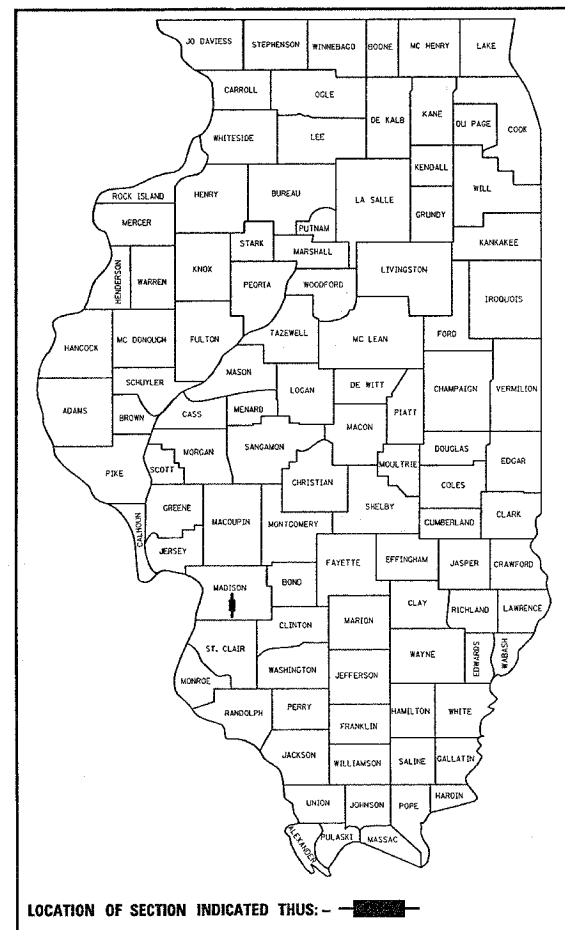


F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70	*	MADISON	11	1

• 60-10HB-4R-HDF-4

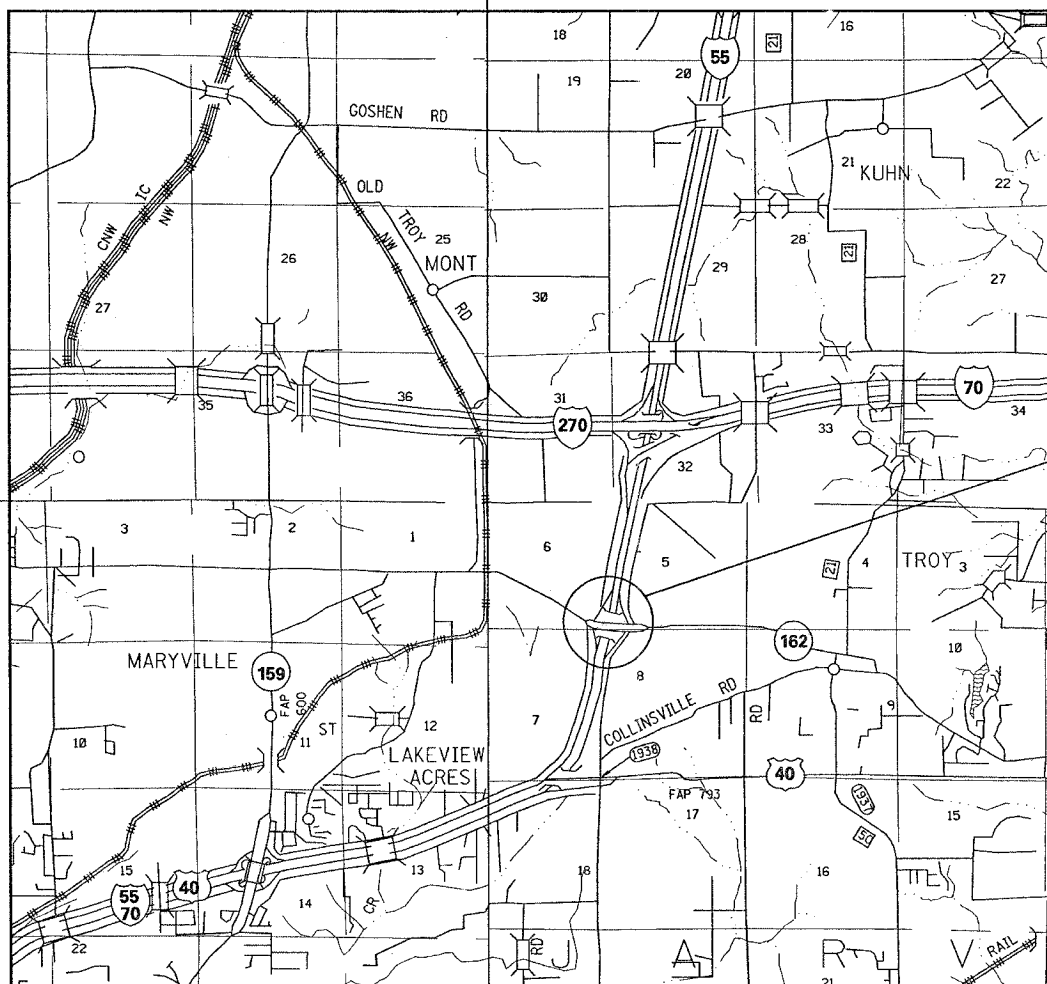
D-98-111-05



STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PROPOSED HIGHWAY PLANS

**FAI ROUTE 55/70 (I-55/70)
SECTION 60-10HB-4R-HDF-4
BRIDGE REPAIRS
MADISON COUNTY
C-98-137-05**

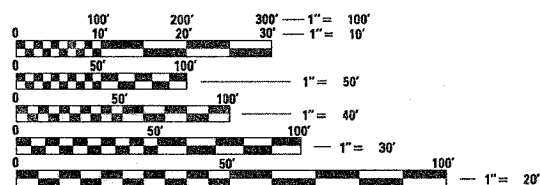
FOR INDEX OF SHEETS, SEE SHEET NO. 2



PROJECT LOCATION
SN 060-0139

PROJECT ENGINEER: WENDA SOUTHERLAND (618) 346-3159
SQUAD LEADER: GREG HANCOCK (618) 346-3195

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

ADT		I-55/70	
IL ROUTE 162	(SOUTHBOUND TRAFFIC)	18,400	(2006)
SU=10.4%		SU=10.4%	
MU=5.8%		MU=5.8%	

NOT TO SCALE

LATITUDE: 38.73242
LONGITUDE: -89.91260

GROSS LENGTH 56.37 FEET (0.01 MILE)
NET LENGTH 56.37 FEET (0.01 MILE)

CONTRACT NO. 76968

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED Sept 1 2005
Mary C Lami
DEPUTY DIRECTOR OF HIGHWAYS
REGION FIVE ENGINEER

October 14 2005
Mike Hill
ENGINEER OF DESIGN AND ENVIRONMENT

October 14 2005
Eric E. Hamm
DEPUTY DIRECTOR, DIVISION OF HIGHWAYS

**PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS**

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70	*	MADISON	11	2
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
* 60-10HB-4R-HDF-4				

INDEX OF SHEETS

- 1 COVER SHEET
- 2 INDEX OF SHEETS, GENERAL NOTES & STANDARDS
- 3 SUMMARY OF QUANTITIES
- 4 TYPICALS AND PAVEMENT MARKING SCHEDULE
- 5 BRIDGE REPAIR
- 6 BEAM STRAIGHTENING DETAILS
- 7 SUPERSTRUCTURE DETAILS
- 8 REPAIR DETAILS
- 9 TEMPORARY CONCRETE BARRIER
- 10 TRAFFIC CONTROL AND PROTECTION (SPECIAL) IL ROUTE 162
- 11 TRAFFIC CONTROL PLAN I-55/70

COMMITMENTS

NONE

STANDARDS

- 001006
- 701101-01
- 701106-01
- 701400-02
- 701401-03
- 701411-03
- 702001-05
- 704001-02
- 780001-01

GENERAL NOTES

1. THE STANDARDS AND REVISION NUMBERS LISTED SHALL APPLY TO THIS PROJECT.
2. ILLINOIS STATE LAW REQUIRES A 48-HOUR NOTICE BE GIVEN TO ALL UTILITIES BEFORE DIGGING. FIELD MARKING OF FACILITIES MAY BE OBTAINED BY CONTACTING J.U.L.I.E. OR FOR NON-J.U.L.I.E., THE UTILITY COMPANY DIRECTLY. AGENCIES KNOWN TO HAVE FACILITIES WITHIN THE PROJECT AREA ARE AS FOLLOWS
 - AMEREN IP (GAS & ELECTRIC)
 - CHARTER COMMUNICATIONS, INC. (COMMUNICATIONS)
 - SBC (COMMUNICATIONS)
 - SOUTHWESTERN ELECTRIC COOPERATIVE, INC. (COMMUNICATIONS)
 - CITY OF TROY (WATER & SANITARY SEWER)

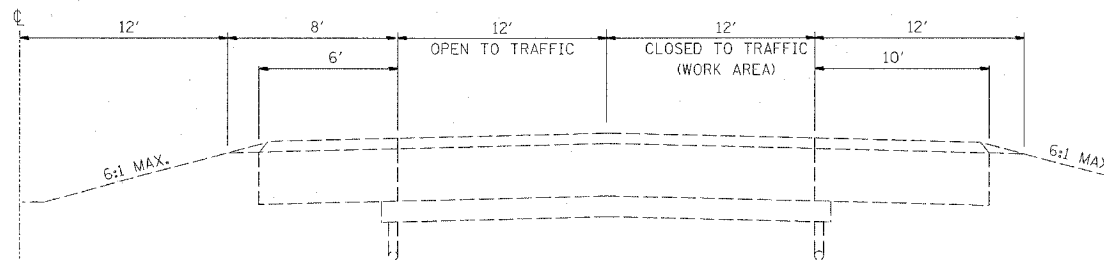
(MEMBERS OF J.U.L.I.E. (800) 892-0123 ARE INDICATED BY *. NON-J.U.L.I.E. MEMBERS MUST BE NOTIFIED INDIVIDUALLY)
3. WHERE SECTION OR SUB-SECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKERS AND MONUMENTS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR, OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THE LOCATION.
4. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO CONSTRUCTION AND ORDERING OF MATERIALS.
5. NO SURVEY WAS PERFORMED FOR THIS PROJECT. THE STATIONING AND TOPOGRAPHY SHOWN IS APPROXIMATE AND WAS CREATED USING MICROFILM.
6. "ROAD CONSTRUCTION AHEAD" SIGNS SHALL BE PLACED AT THE BEGINNING AND END OF THE PROJECT PLUS THE INTERSECTING SIDE ROADS, AND WILL BE CONSIDERED INCLUDED IN THE TRAFFIC CONTROL PAY ITEMS. ALL CONSTRUCTION SIGNS SHALL BE FLUORESCENT ORANGE.
7. ADVANCE WARNING SIGNS SHALL BE PLACED ON SB I-55, WB-70 AND EB I-270 ACCORDING TO STANDARD 701400 AND AS DIRECTED BY THE RESIDENT TO NOTIFY THE MOTORIST OF LANE CLOSURES ON I-55/70 SOUTHBOUND.

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION
NAME	DATE	
		INDEX OF SHEETS, GENERAL NOTES & STANDARDS FAI ROUTE 55/70 SECTION 60-10HB-4R-HDF-4 MADISON COUNTY DRAWN BY _____ CHECKED BY _____

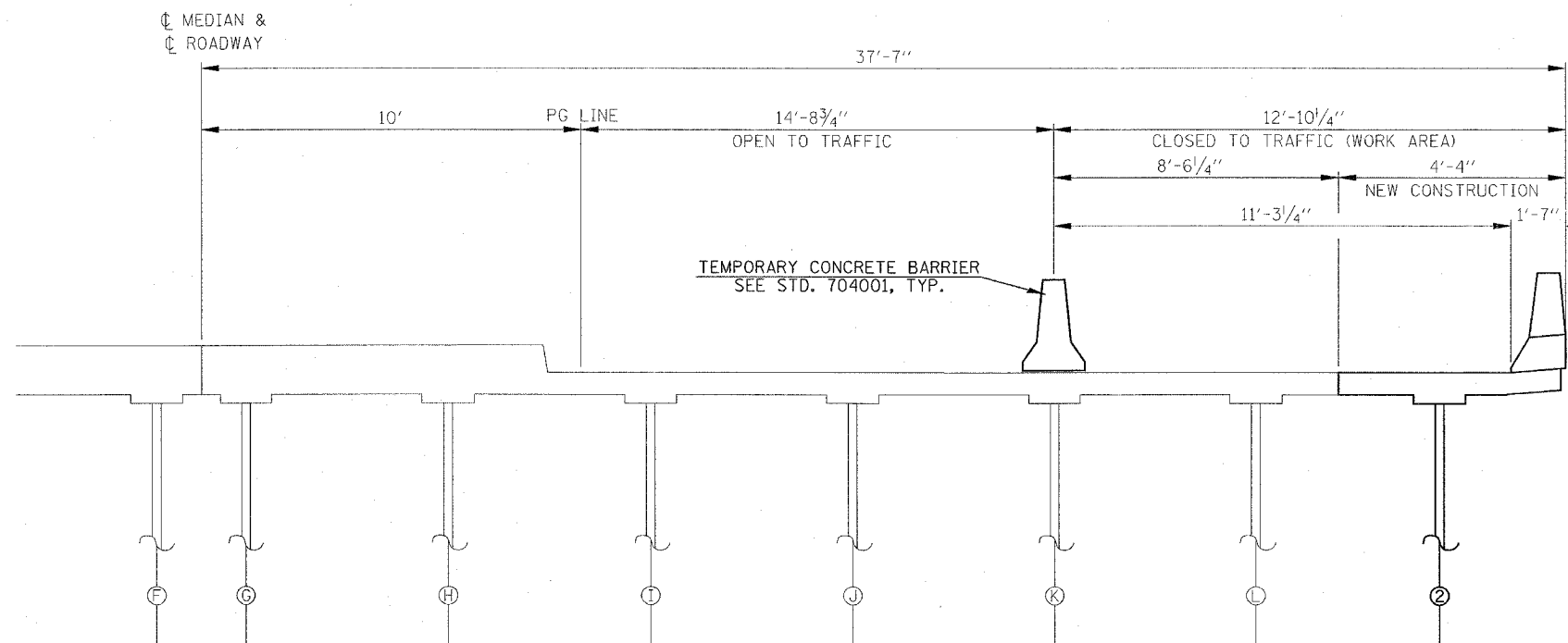
PLOT DATE = 8/31/2005
 PLOT SCALE = 60/1000
 PLOT REFERENCE = #REF#

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55/70		MADISON	11	4
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

• 60-10HB-4R-HDF-4



F.A.I. 55/70 SOUTHBOUND
 STA. 1348+00 TO 1360+00
 SHOULDER WIDTHS NARROW UNDER STRUCTURE



IL 162 WESTBOUND

PAVEMENT MARKING SCHEDULE	
	PAINT
	4" MARKINGS
LOCATION	EDGE LINE
	WHITE
	FOOT
IL ROUTE 162	57

NOTE: THE PROPOSED EDGE LINE SHALL BE PLACED AT THE SAME LOCATION AS THE EXISTING EDGE LINE.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
**TYPICALS AND
 PAVEMENT MARKING SCHEDULE**
 FAI ROUTE 55/70
 SECTION 60-10HB-4R-HDF-4
 MADISON COUNTY

SCALE: VERT. _____
 HORIZ. _____
 DATE _____ DRAWN BY _____
 CHECKED BY _____

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET	SHEET NO. 1
		MADISON	11	5	5 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT:			

Contract Number: 76968

GENERAL NOTES

All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.

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 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 acrylic finish coat shall be Interstate Green, Munsell No. 7.5G 4/8. See Special Provision "Cleaning and Painting New Metal Structures".

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 deck surface shall have its final finish tined according to Article 420.1(k)(1) of the Standard Specifications. Cost included with Concrete Superstructure.

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".

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".

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

Field welding of construction accessories will not be permitted to beams. Reinforcement bars shall conform to the requirements of AASHTO M 31 or M 322 Grade 60.

Prior to pouring the new concrete deck, all loose rust, loose mill scale and other loose potentially detrimental foreign material shall be removed from the surfaces of the beams or girders in contact with concrete. The cost of this work will be included in the pay item covering removal of the existing concrete. All heavy rust and other tightly adhered potentially detrimental foreign matter shall also be removed from the surfaces of the beams or girders in contact with concrete. Tightly adhered paint may remain unless otherwise noted. This removal shall be accomplished by methods that will not damage the steel. The cost of this work will be paid for according to Article 109.04 of the Standard Specifications.

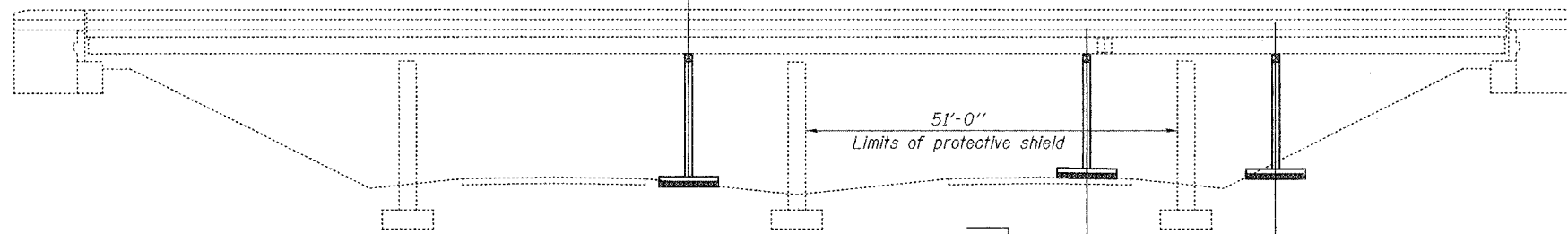
Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction 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 main load carrying member components subject to tensile stress shall conform to the Supplemental Requirements for Notch Toughness Zone 2. These components are the wide flange beams and all splice plate material except fill plates.

REACTION TABLE AT TEMPORARY SHORING

Q	(k)	17.0
L	(k)	25.2
Imp.	(k)	7.6
Total	(k)	49.8

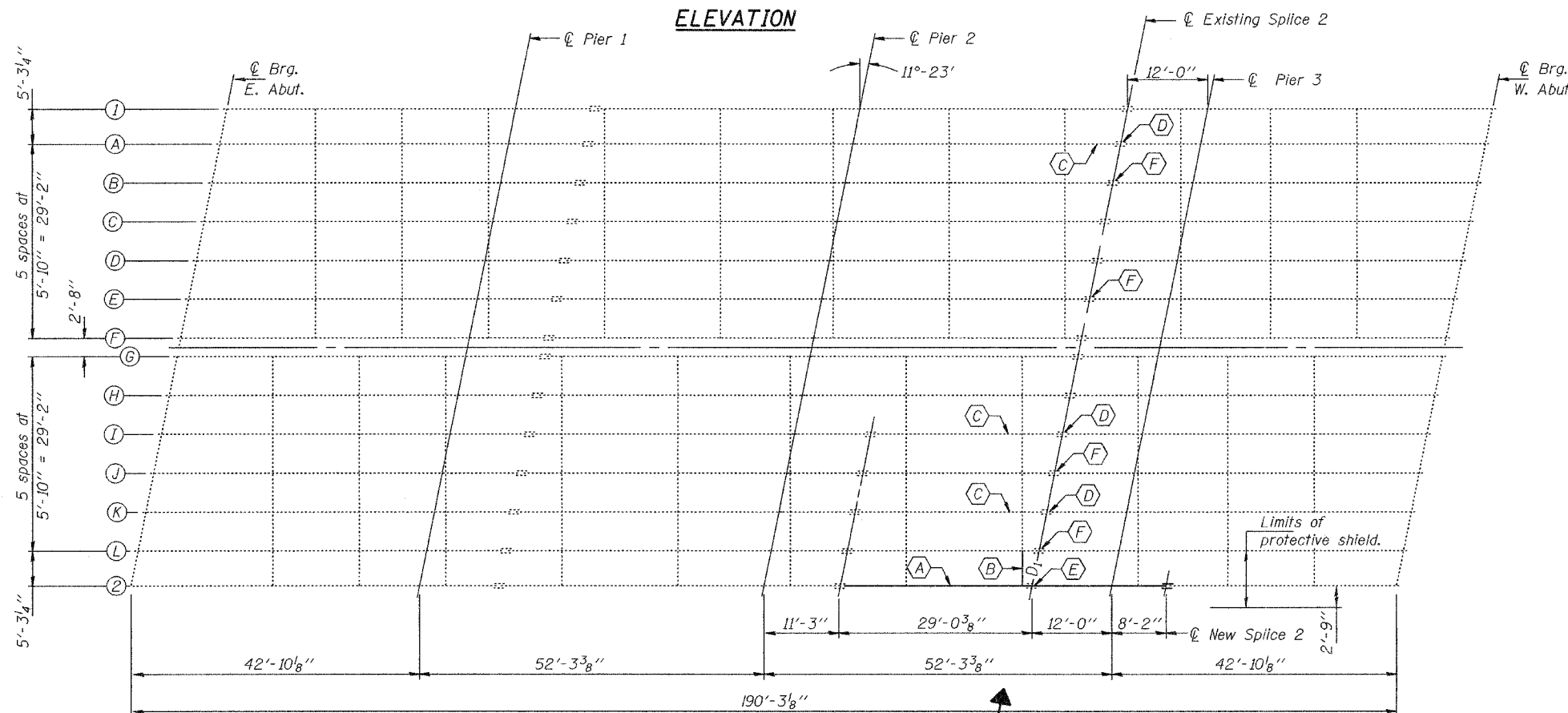
Temporary shoring may be required for Beam 2 to facilitate alignment of existing splice.



Temporary shoring is required for Beams A, I & K splice repairs, unless all traffic is moved at least one beam away from the repair site. Paid for as "Temporary Shoring and Cribbing". The shoring shall be removed as soon as possible after the splice has been completed to minimize traffic control in the South Bound Lanes.

Temporary shoring is required for Beam 2, to be paid for as "Temporary Shoring and Cribbing". Removal & replacement of slope wall, if required, shall be included with "Temporary Shoring and Cribbing".

ELEVATION



FRAMING PLAN

- A Replace existing W27x114 beam.
 - B Existing diaphragm and 4 clip angles each to be replaced.
 - C Existing beam to be straightened.
 - D Splice repair.
 - E Existing splice to be eliminated.
 - F Replace sheared off bolts in bottom flange splice.
- 8-7/8"φ bolts required.
1 at Beam B
2 at Beam E
1 at Beam J
4 at Beam L

DESIGNED	<i>Paul R. H. D.</i>
CHECKED	<i>Adrian T. Holloway</i>
DRAWN	<i>balva</i>
CHECKED	<i>S.T.B. / A.T.H.</i>

September 30, 2005	
EXAMINED	<i>John A. Morris</i>
PASSED	<i>Robert E. Anderson</i>



EXPIRES 11-30-2006

TOTAL BILL OF MATERIAL

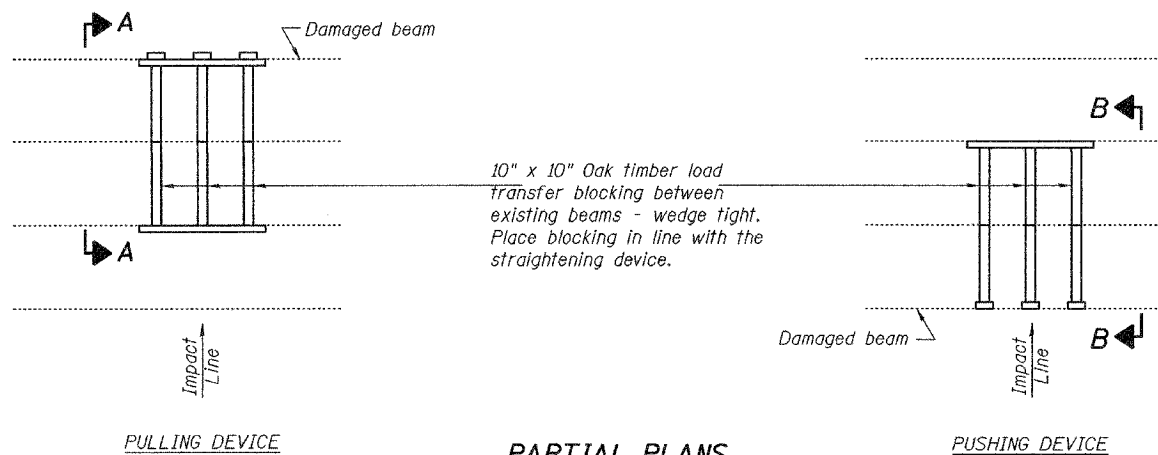
ITEM	UNIT	QUANTITY
Concrete Superstructure	Cu. Yd.	11.6
Concrete Removal	Cu. Yd.	11.6
Reinforcement Bars, Epoxy Coated	Pound	2770
Furnishing and Erecting Structural Steel	Pound	6760
Stud Shear Connectors	Each	147
Beam Straightening	L.S.	1
Temporary Shoring and Cribbing	L.S.	1
Mechanical Splice	Each	188
Protective Shield	Sq. Yd.	45
Protective Coat	Sq. Yd.	36
Structural Steel Removal	Pound	6660

BRIDGE REPAIRS
ILL. RTE 162 OVER FAI RTE. 70
MADISON COUNTY
S.N. 060-0139

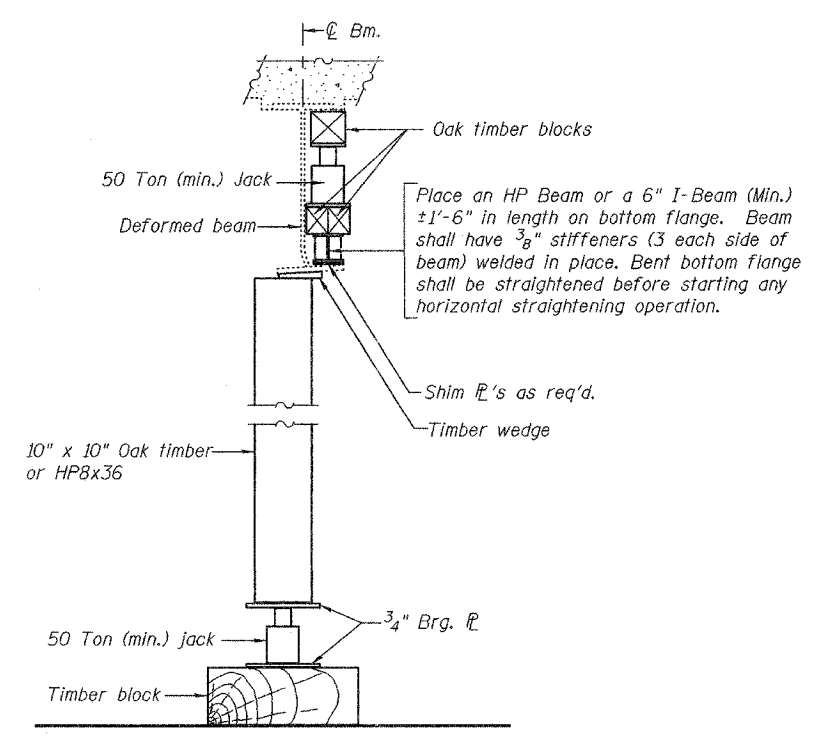
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET	SHEET NO.
		MADISON	//	2
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	5 SHEETS

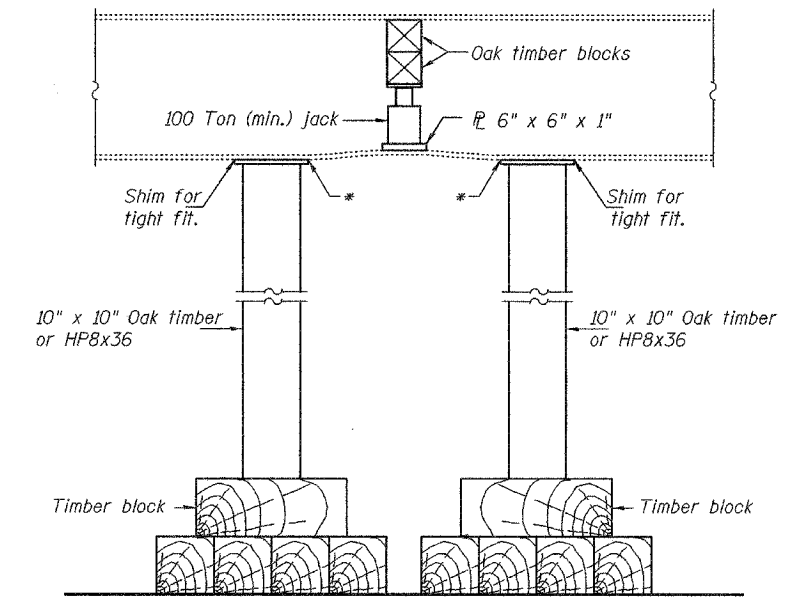
Contract Number: F6968



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

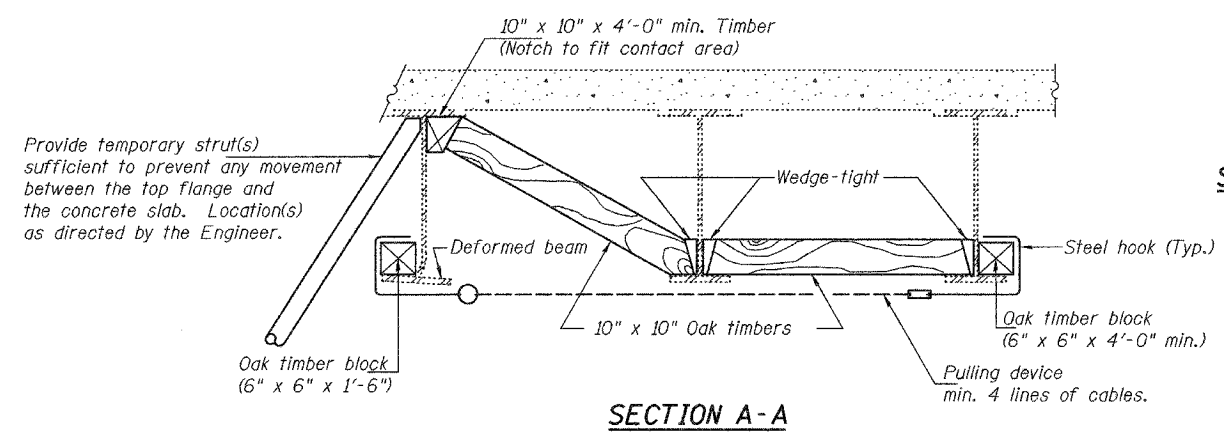


SUGGESTED VERTICAL STRAIGHTENING DETAIL
(To correct flange rotation.)

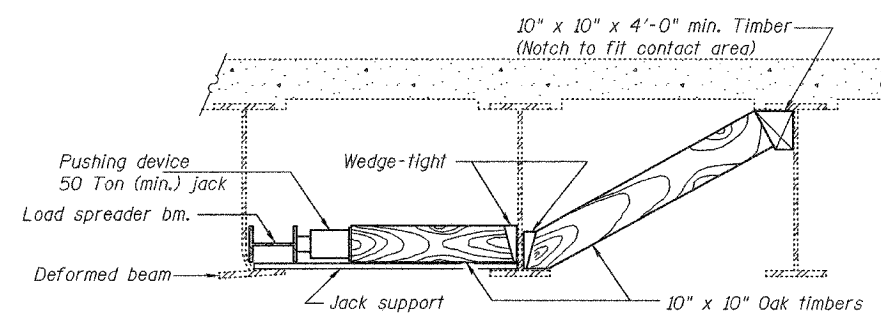


SUGGESTED VERTICAL STRAIGHTENING DETAIL
(To correct localized vertical flange deformations.)

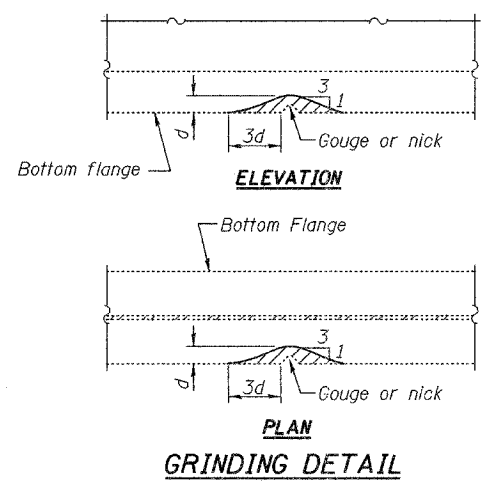
* Edge of plate shall line up with edge of deformation.
Note:
Braces and Jack assembly shall be placed on same side of web.
Bent bottom flange shall be straightened before starting any horizontal straightening operations.



SECTION A-A

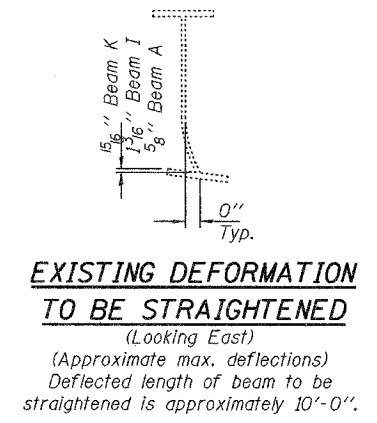


SECTION B-B



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.



EXISTING DEFORMATION TO BE STRAIGHTENED
(Looking East)
(Approximate max. deflections)
Deflected length of beam to be straightened is approximately 10'-0".

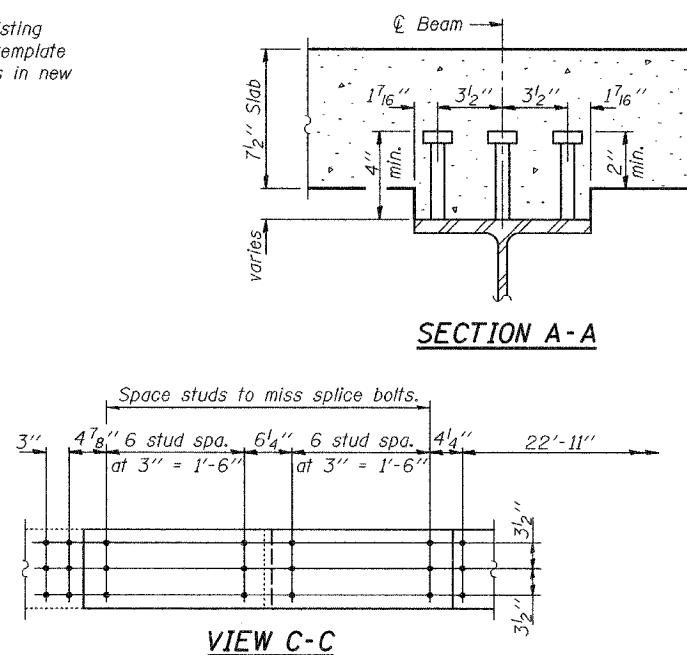
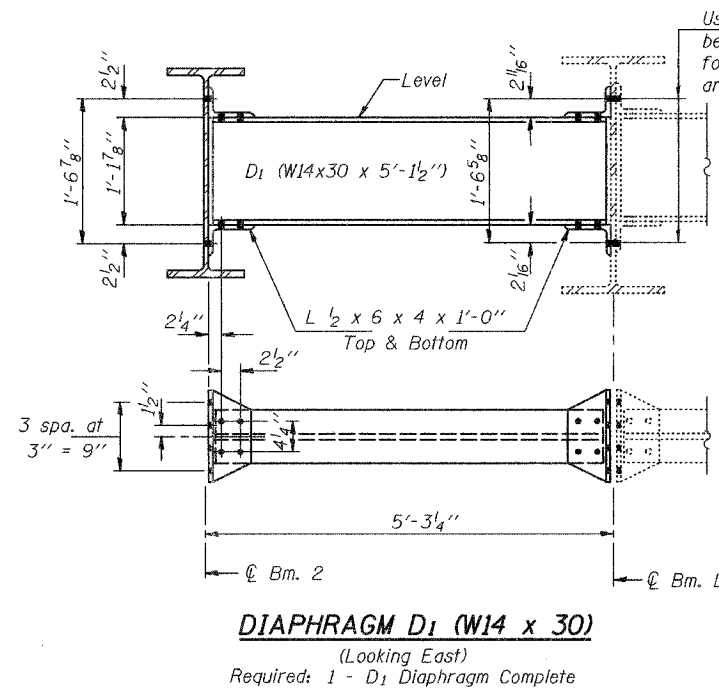
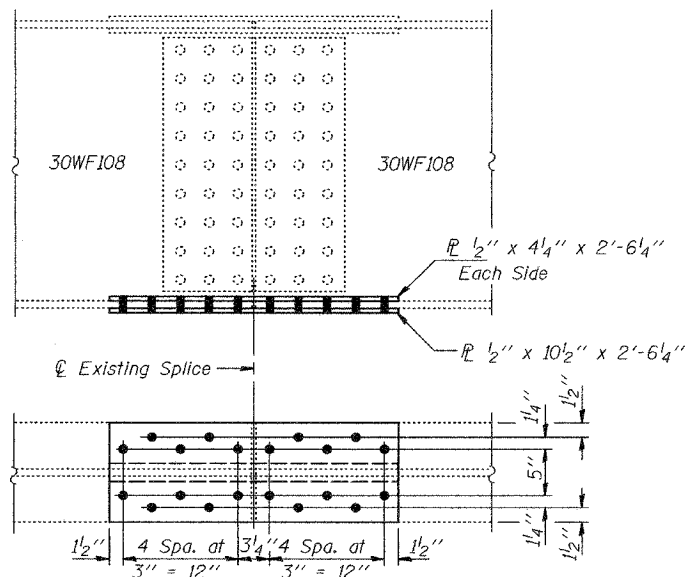
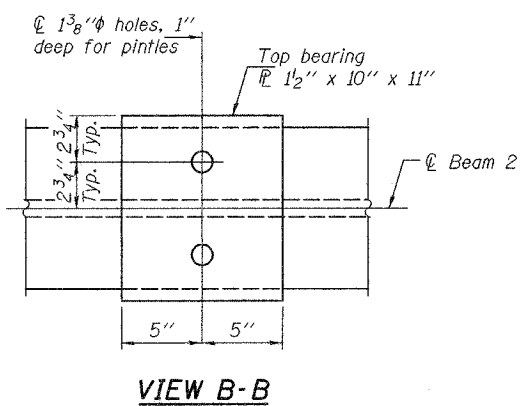
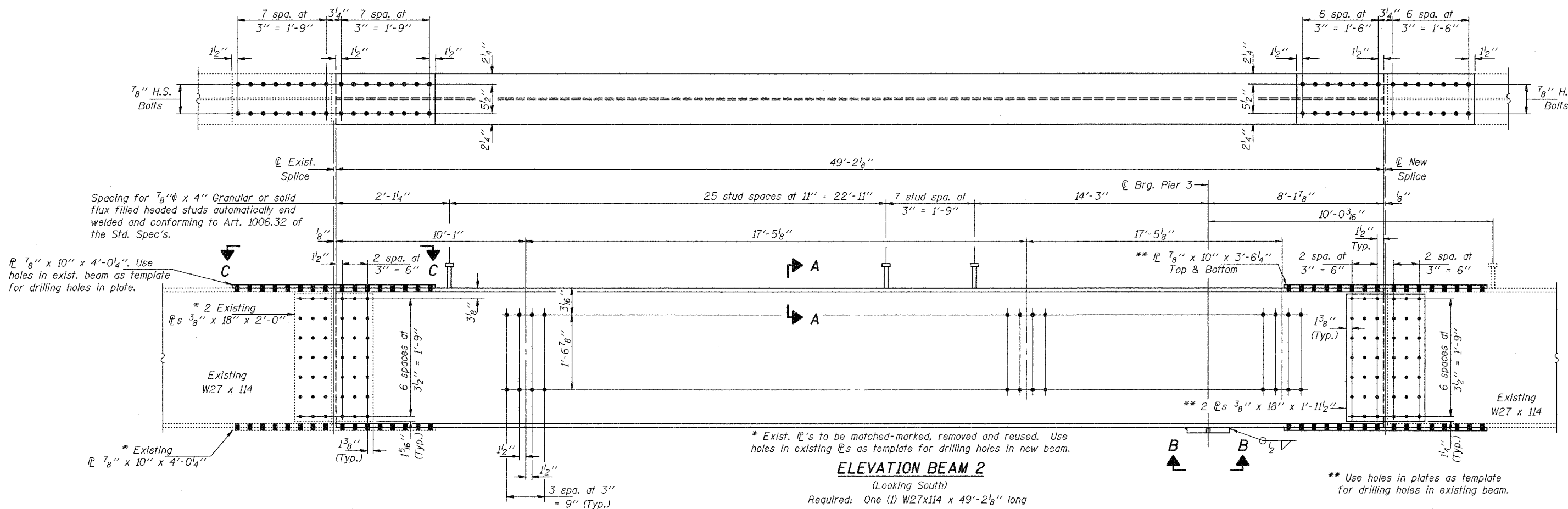
DESIGNED	SJB	SEPTMBER 29, 2005
CHECKED	ATH	EXAMINED
DRAWN	balva	ENGINEER OF STRUCTURAL SERVICES
CHECKED	SJB ATH	PASSED
		ENGINEER OF BRIDGES AND STRUCTURES

BEAM STRAIGHTENING DETAILS
ILL. RTE 162 OVER FAI RTE. 70
MADISON COUNTY
S.N. 060-0139

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET	SHEET NO. 4
		MADISON	11	8	5 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT:			

Contract Number: 76968



DESIGNED	SJB	SEPTEMBER 29, 2005
CHECKED	ATH	EXAMINED
DRAWN	ballva	PASSED
CHECKED	SJB ATH	ENGINEER OF BRIDGES AND STRUCTURES

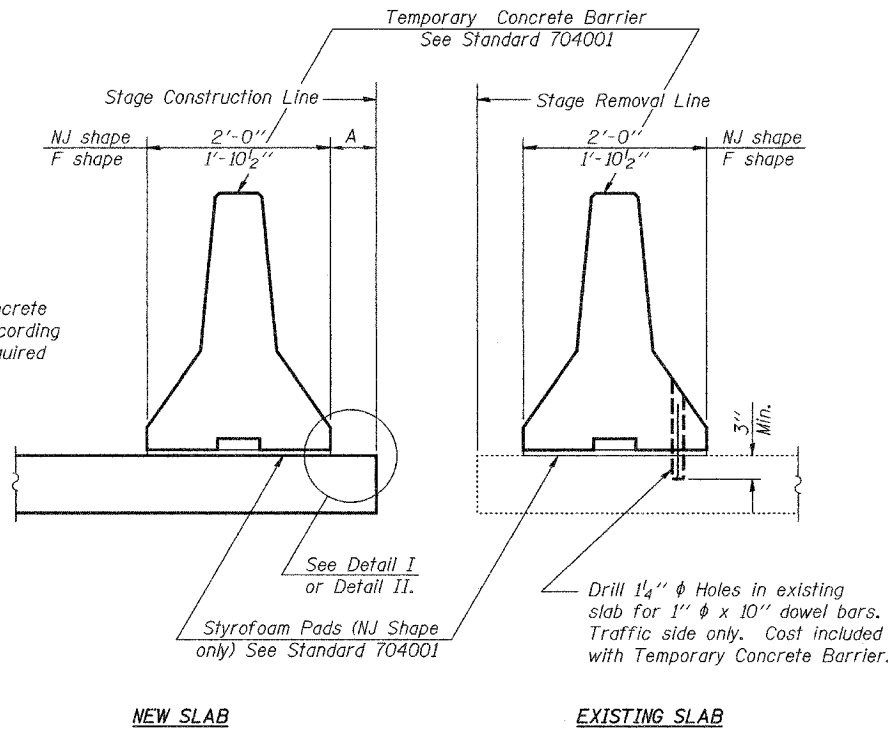
Notes:
Natural camber of new beam shall be placed upward for fabrication.
Fasteners shall be high strength bolts. Flange splice holes shall be $1 5/16'' \phi$ for $7/8'' \phi$ bolts. Web splice holes shall be $1 3/16'' \phi$ for $3/4'' \phi$ bolts.
Diaphragm connection holes shall be $1 5/16'' \phi$ for $3/4'' \phi$ bolts. Two hardened washers shall be required at diaphragm connections.

REPAIR DETAILS
ILL. RTE 162 OVER FAI RTE. 70
MADISON COUNTY
S.N. 060-0139

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET	SHEET NO. 5
		MADISON	11	9	5 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-			

Contract Number: F6968

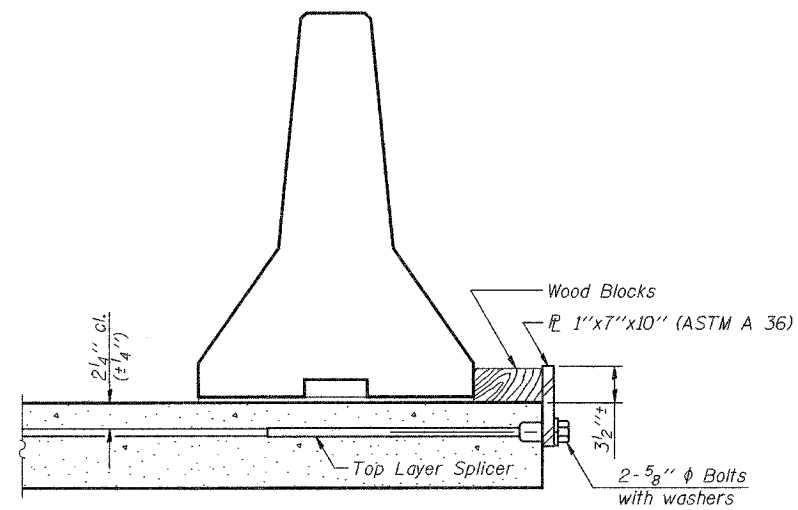


When "A" is 3'-6" or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-6".

NOTES

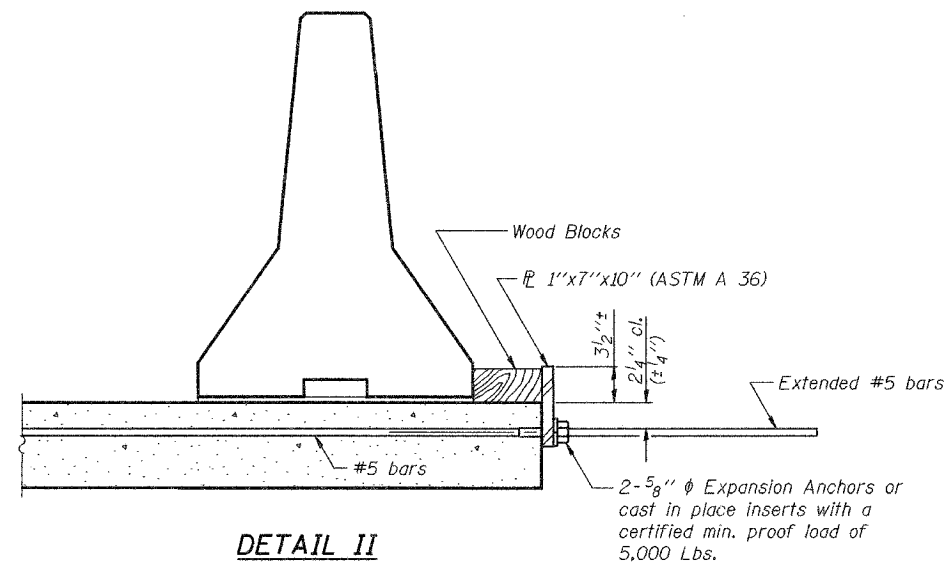
- Detail I - With Bar Splicer or Couplers:**
Connect one (1) 1"x7"x10" steel \bar{L} to the top layer of couplers with 2-5/8" ϕ bolts screwed to coupler at approximate \bar{C} of each barrier panel.
- Detail II - With Extended Reinforcement Bars:**
Connect one (1) 1"x7"x10" steel \bar{L} to the concrete slab with 2-5/8" ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate \bar{C} of each barrier panel.
- Cost of anchorage is included with Temporary Concrete Barrier.

SECTIONS THRU SLAB



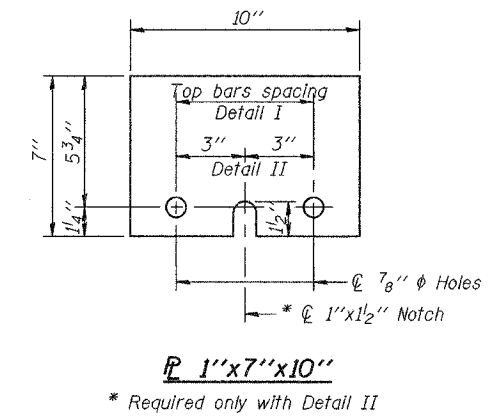
DETAIL I

The 1"x7"x10" Plate shall not be removed until Stage II Construction forms and reinforcement bars are in place.



DETAIL II

The 1"x7"x10" Plate shall not be removed until Stage II Construction forms and all reinforcement bars are in place and the concrete is ready to be placed.



DESIGNED	SJB	SEPTEMBER 29, 2005
CHECKED	ATH	EXAMINED
DRAWN	baliva	PASSED
CHECKED	SJB ATH	ENGINEER OF BRIDGES AND STRUCTURES

R-27 10-22-04

TEMPORARY CONCRETE BARRIER
ILL. RTE 162 OVER FAI RTE. 70
MADISON COUNTY
S.N. 060-0139

