

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
782		GALLATIN	7	1

*FY 05 BEAM REPLACEMENT

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**PROPOSED
HIGHWAY PLANS**

F.A.P. ROUTE 782 (ILL. ROUTE 1)
FY 05 BEAM REPLACEMENT
GALLATIN COUNTY
C-99-028-05

INDEX OF SHEETS

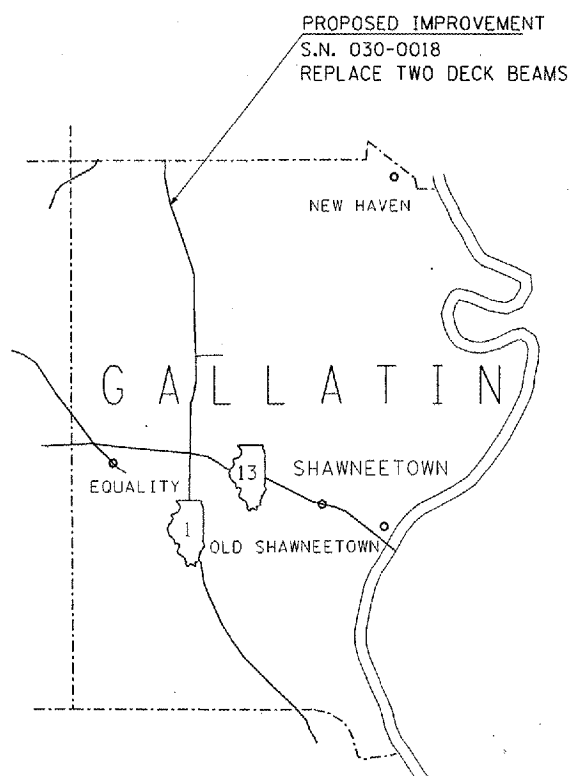
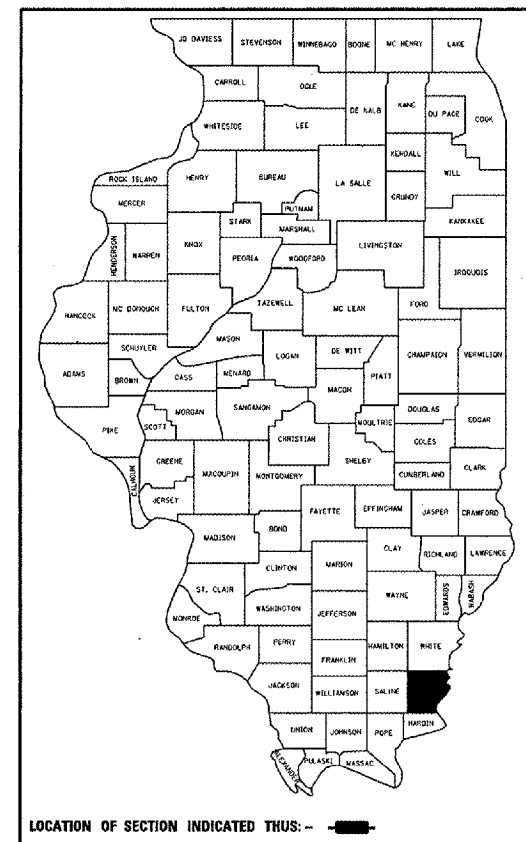
SHEET NO. DESCRIPTION

- 1 COVER SHEET, INDEX OF SHEETS, STANDARDS
- 2 SIGNATURES, GENERAL NOTES
- 3 SUMMARY OF QUANTITIES,
- 4 PLAN AND ELEVATION
- 5, 6 BEAM DETAILS
- 7 TEMPORARY CONCRETE BARRIER

STANDARDS

- 701201-02
- 701321-08
- 702001-05
- 704001-02

OMAHA TOWNSHIP
2003 ADT = 1900
POSTED SPEED = 55 m.p.h
INVENTORY RATING HS 31.4
OPERATING RATING HS 50.3



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED March 2-1 20 05
May Kami
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

20 _____
ENGINEER OF DESIGN AND ENVIRONMENT

20 _____
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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

PROJECT ENGINEER: LARRY L. PICHE
SQUAD LEADER: RITA GAUTNEY
6181 549-2171
CENTREX 782-4554

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

CONTRACT NO. 98920

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONTRACT NO. 98920

ROUTE NO.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
F.A.P. 782	-	GALLATIN	7	2

•FY 05 BEAM REPLACEMENT

BITUMINOUS MIX DESIGN

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

GENERAL NOTES

The Contractor shall notify the District Nine Bureau of Construction at least 2 weeks prior to any lane closure.

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price for the work.

The advance detector loops are typically located 300 feet in advance of the stop bar. The Bureau of Operations should approve the loop locations prior to installation.

THERMOPLASTIC PAVEMENT MARKING - LINE 4"

COLOR	QUANTITY (FT)
YELLOW	40
WHITE	107

Prepared By: *Jim Smothers*
DISTRICT OPERATIONS ENGINEER

Examined By: *James Lewis Emery*
DISTRICT LAND ACQUISITION ENGINEER

Examined By: *Corrie Nelson*
DISTRICT PROGRAM DEVELOPMENT ENGINEER

Examined By: *Joe Zdaniewicz*
DISTRICT STUDIES & PLANS ENGINEER

Examined By: *Joseph Lynn*
DISTRICT CONSTRUCTION ENGINEER

Examined By: *Bruce W. Pappas*
DISTRICT MATERIALS ENGINEER

Examined By: *Danny Carter*
DISTRICT PROJECT IMPLEMENTATION ENGINEER

Approved By: *Alan Kani*
DEPUTY DIRECTOR OF HIGHWAYS,
REGION ENGINEER
March 21 20 05
DATE

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 782	-	GALLATIN	7	3

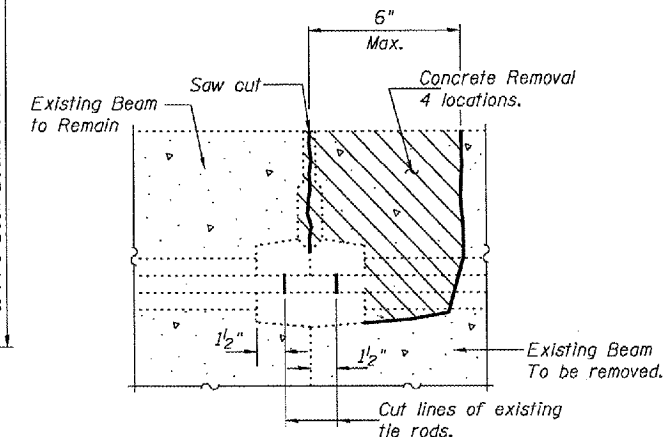
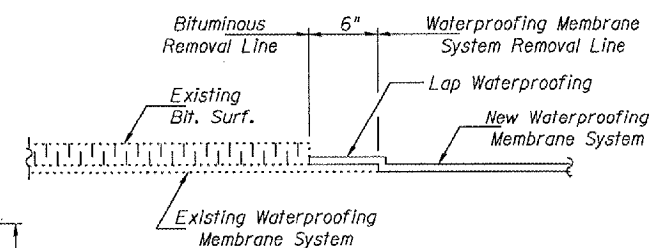
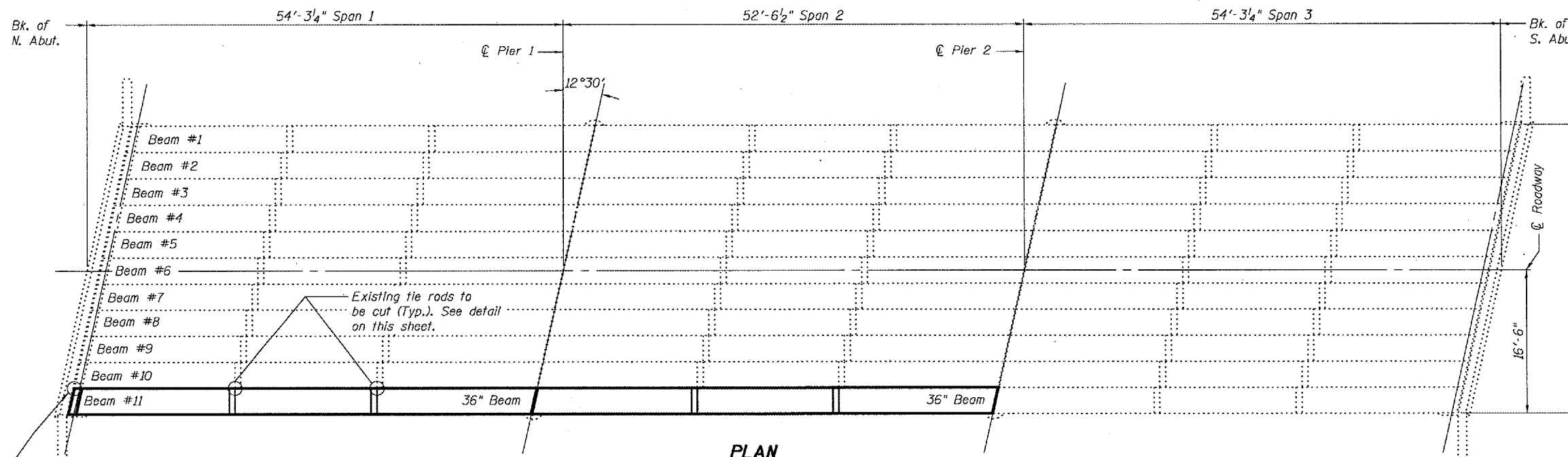
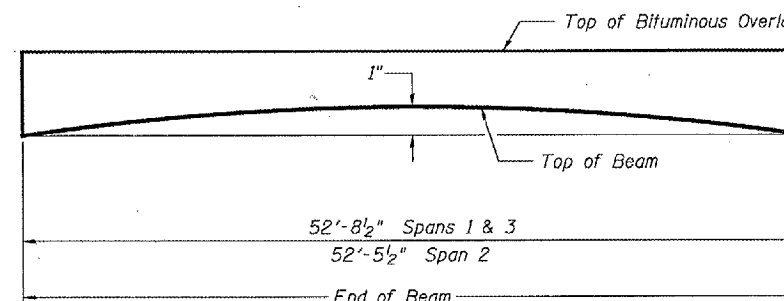
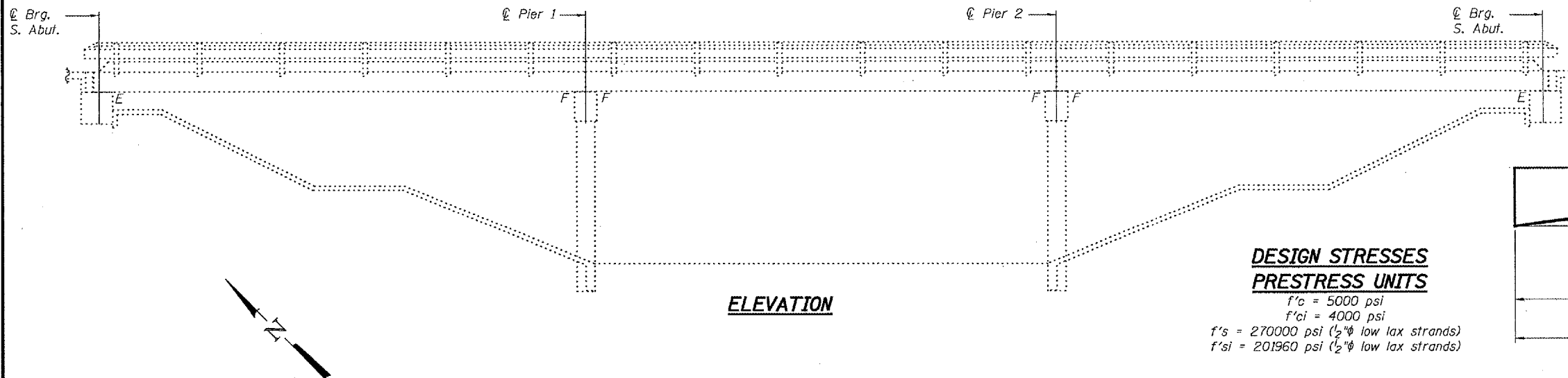
FED. ROAD DIST. NO. 7 ILLINOIS PROJECT
*FY 05 BEAM REPLACEMENT

CONSTRUCTION TYPE CODE: SFTY-2A		100% STATE	
CODE NO.	ITEM DESCRIPTION	UNIT	QUANTITY
42001300	PROTECTIVE COAT	SQ YD	20.7
44001000	BITUMINOUS CONCRETE SURFACE REMOVAL	SQ YD	5.8
50300255	CONCRETE SUPERSTRUCTURE	CU YD	3.9
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	316
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	120
58100200	WATERPROOFING MEMBRANE SYSTEM	SQ YD	29.2
58300100	PORTLAND CEMENT MORTAR FAIRING COURSE	FOOT	105
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
70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ. FT.	14
70400100	TEMPORARY CONCRETE BARRIER	FOOT	270
* 78000200	THERMOPLASTIC PAVEMENT MARKING - LINE 4"	FOOT	147
X0320047	REMOVAL OF EXISTING PRECAST PRESTRESSED CONCRETE DECK BEAMS	SQ FT	316
X0324427	REMOVING AND RE-ERECTING EXISTING RAILING	FOOT	107
X4066418	BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, MIX "C", N90	TON	5.3
X7015000	CHANGEABLE MESSAGE SIGN	CAL. MO.	1
XX002024	ENGINEER'S FIELD OFFICE	CAL MO	2
Z0001900	ASBESTOS BEARING PAD REMOVAL	EACH	2
△ Z0030450	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2

△ SFTY-3N * SPECIALTY ITEMS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 1
		Gallatin	7	4	3 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT	
Contract Number: ---					



GENERAL NOTES

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

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 P.P.C. Deck Beams".

Reinforcement bars shall conform to the requirements of AASHTO M 31 or M 322 Grade 60.

The top surface of the beams shall be finished in accordance with Article 504.06 of the Standard Specifications except that the surface shall not be roughened by brooming. The finished surface shall be free of depressions or high spots with sharp corners, and the top edge of keys shall be rounded or chamfered a minimum of $\frac{1}{4}$ ".

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

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Bituminous Concrete Surface Removal	Sq. Yd.	5.8
Waterproofing Membrane System	Sq. Yd.	29.2
Removal of Existing PPC Deck Beams	Sq. Ft.	316
Bituminous Concrete Surface Course.	Tons	5.3
Superpave Mix CIN 90		
PC Mortar Fairing Course	Foot	105
PPC Deck Beams (27" Depth)	Sq. Ft.	316
Concrete Superstructure	Cu. Yd.	3.9
Protective Coat	Sq. Yd.	20.7
Asbestos Bearing Pad Removal	Each	2
Reinforcement Bars Epoxy Coated	Pound	120
Removing and Re-Erecting Existing Railing	Foot	107

All structural steel shall be shop painted with the inorganic zinc rich primer per AASHTO M300, Type 1. Cost included with PPC Deck Beams (27"). Existing reinforcement extending into the removal area shall be cleaned, straightened and incorporated into the new construction.

PRE-FINAL

DATE: 02/23/2005

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

EXAMINED *John A. Morris*
ENGINEER OF STRUCTURAL SERVICES
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

Expires: November 30, 2006

PLAN AND ELEVATION

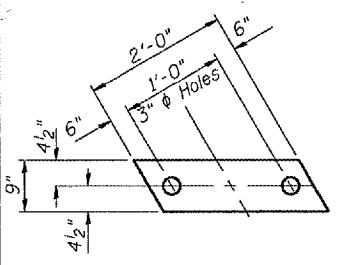
**F.A. RT. 782
GALLATIN COUNTY
SN 030-0018**

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	JOB NO.	SHEET NO.
		Gallatin	7	5
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT-		

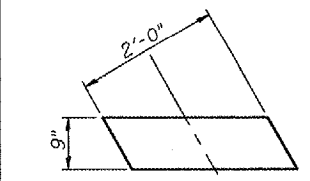
SHEET NO. 2
3 SHEETS

Contract Number: ---



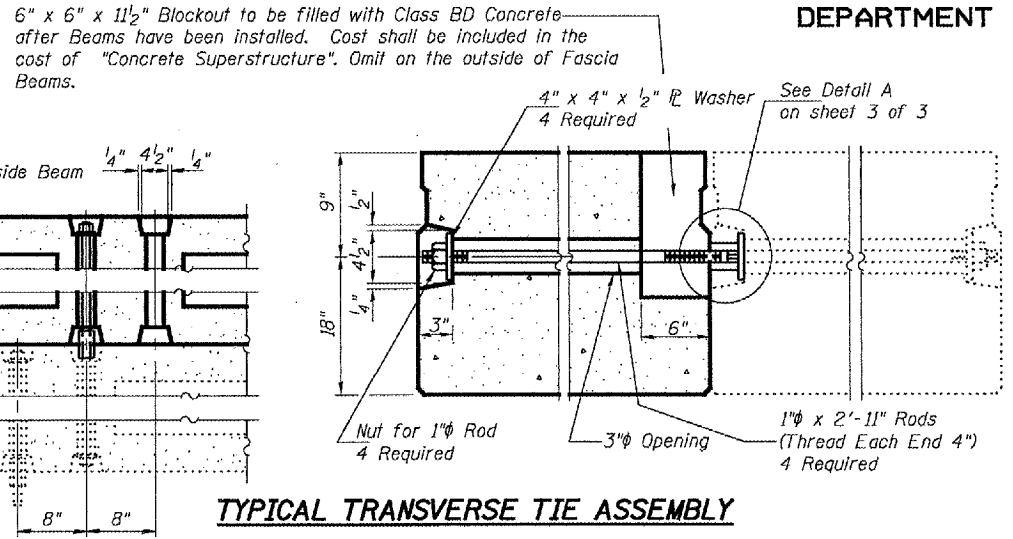
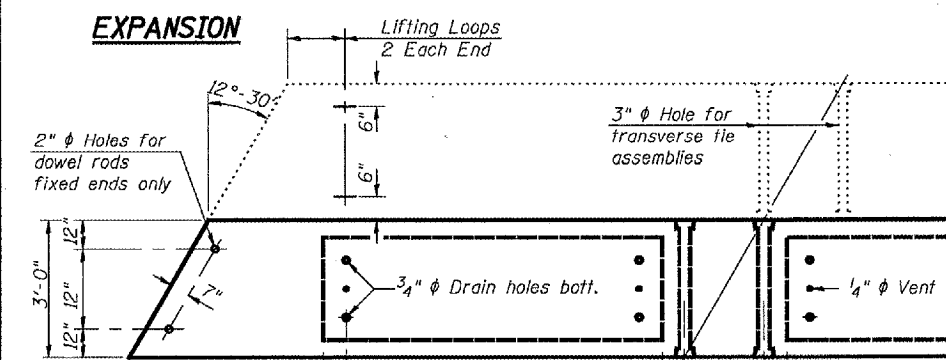
FABRIC BEARING PAD

FIXED

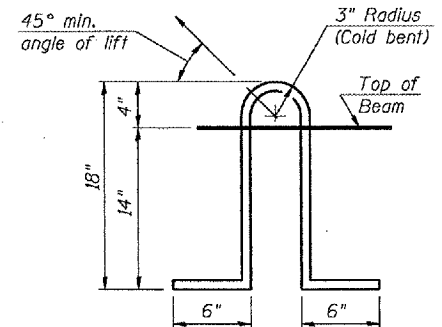


FABRIC BEARING PAD

EXPANSION

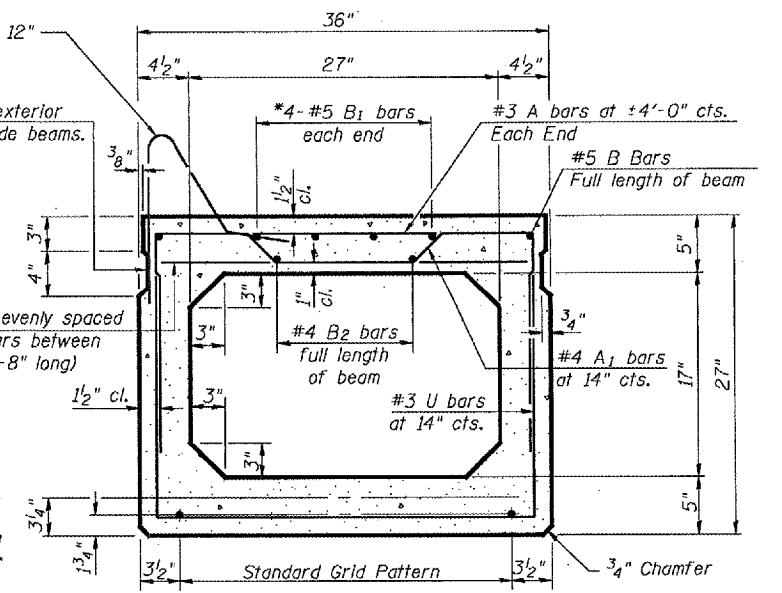


TYPICAL TRANSVERSE TIE ASSEMBLY



LIFTING LOOP DETAIL

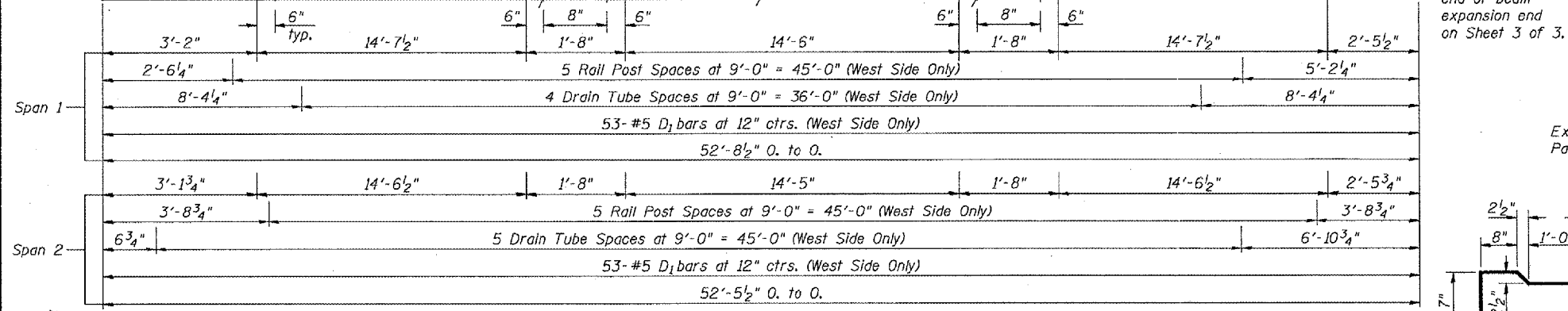
FIXED ADJUSTING SHIM EXPANSION ADJUSTING SHIM



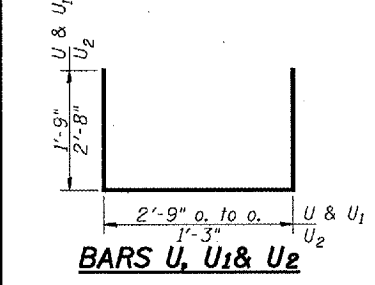
TYPICAL SECTION

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

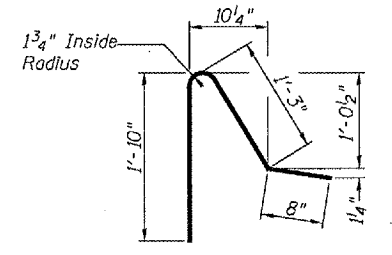
Note:
Place strands symmetrically about centerline of beam.



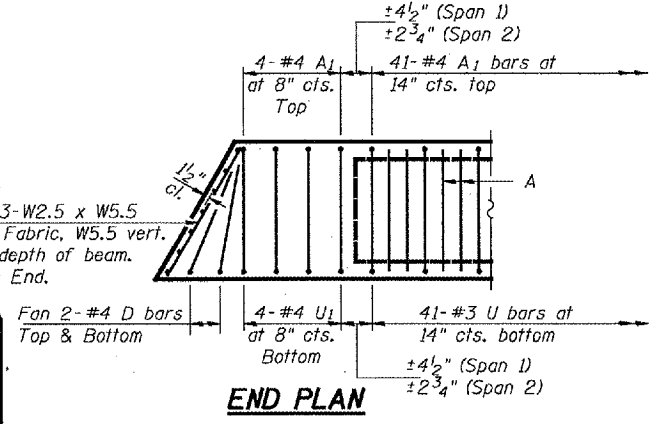
PLAN



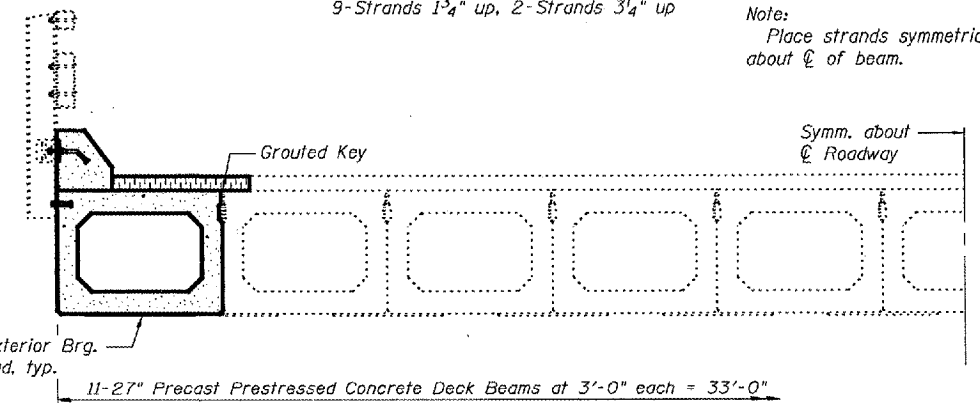
BARS U, U1 & U2



BAR D1



END PLAN

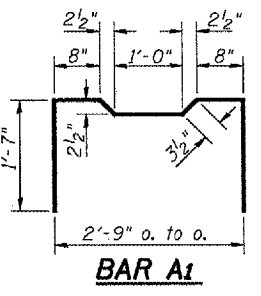


HALF CROSS SECTION

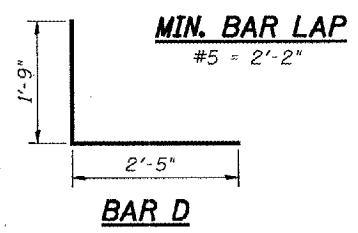
BILL OF MATERIAL

Bar	No.	Size	Length	Shape	
a(E)	3	#5	2'-11"	—	
e(E)	4	#5	27'-7"	—	
Precast Prestressed Conc. Deck Bms.				Sq. Ft.	316
Reinforcing Bars Epoxy Coated				Pound	120

Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus 1 x 2-#5 etc. indicates 1 line of bars with 2 lengths per line.



BAR A1



BAR D

MIN. BAR LAP
#5 = 2'-2"

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" 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 AASHTO M-31 or M322 Grade 60.
The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two 1/2" fabric adjusting shims of the dimensions shown 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, as covered in the Special Provisions, shall be used in the concrete for precast prestressed concrete deck beams.
Required Release Strength, f'ci, shall be 4000 p.s.i.

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

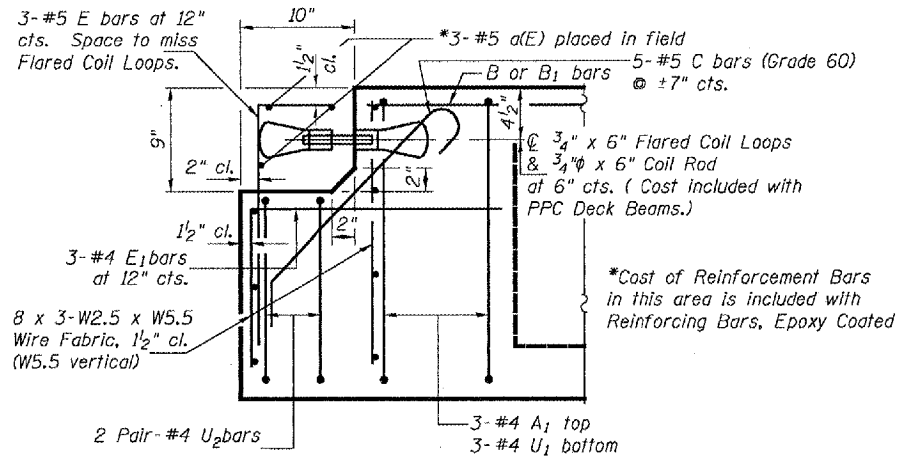
EXAMINED	John A. Morris ENGINEER OF STRUCTURAL SERVICES
PASSED	Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES

PRE-FINAL
DATE: 02/23/2005

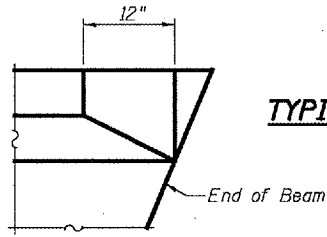
BEAM DETAILS
F.A. RT. 782
GALLATIN COUNTY
SN 030-0018

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

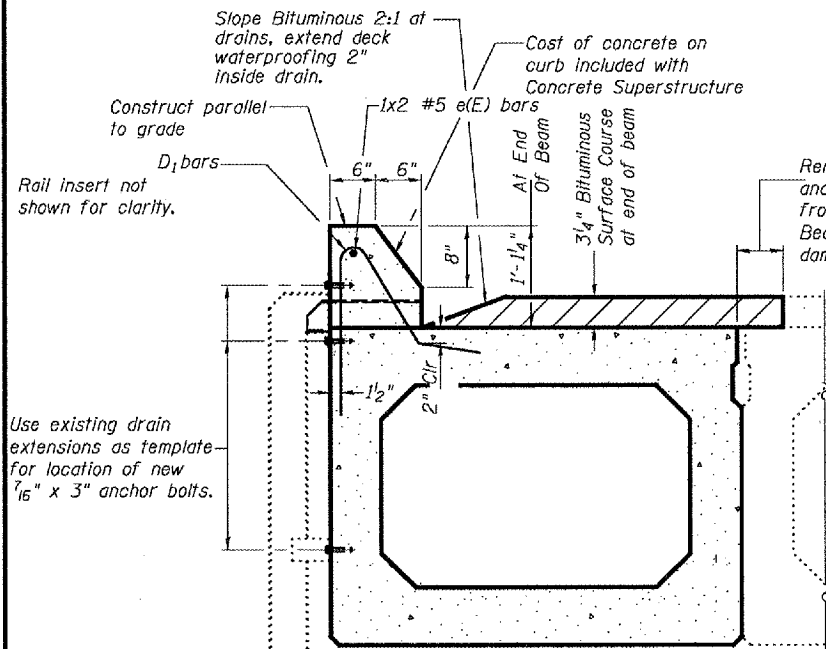
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET	SHEET NO. 3
		Gallatin	7	6	3 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS	FED. RD. PROJECT		Contract Number: ---



END OF BEAM (EXP. END)
(Dimensions at Rt. L's)



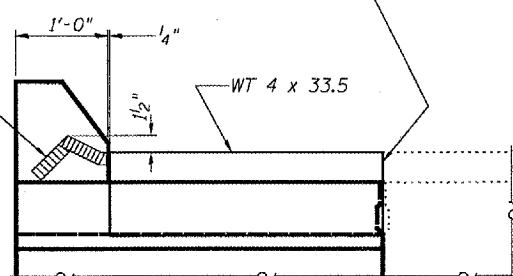
TYPICAL END OF CURB



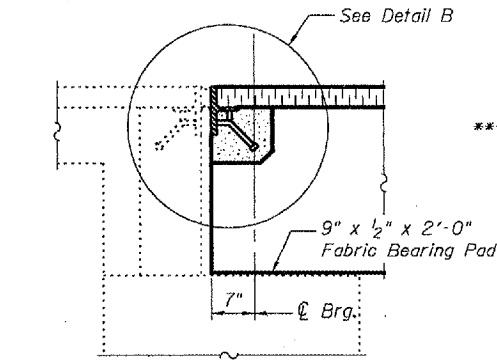
TYPICAL SECTION THRU CURB

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.

P.J.S. to be removed and reinstalled.

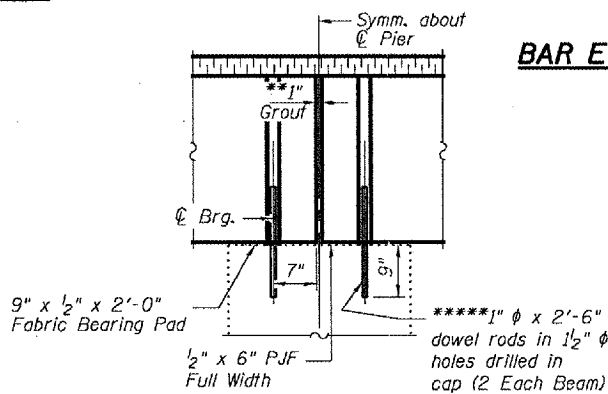


END OF SEAL TREATMENT



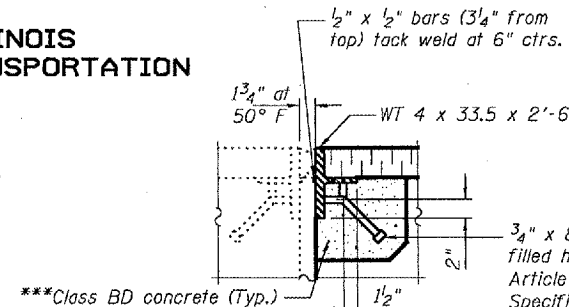
TYPICAL SECTION AT ABUTMENT
(Dimensions at Rt. L's)

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



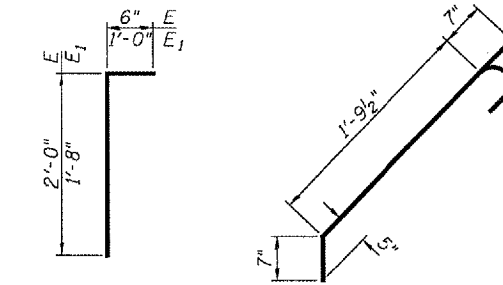
TYPICAL SECTION AT PIER
(Dimensions at Rt. L's)

*****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.



DETAIL B

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



BAR E AND E1

BAR C

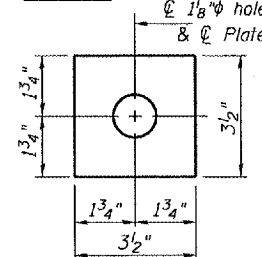
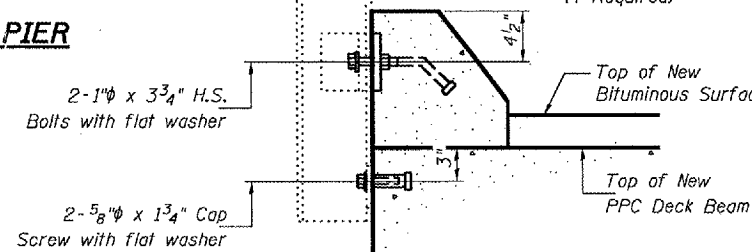
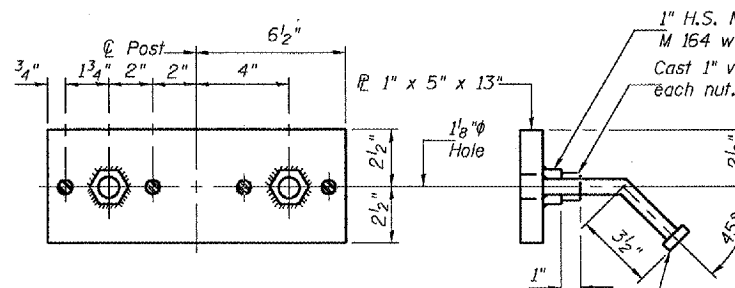


PLATE A
(4 Required)

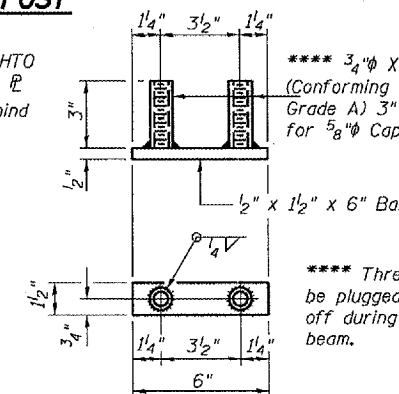


SECTION AT RAIL POST



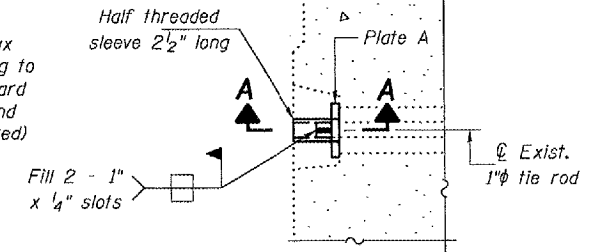
TOP ANCHOR DEVICE

3/4" 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.

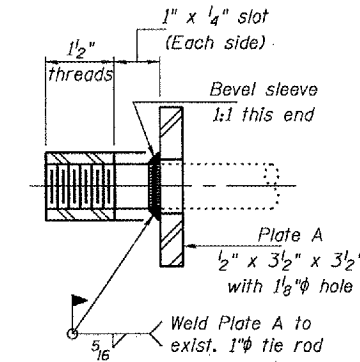


BOTTOM ANCHOR DEVICE

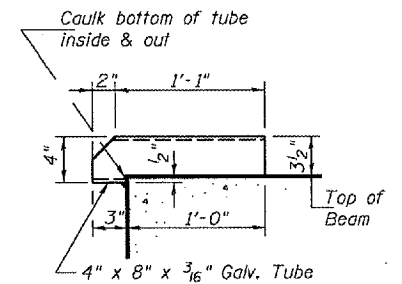
**** Threaded areas shall be plugged or blocked off during casting of beam.



DETAIL A



SECTION A-A
(4 Required)



DRAIN DETAIL

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 1/2" 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).

The removal and re-erecting of the existing railing shall be according to Section 509 and 533 of the Standard Specifications. 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.

BEAM DETAILS
F.A. RT. 782
GALLATIN COUNTY
SN 030-0018

PRE-FINAL

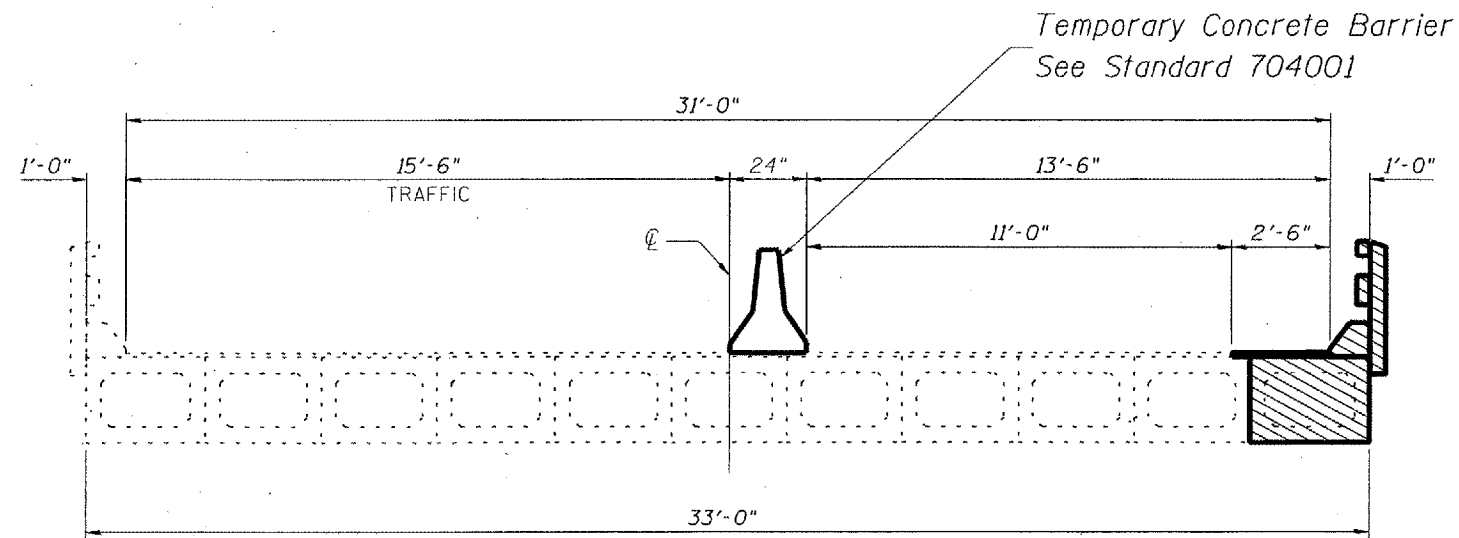
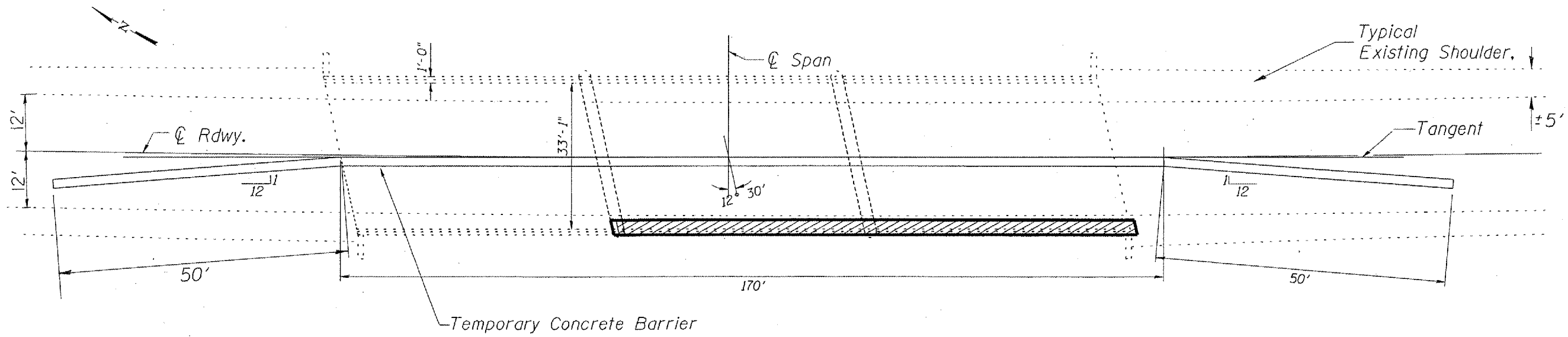
DATE: 02/23/2005

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

EXAMINED	John A. Morris ENGINEER OF STRUCTURAL SERVICES
PASSED	Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONTRACT NO. 98920				
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 782	*	GALLATIN	7	7
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		
*FY 05 BEAM REPLACEMENT				



**TEMPORARY CONCRETE BARRIER
LOOKING SOUTH**