

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

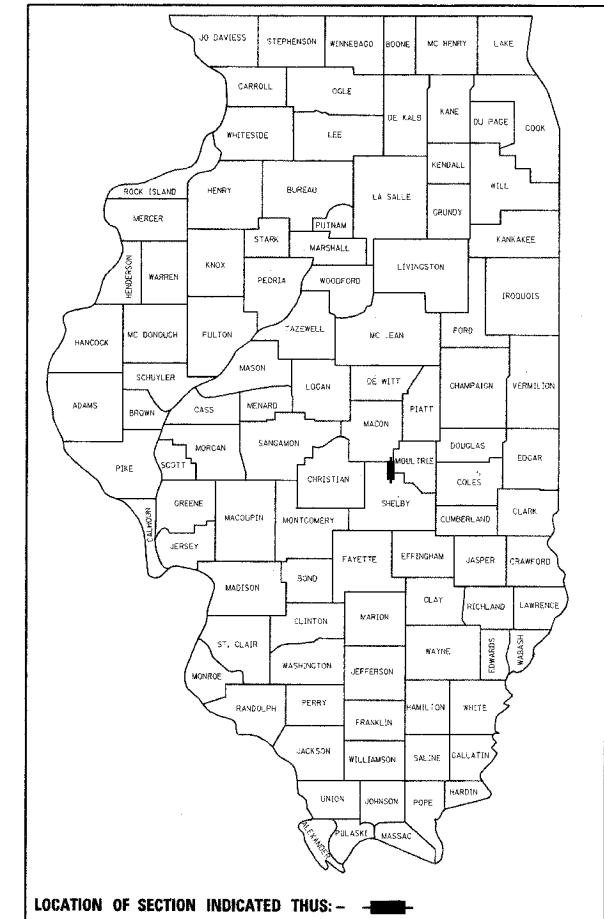
**PROPOSED
 HIGHWAY PLANS**

FAP ROUTE 770 (IL 128)
 D7 BEAM REPAIR 2008-6

MOULTRIE COUNTY
 C-97-059-08

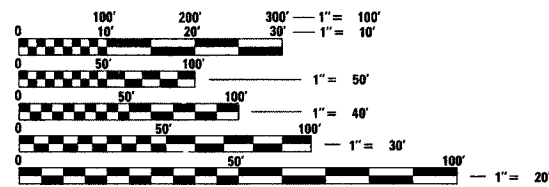
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
770	D7 BEAM REPAIR 2008-6	MOULTRIE	7	1
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO. 74309		

D-97-022-08



FOR INDEX OF SHEETS, SEE SHEET NO. 2

ADT (2005) = 2800

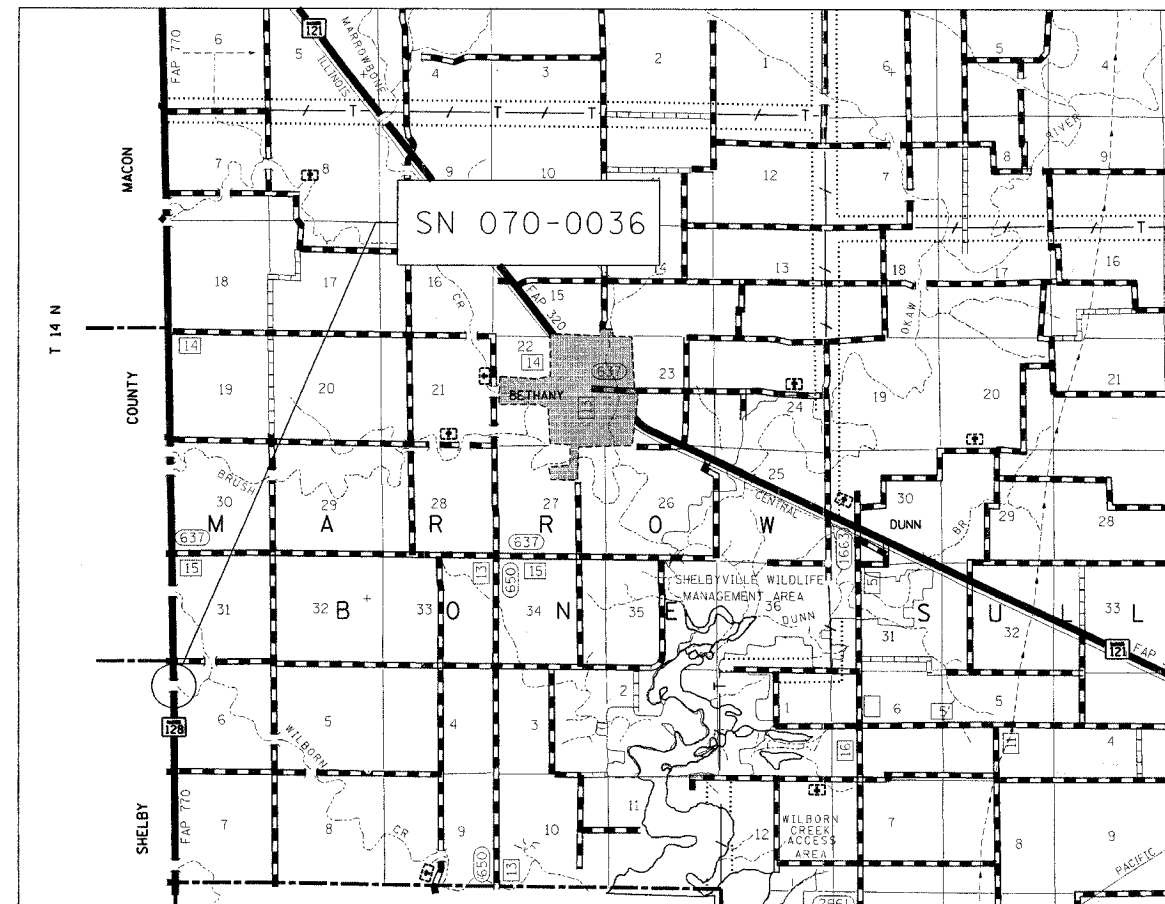


FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

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

PROJECT ENGINEER: MARK DAUGHERTY
 PROJECT MANAGER: BRIAN J. BIERMAN

CONTRACT NO. 74309



STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

SUBMITTED April 8 20 08

Christine M. Reed
 DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

May 9, 20 08
Eric E. Harsh
 INTERIM ENGINEER OF DESIGN AND ENVIRONMENT

May 9, 20 08
Christine M. Reed
 DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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 OF THE STATE OF ILLINOIS

GENERAL NOTES

PLAN DIMENSIONS AND DETAILS RELATIVE TO THE EXISTING STRUCTURE HAVE BEEN TAKEN FROM EXISTING PLANS AND ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. IT SHALL BE THE CONTRACTOR RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO THE CONSTRUCTION OR ORDERING OF MATERIAL. SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION OR A CHANGE IN THE SCOPE OF THE WORK. THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT PRICE BID FOR THE WORK.

THE CONTRACTOR SHALL PROVIDE INTERNET ACCESSIBILITY TO THE HOT-MIX ASPHALT PLANT QUALITY CONTROL LAB SO THAT HOT-MIX ASPHALT PLANT REPORTS CAN BE E-MAILED TO THE DISTRICT HEADQUARTERS. THIS WORK SHALL BE INCLUDED IN THE COST OF ALL HOT-MIX ASPHALT ITEMS.

THE COST OF EARTH EXCAVATION (WIDENING) SHALL BE INCLUDED IN THE COST OF BASE COURSE WIDENING 10".

ALL TEMPORARY PAVEMENT MARKING SHOWN ON TRAFFIC STANDARD 701321 SHALL BE TAPE.

THE TOTAL QUANTITY OF PAINT PAVEMENT MARKING CONSISTS OF THE FOLLOWING:

	YELLOW	WHITE
PAINT PAVEMENT MARKING - LINE 4"	117 FT	289 FT

INDEX OF SHEETS

SHEET NO	TITLE
1	COVER SHEET
2	GENERAL NOTES, INDEX OF SHEETS, LIST OF HIGHWAY STANDARDS
3	SUMMARY OF QUANTITIES
4	STAGE CONSTRUCTION DETAILS
5-7	BEAM REPLACEMENT PLANS

THE FOLLOWING STANDARDS ARE A PART OF THESE PLANS AND ARE INCLUDED FOLLOWING THE LAST NUMBERED SHEET OF THE PLANS.

STD. NO.	DESCRIPTION
000001-05	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-01	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF AN INCH AND OF A FOOT
635011-01	REFLECTOR MARKER AND MOUNTING DETAILS
701001-01	OFF-RD OPERATIONS, 2L, 2W, MORE THAN 15' AWAY
701006-02	OFF-RD OPERATIONS, 2L, 2W, 15' TO 24" FROM PAVEMENT EDGE
701201-02	LANE CLOSURE, 2L, 2W, DAY ONLY, FOR SPEEDS >= 45 MPH
701206-01	LANE CLOSURE, 2L, 2W, NIGHT ONLY, FOR SPEEDS >= 45 MPH
701301-02	LANE CLOSURE, 2L, 2W, SHORT TIME OPERATIONS
701321-09	LANE CLOSURE, 2L, 2W, BRIDGE REPAIR WITH BARRIER
701326-02	LANE CLOSURE, 2L, 2W, PAVEMENT WIDENING, FOR SPEEDS >= 45 MPH
701901	TRAFFIC CONTROL DEVICES
704001-04	TEMPORARY CONCRETE BARRIER
720001	SIGN PANEL MOUNTING DETAILS
720006-01	SIGN PANEL ERECTION DETAILS
720011	METAL POSTS FOR SIGNS, MARKERS & DELINEATORS
729001	APPLICATIONS OF TYPES OF A & B POSTS (FOR SIGNS & MARKERS)
780001-C1	TYPICAL PAVEMENT MARKINGS
886001	DETECTOR LOOP INSTALLATIONS
886006	TYPICAL LAYOUTS FOR DETECTION LOOPS

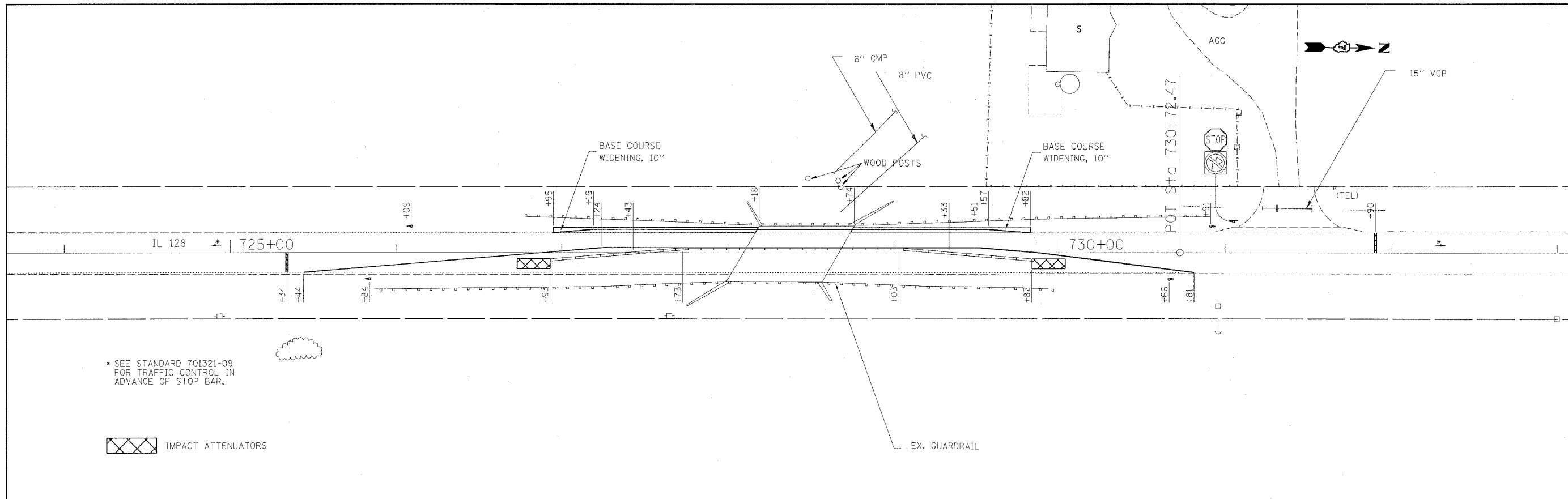
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PLOT SCALE = 20,0000' / 1" IN.	CHECKED -	REVISED -	SCALE:			SHEET NO. OF SHEETS STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT	CONTRACT NO. 74309	
PLOT DATE = 4/9/2008	DATE -	REVISED -								

SUMMARY OF QUANTITIES			100% STATE	CONSTRUCTION TYPE CODE	
CODE NO	ITEM	UNIT	TOTAL QUANTITIES	SFTY-2A	
35650500	BASE COURSE WIDENING 10"	SQ YD	77	77	
40603320	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N90	TON	0	0	
44001005	HOT-MIX ASPHALT SURFACE REMOVAL	SQ YD	7	7	
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	340	340	
58100200	WATERPROOFING MEMBRANE SYSTEM	SQ YD	45	45	
58300100	PORTLAND CEMENT MORTAR FAIRING COURSE	FOOT	172	172	
67100100	MOBILIZATION	L SUM	1	1	
70100405	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321	EACH	1	1	
70100500	TRAFFIC CONTROL AND PROTECTION, STANDARD 701326	L SUM	1	1	
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1	1	
70106700	TEMPORARY RUMBLE STRIP	EACH	6	6	
70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ FT	275	275	
70400100	TEMPORARY CONCRETE BARRIER	FOOT	290	290	
* 78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	406	406	
78300500	PAINT PAVEMENT MARKING REMOVAL	SQ FT	135	135	
X0320047	REMOVAL OF EXISTING PRECAST PRESTRESSED CONCRETE DECK BEAMS	SQ FT	345	345	
Z0001900	ASBESTOS BEARING PAD REMOVAL	EACH	2	2	
Z0030250	IMPACT ATTENUATORS, TEMPORARY (NON- REDIRECTIVE), TEST LEVEL 3	EACH	2	2	

*SPECIALTY ITEMS

Rev.

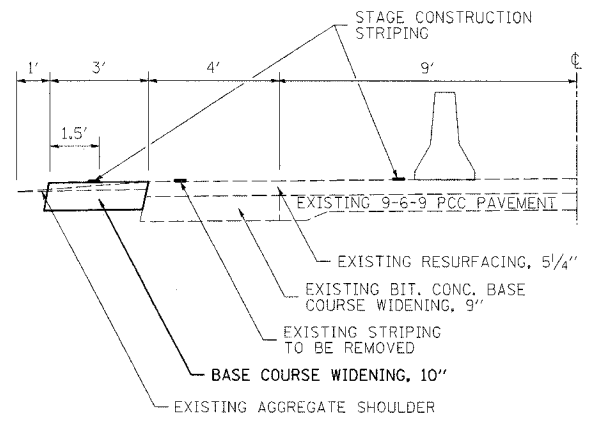
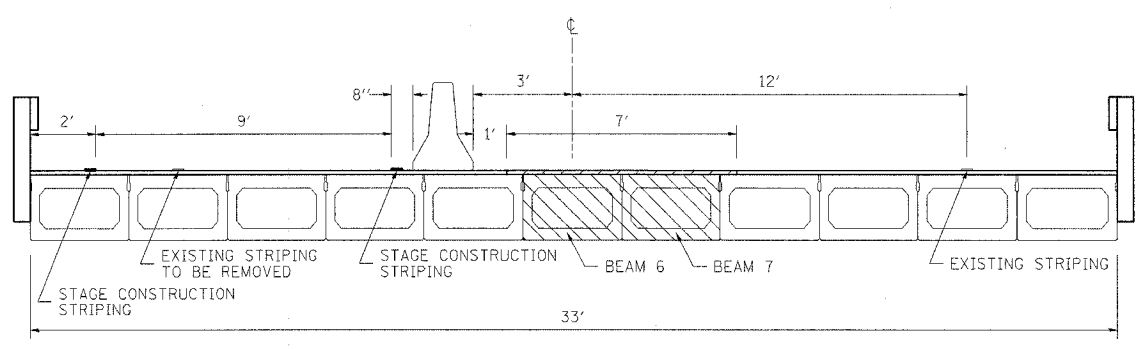
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		DRAWN -	REVISED -			770	DT BEAM REPAIR 2008-6	MOULTRIE	7	3	
		CHECKED -	REVISED -			CONTRACT NO. 74309					
		DATE -	REVISED -			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					



* SEE STANDARD 701321-09 FOR TRAFFIC CONTROL IN ADVANCE OF STOP BAR.

IMPACT ATTENUATORS

EX. GUARDRAIL



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PLT DATE = 4/8/2008		DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

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

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
770	D7 BEAM REPAIR 2008-6	MOULTRIE	7	4
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
			CONTRACT NO. 74309	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET NO.
FAP 770	ΔΔ	Moultrie	7	5
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Contract Number: 74309
ΔΔ D7 Beam Repair 2008-6

GENERAL NOTES

The contractor is advised that the existing PPC Deck Beams are in a deteriorated condition with reduced load carrying capacity. It is the contractor's responsibility to account for the condition of the beams when developing construction procedures.

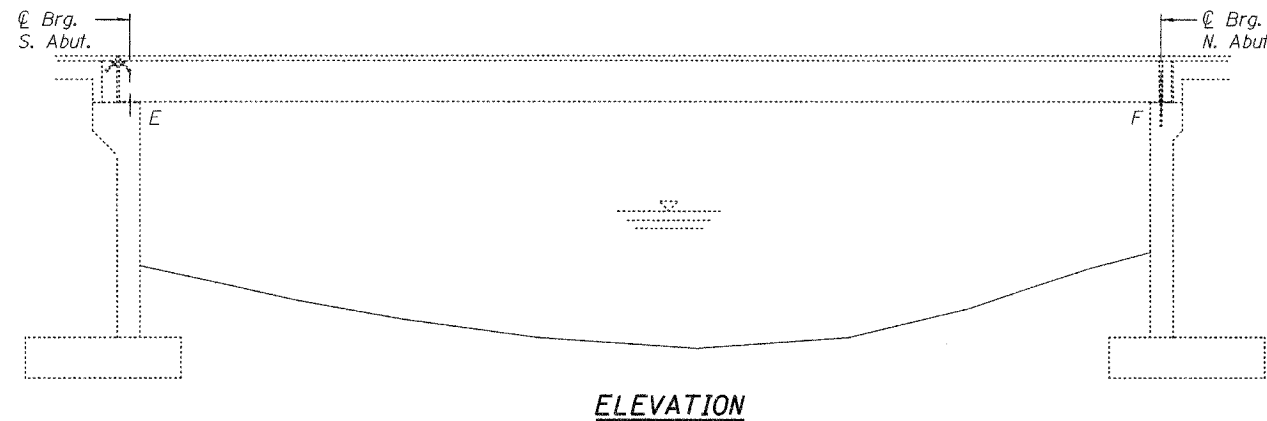
If the contractor's procedure for existing beam removal or placement of new beams involves placement of cranes or other heavy equipment on the bridge, a detailed procedure shall be submitted to the Engineer for approval. The procedure shall include calculations, prepared and sealed by an Illinois Licensed Structural Engineer, verifying that the equipment and procedure used will not overstress the new or existing beams. To distribute load to multiple beams and protect the existing surface, in all cases a double layer mat of heavy timbers shall be used at all times under crane tracks or wheels and any outriggers in the down position. If necessary, shims shall be used under the crane mat to ensure uniform contact with the underlying beams. If heavy equipment will be placed on new PPC deck beams, the following shall be done prior to placement of the timber mats: placement and tightening of transverse tie assemblies, grouting and curing the dowel rods 24 hours minimum and grouting and curing the shear keys.

Any damage done to the bridge during beam removal shall be repaired by the Contractor. Cost to be included in the cost of Removal of Existing PPC Deck Beams.

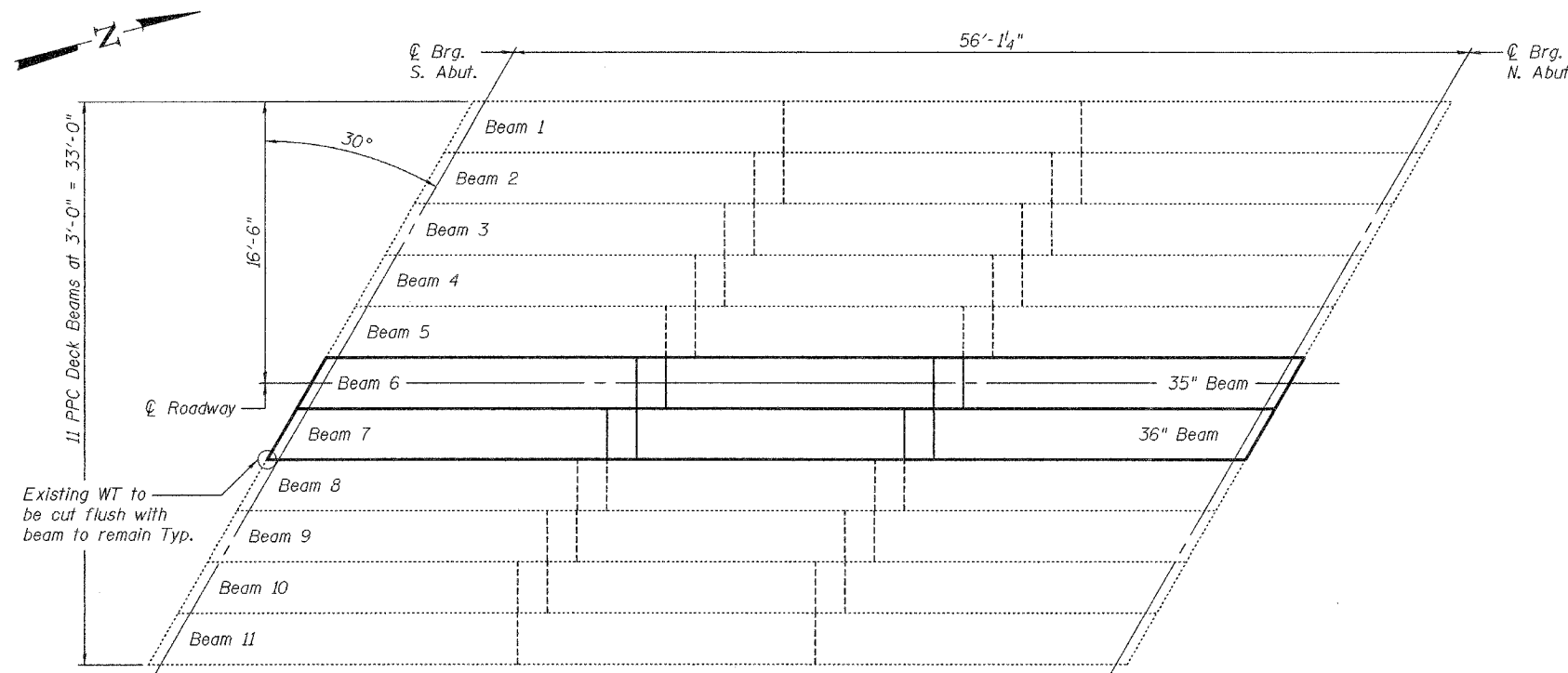
The top surface of the beams shall be finished according to the IDOT Manual for Fabrication of Precast Prestressed Concrete Products.

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.

The Temporary Concrete Barrier shall be anchored into the overlay and not the PPC Deck Beams.



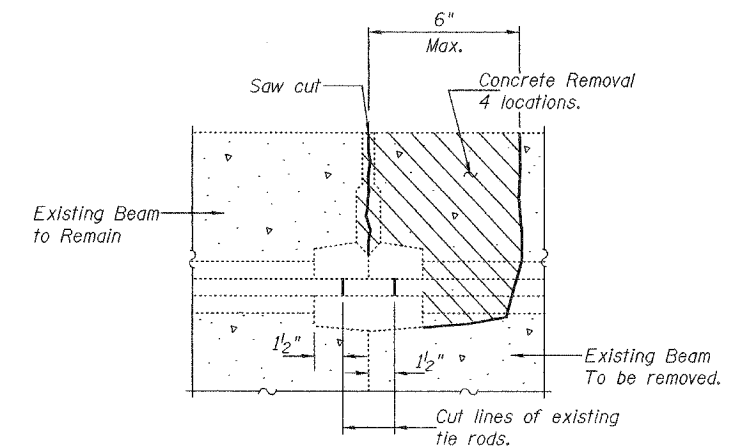
ELEVATION



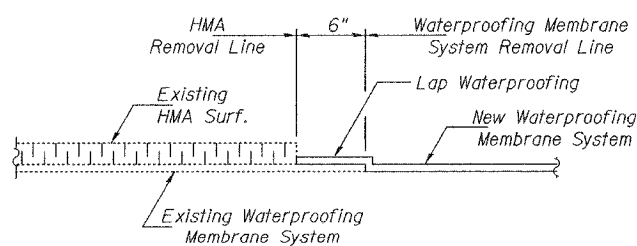
PLAN

**DESIGN STRESSES
PRECAST UNITS**

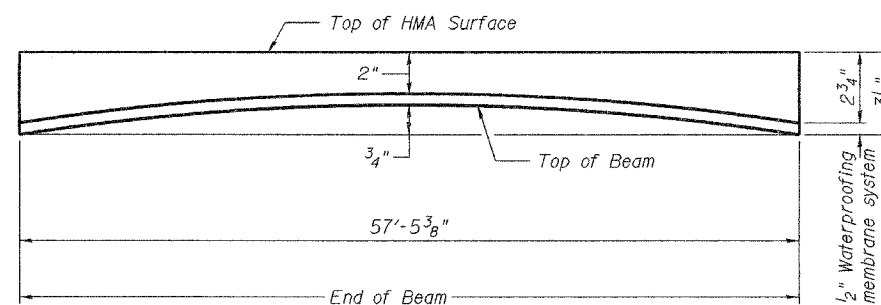
$f'c = 6,000$ psi
 $f'ci = 5,000$ psi
 $f's = 270,000$ psi ($1/2$ " ϕ low lax strands)
 $f'si = 201,960$ psi ($1/2$ " ϕ low lax strands)



**BEAM REMOVAL DETAIL
AT TRANSVERSE TIES**



WATERPROOFING TREATMENT



ANTICIPATED INITIAL CAMBER DIAGRAM

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
HMA Surface Removal	Sq. Yd.	6.8
HMA Surface Course, Mix C N90	Tons	6.0
Removal of Existing PPC Deck Beams	Sq. Ft.	344.7
PPC Deck Beams (Depth = 27")	Sq. Ft.	339.9
Waterproofing Membrane System	Sq. Yd.	45.1
PC Mortar Fairing Course	Foot	172.3
Asbestos Bearing Pad Removal	Each	2

**PLAN AND ELEVATION
F.A.P. RT. 770
MOULTRIE COUNTY
SN 070-0036**

DESIGNED	<i>[Signature]</i>
CHECKED	Victor A. Veliz
DRAWN	<i>[Signature]</i>
CHECKED	AJB

May 9, 2008
EXAMINED *[Signature]*
PASSED *[Signature]*
ENGINEER OF STRUCTURAL SERVICES
ENGINEER OF BRIDGES AND STRUCTURES



Expires: November 30, 2008

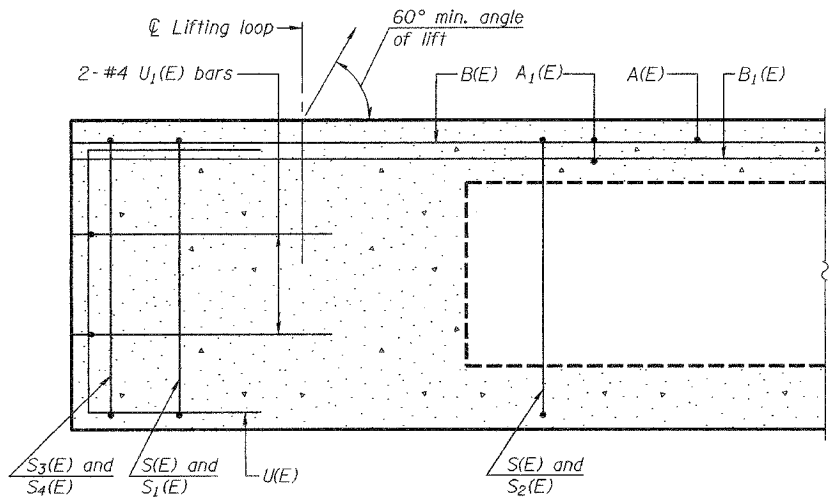
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 770	ΔΔ	Moultrie	7	6
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

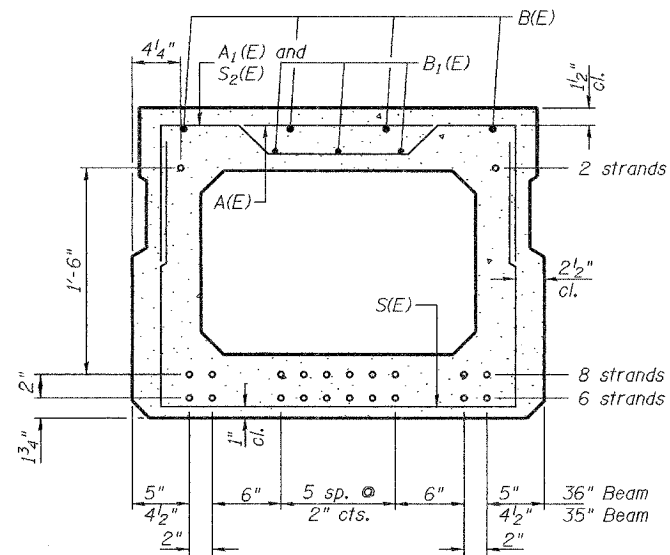
SHEET NO. 2

3 SHEETS

Contract Number: 74309
ΔΔ D7 Beam Repair 2008-6

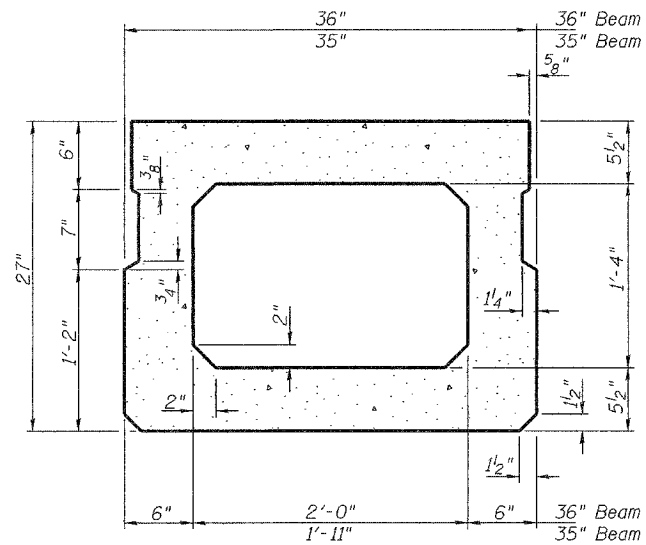


SECTION C-C



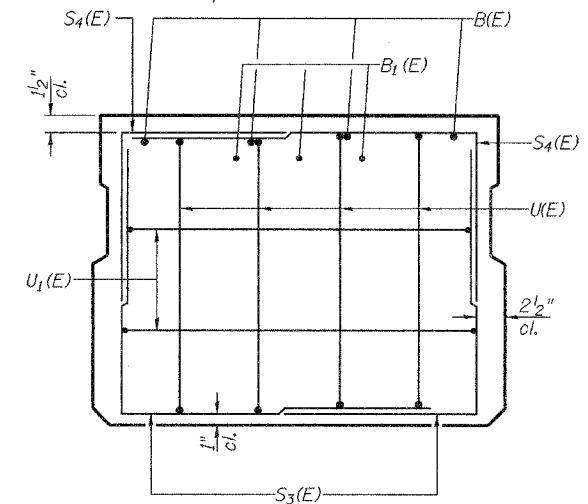
SECTION A-A

(Showing reinforcement and permissible strand locations)
Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.



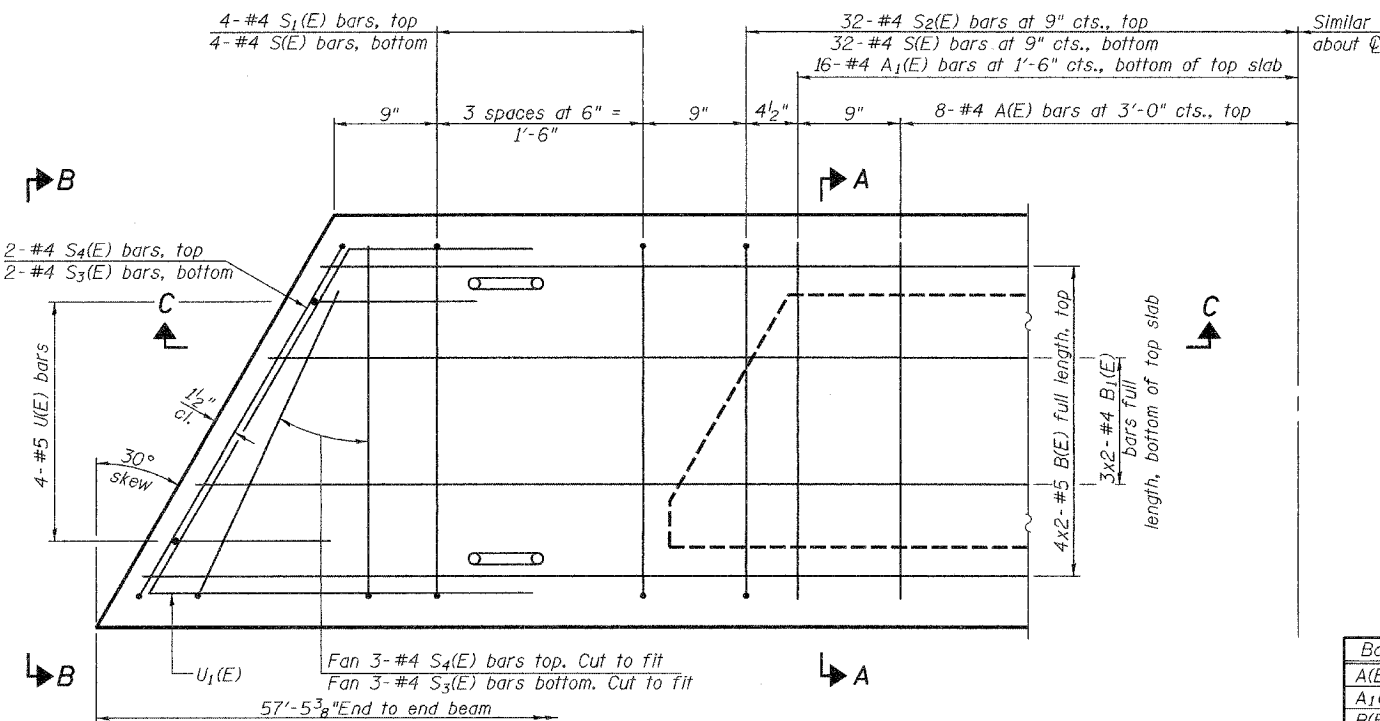
SECTION A-A

(Showing dimensions)

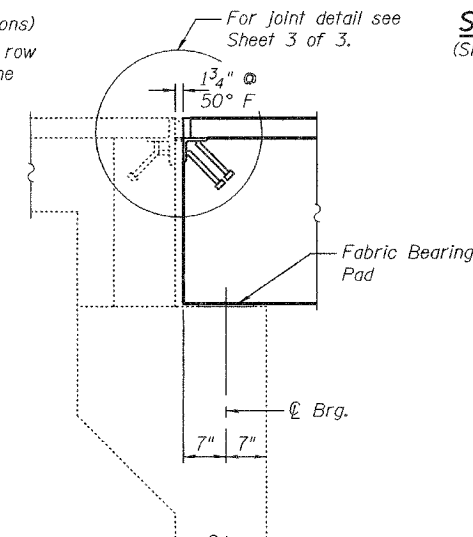


VIEW B-B

Note: Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.

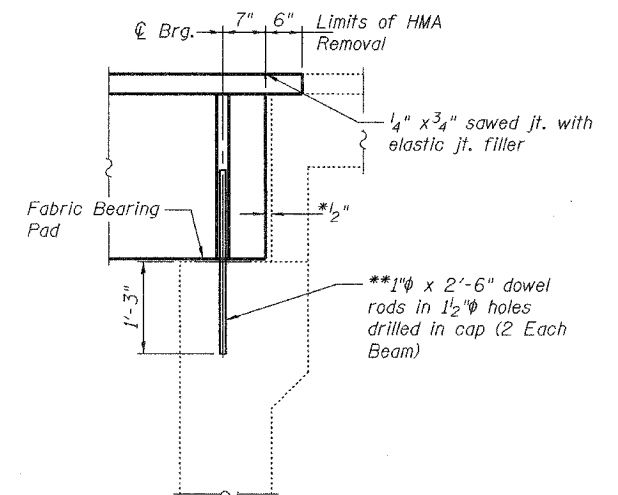


PLAN VIEW



TYPICAL SOUTH ABUTMENT SECTION

*1/2" Joint shall be filled with non-shrink grout. Dimension may vary to accommodate tolerance in beam lengths.
**Existing dowel rods are to be burned off, ground flush, and sealed with epoxy prior to placement of new beams. Cost included in Removal of Existing PPC Deck Beams. After beams have been erected holes shall be drilled into cap and dowel rods placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure a minimum of 24 hours prior to grouting the shear keys.



TYPICAL NORTH ABUTMENT SECTION

MIN. BAR LAPS

#4 bar = 1'-8"
#5 bar = 2'-2"

BAR LIST
35" BEAM

(For information only)

Bar	No.	Size	Length	Shape
A(E)	16	#4	2'-6"	—
A1(E)	32	#4	2'-10"	—
B(E)	8	#5	29'-9"	—
B1(E)	6	#4	29'-6"	—
S(E)	72	#4	6'-4"	┌
S1(E)	8	#4	5'-10"	┌
S2(E)	64	#4	6'-1"	┌
S3(E)	10	#4	4'-10"	┌
S4(E)	10	#4	4'-9"	┌
U(E)	8	#5	4'-6"	┌
U1(E)	4	#4	6'-8"	┌

BAR LIST
36" BEAM

(For information only)

Bar	No.	Size	Length	Shape
A(E)	16	#4	2'-7"	—
A1(E)	32	#4	2'-11"	—
B(E)	8	#5	29'-9"	—
B1(E)	6	#4	29'-6"	—
S(E)	72	#4	6'-5"	┌
S1(E)	8	#4	5'-11"	┌
S2(E)	64	#4	6'-2"	┌
S3(E)	10	#4	4'-10"	┌
S4(E)	10	#4	4'-9"	┌
U(E)	8	#5	4'-6"	┌
U1(E)	4	#4	6'-10"	┌

See sheet 3 of 3 for additional details and Bill of Material.
Bars indicated thus 4x2-#5 etc. indicates 4 lines of bars with 2 lengths per line.

BEAM DETAILS
F.A. RT. 770
MOULTRIE COUNTY
SN 070-0036

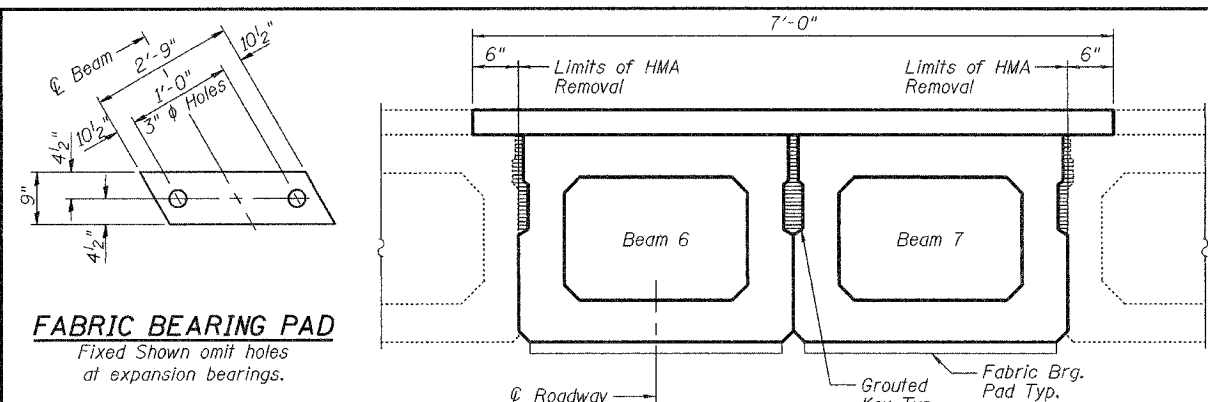
DESIGNED	A.J.B.
CHECKED	V.H.V.
DRAWN	Drew Christopher
CHECKED	A.J.B. V.H.V.

May 9, 2008
EXAMINED *Carl Krusey*
ENGINEER OF STRUCTURAL SERVICES
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

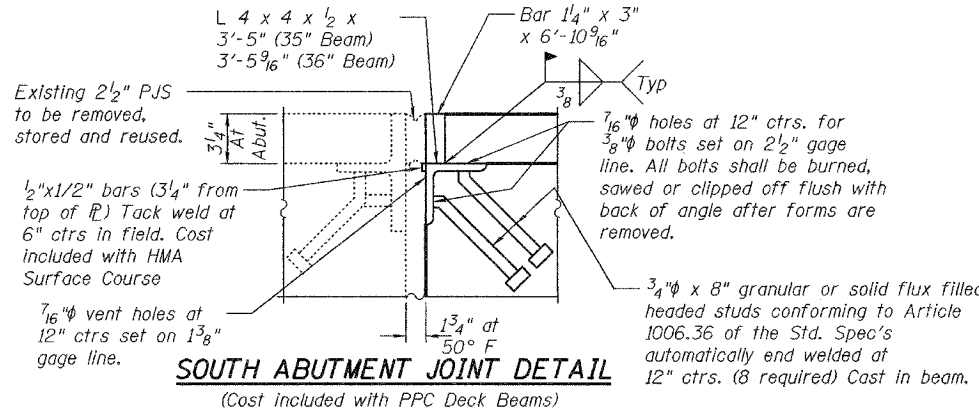
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 3
FAP 770	ΔΔ	Moultrie	7	7	3 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

Contract Number: 74309
ΔΔ D7 Beam Repair 2008-6



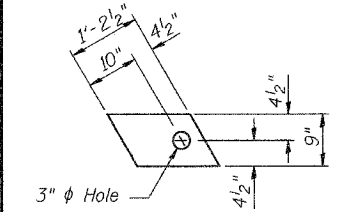
PARTIAL DECK CROSS-SECTION



SOUTH ABUTMENT JOINT DETAIL
(Cost included with PPC Deck Beams)

FABRIC BEARING PAD

Fixed Shown omit holes at expansion bearings.



FABRIC ADJUSTING SHIM

Existing 2 1/2" PJS to be removed, stored and reused.

1/2"x1/2" bars (3/4" from top of P) Tack weld at 6" ctrs in field. Cost included with HMA Surface Course

7/16" vent holes at 12" ctrs set on 1 3/8" gage line.

3/4" AT Abuf.

7/16" holes at 12" ctrs. for 3/8" bolts set on 2 1/2" gage line. All bolts shall be burned, sawed or clipped off flush with back of angle after forms are removed.

3/4" x 8" granular or solid flux filled headed studs conforming to Article 1006.36 of the Std. Spec's automatically end welded at 12" ctrs. (8 required) Cast in beam.

1 3/4" at 50° F

Fill 2 - 1" x 1/4" slots

Half threaded sleeve 2 1/2" long

Plate A

Exist. 1" tie rod

1 3/4" x 1 3/4" x 3 1/2"

1 3/4" x 1 3/4" x 3 1/2"

1 3/4" x 1 3/4" x 3 1/2"

1 3/4" x 1 3/4" x 3 1/2"

1 3/4" x 1 3/4" x 3 1/2"

1 3/4" x 1 3/4" x 3 1/2"

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1 3/4" x 1 3/4" x 3 1/2"

1 3/4" x 1 3/4" x 3 1/2"

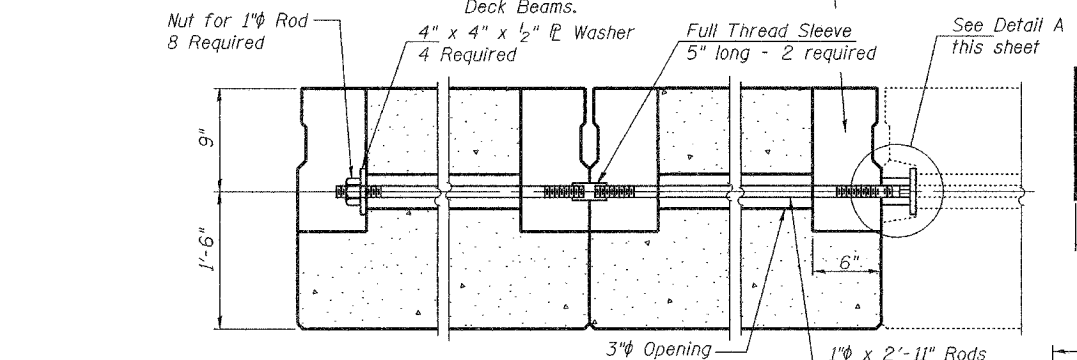
1 3/4" x 1 3/4" x 3 1/2"

1 3/4" x 1 3/4" x 3 1/2"

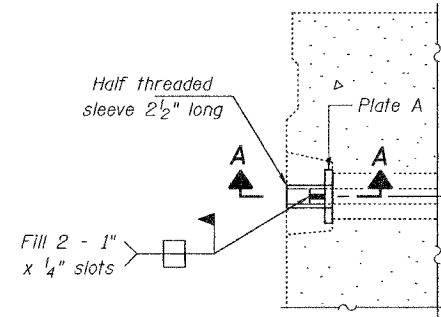
1 3/4" x 1 3/4" x 3 1/2"

1 3/4" x 1 3/4" x 3 1/2"

1 3/4" x 1 3/4" x 3 1/2"



TYPICAL TRANSVERSE TIE ASSEMBLY



DETAIL A

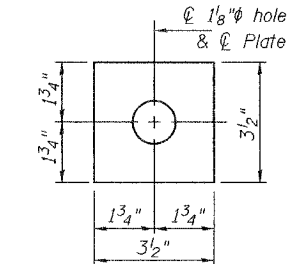
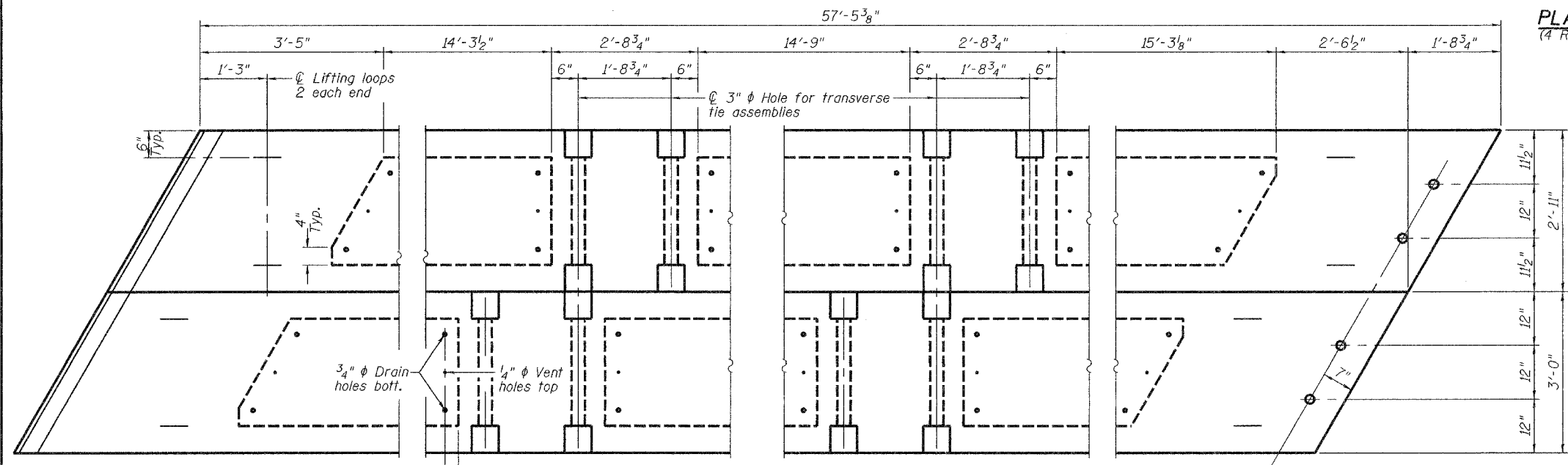


PLATE A
(4 Required)



PLAN VIEW

2" diameter holes for dowel rods at fixed ends only

NOTES

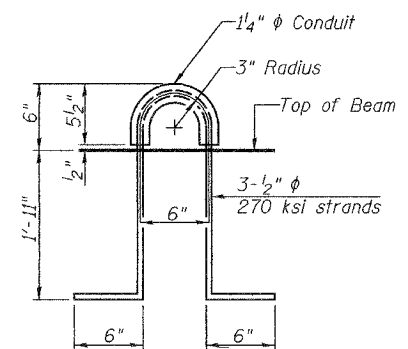
Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.

Reinforcement bars shall conform to ASTM A 706 (IL MOD), Grade 60. (See Special Provisions) Two 1/8" fabric adjusting shims of the dimensions shown shall be provided for each bearing pad location. A minimum 2 1/2" lifting pin shall be used to engage the lifting loops during handling.

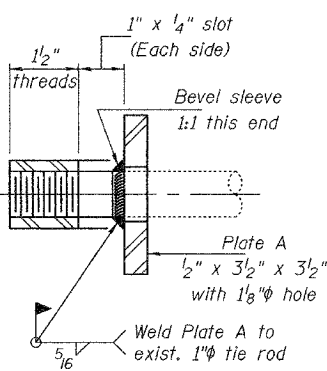
Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.06 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.

Compressive strength of prestressed concrete, f'c, shall be 6000 psi.

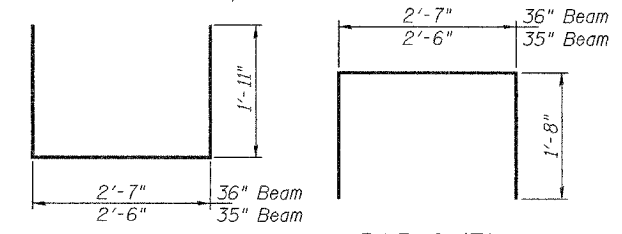
Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.



LIFTING LOOP DETAIL

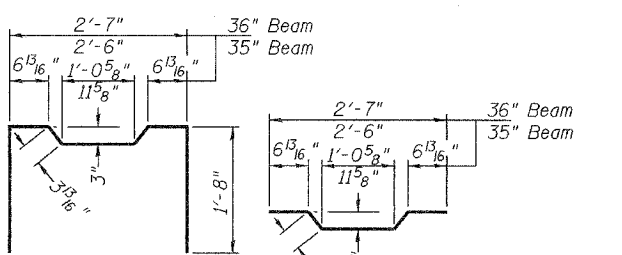


SECTION A-A
(4 Required)



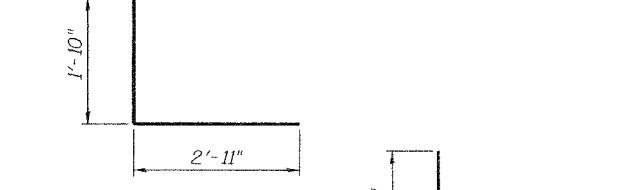
BAR S(E)

BAR S1(E)



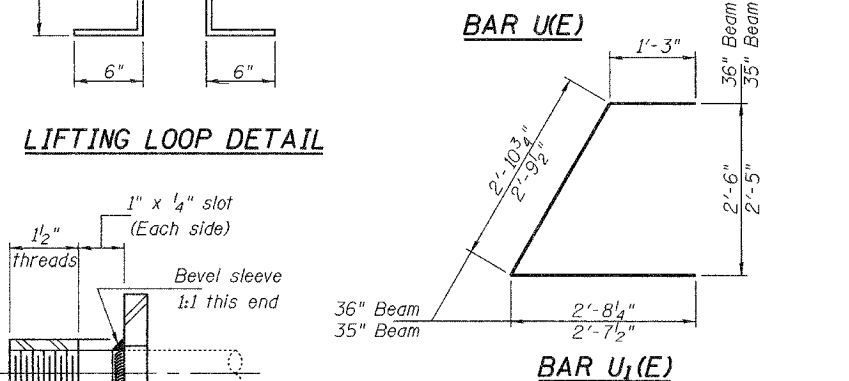
BAR S2(E)

BAR A1(E)



BAR S4(E)

BAR S3(E)



BAR U(E)

BAR U1(E)

BEAM DETAILS
F.A. RT. 770
MOULTRIE COUNTY
SN 070-0036

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (27" depth)	Sq. Ft.	339.9
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DESIGNED	A.J.B.
CHECKED	V.H.V.
DRAWN	Drew Christopher
CHECKED	A.J.B. V.H.V.

May 9, 2008
EXAMINED *Carl Prosser*
ENGINEER OF STRUCTURAL SERVICES
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES