

68537

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
313	D4 BR.REP.2007-1	KNOX	11	1

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED HIGHWAY PLANS

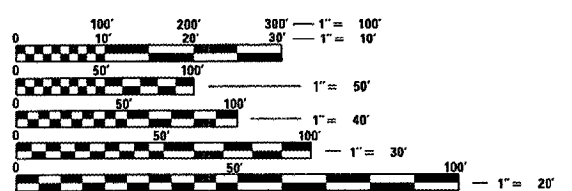
FAP ROUTE 313(US-34)
SECTION D4 BRIDGE REPAIR 2007-1
KNOX COUNTY
C-94-006-06

INDEX OF SHEETS:

1. COVER SHEET
2. GENERAL NOTES & COMMITMENTS
3. SUMMARY OF QUANTITIES
4. TYPICALS
5. SCHEDULE OF QUANTITIES
- 6~7. STAGING & TRAFFIC CONTROL
9. PLAN & ELEVATION
- 10~11. BRIDGE REPAIR SHEETS

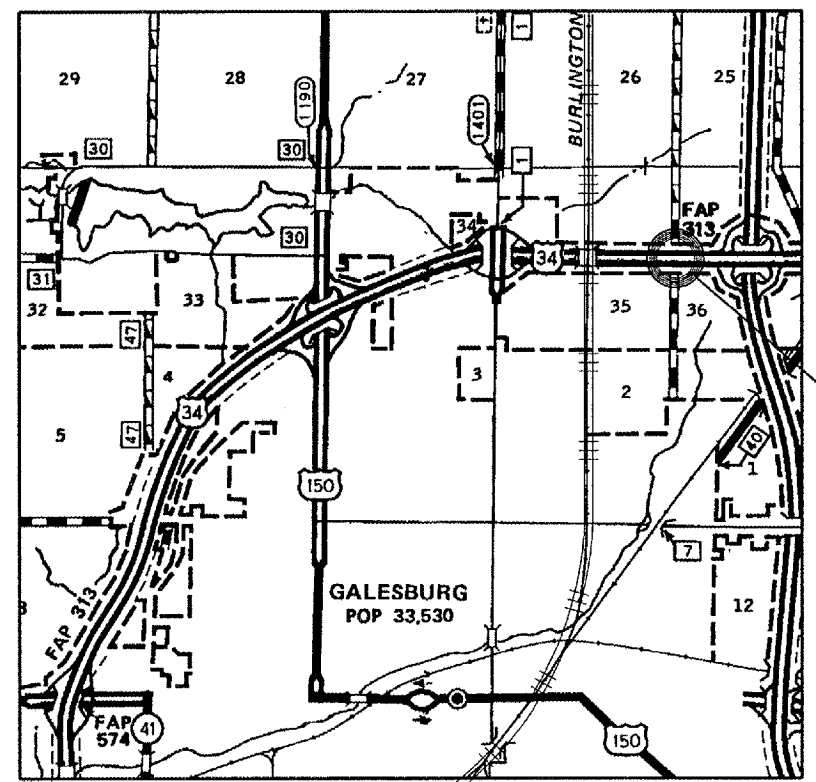
STANDARDS:

- | | | |
|-----------|-----------|-----------|
| 701001-01 | 701401-03 | 701801-03 |
| 701006-02 | 701606-04 | 701400-02 |
| 701011-01 | 702001-06 | |



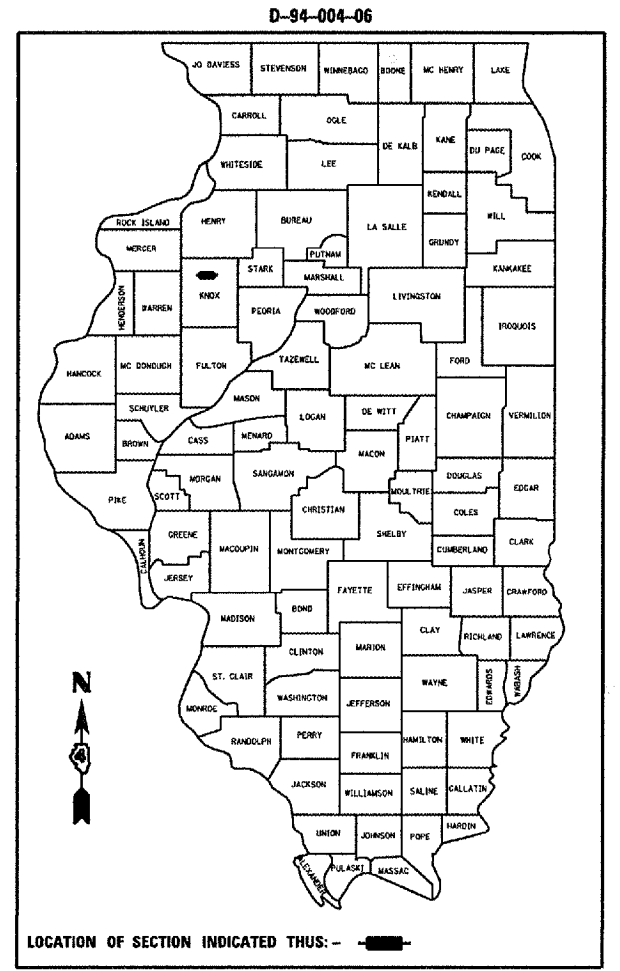
FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

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



LOCATION MAP

THE PROPOSED PROJECT CONSISTS OF REPAIR OF IMPACT DAMAGE TO VARIOUS BEAMS CARRYING LINCOLN PARK DRIVE OVER US34 (SN 048-0068)-GALESBURG BYPASS.



LOCATION OF SECTION INDICATED THUS: -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED *12/28/06*

[Signature] DISTRICT ENGINEER

[Signature] ENGINEER OF DESIGN AND ENVIRONMENT

[Signature] DIRECTOR, DIVISION OF HIGHWAYS

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

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

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

CONTRACT 68537 CAT. NO. 033159-00D

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
313	*	KNOX	11	2
STA. 18+89.01		TO STA. 20+92.60		
FED. ROAD DIST. NO. 4 ILLINOIS FED. AID PROJECT				
* D4 BRIDGE REPAIR 2007-1				

COMMITMENTS

NO COMMITMENTS HAVE BEEN MADE FOR THIS PROJECT.

GENERAL NOTES

ALL NEW FASTENERS SHALL BE HIGH STRENGTH BOLTS. HOLES SHALL BE SHOP OR FIELD DRILLED 11/16"Ø AND REAMED TO 13/16"Ø FOR 3/4"Ø HIGH STRENGTH BOLTS AFTER THE NEW STRUCTURAL STEEL SECTION IS FITTED INTO POSITION.

PLOT DATE * DATE *
 FILE NAME * FILE *
 PLOT SCALE * SCALAR *
 REFERENCE * REF *

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

SCALE: VERT.
 HORIZ.
 DATE 12-04-2006

DRAWN BY CEJ
 CHECKED BY

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
313	*	KNOX	11	3
STA. 18+89.01		TO STA. 20+92.60		
FED. ROAD DIST. NO. 4		ILLINOIS FED. AID PROJECT		
D4 BRIDGE REPAIR 2007-I				

SUMMARY OF QUANTITIES

100% STATE SAFETY-2A
KNOX COUNTY

CODE NO.	ITEM	UNIT	URBAN	TOTAL
50102400	CONCRETE REMOVAL	CU YD	2.0	2.0
50300255	CONCRETE SUPERSTRUCTURE	CU YD	2.0	2.0
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	9470	9470
50501110	STRUCTURAL STEEL REMOVAL	POUND	8560	8560
67100100	MOBILIZATION	LSUM	1.0	1.0
70100800	TRAFFIC CONTROL AND PROTECTION, STANDARD 701401	LSUM	1.0	1.0
70102625	TRAFFIC CONTROL AND PROTECTION, STANDARD 701606	LSUM	1.0	1.0
70102640	TRAFFIC CONTROL AND PROTECTION, STANDARD 701801	LSUM	1.0	1.0
Z0003600	BEAM STRAIGHTENING	LSUM	1.0	1.0
Z0073300	TEMPORARY SHORING AND CRIBBING	LSUM	1.0	1.0
Z0073351	TEMPORARY SLAB SUPPORT SYSTEM	LSUM	1.0	1.0

PLOT DATE * DDMMYY
 FILE NAME * FILEL*
 PLOT SCALE * SCALE*
 REFERENCE * REF#

REVISIONS	
NAME	DATE

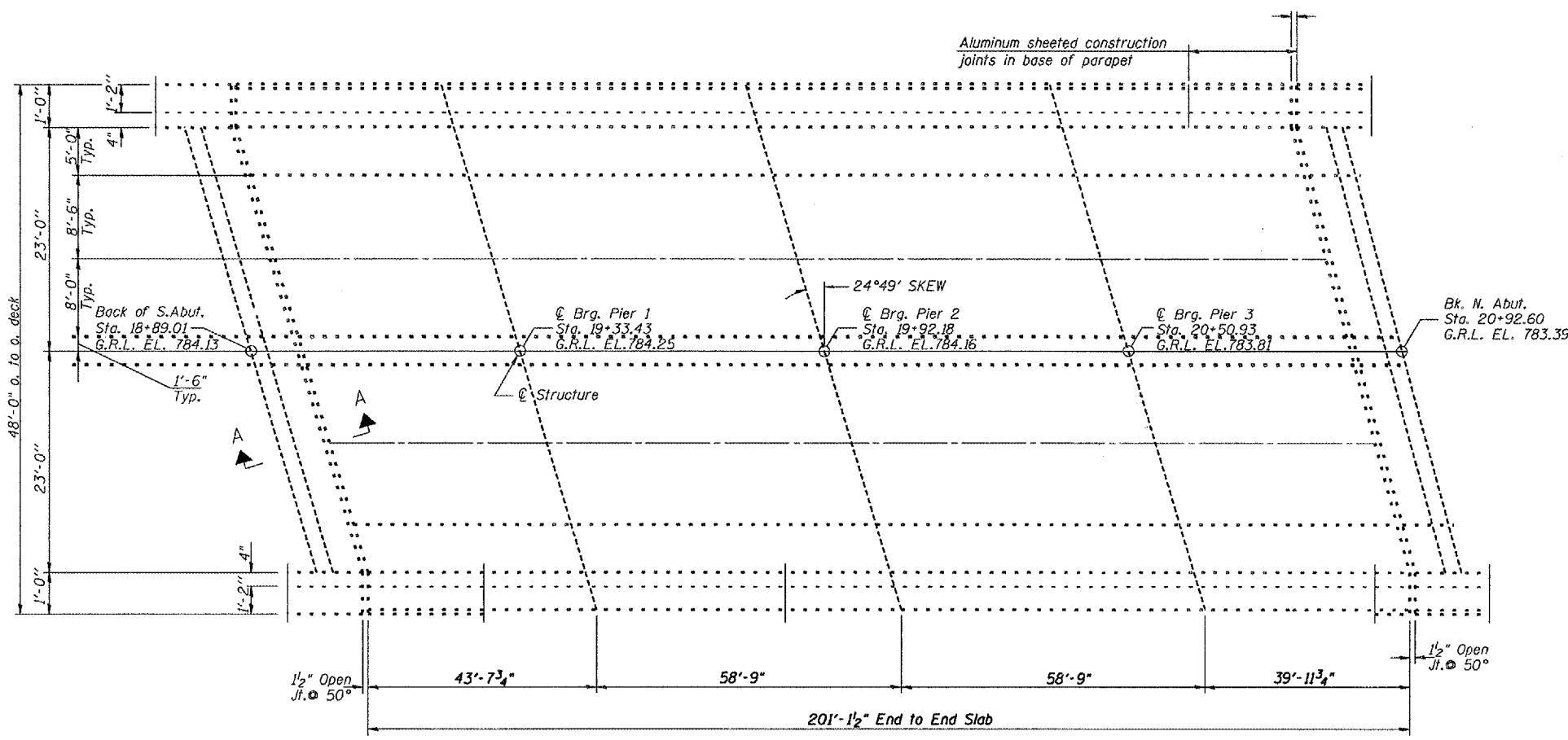
ILLINOIS DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

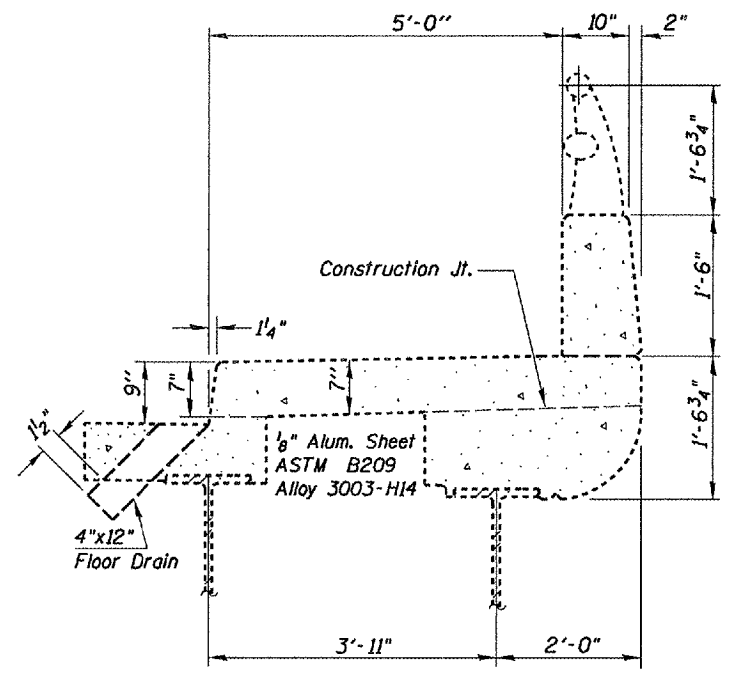
SCALE: VERT.
 HORIZ.
 DATE 12-04-2006

DRAWN BY CEJ
 CHECKED BY

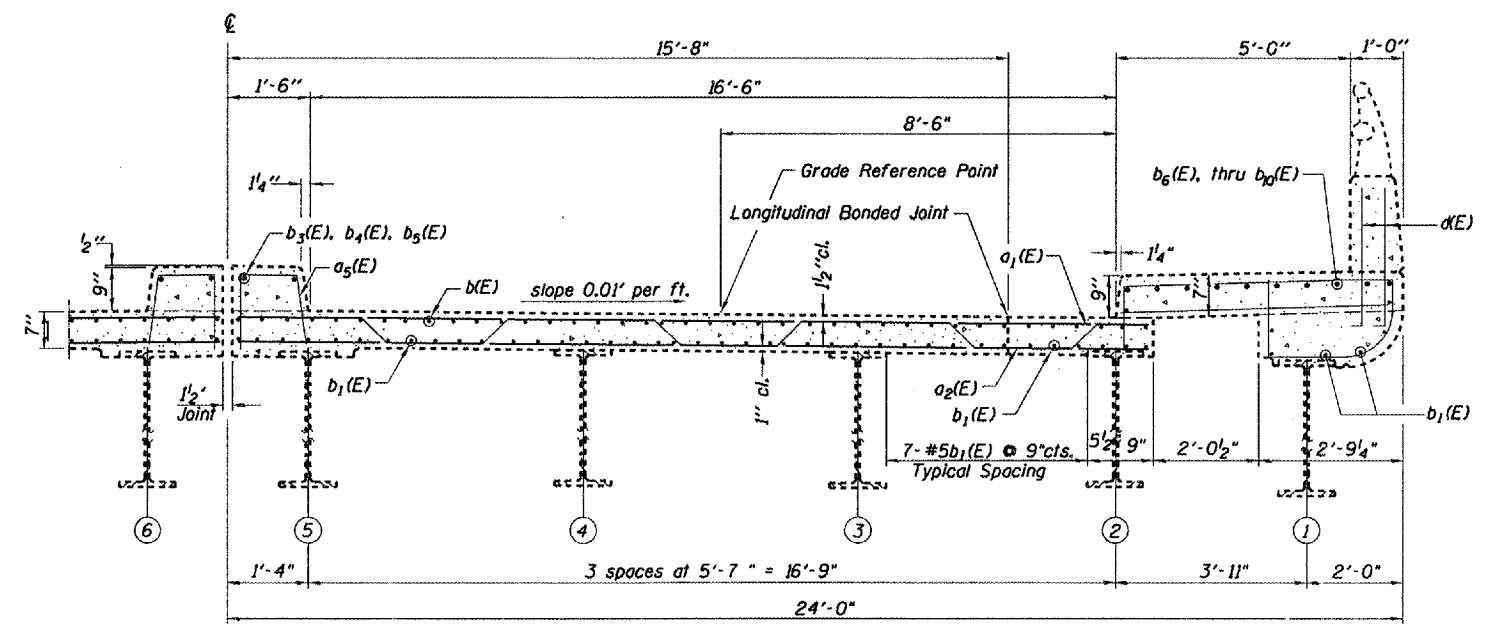
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313	*	KNOX	11	4
STA. 18+89.01		TO STA. 20+92.60		
FED. ROAD DIST. NO. 4 ILLINOIS FED. AID PROJECT				
• 04 BRIDGE REPAIR 2007-1				



PLAN



CURB DETAIL



HALF CROSS SECTION
(Looking North)

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.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
TYPICALS
 VERT. SCALE: 1/2" = 1'-0"
 HORIZ. SCALE: 1" = 10'-0"
 DATE: 12-04-2006
 DRAWN BY: CEJ
 CHECKED BY:

FOR REFERENCE ONLY

PLOT DATE:
 FILE NAME:
 PLOT SCALE:
 REFERENCE:

F.A.P. RT. 313
 KNOX COUNTY
 S.N. 048-0068

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
313	*	KNOX	11	5
STA. 18+89.01		TO STA. 20+92.60		
FED. ROAD DIST. NO. 4 ILLINOIS FED. AID PROJECT				
* D4 BRIDGE REPAIR 2007-1				

SCHEDULE OF QUANTITIES

MOBILIZATION

JOBSITE 1.0 LSUM

TRAFFIC CONTROL & PROTECTION STANDARD 701606

LINCOLN PK. DR. 1.0 LSUM

TRAFFIC CONTROL & PROTECTION STANDARD 701401

EB. AND WB. US 34 1.0 LSUM

TRAFFIC CONTROL & PROTECTION STANDARD 701801

LINCOLN PARK DRIVE 1.0 LSUM

TEMPORARY SHORING AND CRIBBING

PROJECT 1.0 LSUM

TEMPORARY SLAB SUPPORT SYSTEM

PROJECT 1.0 LSUM

CONCRETE REMOVAL

STRUCTURE 2.0 CUYD

STRUCTURAL STEEL REMOVAL

STRUCTURE 8560 POUND

FURNISHING & ERECTING STRUCTURAL STEEL

STRUCTURE 9470 POUND

BEAM STRAIGHTENING

STRUCTURE 1.0 LSUM

CONCRETE SUPERSTRUCTURE

STRUCTURE 2.0 CUYD

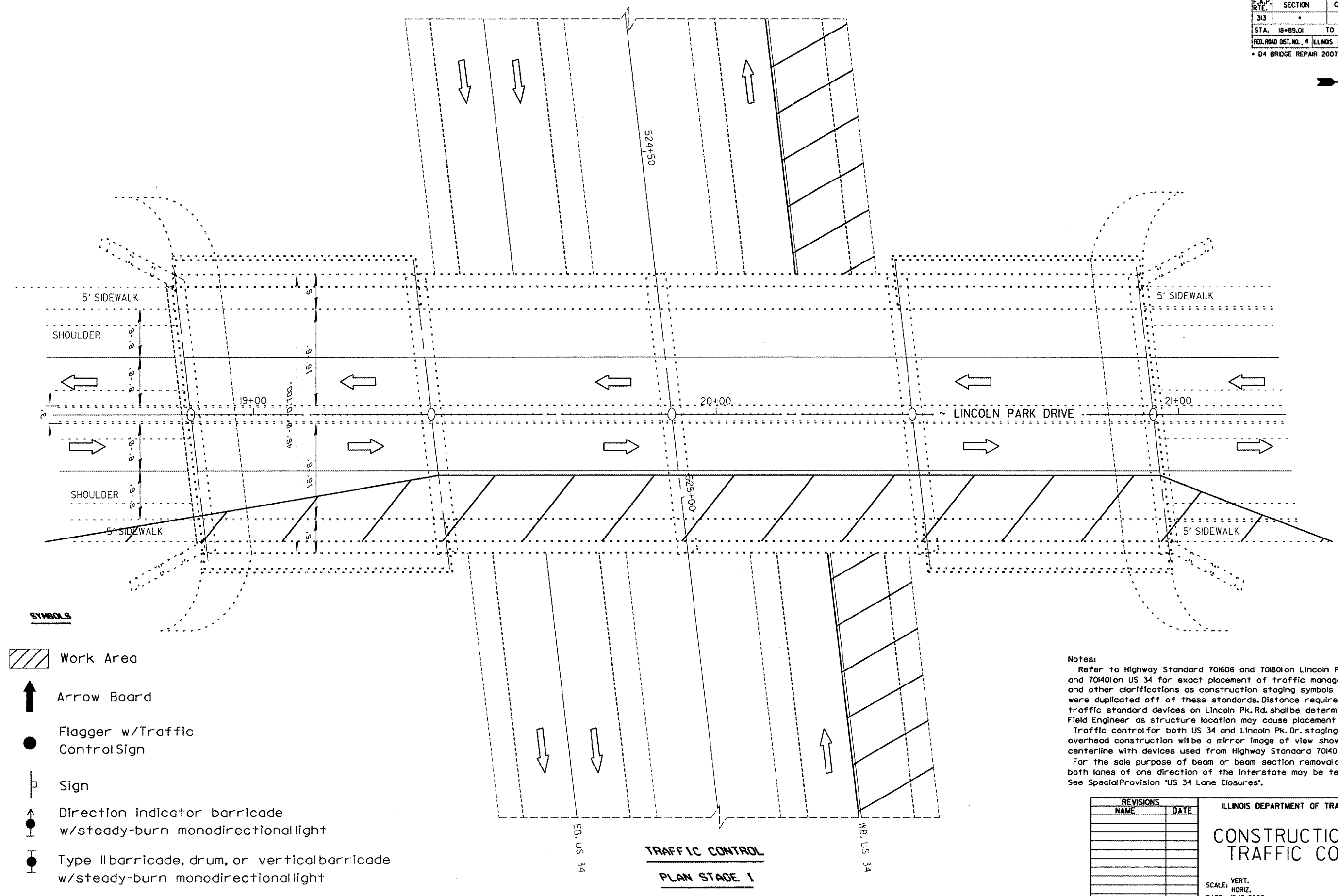
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 PLOT SCALE * SCALE
 PLOT NAME * NAME
 PLOT NUMBER * NUMBER
 PLOT SHEET * SHEET
 PLOT REFERENCE * REFERENCE

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION
NAME	DATE	
		SCHEDULE OF QUANTITIES

SCALE: VERT. DRAWN BY CEJ
 HORIZ. CHECKED BY
 DATE 12-04-2006

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
313		KNOX	11	6
STA. 18+89.01		TO STA. 20+92.60		
FED. ROAD DIST. NO. 4		ILLINOIS FED. AID PROJECT		

* D4 BRIDGE REPAIR 2007-1



SYMBOLS

- Work Area
- Arrow Board
- Flagger w/Traffic Control Sign
- Sign
- Direction indicator barricade w/steady-burn monodirectional light
- Type II barricade, drum, or vertical barricade w/steady-burn monodirectional light

Notes:
 Refer to Highway Standard 701606 and 701801 on Lincoln Pk. Rd. and 701401 on US 34 for exact placement of traffic management devices and other clarifications as construction staging symbols and dimensioning were duplicated off of these standards. Distance requirements for traffic standard devices on Lincoln Pk. Rd. shall be determined by the Field Engineer as structure location may cause placement limitations.
 Traffic control for both US 34 and Lincoln Pk. Dr. staging for overhead construction will be a mirror image of view shown about centerline with devices used from Highway Standard 701401.
 For the sole purpose of beam or beam section removal and replacement both lanes of one direction of the interstate may be temporarily closed. See Special Provision "US 34 Lane Closures".

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

CONSTRUCTION AND TRAFFIC CONTROL

SCALE: VERT. _____
 HORIZ. _____
 DATE 12-15-2006

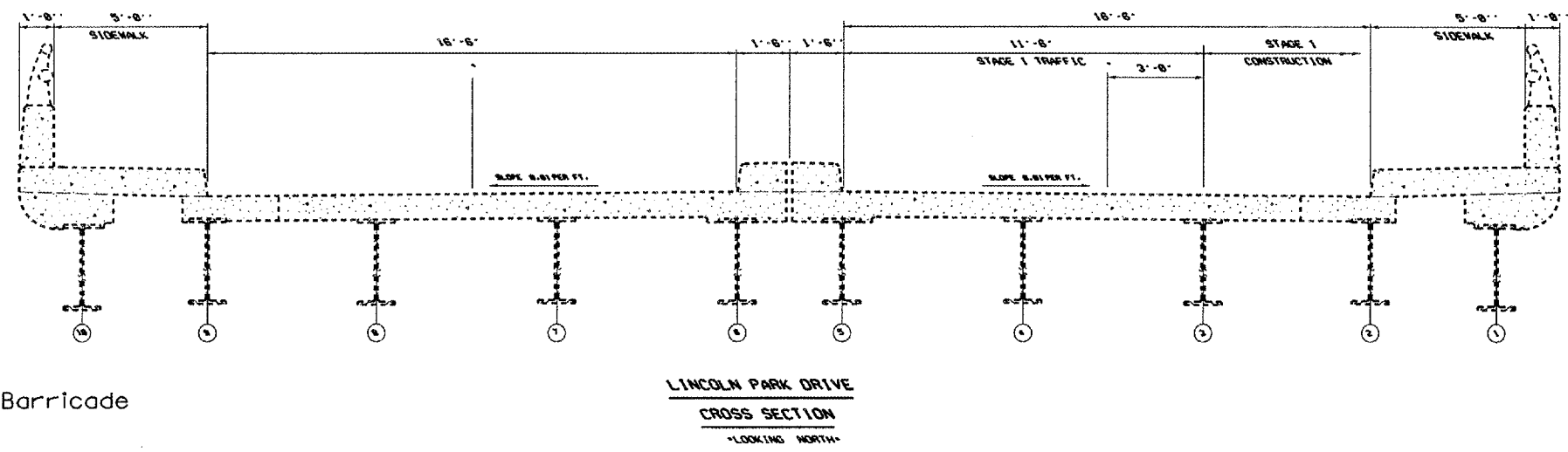
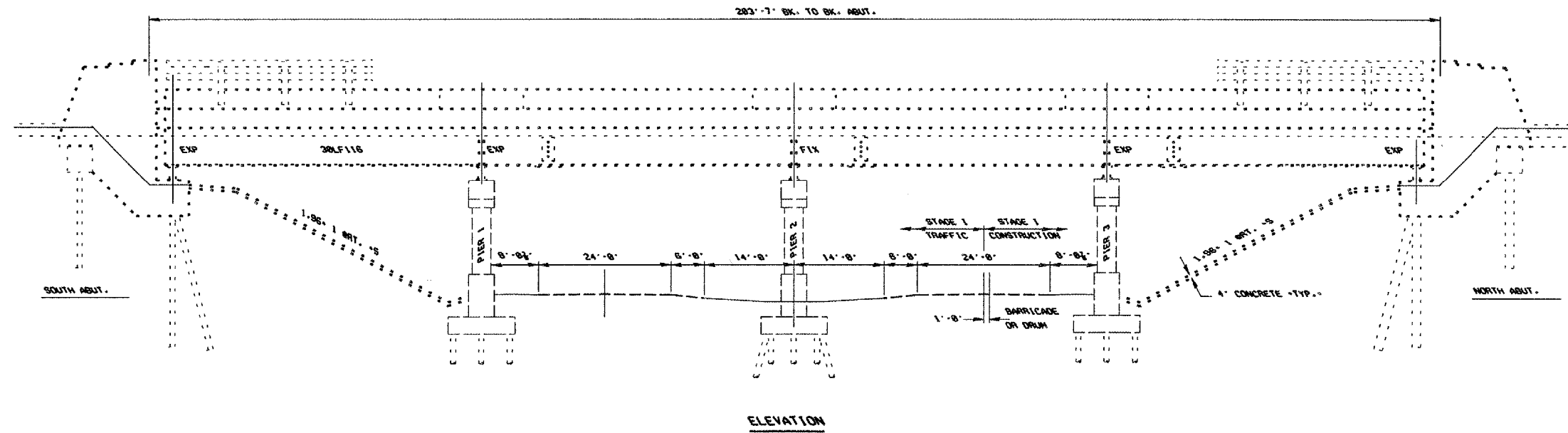
DRAWN BY CEJ
 CHECKED BY _____

PLOT DATE * DATE *
 FILE NAME * FILE *
 PLOT SCALE * SCALE *
 REFERENCE * REF *

**TRAFFIC CONTROL
 PLAN STAGE 1**

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
313		KNOX	11	7
STA. 18+89.01 TO STA. 20+92.60				
FED. ROAD DIST. NO. 4		ILLINOIS FED. AID PROJECT		

* D4 BRIDGE REPAIR 2007-1



SYMBOLS

- Arrow Board
- Cone, Drum, or Barricade
- Sign
- Work Area
- Barricade or Drum w/flashing light
- Type III Barricade w/flashing lights
- Flagger w/Traffic Control Sign

Notes:
 Refer to Highway Standard 701606 and 701801 on Lincoln Pk. Rd. and 701401 on US 34 for exact placement of traffic management devices and other clarifications as construction staging symbols and dimensioning were duplicated off of these standards. Distance requirements for traffic standard devices on Lincoln Pk. Rd. shall be determined by the field engineer as structure location may cause placement limitations.
 Traffic control for both US 34 and Lincoln Pk. Dr. staging for overhead construction will be a mirror image of view shown about centerline with devices used from Highway Standard 701401.
 For the sole purpose of beam or beam section removal and replacement both lanes of one direction of the Interstate may be temporarily closed. See Special Provision 'US 34 Lane Closures'.

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION	
NAME	DATE		

CONSTRUCTION AND TRAFFIC CONTROL

SCALE: VERT. _____
 HORIZ. _____
 DATE 12-20-2006
 DRAWN BY _____
 CHECKED BY _____

PLOT DATE: _____
 DATE: _____
 PLOT SCALE: _____
 REFERENCE: _____

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 1
FA 29		KNOX	11	8	4 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

Contract Number:

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 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.

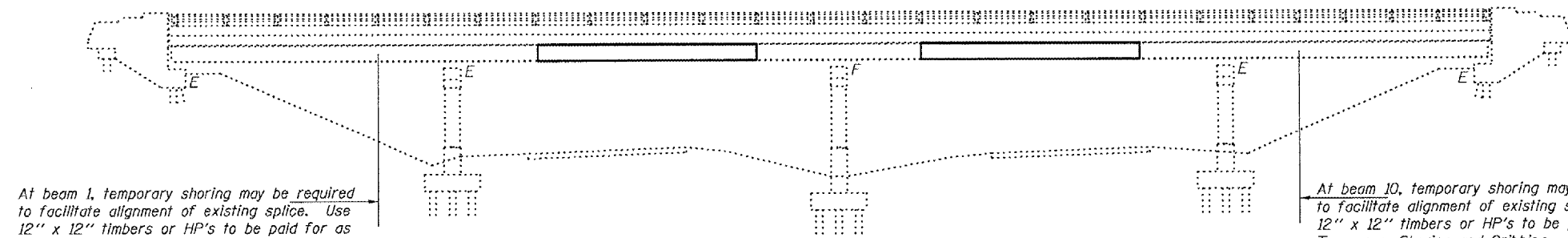
Cost of removal and/or re-installation of all members necessary to complete the work as detailed on the plans and as specified in the Special Provisions shall be included in the cost of Furnishing and Erecting Structural Steel.

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

The existing structural steel coating contains lead. The Contractor should 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 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.

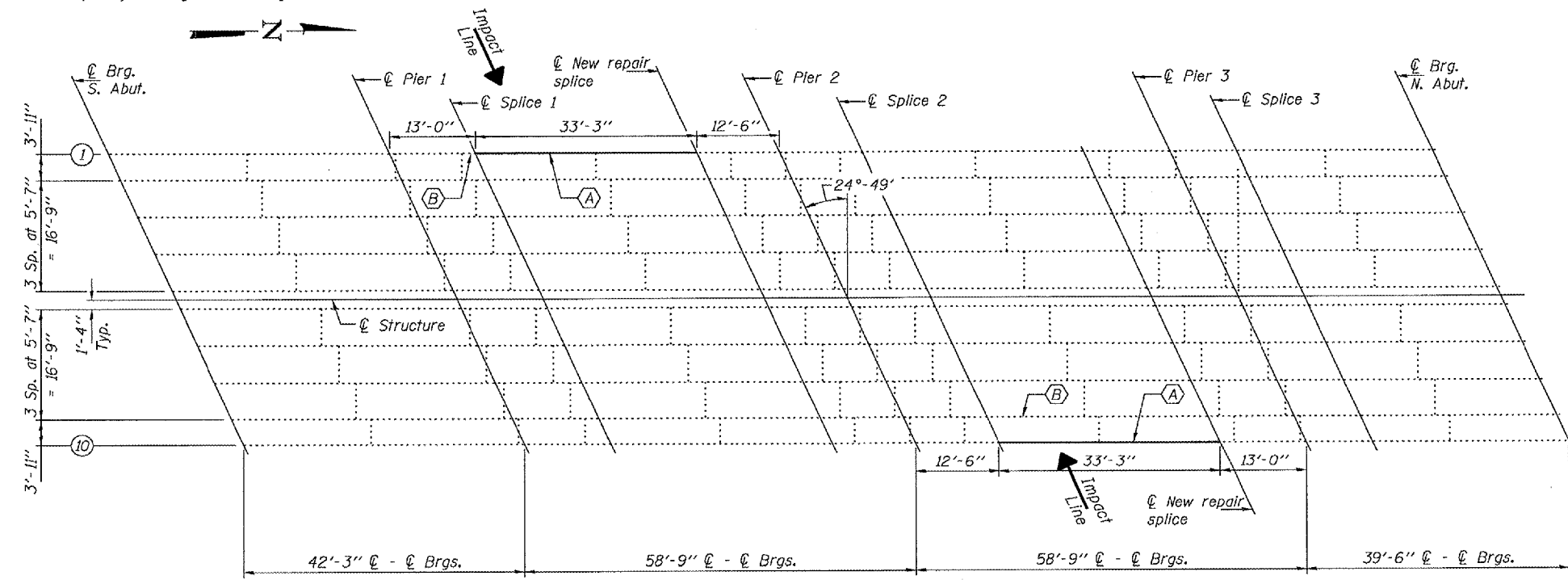
Diaphragm connection holes shall be $\frac{15}{16}$ " ϕ for $\frac{3}{4}$ " ϕ bolts. Two hardened washers shall be required at diaphragm connections.



At beam 1, 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. Remove and replace slopewall, if required. Cost included with Temporary Shoring and Cribbing.

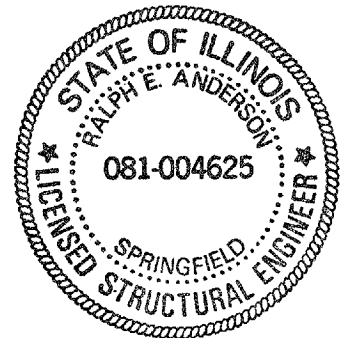
At beam 10, temporary shoring may be required to facilitate alignment of existing splice. Use 12" x 12" timbers or HP's to be paid for as Temporary Shoring and Cribbing. Remove and replace slopewall, if required. Cost included with Temporary Shoring and Cribbing.

ELEVATION



FRAMING PLAN

- (A) - Replace beam section.
- (B) - Straighten beam.



DESIGNED *Adrian T. Holloway*
CHECKED *Angela B...*
DRAWN *balliva*
CHECKED *ATH ASB*

JANUARY 9, 2007
EXAMINED *Carl...*
PASSED *Ralph E. Anderson*
REPAIR PLANS CHIEF
ENGINEER OF BRIDGES AND STRUCTURES

EXPIRES 11-30-2008

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Furnishing and Erecting Structural Steel	Pound	9470
Structural Steel Removal	Pound	8560
Concrete Superstructure	Cu. Yd.	2.0
Concrete Removal	Cu. Yd.	2.0
Temporary Shoring and Cribbing	LS	1
Temporary Slab Support System	LS	1
Beam Straightening	LS	1

PLAN AND ELEVATION
FA RT. 29
KNOX COUNTY
SN 048-0068

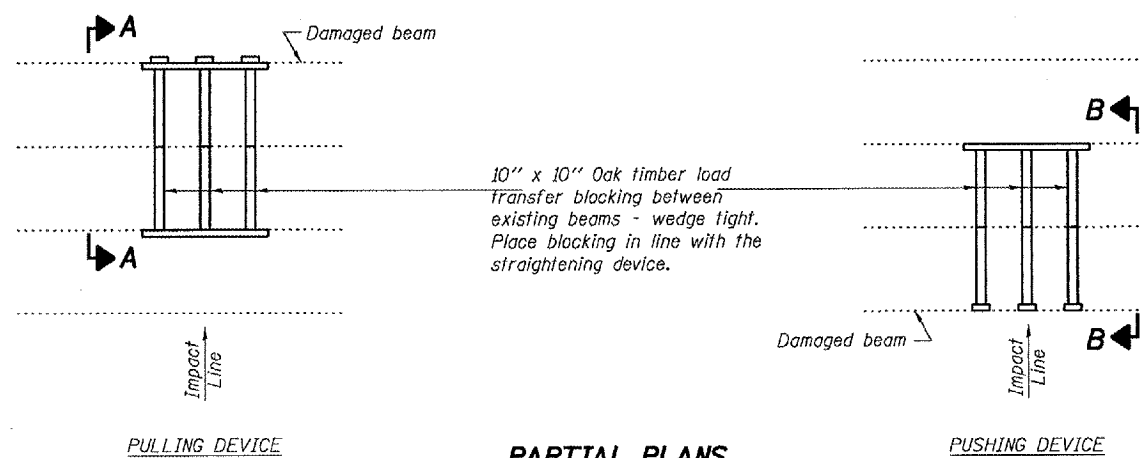
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FA 29		KNOX	11	9
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 2

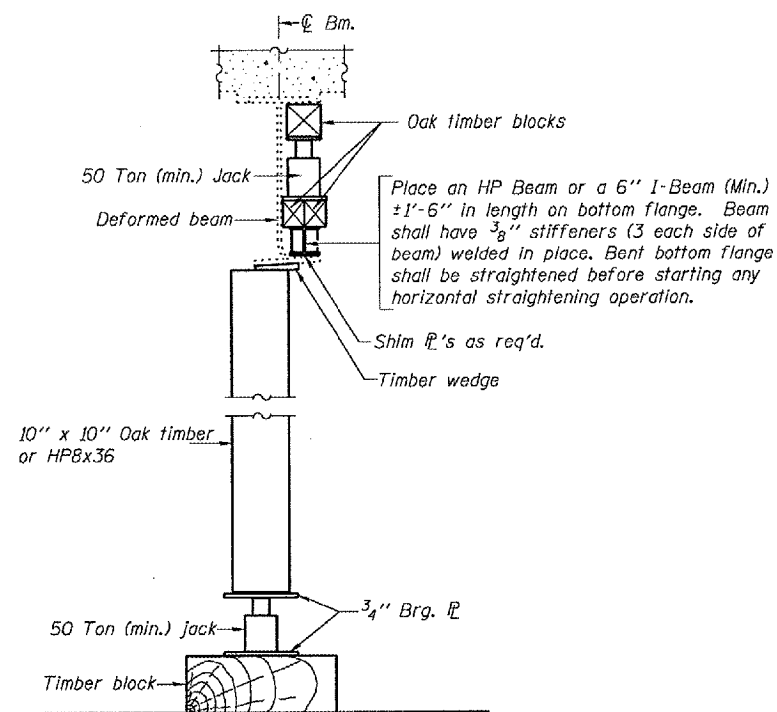
4 SHEETS

Contract Number:



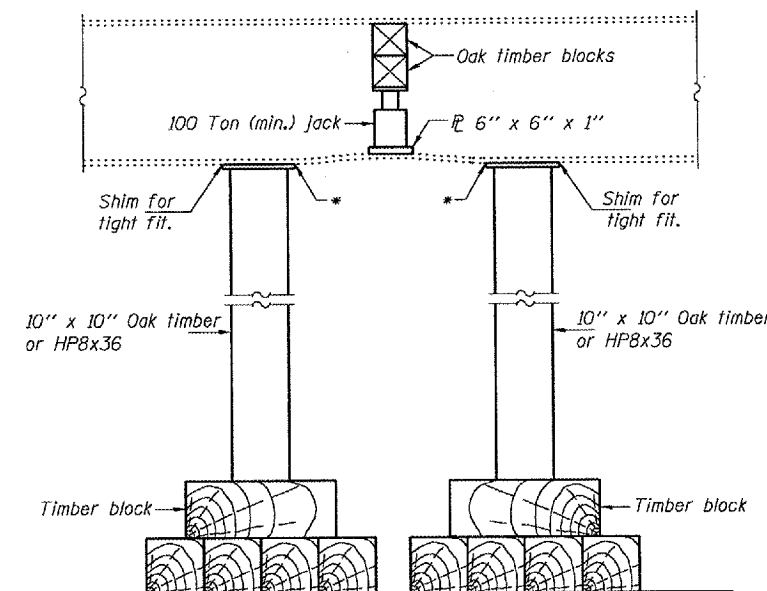
PARTIAL PLANS
SUGGESTED BEAM STRAIGHTENING METHODS

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



SUGGESTED VERTICAL STRAIGHTENING DETAIL

(To correct flange rotation.)

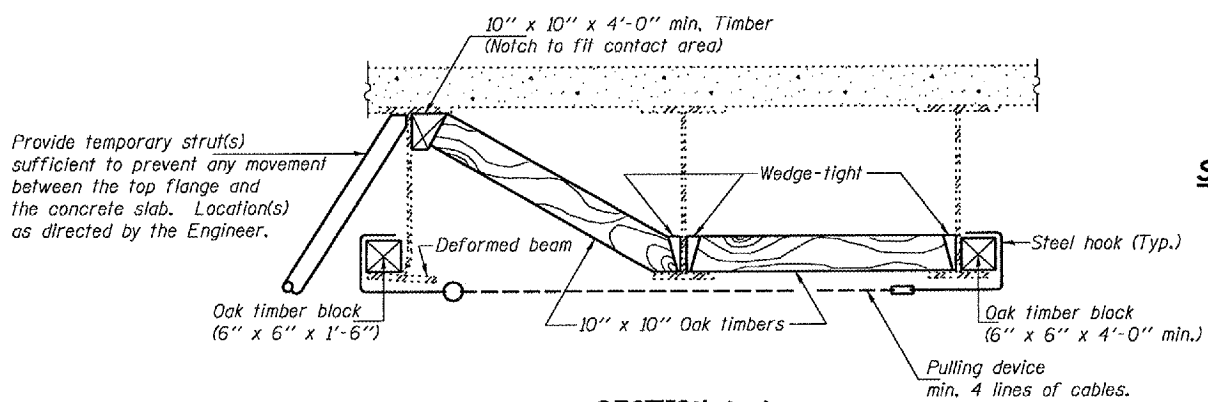


SUGGESTED VERTICAL STRAIGHTENING DETAIL

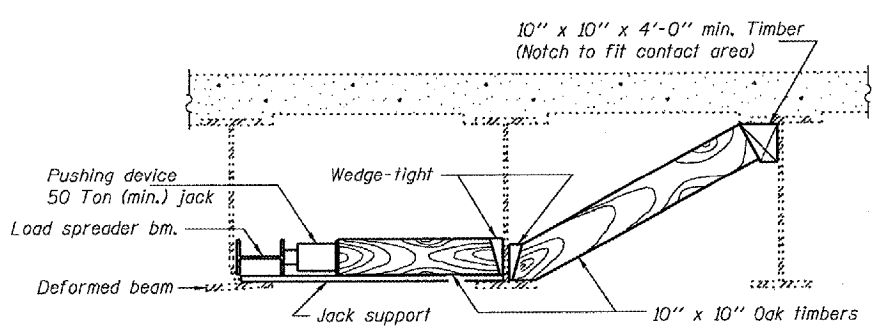
(To correct localized vertical flange deformations.)

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

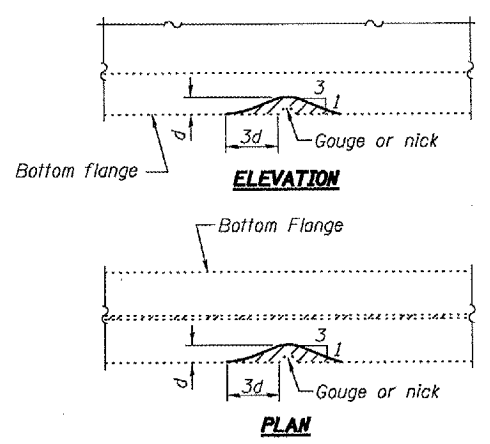
Note:
Braces and jack assembly shall be placed on same side of web.
Bent bottom flange shall be straightened before starting any horizontal straightening operations.



SECTION A-A

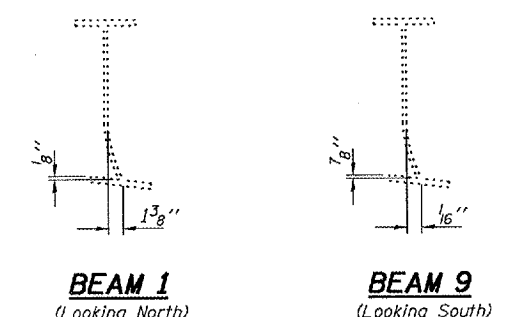


SECTION B-B



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
(Approximate max. deflections)

DESIGNED	ATH
CHECKED	AJB
DRAWN	baliva
CHECKED	ATH AJB

JANUARY 9, 2007
EXAMINED *Carl P. ...*
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

BRIDGE REPAIRS
FA RT. 29
KNOX COUNTY
SN 048-0068

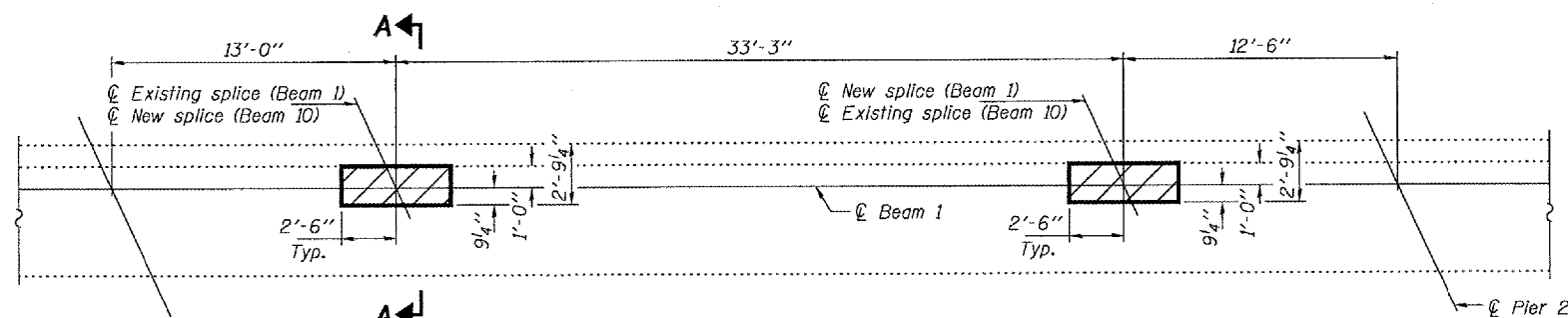
REP-1 1-14-2005

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET
FA 29		KNOX	11	10
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 3
4 SHEETS

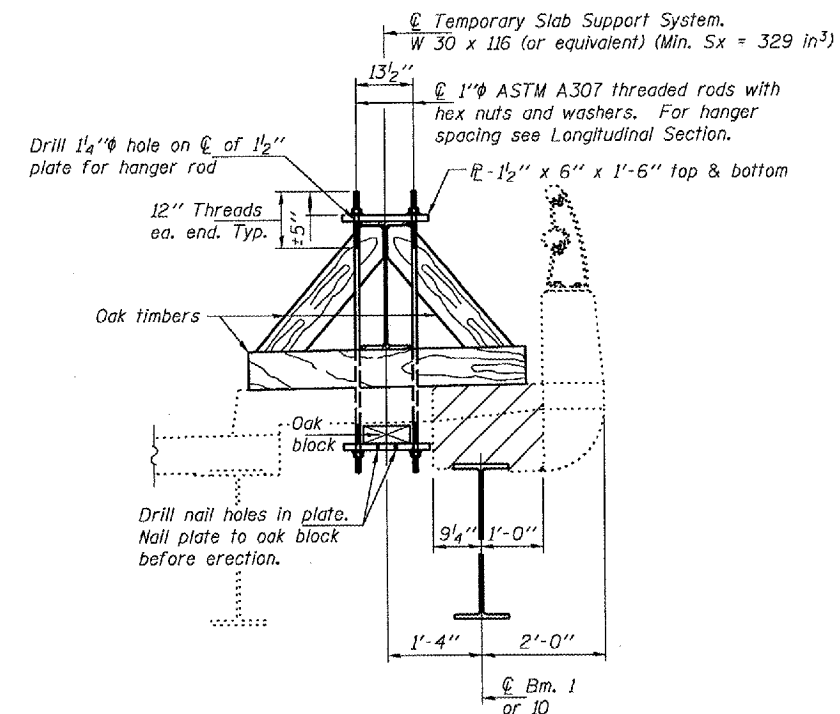
Contract Number:



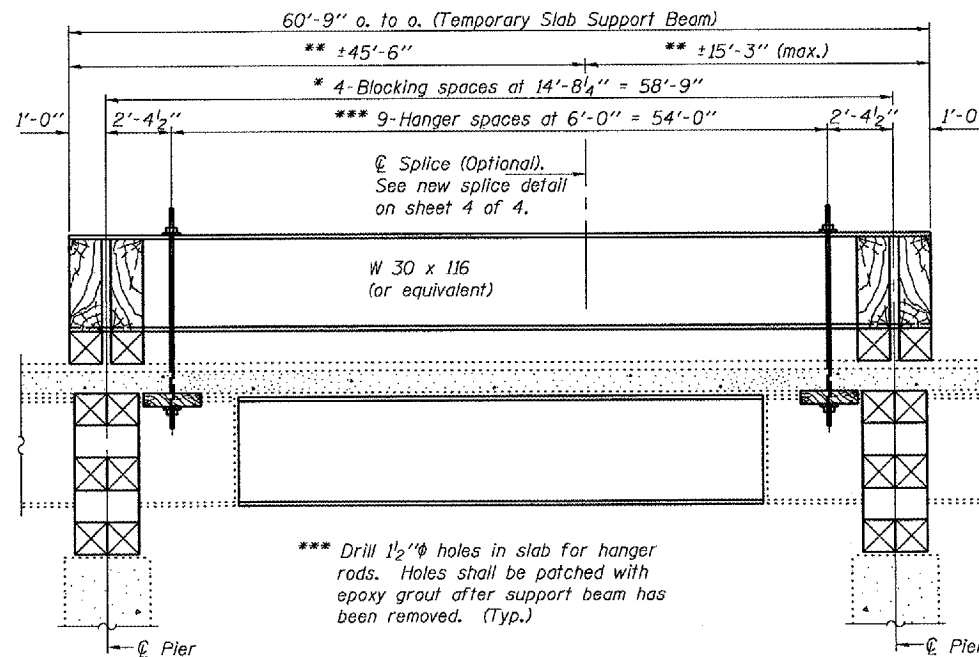
TYPICAL CONCRETE REMOVAL AND REPLACEMENT

Beam 1 shown. Beam 10 similar by rotation, except as shown.

Hatched areas indicate concrete sections to be removed and replaced. Perimeters of concrete removal areas shall be saw cut $\frac{3}{4}$ " 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.



SECTION A-A



**LONGITUDINAL SECTION
SUGGESTED TEMPORARY SLAB SUPPORT SYSTEM**

** These dimensions may vary for available beams in stock.

* Wood blocking between piers to be placed after support beam deflects under its own weight.

DESIGNED	ATH
CHECKED	AJB
DRAWN	baliva
CHECKED	ATH AJB

JANUARY 9, 2007
EXAMINED *A. Carl Hoyer*
REPAIR PLANS UNIT CHIEF
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

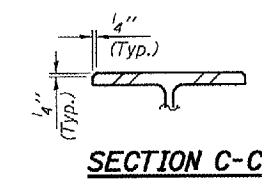
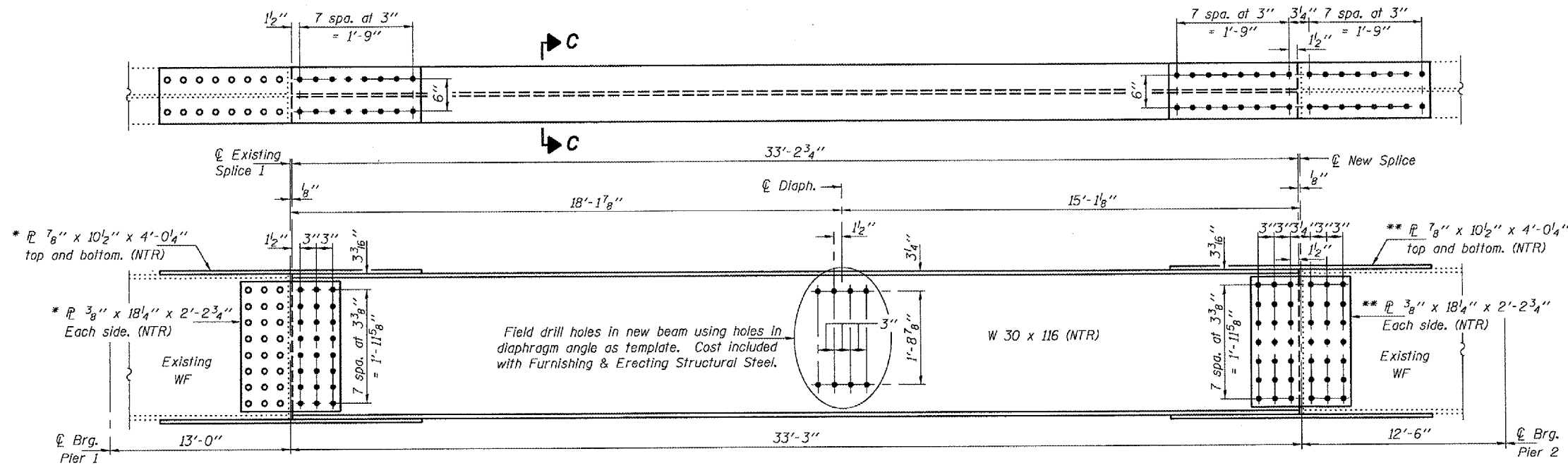
BRIDGE REPAIRS
FA RT. 29
KNOX COUNTY
SN 048-0068

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FA 29		KNOX	11	11
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

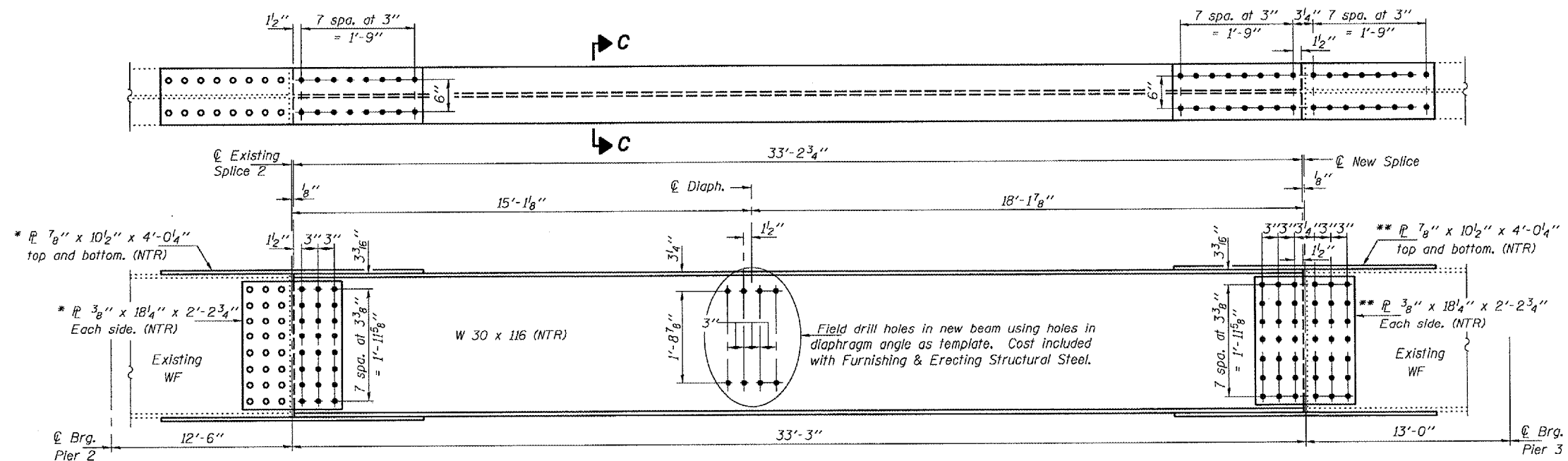
SHEET NO. 4
4 SHEETS

Contract Number:



* Use holes in existing beam as template for drilling holes in new splice plate.

** Use holes in splice plate as template for drilling holes in existing beam



DESIGNED	ATH
CHECKED	AJB
DRAWN	boliva
CHECKED	ATH AJB

JANUARY 9, 2007
 EXAMINED *Carl Perry*
 PASSED *Ralph E. Anderson*
 ENGINEER OF BRIDGES AND STRUCTURES

Notes: Natural camber of new beam shall be placed upward for fabrication.
 Existing bolts shall not be reused.
 The cost of field drilling required for installation of the steel members is included with Furnishing & Erecting Structural Steel.
 NTR denotes plates to which Notch Toughness Requirements apply.

BRIDGE REPAIRS
FA RT. 29
KNOX COUNTY
SN 048-0068