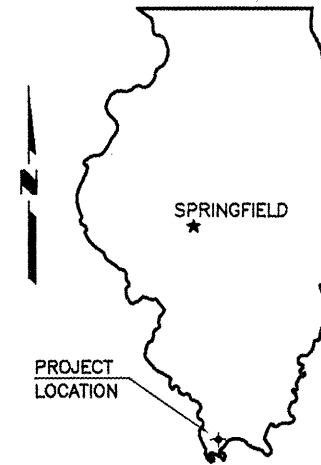


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
PLANS FOR PROPOSED  
**HIGHWAY BRIDGE PROGRAM**

TOWNSHIP ROUTE 95 (MORRIS ROAD)  
COUNTY UNIT ROAD DISTRICT  
SECTION 94-01166-00-BR  
PROJECT ARA-BROS-153(30)  
JOB NO. C-99-538-08  
PULASKI SLOUGH

**PULASKI COUNTY**

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 95	94-01166-00-BR	PULASKI	13	1
PROJECT NO. BROS-153(30)		CONTRACT NO. 99327		



SUMMARY OF QUANTITIES

CODE NO.	PAY ITEM	UNIT	TOTAL
20100500	TREE REMOVAL, ACRES	ACRE	0.1
20200100	EARTH EXCAVATION	CU YD	338
20300100	CHANNEL EXCAVATION	CU YD	360
20400100	BORROW EXCAVATION	CU YD	2425
20800150	TRENCH BACKFILL	CU YD	26
25000200	SEEDING, CLASS 2	ACRE	0.7
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	63
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	63
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	63
25000700	AGRICULTURAL GROUND LIMESTONE	TON	1.4
25100115	MULCH, METHOD 2	ACRE	0.7
25100630	EROSION CONTROL BLANKET	SQ YD	195
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	70
28000300	TEMPORARY DITCH CHECKS	EACH	14
28000400	PERIMETER EROSION BARRIER	FOOT	160
28000500	INLET AND PIPE PROTECTION	EACH	2
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	189
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	845
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50105220	PIPE CULVERT REMOVAL	FOOT	32
50200100	STRUCTURE EXCAVATION	CU YD	11
50300225	CONCRETE STRUCTURES	CU YD	19.4
50300280	CONCRETE ENCASEMENT	CU YD	2.1
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	1440
50800105	REINFORCEMENT BARS	POUND	2440
* 50900205	STEEL RAILING, TYPE S1	FOOT	120
51200957	FURNISHING METAL SHELL PILES 12" X 0.250"	FOOT	479
51202305	DRIVING PILES	FOOT	479
51203200	TEST PILE METAL SHELLS	EACH	1
51500100	NAME PLATES	EACH	1
54213471	END SECTIONS 36"	EACH	2
542D0223	PIPE CULVERTS, CLASS D, TYPE 1 18"	FOOT	28
542D0241	PIPE CULVERTS, CLASS D, TYPE 1 36"	FOOT	42
542D1063	PIPE CULVERTS, CLASS D, TYPE 2 18"	FOOT	50
67100100	MOBILIZATION	L SUM	1
* 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4

\* SPECIALTY ITEM

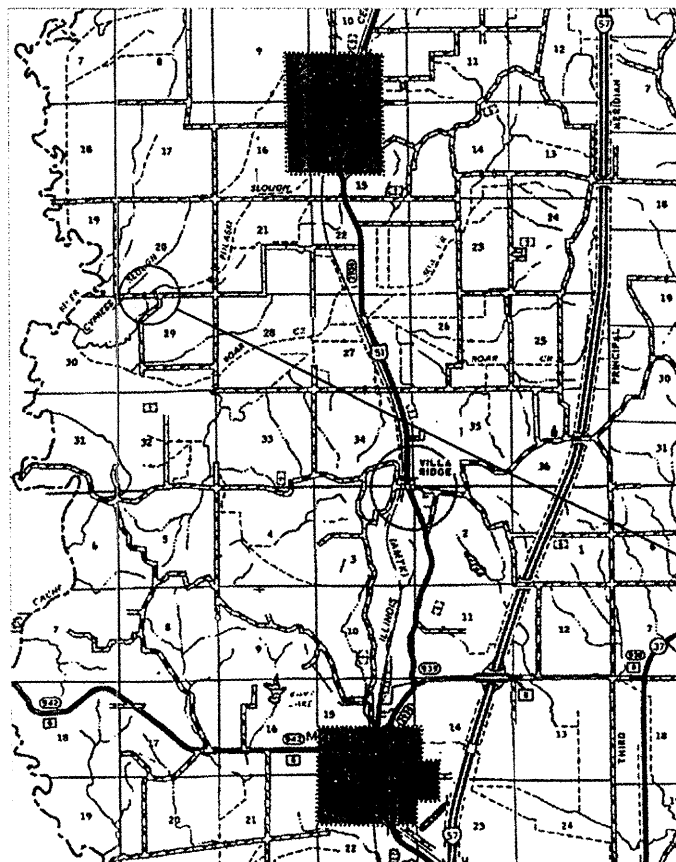
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION  
J.U.L.I.E. 1-800-892-0123  
CONTACT 48 HOURS BEFORE EXCAVATING



11-21-08

*Edward W. Miller*

Edward W. Miller  
PROFESSIONAL ENGINEER  
#062-025277  
EXPIRES NOV. 30, 2009



LOCATION MAP

SCALE: 1" = 2 MILES

NET LENGTH OF IMPROVEMENT = 725.00 FT. = 0.1373 MILES

INDEX OF SHEETS

1. COVER SHEET
2. PLAN AND PROFILE SHEET
3. GENERAL PLAN AND ELEVATION SHEET
4. SUPERSTRUCTURE DETAILS
5. PPC DECK BEAMS DETAILS (27" X 3'-0")
6. PPC DECK BEAMS DETAILS (27" X 3'-0")
7. PPC DECK BEAMS DETAILS (27" X 4'-0")
8. PPC DECK BEAMS DETAILS (27" X 4'-0")
9. ABUTMENTS
10. STEEL RAILING
11. NAME PLATES
12. PILE DETAILS
13. CROSS SECTIONS:
  - STANDARDS 000001-05 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
  - 280001-04 TEMPORARY EROSION CONTROL SYSTEMS
  - 635006-03 REFLECTOR AND TERMINAL MARKER PLACEMENT
  - 701901-01 TRAFFIC CONTROL DEVICES
  - BLR-21-7 TRAFFIC CONTROL

CLASSIFICATION : LOCAL ROAD (RURAL)  
ADT : 25  
DESIGN SPEED : 30 MPH

ILLINOIS DEPARTMENT OF TRANSPORTATION	
Approved	<u>11/21/2008</u> <i>Stacy Camhart</i> Pulaski County Engineer
Passed	<u>12-16-08</u> <i>Keith Wiley</i> District 9 Engineer of Local Roads and Streets
Releasing for Bid Based on Limited Review	<u>12-16-08</u> <i>Mary C. Zanic</i> Deputy Director of Highways, Region 5 Engineer

E. MILLER ENGINEERING, INC.  
CONSULTING ENGINEERS  
HARRISBURG, ILLINOIS

CONTRACT NO. 99327

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 95	94-01166-00-BR	PULASKI	13	2
PROJECT NO. BROS-153(30)			CONTRACT NO. 99327	

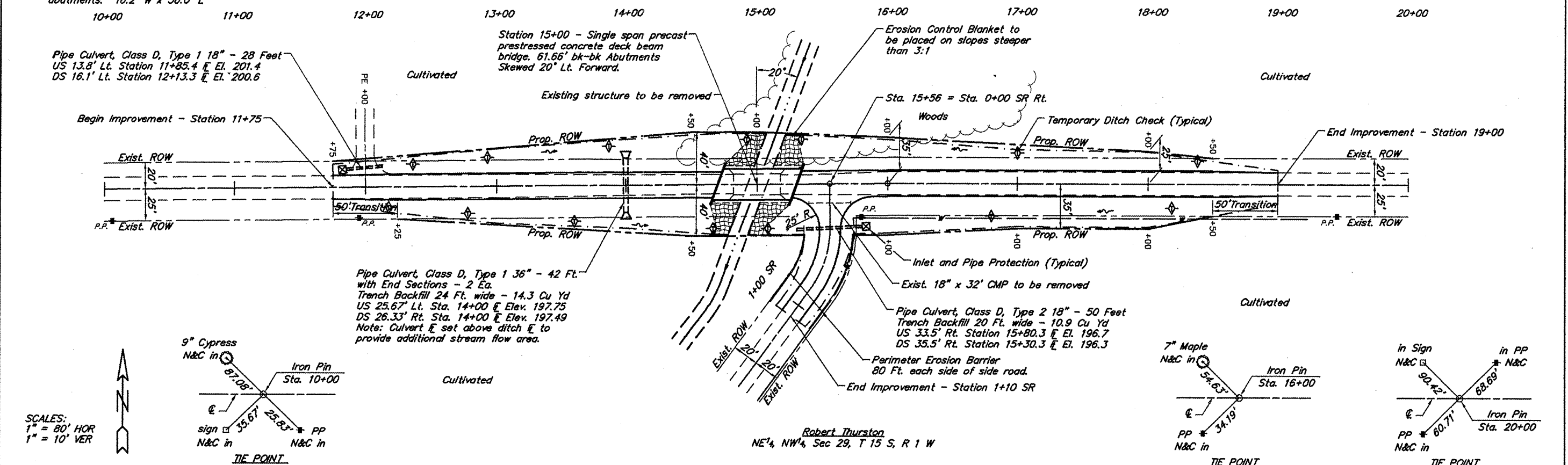
B.M. - RR Spike in PP  
26' Lt. Sta. 14+20  
Elev. 200.00

Stanley McClellan  
SE 1/4, SW 1/4, Sec 20, T 15 S, R 1 W

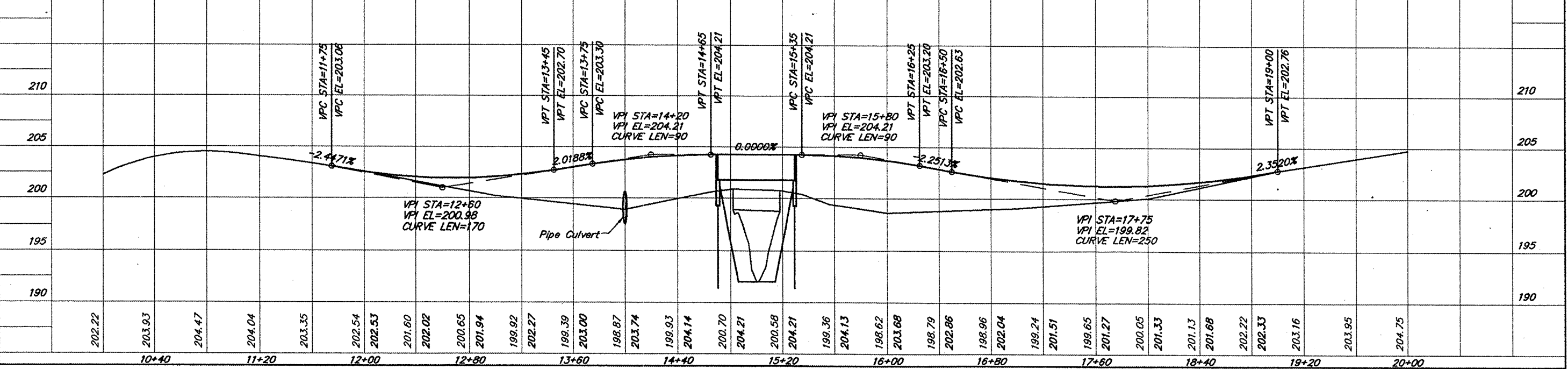
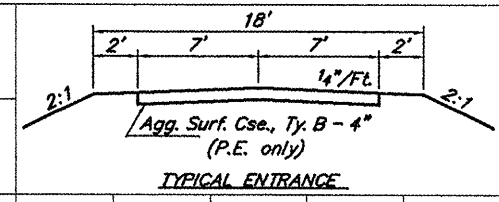
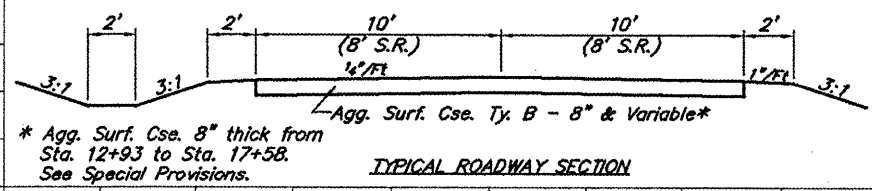
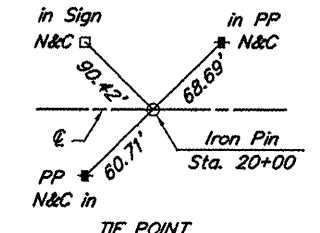
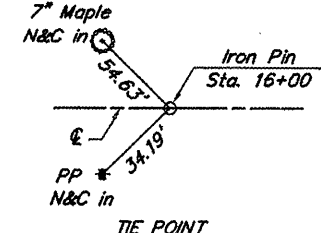
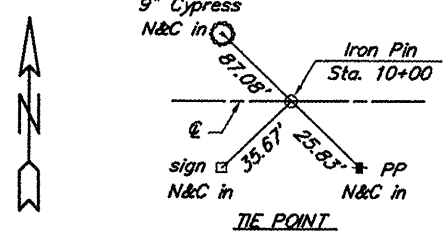
PI Sta. = 16+00  
Δ = 0°40'00" R  
No Curve

**Tree Removal Acres:** The limits of the tree removal shall be between a line 15 feet left of the existing centerline of the roadway and the proposed left ROW from Station 14+40 to Station 16+40. Total area 0.1 Acres

Existing Structure - Timber deck with steel stringers on concrete abutments. 16.2' W x 36.0' L

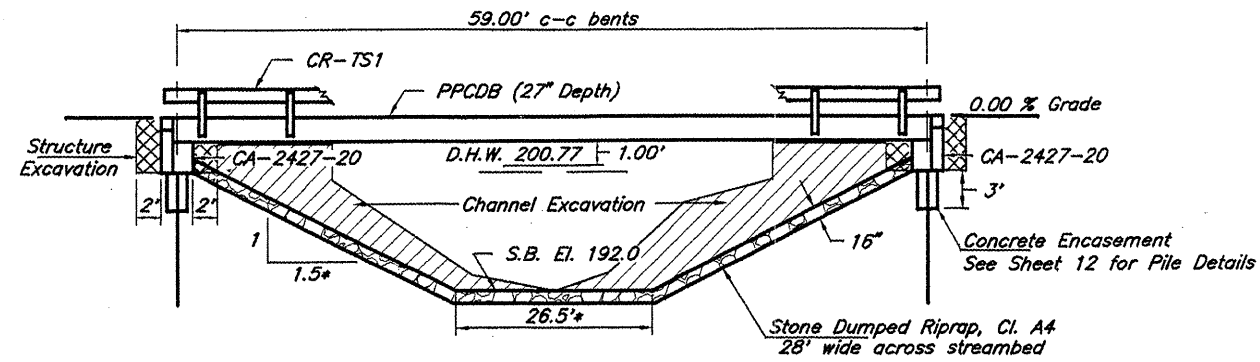


SCALES:  
1" = 80' HOR  
1" = 10' VER



B.M. - RR spike in Power Pole  
26' Lt. of Station 15+80  
Assumed Elev. 200.00

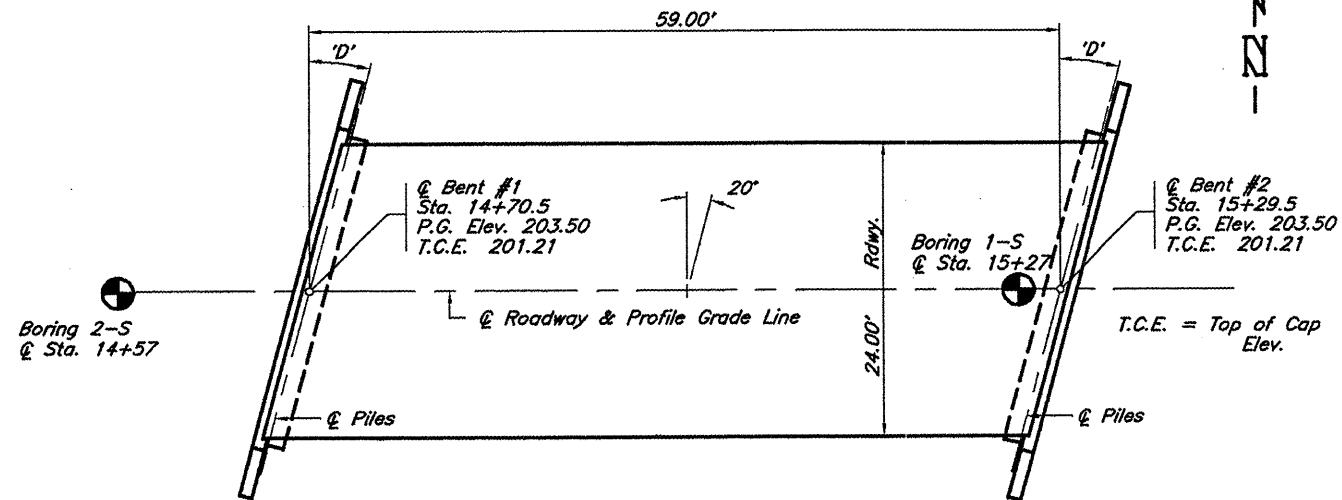
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 95	94-01166-00-BR	PULASKI	13	3
PROJECT NO. BROS-153(30)			CONTRACT NO. 99327	



Existing Structure - Timber deck with steel stringers on concrete abutments. 16.2' W x 36.0' L

\* Normal to Channel

**ELEVATION**



**PLAN**

Skew Angle "D" = 20° Left Forward

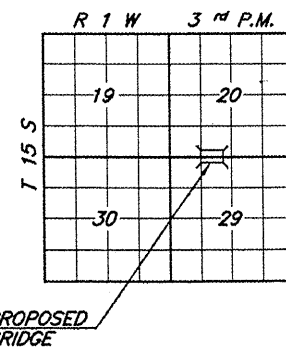
**PILE DATA (2-ABUTS.)**

Type & Size : Metal Shell 12" ø x 0.25" Walls  
Nominal Required Bearing : 279 kips  
Allowable Resistance Available : 93 kips  
Estimated Length : 65 Feet Bent #1, 71 Feet Bent #2  
Number Required : 8 (Includes 1 Test Pile located in Bent #1)

PULASKI SLOUGH  
SEC. 94-01166-00-BR BUILT 20  
COUNTY UNIT ROAD DISTRICT  
PULASKI COUNTY  
LOADING HS20  
STR. NO. 077-3126

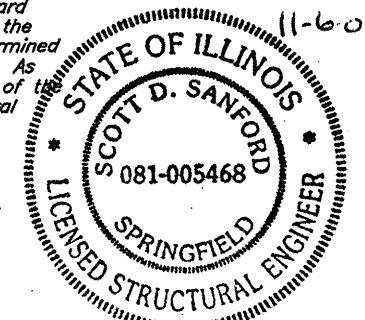
**LETTERING FOR NAME PLATE**

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



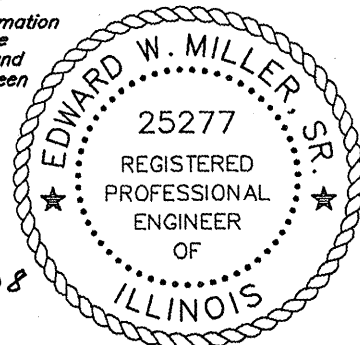
**LOCATION SKETCH**

"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. As directed by the Local Agency, liquefaction potential of the sub-grade has not been considered in the structural design."



Exp. 11-30-2010

"I certify that to the best of my knowledge, information and belief, the capacity of the pile foundation, the hydraulics calculations for the waterway opening and the estimated quantities for this structure have been designed using standard engineering methods in accordance with the policies and procedures of the Illinois Department of Transportation."



Edward W. Miller  
PROFESSIONAL ENGINEER  
#062-025277  
EXPIRES NOV. 30, 2009

10-1-08

**DESIGN SPECIFICATIONS**

2002 AASHTO Standard Specifications - 17<sup>th</sup> ed.

**LOADING HS20-44**

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

**SEISMIC DATA**

Seismic Performance Category (SPC) = B  
Bedrock Acceleration Coefficient (A) = 18.0%  
Site Coefficient (S) = 1.5

**WATERWAY INFORMATION**

Drainage Area = 13.636 Sq. Mi. Low Grade Elev. = 201.26		At Sta. 17+72						
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.	Natural H.W.E.	Head-Ft. Exist.	Prop.	Headwater El. Exist.	Prop.
Design	15	2,050	111.5* 347.6	200.77	0.06	0.50	200.83	201.27
Base	100	2,990	111.5* 400.5*	201.77	0.02	0.54	201.79	202.31
Overtopping	<2	403	82.8	197.86	0.76		198.62	
Max. Calc.	500							

\*Over Road Flow (Sq Ft): Exist. 614.3 1,153.6 Prop. 168.5  
\*\*Note: Flow area of proposed structure augmented with a 36" CMP. Overtopping of proposed road occurs at ±Q<sub>15</sub>.

**GENERAL NOTES**

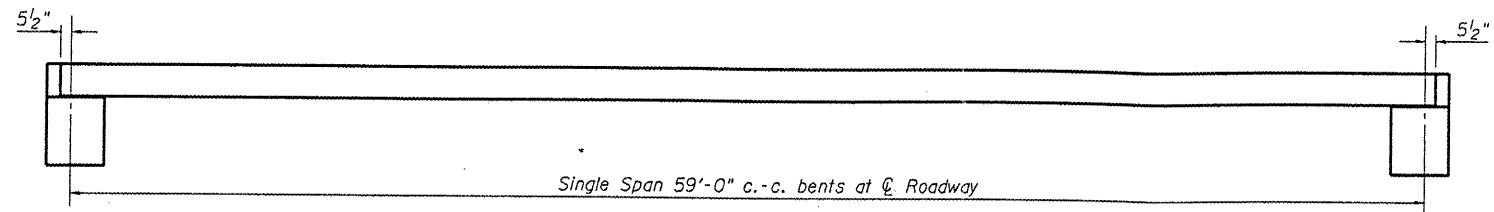
- Metal Shell piles shall meet ASTM A 252 Grade 3 specifications.
- Test Piles shall be driven to 110% of the Nominal Required Bearing indicated in the pile data.
- The Contractor shall drive one test pile, as specified, in a permanent location as directed by the Engineer before ordering the remaining piles.
- See special provisions for boring logs.
- A Corrosion inhibitor, as covered in the Standard Specifications, shall be used in the precast prestressed concrete deck beams.
- The Bituminous Concrete Surface Course and the Waterproofing Membrane System shown on the plans shall not be provided.

**TOTAL BILL OF MATERIAL**

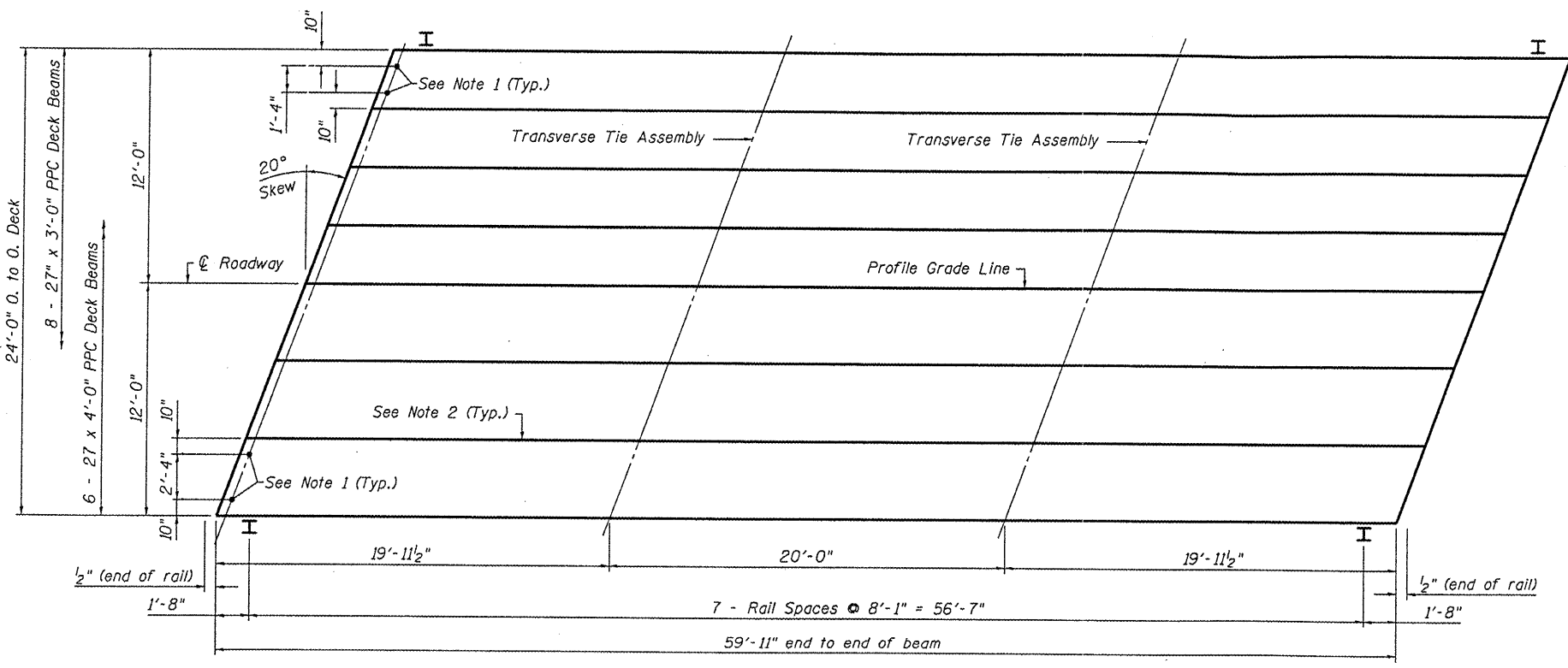
Item	Unit	Super	Sub.		Total
			Piers	Abuts.	
Removal of Existing Structures	Each				1
Concrete Structures	Cu. Yds.			19.4	19.4
P.P. Conc. Dk. Bm. 27" Dp.	Sq. Ft.	1440			1440
Steel Railing, Type S1	Foot	120			120
Reinforcement Bars	Pound		2440		2440
Furnishing Metal Shell Piles 12"	Foot		479		479
Driving Pile	Foot		479		479
Test Pile Metal Shell	Each		1		1
Concrete Encasement	Cu. Yds.		2.1		2.1
Name Plates	Each		1		1
Structure Excavation	Cu. Yds.		11		11
Channel Excavation	Cu. Yds.		360		360
Stone Dumped Riprap, Class A4	Tons		189		189

GENERAL PLAN & ELEVATION  
TOWNSHIP ROUTE 95  
PULASKI SLOUGH  
SECTION 94-01166-00-BR  
PULASKI COUNTY  
STATION 15+00

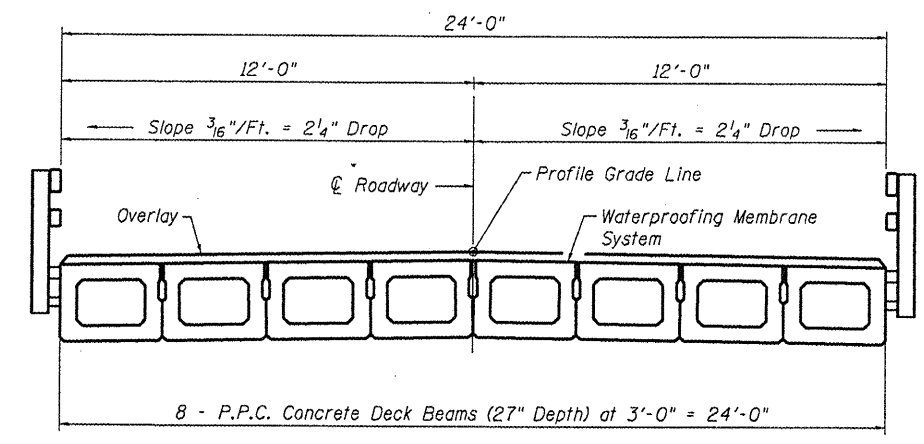
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 95	94-01166-00-BR	PULASKI	13	4
PROJECT NO. BROS-153(30)			CONTRACT NO. 99327	



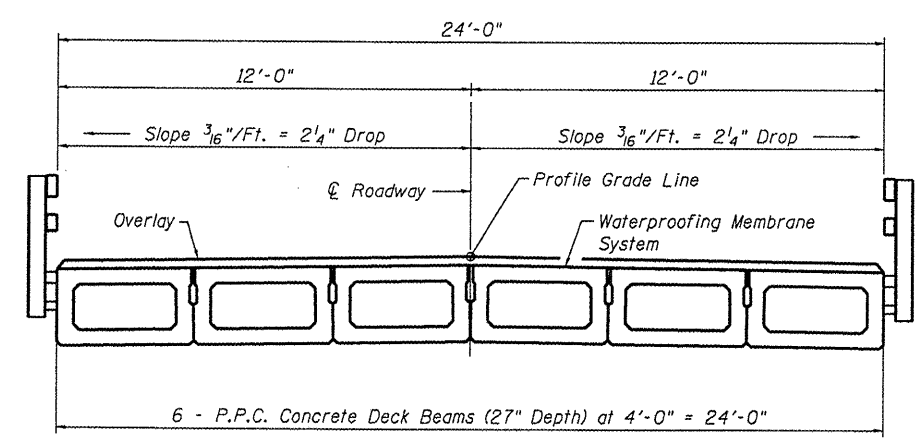
**ELEVATION**



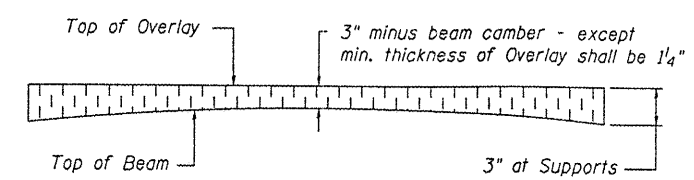
**PLAN**



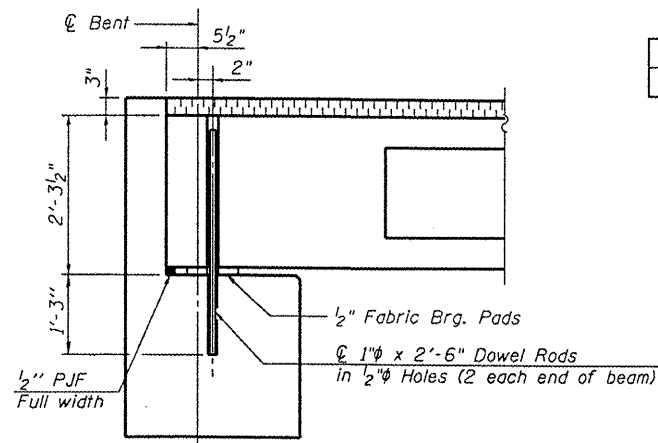
**CROSS SECTION**



**CROSS SECTION**



**PROFILE OF OVERLAY**



**SECTION AT ABUTMENTS**  
(Along  $\phi$  Beams)

**QUANTITIES FOR ONE SPAN**

P.P.C. Concrete Deck Beams (27" Depth)	1440 Sq. Ft.
Steel Railing, Type S1	120 Ft.

**SUPERSTRUCTURE DETAILS**  
**TOWNSHIP ROUTE 95 OVER**  
**PULASKI SLOUGH**  
**SECTION 94-01166-00-BR**  
**PULASKI COUNTY**  
**STA. 15+00**

**NOTES**

1. 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.
2. Longitudinal keys shall be grouted.

DESIGNED	SDS
CHECKED	CWC
DRAWN	DLH
CHECKED	SDS

**WHKS & CO.**  
 ENGINEERS PLANNERS LAND SURVEYORS  
 MASON CITY, IOWA DUBUQUE, IOWA ANES, IOWA  
 E. DUBUQUE, ILLINOIS SPRINGFIELD, ILLINOIS ROCHESTER, MINNESOTA

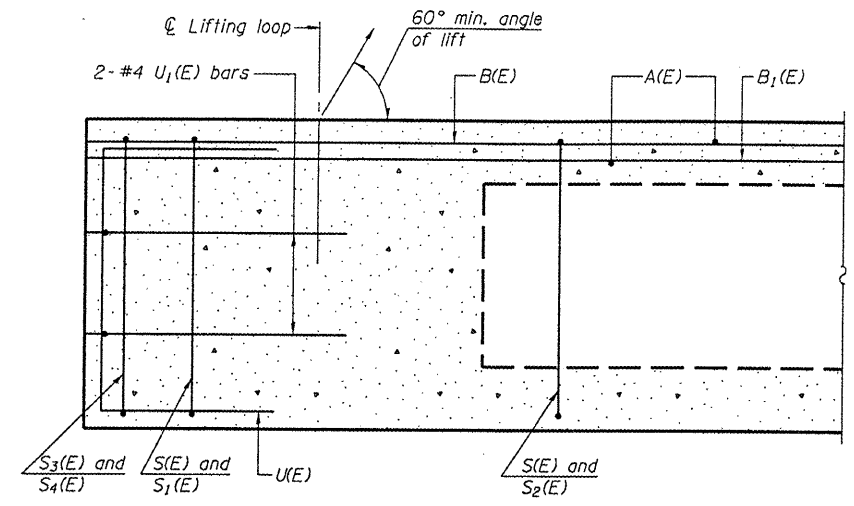
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Operator

Date: 11/22/08

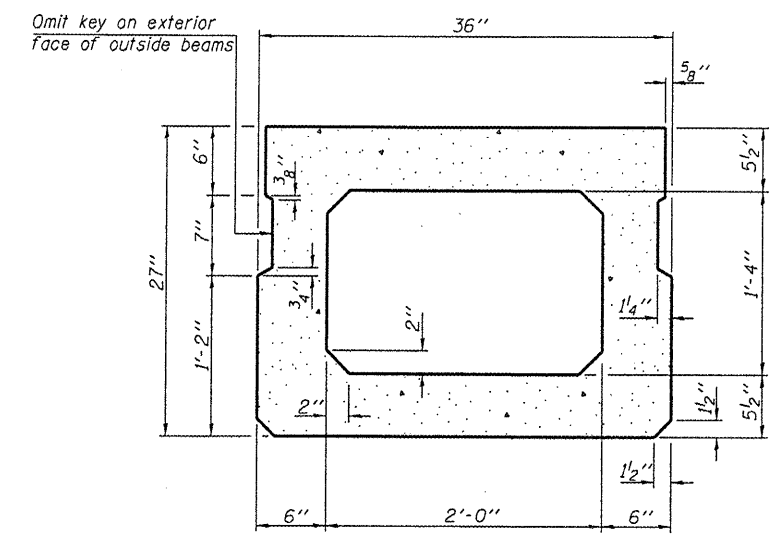
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ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 95	94-01166-00-BR	PULASKI	13	5
PROJECT NO. BROS-153(30)			CONTRACT NO. 99327	

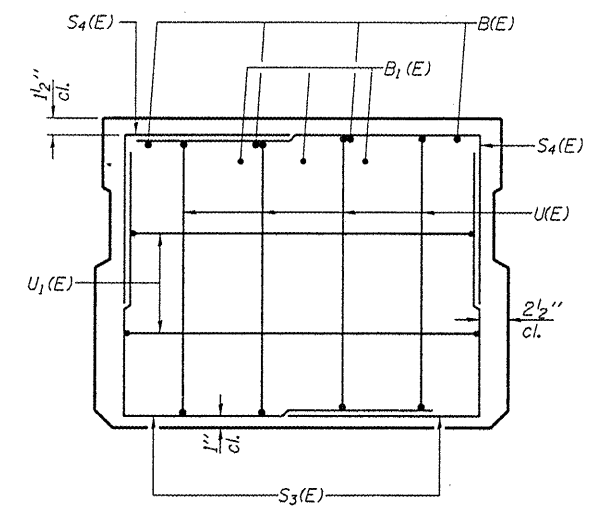


**SECTION C-C**

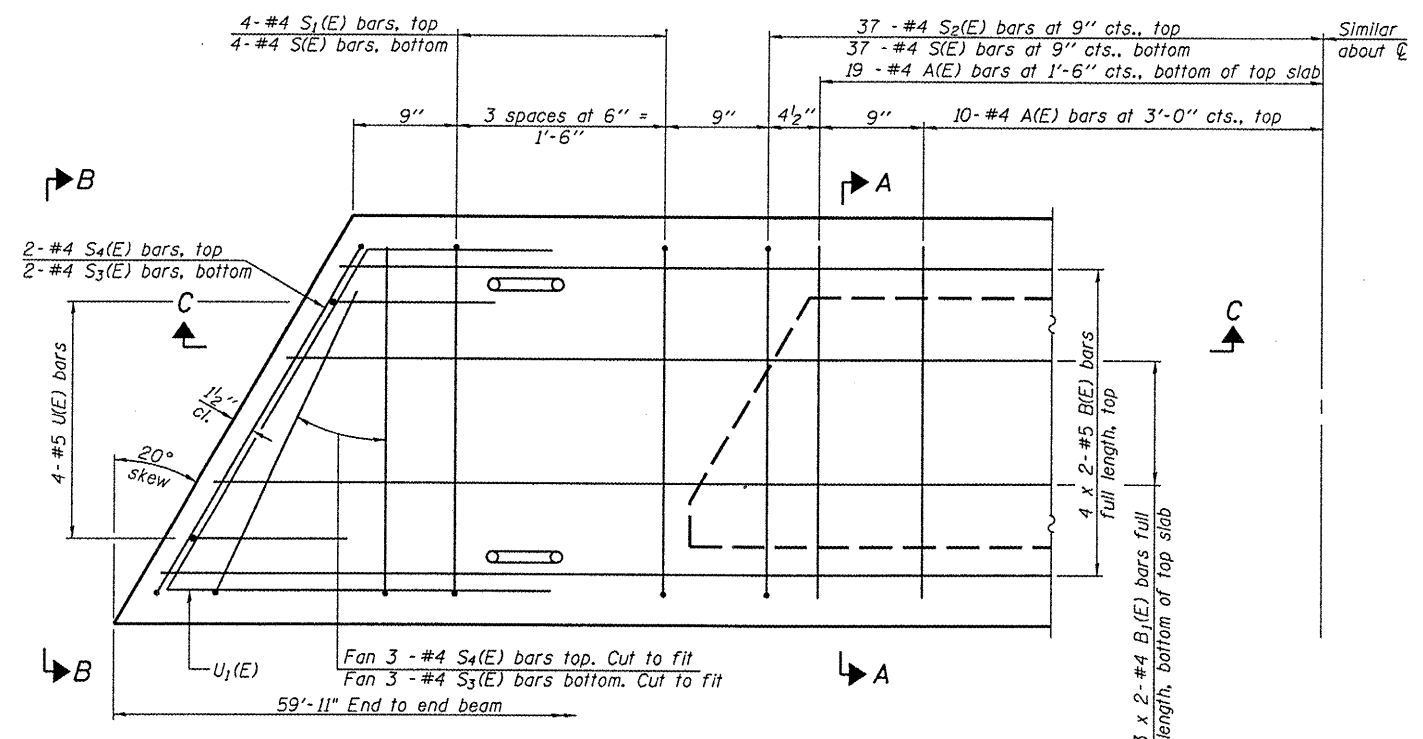
**MIN. BAR LAP**  
 #4 bar = 1'-8"  
 #5 bar = 2'-2"



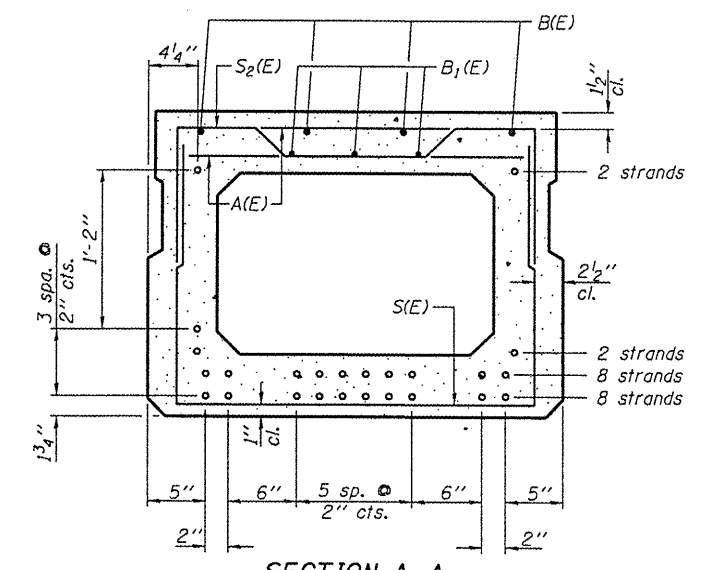
**SECTION A-A**  
(Showing dimensions)



**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)	58	#4	2'-7"	—
B(E)	8	#5	31'-0"	—
B1(E)	6	#4	30'-8"	—
S(E)	81	#4	6'-5"	┌
S1(E)	8	#4	6'-3"	┌
S2(E)	74	#4	6'-6"	┌
S3(E)	10	#4	4'-8"	┌
S4(E)	10	#4	4'-7"	┌
U(E)	8	#5	4'-6"	┌
U1(E)	4	#4	6'-2"	┌

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.

DESIGNED	SDS
CHECKED	CWC
DRAWN	DLH
CHECKED	SDS

**WHKS & CO.**  
 ENGINEERS PLANNERS LAND SURVEYORS  
 MASON CITY, IOWA DUBUQUE, IOWA AMES, IOWA  
 E. DUBUQUE, ILLINOIS SPRINGFIELD, ILLINOIS ROCHESTER, MINNESOTA

PD-2736-L

8-29-07

**PPC DECK BEAM DETAILS (27" X 3'-0")**  
 TOWNSHIP ROUTE 95 OVER  
 PULASKI SLOUGH  
 SECTION 94-01166-00-BR  
 PULASKI COUNTY  
 STA. 15+00

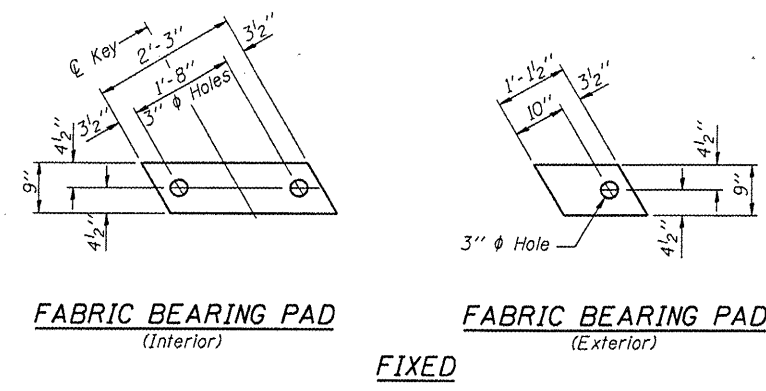
Operator

Date: 11/02/08

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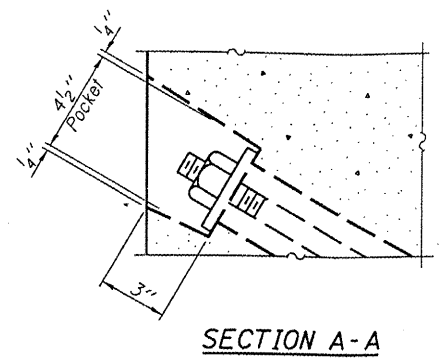
Filename

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 95	94-01166-00-BR	PULASKI	13	6
PROJECT NO. BROS-153(30)			CONTRACT NO. 99327	

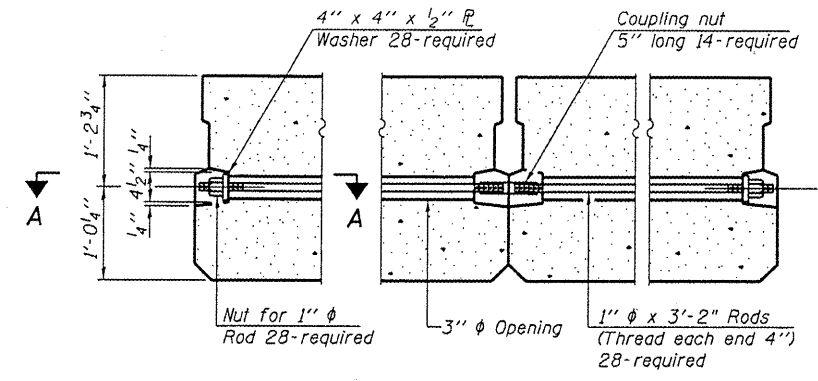


**FABRIC BEARING PAD**  
(Interior) **FIXED**

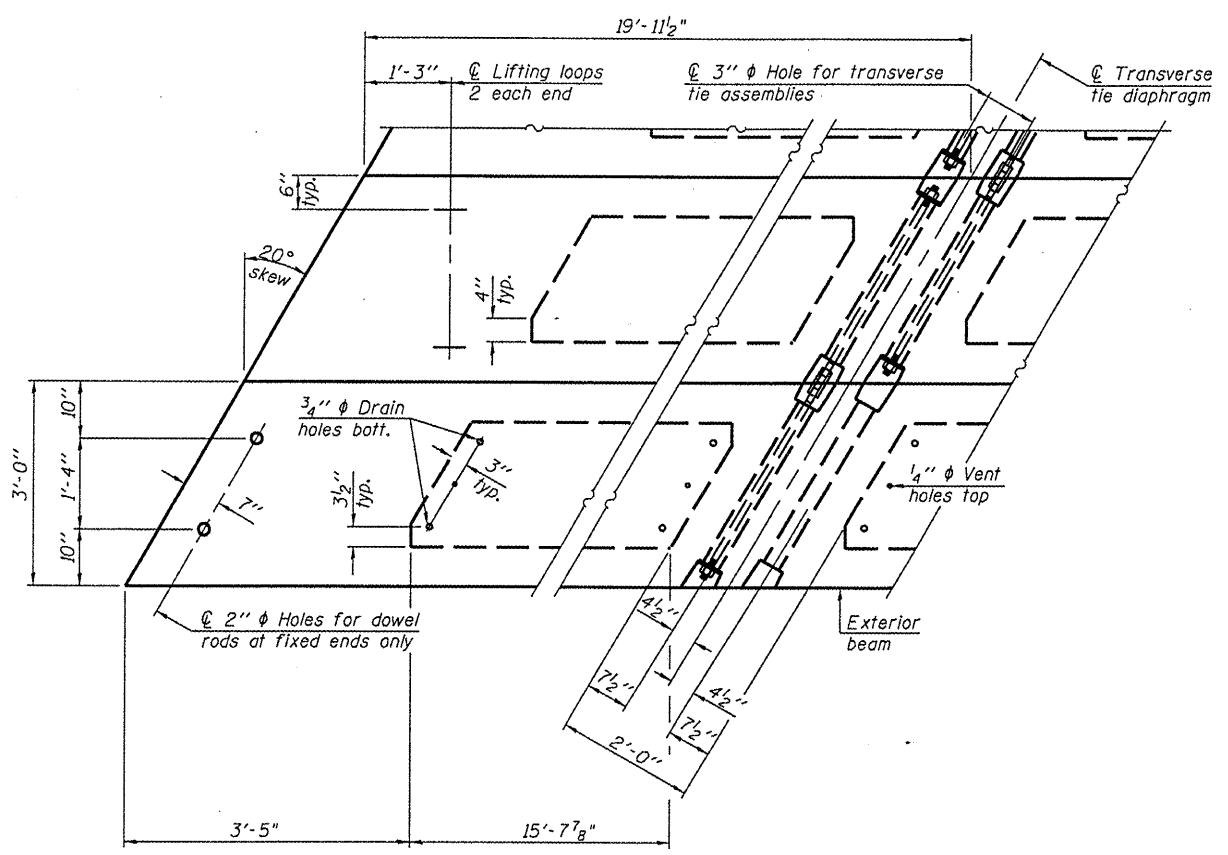
**FABRIC BEARING PAD**  
(Exterior)



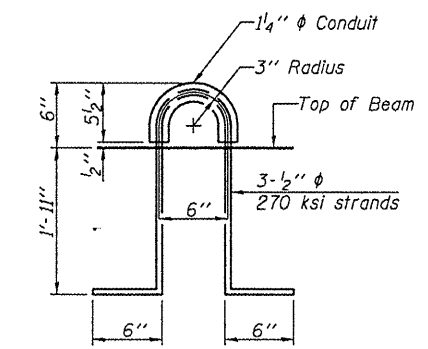
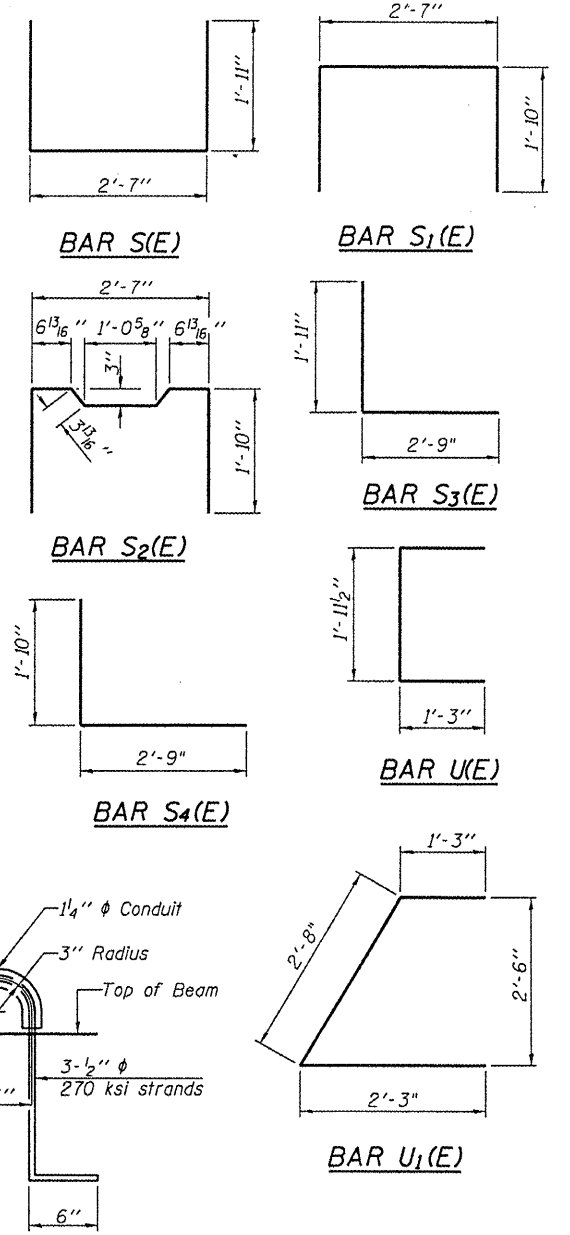
**SECTION A-A**



**TYPICAL TRANSVERSE TIE ASSEMBLY**



**PLAN VIEW**



**LIFTING LOOP DETAIL**

Note: Connect beams in pairs with the transverse tie configuration shown.

**NOTES**

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

Reinforcement bars shall conform to ASTM A 706 (IL MOD), Grade 60. (See Special Provisions)

Two 1/2" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.

A minimum 2 1/2" lifting pin shall be used to engage the lifting loops during handling.

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

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

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

**BILL OF MATERIAL**

Precast Prestressed Conc. Deck Bms. (27" depth)	Sq. Ft. 1,440
---	---------------

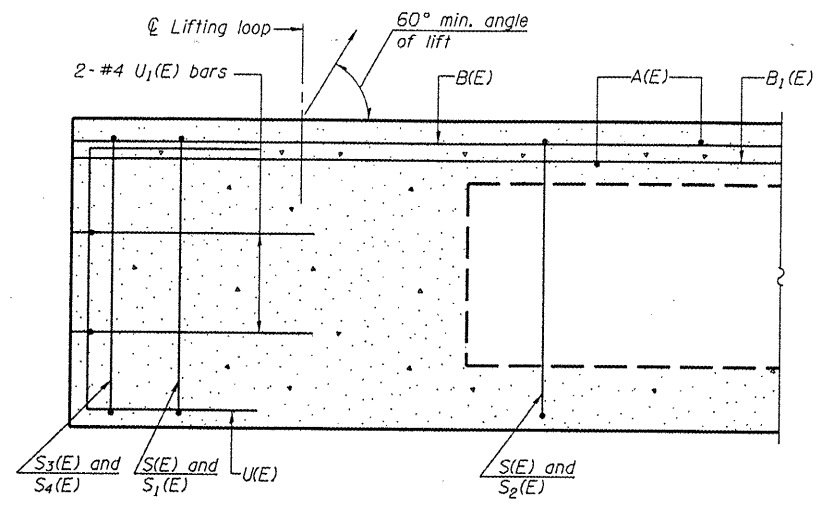
**PPC DECK BEAM DETAILS (27" X 3'-0")**  
**TOWNSHIP ROUTE 95 OVER**  
**PULASKI SLOUGH**  
**SECTION 94-01166-00-BR**  
**PULASKI COUNTY**  
**STA. 15+00**

DESIGNED	SDS
CHECKED	CWC
DRAWN	DLH
CHECKED	SDS
PD-2736-LD	

**WHKS & CO.**  
 ENGINEERS PLANNERS LAND SURVEYORS  
 MASON CITY, IOWA DUBUQUE, IOWA AMES, IOWA  
 E. DUBUQUE, ILLINOIS SPRINGFIELD, ILLINOIS ROCHESTER, MINNESOTA

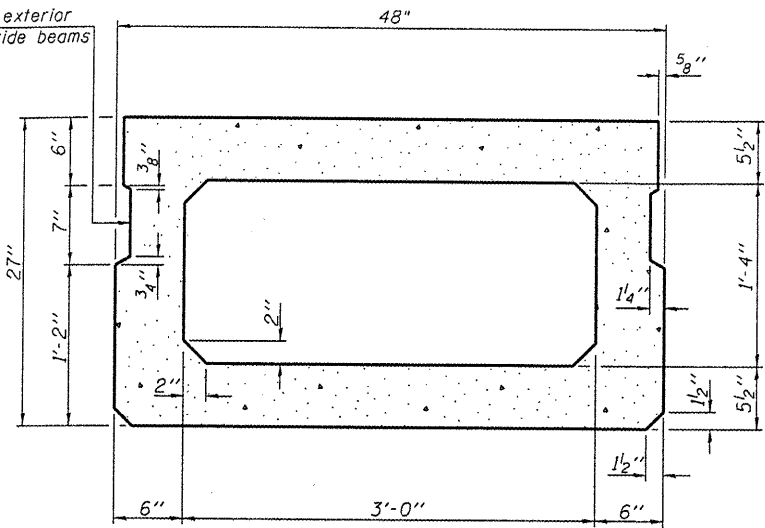
8-29-07

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 95	94-01166-00-BR	PULASKI	13	7
PROJECT NO. BROS-153(30)			CONTRACT NO. 99327	

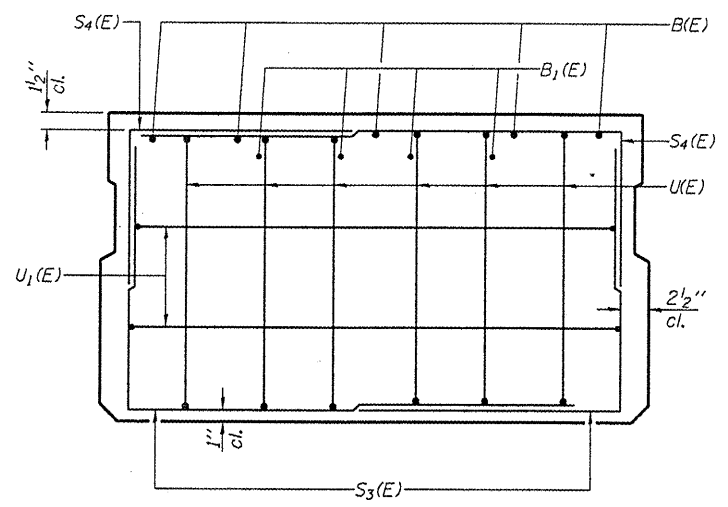


**SECTION C-C**

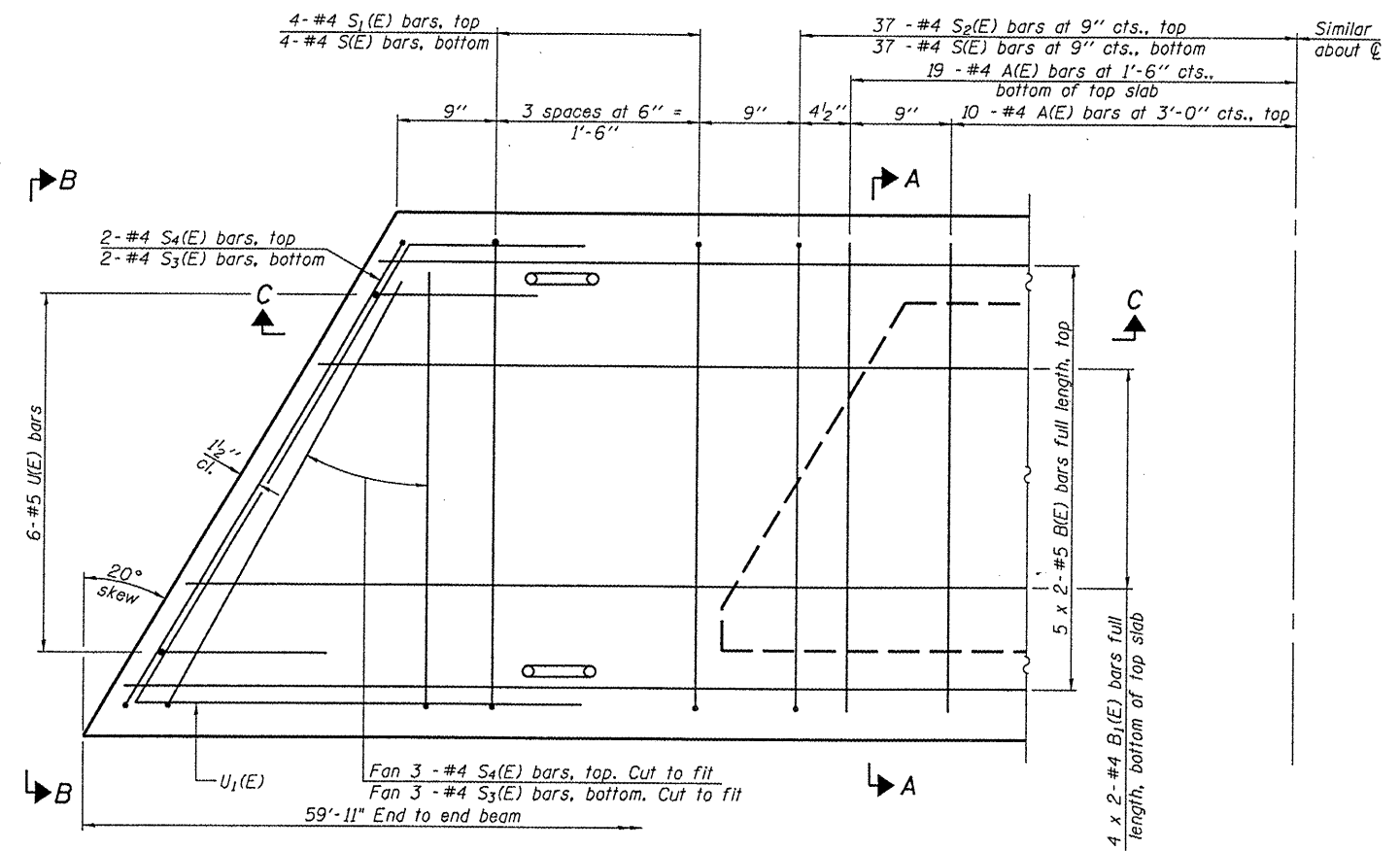
Omit key on exterior face of outside beams



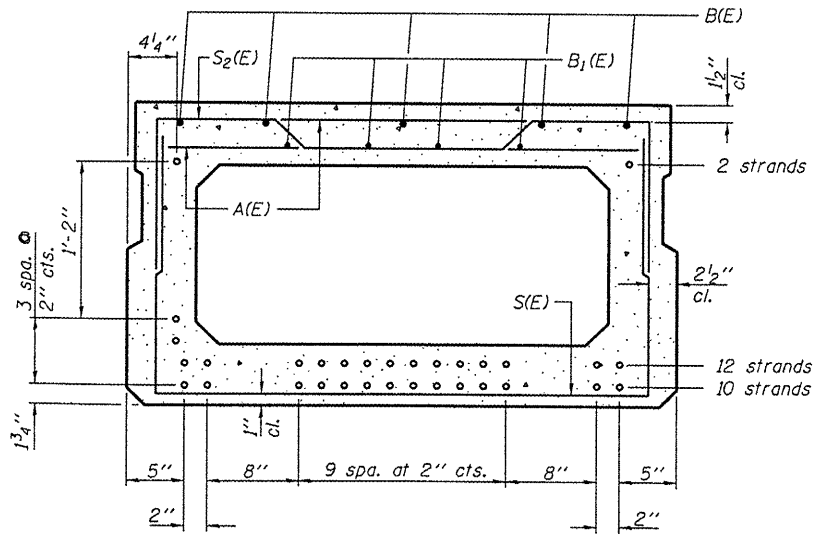
**SECTION A-A**  
(Showing dimensions)



**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)	58	#4	3'-7"	—
B(E)	10	#5	31'-0"	—
B1(E)	8	#4	30'-8"	—
S(E)	81	#4	7'-5"	⌌
S1(E)	8	#4	7'-3"	⌌
S2(E)	74	#4	7'-6"	⌌
S3(E)	10	#4	4'-8"	⌌
S4(E)	10	#4	4'-7"	⌌
U(E)	12	#5	4'-6"	⌌
U1(E)	4	#4	7'-7"	⌌

DESIGNED	SDS
CHECKED	CWC
DRAWN	DLH
CHECKED	SDS



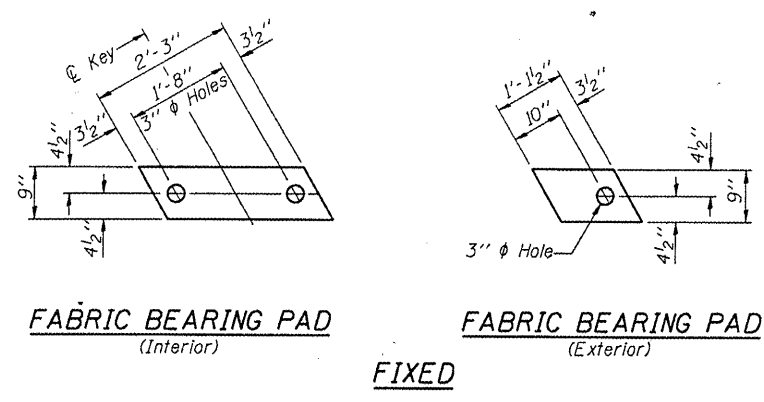
Note: Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.

**PPC DECK BEAM DETAILS (27" X 4'-0")**  
**TOWNSHIP ROUTE 95 OVER**  
**PULASKI SLOUGH**  
**SECTION 94-01166-00-BR**  
**PULASKI COUNTY**  
**STA. 15+00**

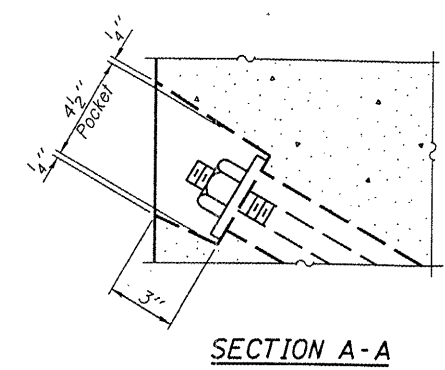
Date: 11/02/08  
Operator: ghs/ab/af  
Filename: L:\pilot\DOT BROS\99327 BBS Varcious Varcious\99327 05\CADD\_Stage\Pulaski 94-01166-00-BR.dgn

Date: 11/02/2008  
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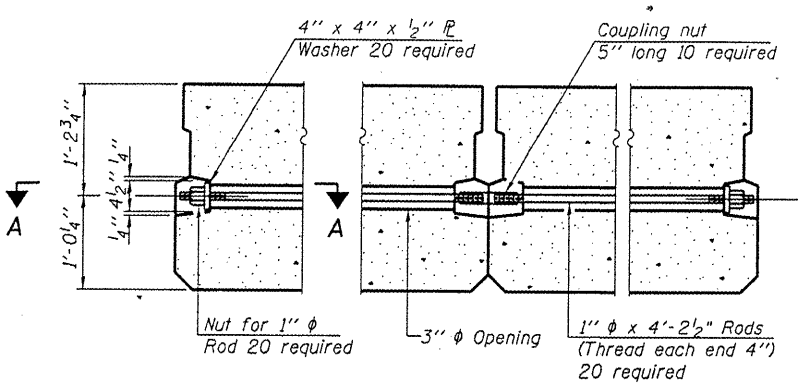
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 95	94-01166-00-BR	PULASKI	13	8
PROJECT NO. BROS-153(30)			CONTRACT NO. 99327	



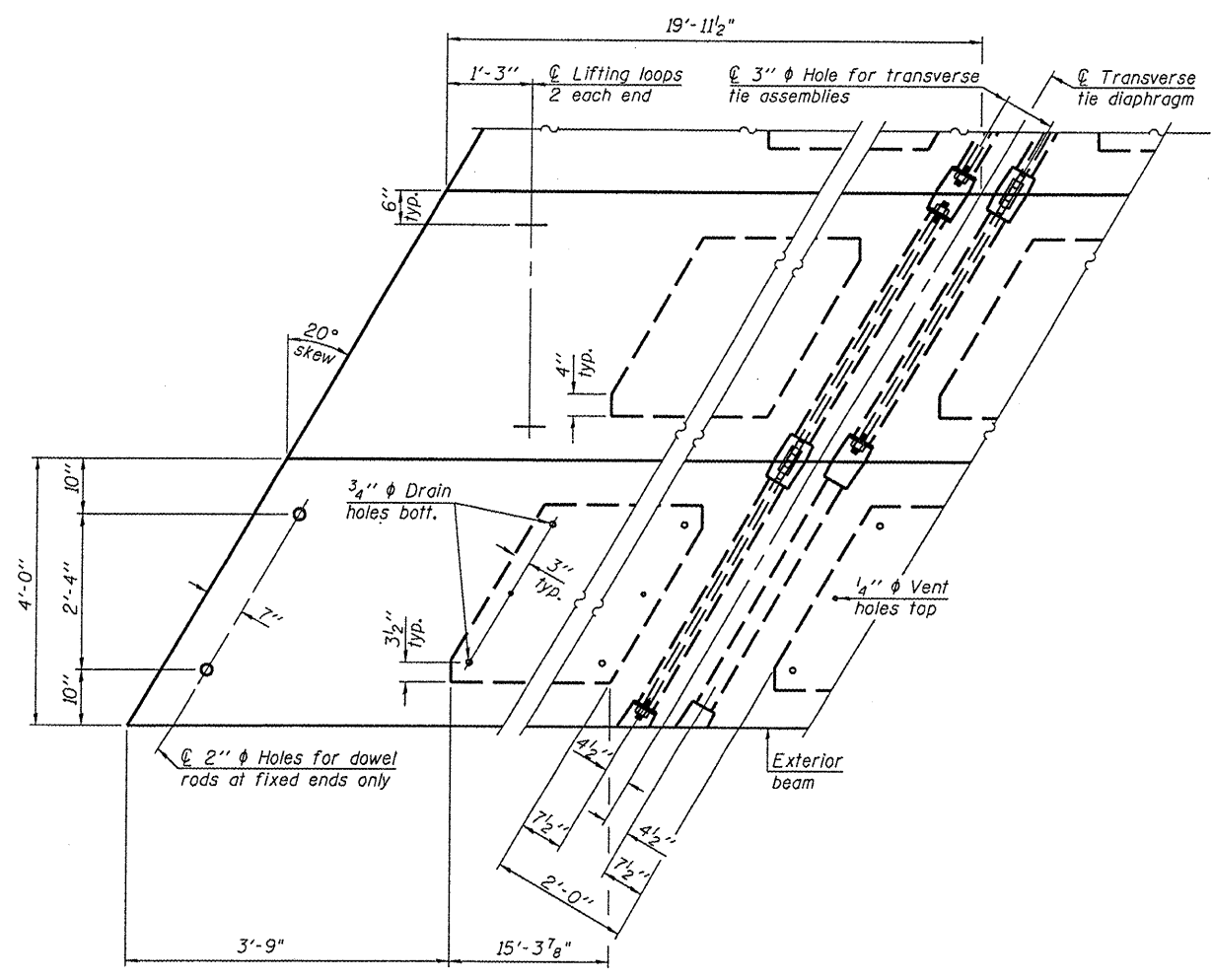
**FABRIC BEARING PAD**  
(Interior)      **FABRIC BEARING PAD**  
(Exterior)



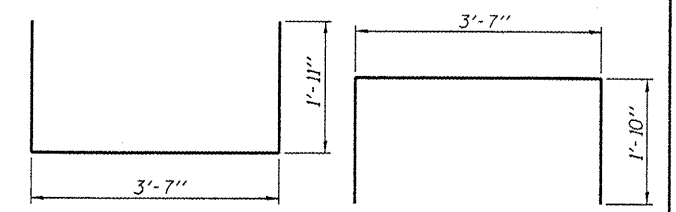
**SECTION A-A**



**TYPICAL TRANSVERSE TIE ASSEMBLY**



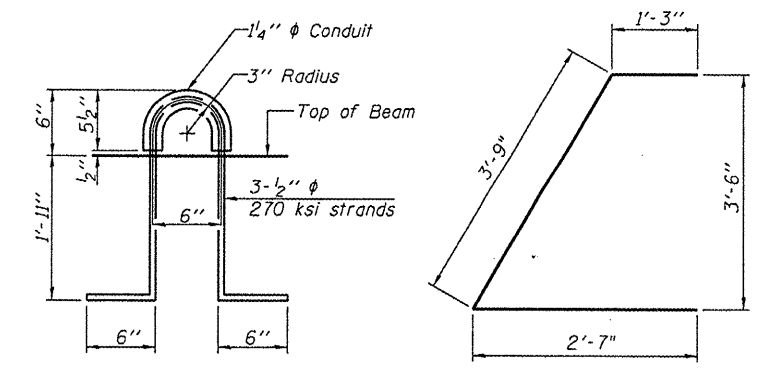
**PLAN VIEW**



**BAR S(E)**      **BAR S<sub>1</sub>(E)**

**BAR S<sub>2</sub>(E)**      **BAR S<sub>3</sub>(E)**

**BAR S<sub>4</sub>(E)**      **BAR U(E)**



**LIFTING LOOP DETAIL**

**BAR U<sub>1</sub>(E)**

Note: Connect beams in pairs with the transverse tie configuration shown.

**NOTES**

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

**BILL OF MATERIAL**

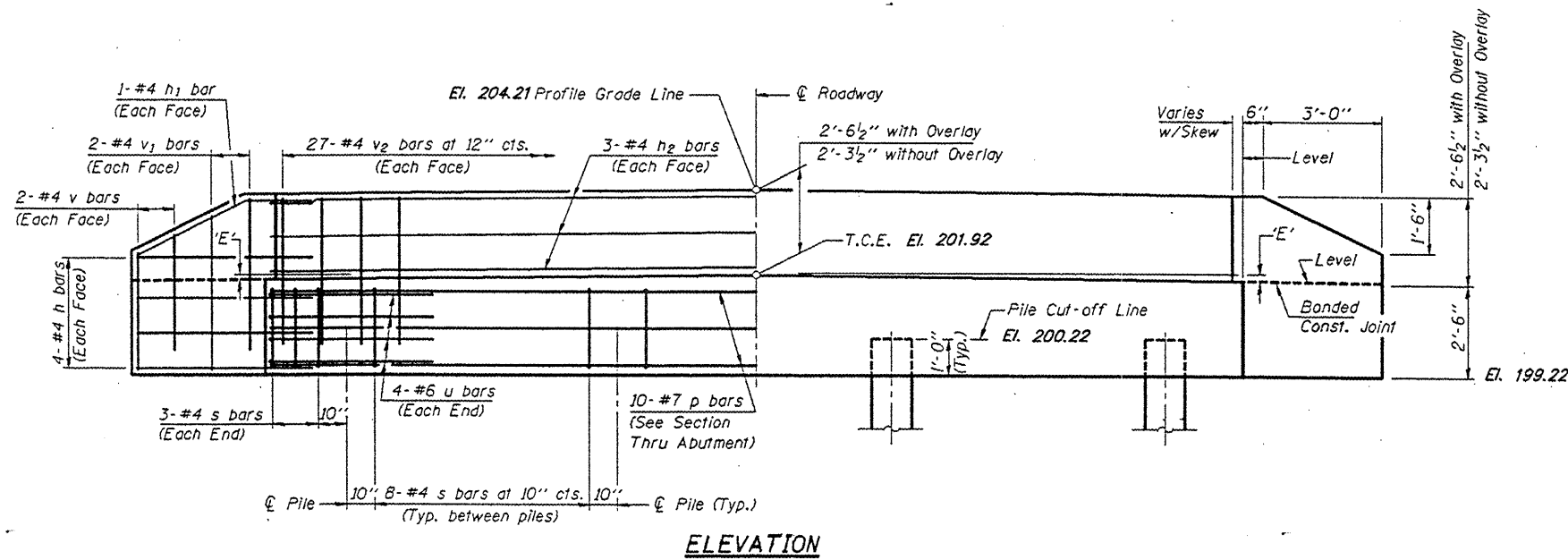
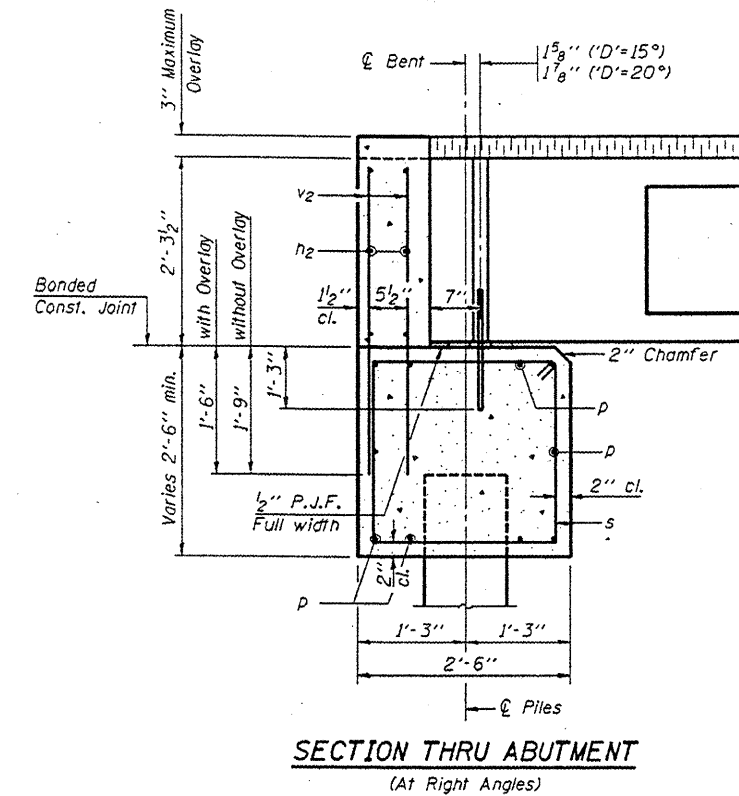
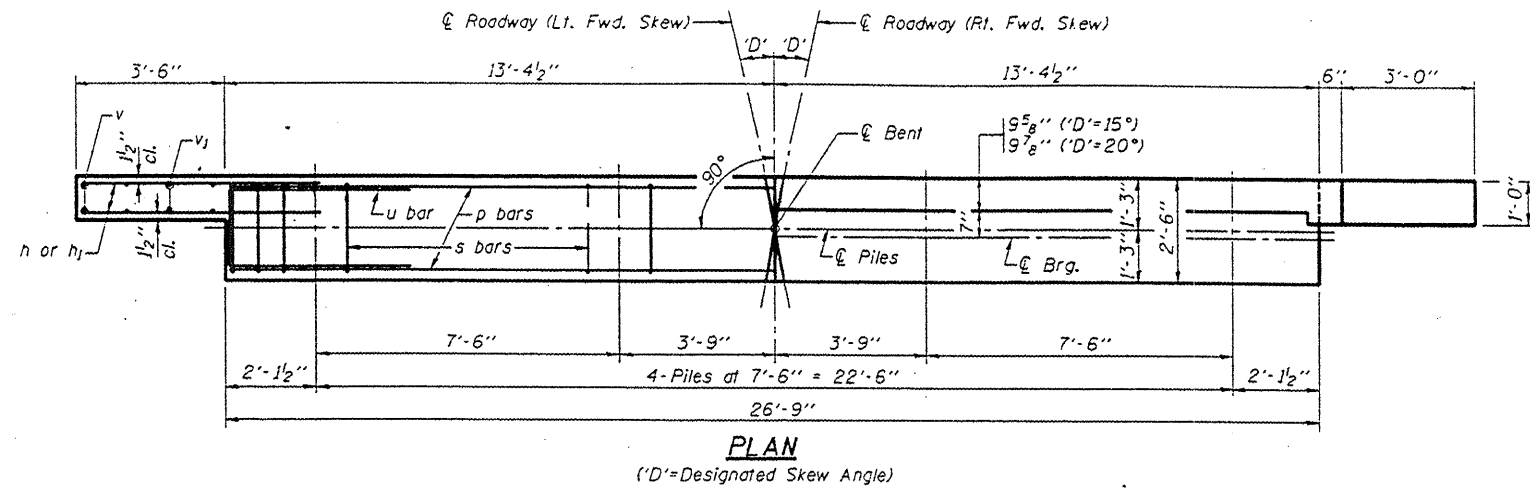
Precast Prestressed Conc. Deck Bms. (27" depth)	Sq. Ft.	1,440
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**PPC DECK BEAM DETAILS (27" x 4'-0")**  
**TOWNSHIP ROUTE 95 OVER**  
**PULASKI SLOUGH**  
**SECTION 94-01166-00-BR**  
**PULASKI COUNTY**  
**STA. 15+00**

DESIGNED	SDS
CHECKED	CWC
DRAWN	DLH
CHECKED	SDS

**WHKS & CO.**  
 ENGINEERS PLANNERS LAND SURVEYORS  
 MASON CITY, IOWA    DUBUQUE, IOWA    AMES, IOWA  
 E. DUBUQUE, ILLINOIS    SPRINGFIELD, ILLINOIS    ROCHESTER, MINNESOTA





**DIMENSION 'E'**

GRADE	<i>'D'</i> =15°		<i>'D'</i> =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 1/8"	2 5/8"
Over 1% to 2%	1 3/4"	3"	1 1/2"	3 1/8"
Over 2% to 3%	1 3/8"	3 1/2"	1 1/4"	3 3/4"
Over 3% to 4%	1"	3 7/8"	3/8"	4 1/4"

**NOTES**

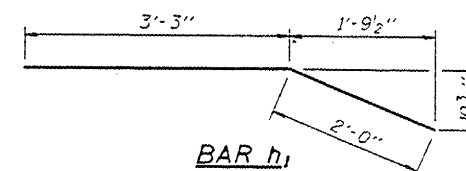
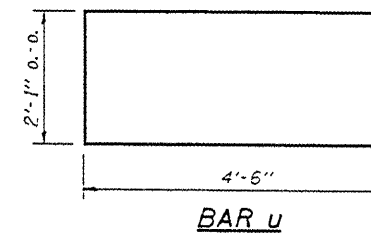
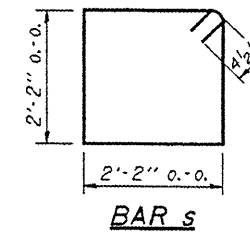
- The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
- Reinforcement bars shall conform to the requirements of A.A.S.H.T.O. M-31 or M-322, Grade 60.
- Space reinforcement in cap to miss anchor bolts.

**MAXIMUM PILE LOADS**

SPAN	TONS
40'	34
50'	38
60'	43

**DESIGN STRESSES**

$f'c = 3,500$  psi  
 $f_y = 60,000$  psi



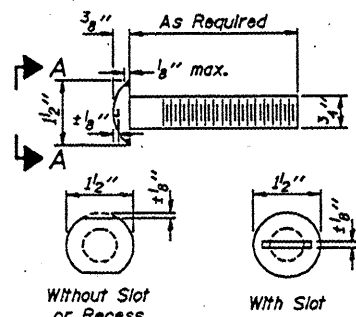
**BILL OF MATERIAL FOR ONE ABUTMENT**

Bar	No.	Size	Length	Shape
h	16	#4	5'-0"	—
h1	4	#4	5'-3"	—
h2	6	#4	26'-5"	—
p	10	#7	26'-5"	—
s	30	#4	9'-5"	□
u	8	#6	11'-1"	□
v	8	#4	3'-2"	—
v1	8	#4	4'-2"	—
v2	54	#4	3'-11"	—
Concrete Structures			9.7 Cu. Yds.	
Reinforcement Bars			1220 Lb.	

**P.P.C. DECK BEAMS  
PILE BENT ABUTMENT**

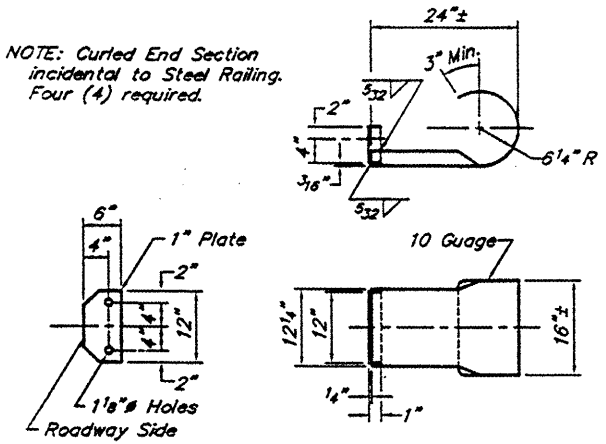
24' RDWY. 27" BMS. *'D'*=15° OR 20°

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 95	94-01166-00-BR	PULASKI	13	10
PROJECT NO. BROS-153(30)			CONTRACT NO. 99327	



VIEW A-A  
ROUND HEAD BOLT

NOTE: Curled End Section  
incidental to Steel Railing.  
Four (4) required.



CURLLED END SECTION DETAILS

**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 requirements 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 and 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 shall be paid for at the contract unit price per foot for STEEL RAILING, TYPE S1.

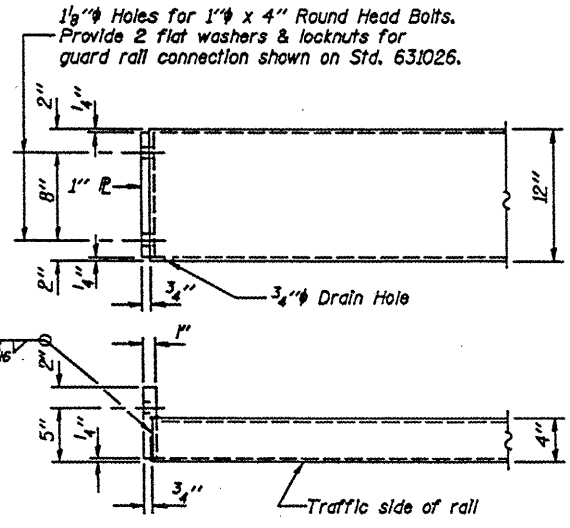
For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with STEEL RAILING, TYPE S1.

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

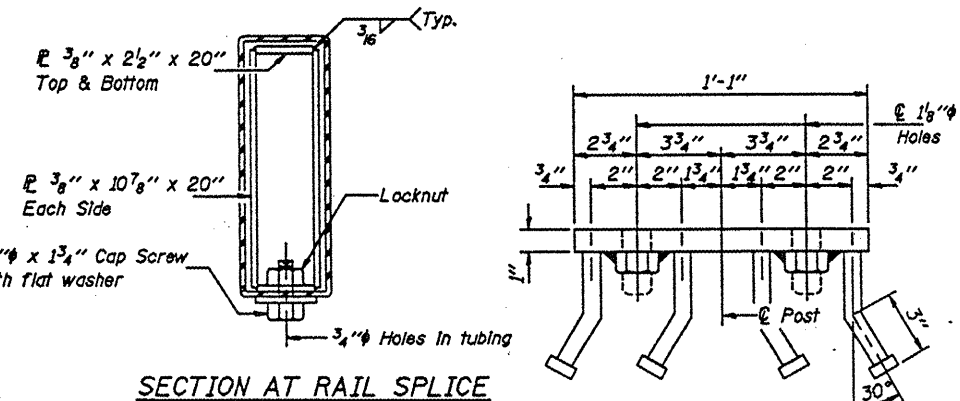
The 1/2" x 7" x 6" plates that come in contact with concrete shall either receive two coats of asphalt paint conforming to Section 1060.07 Type II, or 1/8" fabric bearing pads shall be placed between the plates and concrete.

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 (1)(2) 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.

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.

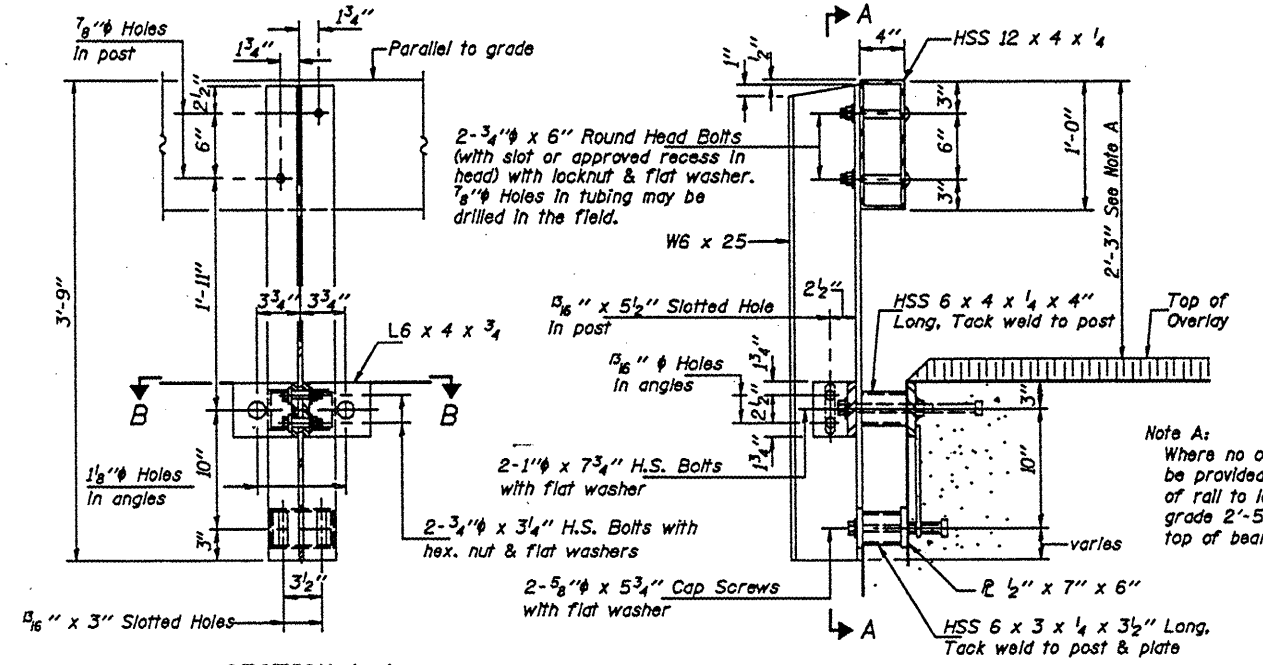


END OF RAIL DETAILS



SECTION AT RAIL SPLICE

VIEW C-C

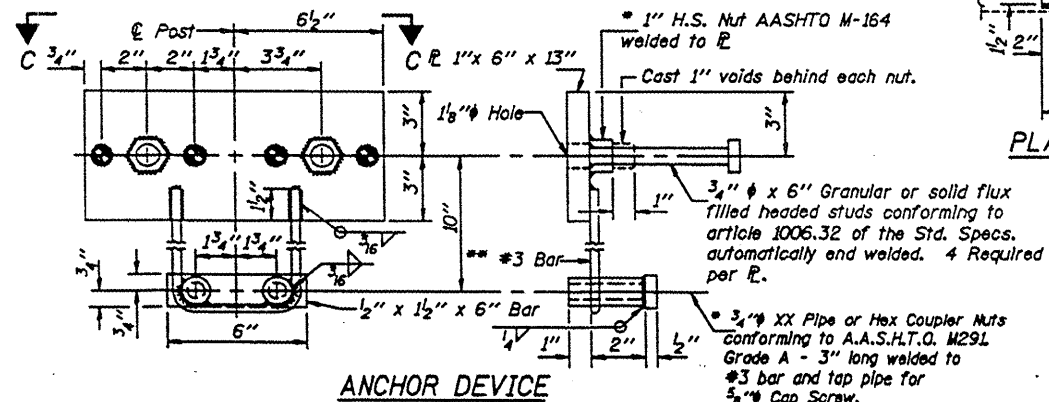


SECTION A-A

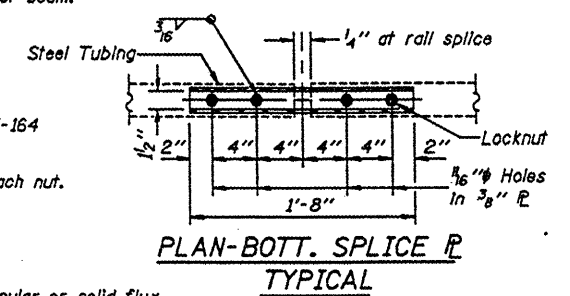
SECTION AT RAIL POST

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.

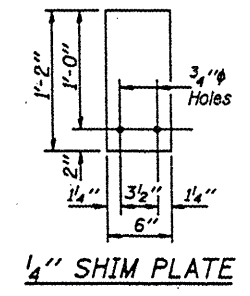
\*\* Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2".



ANCHOR DEVICE



PLAN-BOTT. SPLICE TYPICAL

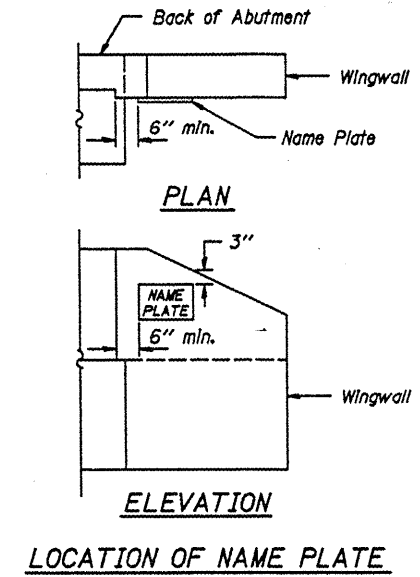
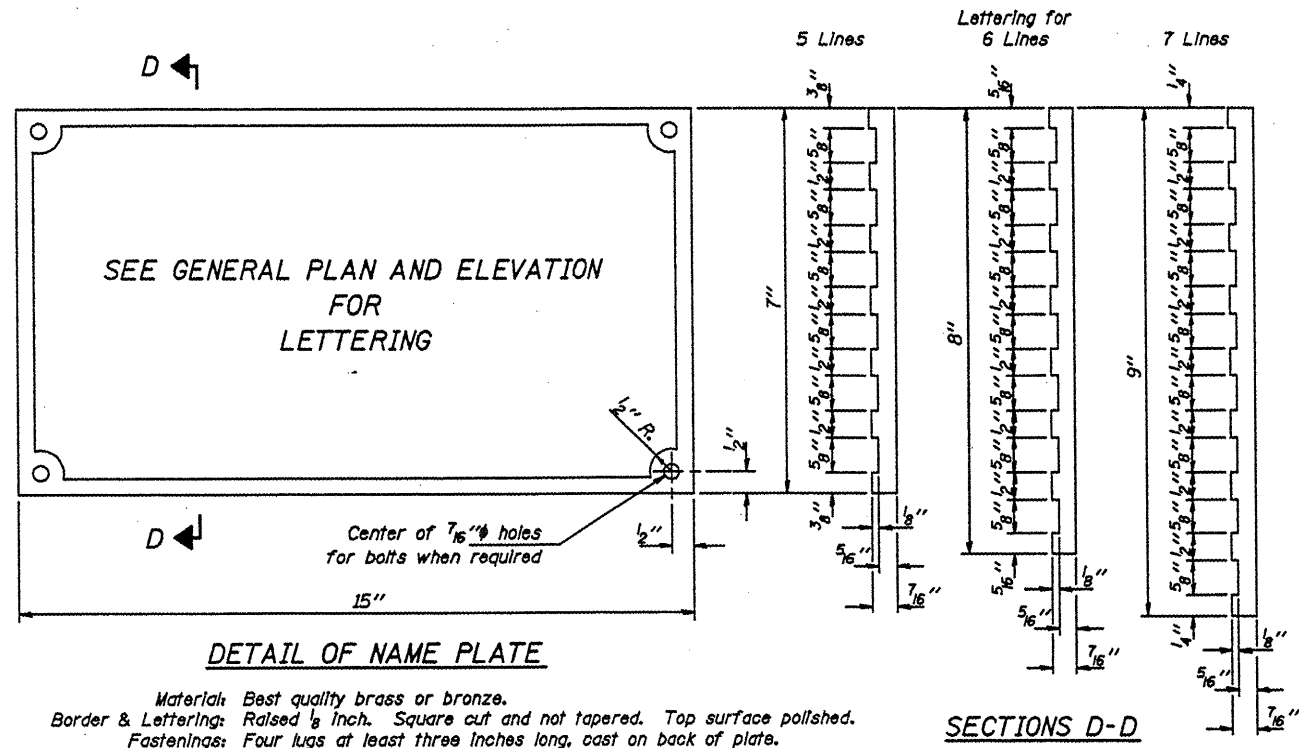


1/4 SHIM PLATE

STEEL RAILING, TYPE S-1  
STANDARD CR-TS1

Illinois Department of Transportation  
PASSED APRIL 4, 2005  
Approved by: [Signature]  
Engineer of Bridge Design  
APPROVED APRIL 4, 2005  
Approved by: [Signature]  
Engineer of Bridges and Structures

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 95	94-01166-00-BR	PULASKI	13	11
PROJECT NO. BROS-153(30)			CONTRACT NO. 99327	



Illinois Department of Transportation

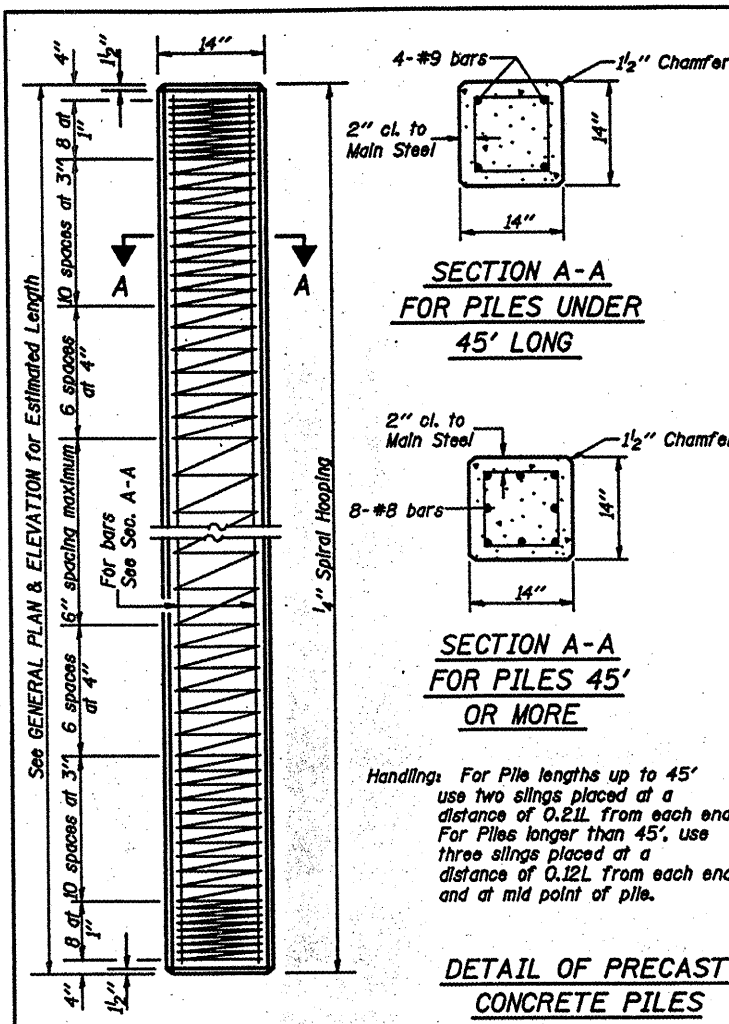
PASSED APRIL 4, 2005  
*Thomas S. Hanna*  
 Engineer of Bridge Design

APPROVED APRIL 4, 2005  
*Ralph E. Anderson*  
 Engineer of Bridge and Structures

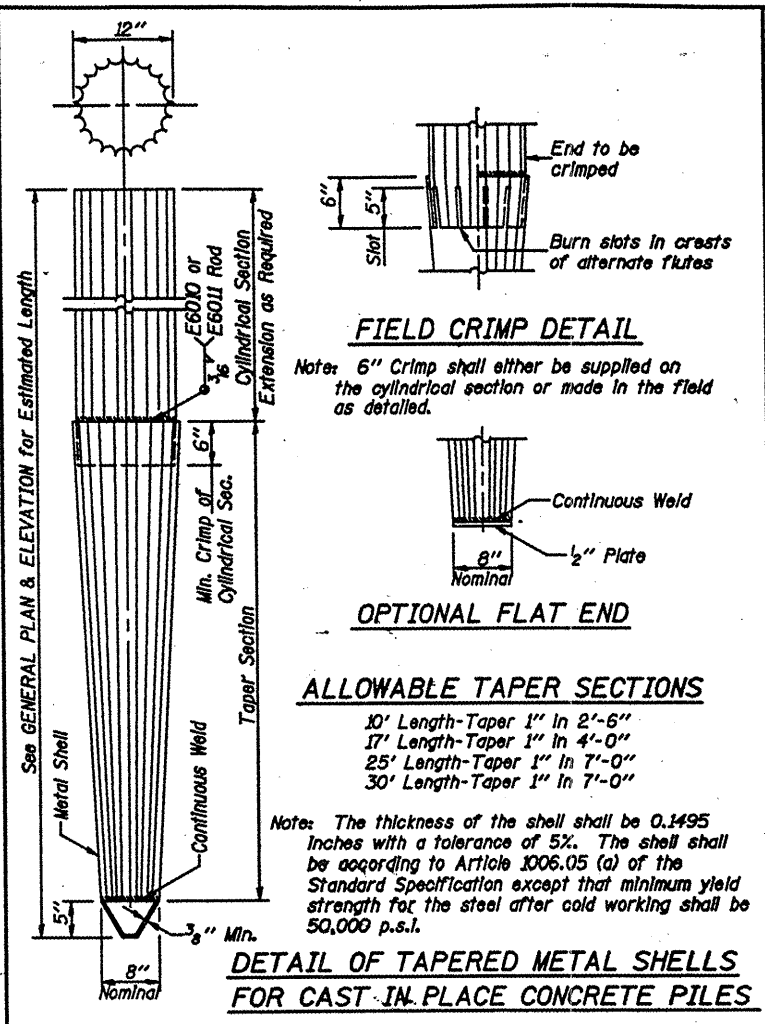
SHE 1-1, GENREV

NAME PLATE  
 STANDARD CN

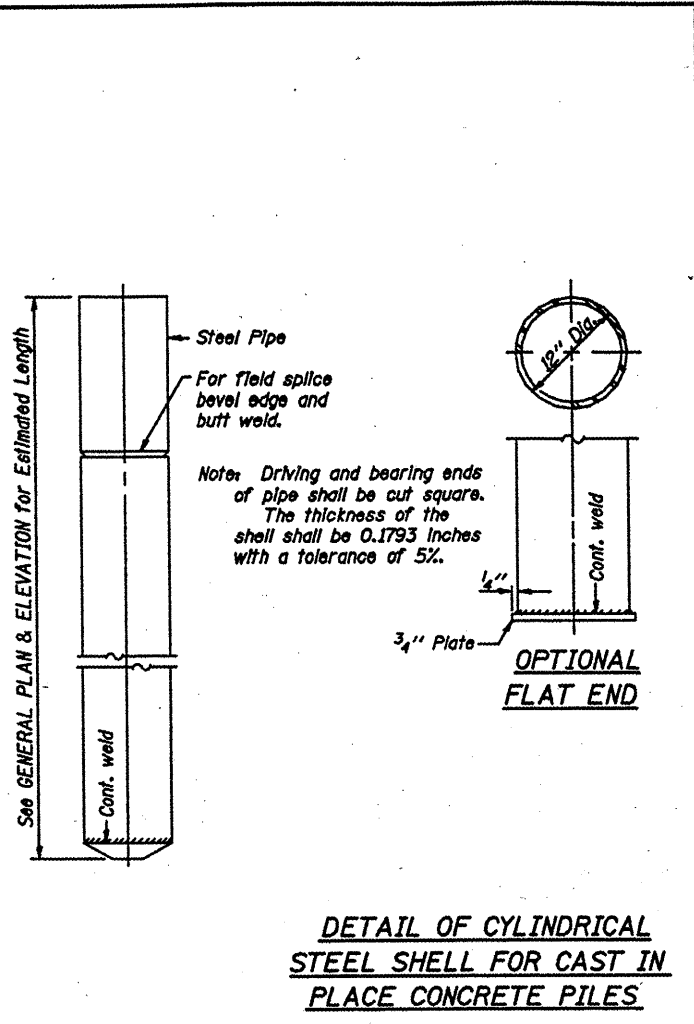
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 96	94-01168-00-BR	PULASKI	13	12
PROJECT NO. BROS-153(30)			CONTRACT NO. 99327	



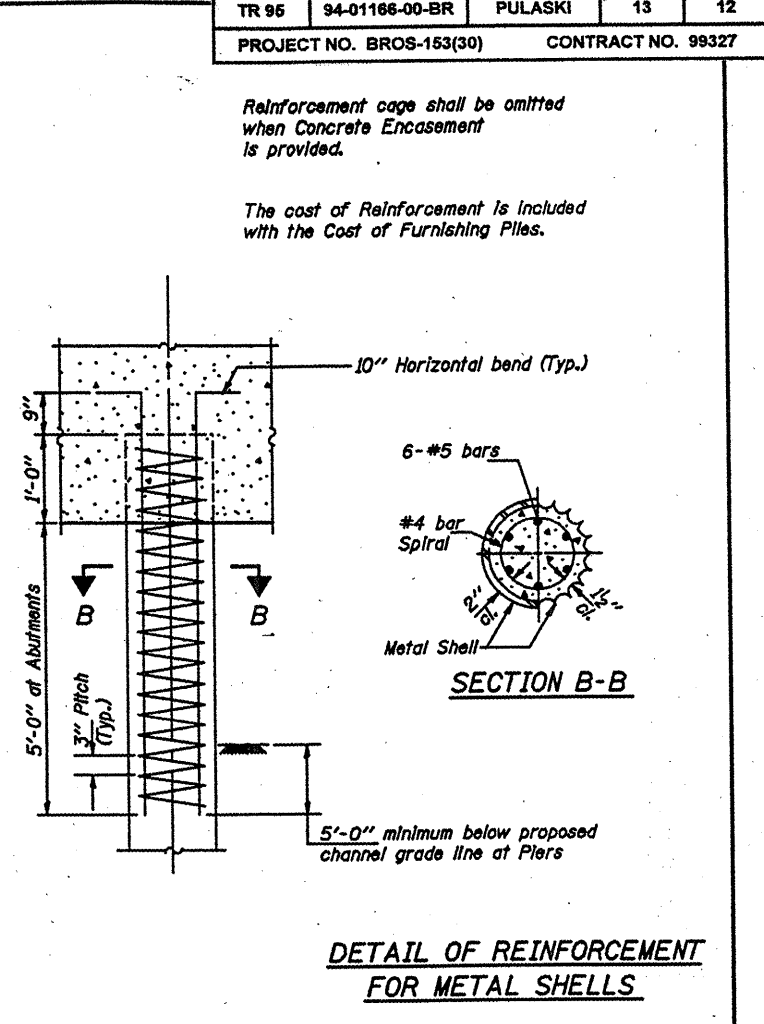
**DETAIL OF PRECAST CONCRETE PILES**



**DETAIL OF TAPERED METAL SHELLS FOR CAST IN-PLACE CONCRETE PILES**



**DETAIL OF CYLINDRICAL STEEL SHELL FOR CAST IN PLACE CONCRETE PILES**



Reinforcement cage shall be omitted when Concrete Encasement is provided.

The cost of Reinforcement is included with the Cost of Furnishing Piles.

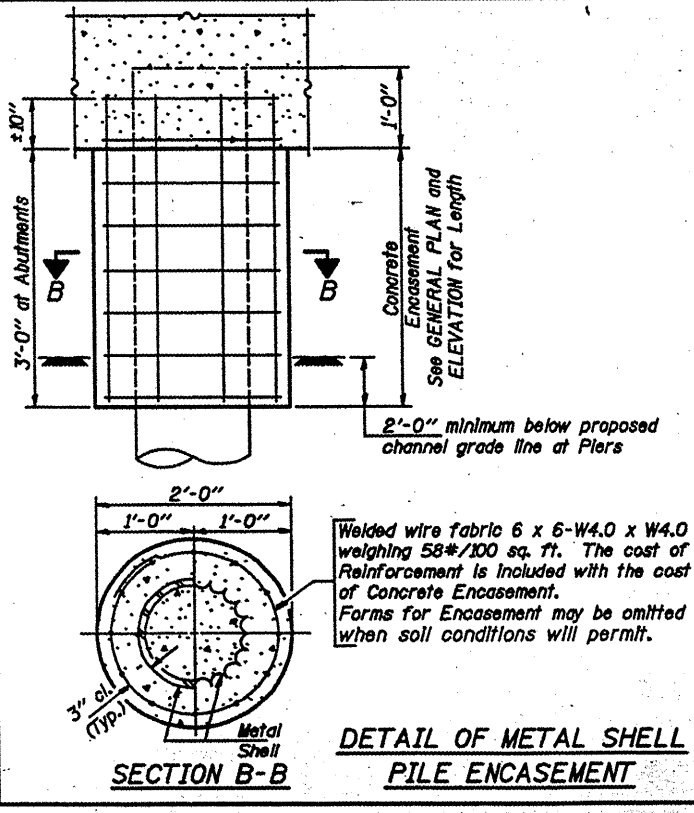
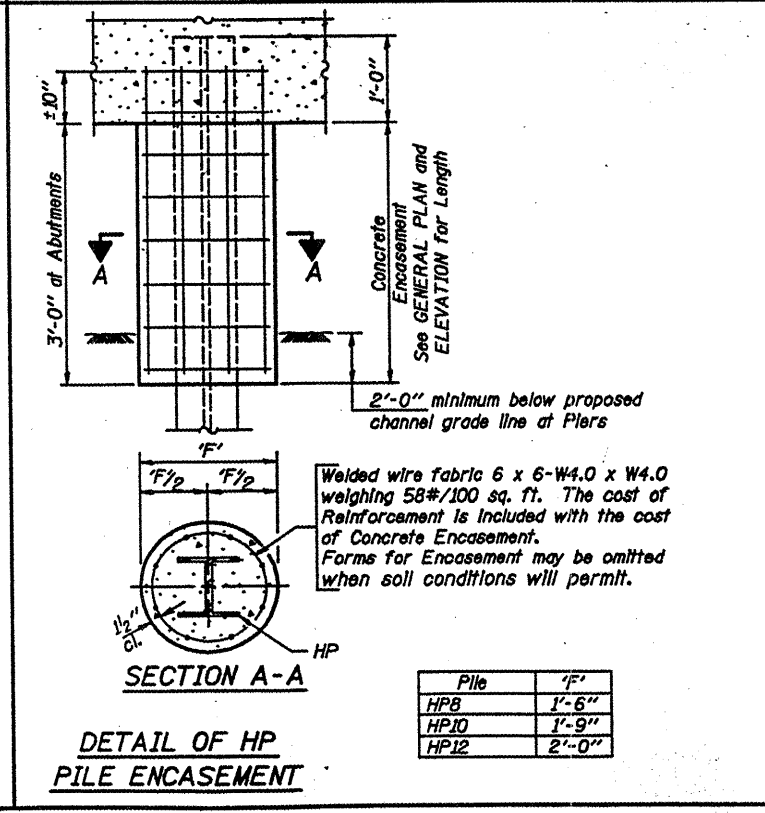
Illinois Department of Transportation

PASSED FEBRUARY 1, 2000

Theresa J. Nussle  
Engineer of Bridge Design

APPROVED FEBRUARY 1, 2000

Ralph E. Anderson  
Engineer of Bridges and Structures



**QUANTITIES/FT. OF ENCASEMENT (STEEL PILES)**

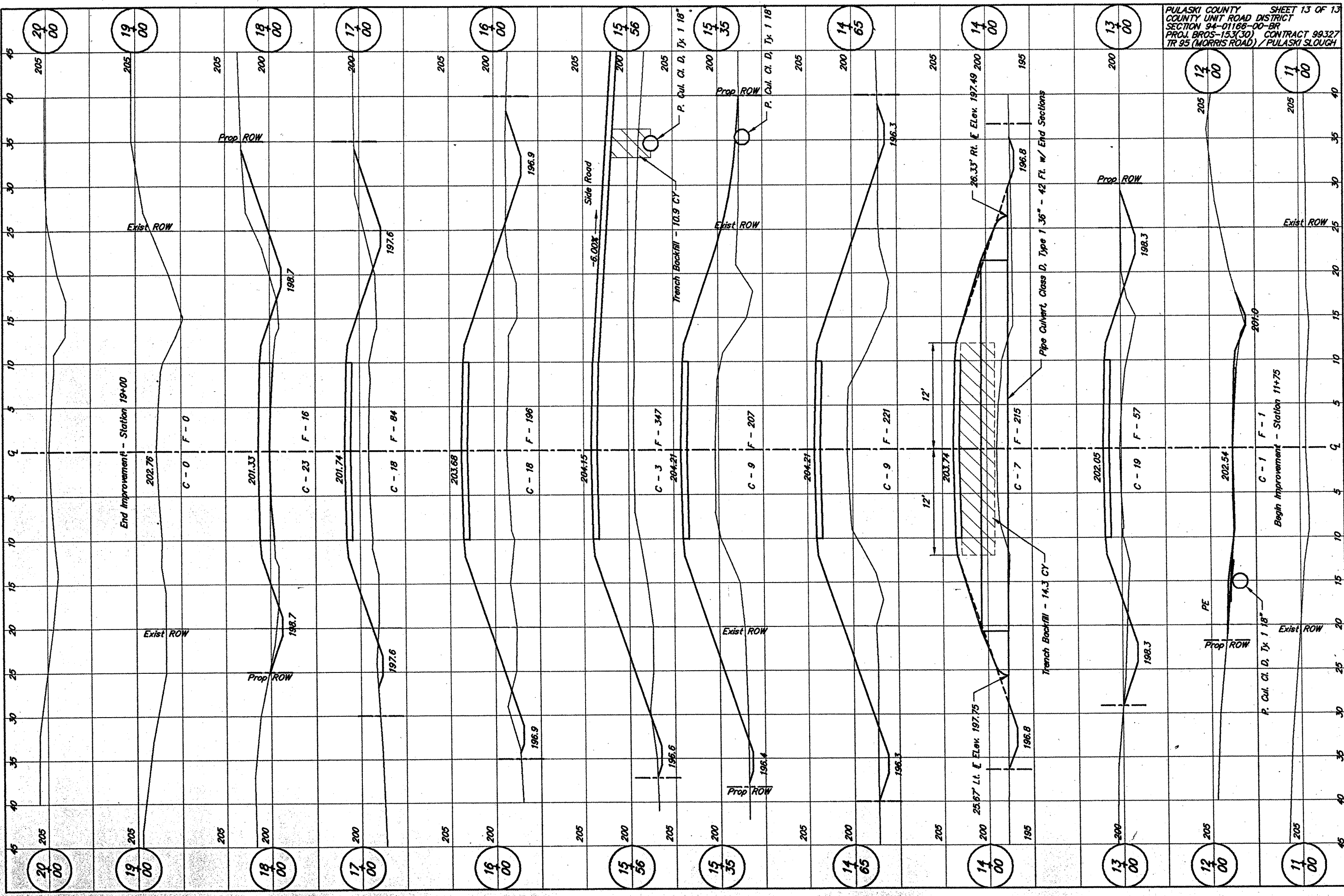
Pile Size	Item	Quantity
HP8	Concrete Encasement	0.063 C.Y.
HP10	Concrete Encasement	0.086 C.Y.
HP12	Concrete Encasement	0.112 C.Y.

**(METAL SHELL PILES)**

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

**PILE DETAILS**

**STANDARD CX-1**



End Improvement - Station 19+00

Begin Improvement - Station 11+75

20  
00

19  
00

18  
00

17  
00

16  
00

15  
56

15  
35

14  
65

14  
00

13  
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12  
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11  
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56

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65

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12  
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