

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60-4HB-2-HDF	MADISON	4	1

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**PROPOSED
HIGHWAY PLANS**

FAI ROUTE 270
SECTION 60-4HB-2-HDF

BRIDGE REPAIR
MADISON COUNTY

C-98-013-07

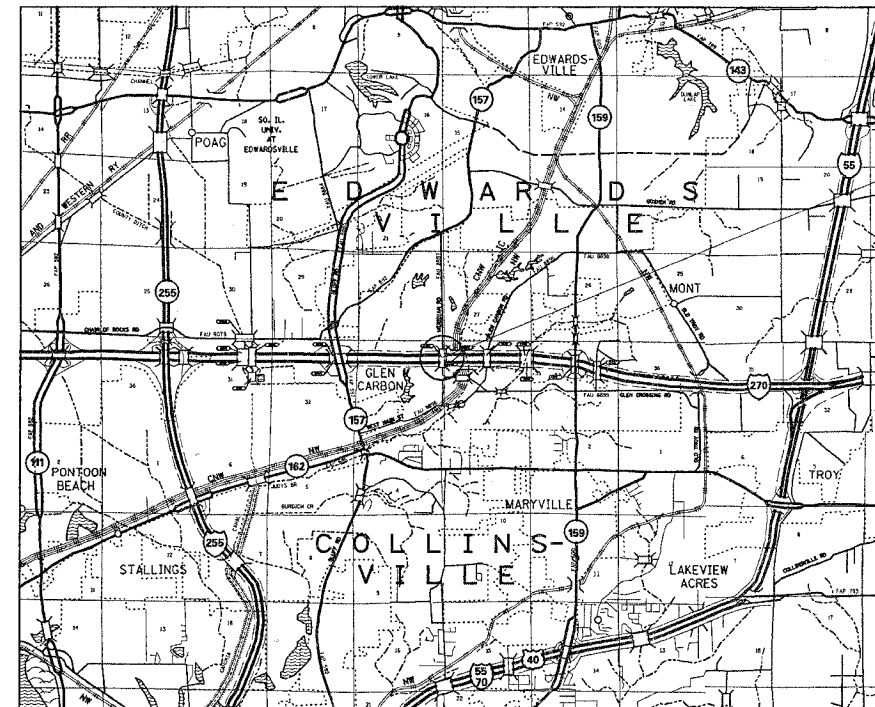
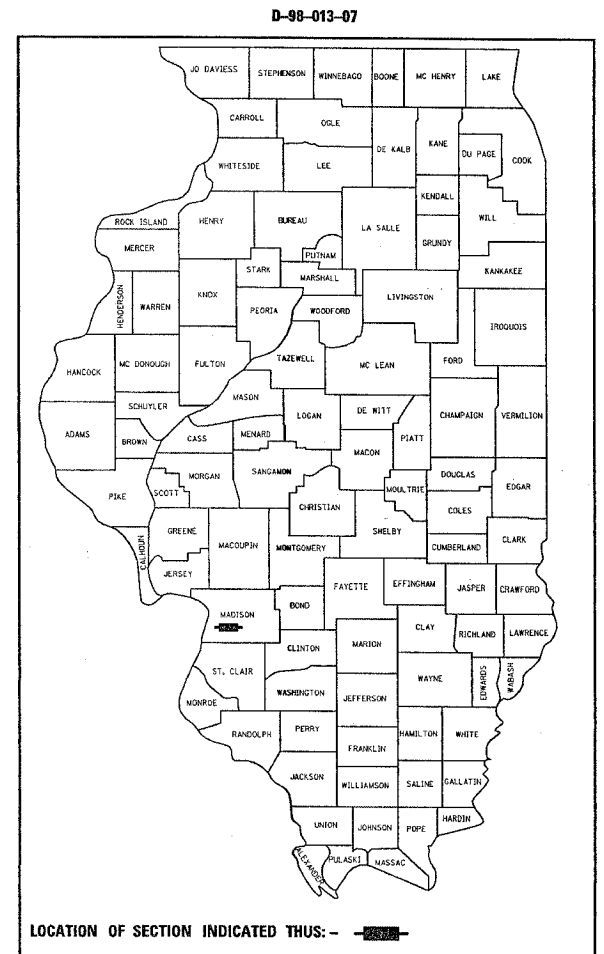
FOR INDEX OF SHEETS, SEE SHEET NO. 2

FAI ROUTE 270 (I-270)

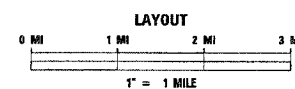
ADT = 40,100 (2005 ACTUAL)
ADT = 40,900 (2007 ESTIMATED)
SU = 5.6%
MU = 26.9%

MERIDIAN ROAD

ADT = 4200 (2006 ACTUAL)
ADT = 4300 (2007 ESTIMATED)
SU = 6.7%
MU = 1.5%



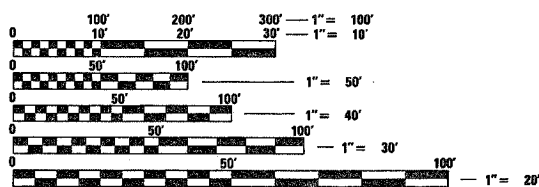
BEAM STRAIGHTENING AND
STRENGTHENING ON STRUCTURE
CARRYING MERIDIAN ROAD
OVER I 270
SN 060-0185



LATITUDE 38.75680
LONGITUDE 89.98446

PROJECT ENGINEER: PATTI LeBEAU (618) 346-3179
SQUAD LEADER: ARTHUR MUEHLFELD (618) 346-3209

MICROFILMED _____
REEL NUMBER _____
AWARDED _____
RESIDENT ENGINEER _____
AS BUILT CHANGES WERE MADE
ON THE FOLLOWING SHEETS



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

DESIGN DESIGNATION
NA

CONTRACT NO. 76A40

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED Feb 7 20 07
Mary Zanic
DEPUTY DIRECTOR OF HIGHWAYS
REGION FIVE ENGINEER

March 23, 20 07
Eric E. Blum
ENGINEER OF DESIGN AND ENVIRONMENT

March 23, 20 07
Milton R. Sewell
DIRECTOR, DIVISION OF HIGHWAYS

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OF THE STATE OF ILLINOIS**

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		Madison	4	3
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

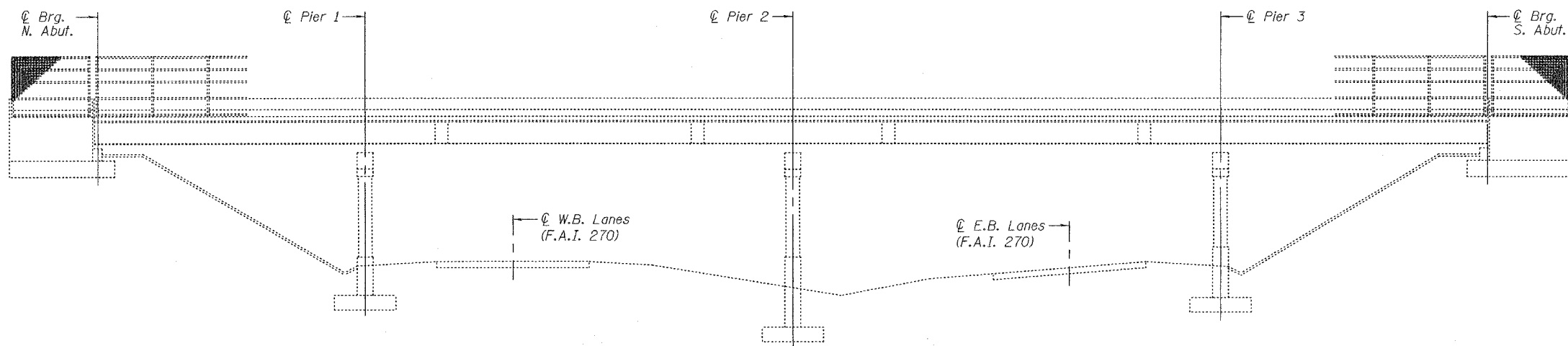
SHEET NO. 1

2 SHEETS

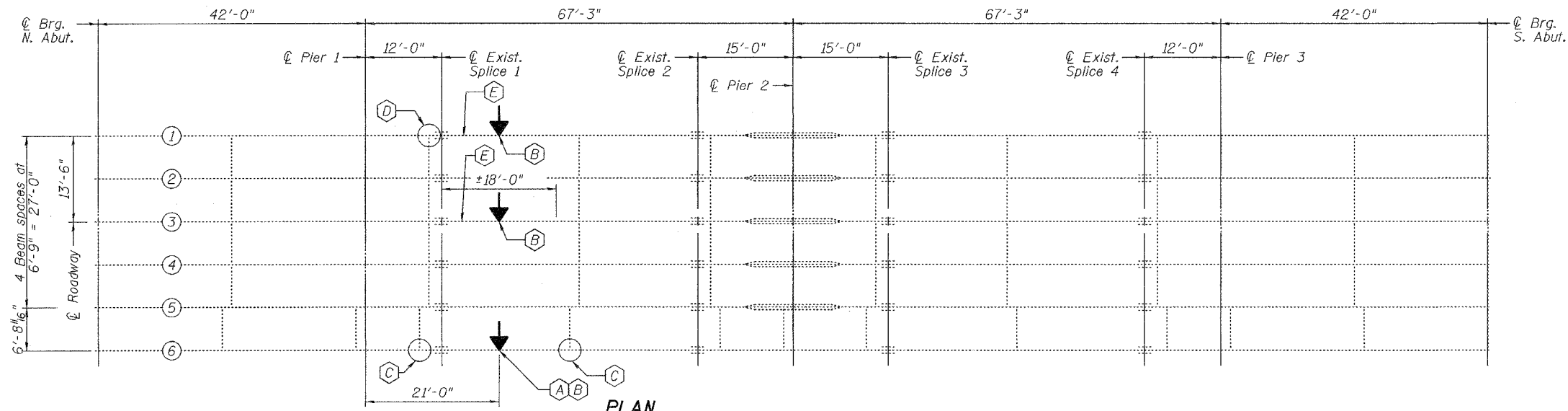
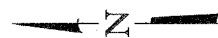
Contract Number: 76A40

GENERAL NOTES

All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.
Fasteners shall be high strength bolts. Bolts 7/8"φ, open holes 5/16"φ, unless otherwise noted.
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/or 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 in the cost of Structural Steel Repair.
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 shall be Gray, Munsell No. 5B 7/1. See Special Provision "Cleaning and Painting New Metal Structures".
Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2. These components are the strengthening plates.
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".
Diaphragm connection holes shall be 5/16"φ for 3/4"φ bolts. Two hardened washers shall be required at diaphragm connections.

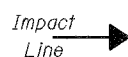


ELEVATION

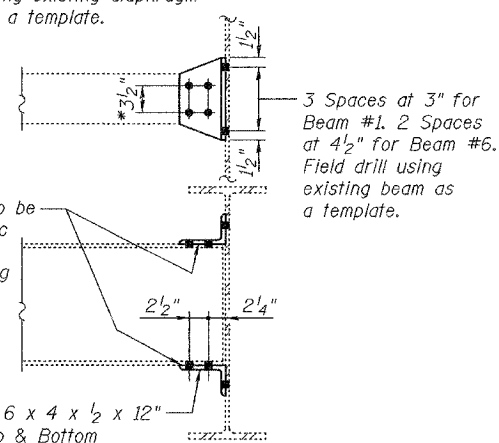


PLAN

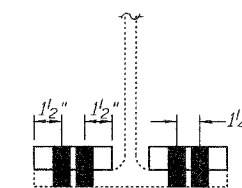
- (A) Beam Strengthening see detail on this sheet.
- (B) Beam Straightening see details sheet 2 of 2.
- (C) Replace Top and Bottom clip L's see detail on this sheet.
- (D) Replace bottom clip L see detail on this sheet.
- (E) Repaint areas of cracked and peeled paint.



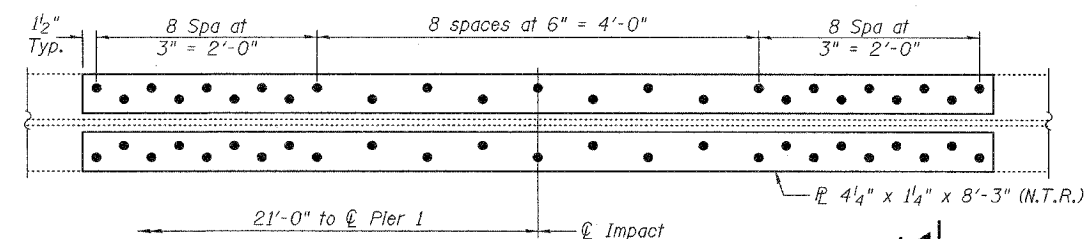
*Beam #1 Field drill holes using existing diaphragm as a template.



CLIP L REPLACEMENT DETAIL



SECTION A-A



STRENGTHENING P'S

(N.T.R. = Notch Toughness Requirements)

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Beam Straightening	L.S.	1
Structural Steel Repair	Pound	440

PLAN AND ELEVATION
MERIDIAN ROAD
MADISON COUNTY
SN 060-0185

DESIGNED	<i>[Signature]</i>
CHECKED	<i>[Signature]</i>
DRAWN	<i>[Signature]</i>
CHECKED	S.J.B. H.B.

EXAMINED	February 28, 2007
PASSED	<i>[Signature]</i>



Expires: November 30, 2008

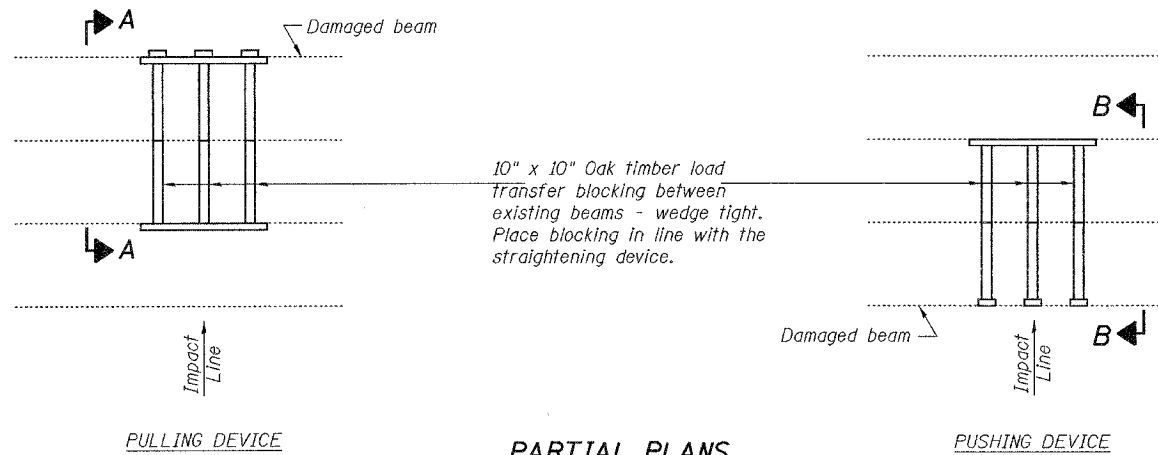
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		Madison	4	4
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 2

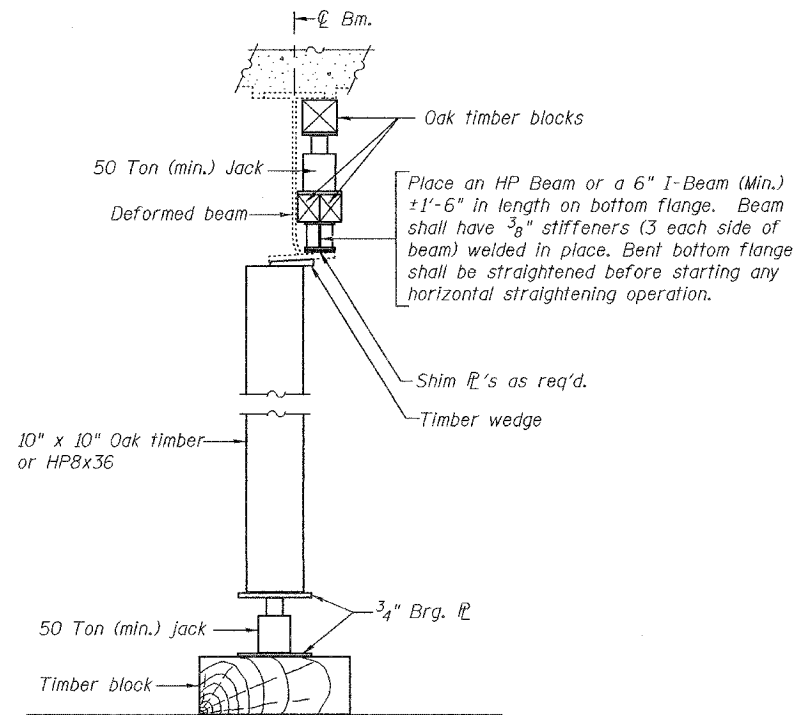
2 SHEETS

Contract Number: 76A40



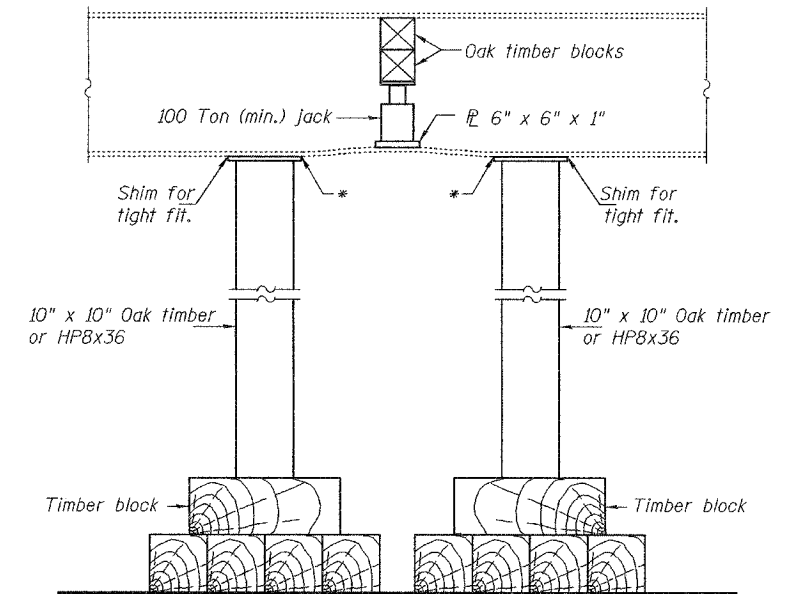
**PARTIAL PLANS
SUGGESTED BEAM STRAIGHTENING METHODS**

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



SUGGESTED VERTICAL STRAIGHTENING DETAIL

(To correct flange rotation.)

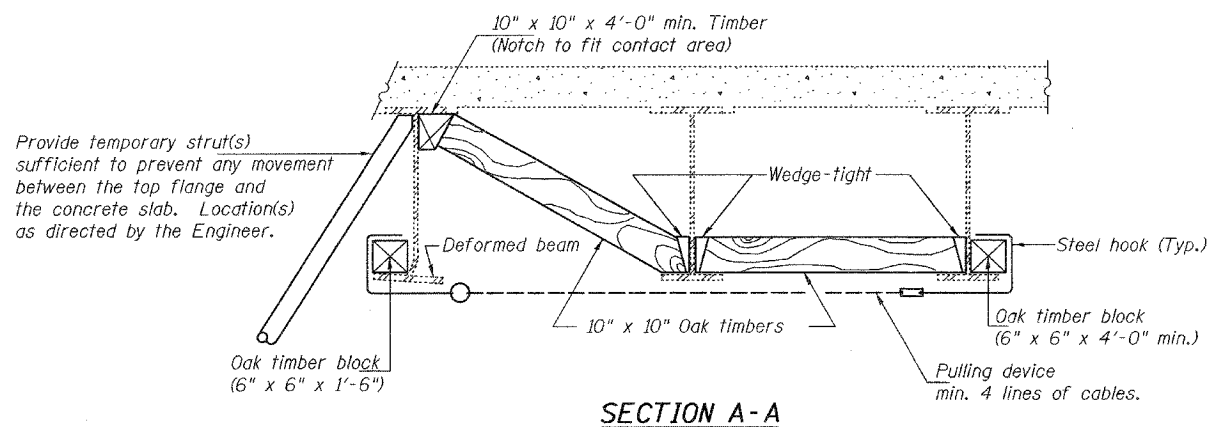


SUGGESTED VERTICAL STRAIGHTENING DETAIL

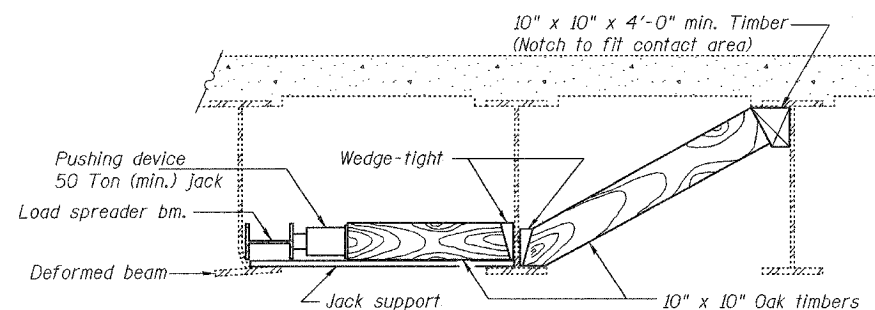
(To correct localized vertical flange deformations.)

* Edge of plate shall line up with edge of deformation.

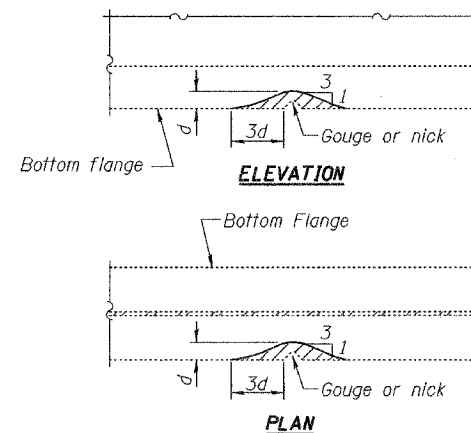
Note:
Braces and jack assembly shall be placed on same side of web.
Bent bottom flange shall be straightened before starting any horizontal straightening operations.



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 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.

Beam #	x	y
1	6 1/8"	1 1/8"
3	5 3/4"	1 1/8"
6	6 5/8"	3 3/8"

**EXISTING DEFORMATION
TO BE STRAIGHTENED**

(Looking South)
(Approximate max. deflections)
Deflected length of beam to be straightened is approximately ±10'-0".

BEAM STRAIGHTENING DETAILS

**MERIDIAN ROAD
MADISON COUNTY
SN 060-0185**

DESIGNED	S.J.B.
CHECKED	A.J.B.
DRAWN	Drew Christopher
CHECKED	S.J.B. A.J.B.

EXAMINED	February 28, 2007
PASSED	Ralph E. Anderson

REP-11-14-2005
SLT-98-001-06