

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

**FOR INDEX OF SHEETS, SEE SHEET NO. 2**

# PROPOSED HIGHWAY PLANS

**FAP ROUTE 314 (IL 4)  
SECTION (110, 111)BJR, BDR  
BRIDGE JOINT/DECK REPLACE/REPAIR  
MADISON COUNTY**

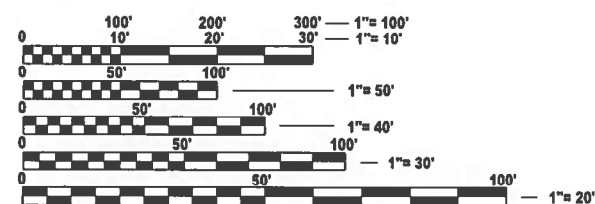
**C-98-100-23**

## TRAFFIC DATA

2021 ADT = 22,500 (ACTUAL)  
2024 ADT = 22,600 (ESTIMATED)  
2044 ADT = 28,700 (ESTIMATED)  
SU = 2.6% MU = 39.4%

## PROJECT LOCATION

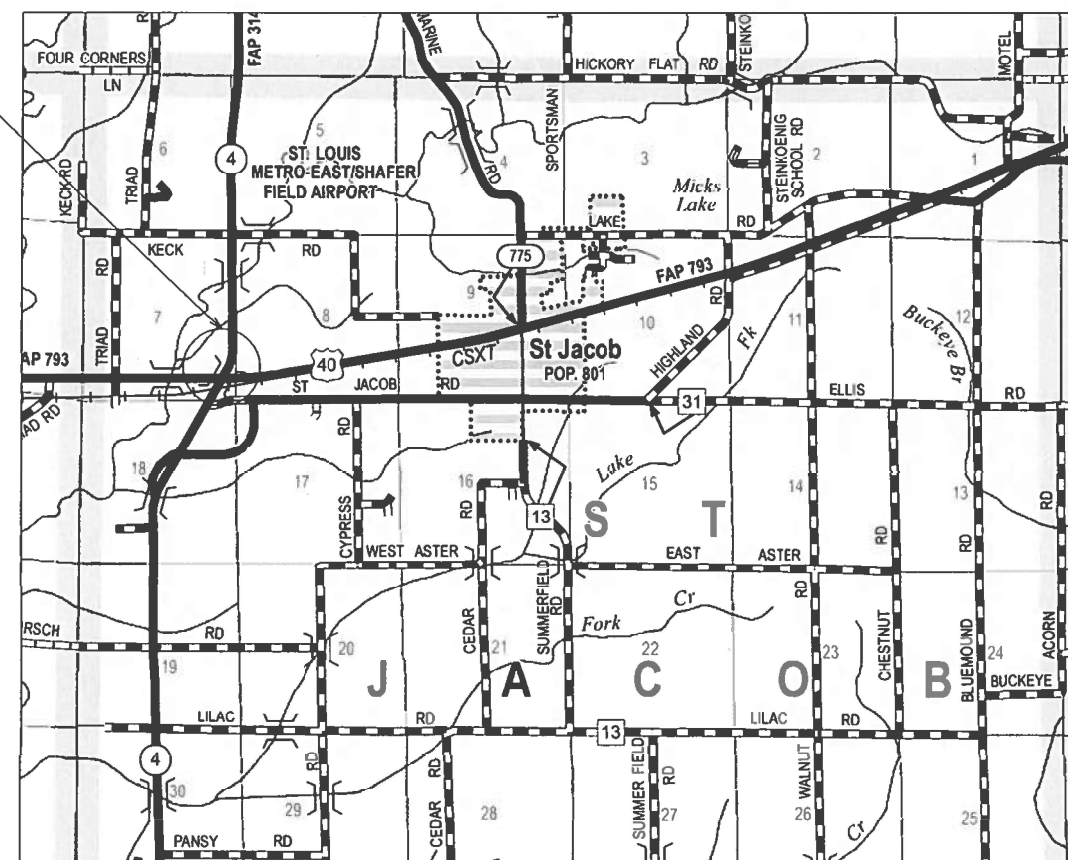
IL 4 OVER US 40 AND CSX RR  
SN 060-0210  
STA : 155+33.92  
LAT : 38° 42' 56.04" N  
LON : 89° 48' 9.51" W



**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 : MIKE BERG**  
**PROJECT MANAGER : BILLIE OWEN**

**CONTRACT NO. 76T28**

R 6 W

**GROSS/NET LENGTH = 1,250.0 FT. = 0.237 MILE**

**D-98-056-23**



LOCATION OF SECTION INDICATED THUS: -

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

SUBMITTED March 27, 2024  
Ker H R  
REGIONAL ENGINEER

May 10, 2024 T / 1 - 2

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**ENGINEER OF DESIGN AND ENVIRONMENT**

May 10, 2024

**DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION**

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

MODEL: General Notes [Sheet]  
FILE NAME: c:\pwworking\dwidd\robert.hughes@illinois.gov\40892611\0876128-shit-gennote.dgn

INDEX OF SHEETS

- 1. COVER SHEET
- 2. INDEX OF SHEETS, STANDARDS, GENERAL NOTES, COMMITMENTS
- 3-4. SUMMARY OF QUANTITIES
- 5. SCHEDULES OF QUANTITIES
- 6. TYPICAL SECTIONS
- 7. STAGING DETAILS
- 8. INLET DETAILS
- 9-19. BRIDGE SHEETS

STANDARDS

000001-08	001001-02
001006	420001-10
610001-09	420101-07
701101-05	542401-04
701106-02	630001-13
701201-05	630301-09
701321-18	631031-18
701326-04	725001-01
701901-09	782006-01
704001-08	
780001-05	
781001-04	

GENERAL NOTES

- 1. UTILITIES KNOWN TO HAVE FACILITIES WITHIN THE PROJECT AREA ARE AS FOLLOWS:  
  
AMEREN ILLINOIS  
AT&T ILLINOIS  
CHARTER COMMUNICATIONS, INC.  
CLEARWAVE FIBER, LLC  
DEPARTMENT OF CENTRAL MANAGEMENT SERVICES  
EVERSTREAM GLC HOLDING COMPANY LLC  
CITY OF HIGHLAND  
HOME TELEPHONE COMPANY  
LEVEL 3 COMMUNICATIONS, LLC  
SOUTHWESTERN ELECTRIC COOPERATIVE, INC.  
VILLAGE OF ST. JACOB
- 2. THE RESIDENT ENGINEER SHALL VERIFY THE EXISTENCE OF HIGHWAY LIGHTING AND/OR INTELLIGENT TRANSPORTATION SYSTEMS (I.T.S.) UTILITIES WITHIN THE PROJECT LIMITS. IF HIGHWAY LIGHTING AND/OR I.T.S. EXISTS WITHIN THE PROJECT LIMITS, AND IF THESE ITEMS REQUIRE LOCATING, THE CONTRACTOR SHALL BE DIRECTED TO DO SO ACCORDING TO SECTION 803 OF THE STANDARD SPECIFICATIONS. THIS WORK SHALL BE PAID FOR ACCORDING TO ARTICLE 109.04 OF THE STANDARD SPECIFICATIONS.
- 3. TWO CHANGEABLE MESSAGE SIGNS SHALL BE REQUIRED FOR THIS PROJECT. THEY SHALL BE PLACED TWO WEEKS PRIOR TO LANE CLOSURE AND SHALL REMAIN UP FOR THE DURATION OF THE PROJECT. THE CHANGEABLE MESSAGE SIGNS SHALL BE PLACED AT THE DIRECTION OF THE ENGINEER.

- 3. THE DEPARTMENT STRONGLY ENCOURAGES THE PRIME CONTRACTOR AND THEIR APPROVED SUB-CONTRACTORS TO HIRE MINORITY, WOMEN AND DISADVANTAGED INDIVIDUALS FROM IT'S FEDERALLY FUNDED HIGHWAY CONSTRUCTION CAREERS TRAINING PROGRAM (HCCTP) TO HELP MEET WORKFORCE AND TRAINEE GOALS. THE PROGRAM IS TRAINING MINORITIES, WOMEN, AND DISADVANTAGED INDIVIDUALS IN HIGHWAY CONSTRUCTION RELATED SKILLS E.G. MATH FOR THE TRADES, JOB READINESS, TECHNICAL SKILLS COURSEWORK (CARPENTRY, CONCRETE FLATWORK, BLUEPRINT READING, SITE PLANS, SITE WORK, TOOLS USE, ETC.) AND OSHA 10 HOUR CERTIFICATION, TO PREPARE THEM FOR A CAREER IN THE HIGHWAY CONSTRUCTION TRADES. GRADUATES ARE WELL-TRAINED AND READY TO BECOME PRODUCTIVE ENTRY-LEVEL CONSTRUCTION WORKERS. CONTACT THE DISTRICT 8 EEO OFFICE AT 618-346-3360 AND/OR THE HCCTP COORDINATOR AT 618-874-6528 TO LEARN MORE ABOUT THE PROGRAM AND FOR ASSISTANCE IN MEETING WORKFORCE AND TRAINING GOALS.
- 4. EXISTING REINFORCEMENT EXTENDING INTO REMOVAL AREA SHALL BE CLEANED, STRAIGHTENED AND INCORPORATED INTO THE NEW CONSTRUCTION. ANY REINFORCEMENT BARS THAT ARE DAMAGED DURING CONCRETE REMOVAL OPERATIONS SHALL BE REPAIRED OR REPLACED USING AN APPROVED BAR SPLICER OR ANCHORAGE SYSTEM. COST INCLUDED WITH "CONCRETE REMOVAL".

COMMITMENTS

- 1. NO EQUIPMENT, MATERIALS, PERSONNEL, OR CONSTRUCTION DEBRIS WILL BE ALLOWED UNDER THE BRIDGE FOR WORK AT THE SOUTH ABUTMENT DUE TO THE CLOSE PROXIMITY TO THE RAILROAD TRACKS

REV. - MS

	USER NAME = Robert.Hughes	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	INDEX OF SHEETS, STANDARDS, GENERAL NOTES AND COMMITMENTS		F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED -				314	(110, 111)BJR, BDR	MADISON	19	2
	PLOT SCALE = \$\$SCALE\$	CHECKED -	REVISED -				CONTRACT NO. 76T28				
	PLOT DATE = 3/20/2024	DATE -	REVISED -		SCALE:	SHEET 1 OF 1 SHEETS	STA.	TO STA.	ILLINOIS FED. AID PROJECT		



CONSTR. CODE

CONSTR. CODE
RURAL
BRIDGE
0013
060-0210

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

CONSTR. CODE

CONSTR. CODE
RURAL
BRIDGE
0013
060-0210

CONTRACT NO. 76T28

MODEL: SOQ [Sheet]

## SUMMARY OF QUANTITIES

SCALE:	SHEET 1	OF 2	SHEETS	STA.	TO STA.
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EARTH EXCAVATION SCHEDULE			
LOCATION	STATIONING	EARTH EXCAVATION (WIDENING)	EARTH EXCAVATION
		(CU YD)	(CU YD)
NE QUADRANT	160+12.0 TO 162+24.0	51	
	INLET PIPE, 159+89.5		13.5
NW QUADRANT	159+94.5 TO 162+44.5	60	
	INLET PIPE, 159+89.5		13.5
SE QUADRANT	151+82.5 TO 154+22.5	85	
	INLET PIPE, 154+32.5		13.5
SW QUADRANT	151+82.5 TO 153+99.5	52	
	INLET PIPE, 154+32.5		13.5
TOTAL:		248	54

SHOULDER REPLACEMENT SCHEDULE					
LOCATION	STATIONING	WIDTH	PORTLAND CEMENT CONCRETE PAVEMENT 10" (JOINTED)	AGGREGATE BASE COURSE, TYPE A 12"	CONCRETE CURB, TYPE B (SPECIAL)
		(FOOT)	(SQ YD)	(SQ YD)	
NE QUADRANT	160+12.0 TO 162+24.0	10	236	236	
NW QUADRANT	159+94.5 TO 162+44.5	10	278	278	
SE QUADRANT	151+82.5 TO 154+22.5	10	267	267	240
SW QUADRANT	151+82.5 TO 153+99.5	10	241	241	
TOTAL:			1022	1022	240

GUARDRAIL REMOVAL SCHEDULE		
LOCATION	STATIONING	GUARDRAIL REMOVAL
		(FOOT)
NE QUADRANT	159+84.50 TO 162+21.5	237
NW QUADRANT	159+74.5 TO 162+56.5	282
SE QUADRANT	150+04.5 TO 154+59.5	455
SW QUADRANT	151+82.5 TO 154+32.50	250
TOTAL:		1224

PAVED SHOULDER REMOVAL SCHEDULE		
LOCATION	STATIONING	PAVED SHOULDER REMOVAL
		(SQ YD)
NE QUADRANT	160+12.0 TO 162+24.0	94
NW QUADRANT	159+94.5 TO 162+44.5	111
SE QUADRANT	151+82.5 TO 154+22.5	287
SW QUADRANT	151+82.5 TO 153+99.5	97
TOTAL:		589

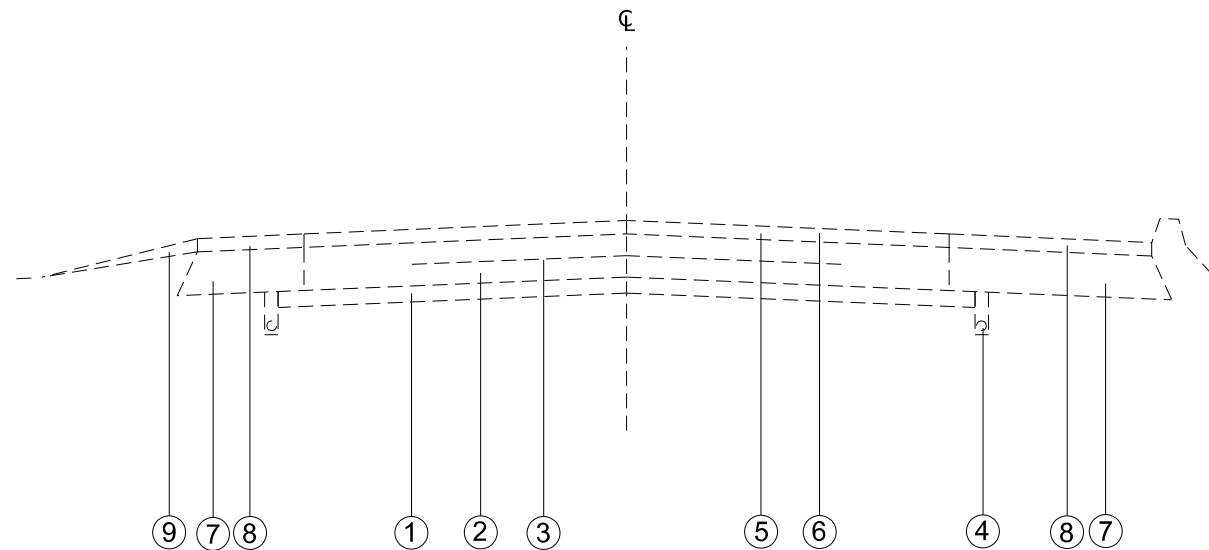
GUARDRAIL SCHEDULE						
LOCATION	STATIONING	STEEL PLATE BEAM GUARDRAIL, TYPE A, 9 FOOT POSTS	GUARDRAIL REFLECTORS, TYPE A	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	TERMINAL MARKER, DIRECT APPLIED	TRAFFIC BARRER TERMINAL TYPE 6
		(FOOT)	(EACH)	(EACH)	(EACH)	(EACH)
NE QUADRANT	160+22.0 TO 16+71.5	150	3			
	162+21.5			1	1	
	159+84.5					1
NW QUADRANT	160+12.0 TO 162+06.5	195	3			
	162+56.5			1	1	
	159+74.5					1
SE QUADRANT	150+54.5 TO 154+22.0	368	5			
	150+04.5			1	1	
	154+59.5					1
SW QUADRANT	152+32.5 TO 153+95.0	163	3			
	151+82.5			1	1	
	154+32.5					1
TOTAL:		875	14	4	4	4

PAVEMENT MARKING SCHEDULE		
TYPE	STATIONING	PAINT PAVEMENT MARKING LINE LINE 6"
		(FOOT)
SOLID WHITE	150+04.5 TO 162+21.5	2434
DASHED YELLOW	150+04.5 TO 154+59.5	110
SOLID YELLOW	150+04.5 TO 162+21.5	1979
TOTAL:		4523

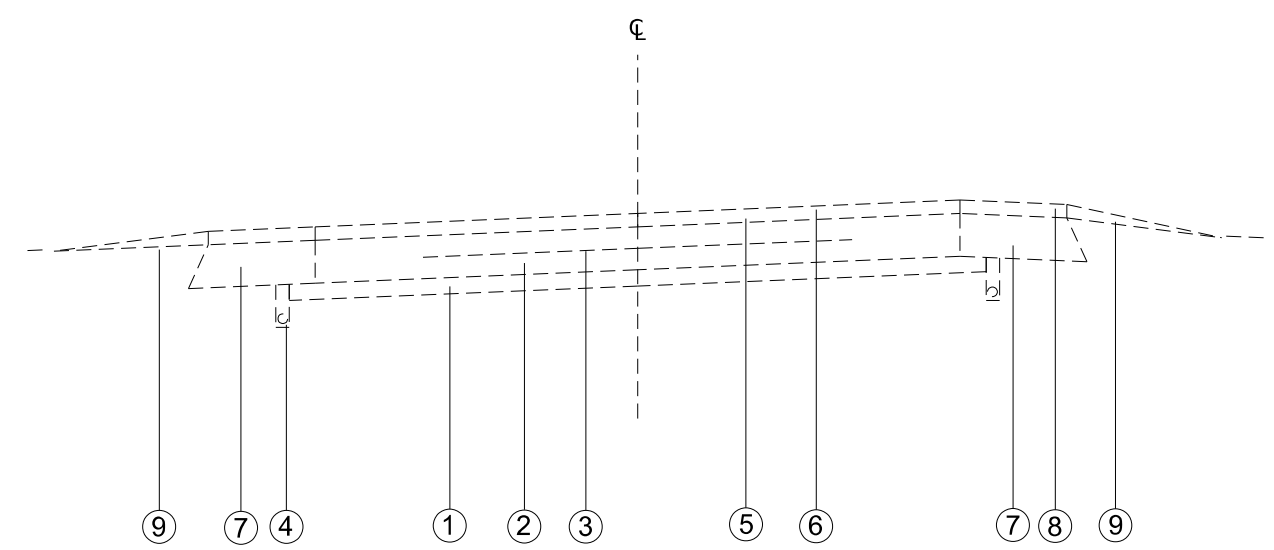
INLET SCHEDULE											
LOCATION	STATIONING	BRIDGE APPRCACH SHOULDER REMOVAL	REMOVE INLET BOX	PIPE DRAIN REMOVAL	PIPE DRAINS, 12"	STEEL FLARED END SECTIONS, 12"	TYPE F INLET BOX, STANDARD 610001	CONCRETE SHOULDER CURB	CONCRETE THRUST BLOCKS	STONE RIPRAP, CLASS A3	FILLING INLETS, TEMPORARY
		(SC YD)	(EACH)	(FOOT)	(EACH)	(EACH)	(EACH)	(FOOT)	(EACH)	(SQ YD)	(EACH)
NE QUADRANT	159+89.5			60	60	1			1	20	1
NW QUADRANT	159+89.5	14	1	60	60	1	1	17	1	20	1
SE QUADRANT	154+32.5			60	60	1			1	20	1
SW QUADRANT	154+32.5			60	60	1			1	20	1
TOTAL:		14	1	240	4	4	1	17	4	80	4

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		CHECKED   -	REVISED   -		CONTRACT NO. 76T28										
	PLOT DATE   = 3/26/2024	DATE       -	REVISED   -		SCALE:	SHEET 1	OF 1	SHEETS	STA.	TO STA.	ILLINOIS				
													FED.AID PROJECT		



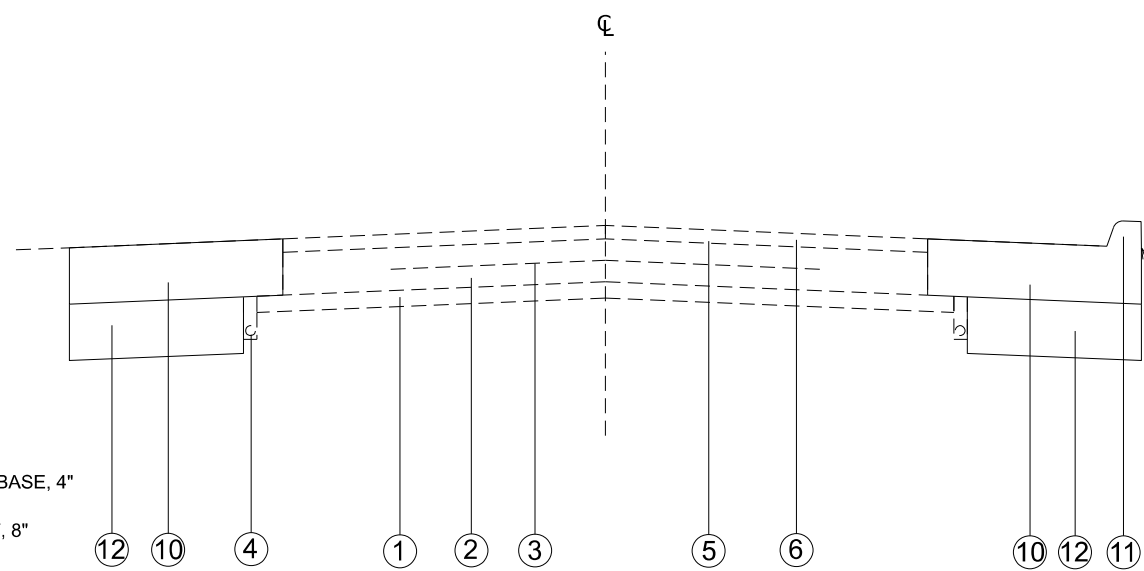
**EXISTING IL 4**  
STA. 152+02.50 TO STA. 154+32.50



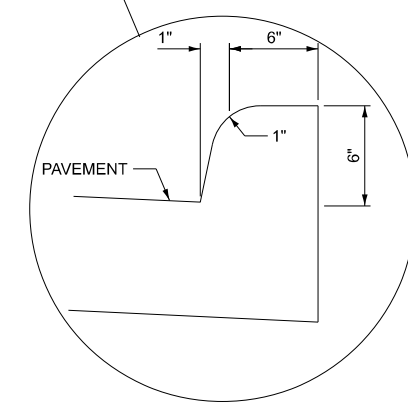
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**LEGEND**

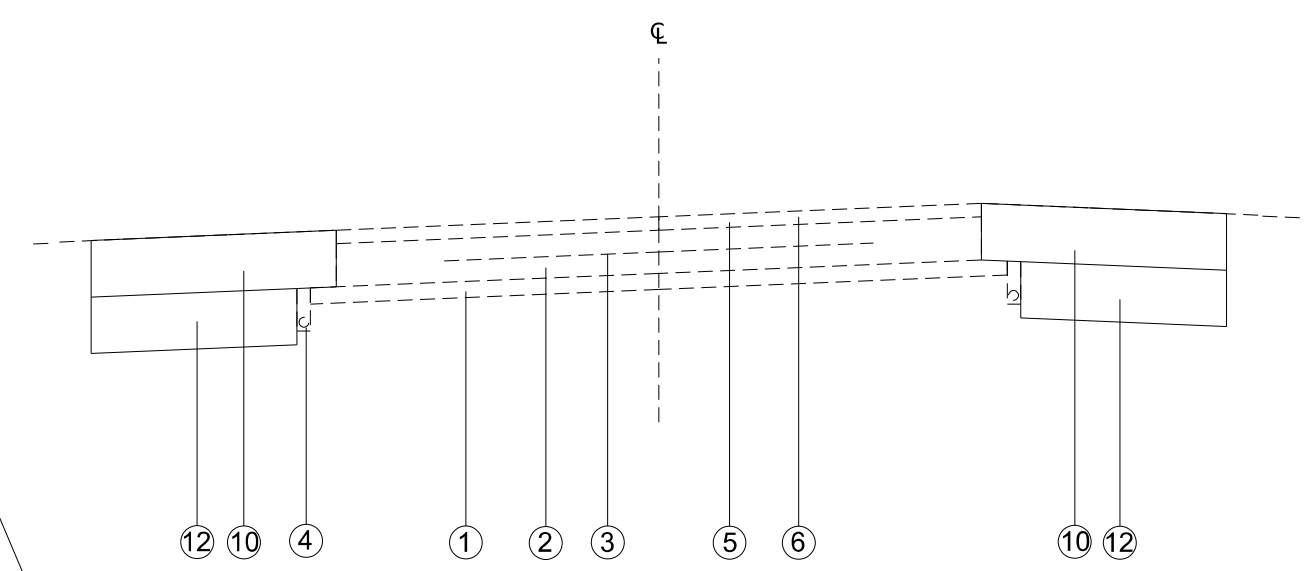
- ① EXISTING STABILIZED SUB-BASE, 4"
- ② EXISTING P.C.C. PAVEMENT, 8"
- ③ EXISTING PAVEMENT FABRIC
- ④ EXISTING SUB-SURFACE DRAINS
- ⑤ EXISTING LEVELING BINDER, 1"
- ⑥ EXISTING HMA SURFACE COURSE, 1 1/2"
- ⑦ EXISTING STABILIZED SHOULDERS, 8"
- ⑧ EXISTING HMA SHOULDERS, 2.5"
- ⑨ EXISTING AGGREGATE SHOULDERS TYPE B (WEDGE)
- ⑩ PROPOSED PORTLAND CEMENT CONCRETE PAVEMENT 10" (JOINTED)
- ⑪ PROPOSED CONCRETE CURB, TYPE B
- ⑫ PROPOSED AGGREGATE BASE COURSE, TYPE A 12"



**PROPOSED IL 4**  
STA. 152+02.50 TO STA. 154+32.50



CONCRETE CURB, TYPE B (SPECIAL) POURED MONOLITHICALLY  
WITH PORTLAND CEMENT CONCRETE PAVEMENT 10" (JOINTED)

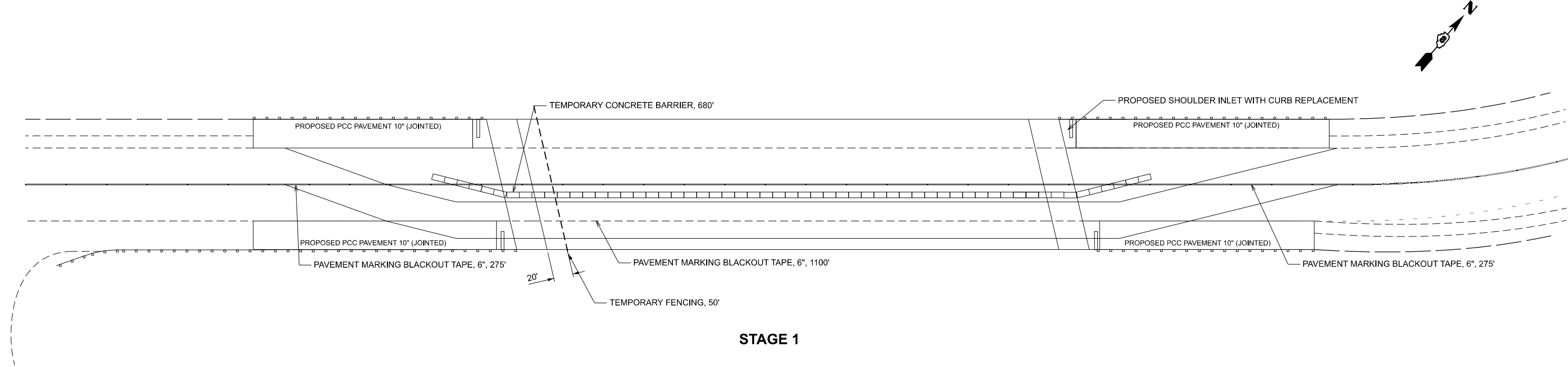


**PROPOSED IL 4**  
STA. 159+89.50 TO STA. 162+56.50

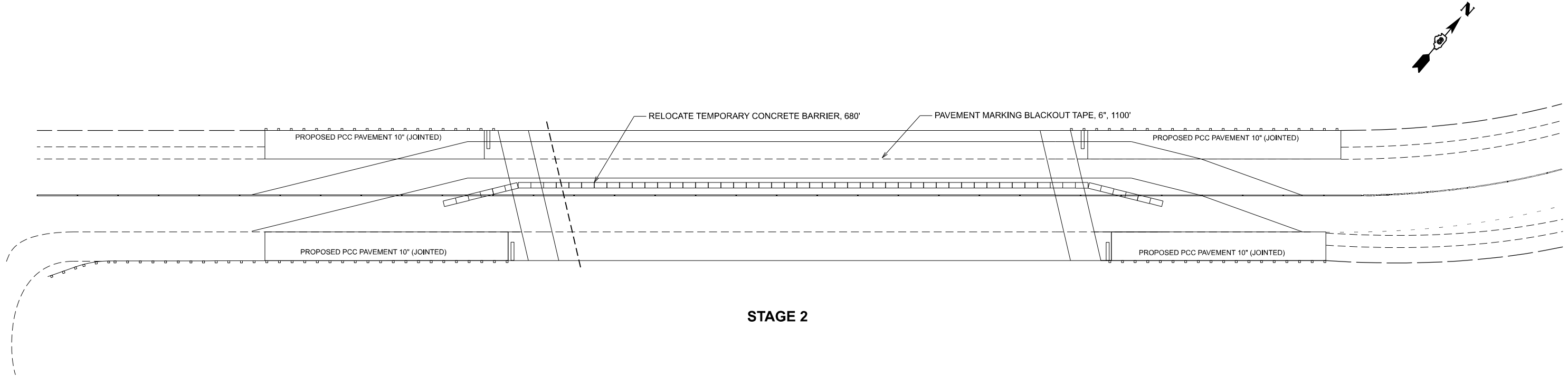
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		CHECKED -	REVISED -					CONTRACT NO. 76T28				
	PLOT DATE = 3/26/2024	DATE -	REVISED -		SCALE: NTS	SHEET 1	OF 1 SHEETS	STA.	TO STA.	ILLINOIS   FED. AID PROJECT		

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STAGE 1



STAGE 2

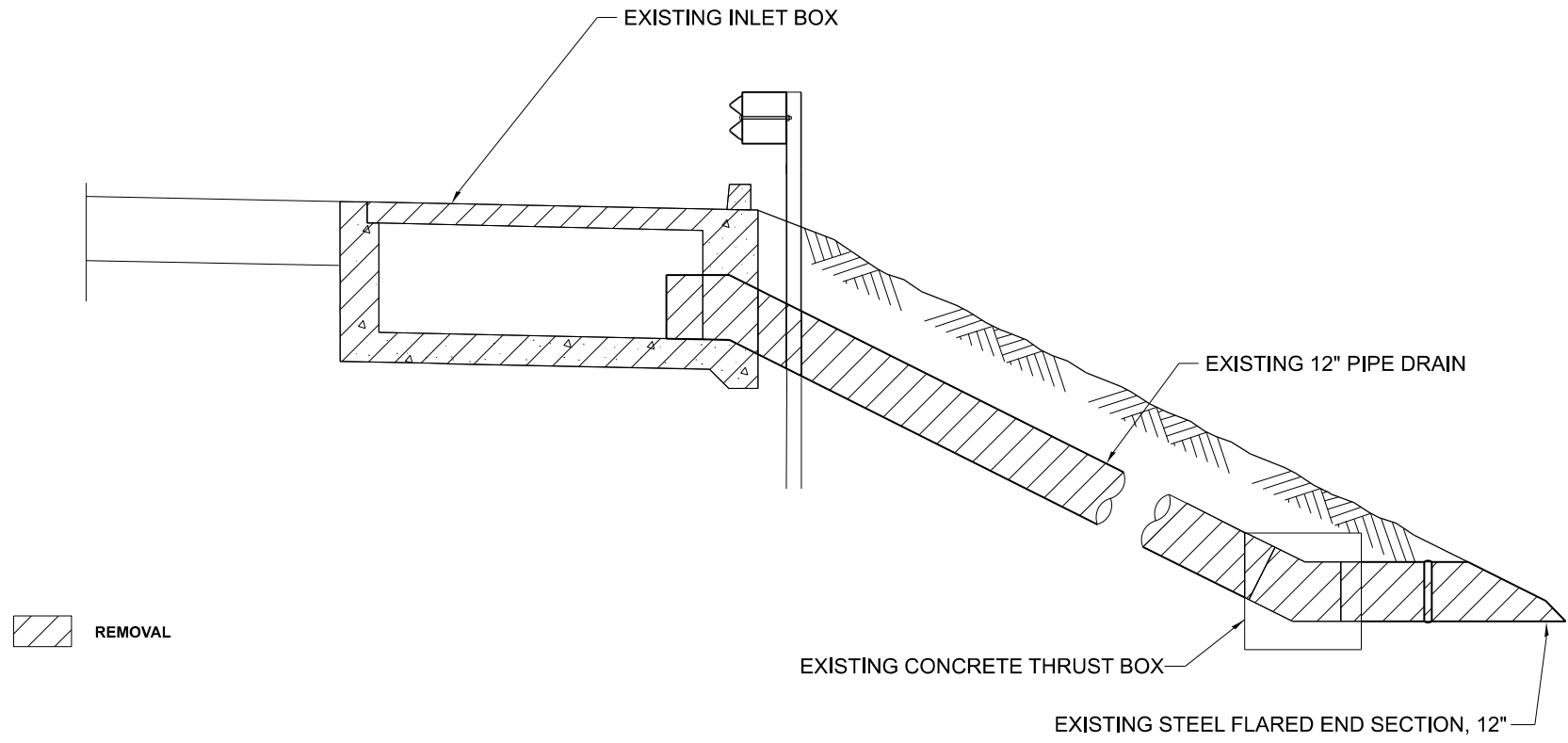
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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

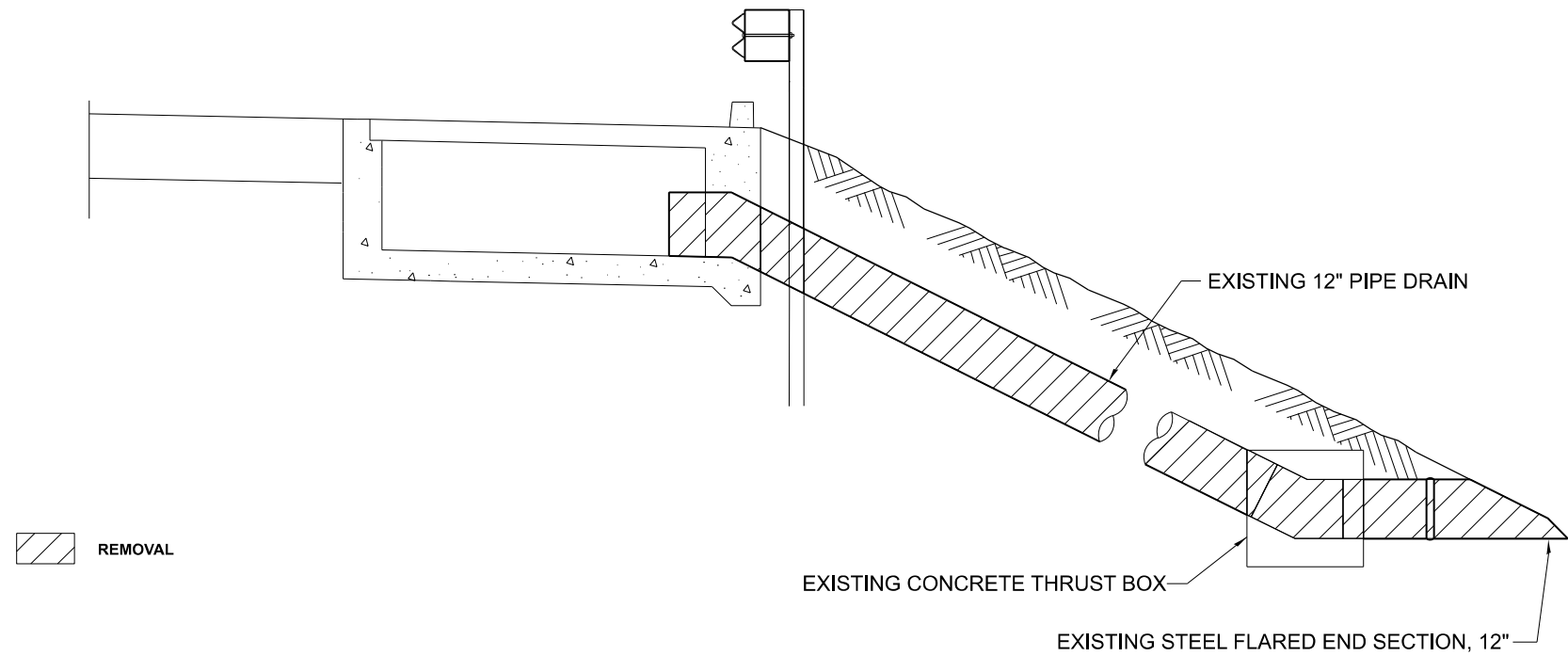
STAGING DETAILS

SCALE: NTS    SHEET 1    OF 1    SHEETS    STA.    TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
314	(110, 111)BJR, BDR	MADISON	19	7
CONTRACT NO. 76T28				
ILLINOIS FED. AID PROJECT				



INLET REPLACEMENT, NW QUADRANT



INLET REPAIR, NE, SE, SW QUADRANTS

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	PLOT DATE   = 3/25/2024	DATE       -	REVISED   -		SCALE: NTS	SHEET 1	OF 1	SHEETS	STA.	TO STA.				

*Salvage: None.*

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
314	(110,111) BJR, BDR	MADISON	19	9
		CONTRACT NO. 76728		
ILLINOIS		EED. AID PROJECT		

GENERAL NOTES

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contactor 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.
3. 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.
4. All exposed concrete edges shall have a standard 3/4" chamfer unless noted otherwise.
5. Fasteners shall be ASTM F 3125 Grade A325 Type 1, mechanically galvanized bolts. Bolts 3/4" Ø, holes 13/16" Ø, unless otherwise noted.
6. 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.
7. Quantity of Deck Slab Repair (Partial) and Epoxy Crack Injection shown on the plans is an estimate based on existing conditions at the time of the estimate. Final quantities shall be determined by the Engineer in the field.
8. Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures."

SCOPE OF WORK

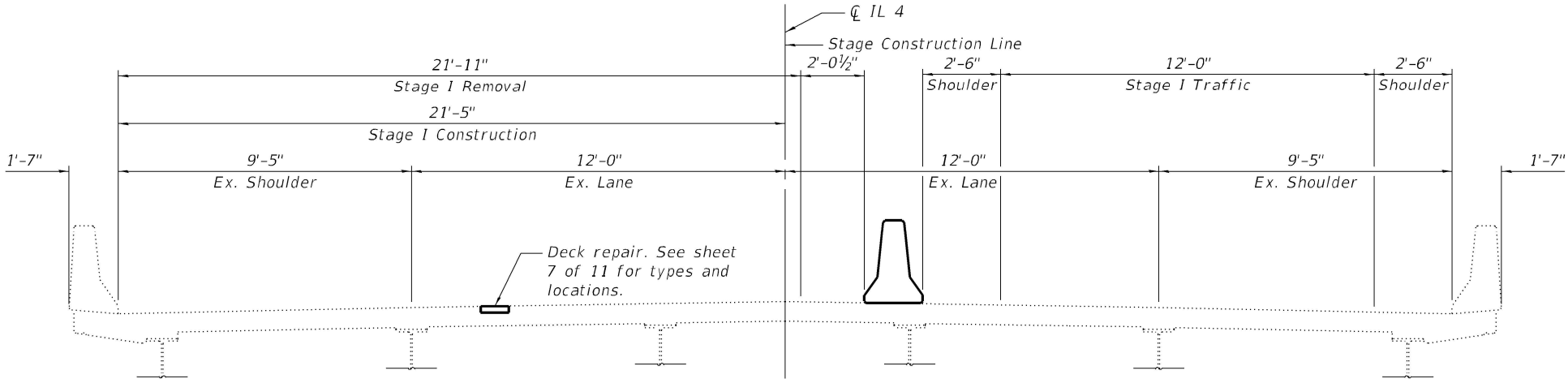
To be completed under stage construction (all work is to be completed from above the deck).

1. Remove existing deck joints at abutments and superstructure concrete.
2. Remove existing diaphragms, supporting angles, stiffeners, and seat plates on both sides of the webs.
3. Complete steel repairs as detailed on Sheets 9 & 10 of 11.
4. Repair bridge deck.
5. Reconstruct deck joints at each abutment with preformed joint strip seal.

TOTAL BILL OF MATERIAL

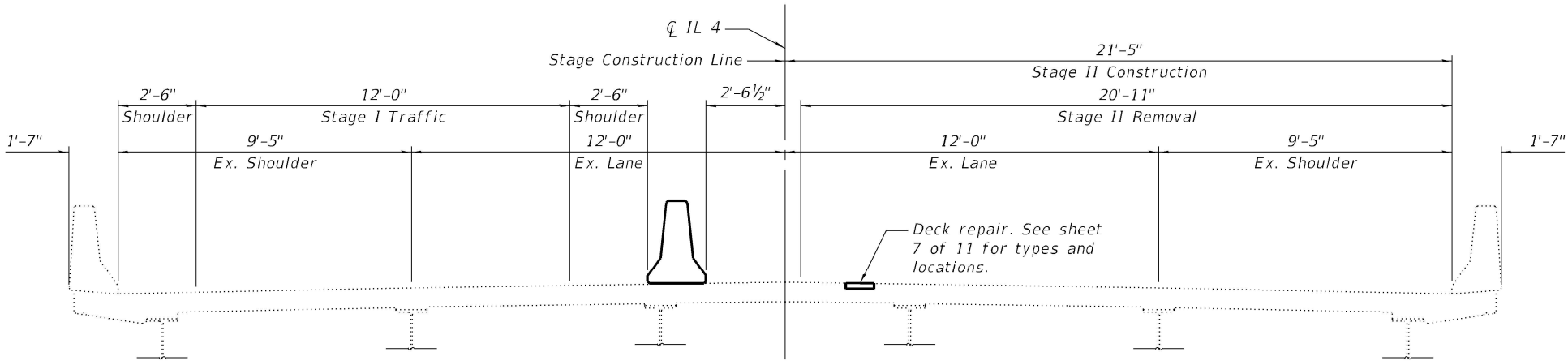
ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu. Yd.	15.5		15.5
Concrete Superstructure	Cu. Yd.	15.9		15.9
* Protective Coat	Sq. Yd.	54		54
Furnishing and Erecting Structural Steel	Pound	4,960		4,960
Reinforcement Bars, Epoxy Coated	Pound	3,810		3,810
Bar Splicers	Each	34		34
Mechanical Splicers	Each	94		94
Preformed Joint Strip Seal	Foot	109		109
Epoxy Crack Injection	Foot	316		316
Structural Steel Removal	Pound	8,350		8,350
Structural Steel Repair	Pound	10,390		10,390
Deck Slab Repair (Partial)	Sq. Yd.	9		9
Jacking and Cribbing	Each	12		12

\* On new concrete only



STAGE 1 - TYPICAL SECTION

(Looking Upstation)  
(Bridge deck shown, approach spans similar)



STAGE 2 - TYPICAL SECTION

(Looking Upstation)  
(Bridge deck shown, approach spans similar)

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

GENERAL DATA  
STRUCTURE NO. 060-0210

SHEET 2 OF 11 SHEETS

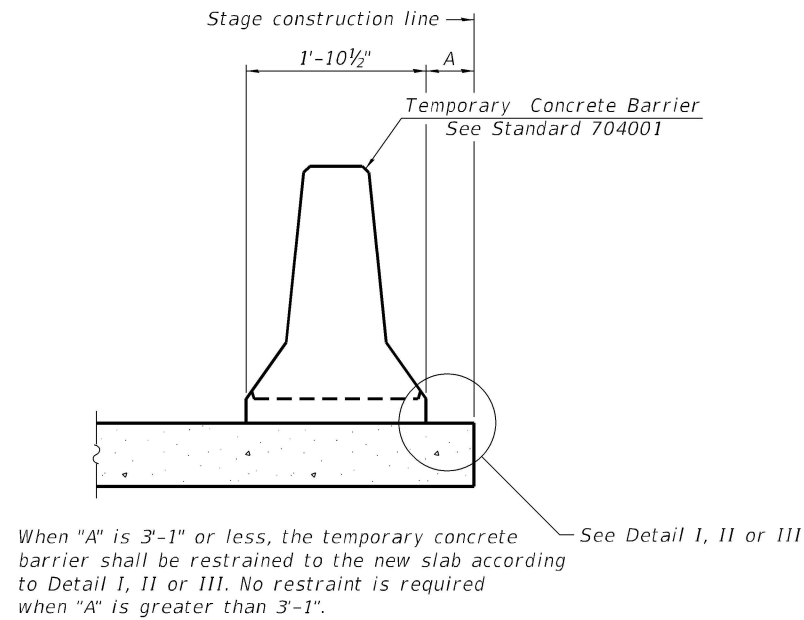
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
314	(110,111) BJR, BDR	MADISON	19	10
CONTRACT NO. 76T28				

ILLINOIS FED. AID PROJECT

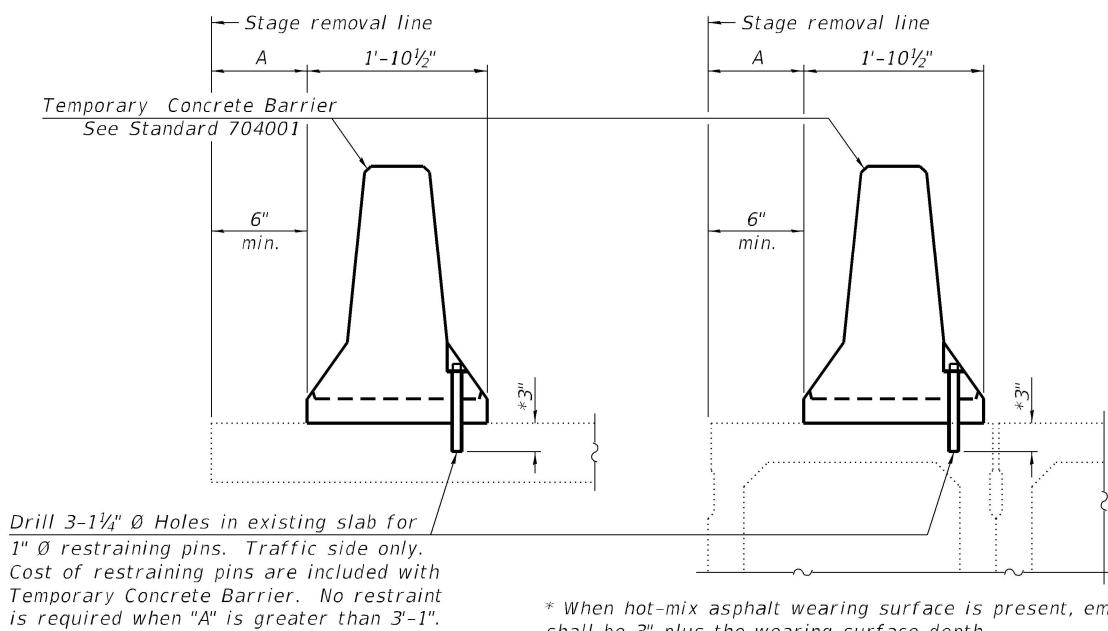
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PLOT DATE =	CHECKED - MMC	REVISED -



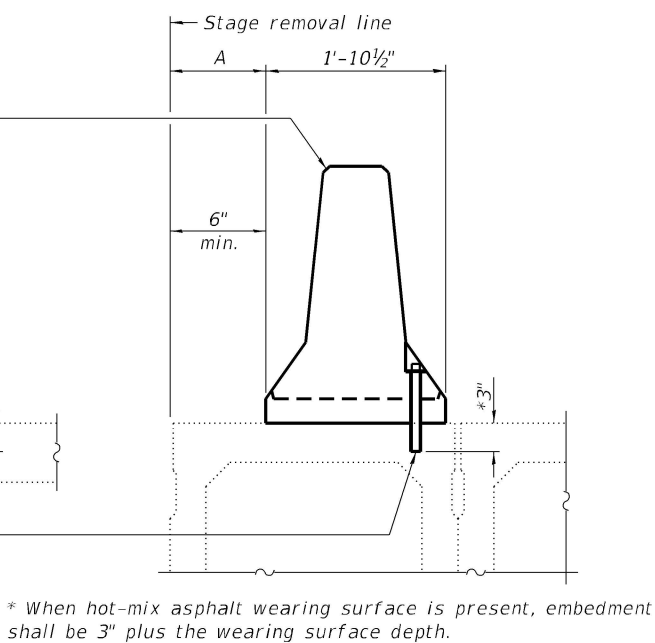
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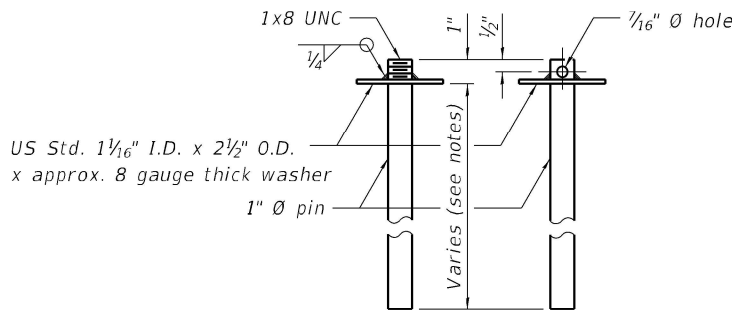
NEW SLAB OR NEW DECK BEAM



EXISTING SLAB

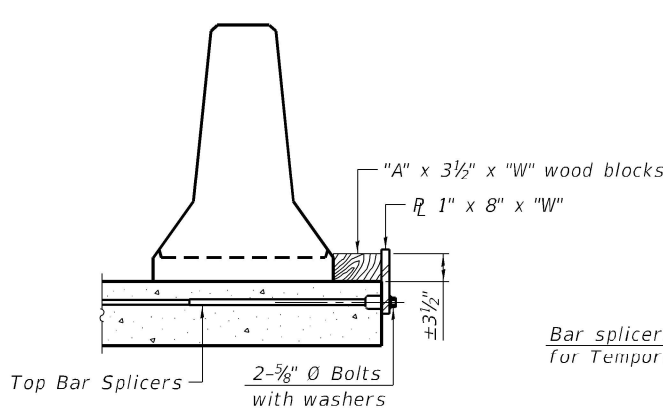


EXISTING DECK BEAM

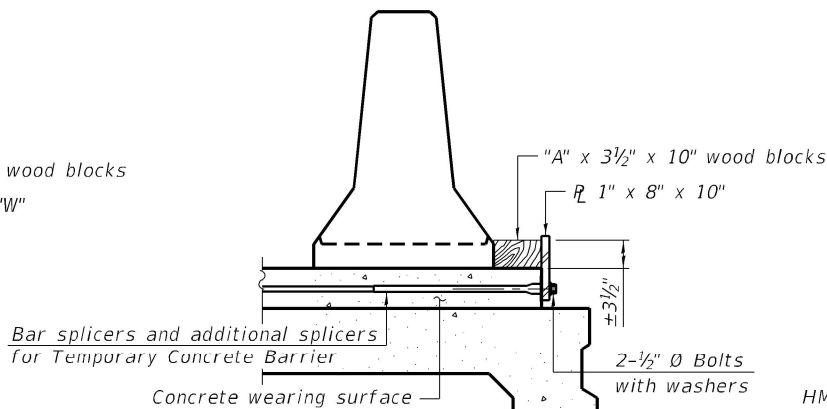


RESTRAINING PIN

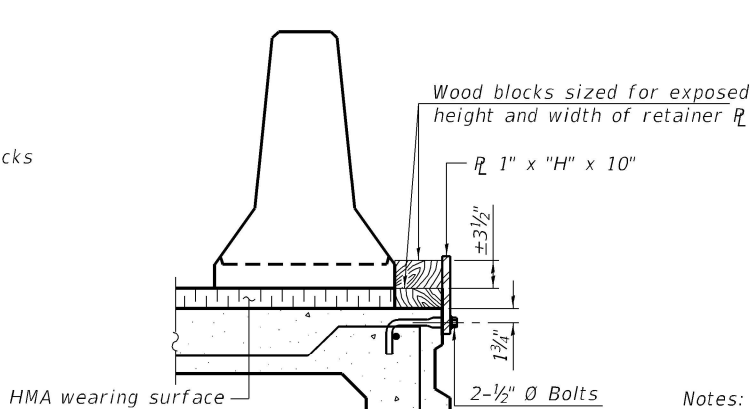
SECTIONS THRU SLAB OR DECK BEAM



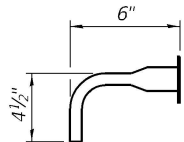
DETAIL I



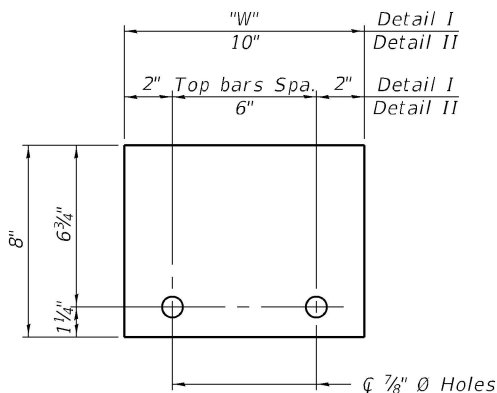
DETAIL II



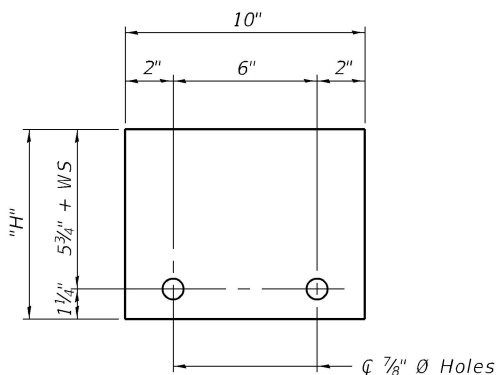
DETAIL III



BAR SPLICER FOR #4 BAR - DETAIL III



STEEL RETAINER R 1" x 8" x "W"  
(Detail I and II)



STEEL RETAINER R 1" x "H" x 10"  
(Detail III)

Notes:  
Cost of retainer assembly is included with Temporary Concrete Barrier.  
A retainer assembly shall be located at the approximate  $\bar{C}$  of each temporary concrete barrier.  
The retainer plate shall not be removed until the concrete on the adjacent stage is ready to be poured. For Detail III applications the retainer plate shall not be removed until just prior to placing the adjacent beam.  
When the 'A' dimension is less than 1 1/2", the wood block shall be omitted and the barrier shall be placed in direct contact with the steel retainer plate. For deck beam applications the minimum required 'A' distance is 6" to accommodate the shear key clamping device.

Detail I - Installation for a new bridge deck or bridge slab.  
Detail II - Installation for a new deck beam with an initial concrete wearing surface. Additional bar splicers shall be provided at 6'-0" centers and paired with the bar splicers of the concrete wearing surface reinforcement to accommodate the installation of the retainer assemblies. The cost of the additional bar splicers is included with the concrete wearing surface.  
Detail III - Installation for a new deck beam with no initial wearing surface or with an initial hot-mix asphalt (HMA) wearing surface present. The deck beam directly beneath the temporary concrete barrier shall be fabricated with bar splicer inserts in the side of the beam, as detailed, to accommodate the installation of the retainer assemblies. A pair of bar splicers, 6" apart, shall be placed at 6'-0" centers along the length of the beam. The cost of the bar splicers is included with the deck beam.

RAILING CRITERIA

NCHRP 350 Test Level	3
Railing Weight (plf)	440

R-27 10-12-2021



200 E. Main St., Suite 100  
Bellaire, Illinois 62223  
618.553.2877 phone  
618.553.2877 fax  
www.kaskaskiaeng.com

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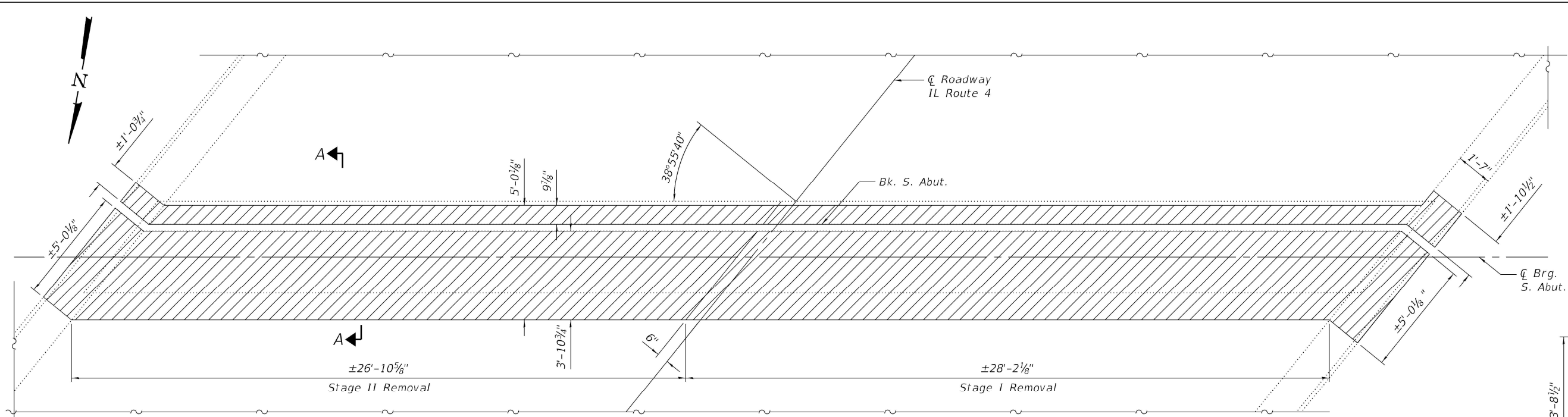
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIER  
STRUCTURE NO. 060-0210

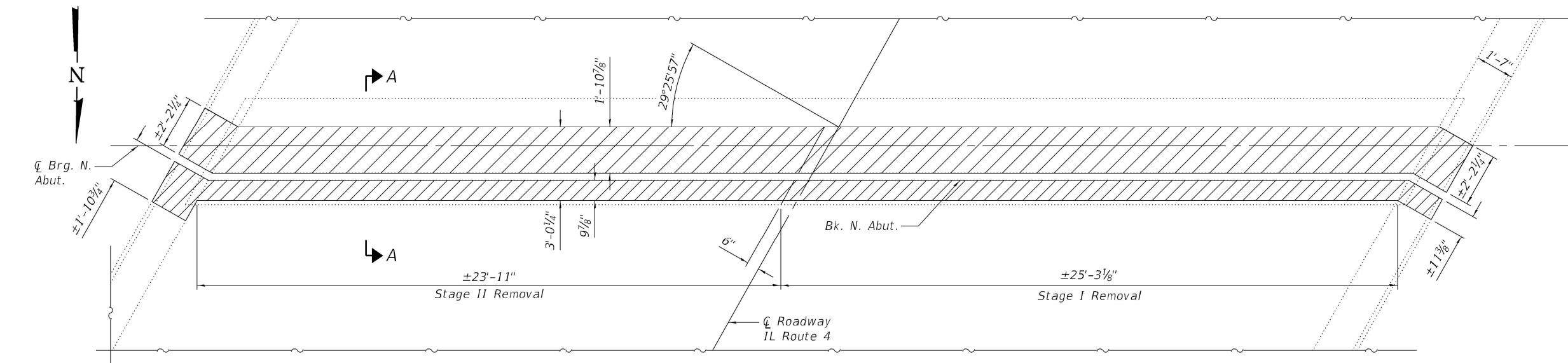
SHEET 3 OF 11 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
314	(110,111) BJR, BDR	MADISON	19	11
CONTRACT NO. 76T28				
ILLINOIS FED. AID PROJECT				

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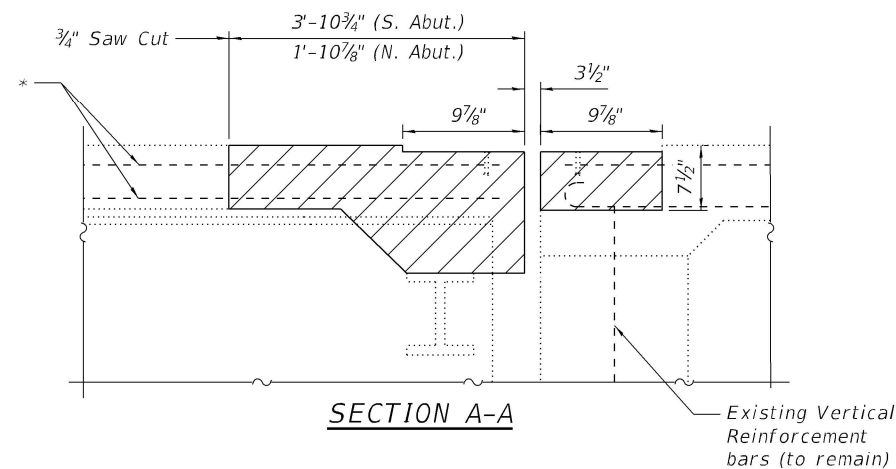
SOUTH ABUTMENT PLAN



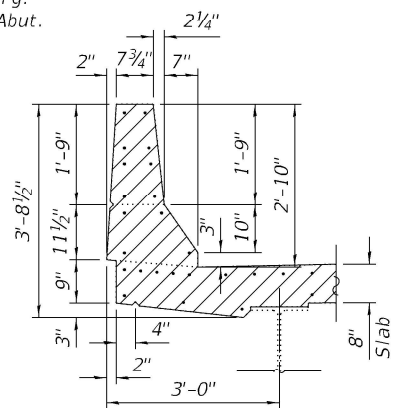
NORTH ABUTMENT PLAN

**Notes:**  
The Contractor shall use extreme care during concrete removal so as not to damage the existing steel beams. Any steel damaged during concrete removal operations shall be repaired at the Contractor's expense.  
Removal of existing expansion joint and associated material shall not be paid for separately, but shall be included in the cost of Concrete Removal.  
Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into new construction.  
Any reinforcement bars that are damaged during concrete removal operations shall be replaced at the Contractor's expense.  
Stud shear connectors damaged during concrete removal operations shall be removed and replaced per Section 505 of the Standard Specifications at the Contractor's expense.

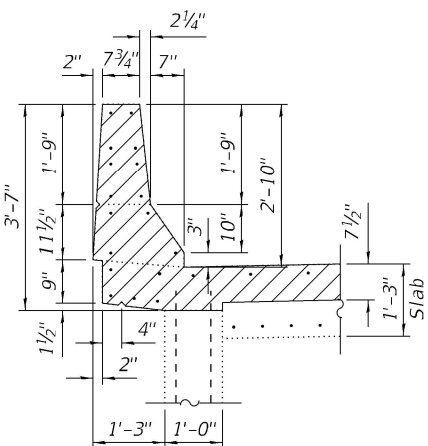
\* At the North Abutment, the existing longitudinal reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal operations shall be replaced at the Contractor's expense. At the South Abutment, after the existing concrete has been removed while keeping the existing longitudinal reinforcement bars in place, cut the existing longitudinal reinforcement in the deck 6" from the previously cut concrete face. The existing longitudinal reinforcement in and below the parapets may remain in place, without being cut. The proposed longitudinal reinforcement bars, b(E), shall be attached to the existing longitudinal reinforcement bars using mechanical splicers.



SECTION A-A



SECTION THRU PARAPET (MAIN SPANS)



SECTION THRU PARAPET (APPROACH SPANS)

**LEGEND**

- Indicates Concrete Removal

**BILL OF MATERIAL**

Item	Unit	Total
Concrete Removal	Cu. Yd.	15.5

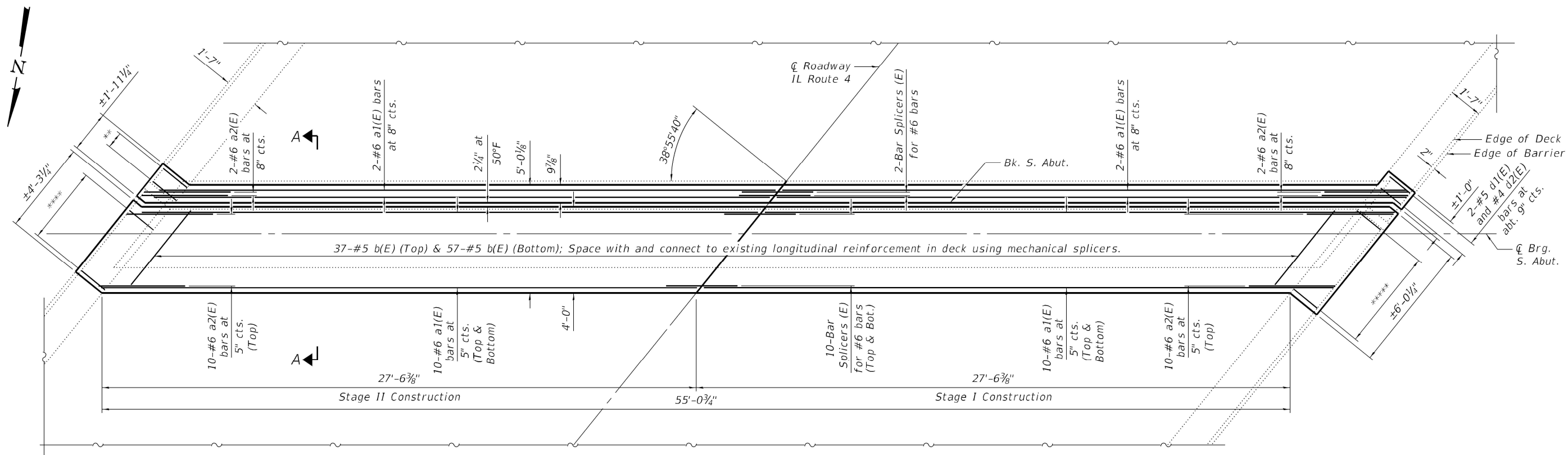
STATE OF ILLINOIS  
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SUPERSTRUCTURE CONCRETE REMOVAL  
STRUCTURE NO. 060-0210

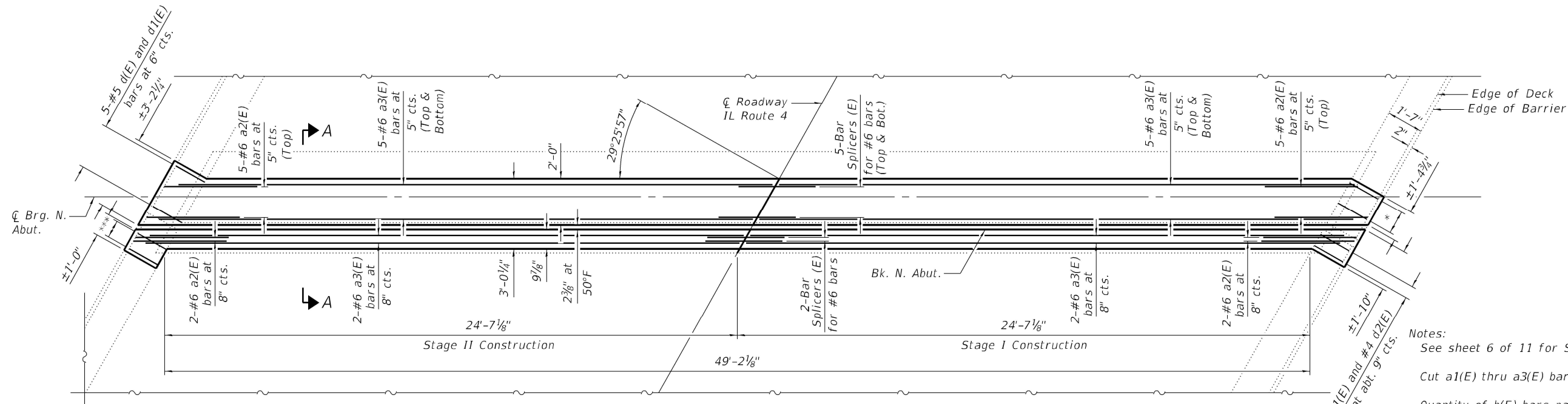
SHEET 4 OF 11 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
314	(110,111) BJR, BDR	MADISON	19	12
CONTRACT NO. 76728				
ILLINOIS FED. AID PROJECT				

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SOUTH ABUTMENT PLAN



NORTH ABUTMENT PLAN

- Notes:
- See sheet 6 of 11 for Section A-A.
  - Cut a1(E) thru a3(E) bars to fit in the field.
  - Quantity of b(E) bars paid will be quantity shown on plans regardless of whether or not additional reinforcement and mechanical splicers are necessary.
  - \* 3-#5 d(E) and d1(E) bars at 6" cts.
  - \*\* 3-#5 d1(E) and #4 d2(E) bars at abt. 6" cts.
  - \*\*\* 2-#5 d1(E) and #4 d2(E) bars at 9" cts.
  - \*\*\*\* 9-#5 d(E) and d1(E) bars at 6" cts.
  - \*\*\*\*\* 11-#5 d(E) and d1(E) bars at 6" cts.

**Kaskaskia**  
Engineering Group, LLC  
Professional Engineering Group  
1810 N. Main St., Suite 100  
Bellaire, Illinois 60010  
630.433.2877 Phone  
630.433.2877 Fax  
www.kaskaskiaeng.com  
1810 N. Main St.  
Bellaire, Illinois 60010  
630.433.2877

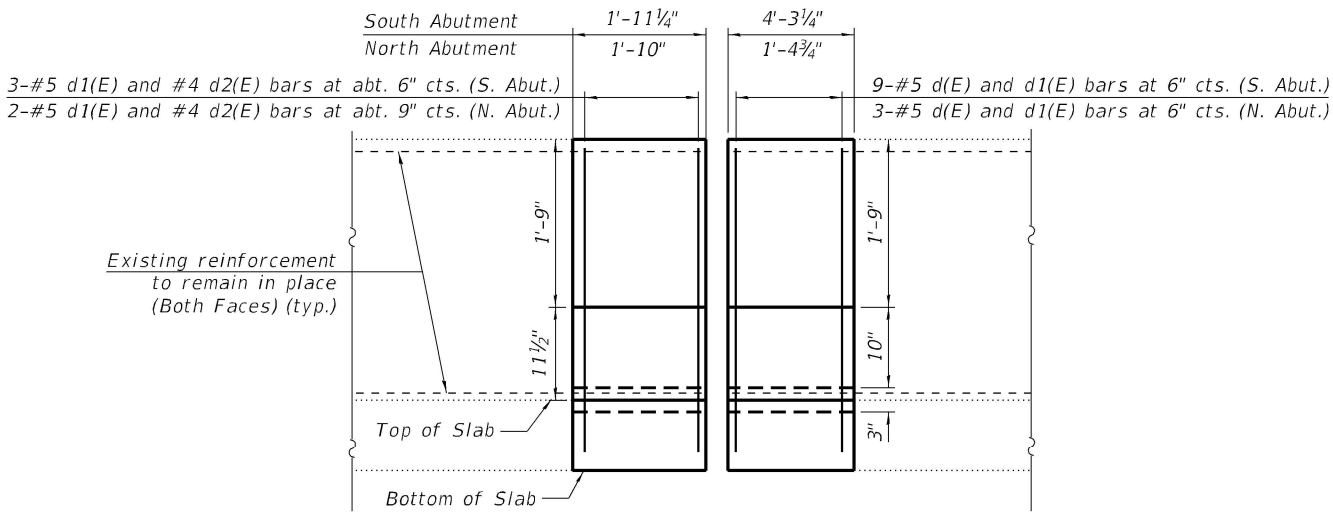
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SUPERSTRUCTURE  
STRUCTURE NO. 060-0210

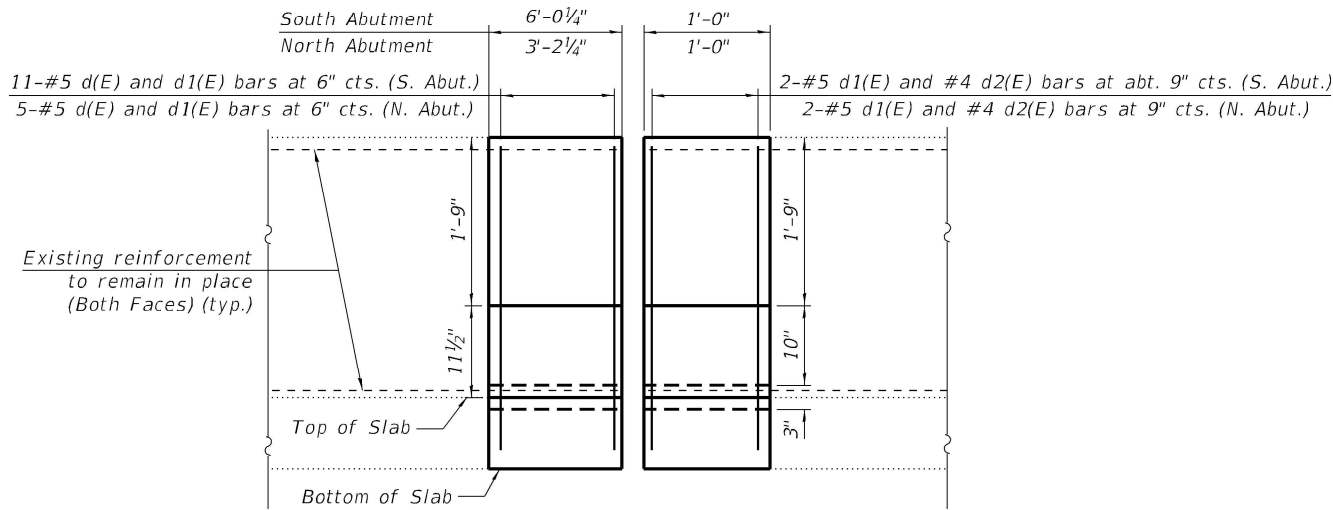
SHEET 5 OF 11 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 76T28				
ILLINOIS FED. AID PROJECT				



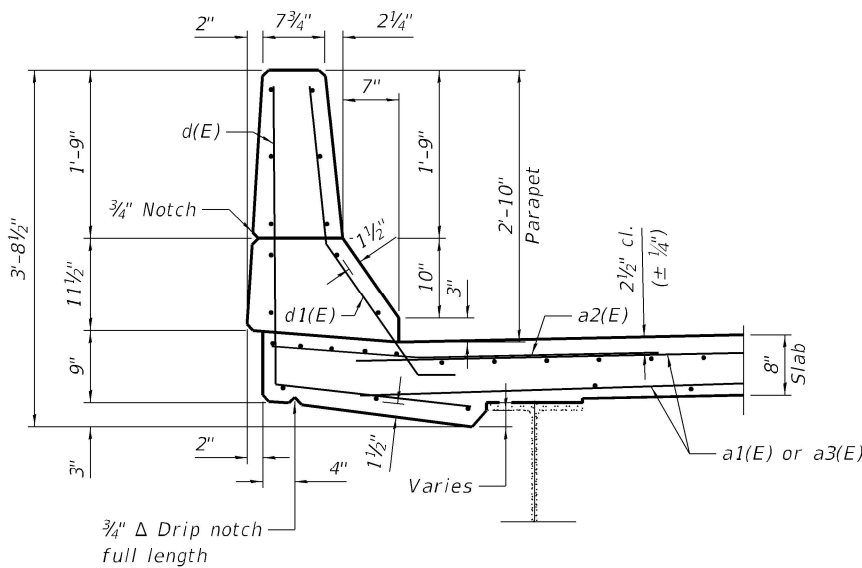
Outside Elevation

(East Parapet - South Abutment and West Parapet - North Abutment)

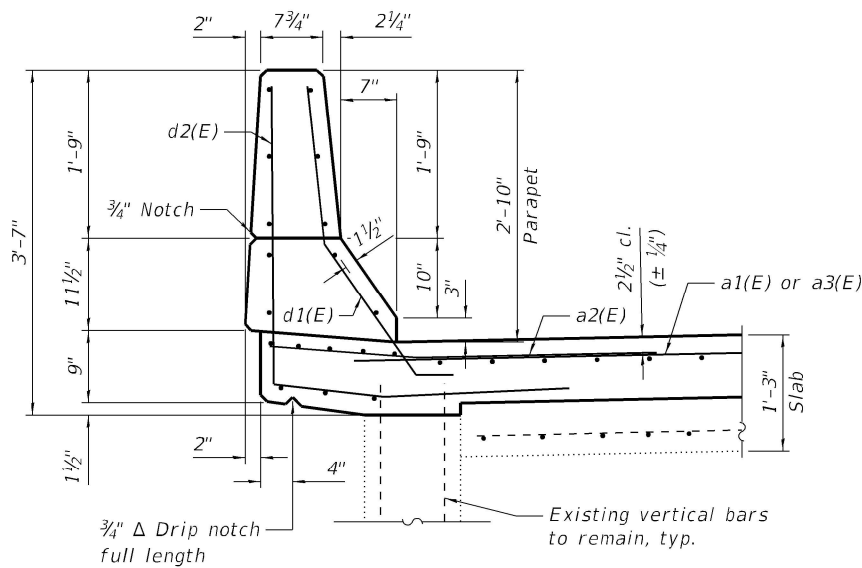


Outside Elevation

(West Parapet - South Abutment and East Parapet - North Abutment)



SECTION THRU MAIN SPAN PARAPET

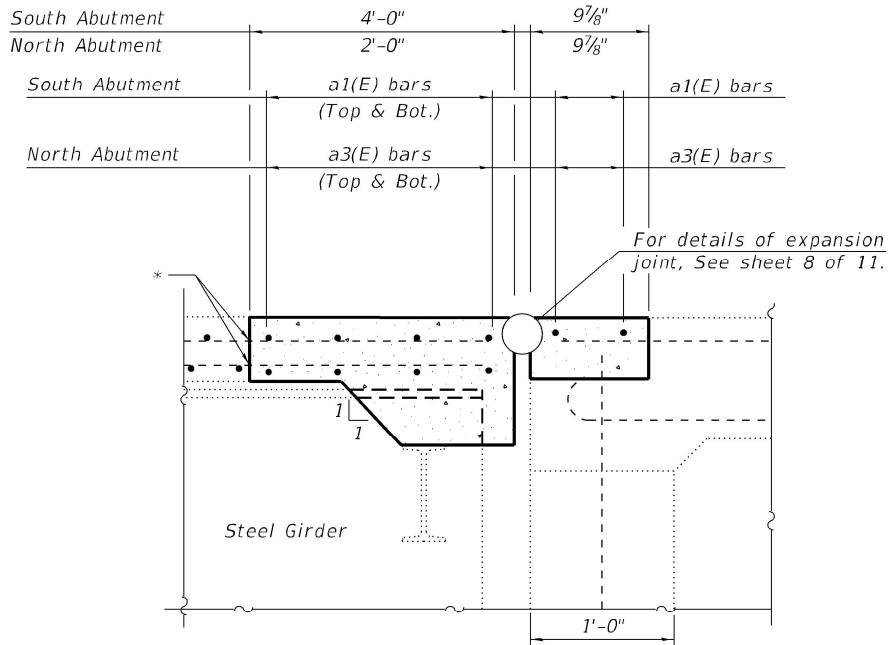


SECTION THRU APPROACH SPAN PARAPET

(Bend d2(E) bar to fit in field as necessary.)

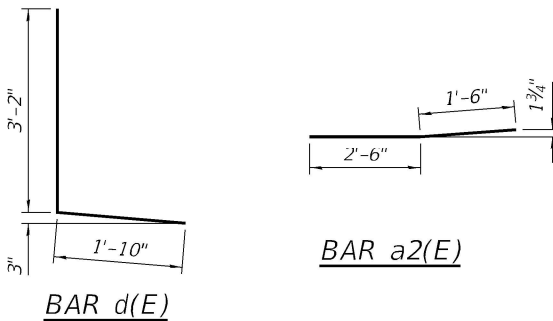
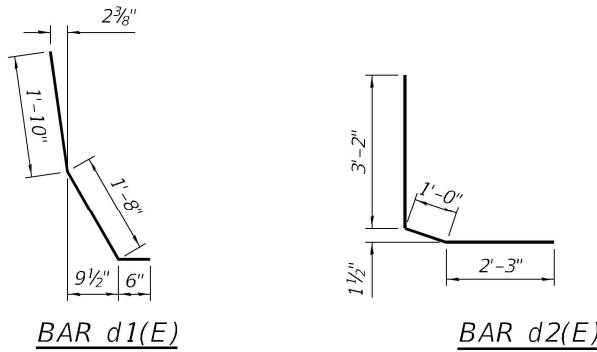
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a1(E)	44	#6	28'-5"	—
a2(E)	38	#6	4'-0"	—
a3(E)	24	#6	25'-5"	—
b(E)	94	#5	4'-6"	—
d(E)	28	#5	5'-0"	—
d1(E)	37	#5	4'-0"	—
d2(E)	9	#4	6'-5"	—
Concrete Superstructure			Cu. Yd.	15.9
Reinforcement Bars, Epoxy Coated			Pound	3,810



SECTION A-A

(at right angle) (Existing longitudinal reinforcement to remain in place at North Abutment shown.)



Note:  
Existing reinforcement bars extending into the removal area shall be cleaned, straightened, and incorporated into new construction. Any reinforcement bars that are damaged during concrete removal operations shall be replaced at the Contractor's expense.

\* At the North Abutment, the existing longitudinal reinforcement bars shall be incorporated into the new construction. At the South Abutment, after the existing concrete has been removed while keeping the existing longitudinal reinforcement bars in place, cut the existing longitudinal reinforcement in the deck 6" from the previously cut concrete face. The existing longitudinal reinforcement in and below the parapets may remain in place, without being cut. The proposed longitudinal reinforcement bars, b(E), shall be attached to the existing longitudinal reinforcement bars using mechanical splicers.

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Engineering Group, LLC  
Professional Engineering Firm  
1870 N. Main St., Suite 100  
Bellaire, Illinois 62220  
618.353.2877 (phone)  
618.353.2877 (fax)  
www.kaskaskiaeng.com  
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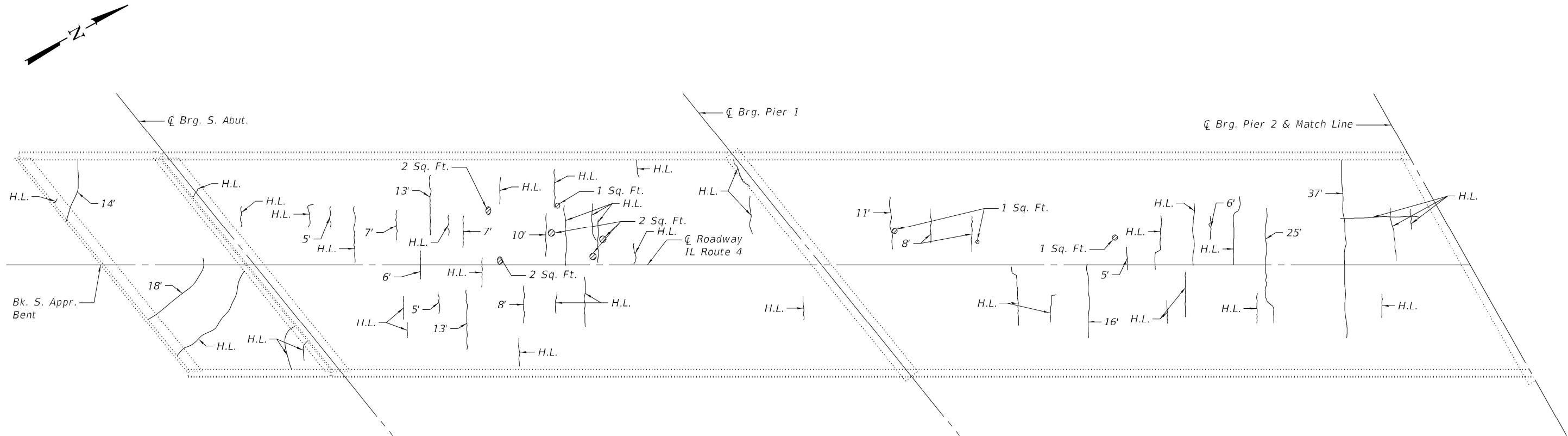
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**SUPERSTRUCTURE DETAILS**  
**STRUCTURE NO. 060-0210**

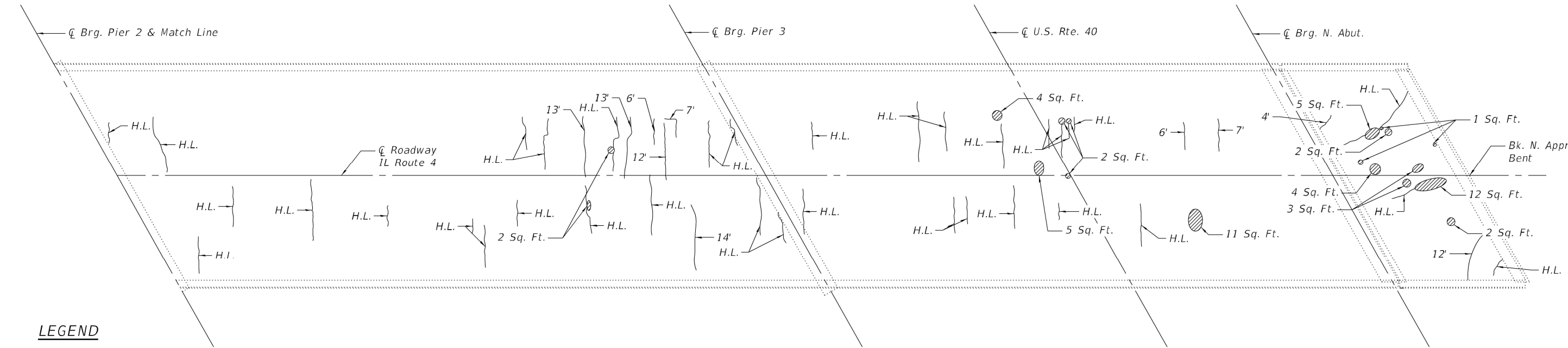
SHEET 6 OF 11 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
314	(110,111) BJR, BDR	MADISON	19	14
CONTRACT NO. 76T28				
ILLINOIS FED. AID PROJECT				

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PLAN OF SOUTH APPROACH SPAN AND SPANS 1 AND 2



PLAN OF SPANS 3 AND 4 AND NORTH APPROACH SPAN

BILL OF MATERIAL

Item	Unit	Total
Epoxy Crack Injection	Foot	316
Deck Slab Repair (Partial)	Sq. Yd.	9

LEGEND

- 6' Epoxy Crack Injection
- H.L. Hairline Crack - Not to be sealed
- Deck Slab Repair (Partial)



200 E. Main St., Suite 100  
Bellaire, Illinois 62220  
618.353.2877 phone  
618.353.2877 fax  
www.kaskaskiaeng.com

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ILLINOIS  
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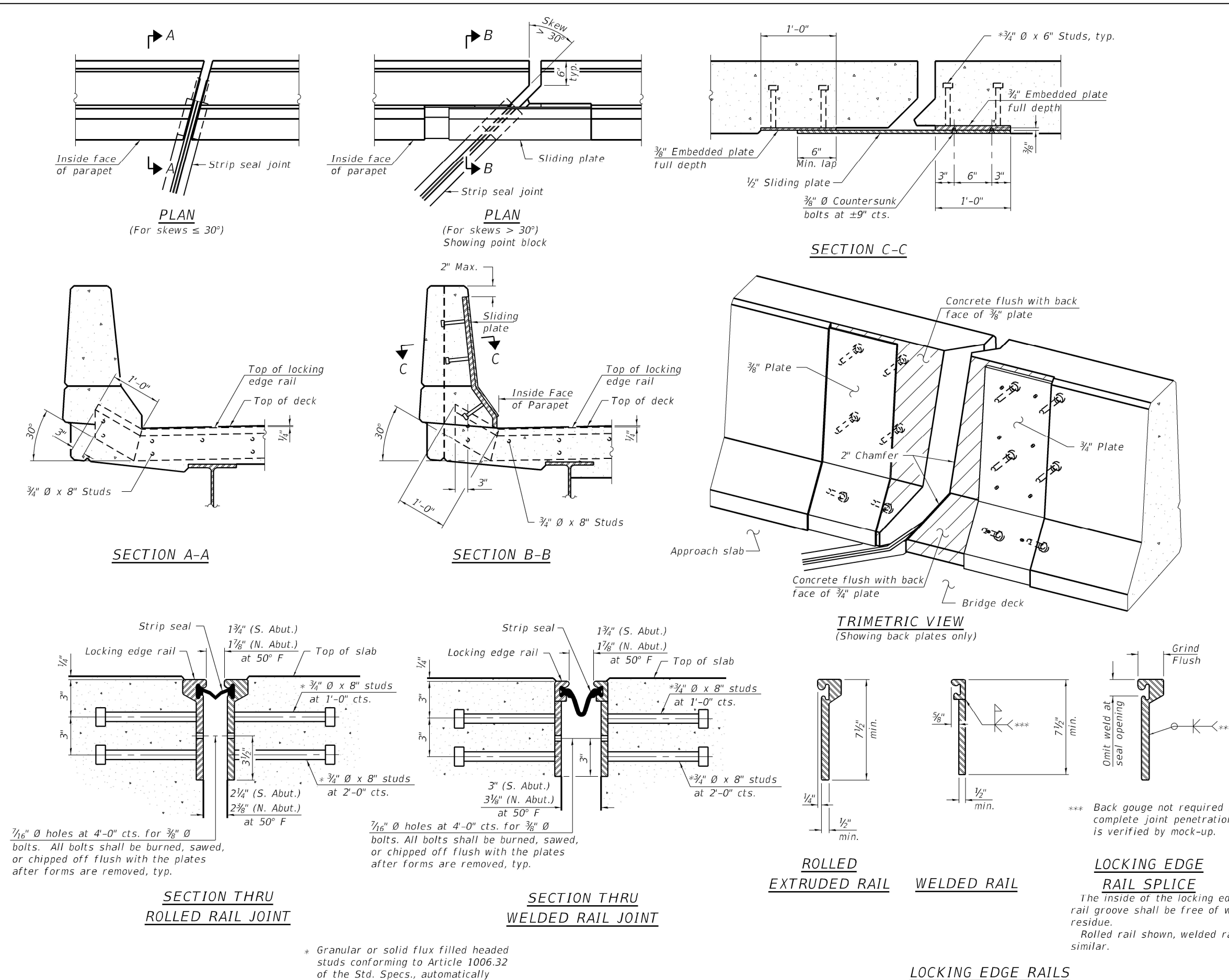
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TOP OF DECK PLAN  
STRUCTURE NO. 060-0210

SHEET 7 OF 11 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 76T28				
ILLINOIS FED. AID PROJECT				

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**Notes:**

The strip seal shall be made continuous and shall have a minimum thickness of  $\frac{1}{4}$ ". 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  $\frac{3}{16}$ ", sealed with a suitable sealant. Joints in rails within 10 ft. of curbs shall be welded.

Parapet plates and anchorage studs for skews  $> 30^\circ$  included in the cost of Preformed Joint Strip Seal.

#### BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	109



200 E. Main St., Suite 100  
Bellaire, Illinois 62220  
618.453.2877 phone  
618.453.2877 fax  
www.kaskaskiaeng.com

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Illinois Professional Design Firm  
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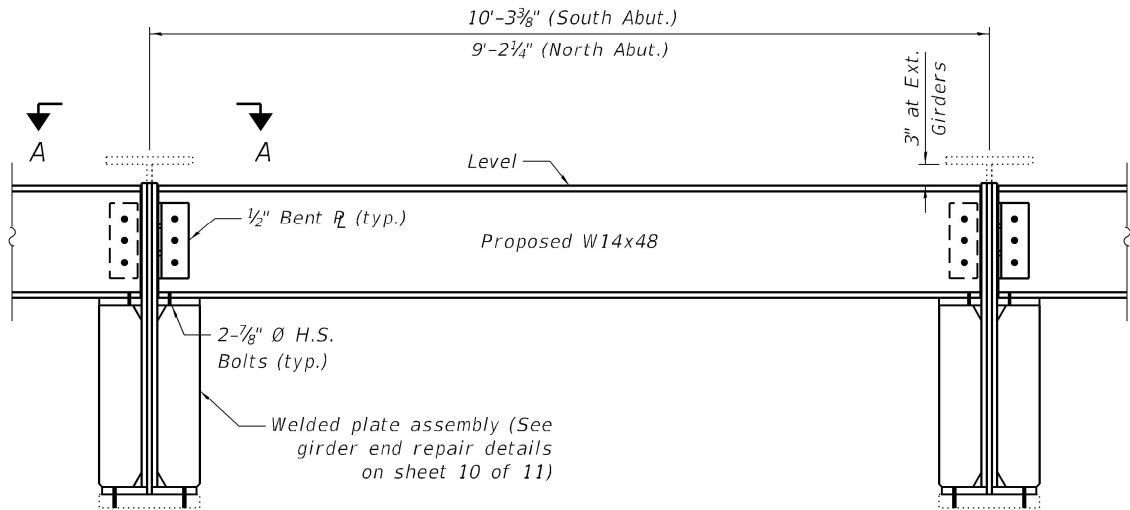
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL  
STRUCTURE NO. 060-0210

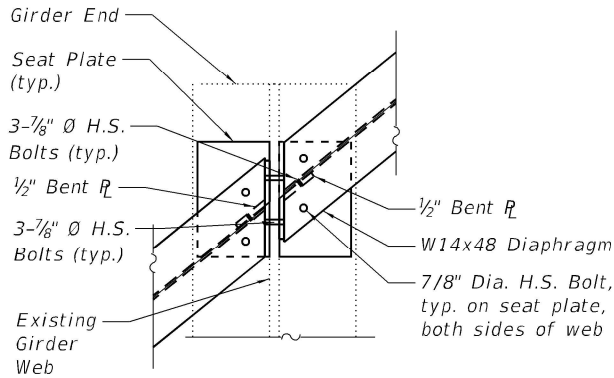
SHEET 8 OF 11 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
314	(110,111)BJR, BDR	MADISON	19	16
CONTRACT NO. 76T28				
ILLINOIS FED. AID PROJECT				

MODEL: Default  
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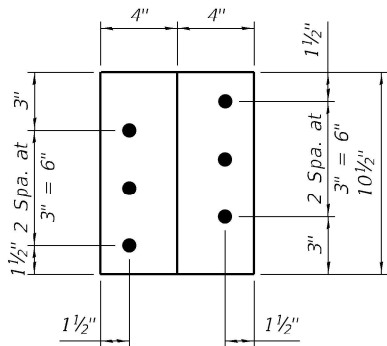


DIAPHRAGM REPLACEMENT DETAIL, TYPE A



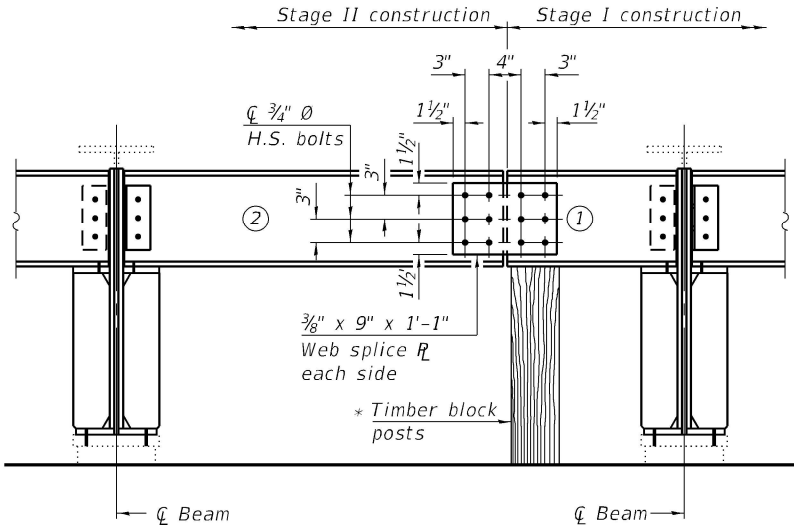
VIEW A-A

Symmetric about  $\bar{C}$  existing plate girder except at exterior beams.  
Skews vary between abutments.



BENT PLATE UNFOLDED ELEVATION

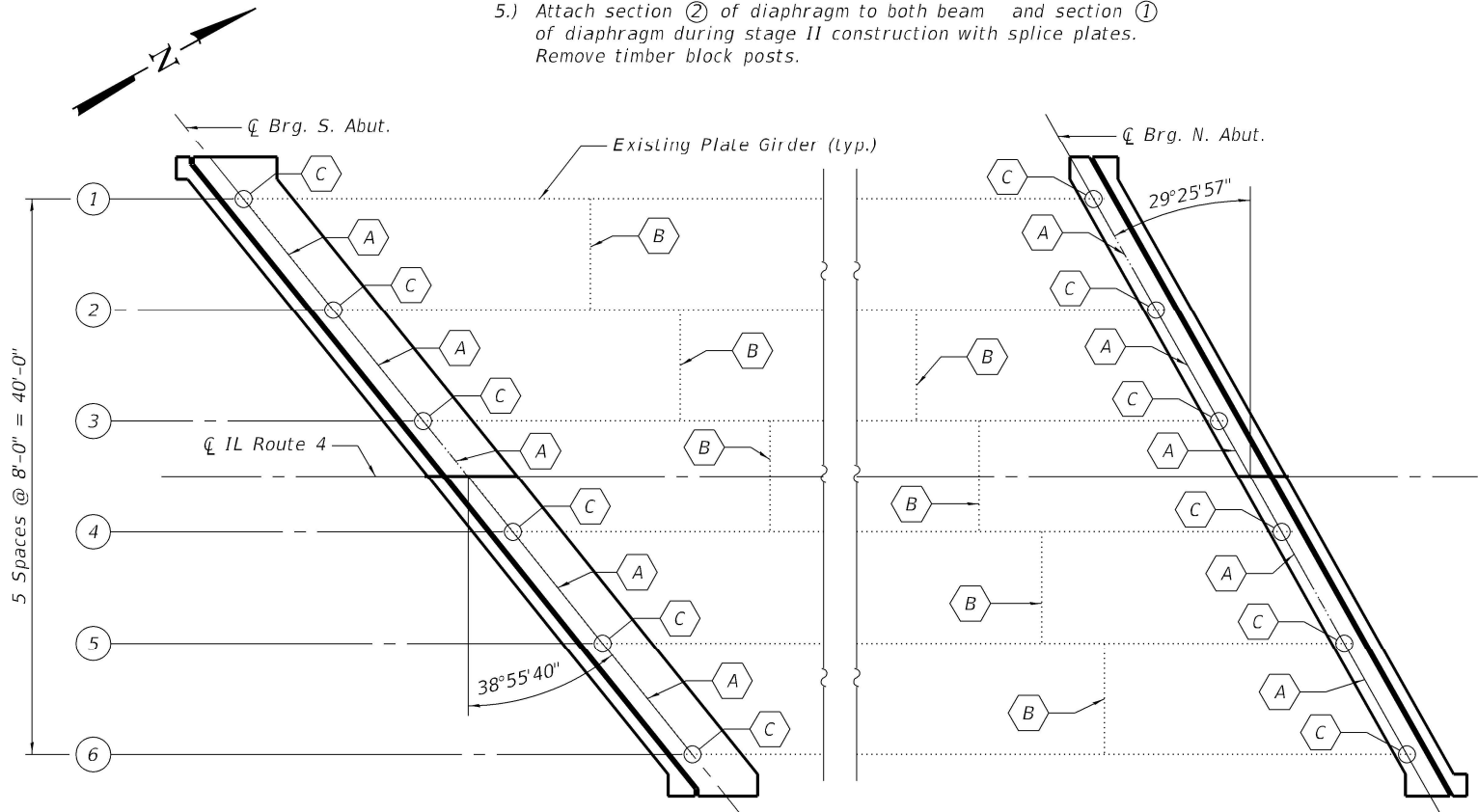
\* Cost of Timber Block Posts is included with Structural Steel.



END DIAPHRAGM

END DIAPHRAGM STAGE CONSTRUCTION SEQUENCE

- 1.) Order diaphragm in two sections.
- 2.) Attach section ① of diaphragm to beam
- 3.) Place timber block posts between section ① of diaphragm and abutment bearing section.
- 4.) Attach section ② of diaphragm to both beam and section ① of diaphragm during stage II construction with splice plates. Remove timber block posts.



STEEL REPAIR PLAN

STEEL REPAIR NOTES

All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.

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 work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

All new structural steel shall be hot-dip galvanized. See Special Provisions for "Hot Dip Galvanizing for Structural Steel."

All metallizing disturbed shall be repaired with zinc-rich paint.

Fasteners shall be ASTM F 3125 Grade A325 Type 1, mechanically galvanized bolts. Bolts 7/8"  $\varnothing$ , open holes 1 1/16"  $\varnothing$ , unless otherwise noted.

Cost of removal of existing diaphragms, seat plates, stiffeners, and web portions will be paid as Structural Steel Removal.

Cost of replacement diaphragms will be paid as Furnishing and Erecting Structural Steel.

Cost of welded plate assemblies and web plate repairs will be paid as Structural Steel Repair.

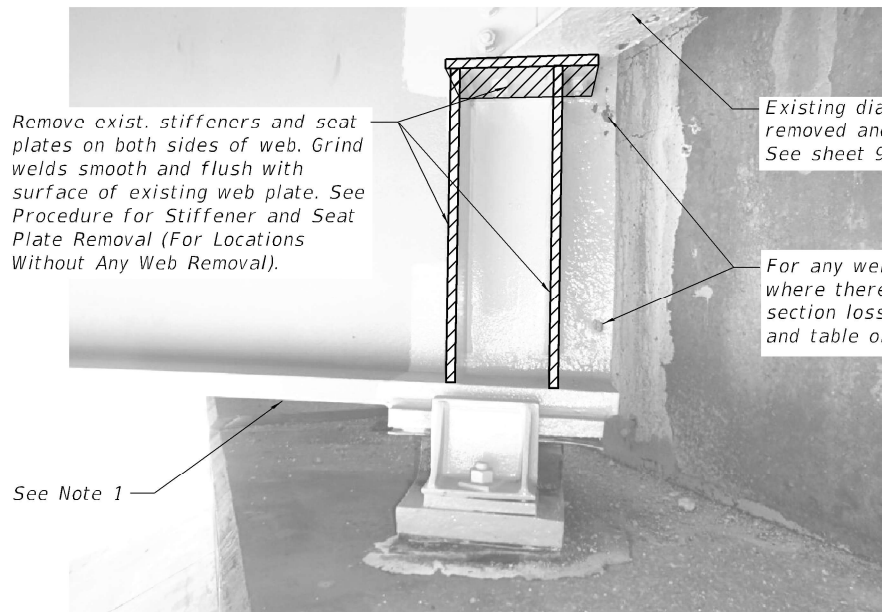
The cost for removal and installation of all members necessary to complete the work as detailed on the plans and as specified in the Special Provisions and repairing existing coating, including cost of drilling holes in existing steel members, shall be included in Structural Steel Repair.

LEGEND

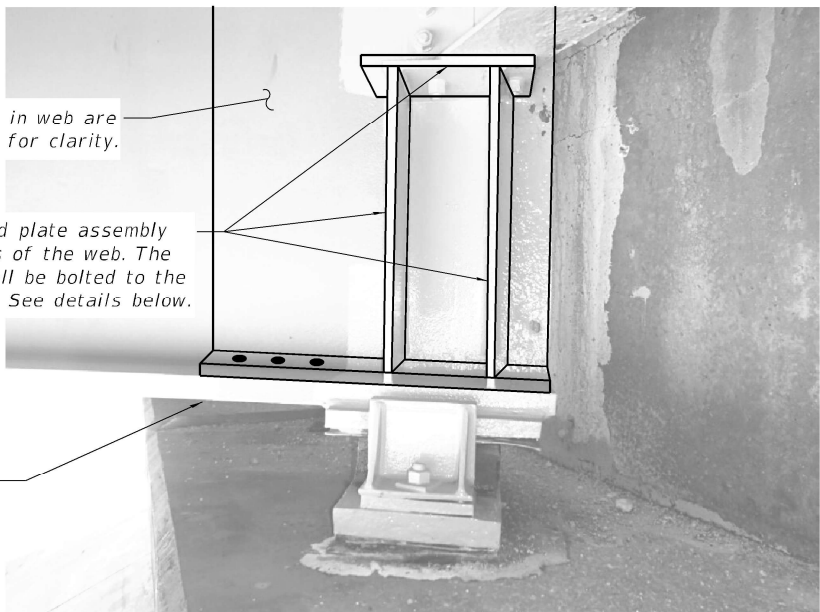
- Ⓐ - Existing end diaphragm to be replaced
- Ⓑ - Existing intermediate diaphragm to remain (no repair required)
- Ⓒ - Proposed Girder end repair (See sheet 10 of 11 for details)
- - Shop-drilled hole
- - Field-drilled hole



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FILE NAME: pw\kleg-pw-bendley.com\kleg-pw-01\Documents\DOT Projects\20-1064.06 PTB 195-056 W06 - Repairs IL4 over US40 (554)VQ\_IDOT\Structures\0600210-76T28-011-Repairs Dtl's.dgn  
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Bellaire, Illinois 62220  
618.553.2877 phone  
618.553.2877 fax  
www.kaskaskiaeng.com  
Kaskaskia  
Engineering Group, LLC  
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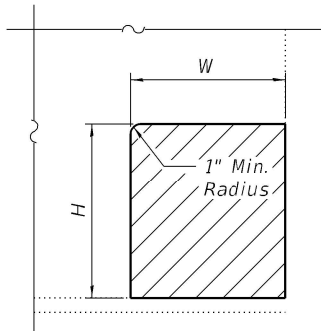


SCHEMATIC DIAGRAM - STEEL REMOVAL AT GIRDER ENDS



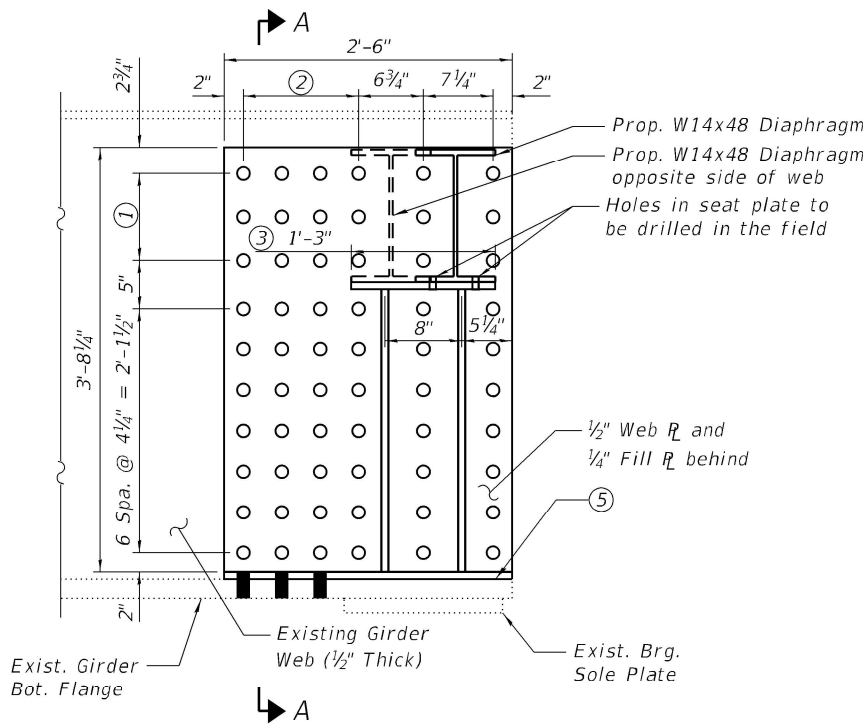
SCHEMATIC DIAGRAM - PROPOSED RETROFIT AT GIRDER ENDS

Girder No.	South Abutment		North Abutment	
	H	W	H	W
1	2'-6"	1'-6"	—	—
2	2'-6"	1'-6"	—	—
3	2'-6"	1'-6"	—	—
4	—	—	2'-6"	1'-6"
5	2'-6"	1'-6"	2'-6"	1'-6"
6	—	—	—	—



GIRDER WEB REMOVAL-  
APPROXIMATE DIMENSIONS

Dimensions are approximate based on inspection photographs.  
Actual limits to be determined in the field by the Engineer.



GIRDER END - ELEVATION

For Girders 1 & 6 at the North Abutment, and Girder 6 at the South Abutment, install the welded plate assembly only on the inside face of girder web.

For the outside face of the Girder 1 web at the South Abutment, only install the fill plate, web plate, and flange plate.

For all other girder ends, install assembly on both sides of the girder web.

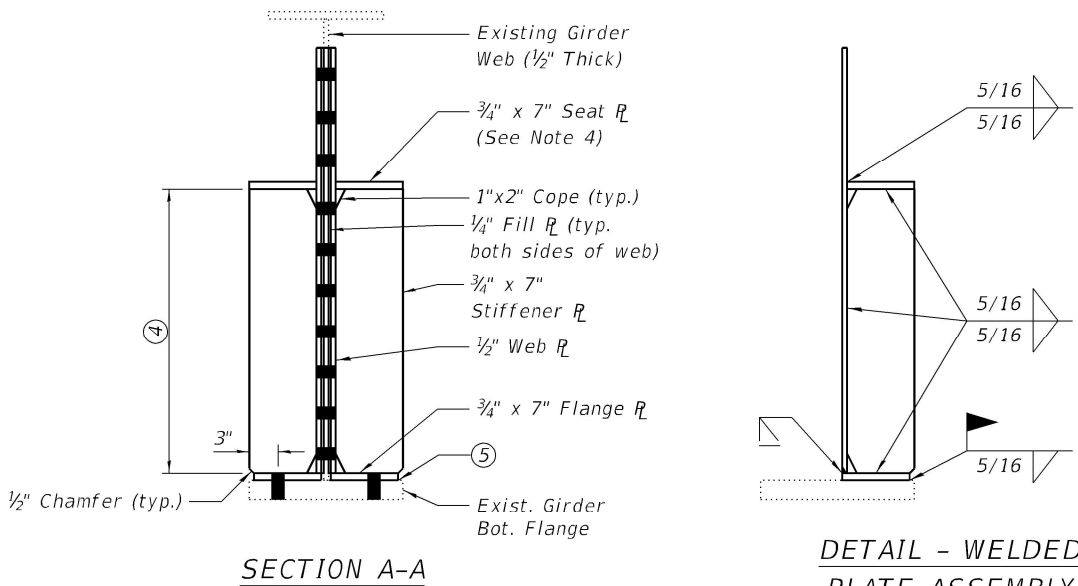
- ① 2 Spa. @  $4\frac{1}{2}" = 9"$   
② 3 Spa. @  $4" = 1'-0"$

- ③ Seat plate to be centered on the stiffener plates.  
④ Height of Stiffener Plates to be verified by the Contractor in the field prior to ordering steel repair materials.

- ⑤ Field weld proposed flange plate to existing girder bottom flange for the length of the existing bearing.

BEAM REACTIONS

Reaction	S. Abut.	N. Abut.
R <sub>ℓ</sub>	(k) 70.3	69.3
R <sub>⊥</sub>	(k) 47.5	47.4
R Imp.	(k) 10.0	10.0
R (Total)	(k) 127.8	126.7



SECTION A-A

DETAIL - WELDED  
PLATE ASSEMBLY

(For clarity, only one side of the welded plate assembly and only the bottom flange of the existing girder are shown.)

PROCEDURE FOR STIFFENER AND SEAT PLATE REMOVAL  
(FOR LOCATIONS WITHOUT ANY WEB REMOVAL)

- Cut existing seat plates and stiffener along web as shown, with a 1" R (Min.) at web. The minimum distance from cut to face of web shall be the larger of  $\frac{1}{4}"$  or web to plate weld size, with removal of remaining material by grinding as described below. The cut shall be made parallel to the web and flanges without angling the cut towards the web or flanges. Equipment and method of cutting shall be approved by the Engineer. Any method of removal to be used shall ensure that no damage is done to the existing web or flanges. Cutting shall be done in a manner such that the paint on the opposite face of the web is not damaged. If damage to the paint occurs due to cutting, the damaged area shall be repainted at the Contractor's expense and procedures shall be modified to prevent damage at subsequent removal locations.
- Remove material between cut and web by grinding and grind smooth at web surfaces and cut end of seat plates and stiffener. Web plate surfaces and cut end of seat plates and stiffener shall have a roughness overage (Ra) of 250  $\mu$  in or less. Grinding equipment shall be approved by the Engineer. The grinding operation should not gouge the girder web plate.
- The web and flanges surface at the modification shall be inspected using dye penetrant or magnetic particle (MT) methods. Any cracks found shall be identified and reported to the Bureau of Bridges and Structures for further disposition.
- The exposed steel surfaces shall be cleaned and painted using an aluminum epoxy mastic primer according to Article 506.05 of the Standard Specifications.

NOTES:

- Jack existing girder before installing welded plate assembly. Jacking and Cribbing should be in-place prior to and during the steel repair work. Clamp the assembly to existing girder bottom flange before drilling holes in the existing web using the new assembly as a template. Jacking and Cribbing can be removed after the steel repair work is complete.
- The web area shall be inspected by the Engineer before installing the stiffener plate assemblies. Any area with severe section loss shall be cut out (edges ground smooth) and replaced with a fill plate of the same thickness. The fill plate shall be sandwiched between the proposed welded plate assemblies. For webs not being cut, a steel putty/filler suitable for structural steel shall be utilized to fill any areas of section loss.
- All bolts on this sheet shall be  $\frac{7}{8}"$  dia. A325 bolts.
- New W14 diaphragm to sit on and be bolted to the proposed seat plate. Drill holes in the seat plate in the field after the W14 diaphragm has been positioned.
- All steel for the welded plate assembly shall be AASHTO M-270 Grade 50.
- As required by Special Provision "Jacking and Cribbing", the differential jacking height allowed between adjacent beams with bridge deck in place is  $\frac{1}{8}"$ . Jacking shall relieve the dead load reaction and one half of the live load reaction (including impact) on the girder before repair work starts.

BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Structural Steel	Pound	4,960
Structural Steel Removal	Pound	8,350
Structural Steel Repair	Pound	10,390
Jacking and Cribbing	Each	12

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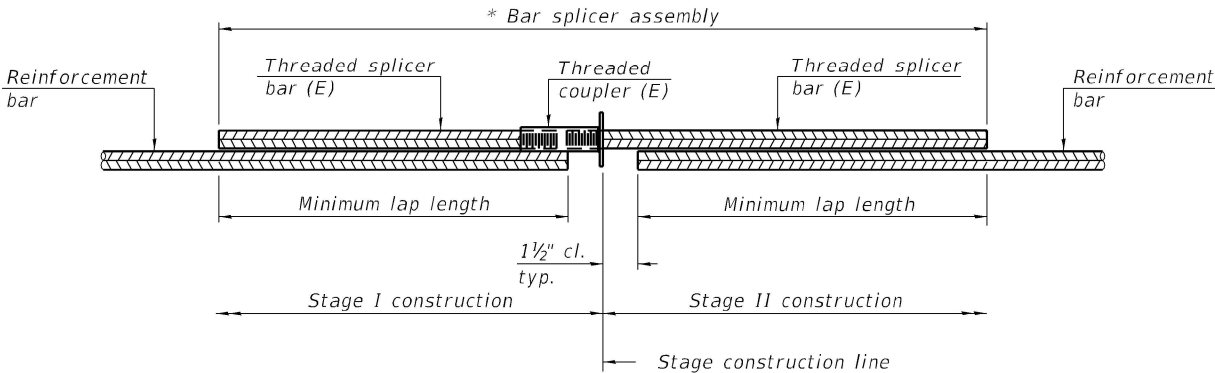
STEEL REPAIR DETAILS (SHEET 2 OF 2)  
STRUCTURE NO. 060-0210

SHEET 10 OF 11 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
314	(110,111)BJR, BDR	MADISON	19	18
CONTRACT NO. 76T28				
ILLINOIS FED. AID PROJECT				



MODEL: Default  
FILE NAME: pw\\ksg-pw-bentley.com\\ksg-pw-01\\Documents\\DOT Projects\\20-1064.06 PTB 195-056 W06 - Repairs IL4 over US40 (554)\\0\_IDOT\\Structures\\0600210-76T28-014-BarSplacers.dgn



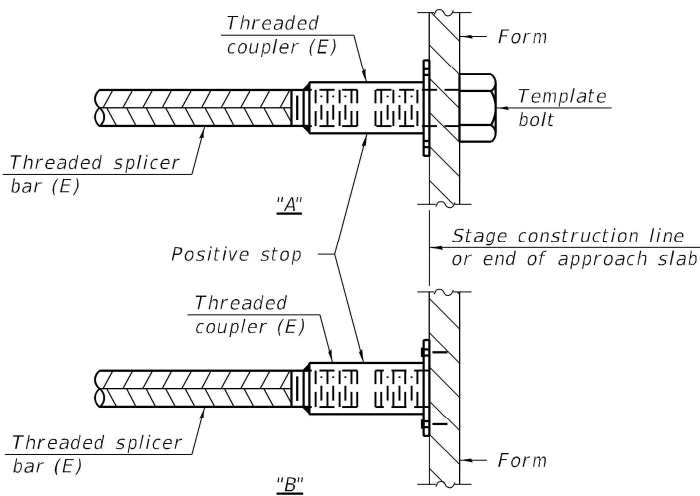
**STANDARD BAR SPLICER ASSEMBLY PLAN**

Only bar splicer assemblies as presented on the approved QPL list may be used.

Threaded splicer bar length = min. lap length + 1 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
S. Appr. Span Deck	#6	2	4'-0"
N. Appr. Span Deck	#6	2	4'-0"
Main Span Deck	#6	30	4'-0"

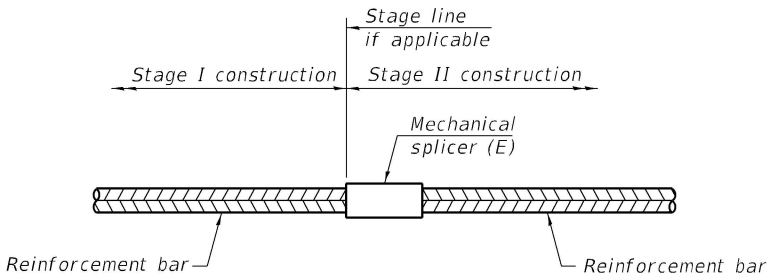


**INSTALLATION AND SETTING METHODS**

"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
Main Span Deck	#5	94

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

2-1-2023



200 E. Main St., Suite 100  
Bellaire, Illinois 62223  
618.455.8877 phone  
618.455.8877 fax  
www.kaskaskiaeng.com

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USER NAME =	DESIGNED - MLC	REVISED -
	CHECKED - MMC	REVISED -
PLOT SCALE =	DRAWN - MLC	REVISED -
PLOT DATE =	CHECKED - MMC	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS  
STRUCTURE NO. 060-0210

SHEET 11 OF 11 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
314	(110,111) BJR, BDR	MADISON	19	19
CONTRACT NO. 76T28				
ILLINOIS FED. AID PROJECT				