

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

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

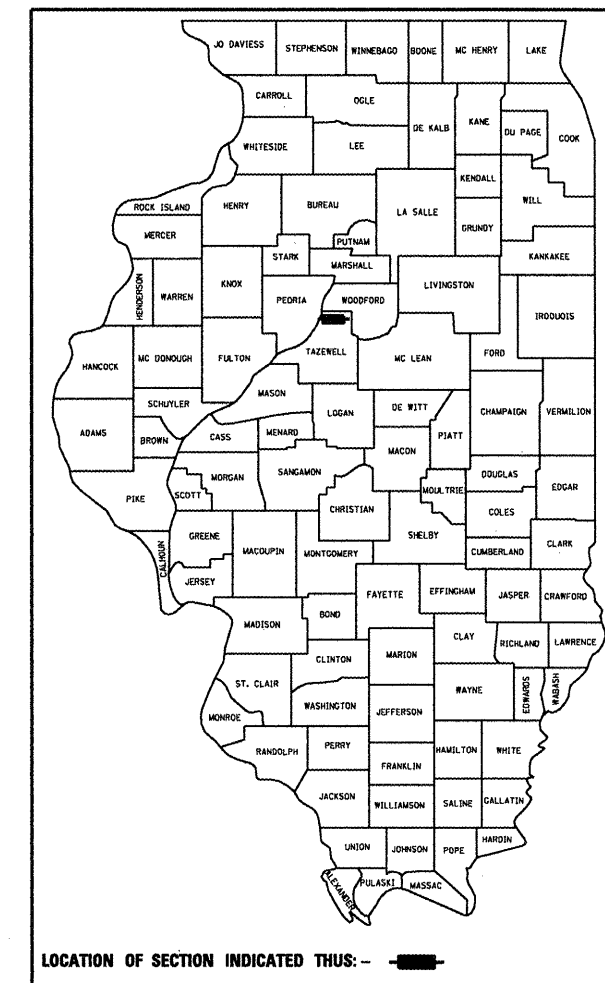
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

**PROPOSED  
HIGHWAY PLANS**

FAP 673 (IL.116)  
SECTION (102-HB-2)1-2  
BRIDGE STEEL BEAM REPAIR  
TAZEWELL COUNTY

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
673	(102-HB-2)1-2	TAZEWELL	17	1
FED. ROAD DIST. NO. 4		ILLINOIS	CONTRACT NO. 68857	

D-94-018-09



PROJECT CONSISTS OF STRAIGHTENING (3) DAMAGED STEEL BEAMS ON STRUCTURE CARRYING EB. IL.116 RAMP TRAFFIC TO WB. US.150 OVER IL.116 (SN.090-0069), LEADING ONTO McCLUGAGE BRIDGE

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

SUBMITTED *Feb 2, 2009*

*[Signature]*  
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

*March 27, 2009*  
*Charles J. Ingersoll*  
ENGINEER OF DESIGN AND ENVIRONMENT

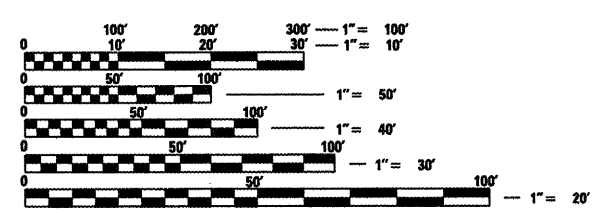
*March 27, 2009*  
*Christine M. Reed*  
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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OF THE STATE OF ILLINOIS

- INDEX OF SHEETS:
1. COVER SHEET
  2. COMMITMENTS & GENERAL NOTES
  3. SUMMARY OF QUANTITIES
  4. EXISTING CROSS SECTIONS
  5. SCHEDULE OF QUANTITIES
  - 6-7. GENERAL LAYOUT
  - 8-9. PROPOSED TRAFFIC CONTROL
  10. WIDTH RESTRICTION SIGNING
  - 11-17. REPAIR DETAILS

STANDARDS:

635011-02	701400-03	701901-01
701001-02	701402-07	704001-05
701006-03	701406-05	780001-02
701201-03	<i>701601-06</i>	

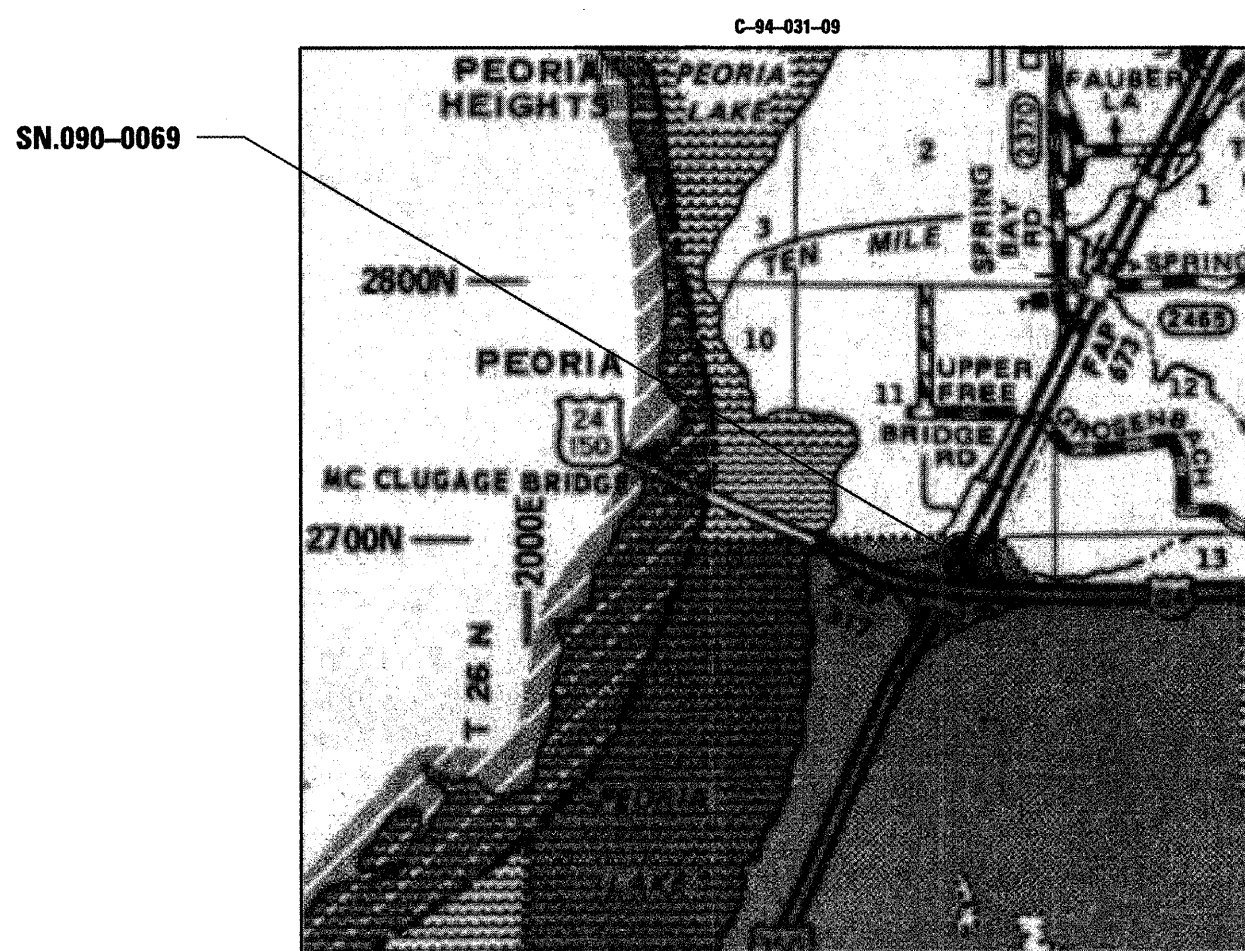


FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.  
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION  
1-800-892-0123  
OR 811

PROJECT ENGINEER- JIM MILLER  
PROJECT MANAGER- MAUREEN ADDIS

CONTRACT NO. 68857



LOCATION MAP

C-94-031-09

COMMITMENTS

*No commitments have been made for this project.*

GENERAL NOTES

*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.*

*All Traffic Control devices including Barricades, Barrels, or Temporary Concrete Barrier, Pavement Marking Tape, Impact Attenuator and Public Information Signs already in-place may be used during construction of this contract. Device modifications or placement shall be at the discretion of the Engineer. Contractor shall be responsible for removal of these devices at project completion. Cost to be included in Traffic Control and Protection Standard 701402.*

SN.090-0069 NB. IL.116  
Ramp over SB. IL.116

FILE NAME = SN090-0069 (2).dgn	USER NAME = jonesce	DESIGNED - CEJ	REVISED - ---	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	-----		F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = 1/32" = 1' / IN.	DRAWN - CEJ	REVISED - ---		673	(102-HB-211-2	TAZEWELL	17	2		
	PLOT DATE = 2/2/2009	CHECKED - ---	REVISED - ---		STEEL BEAM REPAIRS	CONTRACT NO. 68857					
				SCALE: -----	SHEET NO. --- OF --- SHEETS	STA. ----- TO STA. -----	FED. ROAD DIST. NO. 4 ILLINOIS FED. AID PROJECT				

# SUMMARY OF QUANTITIES

## 100% MCHD SAFETY-2A TAZEWELL COUNTY

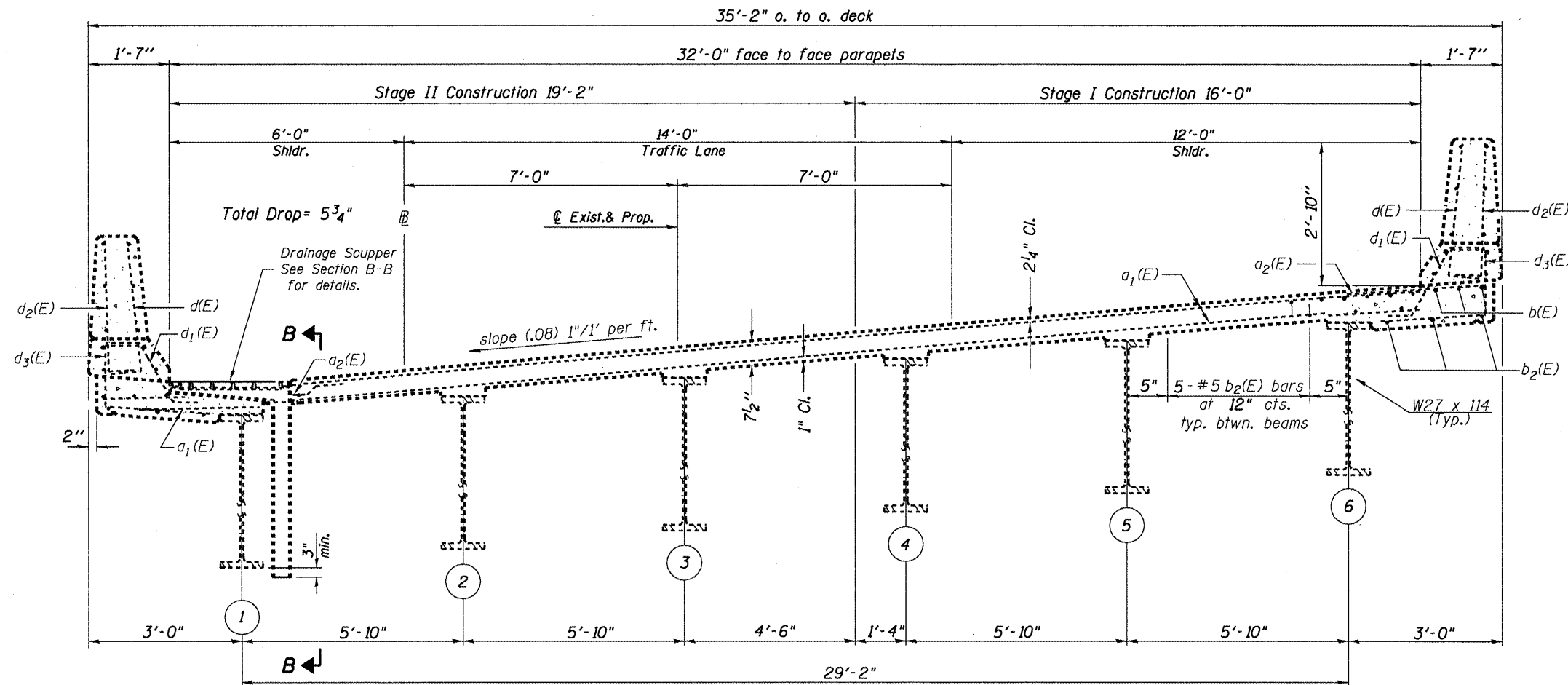
CODE NO.	ITEM	UNIT	URBAN	TOTAL
42001300	PROTECTIVE COAT	SQYD	110.4	110.4
50102400	CONCRETE REMOVAL	CUYD	27.5	27.5
50157300	PROTECTIVE SHIELD	SQYD	127.6	127.6
50300255	CONCRETE SUPERSTRUCTURE	CUYD	27.6	27.6
50300260	BRIDGE DECK GROOVING	SQYD	77.7	77.7
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	16,640	16,640
50500505	STUD SHEAR CONNECTORS	EACH	504	504
50501110	STRUCTURAL STEEL REMOVAL	POUND	16,640	16,640
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	6,520	6,520
52100530	ANCHOR BOLTS, 1 1/4"	EACH	1	1
67100100	MOBILIZATION	LSUM	1	1
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	LSUM	1	1
70100700	TRAFFIC CONTROL AND PROTECTION, STANDARD 701406	LSUM	1	1
70100805	TRAFFIC CONTROL AND PROTECTION, STANDARD 701402	LSUM	1	1
70106800	CHANGEABLE MESSAGE SIGN	CALMO	1	1
70300520	PAVEMENT MARKING TAPE, TYPE III 4"	FOOT	1051	1051
70301000	WORKZONE PAVEMENT MARKING REMOVAL	SQFT	350	350
70400100	TEMPORARY CONCRETE BARRIER	FOOT	475	475
* 78005110	EPOXY PAVEMENT MARKING-LINE 4"	FOOT	576	576
* 78200500	BARRIER WALL MARKERS	EACH	8	8
78300105	PAVEMENT MARKING REMOVAL	FOOT	576	576
X0325303	STRUCTURAL REPAIR OF CONCRETE (DEPTH GREATER THAN 5 INCHES)	SQFT	2.5	2.5

\*SPECIALTY ITEM

## 100% MCHD SAFETY-2A TAZEWELL COUNTY

CODE NO.	ITEM	UNIT	URBAN	TOTAL
Z0003600	BEAM STRAIGHTENING	LSUM	1	1
Z0030250	IMPACT ATTENUATORS, TEMPORARY(NON-REDIRECTIVE), TEST LEVEL 3	EACH	1	1
Z0073300	TEMPORARY SHORING AND CRIBBING	LSUM	1	1

SN.090-0069 NB. IL.116  
Ramp over SB. IL.116

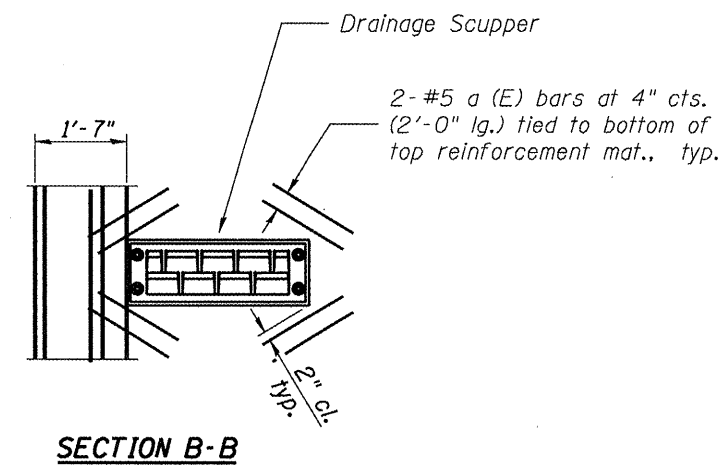


NEAR PIER

**CROSS SECTION**  
(Looking West)

NEAR MIDSPAN

Note: Distances shown on Radial Lines or Arcs



**SECTION B-B**

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.

SN.090-0069 NB. IL.116  
Ramp over SB. IL.116

FILE NAME = SN090-0069 (2).dgn	USER NAME = jonesco	DESIGNED - CEJ	REVISED -
		DRAWN - CEJ	REVISED -
		CHECKED -	REVISED -
		DATE -	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXISTING CROSS SECTIONS

F.A.P. RTE. 673	SECTION 102-HB-211-2	COUNTY TAZEWELL	TOTAL SHEETS 17	SHEET NO. 4
STEEL BEAM REPAIRS			CONTRACT NO. 68857	
FED. ROAD DIST. NO. 4 (ILLINOIS) FED. AID PROJECT				

SCALE: SHEET NO. OF SHEETS STA. TO STA.

# SCHEDULE OF QUANTITIES

## EPOXY PAVEMENT MARKING LINE, 4" & PAVEMENT MARKING REMOVAL

LOCATION	PVMT. MRKG. LINE, 4"		PVMT. MRKG. REM.	
	WHITE LENGTH (FOOT)	YELLOW LENGTH (FOOT)	WHITE EDGELINE (SQ.FT.)	YELLOW SKIP DASH (SQ.FT.)
JOB SITE				
TOTAL	576		576	

## PAVEMENT MARKING TAPE TYPE III, 4" & WORKZONE PAVEMENT MARKING REMOVAL

LOCATION	PVMT. MRKG. TAPE, 4"		PVMT. MRKG. REM.
	WHITE LENGTH (FOOT)	YELLOW LENGTH (FOOT)	WORK ZONE PVMT. MRKG. REM. (SQ.FT.)
JOB SITE			
TOTAL	1051		350

## WIDTH RESTRICTION SIGNING

LOCATION	LSUM
SHOWN ON T.C. PLAN SHEET	1
TOTAL	1

## BARRIER WALL MARKERS

LOCATION	CUFT
RT.-SIDE BRIDGE PARAPET	8
TOTAL	8

## TRAFFIC CONTROL

LOCATION STA. TO STA.	TEMP. CONC. BARRIER (FT)	IMPACT ATTEN. TEMP. (EACH)	T.C.&P. STANDARD 701402 (LSUM)	T.C.&P. STANDARD 701201 (LSUM)	T.C.&P. STANDARD 701601 (LSUM)	CHANGEABLE MESSAGE SIGN
Deck & T.C. Standard Length	306					
Taper Length	169					
		1	1	1	1	1
TOTAL	475	1	1	1	1	1

## STEEL BEAM & DECK REPAIRS

<b>PROTECTIVE COAT</b>	
TOP OF DECK	SQYD
Span 1 & 2 Removal Area	
TOTAL	110.4
<b>CONCRETE REMOVAL</b>	
SOUTH HALF OF SPAN 2	CUYD
Span 2	
TOTAL	27.5
<b>PROTECTIVE SHIELD</b>	
UNDER S. HALF OF SPAN 2	SQYD
Span 2	
TOTAL	127.6
<b>CONCRETE SUPERSTRUCTURE</b>	
SOUTH HALF OF SPAN 2	CUYD
Span 2	
TOTAL	27.6
<b>BRIDGE DECK GROOVING</b>	
TOP OF DECK	SQYD
Span 1 & 2 Replacement Area	
TOTAL	77.7
<b>FURNISHING &amp; ERECTING STRUCTURAL STEEL</b>	
SPAN 2	PD
Span 1 & 2 Replacement Area	
TOTAL	16,640
<b>STUD SHEAR CONNECTORS</b>	
SPAN 2	EA
Top Flanges	
TOTAL	504
<b>STRUCTURAL STEEL REMOVAL</b>	
SPAN 2	PD
Span 1 & 2 Designated Beams	
TOTAL	16,640
<b>REINFORCEMENT BARS, EPOXY COATED</b>	
SPAN 2 DECK	PD
Span 1 & 2 Deck Replacement	
TOTAL	6,520
<b>ANCHOR BOLTS, 1 1/4"</b>	
SOUTH END PIER 1	EA
Pier 1	
TOTAL	1
<b>STRUCTURAL REPAIR OF CONCRETE (DEPTH &gt; 5")</b>	
PIER CAP 1	SQFT
Pier 1	
TOTAL	2.5
<b>BEAM STRAIGHTENING</b>	
SPAN 2, BEAM 2	LSUM
Span 2	
TOTAL	1
<b>TEMPORARY SHORING &amp; CRIBBING</b>	
BEAM STRAIGHTENING DETAILS	LSUM
Jobsite Deck Support	
TOTAL	1

SN.090-0069 NB. IL.116  
Ramp over SB. IL.116

FILE NAME = SN090-0069 (2).dgn

USER NAME = jonesc

DESIGNED - CEJ

REVISED -

PLOT SCALE = 1/4" = 1'-0"

CHECKED -

REVISED -

PLOT DATE = 2/2/2009

DATE - 01/20/2009

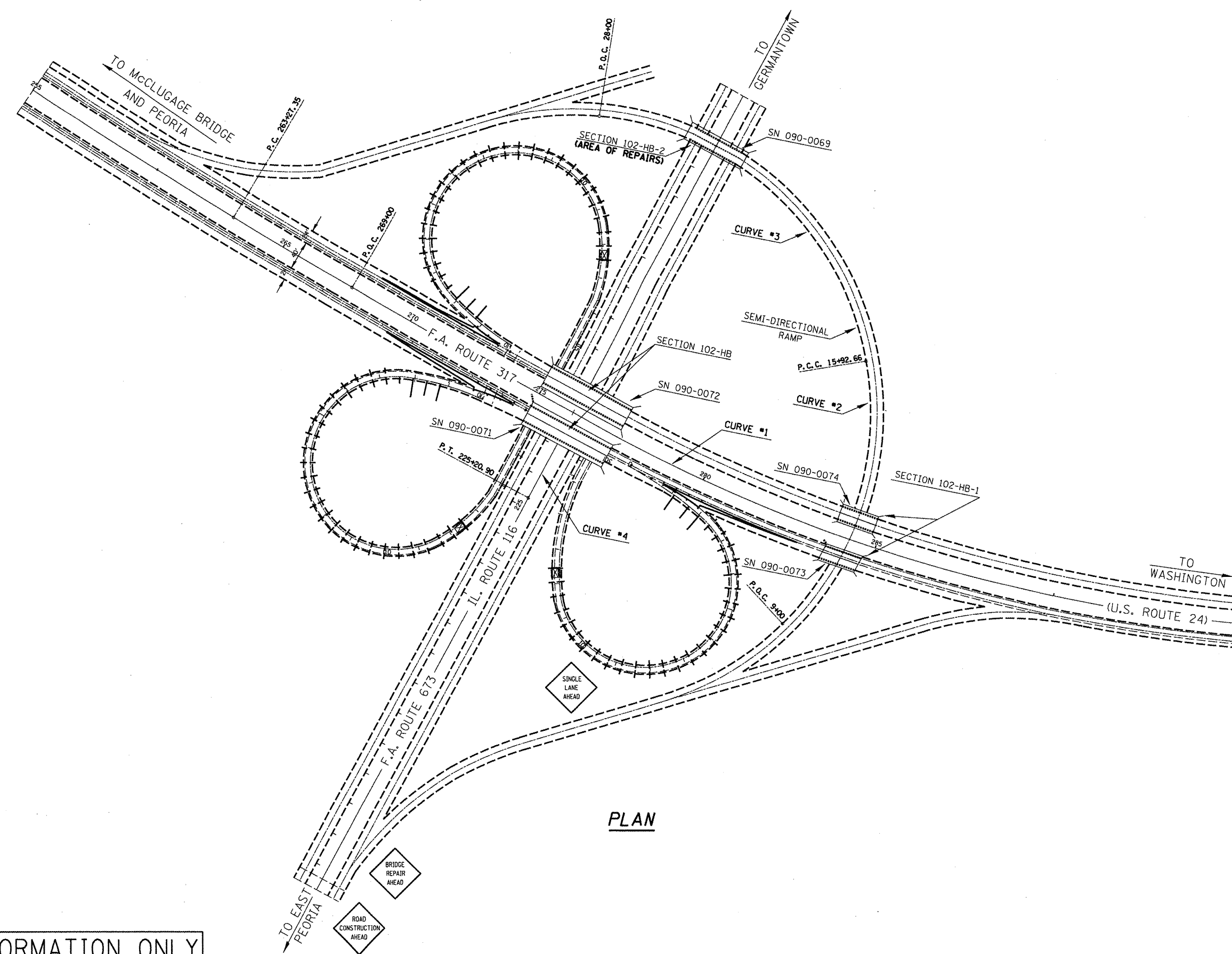
REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**SCHEDULE OF QUANTITIES**

SCALE: \_\_\_\_\_ SHEET NO. \_\_\_ OF \_\_\_ SHEETS STA. \_\_\_\_\_ TO STA. \_\_\_\_\_

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
673	102-HB-211-2	TAZEWELL	17	5
STEEL BEAM REPAIRS			CONTRACT NO. 68857	
FED. ROAD DIST. NO. 4 ILLINOIS FED. AID PROJECT				



**PLAN**

**INFORMATION ONLY**

FILE NAME = SN090-0069 121.dgn

USER NAME = jonesca  
 PLOT SCALE = 1/4" = 100' IN.  
 PLOT DATE = 2/2/2009

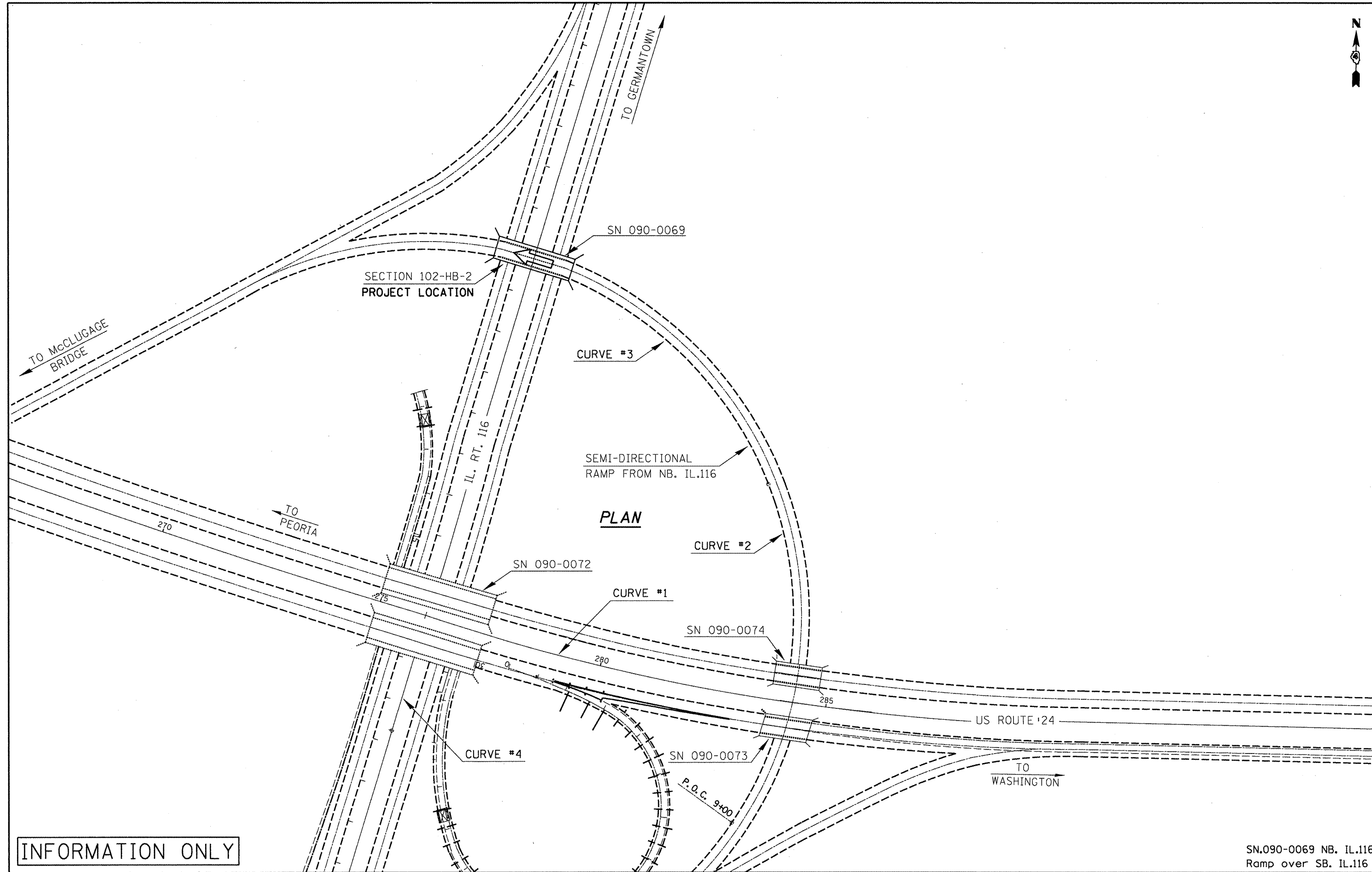
DESIGNED - CEJ	REVISED -
DRAWN - CEJ	REVISED -
CHECKED -	REVISED -
DATE -	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**GENERAL LAYOUT**  
 SCALE: \_\_\_\_\_ SHEET NO. \_\_\_\_\_ OF \_\_\_\_\_ SHEETS STA. \_\_\_\_\_ TO STA. \_\_\_\_\_

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
673	102-HB-211-2	TAZEWELL	17	6
STEEL BEAM REPAIRS			CONTRACT NO. 68857	
FED. ROAD DIST. NO. 4 ILLINOIS FED. AID PROJECT				

SN.090-0069 NB. IL.116  
 Ramp over SB. IL.116



INFORMATION ONLY

SN.090-0069 NB. IL.116  
Ramp over SB. IL.116

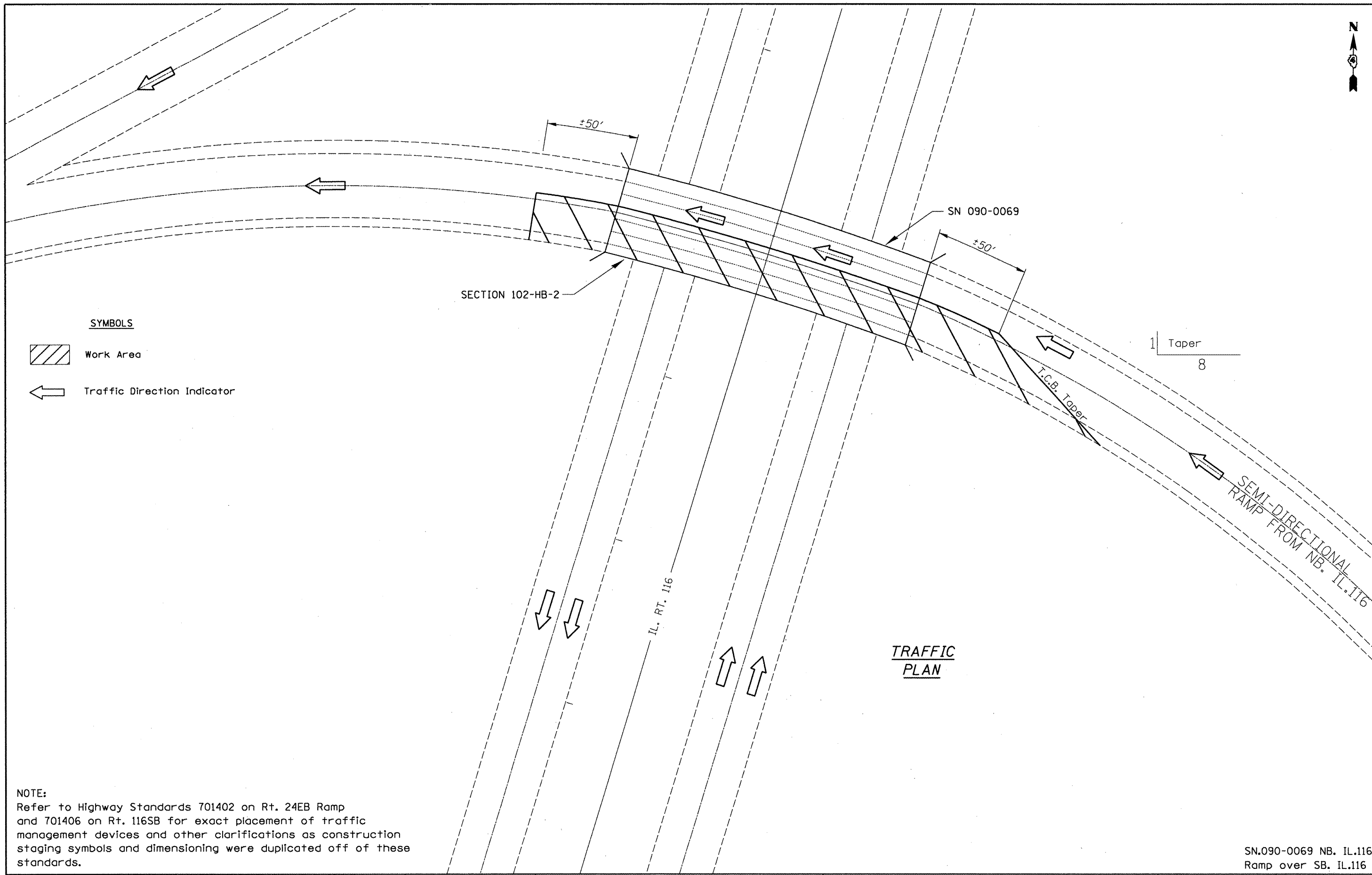
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		DRAWN - CEJ	REVISED -
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	PLOT DATE = 2/2/2009	DATE -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**GENERAL LAYOUT**

SCALE: \_\_\_\_\_ SHEET NO. \_\_\_\_ OF \_\_\_\_ SHEETS STA. \_\_\_\_\_ TO STA. \_\_\_\_\_

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
673	102-HB-211-2	TAZEWELL	17	7
STEEL BEAM REPAIRS			CONTRACT NO. 68857	
FED. ROAD DIST. NO. 4 (ILLINOIS) FED. AID PROJECT				



**SYMBOLS**

- Work Area
- Traffic Direction Indicator





**NOTE:**  
 Refer to Highway Standards 701402 on Rt. 24EB Ramp and 701406 on Rt. 116SB for exact placement of traffic management devices and other clarifications as construction staging symbols and dimensioning were duplicated off of these standards.

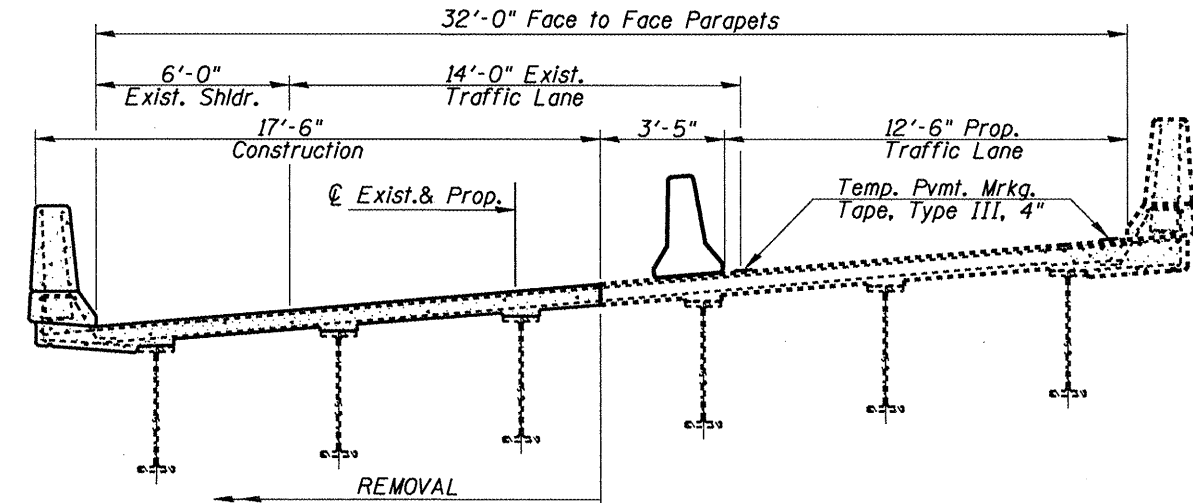
SN.090-0069 NB. IL.116  
 Ramp over SB. IL.116

FILE NAME = SN090-0069 (2).dgn	USER NAME = jansco	DESIGNED - CEJ	REVISED - ---	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>PROPOSED TRAFFIC CONTROL</b>	F.A.P. RTE. 673	SECTION 102-HB-21-2	COUNTY TAEWELL	TOTAL SHEETS 17	SHEET NO. 8
PLOT SCALE = 1/4" = 1' IN.		CHECKED - ---	REVISED - ---	SCALE: _____ SHEET NO. ___ OF ___ SHEETS STA. _____ TO STA. _____		STEEL BEAM REPAIRS		CONTRACT NO. 68857		
PLOT DATE = 2/2/2009		DATE - ---	REVISED - ---	FED. ROAD DIST. NO. 4 ILLINOIS FED. AID PROJECT						

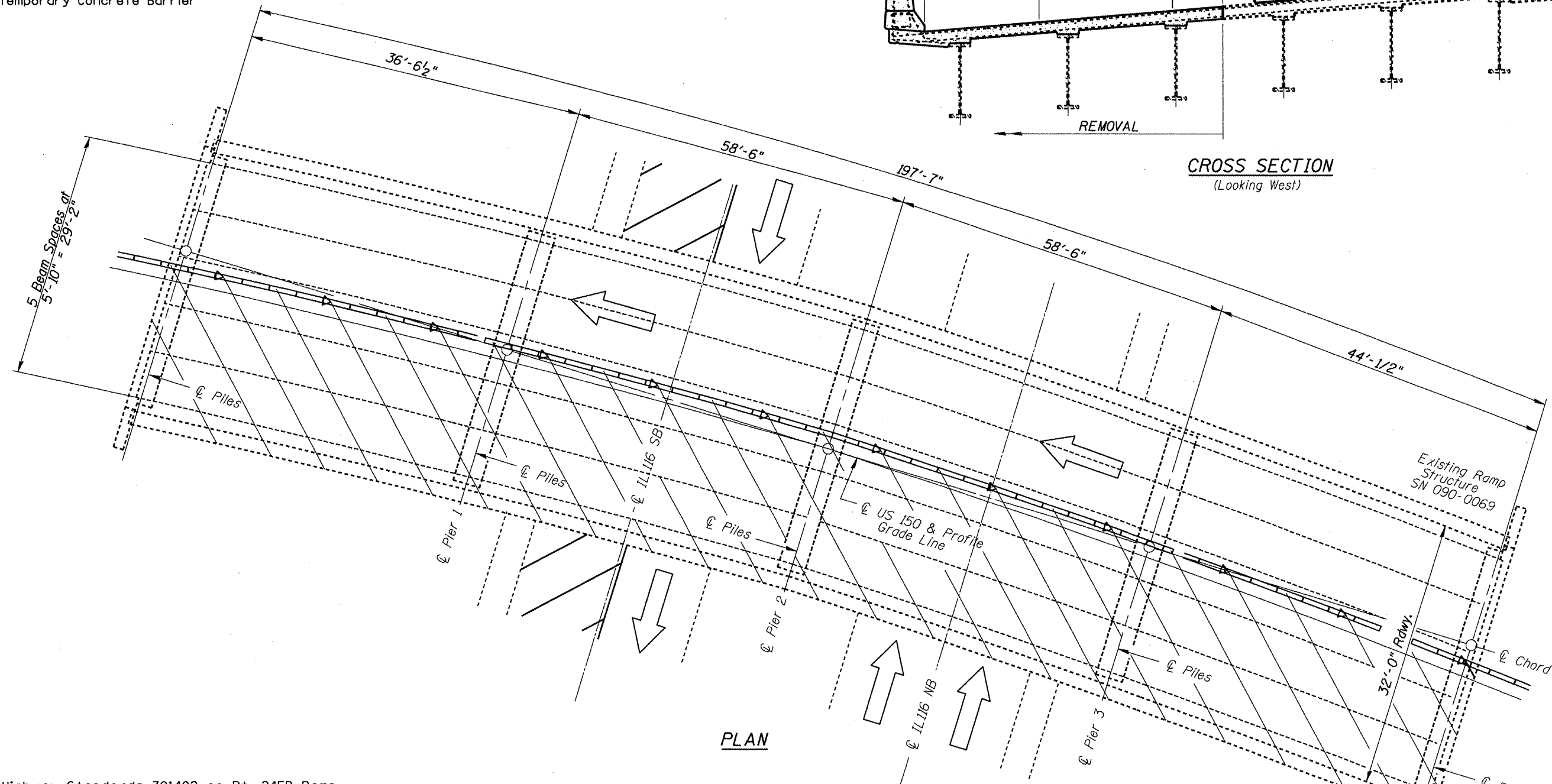


**SYMBOLS**

-  Work Area
-  Traffic Direction Indicator
-  Type C Monodirectional Reflector
-  Temporary Concrete Barrier



**CROSS SECTION**  
(Looking West)



**PLAN**

**NOTE:**  
Refer to Highway Standards 701402 on Rt. 24EB Ramp and 701406 on Rt. 116SB for exact placement of traffic management devices and other clarifications as construction staging symbols and dimensioning were duplicated off of these standards.

SN.090-0069 NB. IL.116  
Ramp over SB. IL.116

FILE NAME = SN090-0069 (2).dgn	USER NAME = jonesco	DESIGNED - CEJ	REVISED - ---
		DRAWN - CEJ	REVISED - ---
		CHECKED - ---	REVISED - ---
		DATE - ---	REVISED - ---

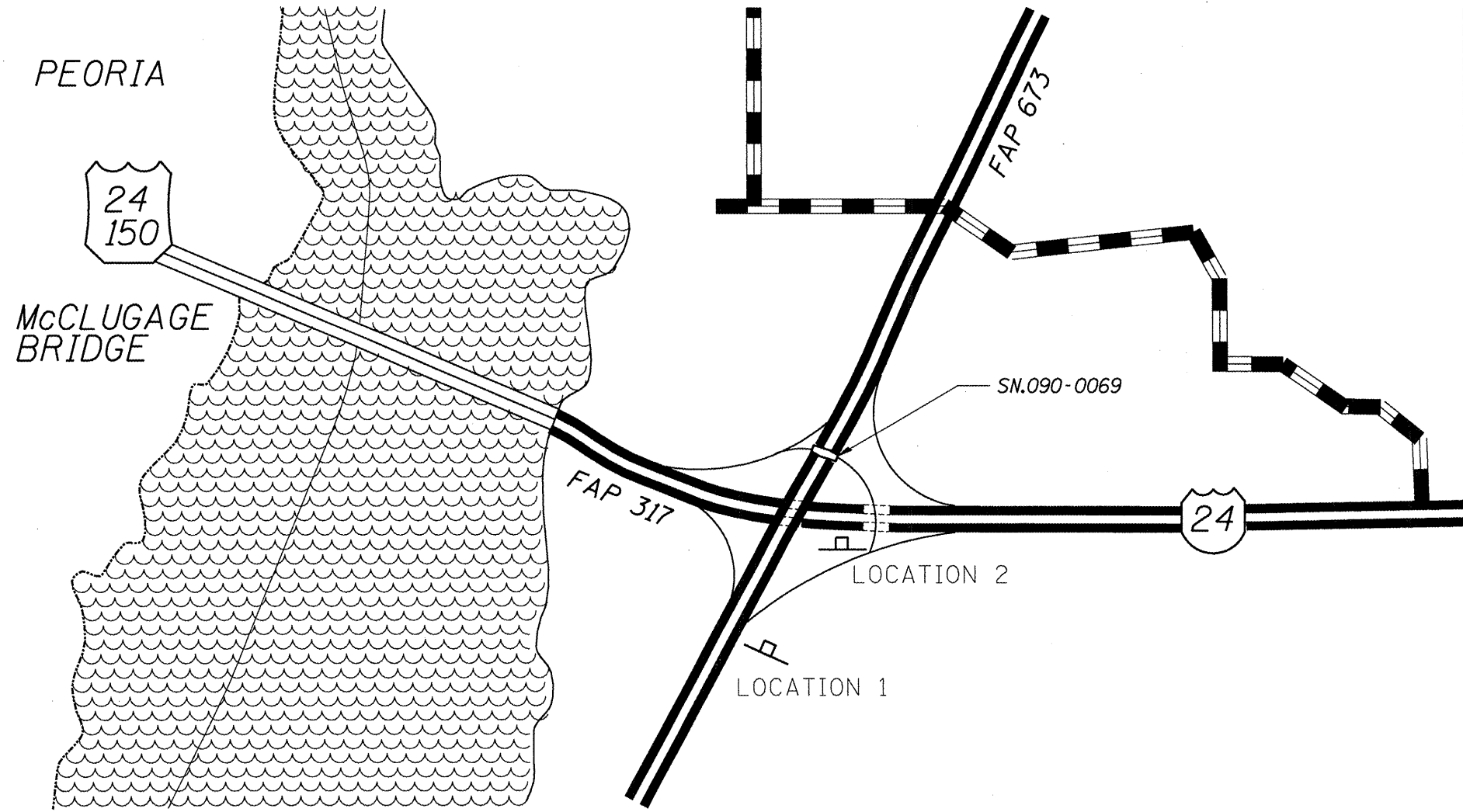
PLOT SCALE = 1/4" = 1'-0"			
PLOT DATE = 2/2/2009			

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

<b>PROPOSED TRAFFIC CONTROL</b>			
SCALE: _____	SHEET NO. _____ OF _____ SHEETS	STA. _____ TO STA. _____	

F.A.P. RTE. 673	SECTION 1102-HB-211-2	COUNTY TAZEWELL	TOTAL SHEETS 17	SHEET NO. 9
STEEL BEAM REPAIRS			CONTRACT NO. 68857	
FED. ROAD DIST. NO. 4 ILLINOIS FED. AID PROJECT				

**NOTES**  
 Notification signs shall be posted where shown indicating maximum width ahead of 12'-6" for stage construction. Changeable Message Boards shall be placed facing each traffic direction one week prior to work start date for public safety and awareness.



SN.090-0069 SIGNING

	SIGN -A-	SIGN -B-
LOCATION 1	1 EA.	NA
LOCATION 2	1 EA.	
LOCATION 3		
LOCATION 4		

CONTRACTOR PROVIDED SIGN -A-

MAX. WIDTH 12'-6" XX MILES

IL. 116

SEE SPECIAL PROVISIONS FOR SIGNING DETAILS

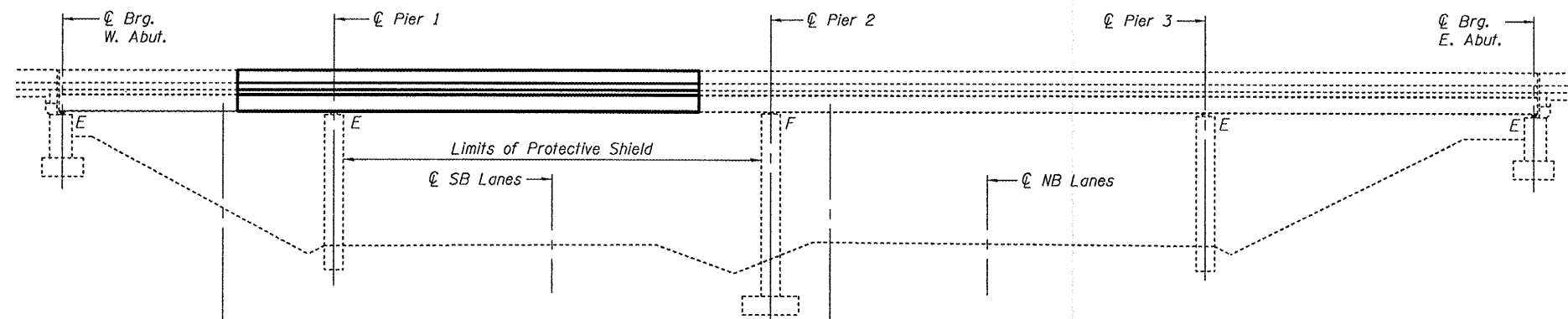
SN.090-0069 NB. IL.116  
 Ramp over SB. IL.116

FILE NAME = SN090-0069 (2).dgn	USER NAME = jonesce	DESIGNED - CEJ	REVISED - ---	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>WIDTH RESTRICTION SIGNING</b>	F.A.P. RTE. 673	SECTION (102-HB-211-2)	COUNTY TAZEWELL	TOTAL SHEETS 17	SHEET NO. 10
	PLOT SCALE = 104.1530' / IN.	DRAWN - CEJ	REVISED - ---			STEEL BEAM REPAIRS	CONTRACT NO. 68857			
	PLOT DATE = 2/2/2009	CHECKED - ---	REVISED - ---			FED. ROAD DIST. NO. 4 (ILLINOIS) FED. AID PROJECT				
		DATE - ---	REVISED - ---			SCALE: _____	SHEET NO. ___ OF ___ SHEETS	STA. _____ TO STA. _____		

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 1 7 SHEETS
F.A.P. 673	++	Tazewell	17	11	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-			

Contract Number: 68B57 ++(102-HB-2)I-2



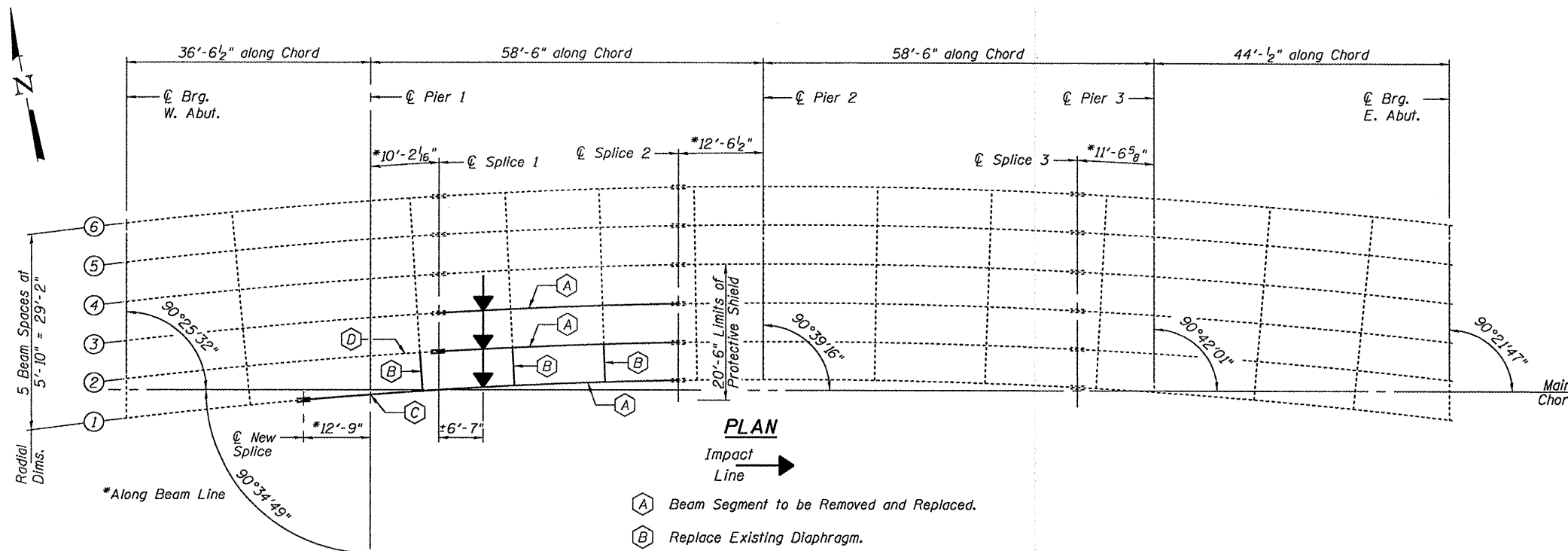
**ELEVATION**

Temporary shoring is required for Beam 1 and may be required for Beams 2 and 3. To be paid for as Temporary Shoring and Cribbing. Removal and replacement of the slopewall, if required, shall be included with Temporary Shoring and Cribbing.

Temporary shoring may be required to facilitate alignment of splice. Use 12"x12" 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.

**GENERAL NOTES**

- All structural steel shall conform to AASHTO Classification M-270 Gr. 50, unless otherwise noted.
- Fasteners shall be high strength bolts. Flange splice holes shall be  $1\frac{1}{8}$ "  $\phi$  for  $7\frac{1}{8}$ "  $\phi$  bolts. Web splice holes shall be  $1\frac{1}{8}$ "  $\phi$  for  $7\frac{1}{8}$ "  $\phi$  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".
- Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
- Reinforcement bars designated (E) shall be epoxy coated.
- Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.
- 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 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 Special Provision "Cleaning and Painting New Metal Structures".
- Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.
- Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
- As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by an individual acceptable to the Engineer. Any cracks that can not be removed by grinding  $\frac{1}{4}$ " inch deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.
- Diaphragm connection holes shall be  $1\frac{1}{8}$ "  $\phi$  for  $3\frac{1}{4}$ "  $\phi$  bolts. Two hardened washers shall be required at diaphragm connections.
- 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".
- 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**

Impact Line

- (A) Beam Segment to be Removed and Replaced.
- (B) Replace Existing Diaphragm.
- (C) Location of Structural Repair of Concrete on Pier Cap.
- (D) Beam Straightening

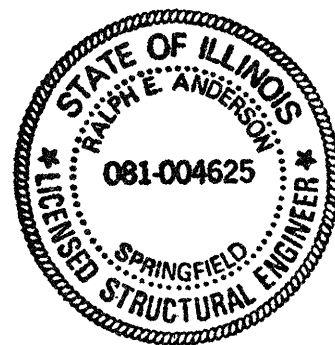
**TOTAL BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	27.5
Concrete Superstructure	Cu. Yd.	27.6
Furnishing and Erecting Structural Steel	Pound	16,640
Reinforcement Bars, Epoxy Coated	Pound	6,520
Beam Straightening	L.S.	1
Temporary Shoring and Cribbing	L.S.	1
Stud Shear Connectors	Each	504
Protective Shield	Sq. Yd.	127.6
Structural Repair of Concrete >5"	Sq. Ft.	2.5
Bridge Deck Grooving	Sq. Yd.	77.7
Protective Coat	Sq. Yd.	110.4
Structural Steel Removal	Pound	16,640
Anchor Bolts, 1 1/4"	Each	1

**PLAN AND ELEVATION**  
F.A. RT. 317  
TAZEWELL COUNTY  
SN 090-0069

DESIGNED: [Signature]  
CHECKED: [Signature]  
DRAWN: [Signature]  
CHECKED: AIB 553

March 19, 2009  
EXAMINED: [Signature]  
PASSED: [Signature]

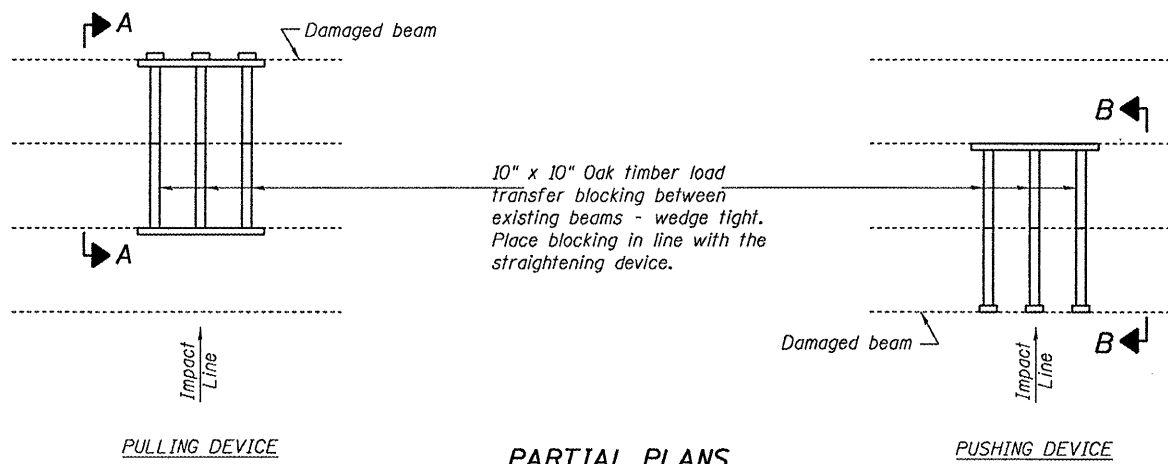


Expires: November 30, 2010

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

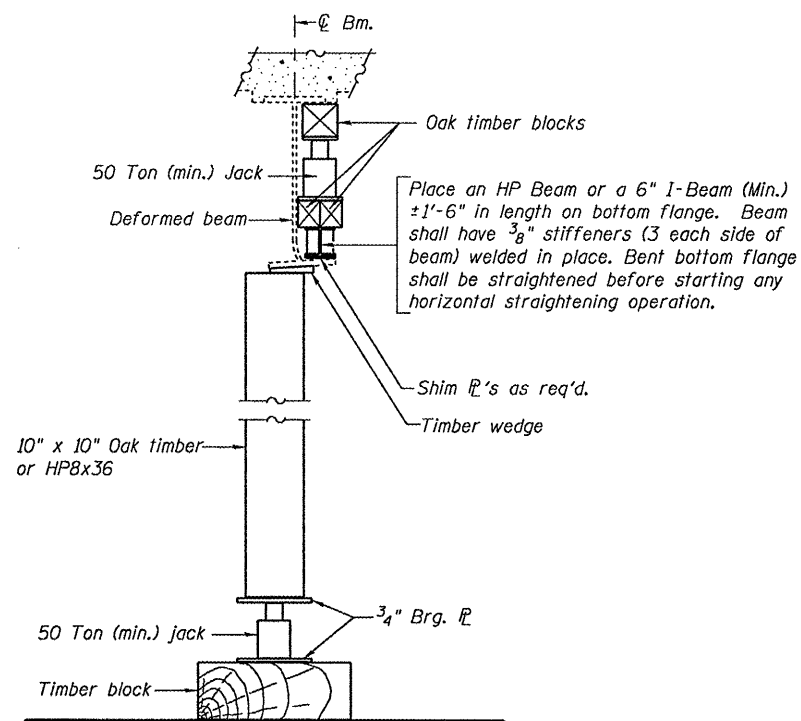
ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET	SHEET NO.
F.A.P. 673	++	Tozowell	17	12	7 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT-			

Contract Number: 68B57 ++(102-HB-2)1-2

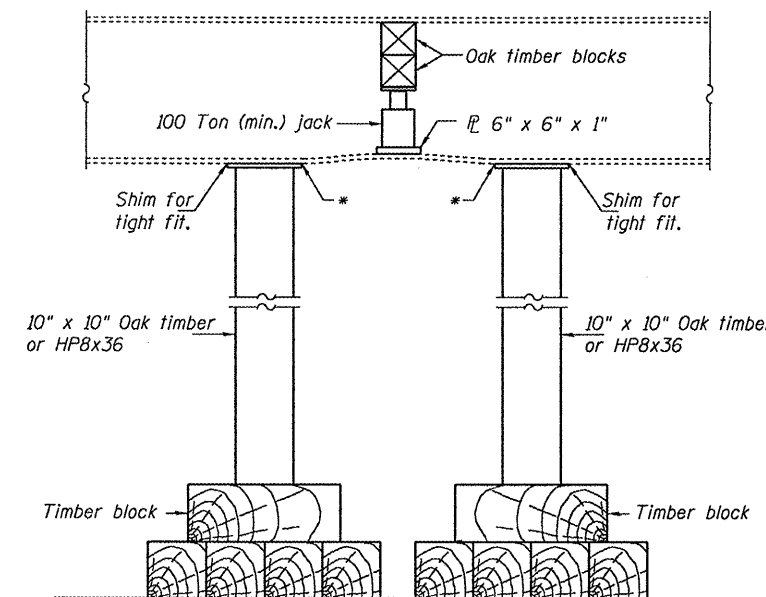


**SUGGESTED BEAM STRAIGHTENING METHODS**

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



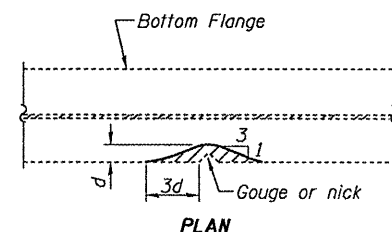
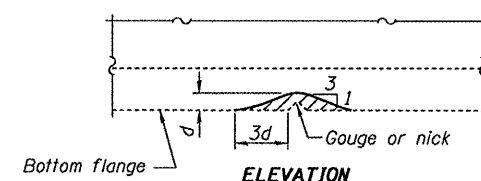
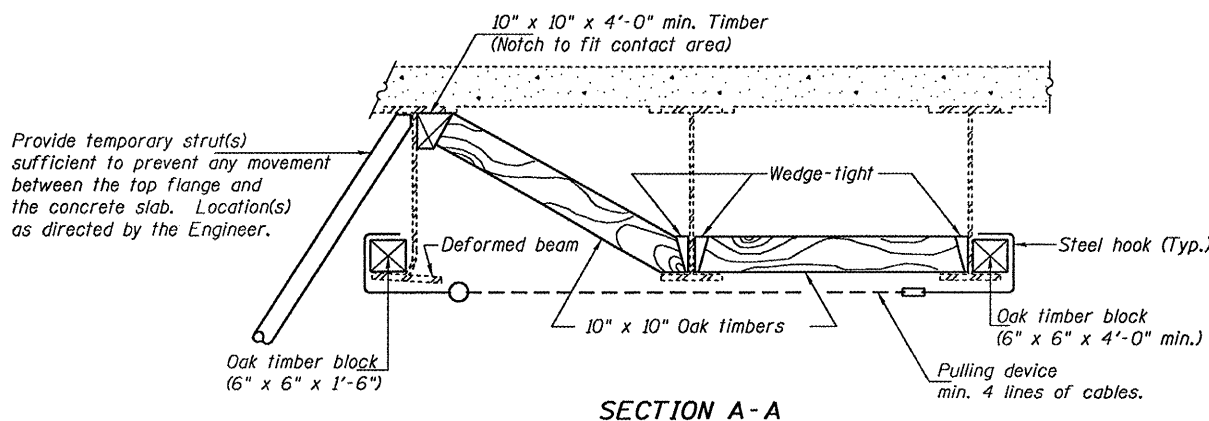
**SUGGESTED VERTICAL STRAIGHTENING DETAIL**  
(To correct localized vertical flange deformations.)



**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.

**EXISTING DEFORMATION TO BE STRAIGHTENED**

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

**BEAM STRAIGHTENING DETAILS**  
F.A. RT. 317  
TAZEWELL COUNTY  
SN 090-0069

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

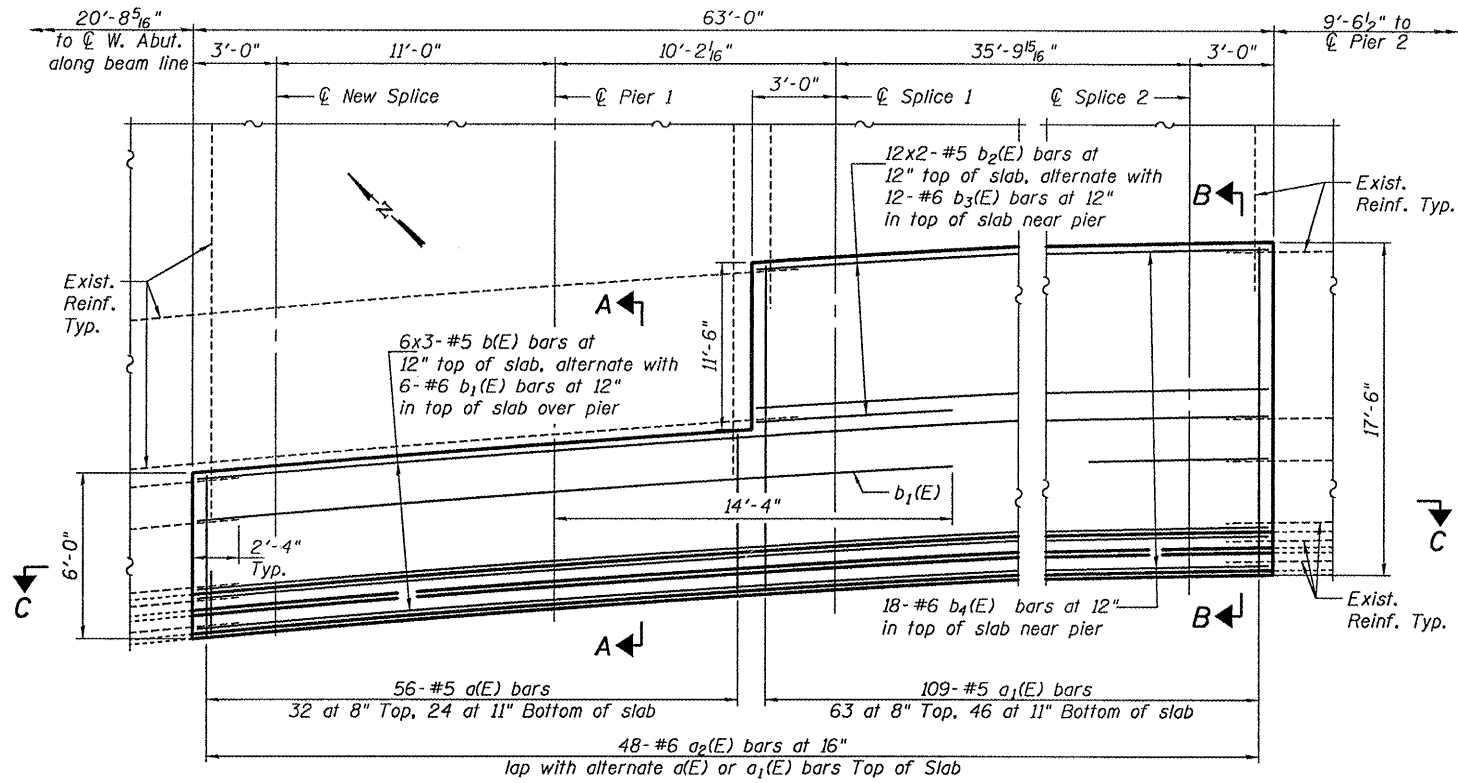
March 19, 2009  
EXAMINED *Carl Perry*  
ENGINEER OF STRUCTURAL SERVICES  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	STATION	SHEET NO.
F.A.P. 673	++	Tazewell	17	13
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

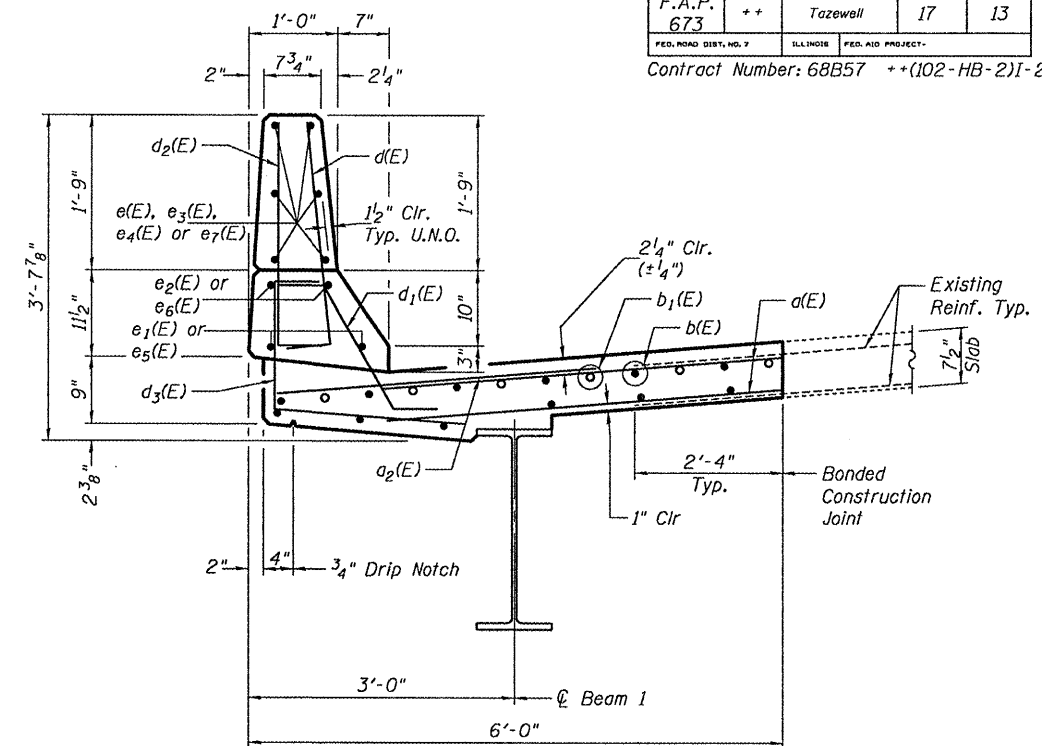
Contract Number: 68B57 ++(102-HB-2)I-2

SHEET NO. 3  
7 SHEETS



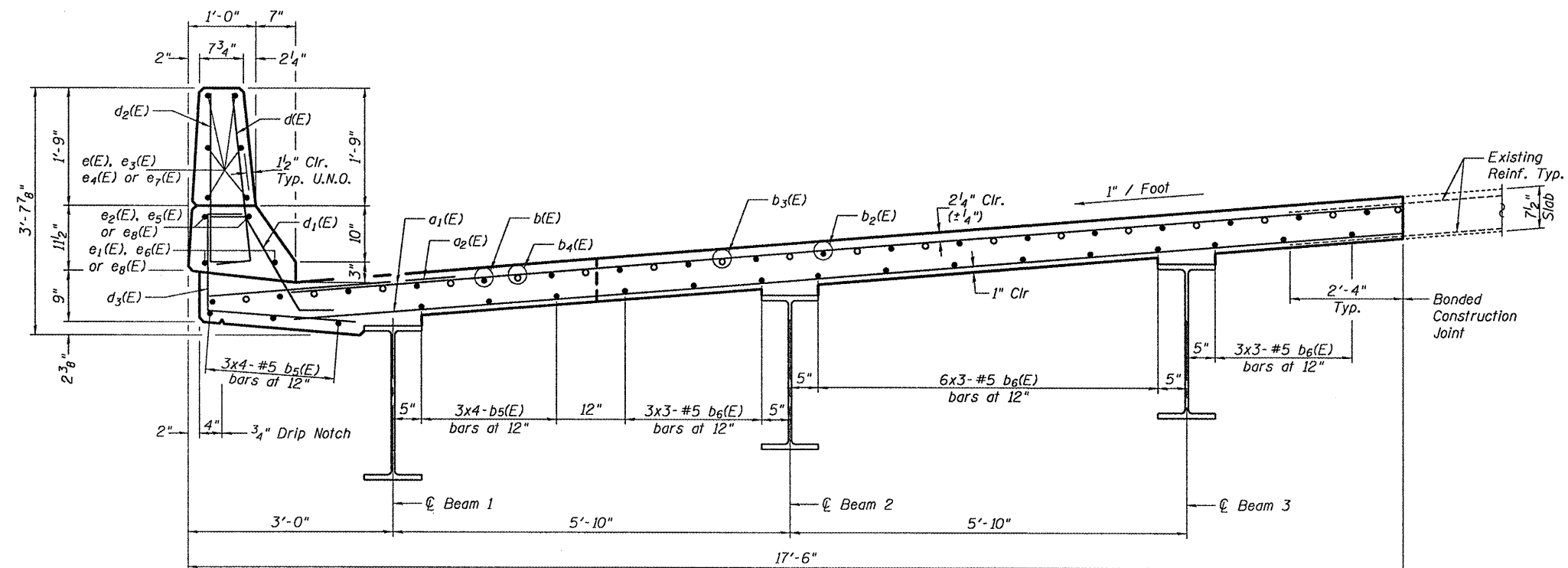
**PARTIAL DECK PLAN**

Note:  
See sheet 4 of 7 for parapet reinforcement and Section C-C.



**SECTION A-A**

**Min. Bar Laps**  
#5 = 1'-8"  
#5 = 2'-2" (Transverse)  
#6 = 2'-0"  
#8 = 3'-5"



**SECTION B-B**

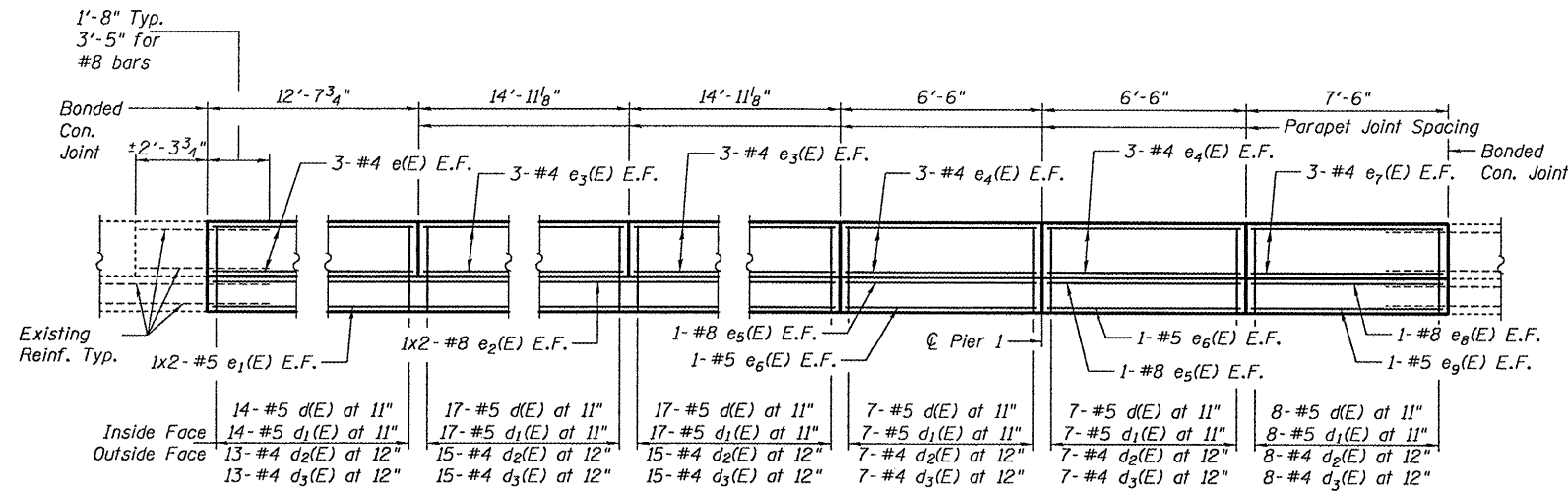
DESIGNED	A.J.B.
CHECKED	S.J.B.
DRAWN	Drew Christopher
CHECKED	A.J.B. S.J.B.

March 19, 2009  
EXAMINED *A. Carl Honey*  
ENGINEER OF STRUCTURAL SERVICES  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

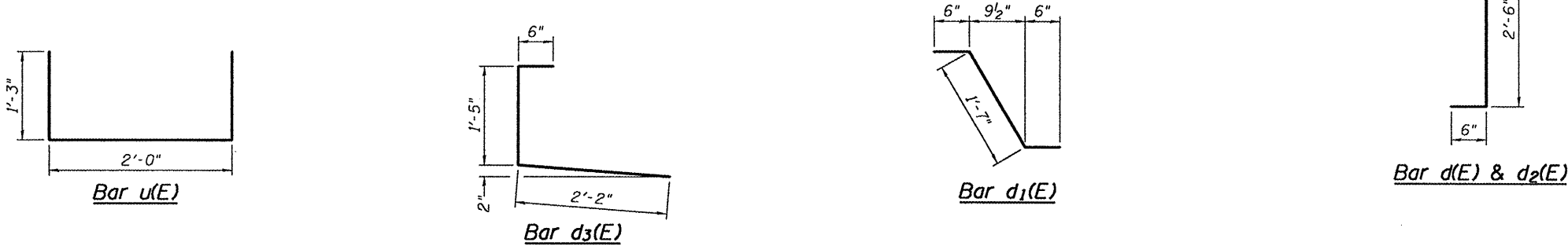
**DECK REPLACEMENT DETAILS**  
F.A. RT. 317  
TAZEWELL COUNTY  
SN 090-0069

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET	SHEET NO.
F.A.P. 673	++	Tazewell	17	14	4
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT		
Contract Number: 68B57 ++ (102-HB-2)I-2					



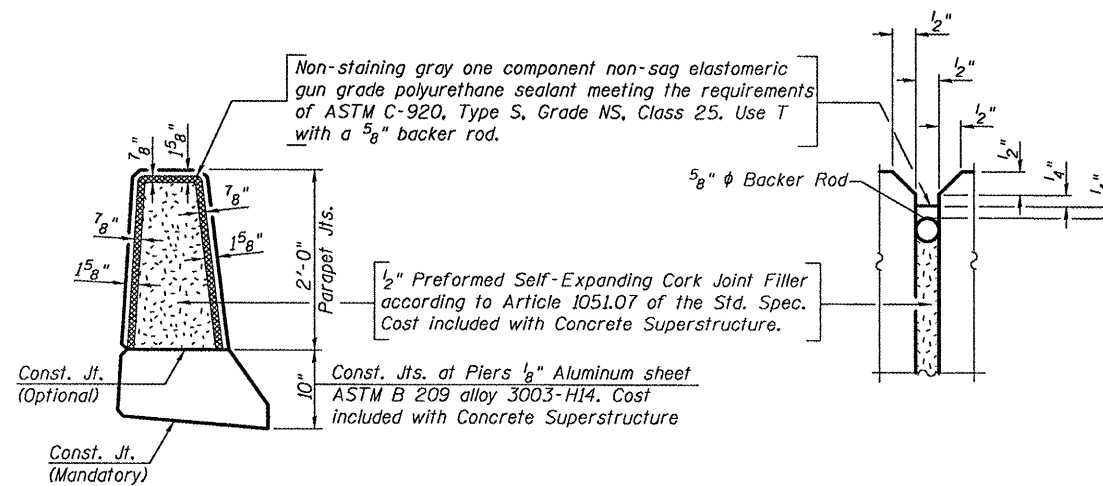
SECTION C-C  
INSIDE SOUTH PARAPET ELEVATION



BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	56	#5	4'-6"	—
a1(E)	109	#5	16'-6"	—
a2(E)	48	#6	5'-8"	—
b(E)	18	#5	22'-1"	—
b1(E)	6	#6	28'-4"	—
b2(E)	24	#5	21'-8"	—
b3(E)	12	#6	7'-1"	—
b4(E)	18	#6	6'-10"	—
b5(E)	24	#5	17'-5"	—
b6(E)	36	#5	15'-0"	—
d(E)	70	#5	3'-0"	┌┐
d1(E)	70	#5	2'-7"	┌┐
d2(E)	65	#4	3'-0"	┌┐
d3(E)	65	#4	4'-1"	┌┐
e(E)	6	#4	12'-4"	—
e1(E)	4	#5	21'-10"	—
e2(E)	4	#8	22'-9"	—
e3(E)	12	#4	14'-8"	—
e4(E)	12	#4	6'-3"	—
e5(E)	4	#8	6'-3"	—
e6(E)	4	#5	6'-3"	—
e7(E)	6	#4	7'-3"	—
e8(E)	2	#8	7'-3"	—
e9(E)	2	#5	7'-3"	—
u(E)	2	#5	4'-6"	┌┐
Concrete Removal			Cu. Yd.	27.5
Concrete Superstructure			Cu. Yd.	27.6
Reinforcement Bars, Epoxy Coated			Lbs.	6,520

Bars indicated thus 1 x 2-#5 etc. indicates 1 line of bars with 2 lengths per line.



PARAPET JOINT DETAILS

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

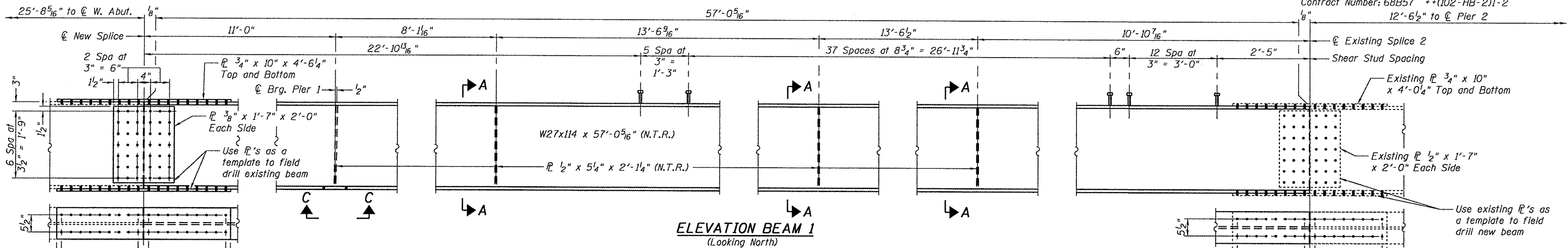
March 19, 2009  
EXAMINED *Carl Krueger*  
ENGINEER OF STRUCTURAL SERVICES  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

PARAPET DETAILS  
F.A. RT. 317  
TAZEWELL COUNTY  
SN 090-0069

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

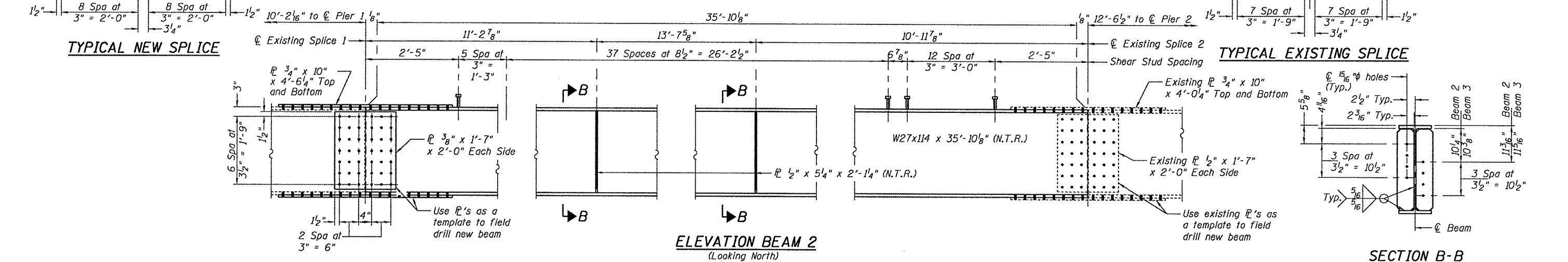
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F.A.P. 673	++	Tazewell	17	15	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-			

Contract Number: 68B57 ++ (102-HB-2)I-2  
12'-6 1/2" to C/Pier 2

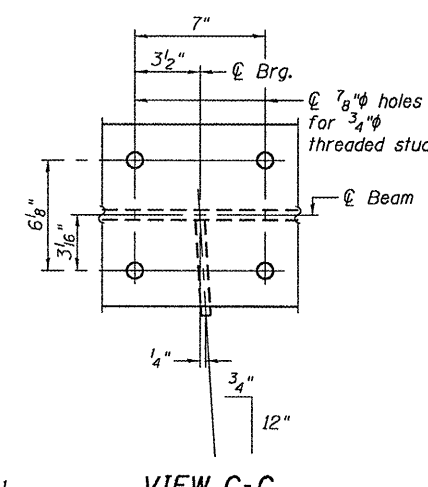
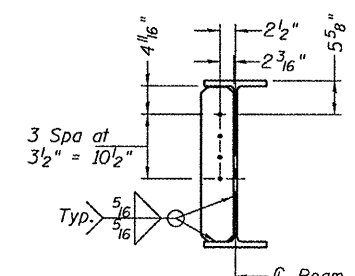
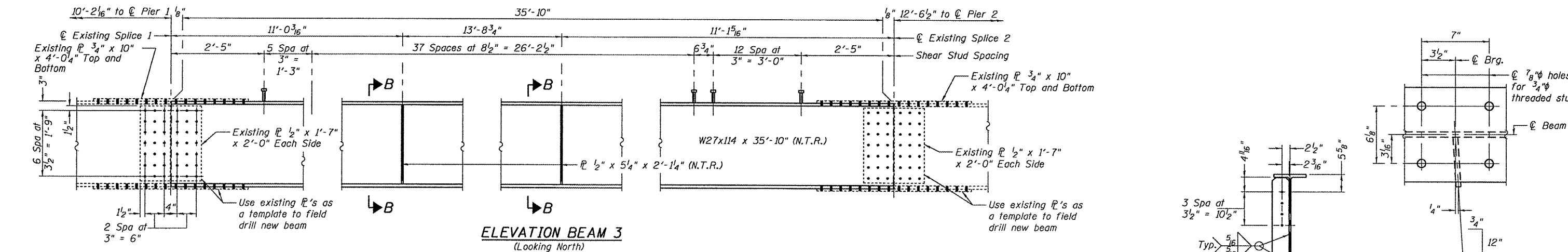


**TYPICAL NEW SPLICE**

**TYPICAL EXISTING SPLICE**



**SECTION B-B**



**SECTION A-A**

**VIEW C-C**

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

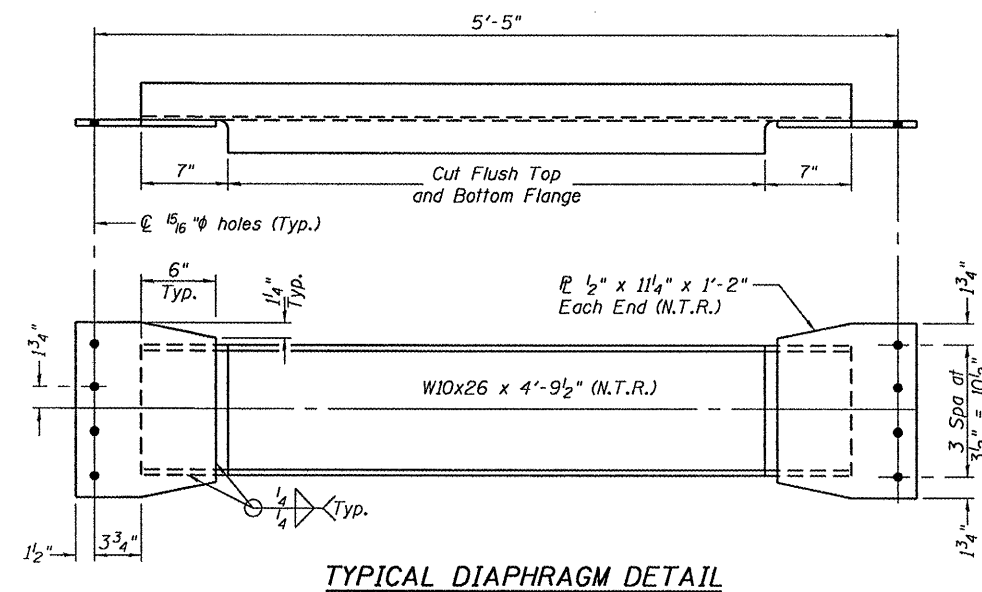
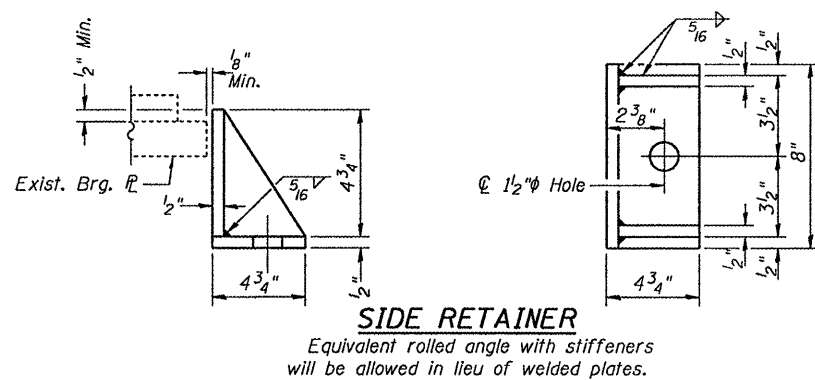
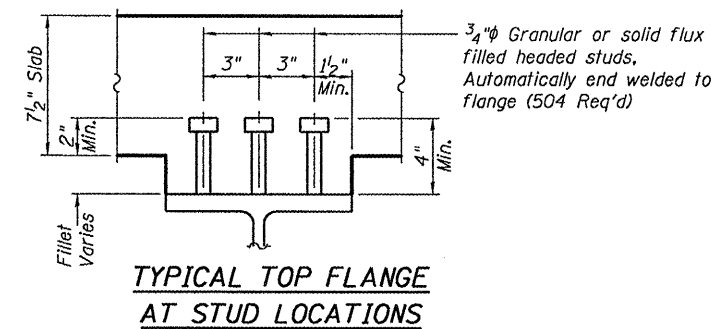
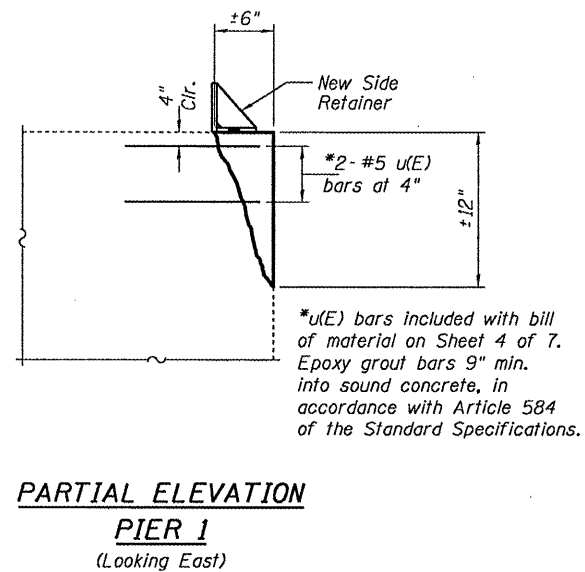
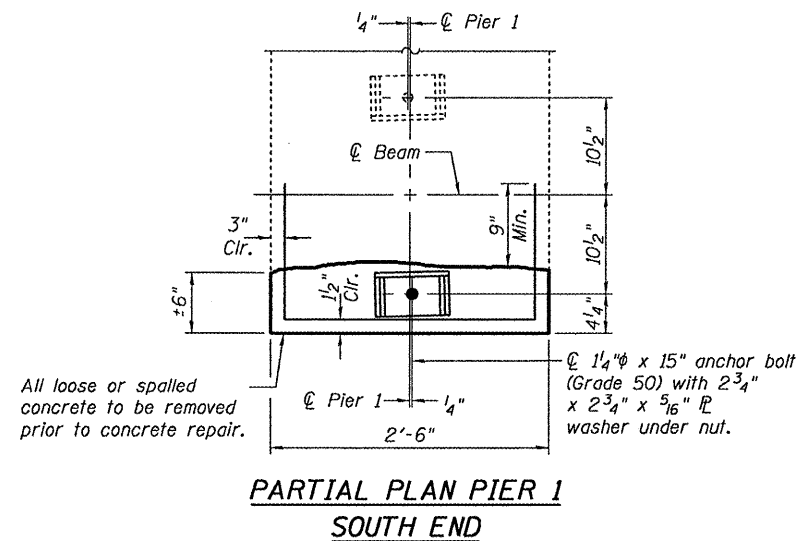
March 19, 2009  
EXAMINED *Carl Hoyer*  
ENGINEER OF STRUCTURAL SERVICES  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

**BEAM REPLACEMENT DETAILS**  
F.A. RT. 317  
TAZEWELL COUNTY  
SN 090-0069

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO. F.A.P. 673	SECTION ++	COUNTY Tazewell	DISTRICT 17	SHEET NO. 16	SHEET NO. 6 7 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT			

Contract Number: 68B57 ++(102-HB-2)I-2



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

March 19, 2009  
EXAMINED *A. Carl Perry*  
ENGINEER OF STRUCTURAL SERVICES  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

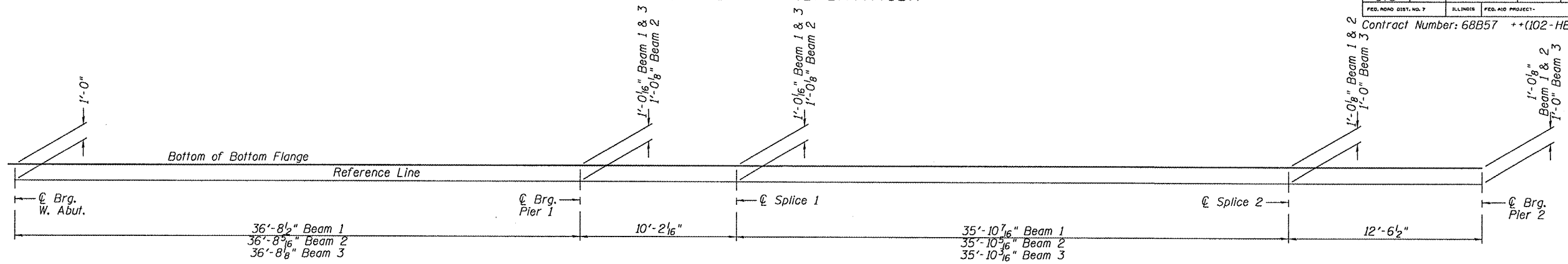
**REPAIR DETAILS**  
F.A. RT. 317  
TAZEWELL COUNTY  
SN 090-0069



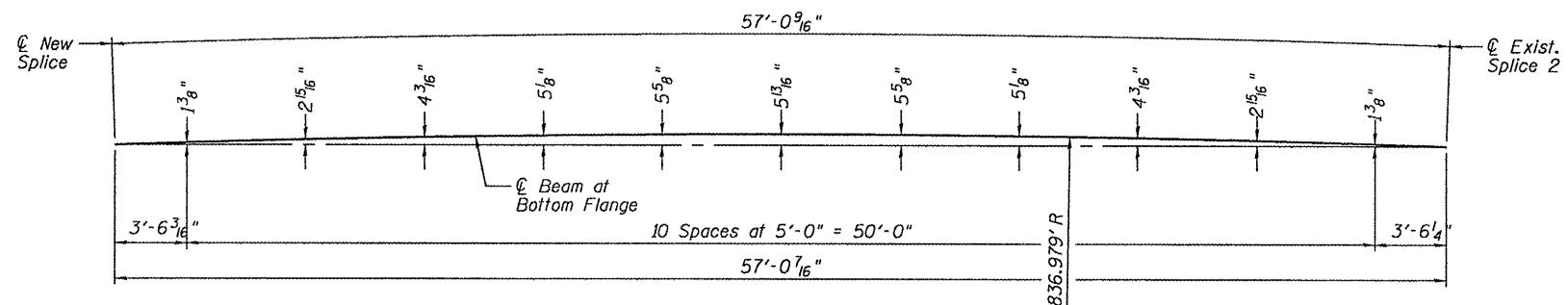
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET	SHEET NO.
F.A.P. 673	++	Tazewell	17	17	7 SHEETS
FED. AID DIST. NO. 7		ILLINOIS		FED. AID PROJECT	

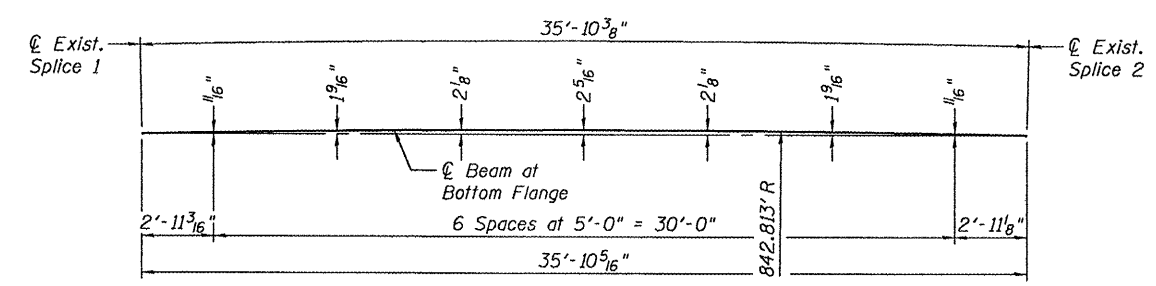
Contract Number: 68B57 ++ (102-HB-2)I-2



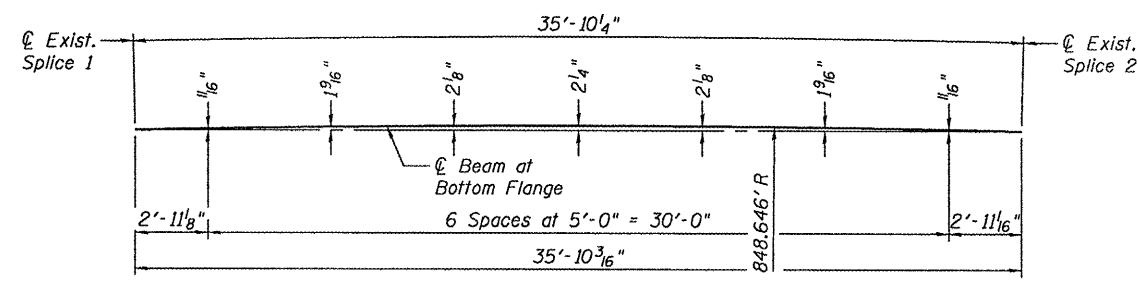
**BEAMS 1, 2 AND 3 VERTICAL BLOCKING DIAGRAM**



**BEAM 1 HORIZONTAL CURVING DIAGRAM**



**BEAM 2 HORIZONTAL CURVING DIAGRAM**



**BEAM 3 HORIZONTAL CURVING DIAGRAM**

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

March 19, 2009  
EXAMINED *Carl Perry*  
ENGINEER OF STRUCTURAL SERVICES  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

**BEAM CURVING DIAGRAMS**  
F.A. RT. 317  
TAZEWELL COUNTY  
SN 090-0069