

04-28-2017 LETTING ITEM 029

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

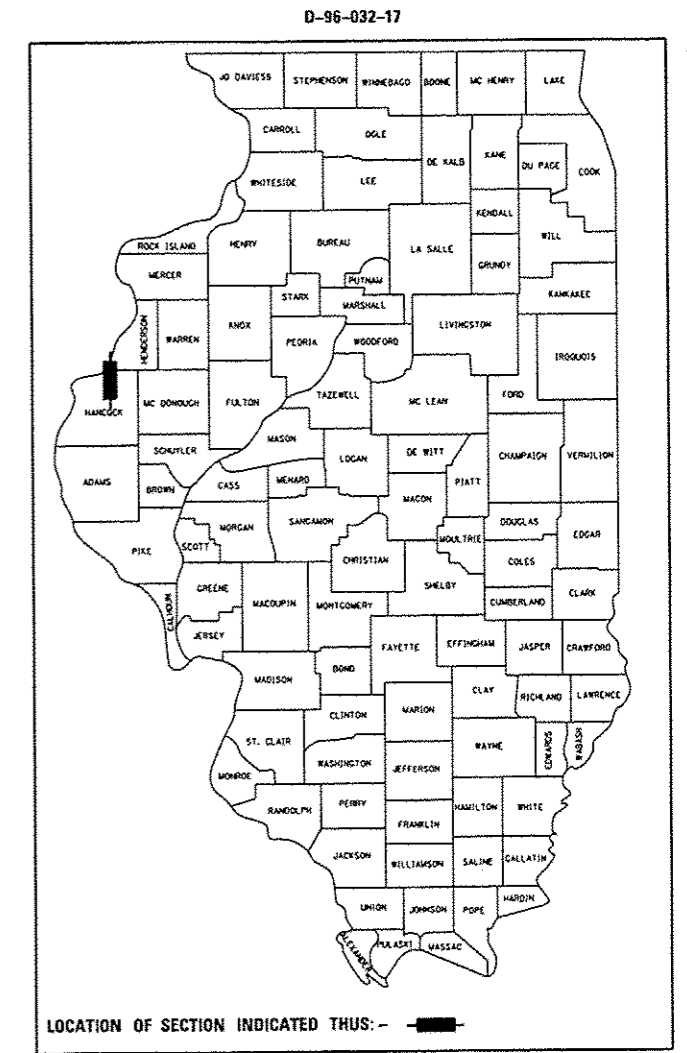
**PROPOSED  
HIGHWAY PLANS**

F.A.P. ROUTE 514 (IL 94)  
SECTION (106) BR, BJR  
PROJECT STP-0514(013)  
DECK & SUPERSTRUCTURE REPAIRS  
HANCOCK COUNTY

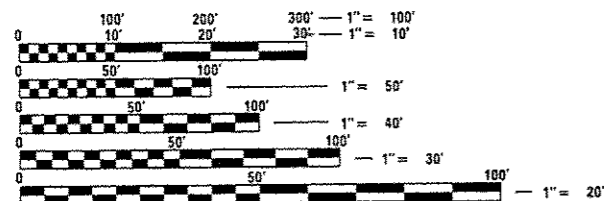
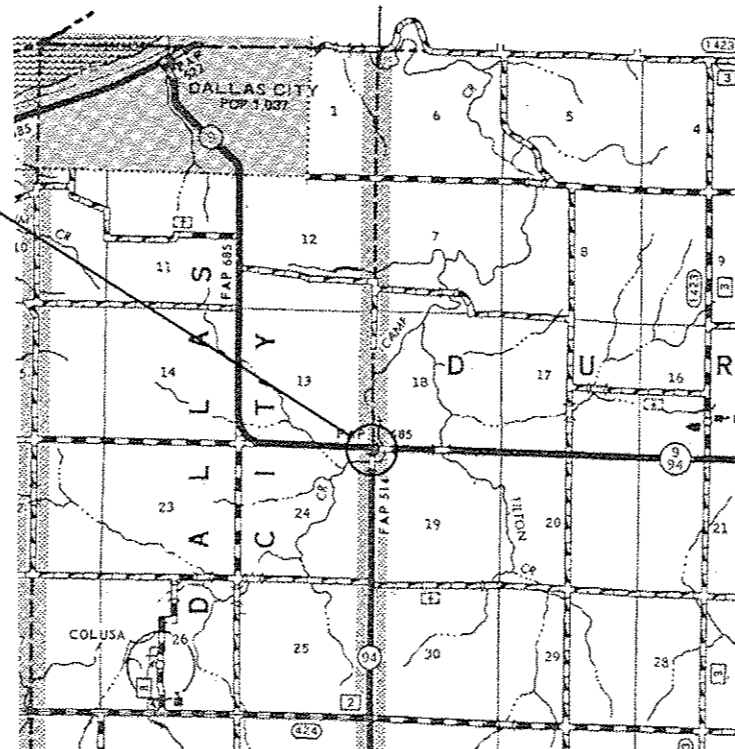
C-96-032-17

FOR INDEX OF SHEETS, SEE SHEET NO. 2

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
514	(106) BR, BJR	HANCOCK	17	1
		ILLINOIS	CONTRACT NO. 72J68	



PROJECT LOCATION  
SN 034-0060  
IL 94 OVER CAMP CREEK  
JUST SOUTH OF IL 9



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

BRIDGE MAINTENANCE ENGINEER: BRANDON DUDLEY (217) 785-9290  
BRIDGE INSPECTION ENGINEER: DAVE COPENBARGER (217) 785-5306

GROSS LENGTH = 215 FT. = 0.04 MILE  
NET LENGTH = 215 FT. = 0.04 MILE

CONTRACT NO. 72J68

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUBMITTED *27 January 2017*  
*[Signature]* REGION FOUR ENGINEER  
*Mar 24 20 17*  
*Maureen M. Addis* ENGINEER OF DESIGN AND ENVIRONMENT  
*Mar 24 20 17*  
*[Signature]* DIRECTOR OF PROGRAM DEVELOPMENT

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

INDEX OF SHEETS

1	COVER SHEET
2	INDEX, STANDARDS, SIGNATURES, GENERAL NOTES, & SCHEDULES
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5	TYPICAL SECTIONS
6	ROADWAY PLAN
7	STAGING PLAN
8-9	TRAFFIC CONTROL PLAN
10-17	SN 034-0060 BRIDGE PLANS

STANDARDS

000001-06
001001-02
001006
701001-02
701006-05
701201-04
701301-04
701321-16
701326-04
701901-06
704001-08
780001-05

GENERAL NOTES:

BASE COURSE WIDENING SHALL BE COMPLETED PRIOR TO STAGING TRAFFIC.

AREAS OF APPROACH REPAIRS SHOWN ARE ESTIMATED. THE ENGINEER SHALL SHOW ACTUAL LOCATIONS OF DECK REPAIRS ON AS-BUILT PLANS.

PAVEMENT MARKING REMOVAL SCHEDULE					
STA	TO	STA	LOC.	LINE TYPE	PAVT MARK REM (SQ FT)
6+05	-	9+80	LT	SOLID	156
9+20	-	11+80	℄	SOLID/SKIP	135
6+05	-	9+80	RT	SOLID	156
TOTAL					447

STRIPING SCHEDULE					
STA	TO	STA	LOC.	LINE TYPE	PAINT PAVT MARK - LINE 5" (FT)
6+05	-	10+20	LT	SOLID	415
6+30	-	11+80	℄	SOLID/SKIP	688
6+05	-	10+20	RT	SOLID	415
TOTAL					1518

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
DISTRICT 6**

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EXAMINED January 25<sup>th</sup> 20 17  
*[Signature]*  
ENGINEER OF OPERATIONS

---

EXAMINED January 19 20 17  
*[Signature]*  
ENGINEER OF PROJECT IMPLEMENTATION

---

EXAMINED January 24 20 17  
*[Signature]*  
ENGINEER OF PROGRAM DEVELOPMENT

SHOULDER IMPROVEMENT SCHEDULE						
STA	TO	STA	SIDE	BASE COURSE WIDENING 10" (SQ YD)	EARTH EX WIDENING (CU YD)	AGG WEDGE SHLDR (TON)
7+94.00	-	10+20.00	LT	101	28	5.9
8+26.00	-	10+20.00	RT	86	24	5.1
TOTALS				187	52	11

MIXTURE USE(S)	HMA BASE CSE WIDENING *
AC/PG	PG 64-22
DESIGN AIR VOIDS	4.0 % @ N50
MIX COMPOSITION (GRADATION MIXTURE)	IL 19.0
FRICTION AGGREGATE	N/A
QUALITY MANAGEMENT	QC/QA
SUBLOT SIZE	N/A

\* BASE COURSE PAY ITEM ALLOWS FOR HMA OR PCC USE.

6-01018-0000  
80% FEDERAL  
20% STATE

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	6-01018-0000	
				BRIDGE 0014	RURAL
20200500	EARTH EXCAVATION (WIDENING)	CU YD	52	52	
20200600	EXCAVATING AND GRADING EXISTING SHOULDER	UNIT	2	2	
35650500	BASE COURSE WIDENING 10"	SQ YD	187	187	
48102100	AGGREGATE WEDGE SHOULDER, TYPE B	TON	11	11	
50102400	CONCRETE REMOVAL	CU YD	6	6	
50300255	CONCRETE SUPERSTRUCTURE	CU YD	6	6	
50300300	PROTECTIVE COAT	SQ YD	16.5	16.5	
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	2080	2080	
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	630	630	
50800515	BAR SPLICERS	EACH	12	12	
52000110	PREFORMED JOINT STRIP SEAL	FOOT	47	47	
52100010	ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	4	4	
52100520	ANCHOR BOLTS, 1"	EACH	8	8	
67100100	MOBILIZATION	L SUM	1	1	

6-01018-0000  
80% FEDERAL  
20% STATE

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	6-01018-0000	
				BRIDGE 0014	RURAL
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	3	3	
70100405	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321	EACH	1	1	
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1	1	
70100500	TRAFFIC CONTROL AND PROTECTION, STANDARD 701326	L SUM	1	1	
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1	1	
70106700	TEMPORARY RUMBLE STRIPS	EACH	9	9	
X7015005	CHANGEABLE MESSAGE SIGN	CAL PA	180	180	
70400100	TEMPORARY CONCRETE BARRIER	FOOT	430	430	
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	430	430	
70600260	IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	2	2	
70600332	IMPACT ATTENUATORS, RELOCATE (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	2	2	
* 78001120	PAINT PAVEMENT MARKING - LINE 5"	FOOT	1518	1518	
X0327979	PAVEMENT MARKING REMOVAL - GRINDING	SO FT	447	447	
X7200201	WIDTH RESTRICTION SIGNING	L SUM	1	1	

\* SPECIALTY ITEM

FILE NAME *	USER NAME * dudleybm	DESIGNED -	REVISED -
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Default	PLOT SCALE * 100.0000 / 10.	CHECKED -	REVISED -
	DATE * 1/26/2017	DATE -	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
514	0061 BR, BJR	HANCOCK	17	3
CONTRACT NO. 72J68				

6-01018-0000

80% FEDERAL  
20% STATE

BRIDGE

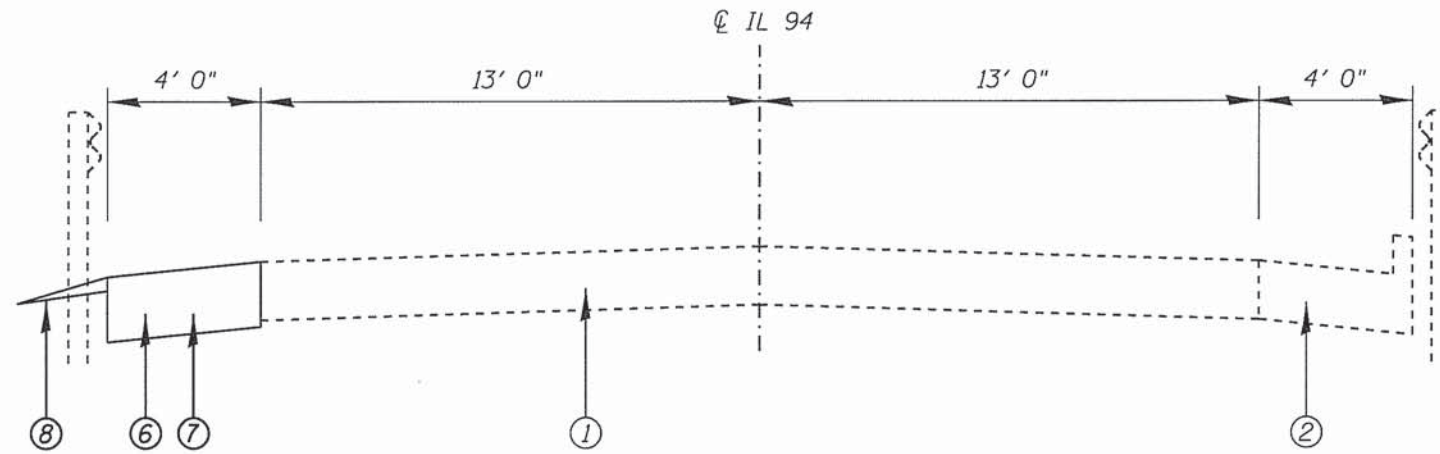
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RURAL

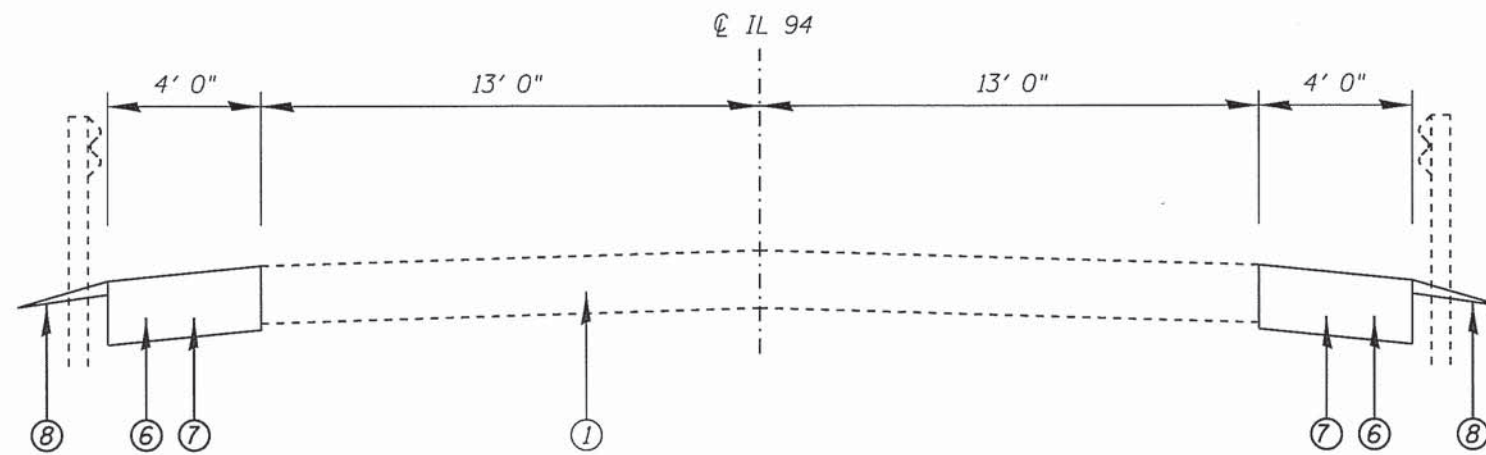
SEE P. 6.

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	
Z0001800	APPROACH SLAB REPAIR (PARTIAL DEPTH)	SQ YD	26.9	26.9
Z0001899	JACK AND REMOVE EXISTING BEARINGS	EACH	4	4
Z0001903	STRUCTURAL STEEL REMOVAL	POUND	1410	1410
Z0001905	STRUCTURAL STEEL REPAIR	POUND	330	330

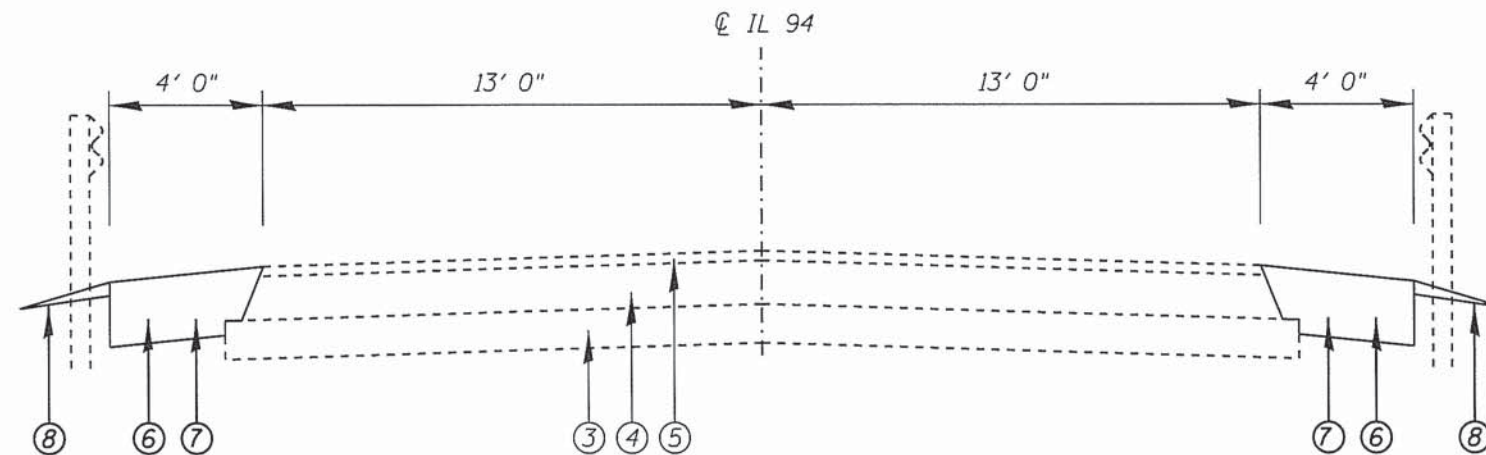
4



STA 7+94.00 TO STA 8+26.00



STA 8+26.00 TO STA 8+45.00



STA 8+45.00 TO STA 10+20.00

- ① EXISTING PCC BRIDGE APPROACH PAVEMENT, 9"
- ② EXISTING PCC BRIDGE APPROACH SHOULDER, 9"
- ③ EXISTING PCC PAVEMENT, 6"
- ④ EXISTING HMA PAVEMENT, 6-3/4"
- ⑤ EXISTING HMA SURFACE, 1-1/2"
- ⑥ PROPOSED BASE CSE. WIDENING, 10"
- ⑦ PROPOSED EARTH EX. (WIDENING)
- ⑧ PROPOSED AGG. WEDGE SHLDR.

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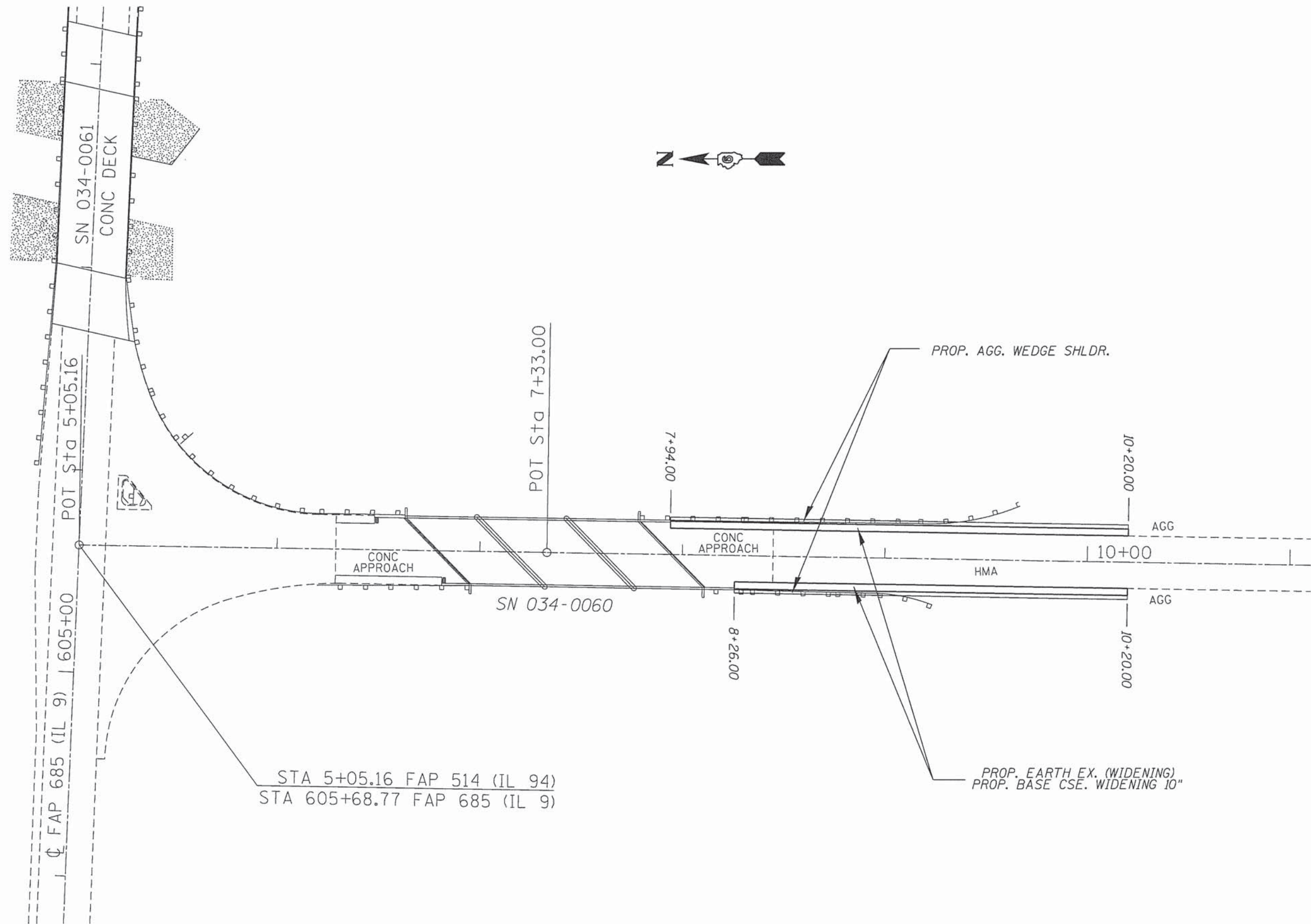
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS

SCALE: SHEET \_ OF \_ SHEETS STA. TO STA.

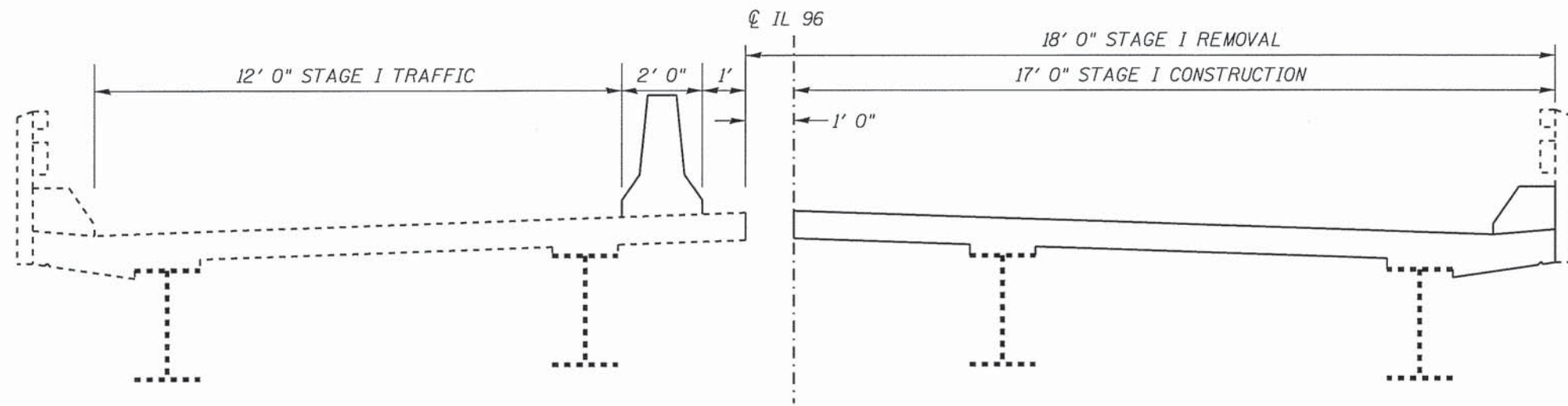
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514	(106) BR, BJR	HANCOCK	17	5
CONTRACT NO. 72J68				
ILLINOIS FED. AID PROJECT				



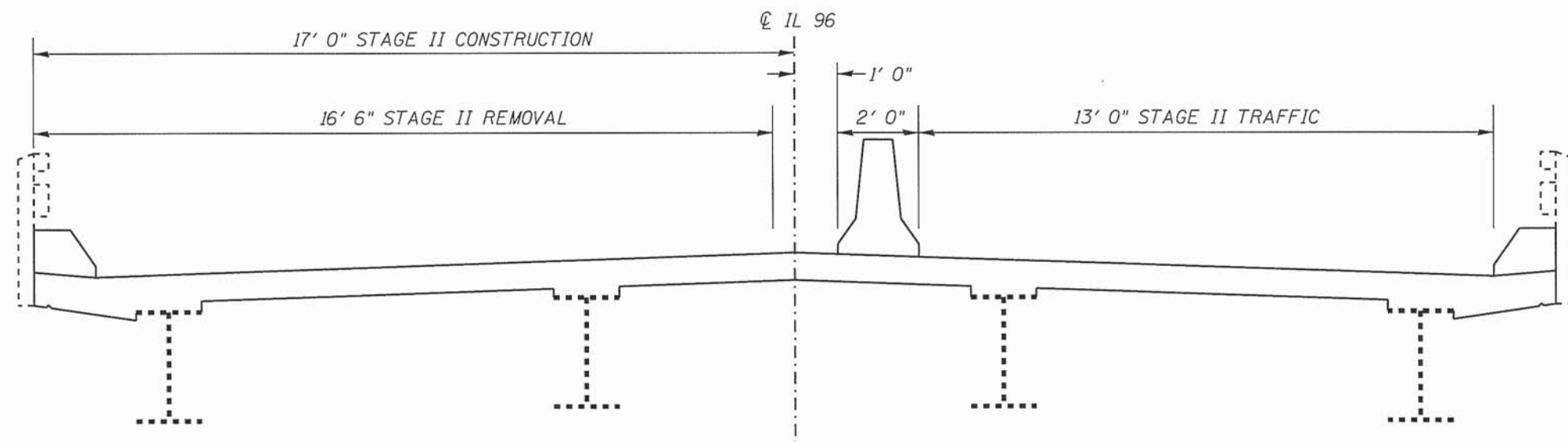


STA 5+05.16 FAP 514 (IL 94)  
 STA 605+68.77 FAP 685 (IL 9)

FILE NAME =	USER NAME = dudleybm	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>ROADWAY PLAN</b>		F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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		DATE -	REVISED -		ILLINOIS FED. AID PROJECT						



STAGE I CROSS SECTION (LOOKING NORTH)



STAGE II CROSS SECTION (LOOKING NORTH)

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		CHECKED -	REVISED -
		DATE -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**STAGING DETAIL**

SCALE: SHEET \_ OF \_ SHEETS STA. TO STA.

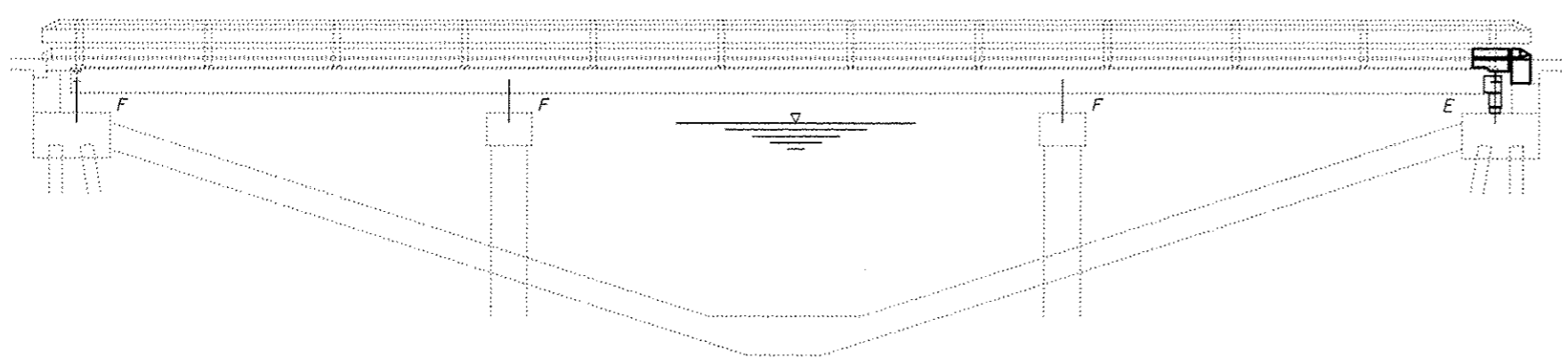
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CONTRACT NO. 72J68				
ILLINOIS FED. AID PROJECT				



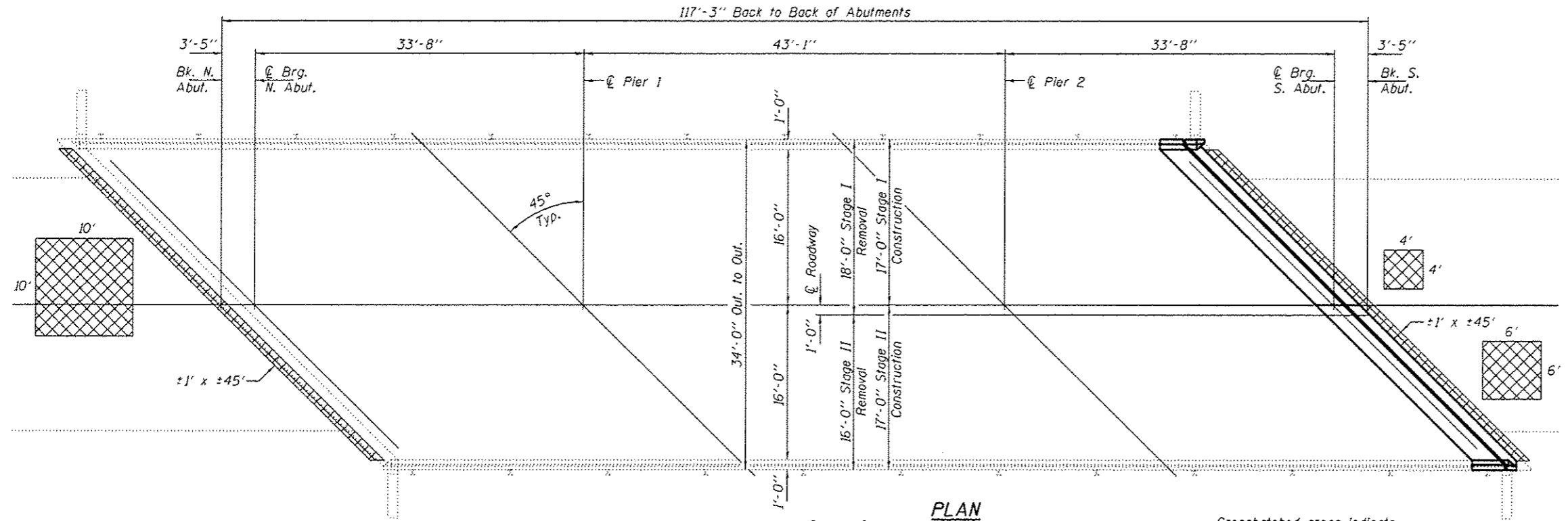
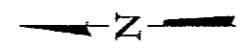








**ELEVATION**



**PLAN**

Scope of work:  
 Joint replacement typical at S. Abutment only.  
 Beam end repairs, diaphragm & bearing replacement typical S. Abutment only.

Crosshatched areas indicate  
 Approach Slab Repair (Partial Depth)

**GENERAL NOTES**

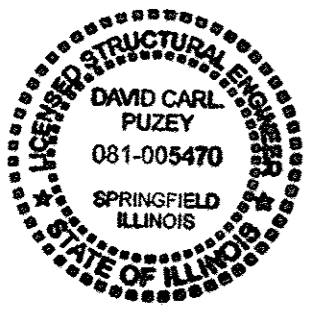
All structural steel shall conform to AASHTO Classification M-270 Gr. 50, unless otherwise noted. Reinforcement bars designated (E) shall be epoxy coated.  
 Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing 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 Standard Specifications when the deck is poured at an ambient temperature other than 50° F.  
 The deck surface shall have its final finish tined at joint locations according to Article 420.09(e)(1) of the Standard Specifications. Cost included with Concrete Superstructure.  
 The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.

Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.  
 Fasteners shall be high strength bolts. Bolts 3/4"φ, open holes 1 1/8"φ, unless otherwise noted. Diaphragm connection holes shall be 1 5/16"φ for 3/4"φ bolts. Two hardened washers shall be required at diaphragm connections.  
 Cost of removal and re-installation of all members necessary to complete the work as detailed on the plans and as specified in the Special Provisions shall be included with Furnishing and Erecting Structural Steel.  
 All structural steel shall be shop painted with the inorganic zinc rich primer per AASHTO M300, Type 1. Cost included with Structural Steel Repair.  
 Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the GBSP "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".  
 Areas of deck repairs shown are estimated. The engineer shall show actual locations of deck repairs on As-built plans.

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	6.1
Concrete Superstructure	Cu. Yd.	6.1
Preformed Joint Strip Seal	Foot	47
Reinforcement Bars, Epoxy Coated	Pound	630
Bar Splicers	Each	12
Approach Slab Repair (Partial Depth)	Sq. Yd.	26.9
Protective Coat	Sq. Yd.	16.5
Structural Steel Removal	Pound	1410
Furnishing and Erecting Structural Steel	Pound	2080
Structural Steel Repair	Pound	330
Elastomeric Bearing Assembly, Type I	Each	4
Jack and Remove Existing Bearings	Each	4
Anchor Bolts 1"φ	Each	8

\* On new concrete only



EXPIRES 11-30-2018

DESIGNED: *[Signature]*  
 CHECKED: *[Signature]*  
 DRAWN: *[Signature]*  
 CHECKED: *[Signature]*

PASSED: *[Signature]*  
 ENGINEER OF BRIDGES AND STRUCTURES

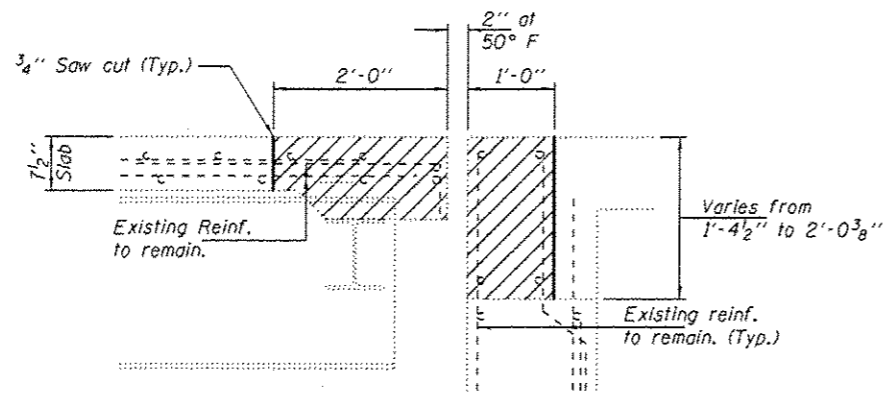
DATE: MARCH 7, 2017  
 REVISED: \_\_\_\_\_  
 REVISED: \_\_\_\_\_

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

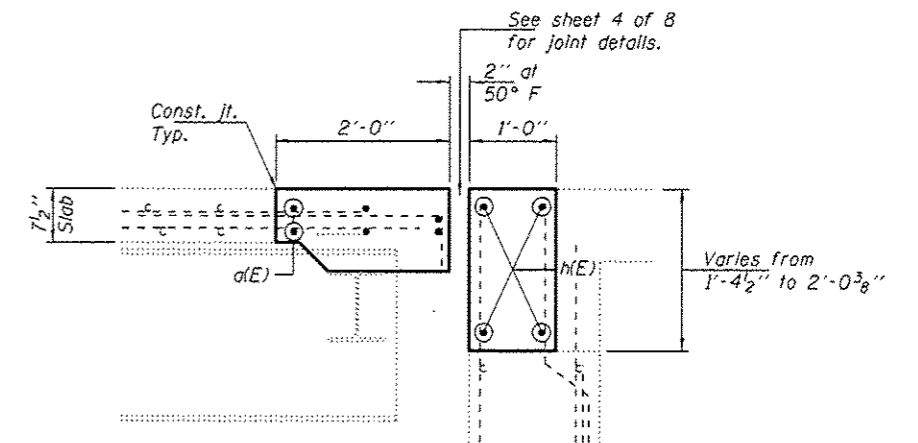
PLAN AND ELEVATION  
 FAP 514 (IL 94) OVER CAMP CREEK  
 SN 034-0060  
 SHEET NO. 1 OF 8 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
514	11061BR,BJR	HANCOCK	11	10

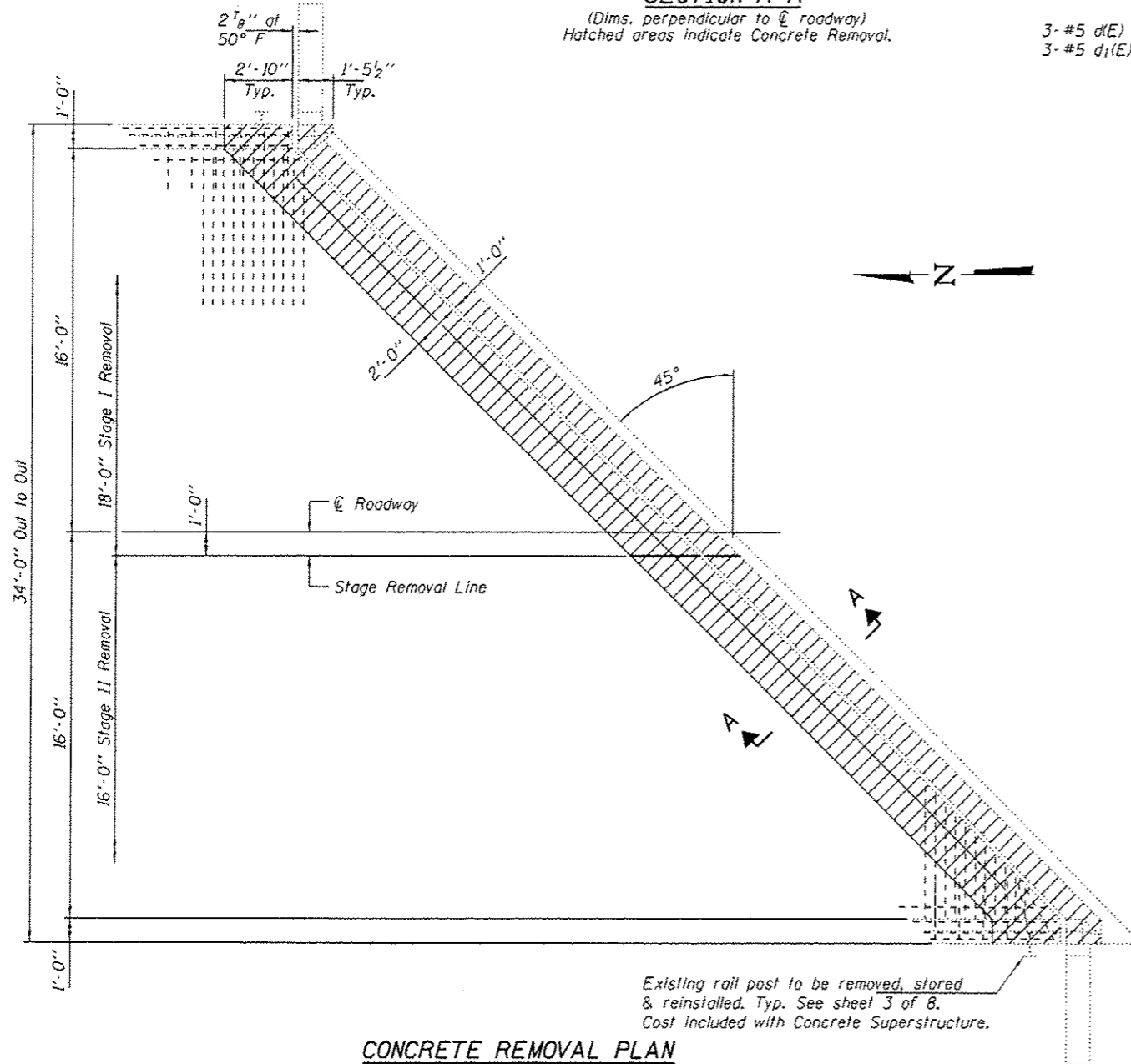
CONTRACT NO. 72J68  
 ILLINOIS FED. AID PROJECT



**SECTION A-A**  
(Dims. perpendicular to  $\bar{C}$  roadway)  
Hatched areas indicate Concrete Removal.

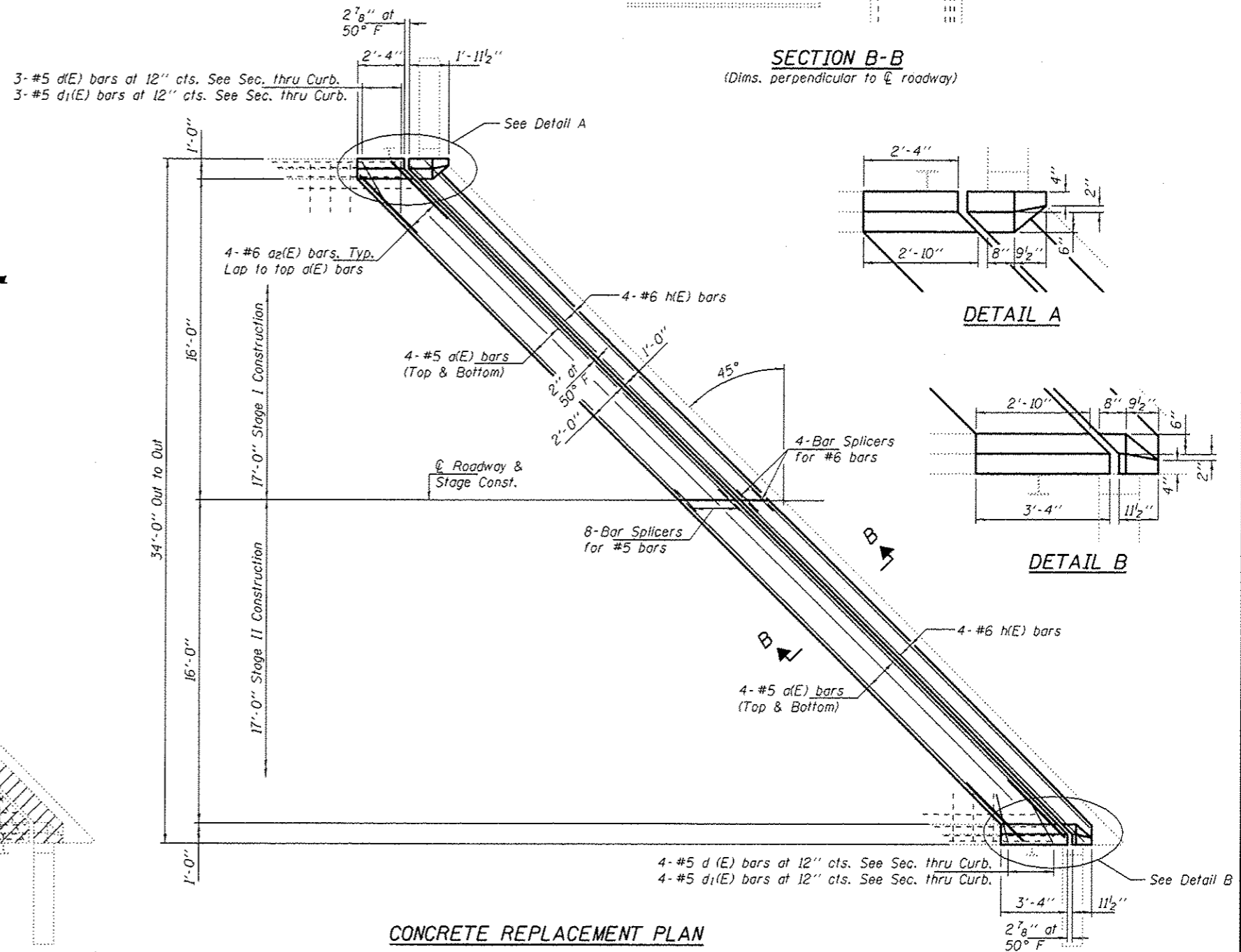


**SECTION B-B**  
(Dims. perpendicular to  $\bar{C}$  roadway)



**CONCRETE REMOVAL PLAN**

Existing rail post to be removed, stored & reinstalled. Typ. See sheet 3 of 8.  
Cost included with Concrete Superstructure.



**CONCRETE REPLACEMENT PLAN**

4-#5 d(E) bars at 12" cts. See Sec. thru Curb.  
4-#5 d1(E) bars at 12" cts. See Sec. thru Curb.

For Section Thru Curb, bar details and Bill of Material, see sheet 3 of 8.

DESIGNED	SMR
CHECKED	JGY
DRAWN	balva
CHECKED	SMR JGY

PASSED	
ENGINEER OF BRIDGES AND STRUCTURES	

DATE	MARCH 7, 2017
REVISED	
REVISED	

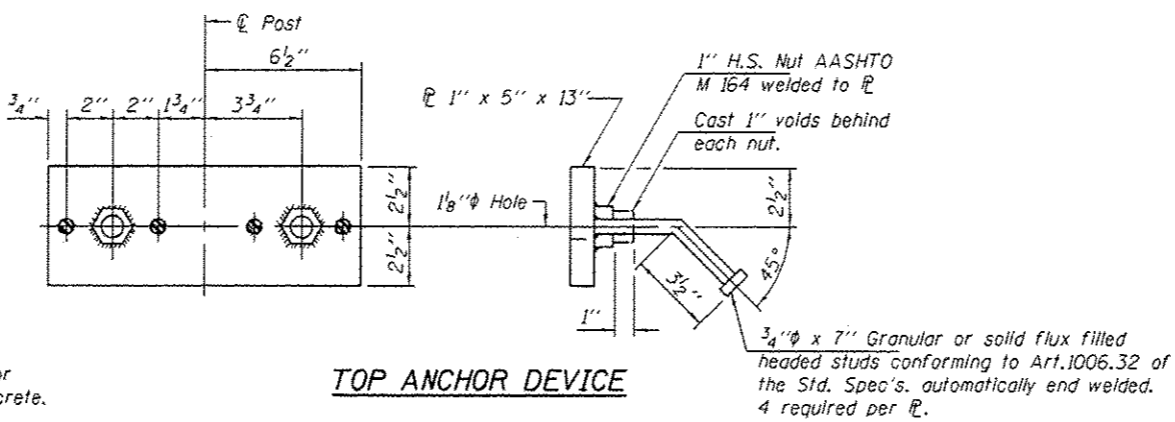
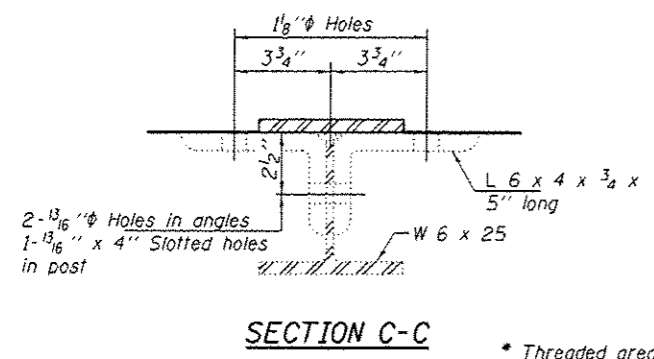
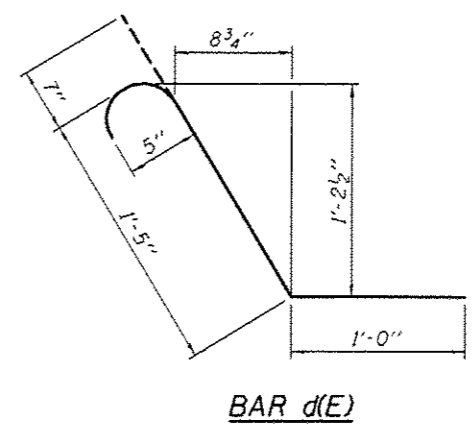
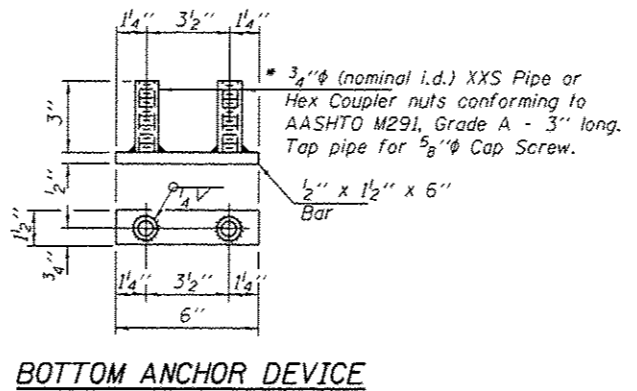
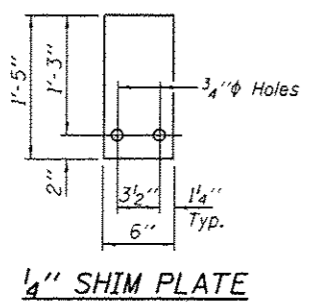
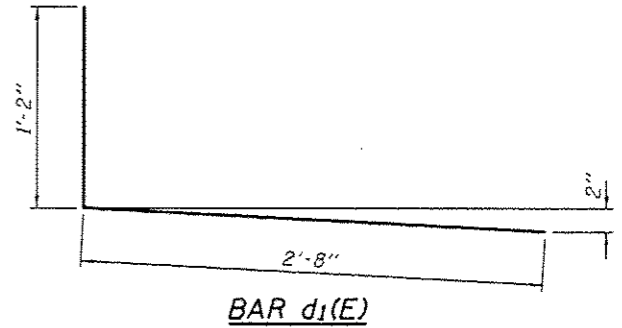
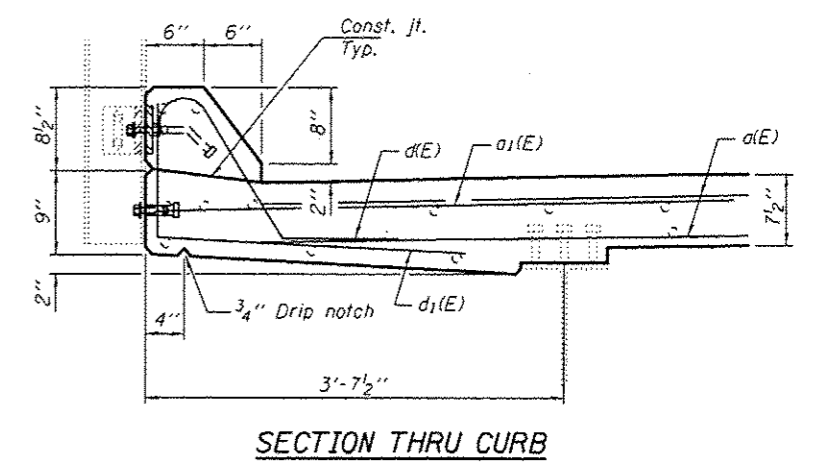
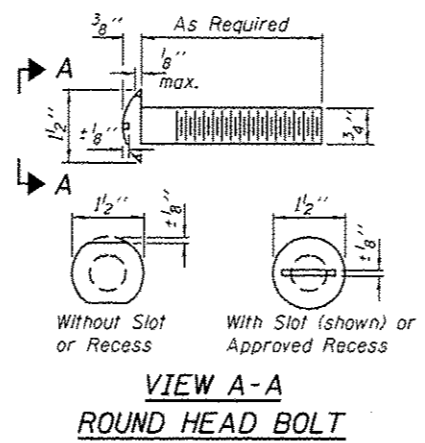
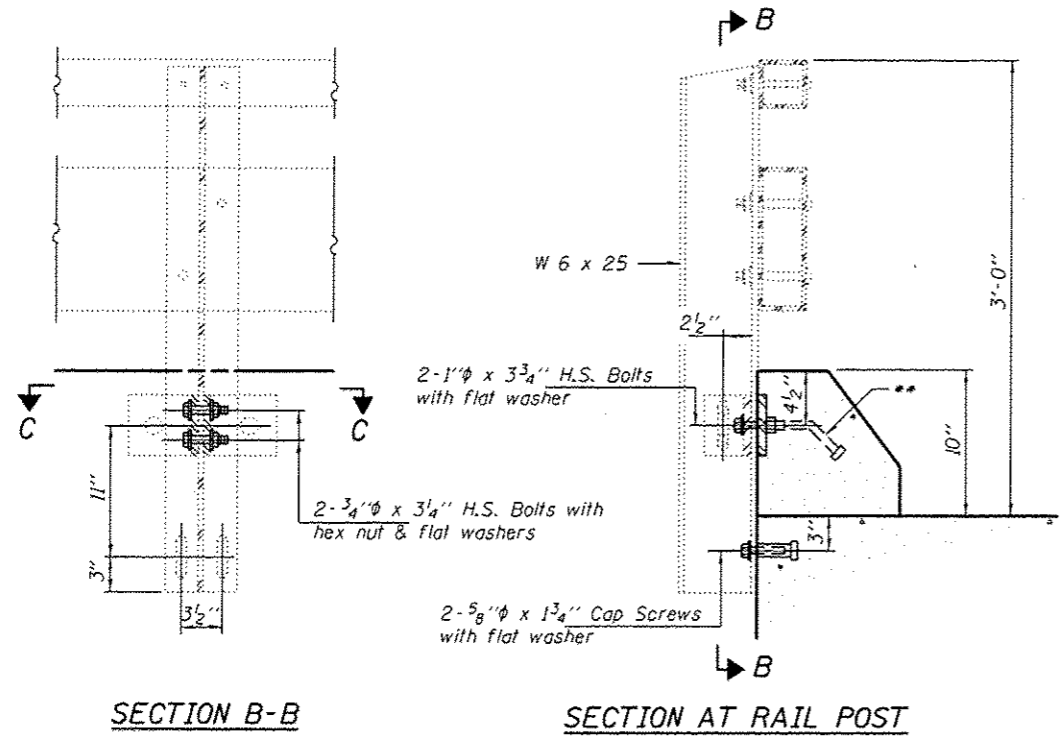
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

REPAIR DETAILS AT SOUTH ABUTMENT  
SN 034-0060

SHEET NO. 2 OF 8 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
514	115618A, B, R	HANCOCK	17	11
CONTRACT NO. 72J68			ILLINOIS FED. AID PROJECT	

Notes:  
 For multi-span bridges, sufficient 1/4" x 6" x 1'-5" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Concrete Superstructure.  
 All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.  
 \* The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device. Cost of anchor devices and all hardware required for reattachment is included with Concrete Superstructure.



**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a(E)	16	#5	22'-9"	—
a1(E)	8	#6	5'-0"	—
d(E)	7	#5	3'-0"	~
d1(E)	7	#5	3'-10"	L
h(E)	4	#6	23'-8"	—
Concrete Removal			Cu. Yd.	6.1
Concrete Superstructure			Cu. Yd.	6.1
Reinforcement Bars, Epoxy Coated			Lbs.	630

\* Threaded areas shall be plugged or blocked off during casting of concrete.

DESIGNED SMR  
 CHECKED JGY  
 DRAWN baliva  
 CHECKED SMR JGY

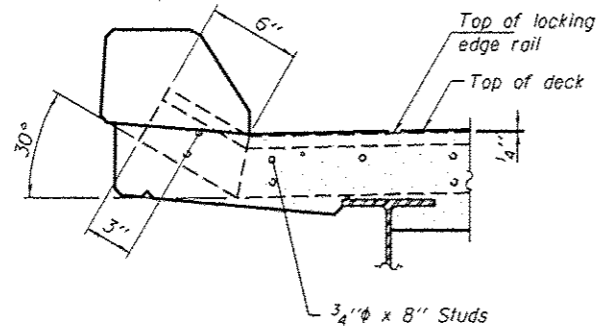
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 PASSED *J. Carl Propp*  
 ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

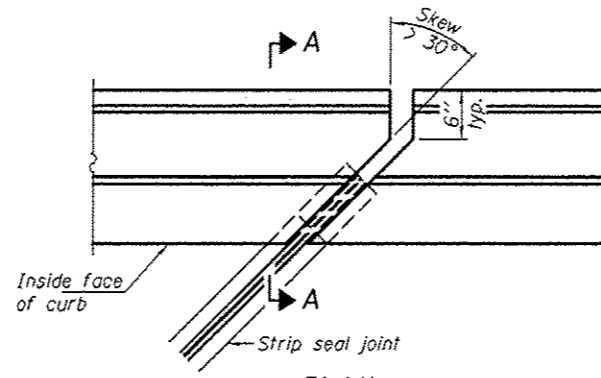
REPAIR DETAILS  
 SN 034-0060  
 SHEET NO. 3 OF 8 SHEETS

F.A.P. RTE. SECTION COUNTY TOTAL SHEETS SHEET NO.  
 514 1106/BR,BJR HANCOCK 11 12  
 CONTRACT NO. 72J68  
 [ILLINOIS] FED. AID PROJECT





**SECTION A-A**



**PLAN**  
(For skews > 30°)  
Showing point block

**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.

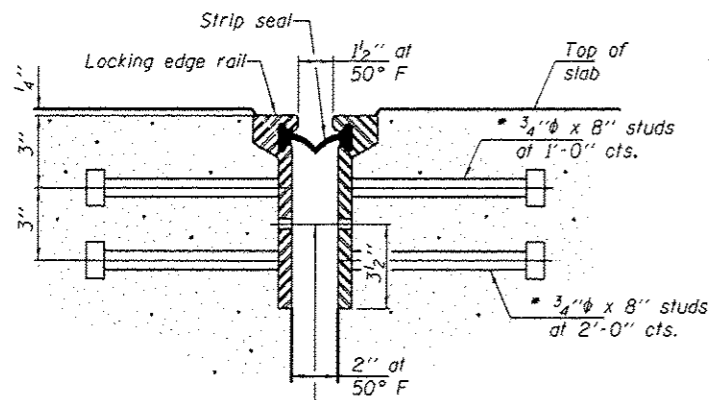
The Locking Edge Rails depicted are conceptual only, except for the minimum dimensions shown. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities.

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.

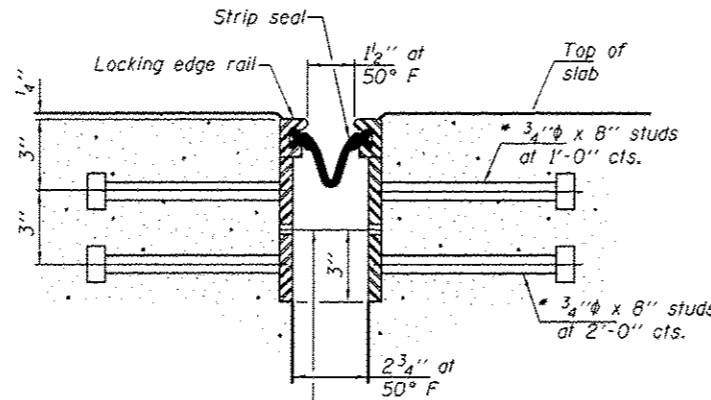
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications. Maximum space between rail segments shall be 3/16", sealed with a suitable sealant. Joints in rails within 10 ft. of curbs shall be welded.

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



**SECTION THRU ROLLED RAIL JOINT**

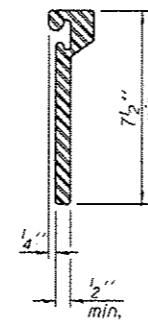
3/16" holes at 4'-0" cts. for 3/8" bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.



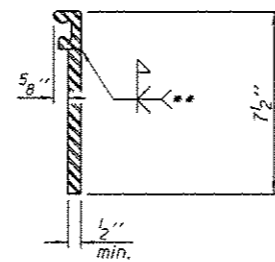
**SECTION THRU WELDED RAIL JOINT**

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

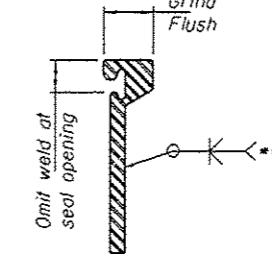
\* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



**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.

**LOCKING EDGE RAILS**

**BILL OF MATERIAL**

Item	Unit	Total
Preformed Joint Strip Seal	Foot	47

DESIGNED SMR  
CHECKED JGY  
DRAWN baliva  
CHECKED SMR JGY

PASSED

*[Signature]*  
ENGINEER OF BRIDGES AND STRUCTURES

DATE MARCH 7, 2017

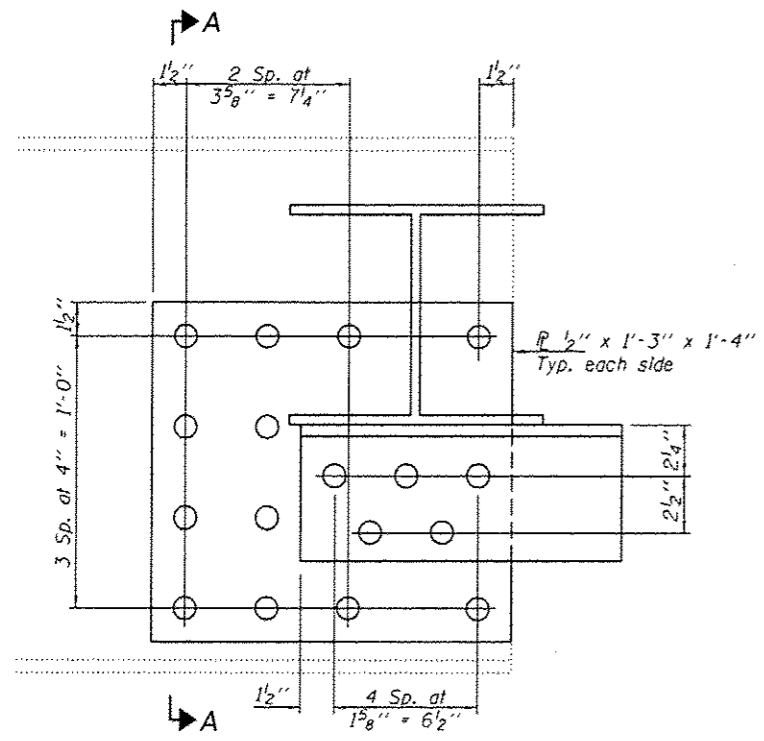
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REVISED

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

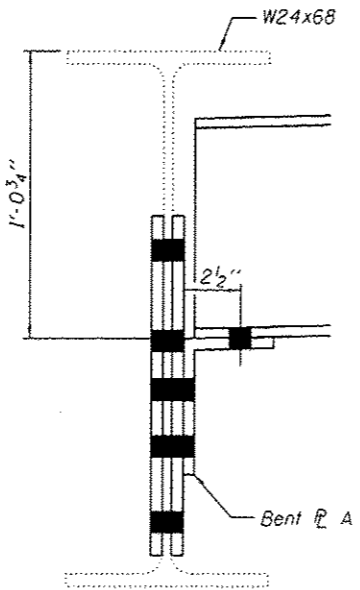
PREFORMED JOINT STRIP SEAL  
SN 034-0060

SHEET NO. 4 OF 8 SHEETS

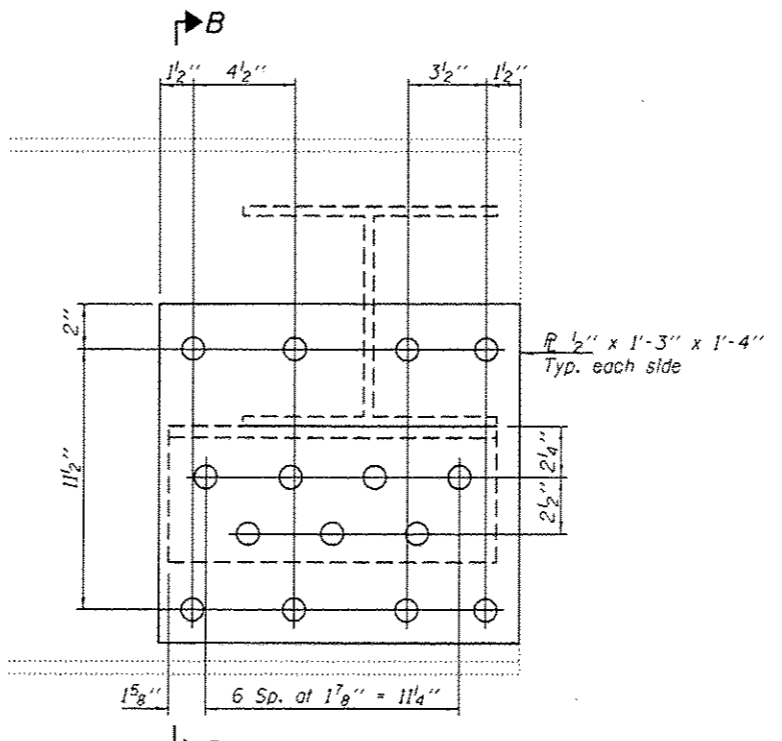
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
514	110618R, BJR	HANCOCK	11	13
ILLINOIS FED. AID PROJECT				CONTRACT NO. T2J68



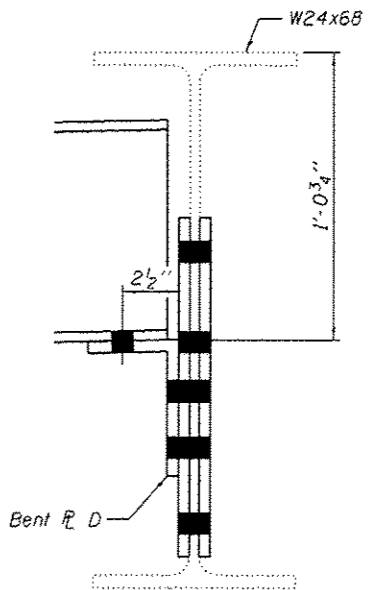
**ELEVATION BEAM 1**  
(Looking East)



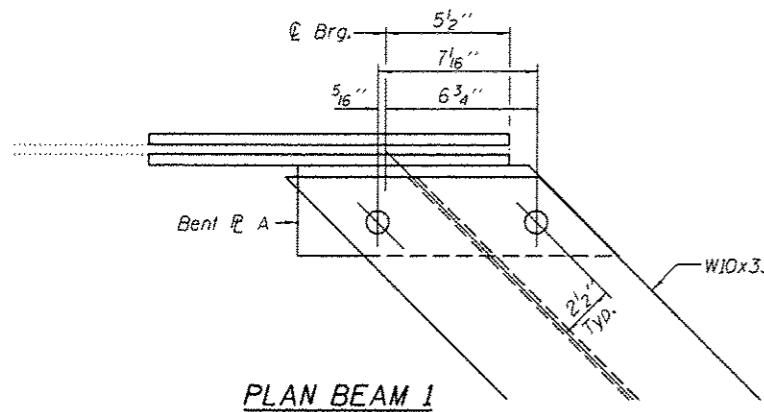
**SECTION A-A**



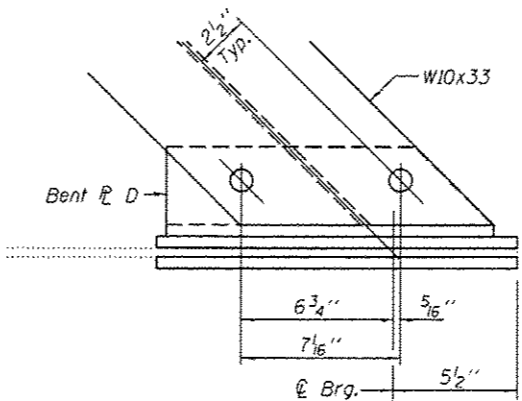
**ELEVATION BEAM 4**  
(Looking East)



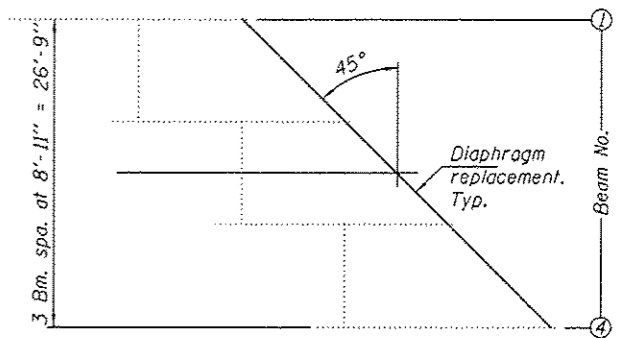
**SECTION B-B**



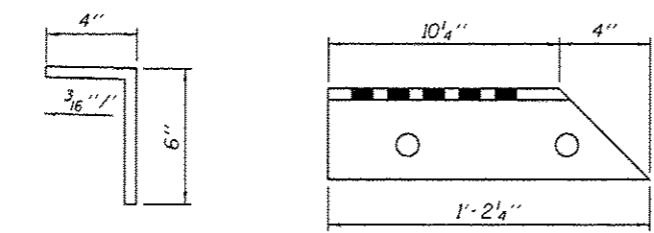
**PLAN BEAM 1**



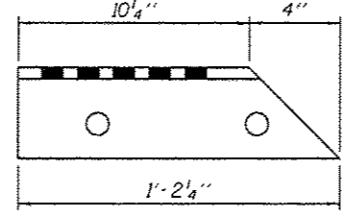
**PLAN BEAM 4**



**PARTIAL PLAN**

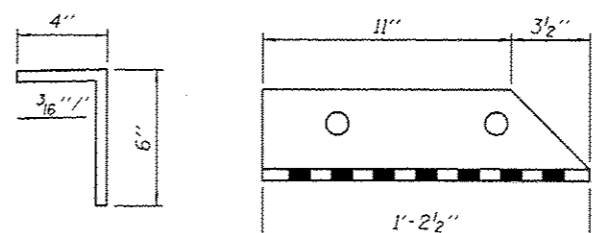


**ELEVATION**

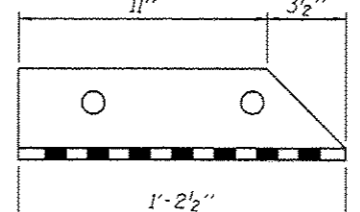


**PLAN**

**BENT PLATE A**  
R 1/2" x 10" x 1'-2 1/4"



**ELEVATION**

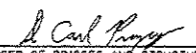


**PLAN**

**BENT PLATE D**  
R 1/2" x 10" x 1'-2 1/2"

**Notes:**  
 All new bent R's and diaphragms to be paid for as Furnishing & Erecting Structural Steel.  
 All new bolts and beam end repairs to be paid for as Structural Steel Repair.  
 Removal of bent R's and diaphragms to be paid for as Structural Steel Removal.  
 Field drill holes in existing steel using holes in new steel as a template.  
 See sheet 6 of 8 for Bill of Material.

DESIGNED	SMR
CHECKED	JGY
DRAWN	baliva
CHECKED	SMR JGY

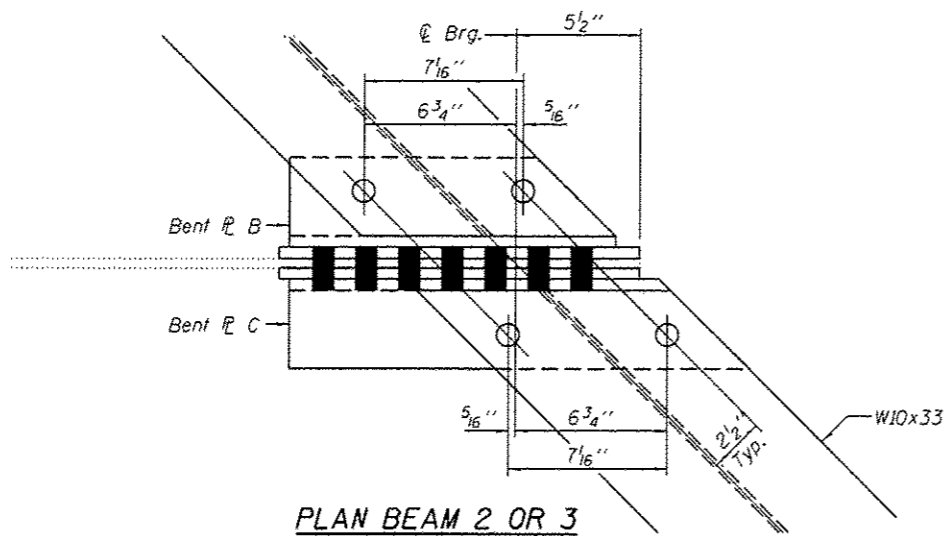
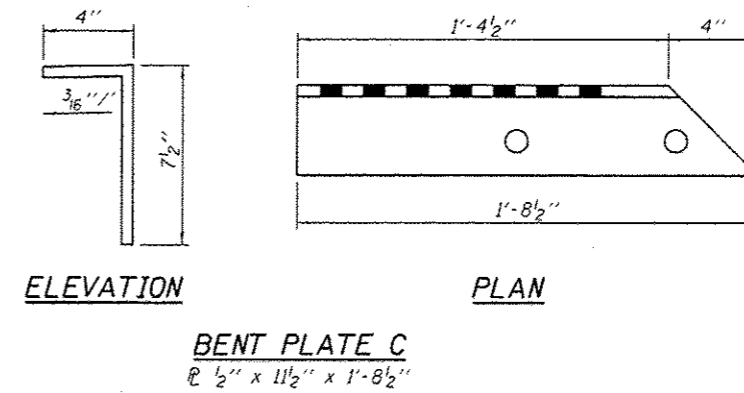
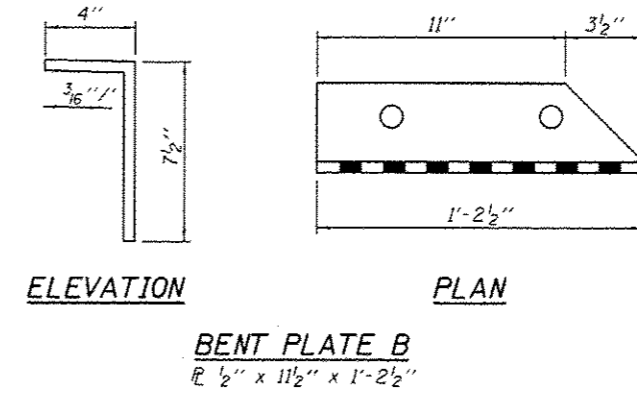
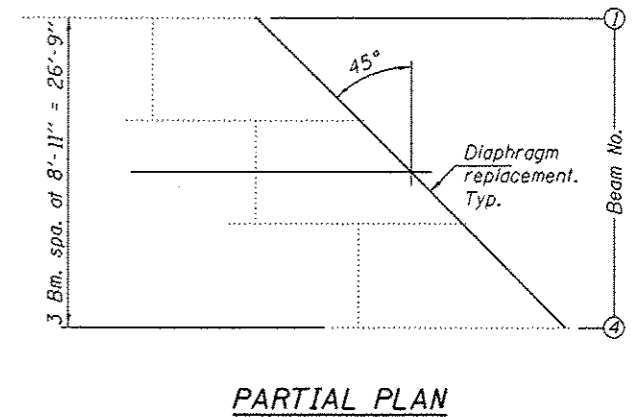
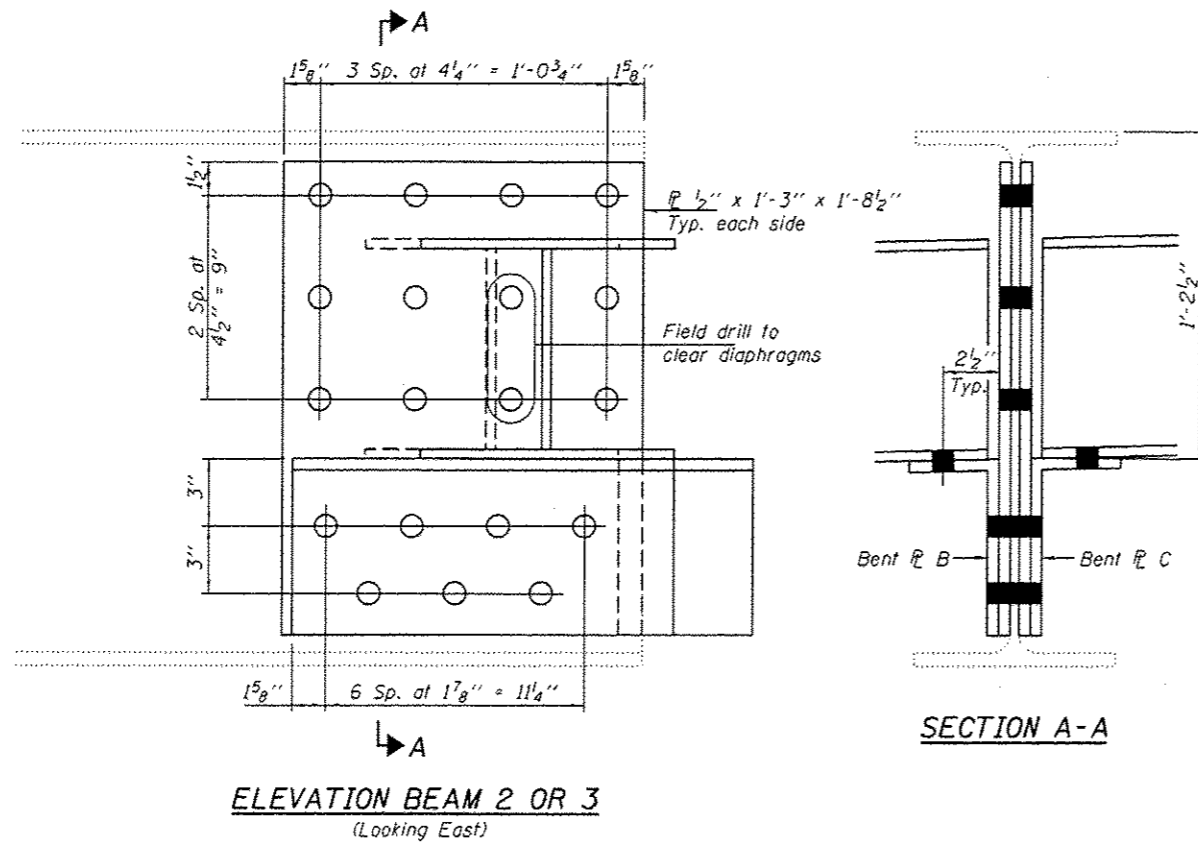
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 ENGINEER OF BRIDGES AND STRUCTURES

DATE	MARCH 7, 2017
REVISED	
REVISED	

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL REPAIR DETAILS  
 S. ABUTMENT, BEAMS 1 & 4  
 SN 034-0060  
 SHEET NO. 5 OF 8 SHEETS

F.A.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
514	110E1BR,BJR	HANCOCK	31	14
CONTRACT NO. 72J68			ILLINOIS FED. AID PROJECT	



Notes:  
 All new bent P's and diaphragms to be paid for as Furnishing & Erecting Structural Steel.  
 All new bolts and beam end repairs to be paid for as Structural Steel Repair.  
 Removal of bent P's and diaphragms to be paid for as Structural Steel Removal.

**BILL OF MATERIAL**

Item	Unit	Quantity
Structural Steel Removal	Pound	1410
Structural Steel Repair	Pound	330
Furnishing and Erecting Structural Steel	Pound	1380

DESIGNED SMR  
 CHECKED JGY  
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 CHECKED SMR JGY

PASSED  
 DATE MARCH 7, 2017  
 ENGINEER OF BRIDGES AND STRUCTURES

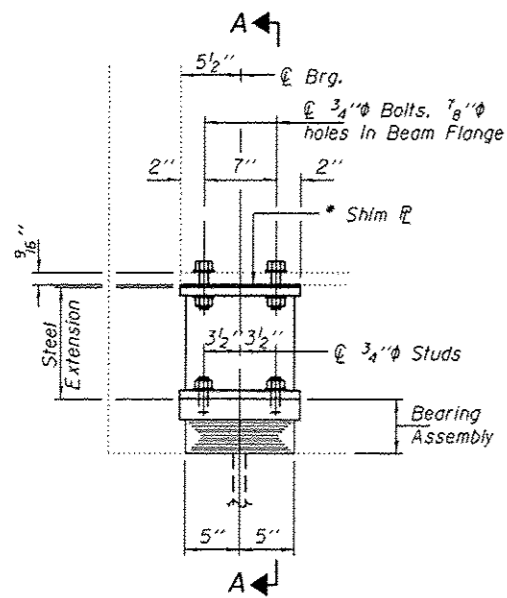
REVISIONS

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

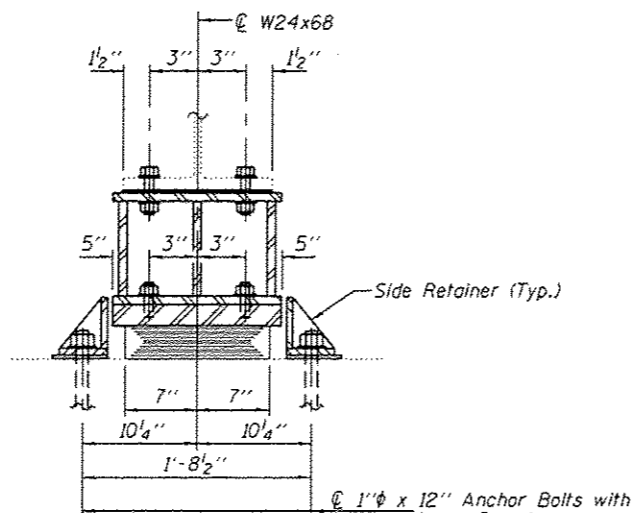
STRUCTURAL STEEL REPAIR DETAILS  
 S. ABUTMENT, BEAMS 2 & 3  
 SN 034-0060

SHEET NO. 6 OF 8 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
514	1106BR,BJR	HANCOCK	11	15
CONTRACT NO. 72J68			ILLINOIS FED. AID PROJECT	



**ELEVATION**

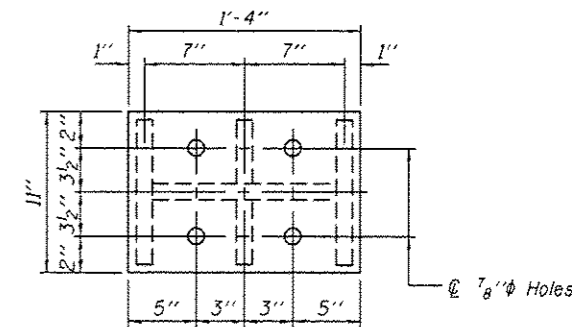


**SECTION A-A**

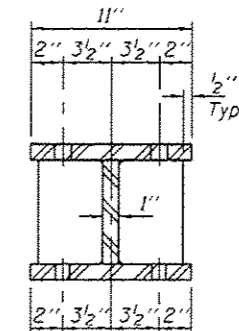
**BEAM REACTIONS**

RP	(K)	20.0
Rt	(K)	88.0
Imp.	(K)	26.4
R (Total)	(K)	134.4

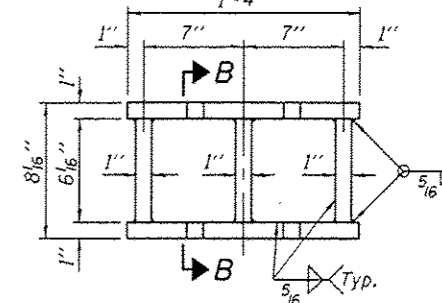
Notes:  
 Diaphragm removal and reinstallation may be required to facilitate drilling holes. Cost included with Furnishing and Erecting Structural Steel.  
 New steel extensions, shim plates and connection bolts are included with Furnishing and Erecting Structural Steel.  
 Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions. Adjustment must account for deck heave due to pack rust (if present).  
 Min. jack capacity = 60 Tons.  
 Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.  
 Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.  
 Side retainers shall be included in the cost of Elastomeric Bearing Assembly, Type I.



**PLAN TOP AND BOTTOM PLATE**



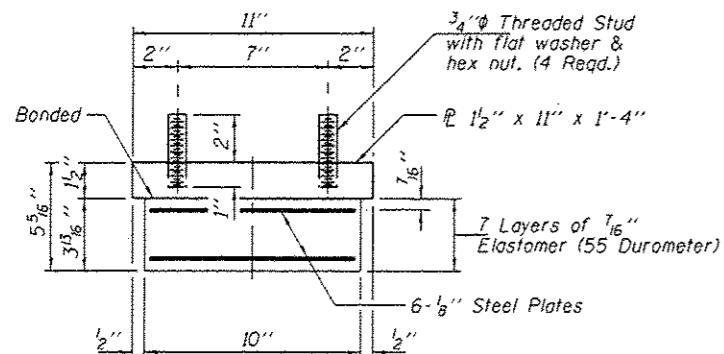
**SECTION B-B**



**STEEL EXTENSION DETAIL**

**TYPE I ELASTOMERIC EXP. BRG.**

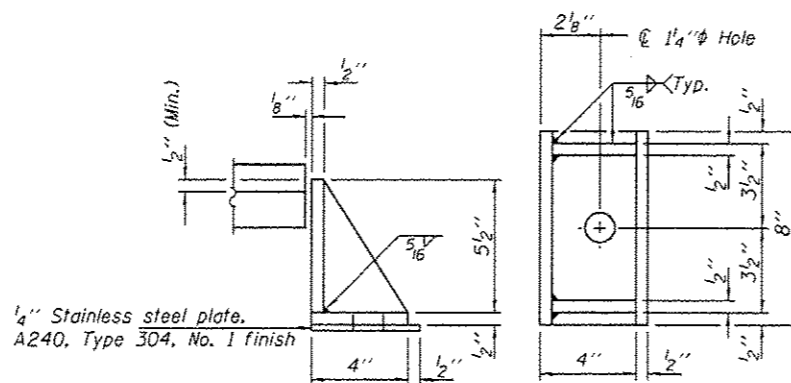
New beam end repair plates and clip angles not shown for clarity.



**BEARING ASSEMBLY**

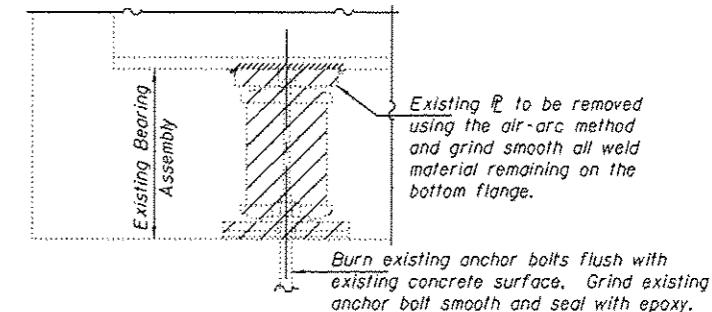
Note:  
 Shim plates shall not be placed under Bearing Assembly.

\* 2-1/8" x 11" x 1'-4" shim plates at Bm. 3 only



**SIDE RETAINER**

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



**EXISTING BEARING REMOVAL DETAIL**

Cost included with Jack and Remove Existing Bearings.

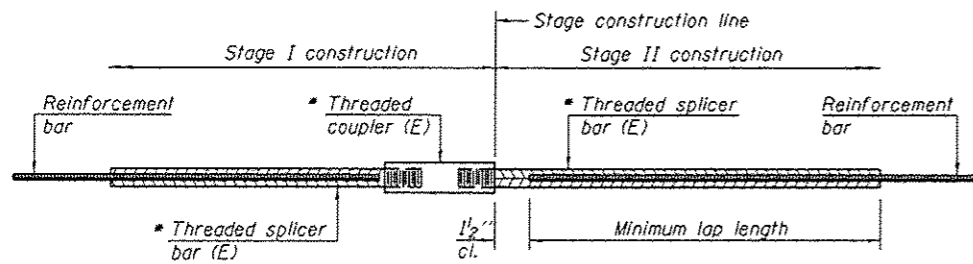
**BILL OF MATERIAL**

Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	4
Jack and Remove Existing Bearings	Each	4
Furnishing and Erecting Structural Steel	Pound	700
Anchor Bolts 1"φ	Each	8

TYI/REPS 1-18-2017

DESIGNED SMR	DATE MARCH 7, 2017	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	S. ABUTMENT BEARING REPLACEMENT DETAILS SN 034-0060	F.A.P. RTE. 514	SECTION 1108/BR,BJR	COUNTY HANCOCK	TOTAL SHEETS 17	SHEET NO. 16
CHECKED JGY	REVISIONS			CONTRACT NO. 72J68		ILLINOIS FED. AID PROJECT		
DRAWN baliva	ENGINEER OF BRIDGES AND STRUCTURES	SHEET NO. 7 OF 8 SHEETS						
CHECKED SMR JGY								



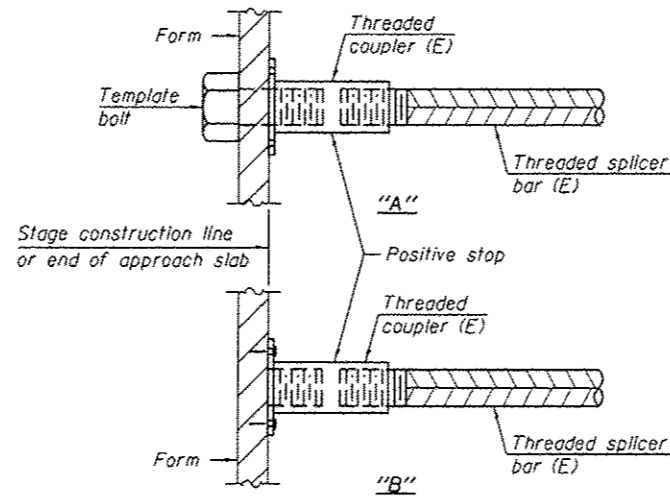


**STANDARD BAR SPLICER ASSEMBLY**

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	Minimum lap length
Deck	#5	8	3'-6"
Hatch Block	#6	4	4'-0"

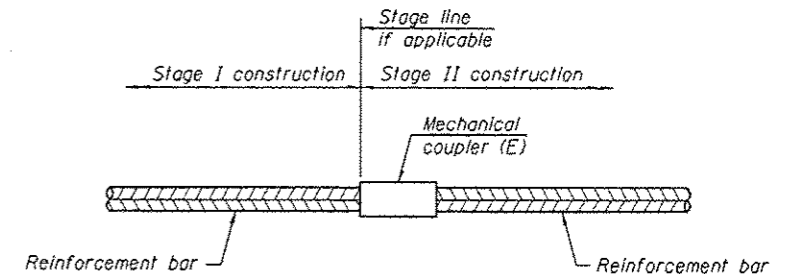


**INSTALLATION AND SETTING METHODS**

"A" : Set bar splicer assembly by means of a template bolt.

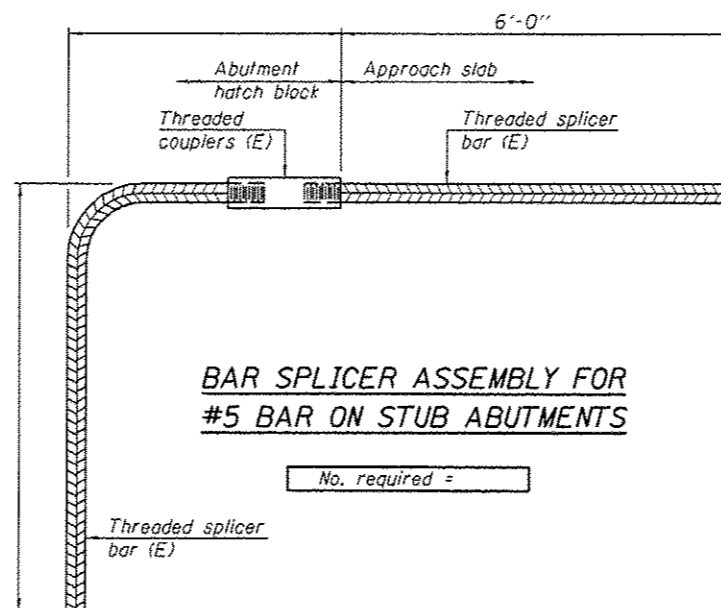
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.

(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.

BSD-1 6-8-15

DESIGNED SMR	DATE MARCH 7, 2017	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS		F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED JGY	REVISOR		SN 034-0060	514	1106184-BJR	HANCOCK	17	17	
DRAWN baliva	REVISOR		SHEET NO. 8 OF 8 SHEETS	CONTRACT NO. 72J68		ILLINOIS FED. AID PROJECT			
CHECKED SMR JGY	ENGINEER OF BRIDGES AND STRUCTURES								