

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
313	(21-HB-2)BRR-1	KNOX	16	1
		ILLINOIS	CONTRACT NO. 68F99	

INDEX OF SHEETS

1. COVER SHEET
2. GENERAL NOTES & COMMITMENTS
3. LINE DIAGRAM
4. - 5. SUMMARY OF QUANTITIES
6. TYPICAL SECTION
7. CROSS SECTION
8. SCHEDULE OF QUANTITIES
9. PROPOSED TRAFFIC CONTROL
10. - 11. DETOUR AND CLOSURE DETAIL
12. - 16. REPAIR DETAIL SHEETS

HIGHWAY STANDARDS

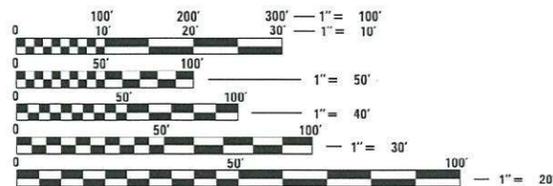
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- 000001-08
- 701006-05
- 701411-09
- 701421-08
- 701451-05
- 701601-09
- 701901-08
- 780001-05

FUNCTIONAL CLASSIFICATION

MINOR COLLECTOR

2019 ADT: 125

PV: 84% SU: 8% MU: 8%



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 EXCAVATORS  
1-800-892-0123  
OR 811

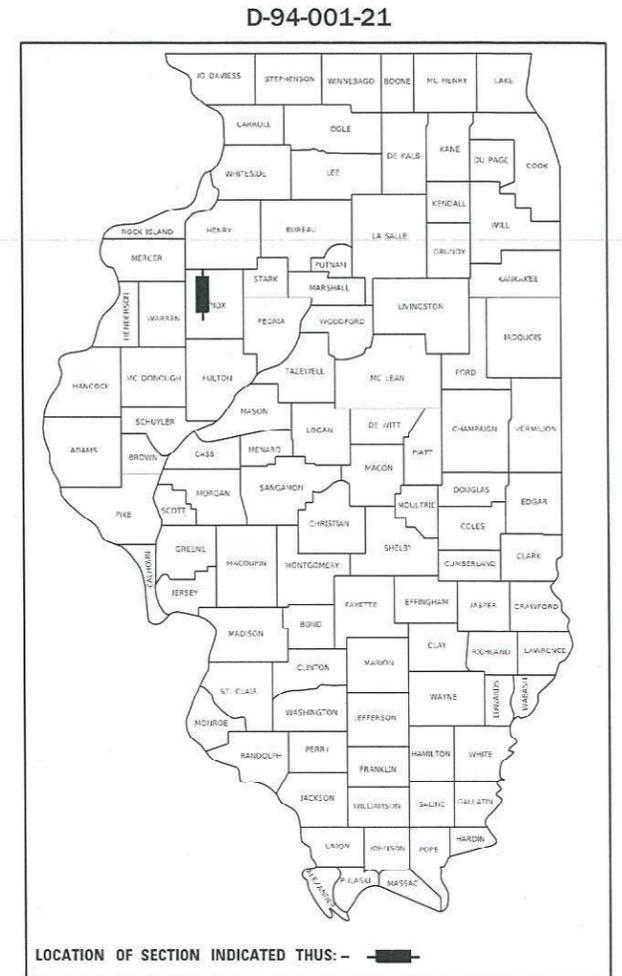
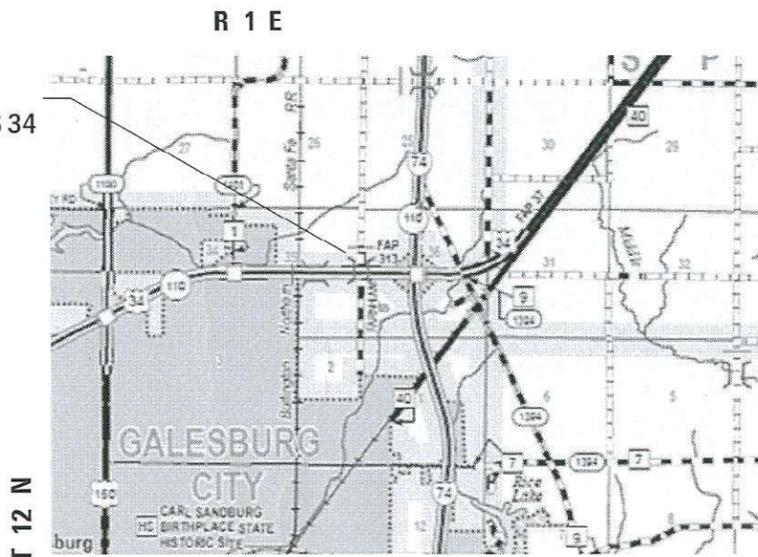
PROJECT ENGINEER: RICH DOTSON (309)671-3455  
PROJECT MANAGER: TRAVIS WALLENFANG (309)671-3474  
CATALOG NO. 036113-00D  
CONTRACT NO. 68F99

PROPOSED  
HIGHWAY PLANS

FAP ROUTE 313 (US 34)  
SECTION (21-HB-2)BRR-1  
PROJECT STATE  
BRIDGE BEAM REPAIR  
KNOX COUNTY

C-94-002-21

SN 048-0065  
FARNHAM ST OVER US 34



LOCATION OF SECTION INDICATED THUS: - [black rectangle] -

DESCRIPTION OF WORK:

THIS PROJECT CONSISTS OF STRAIGHTENING & REPLACEMENT TO MULTIPLE DAMAGED STEEL BEAMS OF STRUCTURE CARRYING TR74 (FARNHAM ST) OVER US 34 (SN 048-0065), BY GALESBURG. MCHD CLAIM 816395

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUBMITTED October 27, 2020  
James A. James  
REGIONAL ENGINEER

December 4, 2020  
Scott A. Etkin  
ENGINEER OF DESIGN AND ENVIRONMENT

December 4, 2020  
James A. James  
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

PRINTED BY THE AUTHORITY  
OF THE STATE OF ILLINOIS

GROSS LENGTH = 590 FT. = 0.11 MILE  
NET LENGTH = 590 FT. = 0.11 MILE

## GENERAL NOTES

Plan dimensions and details relative to existing structure have been taken from existing plan and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field 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 the scope of the work, however, the Contractor will be paid for quantity actually furnished at the unit price bid for the work.

The Contractor will submit to the Engineer a satisfactory progress schedule and critical path schedule which show the proposed sequence of work at the time of the pre-construction conference.

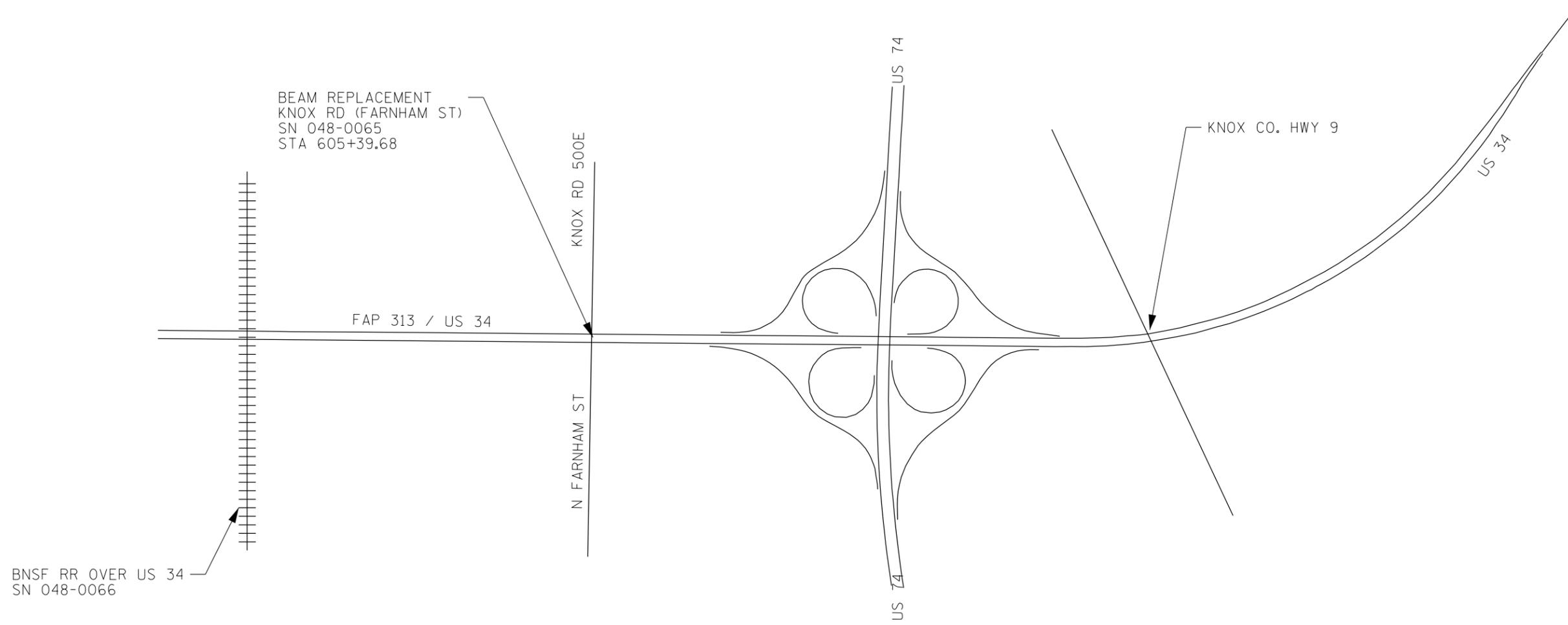
Onsite storage of metal materials shall be off of the pavement and according to Article 1006.34.

## COMMITMENTS

Commitments are not to be altered without the written approval of all parties to which the commitment was made.

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USER NAME = \$USERS	DESIGNED - ARLENE OTERO-FEBUS	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>GENERAL NOTES &amp; COMMITMENTS</b>			F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	DRAWN - ARLENE OTERO-FEBUS	REVISED -					313	(21-HB-2)BRR-1	KNOX	16	2
PLOT SCALE = 1:100	CHECKED -	REVISED -		CONTRACT NO. 68F99							
PLOT DATE = 10/22/2020	DATE -	REVISED -		SCALE:	SHEET 1	OF 1	SHEETS	STA.	TO STA.	ILLINOIS	FED. AID PROJECT



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BNSF RR OVER US 34  
SN 048-0066

BEAM REPLACEMENT  
KNOX RD (FARNHAM ST)  
SN 048-0065  
STA 605+39.68

FAP 313 / US 34

KNOX RD 500E

N FARNHAM ST

US 74

US 74

KNOX CO. HWY 9

US 34

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**LINE DIAGRAM**

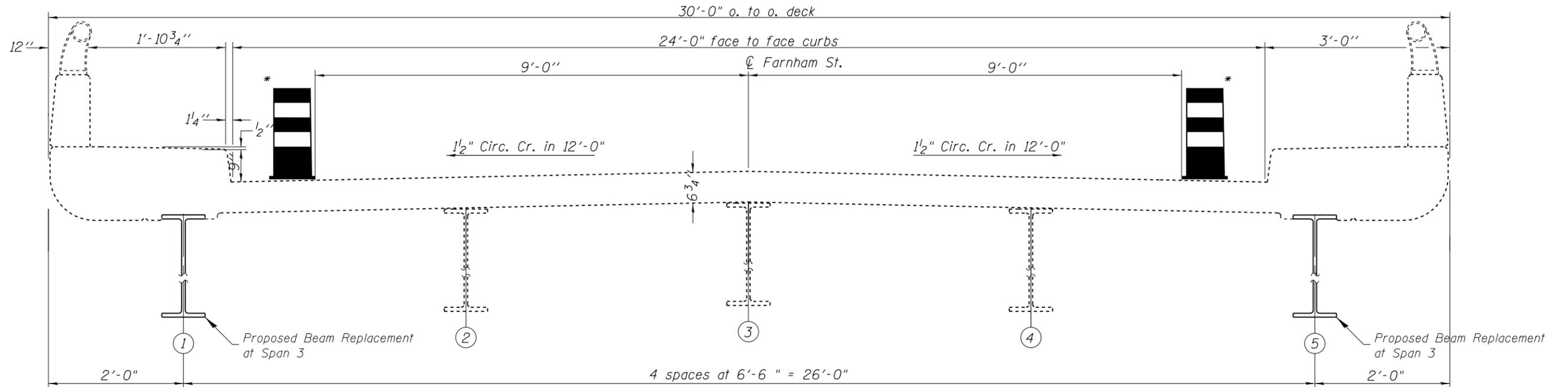
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	DRAWN - ARLENE OTERO-FEBUS	REVISED -
PLOT SCALE = 1:100	CHECKED -	REVISED -
PLOT DATE = 10/22/2020	DATE -	REVISED -

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

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
313	(21-HB-2)BRR-1	KNOX	16	3
CONTRACT NO. 68F99			ILLINOIS FED. AID PROJECT	

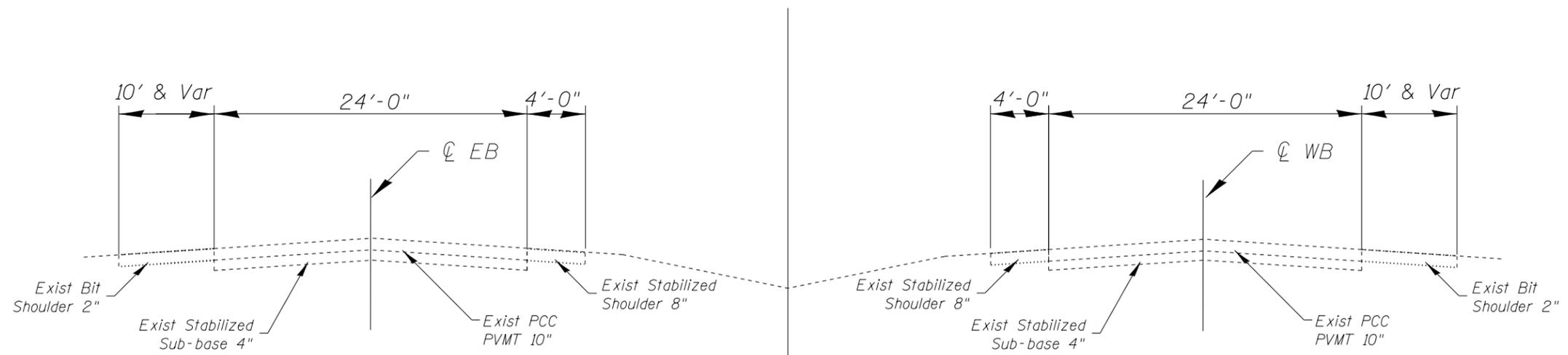






Typical Section SN 048-0065

\*Note:  
Existing Traffic Control Barrels shall remain  
the property of the State.



Typical Section US 34

MODEL: Default  
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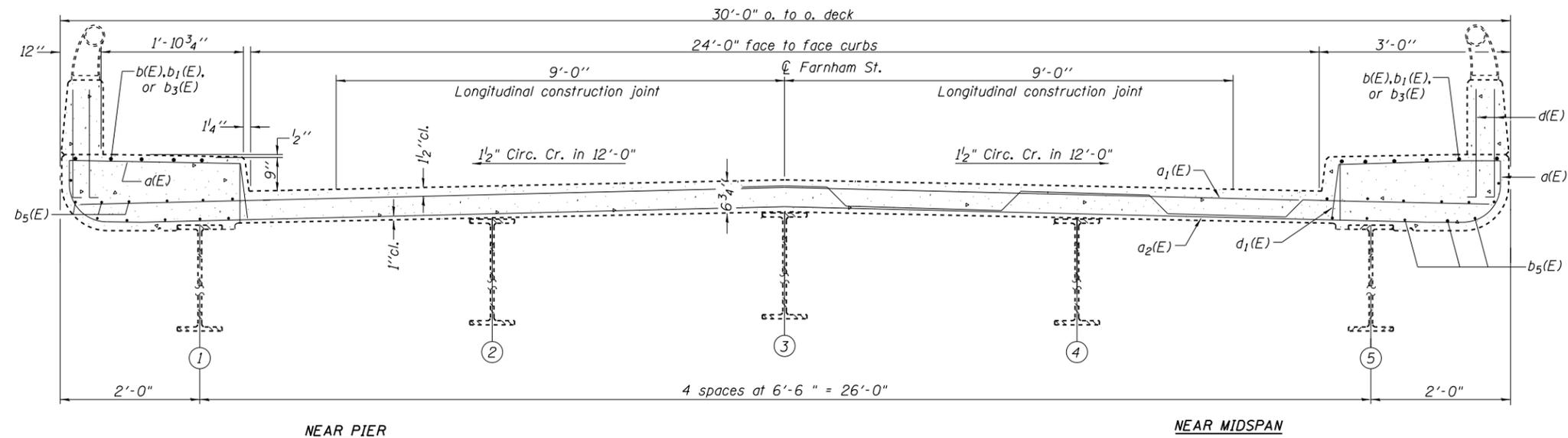
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	DRAWN - Arlene Otero-Febus	REVISED -
PLOT SCALE = 1:100	CHECKED -	REVISED -
PLOT DATE = 10/22/2020	DATE -	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

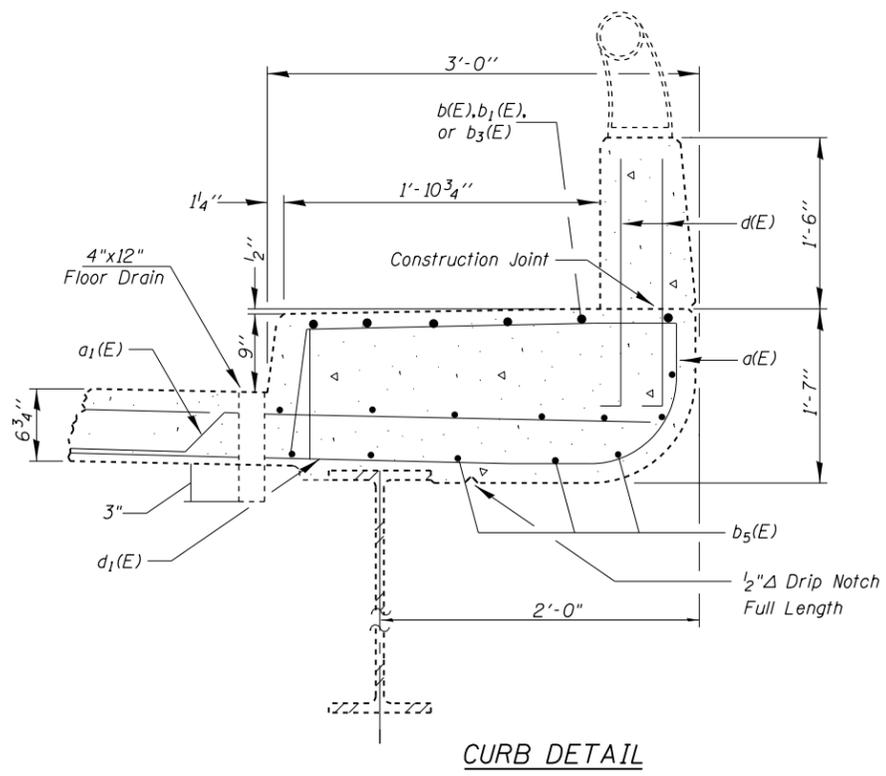
EXISTING TYPICAL SECTION  
SN 048-0065 & US 34

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

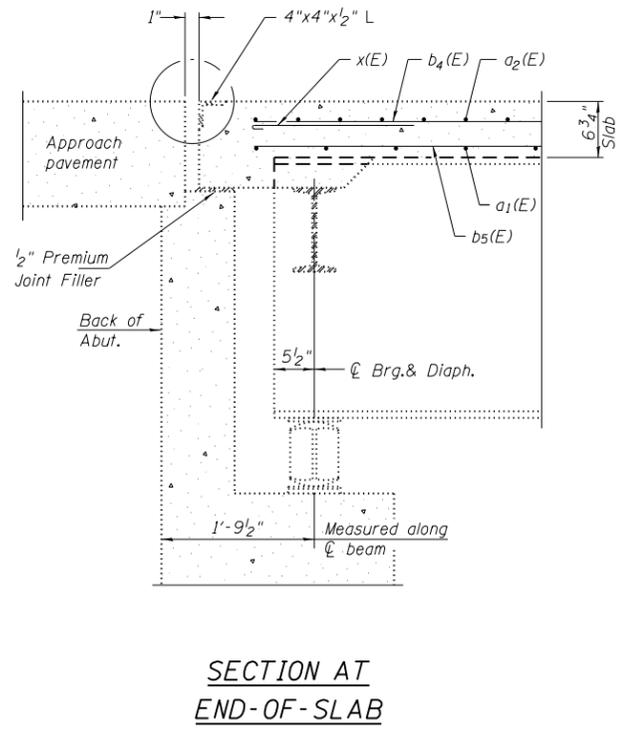
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313	(21-HB-2)BRR-1	KNOX	16	6
CONTRACT NO. 68F99				
ILLINOIS FED. AID PROJECT				



CROSS SECTION



CURB DETAIL



SECTION AT END-OF-SLAB

Notes:  
 Reinforcement bars designated (E) shall be epoxy coated.  
 Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.  
 Section views drawn "FOR INFORMATION ONLY" to be used as reference for beam repair.

**FOR INFORMATION ONLY**

MODEL: Default  
 FILE: Model2 - 20200808.dwg  
 PROJECT: ILLINOIS STATE ROADWAY PROJECTS  
 OFFICE: ILLINOIS STATE ROADWAY PROJECTS  
 DRAWING: ILLINOIS STATE ROADWAY PROJECTS  
 SHEET: ILLINOIS STATE ROADWAY PROJECTS  
 DATE: 10/22/2020

USER NAME = susers	DESIGNED - Arlene Otero-Febus	REVISED -
	DRAWN - Arlene Otero-Febus	REVISED -
PLOT SCALE = 1:100	CHECKED -	REVISED -
PLOT DATE = 10/22/2020	DATE -	REVISED -

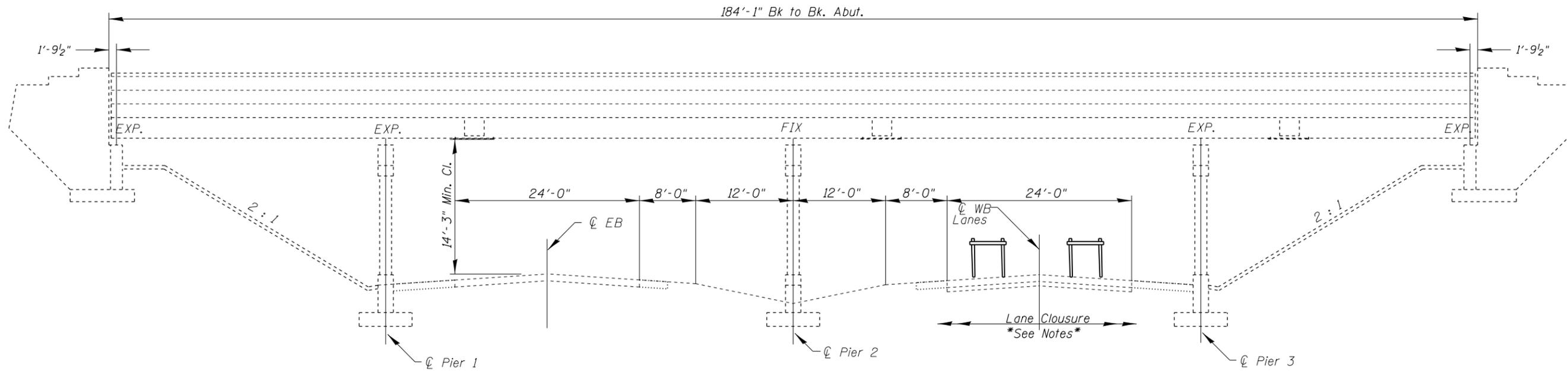
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

CROSS SECTION  
 SN 048-0065

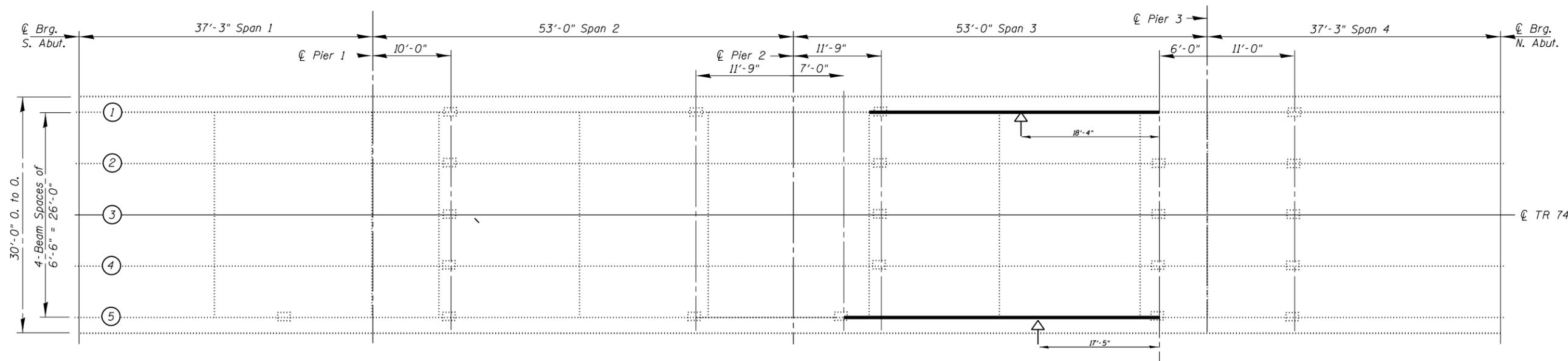
SCALE: SHEET 1 OF 1 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
313	(21-HB-2)BRR-1	KNOX	16	7
CONTRACT NO. 68F99				
ILLINOIS FED. AID PROJECT				





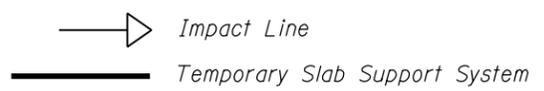
**TRAFFIC CONTROL**  
(Stage I)



**Symbols**

**Notes:**

Temporary closure of Westbound on US 34 allowed to occur on 2 Sundays for beam replacement operations. See "Traffic Control Special Provision (Westbound US 34 Lane Closure/Detour)" for additional information.  
Refer to Highway Standard BLR 21 and 701421 for exact placement of traffic management devices and other clarifications as construction staging symbols and dimensioning were duplicated off of these standards.



**PLAN**

MODEL: Default  
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 PROJECT: 68F99\DOT\Documents\DOT\_Offices\Drawings\Project\68F99\68F99-1-TC.dwg

USER NAME = susers	DESIGNED - ARLENE OTERO-FEBUS	REVISED -
	DRAWN - ARLENE OTERO-FEBUS	REVISED -
PLOT SCALE = 1:100	CHECKED -	REVISED -
PLOT DATE = 10/22/2020	DATE -	REVISED -

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

**TRAFFIC CONTROL**  
**SN 048-0065 FARNHAM ST (OVER US 34)**

SCALE: SHEET 1 OF 2 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
313	(21-HB-2)BRR-1	KNOX	16	9
CONTRACT NO. 68F99				
ILLINOIS FED. AID PROJECT				





**GENERAL NOTES**

All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.  
Fasteners shall be high strength bolts. Flange splice holes shall be  $1\frac{1}{2}''\text{Ø}$  for  $\frac{7}{8}''\text{Ø}$  bolts. Web splice holes shall be  $1\frac{3}{16}''\text{Ø}$  for  $\frac{3}{4}''\text{Ø}$  bolts.

After the new beam is in its final position and/or beam straightening operations have been completed, the Engineer in the field shall check to see that the top flange is tight against the slab. If not, the Contractor shall inject epoxy between the existing concrete deck and the top flange of the beam. See Special Provision "Epoxy Injection".

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.

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.

The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.

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".

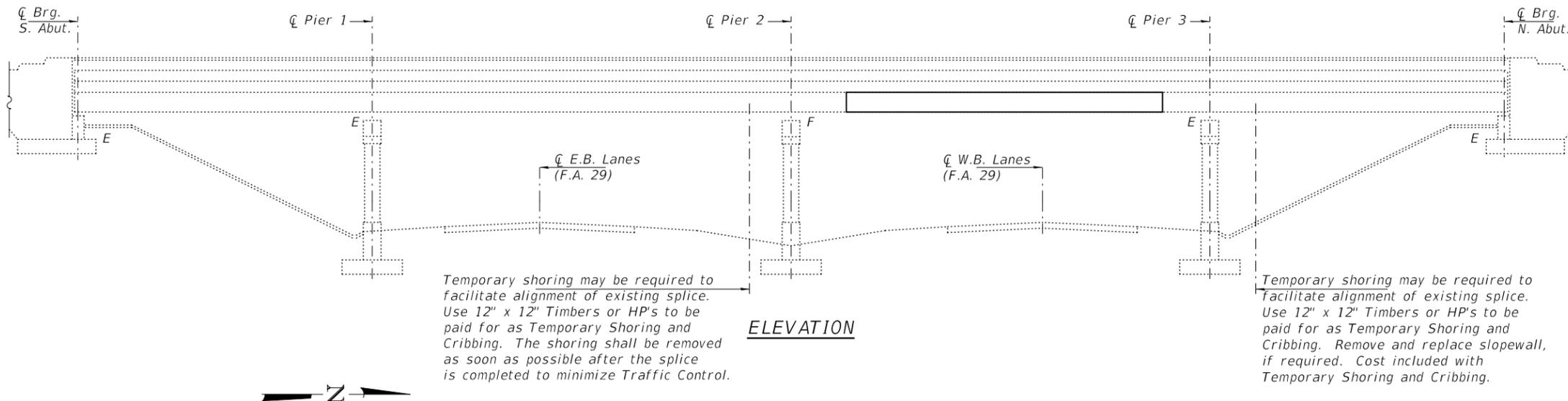
The Inorganic Zinc Rich Primer / Acrylic / Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final finish coat for all interior steel surfaces shall be gray, Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be Blue, Munsell No. 10B 3/6. See Special Provision "Cleaning and Painting New Metal Structures".

The Contractor shall provide support and/or shoring systems for the slab and beam in the area of existing beam removal. See Special Provisions "Temporary Shoring and Cribbing" and "Temporary Slab Support System."

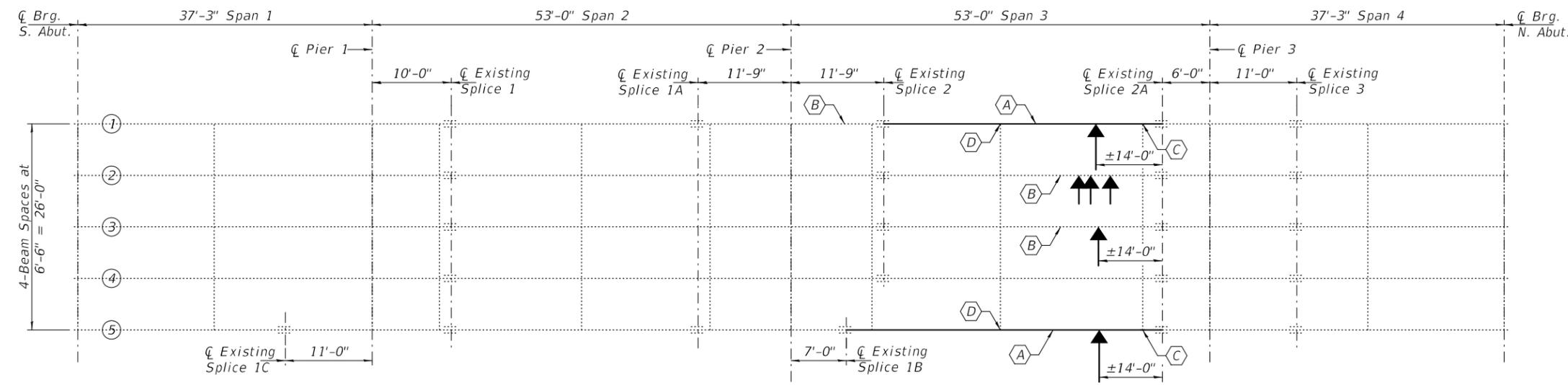
Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.

Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.

Diaphragm connection holes shall be  $1\frac{1}{2}''\text{Ø}$  for  $\frac{3}{4}''\text{Ø}$  bolts. Two hardened washers shall be required at diaphragm connections.



**ELEVATION**



**FRAMING PLAN**

- (A) - Remove & Replace Beam Section
- (B) - Existing Beam to be Straightened.
- (C) - Remove & Replace Bottom Clip Angle.
- (D) - Remove & Replace Top & Bottom Clip Angles.

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	1.6
Concrete Superstructure	Cu. Yd.	1.6
Structural Steel Removal	Pound	7070
Furnishing and Erecting Structural Steel	Pound	7540
Beam Straightening	L. Sum	1
Temporary Slab Support System	L. Sum	1
Temporary Shoring and Cribbing	L. Sum	1



Expires: November 30, 2022

DESIGNED - VICTOR H. VELIZ	EXAMINED - <i>Ting A. Beck</i>	DATE - NOVEMBER 20, 2020
CHECKED - CHI-CHEUNG CHAU	ENGINEER OF STRUCTURAL SERVICES	
DRAWN - STEFFEN	PASSED - <i>Sh. Carl Puzey</i>	REVISED -
CHECKED - VHV CCC	ENGINEER OF BRIDGES AND STRUCTURES	REVISED -

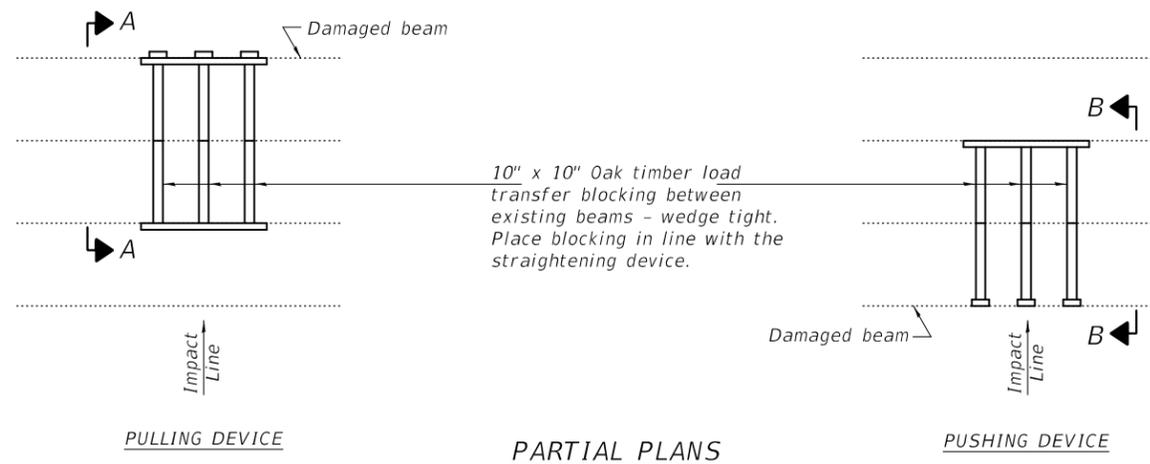
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**FRAMING PLAN AND ELEVATION  
FARNHAM ST. OVER U.S. 34 (FAP 29)  
SN 048-0065**

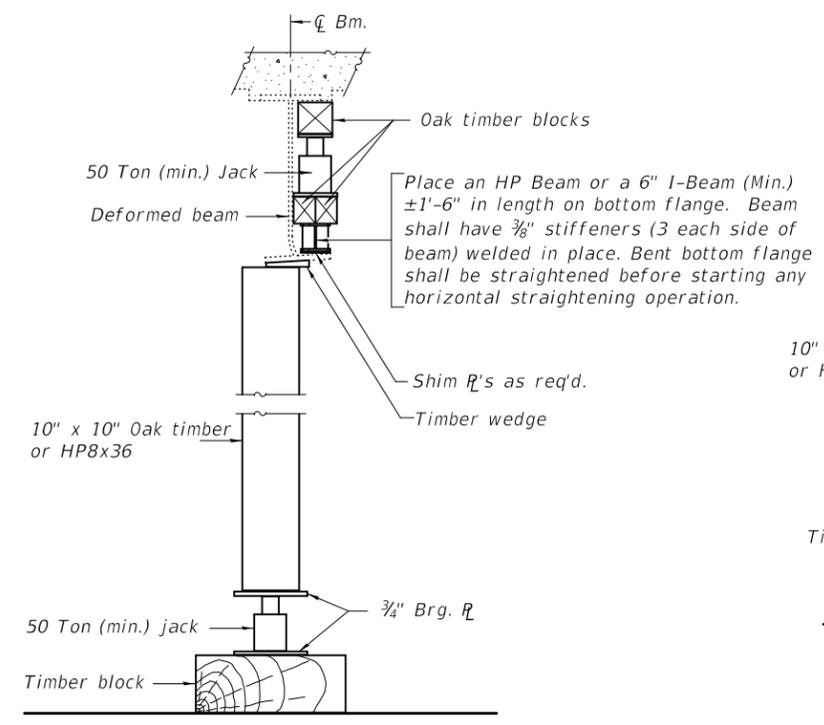
SHEET NO. 1 OF 5 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
29	(21-HB-2)BRR-1	KNOX	16	12
ILLINOIS			FED. AID PROJECT	

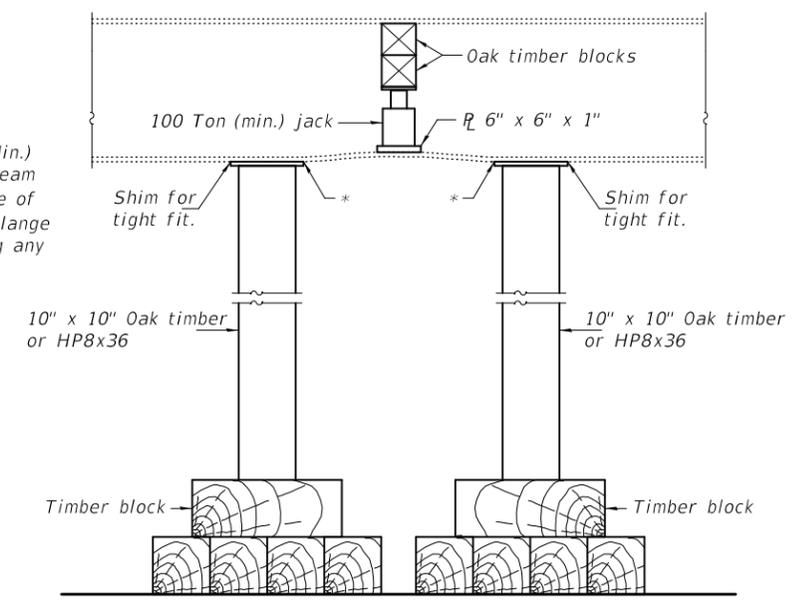
CONTRACT NO. 68F99



**PARTIAL PLANS**  
**SUGGESTED BEAM STRAIGHTENING METHODS**  
 Straightening force shall be maintained on all load transfer blocking during beam straightening.

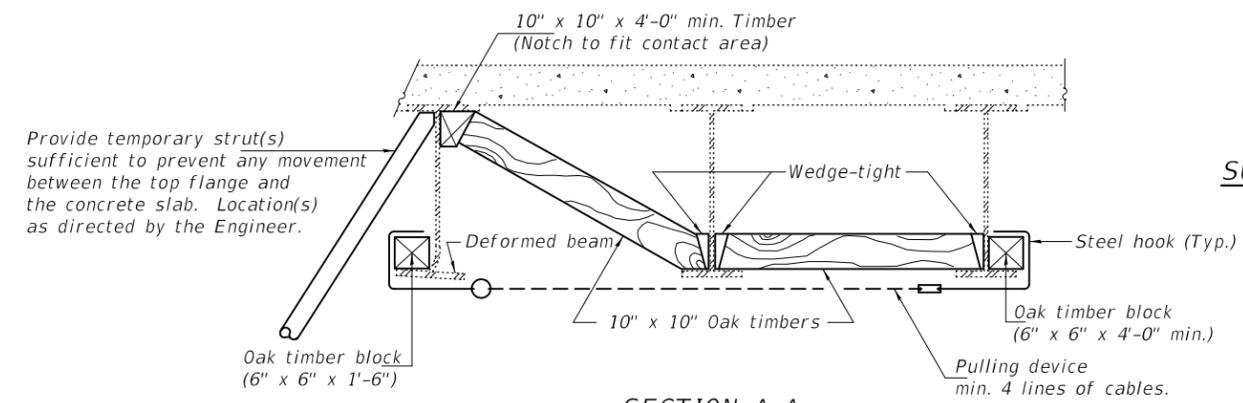


**SUGGESTED VERTICAL STRAIGHTENING DETAIL**  
 (To correct flange rotation.)

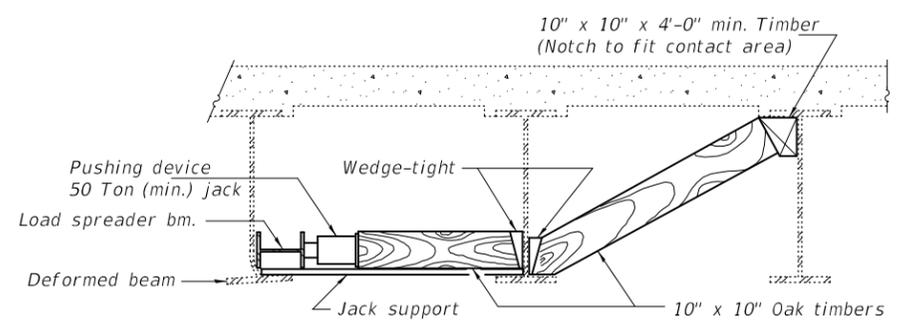


**SUGGESTED VERTICAL STRAIGHTENING DETAIL**  
 (To correct localized vertical flange deformations.)

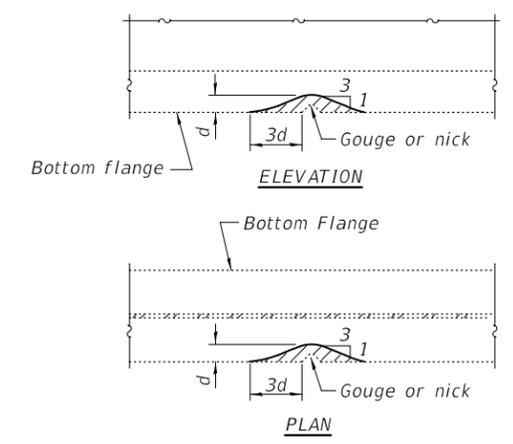
\* Edge of plate shall line up with edge of deformation.  
 Note:  
 Braces and jack assembly shall be placed on same side of web.  
 Bent bottom flange shall be straightened before starting any horizontal straightening operations.



**SECTION A-A**

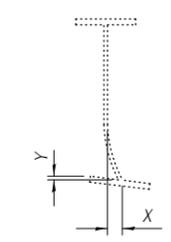


**SECTION B-B**



**GRINDING DETAIL**

Grind existing nicks, gouges and shallow cracks in the damaged beams as detailed. Ground surfaces shall be inspected for cracks using dye penetrant or magnetic particle testing prior to initiating any beam straightening operations. Any cracks that cannot be removed by grinding approximately 1/4\"/>



**EXISTING DEFORMATION TO BE STRAIGHTENED**  
 (Looking South at Span 3)  
 (Approximate max. deflections)  
 Deflected length of beam to be straightened is approximately 6 ft.

LOCATION	X	Y
Beam 1	1/2"	N/A
Beam 2	1/8"	7/16"
Beam 3	1/4"	7/8"

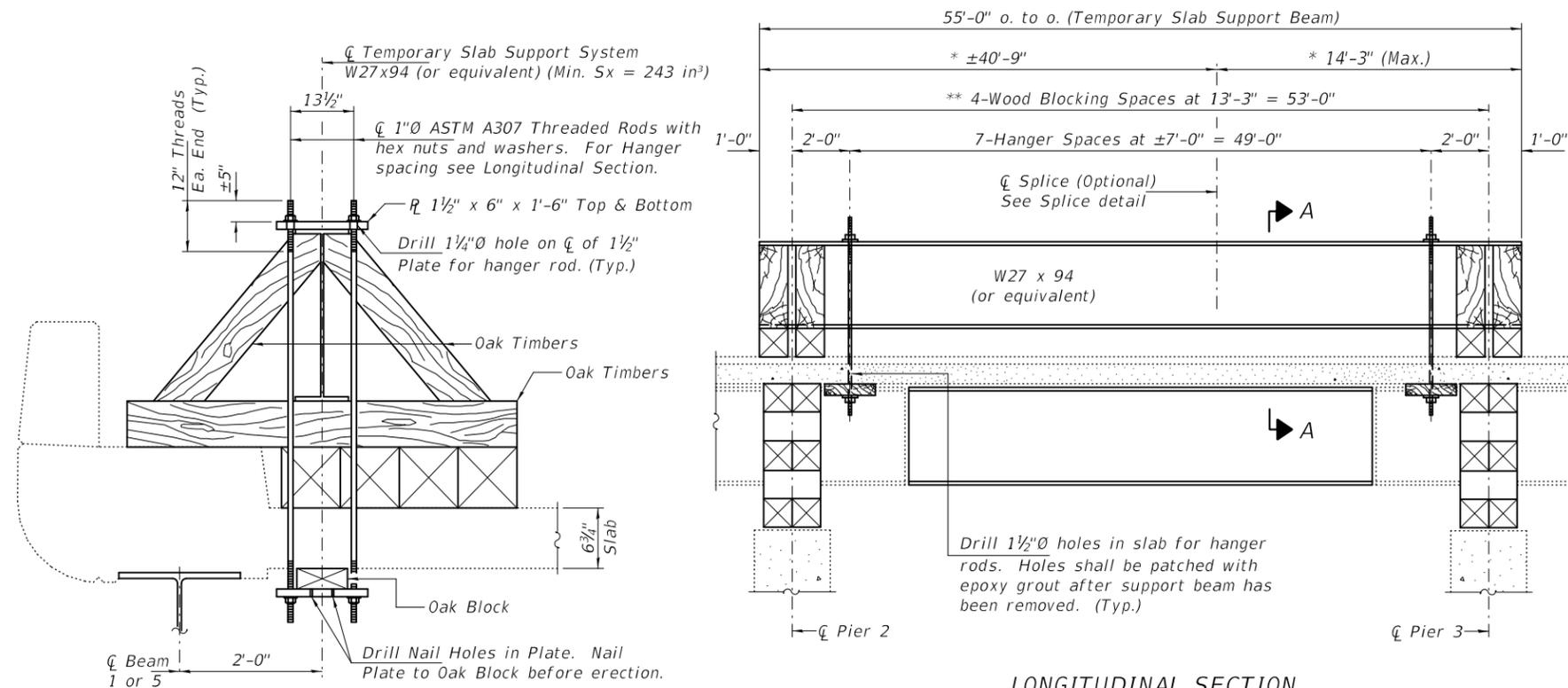
DESIGNED - VHV	EXAMINED - <i>Timothy A. Daulton</i>	DATE - NOVEMBER 20, 2020
CHECKED - CCC	ENGINEER OF STRUCTURAL SERVICES	
DRAWN - STEFFEN	PASSED - <i>Carl Ringer</i>	REVISED -
CHECKED - VHV CCC	ENGINEER OF BRIDGES AND STRUCTURES	REVISED -

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

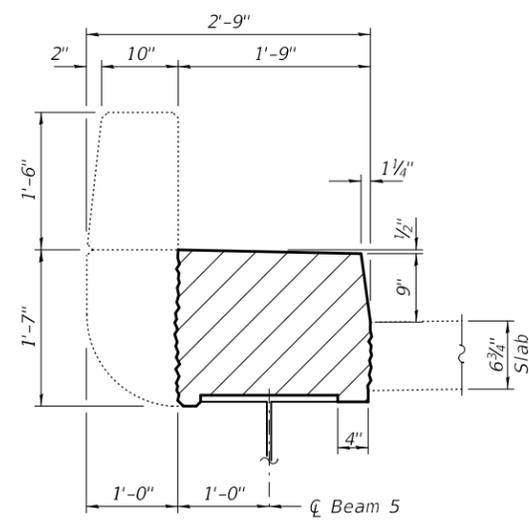
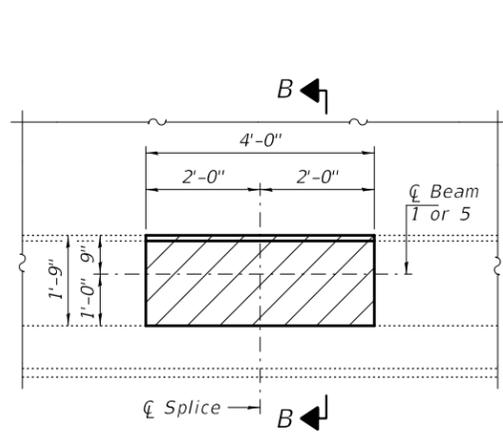
**BEAM STRAIGHTENING DETAILS**  
**SN 048-0065**

SHEET NO. 2 OF 5 SHEETS

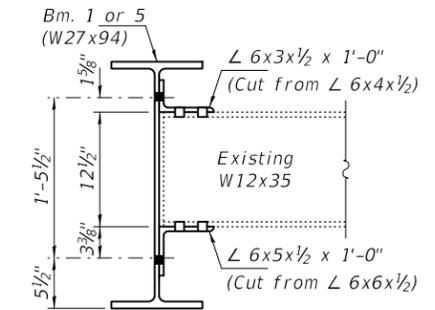
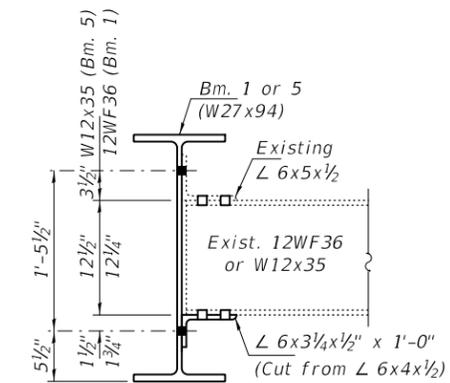
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			CONTRACT NO. 68F99	
		ILLINOIS FED. AID PROJECT		



\* These dimensions may vary for available beams in stock.  
\*\* Wood blocking between supports to be placed after support beam deflects under its own weight.



Notes:  
Hatched areas indicate concrete sections to be removed and replaced. Perimeters of Concrete Removal areas shall be saw cut 3/4" prior to the removal of concrete.  
Reinforcement shall be cut only if required for fitting bolts. Cut reinforcement shall be spliced as directed by the Engineer. Cost included with Concrete Removal.



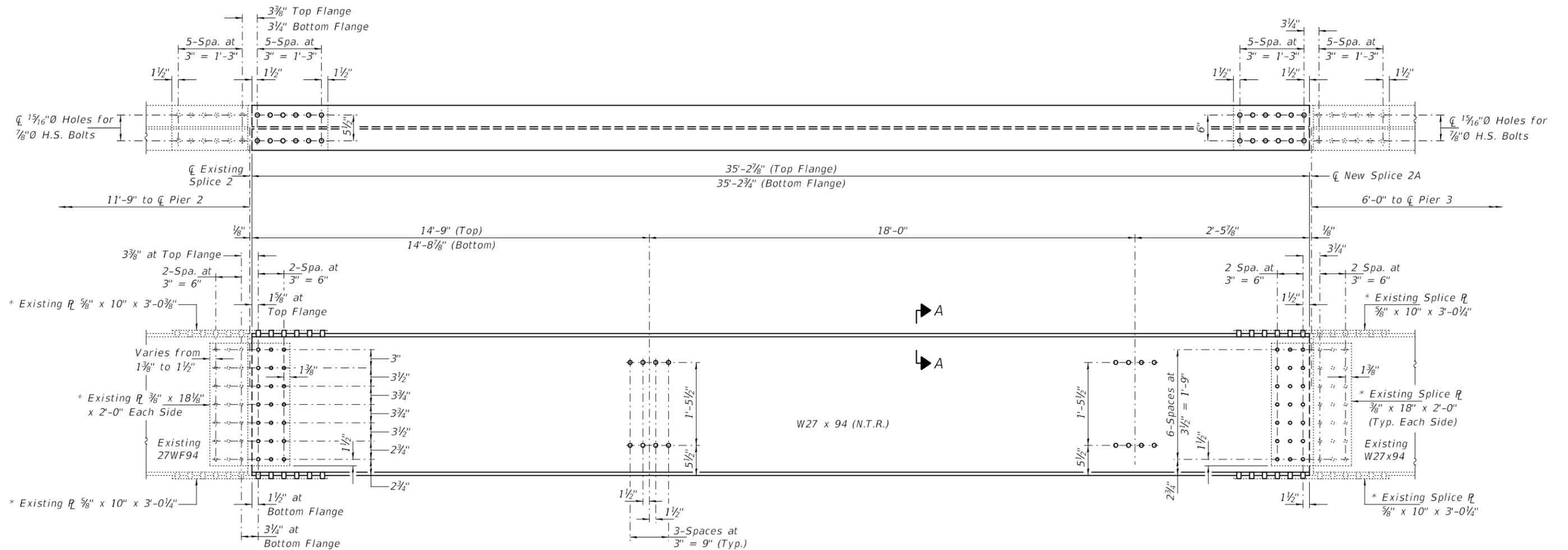
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CHECKED - CCC	ENGINEER OF STRUCTURAL SERVICES
DRAWN - STEFFEN	PASSED - <i>Carl Ringer</i>
CHECKED - VHV CCC	ENGINEER OF BRIDGES AND STRUCTURES

DATE - NOVEMBER 20, 2020
REVISED -
REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

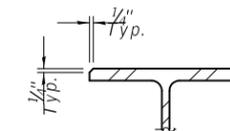
TEMPORARY SLAB SUPPORT & REPAIR DETAILS  
SN 048-0065  
SHEET NO. 3 OF 5 SHEETS

F.A.P. RTE. 29	SECTION (21-HB-2)BRR-1	COUNTY KNOX	TOTAL SHEETS 16	SHEET NO. 14
CONTRACT NO. 68F99				
ILLINOIS FED. AID PROJECT				



**ELEVATION BEAM 1, SPAN 3**  
(Looking West)

\* Existing Splice R's shall be reused and used as template to field drills holes in new beam.



**SECTION A-A**

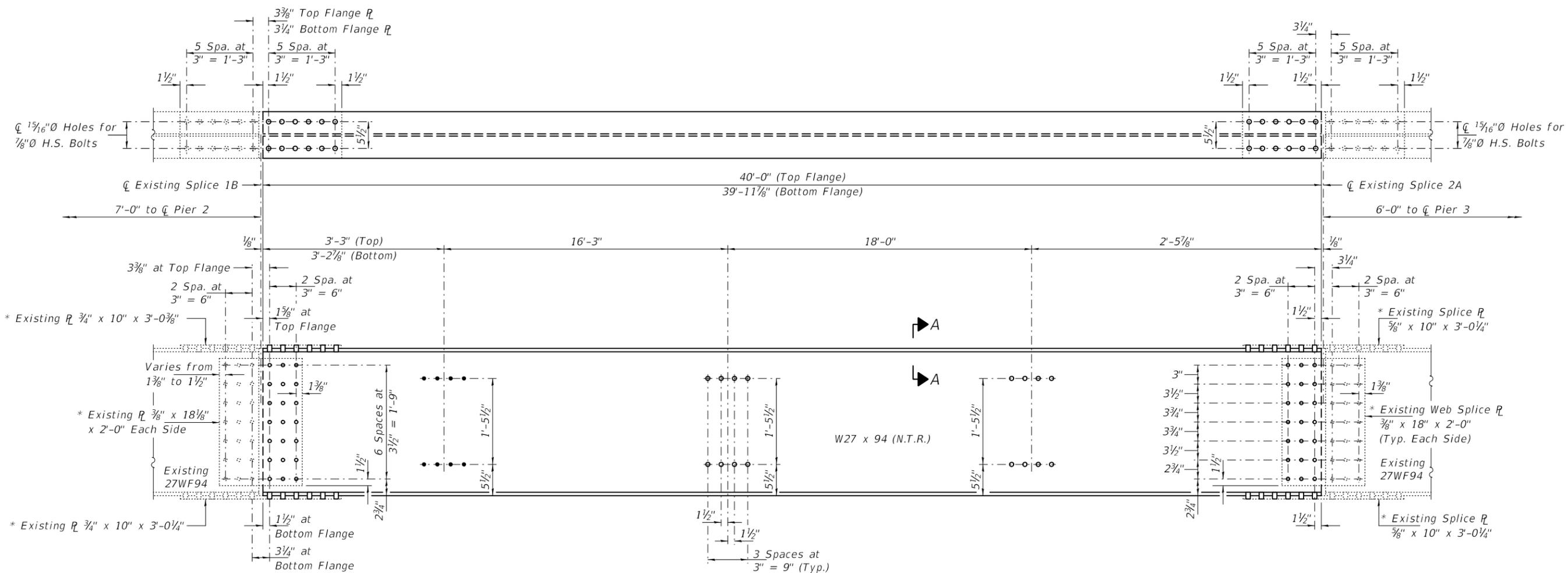
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DRAWN - STEFFEN	PASSED - <i>Carl Ringer</i>	REVISED -
CHECKED - VHV CCC	ENGINEER OF BRIDGES AND STRUCTURES	REVISED -

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

**BEAM REPLACEMENT DETAILS FOR SPAN 3, BEAM 1**  
**SN 048-0065**

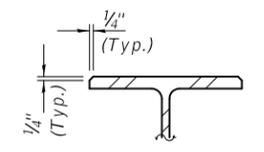
SHEET NO. 4 OF 5 SHEETS

F.A.P. RTE. 29	SECTION (21-HB-2)BRR-1	COUNTY KNOX	TOTAL SHEETS 16	SHEET NO. 15
CONTRACT NO. 68F99				
ILLINOIS FED. AID PROJECT				



**ELEVATION BEAM 5 SPAN 3**  
(Looking West)

\* Existing Splice R's shall be reused and used as template to field drills holes in new beam.



**SECTION A-A**

DESIGNED - VHV	EXAMINED - <i>Timothy A. Doolittle</i> ENGINEER OF STRUCTURAL SERVICES	DATE - NOVEMBER 20, 2020	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BEAM REPLACEMENT DETAILS FOR SPAN 3, BEAM 5 SN 048-0065	F.A.P. RTE. 29	SECTION (21-HB-2)BRR-1	COUNTY KNOX	TOTAL SHEETS 16	SHEET NO. 16
CHECKED - CCC	PASSED - <i>Carl Ringer</i> ENGINEER OF BRIDGES AND STRUCTURES	REVISED -			SHEET NO. 5 OF 5 SHEETS		CONTRACT NO. 68F99		
DRAWN - STEFFEN		REVISED -							
CHECKED - VHV CCC									