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STANDARDS

- 701201-02 LANE CLOSURE, 2L, 2W, DAY ONLY, FOR SPEEDS >= 45 MPH
- 701321-09 LANE CLOSURE, 2L, 2W, BRIDGE REPAIR WITH BARRIER
- 701901 TRAFFIC CONTROL DEVICES
- 704001-04 TEMPORARY CONCRETE BARRIER

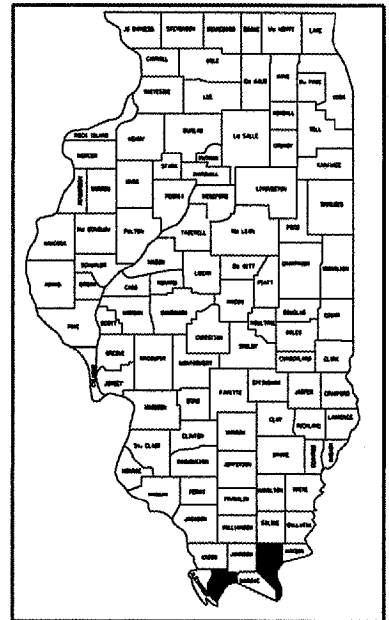
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS**

**PROPOSED
HIGHWAY PLANS**

**FAP ROUTE 885 (IL 146)
FAS ROUTE 2936 (OLD US 51)
SECTION (6A, 14X, 16) I-1
C-99-044-07
POPE & PULASKI COUNTIES**

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 885 FAS 2936	•	POPE PULASKI	21	1

FED. ROAD DIST. NO. 7
ILLINOIS
FED. AID PROJECT
*(6A, 14X, 16)I-1
CONTRACT NO. 78018



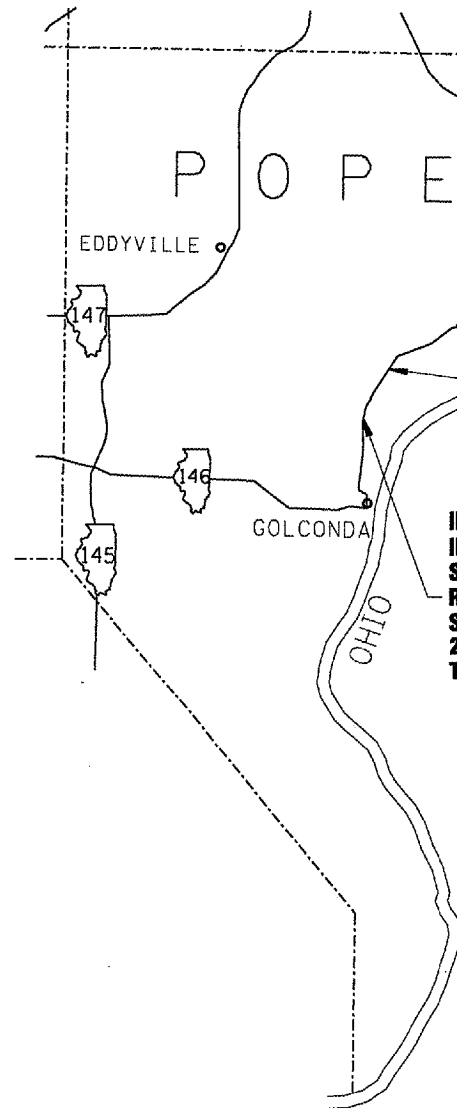
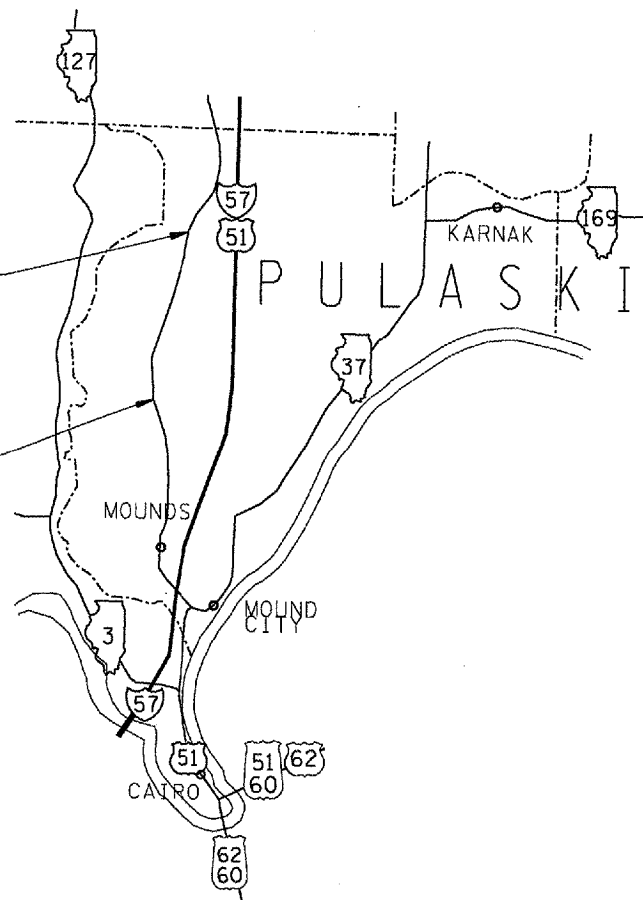
**IMPROVEMENT LOCATION
OLD US 51
STRUCTURE 077-0016
REPLACEMENT OF 2 PPC DECK BEAMS
2003 ADT = 1150
TRUCKS = 16 %**

**IMPROVEMENT LOCATION
OLD US 51
STRUCTURE 077-0035
SHORING OF 2 PPC DECK BEAMS
2003 ADT = 1000
TRUCKS = 11 %**

**IMPROVEMENT LOCATION
IL RTE 146, MILEPOST 18
STRUCTURE 076-0002
REPLACEMENT OF 4 PPC DECK BEAMS
ADT = 1400
TRUCKS = 16 %**

**IMPROVEMENT LOCATION
IL RTE 146, MILEPOST 19
STRUCTURE 076-0026
SHORING OF 2 PPC DECK BEAMS
2005 ADT = 1400
TRUCKS = 16 %
POSTED LEGAL LOADS ONLY**

**IMPROVEMENT LOCATION
IL RTE 146, MILEPOST 21
STRUCTURE 076-0023
REPLACEMENT OF 2 PPC DECK BEAMS
SHORING OF 7 PPC DECK BEAMS
2005 ADT = 1400
TRUCKS = 16 %**



PLAN DRAWINGS ARE NOT TO SCALE.

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

CONTRACT NO. 78018

MAP NOT TO SCALE

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED Oct 23, 2007
Mary C. Lamin
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

December 7, 2007
Eric E. Harn
ENGINEER OF DESIGN AND ENVIRONMENT

December 7, 2007
Christine M. Reed
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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

PROJECT ENGINEER: CASEY N. TECKENBROCK PHONE: (618) 549-2171
SQUAD LEADER: RITA GAUTNEY CENTREX: 782-4554

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	DISTRICT	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 885 FAS 2836	■	POPE PULASKI	21	2
FED. ROAD DIST. NO. 7	ALIGNMENT	FED. AID PROJECT		

*(6A, 14X, 16)-1
CONTRACT NO. 78018

GENERAL NOTES

THE THICKNESS OF HOT-MIX ASPHALT MIXTURE SHOWN ON THE PLANS IS THE NOMINAL THICKNESS. DEVIATIONS FROM THE NOMINAL THICKNESS WILL BE PERMITTED WHEN SUCH DEVIATIONS OCCUR DUE TO IRREGULARITIES IN THE EXISTING SURFACE OR BASE ON WHICH THE HOT-MIX ASPHALT MIXTURE IS PLACED.

STRUCTURES 076-0002 AND 076-0023 MAY HAVE ASBESTOS PRESENT IN THE WATERPROOFING MEMBRANE. SEE SPECIAL PROVISION "ASBESTOS WATERPROOFING MEMBRANE AND ASBESTOS HOT-MIX ASPHALT SURFACE REMOVAL".

FOR TRAFFIC CONTROL AND PROTECTION STANDARD 701321, THE CENTERLINE PAVEMENT MARKING SHOULD BE REMOVED FROM THE STOP BAR TO THE SAND ATTENUATORS OR DRUMS. THE BUREAU OF OPERATIONS SHOULD APPROVE THE LOOP LOCATIONS PRIOR TO INSTALLATION. THE COST OF MAXIMUM WIDTH SIGNS IS INCLUDED IN THE COST OF TRAFFIC CONTROL AND PROTECTION STANDARD 701321.

REMOVAL OF GUARDRAIL TO PROVIDE CLEARANCE FOR PORTABLE SIGNALS IS NOT ALLOWED.

WHILE SIGNAL HEADS ARE MOUNTED IN PLACE, BUT NOT YET IN OPERATION, THEY SHALL BE SECURELY COVERED IN WHITE PLASTIC.

AT THE ABUTMENT OF STRUCTURE 077-0035, IF REMOVAL OF RIPRAP AND EARTH EXCAVATION ARE REQUIRED TO PROVIDE CLEARANCE FOR THE BEAM SHORING, RIPRAP SHALL BE RE-INSTALLED AS DIRECTED BY THE ENGINEER AFTER SHORING IS COMPLETED. COST OF THIS WORK IS INCLUDED IN THE COST OF FURNISHING AND ERECTING STRUCTURAL STEEL, AND WILL NOT BE PAID FOR SEPARATELY.

THE DIMENSIONS BETWEEN SIGNS MAY BE MODIFIED SLIGHTLY SO AS TO AVOID CONFLICTS WITH EXISTING SIDEROADS, COMMERCIAL ENTRANCES, AND PRIVATE ENTRANCES. THE BUREAU OF OPERATIONS SHOULD APPROVE FINAL PLACEMENT OF TRAFFIC CONTROL SIGNING.

TEMPORARY CONCRETE BARRIER SHALL ONLY BE ANCHORED INTO THE WEARING SURFACE, AND NOT INTO THE PPC DECK BEAMS.

FACTORS USED FOR ESTIMATING PLAN QUANTITIES ARE AS FOLLOWS AND SHALL NOT BE USED FOR THE BASIS OF FINAL QUANTITIES:

ALL HOT-MIX ASPHALT	2.016 TONS/CU. YD.
ALL AGGREGATE	2.05 TONS/CU. YD.
HOT-MIX ASPHALT MATERIALS:	
ON PAVEMENT	0.09 GAL./SQ. YD.
INTERMEDIATE LIFTS (FOG COAT)	0.04 GAL./SQ. YD.
ON AGGREGATE SURFACE	0.32 GAL./SQ. YD.
AGGREGATE (PRIME COAT)	0.0015 TONS/SQ. YD.

Prepared By: Wesley Hammer
DISTRICT OPERATIONS ENGINEER

Examined By: Dan L. Taylor
ASSISTANT REGIONAL ENGINEER

Examined By: J. Thomas Emery
DISTRICT LAND ACQUISITION ENGINEER

Examined By: Carrie Nelson
DISTRICT PROGRAM DEVELOPMENT ENGINEER

Examined By: Joe Ziemann
DISTRICT STUDIES & PLANS ENGINEER

Examined By: Joseph D. Smith
DISTRICT CONSTRUCTION ENGINEER

Examined By: Bruce P. Pugh
DISTRICT MATERIALS ENGINEER

Examined By: Jim Matthews
DISTRICT PROJECT IMPLEMENTATION ENGINEER

Approved By: Mike C. Finner
DEPUTY DIRECTOR OF HIGHWAYS,
REGION 5, ENGINEER

DATE: Oct 23 2007

SUMMARY OF QUANTITIES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	DISTRICT	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 885 FAS 2836	•	POPE PULASKI	21	3
FED. ROAD DIST. NO. 7	BLANK	FED. AID PROJECT		

*(BA, 14X, 18)-1
CONTRACT NO. 78018

100% STATE	SFTY-2A	RURAL	QUANTITY					100% STATE TOTAL QUANTITY SFTY-2A		
			CODE NO.	ITEM DESCRIPTION	UNIT	POPE			PULASKI	
						076-0002	076-0023		076-0026	077-0016
40603320	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N90	TON	18.5	7.1		6.3		31.9		
42001300	PROTECTIVE COAT	SQ YD	48.8	30		18.6		97.4		
44001005	HOT-MIX ASPHALT SURFACE REMOVAL	SQ YD	25.3	11.6		3.8		40.7		
50102400	CONCRETE REMOVAL	CU YD		8.2				8.2		
50300255	CONCRETE SUPERSTRUCTURE	CU YD	5.4	8.2		2		15.6		
50400605	PRECAST PRESTRESSED CONCRETE DECK BEAMS (33" DEPTH)	SQ FT	892	413				1305		
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT				477		477		
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND		26350	6200	280	3030	35860		
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	240	1210		120		1570		
50900905	REMOVING AND RE-ERECTING <i>EXISTING RAILING</i>	FOOT	151			60		211		
58100200	WATERPROOFING MEMBRANE SYSTEM	SQ YD	110	47		50		207		
58300100	PORTLAND CEMENT MORTAR FAIRING COURSE	FOOT	452	210		119		781		
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	1	1	1	1	1	5		
67100100	MOBILIZATION	L SUM	0.2	0.2	0.2	0.2	0.2	1		
70100405	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321	EACH	1	1		1		3		
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	0.2	0.2	0.2	0.2	0.2	1		
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1	1		1		3		
70106800	CHANGEABLE MESSAGE SIGN	CAL MO	1.3	1.3		1.3		4		
70300200	TEMPORARY PAVEMENT MARKING	FOOT	512					512		
70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ FT	457	108		183		748		
70400100	TEMPORARY CONCRETE BARRIER	FOOT	400	300		220		920		
* 78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	1345	751		1146		3242		
X0320047	REMOVAL OF EXISTING PRECAST PRESTRESSED CONCRETE DECK BEAMS	SQ FT	904	419		477		1800		
X0320887	POLYMER CONCRETE	CU FT	2.9					2.9		
X0322933	SILICONE JOINT SEALER, 2 1/2"	FOOT	18					18		
Z0001900	ASBESTOS BEARING PAD REMOVAL	EACH	8			3		11		
Z0030250	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE). TEST LEVEL 3	EACH	2	2		2		6		

*SPECIALTY ITEMS

Rev.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 885 FAS 2838	*	POPE PULASKI	21	4
FED. ROAD DIST. NO. 7		ILLINOIS	YES/NO PROJECT	
*(6A, 14X, 18)-1 CONTRACT NO. 78018				

BITUMINOUS MIX DESIGN

LOCATION:	HOT-MIX ASPHALT SURFACE COURSE
MIXTURE USE(S):	HOT-MIX ASPHALT SURFACE COURSE, MIX C, N90
AC/PG:	PG64-22
RAP % (MAX):	10
DESIGN AIR VOIDS:	4.0%, 90 GYRATION DESIGN
MIXTURE COMPOSITION: (GRADATION MIXTURE)	IL - 9.5 mm OR IL 12.5 mm
FRICITION AGGREGATE:	C SURFACE

PAINT PAVEMENT MARKING - LINE 4"

	076-0002	076-0023	077-0016
QUANTITY	FT.	FT.	FT.
YELLOW	833	675	1085
WHITE	512	76	61
TOTAL	1345	751	1146

PAINT CENTERLINE FROM STOP BAR TO STOP BAR.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET NO.
SBI 34		POPE	21	5
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

Contract Number: 78018

GENERAL NOTES

The cut strands at each beam end shall be given two coats of zinc dust spray or paint meeting the requirements of ASTM A780. The zinc dust spray or paint shall be applied before corrosion appears and allowed to dry according to manufacturer's specifications prior to another coat of zinc. A concrete sealer meeting the requirements of Section 587 of the Standard Specifications shall be applied to the exterior face and 9" in on the underside of each fascia beam. The sealer shall be applied after visible crack growth has subsided. This work shall be performed by the producer and included with the cost of the beam.

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.

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.

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.

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

Reinforcement bars designated (E) shall be epoxy coated.

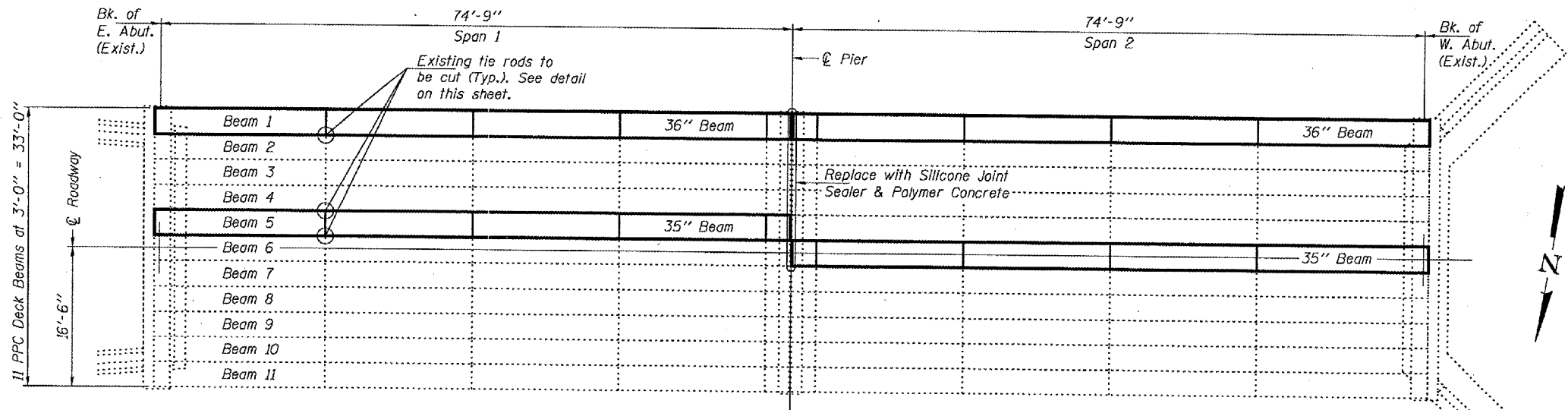
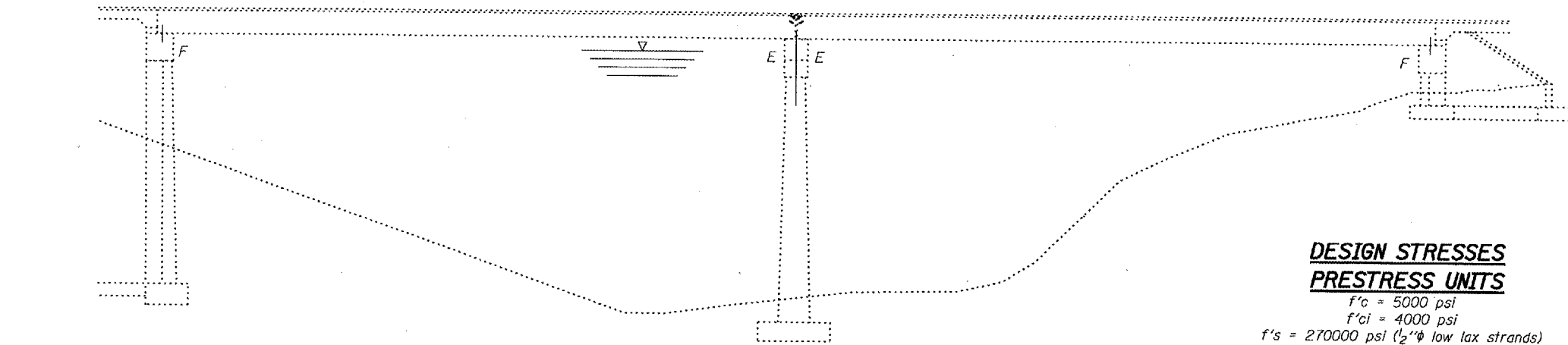
All structural steel shall be shop painted with the inorganic zinc rich primer per AASHTO M300, Type 1. Cost included with PPC Deck Beams (33").

Temporary concrete barrier shall only be anchored into the overlay and not the PPC Deck Beams.

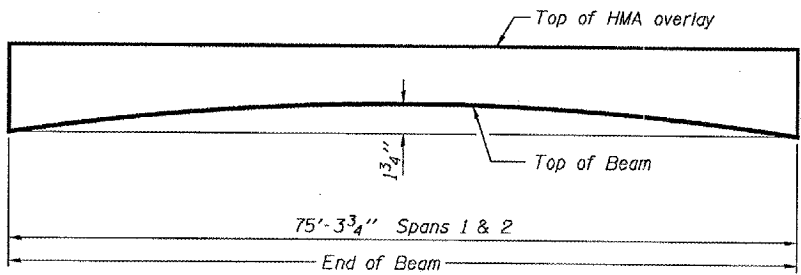
**DESIGN STRESSES
PRESTRESS UNITS**

$f'_c = 5000$ psi
 $f'_{ci} = 4000$ psi
 $f'_s = 270000$ psi ($\frac{1}{2}$ " ϕ low lax strands)
 $f'_{si} = 201960$ psi ($\frac{1}{2}$ " ϕ low lax strands)

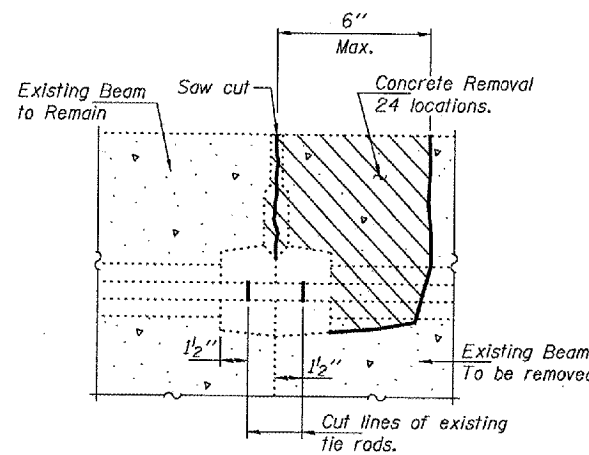
ELEVATION



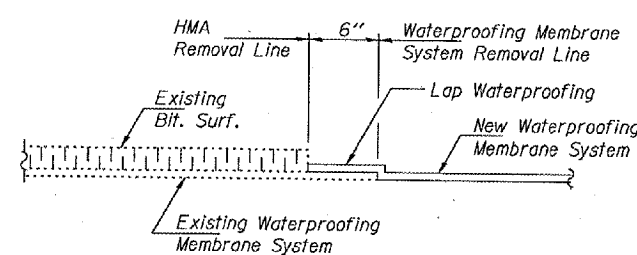
PLAN



ANTICIPATED INITIAL CAMBER DIAGRAM



**BEAM REMOVAL DETAIL
AT TRANSVERSE TIES**

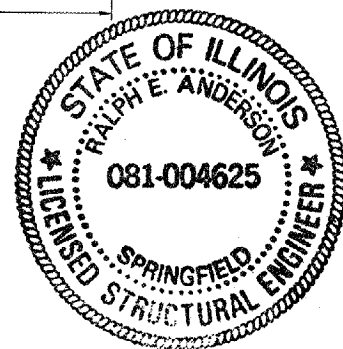


WATERPROOFING TREATMENT

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
HMA Surface Removal	Sq. Yd.	25.3
Waterproofing Membrane System	Sq. Yd.	110
Removal of Existing PPC Deck Beams	Sq. Ft.	904
HMA Surface Course, Mix "C", N90	Tons	18.5
PC Mortar Fairing Course	Foot	452
PPC Deck Beams (33" Depth)	Sq. Ft.	892
Concrete Superstructure	Cu. Yd.	5.4
Protective Coat	Sq. Yd.	48.8
Asbestos Bearing Pad Removal	Each	8
Reinforcement Bars Epoxy Coated	Pound	240
Removing and Re-Erecting Existing Rolling	Foot	151
Silicone Joint Sealer, 2 1/2"	Foot	18
Polymer Concrete	Cu. Ft.	2.9

**PLAN AND ELEVATION
SBI 34 OVER
BIG GRAND PIERRE CR
POPE COUNTY
SN 076-0002**



DESIGNED: Victor H. Vetter
CHECKED: Adrian Holloway
DRAWN: ballva
CHECKED: VHV ATH
NOVEMBER 14, 2007
EXAMINED: [Signature]
PASSED: [Signature]

Expires: November 30, 2008

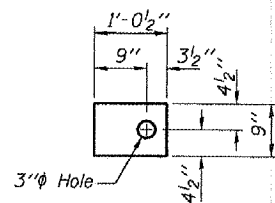
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET NO. 2
SBI 34		POPE	21	6
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		3 SHEETS

Contract Number: 78018

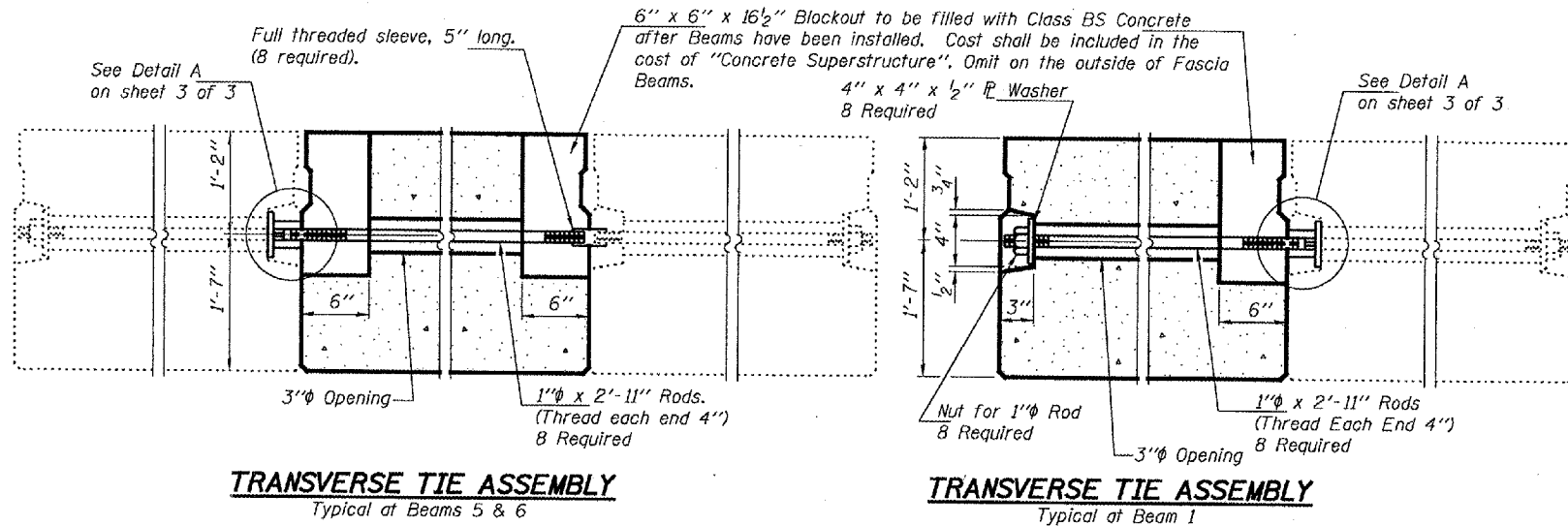
FABRIC BEARING PAD

EXPANSION



FABRIC BEARING PAD

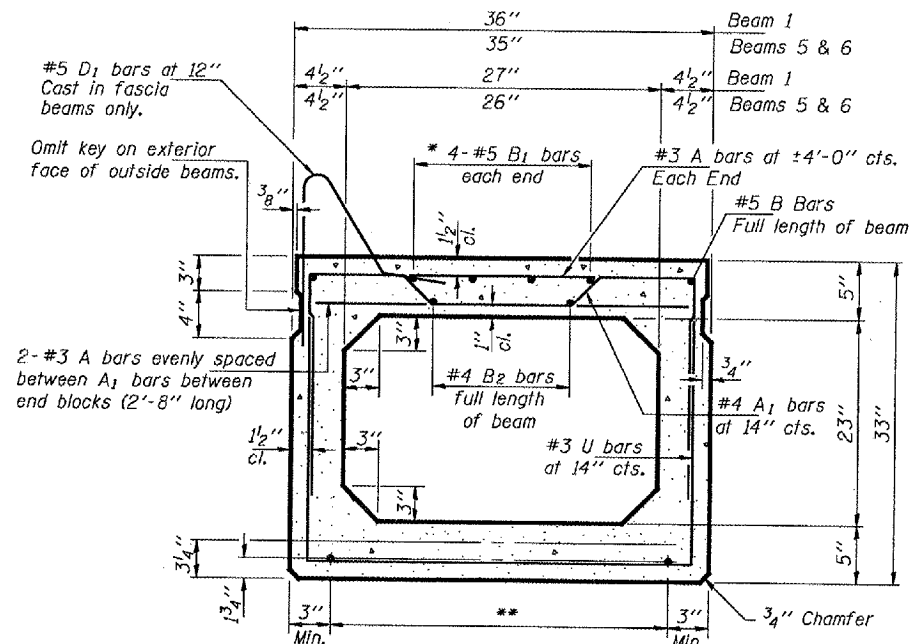
FIXED



TRANSVERSE TIE ASSEMBLY
Typical at Beams 5 & 6

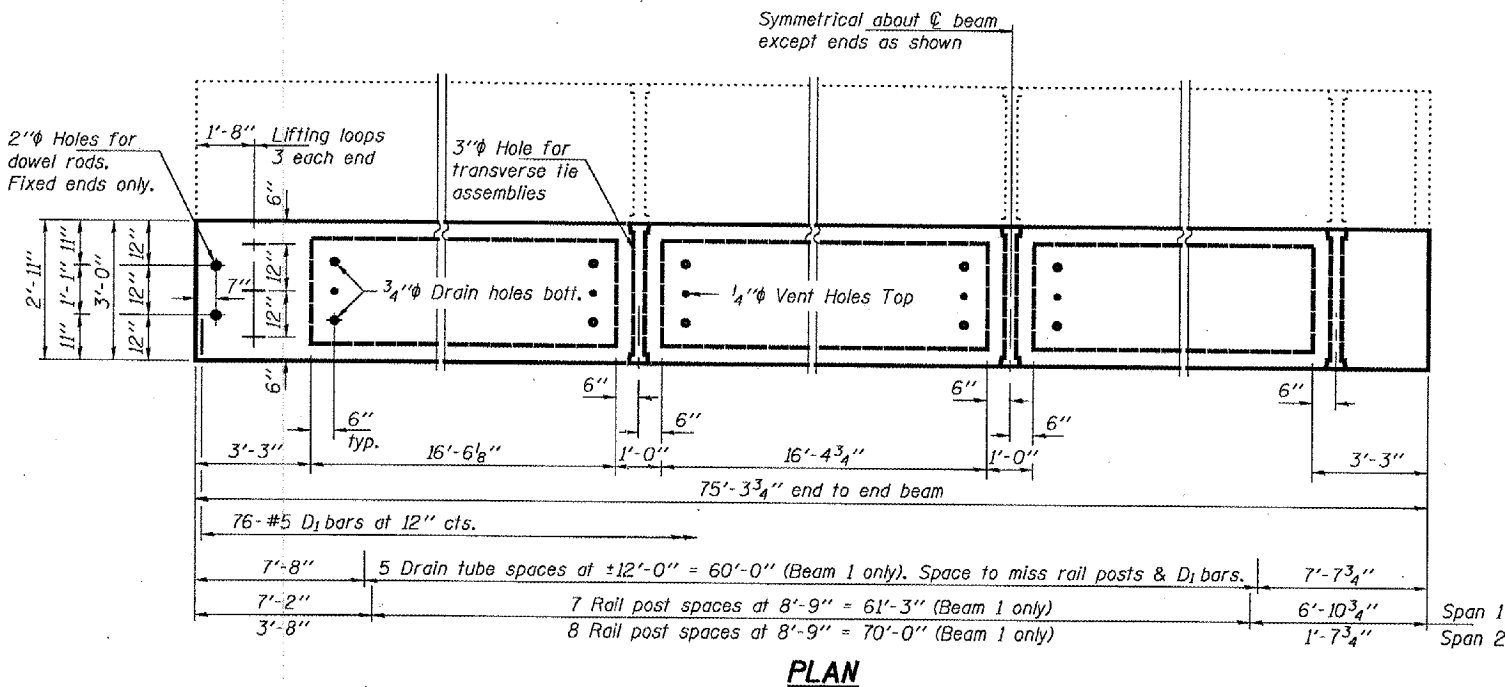
TRANSVERSE TIE ASSEMBLY
Typical at Beam 1

* 0.2 x Length of beam

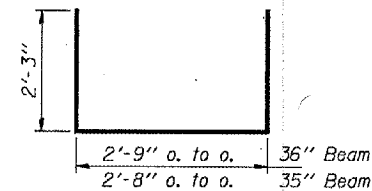


TYPICAL SECTION

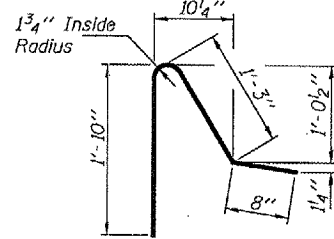
1/2" Strands. Each strand stressed to 30,900 Lbs.
7-Strands 1 3/4" up, 6-Strands 3/4" up,
2-Strands 6" up.



PLAN

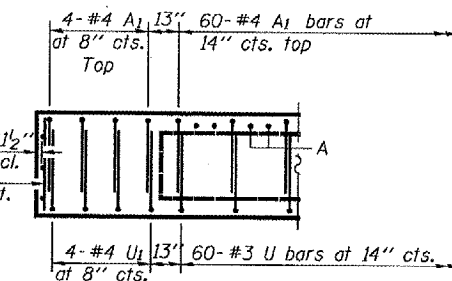


BARS U & U1



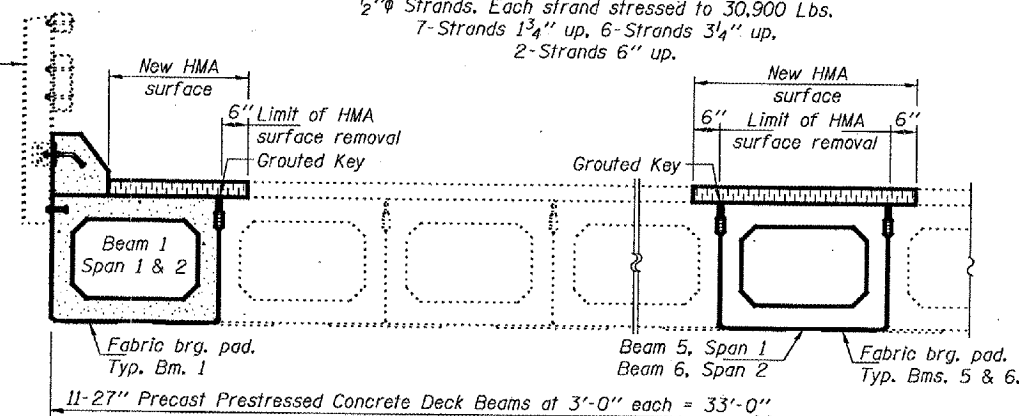
BAR D1

8 x 3-W2.5 x W5.5
Wire Fabric, W5.5 vert.
Full depth of beam.
Each end.



END ELEVATION

Existing handrail & posts to be removed, stored & reused.



PARTIAL CROSS SECTION

**** TRANSVERSE PLACEMENT GUIDELINES**

1. Place strands symmetrically about centerline of beam.
2. The minimum distance from center to center of strands in all directions shall be 2".
3. The minimum clearance from strand to dowel hole shall be 1/2".
4. The minimum clearance from strand to void shall be 1 1/2".

Vertical placement of strands shall not be adjusted to satisfy the above guidelines.

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. Lifting loops shall be 3-1/2" #270 ksi strands, as shown. The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar on outside shall be filled with grout after transverse tie assembly is in place. Non prestressing steel shall conform to ASTM A 706 (IL MOD), Grade 60. The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two 1/8" fabric adjusting shims of the dimensions of the Fabric Bearing Pad shall be provided for each bearing. Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of the beams. Cleaning shall be done by sandblasting the keyway areas between top of the beam and the bottom edge of the key. Corrosion Inhibitor, per Article 1020.05(b)(12) of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams. Required Release Strength, f'cl, shall be 4000 p.s.i.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
e(E)	6	#6	27'-0"	
Precast Prestressed Conc. Deck Bms.		Sq. Ft.	892	
Reinforcing Bars Epoxy Coated		Pound	240	

Bars indicated thus 1 x 3-#5 etc. indicates 1 line of bars with 3 lengths per line.

BEAM DETAILS
SBI 34 OVER
BIG GRAND PIERRE CR
POPE COUNTY
SN 076-0002

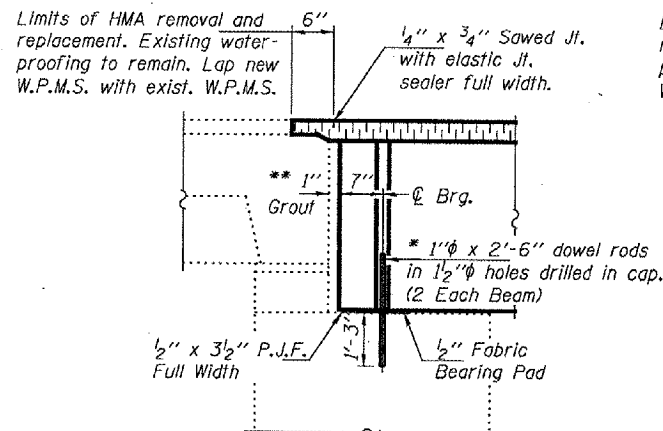
DESIGNED	VHV
CHECKED	ATH
DRAWN	balliva
CHECKED	VHV ATH

NOVEMBER 14, 2007
EXAMINED *Carl Kroyer*
ENGINEER OF STRUCTURAL SERVICES
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

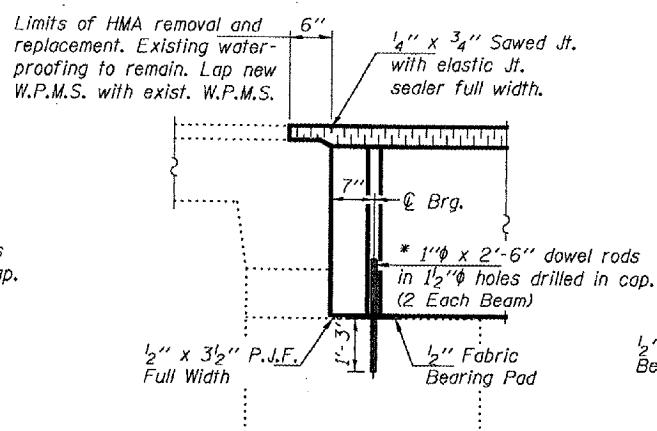
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET	SHEET NO.
SBI 34		POPE	21	7
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Contract Number: 78018



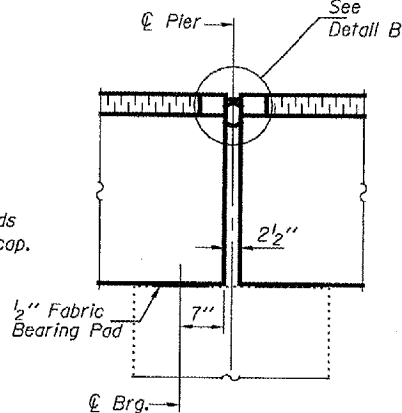
SECTION AT ABUTMENT
(At Beam 1)



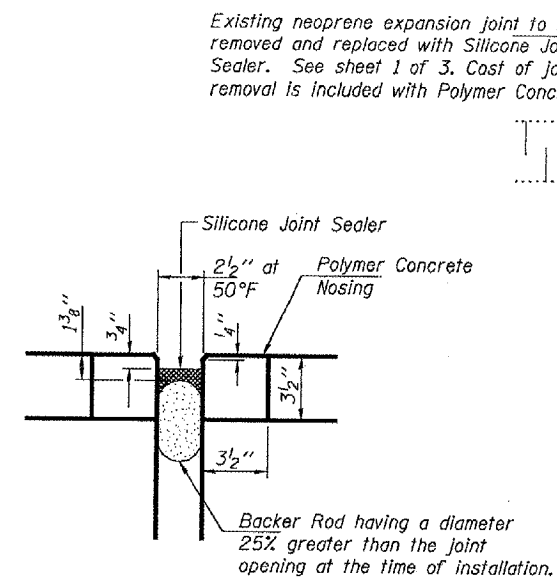
SECTION AT ABUTMENT
(At Beams 5 & 6)

** 1" joint shall be filled with non-shrink grout. This dimension may vary plus or minus to accommodate tolerance in beam lengths.

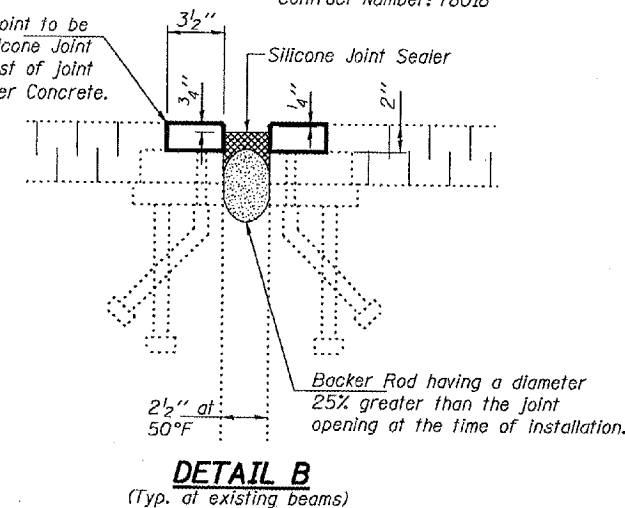
* Existing dowel rods shall be cut off and ground flush with the top of the existing concrete. Cost to be included in the cost of Removal of Existing P.P.C. Deck Beams. New dowel rods shall be grouted after beams are in place and allowed to cure a minimum of 24 hours prior to grouting shear keys.



TYPICAL SECTION AT PIER



DETAIL B
(Typ. at new beams)



DETAIL B
(Typ. at existing beams)

TYPICAL END OF SEAL TREATMENT

NOTES

All steel shapes and plates shall conform to the requirements of AASHTO M 270 Grade 36 except posts and angles shall conform to AASHTO M 270, Grade 50.

Bolts, cap screws, and nuts shall conform to the requirements of ASTM designation A 307 except for high strength bolts, nuts and washers noted which shall conform to AASHTO M 164.

All bolts, nuts, cap screws, washers and lock washers shall be galvanized according to AASHTO M 232.

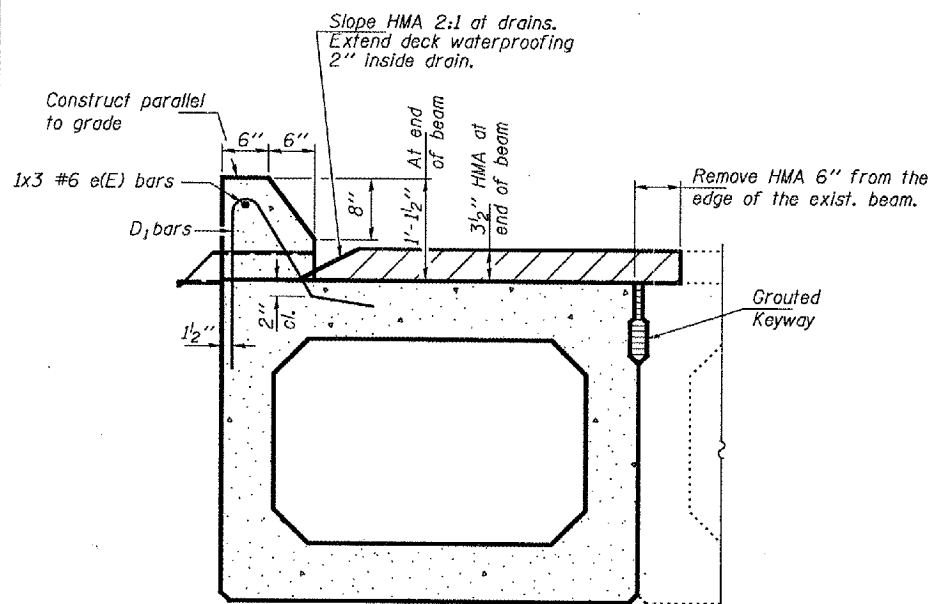
All anchor devices and angles shall be galvanized after shop fabrication according to AASHTO M 111 and ASTM A 385. Galvanized rail shall not be painted.

The lower portion of the post flange in contact with concrete shall receive two coats of asphalt paint conforming to Section 1060.07 Type II or place $\frac{1}{8}$ " fabric bearing pad between the post and concrete.

The $\frac{3}{4}$ " high strength bolts used to connect the 6 x 4 x $\frac{3}{4}$ angles to the post shall be tightened according to Article 505.04(f)(3) of the Standard Specifications. The 1" high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional $\frac{1}{8}$ turn. The $\frac{5}{8}$ " cap screws in bottom of posts shall be tightened to a snug fit only.

Cost of the anchorage devices is included with the cost of Precast Prestressed Concrete Deck Beams (33" Depth).

The cost of removing and re-erecting the existing railing and post with all applicable new hardware shall be included in the cost of Removing and Re-erecting Existing Railing. The work shall be paid for at the contract unit price per foot for Removing and Re-erecting Existing Railing.



TYPICAL SECTION THRU CURB

Cost of concrete in curb included with Concrete Superstructure

Rail insert not shown for clarity.

MIN. BAR LAP
#6 = 2'-7"

DESIGNED	VHV
CHECKED	ATH
DRAWN	baliva
CHECKED	VHV ATH

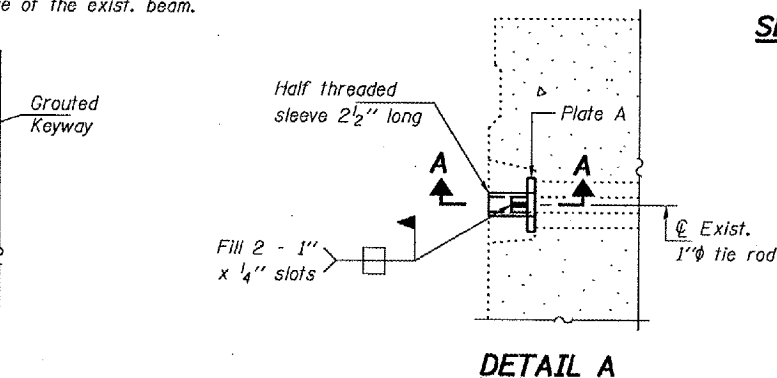
NOVEMBER 14, 2007

EXAMINED *Carl...*

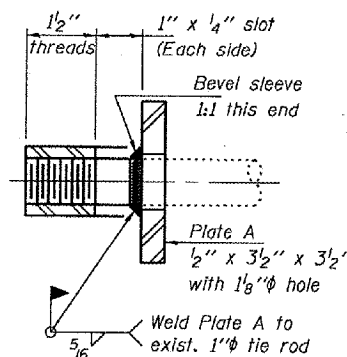
PASSED *Ralph E. Anderson*

ENGINEER OF STRUCTURAL SERVICES

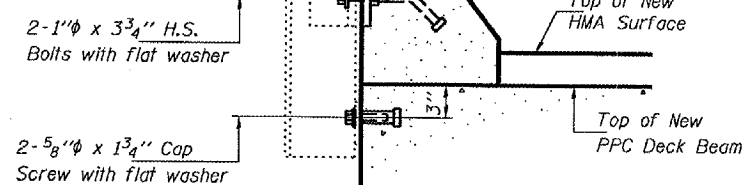
ENGINEER OF BRIDGES AND STRUCTURES



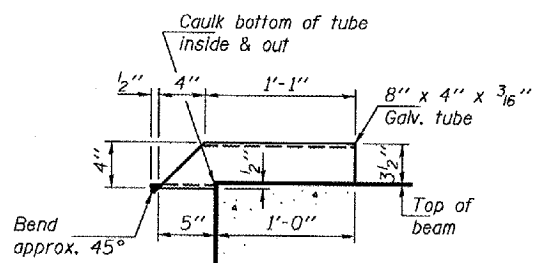
DETAIL A



SECTION A-A
(16 Required)

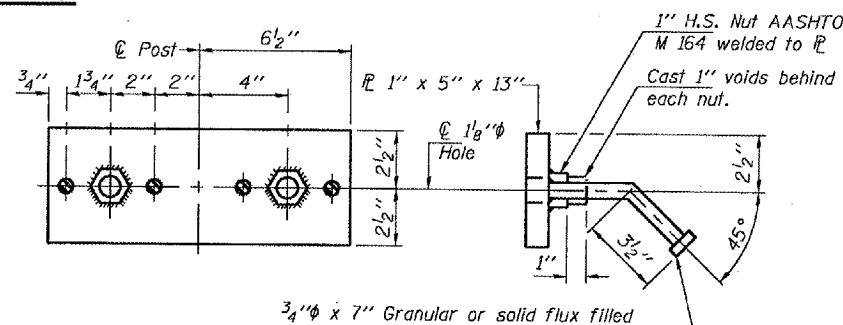


SECTION AT RAIL POST

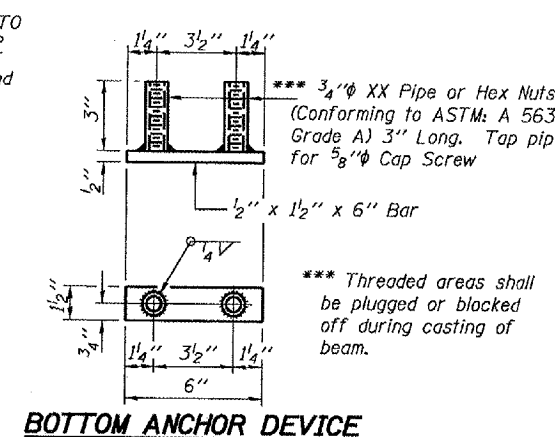


DRAIN DETAIL

Cost included with Concrete Superstructure



TOP ANCHOR DEVICE



BOTTOM ANCHOR DEVICE

BEAM DETAILS
SBI 34 OVER
BIG GRAND PIERRE CR
POPE COUNTY
SN 076-0002

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FA 885		POPE	21	8
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

SHEET NO. 1
4 SHEETS

Contract Number: 78018

GENERAL NOTES

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

See Section 584 of the Standard Specifications for Epoxy Grouting of Threaded Rods; Minimum embedment 9".

The cost of epoxy grouting threaded rods on the pier cap, abutments and beams shall be included with Furnishing and Erecting Structural Steel.

The Contractor has the option of using used steel. See Special Provisions..

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.

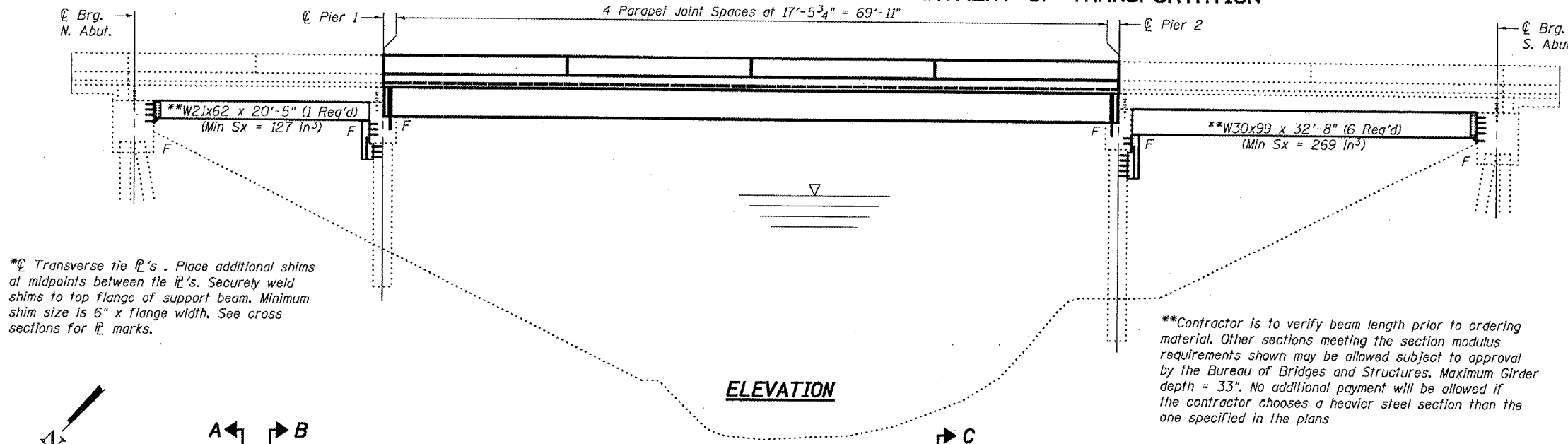
The top surface of the beams shall be finished according to the IDOT Manual for Fabrication of Precast Prestressed Concrete Products.

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

Reinforcement bars designated (E) shall be epoxy coated.

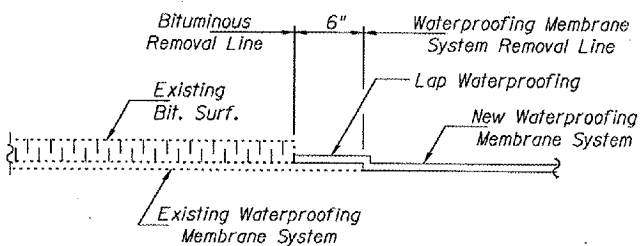
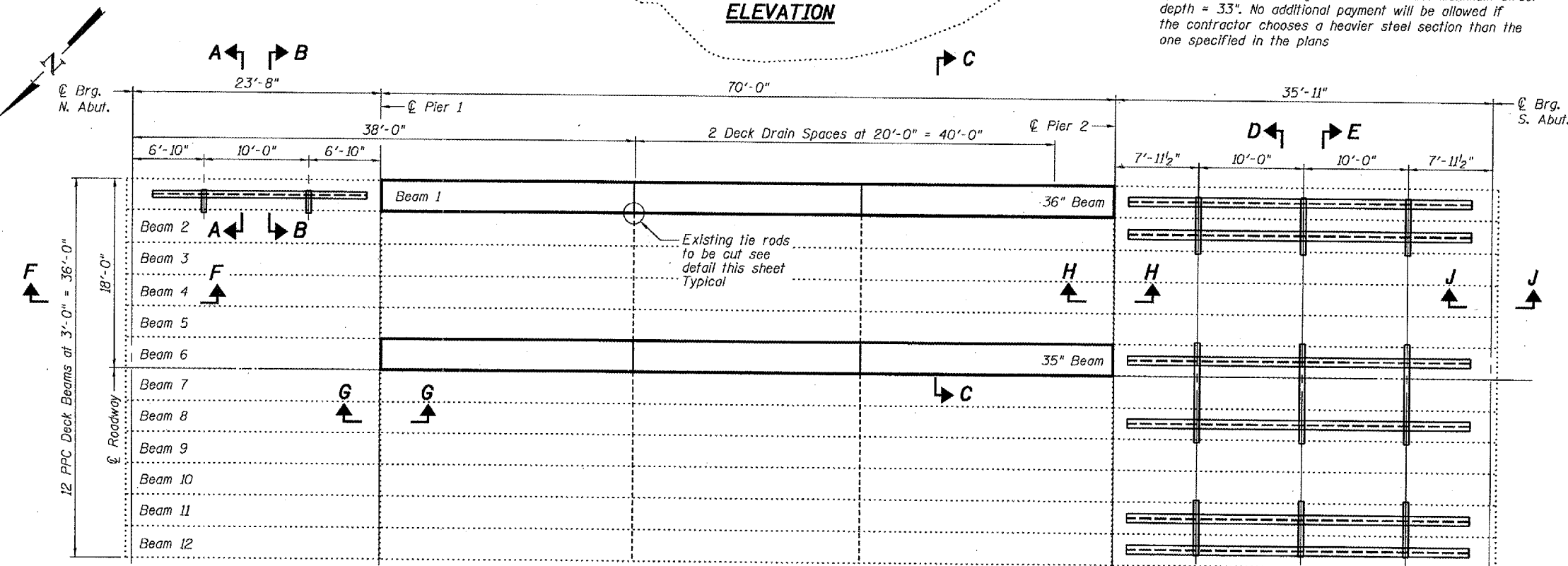
The cut strands at each beam end shall be given two coats of zinc dust spray or paint meeting the requirements of ASTM A780. The zinc dust spray or paint shall be applied before corrosion appears and allowed to dry according to manufacturer's specifications prior to another coat of zinc. This work shall be performed by the producer and included with the cost of the beam.

Temporary concrete barrier shall only be anchored into the overlay and not into the PPC Deck Beams.



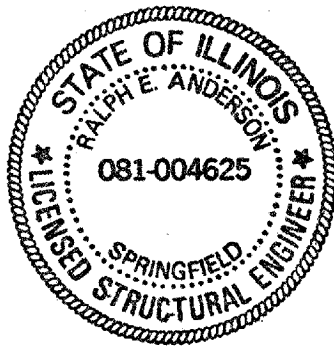
*@ Transverse tie R's. Place additional shims at midpoints between tie R's. Securely weld shims to top flange of support beam. Minimum shim size is 6" x flange width. See cross sections for R marks.

**Contractor is to verify beam length prior to ordering material. Other sections meeting the section modulus requirements shown may be allowed subject to approval by the Bureau of Bridges and Structures. Maximum Girder depth = 33". No additional payment will be allowed if the contractor chooses a heavier steel section than the one specified in the plans



WATERPROOFING TREATMENT

DESIGNED	Alvin T. Holloway	EXAMINED	November 14, 2007
CHECKED	Vicki H. Veitz	PASSED	Ralph E. Anderson
DRAWN	[Signature]		
CHECKED	UFCO ATH		



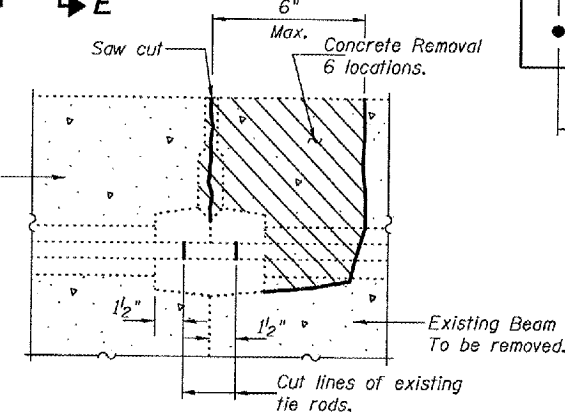
Expires: November 30, 2008

PLAN

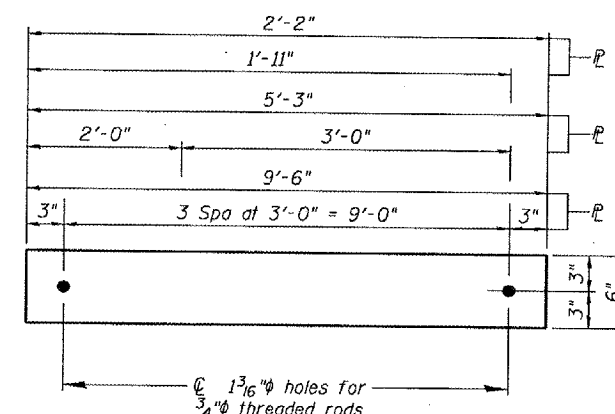
TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Furnishing and Erecting Structural Steel	Pound	26,350
Remove Existing PPC Deck Beams	Sq. Ft.	419
PPC Deck Beams (33" Depth)	Sq. Ft.	413
Concrete Removal	Cu. Yd.	8.2
Concrete Superstructure	Cu. Yd.	8.2
Hot-Mix Asphalt Surface Removal	Sq. Yd.	11.6
Hot-Mix Asphalt Surface Course Mix "C" N90	Tons	7.1
PC Mortar Fairing Course	Foot	210
Reinforcement Bars, Epoxy Coated	Pounds	1,210
Protective Coat	Sq. Yd.	30
Waterproofing Membrane System	Sq. Yd.	47

Existing Beam to Remain



BEAM REMOVAL DETAIL AT TRANSVERSE TIES



TRANSVERSE TIE R'S

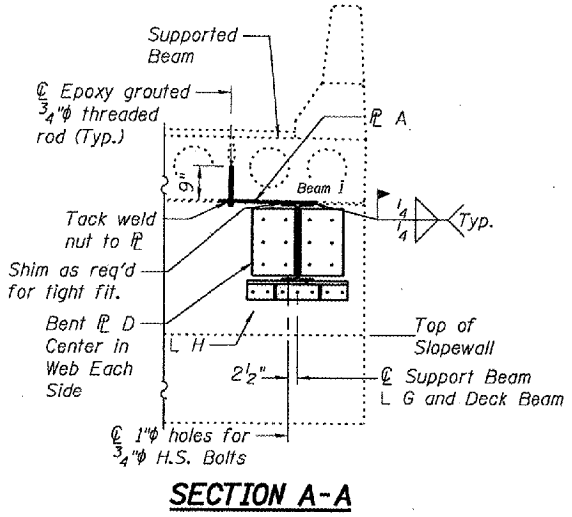
R A 1/2" x 2'-2" x 6" (2 Req'd)
R B 1/2" x 5'-3" x 6" (6 Req'd)
R C 1/2" x 9'-6" x 6" (3 Req'd)

PLAN AND ELEVATION
FA 885 OVER
SIMMONS CREEK
POPE COUNTY
SN 076-0023

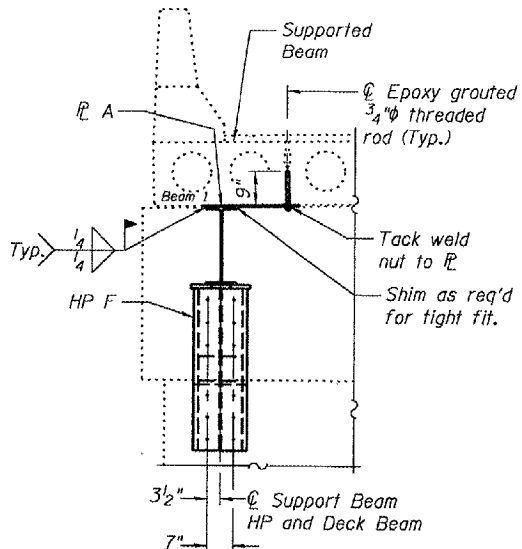
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	FEEDING SHEETS	SHEET NO.	SHEET NO. 2 4 SHEETS
FA 885		POPE	21	9	
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT		

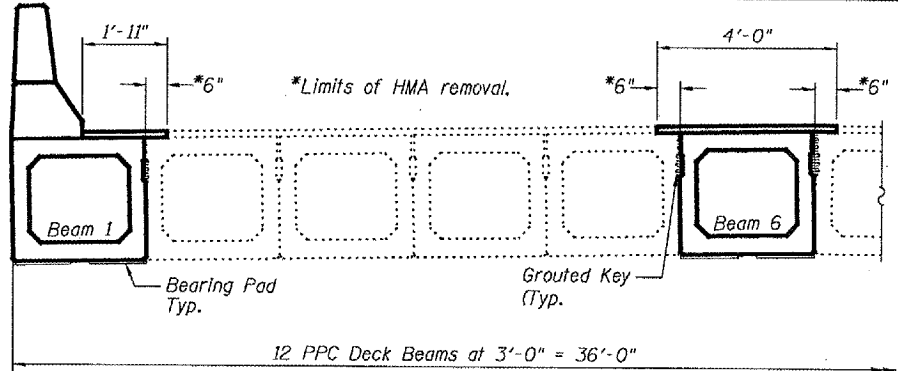
Contract Number: 78018



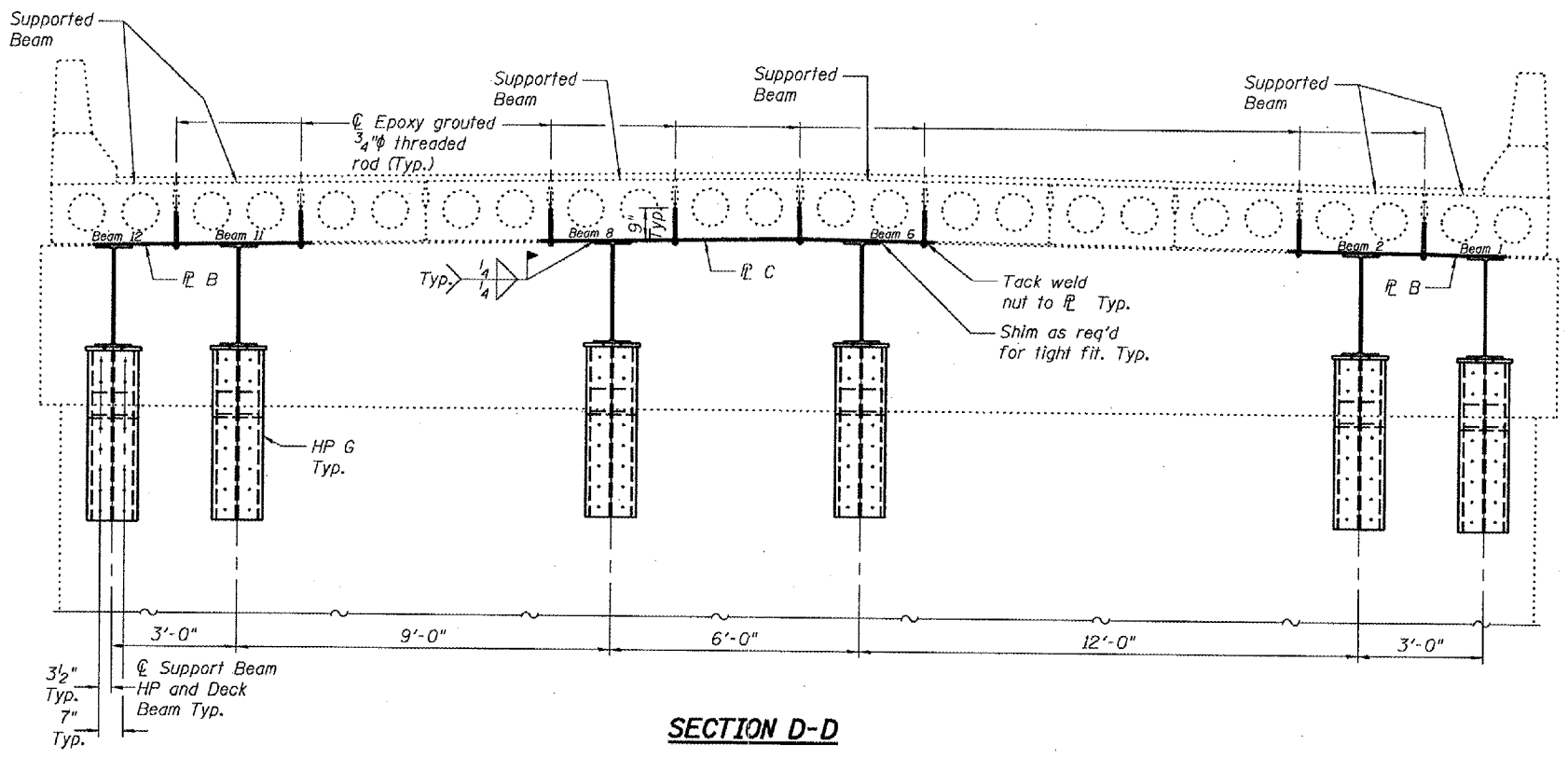
SECTION A-A



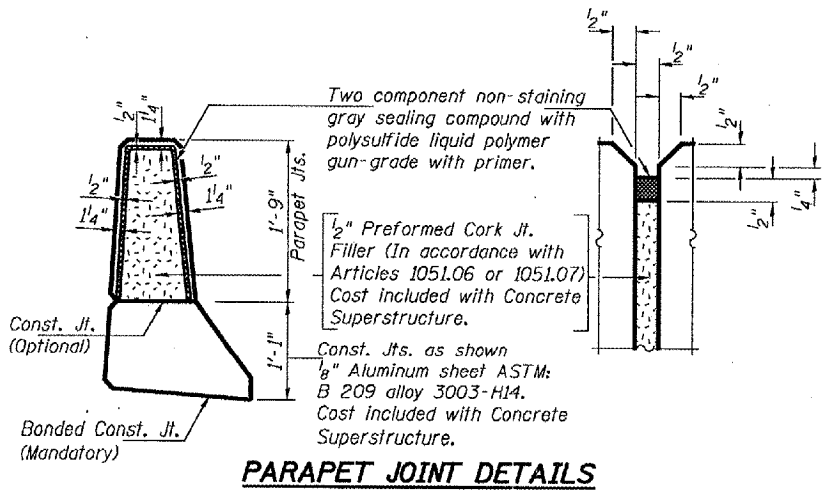
SECTION B-B



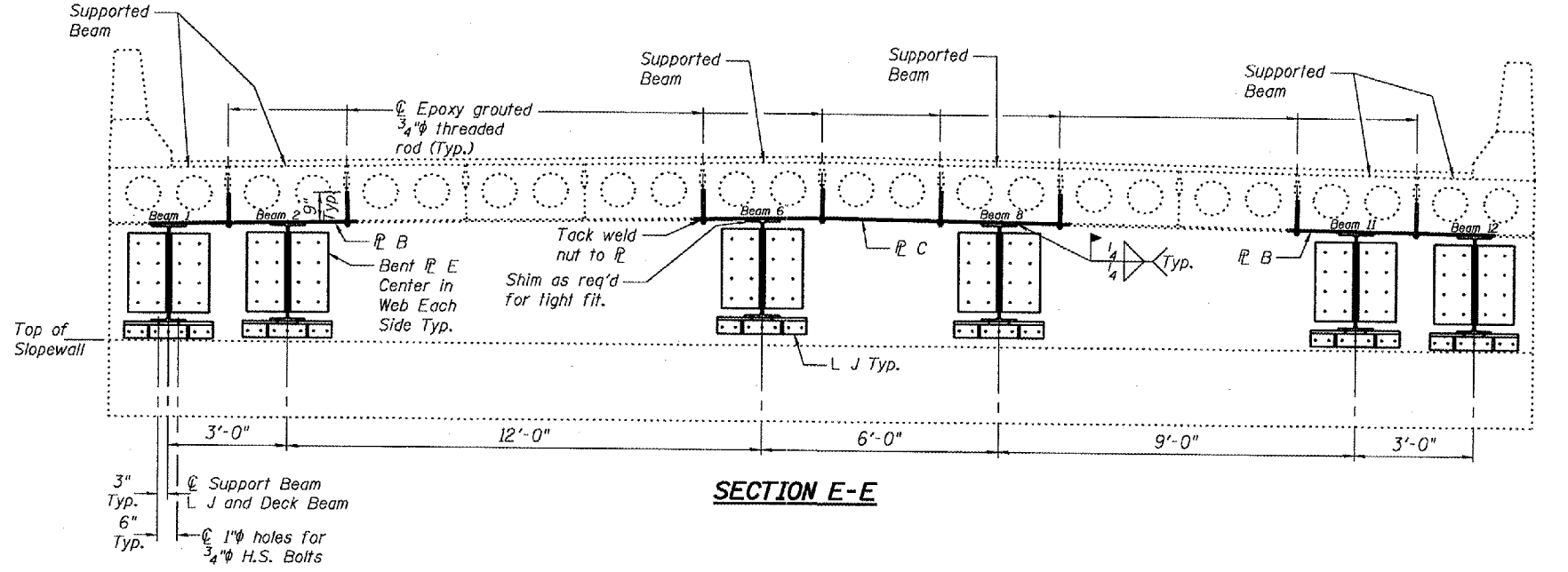
SECTION C-C



SECTION D-D



PARAPET JOINT DETAILS



SECTION E-E

DESIGNED	A.T.H.
CHECKED	V.H.V.
DRAWN	Drew Christopher
CHECKED	A.T.H. V.H.V.

November 14, 2007
 EXAMINED *Carl [Signature]*
 ENGINEER OF STRUCTURAL SERVICES
 PASSED *Ralph E. Anderson*
 ENGINEER OF BRIDGES AND STRUCTURES

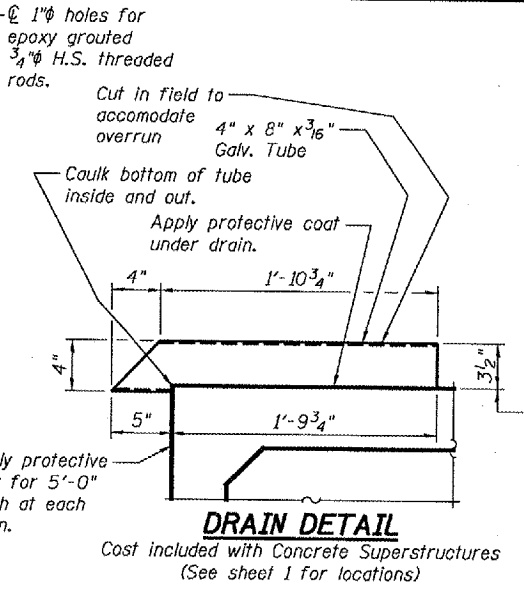
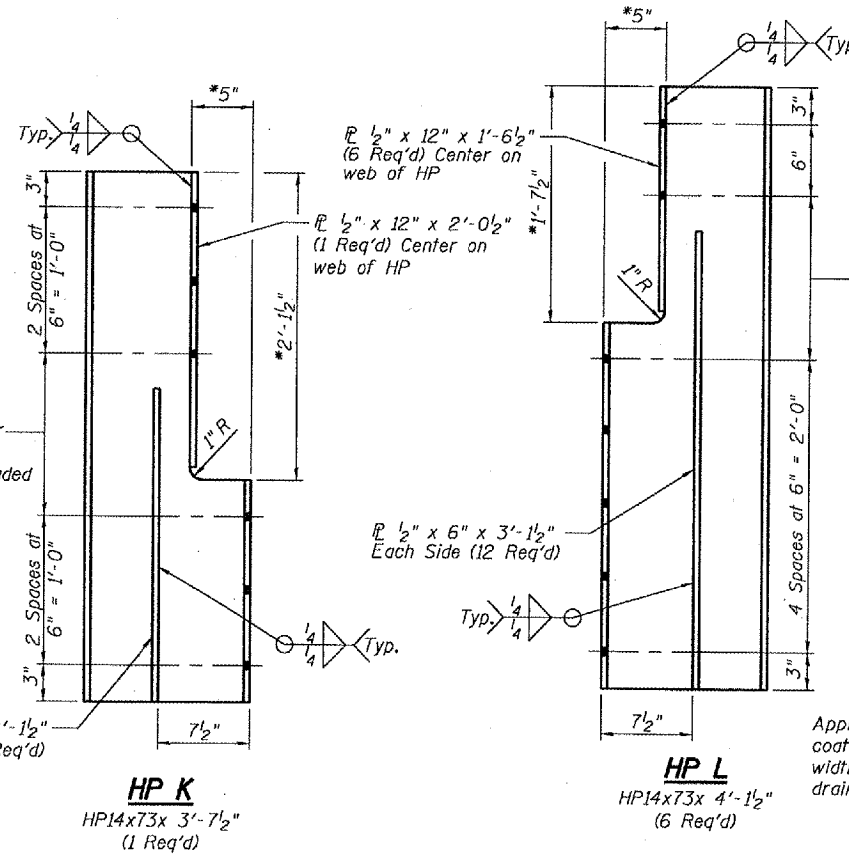
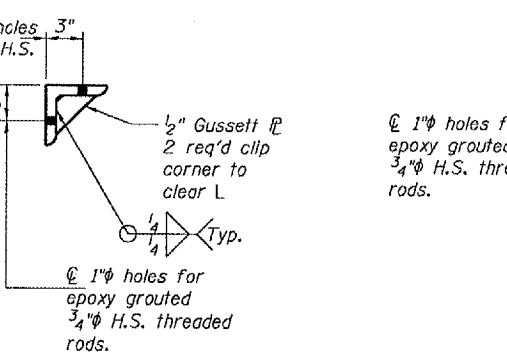
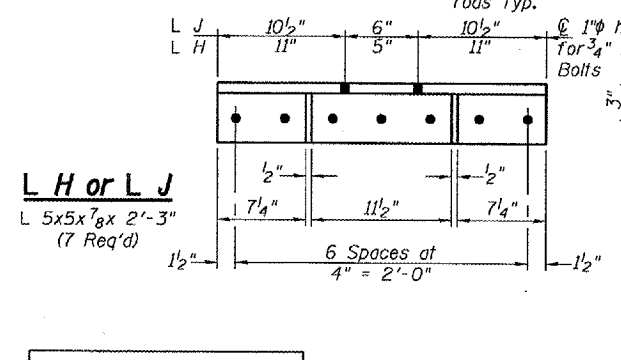
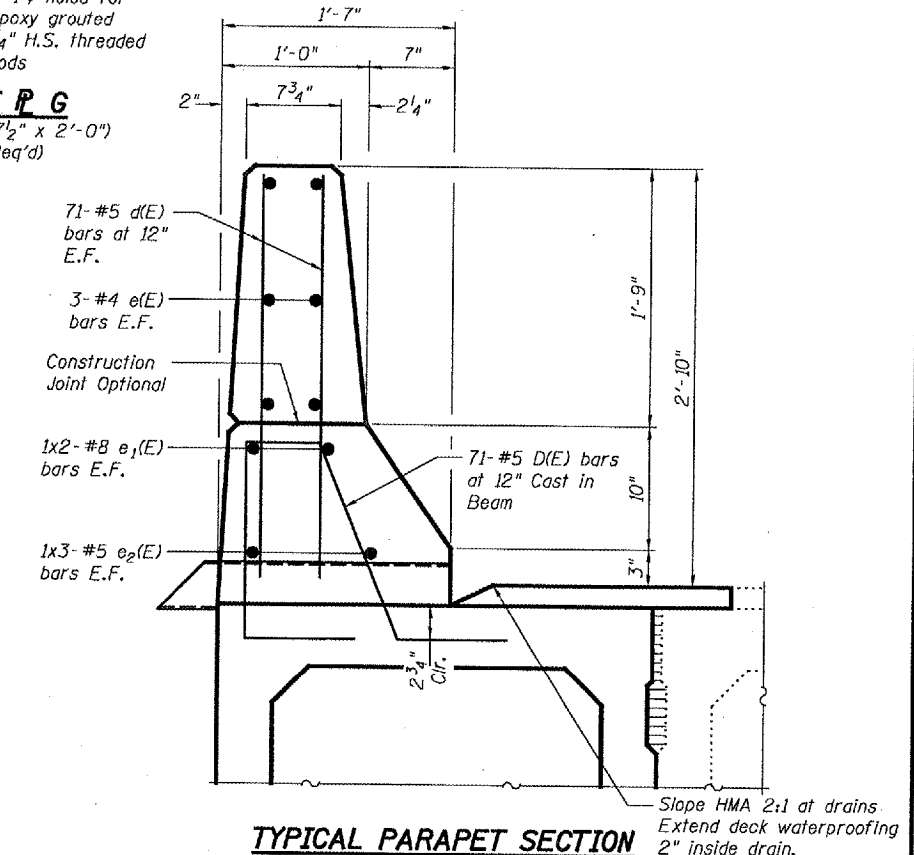
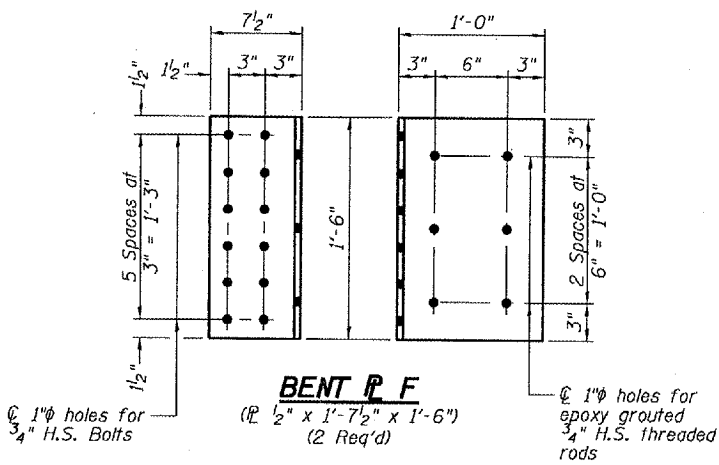
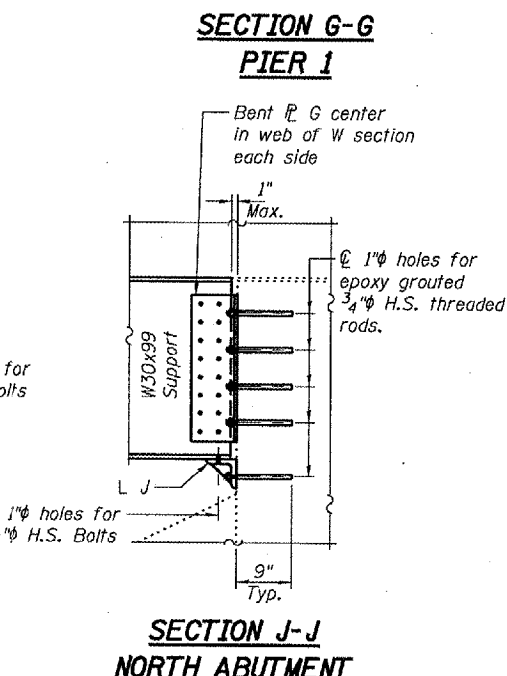
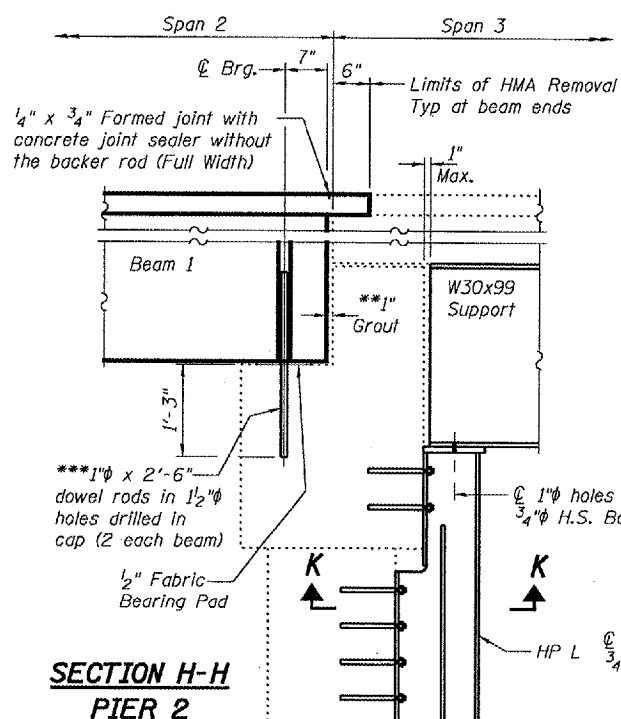
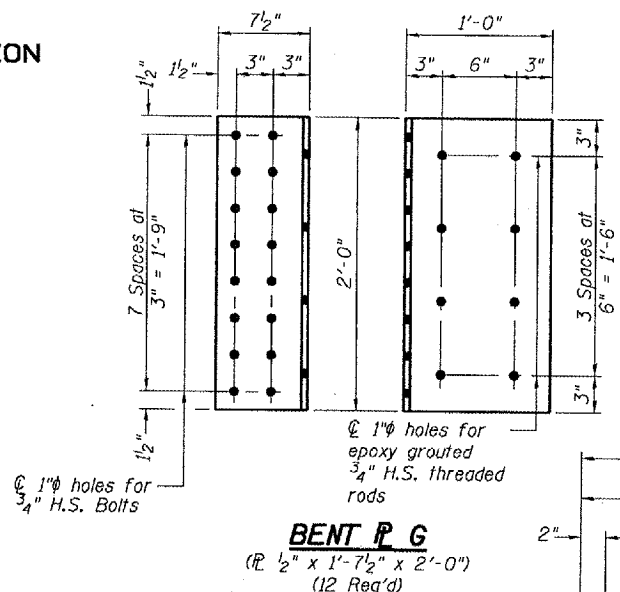
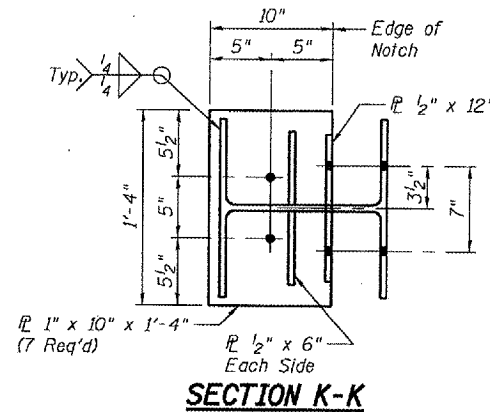
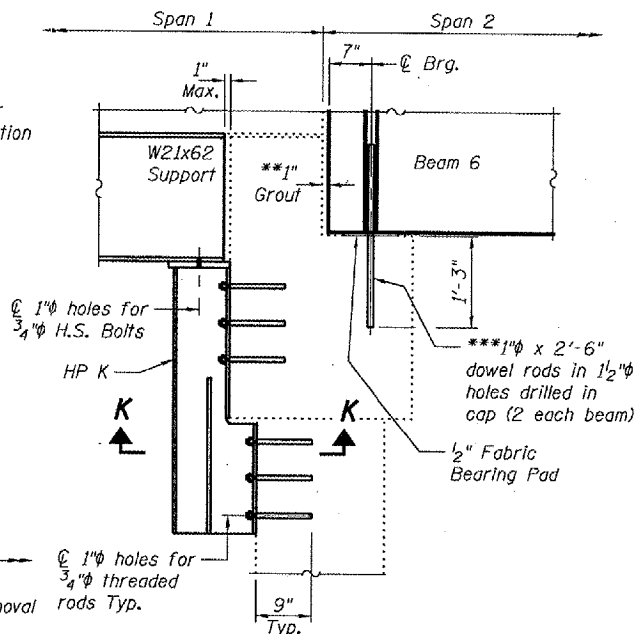
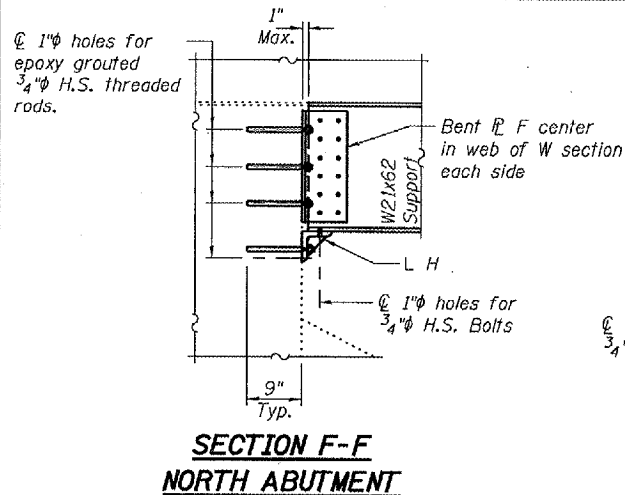
CROSS SECTIONS
FA 885 OVER
SIMMONS CREEK
POPE COUNTY
SN 076-0023

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	JOB NO.	SHEET NO.	SHEET NO. 3 4 SHEETS
FA 885		POPE	21	10	
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT	

Contract Number: 78018

*Dimensions may vary to suit existing conditions. Field verify prior to fabrication.
 **1" 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.



BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d(E)	142	#5	2'-8"	
e(E)	24	#4	17'-2"	
e1(E)	4	#8	36'-9"	
e2(E)	6	#5	24'-4"	
Concrete Removal			Cu. Yd.	8.2
Concrete Superstructure			Cu. Yd.	8.2
Reinforcement Bars, Epoxy Coated			Lbs.	1,210

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

SECTIONS AND DETAILS

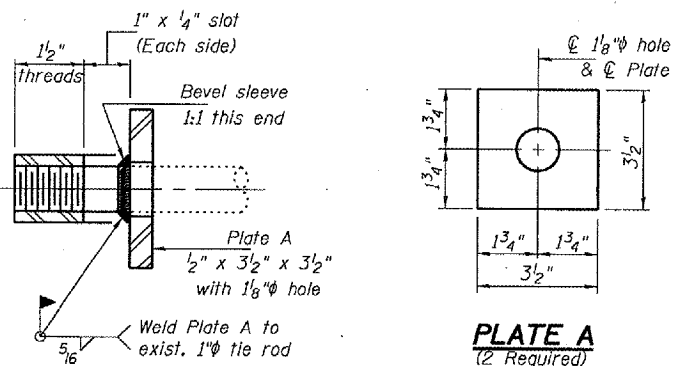
**FA 885 OVER
SIMMONS CREEK
POPE COUNTY
SN 076-0023**

DESIGNED	A.T.H.
CHECKED	V.H.V.
DRAWN	Drew Christopher
CHECKED	A.T.H. V.H.V.

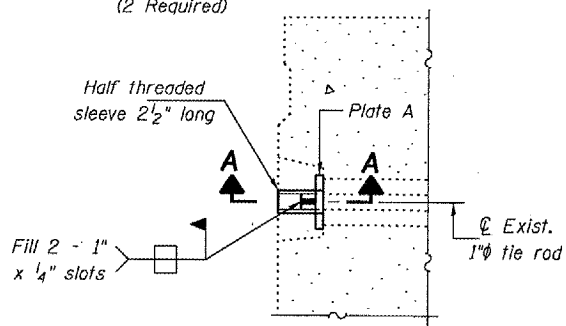
DATE	November 14, 2007
EXAMINED	<i>Carl Proyer</i> ENGINEER OF STRUCTURAL SERVICES
PASSED	<i>Ralph E. Anderson</i> ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

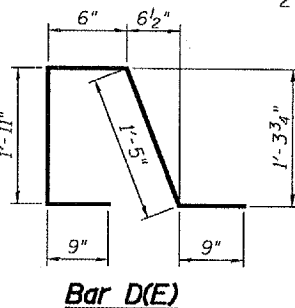
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 4 4 SHEETS
FA 885		POPE	21	11	
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT		Contract Number: 78018



SECTION A-A
(2 Required)

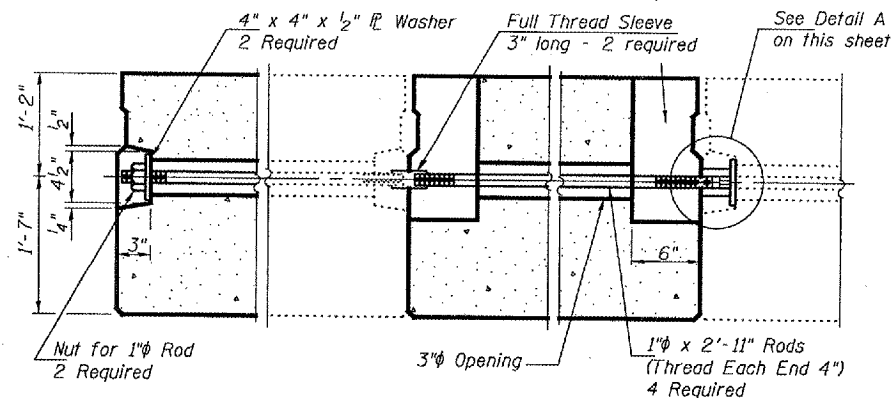


DETAIL A



Bar D(E)

6" x 6" x 16 1/2" Blockout to be filled with Class BS Concrete after Beams have been installed. Cost shall be included in the cost of "Concrete Superstructure". Omit on face of fascia beam.

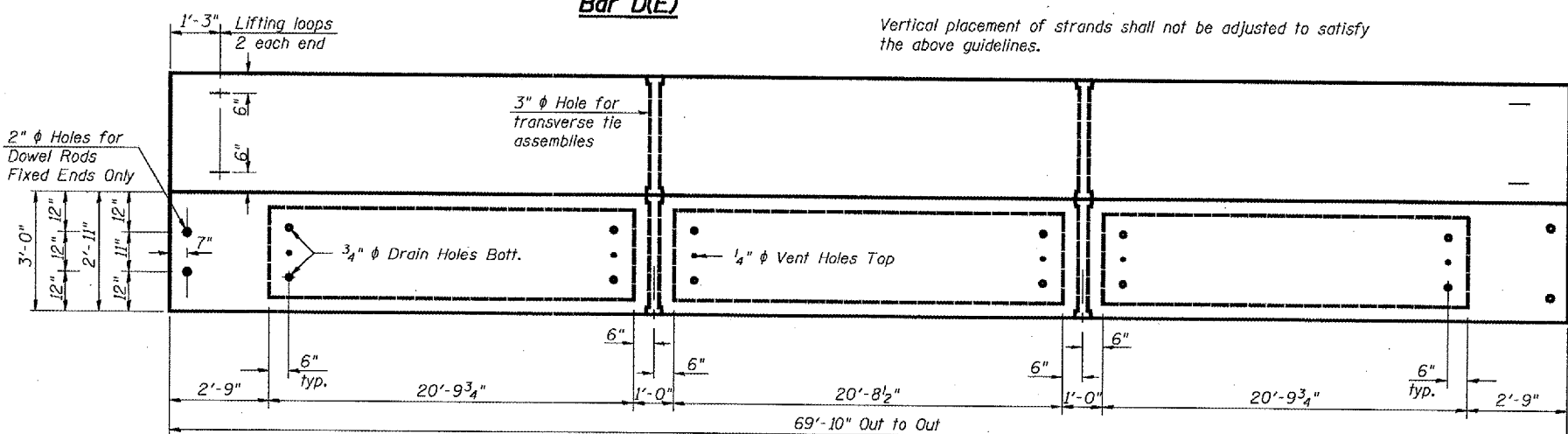


TYPICAL TRANSVERSE TIE ASSEMBLY

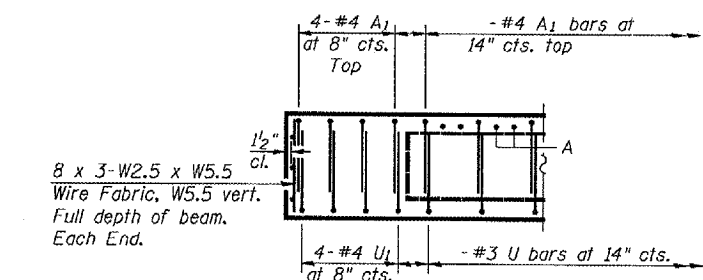
**** TRANSVERSE PLACEMENT GUIDELINES**

1. Place strands symmetrically about centerline of beam.
2. The minimum distance from center to center of strands in all directions shall be 2".
3. The minimum clearance from strand to dowel hole shall be 1/2".
4. The minimum clearance from strand to void shall be 1/2".

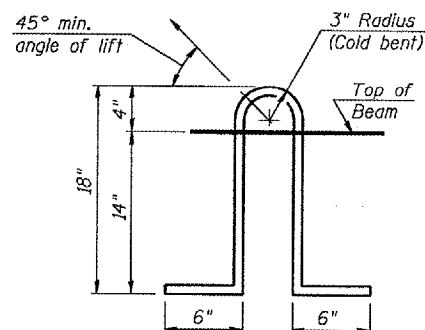
Vertical placement of strands shall not be adjusted to satisfy the above guidelines.



PLAN

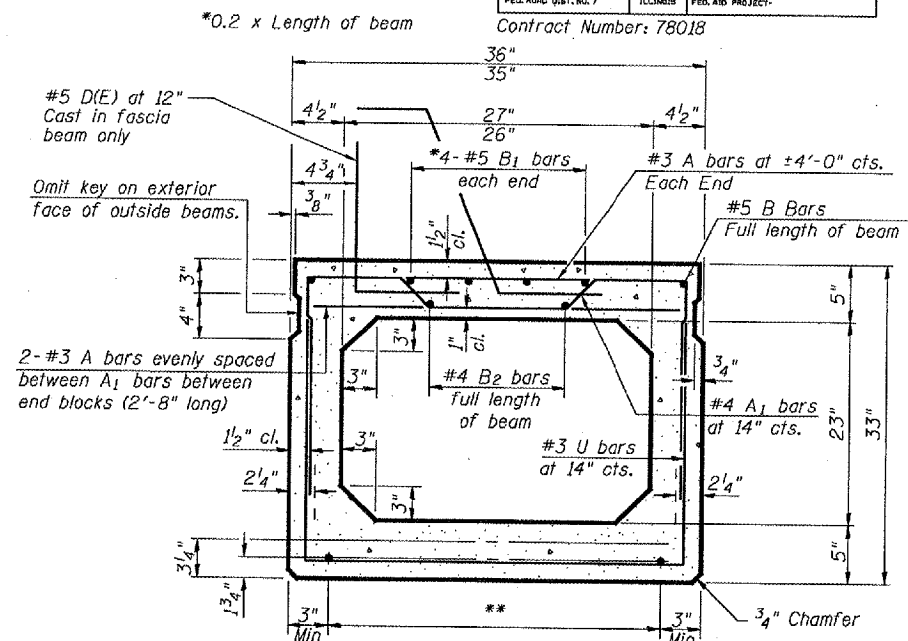
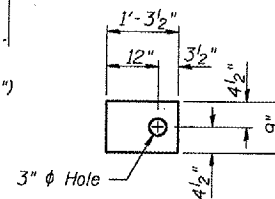


END ELEVATION



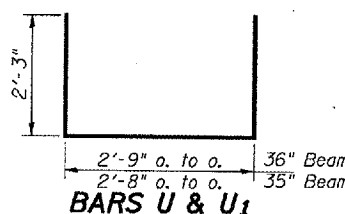
LIFTING LOOP DETAIL

FABRIC BEARING PAD

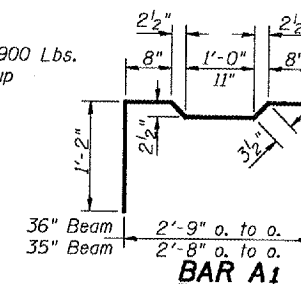


TYPICAL SECTION

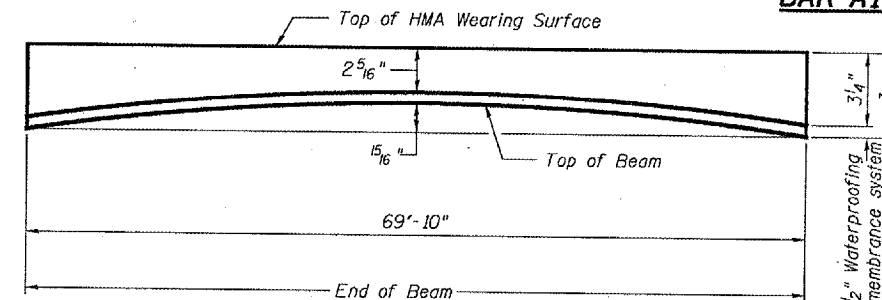
1/2 inch diameter Strands, Each Strand Stressed to 30,900 Lbs.
10-Strands 1 3/4 inch up, 2-Strands 3/4 inch up



BARS U & U1



BAR A1



ANTICIPATED INITIAL CAMBER DIAGRAM

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. Lifting loops shall be 2-1/2" diameter 270 ksi strands, as shown.
- The 1" diameter rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar on outside shall be filled with grout after transverse tie assembly is in place.
- Non prestressing steel shall conform to ASTM A 706 (IL MOD), Grade 60.
- The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two 1/8" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.
- Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of the beams. Cleaning shall be done by sandblasting the keyway areas between top of the beam and the bottom edge of the key.
- Corrosion Inhibitor, per Article 1020.05(b)(12) of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.
- Required Release Strength, f'ci, shall be 4,000 p.s.i.

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms.	Sq. Ft.	413
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SECTIONS AND DETAILS

**FA 885 OVER
SIMMONS CREEK
POPE COUNTY
SN 076-0023**

DESIGNED	A.T.H.
CHECKED	V.H.V.
DRAWN	Drew Christopher
CHECKED	A.T.H. V.H.V.

November 14, 2007
EXAMINED <i>Carl Perry</i> ENGINEER OF STRUCTURAL SERVICES
PASSED <i>Ralph E. Anderson</i> ENGINEER OF BRIDGES AND STRUCTURES

PD-5-S 11-1-06

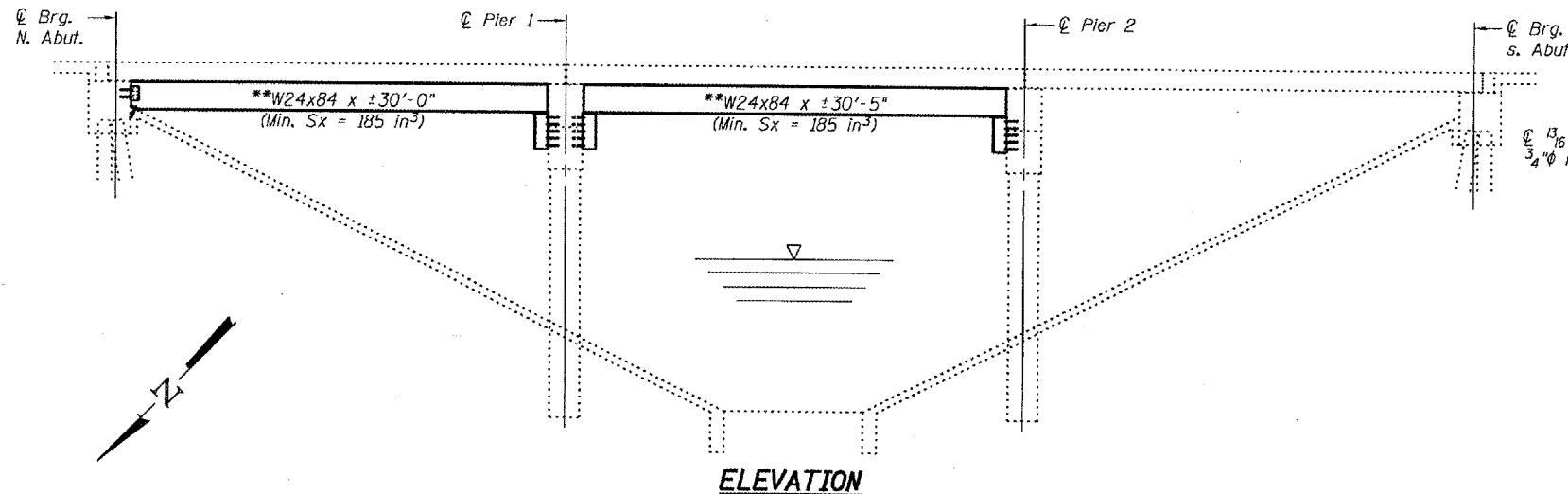
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	POST MILE	SHEET NO.	SHEET NO. 1
FA 885		POPE	21	12	1 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

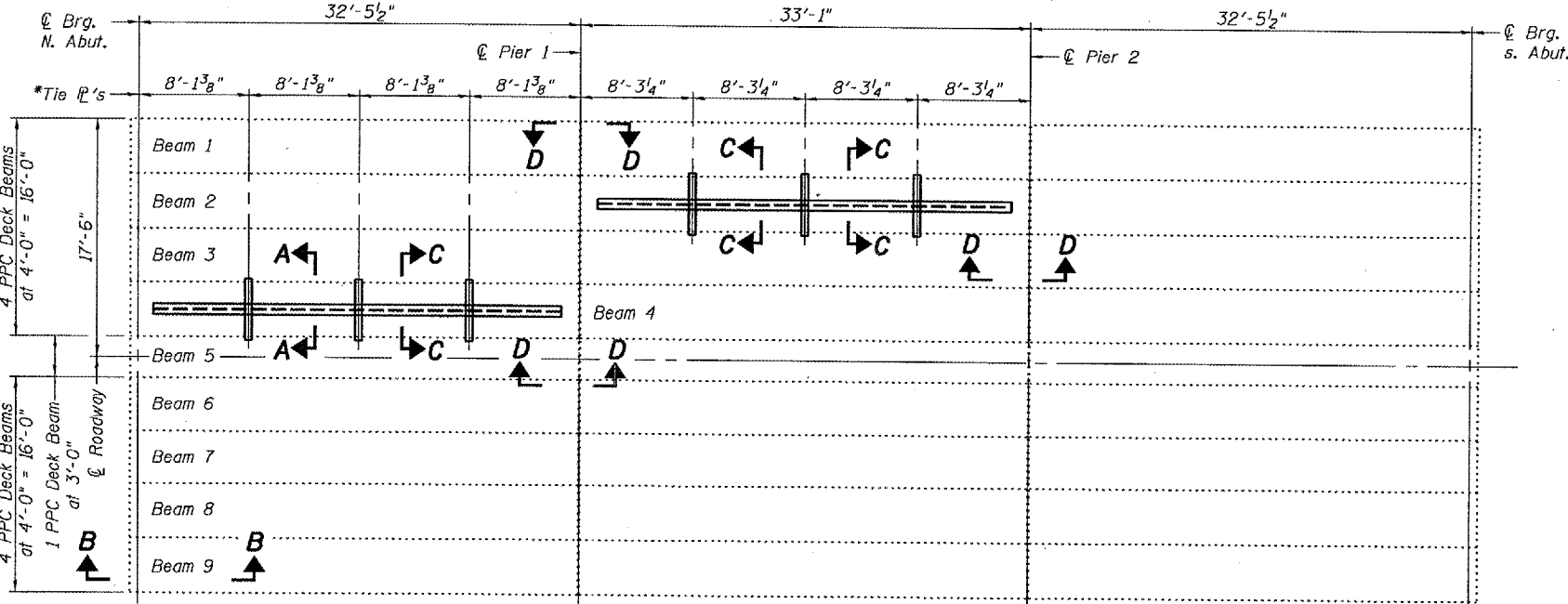
Contract Number: 78018

**Contractor is to verify beam length prior to ordering material. Other sections meeting the section modulus requirements shown may be allowed subject to approval by the Bureau of Bridges and Structures. Maximum Girder depth = 27". No additional payment will be allowed if the contractor chooses a heavier steel section than the one specified in the plans

⊕ Transverse tie Ⓡ's (3 per span). Place additional shims at midpoints between tie Ⓡ's. Securely weld shims to top flange of support beam. Minimum shim size is 6" x flange width.



ELEVATION



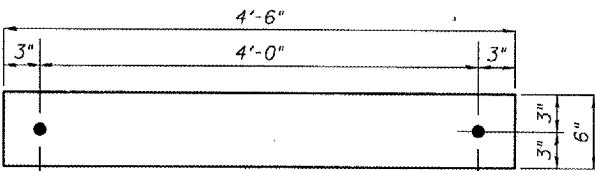
PLAN

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Furnishing and Erecting Structural Steel	Pound	6,200

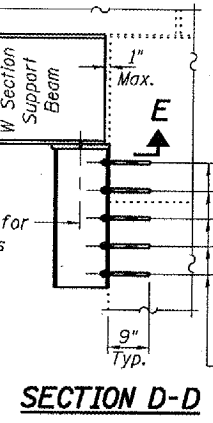


Expires: November 30, 2008

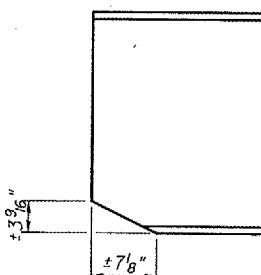


TRANSVERSE TIE Ⓡ'S
Ⓡ 1/2" x 4'-6" x 6" (6 Req'd)

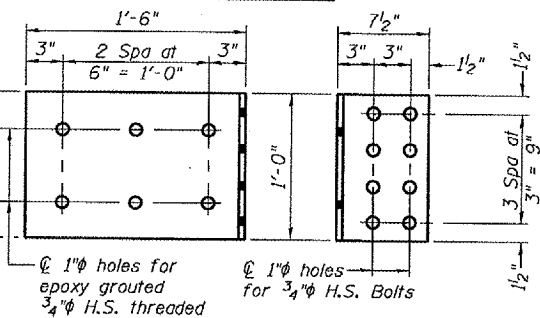
DESIGNED	U. H. V. V. L. Z.	November 14, 2007
CHECKED	Adrian J. Holloway	EXAMINED
DRAWN	[Signature]	PASSED
CHECKED	U. H. V. V. L. Z.	ENGINEER OF BRIDGES AND STRUCTURES



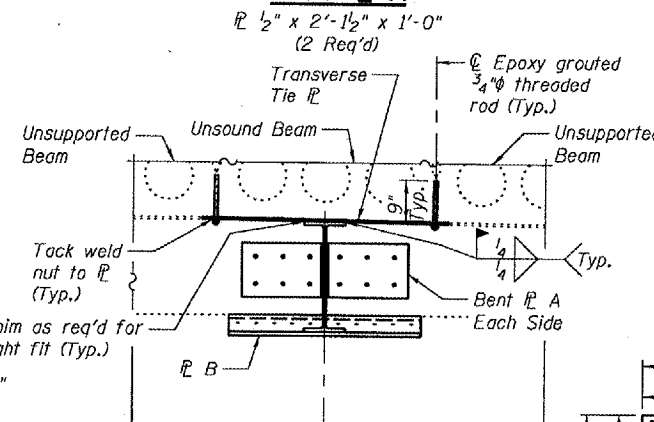
SECTION D-D



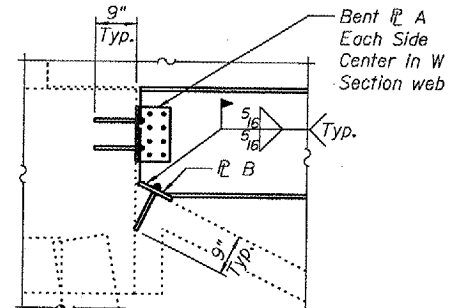
ABUTMENT NOTCH DETAIL



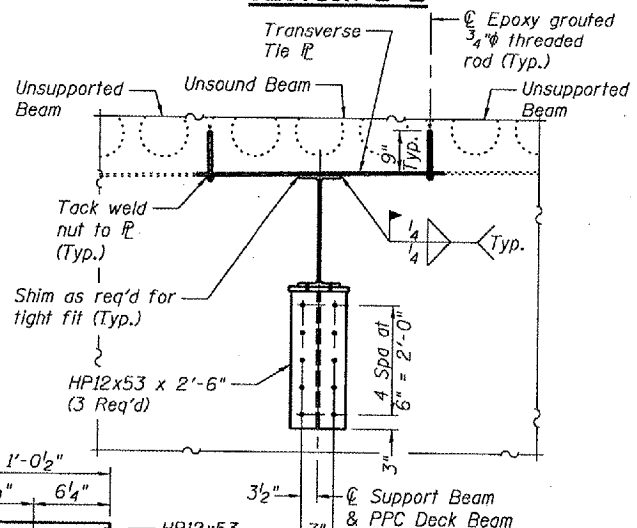
BENT Ⓡ A



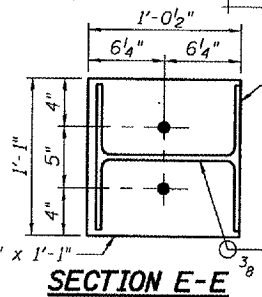
SECTION A-A



SECTION B-B



SECTION C-C



SECTION E-E

PLAN AND ELEVATION
FA 885
POPE COUNTY
SN 076-0026

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	STATE SHEETS	SHEET NO.	SHEET NO. 1 3 SHEETS
FA 885		POPE	21	13	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

Contract Number: 7801B

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 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.

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.

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.

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

Reinforcement bars designated (E) shall be epoxy coated. All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.

Temporary concrete barrier shall only be anchored into the overlay and not into the PPC Deck Beams.

The cut strands at each beam end shall be given two coats of zinc dust spray or paint meeting the requirements of ASTM A780. The zinc dust spray or paint shall be applied before corrosion appears and allowed to dry according to manufacturer's specifications prior to another coat of zinc. This work shall be performed by the producer and included with the cost of the beam.

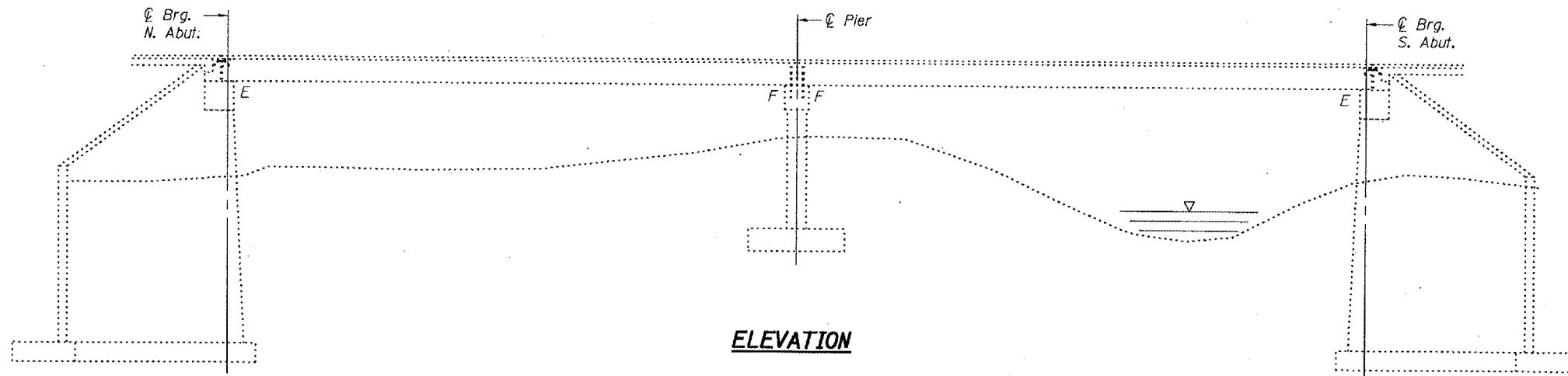
DESIGN STRESSES

FIELD UNITS

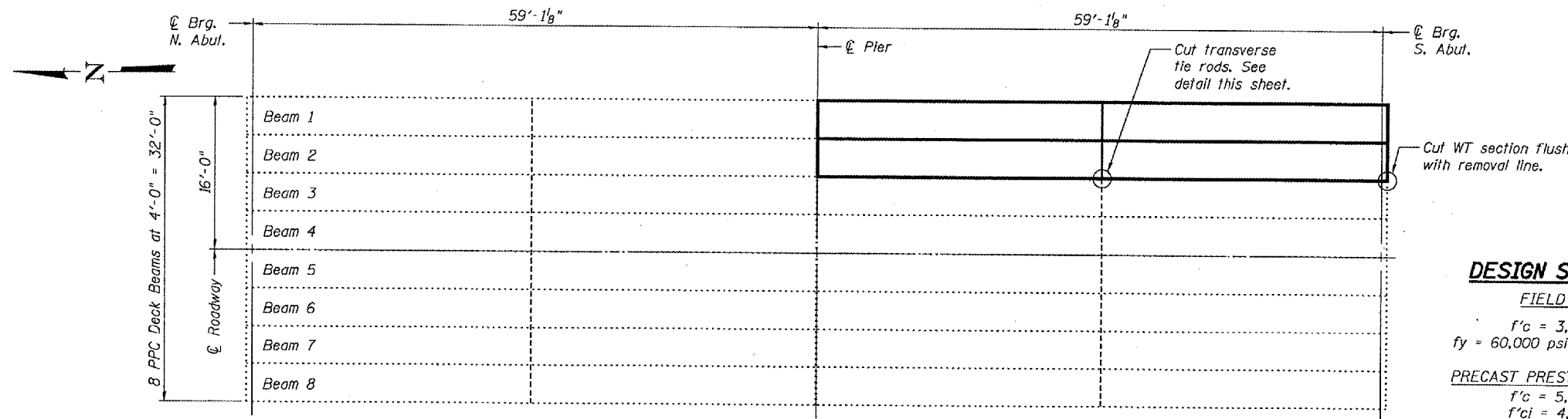
$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)

PRECAST PRESTRESSED UNITS

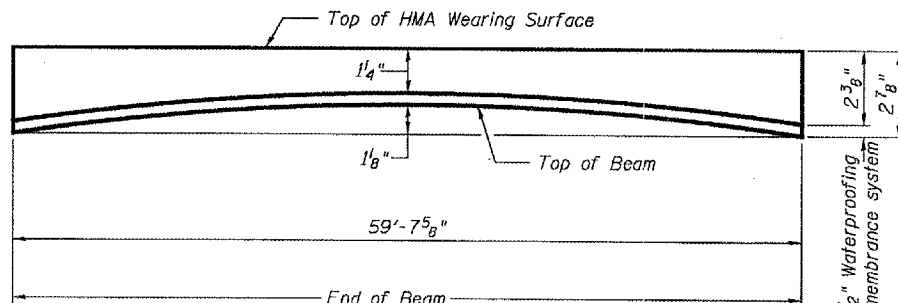
$f'_c = 5,000$ psi
 $f'_{ci} = 4,000$ psi
 $f'_s = 270,000$ psi ($\frac{1}{2}$ " ϕ low lax strands)
 $f'_{si} = 201,960$ psi ($\frac{1}{2}$ " ϕ low lax strands)



ELEVATION



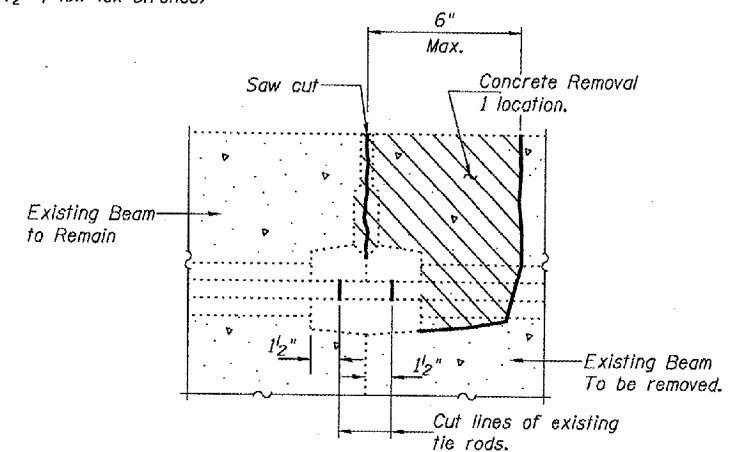
PLAN



ANTICIPATED INITIAL CAMBER DIAGRAM

TOTAL BILL OF MATERIAL

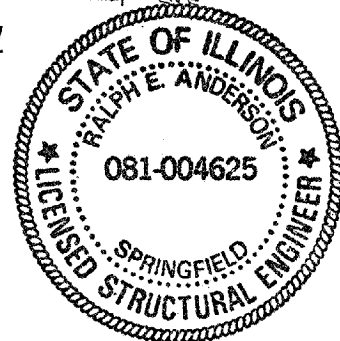
ITEM	UNIT	QUANTITY
Removal of Existing PPC Deck Beams	Sq. Ft.	477
PPC Deck Beams (27" Depth)	Sq. Ft.	477
Hotmix Asphalt Surface Removal	Sq. Yd.	3.8
Hotmix Asphalt Surface Course, Mix "C" N90	Tons	6.3
Concrete Superstructure	Cu. Yd.	2.0
PC Mortar Fairing Course	Foot	119
Waterproofing Membrane System	Sq. Yd.	50
Asbestos Bearing Pad Removal	Each	3
Remove and Re-erecting Existing Railing	Foot	60
Protective Coat	Sq. Yd.	18.6
Reinforcement Bars, Epoxy Coated	Pound	120
Furnishing and Erecting Structural Steel	Pound	280



**BEAM REMOVAL DETAIL
AT TRANSVERSE TIES**

**PLAN AND ELEVATION
F.A.S. RT. 2936
PULASKI COUNTY
SN 077-0016**

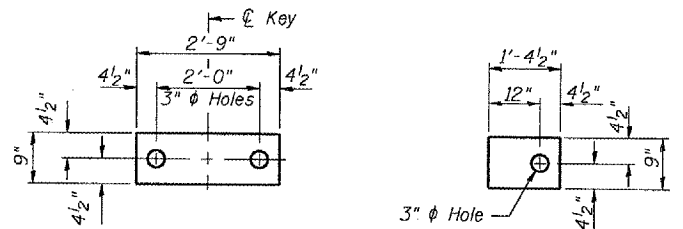
DESIGNED: *Robert H. Halloway* November 14, 2007
CHECKED: *Alvin T. Halloway* EXAMINED: *Dr. Carl Hansen*
DRAWN: *[Signature]* PASSED: *Ralph E. Anderson*
CHECKED: *VHU ATH*



Expires: November 30, 2008

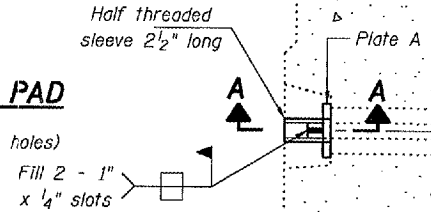
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FA 885		POPE	21	14
SHEET NO. 2				
3 SHEETS				
Contract Number: 78018				



FABRIC BEARING PAD (Interior)
(Expansion Similar without holes)

FABRIC BEARING PAD (Exterior)
(Expansion Similar without holes)



DETAIL A

#5 E bars at 12" cts. Space to miss Flared Coil Loops.

3-#5 a(E) bars placed in field.

5-#5 C bars (Grade 60) @ ±7" cts.

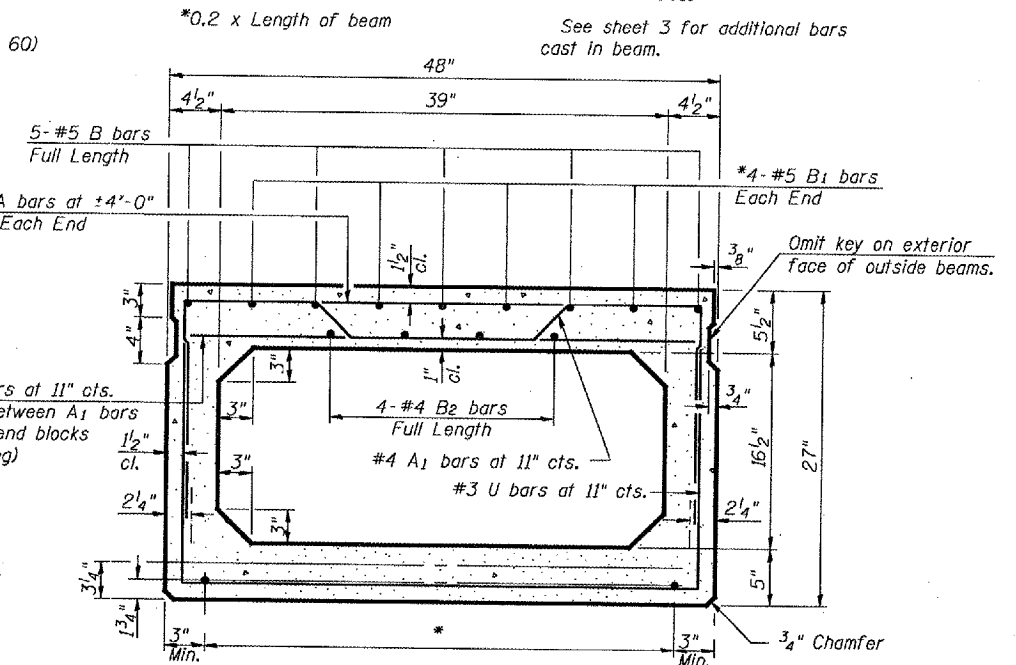
Expansion end to be filled with Class BS Concrete cast with PPC Deck Beams.

8 x 3-W2.5 x W5.5 Wire Fabric, 1 1/2" cl. (W5.5 vertical)

3-#4 A₁ top
3-#4 U₁ bottom

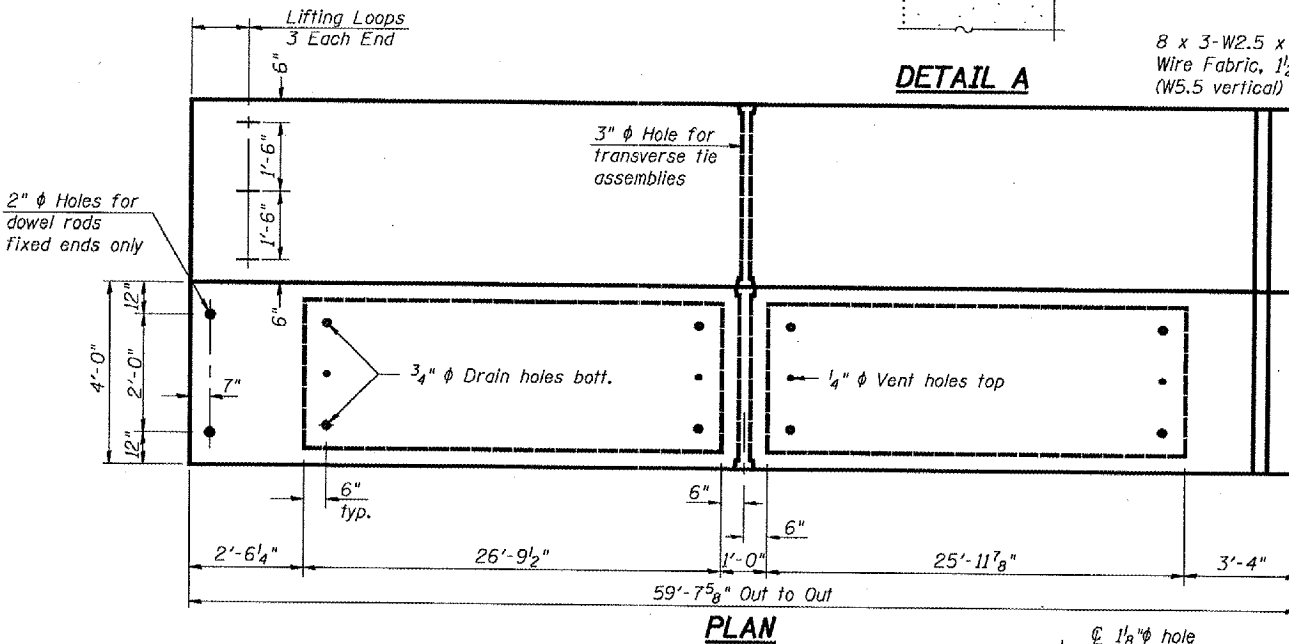
2 Pair-#4 U₂ bars

EXPANSION END OF BEAM



TYPICAL SECTION

1/2" φ Strands, Each Strand Stressed to 30,900 Lbs.
14-Strands 1 3/4" up, 2-Strands 3/4" up

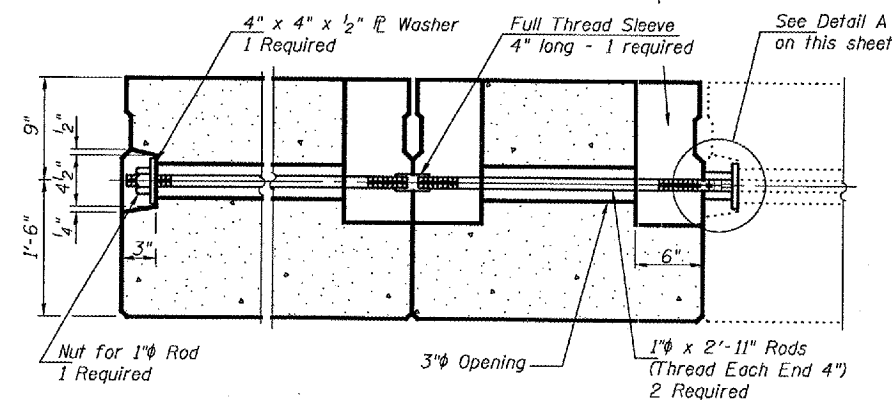


PLAN

8 x 3-W2.5 x W5.5 Wire Fabric, W5.5 vert. Full depth of beam. Each End.

END ELEVATION

6" x 6" x 1 1/2" Blockout to be filled with Class Bs Concrete after Beams have been installed. Cost shall be included in the cost of PPC Deck Beams. Omit on face of fascia beams.



TYPICAL TRANSVERSE TIE ASSEMBLY

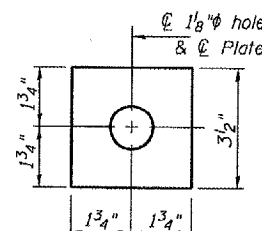
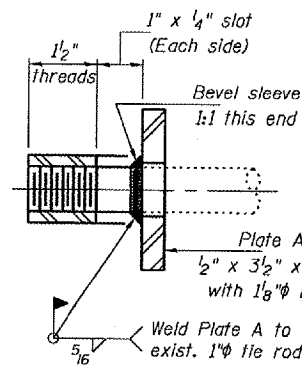
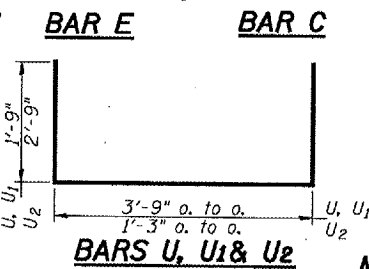


PLATE A
(1 Required)



SECTION A-A
(1 Required)



BARS U, U1 & U2

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. Lifting loops shall be 2 - 1/2" φ-270 ksi strands, as shown.

The 1" φ rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar on outside shall be filled with grout after transverse tie assembly is in place.

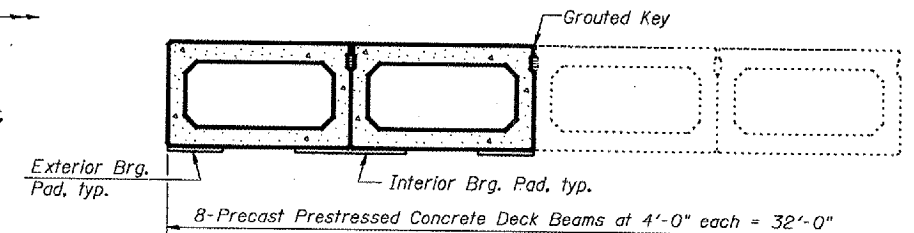
Non prestressing steel shall conform to ASTM A 706 (IL MOD), Grade 60.

The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two 1/8" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.

Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of the beams. Cleaning shall be done by sandblasting the keyway areas between top of the beam and the bottom edge of the key.

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

Required Release Strength, f'ci, shall be 4,000 p.s.i.



HALF CROSS SECTION

*** TRANSVERSE PLACEMENT GUIDELINES**

1. Place strands symmetrically about centerline of beam.
2. The minimum distance from center to center of strands in all directions shall be 2".
3. The minimum clearance from strand to dowel hole shall be 1/2".
4. The minimum clearance from strand to void shall be 1/2".

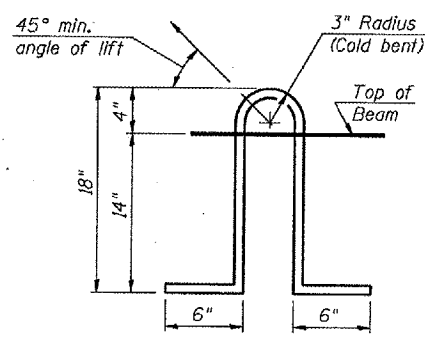
Vertical placement of strands shall not be adjusted to satisfy the above guidelines.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	3	#5	7'-10"	
e(E)	2	#6	30'-9"	
Reinf. Bars, Epoxy Coated			Pound	120
Concrete Superstructure			Cu. Yd.	2.0
Precast Prestressed Conc. Deck Bms.			Sq. Ft.	477

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

BEAM DETAILS
F.A.S. RT. 2936
PULASKI COUNTY
SN 077-0016



LIFTING LOOP DETAIL

DESIGNED	V.H.V.
CHECKED	A.T.H.
DRAWN	Drew Christopher
CHECKED	V.H.V. A.T.H.

EXAMINED	November 14, 2007
PASSED	Carl Provey ENGINEER OF STRUCTURAL SERVICES
	Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES

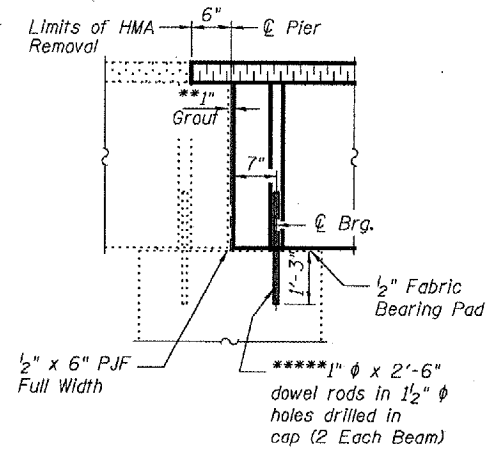
PD-6-S

11-1-06

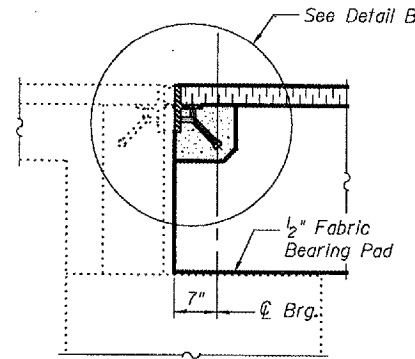
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	POSTS	SHEET NO.	SHEET NO. 3
FA 085		POPE	21	15	3 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

Contract Number: 78018



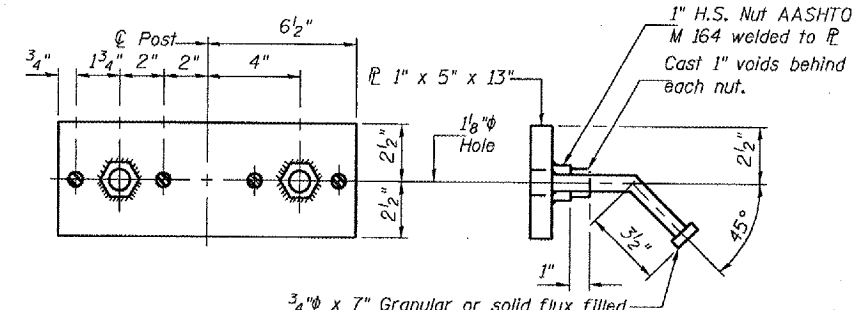
TYPICAL SECTION AT PIER



TYPICAL SECTION AT ABUTMENT

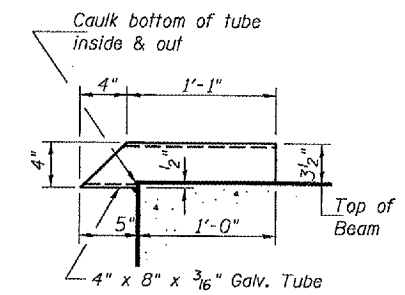
***1" joint shall be filled with non-shrink grout. This dimension may vary plus or minus to accommodate tolerance in beam lengths.

*****Existing Dowel Rods shall be cut off and ground flush with the top of the existing concrete. Cost to be included in the cost of Removal of Existing P.P.C. Deck Beams. New Dowel Rods shall be grouted after beams are in place and allowed to cure a Minimum of 24 hours prior to grouting shear keys.



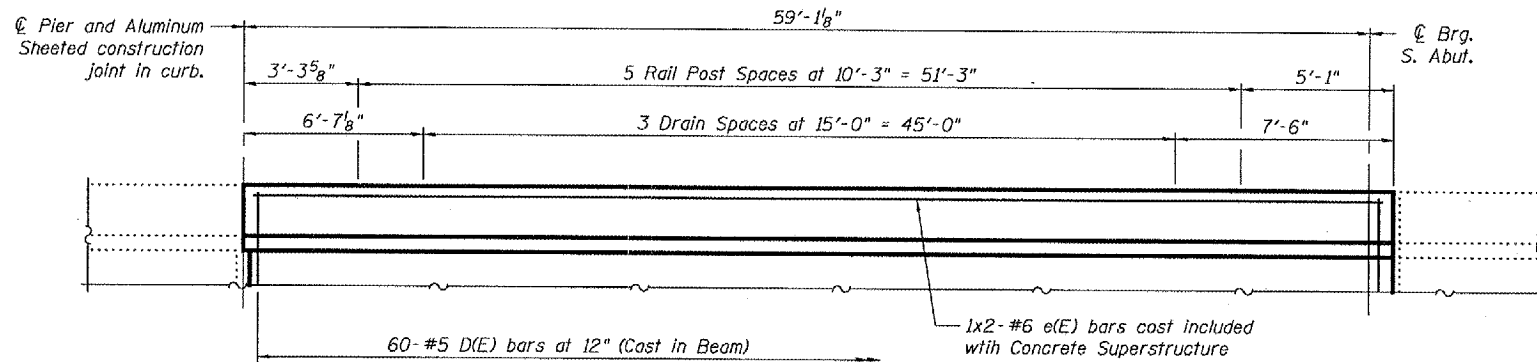
3/4" phi x 7" Granular or solid flux filled headed studs conforming to Article 1006.32 of the Standard Specification automatically end welded. 4 required per plate.

TOP ANCHOR DEVICE

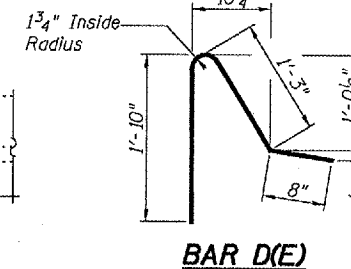


DRAIN DETAIL

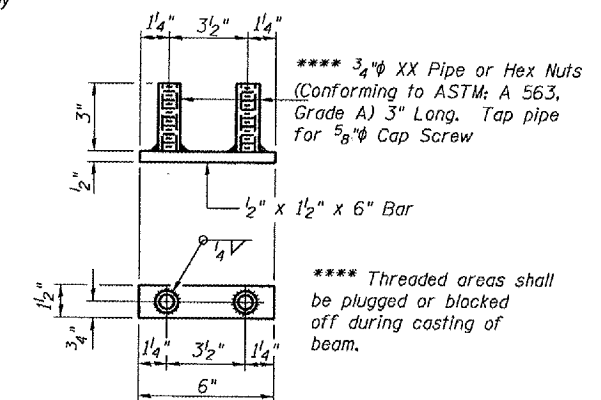
Cost included with Concrete Superstructures



CURB ELEVATION



BAR D(E)

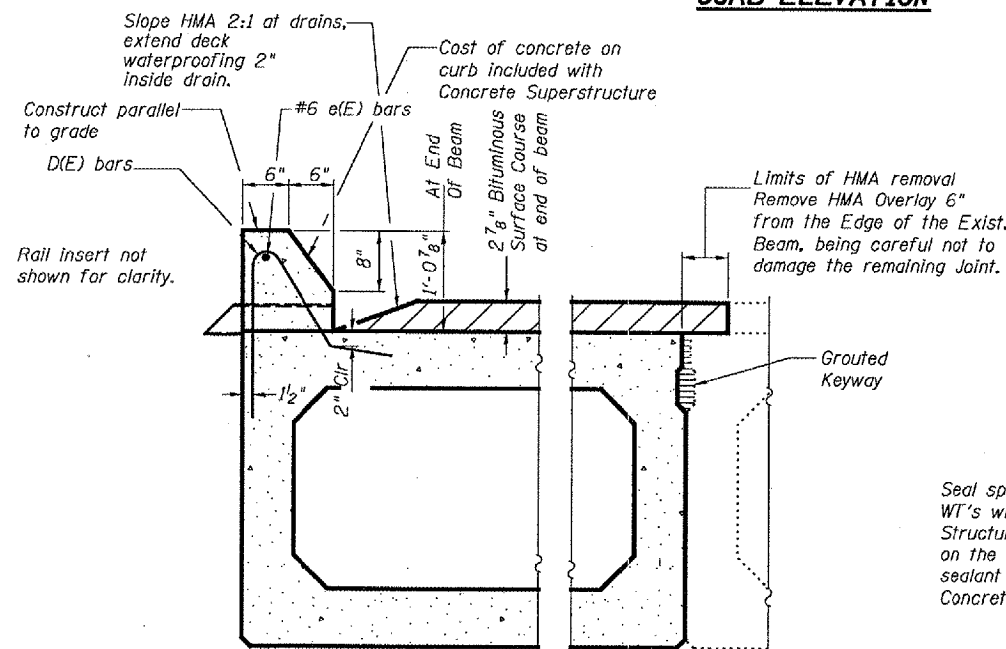


BOTTOM ANCHOR DEVICE

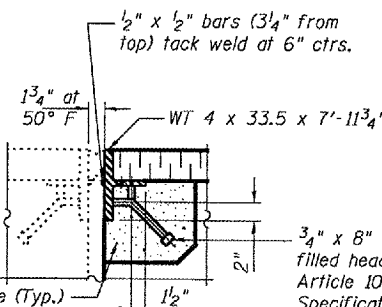
The cost of removing and re-erecting the existing railing and post with all applicable new hardware shall be included in the cost of Removing and Re-erecting Existing Railing. The work shall be paid for at the contract unit price per foot for Removing and Re-erecting Existing Railing.

NOTES

- All steel shapes and plates shall conform to the requirements of AASHTO M 270 Grade 36 except posts and angles shall conform to AASHTO M 270, Grade 50.
- Bolts, cap screws, and nuts shall conform to the requirements of ASTM designation A 307 except for high strength bolts, nuts and washers noted which shall conform to AASHTO M 164.
- All bolts, nuts, cap screws, washers and lock washers shall be galvanized according to AASHTO M 232.
- All anchor devices and angles shall be galvanized after shop fabrication according to AASHTO M 111 and ASTM A 385. Galvanized rail shall not be painted.
- The lower portion of the post flange in contact with concrete shall receive two coats of asphalt paint conforming to Section 1060.07 Type II or place 1/8" fabric bearing pad between the post and concrete.
- The 3/4" high strength bolts used to connect the 6 x 4 x 3/4 angles to the post shall be tightened according to Article 505.04(f)(3) of the Standard Specifications. The 1" high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional 1/8 turn. The 5/8" cap screws in bottom of posts shall be tightened to a snug fit only.
- Cost of the anchorage devices is included with the cost of Precast Prestressed Concrete Deck Beams (27" Depth).



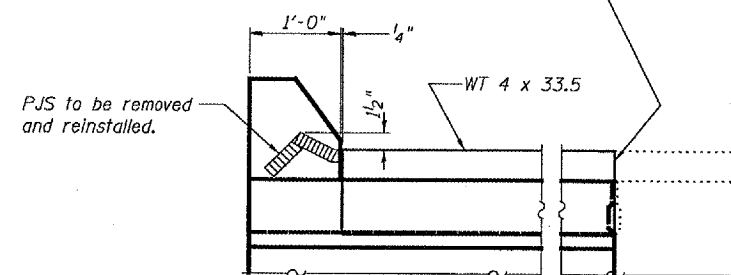
TYPICAL SECTION THRU CURB



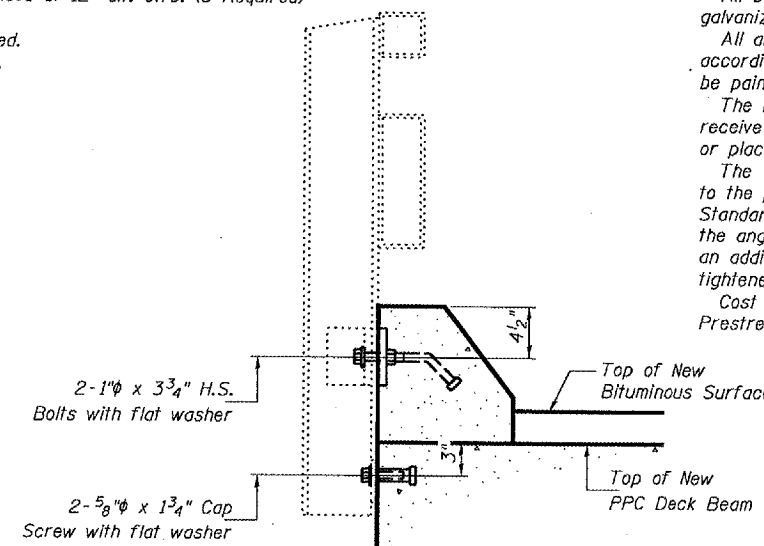
DETAIL B

Existing 2 1/2" P.J.S. to be removed and re-installed.
***Cost included with Concrete Superstructure.

Seal space between existing and new WT's with silicone sealant suitable for Structural Steel on front side. Weld WT's on the backside. Cost of WT, silicone sealant and welding is included with Concrete Superstructure.



END OF SEAL TREATMENT



SECTION AT RAIL POST

RAIL AND CURB DETAILS
F.A.S. RT. 2936
PULASKI COUNTY
SN 077-0016

DESIGNED	V.H.V.
CHECKED	A.T.H.
DRAWN	Drew Christopher
CHECKED	V.H.V. A.T.H.

EXAMINED	November 14, 2007
PASSED	Engineer of Structural Services
	Engineer of Bridges and Structures

**Contractor is to verify beam length prior to ordering material. Other sections meeting the section modulus requirements shown may be allowed subject to approval by the Bureau of Bridges and Structures. Maximum Girder depth = 24". No additional payment will be allowed if the contractor chooses a heavier steel section than the one specified in the plans

* \varnothing Transverse tie \varnothing 's (2 per span). Place additional shims at midpoints between tie \varnothing 's. Securely weld shims to top flange of support beam. Minimum shim size is 6" x flange width.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 1 1 SHEETS
FA 885		Pulaski	21	16	
FED. ROAD DIST. NO. 7		PLAN NO.	FED. AID PROJECT		Contract Number: 78018

GENERAL NOTES

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

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.

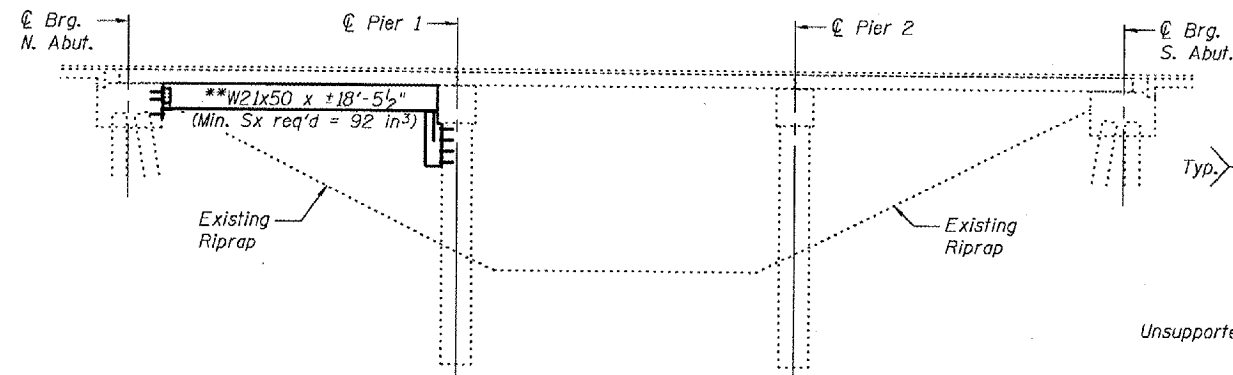
The contractor is advised that the existing PPC Deck Beams are in a deteriorated condition with reduced load carrying capacity. It is the contractor's responsibility to account for the condition of the beams when developing construction procedures.

See Section 584 of the Standard Specifications for Epoxy Grouting of Threaded Rods; Minimum embedment 9".

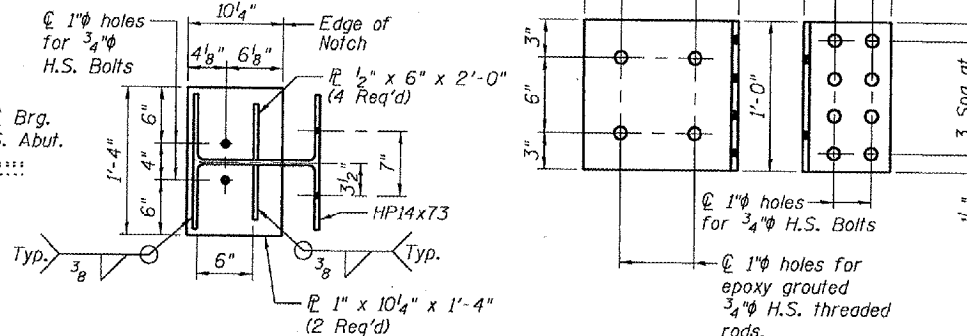
If the contractor's procedure for placement of beams involves placement of cranes or other heavy equipment on the bridge, a detailed procedure shall be submitted to the Engineer for approval. The procedure shall include calculations, prepared and sealed by an Illinois Licensed Structural Engineer, verifying that the equipment and procedure used will not overstress the 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.

The cost of epoxy grouting threaded rods on the pier cap, abutments and beams shall be included with Furnishing and Erecting Structural Steel.

The Contractor has the option of using used steel. See Special Provisions..



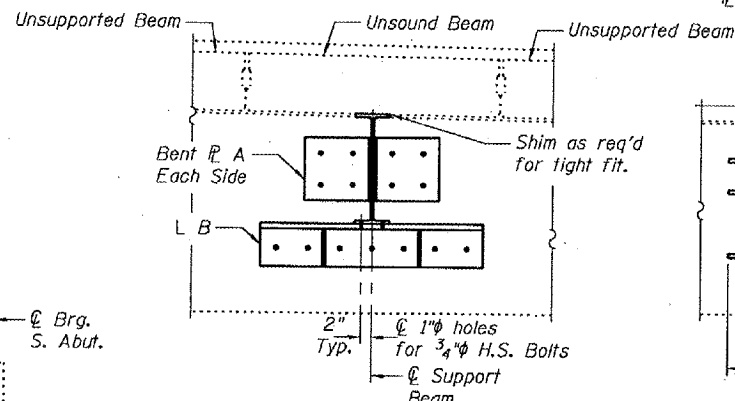
ELEVATION



SECTION E-E

BENT P A

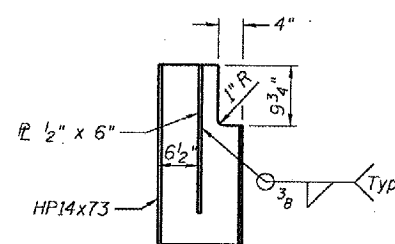
\varnothing 1" holes for epoxy grouted \varnothing 3/4" H.S. threaded rods. (4 Req'd)



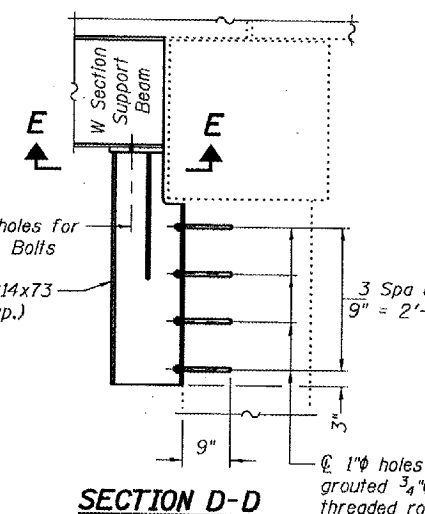
SECTION A-A

SECTION B-B

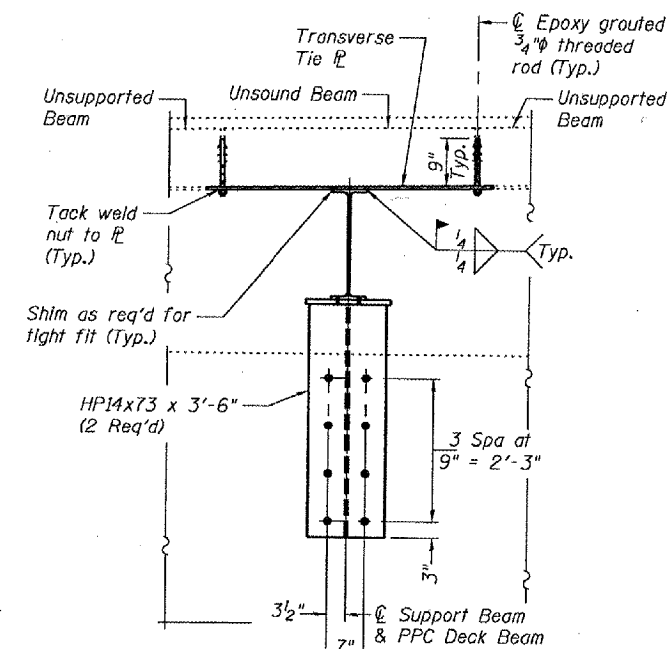
\varnothing 1" holes for epoxy grouted \varnothing 3/4" H.S. threaded rods. (4 Req'd)



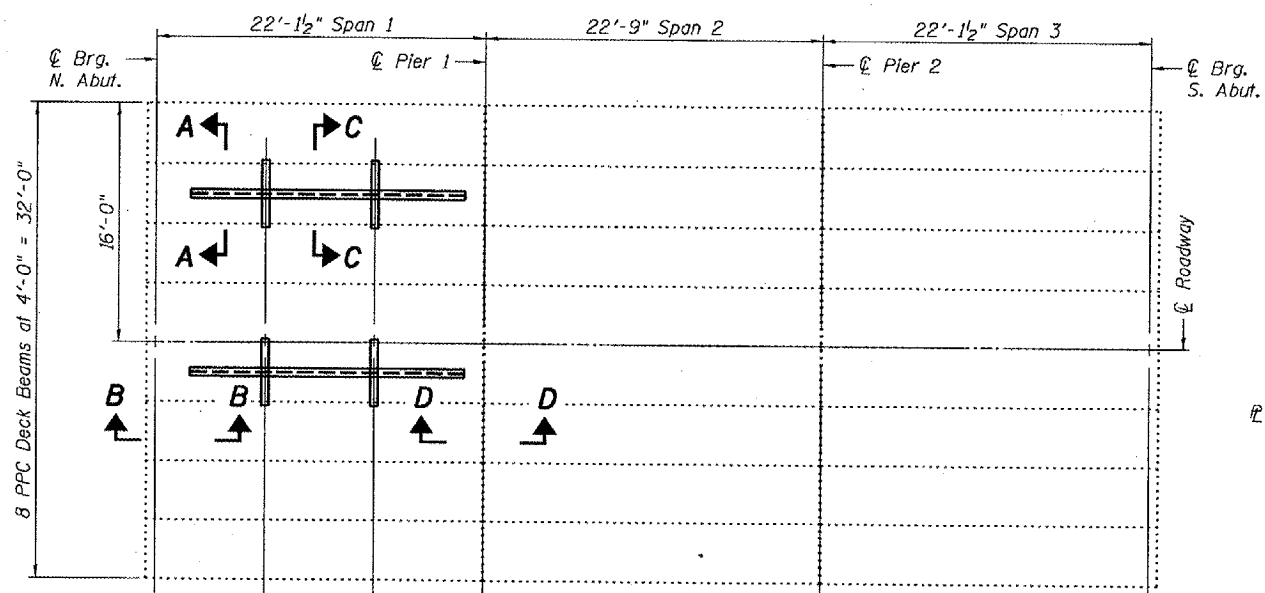
TYPICAL NOTCH IN HP SECTION



SECTION D-D



SECTION C-C



PLAN

* Transverse Tie P's

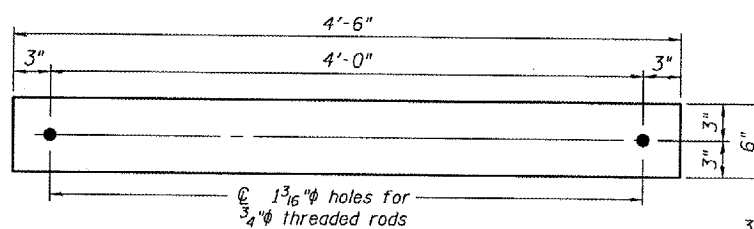
TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Furnishing and Erecting Structural Steel	Pound	3,030

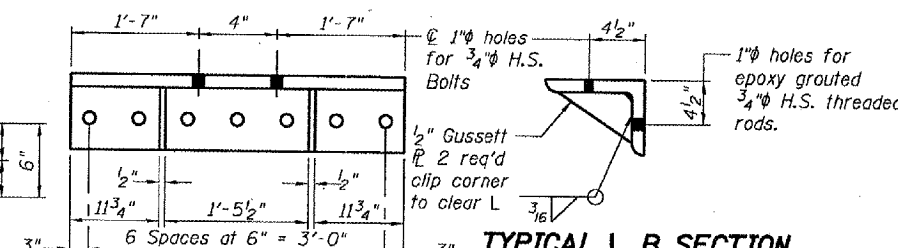
DESIGNED	Victor H. Wolf	November 14, 2007
CHECKED	Adrian J. Hallway	EXAMINED
DRAWN		PASSED
CHECKED	VHW AJH	



Expires: November 30, 2008



TRANSVERSE TIE P
 \varnothing 1/2" x 4'-6" x 6" (4 Req'd)



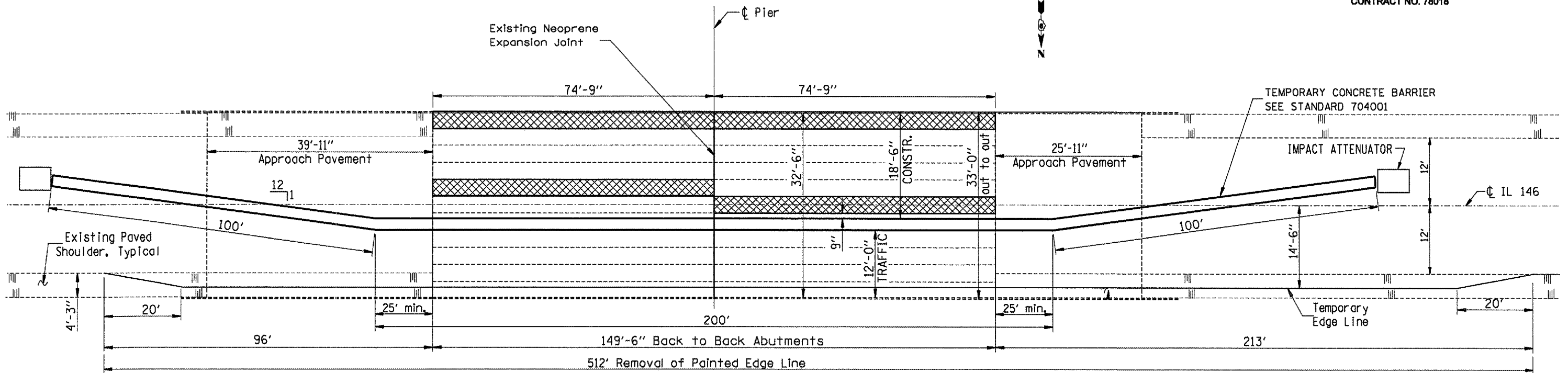
L B
L 8x8x3/4 x 3'-6" (2 Req'd)

PLAN AND ELEVATION
F.A.S. 2936
PULASKI COUNTY
SN 077-0035

PAVEMENT MARKING REMOVAL QUANTITY INCLUDES REMOVAL OF TEMPORARY EDGE LINE.
SEE TRAFFIC CONTROL AND PROTECTION STANDARD 701321 FOR DETAILS NOT SHOWN.

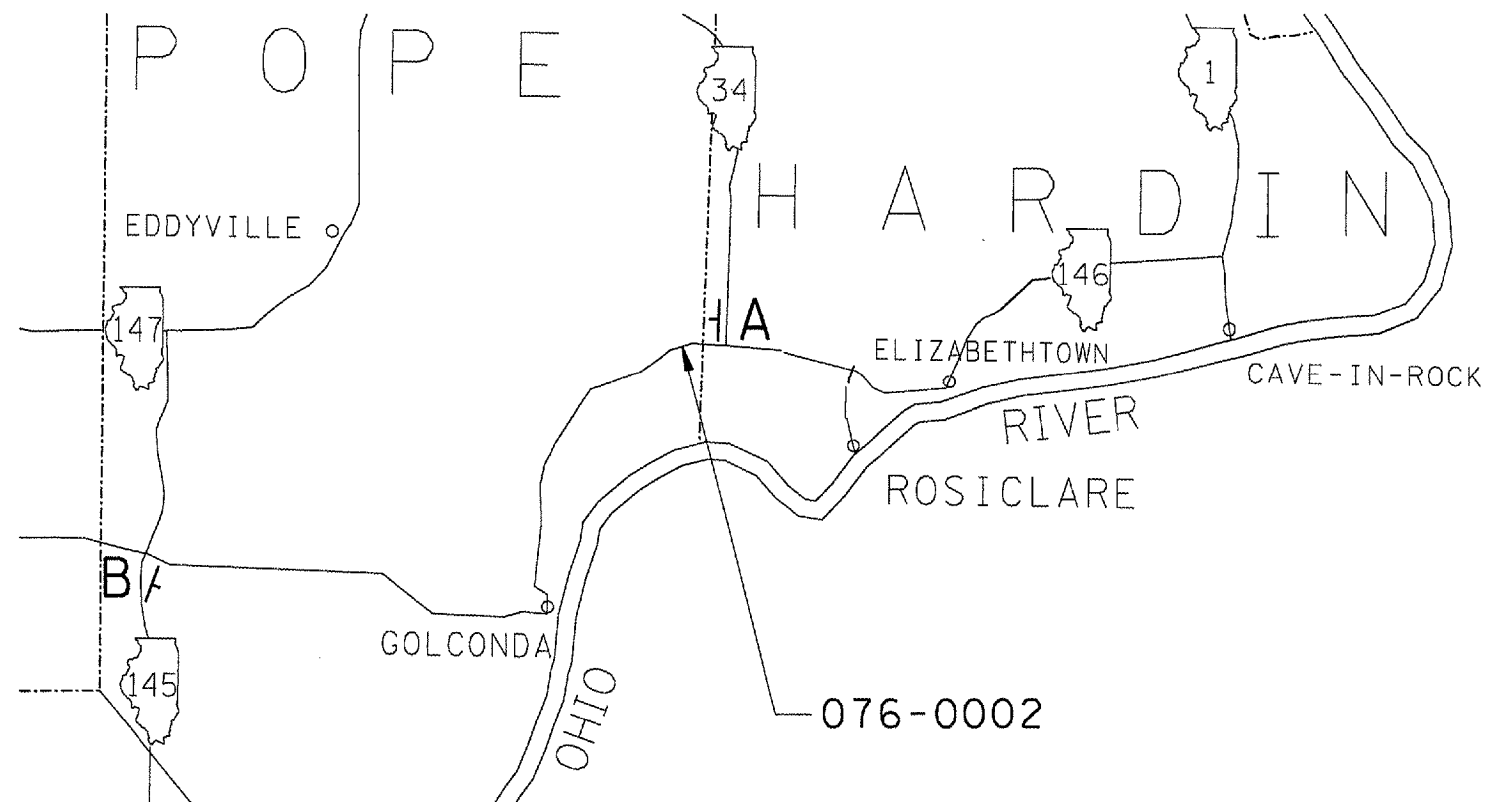
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 885 FAS 2836	"	POPE PULASKI	21	17
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	
*(6A, 14X, 16)I-1 CONTRACT NO. 78018				



TEMPORARY CONCRETE BARRIER

BEAM REPLACEMENT

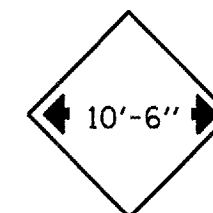


48"	12"	WHITE	MAX WIDTH	6D
	12"	ORANGE	10 FT 6 IN	8D
	24"	WHITE	* MILES AHEAD	6D 6D

*SEE TABLE

MILES AHEAD	
LOCATION	MILES
A	1
B	20

MAXIMUM WIDTH SIGNS



W12-I102(0)-48

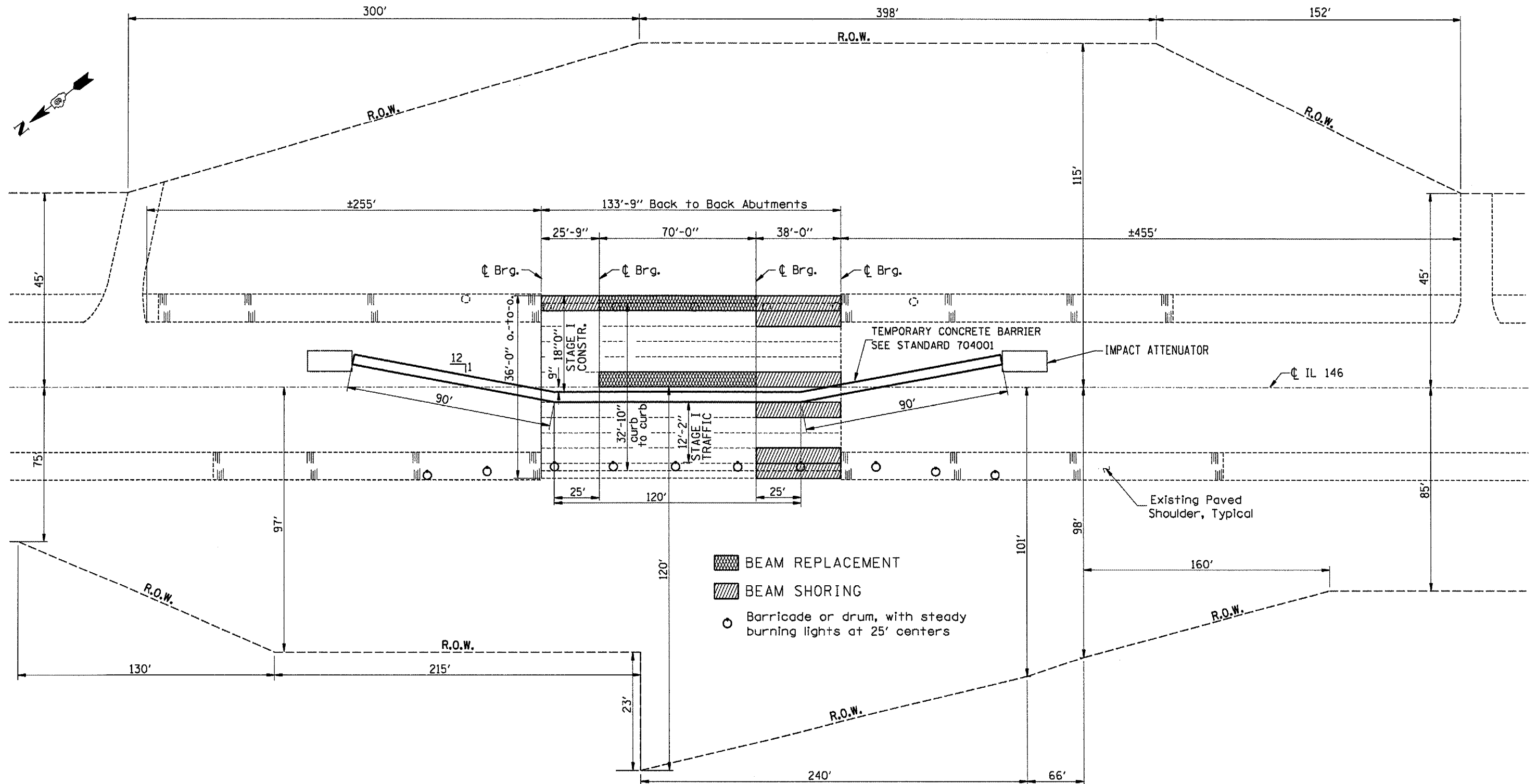
076-0002

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 885 FAS 2936	*	POPE PULASKI	21	18

SEE TRAFFIC CONTROL AND PROTECTION STANDARD 701321 FOR DETAILS NOT SHOWN.

(BA, 14X, 16)I-1
CONTRACT NO. 78018

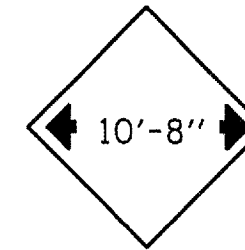
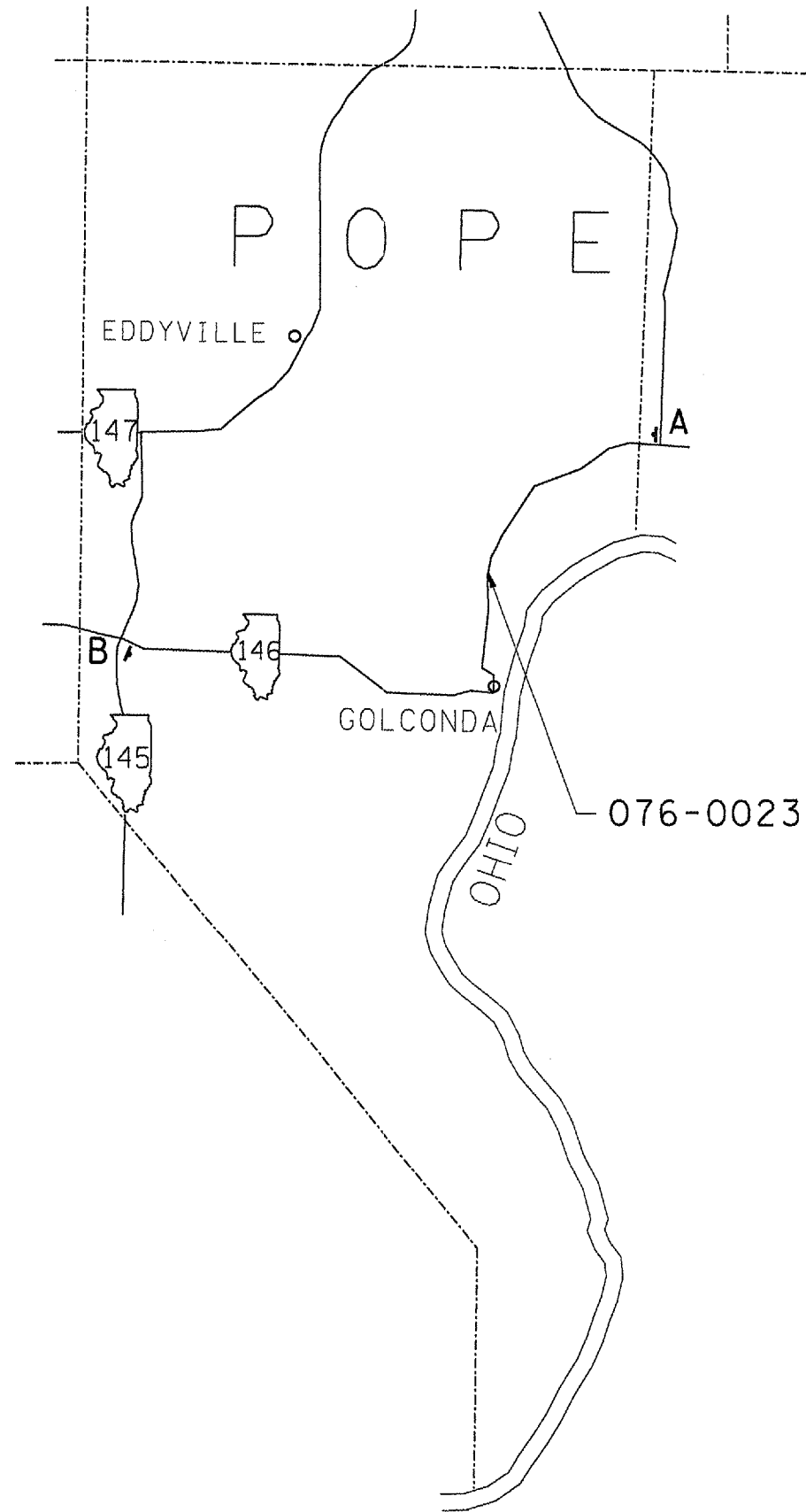


**STAGE ONE CONSTRUCTION
TEMPORARY CONCRETE BARRIER**

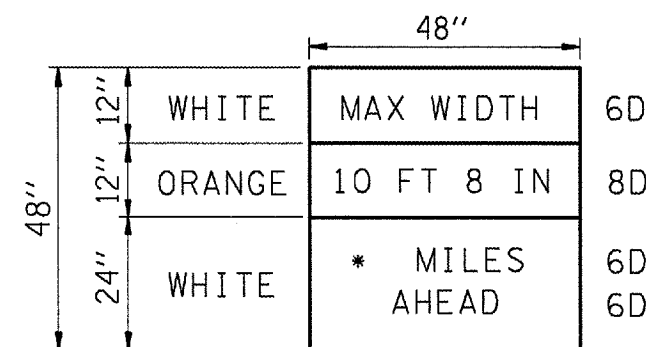
076-0023

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 885 FAS 2936	*	POPE PULASKI	21	19
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		
*(6A, 14X, 18)-1 CONTRACT NO. 78018				



W12-I102(0)-48



*SEE TABLE

MILES AHEAD

LOCATION	MILES
A	9
B	16

MAXIMUM WIDTH SIGNS

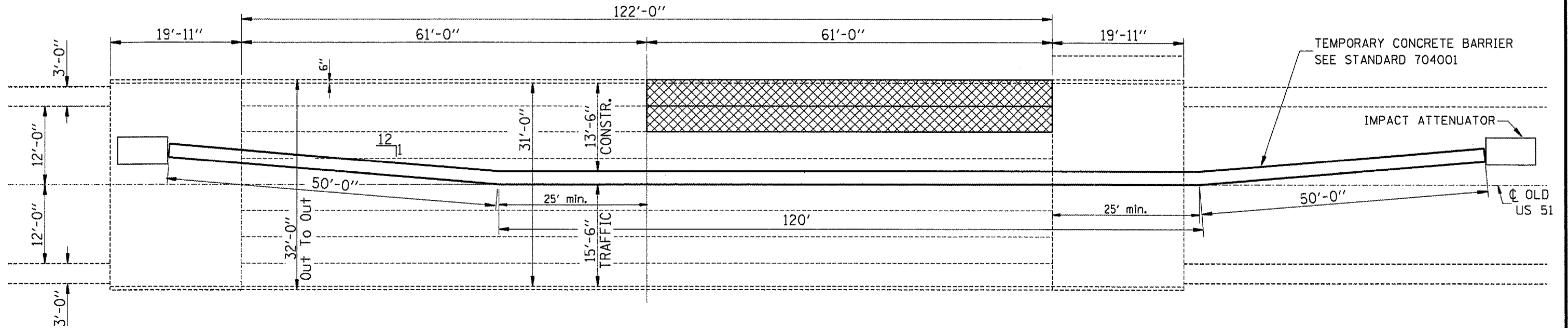
076-0023

SEE TRAFFIC CONTROL AND PROTECTION STANDARD 701321 FOR DETAILS NOT SHOWN.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

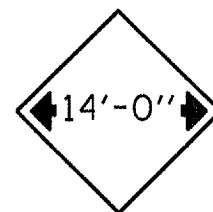
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 885 FAS 2836	•	POPE PULASKI	21	20
FED. ROAD DIST. NO. 7		ELIMINATE	FED. AID PROJECT	

*(6A, 14X, 16)I-1
CONTRACT NO. 78018



TEMPORARY CONCRETE BARRIER

BEAM REPLACEMENT



W12-I102(0)-48

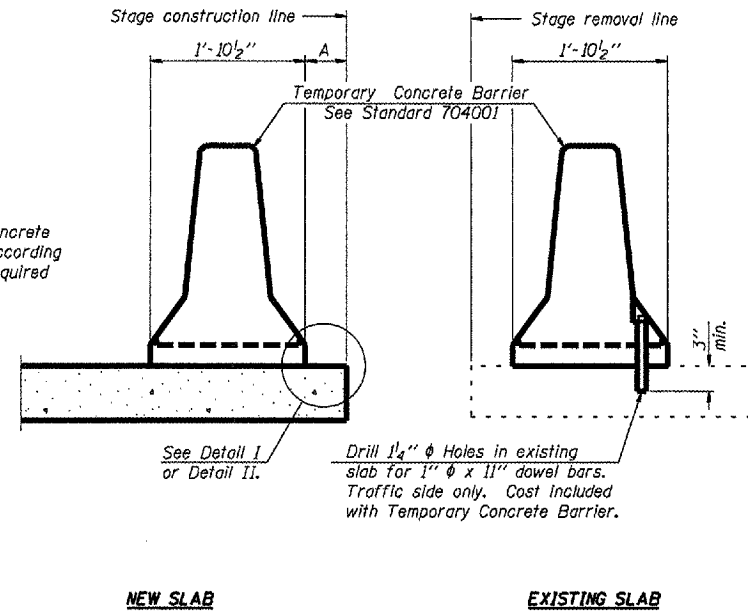
077-0016

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

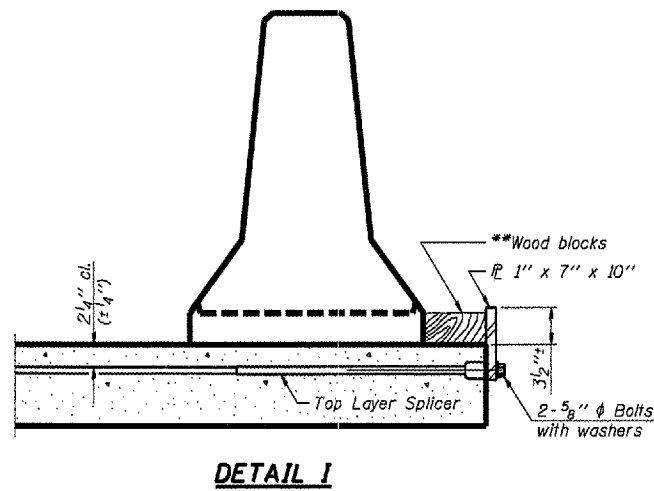
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 885 FAS 2938	*	POPE PULASKI	21	21
FED. ROAD DIST. NO. 7	ALIGNED	FED. AID PROJECT:		

*(6A, 14X, 16)I-1
CONTRACT NO. 78018

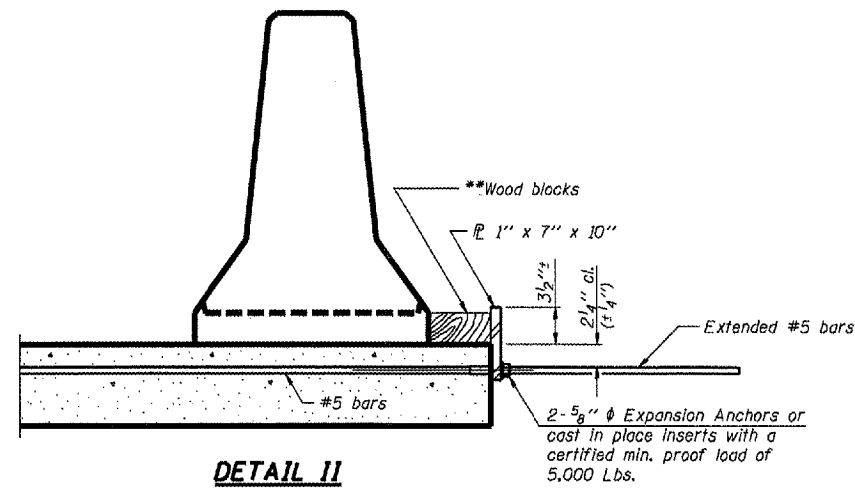
When "A" is 3'-6" or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-6".



SECTIONS THRU SLAB



DETAIL I

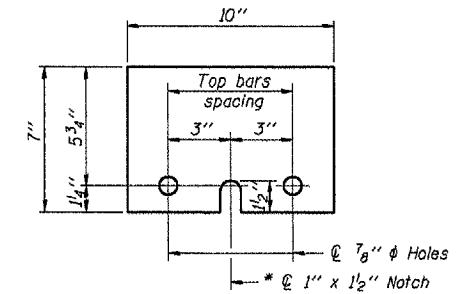


DETAIL II

** Wood blocks may be omitted when required to provide minimum stage traffic lane width. When the wood blocks are omitted, the concrete barrier shall be in direct contact with the steel retainer plate.

NOTES

- Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel \bar{P} to the top layer of couplers with 2-5/8" ϕ bolts screwed to coupler at approximate \bar{C} of each barrier panel.
- Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x7"x10" steel \bar{P} to the concrete slab with 2-5/8" ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate \bar{C} of each barrier panel.
- Cost of anchorage is included with Temporary Concrete Barrier. The 1" x 7" x 10" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.



STEEL RETAINER \bar{P} 1" x 7" x 10"

* Required only with Detail II

TEMPORARY CONCRETE BARRIER
FOR STAGE CONSTRUCTION