

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
638	(129BR-1D)	HENRY	8	1

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
**PROPOSED
HIGHWAY PLANS**

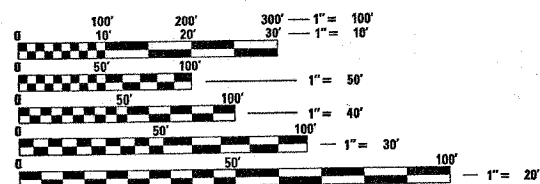
FAP ROUTE 638 (IL 82)
SECTION (129BR-1)D
HENRY COUNTY

INDEX OF SHEETS

1. Cover Sheet, Index of Sheets, Standards
2. Summary of Quantities
3. General Notes
4. Traffic Control Plan
5. Plan and Elevation
6. Beam Details
7. Beam Details
8. Rail Details

STANDARDS

- 701006-02 Off-Road Operations, 2L, 2W, 4.5 m (15') to 600 mm (24³/₃₂') From Pavement Edge
- 701201-02 Lane Closure, 2L, 2W, Day Only, for Speeds > 45 MPH
- 701301-02 Lane Closure, 2L, 2W, Short Time Operations
- 701321-08 Lane Closure, 2L, 2W, Bridge Repair with Barrier
- 702001-06 Traffic Control Devices
- 704001-03 Temporary Concrete Barrier
- 720011 Metal Posts for Signs, Markers and Delineators
- 728001 Telescoping Steel Sign Support
- 729001 Applications of Types A and B Metal Posts (For Signs & Markers)

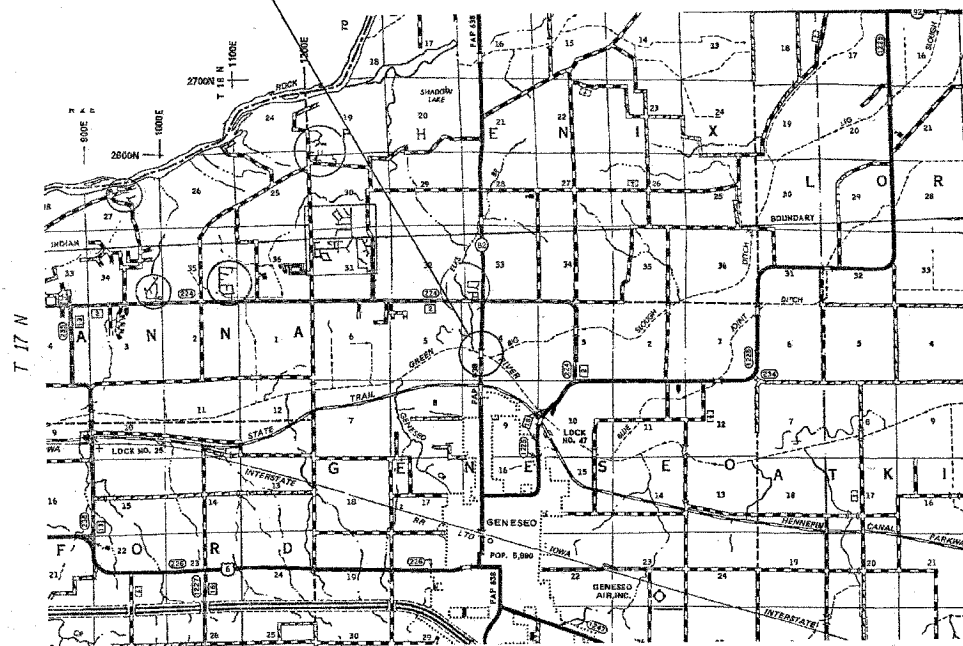


FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

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

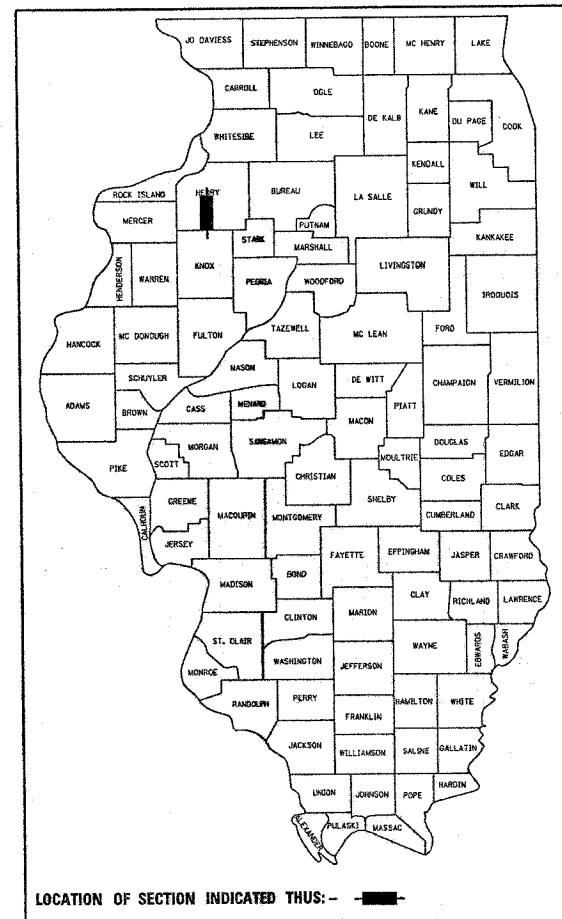
CONTRACT NO. 64D73

Project Location
Structure Number 037-0071



C-92-125-07

D-92-124-07



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED 06/20/07

George F. Ryan
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

June 29, 2007
Eric E. Harn
INTERIM ENGINEER OF DESIGN AND ENVIRONMENT

June 29, 2007
Milton R. Sees, P.E.
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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OF THE STATE OF ILLINOIS**

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
638	(129BR-1)D	Henry	8	2
STA. _____		TO STA. _____		
FED. ROAD DIST. NO. _____		ILLINOIS FED. AID PROJECT		

Summary of Quantities

100% STATE
SFTY-2A

50102400	CONCRETE REMOVAL	CU YD	4.4
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	190
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	527
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	1,790
50900905	REMOVING AND RE-ERECTING EXISTING RAILING	FOOT	48
67100100	MOBILIZATION	L SUM	1
70100405	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321	EACH	1
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1
70106700	TEMPORARY RUMBLE STRIP	EACH	6
70300100	SHORT-TERM PAVEMENT MARKING	FOOT	55
70300520	PAVEMENT MARKING TAPE, TYPE III 4"	FOOT	735
70300570	PAVEMENT MARKING TAPE, TYPE III 24"	FOOT	24
70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ FT	311
70400100	TEMPORARY CONCRETE BARRIER	FOOT	350
78300500	PAINT PAVEMENT MARKING REMOVAL	SQ FT	100
X0320047	REMOVAL OF EXISTING PRECAST PRESTRESSED CONCRETE DECK BEAMS	SQ FT	538
X0321781	MECHANICAL SPLICE	EACH	180
X5030305	CONCRETE WEARING SURFACE, 5"	SQ YD	92
Z0001900	ASBESTOS BEARING PAD REMOVAL	EACH	1
Z0030250	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2

Summary of Quantities
 FAP Route 638 (IL 82)
 Section (129BR-1)D
 Henry County
 Illinois Route 82 over the Green River
 Structure No. 037-0071

PLOT DATE = Wed, Jul 29 13:44:11 2007
 FILE NAME = 037-0071.dgn
 PLOT SCALE = 50.000000 "/ IN.
 USER NAME = ltrkaj

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
638	(129BR-1)D	Henry	8	3
STA. _____		TO STA. _____		
FED. ROAD DIST. NO. _____		ILLINOIS	FED. AID PROJECT	

General Notes

The final top 100 mm (four inches) of soil in any right-of-way area disturbed by the Contractor must be capable of supporting vegetation. The soil must be from the A horizon (zero to 2' deep) of soil profiles of local soils.

The Contractor shall seed all disturbed areas within the project limits. Seeding Class 4 or 2A shall be used, except in front of properties where the grass will be mowed, then use Seeding, Class 1. Class 2A shall be used on front slopes and ditch bottoms. Class 4 shall be used behind Type A gutter, on all backslopes and areas behind the backslope, and beyond the toe of front slope on fill sections without ditches. This work will be included in the contract unit price per Square Foot for PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH).

Mulch Method II shall be applied over all seeded areas. This shall be included in the cost of the PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH).

Install a "TO ACTIVATE SIGNAL" sign for the traffic signal detector loops. The detail of this sign is included in the plans. This work will be included in the cost of TRAFFIC CONTROL AND PROTECTION STANDARD 701321.

This structure will retain the same number 037-0071.

The contractor shall submit four copies of the required shop drawings for review and approval to the Bureau of Bridges and Structures, 2300 South Dirksen Parkway, Springfield, IL 62764. After approval of initial submittal, the contractor shall submit one set of shop drawings to Dave Lippert, Engineer of Materials, 126 East Ash Street, Springfield, IL 62706, and eight (8) sets of shop drawings to be distributed to:

- District 2 District Engineer (1)
- Fabricator (1)
- Contractor (2)
- Resident Engineer (2)
- District 2 Bureau of Materials (2)

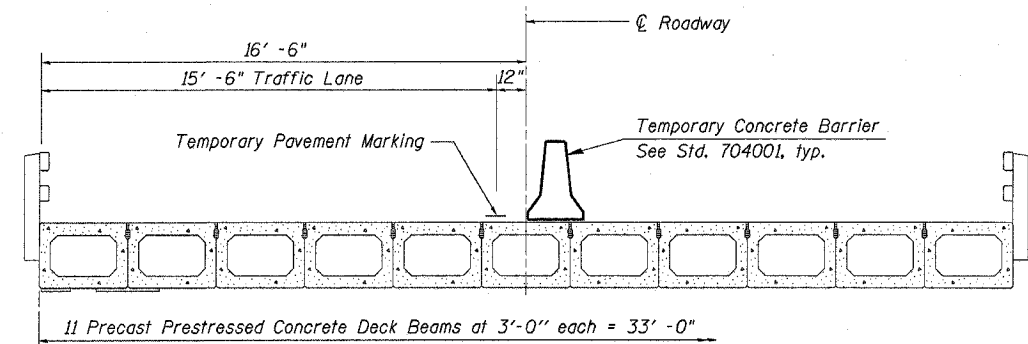
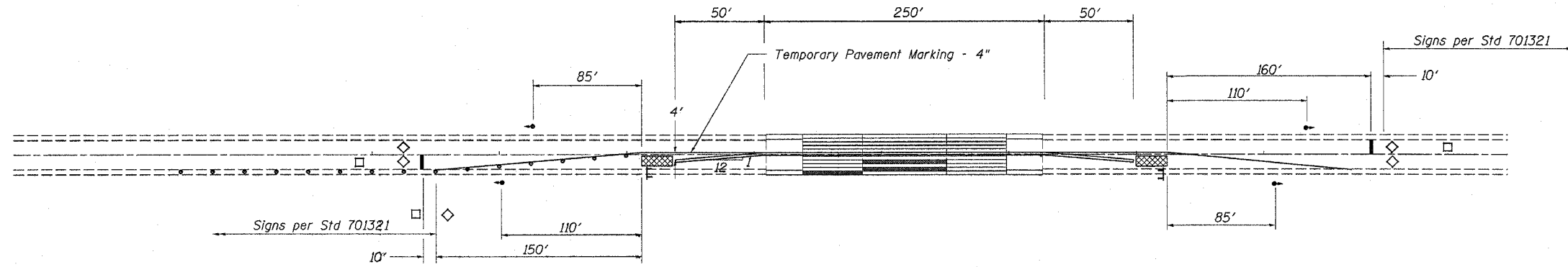
Culvert & bridge flows must be maintained throughout the project. Normal flow shall be allowed to pass at the rate it enters the jobsite. High flows shall be allowed to pass without causing damage to upstream properties.

General Notes
FAP Route 638 (IL 82)
Section (129BR-1)D
Henry County
Illinois Route 82 over the Green River
Structure No. 037-0071

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
638	(129BR-1)D	Henry	8	4
STA. _____		TO STA. _____		
FED. ROAD DIST. NO. _____ ILLINOIS FED. AID PROJECT				

Traffic Control Plan

Refer to Traffic Control & Protection Std 701321 for additional requirements.



CROSS SECTION (Looking South)

Temporary Bridge Traffic Signals	
Each	
Standard 701321	1
Total	1

Temporary Concrete Barrier	
Foot	
Standard 701321	350
Total	350

Pavement Marking Tape, Type III 24"	
Foot	
Stop Bars	24
Total	24

Short Term Pavement Marking	
Foot	
Post 701321	55
Total	55

Traffic Control & Protection Std 701321	
Each	
Entire Project	1
Total	1

Temporary Impact Attenuators	
Each	
Standard 701321	2
Total	2

Pavement Marking Tape, Type III 4"	
Foot	
Stop bar to Stop Bar	735
Total	735

Pavement Marking Removal	
Sq Ft	
Taper Areas	100
Total	100

Workzone Pavement Marking Removal	
Sq Ft	
Temporary Edge Line	245
Stop Bars	48
Short Term	18
Total	311

Traffic Control Plan
 FAP Route 638 (IL 82)
 Section (129BR-1)D
 Henry County
 Illinois Route 82 over the Green River
 Structure No. 037-0071

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		Henry	5	5
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 1
4 SHEETS

Contract Number: 64D73

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. This work shall be performed by the producer and included with the cost of the beam.

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.

Temporary Concrete Barrier should only be anchored into the overlay and not into the PPC Deck Beams.

The contractor is advised that the existing PPC Deck Beams are in a deteriorated condition with reduced load carrying capacity. It is the contractors 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.

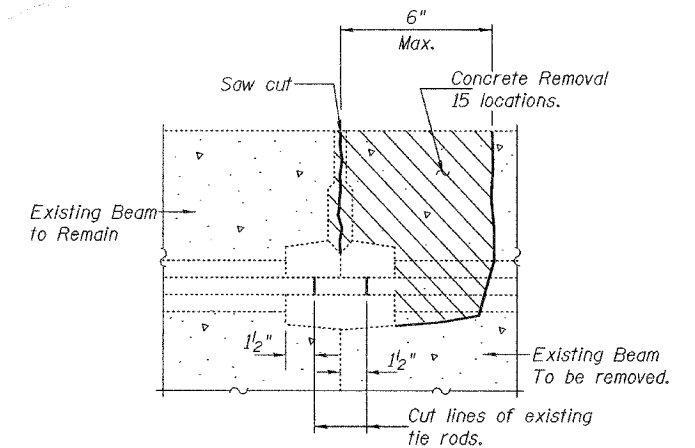
The minimum thickness of the concrete overlay shall be 5" and varies as required to adjust for the existing profile grade and beam camber.

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

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 Furnishing and Erecting Structural Steel.

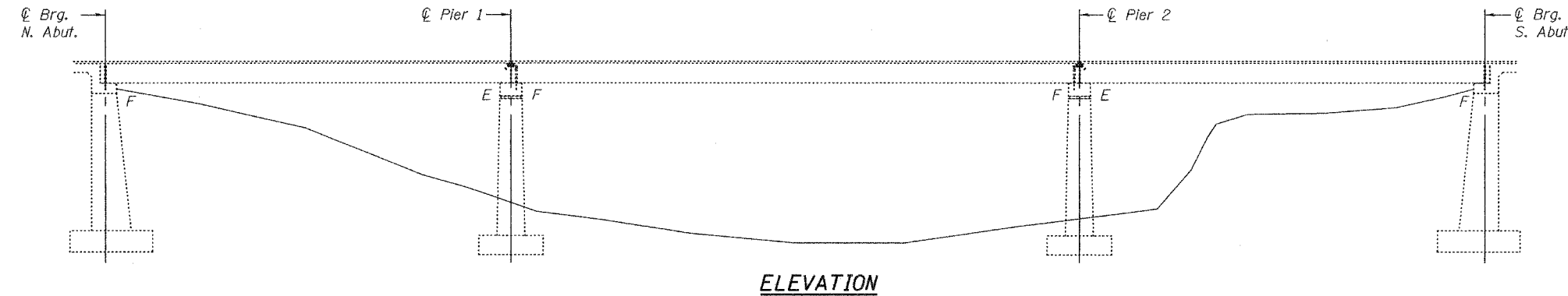


**BEAM REMOVAL DETAIL
AT TRANSVERSE TIES**

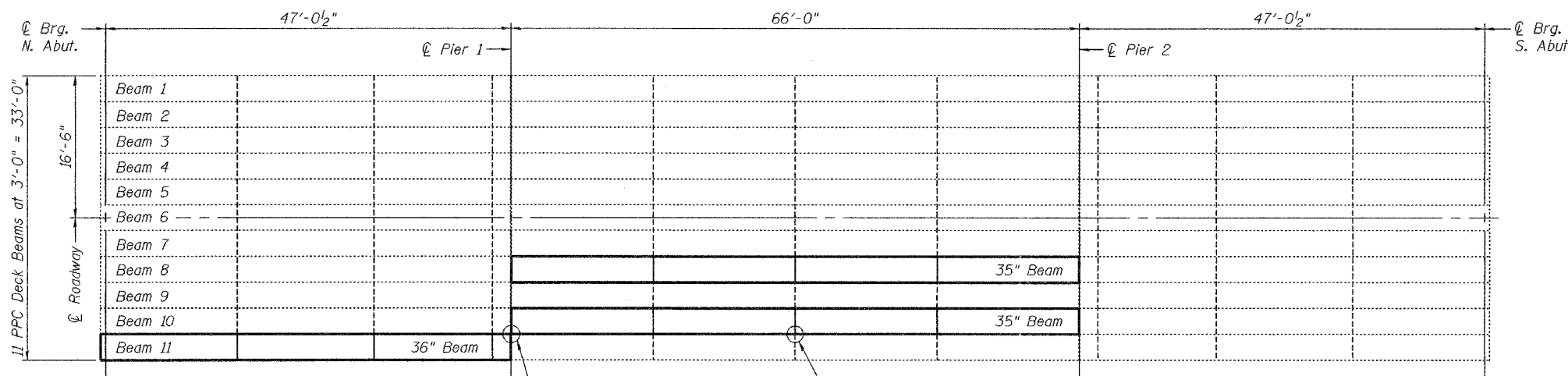
TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Remove Existing PPC Deck Beams	Sq. Ft.	538
PPC Deck Beams (27" Depth)	Sq. Ft.	527
Concrete Removal	Cu. Yd.	4.4
Furnishing and Erecting Structural Steel	Pound	190
Asbestos Bearing Pad Removal	Each	1
Removing and Re-erecting Existing Railing	Foot	48
Reinforcement Bars, Epoxy Coated	Pound	1,790
Concrete Wearing Surface 5"	Sq. Yd.	92
Mechanical Splicers	Each	180

**PLAN AND ELEVATION
S.B.I. RT. 82
HENRY COUNTY
SN 037-0071**



ELEVATION



PLAN

Existing steel ϕ in overlay to be cut flush with the edge of the wearing surface removal area. (Typ.)

Existing tie rod to be cut see detail this sheet.

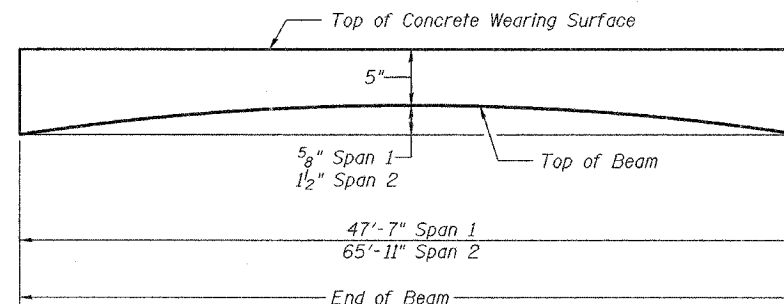
DESIGN STRESSES

FIELD UNITS

$f'_c = 3,500$ psi
 $f'_c = 5,000$ psi (Concrete Wearing Surface)
 $f_y = 60,000$ psi (Reinforcement)

PRECAST PRESTRESSED UNITS

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



ANTICIPATED INITIAL CAMBER DIAGRAM

DESIGNED	Adrian T. Helms
CHECKED	[Signature]
DRAWN	[Signature]
CHECKED	AJB

EXAMINED	[Signature]	June 21, 2007
PASSED	[Signature]	

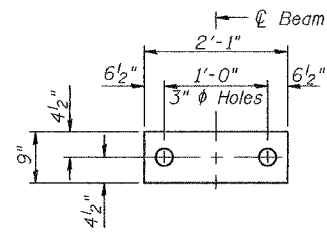


Expires: November 30, 2008

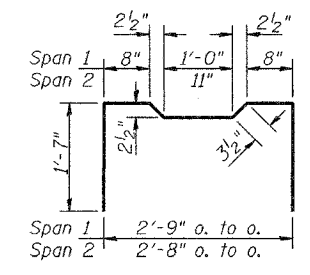
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 2
		Henry	-	b	4 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

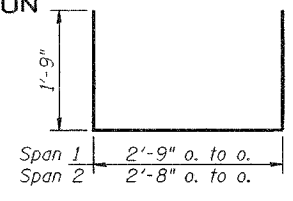
Contract Number: 64D73
*0.2 x Length of beam



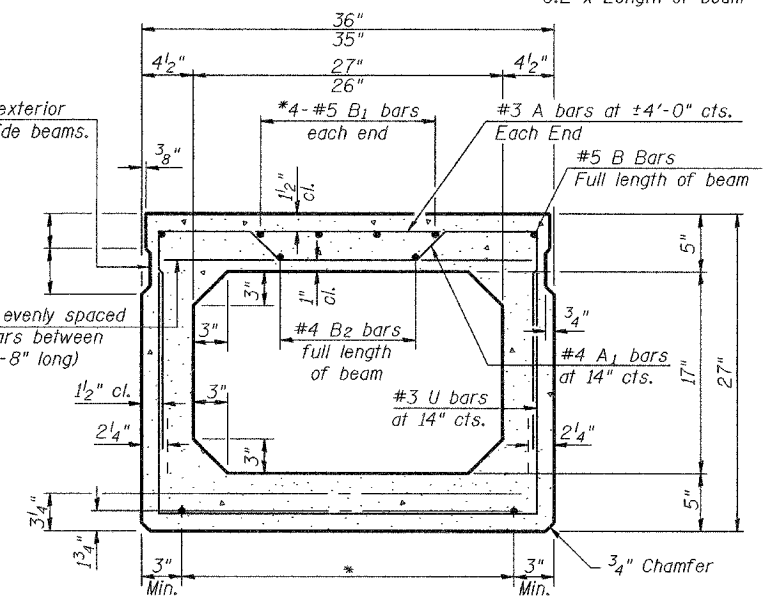
FIXED FABRIC BEARING PAD
(Expansion similar without holes)



BAR A1



BARS U & U1



Omit key on exterior face of outside beams.

2-#3 A bars evenly spaced between A1 bars between end blocks (2'-8" long)

TYPICAL SECTION

1/2" φ Strands, Each Strand Stressed to 30,900 Lbs.
Span 1: 9-Strands 1 3/4" up
Span 2: 9-Strands 1 3/4" up, 4-Strands 3/4" up, 2-Strands 7/2" up, 2-Strands 10 1/2" up

Embedded angle each end see sheet 3 of 4 for details.

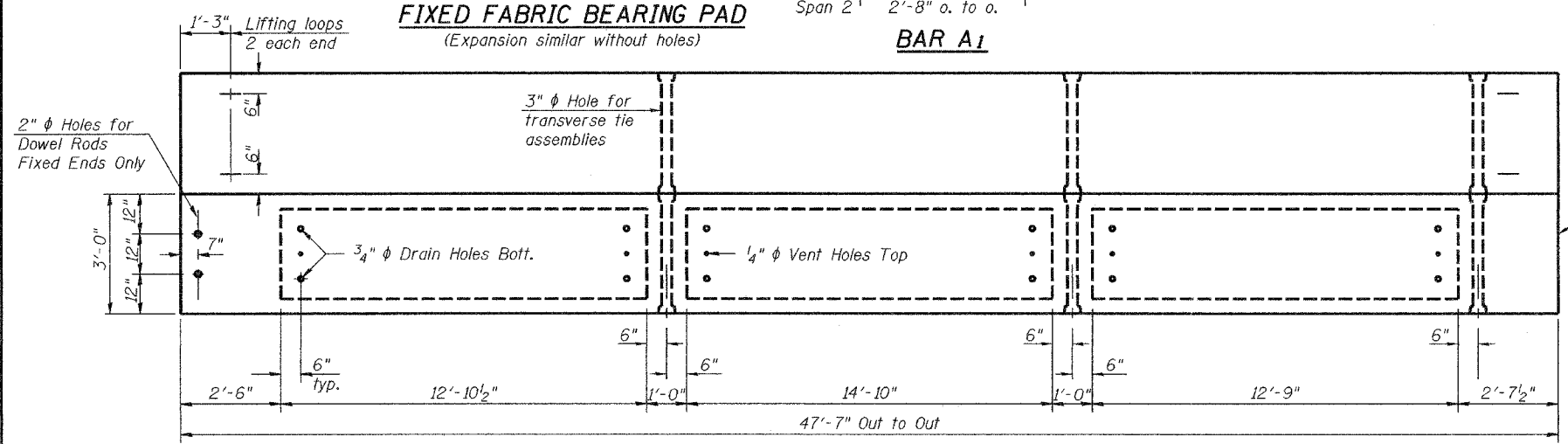
*** TRANSVERSE PLACEMENT GUIDELINES**

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".

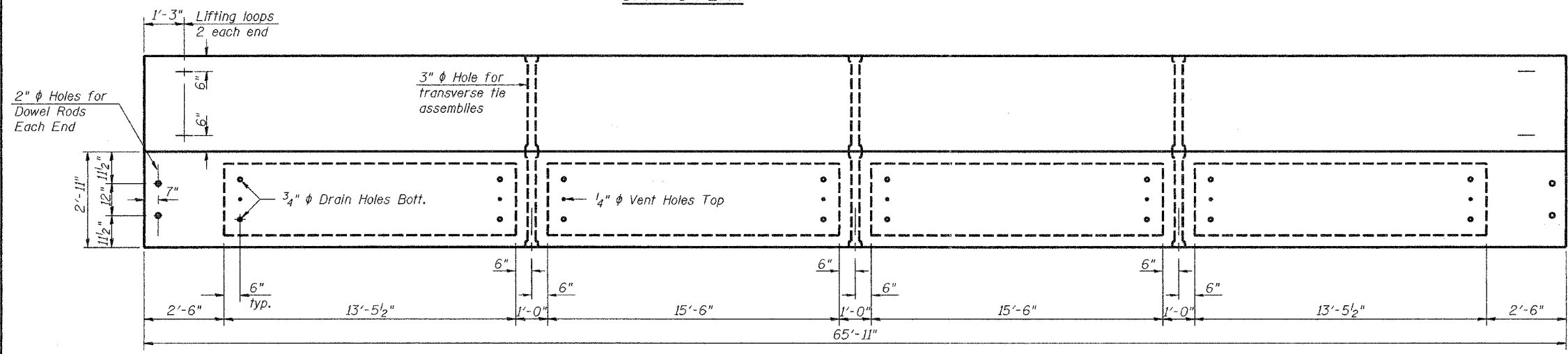
Vertical placement of strands shall not be adjusted to satisfy the above guidelines.

BILL OF MATERIAL

PPC Deck Beams (27" Depth)	Sq. Ft.	527
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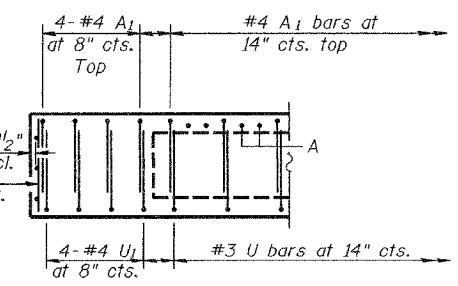
SPAN 1 PLAN



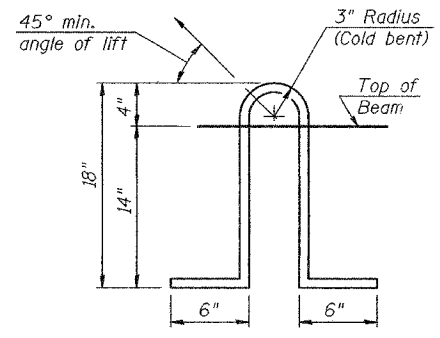
SPAN 2 PLAN

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" 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 9" x 9" x 1/8" fabric adjusting shims 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.



END ELEVATION



LIFTING LOOP DETAIL

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

June 21, 2007
EXAMINED *Carl P. ...*
PASSED *Ralph E. Anderson*
REPAIR PLANS UNIT CHIEF
ENGINEER OF BRIDGES AND STRUCTURES

PD-5-S

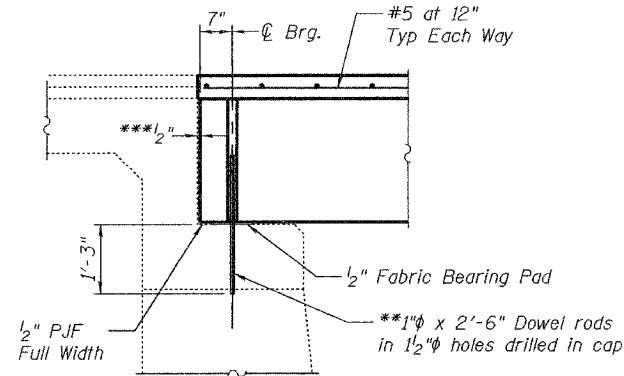
11-1-06

BEAM DETAILS
S.B.I. RT. 82
HENRY COUNTY
SN 037-0071

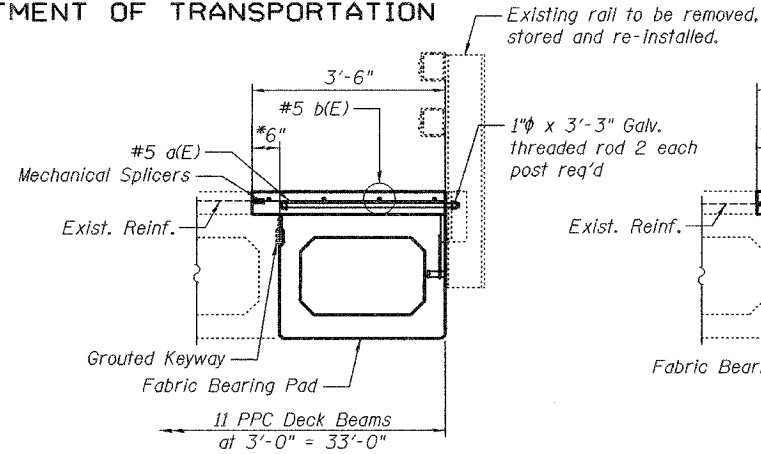
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		Henry	-	7
SHEET NO. 3 4 SHEETS				
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

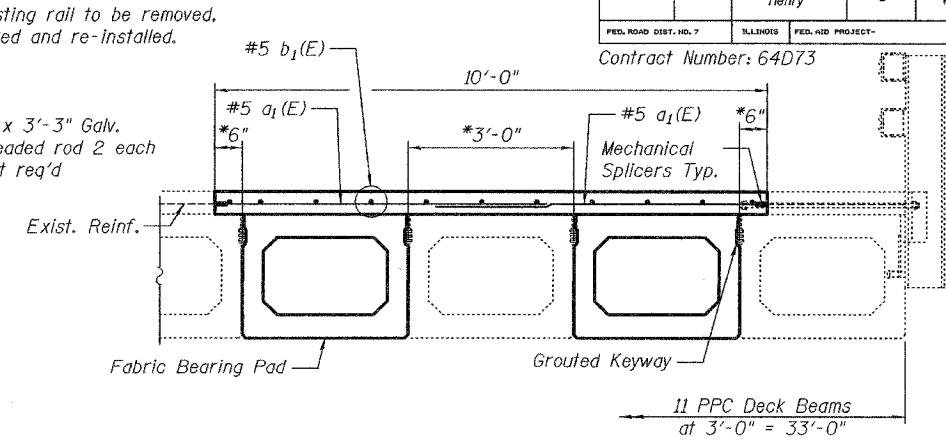
Contract Number: 64D73



TYPICAL SECTION AT ABUTMENT

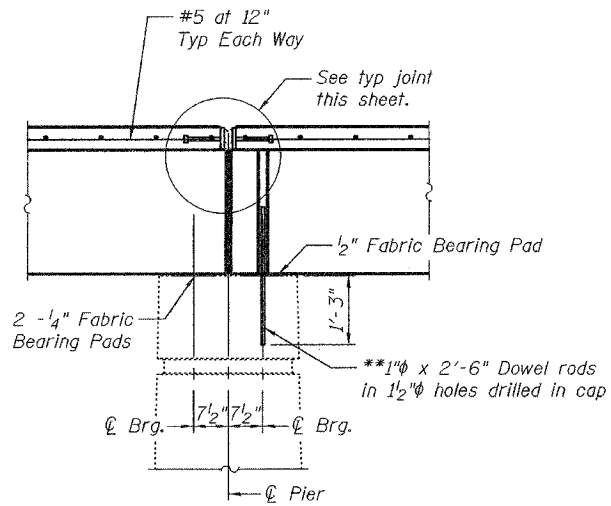


PARTIAL SPAN 1 CROSS SECTION



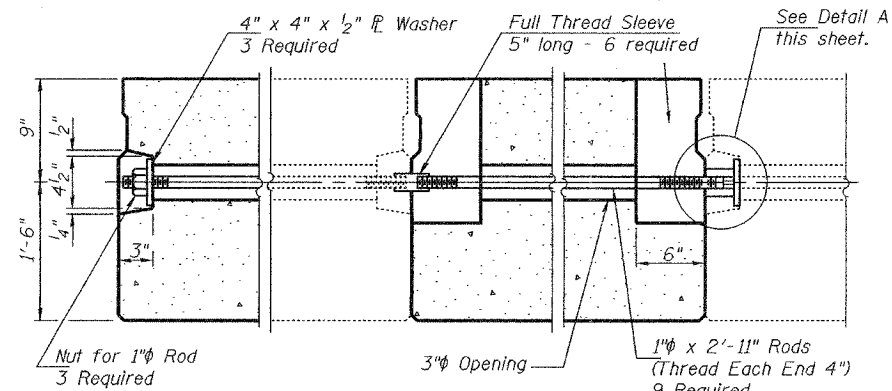
PARTIAL SPAN 2 CROSS SECTION

*Limits of Concrete removal.
**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.
***1/2" Joint shall be filled with non-shrink grout. Dimension may vary to accommodate tolerance in beam lengths.

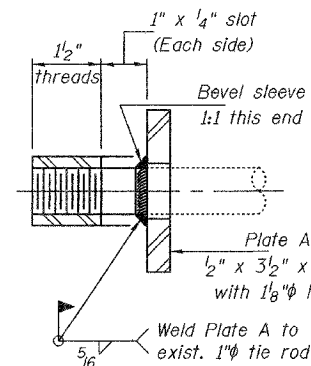


TYPICAL SECTION AT PIER 1
(Pier 2 Opposite Hand)

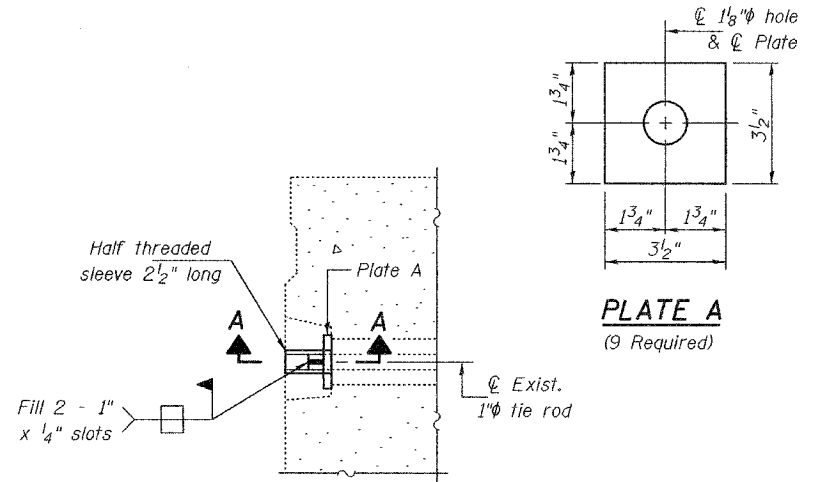
6" x 6" x 1 1/2" Blockout to be filled with Class BS Concrete after Beams have been installed. Cost shall be included in the cost of "PPC Deck Beams (27" Depth). Omit on exterior face of Fascia Beams.



TYPICAL TRANSVERSE TIE ASSEMBLY

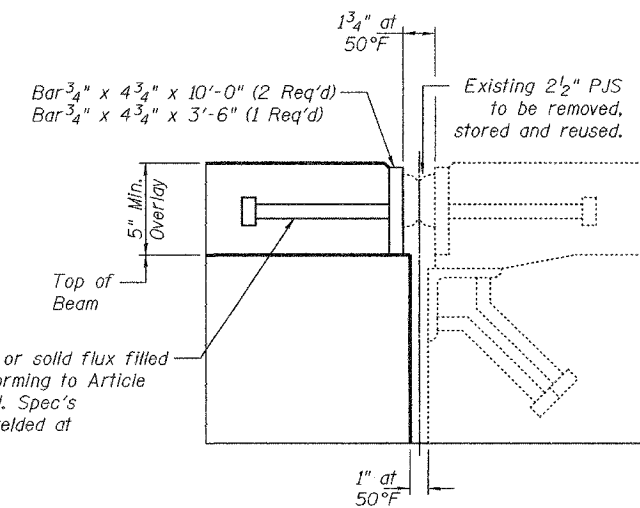


SECTION A-A
(9 Required)

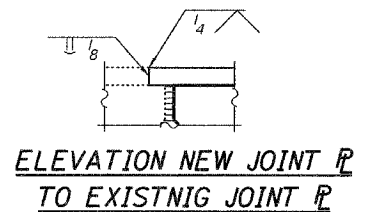


DETAIL A

PLATE A
(9 Required)



TYPICAL JOINT DETAIL
(Cost included with PPC Deck Beams)



ELEVATION NEW JOINT P
TO EXISTING JOINT P

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" alt. ctrs.

BEAM DETAILS
S.B.I. RT. 82
HENRY COUNTY
SN 037-0071

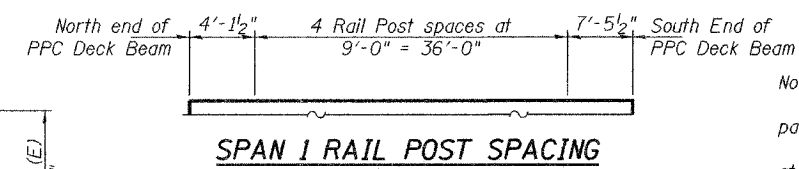
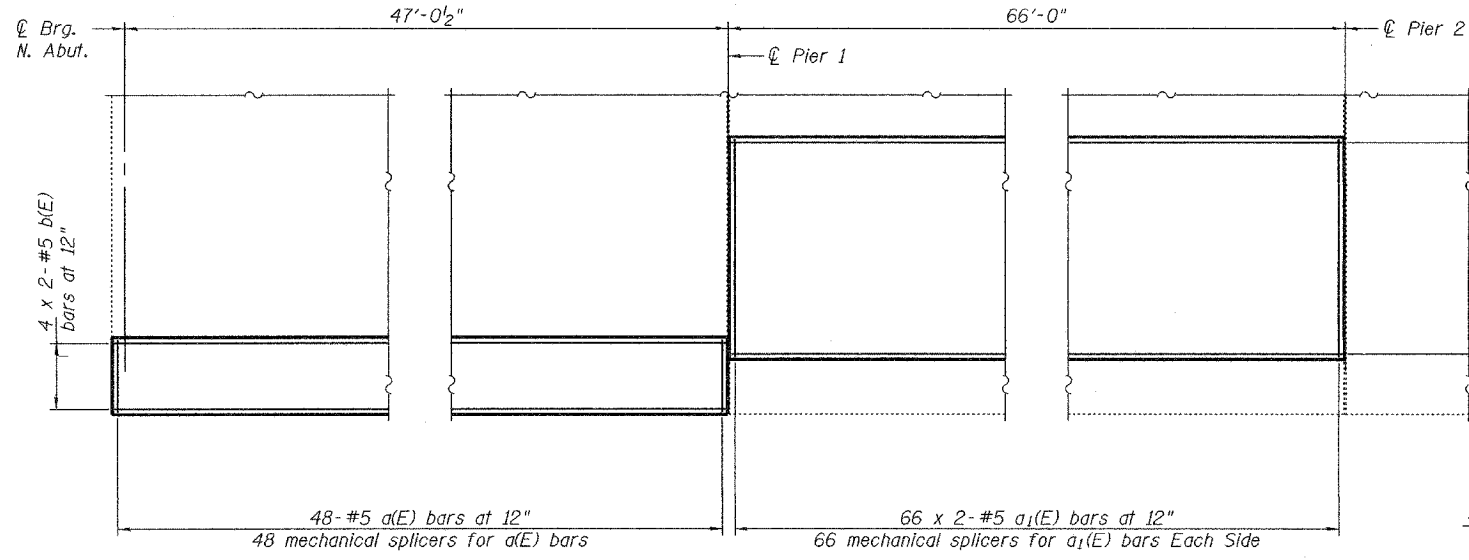
DESIGNED	A.T.H.
CHECKED	A.J.B.
DRAWN	Drew Christopher
CHECKED	A.T.H. A.J.B.

June 21, 2007
EXAMINED *Carl Proyer*
REPAIR PLANS UNIT CHIEF
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	JOB NO.	SHEET	SHEET NO. 4 4 SHEETS
		Henry		8	
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT		

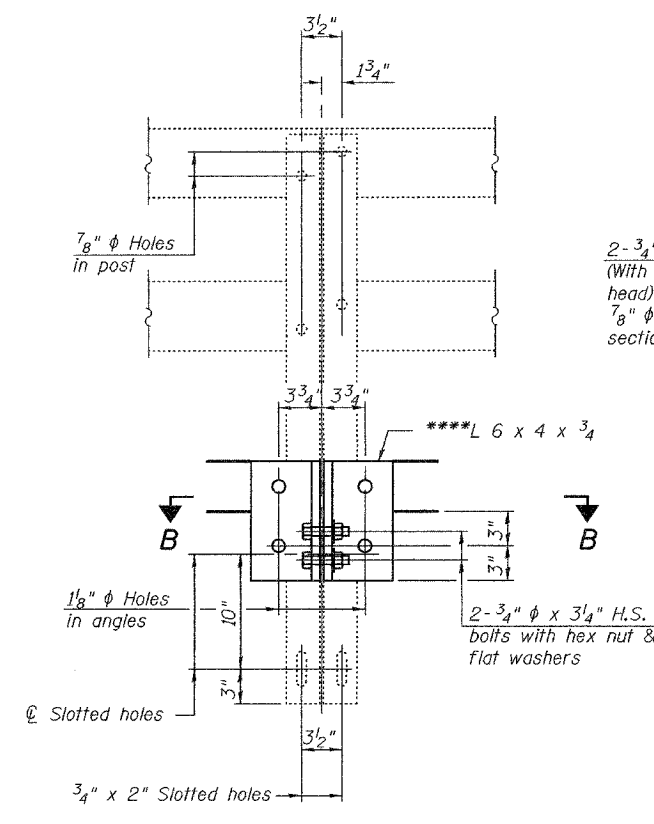
Contract Number: 64D73



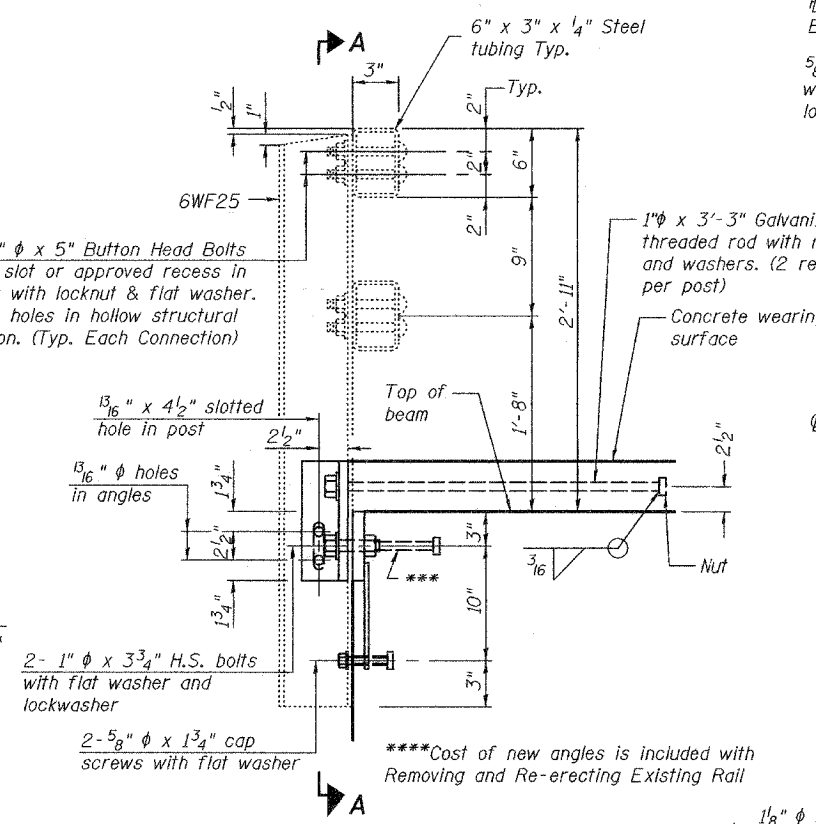
BAR LAP
#5 = 1'-8"

Notes:
All field drilled holes shall be coated with an approved zinc rich point before erection.
For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Removing and Re-erecting Existing Rail.
All steel rail members shall be galvanized according to Article 509.05 of the Standard Specifications.
*** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.
The cost of anchor device is included with the cost of deck beams.
This work will be paid for at the contract unit price per foot for Removing and Re-erecting Existing Railing, which price shall include removal, temporary storage, re-erection, shims and all new hardware required to satisfactorily complete the work.

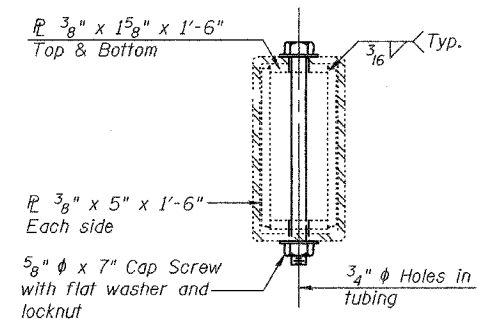
PARTIAL OVERLAY PLAN



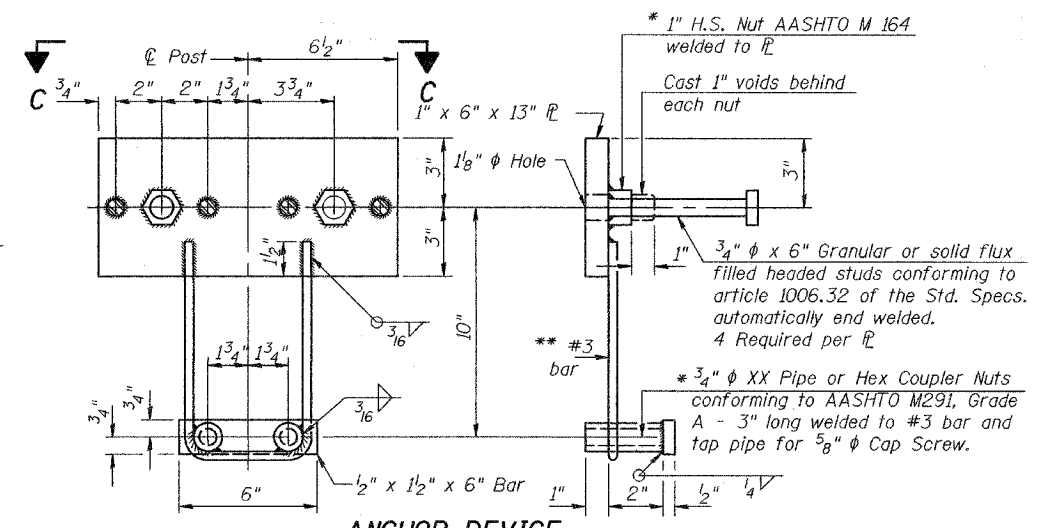
SECTION A-A



SECTION AT RAIL POST

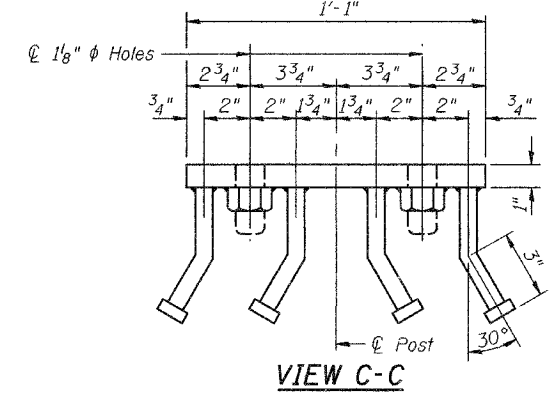


SECTION AT RAIL SPLICE

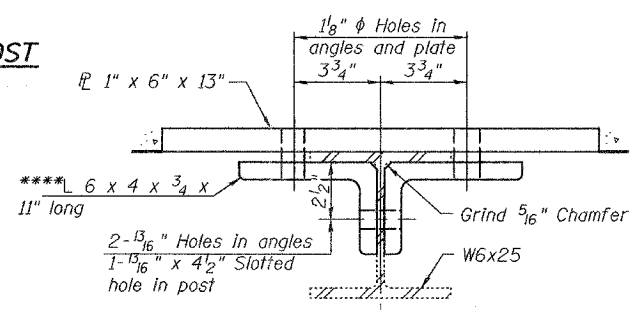


ANCHOR DEVICE

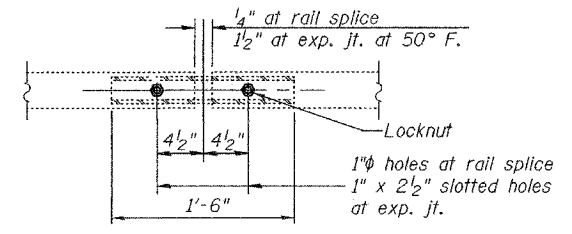
* Threaded areas shall be plugged or blocked off during casting of beam.
** Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2".



VIEW C-C



SECTION B-B



TYPICAL PLAN SPLICE \bar{P}

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	48	#5	3'-3"	—
a1(E)	112	#5	6'-0"	—
b(E)	8	#5	24'-8"	—
b1(E)	30	#5	23'-1"	—
Mechanical Splicers		Each	180	
Concrete Removal		Cu. Yd.	4.4	
Concrete Wearing Surface 5"		Sq. Yd.	92	
Reinforcement Bars, Epoxy Coated		Lbs.	1,790	
Removing and Re-erecting Existing Railing		Foot	48	

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

RAIL DETAILS
S.B.I. RT. 82
HENRY COUNTY
SN 037-0071

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

June 21, 2007

EXAMINED *Carl Prosser*
REPAIR PLANS UNIT CHIEF

PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES