

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 75	05-16118-00-BR	JACKSON	13	1
FED PROJ. BROS-077(40)				

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
**PLANS FOR PROPOSED
HIGHWAY BRIDGE PROGRAM**

(T.R. 75) LICHLITER ROAD
SECTION 05-16118-00-BR
C-99-539-05
FED. PROJECT BROS-077(40)

SUMMARY OF QUANTITIES

CODE	ITEM	UNIT	QUANTITY
20100500	TREE REMOVAL, ACRES	ACRE	0.15
20200100	EARTH EXCAVATION	CU YD	183
20300100	CHANNEL EXCAVATION	CU YD	160
20400100	BORROW EXCAVATION	CU YD	300
25001000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.13
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	150
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	250
50100200	REMOVAL OF EXISTING STRUCTURES	LSUM	1
50300225	CONCRETE STRUCTURES	CU YD	17.6
50300280	CONCRETE ENCASEMENT	CU YD	2.1
50400305	PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH)	SO FT	840
50800105	REINFORCEMENT BARS	POUND	2360
* 50900205	STEEL RAILING, TYPE S1	FOOT	70
51201400	FURNISHING STEEL PILES HP10X42	FOOT	308
51203400	TEST PILE STEEL HP 10X42	EACH	1
51202305	DRIVING PILES	FOOT	266
51500100	NAME PLATES	EACH	1
* 63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	2
* LR631020	TRAFFIC BARRIER TERMINAL, TYPE 1	EACH	2
67100100	MOBILIZATION	LSUM	1

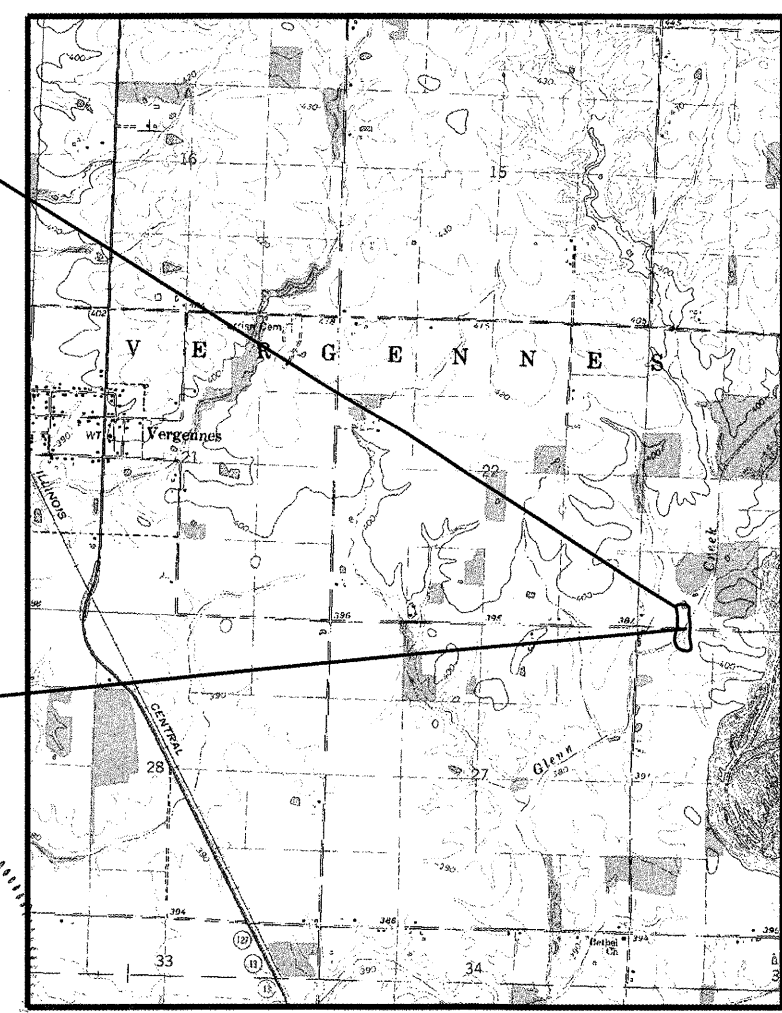
X080-2A

* SPECIALTY ITEMS

INDEX OF SHEETS

1. COVER SHEET, INDEX OF SHEETS, SUMMARY OF QUANTITIES
2. PLAN-PROFILE, TYPICAL SECTION
3. ROADWAY CROSS-SECTIONS
4. BRIDGE GENERAL PLAN AND ELEVATION
5. SUPERSTRUCTURE DETAILS
- 6-7. 17"X36" BEAM DETAILS
- 8.-9. 17"X48" BEAM DETAILS
10. STANDARD CA-2417-20
11. STANDARD CR-TS1
12. STANDARD CN
13. STANDARD CX-1

PROJECT LOCATION
BEGINS STA. 1+63
ENDS STA. 4+30



PROJECT LOCATION MAP

NET LENGTH OF IMPROVEMENT = 267 LINEAL FEET = 0.0506 MILES

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

STANDARDS: 701901-01
BLR 21-8
630301-05
BLR 27-1
BLR 23-3

CLASSIFICATION : LOCAL ROAD
2001 ADT : <150
DESIGN SPEED : 30 MPH

CONTRACT NO. 99342

STA. 3+00
PROPOSED SINGLE SPAN BRIDGE
17" P.P.C. DECK BEAMS 36.56'
BACK TO BACK ABUTMENTS
SKEWED 20° LEFT

Michael L. Smith
Registered Professional Engineer in Illinois
Registration #062-040479
Expires November 30, 2009

MICHAEL L. SMITH
040479
REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

8 Dec 08

ILLINOIS DEPARTMENT OF TRANSPORTATION

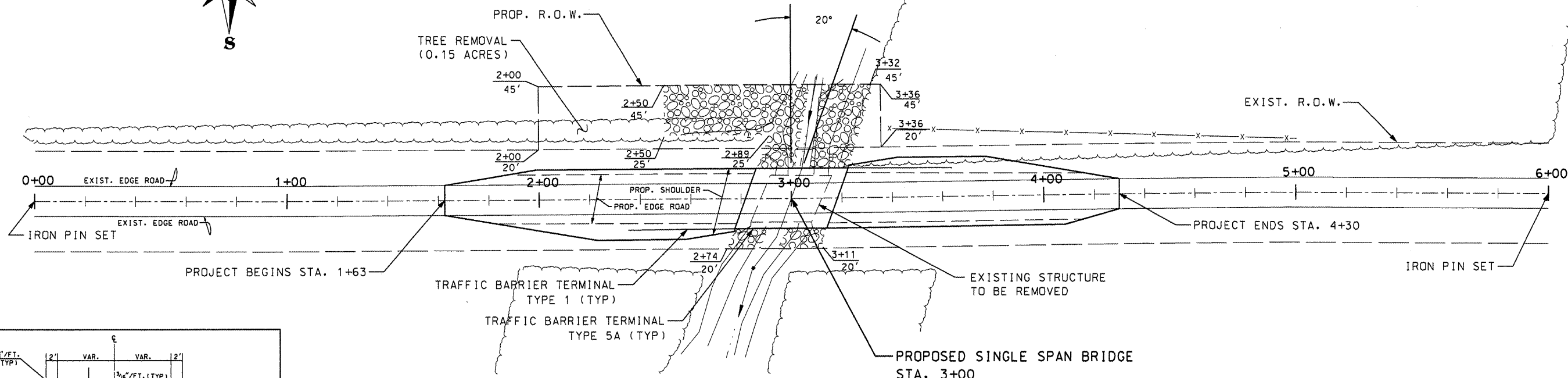
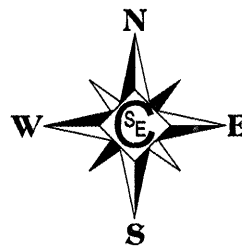
Approved 12-10-2008
[Signature]
Highway Commissioner Vergennes Township

Approved 12-10-2008
[Signature]
Jackson County Engineer

Passed 12-23-08
[Signature]
District 9 Engineer of Local Roads and Streets

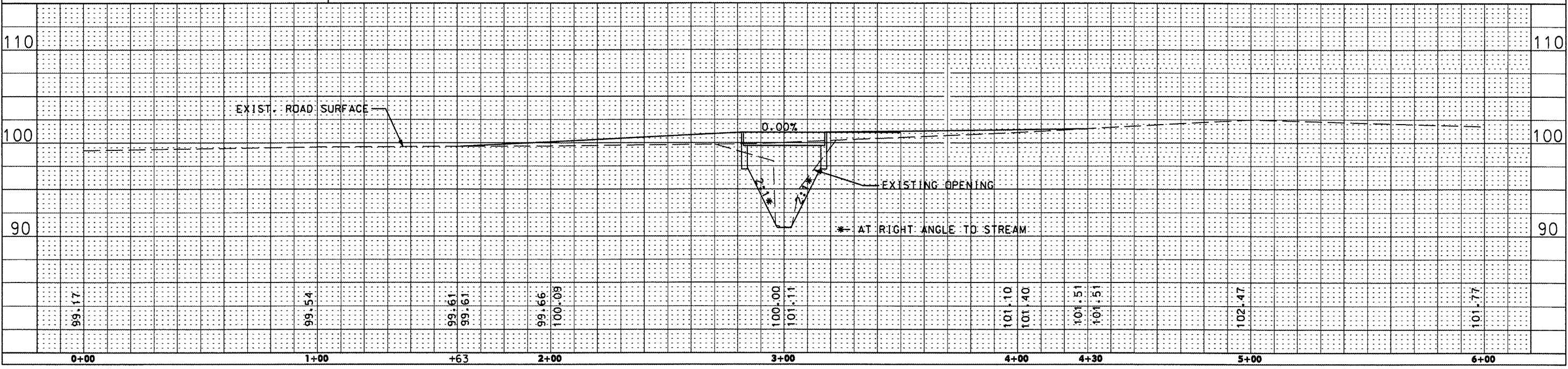
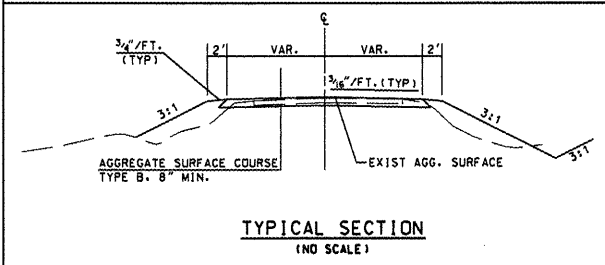
Releasing for Bid Based on Limited Review 12-29-00
[Signature]
Deputy Director of Highways, Region 5 Engineer

ROUTE	SECTION	COUNTY	TOTAL SHEET NO.
T.R. 75	05-16118-00-BR	JACKSON	13
FED PROJ. BR05- 077(40)			2

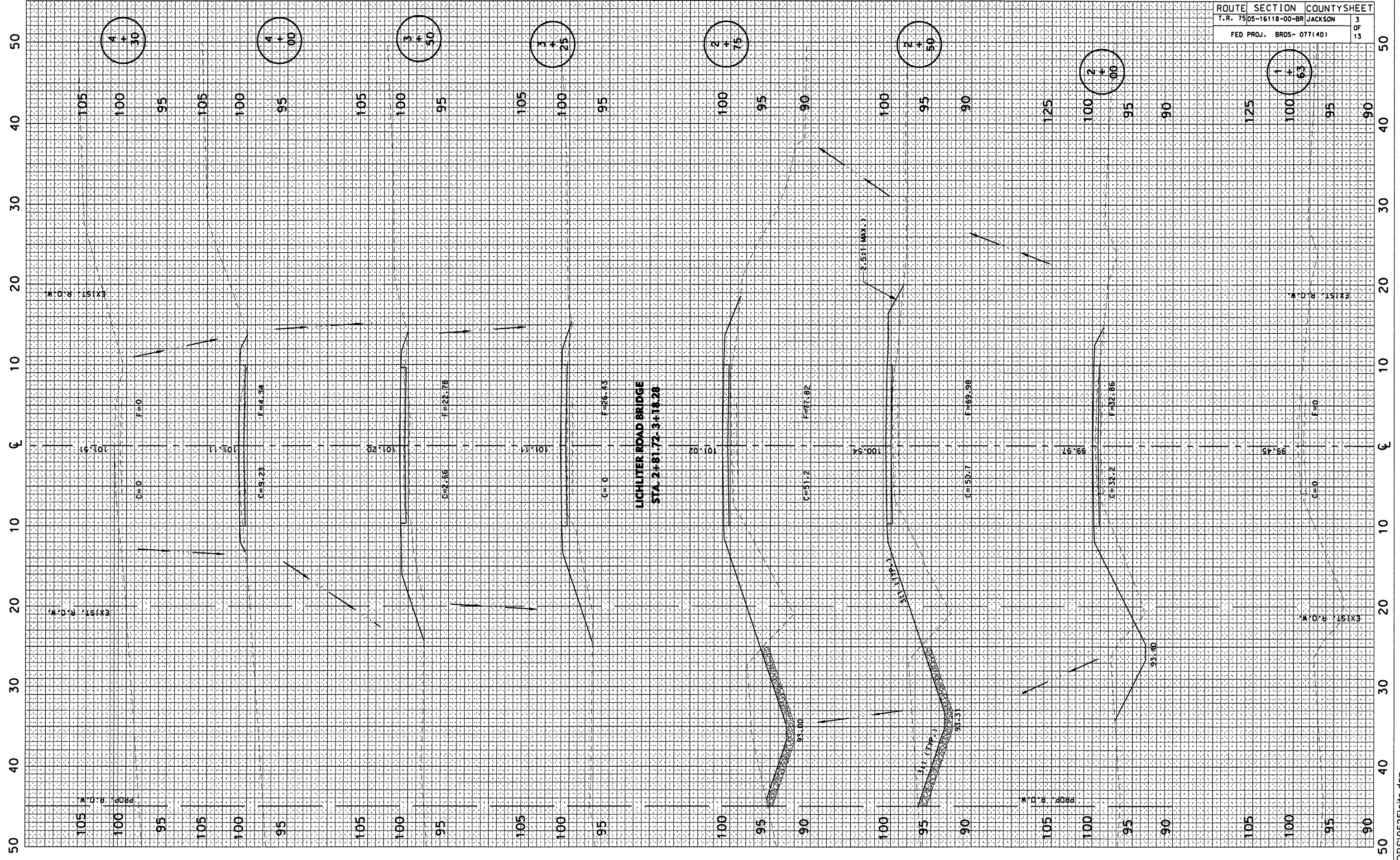


PROPOSED SINGLE SPAN BRIDGE
 STA. 3+00
 17" PRECAST PRESTRESSED CONCRETE DECK BEAMS
 36.56' BK.-BK. ABUTMENTS

NOTE: BEST AVAILABLE INFORMATION
 INDICATES THERE ARE NO
 UTILITIES ON THIS SECTION



LICHLITER ROAD BRIDGE- SECTION 05-16118-00-BR



4
+
30

4
+
00

3
+
50

3
+
25

2
+
75

2
+
50

2
+
00

1
+
63

B.M. - Iron Pin Set Centerline Lichtler Rd.
 @ Sta. 0+00 = Elev. = 99.18

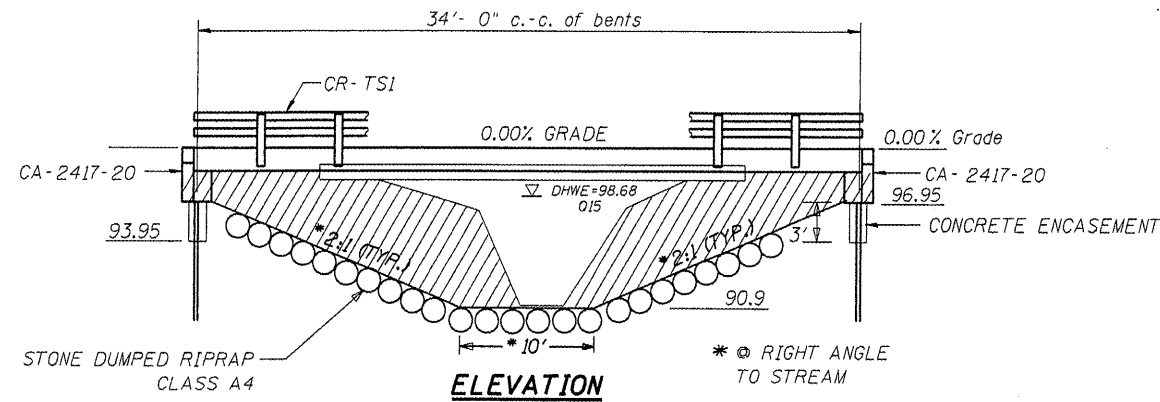
Existing Structure - 24' Wide Concrete Deck Bridge

Salvage - See Special Provisions

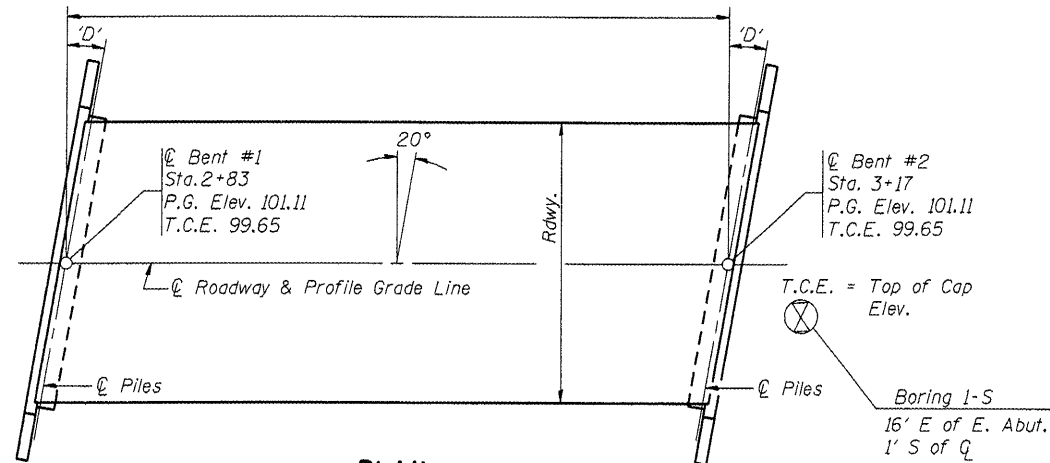
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R.75	*	JACKSON	13	4
FED. PROJECT BROS- 077(40)				

*- 05-16118-00-BR

CHANNEL/STRUCTURE EXCAVATION



Boring 2-S
 22' W of W Abut
 1' N of Q



PLAN
 Skew Angle 'D' = 20° Left Forward

Additional Notes:

Reinforcement bars shall conform to the requirements of A706 Grade 60 (IL modified). See Special Provisions.

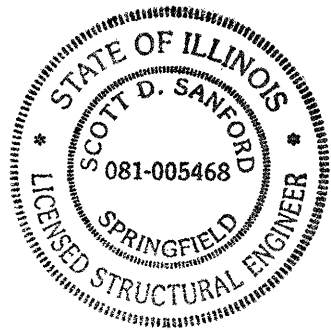
The test pile shall be driven to 110 percent of the Nominal Required Bearing indicated in the pile data information.

The Waterproofing Membrane System and Bituminous Concrete Surface Course shown on the plans shall not be provided.

In addition to all other requirements of section 512 of the Standard Specification, splices for the steel HP piles shall develop the full capacity of the steel's cross sectional area of the pile for tension, shear and bending forces. One approved method of achieving this requirement is full penetration butt welding of the entire cross section. Other types of splices meeting the full capacity requirement may be allowed subject to the approval of the Engineer. Any proposal by the contractor to use an alternate splice method must include adequate documentation demonstrating that the full tension, shear and bending capacities will be met. Appropriate welder qualifications will be required for the positions and processes used in splicing all piles. Nondestructive testing of completed welds will be limited to visual inspection.

TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub.		Total
			Piers	Abuts.	
Removal of Existing Structures	L. Sum				1
Bituminous Concrete Surface Course, Superpave	Ton				
Waterproofing Membrane System	Sq. Yd.				
Concrete Structures	Cu. Yd.			17.6	17.6
Precast Prestressed Concrete Deck Beams (17" Depth)	Sq. Ft.	840			840
Steel Bridge Rail, Type SM	Foot				
Steel Railing, Type S-1	Foot	70			70
Reinforcement Bars	Pound			2360	2360
Furnishing Steel Piles HP 10x42	Foot			308	308
Driving	Foot			266	266
Test Piles	Each			1	1
Name Plates	Each	1			1
Concrete Encasement	Cu. Yd.			2.1	2.1
Portland Cement Mortar Fairing Course	Foot	245			245
Channel Excavation	Cu. Yd.			160	160



"I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with the requirements of the current "AASHTO Standard Specifications for Highway Bridges". The capacity of the pile foundation, hydraulics and quantities were determined by Others and are not covered by this certification."

Date: 12-1-08

Signature: *[Signature]*

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications - 17th ed.

LOADING HS20-44

Allow 25#/sq. ft. for future wearing surface.

SEISMIC DATA

Seismic Performance Category (SPC) = 0.122g
 Bedrock Acceleration Coefficient (A) = B
 Site Coefficient (S) = 1.0

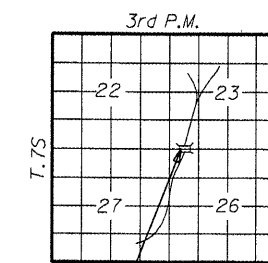
PILE DATA (2-ABUTS.)

Type Steel HP 10x42
 Nominal Required Bearing 183 kips
 Allowable Resistance Available 61 kips
 Estimated Length 35' E. Abut, 42' W. Abut.
 Number Required 8 (Includes 1 Test Pile located in Bent #1)

GLENN CREEK
 SEC. 05-16118-00-BR BUILT 2009
 VERGENNES ROAD DIST.
 JACKSON COUNTY
 LOADING HS20
 STR. NO. 039-3060

LETTERING FOR NAME PLATE

Locate Name Plate at Southeast Corner of Bridge (See Std. CN)



PROPOSED R. 2W BRIDGE
LOCATION SKETCH

GENERAL NOTES

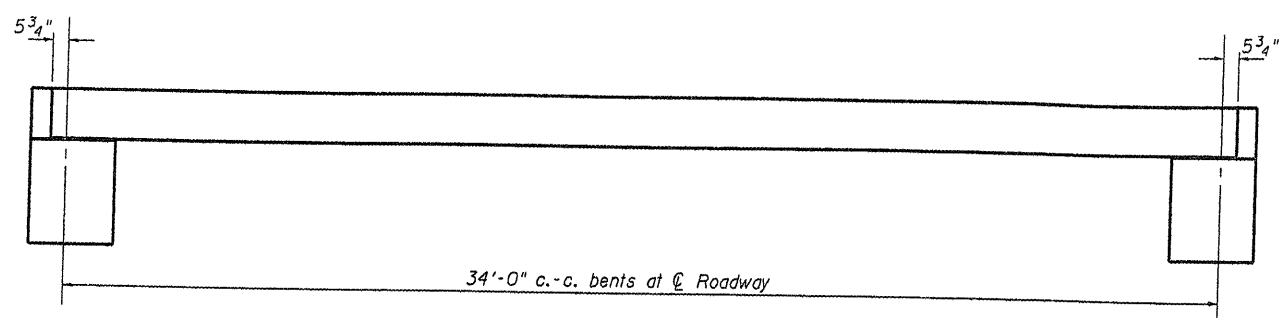
- The Contractor shall drive 1 test pile, as specified, in a permanent location as directed by the Engineer before ordering the remaining piles.
- See Special Provisions for boring logs.

WATERWAY INFORMATION

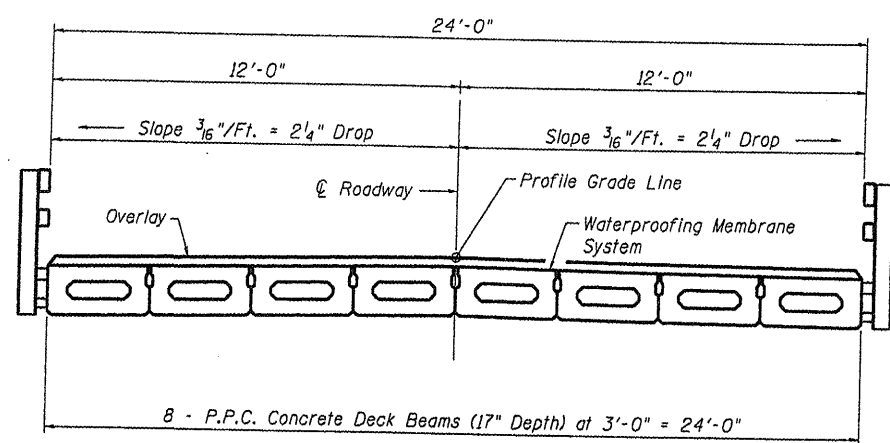
Drainage Area = 4.69 SQ Mi		Low Grade Elev. = 99.69		@ Sta. 3+00			
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft. Headwater El.	
			Exist.	Prop.		Exist.	Prop.
Design	15	612	74	163	98.68	0	98.68
Base	100		79	178	99.09	0	99.02
Overtopping							
Max. Calc.	500	1120			99.31		

GENERAL PLAN & ELEVATION
 TWP ROUTE 75
 OVER GLENN CREEK
 SECTION 05-16118-00-BR
 JACKSON COUNTY
 STATION 3+00

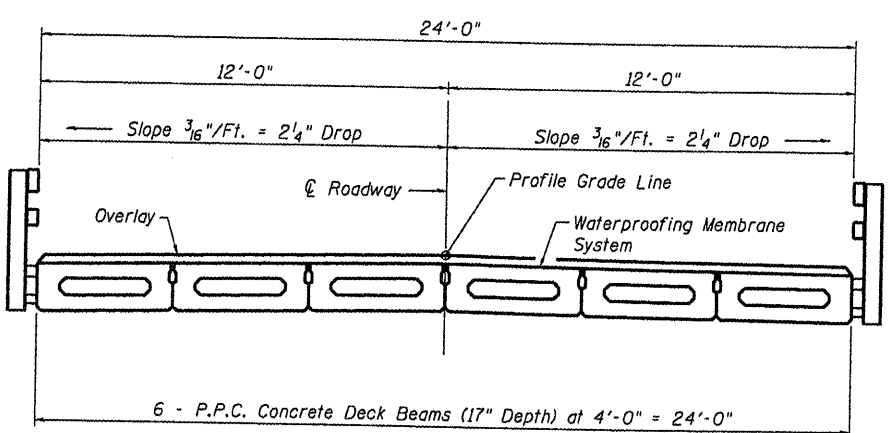
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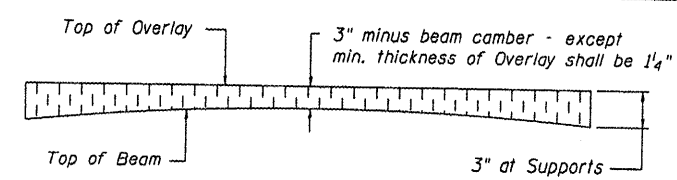
ELEVATION



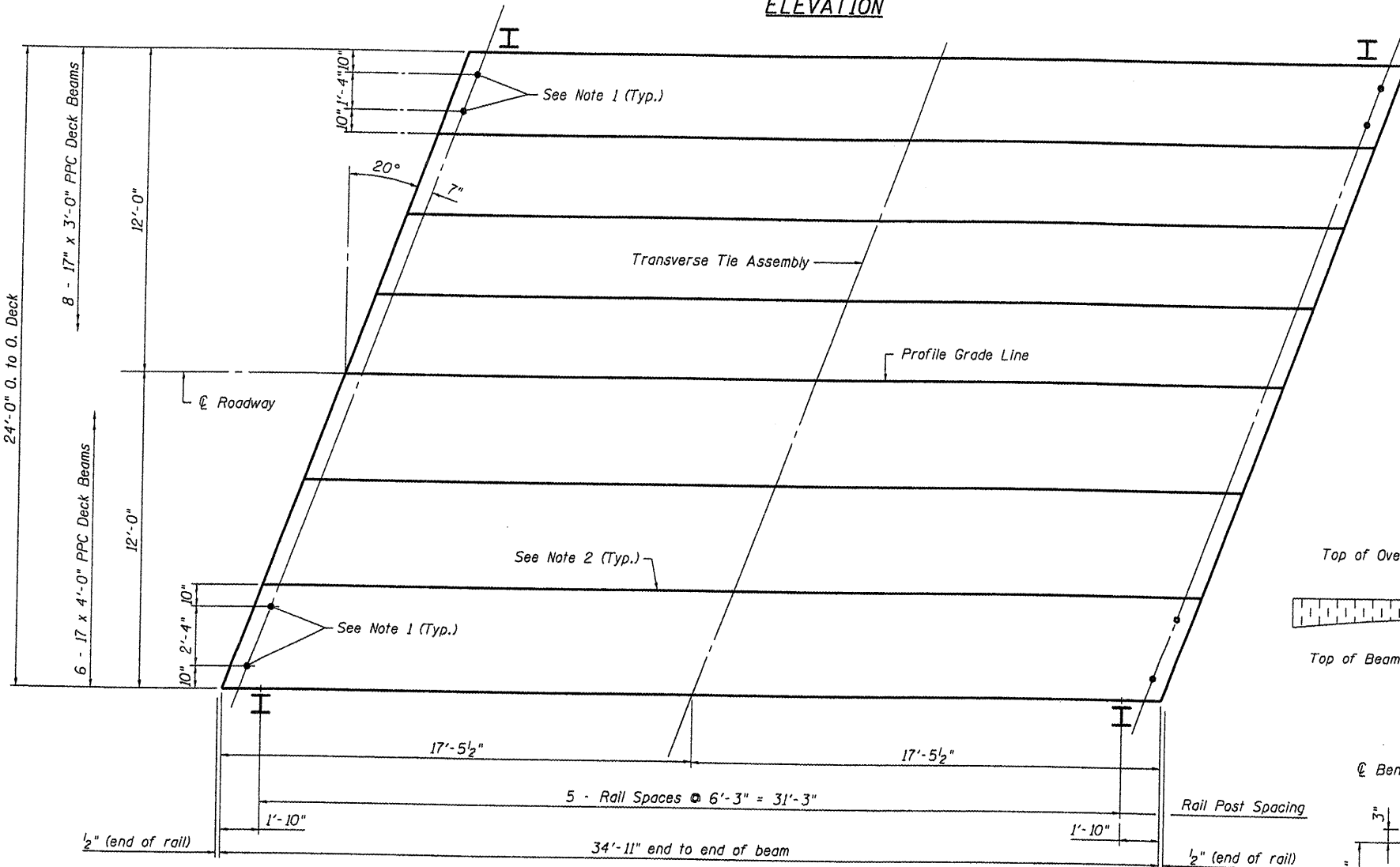
CROSS SECTION



CROSS SECTION



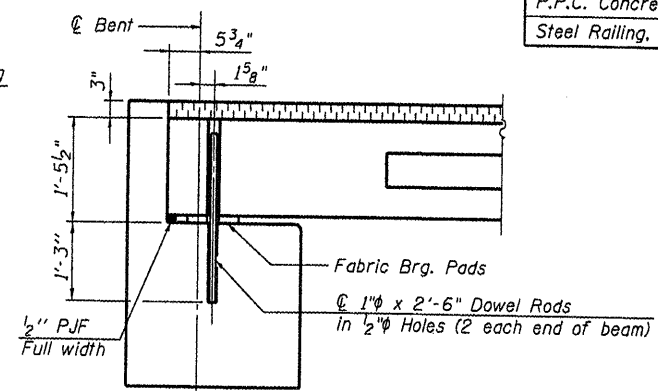
PROFILE OF OVERLAY



PLAN

QUANTITIES FOR ONE SPAN

P.P.C. Concrete Deck Beams (17" Depth)	840 Sq. Ft.
Steel Railing, Type S1	70 Ft.



SECTION AT ABUTMENTS
(Along ϕ Beams)

NOTES

- After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.
- Longitudinal keys shall be grouted.

USER NAME = dhaberling	DESIGNED - SDS	REVISED
	DRAWN - DLH	REVISED
PLOT SCALE = 0.21119' / IN.	CHECKED - CWC	REVISED
PLOT DATE = 9/8/2008	DATE -	REVISED

WHKS & CO.
ENGINEERING

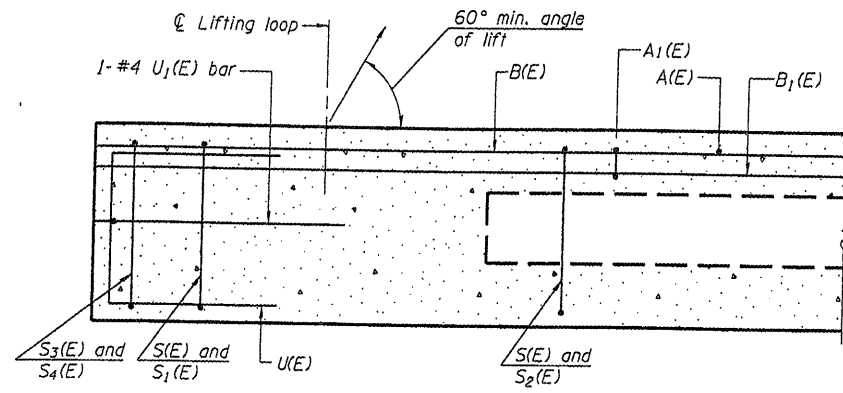
7018 KINGSMILL CT.,
SPRINGFIELD, IL
(217) 483-9457
DESIGN FIRM #184001036

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

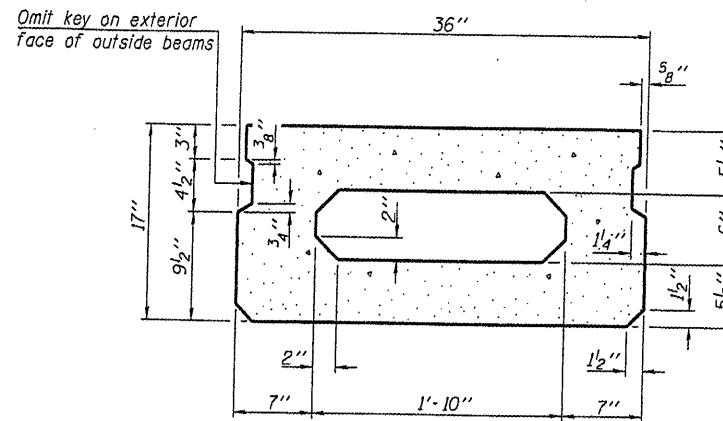
SUPERSTRUCTURE DETAILS
TWP. ROUTE 75 OVER GLENN CREEK

SCALE: SHEET NO. 5 OF 13 SHEETS ϕ STA. 3+00

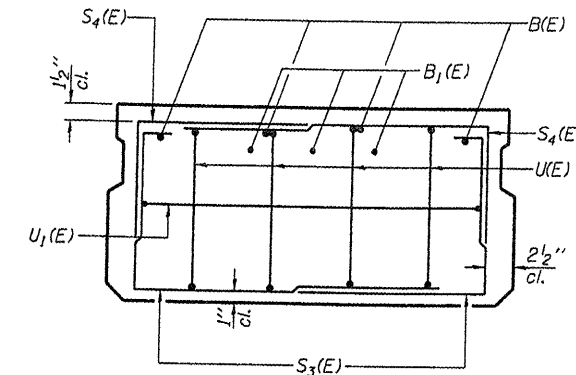
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75	05-16118-00-BR	JACKSON	13	5
S.N. -	CONTRACT		99342	
FED. ROAD DIST. NO. - ILLINOIS FED. AID PROJECT				



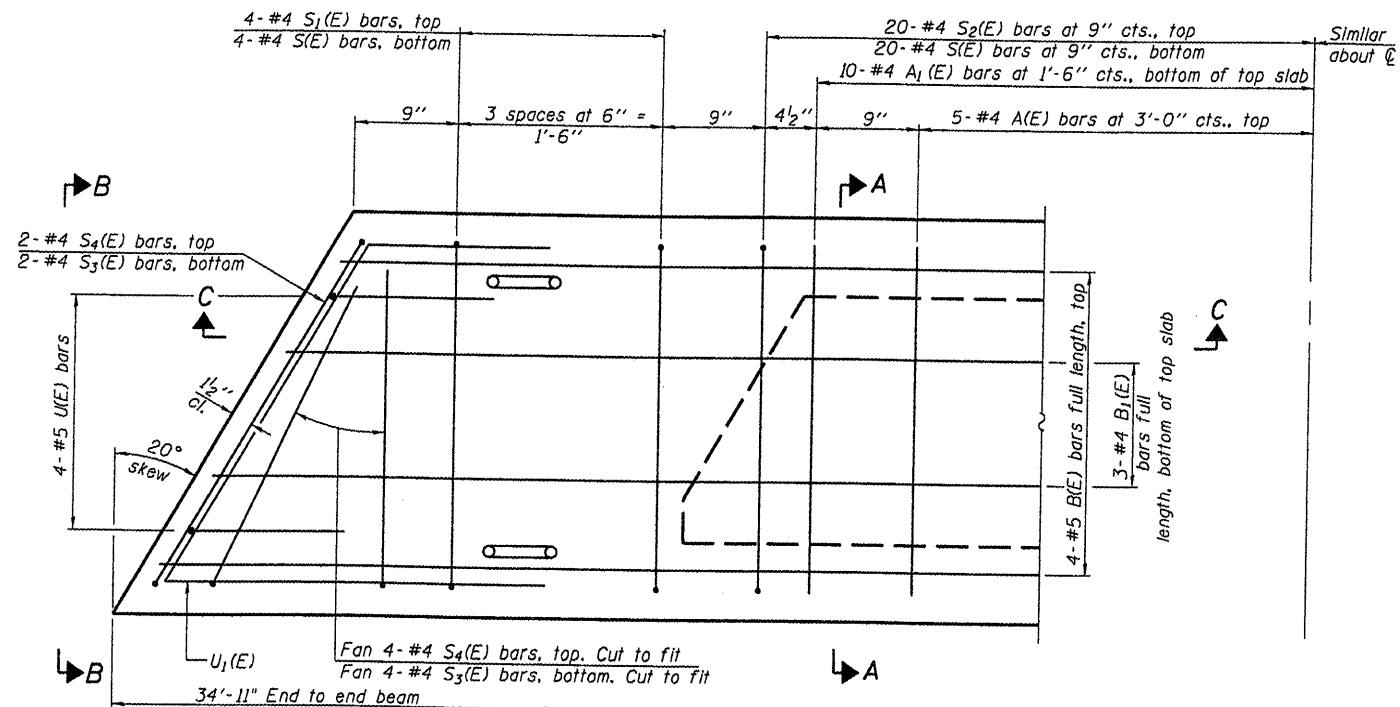
SECTION C-C



SECTION A-A
(Showing dimensions)

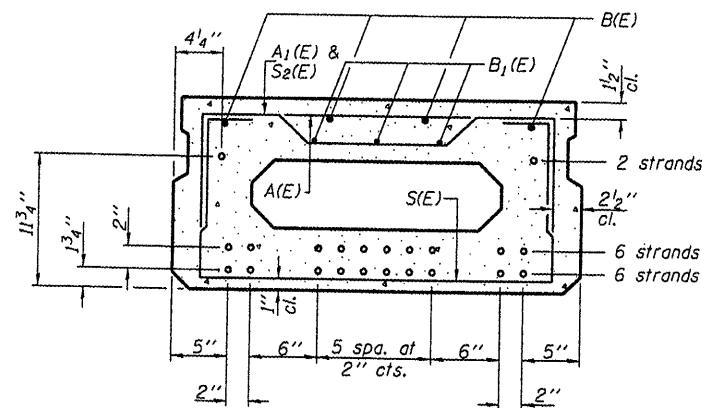


VIEW B-B



PLAN VIEW

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



SECTION A-A
(Showing reinforcement and permissible strand locations)

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

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	10	#4	2'-7"	—
A1(E)	20	#4	2'-11"	—
B(E)	4	#5	34'-8"	—
B1(E)	3	#4	34'-8"	—
S(E)	48	#4	5'-9"	U
S1(E)	8	#4	4'-3"	U
S2(E)	40	#4	4'-6"	U
S3(E)	12	#4	3'-7"	U
S4(E)	12	#4	2'-10"	U
U(E)	8	#5	3'-8"	U
U1(E)	2	#4	6'-1"	U

FILENAME: L:\Jobs\IDOT BBS\6956 BBS Various\6956-05\CADD\Struct\Jackson 05-16118-00-BR.dgn

USER NAME = dhaberling	DESIGNED - SDS	REVISED
	DRAWN - DLH	REVISED
PLOT SCALE = 0.21119 1/4" = 1"	CHECKED - CWC	REVISED
PLOT DATE = 9/8/2008	DATE = 10/08	REVISED

WHKS & CO.
ENGINEERING

7018 KINGSMILL CT.,
SPRINGFIELD, IL
(217) 483-9457
DESIGN FIRM #184001036

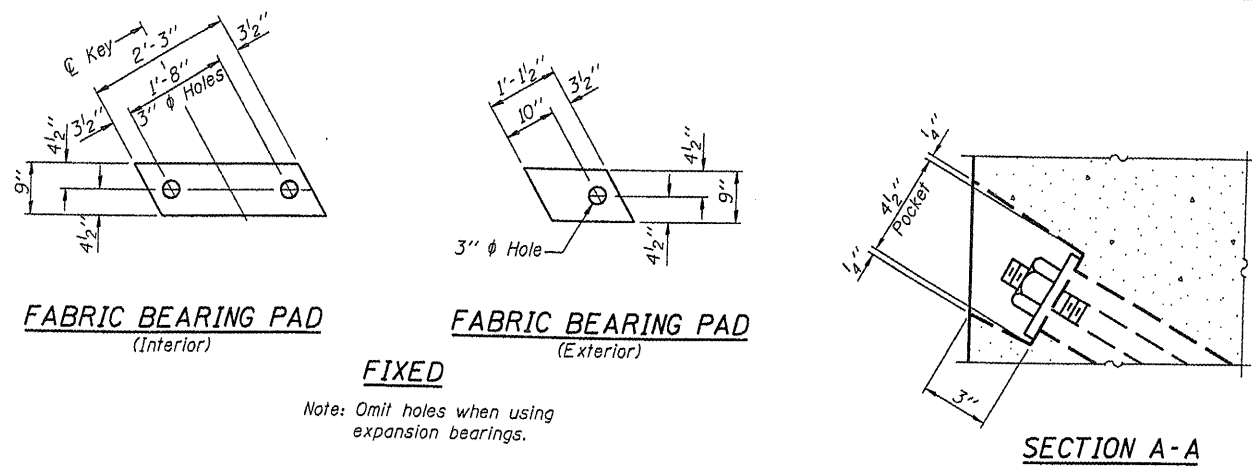
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PPC DECK BEAM DETAILS (17" x 3'-0")
TWP. ROUTE 75 OVER GLENN CREEK

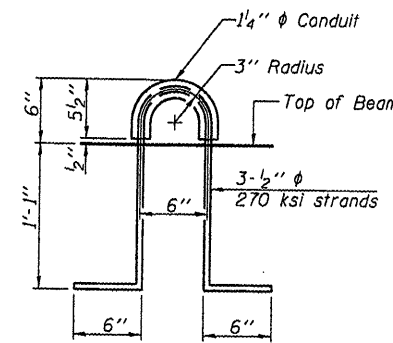
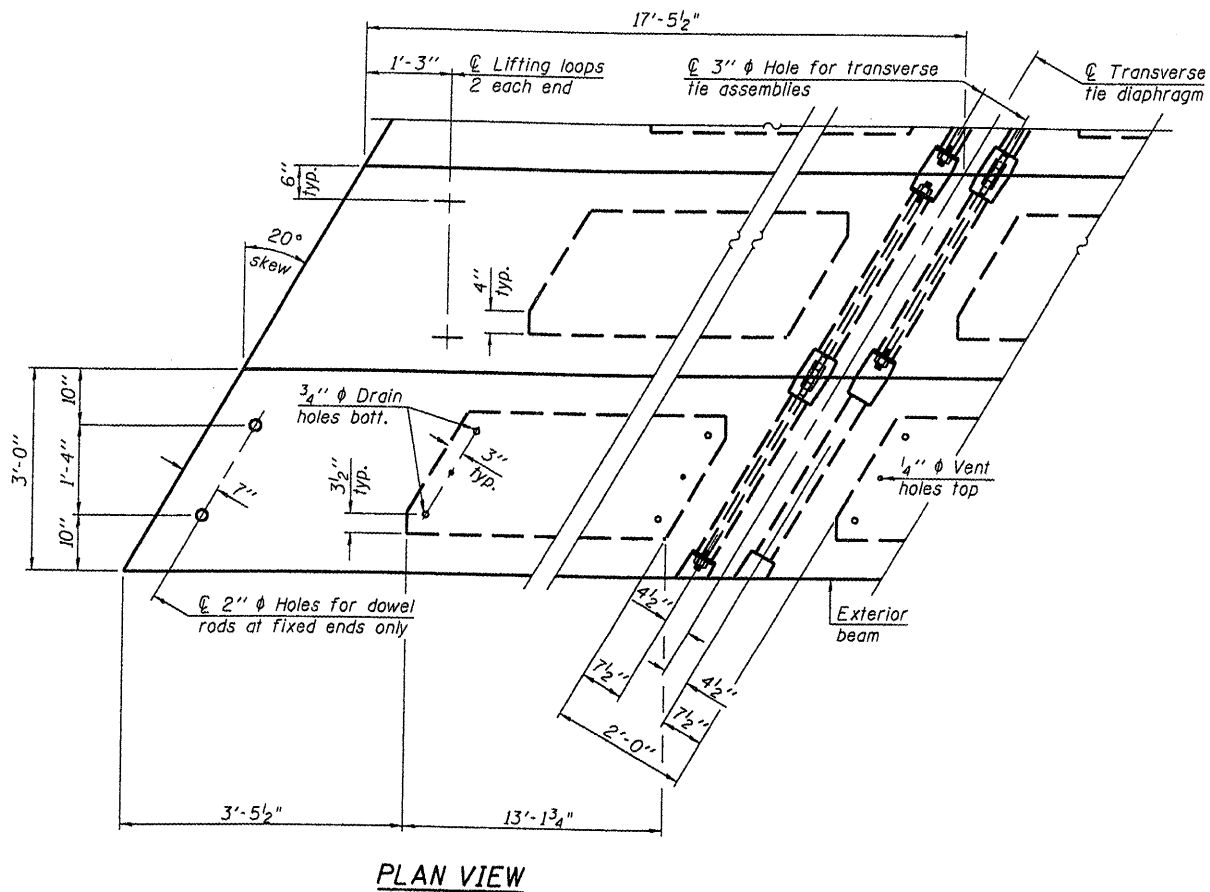
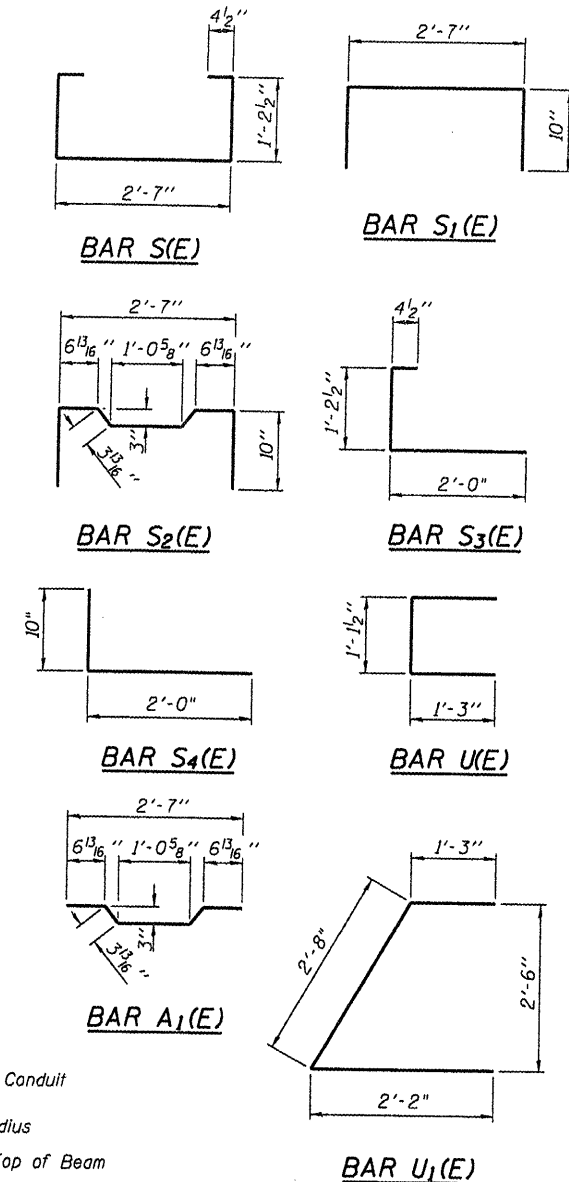
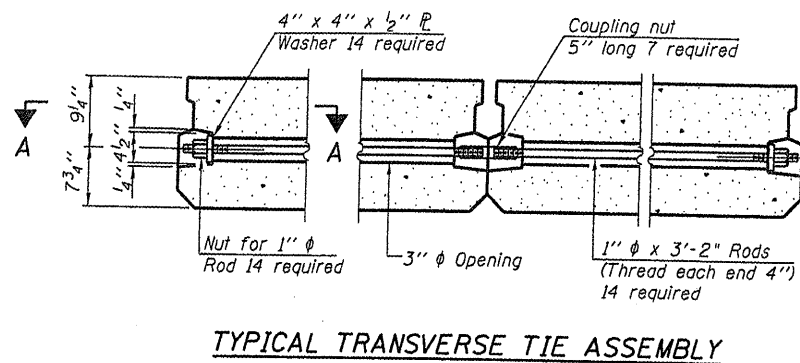
SCALE: SHEET NO. 6 OF 13 SHEETS @ STA. 3+00

T.R. RTE. 75	SECTION 05-16118-00-BR	COUNTY JACKSON	TOTAL SHEETS 13	SHEET NO. 6
S.N. -			CONTRACT 99342	
FED. ROAD DIST. NO. - ILLINOIS FED. AID PROJECT				

FILENAME: L:\Jobs\1001 BBS\6956 BBS Various Vertical\6956.05\CADD.Struc\Jackson\05-16118-00-BR.dgn
 USER NAME = dhaberling



FIXED
 Note: Omit holes when using expansion bearings.



NOTES

- Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in.
- The 1" φ rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.
- Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions).
- Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.
- A minimum 2 1/2" φ lifting pin shall be used to engage the lifting loops during handling.
- Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.06 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.
- Compressive strength of prestressed concrete, f'c, shall be 6000 psi.
- Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (17" depth)	Sq. Ft.	840
---	---------	-----

DESIGNED - SDS	REVISOR
DRAWN - DLH	REVISOR
CHECKED - CWC	REVISOR
DATE 10-00	REVISOR

WHKS & CO. ENGINEERING
 7018 KINGSMILL CT., SPRINGFIELD, IL (217) 483-9457
 DESIGN FIRM #184001036

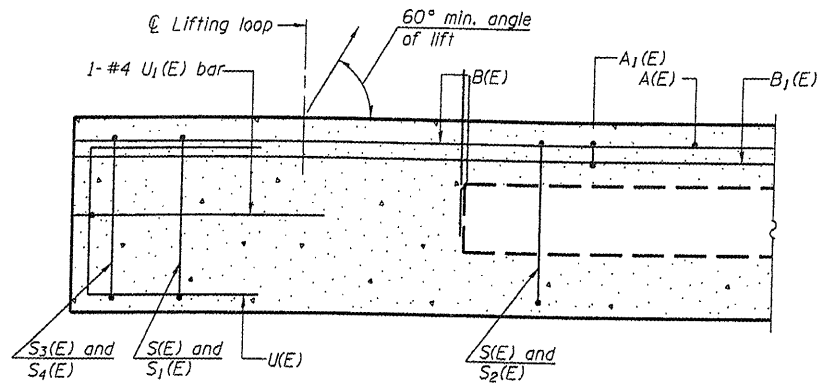
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

PPC DECK BEAM DETAILS (17" x 3'-0")
 TWP. ROUTE 75 OVER GLENN CREEK

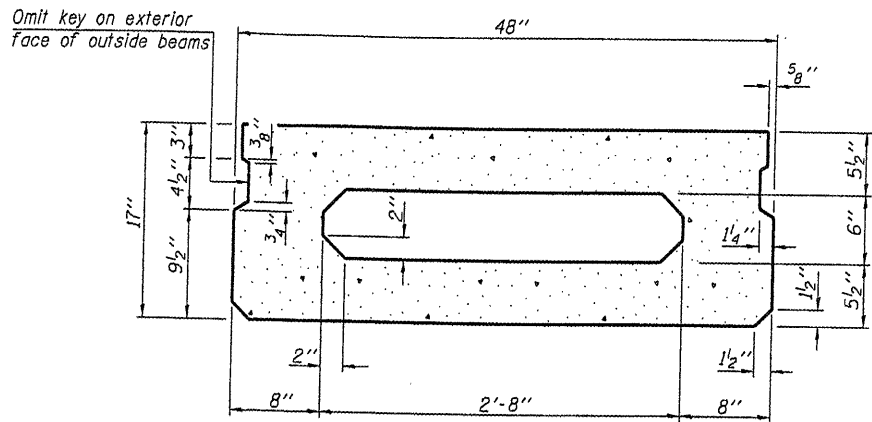
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S.N. -			CONTRACT 99342	
FED. ROAD DIST. NO. - ILLINOIS FED. AID PROJECT				

SCALE: SHEET NO. 7 OF 13 SHEETS STA. 3+00

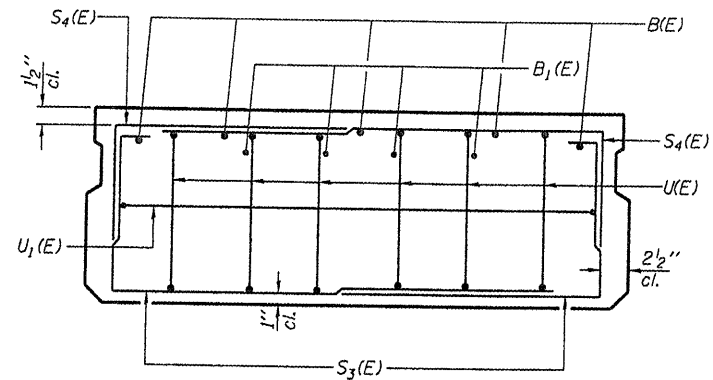
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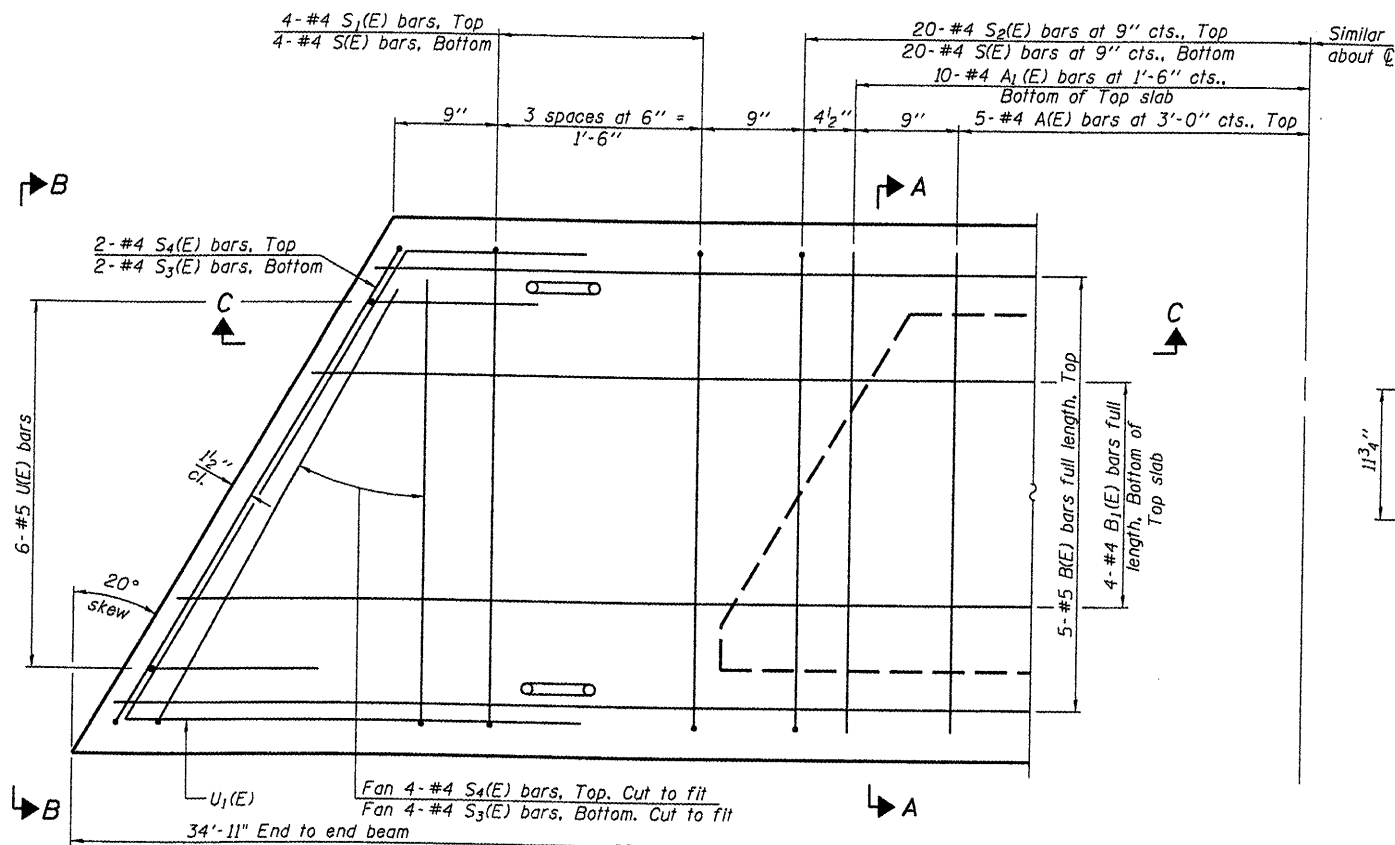
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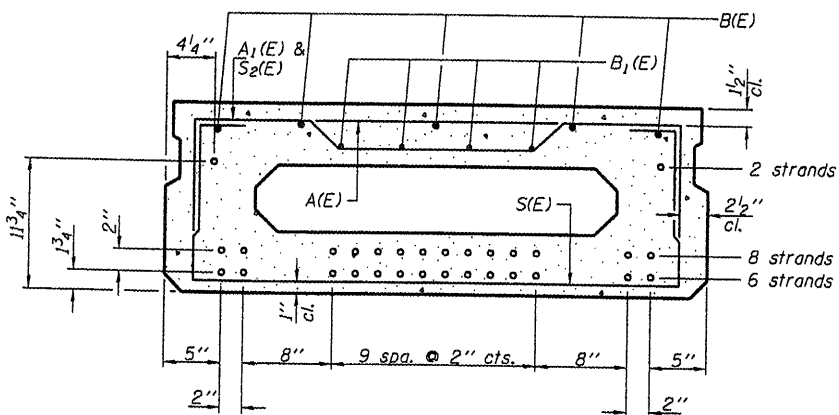
SECTION A-A
(Showing dimensions)



VIEW B-B



PLAN VIEW



SECTION A-A

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

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	10	#4	3'-7"	—
A1(E)	40	#4	3'-10"	—
B(E)	5	#5	34'-8"	—
B1(E)	4	#4	34'-8"	—
S(E)	48	#4	6'-9"	U
S1(E)	8	#4	5'-3"	U
S2(E)	40	#4	5'-6"	U
S3(E)	12	#4	4'-2"	U
S4(E)	12	#4	3'-5"	U
U(E)	12	#5	3'-8"	U
U1(E)	2	#4	7'-6"	U

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

USER NAME = dhaber-ling	DESIGNED - SDS	REVISED
PLOT SCALE = 0.2:1 (1/4" = 1')	DRAWN - DLH	REVISED
PLOT DATE = 9/8/2008	CHECKED - CWC	REVISED
	DATE = 5-10-08	REVISED

WHKS & CO.
ENGINEERING

7018 KINGSMILL CT.,
SPRINGFIELD, IL
(217) 483-9457
DESIGN FIRM #184001036

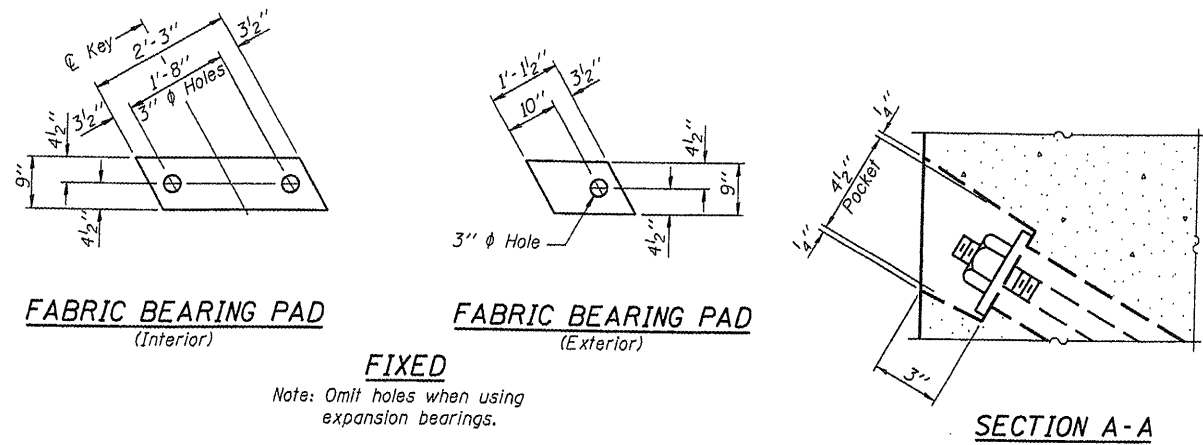
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PPC DECK BEAM DETAILS (17" x 4'-0")
TWP. ROUTE 75 OVER GLENN CREEK

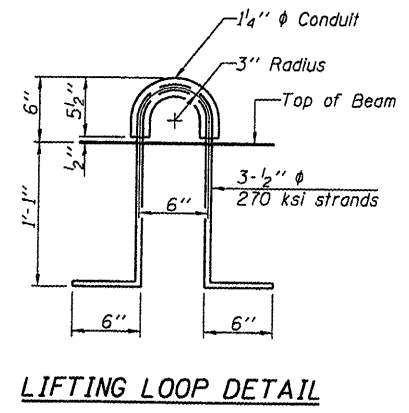
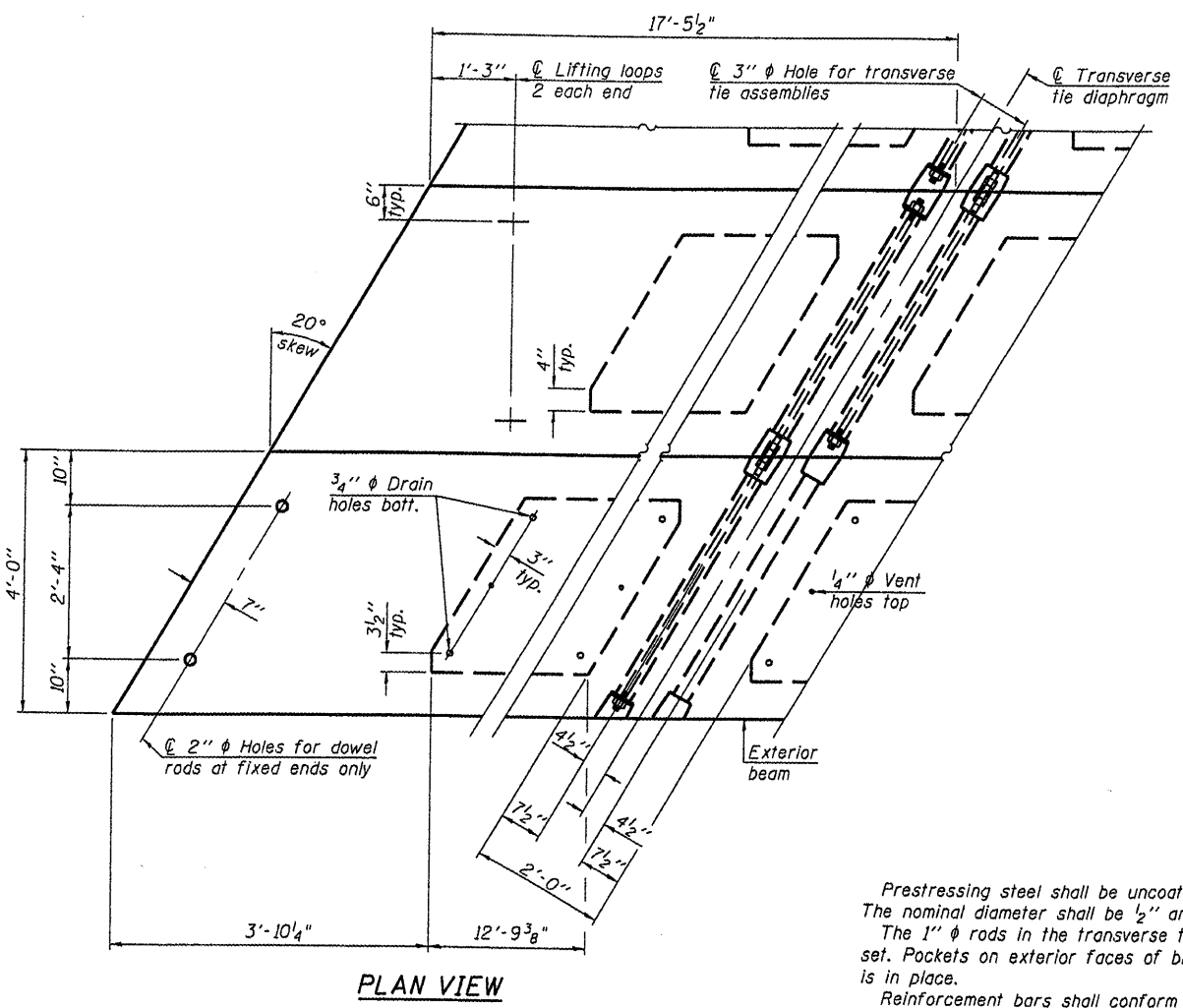
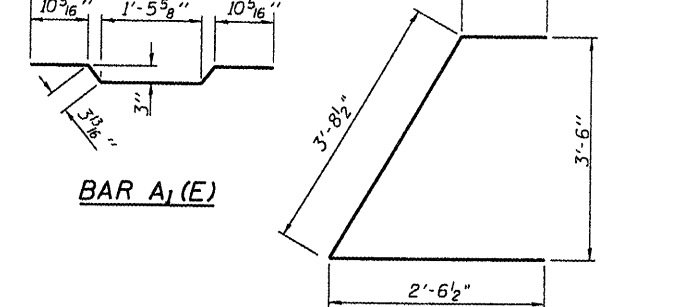
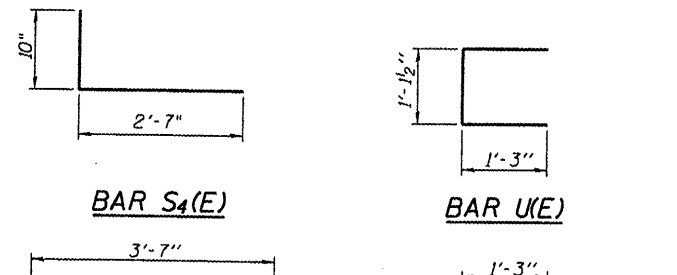
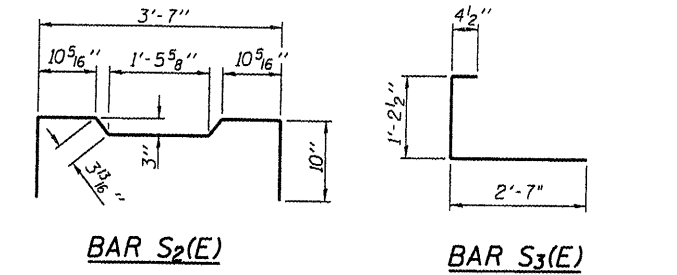
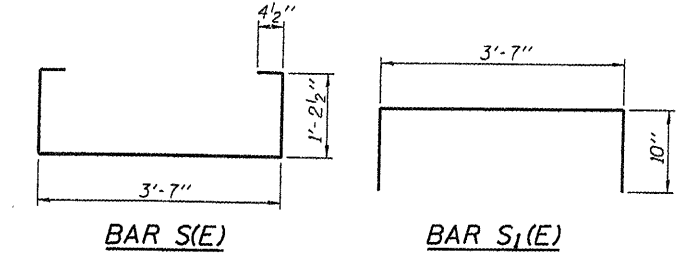
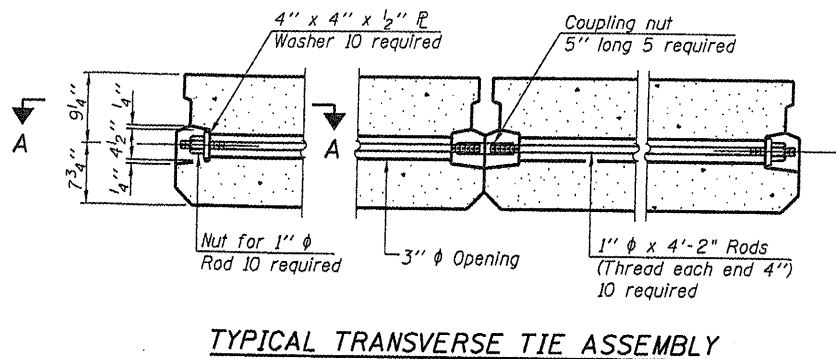
SCALE: SHEET NO. 8 OF 13 SHEETS

STA. 3+00

I.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
75	05-16118-00-BR	JACKSON	13	8
S.N.	CONTRACT		99342	
FED. ROAD DIST. NO. = [ILLINOIS] FED. AID PROJECT				



FIXED
 Note: Omit holes when using expansion bearings.



NOTES

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

Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions). Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.

A minimum 2 1/2" φ lifting pin shall be used to engage the lifting loops during handling. Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.06 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.

Compressive strength of prestressed concrete, f'c, shall be 6000 psi. Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (17" depth)	Sq. Ft.	840
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FILENAME: L:\Jobs\1001 BBS\6956 BBS Various\CADD\Struc\Jackson 05-16118-00-BR.dgn

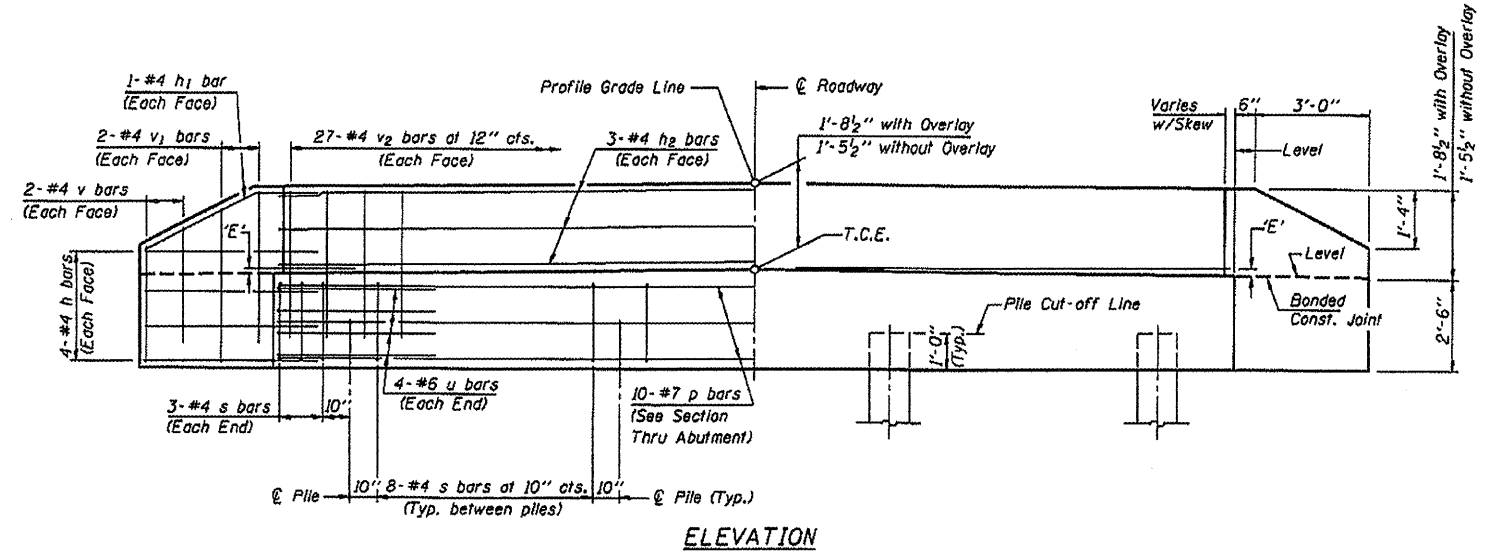
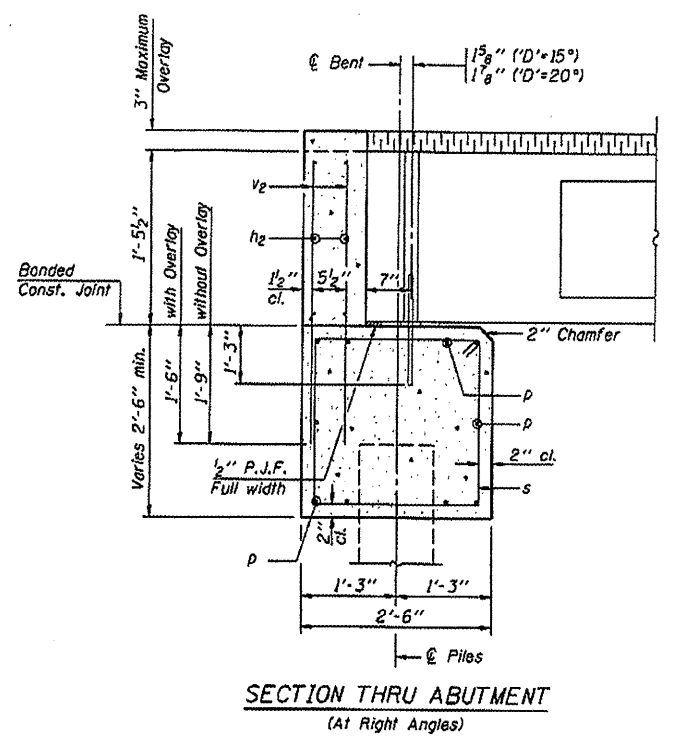
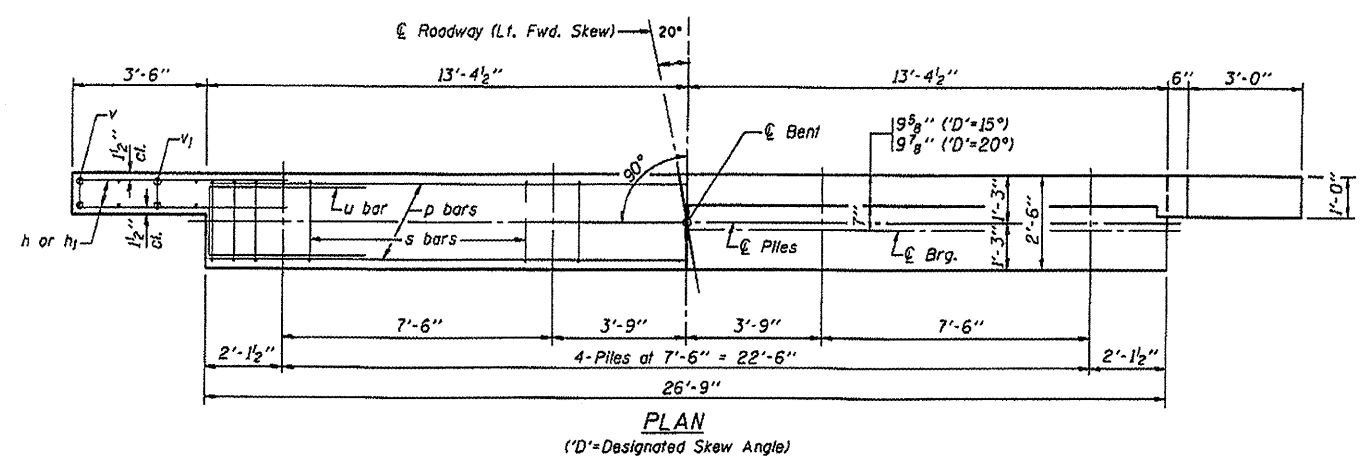
USER NAME: chaberling	DESIGNED: SOS	REVISED:
PLOT SCALE: 0.21119 1" / IN.	DRAWN: DLH	REVISOR:
PLOT DATE: 9/8/2008	CHECKED: CWC	REVISION:
	DATE: 10-00	

WHKS & CO. ENGINEERING
 7018 KINGSMILL CT., SPRINGFIELD, IL (217) 483-9457
 DESIGN FIRM #184001036

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

PPC DECK BEAM DETAILS (17" x 4'-0")
TWP. ROUTE 75 OVER GLENN CREEK
 SCALE: SHEET NO. 9 OF 13 SHEETS

T.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
75	05-16118-00-BR	JACKSON	13	9
S.N.	CONTRACT		99342	
FED. ROAD DIST. NO. - ILLINOIS FED. AID PROJECT				



DIMENSION 'E'

GRADE	'D'=15°		'D'=20°	
	UPGRADE END	DOWNGRADE END	UPGRADE END	DOWNGRADE END
0%	2 3/8"	2 3/8"	2 3/8"	2 3/8"
Over 0% to 1%	2 1/4"	2 5/8"	2 1/2"	2 5/8"
Over 1% to 2%	1 3/4"	3"	1 1/2"	3 1/2"
Over 2% to 3%	1 3/8"	3 1/2"	1"	3 3/4"
Over 3% to 4%	1"	3 7/8"	3/8"	4 1/4"

NOTES

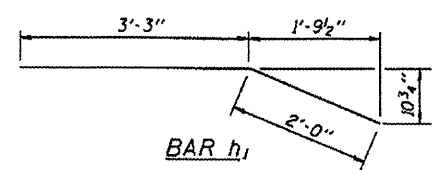
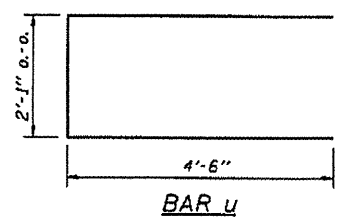
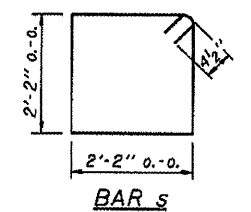
- The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
- Reinforcement bars shall conform to the requirements of A.A.S.H.T.O. M-31 or M-322, Grade 60.
- Space reinforcement in cap to miss anchor balls.

MAXIMUM PILE LOADS

SPAN	TONS
25'	25
30'	26
35'	28
40'	30

DESIGN STRESSES

f'c = 3,500 psi
fy = 60,000 psi



BILL OF MATERIAL FOR ONE ABUTMENT

Bar No.	Size	Length	Shape
h	#6	5'-0"	—
h1	#4	5'-3"	—
h2	#4	26'-5"	—
p	#7	26'-5"	—
s	#4	9'-5"	□
u	#6	11'-1"	—
v	#4	2'-6"	—
v1	#4	3'-5"	—
ve	#4	3'-1"	—
Concrete Structures			8.8 Cu. Yds.
Reinforcement Bars			1180 Lb.

P.P.C. DECK BEAMS PILE BENT ABUTMENT		
24' RDWY.	17" BMS.	'D'=15° OR 20°
STANDARD CA-2417-20		

Illinois Department of Transportation
PASSED APRIL 4, 2005
Thomas S. Noman (P.E.)
Engineer of Bridge Design
APPROVED APRIL 4, 2005
Robert E. Anderson
Engineer of Bridges and Structures

NOTES

Hollow structural steel tubing shall conform to the requirements of ASTM designation A500 Grade B Structural Steel Tubing and shall meet the longitudinal CVN requirements of 15 ft.-lbs. at 0° F.

All other 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 requirement of ASTM designation A307 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 posts, railing, rail splices, 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.

Railing shall be according to Section 509 of the Standard Specifications, except as noted, and will be paid for at the contract unit price per foot for STEEL RAILING, TYPE S-1.

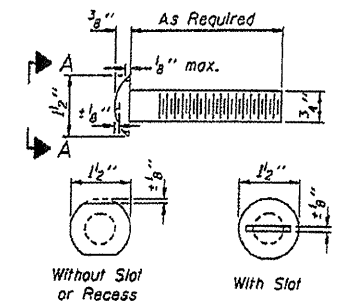
For multi-span bridges, sufficient 1/2" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with STEEL RAILING, TYPE S-1.

All field drilled holes shall be coated with an approved zinc rich paint before erection.

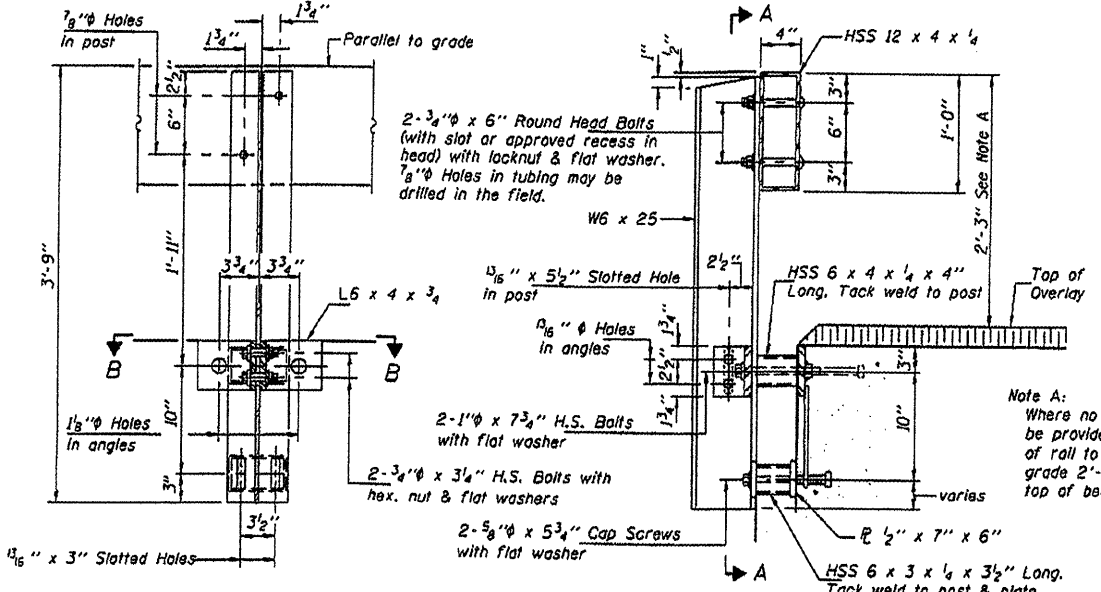
The 1/2" x 7" x 5" plates that come in contact with concrete shall either receive two coats of asphalt paint conforming to Section 1060.07 Type II, or 1/2" fabric bearing pads shall be placed between the plates and concrete.

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 (FX2) 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 1/4 turn. The 5/8" cap screws in bottom of posts shall be tightened to a snug fit only.

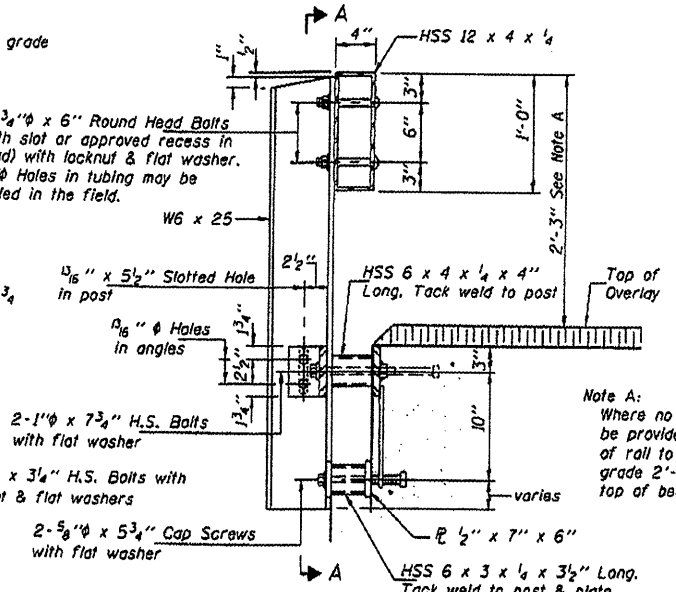
The maximum allowable rail post spacing shall be 10'-6". The rail post spacing shown elsewhere in the plans is based on the allowable spacing for another type of rail. When this type of rail is used, the number of posts may be decreased and the post spacing increased to provide equal post spaces of 10'-6" or less.



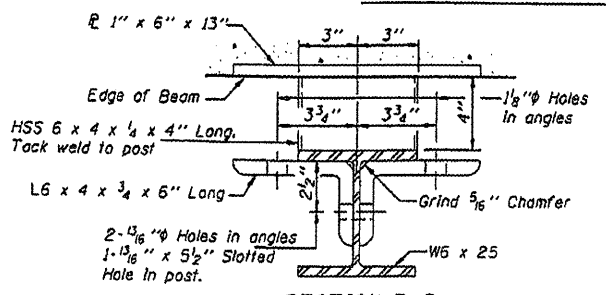
**VIEW A-A
ROUND HEAD BOLT**



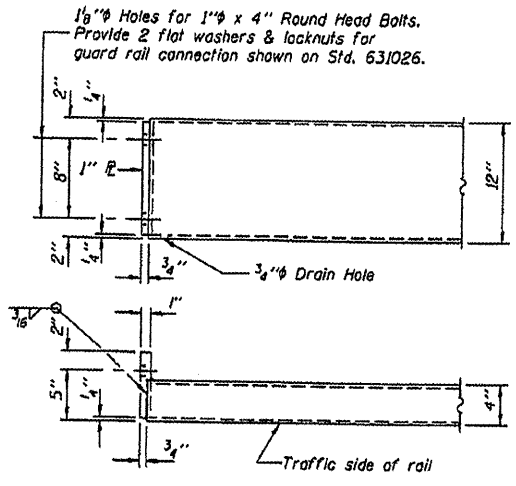
SECTION A-A



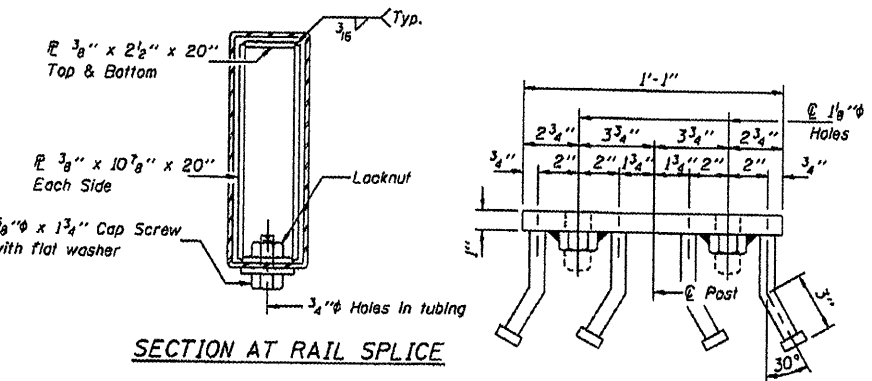
SECTION AT RAIL POST



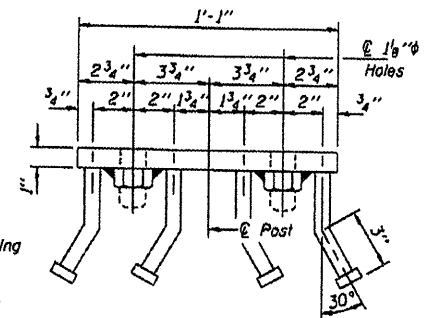
SECTION B-B



END OF RAIL DETAILS



SECTION AT RAIL SPLICE

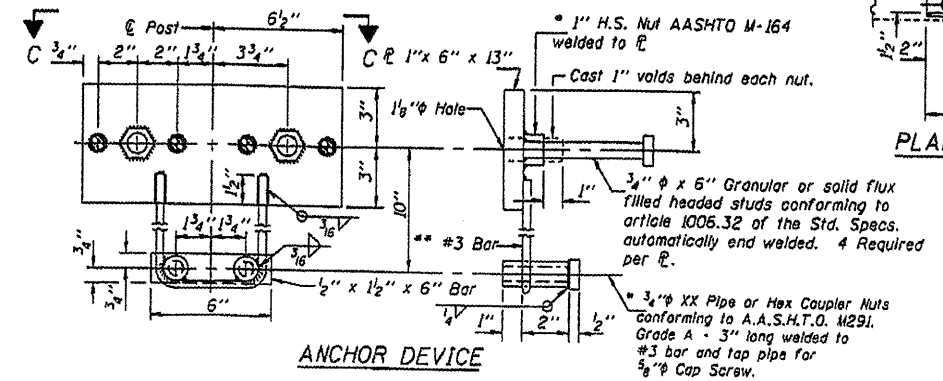


VIEW C-C

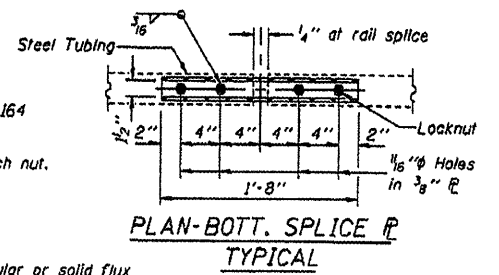
Note A: Where no overlay is to be provided, adjust top of rail to lay parallel to grade 2'-5" max. above top of beam.

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".

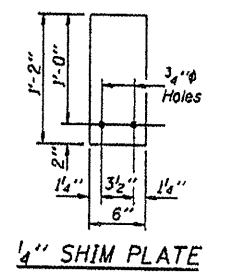
Threaded areas shall be plugged or blocked off during casting of beam.



ANCHOR DEVICE



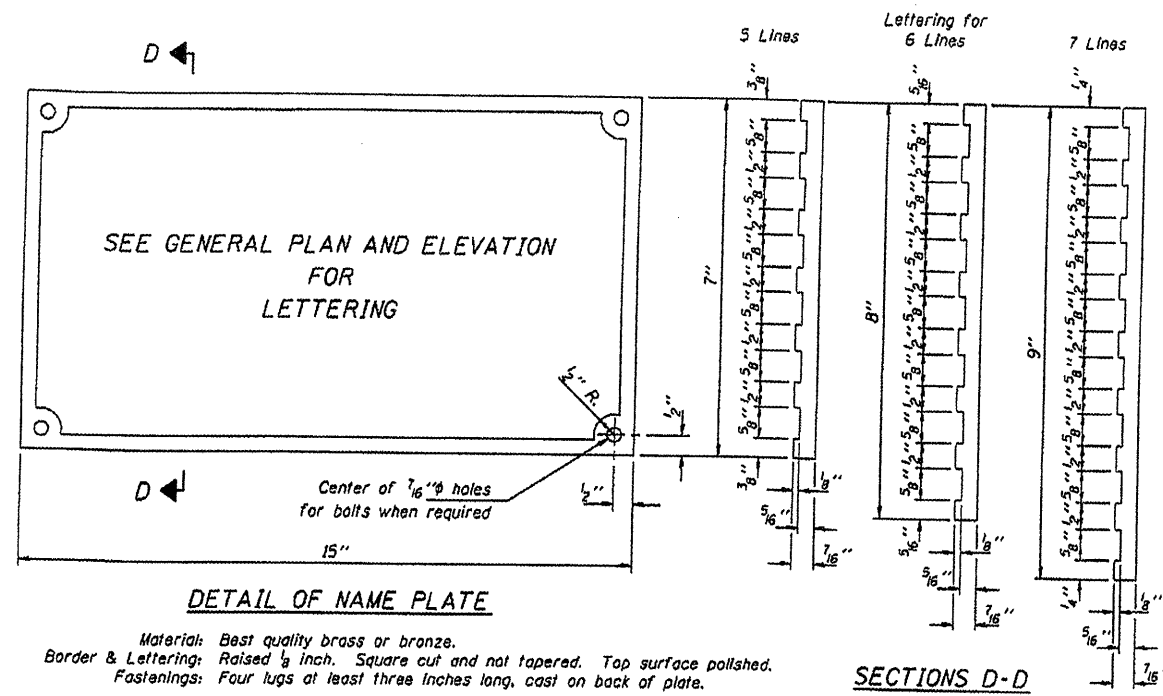
PLAN-BOTT. SPLICE TYPICAL



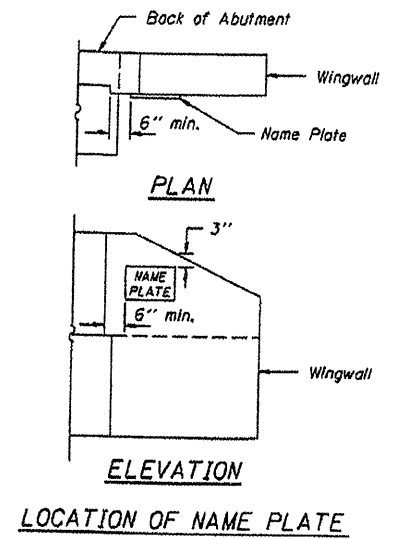
1/4\"/>

Illinois Department of Transportation
 PASSED APRIL 4, 2005
 Thomas S. Noman (Seal)
 Engineer of Bridge Design
 APPROVED APRIL 4, 2005
 Robert E. Anderson
 Engineer of Bridges and Structures

**STEEL RAILING, TYPE S-1
STANDARD CR-TSI**



Material: Best quality brass or bronze.
 Border & Lettering: Raised $\frac{1}{8}$ inch. Square cut and not tapered. Top surface polished.
 Fastenings: Four lugs at least three inches long, cast on back of plate.



Illinois Department of Transportation

PASSED APRIL 4, 2005

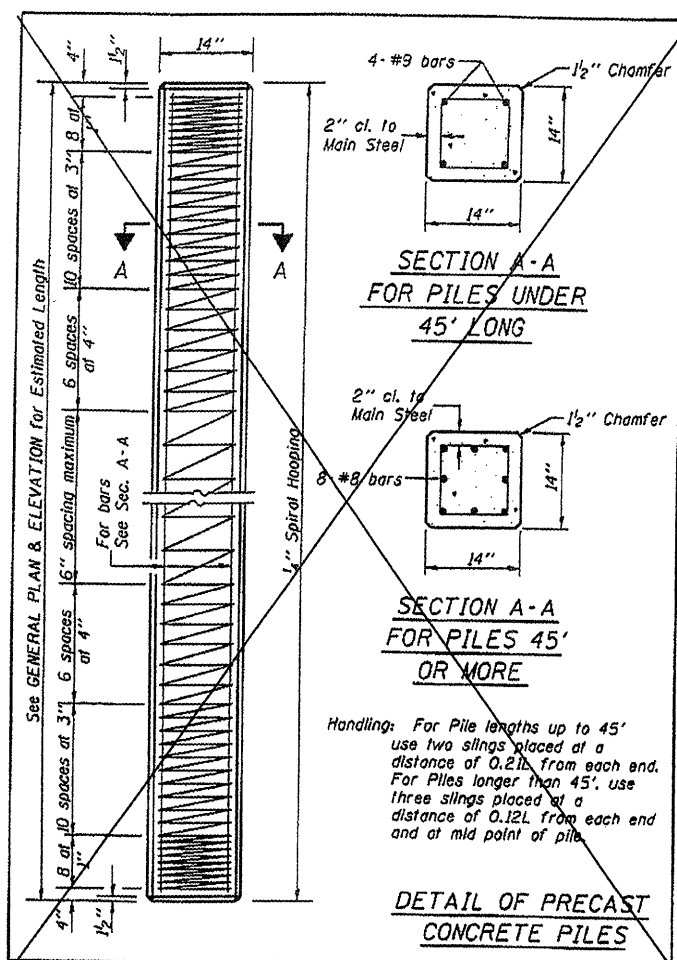
Thomas S. Nungesser
 Engineer of Bridge Design

APPROVED APRIL 4, 2005

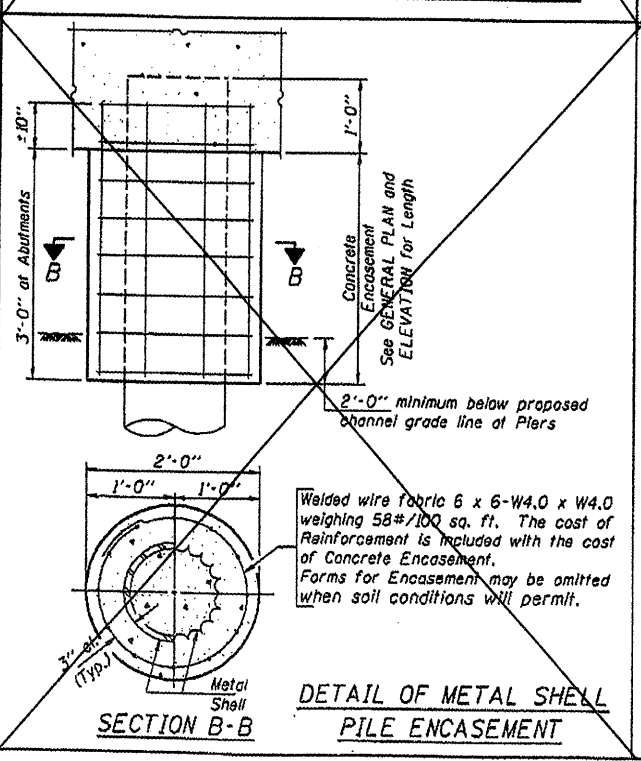
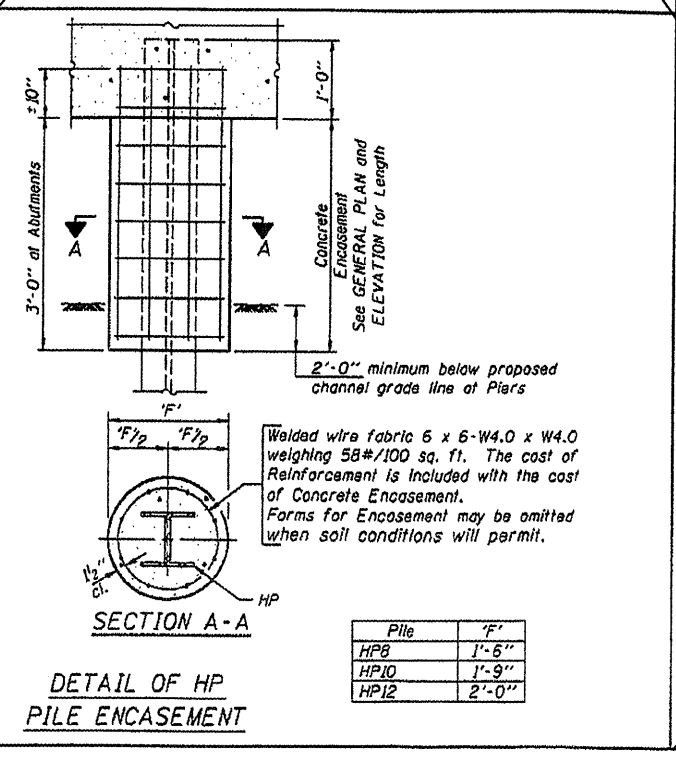
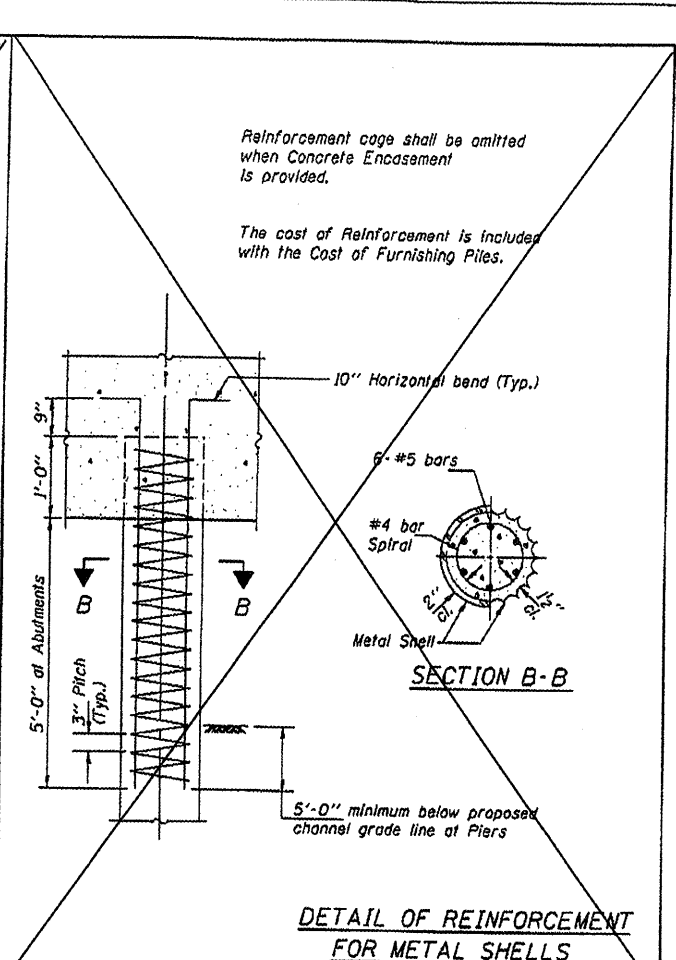
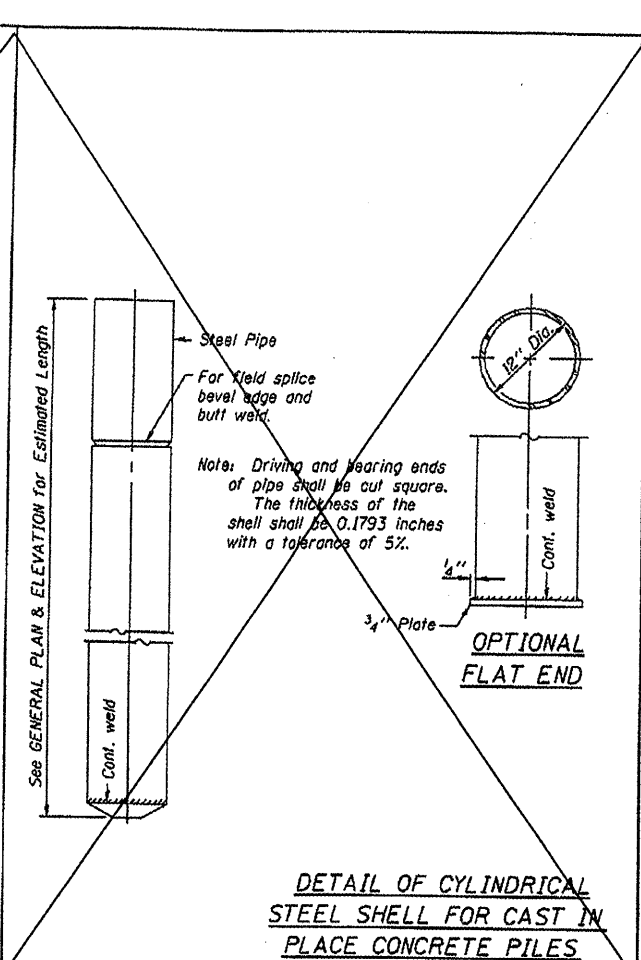
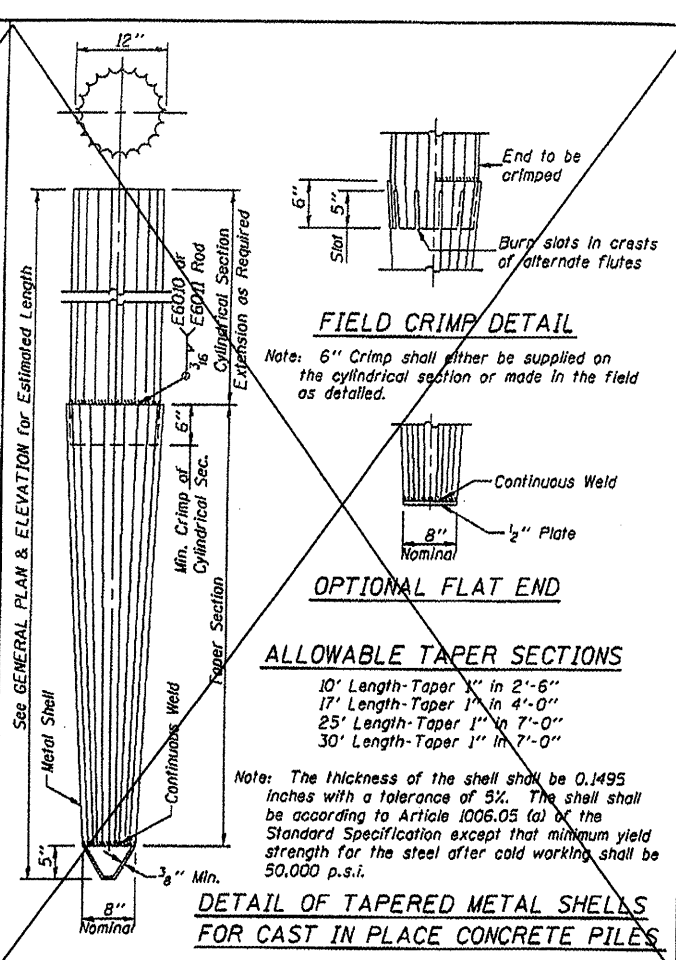
Ralph E. Anderson
 Engineer of Bridges and Structures

509-1-2 03/05/07

NAME PLATE
 STANDARD CN



Handling: For Pile lengths up to 45' use two slings placed at a distance of 0.2L from each end. For Piles longer than 45' use three slings placed at a distance of 0.12L from each end and at mid point of pile.



QUANTITIES/FT. OF ENCASEMENT (STEEL PILES)

Pile Size	Item	Quantity
HP8	Concrete Encasement	0.063 C.Y.
HP10	Concrete Encasement	0.086 C.Y.
HP12	Concrete Encasement	0.112 C.Y.

(METAL SHELL PILES)

Pile Size	Item	Quantity
12" Dia.	Concrete Encasement	0.087 C.Y.

Illinois Department of Transportation

PASSED FEBRUARY 1, 2000
Theresa J. ...
Engineer of Bridges and Structures

APPROVED FEBRUARY 1, 2000
Ralph E. ...
Engineer of Bridges and Structures

180-H-02059

PILE DETAILS
STANDARD CX-1