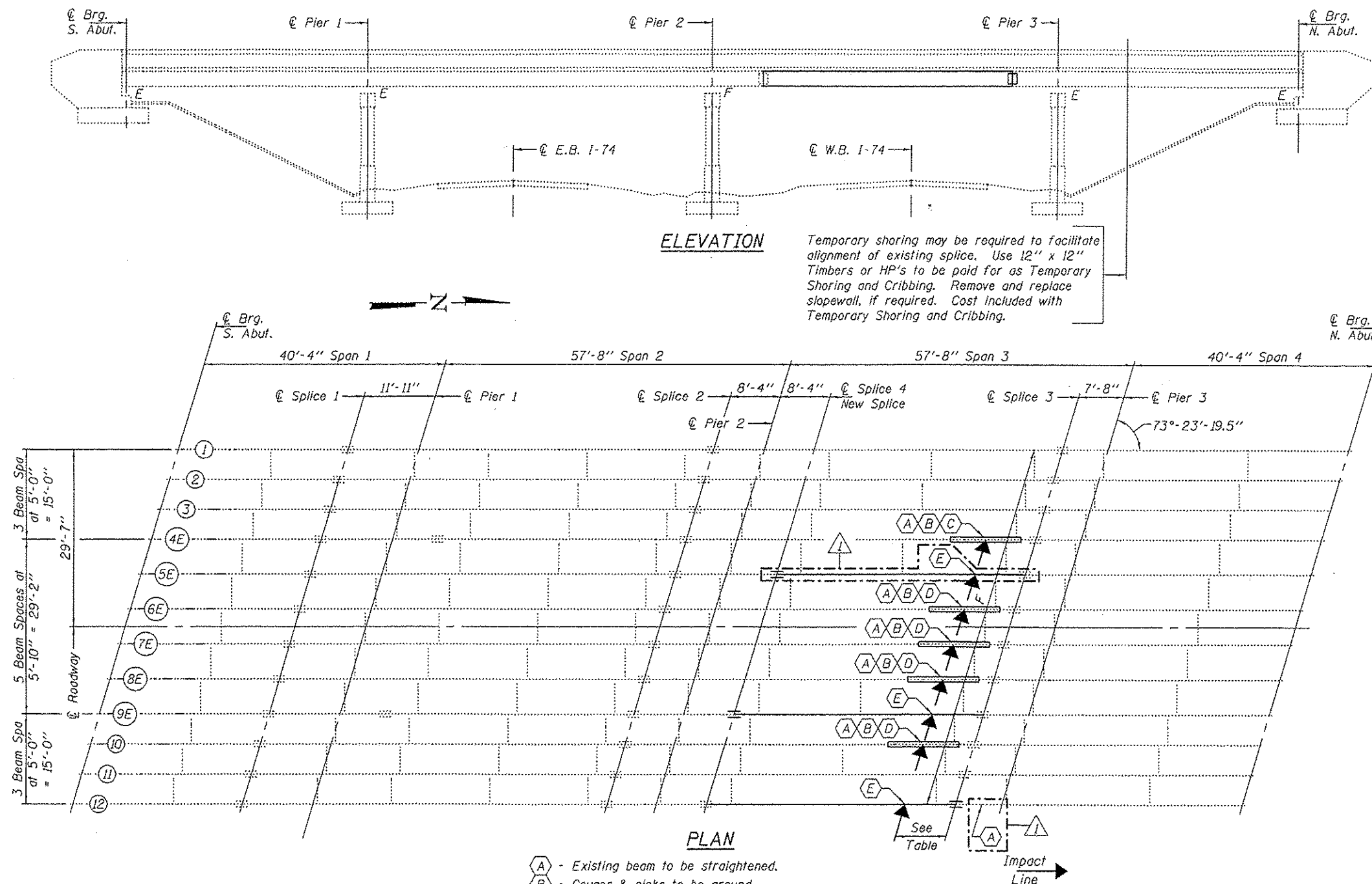




GENERAL NOTES

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 $\frac{15}{16}$ " ϕ for $\frac{7}{8}$ " ϕ bolts. Web splice holes shall be $\frac{13}{16}$ " ϕ for $\frac{3}{4}$ " ϕ 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.

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 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".

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 Article 506 of the Standard Specifications.

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

**TABLE OF
IMPACT LOCATIONS**

BEAM	DIM.
4E	6'-7 $\frac{1}{2}$ "
5E	7'-9"
6E	8'-3"
7E	8'-7"
8E	8'-10"
9E	8'-10"
10	9'-2"
12	9'-1 $\frac{1}{2}$ "

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	2.5
Concrete Superstructure	Cu. Yd.	2.5
Structural Steel Removal	Pound	18,210
Structural Steel Repair	Pound	1700
Furnishing and Erecting Structural Steel	Pound	18,520
Beam Straightening	L.S.	1
Temporary Slab Support System	L.S.	1
Temporary Shoring and Cribbing	L.S.	1



Expires 11/30/12

REVIS 7-18-12

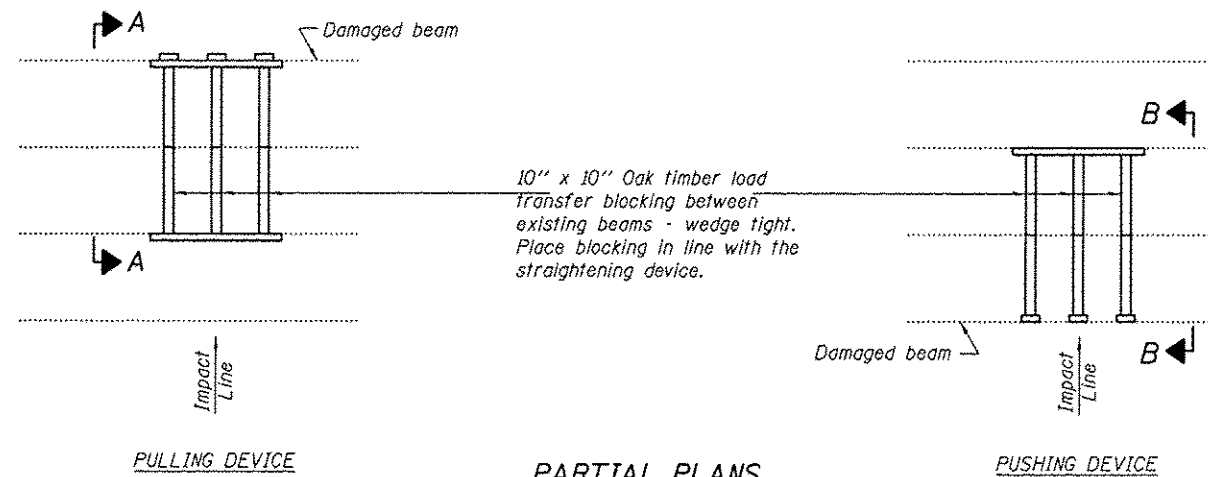
DESIGNED	EXAMINED	DATE
CHECKED	PASSED	JUNE 26, 2012
DRAWN		
CHECKED		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION
PINECREST DRIVE OVER F.A.I. ROUTE 74
SN 090-0091

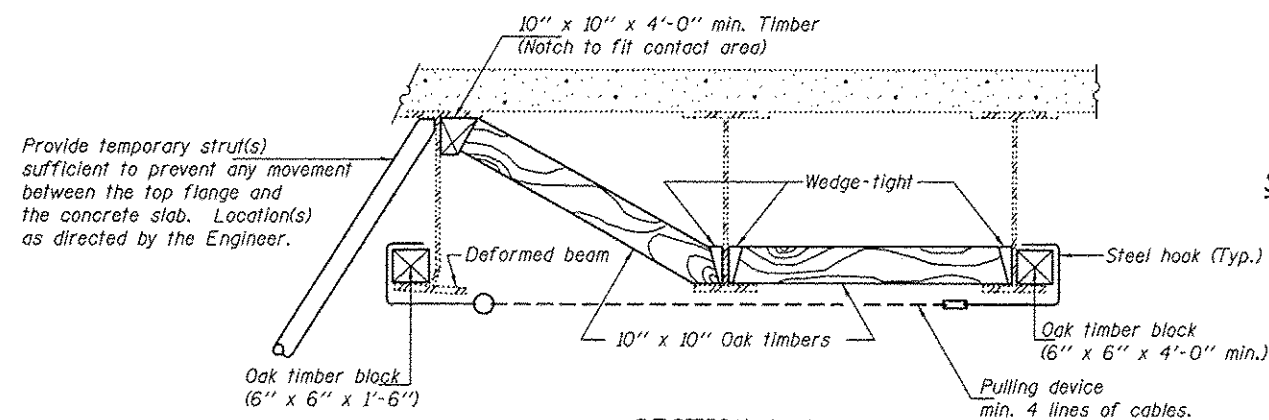
SHEET NO. 1 OF 6 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(90-1418-10R)1-1	TAZEWELL	16	10
				CONTRACT NO. 68B19
ILLINOISIFIED AID PROJECT				

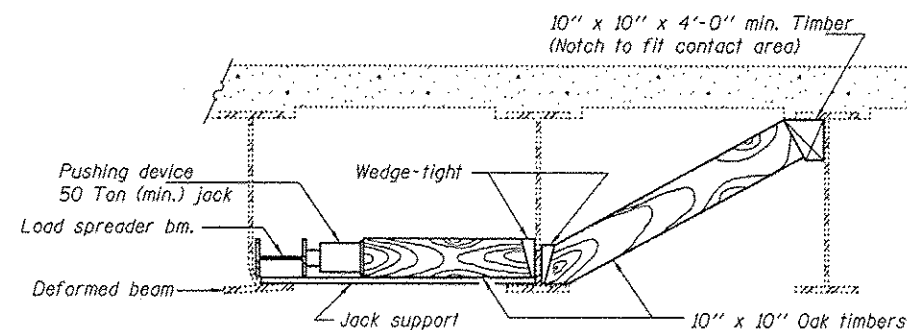


PARTIAL PLANS SUGGESTED BEAM STRAIGHTENING METHODS

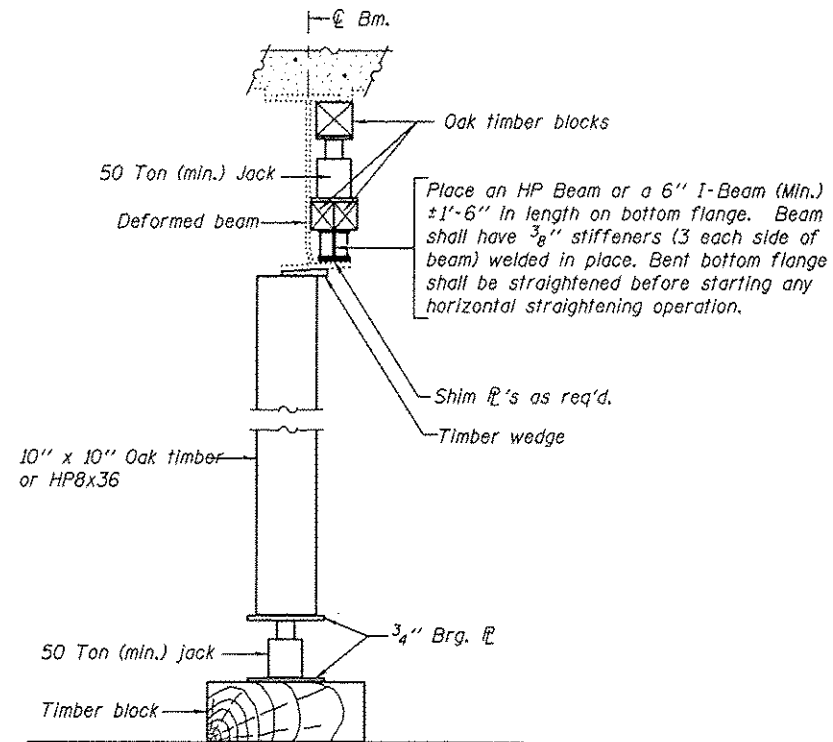
Straightening force shall be maintained on all load transfer blocking during beam straightening.



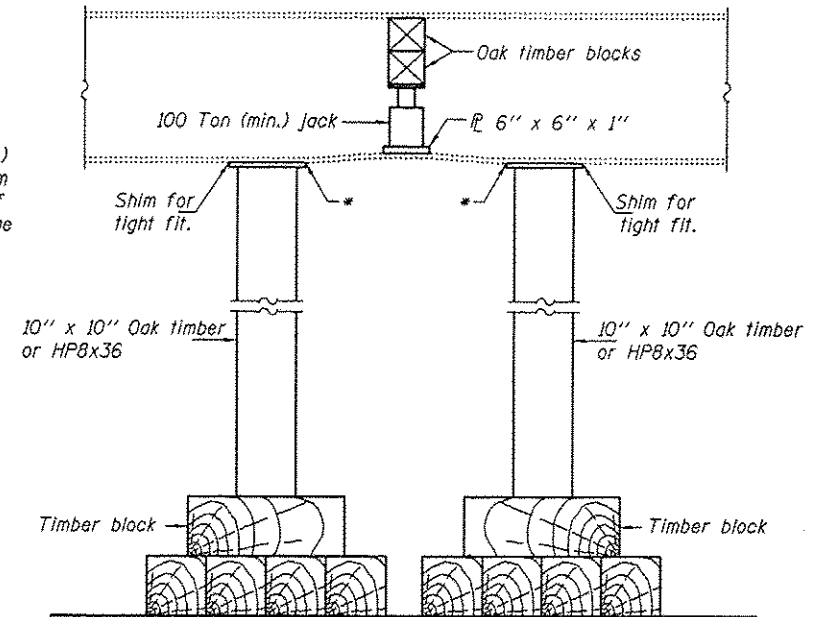
SECTION A-A



SECTION B-B



SUGGESTED VERTICAL STRAIGHTENING DETAIL
(To correct flange rotation.)



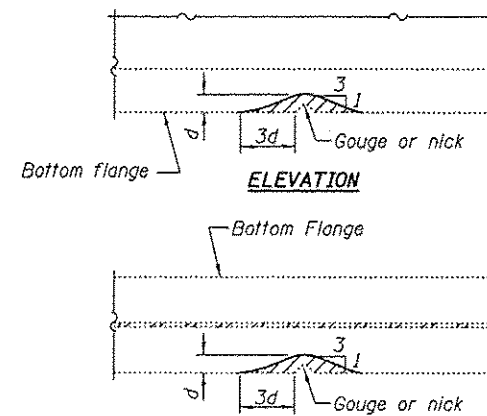
SUGGESTED VERTICAL STRAIGHTENING DETAIL
(To correct localized vertical flange deformations.)

* 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.



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.

TABLE OF DIMENSIONS

BEAM	Dim. X	Dim. Y	Dim. L
4E	1/4"	1/16"	6'-0"
6E	7/8"	2 3/8"	6'-0"
7E	3/8"	1 1/16"	2'-0"
8E	1/2"	1 1/8"	7'-6"
10	1/16"	7/8"	3'-0"
12	1/2"	1/2"	7'-0"

EXISTING DEFORMATION TO BE STRAIGHTENED

(Looking South)

(Approximate max. deflections)
Deflected length of beam to be straightened is approximately "L".

REP-1 1-14-2005

DESIGNED DAB
CHECKED GGE
DRAWN Kyle M. Steffen
CHECKED DAB GGE

EXAMINED
PASSED
ACTING ENGINEER OF STRUCTURAL SERVICES
ACTING ENGINEER OF BRIDGES AND STRUCTURES

DATE JUNE 26, 2012
REVISED 7/18/2012 DAB
REVISED

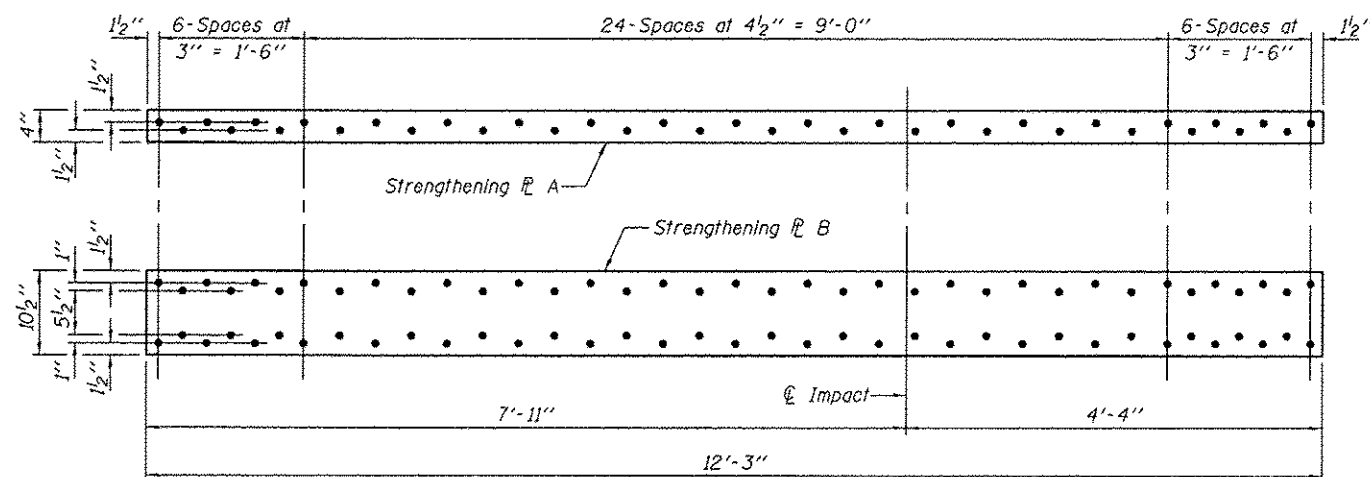
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEAM STRAIGHTENING DETAILS
SN 090-0091

SHEET NO. 2 OF 6 SHEETS

F.A.I. RTE. SECTION COUNTY TOTAL SHEETS SHEET NO.
74 [90-1490-1180]1-1 TAZEWELL 16 11
CONTRACT NO. 68B19
ILLINOIS FED. AID PROJECT

DESIGNED <u>DAB</u>	EXAMINED <u>Joanne F. Steffen</u>	DATE <u>JUNE 26, 2012</u>	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	1 BEAM 5E & 9E REPLACEMENT DETAILS SN 090-0091	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED <u>GGE</u>	ACTING ENGINEER OF STRUCTURAL SERVICES <u>A. Carl Brown</u> ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED <u>7/18/2012 DAB</u>			74	(90-140)-(16R)-1	TAZEWELL	16	12
DRAWN <u>Kyle M. Steffen</u>		REVISED			CONTRACT NO. 68B19				
CHECKED <u>DAB GGE</u>		SHEET NO. 3 OF 6 SHEETS							
					ILLINOIS FED. AID PROJECT				

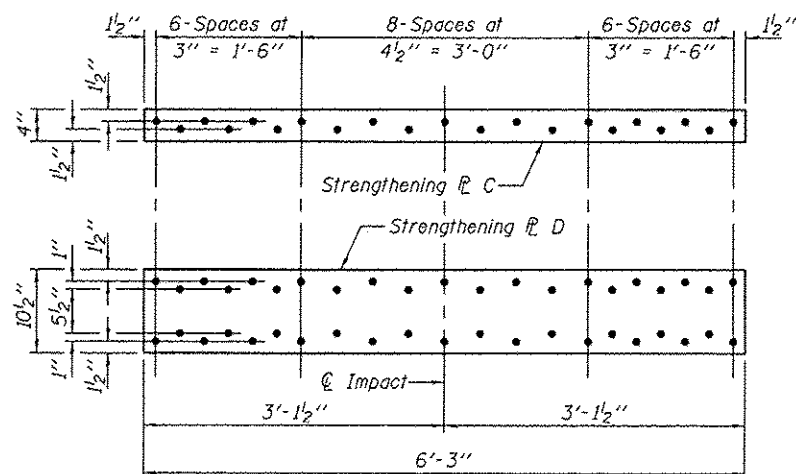


STRENGTHENING R'S A & B (BEAM 4E)

(Holes to be field drilled using holes in beam flange as template.)

R A $\frac{5}{8}$ " x 4" x 12'-3" (2 Required)

R B $\frac{5}{8}$ " x 10 1/2" x 12'-3" (1 Required)

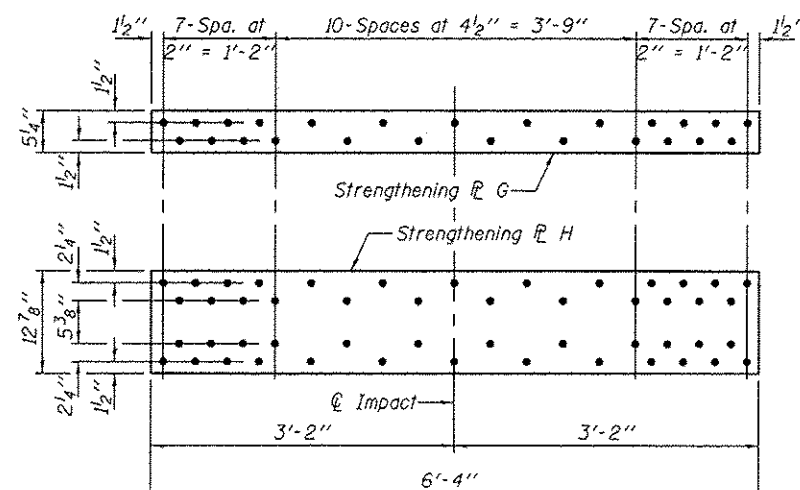


STRENGTHENING R'S C & D (BEAMS 6E, 7E & 8E)

(Holes in beam flange to be field drilled using strengthening plates as template.)

R C $\frac{5}{8}$ " x 4" x 6'-3" (6 Required)

R D $\frac{5}{8}$ " x 10 1/2" x 6'-3" (3 Required)

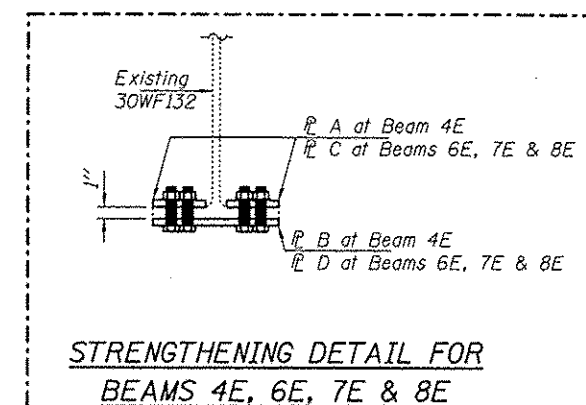


STRENGTHENING R'S G & H (BEAM 10)

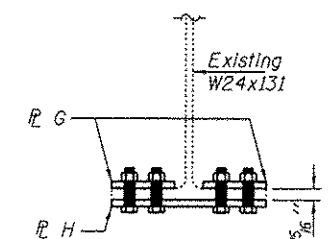
(Holes in beam flange to be field drilled using strengthening plates as template.)

R G $\frac{9}{16}$ " x 5 1/4" x 6'-4" (2 Required)

R H $\frac{9}{16}$ " x 12 7/8" x 6'-4" (1 Required)



STRENGTHENING DETAIL FOR BEAMS 4E, 6E, 7E & 8E



STRENGTHENING DETAIL FOR BEAM 10



Notes:

Removal of existing Strengthening R's on Beam 4E to be paid for as "Structural Steel Removal".

New Strengthening R's on Beams 4E, 6E, 7E, 8E & 10 and field drilling of holes to be paid for as "Structural Steel Repair".

DESIGNED DAB
CHECKED GGE
DRAWN Kyle M. Steffen
CHECKED DAB GGE

EXAMINED
PASSED
ACTING ENGINEER OF STRUCTURAL SERVICES
ACTING ENGINEER OF BRIDGES AND STRUCTURES

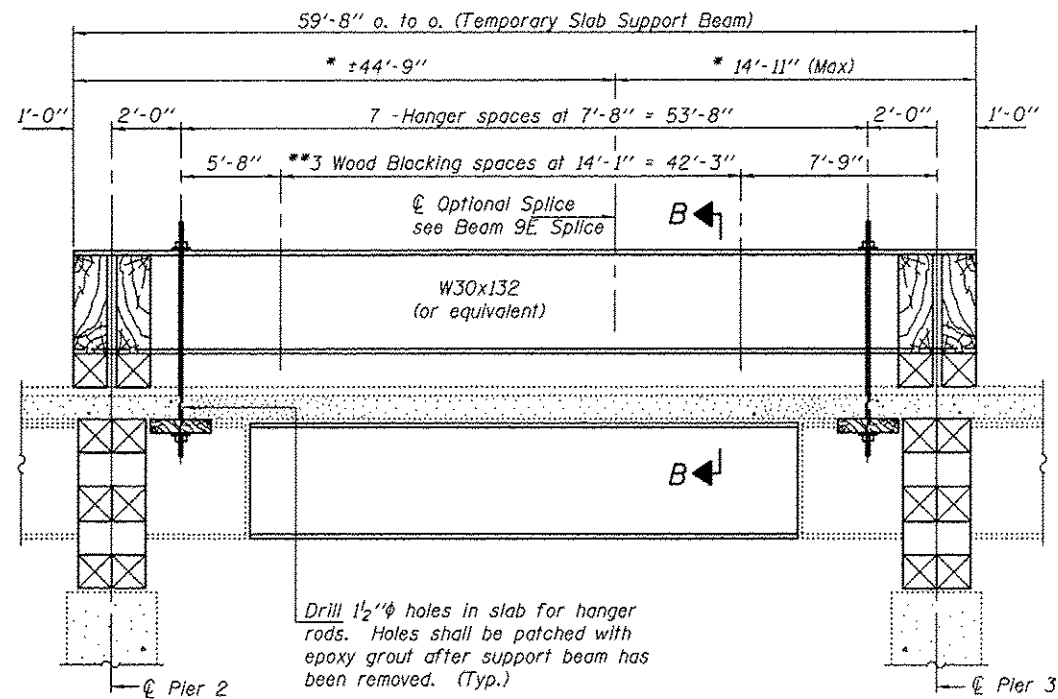
DATE JUNE 26, 2012
REVISED 7/18/2012 DAB
REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SLAB SUPPORT SYSTEM & STRENGTHENING PLATE DETAILS
SN 090-0091

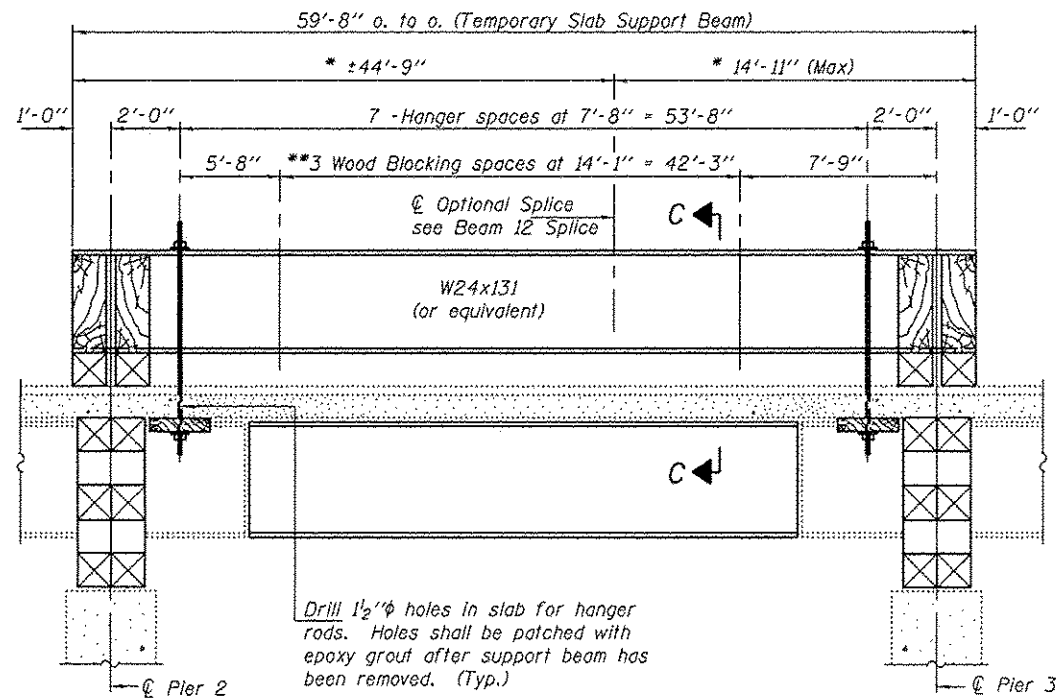
SHEET NO. 5 OF 6 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(90-14)B-11(BR)-1	TAZEWELL	16	14
CONTRACT NO. 68B19				
ILLINOIS FED. AID PROJECT				

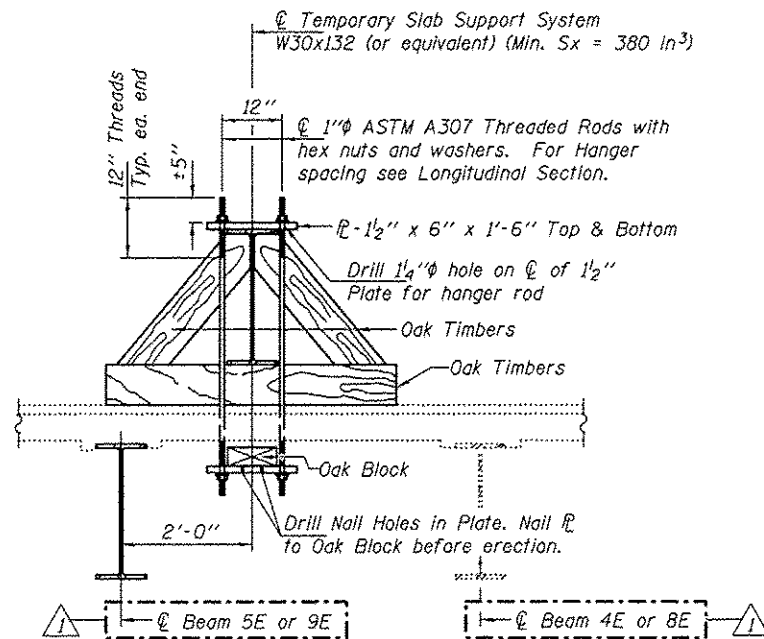


LONGITUDINAL SECTION AT BEAMS 5E & 9E
SUGGESTED TEMPORARY SLAB SUPPORT SYSTEM

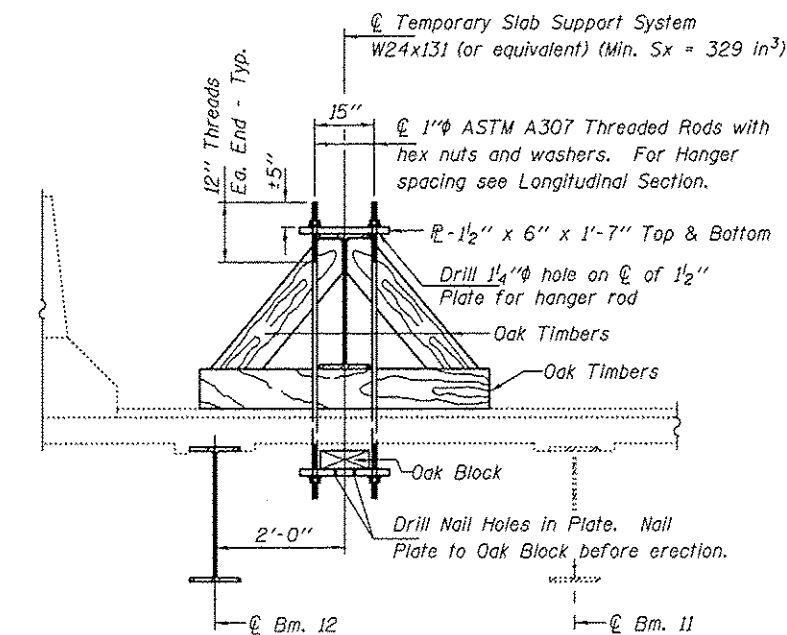
* These dimensions may vary for available beams in stock.



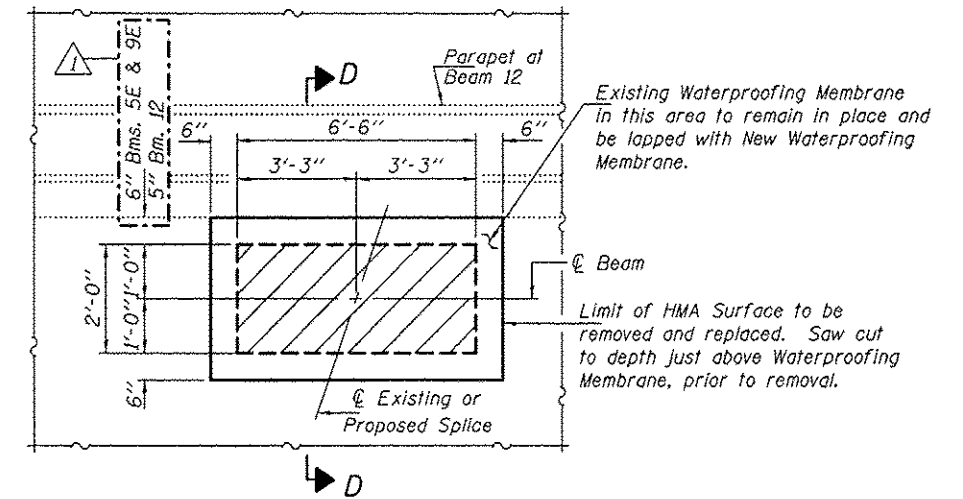
LONGITUDINAL SECTION AT BEAM 12
SUGGESTED TEMPORARY SLAB SUPPORT SYSTEM



SECTION B-B



SECTION C-C



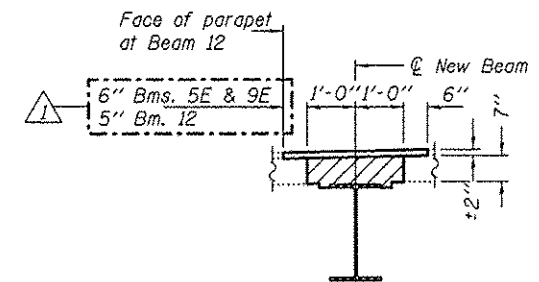
TYPICAL CONCRETE & HMA
SURFACE REMOVAL AND REPLACEMENT

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 shall be included with Concrete Removal.

The cost of removing and replacing the existing HMA wearing surface, waterproofing membrane, and saw cutting shall be included with Concrete Removal.



SECTION D-D