

DESIGNER: CLARK JONES  
PHONE: (309)671-3452

PROJECT ENGINEER: JIM MILLER  
PHONE: (309)671-3451

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

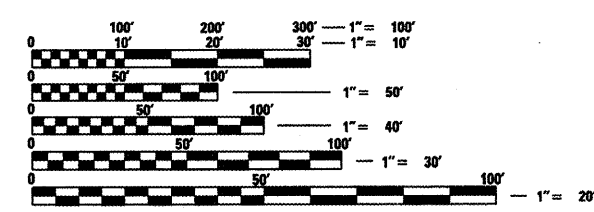
**PROPOSED  
HIGHWAY PLANS**

FAI 74 (I-74)  
SECTION (X3-17HB)I-2  
DAMAGED BEAM REPAIRS  
WOODFORD COUNTY

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(X3-17HB)I-2	WOODFORD	11	1
FED. ROAD DIST. NO. 4		ILLINOIS	CONTRACT NO. 68854	

- INDEX OF SHEETS:
1. COVER SHEET
  2. COMMITMENTS & GENERAL NOTES
  3. SUMMARY OF QUANTITIES
  4. EXISTING CROSS SECTIONS
  5. SCHEDULE OF QUANTITIES
  6. GENERAL LAYOUT
  - 7-8. PROPOSED TRAFFIC CONTROL
  - 9-11. REPAIR DETAILS

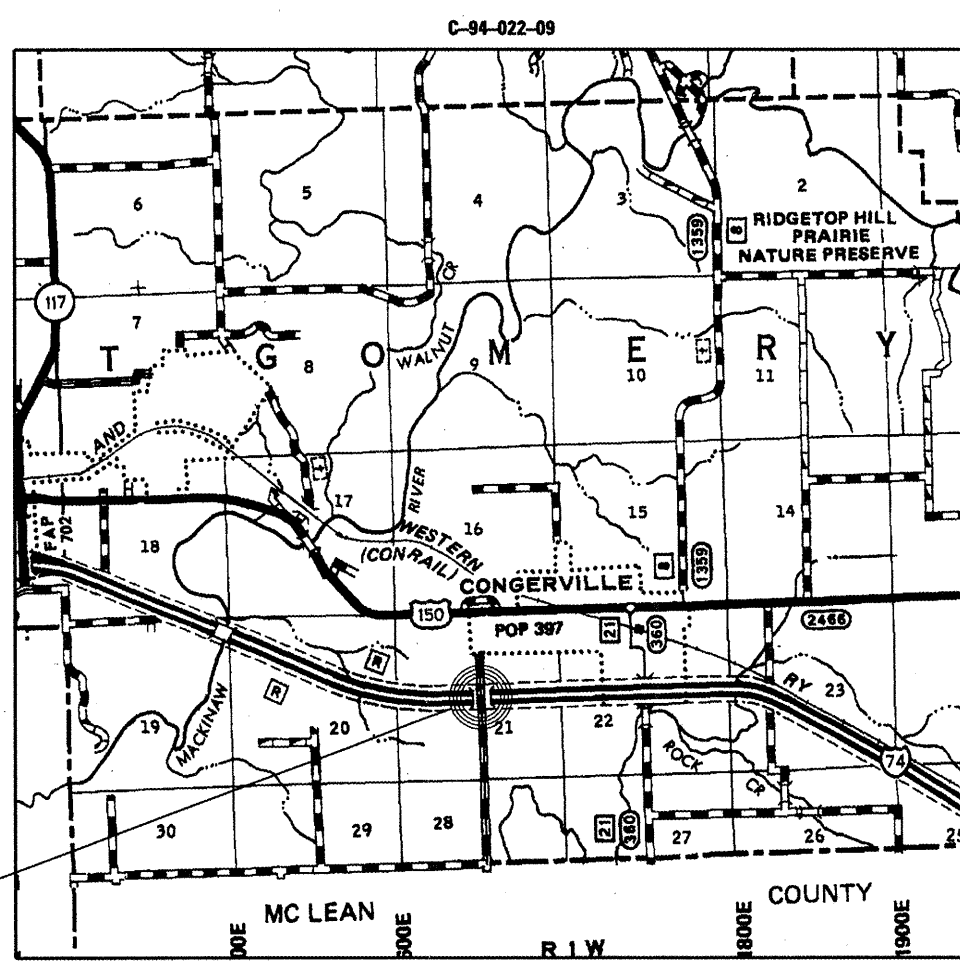
- STANDARDS:
- |           |           |           |
|-----------|-----------|-----------|
| 701001-02 | 701316-04 | 701901-01 |
| 701006-03 | 701400-03 |           |
| 701201-03 | 701406-05 |           |



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.

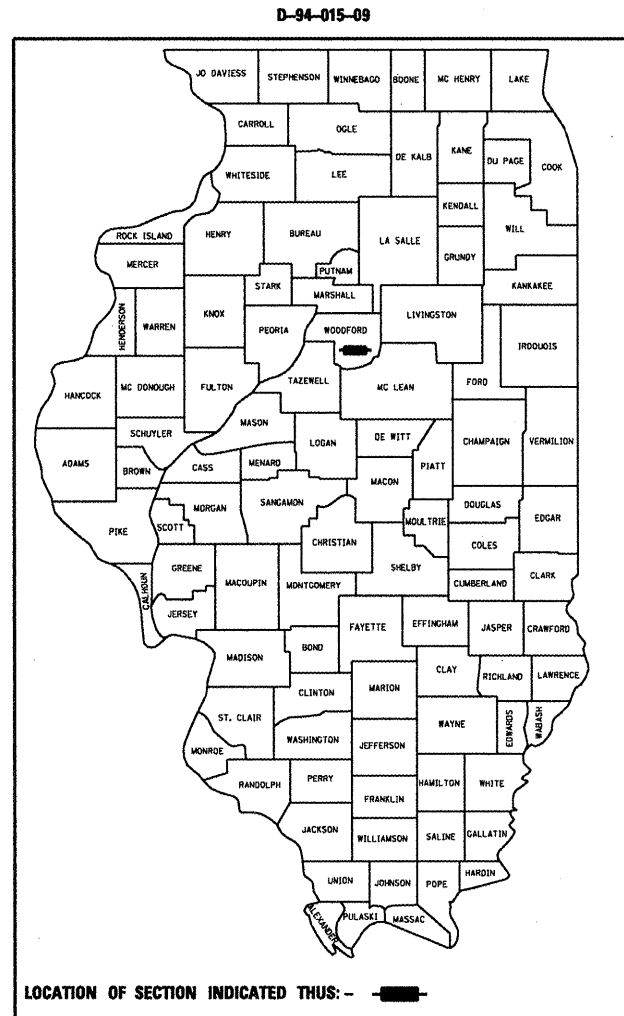
J.U.L.I.E.  
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION  
1-800-892-0123  
OR 811

SN.102-0034



LOCATION MAP

GROSS LENGTH = 1431.25 FT. = 0.271 MILE  
NET LENGTH = 1431.25 FT. = 0.271 MILE



PROJECT CONSISTS OF DAMAGED BEAM REPAIRS AND CONCRETE SEALER APPLICATION ON STRUCTURE CARRYING TR 134 OVER I-74 (SN.102-0034), 1 MILE S. OF CONGERVILLE

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

SUBMITTED Jan 16, 2009

[Signature]  
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

March 27, 2009  
Charles J. Ingersoll  
ENGINEER OF DESIGN AND ENVIRONMENT

March 27, 2009  
Christine M. Reed  
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PRINTED BY THE AUTHORITY  
OF THE STATE OF ILLINOIS

PROJECT ENGINEER- JIM MILLER  
PROJECT MANAGER- MAUREEN ADDIS

CONTRACT NO. 68854 CAT. NO. 034165-00D

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.*

SN. 102-0034  
TR134over I-74

FILE NAME = 0468854-sht-cover.dgn	USER NAME = jonesce	DESIGNED - CEJ	REVISED - ---	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	COMMITMENTS & GENERAL NOTES	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = 1/32" = 1' / IN.	DRAWN - CEJ	REVISED - ---			74	(X3-17HB)I-2	WOODFORD	11	2
	PLOT DATE = 1/15/2009	CHECKED - ---	REVISED - ---			BEAM REPAIRS		CONTRACT NO. 68854		FED. ROAD DIST. NO. 4 ILLINOIS FED. AID PROJECT
	DATE - ---	REVISED - ---		SCALE: _____	SHEET NO. ___ OF ___ SHEETS	STA. _____	TO STA. _____			

# SUMMARY OF QUANTITIES

100% STATE SAFETY-2A  
WOODFORD COUNTY

CODE NO.	ITEM	UNIT	RURAL	TOTAL

100% STATE SAFETY-2A  
WOODFORD COUNTY

CODE NO.	ITEM	UNIT	RURAL	TOTAL
50102400	CONCRETE REMOVAL	CUYD	0.7	0.7
50300255	CONCRETE SUPERSTRUCTURE	CUYD	0.7	0.7
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	5,120	5,120
50501110	STRUCTURAL STEEL REMOVAL	POUND	5,185	5,185
67100100	MOBILIZATION	LSUM	1	1
70100100	TRAFFIC CONTROL AND PROTECTION, STANDARD 701316	EACH	1	1
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	LSUM	1	1
70100700	TRAFFIC CONTROL AND PROTECTION, STANDARD 701406	LSUM	1	1
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1	1
70106800	CHANGEABLE MESSAGE SIGN	CAL MO	1	1
X0325778	SOLUBLE REACTIVE SILICATE CONCRETE TREATMENT	SOYD	635	635
Z0003600	BEAM STRAIGHTENING	LSUM	1	1
Z0073300	TEMPORARY SHORING AND CRIBBING	LSUM	1	1
Z0073351	TEMPORARY SLAB SUPPORT SYSTEM	LSUM	1	1

FILE NAME = 0468854-sht-cover.dgn	USER NAME = Jonesce	DESIGNED - CEJ	REVISED - ---
	PLOT SCALE = 104.4291' / IN.	DRAWN - CEJ	REVISED - ---
	PLOT DATE = 1/15/2009	CHECKED - ---	REVISED - ---
		DATE - -----	REVISED - ---

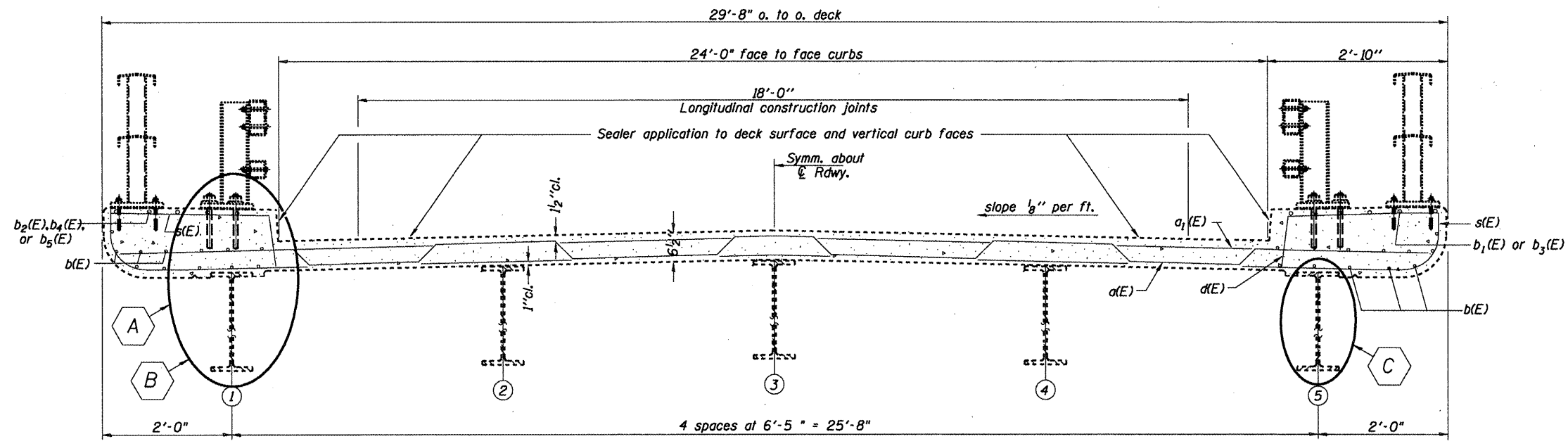
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

**SUMMARY OF QUANTITIES**

SCALE: \_\_\_\_\_ SHEET NO. \_\_\_\_ OF \_\_\_\_ SHEETS STA. \_\_\_\_\_ TO STA. \_\_\_\_\_

F.A.I. RTE. 74	SECTION (X3-17HB)I-2	COUNTY WOODFORD	TOTAL SHEETS 11	SHEET NO. 3
BEAM REPAIRS		CONTRACT NO. 68854		
FED. ROAD DIST. NO. 4 ILLINOIS FED. AID PROJECT				

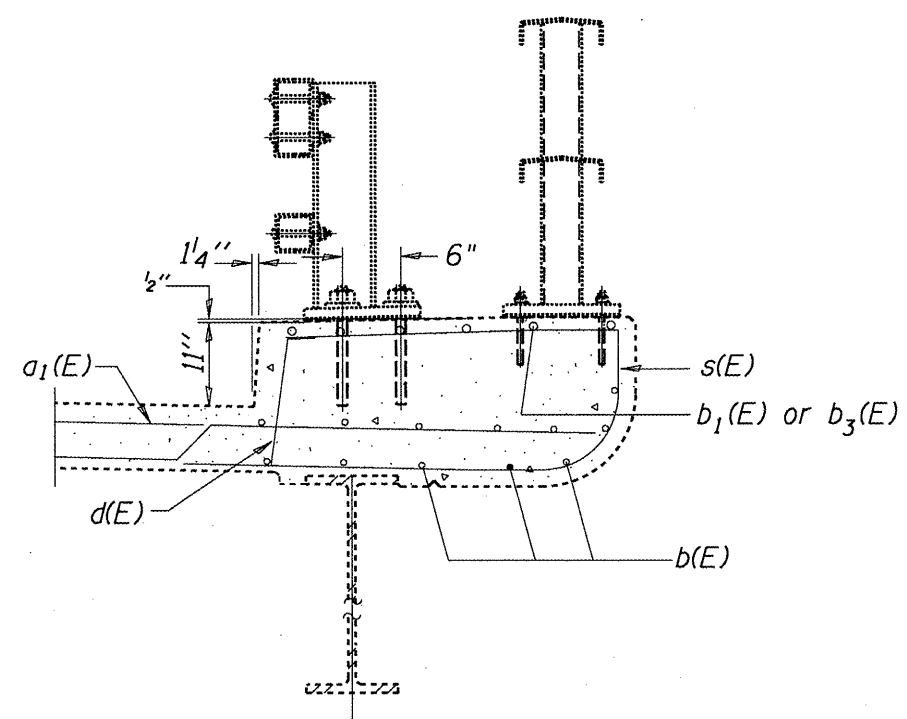
SN. 102-0034  
TR134over I-74



NEAR PIER

CROSS SECTION

NEAR MIDSPAN



CURB DETAIL

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.  
 Remove and Replace or Straighten Repairs (See Repair Details - Sheet 1 of 3)

FOR REFERENCE ONLY

FILE NAME = D468854-shr-cover.dgn	USER NAME = jonesce	DESIGNED - CEJ	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	<b>EXISTING CROSS SECTIONS</b>			F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = 1/4" = 1'-0"	DRAWN - CEJ	REVISED -		74	(X3-17NB)I-2	WOODFORD	11	4			
	PLOT DATE = 1/15/2009	CHECKED -	REVISED -		SCALE: _____ SHEET NO. ____ OF ____ SHEETS STA. _____ TO STA. _____			BEAM REPAIRS		CONTRACT NO. 68854		
		DATE -	REVISED -					FED. ROAD DIST. NO. 4 ILLINOIS FED. AID PROJECT				

SN. 102-0034  
 TR134over I-74

# SCHEDULE OF QUANTITIES

## SRS CONCRETE TREATMENT

LOCATION	SQYD
DECK SURFACE	590
VERTICAL SIDES	45
TOTAL	635

## TRAFFIC CONTROL

LOCATION STA. TO STA.	TEMP. BR. TRAF. SIGNALS (EA)	T.C.&P. STANDARD 701406 (LSUM)	T.C.&P. STANDARD 701316 (EACH)	T.C.&P. STANDARD 701201 (LSUM)	CHANGEABLE MESSAGE SIGN (CALM)
T.R.134 DECK I-74	1	1	1	1	1
TOTAL	1	1	1	1	1

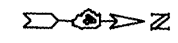
## STEEL BEAM REPAIRS

CONCRETE REMOVAL	
SOUTH HALF OF SPAN 2	CUYD
Span 2	0.7
TOTAL	0.7
CONCRETE SUPERSTRUCTURE	
SOUTH HALF OF SPAN 2	CUYD
Span 2	0.7
TOTAL	0.7
FURNISHING & ERECTING STRUCTURAL STEEL	
SPAN 2	PD
Span 1 & 2 Replacement Area	5,120
TOTAL	5,120
STRUCTURAL STEEL REMOVAL	
SPAN 2	PD
Spans 1 & 2 Designated Beams	5,185
TOTAL	5,185
TEMPORARY SLAB SUPPORT SYSTEM	
BEAM STRAIGHTENING DETAILS	LSUM
Pier 1	1
TOTAL	1
BEAM STRAIGHTENING	
SPAN 2, BEAM 5	LSUM
Span 2	1
TOTAL	1
TEMPORARY SHORING & CRIBBING	
BEAM STRAIGHTENING DETAILS	LSUM
Jobsite Deck Support	1
TOTAL	1

SN. 102-0034  
TR134over I-74

FILE NAME = D468854-sht-cover.dgn	USER NAME = jonesce	DESIGNED - CEJ	REVISED - ---	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SCHEDULE OF QUANTITIES	F.A.I. RTE. 74	SECTION (X3-17HBII)-2	COUNTY WOODFORD	TOTAL SHEETS 11	SHEET NO. 5
PLOT SCALE = 1/16" = 1' / IN.	CHECKED - ---	DRAWN - CEJ	REVISED - ---		SCALE: _____	SHEET NO. ___ OF ___ SHEETS	CONTRACT NO. 68854	FED. ROAD DIST. NO. 4   ILLINOIS FED. AID PROJECT		
PLOT DATE = 1/15/2009	DATE - -----		REVISED - ---		STA. _____ TO STA. _____					

STEEL PLATE BEAM GUARD RAIL (STD.1697-3)  
 STA. 258+45.5 TO STA. 261+59 LT. = 312.5 LIN. FT.  
 STA. 259+70.5 TO STA. 261+59 RT. = 287.5 LIN. FT.  
 STA. 264+00 TO STA. 267+97.5 LT.&RT. = 775.0 LIN. FT.  
 TOTAL = 1375.0 LIN. FT.



SEC. 21 T25N R1W 3PM

ROY E. & PEARL A. SCHROCK

Sta. 261+70.21  
80'

Sta. 263+90.27  
85'

T.R. 134

260

263

265

STA. 262+79.45 T.R. 134  
 STA. 1276+99.99 FAI. 74

EDNA M. MILLER

Sta. 261+53.77  
70'

Sta. 263+80.59  
90'

F.A.I. 74

FOR REFERENCE ONLY

SN. 102-0034  
 TR134over I-74

FILE NAME =  
 0468854-shr-cover.dgn

USER NAME = jonesce

DESIGNED - CEJ

REVISED -

DRAWN - CEJ

REVISED -

PLOT SCALE = 104.4291 / IN.

CHECKED -

REVISED -

PLOT DATE = 1/15/2009

DATE -

REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

GENERAL LAYOUT

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

F.A.I.  
 RTE.

SECTION  
 (X3-17HB)I-2

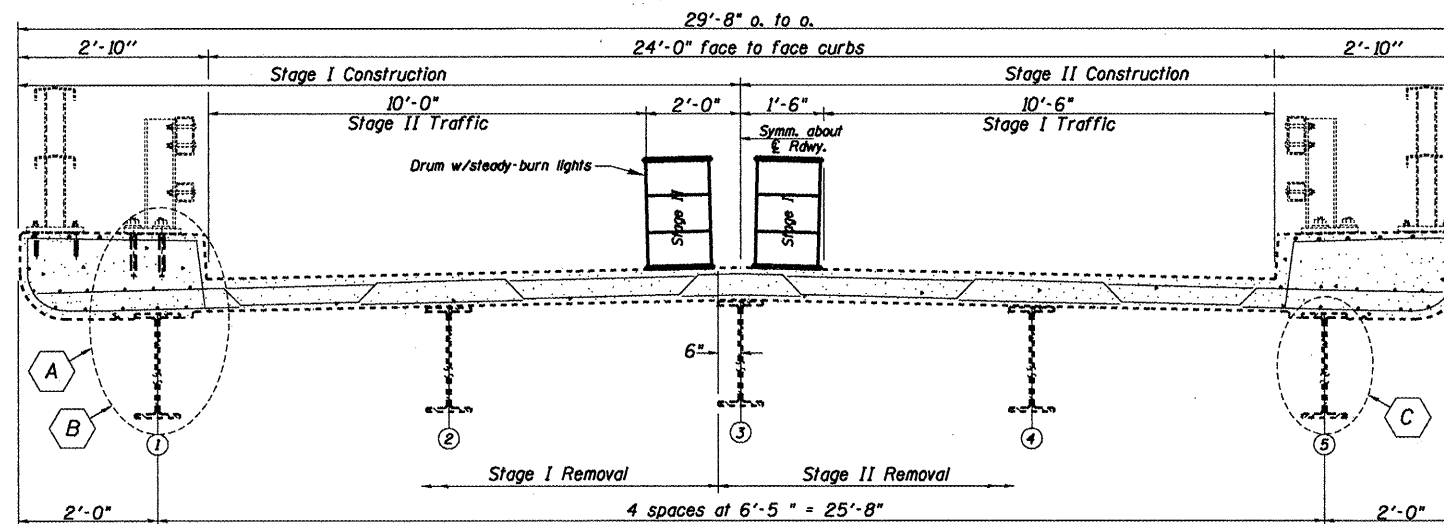
COUNTY  
 WOODFORD

TOTAL SHEETS  
 11

74

BEAM REPAIRS CONTRACT NO. 68854

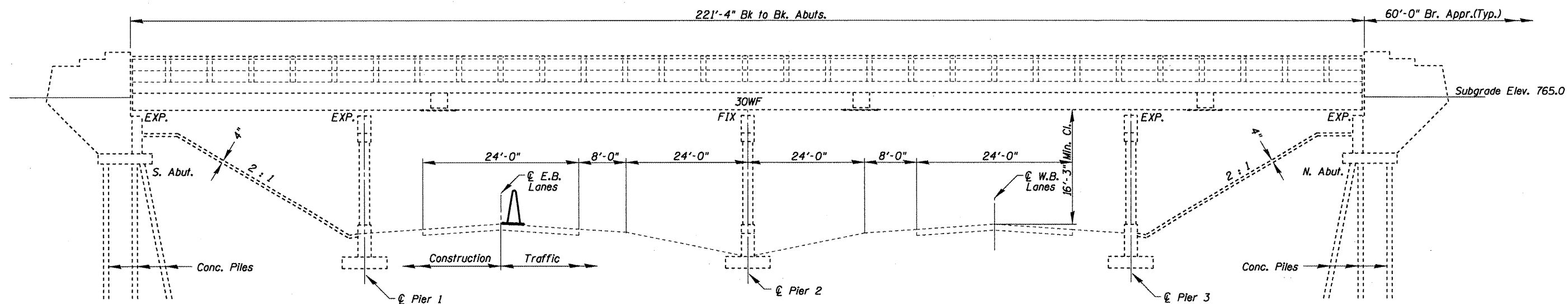
FED. ROAD DIST. NO. 4 ILLINOIS FED. AID PROJECT



**TRAFFIC PLAN**  
(Looking North)

**SYMBOLS**

 Remove and Replace or Straighten Repairs  
(See Repair Details - Sheet 1 of 3)

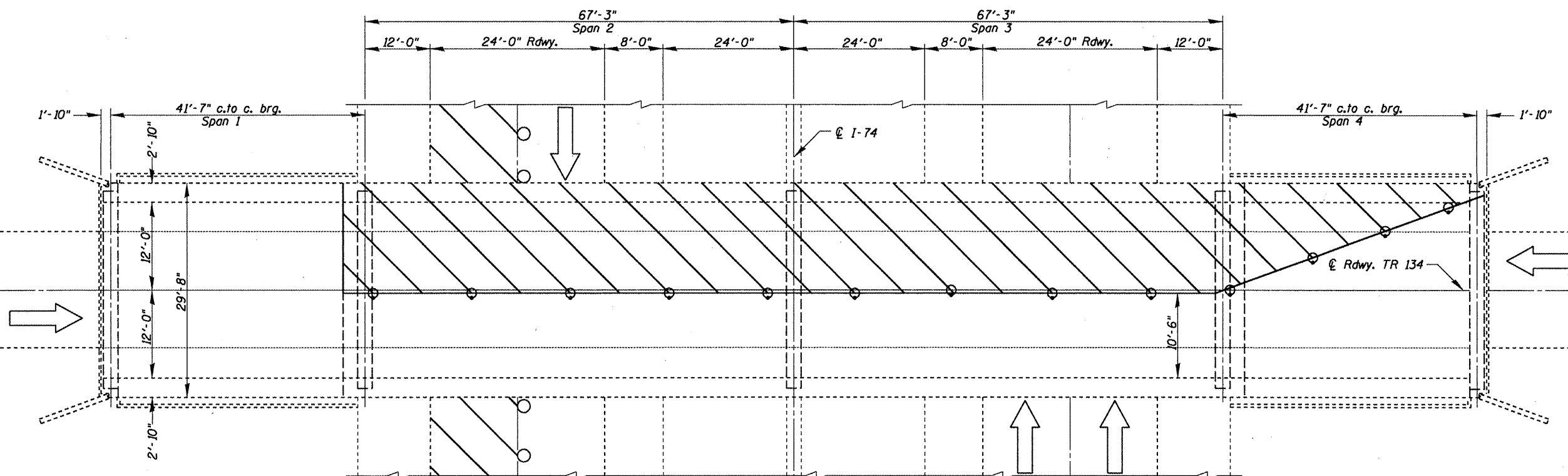


**TRAFFIC CONTROL**  
(Elevation)

**Note:**  
Refer to Highway Standard 701201, 701316 and 701406 for exact placement of traffic management devices and other clarifications as construction staging symbols and dimensioning were duplicated off of these standards.

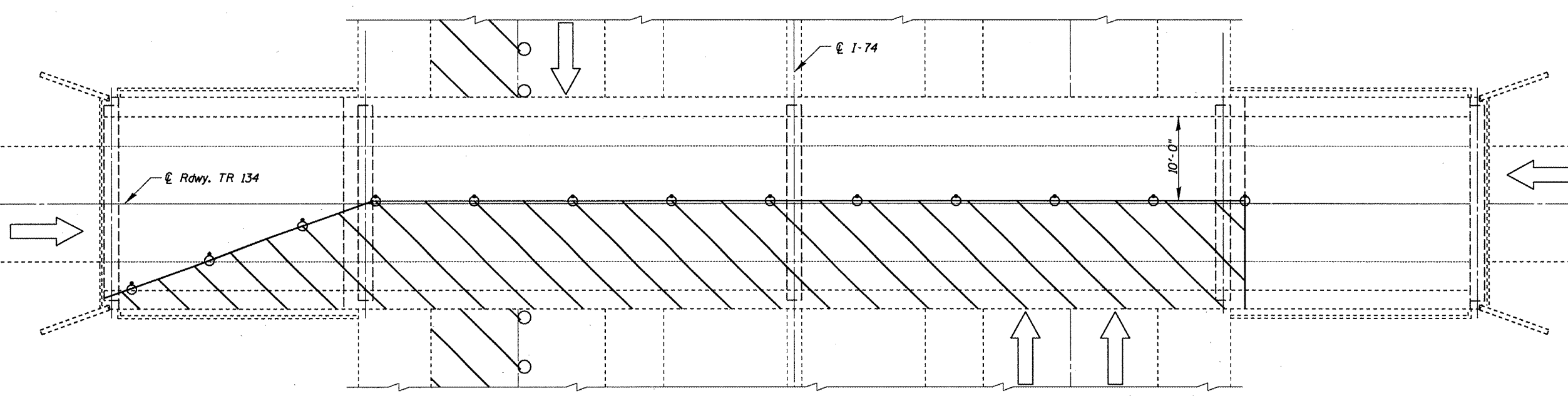
SN. 102-0034  
TR134over I-74

FILE NAME = D468854-sht-cover.dgn	USER NAME = jonesce	DESIGNED - CEJ	REVISED - ---	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>PROPOSED TRAFFIC CONTROL</b>		F.A.I. RTE. = 74	SECTION = (X3-17HB11-2)	COUNTY = WOODFORD	TOTAL SHEETS = 11	SHEET NO. = 7
	PLOT SCALE = 1/83.7051' / IN.	CHECKED - ---	REVISED - ---				CONTRACT NO. 68854				
	PLOT DATE = 1/16/2009	DATE = 12/16/2008	REVISED - ---				FED. ROAD DIST. NO. 4 (ILLINOIS) FED. AID PROJECT				



**TRAFFIC CONTROL**  
(Stage I)

- SYMBOLS**
- Work Area
  - Cone, Drum, or Barricade
  - Traffic
  - Drum w/ steady burn light



**TRAFFIC CONTROL**  
(Stage II)

Note:  
Refer to Highway Standard 701201, 701316 and 701406 for exact placement of traffic management devices and other clarifications as construction staging symbols and dimensioning were duplicated off of these standards.

SN. 102-0034  
TR134over I-74

FILE NAME =	USER NAME = jonesce
D468854-ahc-cover.dgn	

DESIGNED - CEJ	REVISED - ---
DRAWN - CEJ	REVISED - ---
PLOT SCALE = 1/83.7051' / IN.	REVISED - ---
CHECKED - ---	REVISED - ---
PLOT DATE = 1/16/2009	REVISED - ---

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

**PROPOSED TRAFFIC CONTROL**

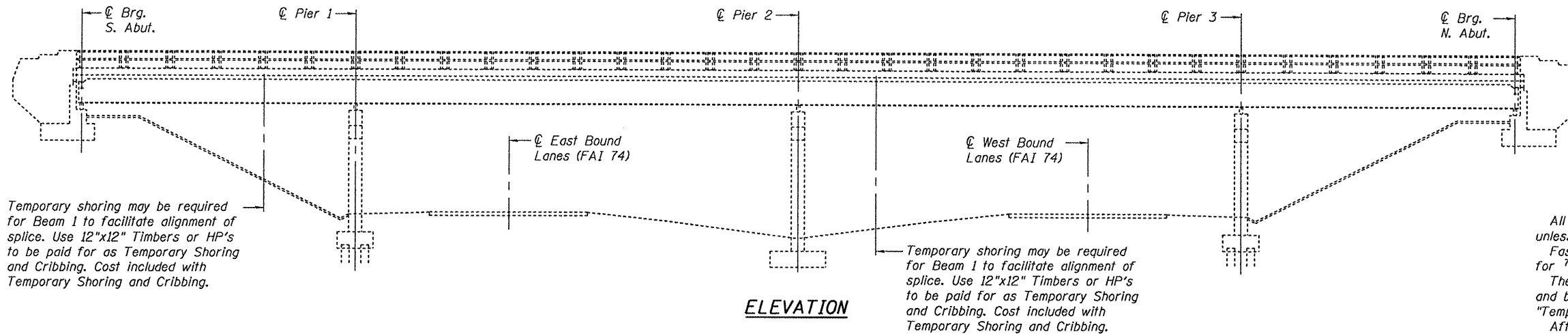
SCALE: \_\_\_\_\_ SHEET NO. \_\_\_ OF \_\_\_ SHEETS STA. \_\_\_\_\_ TO STA. \_\_\_\_\_

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(X3-17HB11-2	WOODFORD	11	8
BEAM REPAIRS			CONTRACT NO. 68854	
FED. ROAD DIST. NO. 4 (ILLINOIS) FED. AID PROJECT				



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 74	**	Woodford	11	9
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT-				
Contract Number: 68854 **K3-17-HB11-2				



ELEVATION

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  $1\frac{5}{16}$ "  $\phi$  for  $7/8$ "  $\phi$  bolts. Web splice holes shall be  $1\frac{5}{16}$ "  $\phi$  for  $3/4$ "  $\phi$  bolts.

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."

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 routine 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 based upon 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.

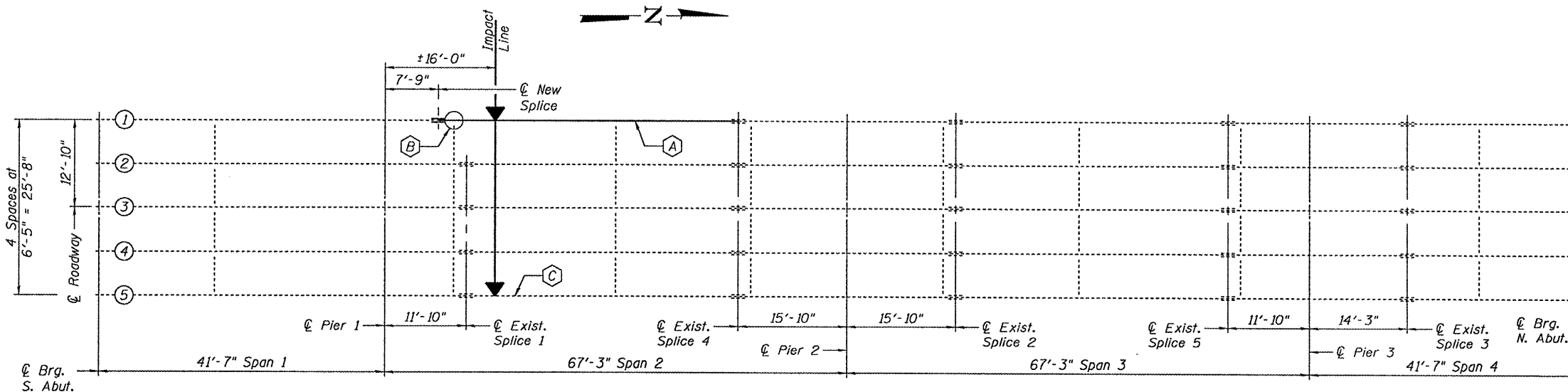
The Inorganic Zinc Rich Primer / Acrylic / Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final finish coat for all interior steel surfaces shall be gray, Munsell No. 5B 7/1. The color of the final finish coat for 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".

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.

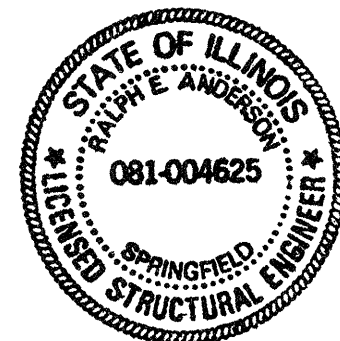
Diaphragm connection holes shall be  $1\frac{5}{16}$ "  $\phi$  for  $3/4$ "  $\phi$  bolts. Two hardened washers shall be required at diaphragm connections.

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



PLAN

- (A) Remove and Replace Beam Segment
- (B) Remove and Replace Bottom Clip Angle
- (C) Beam to be Straightened



DESIGNED: *Vickor H. Vello* March 9, 2009  
 CHECKED: *Ralph E. Anderson*  
 DRAWN: *VHV*  
 EXAMINED: *Ralph E. Anderson*  
 PASSED: *Ralph E. Anderson*

Expires: November 30, 2010

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Furnishing and Erecting Structural Steel	Pound	5,120
Structural Steel Removal	Pound	5,185
Beam Straightening	L.S.	1
Temporary Slab Support System	L.S.	1
Concrete Removal	Cu. Yd.	0.7
Concrete Superstructure	Cu. Yd.	0.7
Temporary Shoring and Cribbing	L.S.	1

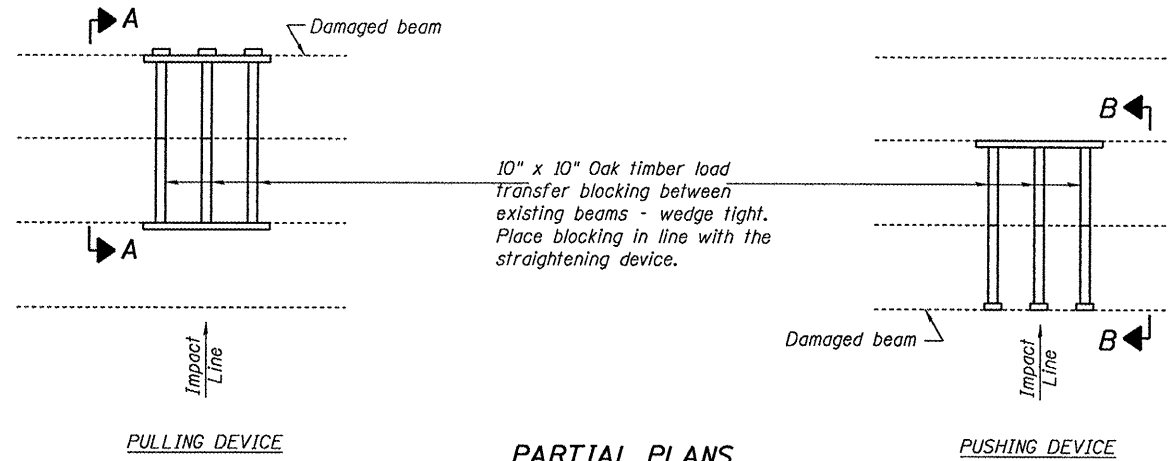
PLAN AND ELEVATION  
F.A.I. RT. 74  
WOODFORD COUNTY  
SN 102-0034

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 74	++	Woodford	11	10
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

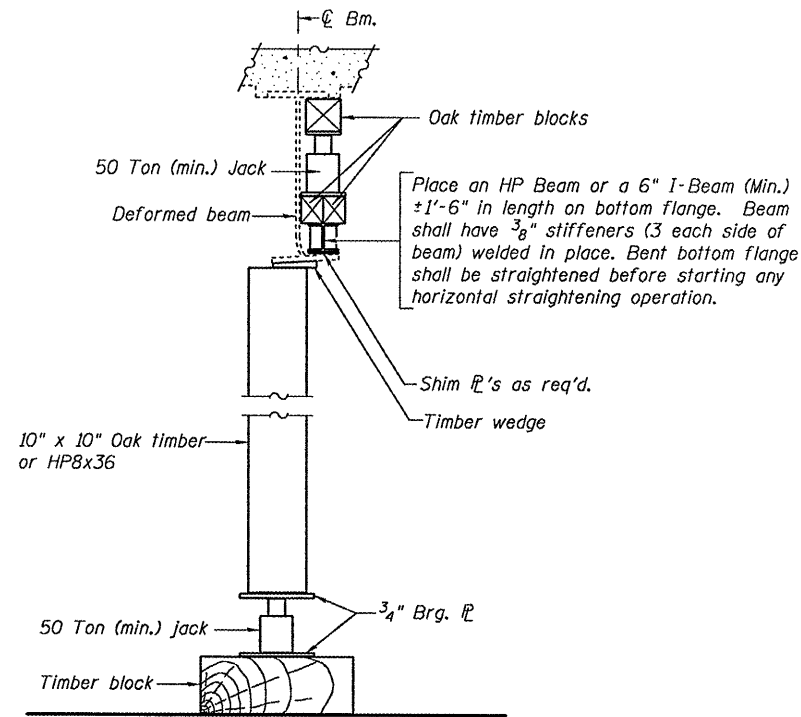
Contract Number: 68854    ++(X3-17-HB)1-2

SHEET NO. 2  
3 SHEETS

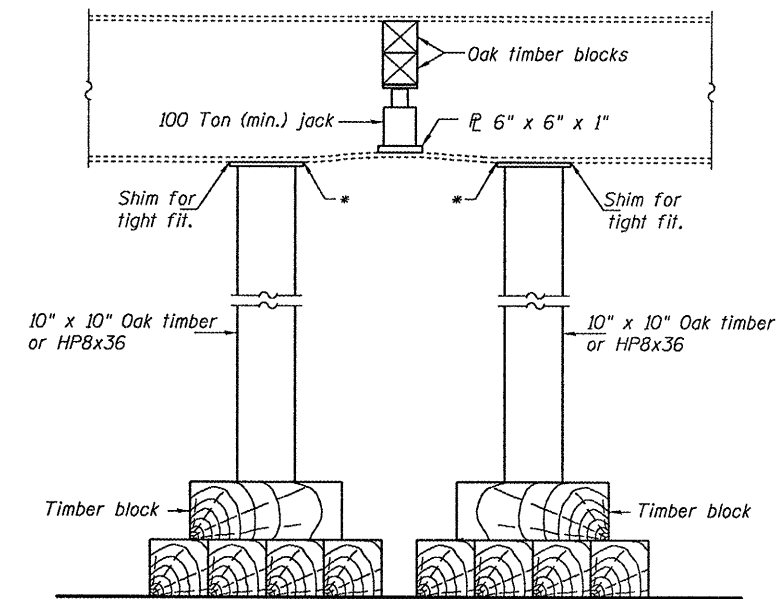


**PARTIAL PLANS**  
**SUGGESTED BEAM STRAIGHTENING METHODS**

Straightening force shall be maintained on all load transfer blocking during beam straightening.



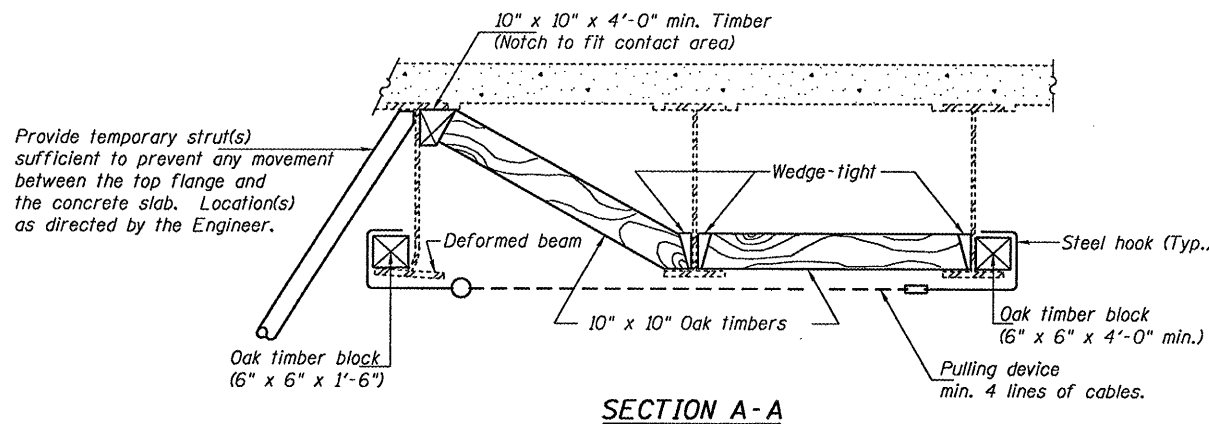
**SUGGESTED VERTICAL STRAIGHTENING DETAIL**  
(To correct flange rotation.)



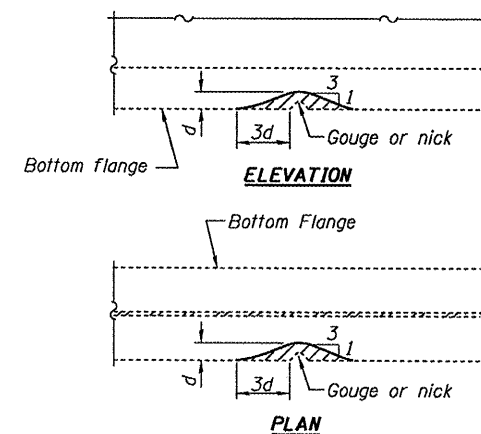
**SUGGESTED VERTICAL STRAIGHTENING DETAIL**  
(To correct localized vertical flange deformations.)

\* 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.

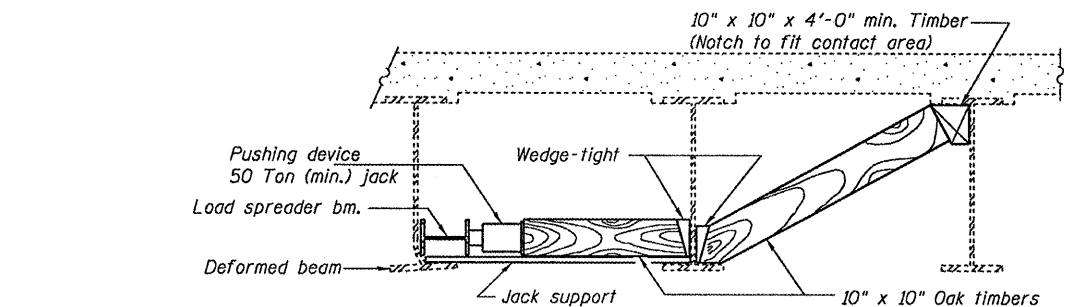


**SECTION A-A**

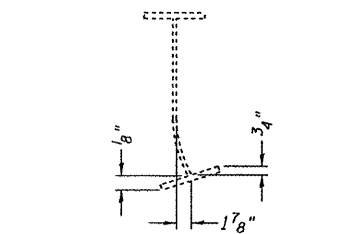


**GRINDING DETAIL**

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



**SECTION B-B**



**EXISTING DEFORMATION TO BE STRAIGHTENED**  
(Looking North)  
(Approximate max. deflections)  
Deflected length of beam to be straightened is approximately 16'-0".

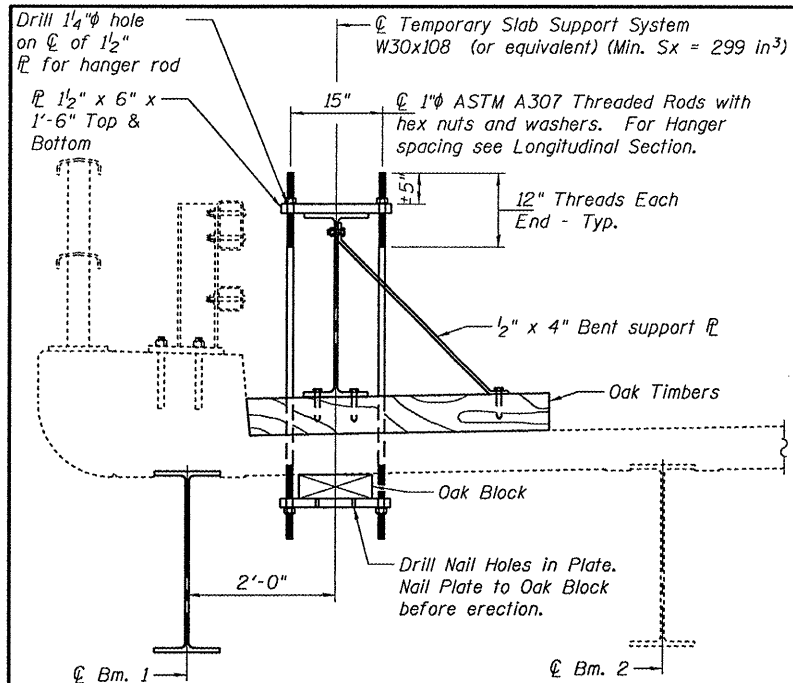
DESIGNED	V.H.V.
CHECKED	D.A.B.
DRAWN	Drew Christopher
CHECKED	V.H.V. D.A.B.

March 9, 2009  
EXAMINED *Carl P... Engineer of Structural Services*  
PASSED *Ralph E. Anderson Engineer of Bridges and Structures*

**BEAM STRAIGHTENING DETAILS**  
F.A.I. RT. 74  
WOODFORD COUNTY  
SN 102-0034

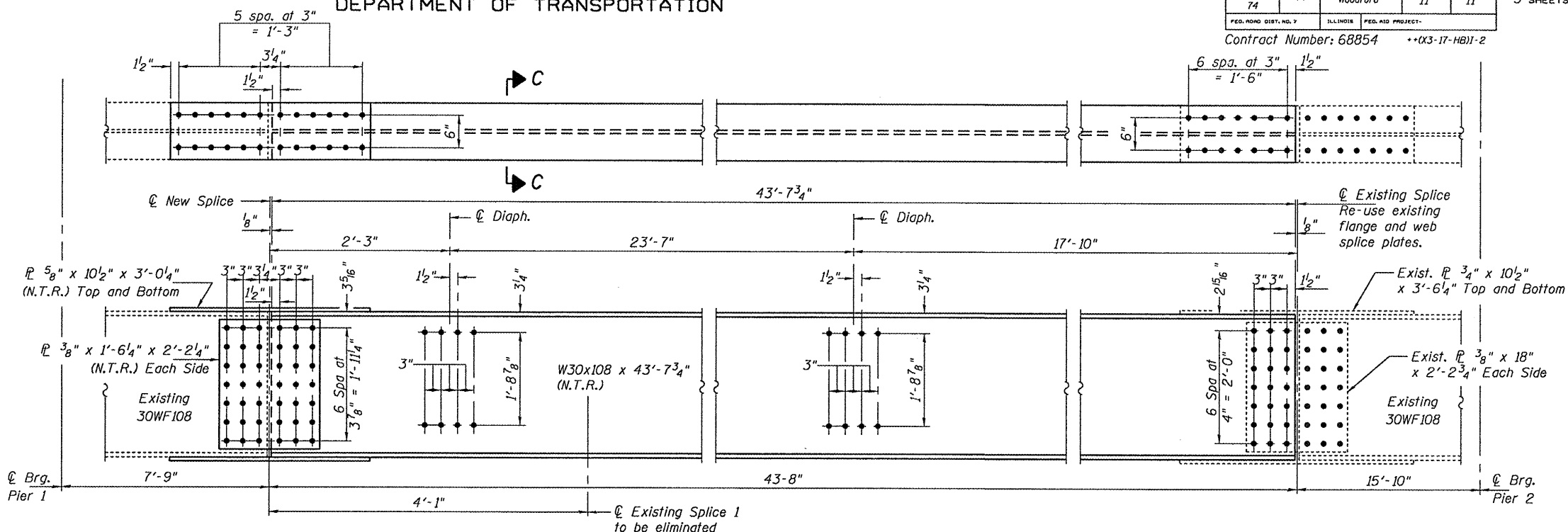
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	INVERT	SHEET	SHEET NO. 3 3 SHEETS
FAI 74	**	Woodford	11	11	
Contract Number: 68854 **03-17-HB11-2					

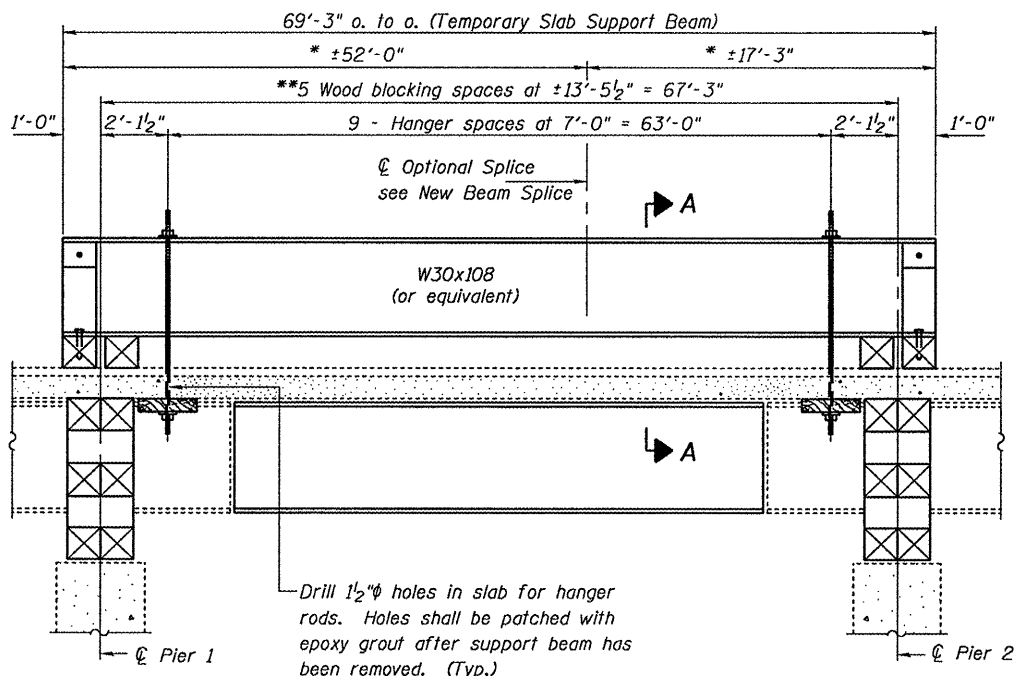


SECTION A-A

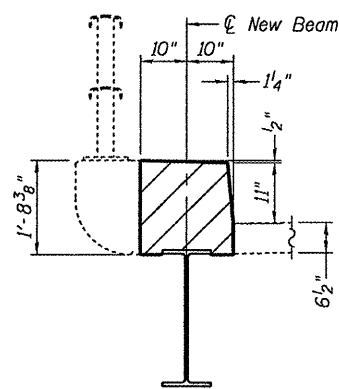
\* These dimensions may vary for available beams in stock.  
\*\* Wood blocking between piers to be placed after support beam deflects under its own weight.



ELEVATION BEAM 1

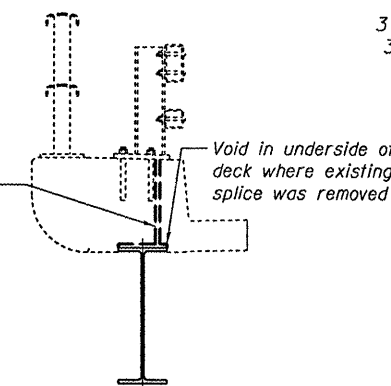


LONGITUDINAL SECTION  
SUGGESTED TEMPORARY SLAB SUPPORT SYSTEM

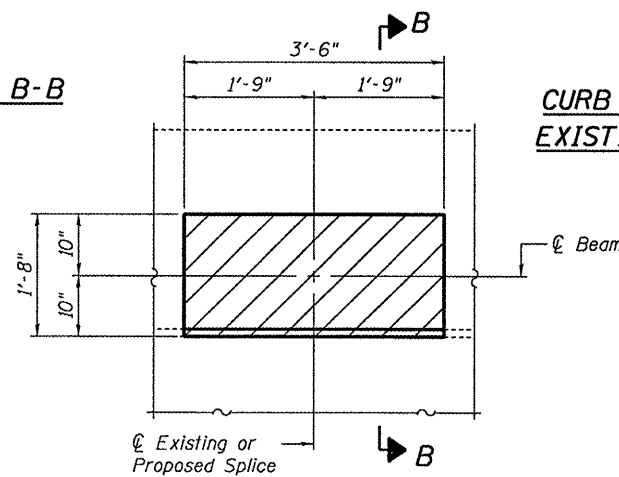


SECTION B-B

1" hole drilled into void before beam is installed to pump void full of grout. Space to miss existing rail post. Cost of drilling and grout included with Furnishing and Erecting Structural Steel.

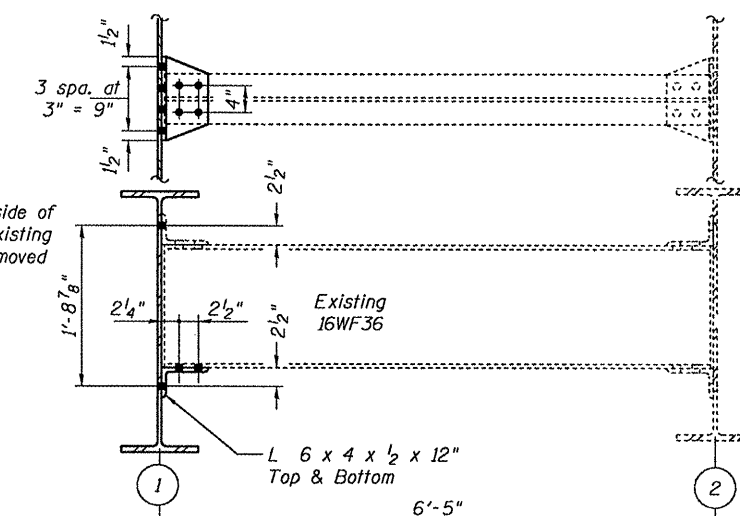


CURB SECTION AT  
EXISTING SPLICE 1

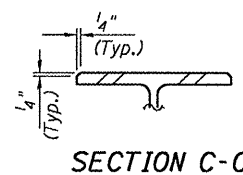


TYPICAL CONCRETE REMOVAL  
AND REPLACEMENT

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 shall be included with Concrete Removal.



CLIP ANGLE REPLACEMENT DETAIL  
Use holes in existing diaphragm as a template to field drill new clip angles.



SECTION C-C

BEAM REPLACEMENT DETAILS  
F.A.I. RT. 74  
WOODFORD COUNTY  
SN 102-0034

DESIGNED	V.H.V.
CHECKED	D.A.B.
DRAWN	Drew Christopher
CHECKED	V.H.V. D.A.B.

EXAMINED	March 9, 2009
PASSED	Ralph E. Anderson

REP-2 1-27-2000