

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60-2HB-I-HDF-3	MADISON	8	1
		ILLINOIS	CONTRACT NO. 76C95	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**PROPOSED
HIGHWAY PLANS**

FAI ROUTE 270 (I-270)
SECTION 60-2HB-I-HDF-3
BRIDGE REPAIRS - HDF
MADISON COUNTY

INDEX OF SHEETS

1. COVER SHEET
2. SUMMARY OF QUANTITIES /GENERAL NOTES
- 3.- 4. TRAFFIC CONTROL
- 5.- 8. STRUCTURE PLANS

HIGHWAY STANDARDS

000001-05	701406-05
001001-02	701411-05
001006	701901-01
701101-02	704001-05
701400-03	

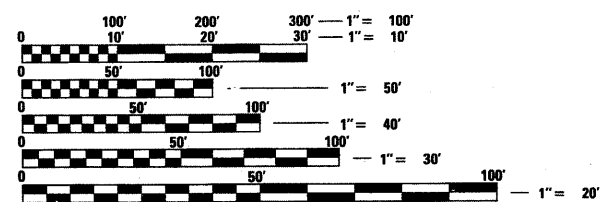
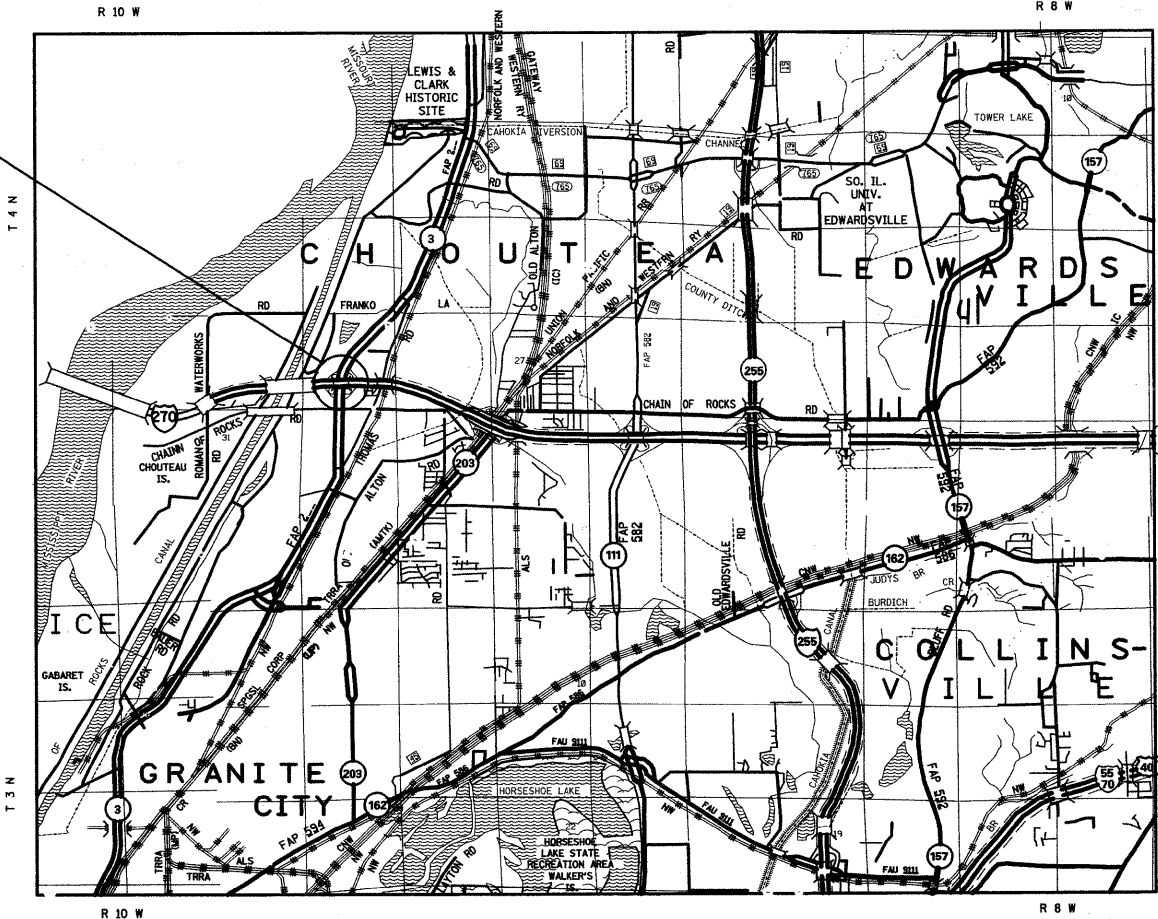
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LOCATION OF SECTION INDICATED THIS: - [black rectangle] -

C-98-036-09

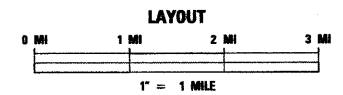
PROJECT LOCATION
I-270 OVER IL 3
SN 060-0039
STA 232 + 77.75



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

TRAFFIC DATA
ADT: 49700 (2009)
60600 (2029)
SU: 3.9%
MU: 18.7%



LATITUDE: 38.7686 LONGITUDE: 90.1229

PROJECT ENGINEER: PATTI LEBEAU (618) 346-3179
PROJECT MANAGER: ART MUEHLFELD (618) 346-3209

CONTRACT NO. 76C95

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED 7-2-09 20
Way C. Adams
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

August 14, 2009
Charles G. Ingersoll
ENGINEER OF DESIGN AND ENVIRONMENT

August 14, 2009
Christine M. Reed
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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

SUMMARY OF QUANTITIES			URBAN	CONSTRUCTION TYPE CODE	
CODE NO	ITEM	UNIT	TOTAL	STRUCTURE	
			QUANTITIES	X031-2A	
50102400	CONCRETE REMOVAL	CU YB	0.3	0.3	
50300255	CONCRETE SUPERSTRUCTURE	CU YB	0.3	0.3	
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	25790	25790	
50501110	STRUCTURAL STEEL REMOVAL	POUND	14270	14270	
67100100	MOBILIZATION	L SUM	1	1	
70100700	TRAFFIC CONTROL AND PROTECTION, STANDARD 701406	LSUM	1	1	
70101220	TRAFFIC CONTROL AND PROTECTION, STANDARD 701411 (SPECIAL)	EACH	1	1	
70400100	TEMPORARY CONCRETE BARRIER	FOOT	262.5	262.5	
Z0003600	BEAM STRAIGHTENING	L SUM	1	1	
Z0030250	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3	EACH	1	1	
Z0073300	TEMPORARY SHORING AND CRIBBING	L SUM	1	1	
Z0073351	TEMPORARY SLAB SUPPORT SYSTEM	L SUM	1	1	

GENERAL NOTES

- THE STANDARDS AND REVISION NUMBERS SHALL APPLY TO THIS PROJECT.
 - THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO CONSTRUCTION AND ORDERING MATERIALS.
 - ILLINOIS STATE LAW REQUIRES A 48-HOUR NOTICE BE GIVEN TO UTILITIES WITHIN THE PROJECT AREA BEFORE DIGGING BY CALLING J.U.L.I.E. AND BY NOTIFYING NON-J.U.L.I.E. MEMBERS INDIVIDUALLY. AGENCIES KNOWN TO HAVE FACILITIES WITHIN THE PROJECT AREA ARE AS FOLLOWS:
 - AMERENIP
 - AMERENUE
 - AT&T ILLINOIS
 - VILLAGE OF CASEYVILLE
 - CHARTER COMMUNICATION, INC.
 - MEDIACOM LLC CENTRAL
- MEMBERS OF J.U.L.I.E (800) 892-0123 ARE INDICATED BY *. NON-MEMBERS MUST BE NOTIFIED INDIVIDUALLY.
- A QUANTITY OF 1288 FEET OF "TEMPORARY PAVEMENT MARKING - LINE 6" WHITE HAS BEEN INCLUDED IN THE PLANS FOR PAINTING THE BOTTOM 6" OF THE TEMPORARY CONCRETE BARRIER.
 - THE CONTRACTOR SHALL FURNISH AND INSTALL WOOD SIGN SUPPORTS IN ACCORDANCE WITH SECTION 730 OF THE STANDARD SPECIFICATIONS, HOWEVER, INSTALLATION BY METHOD "A" (ARTICLE 730.04(A)) SHALL BE THE ONLY METHOD PERMITTED.
 - TWO LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES.
 - "ROAD CONSTRUCTION AHEAD" SIGNS SHALL BE REQUIRED AT INTERSECTING SIDE ROADS THROUGHOUT THE PROJECT. COST TO BE INCLUDED IN BID PRICES FOR TRAFFIC CONTROL AND PROTECTION.
 - THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT ANY DEBRIS FROM FALLING ONTO LANES OPEN TO TRAFFIC BELOW THE BRIDGE.

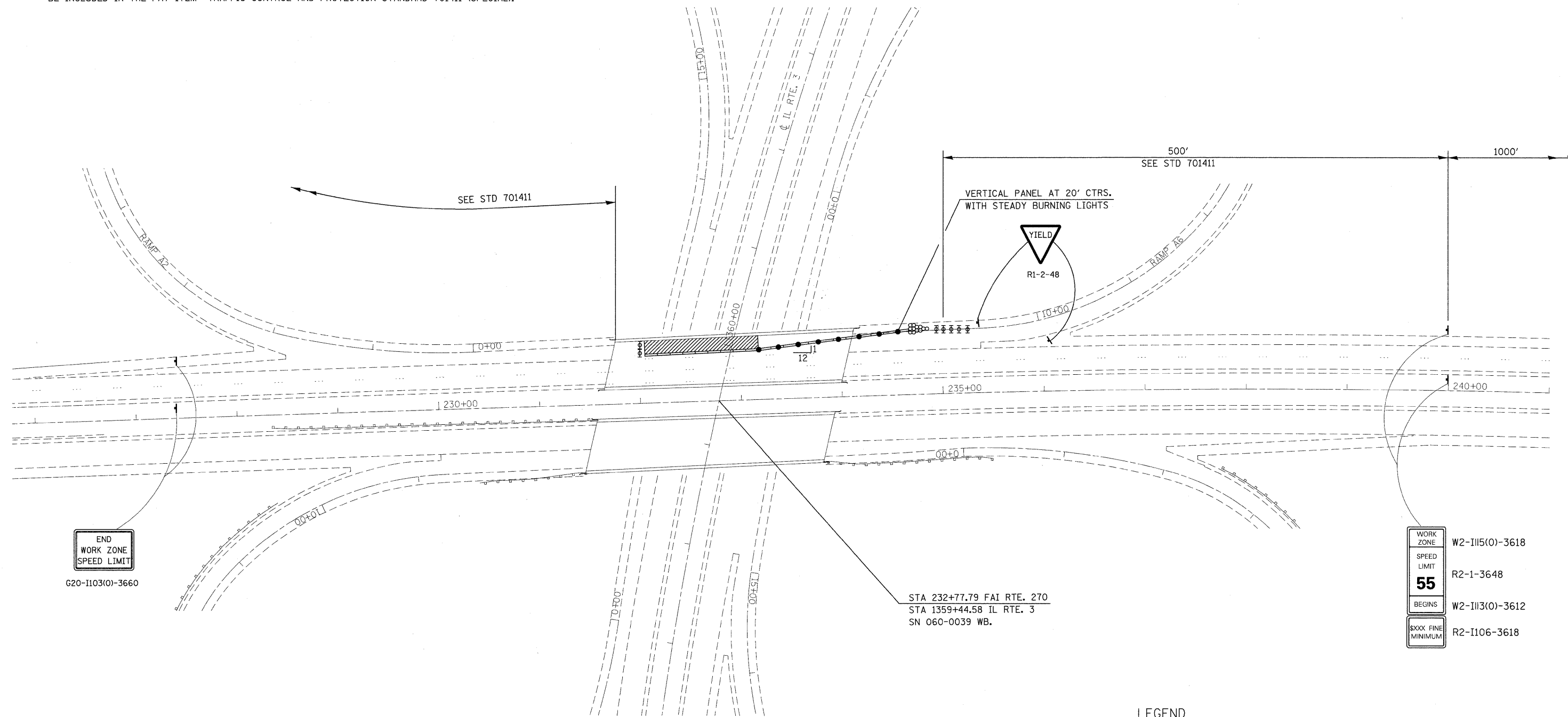
COMMITMENTS

NONE

FILE NAME =	USER NAME = gelnh	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUMMARY OF QUANTITIES /GENERAL NOTES	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
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PLOT SCALE = 50.0000' / IN.		CHECKED -	REVISED -			CONTRACT NO. 76C95		ILLINOIS FED. AID PROJECT			
PLOT DATE = 6/23/2009		DATE -	REVISED -			SCALE: _____	SHEET NO. ___ OF ___ SHEETS	STA. _____ TO STA. _____			

NOTE

TRAFFIC CONTROL SHALL BE INSTALLED AS SHOWN IN THE PLANS. THE COST OF THIS TRAFFIC CONTROL SHALL BE INCLUDED IN THE PAY ITEM "TRAFFIC CONTROL AND PROTECTION STANDARD 701411 (SPECIAL)."



END
WORK ZONE
SPEED LIMIT

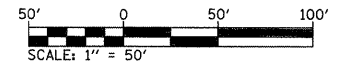
G20-1103(0)-3660

STA 232+77.79 FAI RTE. 270
STA 1359+44.58 IL RTE. 3
SN 060-0039 WB.

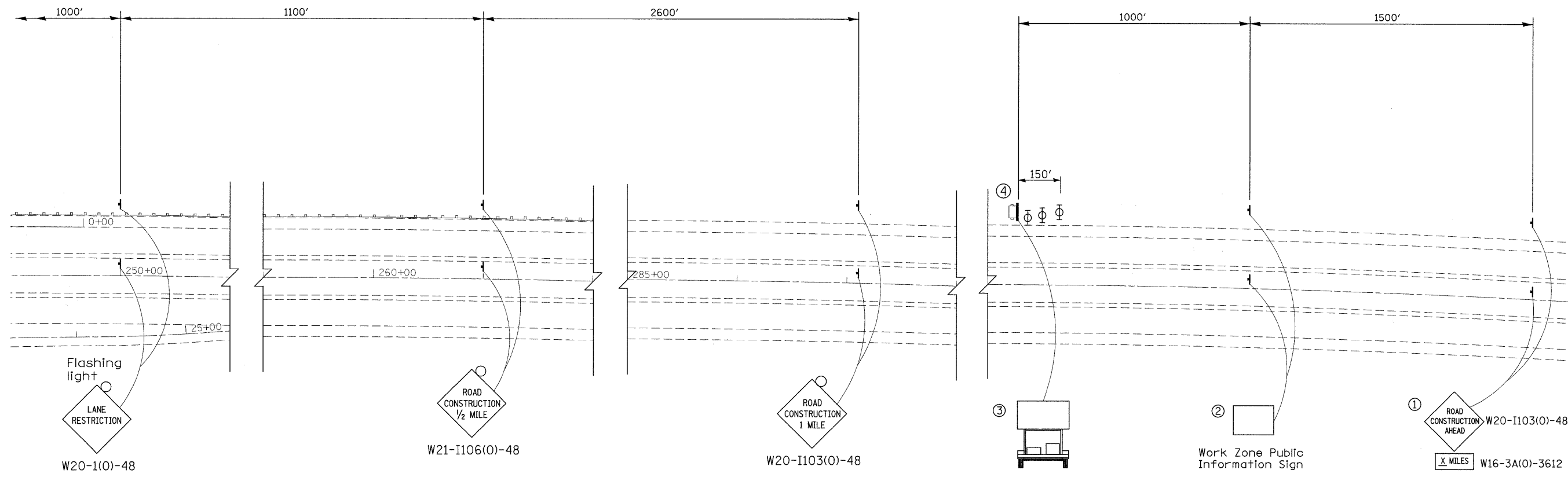
WORK ZONE	W2-II15(0)-3618
SPEED LIMIT	R2-1-3648
55	
BEGINS	W2-II13(0)-3612
XXX FINE MINIMUM	R2-II06-3618

LEGEND

- NOMODIRECTIONAL BURNING LIGHTS AND VERTICAL PANELS
- ⊕ DRUMS WITH STEADY MONODIRECTIONAL LIGHT
- ⊥ SIGNS
- ▬ TEMPORARY CONCRETE BARRIER
- ⊗ IMPACT ATTENUATORS
- ▨ WORK AREA



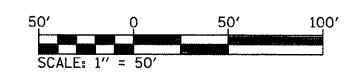
FILE NAME =	USER NAME = gelinh	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TRAFFIC CONTROL & PROTECTION PLAN	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
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	PLOT DATE = 6/23/2009	CHECKED -	REVISED -			CONTRACT NO. 76C95					
		DATE -	REVISED -			ILLINOIS FED. AID PROJECT					



SYMBOLS

- ☐ PORTABLE CHANGEABLE MESSAGE SIGN
- ⊥ SIGN
- ⊕ TYPE II BARRICADE, DRUM, OR VERTICAL BARRICADE WITH MONODIRECTIONAL FLASHING LIGHT

- ① THE ROAD CONSTRUCTION AHEAD SIGN SHALL BE LOCATED 3 TO 5 MILES IN ADVANCE OF THE PROJECT LIMITS.
- ② THE MESSAGE AND SIZE OF THE WORK ZONE PUBLIC INFORMATION SIGN SHALL BE AS SPECIFIED BY THE DEPARTMENT.
- ③ THE MESSAGE BOARD SHALL BE USED TO DISPLAY STATUS OF LANES WITHIN THE PROJECT. THE PRIMARY MESSAGES SHALL BE:
 "RIGHT LANE CLOSED" / " X MILES AHEAD"
 "LEFT LANE CLOSED" / " X MILES AHEAD"
 "ALL LANES OPEN"
- ④ THREE, TYPE II BARRICADES, DRUMS, OR VERTICAL BARRICADES AT 50' CENTERS.



FILE NAME =	USER NAME = gelinh	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TRAFFIC CONTROL & PROTECTION PLAN	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
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PLOT SCALE = 50.0000' / IN.		CHECKED -	REVISED -			CONTRACT NO. 76C95					
PLOT DATE = 6/23/2009		DATE -	REVISED -			ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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.

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 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.

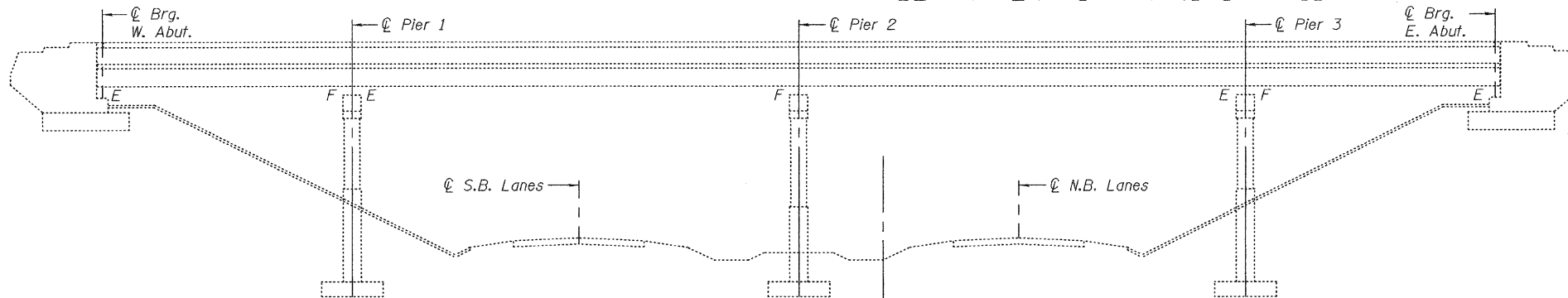
Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures", and "Cleaning and Painting New Metal Structures". The color of the final finish coat shall be Green, Munsell No. 7.5G 4/8. Cost included with Furnishing and Erecting Structural Steel.

Diaphragm connection holes shall be $\frac{15}{16}$ " ϕ for $\frac{3}{4}$ " ϕ bolts. Two hardened washers shall be required at diaphragm connections.

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

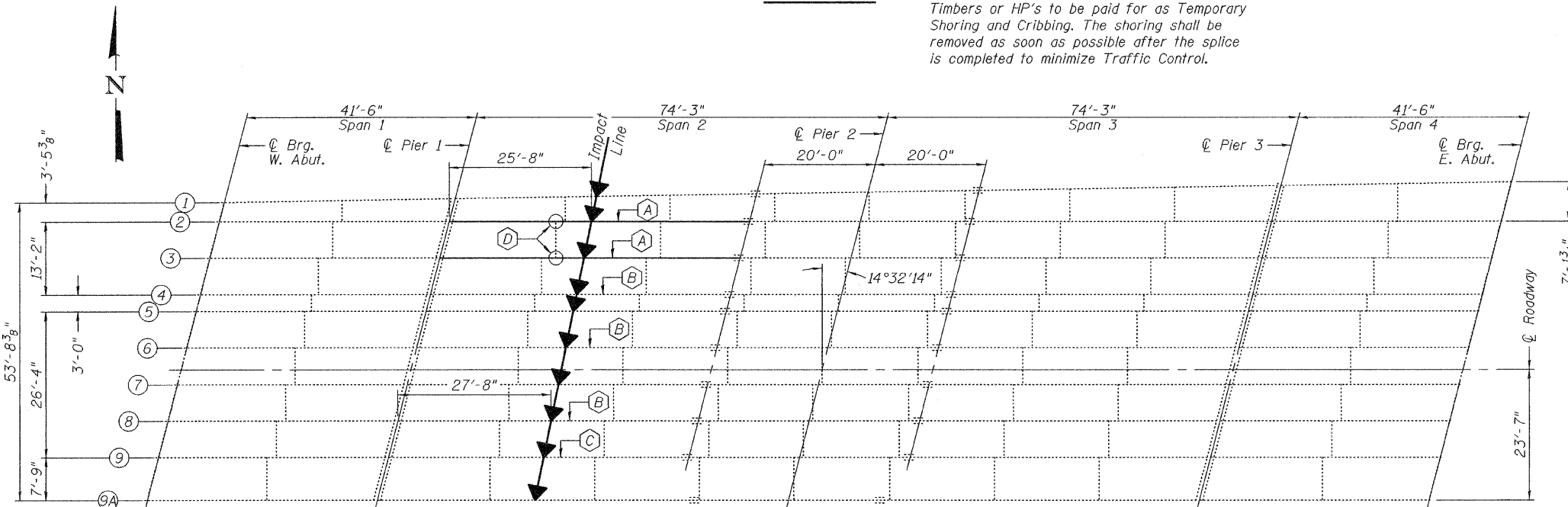
The Inorganic Zinc Rich Primer / Acrylic / Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final finish coat shall be Interstate Green, Munsell No. 7.5G 4/8. See Special Provision "Cleaning and Painting New Metal Structures".

The Contractor is responsible for the method of supporting the portion of existing girder to be removed prior to, during cutting and removal operations, and shall ensure that cuts made are smooth and straight.



ELEVATION

Temporary shoring may be required to facilitate alignment of existing splice. Use 12" x 12" Timbers or HP's to be paid for as Temporary Shoring and Cribbing. The shoring shall be removed as soon as possible after the splice is completed to minimize Traffic Control.



FRAMING PLAN

- (A) Remove and replace Beam Segment
- (B) Existing beam to be straightened and strengthened
- (C) Existing beam to be straightened
- (D) Replace bottom clip L

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Furnishing and Erecting Structural Steel	Pound	25,790
Structural Steel Removal	Pound	14,270
Temporary Slab Support System	L.S.	1
Beam Straightening	L.S.	1
Temporary Shoring and Cribbing	L.S.	1

DESIGNED *Augie Boyart*
CHECKED *Alma Holloway*
DRAWN *[Signature]*
CHECKED *ASB ATH*

EXAMINED *[Signature]*
PASSED *[Signature]*
ENGINEER OF STRUCTURAL SERVICES
ENGINEER OF BRIDGES AND STRUCTURES

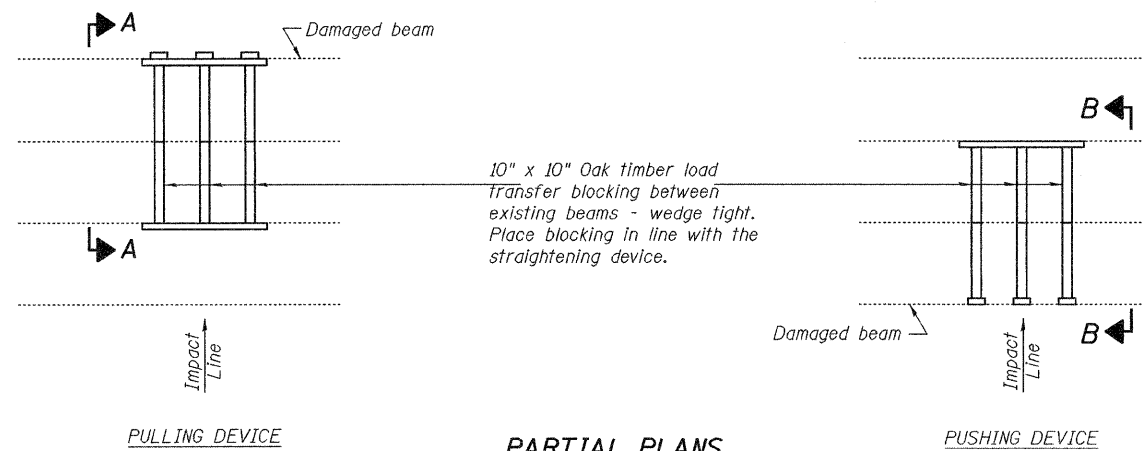


Expires: November 30, 2010

PLAN AND ELEVATION
SN 060-0039

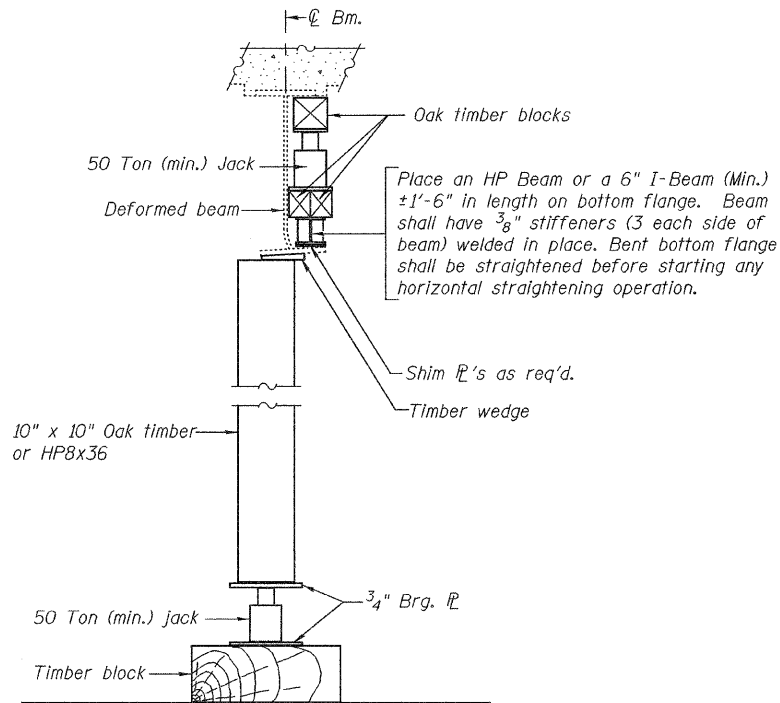
SHEET NO. 1 4 SHEETS	F.A.I. RTE. 270	SECTION 60-2HB-I-HDF-2	COUNTY Madison	TOTAL SHEETS 8	SHEET NO. 5
	FED. ROAD DIST. NO. ILLINOIS		FED. AID PROJECT CONTRACT NO. 76C95		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

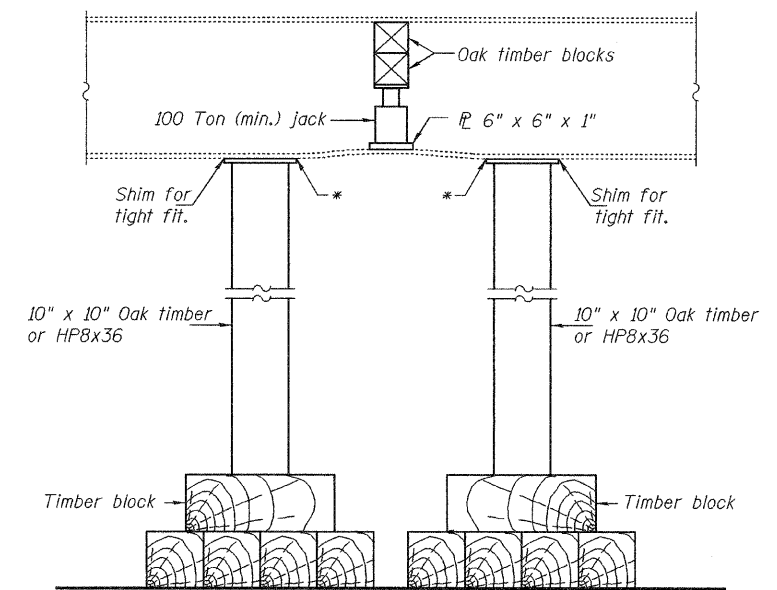


SUGGESTED BEAM STRAIGHTENING METHODS

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



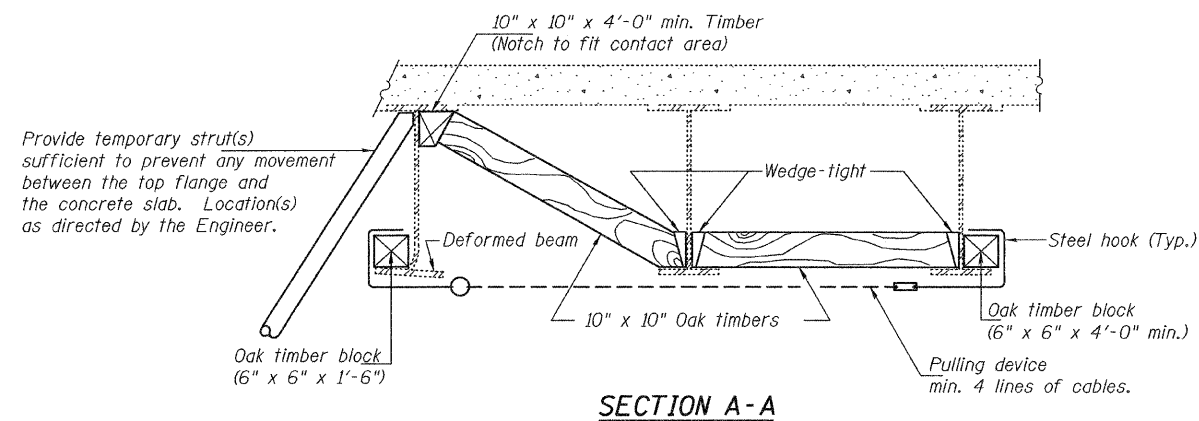
SUGGESTED VERTICAL STRAIGHTENING DETAIL
(To correct flange rotation.)



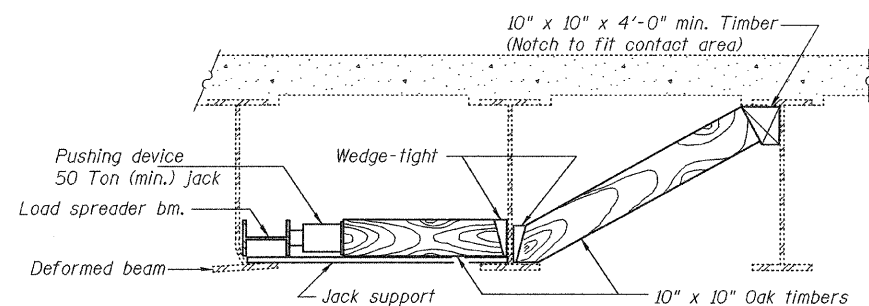
SUGGESTED VERTICAL STRAIGHTENING DETAIL
(To correct localized vertical flange deformations.)

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

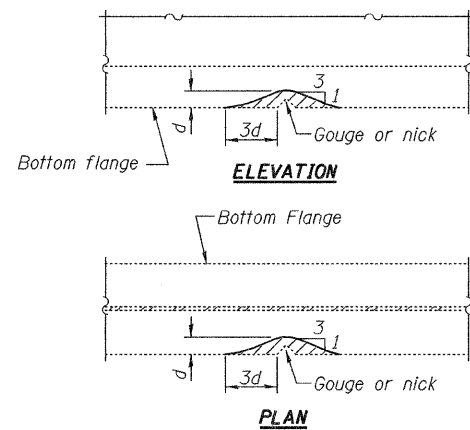
Note:
Braces and jack assembly shall be placed on same side of web.
Bent bottom flange shall be straightened before starting any horizontal straightening operations.



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 L.

Beam	X	Y	L
4	1 5/16"	3/4"	4'-0"
6	1 3/16"	1 3/8"	4'-0"
8	1 1/4"	2"	4'-0"
9	1/2"	5/8"	3'-0"

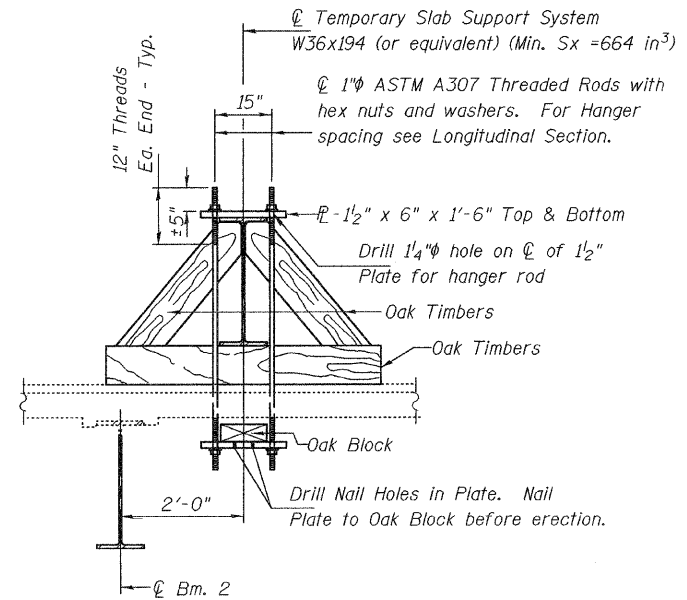
BEAM STRAIGHTENING DETAILS
SN 060-0039

DESIGNED	A.J.B.
CHECKED	A.T.H.
DRAWN	Drew Christopher
CHECKED	A.J.B. A.T.H.

EXAMINED	July 27, 2009
PASSED	Ralph E. Anderson

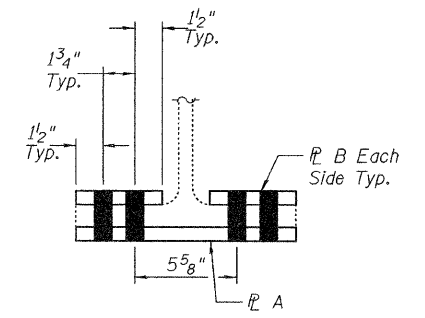
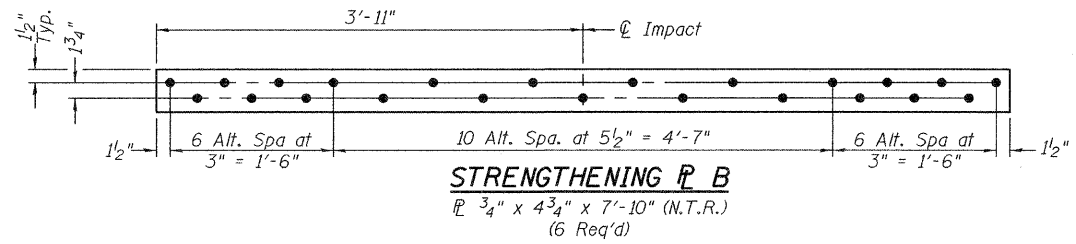
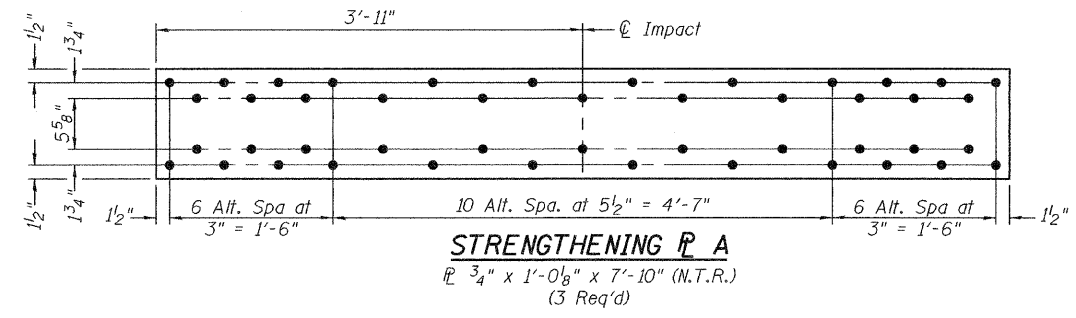
SHEET NO. 2 4 SHEETS	F.A.I. RTE. 270	SECTION 60-2HB-I-HDF-2	COUNTY Madison	TOTAL SHEETS 8	SHEET NO. 6
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT	CONTRACT NO. 76C95	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



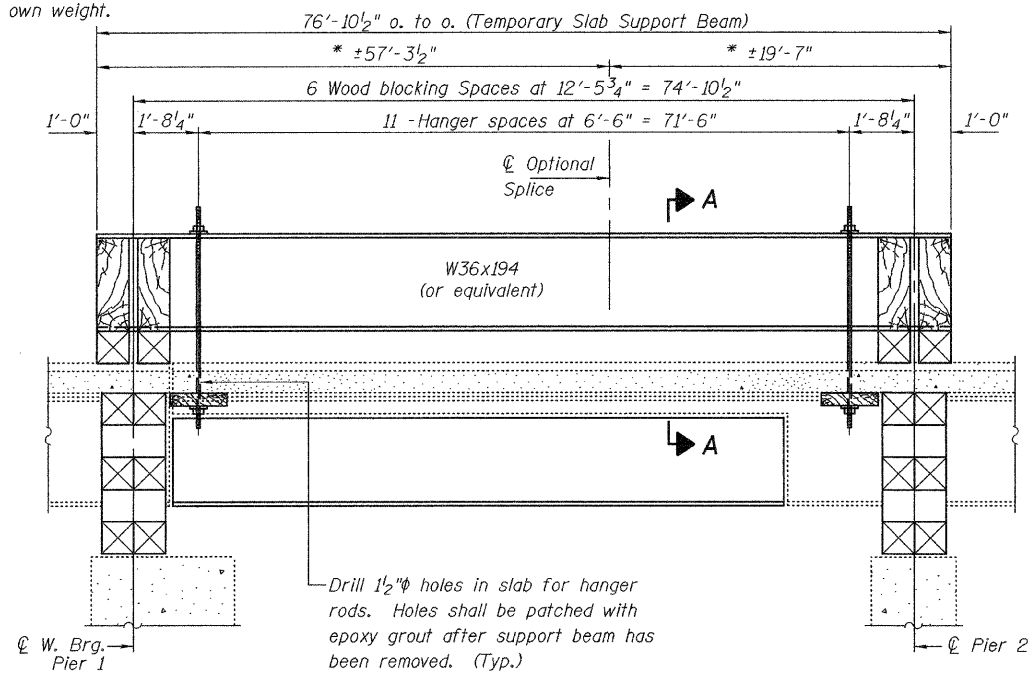
SECTION A-A
(Looking East)
(Beam 3 Opposite Hand)

If work on adjacent beam is to be done simultaneously, each beam line will be required to have it's own Temporary Slab Support System.

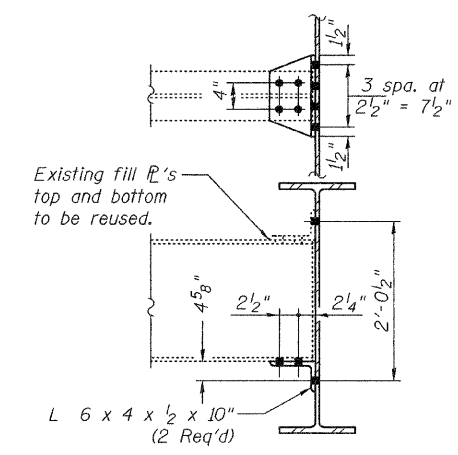


REPAIR B
STRENGTHENING SECTION
(1/2" H.S. bolts in 1/16" holes)

* These dimensions may vary for available beams in stock.
** Timber blocking is to be installed after support beam is allowed to deflect under its own weight.



LONGITUDINAL SECTION
SUGGESTED TEMPORARY SLAB SUPPORT SYSTEM



REPAIR D
CLIP L REPLACEMENT

DESIGNED	A.J.B.
CHECKED	A.T.H.
DRAWN	Drew Christopher
CHECKED	A.J.B. A.T.H.

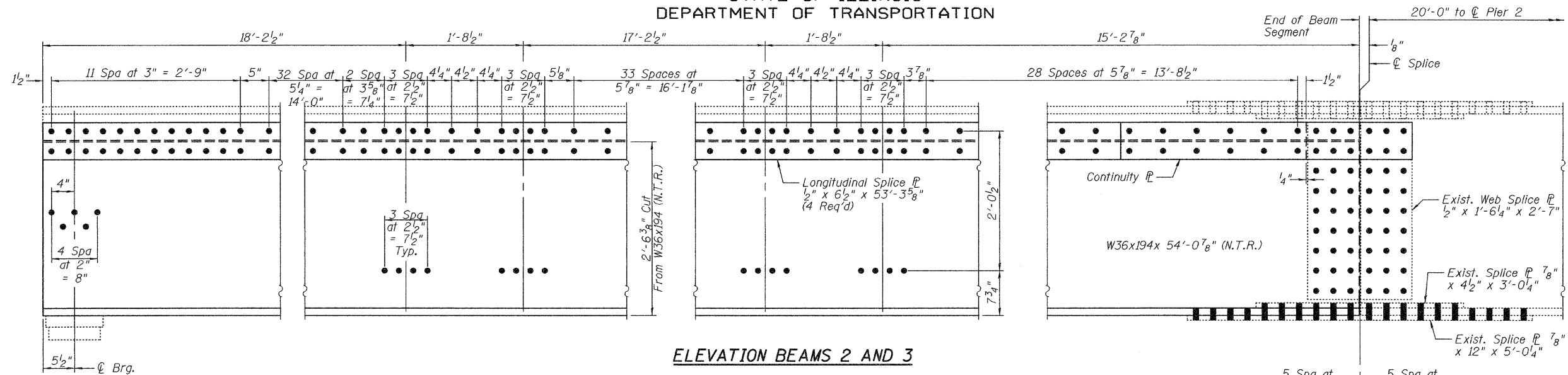
EXAMINED	July 27, 2009
PASSED	Carl Prosser ENGINEER OF STRUCTURAL SERVICES
	Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES

REP-2 1-27-2000

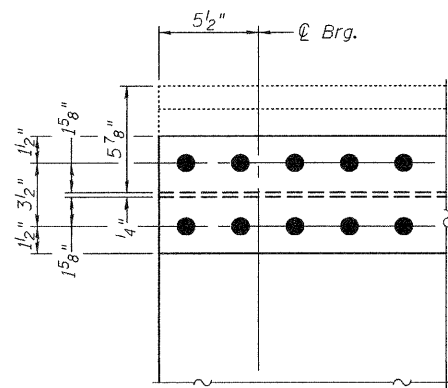
DETAILS
SN 060-0039

SHEET NO. 3	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	270	60-2HB-I-HDF-2	Madison	8	7
4 SHEETS	FED. ROAD DIST. NO.		ILLINOIS	CONTRACT NO. 76C95	
		FED. AID PROJECT			

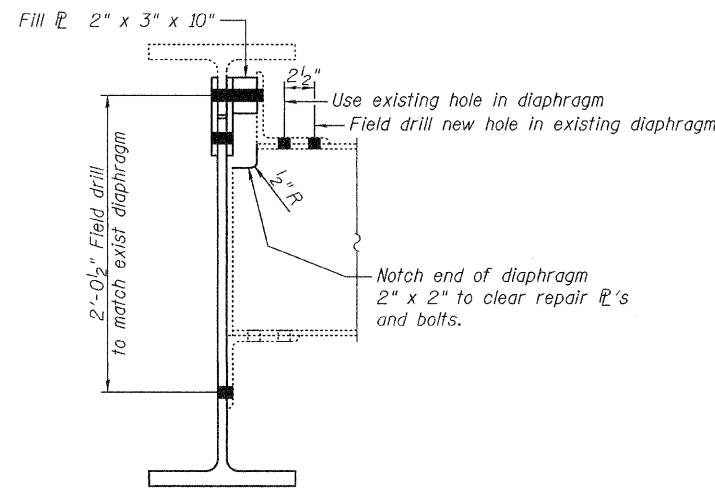
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



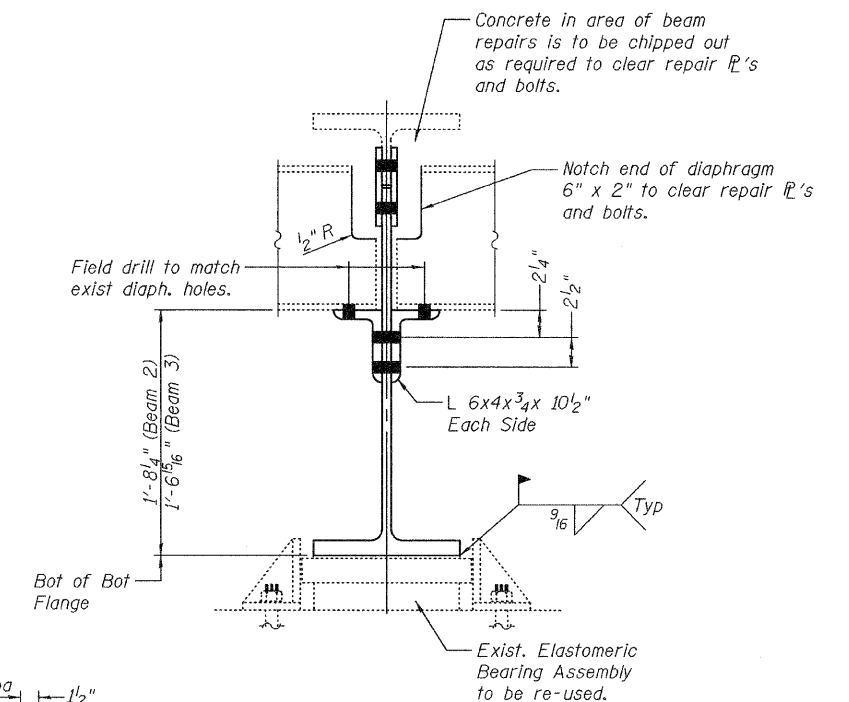
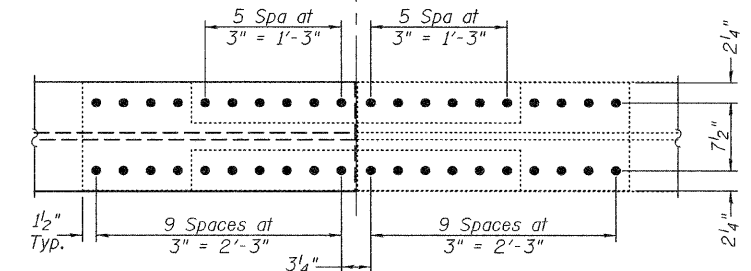
ELEVATION BEAMS 2 AND 3



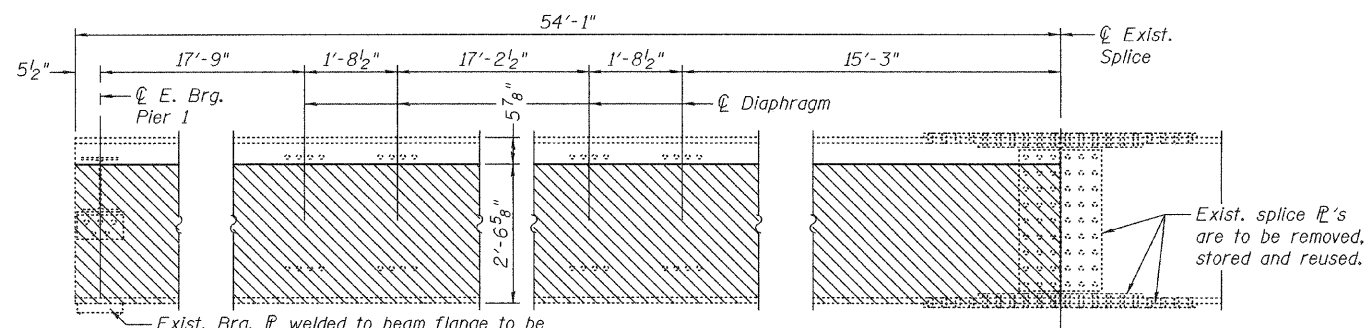
LONGITUDINAL SPLICE
AND BEAM END DETAIL



TYPICAL SECTION AT
INTERIOR DIAPHRAGM

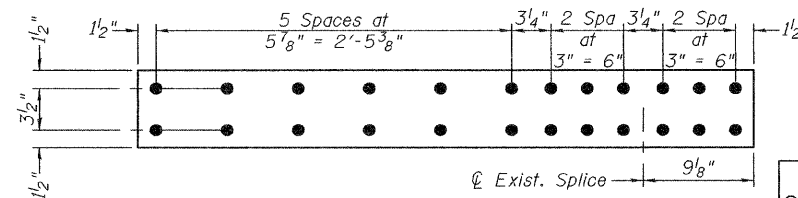


TYPICAL END ELEVATION



TYPICAL REMOVAL DETAIL
BEAMS 2 AND 3

All cut edges are to be ground smooth and be free of any nicks, gauges or irregularities.



CONTINUITY PL
PL 1/2" x 6 1/2" x 4'-2 7/8"
(4 Req'd)

DESIGNED	A.J.B.
CHECKED	A.T.H.
DRAWN	Drew Christopher
CHECKED	A.J.B. A.T.H.

July 27, 2009	
EXAMINED	<i>Carl Henry</i>
PASSED	<i>Ralph E. Anderson</i>
ENGINEER OF BRIDGES AND STRUCTURES	

DETAILS
SN 060-0039

SHEET NO. 4 4 SHEETS	F.A.I. RTE. 270	SECTION 60-2HB-1-HDF-2	COUNTY Madison	TOTAL SHEETS 8	SHEET NO. 8
	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT	CONTRACT NO. 76C95		