7-30-10 LETTING ITEM 061

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	[90-14HB-1(BR)]I	TAZEWELL	17	1
FED. ROAD DIST. NO. 4	ILLINOIS	CONTRACT NO. 68976		

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED
HIGHWAY PLANS

FAI 74 (I–74)
SECTION [90–14HB–1(BR)]I
(MCHD CLAIM 751347)
TAZEWELL COUNTY
C–94–096–10

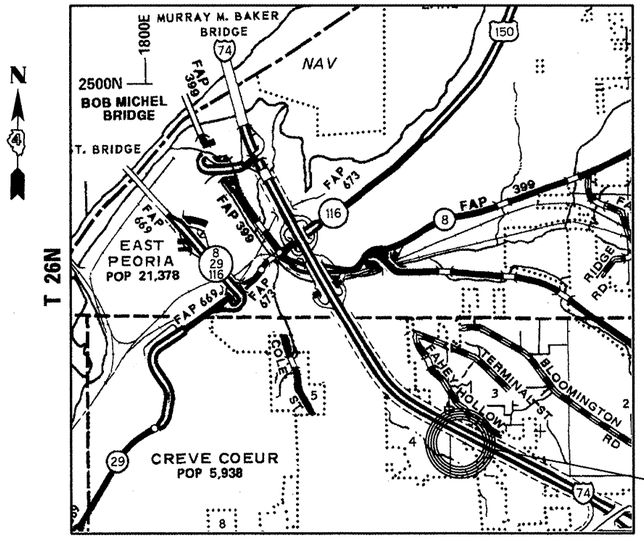
INDEX OF SHEETS:

1. COVER SHEET
2. COMMITMENTS & GENERAL NOTES
3. SUMMARY OF QUANTITIES
4. TYPICAL SECTIONS
5. SCHEDULE OF QUANTITES
6. GENERAL LAYOUT
7–9. PROPOSED TRAFFIC CONTROL
10–15. REPAIR DETAILS
16–17. D4 CADD STANDARDS

STANDARDS:

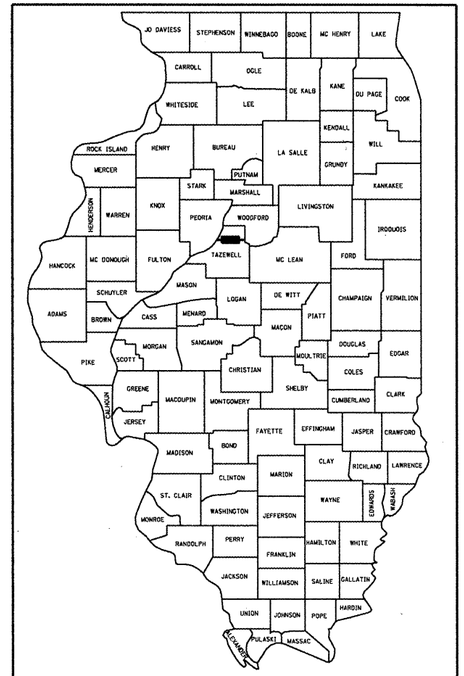
701101–02 701601–06 780001–D4
701400–04 701901–01
701406–05 704001–06

D4 STANDARDS:



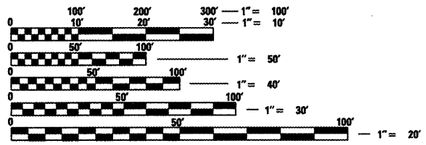
LOCATION MAP

D–94–041–10



LOCATION OF SECTION INDICATED THUS: –

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



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

PHASE 1: STRUCTURAL STEEL REPAIR OF ONE BEAM REPLACEMENT AND TWO BEAMS REPAIRED OVER EB LANES OF I–74 ON SN.090–0091, PINECREST DR. OVERPASS

PHASE 2: STRUCTURAL STEEL REPAIR OF STRAIGHTENING & STRENGTHENING OF FIVE BEAMS OVER WB. LANES OF I–74 ON SN.090–0091, PINECREST DR. OVERPASS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED May 24 20 10

DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

June 25 20 10

Scott E. Stitt, P.E. /sa
acting ENGINEER OF DESIGN AND ENVIRONMENT

June 25 20 10

Christine M. Reed /sa
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

CONTRACT NO. 68976 CAT. NO. 034446–00D

COMMITMENTS

Commitments are not to be altered without the written approval of all parties to which the commitment was made.

GENERAL NOTES

ENVIRONMENTAL REVIEWS

Prior to the use of any proposed borrow areas, use areas (temporary access roads, detours, run–arounds, etc.) and/or waste areas, the Contractor shall file the required environmental resource request surveys according to Section 107.22 of the Standard Specifications. These surveys are required in order for the Department to conduct cultural and biological resource surveys for the proposed site.

Prior to any waste materials being removed from the construction site the required environmental resource surveys will need to be obtained and filed by the Contractor. Excess waste products removed from the construction site shall be disposed of as required in Section 202.03 of the Standard Specifications.

Any protruding metal bars shall be removed prior to the disposal of broken concrete at approved disposal sites.

The required environmental resource documentation shall include the following:

* **BDE Form 2289 (Environmental Survey Request)**
* **A location map showing the size limits and location of the use area**
* **Signed property owner agreement form–D4 PI0100**
* **Color photographs depicting the use area**
* **Borrow Area Entry Agreement form–D4 PI0101**

Please note that a minimum of two weeks shall be allowed for the District to obtain the required environmental clearances.

No field welding is permitted except as specified in the contract documents.

All structural steel shall be AASHTO M 270 Grade 36 (except expansion joints which shall be AASHTO M 270 Grade 50.)

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60 (IL Modified). See Special Provisions

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.

S:-GEN-DRAFT-STD&PLNS-SQUA014-BRIDGE CONTRACTS-STEEL BEAM REP-68976 SN090-0091-SN.090-0091 PinecrestDr-ovr1-74.dgn

SN. 090-0091 PINECREST DRIVE OVER I-74

FILE NAME = SN.090-0091 Straighten&Strengthen.dgn	USER NAME = jonesce	DESIGNED - CEJ	REVISED -
		DRAWN - CEJ	REVISED -
	PLOT SCALE = 103.7051 ' / IN.	CHECKED - ---	REVISED -
	PLOT DATE = 5/3/2010	DATE - ---	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES & COMMITMENTS

SCALE: _____ | SHEET NO. __ OF ___ SHEETS | STA. _____ TO STA. _____

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	[90-14HB-1(BR)]I	TAZEWELL	17	2
	STEEL BEAMS REP./REPL.	CONTRACT NO. 68976		
FED. ROAD DIST. NO. 4	ILLINOIS	FED. AID PROJECT		

SUMMARY OF QUANTITIES

CODE NO.	ITEM	100% STATE SAFETY-2A TAZEWELL COUNTY, URBAN UNIT	TOTAL	MCHD	CONTRACT MAINT.
50102400	CONCRETE REMOVAL	CUYD	0.5	0.5	
50300255	CONCRETE SUPERSTRUCTURE	CUYD	0.5	0.5	
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	6130	6130	
50501110	STRUCTURAL STEEL REMOVAL	POUND	5640	5640	
50501130	STRUCTURAL STEEL REPAIR	POUND	1500		1500
67100100	MOBILIZATION	LSUM	1	0.5	0.5
70100700	TRAFFIC CONTROL AND PROTECTION, STANDARD 701406	LSUM	1	0.5	0.5
70102630	TRAFFIC CONTROL AND PROTECTION, STANDARD 701601	LSUM	1	1	
70300520	PAVEMENT MARKING TAPE, TYPE III 4"	FOOT	1400	1400	
70301000	WORKZONE PAVEMENT MARKING REMOVAL	SQFT	467	467	
* 78005110	EPOXY PAVEMENT MARKING-LINE 4"	FOOT	2392	2392	
78300100	PAVEMENT MARKING REMOVAL	SQFT	800	800	
X0323583	SPEED INDICATOR SIGN	CAL DA	70	45	25
Z0003600	BEAM STRAIGHTENING	LSUM	1	0.5	0.5
Z0030240	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 2	EACH	1	1	
Z0073300	TEMPORARY SHORING AND CRIBBING	LSUM	1	1	
Z0073351	TEMPORARY SLAB SUPPORT SYSTEM	LSUM	1	1	

*SPECIALTY ITEM

SN. 090-0091 PINECREST
DRIVE OVER I-74

S:-GEN-DRAFT-STD&PLNS-SQUAD14-BRIDGE CONTRACTS-STEEL BEAM REP-68976 SN090-0091-SN.090-0091 PinecrestDr.ovr1-74.dgn

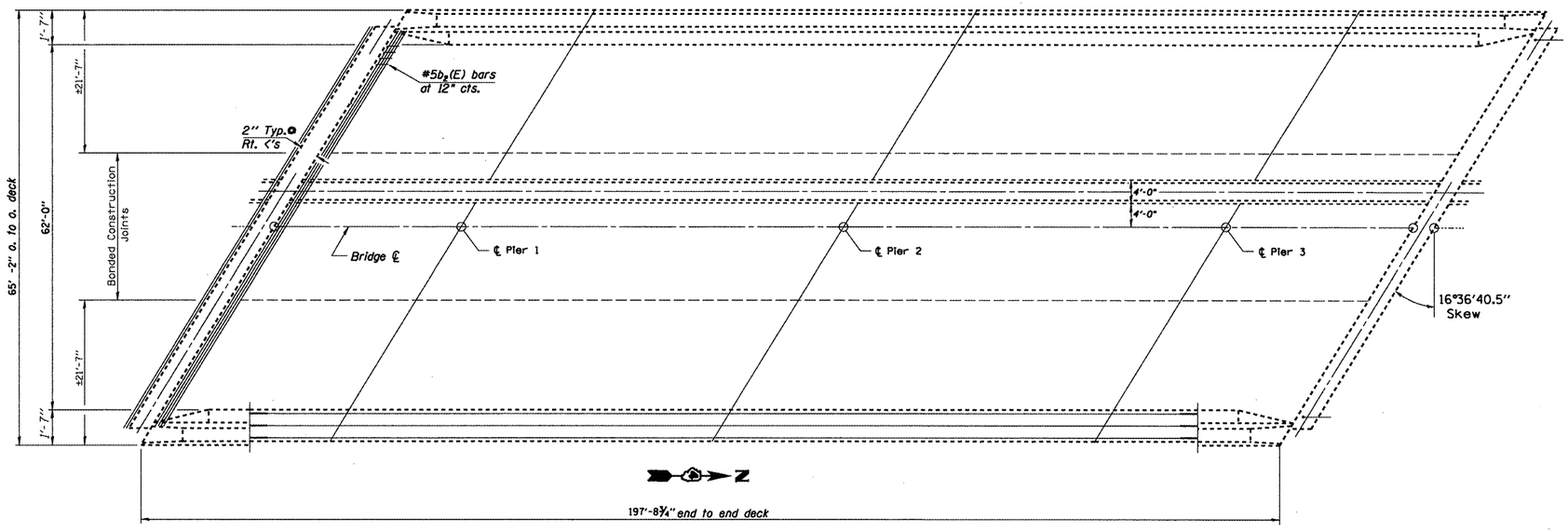
FILE NAME = SN.090-0091 Straighten&Strengthen.dgn	USER NAME = jonesce	DESIGNED - CEJ	REVISED - ---
		DRAWN - CEJ	REVISED - ---
	PLOT SCALE = 103.7051 ' / IN.	CHECKED - ---	REVISED - ---
	PLOT DATE = 5/18/2010	DATE - 05/13/2010	REVISED - ---

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

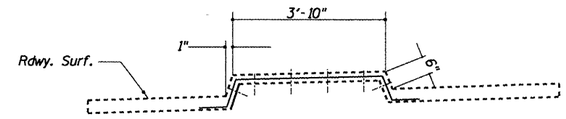
SUMMARY OF QUANTITIES

SCALE: _____ | SHEET NO. __ OF ___ SHEETS | STA. _____ TO STA. _____

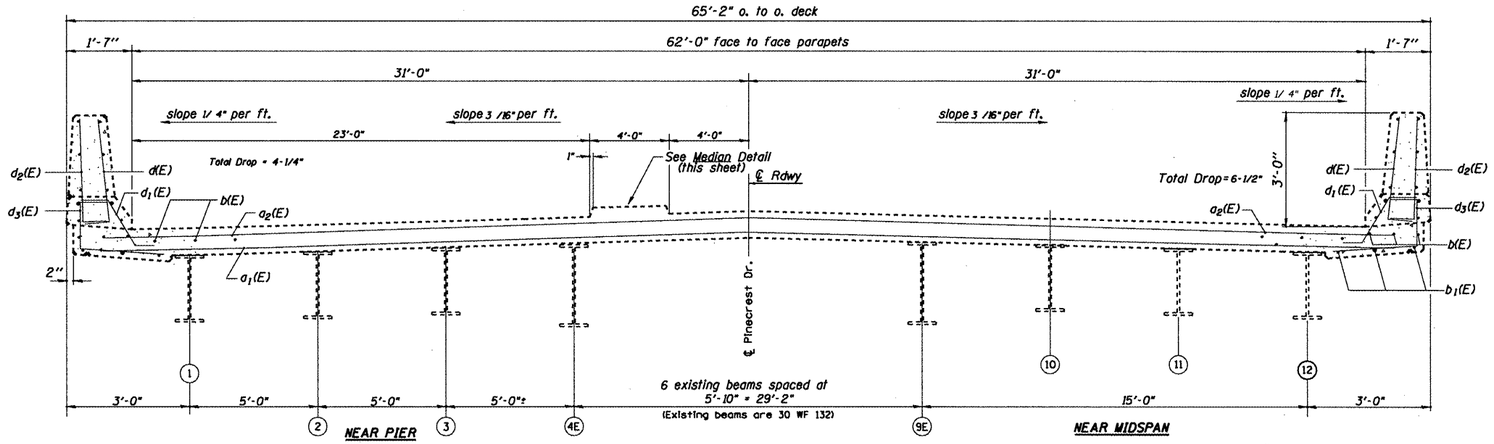
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(90-14HB-1(BR))I	TAZEWELL	17	3
	STEEL BEAMS REP./REPL.	CONTRACT NO. 68976		
FED. ROAD DIST. NO. 4	ILLINOIS	FED. AID PROJECT		



EXISTING DECK

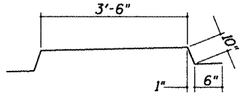


TYPE S.B. 6.12 MEDIAN



EXISTING CROSS SECTION

(Looking NORTH)



BAR

SN. 090-0091 PINECREST DRIVE OVER I-74

S:-GEN-DRAFT-STD&PLNS-SOUAD14-BRIDGE CONTRACTS-STEEL BEAM REP-68976 SN090-0091-SN.090-0091 PinecrestDr.ovr1-74.dgn

FILE NAME = SN.890-8091 Straighten&Strengthen.dgn	USER NAME = jonesce	DESIGNED - CEJ	REVISED - ---
		DRAWN - CEJ	REVISED - ---
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	PLOT DATE = 5/3/2010	DATE - ---	REVISED - ---

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK PLAN & CROSS-SECTION

SCALE: _____ | SHEET NO. __ OF ___ SHEETS | STA. _____ TO STA. _____

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(90-14HB-1(BR))I	TAZEWELL	17	4
	STEEL BEAMS REP./REPL.	CONTRACT NO. 68976		
FED. ROAD DIST. NO. 4	ILLINOIS	FED. AID PROJECT		

SCHEDULE OF QUANTITIES

CONCRETE REMOVAL

LOCATION	CUYD
AS SHOWN ON DETAIL SHEETS	0.5
TOTAL	0.5

CONCRETE SUPERSTRUCTURE

LOCATION	CUYD
AS SHOWN ON DETAIL SHEETS	0.5
TOTAL	0.5

FURNISHING & ERECTING STRUCTURAL STEEL

LOCATION	POUND
AS SHOWN ON DETAIL SHEETS	6130
TOTAL	6130

STRUCTURAL STEEL REMOVAL

LOCATION	POUND
EB. LANES AS SHOWN ON DETAIL SHEETS	5640
TOTAL	5640

STRUCTURAL STEEL REPAIR

LOCATION	POUND
WB. LANES AS SHOWN ON DETAIL SHEETS	1500
TOTAL	1500

MOBILIZATION

LOCATION	LSUM
PROJECT LOCATION	1
TOTAL	1

PVMT. MRKG. TAPE, TYPE III 4"

LOCATION	FOOT
AS SHOWN ON TRAFFIC SHEETS	1400
TOTAL	1400

WORKZONE PAVEMENT MARKING REMOVAL

LOCATION	SQFT
AS SHOWN ON TRAFFIC SHEETS	467
TOTAL	467

EPOXY PAVEMENT MARKING-LINE 4"

LOCATION	FOOT
AS REQUIRED BY T.C.& P	2392
TOTAL	2392

PAVEMENT MARKING REMOVAL

LOCATION	SQFT
AS REQUIRED BY T.C.& P	800
TOTAL	800

TRAFFIC CONTROL AND PROTECTION

LOCATION	T.C.&P. STANDARD 701406 (LSUM)	T.C.&P. STANDARD 701601 (LSUM)	SPEED INDICATOR SIGN (CAL DA)
PINECREST BRIDGE OVERPASS		1	
I-74 PROJECT LANES	1		70
TOTAL	1	1	70

BEAM STRAIGHTENING

LOCATION	LSUM
PROJECT BEAM LOCATIONS	1
TOTAL	1

IMPACT ATTENUATORS, NRD, TL2

LOCATION	EACH
SPAN 3 OF BRIDGE DECK	1
TOTAL	1

TEMPORARY SHORING AND CRIBBING

LOCATION	LSUM
PROJECT BEAM LOCATIONS	1
TOTAL	1

TEMPORARY SLAB SUPPORT SYSTEM

LOCATION	LSUM
PROJECT DECK LOCATIONS	1
TOTAL	1

S:-GEN-DRAFT-STD&PLNS-SQUAD14-BRIDGE CONTRACTS-STEEL BEAM REP-68976 SN090-0091-SNL090-0091 PinecrestDr_ovr1-74.dgn

SN. 090-0091 PINECREST DRIVE OVER I-74

FILE NAME = SN.090-0091 Straighten&Strengthen.dgn	USER NAME = jonesce	DESIGNED - CEJ	REVISED - ---	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SCHEDULE OF QUANTITIES	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - CEJ	REVISED - ---			74	[90-14HB-1(BR)]I	TAZEWELL	17	5
	PLOT SCALE = 103.7051 ' / IN.	CHECKED - ---	REVISED - ---			STEEL BEAMS REP./REPL.		CONTRACT NO. 68976		
	PLOT DATE = 5/18/2010	DATE - 05/13/2010	REVISED - ---		SCALE: _____ SHEET NO. __ OF ___ SHEETS STA. _____ TO STA. _____	FED. ROAD DIST. NO. 4	ILLINOIS	FED. AID PROJECT		

TRAILPARK GARDENS

MC CLUGAGE BRIDGE

PEORIA LAKE

MURRAY M. BAKER BRIDGE

BOB MICHEL BRIDGE

CEDAR ST. BRIDGE

EAST PEORIA POP 21,378

FARMDALE RECREATION AREA

TOLEDO

F O N D U L A C

W A S H I N G T O N

WASHINGTON POP 10,136

WESTERN

PEORIA

To Eureka

WOODFORD COUNTY

LAKELAND

KENNEL LAKE

CREVE COEUR POP 5,938

SN.090-0091

(TPW)

NORFOLK AND WESTERN

D E E R C R E E K

DEER CREEK POP 630

NORTH PEKIN POP 1,556

MARQUETTE HEIGHTS POP 3,077

PPU

G R O V E L A N D

MORTON POP 13,798

WORLEY LAKE

P E K I N

PEKIN LAKE

GROVELAND

M O R T O N

SN. 090-0091 PINECREST DRIVE OVER I-74

S:\GEN-DRAFT-STD&PLNS-SQUAD14-BRIDGE CONTRACTS-STEEL BEAM REP-68976 SN090-0091-SN090-0091 PinecrestDr-ovr1-74.dgn

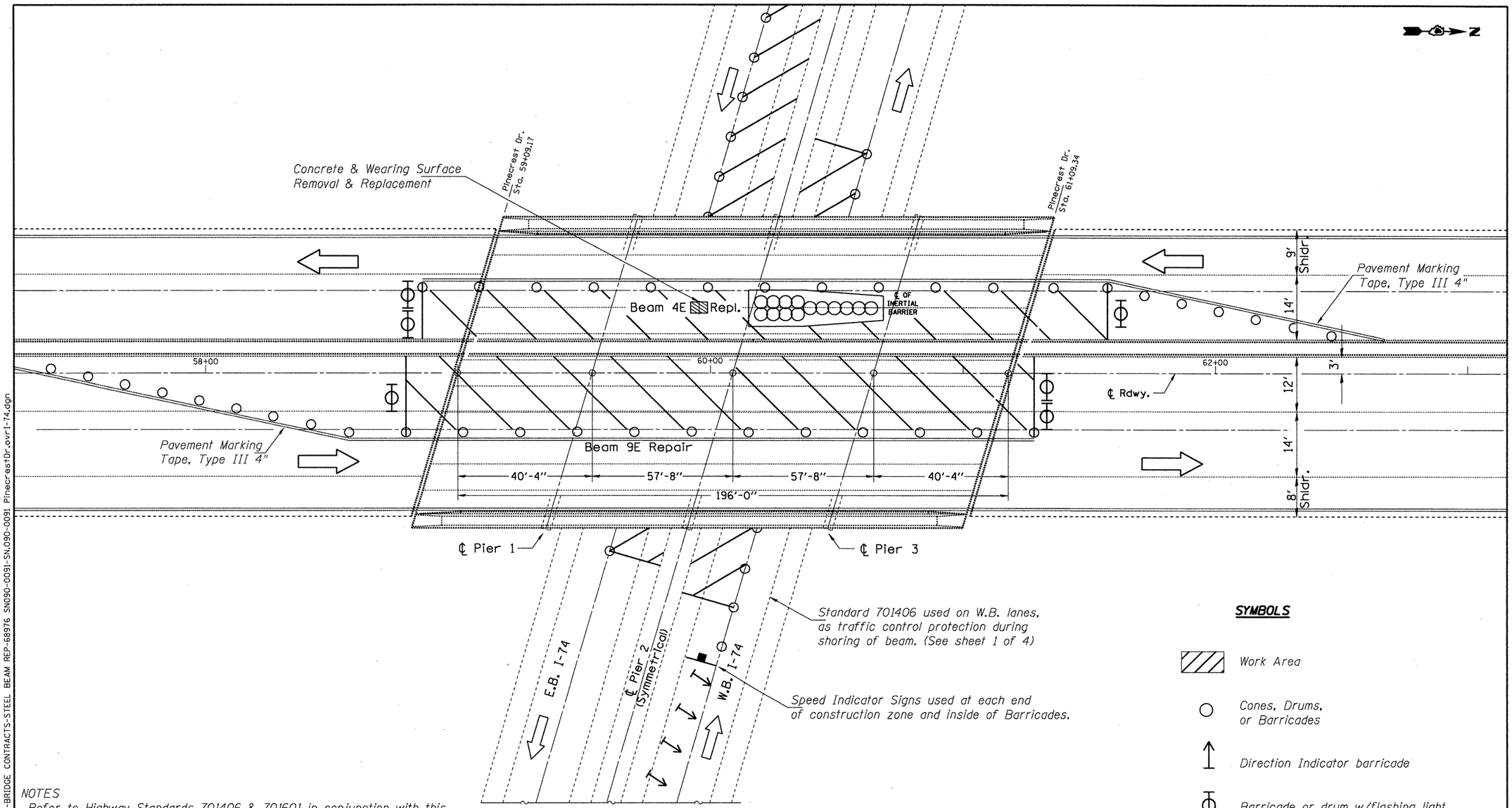
FILE NAME = SN.090-0091 Straighten&Strengthen.dgn	USER NAME = jonesce	DESIGNED - CEJ	REVISED - ---
		DRAWN - CEJ	REVISED - ---
	PLOT SCALE = 103.7051 ' / IN.	CHECKED - ---	REVISED - ---
	PLOT DATE = 5/24/2010	DATE - 04/06/2010	REVISED - ---

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL LAYOUT

SCALE: _____ | SHEET NO. __ OF ___ SHEETS | STA. _____ TO STA. _____

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(90-14HB-1(BR))I	TAZEWELL	17	6
	STEEL BEAMS REP./REPL.	CONTRACT NO. 68976		
FED. ROAD DIST. NO. 4	ILLINOIS	FED. AID PROJECT		



STAGE I PLAN
(Phase I)

SYMBOLS

- Work Area
- Cones, Drums, or Barricades
- Direction Indicator barricade
- Barricade or drum w/flashing light
- Sign (speed indicator)
- Impact Atten, Temp. NRD, TL2

NOTES
Refer to Highway Standards 701406 & 701601 in conjunction with this sheet for exact placement of traffic management devices and other clarifications as construction staging symbols and dimensioning were duplicated off of these standards.
Temporary Pavement Marking Tape, Type III 4" shall be placed throughout the taper and alongside the work area as shown in the plans.
A Sand Barrel Attentuator shall be placed on Span 3 of deck North of the "Temporary Slab Support Beam" shown on repair detail sheet 3 of 4.
Speed Indicator Signs shall be required and activated for each closed lane on I-74.

SN. 090-0091 PINECREST
DRIVE OVER I-74

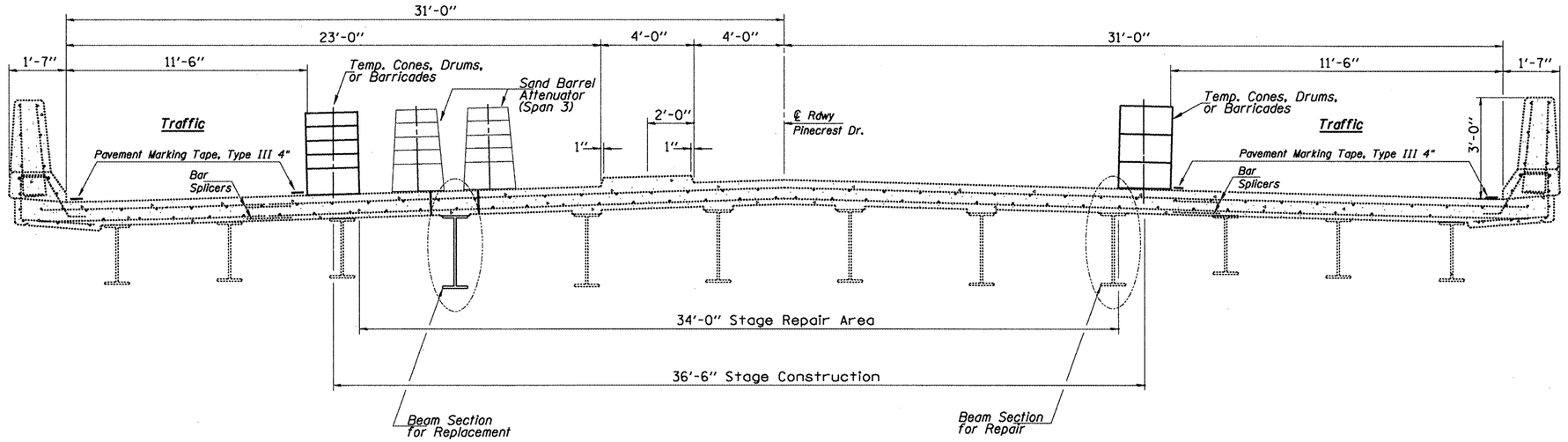
S:-GEN-DRAFT-STD&PLNS-SQUAD14-BRIDGE CONTRACTS-STEEL BEAM REP-68976 SN090-0091-SN.090-0091 Pinecrest Dr_ovr I-74.dgn

FILE NAME = SN.090-0091 Straighten&Strengthen.dgn	USER NAME = jonesce	DESIGNED - CEJ	REVISED - ---	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		DRAWN - CEJ	REVISED - ---	
	PLOT SCALE = 103.7051 ' / IN.	CHECKED - ---	REVISED - ---	
	PLOT DATE = 5/24/2010	DATE - 04/05/2010	REVISED - ---	

PROPOSED TRAFFIC CONTROL

SCALE: _____ | SHEET NO. __ OF ___ SHEETS | STA. _____ TO STA. _____

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	[90-14HB-1(BR)]I	TAZEWELL	17	7
	STEEL BEAMS REP./REPL.	CONTRACT NO. 68976		
FED. ROAD DIST. NO. 4	ILLINOIS	FED. AID PROJECT		



STAGE I CROSS SECTION

(Looking North)

SYMBOLS

Cones, Drums, or Barricades

Pavement Marking Tape Type III, 4"

Sand Barrel Attenuator

NOTES

Refer to Highway Standards 701406 & 701601 in conjunction with this sheet for exact placement of traffic management devices and other clarifications as construction staging symbols and dimensioning were duplicated off of these standards.

Temporary Pavement Marking Tape, Type III 4" shall be placed throughout the taper and alongside the work area as shown in the plans.

SN. 090-0091 PINECREST DRIVE OVER I-74

FILE NAME = SN.090-0091 Straighten&Strengthen.dgn	USER NAME = jonesce	DESIGNED - CEJ	REVISED - ---
		DRAWN - CEJ	REVISED - ---
	PLOT SCALE = 103.7051 ' / IN.	CHECKED - ---	REVISED - ---
	PLOT DATE = 5/18/2010	DATE - 04/05/2010	REVISED - ---

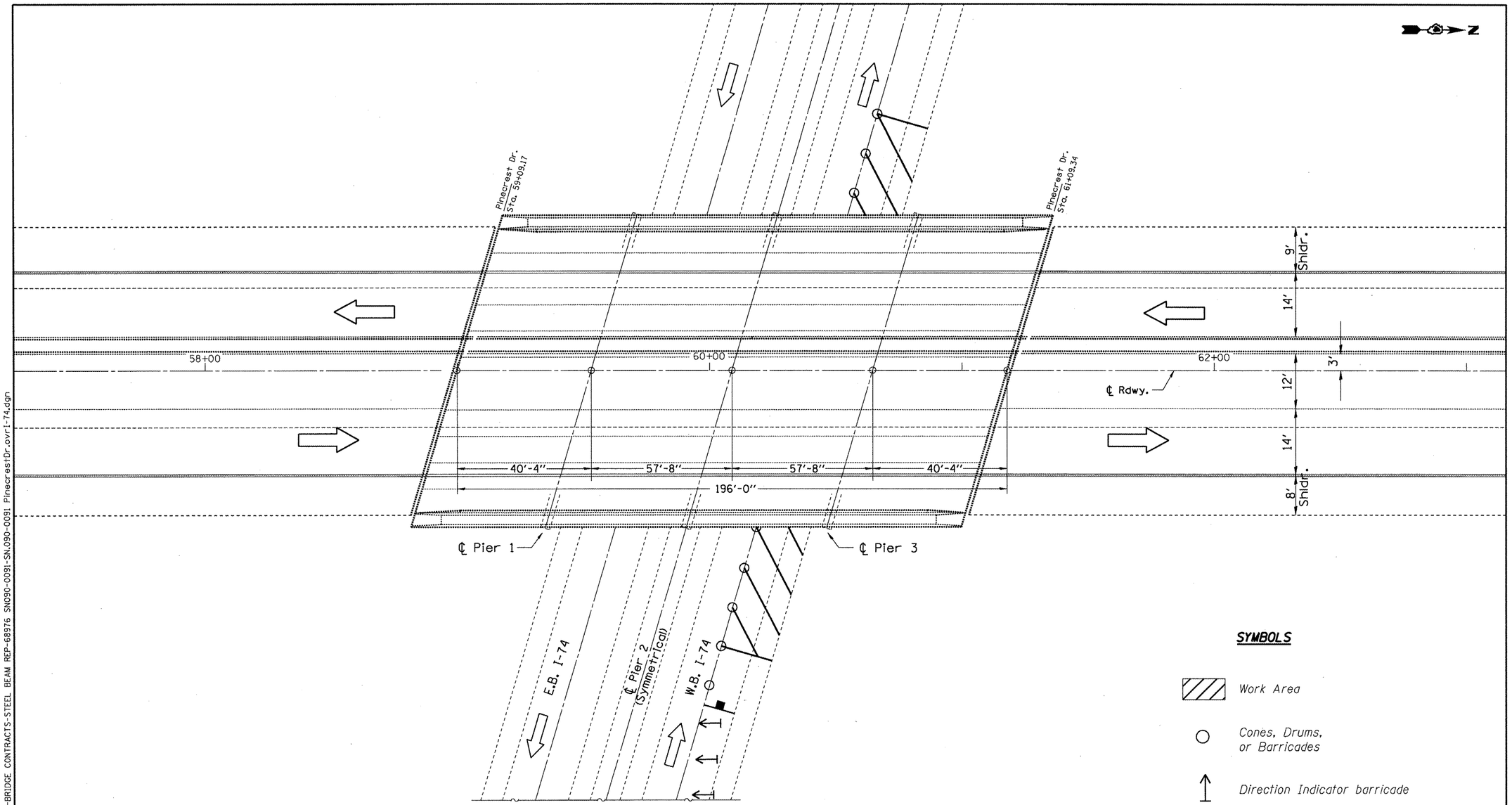
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROPOSED TRAFFIC CONTROL

SCALE: _____ | SHEET NO. __ OF ___ SHEETS | STA. _____ TO STA. _____

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	[90-14HB-1(BR)]I	TAZEWELL	17	8
	STEEL BEAMS REP./REPL.	CONTRACT NO. 68976		
FED. ROAD DIST. NO. 4	ILLINOIS	FED. AID PROJECT		

S:\-GEN-DRAFT-STD&PLNS-SOUA014-BRIDGE CONTRACTS-STEEL BEAM REP-68976 SN090-0091-SN.090-0091 Pinecrest Dr.ovr I-74.dgn



STAGE II PLAN
(Phase II)

SYMBOLS

- Work Area
- Cones, Drums, or Barricades
- Direction Indicator barricade
- Sign (speed indicator)

NOTES
Refer to Highway Standards 701406 in conjunction with this sheet for exact placement of traffic management devices and other clarifications as construction staging symbols and dimensioning were duplicated off of these standards.
Speed Indicator Signs shall be required and activated for each closed lane on I-74.

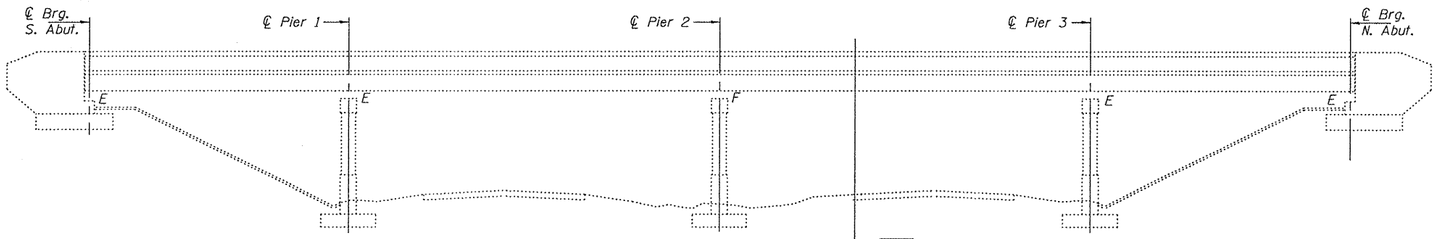
SN. 090-0091 PINECREST DRIVE OVER I-74

S:\-GEN-DRAFT-STD&PLNS-SQUAD14-BRIDGE CONTRACTS-STEEL BEAM REP-68976 SN090-0091-SN.090-0091 Pinecrest Dr.ovr I-74.dgn

FILE NAME = SN.090-0091 Straighten&Strengthen.dgn	USER NAME = jonesce	DESIGNED - CEJ	REVISED - ---	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PROPOSED TRAFIC CONTROL
		DRAWN - CEJ	REVISED - ---		
	PLOT SCALE = 103.7051 ' / IN.	CHECKED - ---	REVISED - ---		SCALE: _____ SHEET NO. __ OF ___ SHEETS STA. _____ TO STA. _____
	PLOT DATE = 5/18/2010	DATE - ---	REVISED - ---		

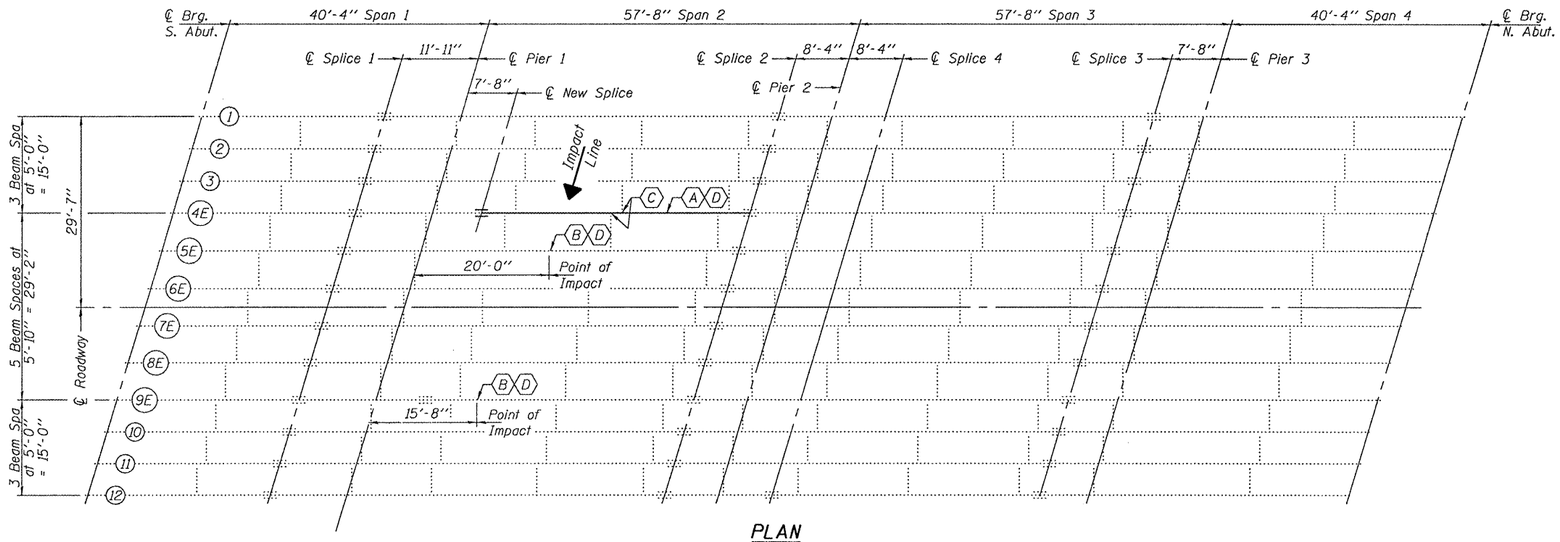
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(90-14HB-1(BR))II	TAZEWELL	17	9
	STEEL BEAMS REP./REPL.	CONTRACT NO. 68976		
FED. ROAD DIST. NO. 4	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



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.



PLAN

- A - Existing Beam to be Removed & Replaced.
- B - Existing Beam to be Straightened.
- C - Existing Bottom Clip L's to be Removed & Replaced.
- D - Existing Permanent Protection Shield to be Removed & Reinstalled to facilitate work. Cost included with Furnishing & Erecting Structural Steel or Beam Straightening.

GENERAL NOTES

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

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".

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

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".

Grind existing nicks, gouges and shallow cracks in the damaged beams as detailed. Grinding shall be done parallel to the longitudinal axis of the member. Ground surfaces shall be inspected for cracks using dye penetrant or magnetic particle testing prior to initiating any beam straightening operations. Any cracks that cannot be removed by grinding approximately $\frac{1}{8}$" 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.

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.

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".

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

If the analysis submitted to the Contractor for the jacking/temporary support system to be used shows temporary stiffeners are required to prevent web crippling or buckling, the stiffeners shall be steel and bolted to the web. If stiffeners are not required, hardwood timbers shall be installed tightly between the top and bottom flange to prevent flange rotation.

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.

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

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	0.5
Concrete Superstructure	Cu. Yd.	0.5
Furnishing and Erecting Structural Steel	Pound	6130
Temporary Slab Support System	L.S.	1
Beam Straightening	L.S.	0.5
Temporary Shoring and Cribbing	L.S.	1
Structural Steel Removal	Pound	5640

DESIGNED	Victor A. Velit
CHECKED	Dirk D. Jobst
DRAWN	Kyle M. Steffen
CHECKED	VHV ISL

JUNE 15, 2010
EXAMINED — ENGINEER OF STRUCTURAL SERVICES
PASSED — ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS
RALPH E. ANDERSON
081-004625
SPRINGFIELD
LICENSED STRUCTURAL ENGINEER

Expires: November 30, 2010

PLAN & ELEVATION
PINECREST DRIVE
OVER F.A.I. RTE. 74
SN 090-0091

SHEET NO. 1	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4 SHEETS	74	[90-14HB-1(BR)]I	TAZEWELL	17	10
			CONTRACT NO. 68976		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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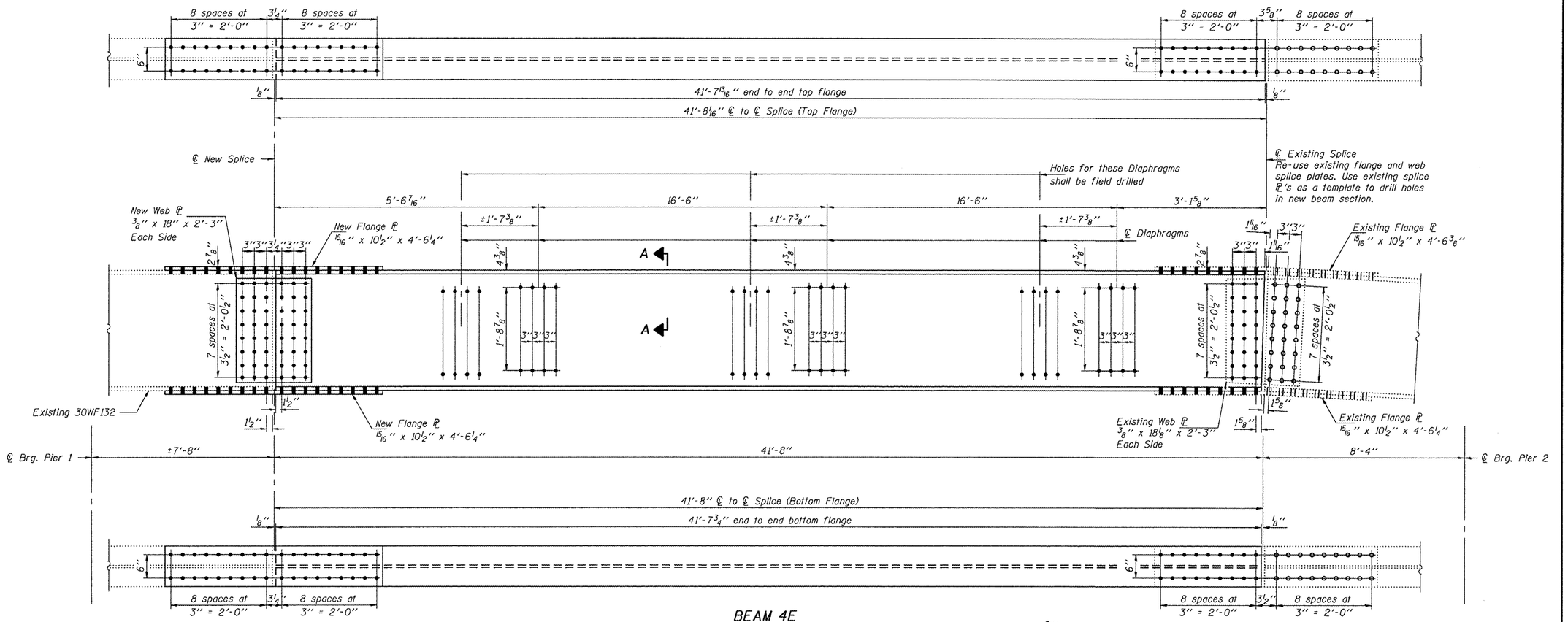
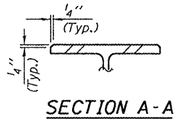
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

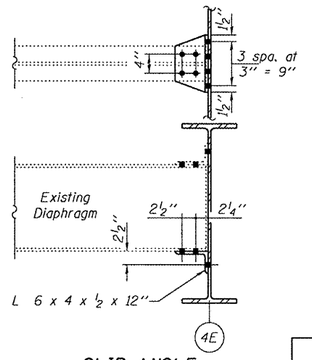


BEAM 4E

W30x132 x 41'-7 13/16" (1 Req'd) N.T.R.
Web ℄ ⅜" x 18" x 2'-3" (2 Req'd) N.T.R.
Flange ℄ 15/16" x 10½" x 4'-6¼" (2 Req'd) N.T.R.



SECTION A-A



CLIP ANGLE REPLACEMENT DETAIL
(Typ. both sides of Beam 4E)

DESIGNED	VHV
CHECKED	IJL
DRAWN	Kyle M. Steffen
CHECKED	VHV IJL

JUNE 15, 2010
EXAMINED — ENGINEER OF STRUCTURAL SERVICES
PASSED — ENGINEER OF BRIDGES AND STRUCTURES

BEAM DETAILS
PINECREST DRIVE
OVER F.A.I. RTE. 74
SN 090-0091

SHEET NO. 2	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4 SHEETS	74	(90-14HB-1(BR))I	TAZEWELL	17	11
			CONTRACT NO. 68976		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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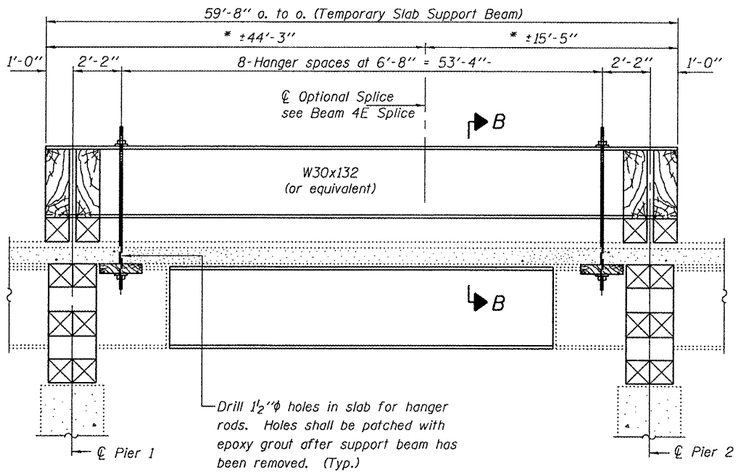
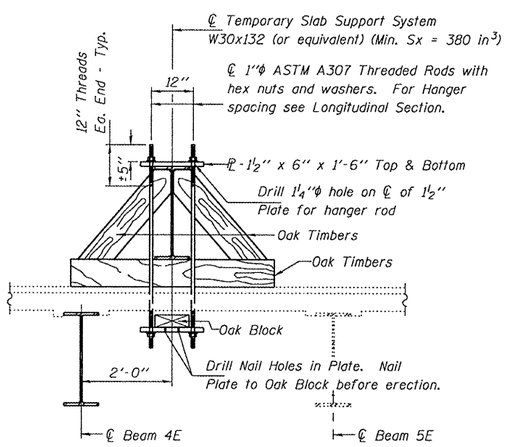
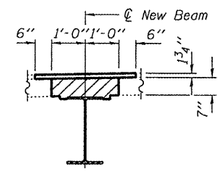
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



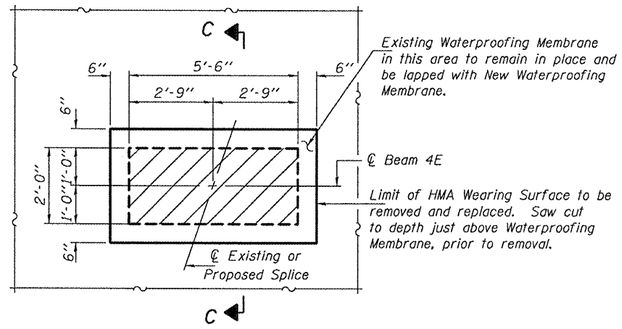
LONGITUDINAL SECTION SUGGESTED TEMPORARY SLAB SUPPORT SYSTEM



SECTION B-B



SECTION C-C



TYPICAL CONCRETE & HMA WEARING SURFACE REMOVAL AND REPLACEMENT

Hatched areas indicate concrete sections to be removed and replaced. Perimeters of concrete removal areas shall be saw cut ¾" 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.

The cost of removing and replacing the existing HMA wearing surface, waterproofing membrane, and saw cutting shall be included with Concrete Removal.

DESIGNED	VHV
CHECKED	IJL
DRAWN	Kyle M. Steffen
CHECKED	VHV IJL

JUNE 15, 2010

EXAMINED _____ ENGINEER OF STRUCTURAL SERVICES

PASSED _____ ENGINEER OF BRIDGES AND STRUCTURES

REPAIR DETAILS PINECREST DRIVE OVER F.A.I. RTE. 74 SN 090-0091

SHEET NO. 3	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4 SHEETS	74	[90-14HB-1(BR)]]	TAZEWELL	17	12
			CONTRACT NO. 68976		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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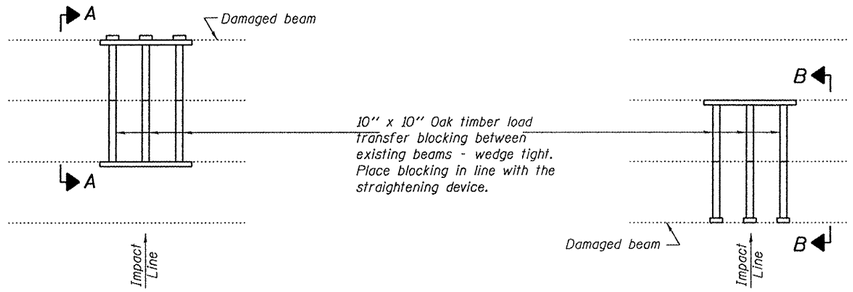
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

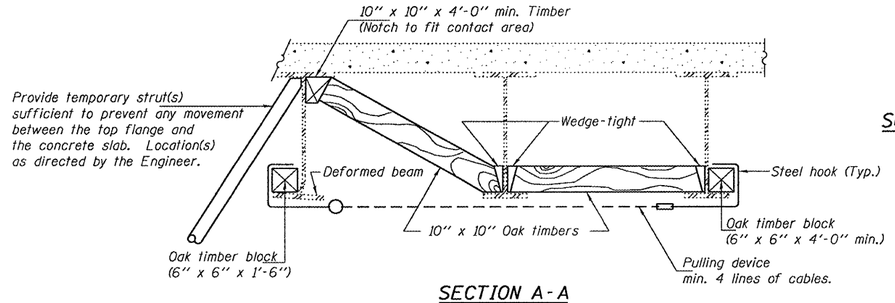


PULLING DEVICE

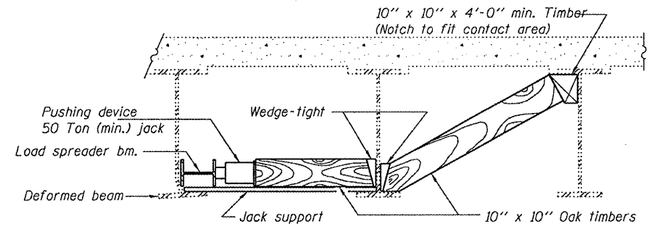
PUSHING DEVICE

PARTIAL PLANS
SUGGESTED BEAM STRAIGHTENING METHODS

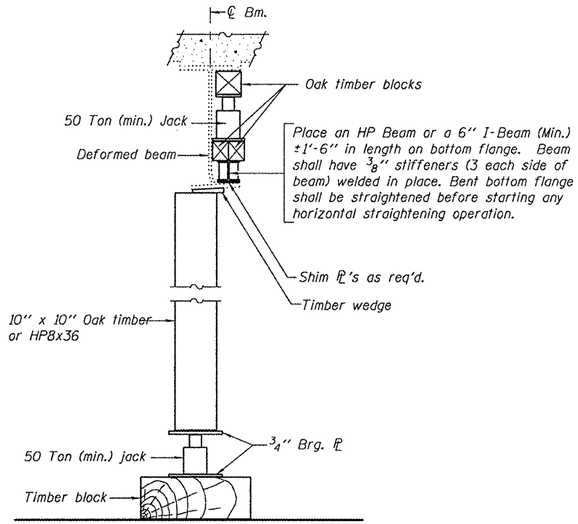
Straightening force shall be maintained on all load transfer blocking during beam straightening.



SECTION A-A

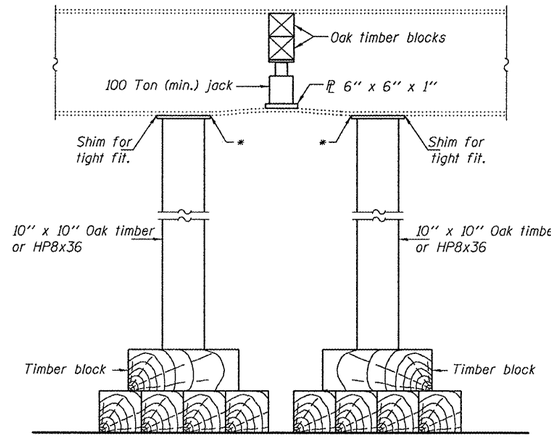


SECTION B-B



SUGGESTED VERTICAL STRAIGHTENING DETAIL

(To correct flange rotation.)

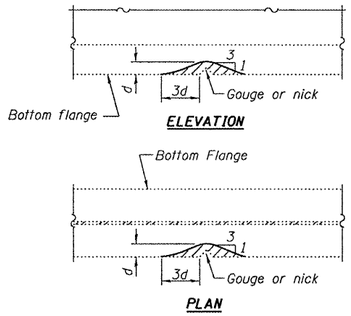


SUGGESTED VERTICAL STRAIGHTENING DETAIL

(To correct localized vertical flange deformations.)

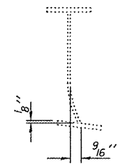
* *Edge of plate shall line up with edge of deformation.*

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.



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 North)
(Approximate max. deflections)
Deflected length of beam to be straightened is approximately 8'.

DESIGNED	VHV
CHECKED	IJL
DRAWN	Kyle M. Steffen
CHECKED	VHV IJL

JUNE 15, 2010
EXAMINED — ENGINEER OF STRUCTURAL SERVICES
PASSED — ENGINEER OF BRIDGES AND STRUCTURES

REP-1 1-14-2005

BEAM STRAIGHTENING DETAILS
PINECREST DRIVE OVER F.A.I. RTE. 74
SN 090-0091

SHEET NO. 4	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4 SHEETS	74	[90-14HB-1(BR)]I	TAZEWELL	17	13
			CONTRACT NO. 68976		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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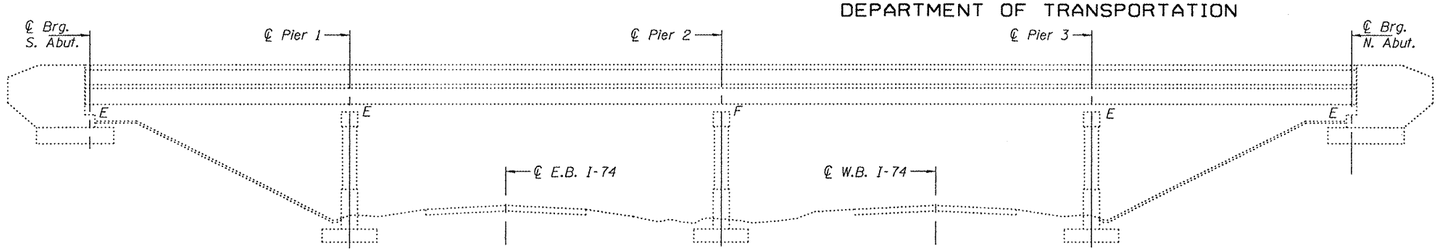
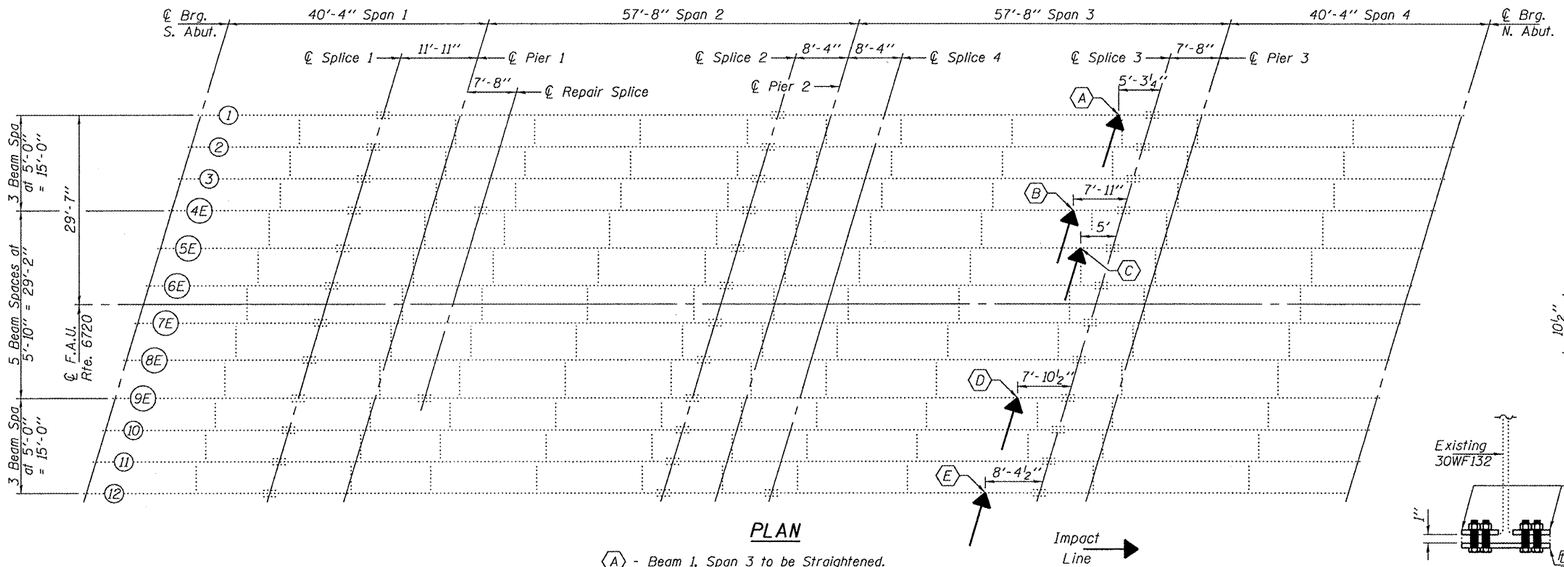
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



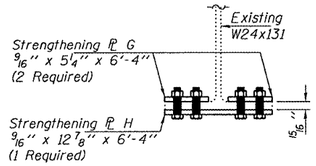
ELEVATION

Z

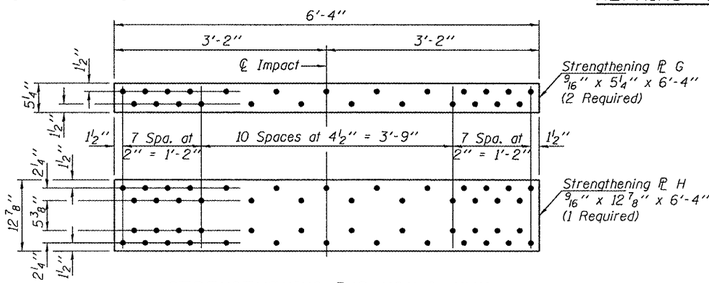


PLAN

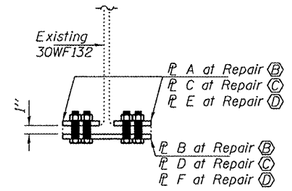
(A) - Beam 1, Span 3 to be Straightened.
(B) - Beam 4E, Span 3 to be Straightened & Strengthened.
(C) - Beam 5E, Span 3 to be Straightened & Strengthened.
(D) - Beam 9E, Span 3 to be Straightened & Strengthened.
(E) - Beam 12, Span 3 to be Straightened & Strengthened.



STRENGTHENING DETAIL AT REPAIR "E"



STRENGTHENING ℙ'S "G" & "H"



STRENGTHENING DETAIL FOR REPAIRS "B" THRU "D"

GENERAL NOTES

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

Fasteners shall be high strength bolts. Bolts $\frac{7}{8}$"ϕ, open holes $\frac{15}{16}$"ϕ, unless otherwise noted.

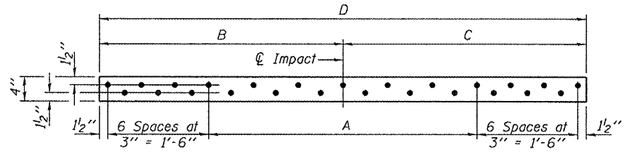
After the new beam is in its final position and/or beam straightening operations have been completed, the Engineer in the field shall check to see that the top flange is tight against the slab. If not, the Contractor shall inject epoxy between the existing concrete deck and the top flange of the beam. See Special Provision "Epoxy Injection".

Plan dimensions and details relative to existing plans are subject to 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.

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

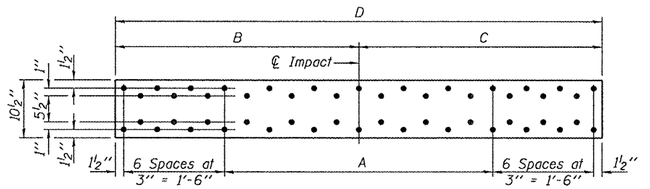
Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".

All structural steel shall be shop painted with the inorganic zinc rich primer per AASHTO M300, Type 1. Cost included with Structural Steel Repair.



STRENGTHENING ℙ'S "A", "C", & "E"

ℙ $\frac{5}{8}$" x 4" x D
(See Table for Dimensions)



STRENGTHENING ℙ'S "B", "D", & "F"

ℙ $\frac{5}{8}$" x 10½" x D
(See Table for Dimensions)

TABLE OF DIMENSIONS

	A	B	C	D	# Req'd
ℙ A	24 spa. at 4½" = 9'-0"	6'-7½"	5'-7½"	12'-3"	2
ℙ B	24 spa. at 4½" = 9'-0"	6'-7½"	5'-7½"	12'-3"	1
ℙ C	8 spa. at 4½" = 3'-0"	3'-6½"	2'-8½"	6'-3"	2
ℙ D	8 spa. at 4½" = 3'-0"	3'-6½"	2'-8½"	6'-3"	1
ℙ E	12 spa. at 4" = 4'-0"	3'-7½"	3'-7½"	7'-3"	2
ℙ F	12 spa. at 4" = 4'-0"	3'-7½"	3'-7½"	7'-3"	1

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Steel Repair	Pound	1500
Beam Straightening	L.S.	0.5

DESIGNED		
CHECKED		
DRAWN	Kyle M. Steffen	
CHECKED		

JUNE 15, 2010
EXAMINED — ENGINEER OF STRUCTURAL SERVICES
PASSED — ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS
RALPH E. ANDERSON
081-004625
LICENSED STRUCTURAL ENGINEER
SPRINGFIELD

Expires: November 30, 2010

PLAN & ELEVATION
PINECREST DRIVE OVER F.A.I. RTE. 74
SN 090-0091

SHEET NO. 1	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2 SHEETS	74	[90-14HB-1(BR)]I	TAZEWELL	17	14
			CONTRACT NO. 68976		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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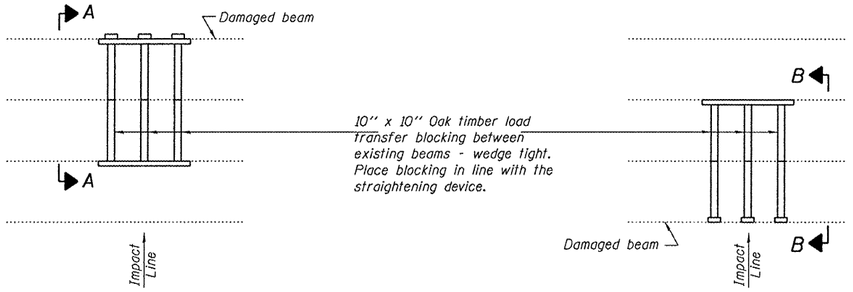
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

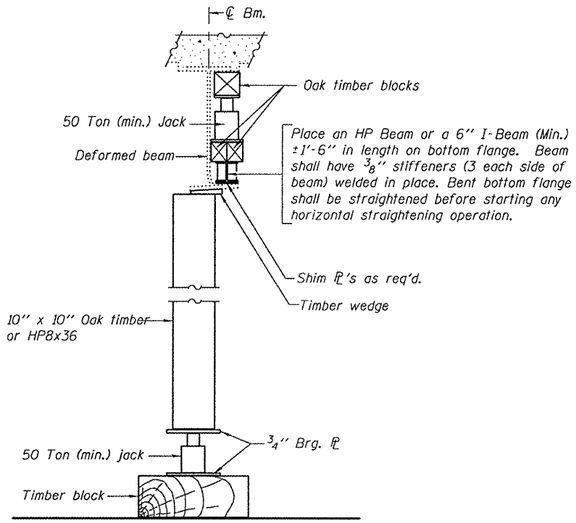


PULLING DEVICE

PUSHING DEVICE

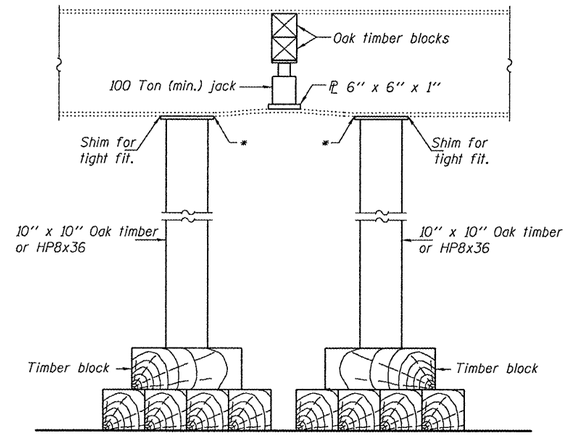
PARTIAL PLANS
SUGGESTED BEAM STRAIGHTENING METHODS

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



SUGGESTED VERTICAL STRAIGHTENING DETAIL

(To correct flange rotation.)

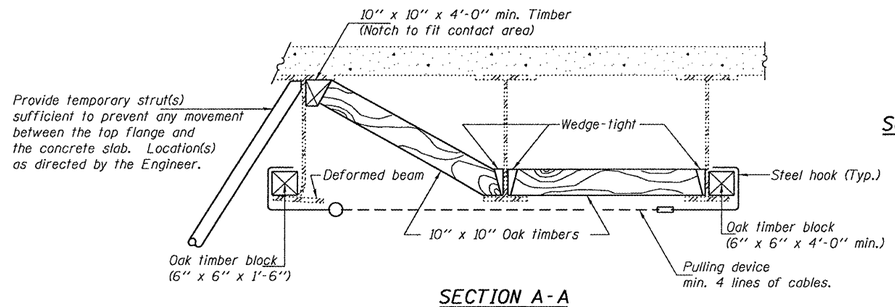


SUGGESTED VERTICAL STRAIGHTENING DETAIL

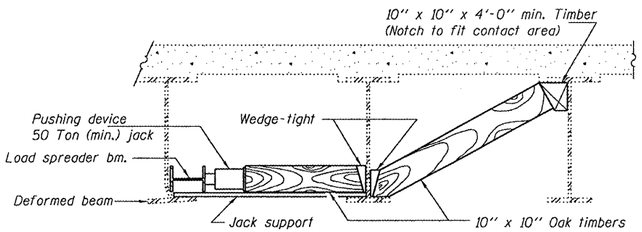
(To correct localized vertical flange deformations.)

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

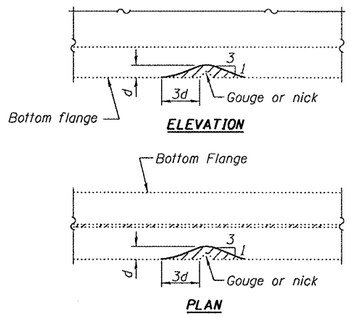
Note:
Braces and jack assembly shall be placed on same side of web.
Bent bottom flange shall be straightened before starting any horizontal straightening operations.



SECTION A-A



SECTION B-B

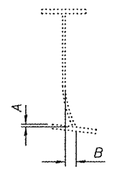


GRINDING DETAIL

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 DEFORMATIONS

Beam	A	B	C
1	1/4''	3/8''	3'-0''
4E	5/8''	3/4''	9'-0''
5E	1/8''	3/8''	3'-0''
9E	1 1/8''	1 5/16''	4'-0''
12	7/8''	2''	3'-9''



EXISTING DEFORMATION TO BE STRAIGHTENED

(Looking South)
(Approximate max. deflections)
Deflected length of beam to be straightened is approximately "C".

DESIGNED	GGE		
CHECKED	IJL		
DRAWN	Kyle M. Steffen		
CHECKED	GGE	IJL	

EXAMINED — JUNE 15, 2010
ENGINEER OF STRUCTURAL SERVICES

PASSED
ENGINEER OF BRIDGES AND STRUCTURES

REP-1 1-14-2005

BEAM STRAIGHTENING DETAILS
PINECREST DRIVE OVER F.A.I. RTE. 74
SN 090-0091

SHEET NO. 2	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2 SHEETS	74	[90-14HB-1(BR)]]	TAZEWELL	17	15
			CONTRACT NO. 68976		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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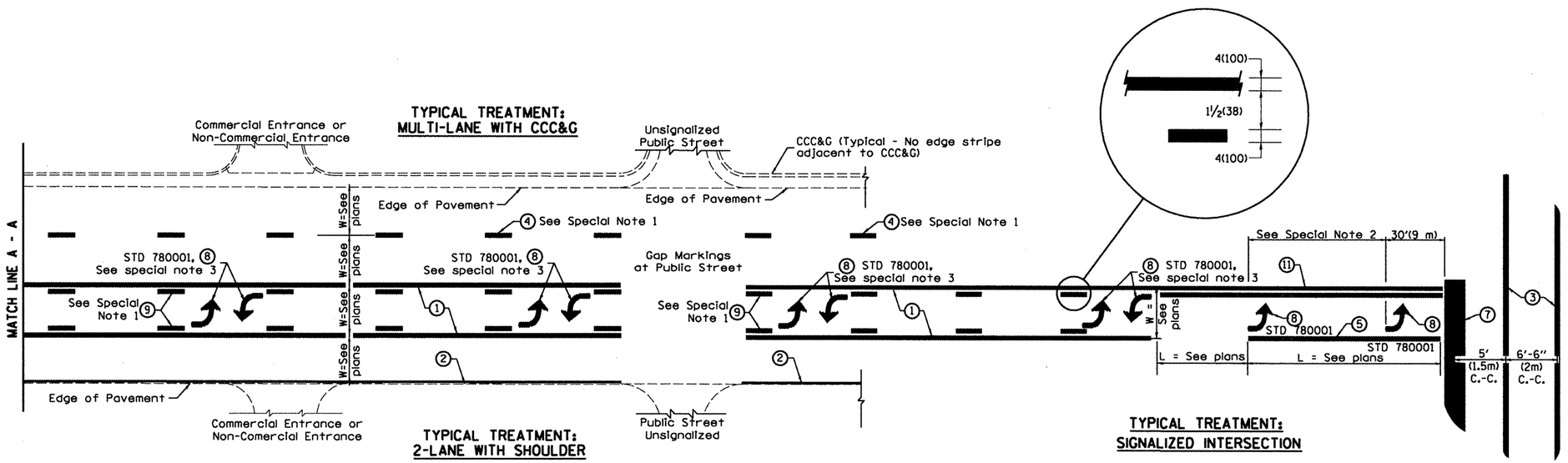


FLUSH PAVED MEDIAN: TWO-WAY LEFT TURN LANE WITH ONE-WAY LEFT TURN LANE AT SIGNALIZED INTERSECTION

DESIGNER NOTES:
1. Include State Standard 780001 (Typical Pavement Markings)

TYPICAL PAVEMENT MARKING LEGEND

(Note: This is a District Standard Legend. Some elements may not apply to specific project.)

1. 4(100) Solid (Yellow)
2. 4(100) Solid (White)
3. 2-6(150) Crosswalk @ 6'-6" (2m)min C.-C. (White)
   2-8(200) Crosswalk @ 6'-6" (2m)min C.-C. (White) (When traffic signals are present.)
4. 6(150) Skip-Dash (White) — 10' (3.05m) / 30' (9.14m) / 10' (3.05m) (See Special Note 1)
5. 8(200) Solid (White)
6. 12(300) Diagonal (White) (Item 6 is shown on Std. 780001)
7. 24(600) Stop Bar (White)
8. Letters & Arrows — 33' (10m) (See Std. 780001 and Special Notes 2 & 3)
9. 4(100) Skip-Dash (Yellow) — 10' (3.05m) / 30' (9.14m) / 10' (3.05m) (See Special Note 1)
10. 12(300) Diagonal (Yellow) (See Table A) — 45°, See Table A
11. 4(100) Double Solid (Yellow) — 11(280) C.-C.

SPECIAL NOTES

1. Skip-Dash markings will be centered between both ends of city blocks and shall be placed in alignment transversly across the pavement.
2. The following shall apply to arrows located in one-way left turn lanes:
   A. A minimum of two (2) arrows is required.
   B. The maximum spacing between arrows is 80' (24 m).
   C. Arrows shall be evenly spaced if three (3) or more are required.
3. The following shall apply to arrow pairs located in two-way left turn lanes:
   A. A minimum of two (2) arrow pairs is required.
   B. The maximum spacing between arrow pairs is 200' (61 m).
   C. Arrow pairs shall be evenly spaced if three (3) or more are required.
   D. The spacing between Bi Directional Left Turn Arrows is 33' (10 m).

GENERAL NOTES

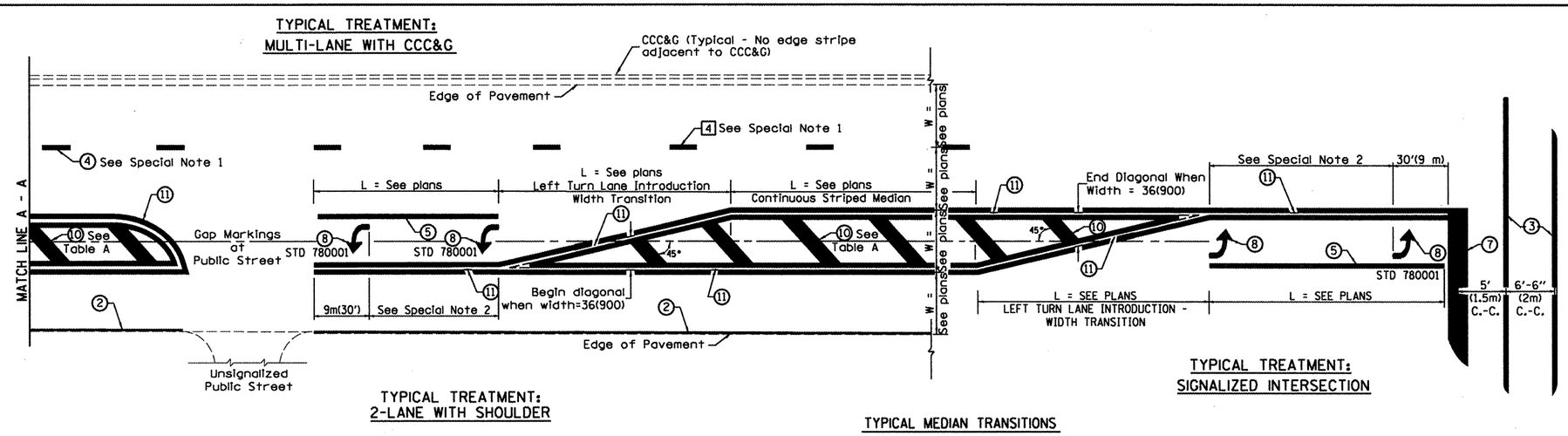
1. Refer to State Standard 780001 for additional Pavement Markings including letters & arrows.
2. See Plans for Pavement Markings adjacent to curbed islands and medians, and through lane reductions.

01-01-97	BENUM. F-8.03, NEW REVISION BOX	I.P.	10-16-06	REVISED TO 2007 SPEC.	
02-07-97	ADD BI DIRECTIONAL DIMENSION	J.B.			
10-97	CORRECT BI DIRECTIONAL DIMENSION	J.B.			
08-02	ADD CROSSWALK DIMNS., WITH I.S.	M.B.			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPICAL PAVEMENT MARKINGS
NOT TO SCALE
SHT._1_OF_2
C400_STD._780001-04

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(90-14HB-1(BR))I	TAZEWELL	17	16
		CONTRACT NO. 68976		
FED. ROAD DIST. NO. 4	ILLINOIS	FED. AID PROJECT		

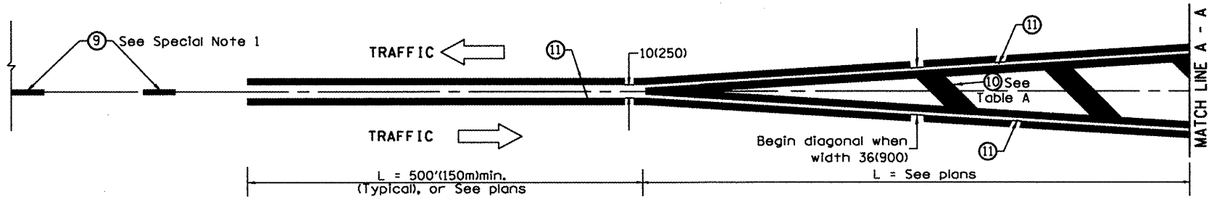


FLUSH PAVED MEDIAN: RESTRICTED LEFT TURN LANE

TABLE A

RECOMMENDED SPACING BETWEEN DIAGONAL LINES

SPEED LIMIT RANGE	CONTINUOUS	INTERSECTION CHANNELIZATION (Includes Width Transitions for Median and Left Turn Lane Introductions)
Less Than 30 mph (50 km/h)	50' (15m)	15' (5m)
30 - 45 mph (50 - 70 km/h)	75' (23m)	20' (6m)
Over 45 mph (70 km/h)	150' (46m)	30' (9m)



MEDIAN INTRODUCTION - WIDTH TRANSITIONS

All dimensions are in inches (millimeters) unless otherwise noted.

				STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TYPICAL PAVEMENT MARKINGS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS / SHEET NO.
						74	(90-14HB-1(BR))I	TAZEWELL	17 / 17
									CONTRACT NO. 68976
					NOT TO SCALE	FED. ROAD DIST. NO. 4	ILLINOIS	FED. AID PROJECT	

SHT. 2 OF 2
C400 SIG. 780001-04