

055

01-18-2019 LETTING ITEM 055

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F & P R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
29	21-HB-2)BRR	KNOX	12	1
EMERGENCY BEAM REPAIR		ILLINOIS	CONTRACT NO. 68E74	

D-94-010-19



FOR INDEX OF SHEETS, SEE SHEET NO. 2

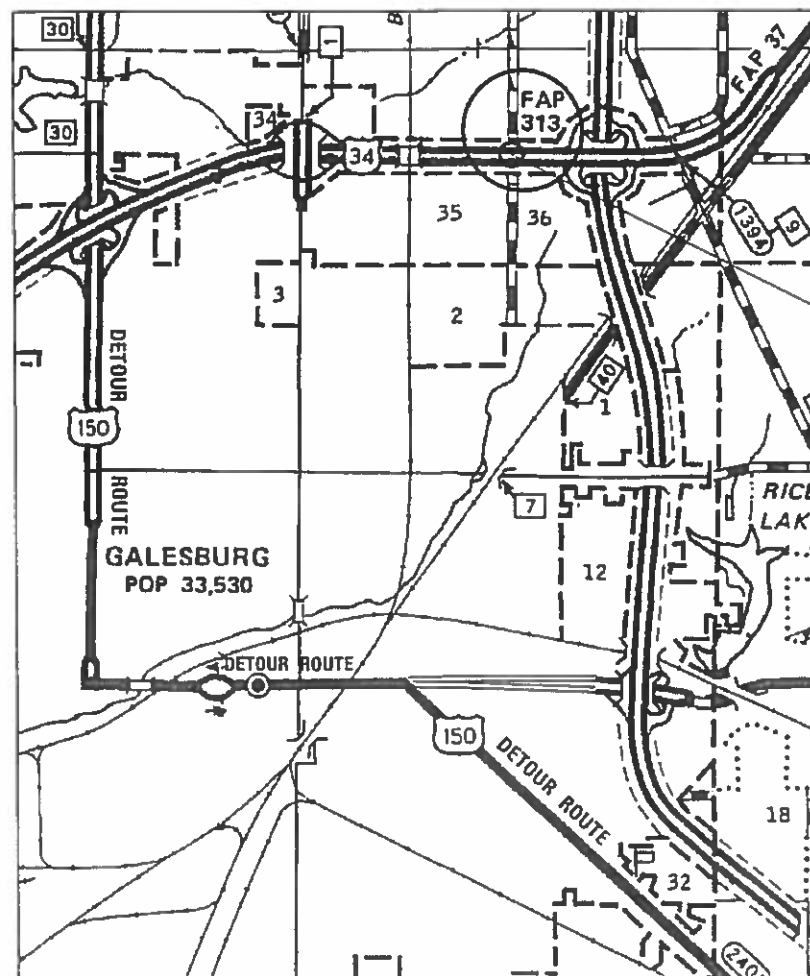
PROPOSED HIGHWAY PLANS

FAP 29 (Farnham St.)
SECTION (21-HB-2)BRR
MCHD Claim No. 808493
EMERGENCY BEAM REPAIR
KNOX COUNTY

HIGHWAY STANDARDS:

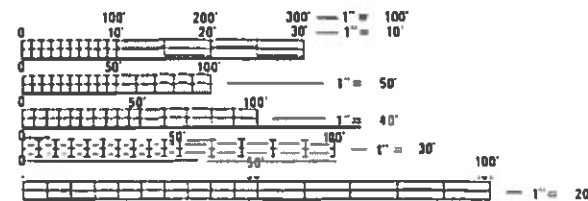
- | | |
|-----------|-----------|
| 701001-02 | 701451-05 |
| 701006-05 | 701601-09 |
| 701011-04 | 701901-08 |
| 701411-09 | 780001-05 |
| 701421-08 | BLR-22-7 |

C-94-013-19



SN 048-0065

This project consists of emergency steel beam repairs on SN 048-0065 carrying Farnham St. over US34 in Galesburg



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: CLARK JONES (309) 671-3452
PROJECT MANAGER: MARK ECKHOFF (309) 671-4463
CONTRACT NO. 68E74
CAT. NO. 035673-00D

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED 10/26 2018
K.A. Smith
REGION THREE ENGINEER

Dec 7 2018
EA. Etk
ENGINEER OF DESIGN AND ENVIRONMENT

Dec 7 2018
Paul J. [Signature]
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

INDEX OF SHEETS:

- 1. COVER SHEET
- 2. GENERAL NOTES & COMMITMENTS
- 3. SUMMARY OF QUANTITIES
- 4. EXISTING CROSS-SECTIONS
- 5. SCHEDULE OF QUANTITIES
- 6-8. PROPOSED TRAFFIC CONTROL
- 9-12. REPAIR DETAIL SHEETS

COMMITMENTS

No commitments have been made for this project.

GENERAL NOTES

Plan dimensions and details relative to existing structure have been taken from existing plans 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 the quantity actually furnished at the unit price bid for the work.

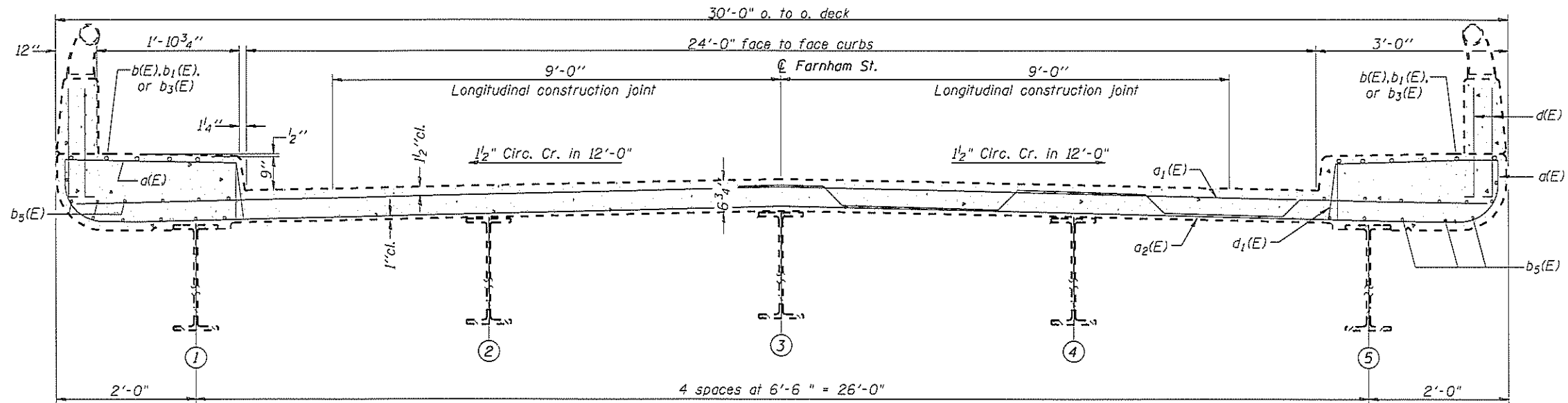
The Contractor will submit to the Engineer a satisfactory progress schedule and critical path schedule which will show the proposed sequence of work at the time of the pre-construction conference.

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

FILE NAME *	USER NAME * \$USER*	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL NOTES AND COMMITMENTS STRUCTURE NO. 048-0065	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FILEL		DRAWN -	REVISED -			29	I21-HB-21BRR	KNOX	12	2
	PLOT SCALE * \$SCALE*	CHECKED -	REVISED -			Emergency Steel Beam Repair		CONTRACT NO. 68E74		
MODELNAME	PLOT DATE * \$DATE*	DATE -	REVISED -			SCALE:	SHEET	OF	SHEETS	STA.

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	URBAN	CONST. CODE
				100% STATE	MCHD 808493
50102400	CONCRETE REMOVAL	CUYD	0.8		BRIDGE 0013 048-0065
50300255	CONCRETE SUPERSTRUCTURE	CUYD	0.8		0.8
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	4230		4230
67100100	MOBILIZATION	LSUM	1		1
70100310	TRAFFIC CONTROL AND PROTECTION, STANDARD 701421	LSUM	1		1
70100420	TRAFFIC CONTROL AND PROTECTION, STANDARD 701411	EACH	1		1
70100820	TRAFFIC CONTROL AND PROTECTION, STANDARD 701451	LSUM	1		1
70101835	TRAFFIC CONTROL AND PROTECTION, STANDARD BLR-22	LSUM	1		1
70102630	TRAFFIC CONTROL AND PROTECTION, STANDARD 701601	LSUM	1		1
70107025	CHANGEABLE MESSAGE SIGN	CALDA	15		15
X7010216	TRAFFIC CONTROL AND PROTECTION, STANDARD (SPECIAL)	LSUM	1		1
X7200201	WIDTH RESTRICTION SIGNING	LSUM	1		1
Z0001903	STRUCTURAL STEEL REMOVAL	POUND	3930		3930
Z0003600	BEAM STRAIGHTENING	LSUM	1		1
Z0073300	TEMPORARY SHORING AND CRIBBING	LSUM	1		1
Z0073351	TEMPORARY SLAB SUPPORT SYSTEM	LSUM	1		1

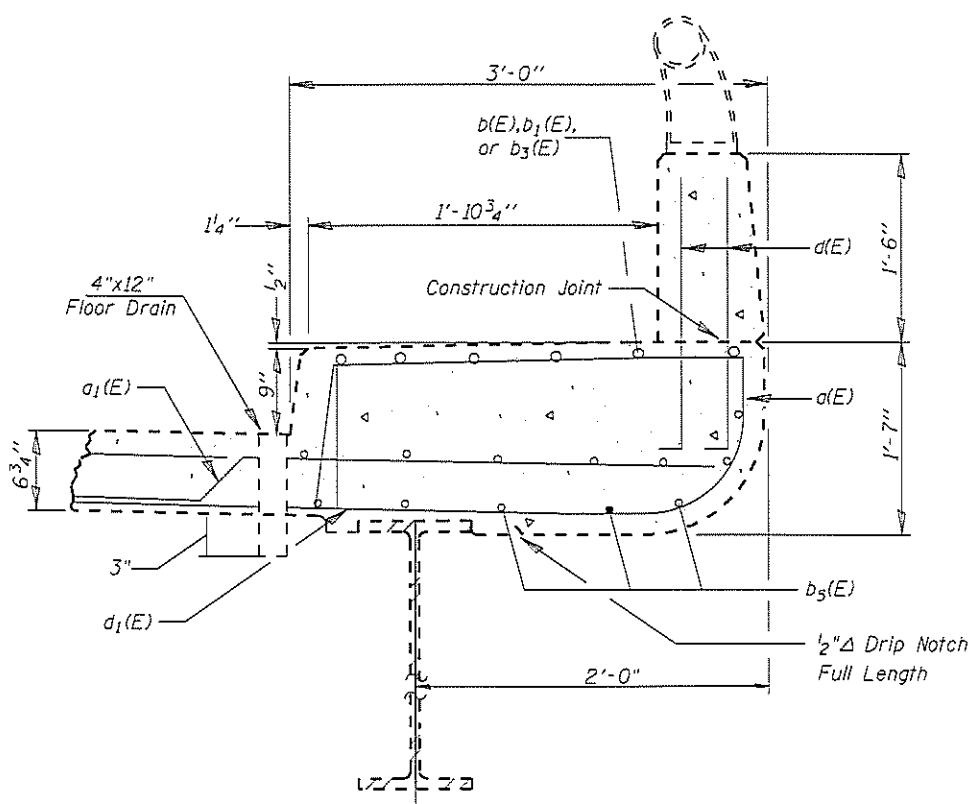
FILE NAME *	USER NAME * USER*	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUMMARY OF QUANTITIES STRUCTURE NO. 048-0065	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
FILEL		DRAWN -	REVISED -			29	(21-HB-2)BR	KNOX	12	3	
	PLOT SCALE = *SCALE*	CHECKED -	REVISED -			Emergency Steel Beam Repair CONTRACT NO. 68E74					
	PLOT DATE = *DATE*	DATE -	REVISED -			ILLINOIS FED. AID PROJECT					



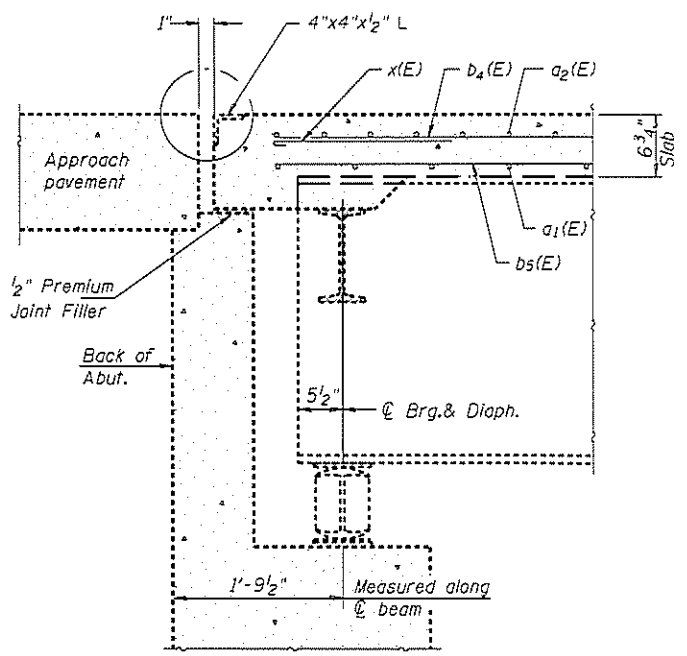
NEAR PIER

NEAR MIDSPAN

CROSS SECTION



SECTION AT CURB



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

I:\COURT\ANGELINA\FILES
 FILE NAME: SHEETS

USER NAME = USERS	DESIGNED -	REVISED -
PLOT SCALE = 1/8"=1'-0"	DRAWN -	REVISED -
PLOT DATE = 10/26/05	CHECKED -	REVISED -
	DATE -	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING CROSS-SECTION
 STRUCTURE NO. 048-0065

SCALE SHEET OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
29	I21-HB-21BRR	KNOX	12	4
Emergency Steel Beam Repair			CONTRACT NO. 68E74	
ILLINOIS FED AID PROJECT				

MOBILIZATION

LOCATION	LSUM
JOB SITE	1
TOTAL	1

CONCRETE REMOVAL

LOCATION	CUYD
SN. 048-0065	0.8
TOTAL	0.8

CONCRETE SUPERSTRUCTURE

LOCATION	CUYD
SN. 048-0065	0.8
TOTAL	0.8

**FURNISHING & ERECTING
STRUCTURAL STEEL**

LOCATION	POUND
DECK SUPERSTRUCTURE	4,230
TOTAL	4,230

TRAFFIC CONTROL

LOCATION	T,C.&P. STANDARD 701421 (LSUM)	T,C.&P. STANDARD 701411 (EACH)	T,C.&P. STANDARD 701451 (LSUM)	T,C.&P. STANDARD BLR-22 (LSUM)	T,C.&P. STANDARD 701601 (LSUM)	T,C.&P. STANDARD SPECIAL (LSUM)	CHANGEABLE MESSAGE SIGN (CAL DA)	WIDTH RESTRICTION SIGNING (LSUM)
Farnham St. US 34	1	1	1	1	1	1	15	1
TOTAL	1	1	1	1	1	1	15	1

STRUCTURAL STEEL REMOVAL

LOCATION	POUND
DECK SUPERSTRUCTURE	3,930
TOTAL	3,930

**TEMPORARY SHORING
AND CRIBBING**

LOCATION	LSUM
SEE T.C. SPECIALS	1
TOTAL	1

BEAM STRAIGHTENING

LOCATION	LSUM
DECK SUPERSTRUCTURE	1
TOTAL	1

**TEMPORARY SLAB
SUPPORT SYSTEM**

LOCATION	LSUM
DECK SURFACE & VERTICAL SIDES	1
TOTAL	1

MODEL: SCHEDULES
FILE NAME: SCHEDULES

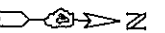
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PLOT SCALE = 1/8"=1'	DRAWN -	REVISED -
PLOT DATE = 10/20/11	CHECKED -	REVISED -
	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SCHEDULE OF QUANTITIES
STRUCTURE NO. 048-0065

SCALE SHEET OF SHEETS STA TO STA

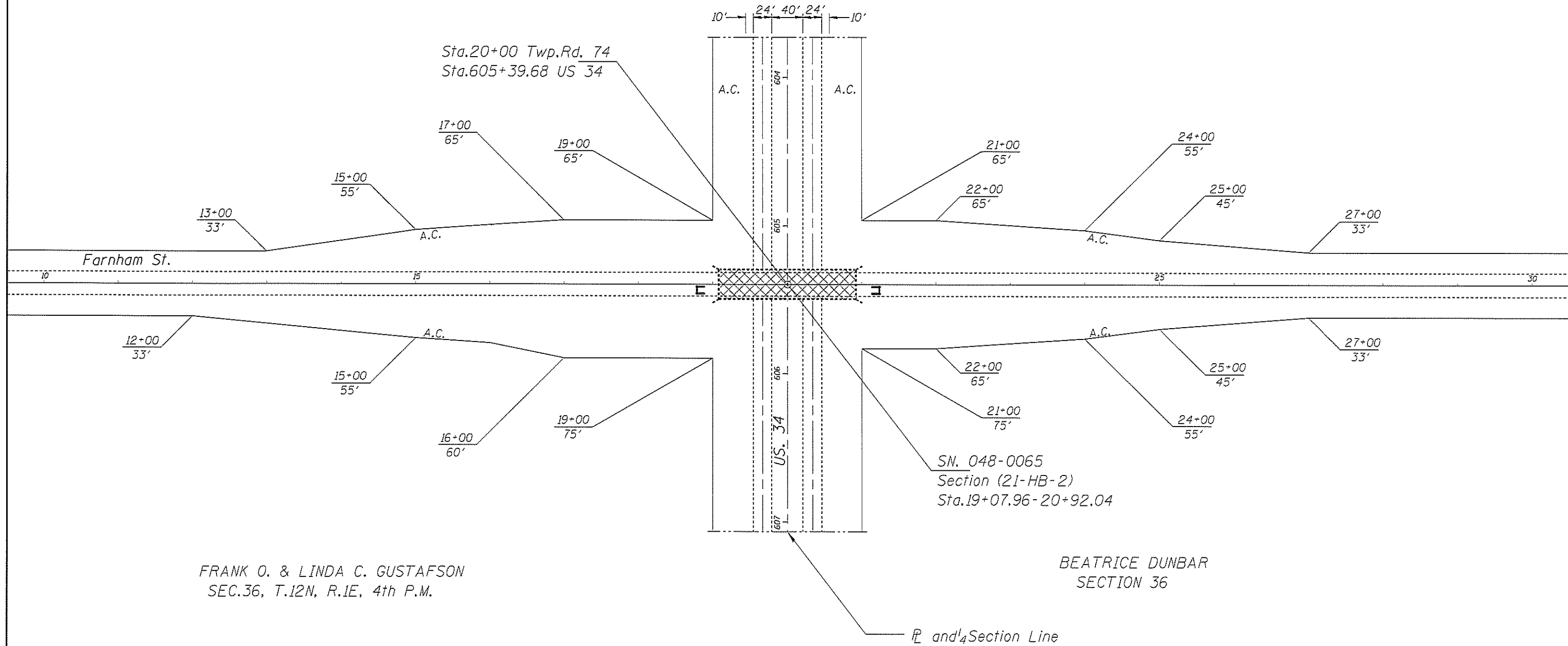
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
29	(21-HB-2)BR	KNOX	12	5
Emergency Steel Beam Repair			CONTRACT NO. 68E74	
ILLINOIS FED. AID PROJECT				



TWSP. RD. 74 (FARNHAM ST.)

CHARLES E. HINCKLEY
SEC.35, T.12N, R.1E, 4th P.M.

DUWAYNE R. JOHNSON
SECTION 35



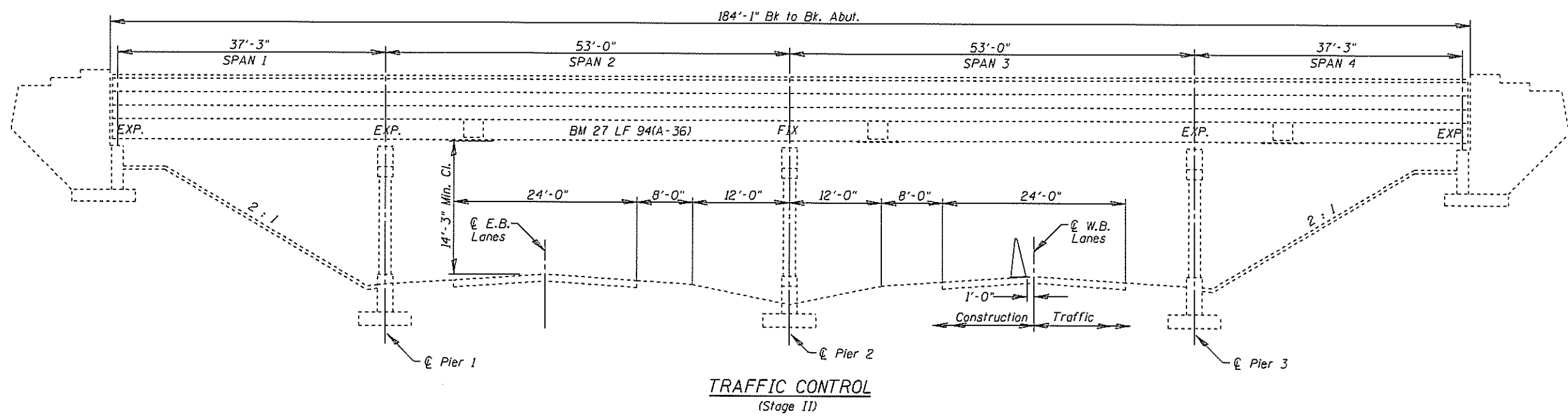
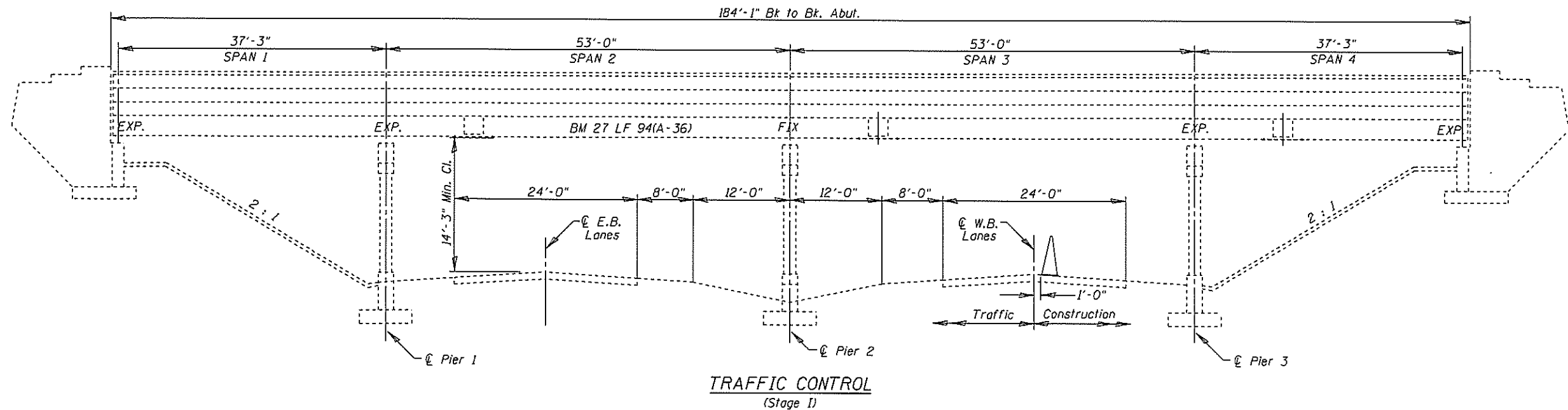
MODEL: SHORLINES
FILE NAME: SHEETS

USER NAME = USERS	DESIGNED -	REVISED -
PLOT SCALE = 1/8"=1'-0"	DRAWN -	REVISED -
PLOT DATE = 10/20/11	CHECKED -	REVISED -
	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROPOSED TRAFFIC CONTROL STRUCTURE NO. 048-0065			
SCALE	SHEET	OF SHEETS	STA TO STA

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
29	121-HB-21BRR	KNOX	12	6
Emergency Steel Beam Repair			CONTRACT NO. 68E74	
ILLINOIS FED AID PROJECT				



Notes:
 Refer to Highway Standard 701411, 701421, 701451 & 701601 for exact placement of traffic management devices and other clarifications as construction staging symbols and dimensioning were referenced off of these standards. Standard BLR-22 shall be used for traffic management on Farnham St. bridge during this project.
 For the sole purpose of beam or beam section removal and replacement both lanes of the WB. direction of US34 will be temporarily closed. See Special Provisions "US 34 Lane Closures".

MODEL AND DIMENSIONS FILE NAME: SHEETS

USER NAME = SUSERS	DESIGNED -	REVISED -
PLOT SCALE = 1/8"=1'-0"	DRAWN -	REVISED -
PLOT DATE = 10/20/2011	CHECKED -	REVISED -
	DATE -	REVISED -

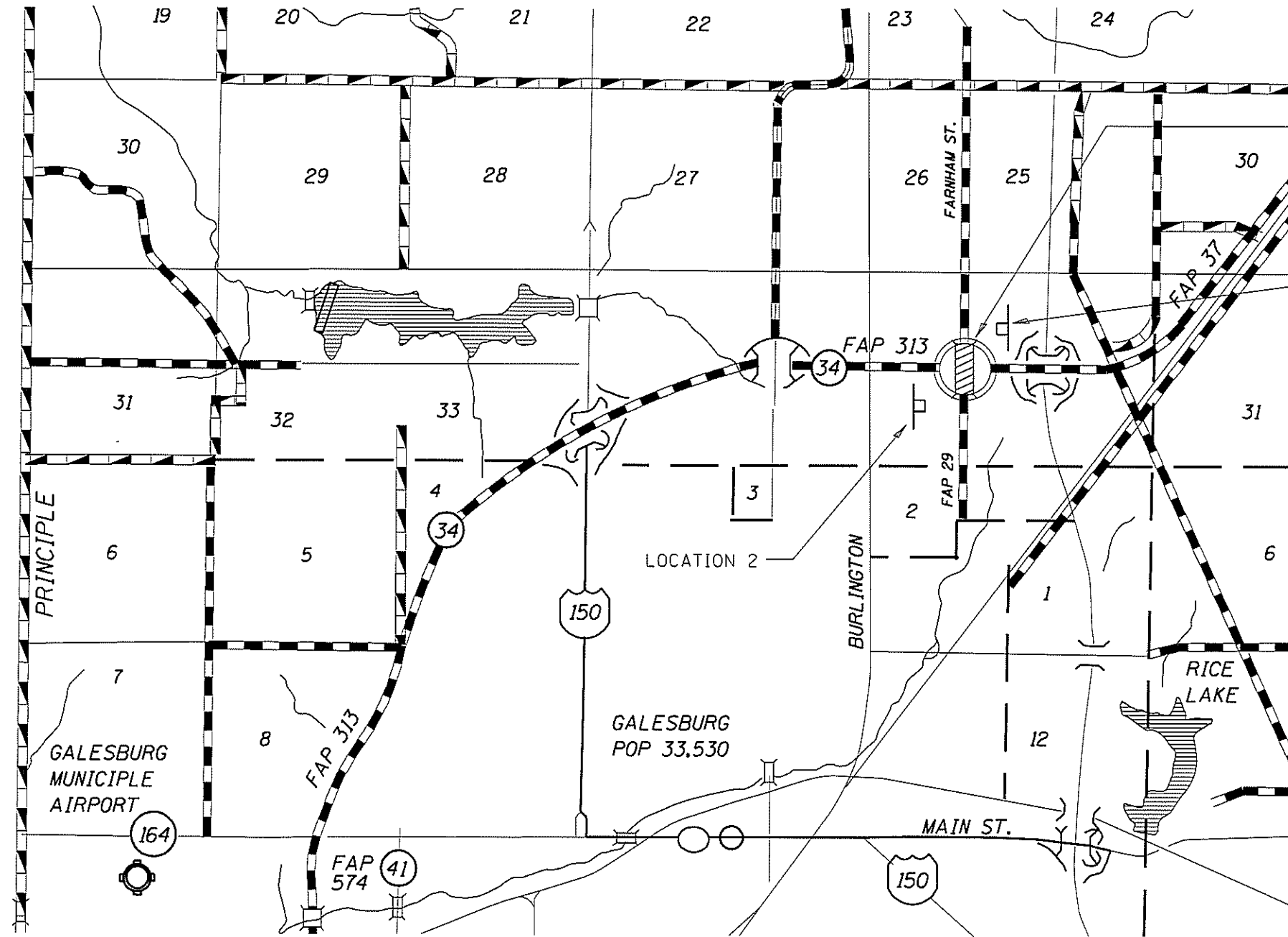
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROPOSED TRAFFIC CONTROL				
STRUCTURE NO. 048-0065				
SCALE	SHEET	OF	SHEETS	STA TO STA

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
29	(21-HB-2)BRR	KNOX	12	7
Emergency Steel Beam Repair			CONTRACT NO. 68E74	
ILLINOIS FED AID PROJECT				

NOTES

Notification signs shall be posted where shown indicating maximum width ahead of 11'-6" for stage construction. A Changeable Message Board shall be placed facing traffic direction one week prior to work start date for public safety and awareness. State-owned signage and barrels for Farnham St. may already be in-place for posted bridge restrictions. Contractor will arrange existing T.C. devices be returned at job completion. The detour for WB. US34 closures shall begin at the East Galesburg Exit 48B off of I-74, for passage Northwest on IL.150 to US.34 entrance ramps. The Contractor shall be responsible to set-up detour signage in necessary placements, remove or cover at end of work day, and coordinate all necessary notifications for US34 Sunday closure. See "Traffic Control Plan" in Special Provisions.



SN 048-0065
Farnham St. bridge may be currently posted with State-owned signage and barrels.

LOCATION 1

LOCATION 2

SN.048-0065 SIGNING

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

CONTRACTOR PROVIDED SIGN -A-

MAX. WIDTH
11'-6"
XX MILES

US. 34

SEE SPECIAL PROVISIONS FOR SIGNING DETAILS

SN.048-0065 Farnham St. over US 34

FILE NAME =	USER NAME = *USER*	DESIGNED - CEJ	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PROPOSED TRAFFIC CONTROL STRUCTURE NO. 048-0065	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
*FILE#	PLOT SCALE = *SCALE*	DRAWN - CEJ	REVISED -			29	I21-HB-21BRR	KNOX	12	8	
	PLOT DATE = *DATE*	CHECKED -	REVISED -			Emergency Steel Beam Repair		CONTRACT NO. 68E74			
		DATE - 10-22-2018	REVISED -			FED. ROAD DIST. NO. 4 ILLINOISIFIED AID PROJECT					
SCALE:		SHEET NO. OF SHEETS		STA. TO STA.							

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 $1\frac{3}{16}" \varnothing$ for $\frac{7}{8}" \varnothing$ bolts. Web splice holes shall be $1\frac{3}{16}" \varnothing$ for $\frac{3}{4}" \varnothing$ 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.

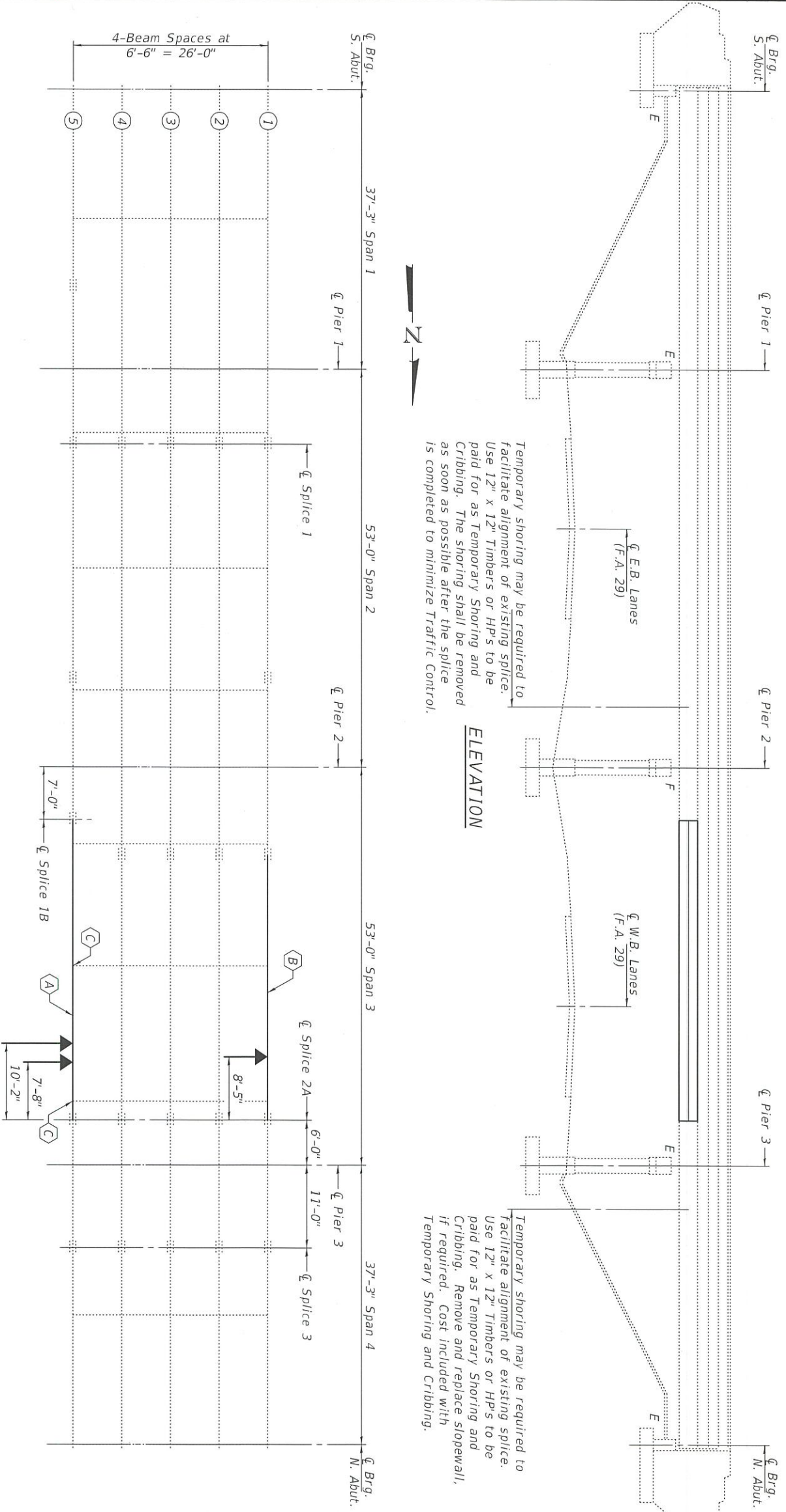
The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project. Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the Special 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".

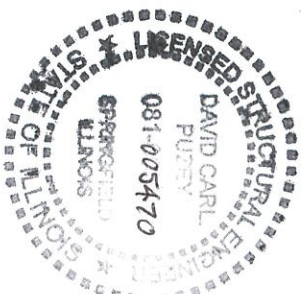
The Contractor shall provide support and/or shoring systems for the slab and beam in the area of existing beam removal. See Special Provisions "Temporary Shoring and Cribbing" and "Temporary Slab Support System".

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 $1\frac{3}{16}" \varnothing$ for $\frac{3}{4}" \varnothing$ bolts. Two hardened washers shall be required at diaphragm connections.



- FRAMING PLAN**
- Impact Line →
- (A) - Remove & Replace Beam Section
 - (B) - Existing Beam to be Straightened & Strengthened
 - (C) - Remove & Replace Bottom Clip Angle.



DESIGNED - *[Signature]*
 CHECKED - *[Signature]*
 DRAWN - *[Signature]*
 CHECKED - *[Signature]*

EXAMINED *[Signature]*
 PASSED

DATE - NOVEMBER 14, 2018

REVISIONS

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

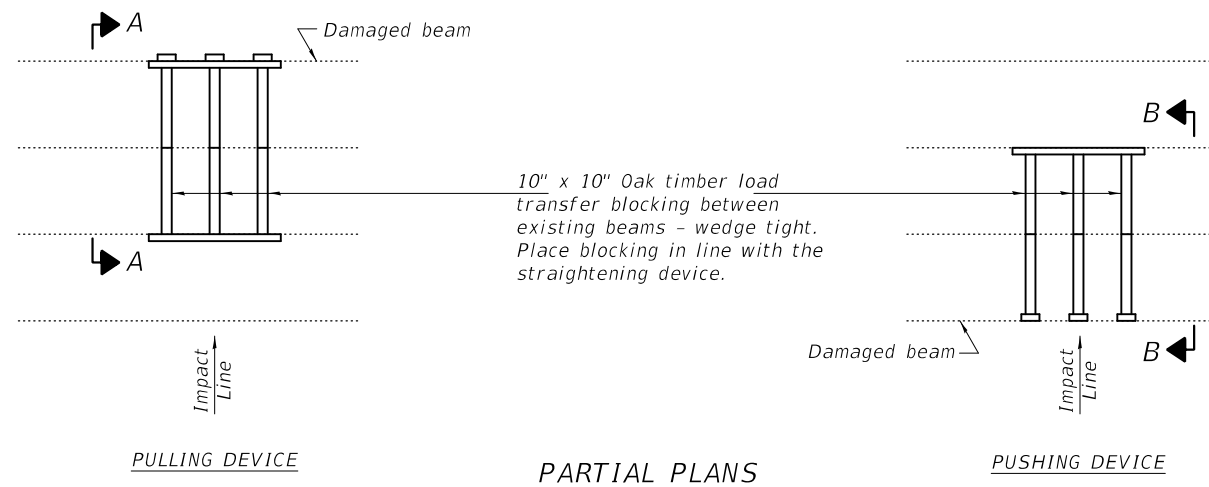
GENERAL PLAN & ELEVATION
 FARNHAM ST. OVER US 34 (FAP 29)
 SN 048-0065

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEET NO.
29	(21+HB-2)BRR	KNOX	12
			9

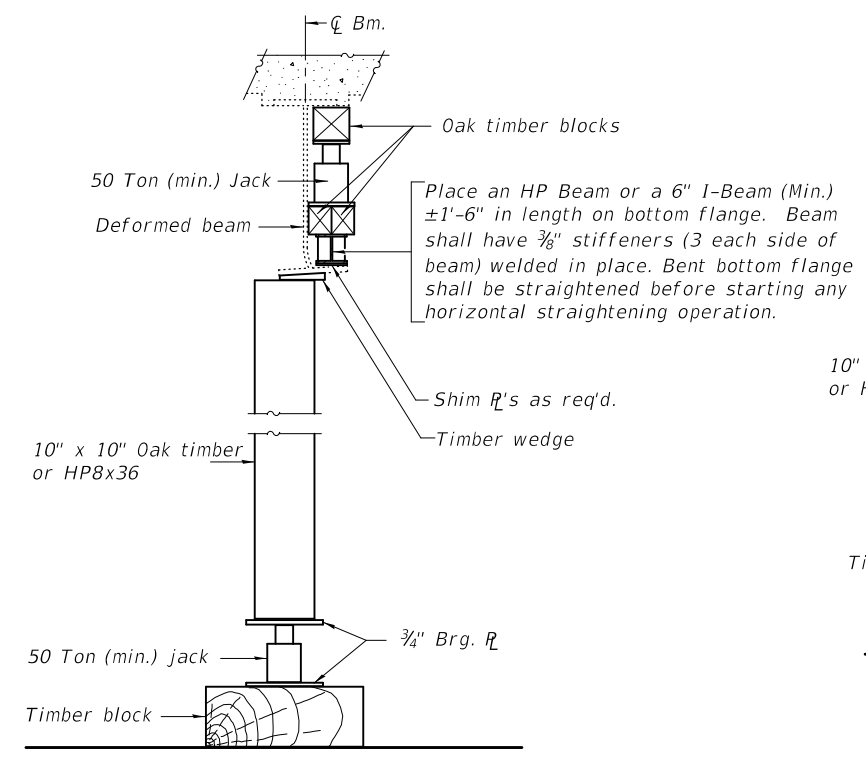
TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	0.8
Concrete Superstructure	Cu. Yd.	0.8
Structural Steel Removal	Pound	3930
Furnishing and Erecting Structural Steel	Pound	4230
Beam Straightening	L. Sum	1
Temporary Slab Support System	L. Sum	1
Temporary Shoring and Cribbing	L. Sum	1

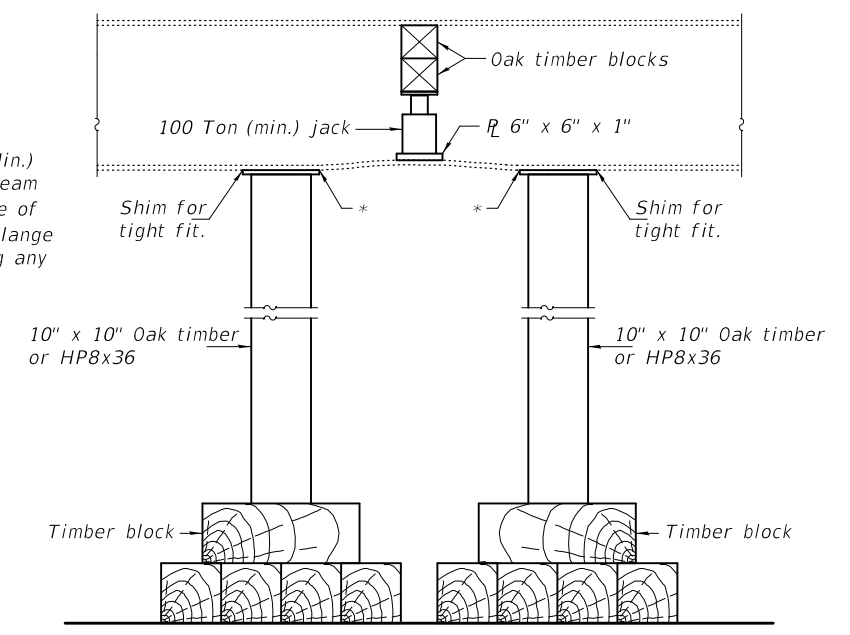
EXPIRES 11-30-2020



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

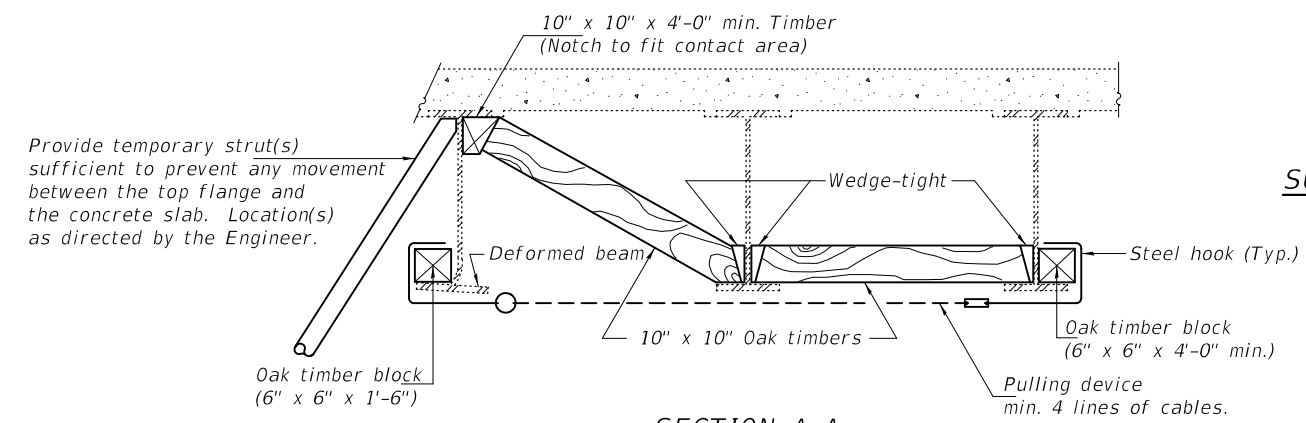


SUGGESTED VERTICAL STRAIGHTENING DETAIL
 (To correct flange rotation.)

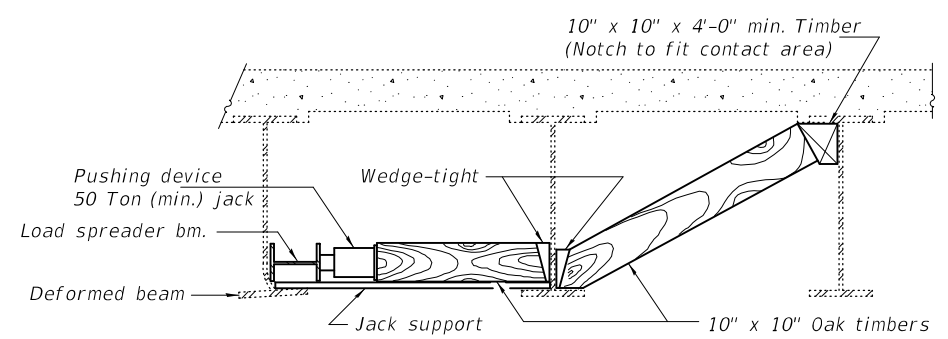


SUGGESTED VERTICAL STRAIGHTENING DETAIL
 (To correct localized vertical flange deformations.)

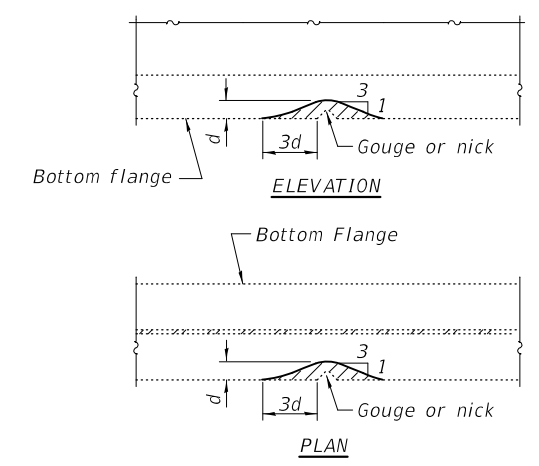
* Edge of plate shall line up with edge of deformation.
 Note:
 Braces and jack assembly shall be placed on same side of web.
 Bent bottom flange shall be straightened before starting any horizontal straightening operations.



SECTION A-A

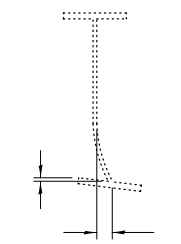


SECTION B-B



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 inch deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. Ground surfaces shall be spot cleaned and painted with an aluminum epoxy mastic primer followed by a finish coat to match the color of the existing beam. Cost of grinding, testing and spot painting included with Beam Straightening.



EXISTING DEFORMATION TO BE STRAIGHTENED
 (Looking East at Span 2)
 (Approximate max. deflections)
 Deflected length of beam to be straightened is approximately 8'-0".

LOCATION	X	Y
Bm. 1, Sp. 3	1 3/8"	7/8"

REP-1 8-16-2018

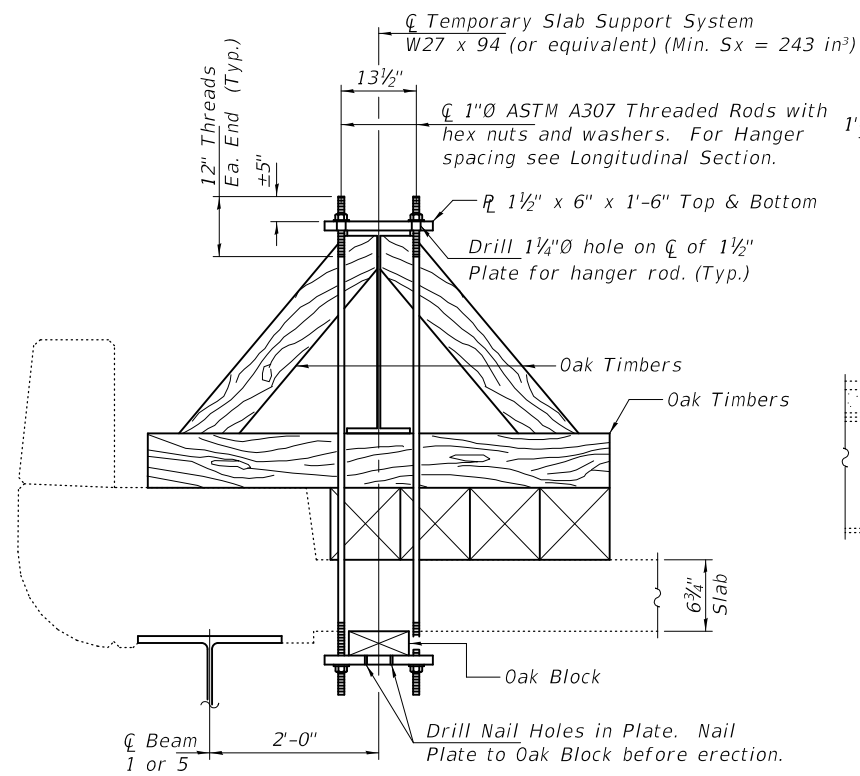
DESIGNED - VHV	EXAMINED - <i>Timothy A. Daulton</i>	DATE - NOVEMBER 14, 2018
CHECKED - JSB	ENGINEER OF STRUCTURAL SERVICES	
DRAWN - daburdell	PASSED - <i>Carl Ringer</i>	REVISED -
CHECKED - VHV JSB	ENGINEER OF BRIDGES AND STRUCTURES	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

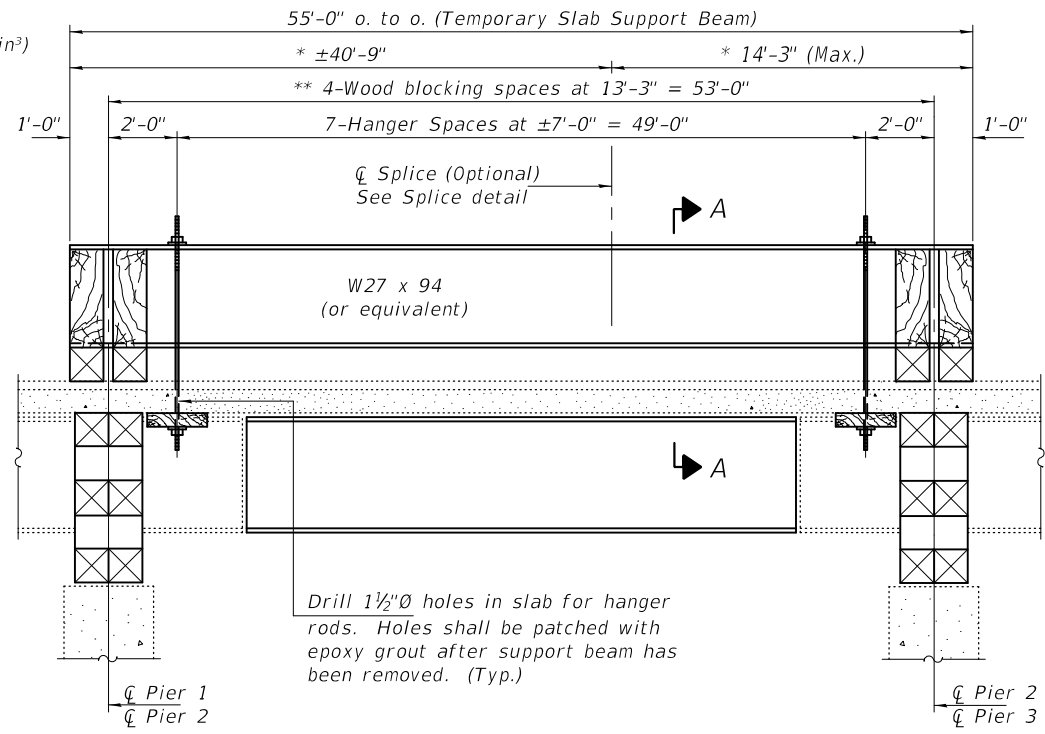
BEAM STRAIGHTENING DETAILS
 SN 048-0065

SHEET NO. 2 OF 4 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
29	(21-HB-2)BRR	KNOX	12	10
CONTRACT NO. 68E74				
ILLINOIS FED. AID PROJECT				



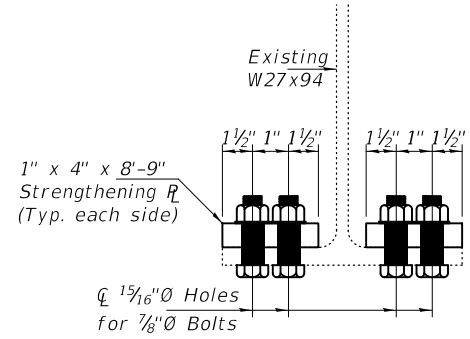
SECTION A-A NEAR SIDEWALK



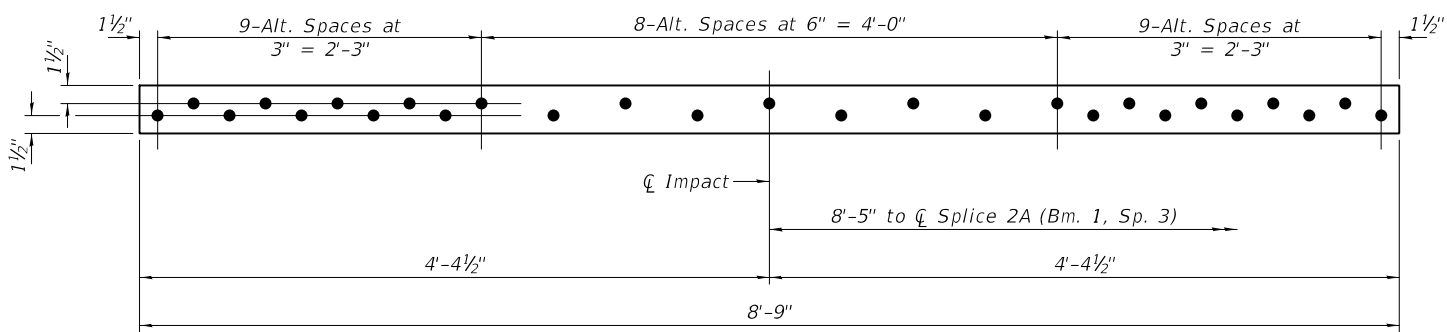
**LONGITUDINAL SECTION
SUGGESTED TEMPORARY SLAB SUPPORT SYSTEM**

* These dimensions may vary for available beams in stock.

** Wood blocking between supports to be placed after support beam deflects under its own weight.

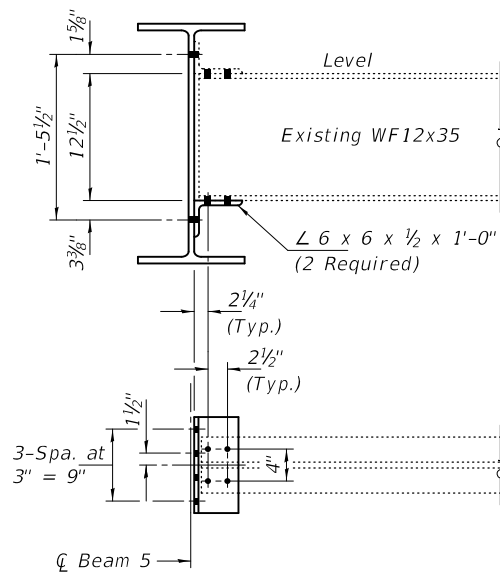


STRENGTHENING DETAIL

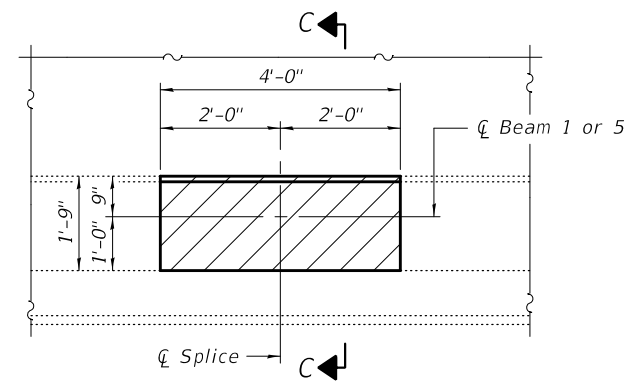


STRENGTHENING PLATES FOR BEAM 1, SPAN 3
P 1" x 4" x 8'-9" (2 Required)

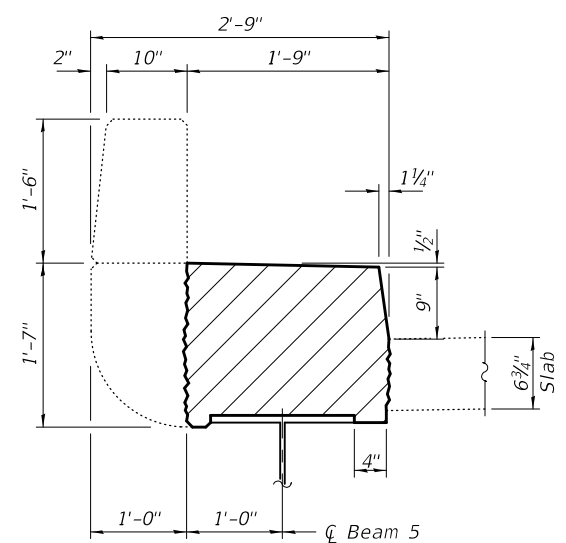
Notes:
Hatched areas indicate concrete sections to be removed and replaced. Perimeters of Concrete Removal areas shall be saw cut 3/4" prior to the removal of concrete.
Reinforcement shall be cut only if required for fitting bolts. Cut reinforcement shall be spliced as directed by the Engineer. Cost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



DETAILS FOR REPAIR



TYPICAL CONCRETE REMOVAL FOR BEAM REMOVAL



SECTION C-C

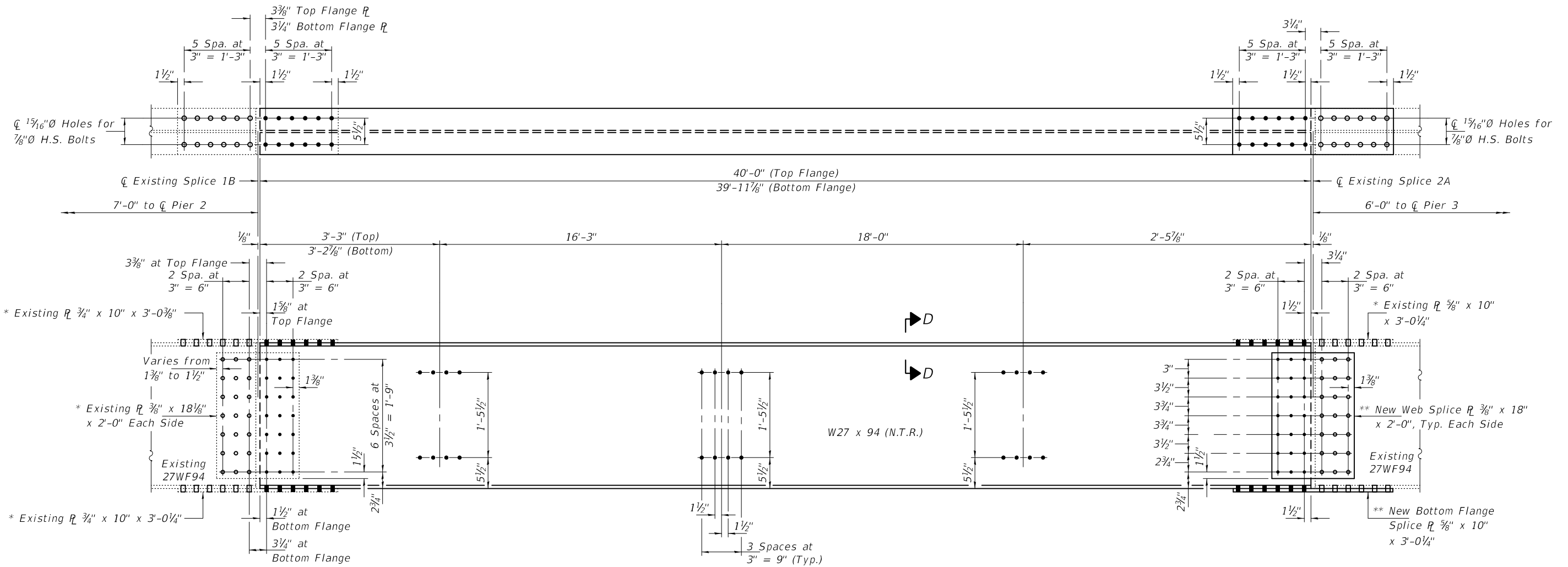
DESIGNED - VHV	EXAMINED - <i>Timothy A. Daulton</i> ENGINEER OF STRUCTURAL SERVICES	DATE - NOVEMBER 14, 2018
CHECKED - JSB	PASSED - <i>Carl Ringer</i> ENGINEER OF BRIDGES AND STRUCTURES	REVISED -
DRAWN - daburdell		REVISED -
CHECKED - VHV JSB		

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

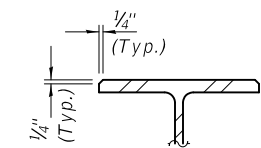
**TEMPORARY SLAB SUPPORT SYSTEM & REPAIR DETAILS
SN 048-0065**

SHEET NO. 3 OF 4 SHEETS

F.A.P. RTE. 29	SECTION (21-HB-2)BRR	COUNTY KNOX	TOTAL SHEETS 12	SHEET NO. 11
CONTRACT NO. 68E74				
ILLINOIS FED. AID PROJECT				



ELEVATION BEAM 5 SPAN 3
(Looking West)


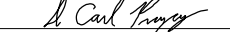


SECTION D-D

* Holes in existing R_L shall be used to field drill holes in new beam.

** Holes in existing beam shall be used to field drill holes in new Splice R_L 's.

DESIGNED - VHV
CHECKED - JSB
DRAWN - daburdell
CHECKED - VHV JSB

EXAMINED
PASSED


 ENGINEER OF STRUCTURAL SERVICES
 ENGINEER OF BRIDGES AND STRUCTURES

DATE - NOVEMBER 14, 2018
 REVISED -
 REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEAM REPAIR DETAILS FOR BEAM 5, SPAN 3
SN 048-0065

SHEET NO. 4 OF 4 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
29	(21-HB-2)BRR	KNOX	12	12
CONTRACT NO. 68E74				
ILLINOIS FED. AID PROJECT				