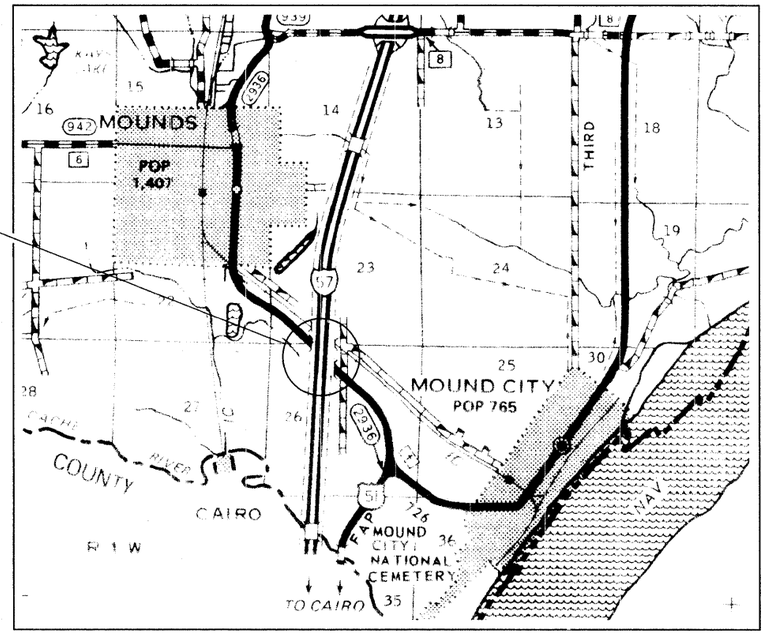
FAI ROUTE 57 NB / FAI ROUTE 57 SB
OVER FAS 2936 (OLD RTE US 51)
SECTION D9 BSMART 2010-2
PULASKI COUNTY
MICROSILICA OVERLAY AND MISC. REPAIRS

C-99-029-10

D-99-031-10

LOCATION OF SECTION INDICATED THUS: – ■ –

EXISTING SRUCTURE NO. 077-0001
FAI 57 (I-57) NB
EXISTING STRUCTURE NO. 077-0002
FAI 57 (I-57) SB



SN 077-0001 (NB)
BRIDGE LENGTH = 1013.16 FT
NET LENGTH = 1013.16 FT

SN 077-0002 (SB)
BRIDGE LENGTH = 1085.48 FT
NET LENGTH = 1085.48 FT

TRAFFIC DATA

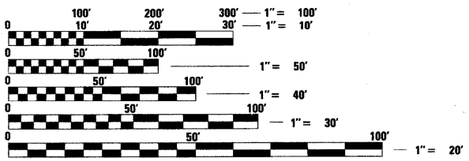
I-57 TRAFFIC DATA

2007 ADT = 10,200
37% TRUCKS

TOWNSHIPS:

COUNTY UNIT ROAD DISTRICT

FOR INDEX OF SHEETS, SEE SHEET NO. 2



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: DAVID PICHE (618) 351-5227
DESIGNER: T. WAYNE HALSTEAD (618) 351-5228

CONTRACT NO. 78174

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED March 11 20 10
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

May 7 20 10
Scott E. Stitt, P.E. /bc
acting ENGINEER OF DESIGN AND ENVIRONMENT

May 7 20 10
Christine M. Reed /bc
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

FILE NAME = c:\pw_work\pwdot\thalsteadsw\d0176093\d770201_0002_sht_msc.dgn

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 /SQ YD

3) PRIOR TO PLACEMENT OF THE FINAL PAVEMENT MARKINGS THE RESIDENT ENGINEER SHOULD CONTACT THE BUREAU OF OPERATIONS AND ARRANGE FOR INSPECTION AND APPROVAL OF THE PAVEMENT MARKING LAYOUT.

4) 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.

5) COMMITMENTS: NONE AS OF MARCH 19, 2010.

MIXTURE REQUIREMENTS

LOCATION(S):	HOT-MIX ASPHALT SHOULDERS
MIXTURE USES(S):	HOT-MIX ASPHALT SURFACE COURSE, MIX C, N70
AC/PG:	PG64-22
RAP% (MAX):	10
DESIGN AIR VOIDS:	4%, 70 GYRATION DESIGN
MIXTURE COMPOSITION: (GRADATION MIXTURE)	IL-9.5 MM OR 12.5 MM
FRICTION AGGREGATE:	C SURFACE

STANDARDS

000001-05	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
642001-01	SHOULDER RUMBLE STRIPS
701101-02	OFF-ROAD, MULTILANE 15' TO PAVEMENT EDGE
701201-03	LANE CLOSURE, 2L, 2W, DAY ONLY, FOR SPEEDS $\geq$ 45 MPH
701400-04	APPROACH TO LANE CLOSURE FREEWAY/EXPRESSWAY
701402-07	LANE CLOSURE FREEWAY/EXPRESSWAY, WITH BARRIER
701421-02	LANE CLOSURE, MULTILANE, DAY OPERATION ONLY, FOR SPEEDS $\geq$ 45 MPH TO 55 MPH
701426-03	LANE CLOSURE, MULTILANE, INTERMITTENT OR MOVING OPERATION, FOR SPEEDS $\geq$ 45 MPH
701901-01	TRAFFIC CONTROL DEVICES
704001-06	TEMPORARY CONCRETE BARRIER
780001-02	TYPICAL PAVEMENT MARKINGS

INDEX OF SHEETS

Prepared By: Joe Hendricks
DISTRICT STUDIES & PLANS ENGINEER

Examined By: James Travis Emery
DISTRICT LAND ACQUISITION ENGINEER

Examined By: Carrie Nelson
DISTRICT PROGRAM DEVELOPMENT ENGINEER

Examined By: Kent Hoy
DISTRICT OPERATIONS ENGINEER

Examined By: John Smothers
DISTRICT CONSTRUCTION ENGINEER

Examined By: Brian W. Babb
DISTRICT MATERIALS ENGINEER

Examined By: John Smothers
DISTRICT PROJECT IMPLEMENTATION ENGINEER

Examined By: Daniel C. Clayton
ASSISTANT REGIONAL ENGINEER

Approved By: Mark C. Kanzi
DEPUTY DIRECTOR OF HIGHWAYS, REGION 5 ENGINEER

March 11 2010
DATE

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	DRAWN -	REVISED -	
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PLOT DATE = 2/24/2010	DATE -	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES, STANDARDS, INDEX OF SHEETS AND MIXTURE REQUIREMENTS

SCALE: | SHEET NO. 2 OF SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BSMART 2010-2	PULASKI	14	2
		CONTRACT NO. 78174		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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SUMMARY OF QUANTITIES

CODE NUMBER	ITEM DESCRIPTION	STP FUNDING 100% STATE CONSTRUCTION TYPE CODE SFTY-2A PULASKI SN 077-0001 & 077-0002 UNIT	QUANTITY
40600010	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	60
42001300	PROTECTIVE COAT	SQ YD	7704
44000155	HOT-MIX ASPHALT SURFACE REMOVAL, 1 1/2"	SQ YD	569
44000915	HOT-MIX ASPHALT SURFACE REMOVAL (DECK)	SQ YD	7515
48203100	HOT-MIX ASPHALT SHOULDERS	TON	48
50102400	CONCRETE REMOVAL	CU YD	493.3
50157300	PROTECTIVE SHIELD	SQ YD	392
50300255	CONCRETE SUPERSTRUCTURE	CU YD	548
50300260	BRIDGE DECK GROOVING	SQ YD	6865
50300300	PROTECTIVE COAT	SQ YD	7704
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	106580
50800515	BAR SPLICERS	EACH	596
52000110	PREFORMED JOINT STRIP SEAL	FOOT	1293
64200105	SHOULDER RUMBLE STRIP	FOOT	1280
67000400	ENGINEERS FIELD OFFICE, TYPE A	CAL MO	10
67100100	MOBILIZATION	L SUM	1
70100310	TRAFFIC CONTROL AND PROTECTION, STANDARD 701421	L SUM	1
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1
70100805	TRAFFIC CONTROL AND PROTECTION, STANDARD 701402	L SUM	1
70106800	CHANGEABLE MESSAGE SIGN	CAL MO	1
70300100	SHORT-TERM PAVEMENT MARKING	FOOT	210
70300220	TEMPORARY PAVEMENT MARKING - LINE 4"	FOOT	6005
70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ FT	2072
70400100	TEMPORARY CONCRETE BARRIER	FOOT	2575
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	2575
* 78004210	PREFORMED PLASTIC PAVEMENT MARKING, TYPE B - INLAID - LINE 4"	FOOT	6005
* 78100105	RAISED REFLECTIVE PAVEMENT MARKER (BRIDGE)	EACH	28
78300100	PAVEMENT MARKING REMOVAL	SQ FT	427
78300200	RAISED REFLECTIVE PAVEMENT MARKER REMOVAL	EACH	28
X0323644	PAVEMENT MARKING GROOVING	FOOT	6005
XZ191200	BRIDGE DECK MICROSILICA CONCRETE OVERLAY 2 1/2"	SQ YD	6526
Z0006204	BRIDGE DECK HYDRO-SCARIFICATION 1/2"	SQ YD	6526

CODE NUMBER	ITEM DESCRIPTION	STP FUNDING 100% STATE CONSTRUCTION TYPE CODE SFTY-2A PULASKI SN 077-0001 & 077-0002 UNIT	QUANTITY
Z0016001	DECK SLAB REPAIR (FULL DEPTH, TYPE I)	SQ YD	1.4
Z0030250	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2
Z0030350	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2

* specialty items

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: | SHEET NO. 2 OF SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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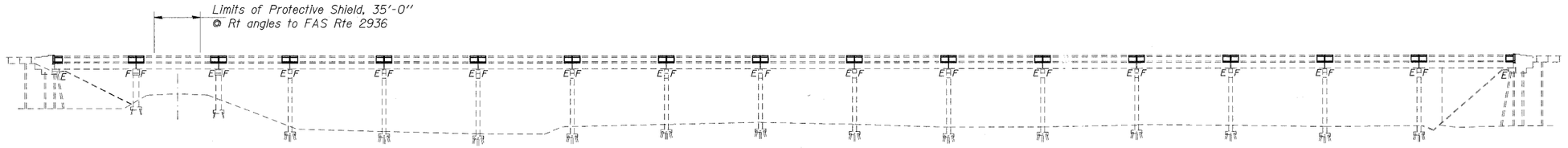
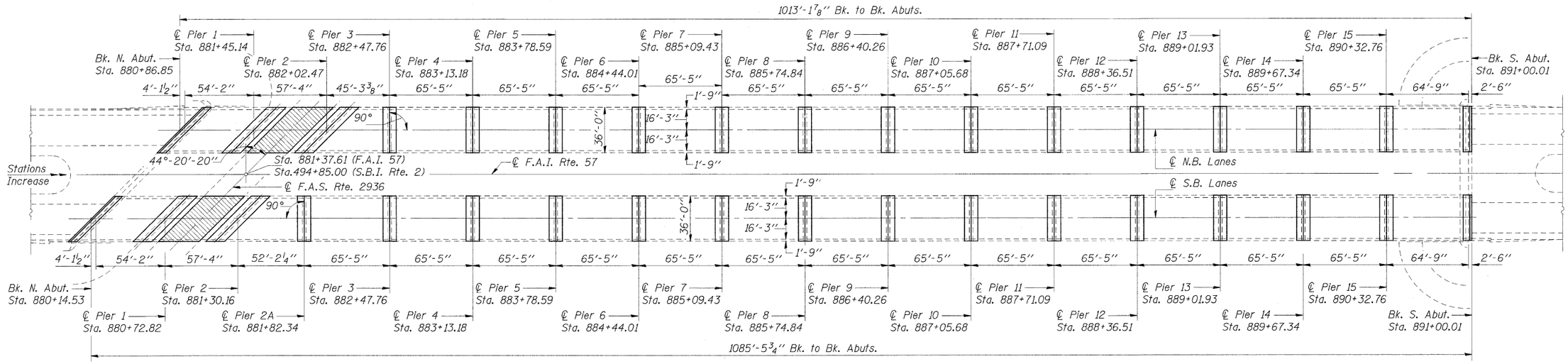
		CONTRACT NO. 78174		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



ELEVATION



PLAN

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANITY
Concrete Removal	Cu. Yd.	493.3
Concrete Superstructure	Cu. Yd.	548.0
Bridge Deck Grooving	Sq. Yd.	6865
Bar Splicers	Each	596
Reinforcement Bars, Epoxy Coated	Pound	106580
Preformed Joint Strip Seal	Foot	1293
Bridge Deck Microsilica Concrete Overlay 2 1/2"	Sq. Yd.	6526
Bridge Deck Hydro-Scarification 1/2"	Sq. Yd.	6526
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	1.4
Protective Coat	Sq. Yd.	7704
HMA Surface Removal (Deck)	Sq. Yd.	7515
Protective Shield	Sq. Yd.	392

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.

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 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 I-Beam.

DESIGN STRESSES

NEW CONSTRUCTION
Field Units

f'_c = 3,500 psi
f_y = 60,000 psi (reinforcement)

ORIGINAL CONSTRUCTION
Field Units

f_c = 1,400 psi (super & sub)
f_s = 20,000 psi (reinforcement)
vc = 75 psi
n = 10

Precast Prestressed Units

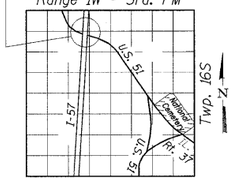
f_c = 5,000 psi
f_{ci} = 4,000 psi
f_s = 248,000 psi ($^7/_{16}$"ϕ stress relieved strands)
f_{si} = 173,600 psi ($^7/_{16}$"ϕ stress relieved strands)

STATE OF ILLINOIS
RALPH E. ANDERSON
081-004625
SPRINGFIELD
LICENSED STRUCTURAL ENGINEER

Expires 11/30/2010

Limits of Protective Shield

Structure location
Range 1W - 3rd. PM



LOCATION SKETCH

SCOPE OF WORK

1. Remove existing HMA overlay.
2. Hydroscarify deck 1/2".
3. Perform full depth patching.
4. Remove and replace expansion joints at both abutments and all piers.
5. Apply 2 1/2" microsilica overlay and protective coat.

GENERAL PLAN
SECTION D9 BSMART 2010-2
F.A.I. RTE. 57 OVER F.A.S. 2936
PULASKI COUNTY
STRUCTURE NO. 077-0001 (N.B.)
STRUCTURE NO. 077-0002 (S.B.)

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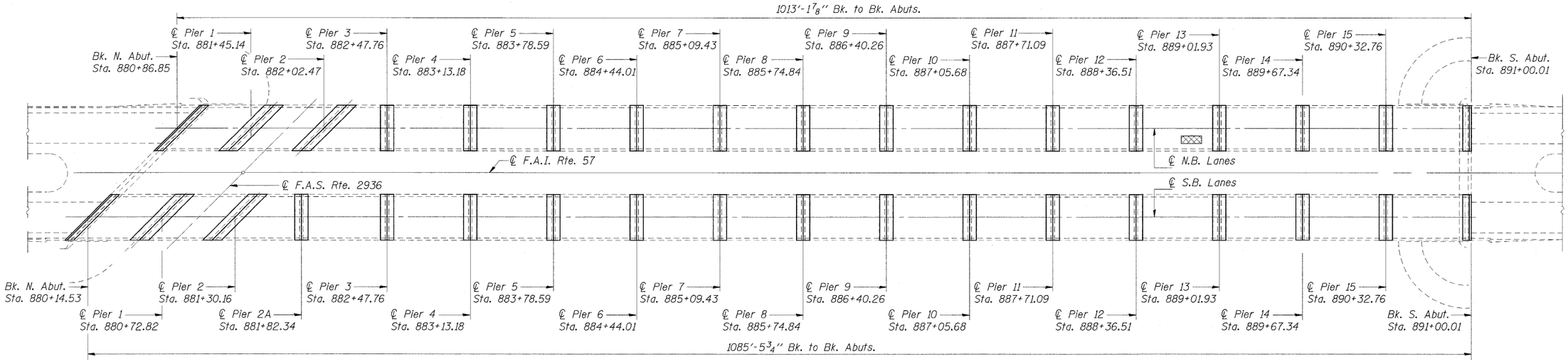
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLAN AND ELEVATION
SN 077-0001 & 077-0002

SHEET NO. OF SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BSMART 2010-2	PULASKI	14	4
		CONTRACT NO. 78174		
		ILLINOIS FED. AID PROJECT		



PLAN

FULL DEPTH DECK REPAIR			
NUMBER	LENGTH (FT)	WIDTH (FT)	AREA (SQ YD)
1	6	2	1.4

☒ Full Depth Patching

Notes:

The Resident Engineer will determine final patch locations and quantities in the field before bridge deck patching operations begin.

Area of deck repairs shown are estimated. The Engineer shall show actual locations for deck repairs on As-Built plans.

BILL OF MATERIAL

Item	Unit	Total
Deck Slab Repair (Full Depth, ty 1)	Sq Yd	1.4

DECK SLAB REPAIRS
PULASKI COUNTY
STRUCTURE NO. 077-0001 (N.B.)
STRUCTURE NO. 077-0002 (S.B.)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK SLAB REPAIRS
SN 077-0001 & 077-0002

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

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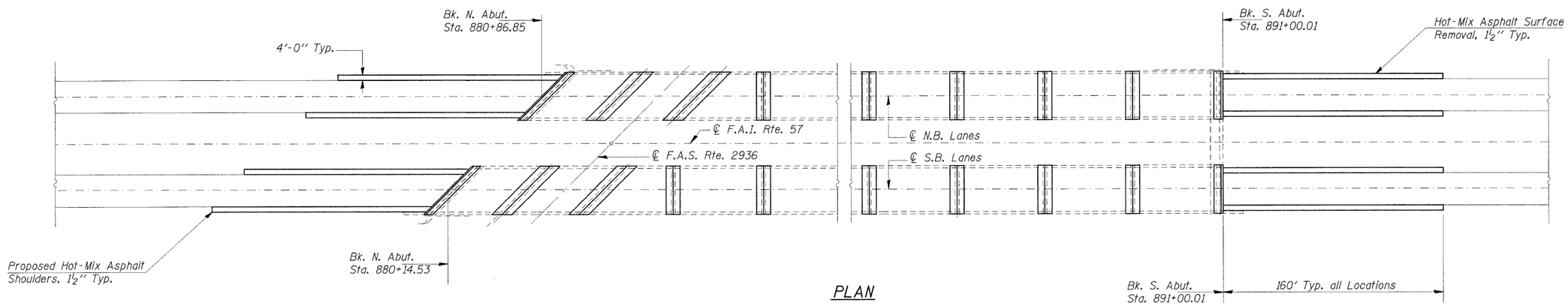
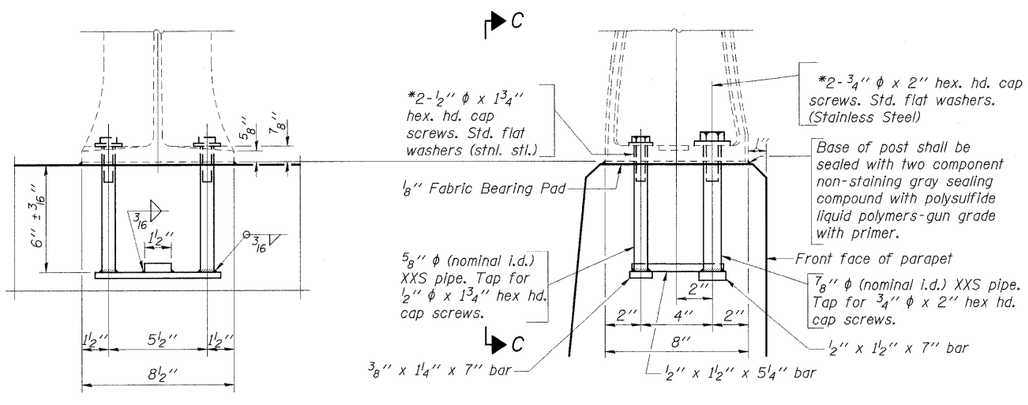
		CONTRACT NO. 78174		
	ILLINOIS FED. AID PROJECT			



PLAN



VIEW C-C

RAIL POST DETAILS

64 Locations on SN 077-0001 (N.B.)
68 Locations on SN 077-0002 (S.B.)

Notes:

Shoulder work shall be done prior to allowing staged traffic.
Post shall be normal to 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 manufacturer's specifications.
Removal and 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.

SHOULDER RUMBLE STRIP REMOVAL & RAILING DETAILS
PULASKI COUNTY
STRUCTURE NO. 077-0001 (N.B.)
STRUCTURE NO. 077-0002 (S.B.)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHOULDER RUMBLES & RAILING
SN 077-0001 & 077-0002

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

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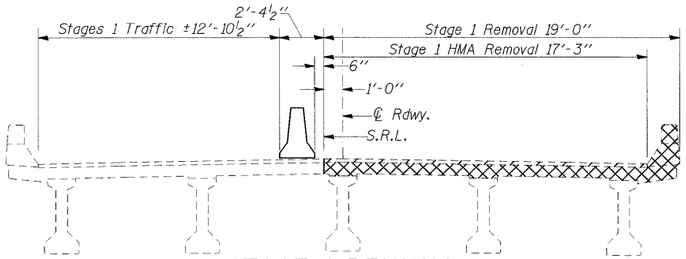
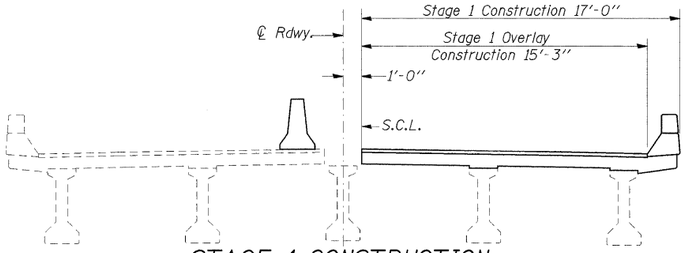
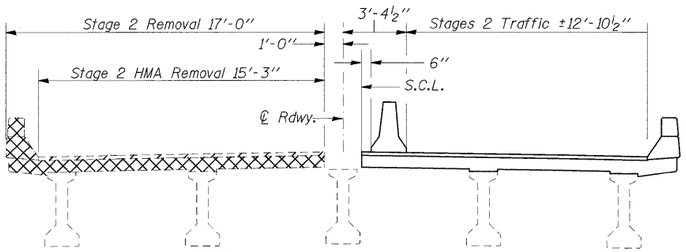
	ILLINOIS FED. AID PROJECT			



STAGE 1 REMOVAL



STAGE 1 CONSTRUCTION



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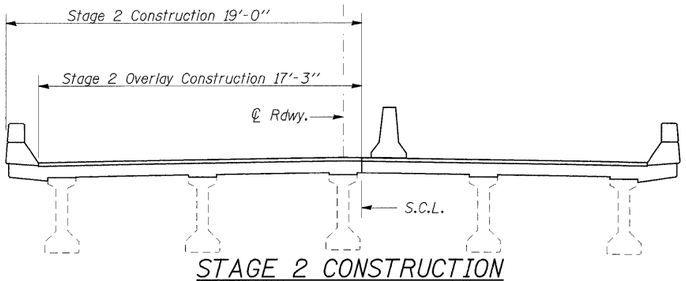

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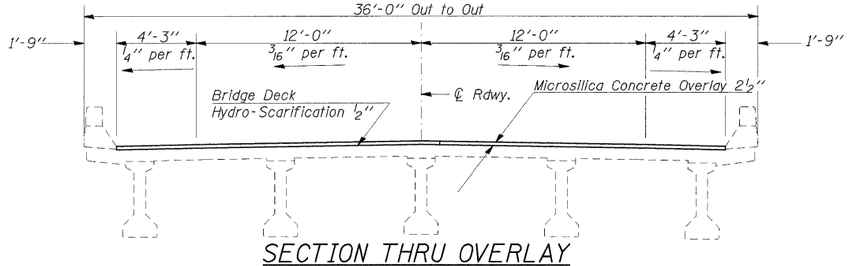


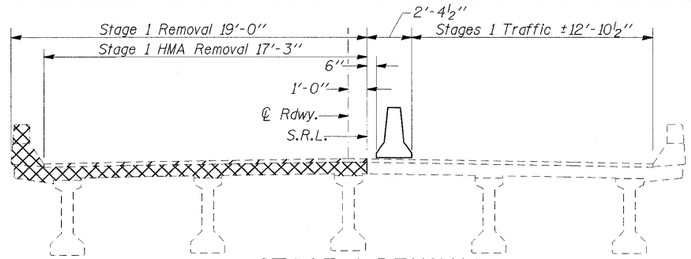
SECTION THRU OVERLAY

Concrete Removal at joint replacements

HMA Surface Removal

NOTES:

All Sections looking North.



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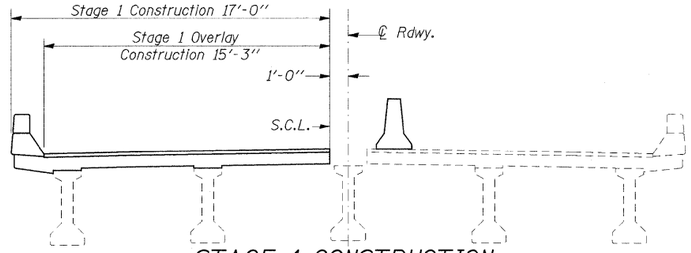

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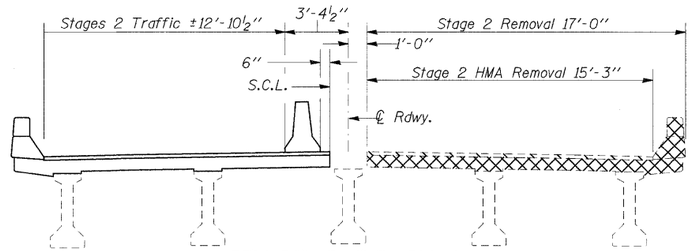

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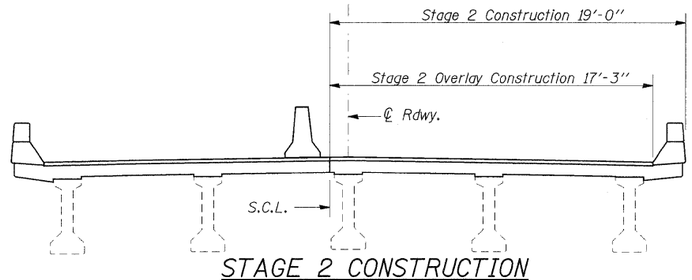

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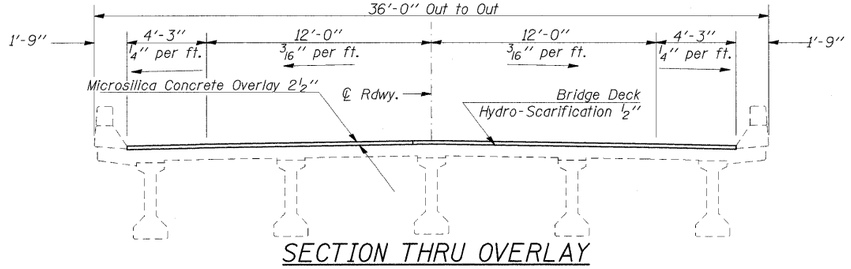

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGING DETAILS

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

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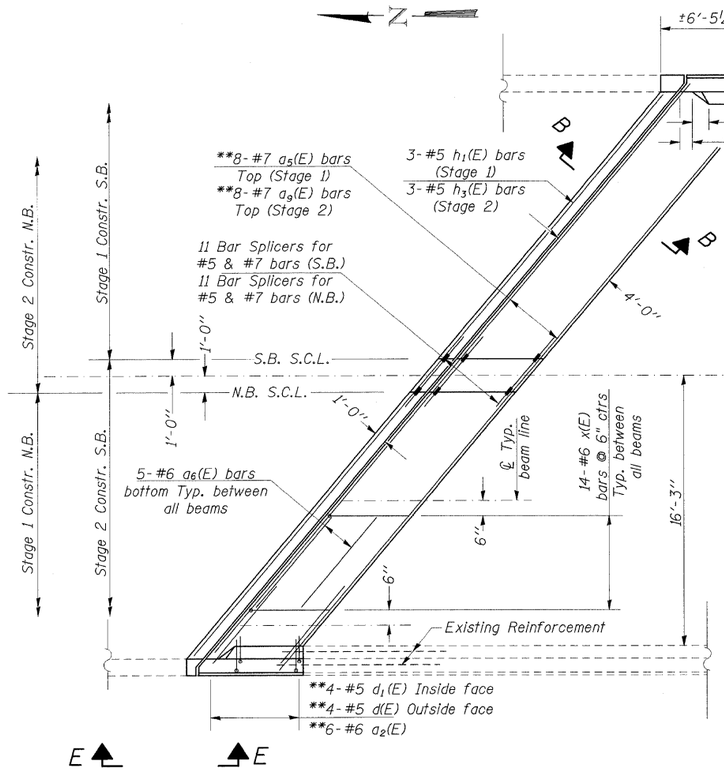
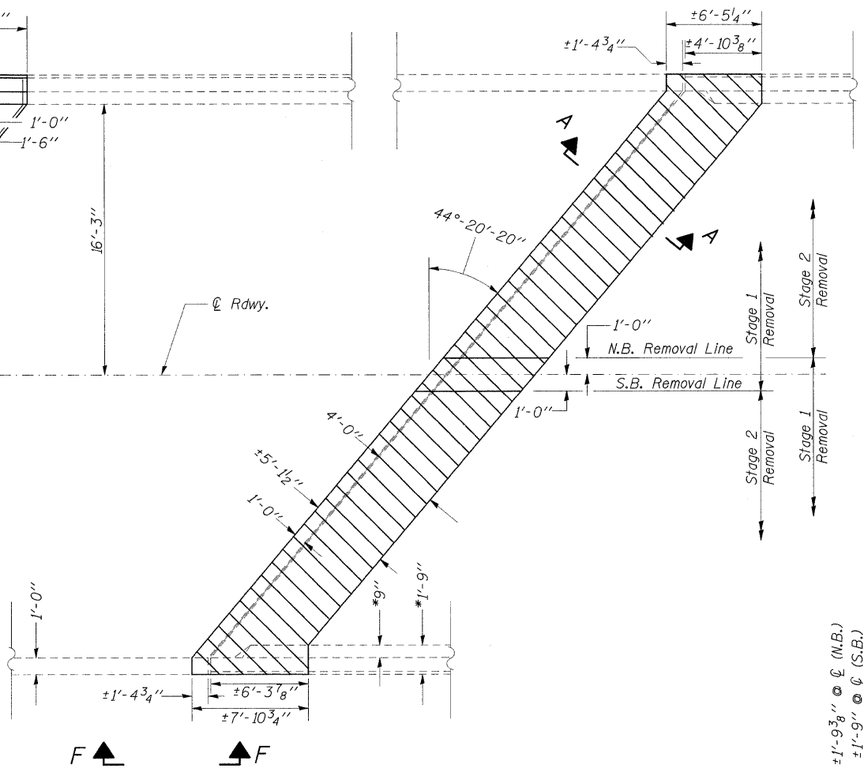


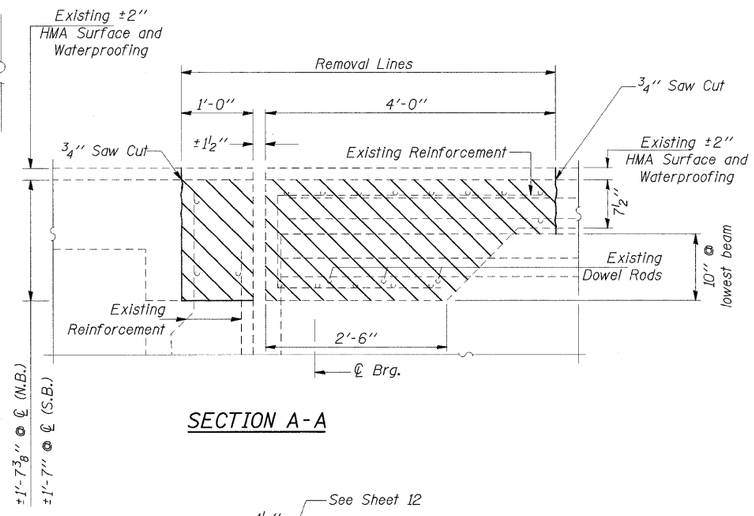
JOINT @ NORTH ABUT. PLAN SHOWING NEW CONCRETE



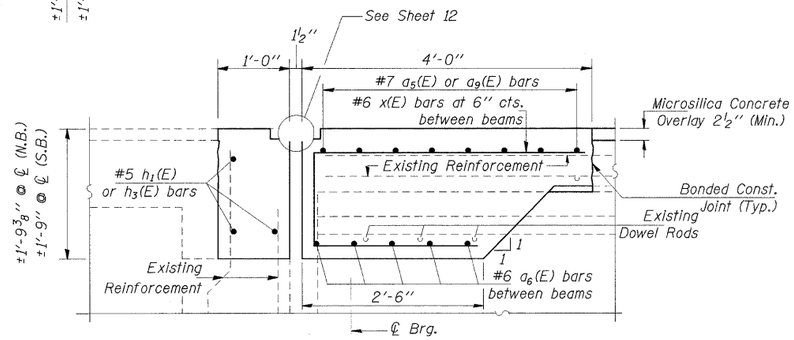
JOINT @ NORTH ABUT. PLAN SHOWING CONCRETE REMOVAL

NOTES:

* Field Verify (Match Existing)
** Bend or turn Bars in Field to fit

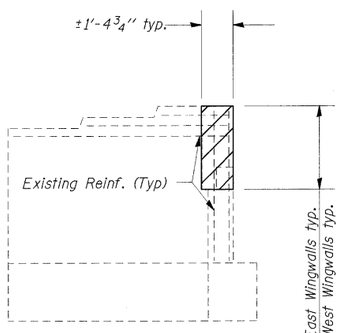


SECTION A-A

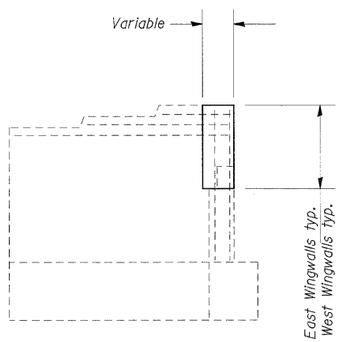


SECTION B-B

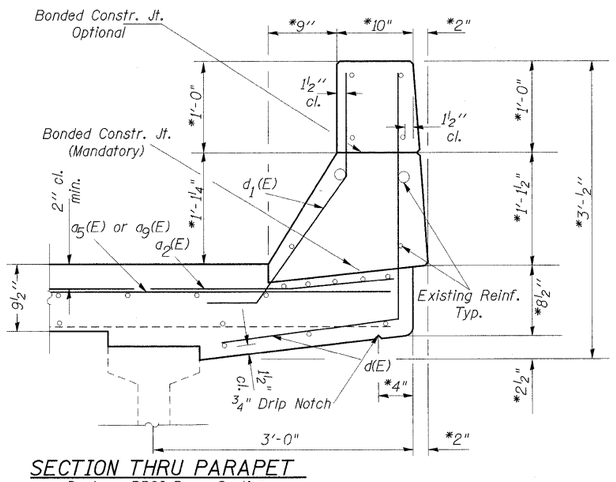
Concrete Removal



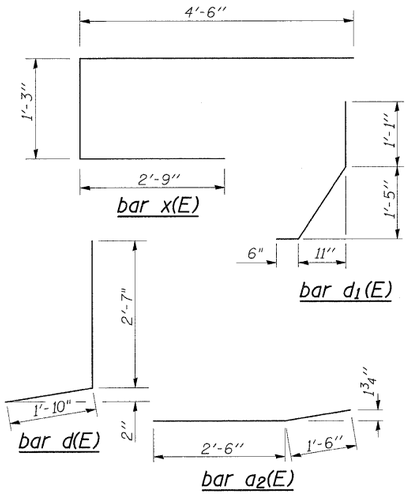
VIEW E-E
Showing Concrete Removal



VIEW F-F
Showing Concrete Superstructures



SECTION THRU PARAPET
Deck on PPCI Beam Section



BILL OF MATERIAL (BOTH JOINTS)

Bar	No.	Size	Length	Shape
$a_2(E)$	24	#6	4'-0"	———
$a_5(E)$	16	#7	21'-6"	———
$a_6(E)$	40	#6	8'-7"	———
$a_9(E)$	16	#7	24'-2"	———
d(E)	16	#5	4'-5"	⌟
$d_1(E)$	16	#5	3'-3"	⌞
$h_1(E)$	6	#5	21'-6"	———
$h_3(E)$	6	#5	24'-2"	———
x(E)	112	#6	8'-6"	⌐
Concrete Superstructure		Cu. Yd.	27.8	
Concrete Removal		Cu. Yd.	25.3	
Reinforcement Bars, Epoxy Coated		Pound	4000	

Reinforcement bars designated (E) shall be epoxy coated.

NORTH ABUTMENT
JOINT REPLACEMENT DETAILS
PULASKI COUNTY
STRUCTURE NO. 077-0001 (N.B.)
STRUCTURE NO. 077-0002 (S.B.)

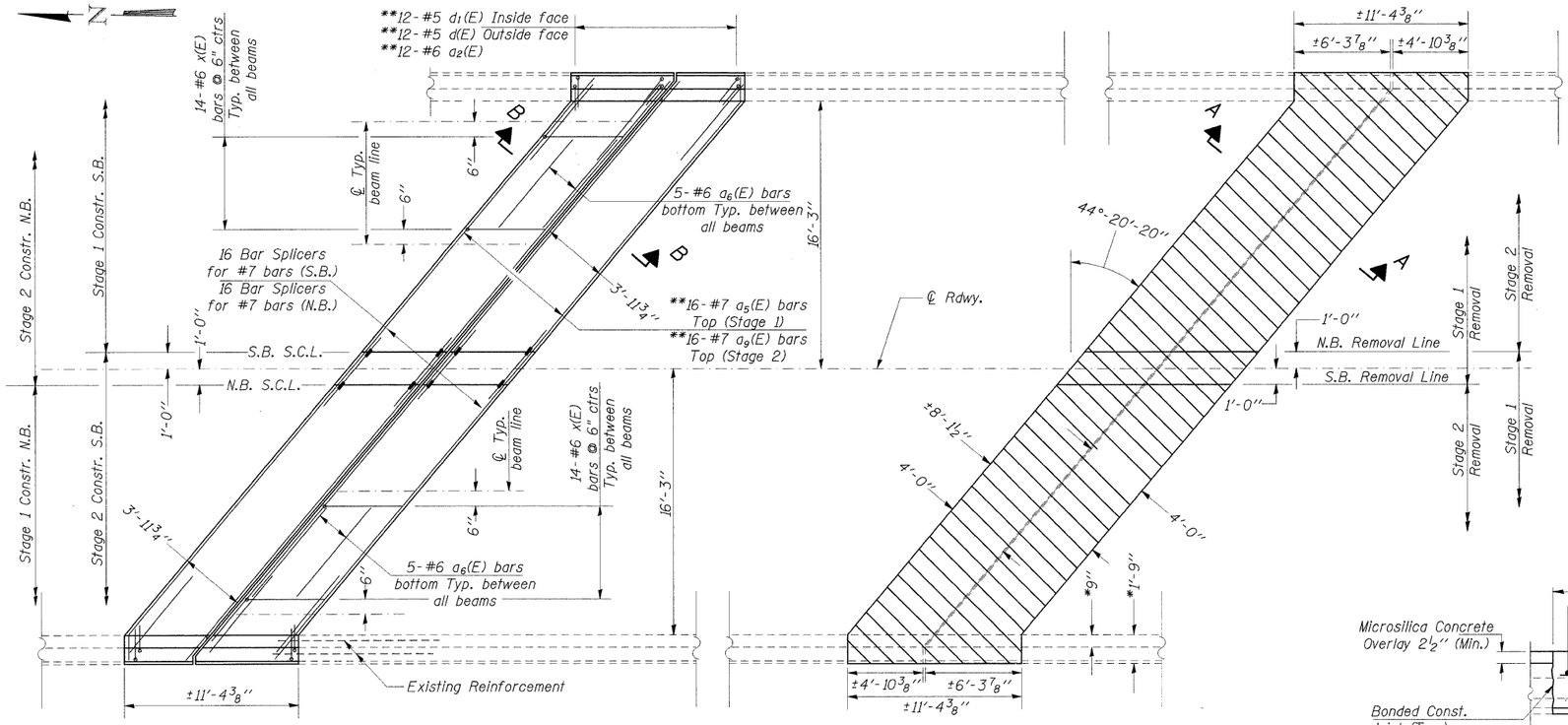
FILE NAME = c:\pw_work\pwidot\halsteadtw\d0270293\077-0001_0002-sht-plan.dgn	USER NAME = halsteadtw	DESIGNED - TWH	REVISED -
		DRAWN - TWH	REVISED -
	PLOT SCALE = 4.5000 ' / IN.	CHECKED - MAS	REVISED -
	PLOT DATE = 2/24/2010	DATE - 11/20/09	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

JOINT REPLACEMENT DETAILS

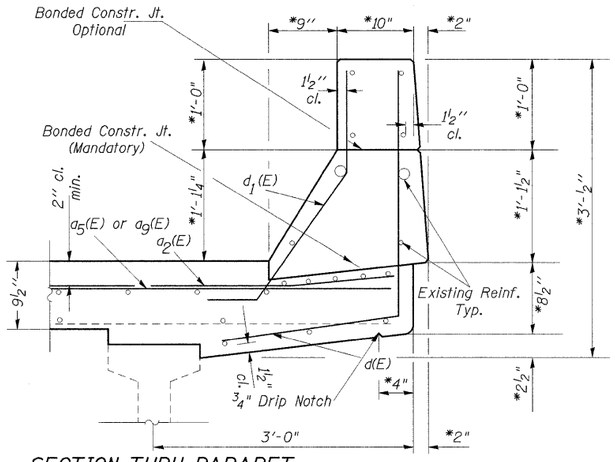
SCALE: | SHEET NO. OF SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BSMART 2010-2	PULASKI	14	8
		CONTRACT NO. 78174		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

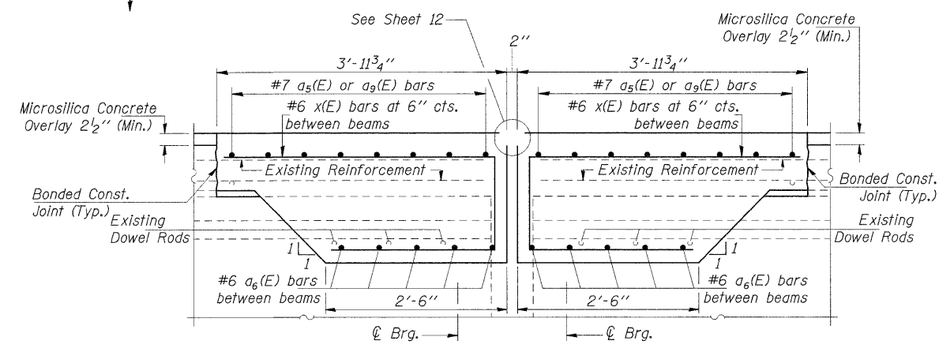


JOINTS @ PIERS 1 & 2. PLAN
SHOWING NEW CONCRETE

JOINTS @ PIERS 1 & 2. PLAN
SHOWING CONCRETE REMOVAL



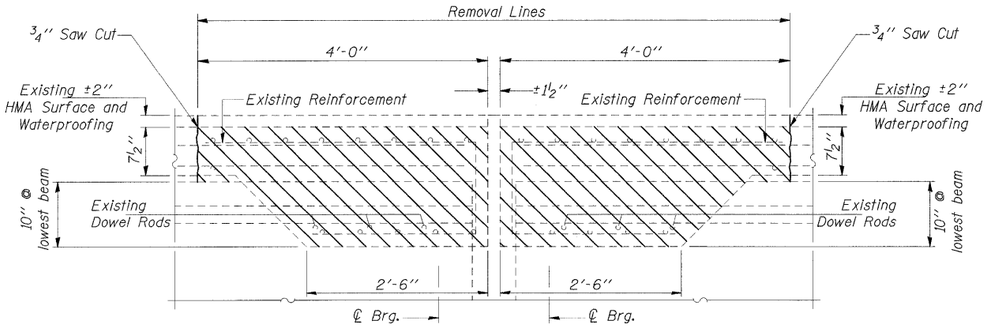
SECTION THRU PARAPET
Deck on PPCI Beam Section



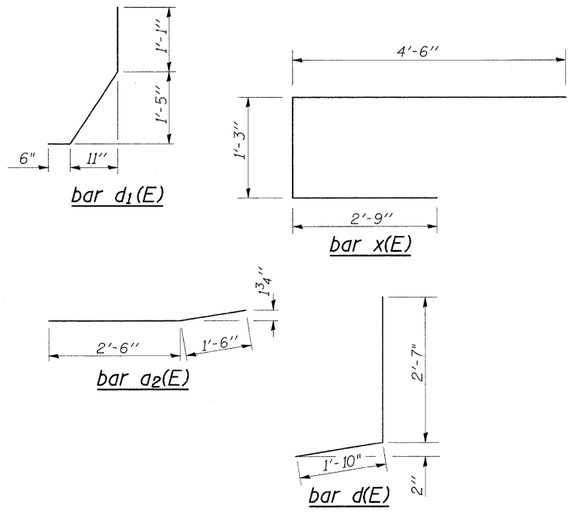
SECTION B-B

Concrete Removal

NOTES:
* Field Verify (Match Existing)
** Bend or turn Bars in Field to fit



SECTION A-A



BILL OF MATERIAL (4 LOCATIONS)

Bar	No.	Size	Length	Shape
$a_2(E)$	96	#6	4'-0"	
$a_5(E)$	64	#7	21'-6"	
$a_6(E)$	160	#6	8'-7"	
$a_9(E)$	64	#7	24'-2"	
d(E)	96	#5	4'-5"	
$d_1(E)$	96	#5	3'-3"	
x(E)	448	#6	8'-6"	
Concrete Superstructure			Cu. Yd.	85.5
Concrete Removal			Cu. Yd.	76.8
Reinforcement Bars, Epoxy Coated			Pound	15100

Reinforcement bars designated (E) shall be epoxy coated.

PIER #'S 1 & 2
JOINT REPLACEMENT DETAILS
PULASKI COUNTY
STRUCTURE NO. 077-0001 (N.B.)
STRUCTURE NO. 077-0002 (S.B.)

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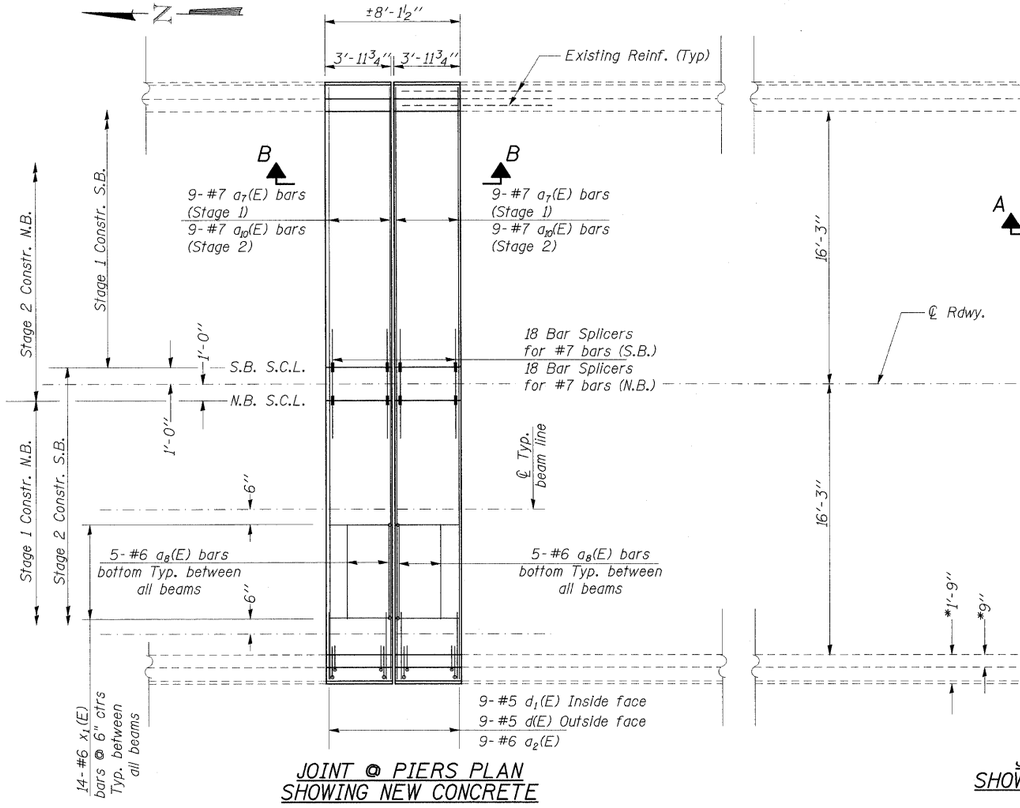
	PLOT DATE = 2/24/2010	DATE - 11/20/09	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

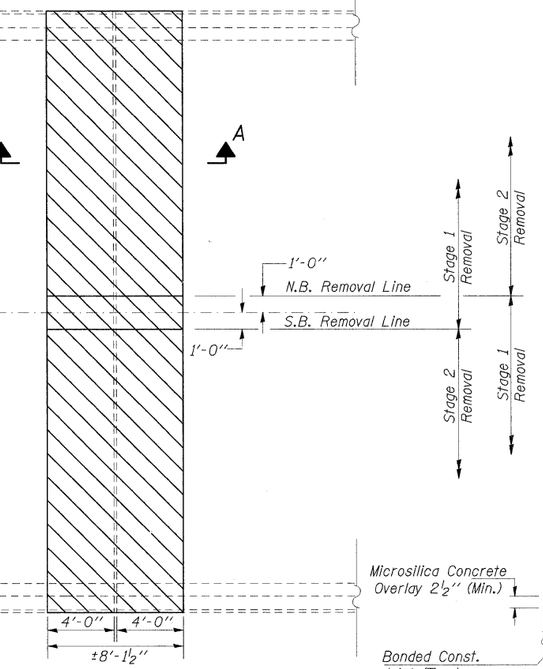
JOINT REPLACEMENT DETAILS

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

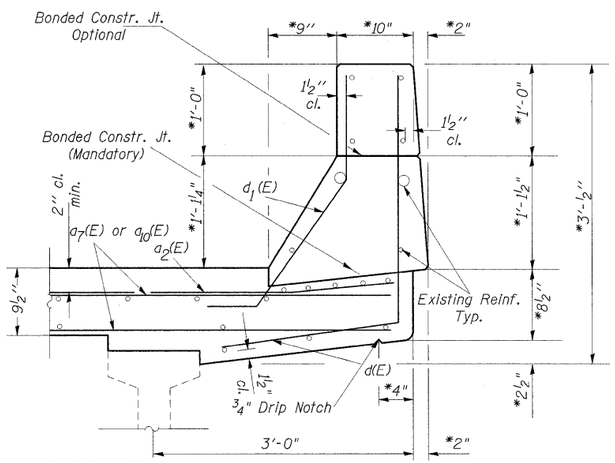
F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BSMART 2010-2	PULASKI	14	9
		CONTRACT NO. 78174		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



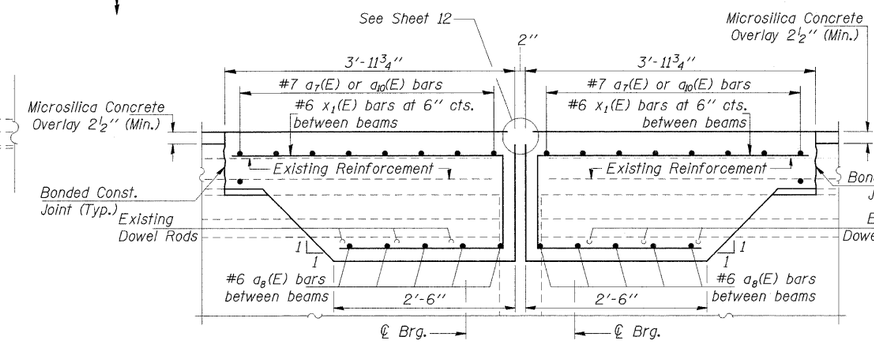
JOINT @ PIERS PLAN
SHOWING NEW CONCRETE



JOINT @ PIERS PLAN
SHOWING CONCRETE REMOVAL

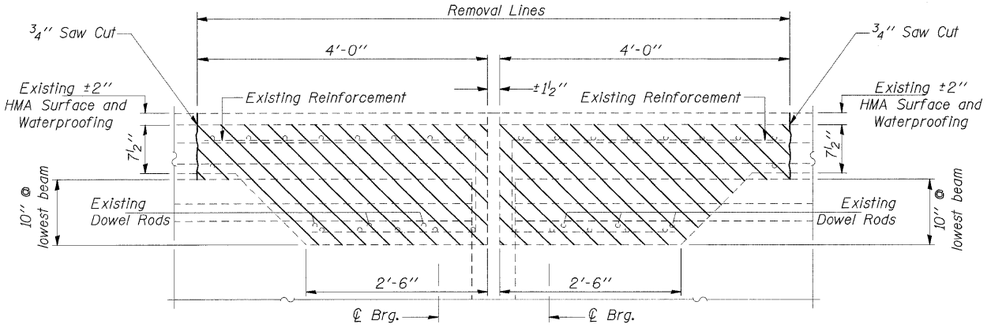


SECTION THRU PARAPET
Deck on PPCI Beam Section



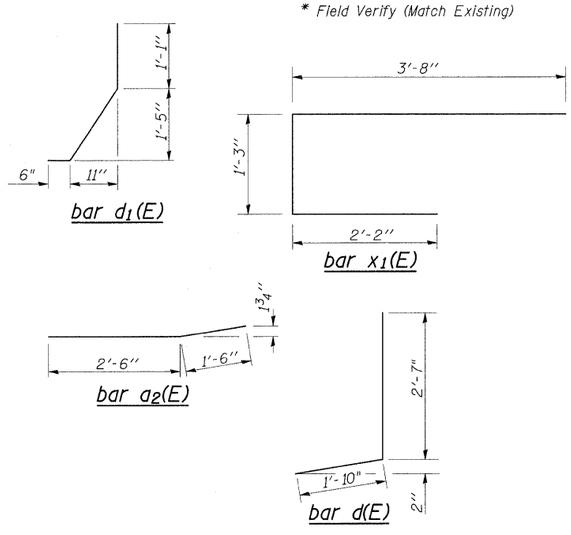
SECTION B-B

Concrete Removal



SECTION A-A

NOTES:
* Field Verify (Match Existing)



BILL OF MATERIAL (27 LOCATIONS)

Bar	No.	Size	Length	Shape
$a_2(E)$	486	#6	4'-0"	———
$a_7(E)$	486	#7	16'-5"	———
$a_8(E)$	1080	#6	6'-6"	———
$a_{10}(E)$	486	#7	18'-5"	———
d(E)	486	#5	4'-5"	⌟
$d_1(E)$	486	#5	3'-3"	⌡
$x_1(E)$	3024	#6	7'-1"	⌞
Concrete Superstructure			Cu. Yd.	414.2
Concrete Removal			Cu. Yd.	372.6
Reinforcement Bars, Epoxy Coated			Pound	84130

Reinforcement bars designated (E) shall be epoxy coated.

PIER #'S 2A THRU 15
JOINT REPLACEMENT DETAILS
PULASKI COUNTY
STRUCTURE NO. 077-0001 (N.B.)
STRUCTURE NO. 077-0002 (S.B.)

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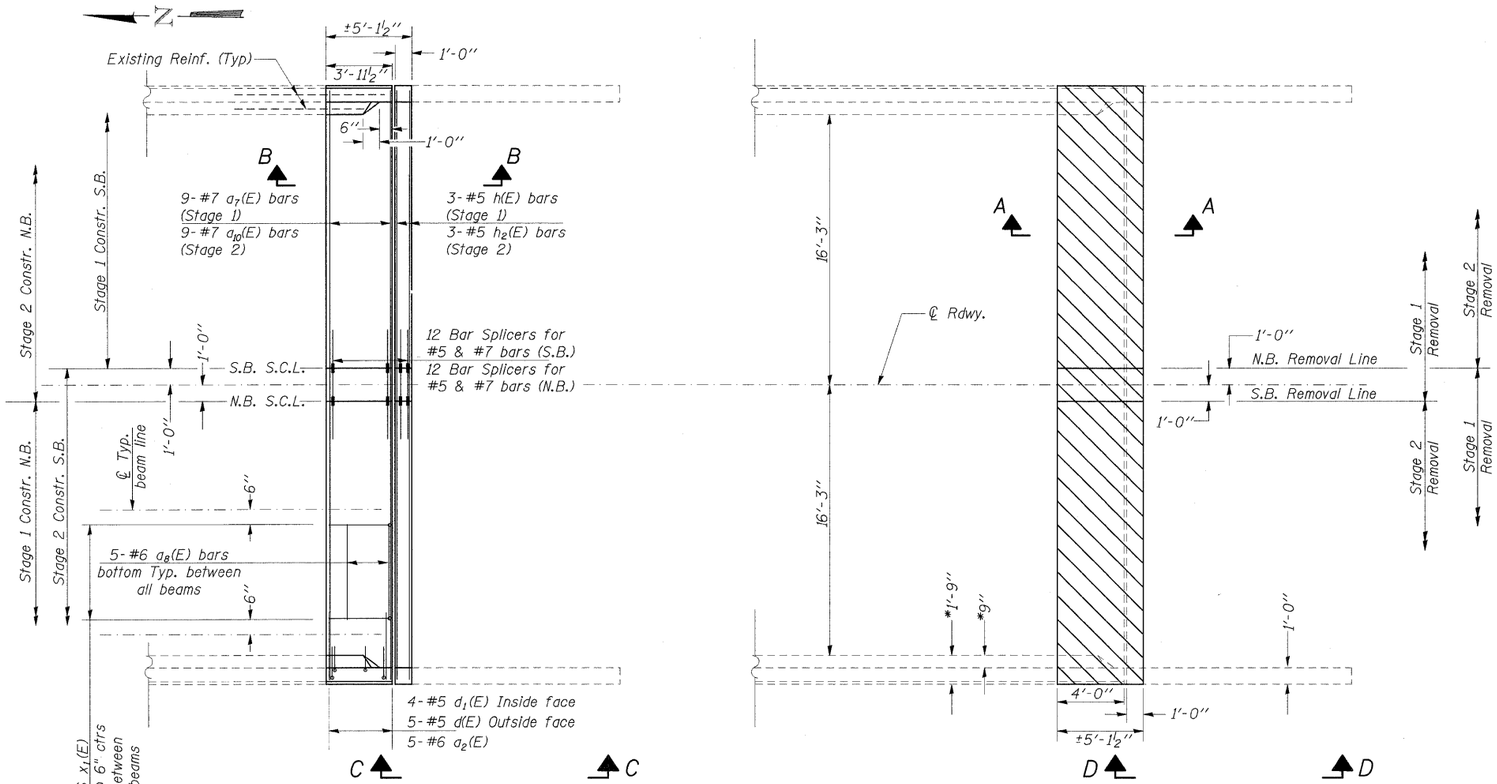
	PLOT DATE = 2/24/2010	DATE - 11/20/09	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

JOINT REPLACEMENT DETAILS

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

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BSMART 2010-2	PULASKI	14	10
		CONTRACT NO. 78174		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



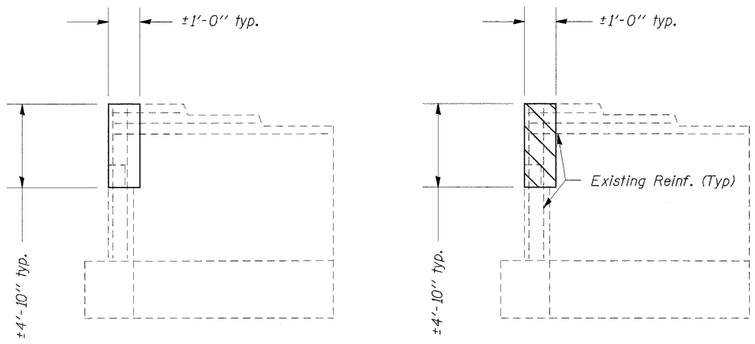
JOINT @ SOUTH ABUT. PLAN SHOWING NEW CONCRETE

JOINT @ SOUTH ABUT. PLAN SHOWING CONCRETE REMOVAL

SECTION A-A

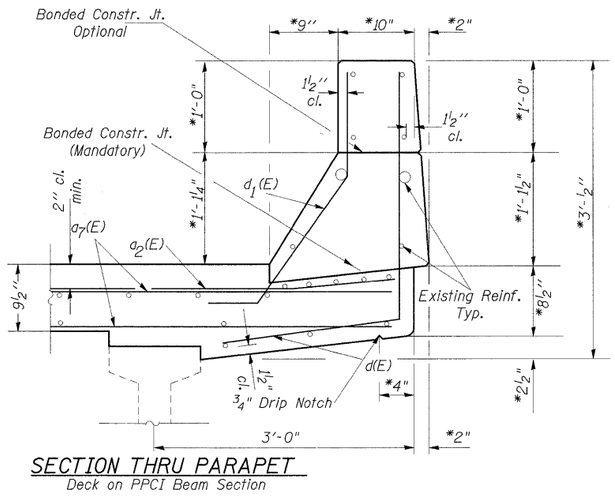
SECTION B-B

Concrete Removal



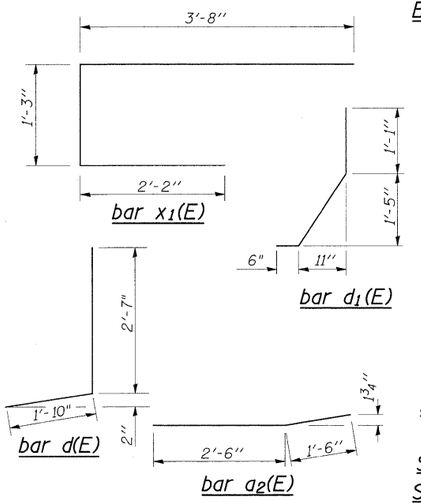
VIEW C-C
Showing Concrete Superstructures

VIEW D-D
Showing Concrete Removal



SECTION THRU PARAPET
Deck on PPCI Beam Section

NOTES:
* Field Verify (Match Existing)



BILL OF MATERIAL (BOTH JOINTS)

Bar	No.	Size	Length	Shape
$a_2(E)$	20	#6	4'-0"	—
$a_7(E)$	18	#7	16'-5"	—
$a_8(E)$	40	#6	6'-6"	—
$a_{10}(E)$	18	#7	18'-5"	—
$d(E)$	20	#5	4'-5"	⌋
$d_1(E)$	16	#5	3'-3"	⌋
$h(E)$	6	#5	16'-5"	—
$h_2(E)$	6	#5	18'-5"	—
$x_1(E)$	112	#6	7'-1"	⌐
Concrete Superstructure		Cu. Yd.	20.5	
Concrete Removal		Cu. Yd.	18.6	
Reinforcement Bars, Epoxy Coated		Pound	3350	

Reinforcement bars designated (E) shall be epoxy coated.

SOUTH ABUTMENT JOINT REPLACEMENT DETAILS PULASKI COUNTY STRUCTURE NO. 077-0001 (N.B.) STRUCTURE NO. 077-0002 (S.B.)

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	PLOT DATE = 2/24/2010	DATE - 11/20/09	REVISED -

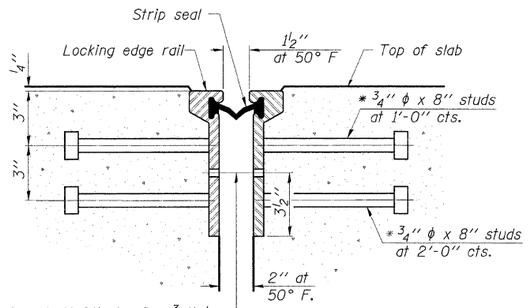
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

JOINT REPLACEMENT DETAILS

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

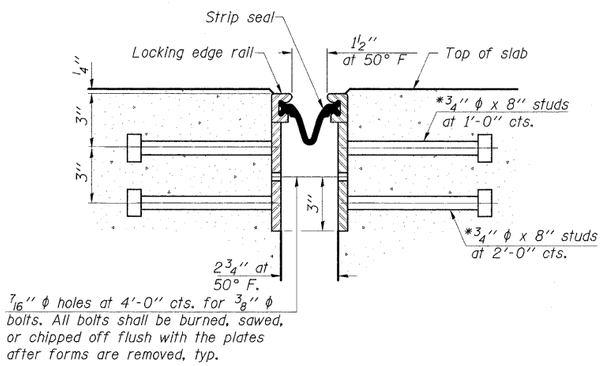
F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BSMART 2010-2	PULASKI	14	11
		CONTRACT NO. 78174		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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



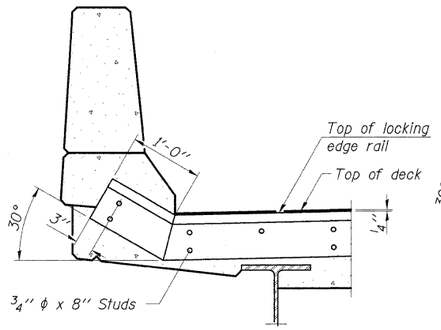
7/16" ϕ holes at 4'-0" cts. for ⅜" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

SECTION THRU ROLLED RAIL JOINT



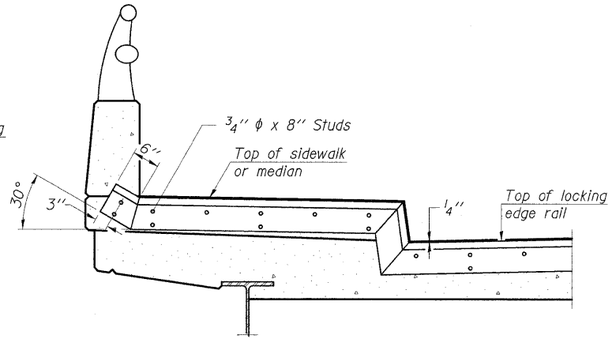
7/16" ϕ holes at 4'-0" cts. for ⅜" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

SECTION THRU WELDED RAIL JOINT



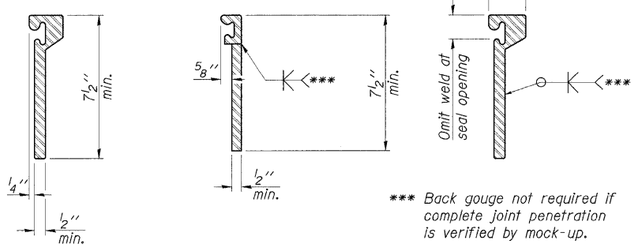
AT PARAPET

See Section A-A for end treatment of skews > 30°.



AT SIDEWALK OR MEDIAN

Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.



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

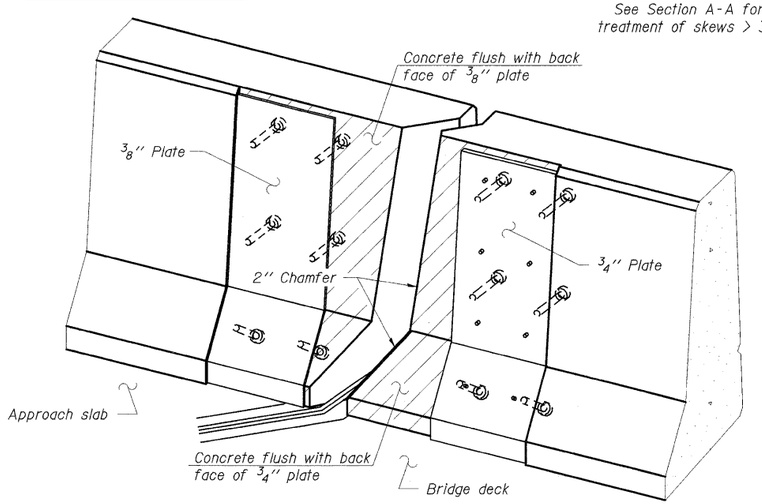
ROLLED EXTRUDED RAIL

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.



TYPICAL END TREATMENTS

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of ¼". 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.

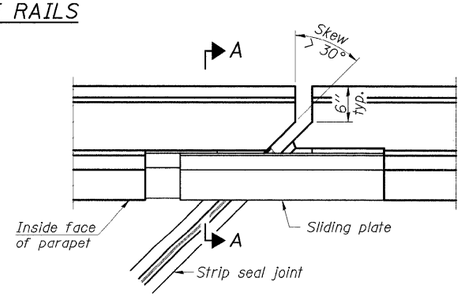
The manufacturer's recommended installation methods shall be followed.

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.

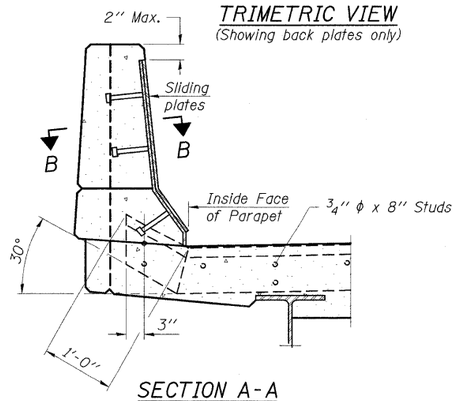
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

Maximum space between rail segments at stage lines shall be 3/16", sealed with a suitable sealant.

LOCKING EDGE RAILS



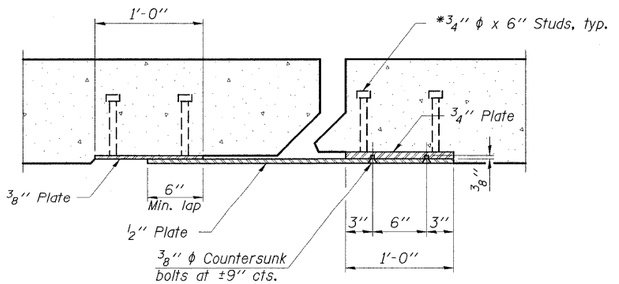
PLAN



SECTION A-A

TRIMETRIC VIEW

(Showing back plates only)



SECTION B-B

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	1293

POINT BLOCK DETAILS

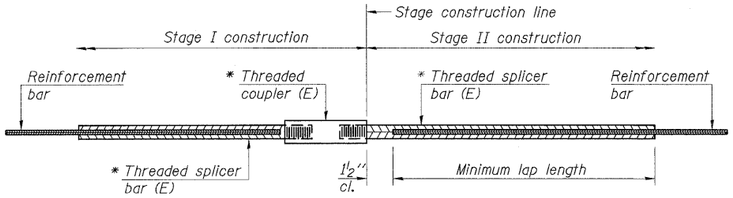
(for skews > 30°)

PREFORMED JOINT STRIP SEAL PULASKI COUNTY

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BSMART 2010-2	PULASKI	14	12
		CONTRACT NO. 78174		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

EJ-SSJ

11-1-09



STANDARD BAR SPLICER ASSEMBLY

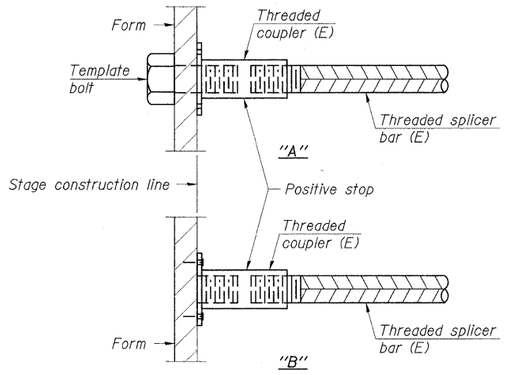
Minimum Lap Lengths				
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4
3, 4	1'-5"	1'-11"	2'-1"	2'-4"
5	1'-9"	2'-5"	2'-7"	2'-11"
6	2'-1"	2'-11"	3'-1"	3'-6"
7	2'-9"	3'-10"	4'-2"	4'-8"
8	3'-8"	5'-1"	5'-5"	6'-2"
9	4'-7"	6'-5"	6'-10"	7'-9"

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 + 1½" + thread length

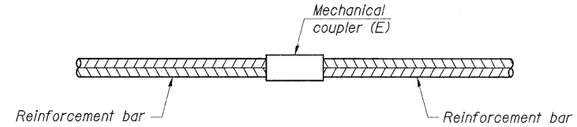
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
Deck	#5	12	TABLE 4
Deck	#7	584	TABLE 4



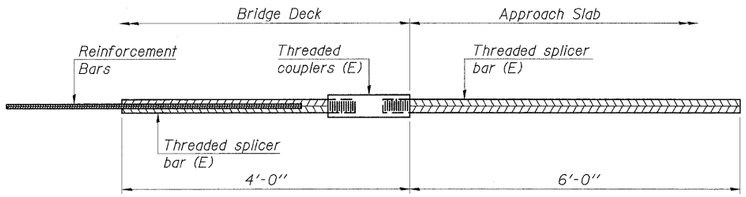
INSTALLATION AND SETTING METHODS

"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.



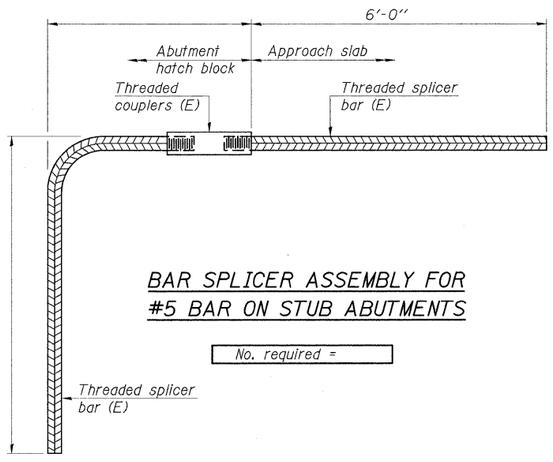
STANDARD MECHANICAL SPLICER

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 PULASKI COUNTY

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9B SMART 2010-2	PULASKI	14	13
		CONTRACT NO. 78174		
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

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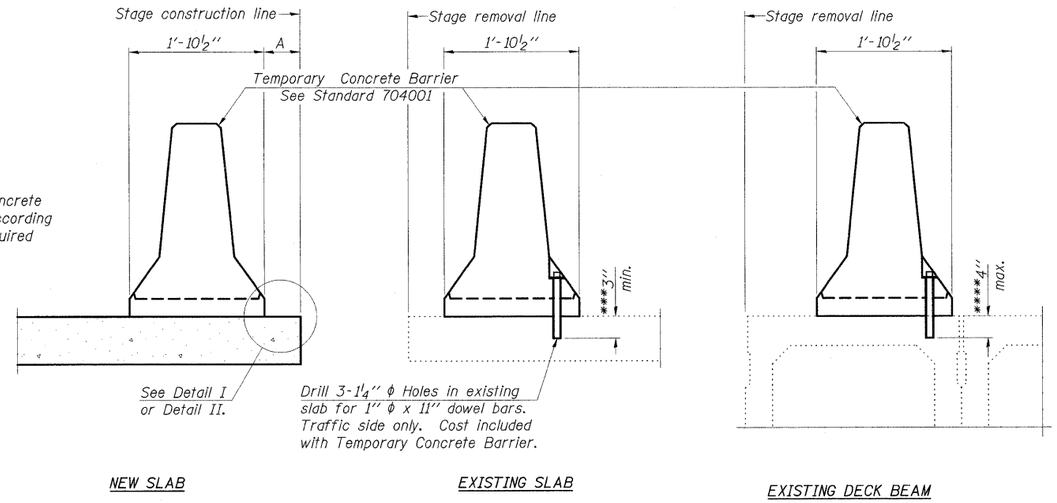
When "A" is 3'-6" or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-6".



NEW SLAB | EXISTING SLAB | EXISTING DECK BEAM

NOTES

Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel ℙ to the top layer of couplers with 2-⅝" ϕ bolts screwed to coupler at approximate ℄ of each barrier panel.

Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x7"x 10" steel ℙ to the concrete slab or concrete wearing surface with 2-⅝" ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate ℄ of each barrier panel.

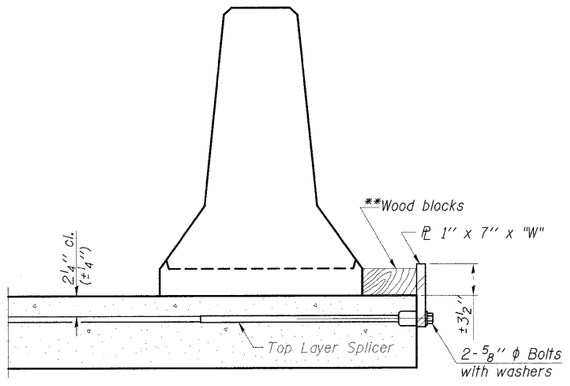
Cost of anchorage is included with Temporary Concrete Barrier.

The 1" x 7" x 10" 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.

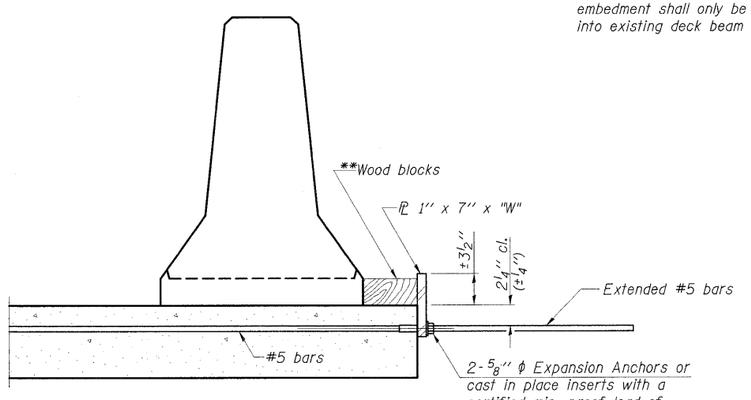
SECTIONS THRU SLAB OR DECK BEAM

*** 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.



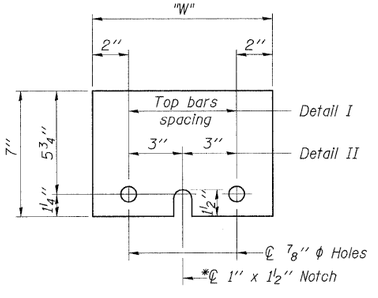
DETAIL I



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 ℙ 1" x 7" x 10"

* Required only with Detail II

TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION PULASKI COUNTY

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9B SMART 2010-2	PULASKI	14	14
		CONTRACT NO. 78174		
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

11-1-09